U. S.
OFFICIAL GAZETTE
UNITED STATES
PATENT OFFICE

VOL 882

JANUARY

1971

MICRO PHOTO DIVISION

BELL HOWELL

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A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

U.S. DEPARTMENT OF COMMERCE

Official Gazette of the United States Patent Office

January 5, 1971 Volume 882 Number 1

PATENTS

NOTICES

Board of Appeals Decisions Rendered in the Month of November 1970

Examiner affirmed	140
Examiner affirmed in part	13
Examiner reversed	33
Total	186

Certificates of Correction for the Week of Jan. 5, 1971

Re. 26,975	3,507,129	3,522,210	3,532,691
3,266,743	3,507,238	3,522,335	3,532,753
3,348,235	3,507,881	3,523,088	3,533,084
3,366,086	3,508,232	3,523,935	3,533,205
3,417,029	3,508,636	3,524,496	3,533,490
3,418,512	3,509,312	3,524,523	3,533,528
3,424,697	3,510,032	3,524,855	3,533,853
3,453,237	3,510,187	3,524,868	3,533,911
3,455,861	3,510,246	3,524,878	3,533,943
3,455,928	3,510,446	3,525,026	3,534,025
3,459,769	3,510,598	3,525,726	3,534,155
3,471,788	3,510,621	3,525,841	3,534,438
3,472,145	3,511,776	3,526,521	3,534,886
3,473,063	3,512,221	3,526,646	3,534,963
3,473,727	3,512,853	3,526,708	3,535,245
3,473,882	3,513,121	3,527,758	3,535,318
3,473,929	3,513,251	3,527,759	3,535,319
3,476,394	3,513,666	3,527,821	3,535,395
3,477,807	3,513,978	3,528,049	3,535,396
3,478,048	3,514,366	3,528,222	3,536,007
3,478,732	3,514,639	3,528,538	3,536,411
3,479,977	3,515,065	3,528,689	3,536,550
3,480,625	3,515,090	3,528,726	3,536,588
3,484,464	3,515,389	3,529,934	3,536,677
3,493,737	3,515,440	3,530,088	3,536,917
3,494,915	3,515,717	3,530,089	3,537,188
3,496,924	3,516,614	3,530,090	3,537,279
3,499,321	3,516,913	3,530,140	3,537,280
3,499,522	3,516,997	3,530,700	3,537,673
3,501,613	3,517,284	3,531,142	3,537,706
3,502,646	3,517,616	3,531,278	3,537,733
3,503,272	3,518,187	3,531,287	3,537,823
3,504,025	3,520,777	3,531,494	3,537,895
3,505,238	3,520,818	3,531,939	3,537,926
3,506,040	3,522,146	3,531,992	3,537,959
3,506,404	3,522,204	3,532,299	3,538,015

Patents Available for Licensing or Sale

D. 207,895. ASH TRAY. Oliver J. Bacott, 4407 Springdale Ave., Berkeley, Mo., 63134.

D. 218,817. DECORATIVE STOOL. Mary J. Schildknecht, 6202 Upper Hunter Trace Road, Louisville, Ky., 40216.

2,941,437. THREADLESS BOLT HAVING A WEDGE SHAPED RETAINING KEY. William C. Brander, 3985 Syracuse, Dearborn Heights, Mich., 48125.

3,143,331. TELEVISION POLE STAND. John L. Corey, 21329 S. Martin St., Carson, Calif., 90745.

3,186,114. LABEL HOLDER FOR LOOSE LEAF BINDER. Louis J. Carter, 7300 City Line, Suite 120, Philadelphia, Pa., 19151.

3,465,468. RADIANT ENERGY INSECT TRAP. Rose Takamoto, 347 North Township, Yuba City, Calif., 95991.

3,503,320. VENT. Sogeco-Societa Generale Condizionaments, Monfalcone, Italy. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,516,512. MOBILE SCAFFOLD. Eisenbau Karl Ladwig BSB, Germany. Correspondence to: Michael S. Striker, 360 Lexington Ave., New York, N.Y., 10017.

3,521,182. ENCODING SYSTEM FOR DIGITAL LINKS. Troy L. Stueck, 161 Stanmore Road, Baltimore, Md., 21212.

3,532,353. TWO-WHEELED FOLDABLE STROLLER. Edmund Rogol, Nimshew Road, Star Rte., Magalia, Calif., 95954.

3,533,645. CLOSE TRACKING TRAILER VEHICLE. Meigs W. Newberry, 630 Parker St., East Longmeadow, Mass., 01028.

3,537,195. FRAUD PROOF CREDIT CARD. A. D. Gerds, P.O. Box 505, Apple Valley, Calif., 92307.

3,543,438. PLANT GROWING MEANS AND METHOD OF MAKING SAME. Edwards Enterprises, Box 227, Redondo Beach, Calif., 90277.

The following three patents are offered by: John W. Barnd, 32 Hollybrook Road, Paramus, N.J.

3,351,128. MULTI-ZONE TEMPERATURE CONTROL.

3,496,991. FLUID TEMPERATURE REGULATING METHOD AND APPARATUS.

3,515,345. MULTI-ZONE TEMPERATURE CONTROL.

Otto Wohr of Stuttgart, Germany, is prepared to grant exclusive or non-exclusive license on reasonable terms and conditions under the following patent.

Inquiries should be addressed to: George V. Caldwell & Associates, 236 Adelaide Drive, Santa Monica, Calif., 90402.

3,437,217. DOUBLE-TIER GARAGE.

New Applications Received During September 1970

Patents	8413
Designs	494
Plant Patents	4
Reissues	41
Total	8952

Issue—January 5, 1971

Patents	1825	No. 3,551,909 to No. 3,553,733, incl.
Designs	63	No. 219,637 to No. 219,699, incl.
Plant Patents	3	No. 3,011 to No. 3,013, incl.
Reissues	6	No. 27,018 to No. 27,023, incl.
Total	1897	

General Electric Company is prepared to grant non-exclusive licenses under the following 22 patents upon reasonable terms to domestic manufacturers.

Applications for license under the following 2 patents should be addressed to: Division Patent Counsel, Space Division, General Electric Company, P.O. Box 8555, Philadelphia, Pa., 19101.

3,524,288. COMPLEX, NON-SPHERICAL STRUCTURES.

3,525,000. ELECTRODE CONFIGURATION IN A LINEAR MHD GENERATOR.

Applications for license under the following 20 patents may be addressed to: Patent Counsel Appliance and Television Business Group, General Electric Company, Appliance Park, Louisville, Ky., 40225.

3,005,253. MANUFACTURE OF HEAT EXCHANGE TUBING.

3,134,166. MANUFACTURE OF HEAT EXCHANGE TUBING.

3,229,380. AUTOMATIC DRYER CONTROL CIRCUIT.

3,364,621. PEDAL-TYPE DOOR OPENER.

3,520,568. DOOR LATCH FOR APPLIANCE CABINETS AND THE LIKE.

3,521,470. TEMPERATURE CONTROL FOR WASHING MACHINE.

3,527,446. DUAL VALVE CONTROL.

3,527,904. UNBALANCE CONTROL MEANS FOR CLOTHES TREATING APPARATUS.

3,507,265. SELF-CLEANING GAS COOKING OVEN.

3,507,266. OVEN DOOR WITH DOOR SEALING GASKET.

3,509,605. SLIDABLE FASTENING MEANS BETWEEN RELATED MEMBERS.

3,512,514. AIR COOLING SYSTEM FOR WALLS OR SELF CLEANING OVEN.

3,514,577. COMBINED EXPANSIBLE BROILER OVEN AND KITCHEN VENTILATING HOOD.

3,514,578. COMBINATION BROILER OVEN AND KITCHEN VENTILATING HOOD.

3,514,733. SNAP-ACTION HOT WIRE POWER SWITCHING RELAY.

3,522,414. HIGH SPEED BROILING OVEN WITH A PIVOTAL ELECTRIC BROILING ELEMENT.

3,529,582. SELF-CLEANING FORCED CONVECTION OVEN.

3,529,973. METHOD OF BROILING IN AN OVEN.

Re. 26,943. SAFETY MEANS FOR OVEN DOOR LATCHING MECHANISM.

Re. 26,944. OVEN DOOR LATCHING SYSTEM.

Patent Suits

Notices under 35 U.S.C. 290; Patent Act of 1952

2,653,526, W. E. Peery, PRINTING SYSTEM FOR PHOTOCOMPOSING MACHINES OR THE LIKE; **2,787,654**, same, ELECTRONIC PHOTO-TYPE-COMPOSING SYSTEM, filed Aug. 7, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c1961, *Compugraphic Corporation* v. *Eltra Corporation and Logan Square Typographers, Inc.*

2,787,654. (See 2,653,526.)

2,882,060, P. L. Speicher, MOBILE BROADCAST SPREADER; **3,394,892**, same, MATERIAL SPREADER, filed Sept. 8, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c55, *The Cyclone Seeder Co., Inc.* v. *Central Quality Industries, Inc.*

2,906,964. (See 3,043,211.)

2,971,259, Hahnau and O'Toole, METHOD AND APPARATUS FOR DETERMINING THE POSITION OF SEWER LEAKS; **3,168,900**, Zurbrigen and Steinsberger, METHOD FOR LOCATING AND SEALING PIPE LEAKS, filed May 20, 1970, D.C., S.D. Fla. (Miami), Doc. 70–710–C–CF, *The Penetryn System, Inc.* v. *Westwood Lake, Inc.* Stipulation and motion for dismissal, complaint and counterclaim dismissed with prejudice, Sept. 9, 1970.

3,043,211, V. Appenzeller, ROLLER ASSEMBLIES FOR THE PRESSURE TREATMENT OF MATERIALS; **2,906,964**, same, PRESSURE TREATMENT OF MATERIAL, filed May 6, 1965, D.C., S.D.N.Y., Doc. 65–C–1377, *Beloit Corp.* v. *Eduard Kusters*. Stipulation and order that pursuant to Rule 41(a)(c) F.R.C.P. action and all complaints, counterclaims dismissed without prejudice, Sept. 2, 1970.

3,068,948, Little and Poon, PRODUCTION OF TRIS-2-HYDROXYALKYL ISOCYANURATES, filed Aug. 26, 1970, D.C., N.D.N.Y. (Utica), Doc. 70–CV–300, *Allied Chemical Corporation* v. *Schenectady Chemicals, Inc.*

3,157,045, C. E. Maki, VIBRATION TESTING, filed Aug. 7, 1970, D.C., E.D. Va. (Alexandria), Doc. 320–70–A, *Textron Inc.* v. *Abac-Derritron Incorporated.*

3,168,900. (See 2,971,259.)

3,226,612, J. C. Haenichen, SEMICONDUCTOR DEVICE AND METHOD, filed Sept. 21, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c2327, *Texas Instruments Incorporated* v. *Motorola, Inc.*

3,231,154, M. S. Johnston, SIPHON DEVICE FOR BEER KEGS AND THE LIKE; **3,353,724**, same, BEER TAPPING DEVICE; **3,435,997**, same; **3,497,114**, same, filed Aug. 14, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–1813–DWW, *The Perlick Co., Inc.* v. *Republic Corporation.*

3,317,955, Schuman and Confer, APPARATUS FOR BLOW MOLDING HOLLOW CONTAINERS; **3,441,071**, same, PLASTIC CONTAINER; **3,452,125**, same, METHOD OF AND APPARATUS FOR BLOW MOLDING THERMOPLASTIC MATERIAL, filed June 29, 1970, D.C., E.D. Ill. (Danville), Doc. CV 70–131–D, *W. R. Grace & Company* v. *Park Mfg. Co., J. E. Industrial Molding and Jack Evans.*

3,321,081, A. H. Willinger, AQUARIUM FILTER APPARATUS, filed Aug. 10, 1970, D.C. Mass. (Boston), Doc. 70–1019–C, *Metaframe Corp.* v. *Biozonics Corp.*

3,325,018, L. A. Wright, ARTICULATING CRANE, filed Oct. 6, 1970, D.C.N.J. (Newark), Doc. C–1342–70, *Fruehauf Corporation* v. *International Terminal Operating Co.*

3,329,468, R. D. Beith, WHEEL STRUCTURE, filed Oct. 8, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c2498, *E-T Industries, Inc.* v. *Ansen Automotive Engineering and Automotive Speed Center, Inc.*

3,350,733, D. C. Hanna, CAR WASHING DEVICES; **3,403,417**, Hanna and Ebeling, CAR ENDS AND SIDES CLEANING BRUSHES; **3,517,405**, same, CAR WASHING FRICTION SCRUBBER, filed Sept. 17, 1970, D.C. Ariz. (Phoenix), Doc. C–70–530 Phx., *Daniel C. Hanna* v. *Hurricane Car Wash Systems, Inc. et al.*

3,353,724. (See 3,231,154.)

3,361,114, H. R. Axelrod, METHOD FOR FEEDING FISH AND OTHER AQUATIC ANIMALS; **3,361,566**, same, FREEZE DRIED FOOD ARTICLE FOR AQUATIC ANIMALS, filed Oct. 8, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–2278–HP, *Miracle Pet Products, Inc.* v. *Long Beach Fisheries, Inc. et al.*

3,361,566. (See 3,361,114.)

3,391,037, J. D. McNulty, METHOD OF COVERING JOINTS IN INTERIOR WALL CONSTRUCTION, filed June 4, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c1347, *Plastering Development Center, Inc.* v. *Joseph H. Kaptur*. Final judgment on consent, July 27, 1970.

3,394,892. (See 2,882,060.)

3,397,727, S. J. Orosz, RESILIENT RETAINING RING ASSEMBLY, filed Oct. 7, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–2269–F, *Steve J. Orosz* v. *Connor Spring Manufacturing Company.*

3,403,417. (See 3,350,733.)

3,435,997. (See 3,231,154.)

3,441,071. (See 3,317,955.)

3,452,125. (See 3,317,955.)

3,469,572, J. R. Nehring, APPARATUS FOR TAKING MULTIPLE FLUID SAMPLES; **3,494,352**, Russo and Halligan, APPARATUS FOR TAKING MULTIPLE SAMPLES, filed Aug. 10, 1970, D.C., M.D. Fla. (Jacksonville), Doc. 70–733–C–J, *Becton, Dickinson & Company* v. *Sherwood Medical Industries, Inc.*

3,494,352. (See 3,469,572.)

3,497,114. (See 3,231,154.)

3,515,806, E. D. Spraker, PORTABLE INPUT-OUTPUT TERMINAL, filed Sept. 18, 1970, D.C., N.D. Tex. (Dallas), Doc. CA–3–4177–B, *Electronic Data Systems Corporation* v. *Sigma Systems Corp. and Applied Science Inc.*

3,517,405. (See 3,350,733.)

3,527,018, D. E. Jahnke, VACUUM PACKAGING OF POULTRY, filed Sept. 24, 1970, D.C., E.D. Wis. (Milwaukee), Doc. 70–C–535, *Vac-Air, Inc.* v. *John Mohr & Sons, Inc.*

Re. 25,737, Brainard, Hansen, Sedgwick, Sipek and Baechle, MACHINE TOOL WITH MECHANICAL CUTTING TOOL CHANGER, filed Sept. 15, 1970, D.C., E.D. Mich. (Detroit), Doc. 35374, *Ex-Cell-O Corp.* v. *Kearney & Trecker Corporation.*

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner
F. H. BRONAUGH, Deputy Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF DECEMBER 15, 1970

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	3-27-69
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	1-09-69
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	9-09-69
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	5-20-69
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	2-07-69
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—N. ANSHER, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	2-02-70
SECURITY, GROUP 220—R. L. CAMPBELL, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	6-04-69
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	9-15-69
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	12-01-69
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	8-12-69
DESIGNS, GROUP 290—R. L. CAMPBELL, Director. Industrial Arts; Household, Personal and Fine Arts.	3-04-70
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	9-08-69
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—D. J. STOCKING, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	6-27-69
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	6-24-69
HEAT, POWER AND FLUID ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission; Fluid Handling; Lubrication; Joint Packing.	12-29-69
CONSTRUCTIONS, SUPPORTS, TEXTILES, CLEANING, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures; Centrifugal Separations; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes; Sewing Machines; Winding and Reeling.	11-03-69

Total number of pending applications (excluding Designs)	183,354
Total number of Design applications pending	2,740

Expiration of patents: The patents within the range of numbers indicated below expire during November 1970, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,660,723 to 2,664,561, inclusive
Plant Patents	Numbers 1,232 to 1,237, inclusive

REISSUES

JANUARY 5, 1971

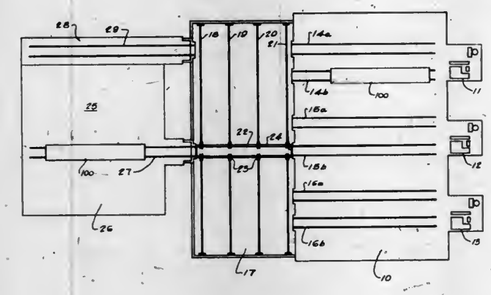
27,018
SILICON CARBIDE FURNACES AND PLANTS

Wilbur T. Bolkcom, Pittsburgh, Pa., and William E. Knapp, Allison Park, Pa., (both % American Metallurgical Products Co., 9800 McKnight Road, Pittsburgh, Pa. 15237)

Original No. 3,432,605, dated Mar. 11, 1969, Ser. No. 618,034, Feb. 23, 1967. Application for reissue Nov. 20, 1969, Ser. No. 878,283

Int. Cl. H05b *3/02, 3/62*

U.S. Cl. 13—20 **14 Claims**



A silicon carbide manufacturing plant for manufacturing silicon carbide in a movable furnace at one area, discharging the furnace in a second area and loading in a third area. An electrical power source is provided having a main trackway adjacent the power source with a furnace car movable to and from said power source and removably connected thereto through electrodes on end panels on the car.

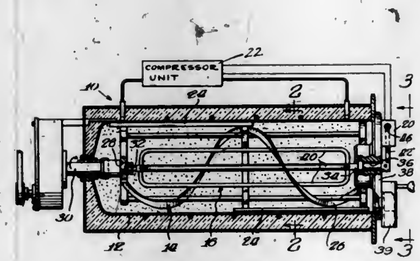
27,019
FREEZING CONDITION CONTROL

Charles B. Harker, Rockford, Ill., assignor, by mesne assignments, to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware

Original No. 3,298,190, dated Jan. 17, 1967, Ser. No. 493,670, Oct. 7, 1965, continuation of Ser. No. 669,988, Sept. 18, 1967. Application for reissue Dec. 19, 1968, Ser. No. 786,508

Int. Cl. F25c *7/12;* **G01n** *11/14*

U.S. Cl. 62—136 **3 Claims**



An improved viscosity sensor control for a semi-frozen confection machine of the type having a cylindrical refrigerated chamber with a scraper-beater assembly. The viscosity sensor is of the drag type and is mounted radially inwardly of the scraper-beater assembly and independently thereof. Upon a predetermined rise in viscosity the viscosity sensor is arranged to secure the refrigeration for the chamber.

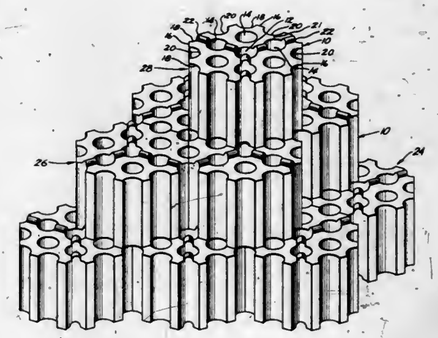
27,020
CHECKERBRICK AND CHECKERWORK CONSTRUCTION FOR REGENERATORS

Charles R. Hauth, Upper St. Clair, Pittsburgh, and Larry L. Sheatsley, Bethel Park, Pa., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Original No. 3,436,064, dated Apr. 1, 1969, Ser. No. 674,327, Oct. 10, 1967. Application for reissue Nov. 18, 1969, Ser. No. 871,503

Int. Cl. F23l *15/02*

U.S. Cl. 263—51 **7 Claims**



The present invention relates to improvements in heat exchangers and is directed particularly to improved design for checkerbrick and checkerwork construction for blast furnace stoves. Specifically, in an assembly of checkers, the invention is directed to multi-sided checkerbrick having symmetrically arranged internal apertures and external grooves and which is divided into equal segments by projections and complementary recesses to permit staggering of courses of checkerbrick throughout the vertical extent of the construction while maintaining alignment of the apertures in the checkerbrick and formed by combinations of checkerbrick.

27,021
WIRE-BENDING APPARATUS

Ernst G. Ott, Chigwell, England, assignor to Lear Siegler, Inc., a corporation of Delaware

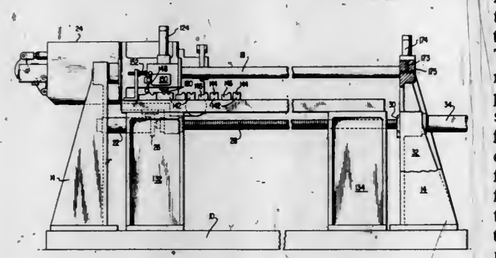
Original No. 3,393,714, dated July 23, 1968, Ser. No. 456,981, May 19, 1965. Application for reissue July 24, 1969, Ser. No. 862,983

Int. Cl. B21f *1/00*

U.S. Cl. 140—71 **31 Claims**

The specification and drawings disclose a machine for bending wire into formed wire spring strips of the type used in automotive seats. The machine comprises a bending head mounted on a frame for rotary movement about

an axis and longitudinal movement along the axis. The machine is programmed to run through repeating cycles to produce a spring strip for each cycle. The bending head starts from a retracted position wherein it clamps the free end of a coil of wire. It then moves longitudinally to its advanced position, pulling the wire through a wire straightener as it advances. The bending head is then retracted step by step along the wire back to the retracted position, stopping at predetermined axial positions to make bends in the wire. After a predetermined number



of bends, the bending head automatically cuts the wire to complete the formation of the spring strip, and ready the machine for the next cycle. Easily changeable camming means is provided to facilitate programming the machine to produce any one of a large number of different spring strips with changeover time reduced to a matter of minutes.

27,022

CASING WITH APPERTAINING REFILL SHELL FOR LIPSTICKS AND OTHER POMADE STICKS

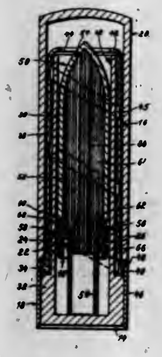
Erik Fuglsang-Madsen, Saxtorp, Sweden, assignor, by mesne assignments, to Sebec S.A., Fribourg, Switzerland, a Swiss company

Original No. 3,393,036, dated July 16, 1968, Ser. No. 576,123, Aug. 30, 1966. Application for reissue Sept. 10, 1969, Ser. No. 862,992

Claims priority, application Denmark, Aug. 31, 1965, 4,472/65

Int. Cl. A45d *40/06*

U.S. Cl. 401—78 **13 Claims**



A pomade stick container having a removable pomade refill. The container includes a casing having an upper portion provided with an inwardly extending flange the inner diameter of which defines the outlet opening of the container, a slide arranged to move within the casing, manually operable means connected to the slide for displacing the slide within the casing and the pomade refill itself. The refill includes a refill shell which is closed at its upper end and has a lower portion defining an entry to the shell, a detachable stick carrier closing the shell entry and adapted to hold a pomade stick extending into the refill shell. The stick carrier includes a lower carrier portion provided with a first connecting means. The slide is provided with a second connecting means adapted to be interconnected with the first connecting means so that the slide and the stick carrier may be joined when the two are pressed towards each other inside the casing. The stick carrier is also provided at its upper end with a narrowed portion adapted to be engaged by the lower portion of the refill shell. The major diameter of the stick carrier is smaller than the inner diameter of the flange whereas the major diameter of the lower portion of the refill shell is larger than the inner diameter of the flange. Either the lower portion of the refill shell or the flange, or both, are made of a material so yieldable that the major part of the refill shell may be pressed into the casing through the flange. A release member is arranged within the casing, at least during use, which, when operated, is adapted to release the stick carrier from the slide.

27,023

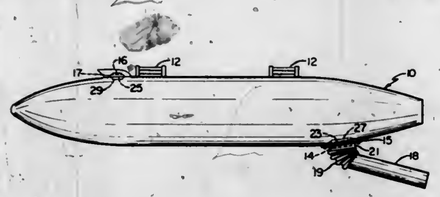
METHOD AND APPARATUS FOR SAFE VOIDING OF TANKS FILLED WITH INFLAMMABLE LIQUIDS OR VAPORS

William H. Sustrich, Salida, and Gus Francis, Denver, Colo., assignors to Francis Associates Company, Denver, Colo., a firm composed of Gus Francis and Emma L. Francis

Original No. 3,339,800, dated Sept. 5, 1967, Ser. No. 578,046, Sept. 8, 1966. Application for reissue May 26, 1969, Ser. No. 835,288

Int. Cl. B67b *7/24*

U.S. Cl. 222—81 **20 Claims**



[The invention relates to] *An* apparatus for safely and rapidly [draining] *voiding containers, such as, tanks or containers carried by aircraft, of* flammable *or deflagratable* [fluids] *materials,* [from tanks, such as fuel tanks for aircraft,] the apparatus incorporating *explosive cutter* means for cutting [with explosive cutters in the required sequence] *a* first [a drain] hole [and second] *in the wall of the container and sequentially actuating with the cut out portion for the first hole, associated apparatus operative upon actuation to augment the voiding of the tank, the associated apparatus being a second explosive cutter for cutting* an air inlet hole *in the container,* the *essential* improvement of this invention being the [supporting of a layer] *maintenance* of non-inflammable [liquid] *fluid* between [the] *any* explosive cutter *used to cut a hole in the container* and the flammable [liquid] *or deflagratable contents of the container* to prevent ignition [of the flammable liquid.] *or deflagration of the contents of the container by the high temperature products of the hole cutting operation.*

PLANT PATENTS

GRANTED JANUARY 5, 1971

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

3,011

ROSE PLANT

Michel Kriloff, Chemin de Saint Maymes, Antibes, Alpes-Maritimes, France

Filed Oct. 2, 1968, Ser. No. 764,973

Claims priority, application France, Oct. 12, 1967, 124,266

Int. Cl. A01h *5/00*

U.S. Cl. Plt.—18 **1 Claim**

1. A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a regular and good plant habit, a healthy leaf system, with the foliage being borne in abundance, an abundant and continuous flowering habit, particularly during the winter months, blooms of elegant form and of average size and usually borne singly and erect on sturdy, relatively stiff stems, with the blooms having good petalage, a distinctive, attractive, delicate and warm, pale pearly pink general color tonality of the flowers, good resistance to frost and other bad weather conditions and to diseases commonly attributed to roses, as compared with other rose varieties grown in France under the same conditions, excellent adaptability to various grafting stocks under widely varying climate and soil conditions, excellent adaptability to forced cultivation under glass, good shipping qualities, and excellent lasting qualities of the flowers as cut flowers.

3,012

BEGONIA PLANT

Dale W. Ulery, Springfield, Ohio, assignor to Ulery Greenhouse Company, Springfield, Ohio, a corporation of Ohio

Filed Apr. 23, 1969, Ser. No. 818,849

Int. Cl. A01h *5/00*

U.S. Cl. Plt.—68 **1 Claim**

A new variety of *semperflorens* begonia plant having very large red blooms and extremely vigorus and husky growth qualities, the new plant originating as a sport of Swansson Double Rose (unpatented).

3,013

GLADIOLUS PLANT

Claude R. Poyner, Jessup, Iowa, assignor to Selected Glads, Inc., New Albany, Ind., a corporation of Tennessee

Filed Dec. 18, 1968, Ser. No. 784,954

Int. Cl. A01h *5/00*

U.S. Cl. Plt.—85 **1 Claim**

1. The new and distinct variety of gladiolus plant, substantially as herein shown and described, characterized by its rugged plant, large size florets, ruffling, heavy substance, and a pink color of blossom having a frosty sheen.

PATENTS

GRANTED JANUARY 5, 1971

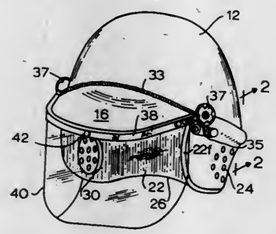
GENERAL AND MECHANICAL

3,551,909
UNIVERSAL CABLE RESTRAINED WAIST JOINT FOR PRESSURIZED SUIT
Edwin G. Vail, Simsbury, and Douglas E. Getchell, Windsor Locks, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Mar. 4, 1968, Ser. No. 710,387
Int. Cl. B63c
U.S. Cl. 2—2.1 **1 Claim**



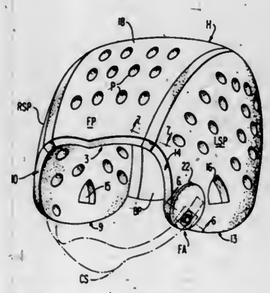
A pair of complementary circumferential cables provide axial and hoop load restraint about the waist of a space suit. The first cable includes vertically extending portions at the front and back of the suit, and the second cable includes vertically extending portions at the side of the suit, which portions provide plug load strength across the height of the waist strain section. Any bending motion about the waist results in either or both of these cables adjusting the length of the vertically extending portion, one side becoming longer and the other side shorter for any one cable, as a result of any bending of the space suit, the overall length, and the tension in the cables remaining constant during the bending motion.

3,551,910
NECK AND HEAD PROTECTOR FOR MOUNTING ON SAFETY HELMETS
Herbert A. Raschke, Greenbrae, Calif., assignor to E. D. Bullard Company, Sausalito, Calif.
Filed Nov. 12, 1968, Ser. No. 774,650
Int. Cl. A42b *3/00*
U.S. Cl. 2—3 **4 Claims**



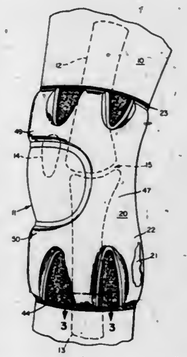
A neck-protective shield that can be removably mounted on head-protective helments. A transparent face-protective shield that can be removably mounted on the neck-protective shield.

3,551,911
PROTECTIVE HELMET AND METHOD OF MAKING SAME
David J. Holden, Littleton, Mass., assignor to George Frost Company, Shirley, Mass., a corporation of Massachusetts
Filed Feb. 4, 1969, Ser. No. 796,377
Int. Cl. A42b *1/08;* **A42c** *1/00*
U.S. Cl. 2—3 **5 Claims**



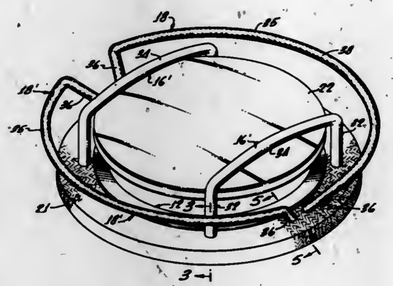
A protective helmet is made from an unitary piece of flexible slab material, such as vinyl foam. A substantially cruciform blank has a central part, front and rear portions, and two side portions. The blank is formed into head-encompassing shape, and the edges of the blank portions are joined in pairs in edge abutting relation, as by gluing, and a flexible coating is applied to the surfaces of the shaped helmet. A fastener assembly cooperable with a fastener on a chin strap is attached to the helmet proper.

3,551,912
PROTECTIVE DEVICE
Joseph P. Viglione, 715 Scott St., Stroudsburg, Pa. 18360
Filed Feb. 26, 1969, Ser. No. 802,436
Int. Cl. A41d *13/06*
U.S. Cl. 2—24 **7 Claims**



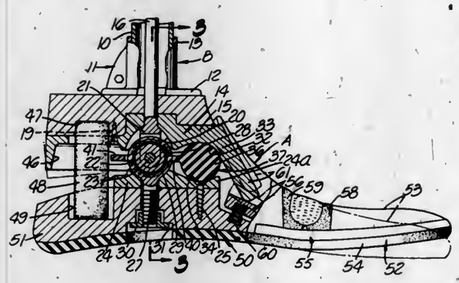
A protective device for a body joint, having fluid filled cushion areas positioned at either side of the joint and passages connecting said areas for the flow of fluid from one such area to the other upon impact.

3,551,913
HEART VALVE PROSTHESIS WITH GUARD STRUCTURE
Donald P. Shiley, 11022 Huntinghorn, Santa Ana, Calif. 92705, and Jerome Harold Kay, 115 S. June St., Los Angeles, Calif. 90004
Filed Apr. 2, 1968, Ser. No. 718,157
Int. Cl. A61f *1/22*
U.S. Cl. 3—1 **29 Claims**



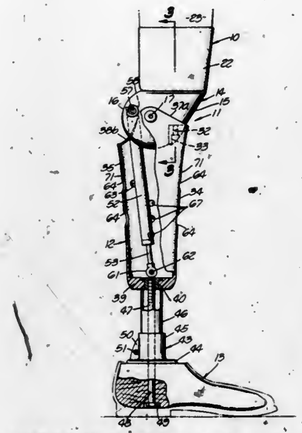
A heart valve prosthesis which includes a guard structure for preventing intrusion of heart muscle or other foreign tissue into the path of valve excursion. The guard in one embodiment is formed from a pair of upstanding struts mounted about the valve body intermediate the limits of valve excursion. In another embodiment the guard is formed by a plastic flange which extends upwardly and outwardly from the valve body and substantially surrounds the path of valve excursion.

3,551,914
NATURAL ACTION TOE LIFT ARTIFICIAL FOOT
Carl Woodall, 10705 Bellman, Downey, Calif. 90241
Filed May 9, 1968, Ser. No. 727,863
Int. Cl. A61f *1/08*
U.S. Cl. 3—6 **9 Claims**



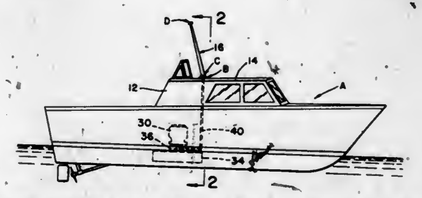
An artificial foot having a natural toe lift, in which a hinged toe section of the foot is interconnected with a pivotally connected shank member through a motion transmitting connection so that the toe section will be raised and lowered in a natural manner during the walking process, resilient means being utilized to effect articulated movement between the shank member and foot to raise or lift the toe section when walking pressure upon the heel section of the foot is relieved, and lower the toe section when walking pressure is applied to the heel section.

3,551,915
ARTIFICIAL LIMB HAVING ADJUSTABLE PARTS
Carl Woodall, 10705 Bellman, Downey, Calif. 90241
Filed Feb. 5, 1968, Ser. No. 702,990
Int. Cl. A61f *1/08*
U.S. Cl. 3—21 **9 Claims**



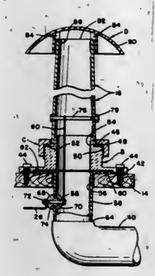
An artificial limb having a relatively adjustable thigh section, a knee section, a shin section and a foot section, which are so assembled as to permit fitting, alignment and adjustment for each patient without having to custom-make each limb particularly for each patient; the knee section having a knee unit embodying a universally adjustable cup adapter to receive a thigh socket therein, and having access openings for adjusting a knee action device within the knee unit; the shin section being of hollow shell-like construction and initially so shaped that by a simple cutting operation of an upper edge portion of the section, it can be adapted for either right or left limb assembly, a plurality of prepositioned holes being provided to permit mounting of a variety of available swing phase control devices therein and for convenient access to adjusting means therefor, and further having a tubular extension which is readily and easily varied as to length, and which provides a mounting for the foot section such that the angular relation of the elongate axis of the foot section can be varied as required to provide "toe-in" or "toe-out."

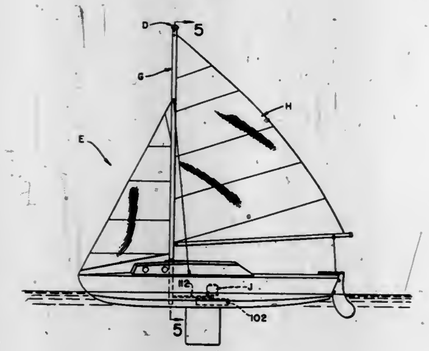
3,551,916
SEPTIC TANK VENT FOR BOATS
James S. Reid, Hudson, Ohio, assignor to The Standard Products Company, Cleveland, Ohio, a corporation of Ohio
Filed May 13, 1969, Ser. No. 824,067
Int. Cl. E03d *9/04*
U.S. Cl. 4—83 **12 Claims**

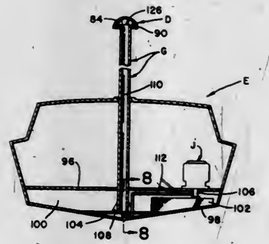


A boat having a toilet and storage tank for wastes from the toilet is provided with a storage tank vent. The boat may be one having a transceiver and a transceiver antenna. The transceiver antenna extends very high above

the boat and is hollow. A vent conduit connects the waste tank with the hollow transceiver antenna and gases formed in the waste tank are exhausted to atmosphere through opening means in the top portion of the trans-



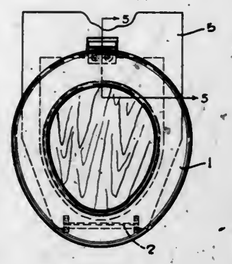




ceiver antenna. The boat may be a sailboat having a sail supporting mast which is hollow. A vent conduit connects the waste tank with the hollow mast to exhaust gases to atmosphere through opening means in the top portion of the mast.

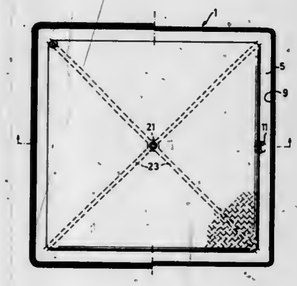
3,551,917
LATRINE CLOSURE MECHANISM
Guy Immega, 11511 Meyer, University City, Mo. 63130
Filed Dec. 21, 1967, Ser. No. 692,594
Int. Cl. A47k *11/02*
U.S. Cl. 4—144 **6 Claims**

A trap door automatically covers aperture in latrine when latrine is not in use and swings down and away from aperture in response to light downward pressure on seat or treadle when latrine is in use. The mechanism is made of simple butt hinges or their equivalent and small pieces of metal or wood, and includes a simple



counter weight to hold the trap door normally in aperture covering position. The identical mechanism may be used with either seat or squat-type treadle.

3,551,918
SHOWER CABINET BASE
Nils Randolf Bergmark, 14 Ringvagen, 930 47 Byske, Sweden
Filed May 23, 1969, Ser. No. 827,378
Claims priority, application Sweden, May 30, 1968, 7,282/68
Int. Cl. A47k *3/08, 3/13*
U.S. Cl. 4—146 **16 Claims**

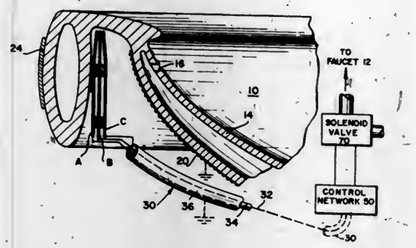


A shower cabinet base shaped as a box with an arched floor and an integral water drain gutter extending along three or four floor sides. The gutter is U-shaped with substantial depth making the base rigid. The outer gutter wall forms a rest for the cabinet walls. The base is supported by legs or a cushion on a floor stand.

3,551,919
ANTENNA SYSTEM FOR PROXIMITY CONTROL
Norman Arthur Forbes, Louisville, Ky., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 17, 1967, Ser. No. 683,969
Int. Cl. A47k *1/04*
U.S. Cl. 4—166 **15 Claims**

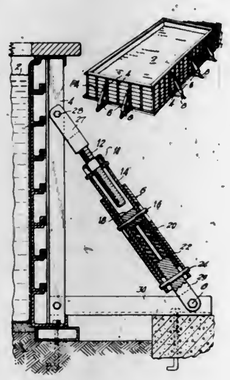
Covers to plumbing and other systems which respond, for example, to the approach or withdrawal of a user. The arrangement includes a primary antenna structure which changes in electrical capacitance in response to the approach or withdrawal of the user, a control circuit connected to the antenna structure, and a translating device, such as a valve which is to be operated or released. The

arrangement includes a secondary antenna to render the primary antenna structure more sensitive. A coaxial cable system interconnects the primary antenna structure to the



control circuit. When the arrangement is applied to a plumbing fixture, a grounded shield is applied to the plumbing fixture.

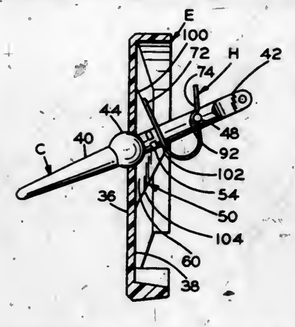
3,551,920
POOL STABILIZER AND SHOCK ABSORBER
Samuel Greene, 18 Underwood Drive, West Orange, N.J. 07052
Filed Apr. 22, 1968, Ser. No. 723,125
Int. Cl. E04h *3/16*
U.S. Cl. 4—172.19 **3 Claims**



An adjustable pool stabilizer and shock absorber is connected between the pool wall and a secure point. Adjustment of the stabilizer permits adjustment of the pool walls while the pool is full. Shock absorber means in the stabilizer permit the stabilizer to receive shocks without damaging the pool walls or the stabilizer.

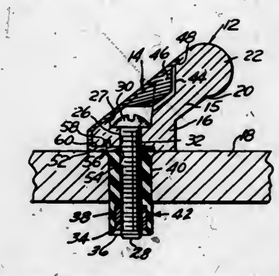
3,551,921
MECHANICAL CONTROL FOR LIQUID DRAIN STOPPER
William R. Fox and Edgar R. Rowe, Cleveland, Ohio, assignors, by mesne assignments, to Sajar Plastics Inc., Middlefield, Ohio, a corporation of Ohio
Filed June 28, 1968, Ser. No. 741,014
Int. Cl. E03c *1/232*
U.S. Cl. 4—199 **8 Claims**

A mechanical control for a liquid drain stopper includes a mounting plate having a hole in it and cam means formed on the rear face of the plate adjacent the hole. A lever extends through the hole and a U-shaped spring biases against an abutment on the rear of the lever and against the cam means. Pivoting the front portion of the lever moves the spring from one portion of the cam to



another for positioning a drain stopper in either an opened or a closed position.

3,551,922
FASTENER-CONCEALING TOILET SEAT HINGE POST
Robert E. Watson, Farmington, Mich., assignor to Swedish Crucible Steel Company, Detroit, Mich., a corporation of Michigan
Filed Mar. 27, 1968, Ser. No. 716,563
Int. Cl. A47k *13/12*
U.S. Cl. 4—240 **2 Claims**

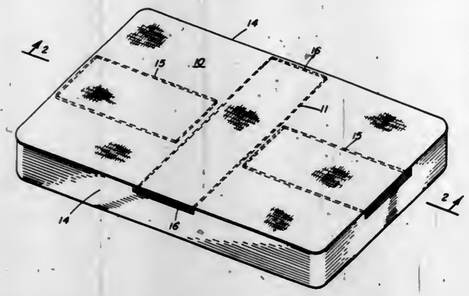


This toilet seat hinge post has a counterbore for the head of its fastener concealed by a cover plate extending over the counterbore and having projections frictionally engaging recesses adjacent the counterbore to releasably hold the cover plate in its closing position. One such cover plate has such a projection near its upper end and has an elongation of the plate extending around and beneath the hinge post where it is apertured for the passage of the fastener. This hinge post is especially suitable for installation on modern toilet bowls using top-inserted fasteners where the space beneath the rearward platform is inadequate to receive a wrench for tightening the nut on the lower end. The concealment of the fastener and its counterbore by the cover plate of the present invention enhances the cleanliness and sanitary condition of the hinge post, renders it easy to maintain in a clean condition, and also enhances the appearance of the hinge post.

3,551,923
NEW MATTRESS CONSTRUCTION
Marshall Franklin, 53 Tanglewood Lane, Stamford, Conn. 06903
Filed Apr. 10, 1968, Ser. No. 720,119
Int. Cl. A47c *27/16*
U.S. Cl. 5—345 **1 Claim**

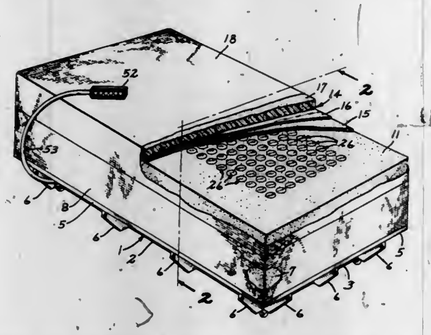
This invention relates to a mattress construction comprising a mattress provided with at least one slot located

at or near the top of the mattress. A slot opening provided on a side of the mattress is sufficiently large to permit the insertion of diagnostic or therapeutic appara-



tus (e.g. photographic plates). The slot length can extend the entire length or width of the mattress or any portion thereof. The slot may be formed by a semi-rigid water resistant material such as plastic.

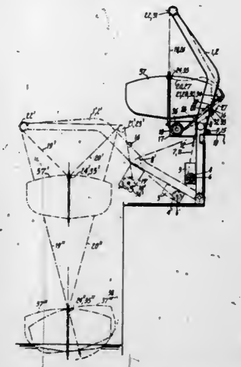
3,551,924
VARIABLE FIRMNESS SLEEP UNIT
James R. Frye, Sr., Box 98,
Lakeside, Mont. 59922
Filed May 19, 1969, Ser. No. 825,789
Int. Cl. A47c *27/08, 23/00*
U.S. Cl. 5—345 **9 Claims**



A sleep unit including a resilient mattress having vertically movable support rods extending therethrough and resiliently biased against downward movement imparted thereto by a reclining body on the mattress. Vertically movable means underlying the support rods is operable to vary the bias against the support rods, the rods having flexible head elements mounted on their upper ends for universal tilting movements relative to the axes of their respective support rods.

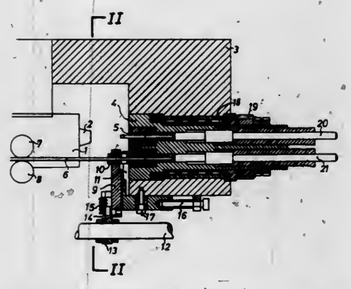
3,551,925
SELF-STABILIZING DAVIT
John R. Reid, 2871 Sandalwood Drive,
Ottawa 8, Ontario, Canada
Filed Sept. 18, 1968, Ser. No. 760,418
Int. Cl. B63b *23/06*
U.S. Cl. 9—39 **4 Claims**

A davit having a davit arm mounted on the deck of a ship, with at least two ropes connected to each point suspension of an object to be handled, one of the ropes extending to a sheave mounted near the top of the arm, the other rope extending to a sheave mounted on the arm at a certain distance from the top sheave, such that at each point of suspension the object is supported in the inboard



position of the davit arm by the one rope and at the outboard position of the arm by both ropes.

3,551,926
APPARATUS FOR THE COLD-STAMPING OF SCREWS, RIVETS AND THE LIKE
Amadeo Ferre, Juan Corrales 88, Esplugas de Llobregat, Barcelona, Spain
Filed Sept. 7, 1967, Ser. No. 666,073
Claims priority, application Spain, Sept. 8, 1966, 331,384, 331,386
Int. Cl. B21k *1/44;* **B23g** *9/00*
U.S. Cl. 10—13 **10 Claims**

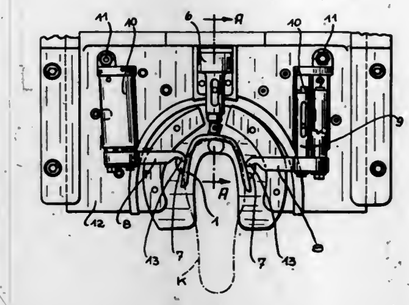


A stamping apparatus in which a rod is fed through a reciprocally movable percussion head into a die-clamp in a rotary body after which the rod is cut by a cutting device to leave a workpiece in the die-clamp which is successively acted on by the head to form the desired product which is then discharged from the rotary body and replaced with a subsequent workpiece.

3,551,927
APPARATUS FOR FORCING LEATHER UPPERS AGAINST A SHOE LAST IN THE TOE REGION THEREOF
Tilo Löffler, Gersbacher Strasse 20, Winzeln, Germany
Filed May 16, 1969, Ser. No. 825,183
Claims priority, application Germany, May 16, 1968, 1,760,426
Int. Cl. A43d *21/00*
U.S. Cl. 12—14.4 **9 Claims**

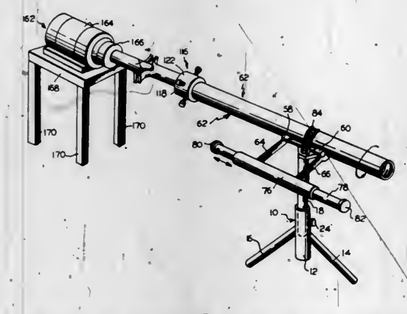
A flexible U-shaped band is engaged in a central region thereof by the piston of a hydraulic cylinder and the end portions of the band are similarly engaged by pistons of

hydraulic cylinders, said pistons acting on the band through pivotal joints to cause the band to conform to



the shape of the last and press a turned-over shoe upper thereagainst when the pistons are extended.

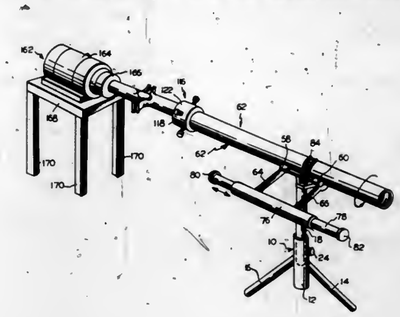
3,551,928
METHOD OF CUTTING, REAMING AND THREADING A ROTATING PIPE
Donald E. Blake, 761 Chestnut Ridge Road, Morgantown, W. Va. 26505
Original application Apr. 3, 1967, Ser. No. 627,694, now Patent No. 3,445,871, dated May 27, 1969. Divided and this application Feb. 18, 1969, Ser. No. 840,553
Int. Cl. B23g *1/00*
U.S. Cl. 10—87 **1 Claim**



A method is provided for the cutting, reaming and threading of pipes wherein a portable rotary power source such as a power vise may be employed to rotatably drive the pipe. The method involves establishing a universal driving connection between a pipe to be worked and a rotary power source, rotatably securing the pipe in a vise means supported for rotation about multiple axes, and then rotatably driving the pipe and sequentially applying cutting, reaming and threading tools to the portion thereof to be worked in a single work set-up.

3,551,929
METHOD OF THREADING A ROTATING PIPE
Donald E. Blake, 761 Chestnut Ridge Road, Morgantown, W. Va. 26505
Original application Apr. 3, 1967, Ser. No. 627,694, now Patent No. 3,445,871, dated May 27, 1969. Divided and this application Feb. 18, 1969, Ser. No. 840,554
Int. Cl. B23g *1/00*
U.S. Cl. 10—89 **3 Claims**

A method is provided for the threading of pipes wherein a portable rotary power source such as a power vise may be employed to rotatably drive the pipe. The method involves establishing a universal driving connection between a pipe to be worked and a rotary power source, rotatably securing the pipe in a vise means supported for

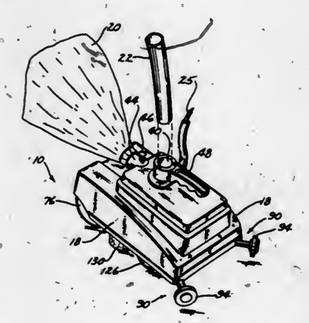


rotation about multiple axes, and then rotatably driving the pipe and applying a threading tool to the portion thereof to be worked.

ERRATUM

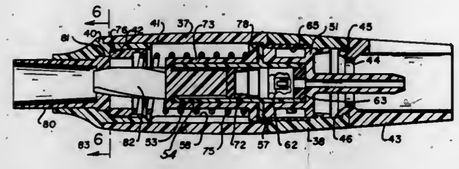
For Class 12—14.4 see:
Patent No. 3,551,927

3,551,930
SWIMMING POOL CLEANER
Robert R. Myers, 904 NE. 2nd St., Boca Raton, Fla. 33432
Continuation-in-part of application Ser. No. 606,663, Jan. 3, 1967. This application Oct. 4, 1967, Ser. No. 672,923
Int. Cl. E04h *3/20*
U.S. Cl. 15—1.7 **4 Claims**



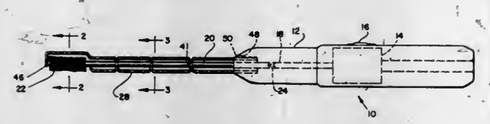
A machine for cleaning the bottom and the surface water of swimming pools wherein the machine is movable along the bottom and is provided with a guidance control system which will change the direction of travel a predetermined amount as the machine encounters obstructions to the side or front such as the sidewalls of the pool. The machine may be of a crawler type and has a transmission for automatically controlling the forward and reverse rotation of the drive wheels whereby one or both drive wheels may be operating in the same direction at the same time. Sensing means for actuating the transmission are provided and are adjustable to assure that the machine will clean the maximum area of the pool but prevent it from being overturned.

3,551,931
HYDRAULIC MOTOR DRIVEN TOOTHBRUSH
Wayne W. Monroe, Siegmund Deines, Homer A. Jeffers, Jr., and John M. Trenary, Fort Collins, Colo., assignors to Aqua Tec Corporation, Fort Collins, Colo., a corporation of California
Filed Feb. 28, 1969, Ser. No. 803,392
Int. Cl. A46b *13/06*; A47k *7/04*
U.S. Cl. 15—22 4 Claims



A toothbrush energized by an intermittent liquid pulse stream comprises a handle in which a hydraulic motor of the expansible chamber type is mounted and connected to drive the toothbrush with back and forth movement. The reciprocating movement of the motor is converted to oscillating movement of the brush by a helical post driven by the motor and slidably engaging a sleeve rotatably mounted in the handle and to which the brush is attached. The energizing pulse stream is connected in direct communication with the expansible chamber to drive the motor.

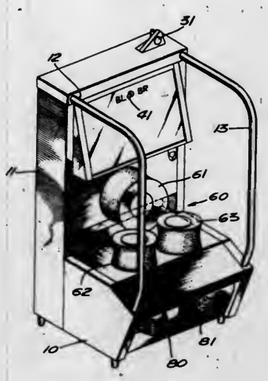
3,551,932
ELECTRIC TOOTHBRUSH
Sidney Grossman, 180 Samoset Ave., Quincy, Mass. 02138
Filed Feb. 20, 1969, Ser. No. 800,921
Int. Cl. A46f *13/02*
U.S. Cl. 15—23 9 Claims



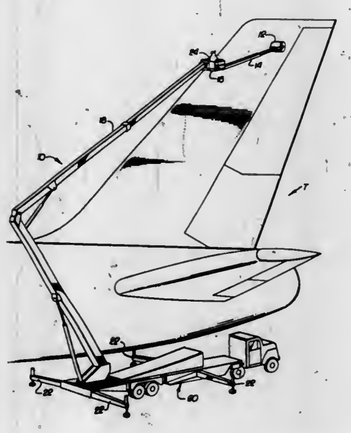
A motor-driven toothbrush is provided wherein the brush is rotated continuously in either direction by means of a reversible motor mounted in the handle. The brush and stem are detachably connected to the motor drive rod and both the stem and the brush are enclosed within a sleeve attached to a motor housing. The end of the sleeve enclosing the brush is formed with a hooded opening to expose only an angular section of the brush. The sleeve is in two longitudinal parts hinged together to permit ready replacement of the brush and ease of cleaning.

3,551,933
AUTOMATIC SHOE SHINE MACHINE
Wilbert J. Jaeger, Orange, Calif., assignor to Medevco, Los Alamitos, Calif., a corporation of California
Filed Aug. 5, 1968, Ser. No. 750,109
Int. Cl. A47l *23/02*
U.S. Cl. 15—31 6 Claims

An automatic shoe shine machine which includes a set of buffing brushes driven by a separate motor; a pair of individually driven polish application brushes, one for each of two different colors of polish; a selection switch for the customer to select the desired color of polish; a coin mechanism for activating the machine; and a separate polish applicator associated with each of the polish application brushes; each of the polish applicators including an elongated feed tube, a cake of wax-type polish disposed within the feed tube, a pusher plate for pushing the polish cake forward onto the associated polish brush, a telescoping lead screw attached to the pusher plate, and a small electric motor coupled to the rearward end of the telescoping lead screw; the machine further including timing and control circuitry responsive to the coin mechanism for energizing the selected polish application brush during the entire operating cycle, the selected polish applicator during only an initial portion of the operating cycle, and the buffing brushes during the remainder of the operating cycle.

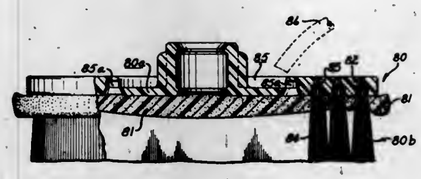


3,551,934
AIRCRAFT SKIN CLEANING MAINTENANCE
Thomas G. Franzreb, Rolling Hills, Calif., assignor to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California
Filed Sept. 26, 1968, Ser. No. 762,767
Int. Cl. B64f *5/00*
U.S. Cl. 15—97 12 Claims



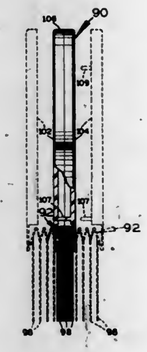
The efficient cleaning of aircraft aluminum skin surfaces without abrading or scratching is realized through the use of a polyurethane foam roller loaded with liquid detergent which is rotatively applied to the skin surface from a ground location through mounting of the roller on a boom.

3,551,935
FOAM GENERATOR FOR A FLOOR CARE MACHINE
Paul E. Gandry, Laval des Rapides, Quebec, Edouard Gaudry, St. Laurent, Quebec, Raymond Descarries, Montreal, Quebec, and James Anderson, Baie d'Urfe, Quebec, Canada, assignors, by mesne assignments, to Consolidated Foods Corporation, Chicago, Ill., a corporation of Maryland
Original application June 20, 1967, Ser. No. 647,378, now Patent No. 3,469,272. Divided and this application Dec. 19, 1968, Ser. No. 798,550
Int. Cl. A46b
U.S. Cl. 15—180 3 Claims



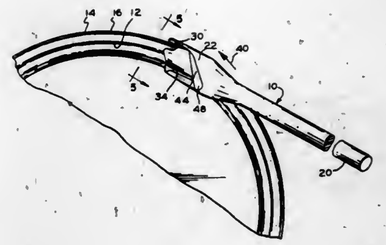
A scrubbing brush for a floor care machine in which a disc of sponge material is attached to a surface of the brush back by the bristle wires. The disc of sponge material has a larger diameter than the brush back diameter and the brush back is provided with a well having openings to feed a foaming liquid through the brush back to the sponge material.

3,551,936
BRISTLED PRODUCT
Louis F. Kutik, 8720 SW. 23rd Place 33315, and Erich W. Gronemeyer, 2100 S. Ocean Lane, Apt. 206 33316, both of Fort Lauderdale, Fla.
Filed Aug. 7, 1968, Ser. No. 750,913
Int. Cl. A46b *1/00, 5/02*
U.S. Cl. 15—187 7 Claims



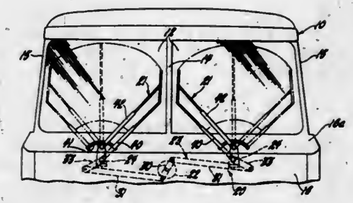
A bristled product including a backing portion made of plastic material and plastic bristles integral therewith. The backing portion is in a zigzag or accordian or pleated configuration such that it may be collapsed to position the bristles closer together than in the extended condition.

3,551,937
CAN TOP CLEANER
Arley A. Nelson, 351 N. Rice St., Aberdeen, Wash. 98520
Continuation-in-part of application Ser. No. 642,941, June 1, 1967. This application Mar. 5, 1969, Ser. No. 804,439
Int. Cl. A47l *13/02*
U.S. Cl. 15—236 7 Claims



Tools are disclosed that can be moved around the top of a paint or similar can for removing material collected in the lid receiving annular recess and adjacent top portions of the can and returning this material to the interior of the can. The tools all include a handle portion and a material collecting and discharge portion having a plurality of projections and grooves fitting the contour of the top portion of the can, and an angularly disposed guiding surface for directing the collected material into the open top of the can as the tool is moved around the top of the can.

3,551,938
ARTICULATED WINDSHIELD WIPER FOR FLAT FRONT VEHICLES
Steve Yonke, Union Lake, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 4, 1968, Ser. No. 757,367
Int. Cl. B60s *1/32*
U.S. Cl. 15—250.23 2 Claims

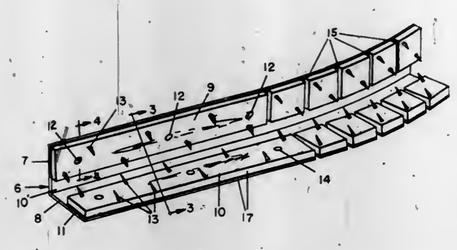


In a preferred form, an oscillatory windshield wiper for wiping a windshield is disclosed. The windshield wiper comprises a first arm for carrying a first blade holder means and which is adapted to be connected to an oscillatory drive pivot, a second wiper arm pivotally connected to a pivot means at one end and at its other end pivotally connected to a second blade holder means intermediate the ends of the latter, and a pivot means for pivotally interconnecting the first and second blade holder means. The windshield wiper further includes a single wiper blade extending along substantially the entire length of both the first and second blade holder means.

3,551,939
STAIR CARPET FASTENER

Keith E. Rager, Pointer Ridge Park, Bowie, Md., assignor of forty-nine percent to Larry G. Wickline, Upper Marlboro, Md.

Filed Mar. 27, 1969, Ser. No. 811,129
Int. Cl. A47g 27/04
U.S. Cl. 16—10 7 Claims

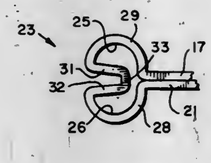


A carpet fastener for arranging and securing stair carpeting to the steps of prefabricated stairways presently being commonly used in construction projects.

3,551,940
BOX HINGE

Jack Roger Edison, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

Filed Aug. 19, 1968, Ser. No. 753,603
Int. Cl. E05d 7/00
U.S. Cl. 16—150 3 Claims



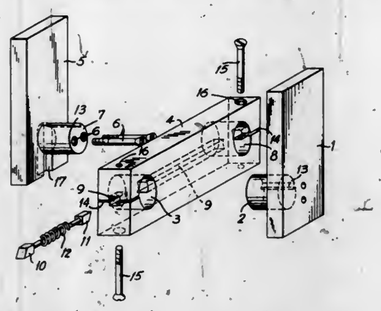
A method for forming a hinge in plastic sheet material susceptible to formation by heat and pressure whereby two flush surfaces may be integrally hinged. The hinge is formed by conforming plastic sheet material into a pair of longitudinal valleys in a mold which are separated by a longitudinal ridge.

3,551,941
PIVOT FOR PIVOTING WINDOW

Robert Bruers, Bouillon, Belgium, assignor to Etablissements L. Devillez & Camion Societe Anonyme, Bouillon, Belgium, a company of Belgium

Filed Oct. 7, 1968, Ser. No. 765,432
Claims priority, application Belgium, Oct. 18, 1967, 49,761; Jan. 9, 1968, 53,124
Int. Cl. E05d 3/06, 7/12
U.S. Cl. 16—163 12 Claims

A pivot for a pivoting casement window has two pins about which the casement is pivoted in succession, first about the first pin to free the casement from the post to pivot through a determined angle for ventilation up to 90° and then about the second pin until the casement has pivoted through 180°. The pivot has a sliding bolt which is concealed in an intermediate piece between the casement and post, the pins being mounted in bores in the intermediate piece and having notches in the surfaces thereof. The bolt slides in a cavity between the bores and can engage in the notch of one or the other pins to secure such pin to the intermediate piece and permit pivotal

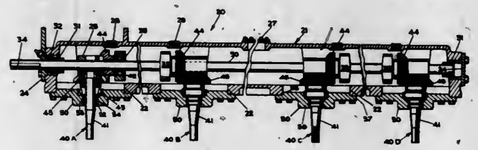


movement about the disengaged pin while preventing pivotal movement about the engaged pin.

3,551,942
DRIVE MECHANISM FOR POULTRY PICKING APPARATUS

Edward J. Crane, Ottumwa, Iowa, assignor to International Agri-Systems, Inc., Ottumwa, Iowa, a corporation of Iowa

Filed May 1, 1969, Ser. No. 820,826
Int. Cl. A22c 21/02
U.S. Cl. 17—11.1 8 Claims

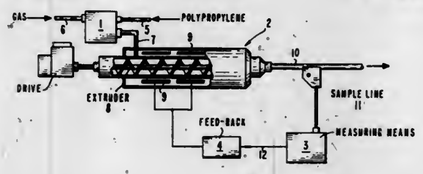


A drive mechanism for a poultry picker including a spaced seal arrangement with means for permitting the introduction of grease into the open area therebetween at each output shaft. The housing for the mechanism includes a circular protruding flange at each output shaft which flange is received by a comparably sized aperture in the side wall of the picking machine. The flange and aperture are of sufficient size to permit withdrawal of the picking support and fingers attached thereto from the interior of the apparatus through the aperture and, thus, from the back side of the machine.

3,551,943
CONTROLLED DEGRADATION

John C. Staton, James P. Keller, and Ronald C. Kowalski, Baytown, and John W. Harrison, Westfield, Tex., assignors to Esso Research and Engineering Company

Filed Dec. 19, 1966, Ser. No. 602,676
Int. Cl. B29f 3/08
U.S. Cl. 18—2 5 Claims

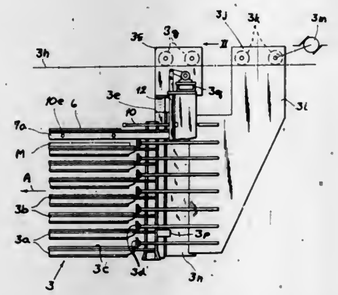


A system for the controlled scission of polypropylene comprises an extruder-reactor, means for measuring a parameter of molecular weight of polypropylene after passing through the extruder-reactor, and feedback means for changing the conditions in the extruder-reactor in response to the parameter of molecular weight measured. This system may contain a pelletizer and a continuous rheometer which measures the parameter of molecular weight of the pelletized polypropylene.

3,551,944
PLANT FOR THE PRODUCTION OF PRESSED SHEETS

Karl Müller, Krefeld-St. Tonis, Germany, assignor to G. Siempelkamp & Co., Krefeld, Rhineland, Germany, a corporation of Germany

Filed May 20, 1968, Ser. No. 730,452
Claims priority, application Germany, May 20, 1967, S 109,951
Int. Cl. B29c 3/04
U.S. Cl. 18—4 10 Claims

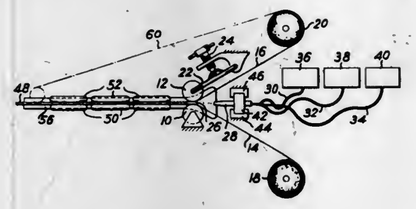


In a plant for the production of pressed sheets, wherein a multiplicity of crude mats are fed simultaneously between the plantens of a press from a multilevel charging station disposed alongside the press by a feeding arm displaceable toward the press, an arrangement whereby the feeding arm carries a plurality of fingers selectively displaceable to entrain spacer blocks into the press when it is desired to change the thickness of the sheet produced by the plant.

3,551,945
APPARATUS FOR PRODUCING HOT AND COLD INSULATING SHEET

Willy Eyberg and Josef Fülber, Osnabruck, and Helmut Habig, Brackwede, Germany, assignors to Papierfabrik GmbH, Osnabruck, Germany

Original application Oct. 18, 1967, Ser. No. 676,191. Divided and this application Dec. 9, 1968, Ser. No. 800,018
Int. Cl. B26d 7/14
U.S. Cl. 18—4 11 Claims

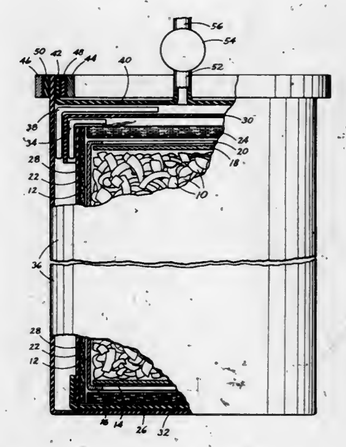


Apparatus for producing hot and cold insulating sheet consisting, at least in part, of foamed plastic. At least two basic constituents of a plastic are mixed with at least one activating agent and directed into a gap formed by at least two spaced apart surfaces. The mixture forms a sheet of foamed plastic, the thickness of which is determined by the size of the gap. The gap surfaces may be formed of sheets of flexible foil moved over guides or rollers and may be made of material to which the foamed plastic will adhere. The resulting insulating sheet may thus have one or more layers of this foil as a protective coating over the foamed plastic. The insulating sheet produced according to the present invention can be made thin and flexible if desired, and may be used in the manufacture of products, such as containers of all kinds, which find need for its hot and cold insulating as well as shock energy absorbing qualities.

3,551,946
METHOD AND APPARATUS FOR COMPACTING ISOSTATICALLY METAL PARTICLES INTO SOLID FORM

Leo E. Backer and Daniel G. Long, Albany, Oreg., assignors to Wah Chang Albany Corporation, Albany, Oreg., a corporation of Oregon

Filed Aug. 26, 1968, Ser. No. 755,196
Int. Cl. B29g 1/00
U.S. Cl. 18—5 10 Claims



Metal particles are confined in a tube of ductile material capable of collapsing against the particles but of resisting penetration by the particles. The tube is encased in a buffer material capable of compression through its thickness, and the buffer material is enclosed in a liquid-impervious, flexible container. The assembly is evacuated and immersed in a liquid, and the liquid then is pressurized to collapse the assembly and compact the particles into a coherent, solid form.

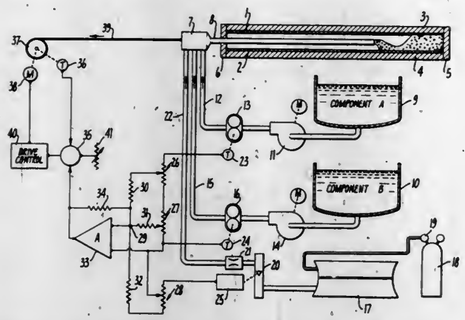
3,551,947
APPARATUS FOR FILLING MOLDS WITH POLYURETHANE

Roger G. Jennings, Oakland, Calif., assignor, by mesne assignments, to Control Building Systems, Inc., Oakland, Calif., a corporation of California

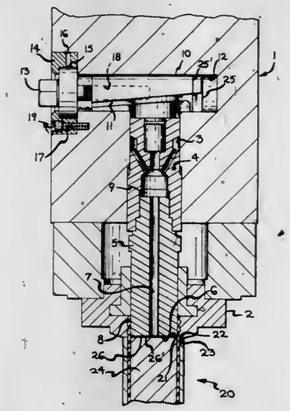
Filed Sept. 3, 1968, Ser. No. 756,859
Int. Cl. B29c 5/00
U.S. Cl. 18—5 6 Claims

Apparatus for forming objects with foam-in-place plastics using a movable probe and further comprising means for moving the probe at a controlled rate, a mixing head connected to said probe for combining various components used to produce a polyurethane foam, means for feeding each of the essential components into said mixing

head, means for measuring the speed at which each component, respectively, is fed to said mixing head and simultaneously producing a signal in proportion to the combined mass flow rate of the components, and means responsive to said signal for moving the probe at a controlled rate.



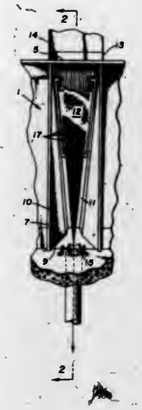
3,551,948
ADJUSTABLE CORE PIN MECHANISM
Noel B. Eggert, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Dec. 23, 1968, Ser. No. 786,038
Int. Cl. B29c *1/06*
U.S. Cl. 18—5 **9 Claims**



Mechanism to adjust the length of a core pin a known distance in an injected finish-blow molding machine without disassembling the neck ring mold. The mechanism consists of a cylindrical cam moveable at right angles to the longitudinal axis of the core pin. A low angle track on the cam provides the means for transferring the inward or outward movement of the cam to the upward or downward movement of the core pin.

3,551,949
SPINNING CHIMNEY
Allen E. Leybourne III, and John R. Dees, Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Nov. 15, 1968, Ser. No. 776,032
Int. Cl. D01d *5/04*
U.S. Cl. 18—8 **7 Claims**

A spinning chimney to be used for the quenching of molten polymeric filaments, said chimney having sides and a back with the sides comprising converging walls which conform to the path of filaments from the spinneret to the convergence guide and diverging wings which communicate with the leading edges of the walls, and a plenum chamber associated with the upper portion of the back of the chimney for directing the flow of air over the filaments.

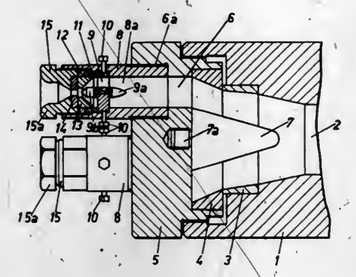


3,551,950
PELLET MILL FOR WET POWDERY MATERIALS
Kozi Miyakawa and Shimpei Yoshida, Niigata-shi, Japan, assignors to Japan Gas Chemical Company, Inc., Tokyo, Japan, a corporation of Japan
Filed Aug. 12, 1968, Ser. No. 751,793
Int. Cl. B29f *3/012*
U.S. Cl. 18—12 **3 Claims**

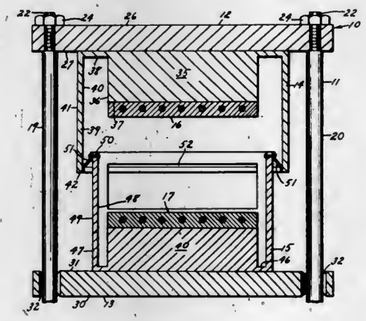
A rotary extrusion-type pellet mill wherein a roller cooperating with a rotating die is forcibly rotated by a gear provided on the surface thereof in engagement with a gear provided on the inside wall surface of said rotating die and the interior of said roller is maintained pressurized by a pressure fluid supplied therein from the rear end of a roller supporting shaft throughout the period of operation, whereby a lowering of extruding capacity and formation of unsatisfactory product due to idling or binding of the roller as has been experienced in a conventional mill of this type can be eliminated.

3,551,951
MULTIPLE EXTRUDER HEAD FOR EXTRUDERS
Walter Hugo Schlesser, 9 Hortensienstrasse, CH 8050 Zurich, Switzerland
Filed Mar. 12, 1968, Ser. No. 712,466
Int. Cl. B29f *3/06*
U.S. Cl. 18—12 **5 Claims**

The application discloses a multiple extruding die for extruders in which a supporting member is mounted on the nozzle of the extruder; the member contains 2 or more axially parallel ducts over which the effluent molding composition from the nozzle of the extruder is distributed by a guide member; and an outlet nozzle containing an extrusion die being connected to the forward ends of the individual ducts.



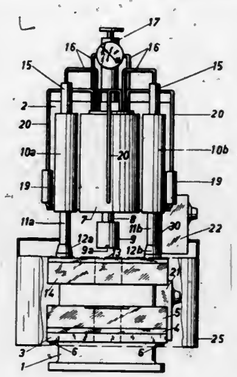
3,551,952
HEAT SHIELDED PRESS
Milton Morse, Fort Lee, N.Y. (41 Honeck St., Englewood, N.J. 07631)
Filed Dec. 8, 1967, Ser. No. 689,040
Int. Cl. B29h *5/22*
U.S. Cl. 18—17 **1 Claim**



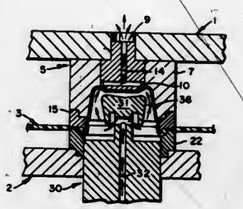
A molding press having first and second elements relatively movable toward and away from each other to enclose an article to be molded. Each of said elements being provided with cooperating heat shield means to prevent loss of heat during the opening and closing and operation of the press.

3,551,953
TRANSFER PRESS
Walter Hugo Schlesser, Hortensienstrasse 9, Zurich, Switzerland
Filed Dec. 11, 1967, Ser. No. 689,382
Claims priority, application Switzerland, Dec. 17, 1966, 18,398/66
Int. Cl. B29h *5/00*
U.S. Cl. 18—17 **3 Claims**

A transfer press provided with a replaceable mould comprising a top part and a bottom part, for the moulding and vulcanisation of rubber mouldings, in which the press is provided with a stationary lower hot plate resting on the pressing table, a vertically movable upper hot plate provided with a central cylindrical hole, and between the two hot plates the mould comprising a top mould part and a bottom mould part provided on its underside with a cylindrical lug, which lug is centered in a centering ring inserted in the top of the lower hot plate, two fixed vertical hydraulic cylinders, whose pistons are connected to the piston rods extending downwardly from the hydraulic cylinders, to the individual lower ends of which piston rods the upper hot plate is secured by means of a yoke, being mounted on the column of the press, a further fixed hydraulic cylinder to the piston rod of which, issuing downwardly therefrom, there is secured a press plunger which is adapted to be pressed into the press chamber containing the unvulcanised rubber mixture, and being also mounted on the column, the press chamber being formed by a cylindrical recess, provided in the top surface of the top mould part from which cylindrical recess at least one press duct extends into the moulding space of the mould, and by the bore of a fixed guide ring inserted in a recess provided in the top surface of the top mould part.

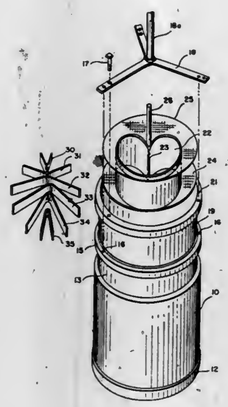


3,551,954
CONTAINER FORMING APPARATUS
Edward Rolland Knowles, Cranford, N.J., assignor to Sterling Extruder Corporation, Linden, N.J., a corporation of New Jersey
Original application Sept. 14, 1966, Ser. No. 579,281, now Patent No. 3,470,281, dated Sept. 30, 1969. Divided and this application Apr. 3, 1969, Ser. No. 840,867
Int. Cl. B29c *17/00*
U.S. Cl. 18—19 **4 Claims**



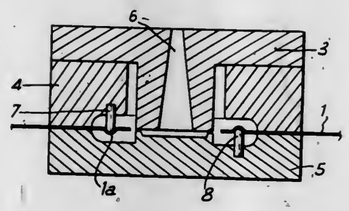
Apparatus for forming a cup-shaped, flange container from moldable material including a die member for forming a thickened flange portion having a thickness greater than the thickness of the moldable material, and forming mechanism for forming the portion of the moldable material disposed inwardly of the flange into a cup-shaped configuration without disturbing the flange.

3,551,955
BLENDING APPARATUS
George E. Gard, Lancaster, and William K. Boak, Columbia, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Original application Nov. 12, 1968, Ser. No. 774,614, now Patent No. 3,507,946. Divided and this application Nov. 10, 1969, Ser. No. 871,314
Int. Cl. B29c *1/00*
U.S. Cl. 18—30 5 Claims



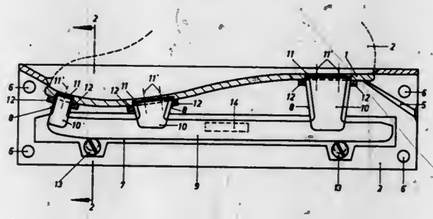
A shaped form is placed within a cylindrical mold and slowly moved along the mold axis. Different dividers are placed within the form in sequence as it is moved, and dielectric materials are dispensed into the mold adjacent said shaped form and dividers to produce differently shaped bodies of dielectric material at different axial levels in the mold. The resultant three-dimensionally shaped charge of dielectric material is then stirred, randomized, and fused into a monolithic mass.

3,551,956
INJECTION MOLD HAVING PREFORM SECURING MEANS
Jean-Jacques Rosier, 19 Route de la Celle St. Cloud, Bougival, Yvelines, France
Filed Apr. 10, 1968, Ser. No. 720,143
Claims priority, application France, Apr. 10, 1967, 102,042; Jan. 15, 1968, 135,930
Int. Cl. B29d *3/00*
U.S. Cl. 18—36 4 Claims



A mould is provided for casting an element onto a sheet and the mould has two elements joined along a joint plane and defining a mould cavity. A sheet is clamped between the mould elements and is positioned in the mould cavity along the joint plane. A plastic material is injected through an inlet orifice and is joined with the sheet. The mould elements are provided with respective projections extending into the mould cavity in opposite directions beyond the joint plane to contact the sheet and produce undulations therein in order to tension the sheet during the moulding process. The projections are arranged in alternating relation either in linear or annular array.

3,551,957
METHOD AND APPARATUS FOR MOLDING ICE SKATES
Horst Ramm, Rehme, Germany, assignor to Friedrich Stubbe
Filed Nov. 5, 1968, Ser. No. 773,560
Claims priority, application Germany, Nov. 7, 1967, 1,729,360
Int. Cl. B29c *6/00*
U.S. Cl. 18—36 12 Claims



A method and apparatus for making ice skates comprises positioning the flanged portions of the skate blade which are adapted to be attached to the shoe sole of the skate in a mold cavity and also positioning the bottom of the skate shoe top in the cavity, the blade flanged portions being positioned relative to the shoe top. The shoe sole is formed by introducing a composition into the cavity, embedding the flanged portion of the blade and the bottom of the shoe top in the sole.

3,551,958
INSTRUMENT FOR DRAFTING BOARD TABLE
Ronan J. Belter, 3227 W. Wells St., Milwaukee, Wis. 53208
Filed Sept. 17, 1968, Ser. No. 760,290
Int. Cl. B42f *1/00*; G01b *3/06*
U.S. Cl. 24—67.5 4 Claims

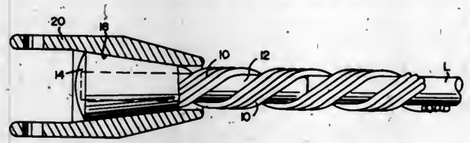


An instrument for use on drafting board tables which can be used to hold the work sheet (upon which the drawings are made) detachably in place, while eliminating thumb tack holes in both the work sheet and the work area on the table.

3,551,959
DETACHABLE SOCKETED DEAD END
Henry N. Mastalski, Lakewood, Ohio, assignor to The Fanner Manufacturing Company, a Division of Textron Inc., Cleveland, Ohio, a corporation of Rhode Island
Filed May 16, 1968, Ser. No. 729,619
Int. Cl. F16g *11/03, 11/14*
U.S. Cl. 24—123 10 Claims

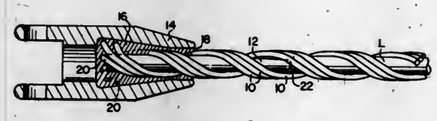
A field applied dead end fitting for gripping a linear body wherein a plurality of helically preformed resilient

elements are bonded together in a socket member. The socket member is configured for detachable mounting on



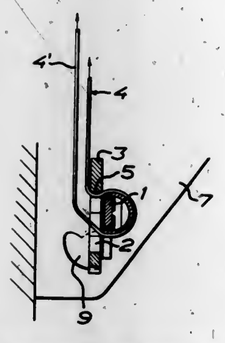
various types of attachment devices, such as turnbuckles, or socket housings for wire rope and the like.

3,551,960
DEAD ENDING DEVICE
Jess C. Little, Chagrin Falls, Ohio, assignor to The Fanner Manufacturing Company, a Division of Textron Inc., Cleveland, Ohio, a corporation of Rhode Island
Filed May 16, 1968, Ser. No. 729,618
Int. Cl. F16g *11/03, 11/14*
U.S. Cl. 24—123 17 Claims



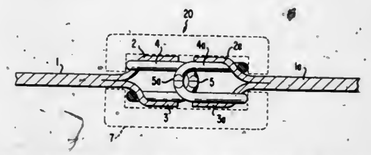
A field applied dead end and method of making same wherein a plurality of preformed helical rods, or wires are secured at one end thereof preferably by encapsulating material within a socket housing. The other ends project from the socket and are disposed to wrappingly engage and thereby grip a line. A core member projects from the socket and is surrounded by the helically formed rods to provide a stop against which the end of the line being gripped abuts.

3,551,961
DEVICES FOR LOCKING A STRAP COOPERATING WITH A RETRACTING MECHANISM
Harry Mauritz Nygren, Monsteras, Sweden, assignor to AB Industrifjadrar, Monsteras, Sweden
Filed Oct. 14, 1968, Ser. No. 767,224
Claims priority, application Sweden, Oct. 18, 1967, 14,246/67
Int. Cl. A44b *11/10*; A62b *35/00*
U.S. Cl. 24—196 7 Claims



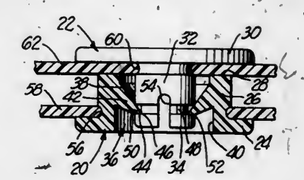
A device for locking a strap which is part of a safety seat belt and cooperates with a strap retracting mechanism, is constituted by a buckle of the type comprising a rod which serves as a latching means and is shiftable in relation to a recess provided in a plate of the buckle. The strap shall pass about the rod and extend from the same side into and out of the recess, the strap being locked between one edge of the recess and the rod when it is stretched substantially in the direction of the plate. The plate is mounted for pivotal movement in a frame between the locking position in which it thus is substantially parallel with the direction of the strap, and a released position in which it is substantially at right angles to the direction of the strap.

3,551,962
SLIDE FASTENER
Wilhelm Uhrig, Mannesmannstrasse 11, Wuppertal-Elberfeld, Germany
Filed Jan. 16, 1968, Ser. No. 698,203
Claims priority, application Germany, Feb. 1, 1967, U 13,516
Int. Cl. A44b *19/10*
U.S. Cl. 24—205.1 2 Claims



A slide fastener unit having two rows of links which are secured to the two halves of the supporting tape, each of the halves being a Y-tape with the upper and lower ends of each half partly covering the row of links at each side so that adjacent upper and lower ends form parallel longitudinal bands exposing to view the middle of the rows of links at each side where these rows come together and the individual loops of the rows of links remote from the center. These rows of links are formed by weaving a continuous length of heavy duty thermoplastic synthetic mono-filament as a warp into the two short arms of the Y-tape to form loops and links in a single operation. The loops and the links which are initially in the same plane are heat-deformed between the free ends of the arms of the Y-tape to form U-shaped links facing towards the edge of the tape while the loops are compression set at the part of the arm remote from the edge to form a guide for the fastener slide.

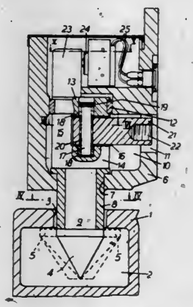
3,551,963
SELF-LOCKING SNAP FASTENER
Walter W. Mosher, Jr., 738 Fairmont 91501, and Donald A. Long, 936 Uclan Drive 91504, both of Burbank, Calif.
Filed Aug. 16, 1968, Ser. No. 753,136
Int. Cl. A44b *17/00*
U.S. Cl. 24—216 4 Claims



A female component is formed by a headed shank having an axial opening therethrough and an opening restricting annulus projecting into said opening angling in an axial direction away from a shank free end. The annulus tapers inwardly and terminates inwardly in either a flat radial portion axially opposite said shank free end or in an arcuate edge. A male component has a headed shank with an annular groove, said male component

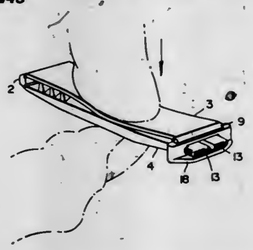
shank being received through the free end of the female component shank and into the female component shank opening. The female component annulus engages in the male component shank groove, the annulus flat portion engaging a flat side of the groove for permanent locking or the annulus arcuate edge engages an arcuate outer edge of the groove for selective release. Both components may be formed of a resiliently deformable plastic and the male component shank may be axially slotted or the female component annulus may be radially slotted to increase resilient deformation and facilitate assembly.

3,551,964
TWIST LOCK UNITS
George Neville Bowman Shaw, Toddington, England, assignor to Lancer Boss Limited, Leighton Buzzard, Bedfordshire, England, a corporation of Great Britain
Filed June 5, 1968, Ser. No. 734,761
Claims priority, application Great Britain, Feb. 1, 1968, 5,200/68
Int. Cl. A44b *21/00*
U.S. Cl. 24—221 6 Claims



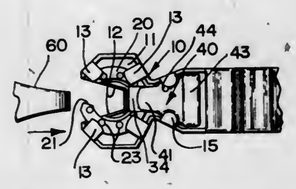
A twist lock for use on a load lifting device for connecting the lifting device to an apertured fitting on a load, this unit having a body, a twist lock element rotatable in the body, a tapered lock head at one end of the element for engagement in the aperture in the fitting and on rotation for engagement beneath the underside of a part of the fitting. The other end of this element has a portion shaped for connection to an actuating ram rod for rotating the element into and out of the locking position.

3,551,965
CLIP
Stanley H. Gordon, Winchester, Mass., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Dec. 19, 1968, Ser. No. 785,082
Int. Cl. A42c *5/00*; A44b *21/00*
U.S. Cl. 24—248 2 Claims



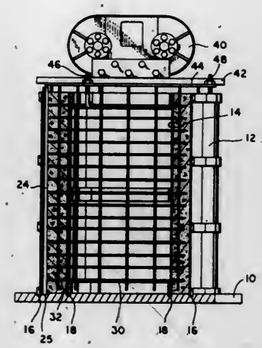
A clip in the form of a unitary strip of synthetic plastic material is adapted to be bent on itself in more than one direction and locked to provide a closed, loop-type fastening. One end of the strip carries a resilient, locking plug and the other end carries a socket which snappedly mates with the plug to effect the lock. The strip embodies multiple hinges which provide for substantial, right angle bends at the ends of the loop when it is in the locked condition.

3,551,966
END CONNECTOR
Stephen F. Bert, West Warwick, R.I., assignor to Textron Inc., Providence, R.I., a corporation of Delaware
Filed Apr. 1, 1969, Ser. No. 811,791
Int. Cl. A44c *5/18*
U.S. Cl. 24—265 11 Claims



An end connector adapted for use with a wrist watch or similar article having a bail, the connector having a link with a cavity in its lower side, an open ended channel in the top and end walls of the link capable of receiving a bail, a split ring movable about its axis in the cavity, the ends of the ring which are adjacent to the split being spaced apart to form a gap capable of receiving a watch bail when in substantial registry with the channel, and resilient stop means which is automatically urged into the passage of the ring when the ring is moved about its axis to a position in which the gap is out of registry with the channel, whereby a watch bail extending through the opening in the ring is held in the connector when the stop means is positioned in the gap.

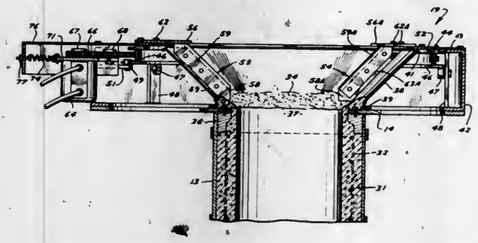
3,551,967
CONCRETE PIPE MOLDING APPARATUS
Frank M. Williams, 6750 High St., Worthington, Ohio 43085
Filed July 18, 1968, Ser. No. 745,782
Int. Cl. B28b *21/16*
U.S. Cl. 25—30 8 Claims



An apparatus and method of manufacturing concrete pipe are disclosed. The pipe is moulded in a mould comprising a base, an inner cylindrical form and an outer cylindrical form. A vibratory driver is attached to metal cylindrical reinforcing cages ordinarily made of steel

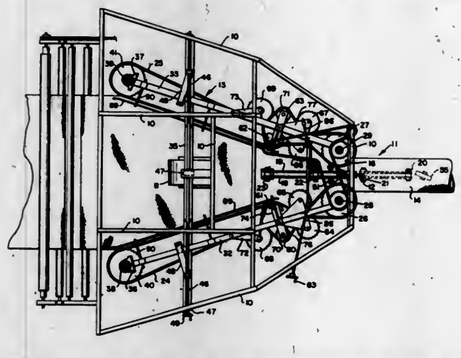
mesh. The pipe mould is filled with concrete, the reinforcing cages with the attached driver are raised above the filled mould and set upon the plastic concrete. The vibratory driver is activated and the reinforcing cages are driven down in the plastic concrete to the designated position by the vibration of the driver.

3,551,968
FEEDING DEVICE FOR CONCRETE PIPE MACHINE
Navarro T. Fosse, Nashua, and Harvey N. Peninger, Jefferson, Iowa, assignors to Hydrotile Machinery Company, Nashua, Iowa, a corporation of Iowa
Filed Mar. 1, 1968, Ser. No. 709,626
Int. Cl. B28b *13/00, 21/26*
U.S. Cl. 25—36 12 Claims



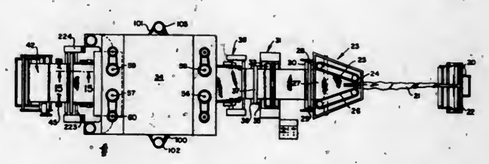
A packer head concrete pipe machine for making a cylindrical pipe in an upright mold. Concrete is moved from a hopper by a conveyor into a feeding device positioned adjacent the top of the mold. A rotatable packer head is carried upwardly with a vertically movable carriage to pack the concrete against the cylindrical mold to form a cylindrical pipe. The feeding device has a cone-shaped funnel mounted in the top table for directing the concrete into the top of the mold. A ring carrying a pair of scraper blades moves around the cone-shaped funnel on operation of a fluid motor to push the concrete into the mold.

3,551,969
APPARATUS FOR SLITTING, OPENING AND PROCESSING TUBULAR KNITTED FABRIC
Eugene Cohn, Great Neck, and Andrew P. Cecere, Valley Stream, N.Y., assignors to Samcoe Holding Corporation, Woodside, N.Y., a corporation of New York
Filed Apr. 7, 1967, Ser. No. 629,326
Int. Cl. D06c *3/02*
U.S. Cl. 26—1 8 Claims



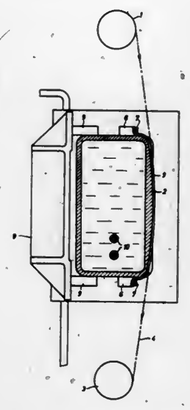
The invention is directed to the conversion of tubular knitted fabric to open width form, with improved arrangements and procedures for slitting the fabric, engaging its slit edge margins, and then divergently advancing the edges to convert the fabric from tubular to open width configuration. Advantageously, the fabric may be processed during the conversion, as by performing cross line realigning operations, for example.

3,551,970
APPARATUS FOR HANDLING AND PROCESSING OPEN WIDTH FABRIC
Eugene Cohn, Great Neck, Andrew P. Cecere, Valley Stream, and Robert Frezza, Carle Place, N.Y., assignors to Samcoe Holding Corporation, Woodside, N.Y., a corporation of New York
Filed Jan. 18, 1968, Ser. No. 698,899
Int. Cl. D06c *3/02*
U.S. Cl. 26—59 21 Claims



The invention is directed to method and apparatus for handling and processing fabric webs, and most particularly knitted fabric, in a flat, open width form. The method particularly includes a processing stage, in which the fabric is conveyed about and supported by a rotating drum and dried or heat set, for example, while being maintained under precise width control. Specific aspects of the invention are directed to significant improvements in the construction of rotary dryers and processes for open width fabrics and particularly knitted fabrics, improved tenter means for conveying and controlling open width fabrics during processing, and related features.

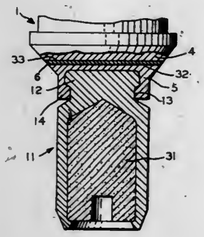
3,551,971
APPARATUS FOR HOT-STRETCHING OF SYNTHETIC FILAMENTS
Karl Lehner, Frankfurt am Main-Bonames, Germany, assignor to Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen
Filed June 25, 1968, Ser. No. 739,698
Int. Cl. D02j *1/22*
U.S. Cl. 28—71.3 1 Claim



An apparatus for the hot-stretching of synthetic filaments wherein the heating of the filaments during the

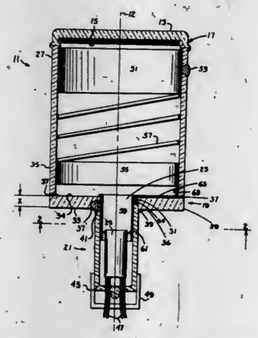
stretching operation is provided by heating plates attached to the exterior surface of a heating tank which contains a heating medium maintained at a uniform and constant temperature.

3,551,972
METHOD OF MANUFACTURING A SABOT
Walter Engel, Dubendorf, Switzerland, assignor to Oerlikon-Buhrle Holding Ltd., Zurich, Switzerland
Original application July 24, 1967, Ser. No. 655,583, now Patent No. 3,455,768. Divided and this application Oct. 11, 1968, Ser. No. 766,712
Int. Cl. B21k *21/06*; F42b *13/16*
U.S. Cl. 29—1.23 1 Claim



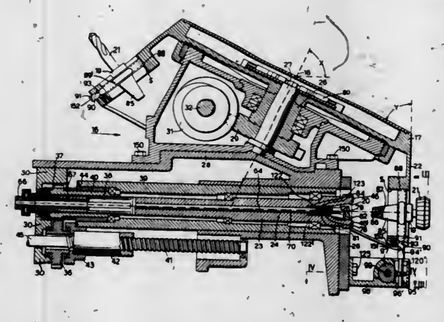
A method for construction of a sabot projectile, which carries with it a tracer composition on the rear part of the hard-metal projectile body, connected to a steel joining part by a flanged joint, has a hard solder bonding connection for connecting the joining part to the rear part. In the zone of the hard solder bonding connection, the rear part and the joining part are constructed as two truncated circular cones merging into one another. In order to relieve the load on the hard solder bonding connection, these two truncated cones are supported at the rear in common against a corresponding inside surface of a hollow truncated cone on the sabot.

3,551,973
METHOD AND APPARATUS FOR FABRICATING A CATHODE RAY TUBE HAVING AN ANNULAR SHAPED REAR WINDOW
Chris F. Bossers, Seneca Falls, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Dec. 20, 1968, Ser. No. 785,647
Int. Cl. H01j *9/18*
U.S. Cl. 29—25.13 2 Claims



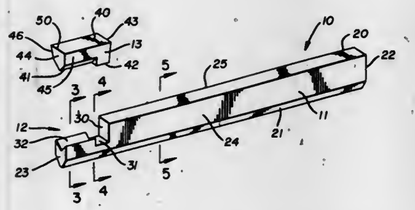
A method and apparatus for fabricating a rear-window cathode ray tube having a longtiudinal axis and an envelope of substantially glass construction wherein there is oriented a cathodoluminescent screen and at least one related electron gun. The envelope is formed by hermetically sealing a bulb portion and a tubular neck section to a substantially annular shaped optical access window oriented in substantially symmetrical relationship to the longitudinal axis of the tube to provide a substantially annular viewing area for observing the electron impinged side of the screen.

3,551,974
TOOL CLAMPING DEVICE FOR TOOL STORAGE MAGAZINE OF MACHINE TOOL
Giuseppe Fantoni, Ivrea, Torino, Italy, assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Torino, Italy, a corporation of Italy
Filed July 29, 1968, Ser. No. 748,535
Claims priority, application Italy, July 29, 1967, 52,600/67
Int. Cl. B23b *39/00*; B23c *1/02*
U.S. Cl. 29—26 6 Claims



A machine tool arrangement having a device for locking tools thereto comprising a chuck, a magazine adapted to accommodate a series of tools selectively connectable to the chuck by individual tool holders, and a mechanism for moving the magazine to bring the selected tool into the tool changing position. Each tool carrier is normally locked to the magazine, but may be selectably disengaged therefrom for coupling to the chuck.

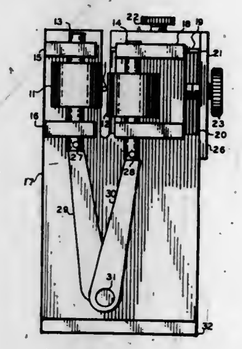
3,551,975
INSERT BIT FOR CUTOFF TOOLS HAVING ALIGNING MEANS BETWEEN TIP AND SHANK
Raymond E. Novkov, Cuyahoga Falls, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio
Filed Mar. 28, 1968, Ser. No. 716,817
Int. Cl. B26d *1/00*
U.S. Cl. 29—95 3 Claims



An improved insert bit for use with metal cutoff tools and characterized by the presence of aligning means operable between the shank and tip portions of the bit with

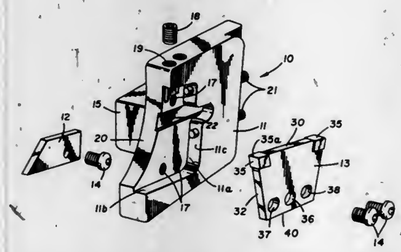
such alignment means including complemental interlocking surfaces on the tip and shank of the insert serving to properly locate the tip on the shank and further serving to increase the rigidity of the insert.

3,551,976
WIRE FINISHING MACHINE
John A. Zentgraf, Daytona Beach, Fla., and Richard L. Snyder, 4625 Van Kleek Drive, New Smyrna Beach, Fla. 32069; said Zentgraf assignor to said Snyder
Filed Feb. 1, 1968, Ser. No. 702,328
Int. Cl. B21c *37/04*
U.S. Cl. 29—90 2 Claims



This machine is capable of rolling the surface of wire so that its finish approaches the quality of optical polishing. It can be used for compacting and finishing heavy layers of metal which have been deposited on wire by electro-plating. Its speed of operation is sufficient for reasonable economy.

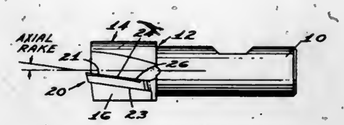
3,551,977
BLADE-LIKE CUTOFF TOOL
Raymond E. Novkov, Cuyahoga Falls, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio
Filed Apr. 8, 1969, Ser. No. 814,287
Int. Cl. B26d *1/00*
U.S. Cl. 29—96 12 Claims



A unique cutoff tool that features the use of a consumable blade-type insert that is made double ended for reversibility and that is characterized by a unique geometry wherein a mounting aperture is spaced midway between the ends with the length to height ratio of the unit of the insert being approximately two to one.

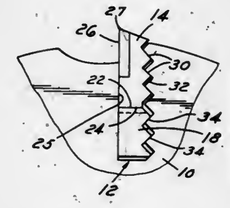
The insert used may be either a unitary insert or one provided with carbide tips and the number of mounting holes employed is variable and may be eliminated entirely so long as the mounting point is midway between the reversible cutting edges.

3,551,978
ROTARY END MILL CUTTER
Robert W. Berry, Jr., Ferndale, Mich., assignor to Fansteel Inc., North Chicago, Ill., a corporation of New York
Filed Oct. 31, 1968, Ser. No. 772,216
Int. Cl. B26d *1/12*, *1/00*
U.S. Cl. 29—105 4 Claims



A rotary end mill cutter utilizing replaceable cutting inserts positioned at a positive axial rake angle and constructed in a way to achieve a straight wall configuration in a milled slot in much the same manner as an end mill having zero axial rake inserts, this being accomplished by a novel shaped cutting edge on the indexable inserts.

3,551,979
ROTARY CUTTING DEVICE WITH ADJUSTABLE BLADES
Robert W. Berry, Jr., Ferndale, Mich., assignor to Fansteel Inc., Chicago, Ill., a corporation of New York
Filed Jan. 23, 1968, Ser. No. 699,966
Int. Cl. B26d *1/12*
U.S. Cl. 29—105 3 Claims

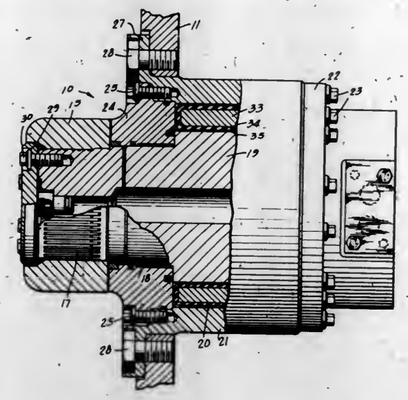


This invention relates to improvements in rotary cutting devices and more particularly to rotary cutting devices in which the tool carriers are radially and axially adjustable by combining a serrated blade and a serrated wedge for simultaneous assembly in any of a plurality of positions in the main body of the device.

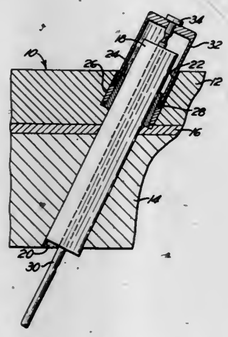
3,551,980
METHOD FOR ASSEMBLING VANE AND ABUTMENT SEALS IN ROTARY ACTUATORS AND THE LIKE
George H. Davis, Tonawanda, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Delaware
Original application Mar. 16, 1966, Ser. No. 534,707, now Patent No. 3,447,226, dated June 3, 1969. Divided and this application Sept. 3, 1968, Ser. No. 810,402
Int. Cl. B21k *19/00*; B23p *11/00*
U.S. Cl. 29—148.3 7 Claims

A method of assembling seals in slotted abutment and wing shaft vanes of a rotary actuator while the wing shaft is in assembled relation within the actuator housing, comprising applying about the journalled portion of the wing shaft the collar of a seal-assembling tool

which includes a seal guiding slot, orienting the collar to align the seal guiding slot with a seal slot in any selected one of the abutments or vanes, accurately matching the exit end of the guide slot with the entry end of the selected seal slot, and thrusting a seal assembly through the guide slot into the seal slot.



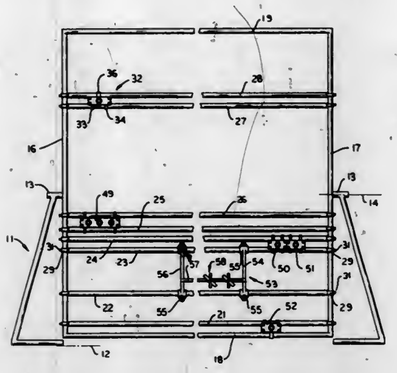
3,551,981
METHOD OF SEALINGLY SEATING AN ELONGATED OBJECT IN AN OPENING
Donald K. Hagar, Pittsburgh, Pa., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Filed Oct. 19, 1967, Ser. No. 676,410
Int. Cl. B21d *53/00*; B21k *29/00*; B23p *15/26*
U.S. Cl. 29—157 **12 Claims**



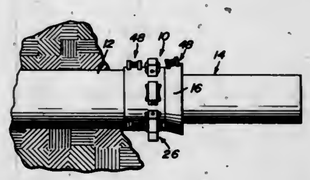
Methods and apparatus for sealing an elongated object in a prepared stepped opening with the use of a pair of nested sealing members, one of which expands by moving with respect to the other to fill the large part of the stepped opening around the object.

3,551,982
PLUMBING PREFABRICATION FIXTURE
Jerry L. Bratton, 3237 Winton Ave., Indianapolis, Ind. 46224
Filed Sept. 5, 1968, Ser. No. 757,735
Int. Cl. B23p *19/00*; B25b *1/20*; B23g *1/04*
U.S. Cl. 29—200 **9 Claims**

A rectangular frame of pipe, stand-mounted to pivot on a horizontal axis, has a plurality of horizontal pipes slidably mounted on the vertical side pipes of the frame. Individual fixtures and clamps apertured to receive tubing for supply to various plumbing fixtures, are mounted to the horizontal pipes and horizontally slidable thereon, the various pipes and tubing clamps and receivers being thereby disposable at locations for lavatories, water closets, bath tubs, and shower heads to enable prefabrication of the water supply tubing to accommodate such plumbing fixtures.



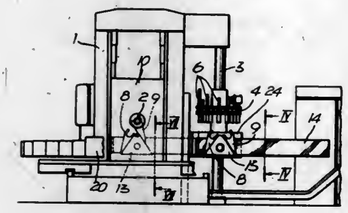
3,551,983
PIPE GUIDE WITH FIXED POSITION ROLLERS
Bryan J. Newbury, P.O. Box 123, Woodsboro, Tex. 78393
Filed May 3, 1968, Ser. No. 726,499
Int. Cl. B23p *19/00*
U.S. Cl. 29—200 **11 Claims**



A pipe guide consisting of three pivotally interconnected arcuate sections releasably clampable in surrounding relation to one end of a casing for the guided insertion of a pipe therein. The guide mounts seven rollers positioned peripherally thereabout and projecting inwardly thereof for rolling support of an inserted pipe. The guide includes abutment means for proper alignment thereof with the end of the casing and latches for releasably clamping the guide to the casing.

3,551,984
TOOL-CHANGING MECHANISM FOR A MACHINE TOOL
Hellmut Goebel, Reutlingen, and Ernst Raiser, Rommelsbach, Germany, assignor to Burkhardt & Weber K.G., Reutlingen, Germany, a firm
Filed Sept. 5, 1968, Ser. No. 757,616
Claims priority, application Germany, Sept. 8, 1967, 1,602,719
Int. Cl. B23p *19/04*; B23q *7/10*
U.S. Cl. 29—200 **8 Claims**

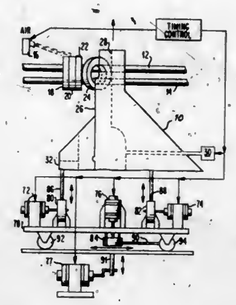
A tool-changing mechanism for a machine tool in which a guide element is movable from a position adjacent to a magazine to a position adjacent to the tool spindle of the machine and vice versa, and in which two gripping elements are movable independently of each other along separate guide-ways on the common guide element for removing a selected tool from the magazine and for also removing a tool from the tool spindle and for then inserting these tools into the tool spindle and into the magazine, respectively.



3,551,985
MACHINE FOR ASSEMBLING METALLIZED RESISTORS
Ivan Petrovich Ivanov, Alexandr Vasilievich Bespalov, and Pavel Pavlovich Ananiev, Leningrad, U.S.S.R., assignors to Leningradskoe Proizvodstvennoe Obiedinenie Radiodetal, Leningrad, U.S.S.R.
Filed Jan. 11, 1968, Ser. No. 697,174
Int. Cl. H05k *13/00*
U.S. Cl. 29—203 **7 Claims**

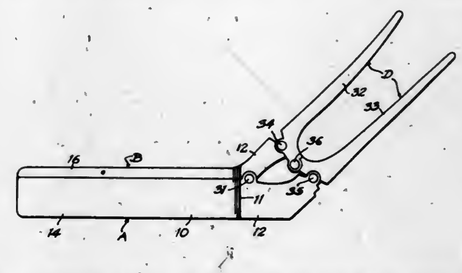
An automatic machine is provided for assembly metallized resistors by pressing caps with central wire leads onto metallized ceramic bases of resistors by means of pressing punches which are movable towards one another in a rotary drum. The punches move towards each other in axial openings in the drum and the drum has an annular stepped groove between the punches. The punches have sockets with radial cuts for supply of the caps and the cuts form a common tangential surface with the cylindrical surface of one of the steps of the annular groove. A cylindrical surface of a protrusion in the groove is provided with recesses for receiving the ceramic bases of the resistors in coaxial arrangement with the sockets in the punches. The sockets in the punches have a narrowed middle portion for accommodation of the lead to insure centering of the cap in the socket through the lead.

3,551,986
THIRD WIRE FEEDER APPARATUS EMPLOYING VACUUM CAPTURE
Joseph H. Lima, San Jose, Calif., and Donald A. Marquis, West Hurley, and Herwig Sternberg, Woodstock, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 14, 1969, Ser. No. 790,957
Int. Cl. H05k *13/04*; B23p *19/04*
U.S. Cl. 29—203 **8 Claims**



An apparatus is disclosed which is designed to capture cores already threaded upon pairs of column wires and position the captured cores to allow a third wire to be threaded through the captured cores, thus forming a row. The apparatus employs specially shaped fixtures as well as air jets and vacuum means to capture and position the cores at the desired locations.

3,551,987
STAPLING CLAMP FOR GASTROINTESTINAL SURGERY
Jack E. Wilkinson, 2411 Divisadero St., Fresno, Calif. 93721
Filed Sept. 12, 1968, Ser. No. 759,273
Int. Cl. B23g *7/10*
U.S. Cl. 29—212 **11 Claims**

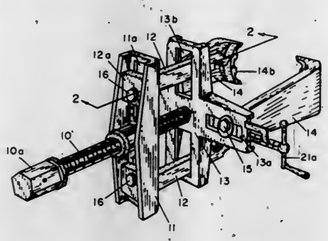


A surgical clamp for simultaneous setting of multiple staples in the suturing of resected stomachs and other gastrointestinal surgery, embodying jaws of Z-offset form, and jaw-closing means utilizing fluid or electromagnetic or equivalent power operation.

3,551,988
AUTOMOTIVE TOOL
Daniel A. Berbel, 5610 Ave. K, and Leon J. Keller, 615 14th St., both of Galveston, Tex. 77550
Filed July 15, 1968, Ser. No. 744,939
Int. Cl. B23p *19/04*
U.S. Cl. 29—259 **6 Claims**

A tool for withdrawing an axle having a flanged end from an axle housing, the tool comprising an inverted U-

shaped pulling bracket, a pushing bracket disposed below said pulling bracket, a screw shaft threaded through the pulling bracket and rotatably connected with the pushing bracket, the pulling bracket having depending legs adapted to receive the peripheral edge of the flanged end of said



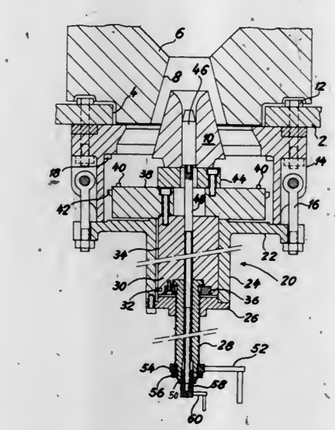
axle, the pushing bracket being adapted to rest upon and push against the surface of the axle housing, the pulling and pushing bracket being adapted such as to substantially prevent rotation with respect to one another.

3,551,989

MOUNTING APPARATUS FOR THE WEARING BLOCKS OF CASTING VESSELS EQUIPPED WITH A SLIDE CLOSURE MECHANISM

Bernhard Tinnes, Zollikon, Switzerland, assignor to Metacon AG, Zollikon, Switzerland, a corporation of Switzerland

Filed Feb. 27, 1968, Ser. No. 708,664
Claims priority, application Switzerland, Mar. 3, 1967, 3,175/67
Int. Cl. B23p *19/04*
U.S. Cl. 29—252 **14 Claims**



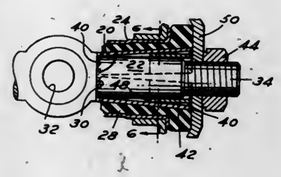
A mounting apparatus for the wearing blocks or stones of casting vessels provided with a slide closure mechanism including a slide housing. The inventive apparatus includes a spindle mechanism which is detachably connected with the slide housing. This spindle mechanism incorporates at least one axially displaceable centering and pressure spindle means serving for pressing in the blocks to a certain predetermined depth in a centered position with respect to the slide housing.

3,551,990

BEARING ASSEMBLY AND METHOD OF ELIMINATING BEARING SQUEAKS IN AN ELASTOMERIC BEARING ASSEMBLY

William C. Wehner, Detroit, Mich., assignor to Moog Industries, Inc., St. Louis, Mo., a corporation of Missouri

Substituted for abandoned application Ser. No. 611,925, Jan. 26, 1967. This application May 9, 1969, Ser. No. 839,756
Int. Cl. B23p *7/00*
U.S. Cl. 29—401 **10 Claims**



In general, this disclosure relates to the elimination of squeaks in a bearing assembly having an elastomeric bushing compressed between metal sleeves, in which a wedged insert is forced between one of the sleeves and the bushing further compressing the bushing, to compensate for deterioration of the elastomer.

3,551,991

INFILTRATED CEMENTED CARBIDES

William A. Reich, Huntington Woods, and Thomas E. Hale, Warren, Mich., assignors to General Electric Company, a corporation of New York

No Drawing. Filed Apr. 16, 1969, Ser. No. 816,778
Int. Cl. B22f *3/24*
U.S. Cl. 29—420.5 **9 Claims**

Cemented carbide compositions are prepared by the production of a sintered cemented carbide compact by conventional liquid-phase sintering techniques, followed by chemical removal of the metallic binder and replacement by infiltration with a second metallic binder different than the original binder. The resulting compositions are fully dense, have a fine-grained, homogeneous structure and possess the high hardness normally associated with cemented carbide alloys.

3,551,992

METHOD OF PRODUCING DUCTILE-TUNGSTEN BASE SHEET ALLOY

Daniel J. Maykuth and Horace R. Ogden, Columbus, Ohio, assignors, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

Filed Oct. 15, 1965, Ser. No. 496,588
Int. Cl. B22f *3/24*
U.S. Cl. 29—420.5 **7 Claims**

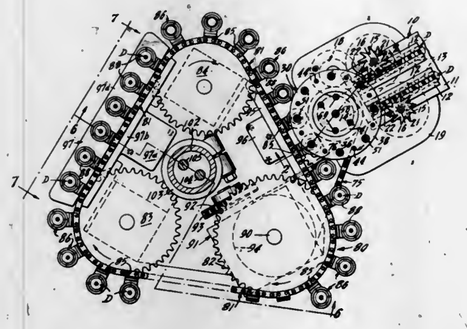
A method for making a ductile tungsten-base sheet alloy is described. Particulate tungsten, a minor proportion of another metal, such as Group VII and VIII metals, and a metal oxide, such as thoria, zirconia or hafnia is blended. The tungsten may be obtained by chemical reduction of tungsten oxide and may be doped with for example, an alkali silicate or aluminum chloride to provide an interlocked grain structure for tungsten in the recrystallization condition. The homogenized product is heated to a temperature above 2000° C. in a vacuum or inert atmosphere, isostatically bonded and cold worked. The product has a small recrystallized grain size, and room temperature ductility in the wrought and recrystallized condition.

3,551,993

MACHINE AND METHOD FOR HANDLING WORKPIECES

Eugene Cassai, Oakland, and Hans Hirn, Iselin, N.J., assignors to American Can Company, New York, N.Y., a corporation of New Jersey

Filed July 25, 1968, Ser. No. 747,627
Int. Cl. B23p *19/00, 19/04;* **B23q** *17/00*
U.S. Cl. 29—429 **17 Claims**



The invention relates to a machine and method for supplying and positioning disc shaped container headpiece barrier members into a container fabricating machine. The disc members are received by a dual feed unit from a conventional hopper and feed seriatim in two rows into an indexing turret which transfers the disc members to an indexing chain unit. A disc inserting unit located at a station remote from the indexing turret strips the disc members from the indexing chain unit and positions them onto awaiting tools of a molding machine in order that the disc members may become assembled with other components to form articles of manufacture.

ERRATUM

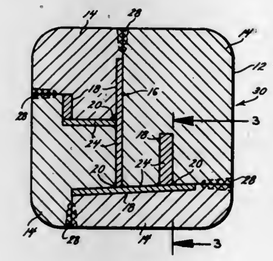
For Class 29—452 see:
Patent No. 3,552,940

3,551,994

METHOD FOR PRODUCING STRUCTURAL MEMBERS

Robert E. Newcomer, St. Louis, Mo., assignor to McDonnell Douglas Corporation, St. Louis County, Mo., a corporation of Maryland

Filed Nov. 12, 1968, Ser. No. 774,982
Int. Cl. B23k *31/02*
U.S. Cl. 29—471.1 **7 Claims**



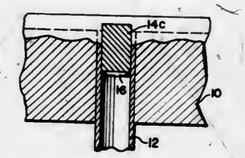
A structural member of complex cross-sectional shape is formed by encapsulating bars of simple cross-sectional shape in a matrix with the bars abutting one another therein. The pack so formed is heated and then rolled such that it is transversely reduced in two dimensions. This causes the bars to bond to one another in the complex shape. The matrix is then removed.

3,551,995

CLADDING HEADERS HAVING TUBES ATTACHED THERETO

Emile Marechal, Lille, France, assignor to Societe Fives Lille-Cail, Paris, France

Filed Jan. 4, 1968, Ser. No. 695,713
Claims priority, application France, Jan. 4, 1967, 89,878; Mar. 2, 1967, 97,117; Oct. 2, 1967, 122,928
Int. Cl. B23k *31/02*
U.S. Cl. 29—471.3 **15 Claims**



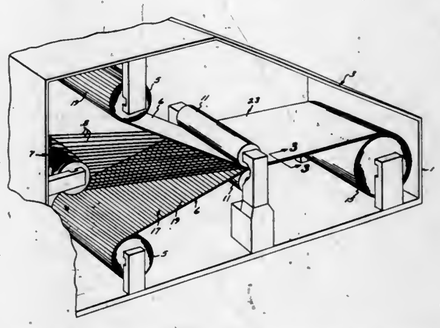
Tubes are inserted into the bores of a header to be joined thereto, and the outer face of the header is surfaced or clad after the ends of the tubes have been plugged. The surfacing or cladding is applied by any suitable welding process, and if it extends over the tube ends, the tubes are simultaneously welded to the header.

3,551,996

PROCESS FOR THE PRODUCTION OF ALUMINUM-STEEL COMPOSITE

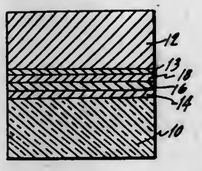
Edwin V. Sumner, Alhambra, Donald Q. Cole, Los Angeles, and Le Roy W. Davis, San Pedro, Calif., assignors to Harvey Aluminum, Incorporated

Application Oct. 2, 1967, Ser. No. 672,048, which is a continuation-in-part of applications Ser. No. 571,301 and Ser. No. 571,322, both filed Aug. 9, 1966. Divided and this application Aug. 14, 1969, Ser. No. 862,132
Int. Cl. B23k *31/02*
U.S. Cl. 29—472.3 **9 Claims**



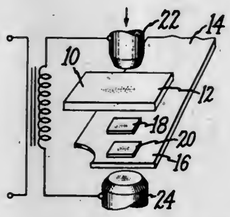
A high strength aluminum-steel composite is formed by compressing at elevated temperatures an assembled stack of at least two sheets of aluminum having steel wires sandwiched therebetween, with one of the opposing surfaces of the sheets having a groove formed therein, the force under which the assembly is compressed being sufficient to fill in the groove and thereby expose fresh metal surface which forms a substantially continuous metallurgical bond between the opposing sheet surfaces.

3,551,997
METHODS FOR ELECTROLESS PLATING AND FOR BRAZING
Robert W. Etter, Lititz, Pa., assignor to RCA Corporation, a corporation of Delaware
Filed Oct. 6, 1967, Ser. No. 673,401
Int. Cl. B23k 31/02
U.S. Cl. 29—473.1 5 Claims



A method for brazing comprising metallizing the surface of an insulating or semiconducting member, electrolessly plating the metallized surface with a cobalt-copper alloy, and then brazing a metallic member to the plated surface. The presence of this cobalt-copper plating improves the wettability of the surface and reduces the penetration of the braze through the metallizing. The step of electrolessly plating includes contacting the metallized surface with an aqueous solution containing cobalt and copper ions, a reducing agent for these ions, a soluble base, and a complexing agent. The electroless plating method has the advantage that it is self-initiating in the presence of most electrical conductors.

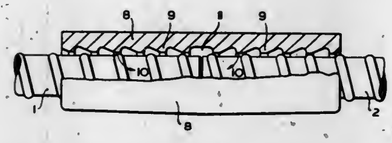
3,551,998
METALLURGICAL BONDING OF DISSIMILAR METALS
Moreland P. Bennett, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
Filed Nov. 8, 1967, Ser. No. 681,458
Int. Cl. B23k 31/02, 35/24
U.S. Cl. 29—498 3 Claims



A metallurgical bond between dissimilar metals is obtained by using compatible shims between the meal members which will form a metallurgical bond to each other and to the dissimilar metals. Where copper and aluminum are the metals, a copper-silver phosphorus shim and silver shim are used. A tin shim may be used between the copper-silver-phosphorus shim and the silver shim to improve their bonding characteristics. Heat and pressure are used to form the bond.

3,551,999
BUTT-JOINING OF STEEL BARS
Siegfried Gutmann, 45 Schwarzwaldstrasse, 76 Offenburg, Baden, Germany
Filed Dec. 13, 1967, Ser. No. 690,214
Claims priority, application Germany, Dec. 14, 1966, G 48,735
Int. Cl. B21d 39/00; B23p 11/00
U.S. Cl. 29—517 10 Claims

A tubular sleeve is placed over a pair of aligned end-butted steel bars. The steel bars are compressed by totally surrounding jaws to cold-flow the tubular sleeve around the steel bars over the entire surrounded surfaces thereof; preferably, the tubular sleeve has internal, inclined

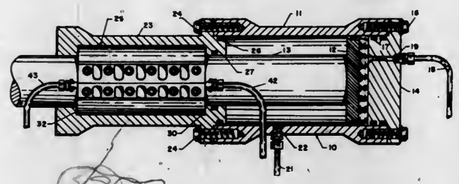


serrations so that, upon compression, axial forces arise tending to press the steel bars towards each other; steel wires may be inserted prior to the compression step to further increase the tensile strength of the joint.

3,552,000
METHOD OF MANUFACTURING DISPERSION-HARDENED WORKPIECES
Dieter Hirschfeld, Essen, and Emil Hillnhagen, Cologne-Ehrenfeld, Germany, assignors to Beteiligungs- und Patentverwaltungsgesellschaft mit beschrankter Haftung, Essen, Germany
No Drawing. Filed Aug. 14, 1967, Ser. No. 660,183
Claims priority, application Germany, Oct. 12, 1966, 1,533,441
Int. Cl. B23p 17/00
U.S. Cl. 29—527.2 8 Claims

A process for the production of compact, malleable and rollable metal workpieces from dispersion-hardened starting materials. Compact, malleable and rollable workpieces are prepared by the electrodeposition of a metal component onto a metal carrier such as a wire or sheet, the dimensions of the carrier being small in relation to the volume of deposited metal, there being added to the deposition bath a refractory material and a wetting agent.

3,552,001
METHOD FOR MANUFACTURING A BAND BRAKE
Salvatore Motta, Lowell, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Original application Feb. 10, 1965, Ser. No. 431,578, now Patent No. 3,362,505. Divided and this application Aug. 15, 1967, Ser. No. 683,742
Int. Cl. B23p 13/04
U.S. Cl. 29—558 4 Claims



A method for manufacturing a band brake to be used in applying radial pressure to the outer surface of a movable circular shaft including the steps of providing a slotted annular member, expanding the member to a position and pressure determined by the formula:

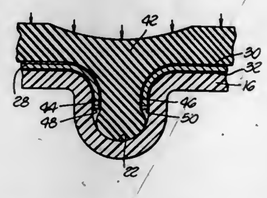
$$d=\frac{(f_t)^{3/2}}{1.725E}\times\frac{r}{(p)^{1/2}}$$

and subsequently forming the inner surface of the member.

3,552,002
METHOD OF PRODUCING PRINTED CIRCUIT BOARDS
William J. Barron, Peru, Ill., assignor to Graphic Electronics, Inc., La Salle, Ill., a corporation of Delaware
No Drawing. Filed Jan. 9, 1969, Ser. No. 790,147
Int. Cl. B41m 3/08; H05k 3/00
U.S. Cl. 29—625 10 Claims

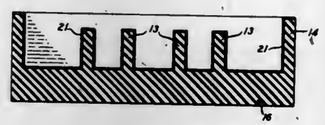
A method of producing a printed circuit board by wrapping on a first cylinder a relatively thin, flexible blank of laminated circuit board material having a backing layer of insulating material and a thin surface layer of copper, wrapping on a second cylinder a sheet of copy material illustrating a desired design for a printed circuit board, rotating the two cylinders while scanning the copy with a light-sensitive scanner and using a scanner-controlled cutter to cut away and remove the thin copper surface layer from the laminated blank circuit board material except in the areas corresponding to the circuit design shown on the copy material.

3,552,003
METHOD OF MAKING SLOT CAR RACETRACKS
Bhaskar Kumar Agarwala, Los Angeles, Calif., assignor to Revell, Incorporated, Venice, Calif.
Filed Jan. 8, 1969, Ser. No. 789,718
Int. Cl. B41m 3/08; H05k 3/30
U.S. Cl. 29—625 6 Claims



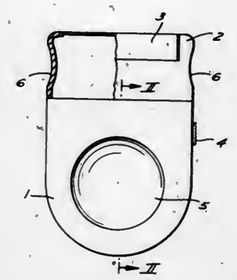
A unitary slot car racetrack comprises a thermoplastic substrate having a continuous slot of desired configuration formed therein. A pair of tin-coated steel foil strips are adhesively secured to the substrate surface on either side of the slot and extend over the edges of the slot and downwardly along the sidewalls thereof.

3,552,004
BATCH FABRICATION OF COMPONENT BOARDS
David W. Hagelbarger, Morris Township, Morris County, and Peter S. Kublik, South Plainfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Mar. 13, 1968, Ser. No. 712,741
Int. Cl. H05k 3/00
U.S. Cl. 29—625 5 Claims



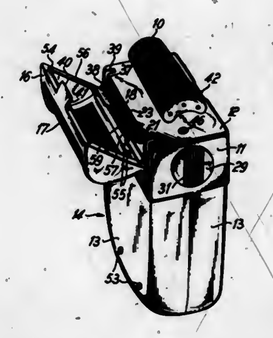
Methods for making apertured nonconductive component boards are described. In particular, the methods are directed to forming conductive paths through such boards by batch fabrication techniques according to which a conductive material is readily applied to the insides of the apertures.

3,552,005
DRYSHAVER
Richard Fischer, Frankfurt am Main, Germany, assignor to Braun Aktiengesellschaft, Frankfurt am Main, Germany
Filed Oct. 16, 1968, Ser. No. 767,988
Claims priority, application Germany, Oct. 21, 1967, 1,553,663
Int. Cl. B26b 19/38
U.S. Cl. 30—34 6 Claims



A dryshaver has a two-part housing one part of which constitutes a shaving head. The housing has two side faces and two end faces. At least the side faces are provided with handgrip portions in form of respective semispherical depressions.

3,552,006
POWER OPERATED SHAVER AND HAIR TRIMMER
Kurt Baumann, Solingen-Merscheid, Horst Lorenz, Solingen, Michael Borgmann, Solingen-Ohligs, and Rudolf Maass, Solingen, Germany, assignors to Robert Krups, Solingen-Wald, Germany
Filed Apr. 29, 1968, Ser. No. 724,935
Claims priority, application Germany, Apr. 29, 1967, K 62,180
Int. Cl. B26b 19/10
U.S. Cl. 30—34.1 15 Claims



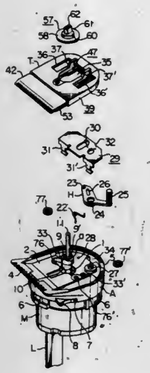
A power operated shaver and hair trimmer wherein the casing supports the movable cutter of the dry shaver and a pivotable frame for the comb foil of the dry shaver. The hair trimmer can be extended through a lateral slot provided on or adjacent to a rectangular carrier which surrounds the head of the casing, and the slot is flanked by two bearing members which define a pivot axis for the frame.

3,552,007

BATTERY POWERED DRY SHAVER HAVING ROTARY SHAVING HEAD AND RETRACTIBLE TRIMMER

Norio Yamada, Kadoma-shi, Japan, assignor to Matsushita Electric Works, Ltd., Osaka, Japan, a corporation of Japan

Filed Nov. 15, 1968, Ser. No. 776,041
Claims priority, application Japan, Apr. 29, 1968, 43/28,731
Int. Cl. B26b *19/26*
U.S. Cl. 30—34.1 4 Claims



An electric dry shaver comprising a head base member provided with a motor and a battery holder at the lower portion, said motor having a driving shaft penerating through said head base member and provided with a cam mechanism, a hand operated switch means for connecting said motor to a battery held in said battery holder, a trimmer assembly slidably contained in a receptacle formed on the upper surface of said head base member, said trimmer assembly being provided with a cam means releasably engaged with said cam mechanism of the driving shaft, a trimmer operating means in engagement with said trimmer assembly for extracting the same, and a rotary blade assembly provided on said head base member, said rotary blade assembly being provided with a cam means releasably engaged with said cam mechanism of the driving shaft; during the time when said trimmer assembly is retracted in the receptacle only the cam means of said rotary blade assembly is made to enage with the driving shaft so that only the rotary blade assembly is rotated, and during the time when the trimmer assembly is extracted from the receptacle only the cam means of said trimmer assembly is made to engage with the driving shaft so that only inner trimmer blade of the trimmer assembly is driven.

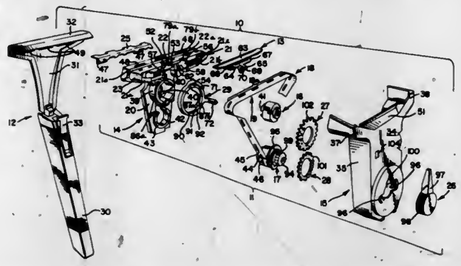
3,552,008

ADJUSTABLE RIBBON-TYPE RAZOR

Frank A. Ferraro, Monroe, Conn., assignor to Eversharp, Inc., Milford, Conn., a corporation of Delaware

Filed Oct. 25, 1968, Ser. No. 770,592
Int. Cl. B26b *21/26*
U.S. Cl. 30—40.1 23 Claims

A magazine for an adjustable razor unit in which adjusting means is provided for moving a separate, removable blade guard bar positioned therein from a first position closely beneath a sharpened edge of a portion of blade in shaving position to a second position substantially farther beneath the sharpened edge and substantially laterally farther outwardly from the edge in shaving position, and to a plurality of intermediate positions. Preferably the adjustment means includes a pivotally mounted lever arm connected to the guard bar and cam or ramp means for moving the lever arm to cause arcuate movement of the guard bar, which is constructed so as to simplify assembly thereof, and to permit economical manufacture of other parts of the magazine. Indicia are provided on the magazine cover adjacent an actuating arm for moving the blade guard bar to show the relative position of the guard bar.



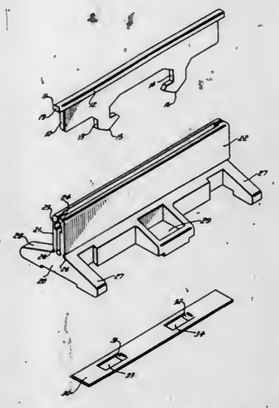
Means are provided in the magazine for the passage of rinsing fluid through the magazine; and preferably the magazine holder includes passage means communicating with passage means in the magazine whereby rinsing fluid can flow through the assembled razor unit. The front and rear wall portions of the magazine and the supply reel are dimensioned to apply and maintain a force upon axially facing surfaces of the blade supply reel within the magazine to tension the blade.

3,552,009

ANGULAR ADJUSTABLE SHAVER HEAD ASSEMBLY FOR ELECTRIC RAZOR

Henry J. Walter, Lancaster, Pa., assignor to Schick Electric Inc., Lancaster, Pa., a corporation of Delaware

Filed Mar. 3, 1969, Ser. No. 803,604
Int. Cl. B26b *19/06*
U.S. Cl. 30—43.1 7 Claims



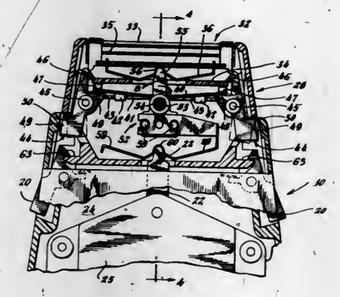
A shaver head assembly for an electric razor includes means for adjusting the angular relationship between the shaver heads to increase or decrease the exposure of the side cutting surfaces of the heads and thus substantially eliminate irritation to the skin of the user while providing close shaving action. The assembly includes a pair of shaver heads mounted in opposing relationship on a cradle. The cradle has a pair of upright, movable guide members to which the shaver heads are pressed into contact. A spreader bar is movably mounted between the guide members and, through camming action rotates the shaver heads to control the exposure of the side cutting surfaces of opposing faces of the shaver heads.

3,552,010

AUXILIARY CUTTER MEANS FOR AN ELECTRIC DRY SHAVER

David R. Locke and John F. Daniels, Jr., Bridgeport, Conn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 13, 1969, Ser. No. 790,534
Int. Cl. B26b *19/04*
U.S. Cl. 30—43.92 10 Claims



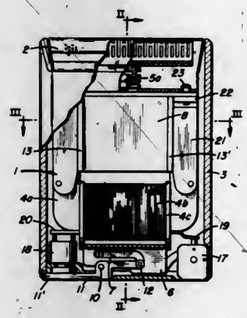
An auxiliary cutter head assembly for an electric dry shaver. The assembly including cutter means mounted on an elongated casing and which casing is adapted to be detachably mounted on the shaver casing as an extension thereof with means provided in the auxiliary casing for transmitting the drive of the shaver operating means to the auxiliary cutter means.

3,552,011

ELECTRIC DRY SHAVER

Mineharu Omori, Kozo Terayama, Shozo Matsubara, Tatsuo Shigematsu, and Gen Kido, Ibaraki-shi, Japan, assignors to Hitachi Maxell, Ltd., Oazo Ushitora, Ibaraki-shi, Osaka Prefecture, Japan

Filed Mar. 28, 1968, Ser. No. 716,912
Claims priority, application Japan, June 30, 1967, 42/41,992, 42/41,993, 42/41,994, 42/56,448
Int. Cl. B26b *19/02*
U.S. Cl. 30—43.92 10 Claims



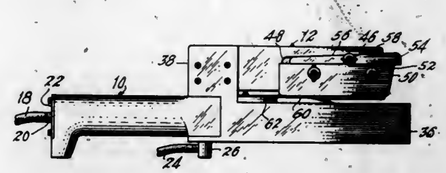
An electric dry shaver construction providing a shearing section, a driving section connected to the shearing section and a casing enclosing the driving section and the shearing head, and a lifting lever connected to the casing for effecting translational movement of the driving section and shearing head within the casing. The invention also provides a novel electrical connector in the shaver casing which also serves as a power switch, and the electrical connection with the shaver is provided with an interlock disrupting power to the driving section when the lifting lever is actuated.

3,552,012

HAND MANIPULATABLE POWER OPERATED CUTTER

Richard J. Roseman, 72 Stafford Road, Colonia, N.J. 07067

Filed Aug. 6, 1968, Ser. No. 750,635
Int. Cl. B25f *3/00*; B26b *1/00*
U.S. Cl. 30—124 9 Claims



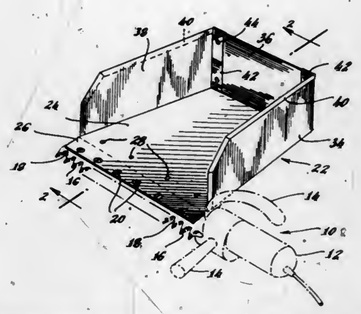
Apparatus for cutting material in the form of strips or tapes wherein the material is forced against a fixed cutting blade by a resilient metal strip or ribbon, the resilient metal strip extending the length of the blade with its major portion normally providing a space between itself and the edge of the blade to receive said material. Movement of the resilient metal strip toward the blade is accomplished with a roller which travels beneath the metal strip in a track which is parallel to the edge of the blade.

3,552,013

HEDGE CLIPPER ATTACHMENT

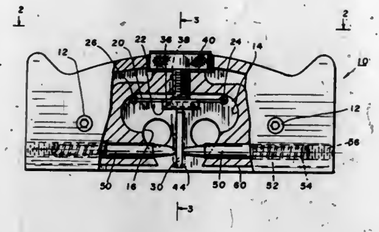
William C. Stone, Devon, Conn.; Ruth L. Stone, administratrix of said William C. Stone, deceased

Filed May 21, 1968, Ser. No. 730,753
Int. Cl. B26b *19/48*
U.S. Cl. 30—132 7 Claims



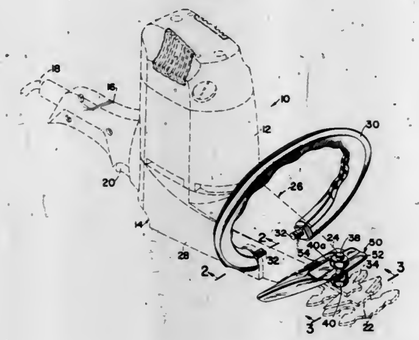
This disclosure relates to an accumulator tray attachment for a power-operated hedge clipper. The tray is a sheet metal structure having a planar base with perpendicular walls on three sides thereof including a rear wall and an end wall defining an angle of greater than ninety degrees therebetween, and an open fourth side forming a lip which extends outwardly from the base in the plane thereof. Mounting openings are disposed in the lip for attaching the tray to the hedge clipper.

3,552,014
EDGE DEBURRING TOOL
Henry Persson, 224 Glenwood Ave., Bloomfield, N.J. 07003
Filed Dec. 18, 1969, Ser. No. 886,133
Int. Cl. B26f *3/00*
U.S. Cl. 30—169 10 Claims



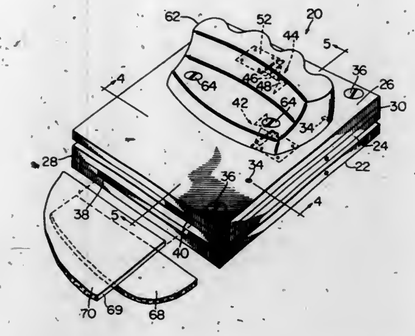
A deburring tool adapted for the removal of sharp edges from sheared or machined metal plates and the like includes a handheld body member having a grooved troughway in a face portion. This troughway is disposed to ride and slide on and over the edges of the plate to be deburred. Into a portion of this troughway is adjustably moved a pivoted cutting blade preferably of carbide. Adjustably biased stops in the body member limit the amount of swing of the cutting end of the blade disposed into the troughway. The amount of penetration into the troughway establishes the amount of blade exposed and the degree of swing establishes the angle of cut at which the blade cuts the sharp edge of the metal plate or workpiece.

3,552,015
BLADE GUARDS FOR HEDGE TRIMMERS
William A. Batson, Pickens, S.C., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey.
Filed June 24, 1968, Ser. No. 739,343
Int. Cl. B26b *29/00*
U.S. Cl. 30—216 1 Claim



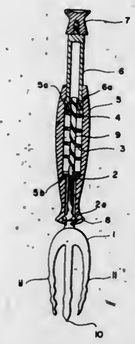
This disclosure relates to hand held hedge trimmer in which a blade guard is either integrally formed with the housing of the tool or connected thereto to extend over the cutting blades as the cutting blades emerge from the housing and thus shield the operator's hand from coming into accidental contact with the cutting teeth thereof.

3,552,016
CUTTING APPARATUS FOR SHEET MATERIAL
Lester P. Hittepole, 2790 Prentice St., Dayton, Ohio 45420
Filed Feb. 10, 1969, Ser. No. 797,756
Int. Cl. B26b *3/08*
U.S. Cl. 30—283 20 Claims



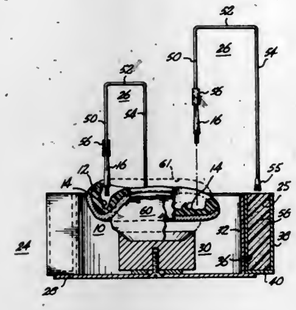
A manually operable cutting apparatus for cutting overlapping sheet material for abutting alignment is disclosed. The cutting apparatus provides for the cutting of two pieces of overlapped material through the use of a plurality of cutting edges positioned to compensate for the approximate bend in the material due to the height of the cutting edges above a base surface.

3,552,017
ROTATING CULINARY DEVICES, PARTICULARLY ROTATING SPAGHETTI FORKS
Israel Robert Smuts, Livingston, N.J., assignor of thirty-nine percent to Anthony W. Szabo and ten percent to Andrew E. Taylor
Filed Nov. 22, 1968, Ser. No. 778,211
Int. Cl. A47j *43/28*
U.S. Cl. 30—322 16 Claims



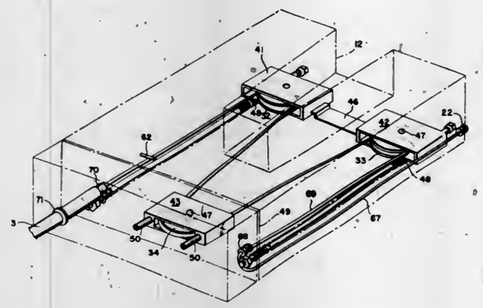
A rotating culinary device, particularly a rotating spaghetti fork, has a tine assembly rotatably mounted in a handle against axial movement, an axially movable plunger having a threaded member cooperating with a threaded part of the tine assembly to effect rotation of the tine assembly, and a spring to return the plunger to its original position.

3,552,018
DOWEL ORIENTING APPARATUS USEFUL IN DENTISTRY
Eric H. Zahn, 6401 Lake Washington Blvd., Kirkland, Wash. 98037
Filed Apr. 10, 1969, Ser. No. 815,108
Int. Cl. A61c *13/00*
U.S. Cl. 32—11 1 Claim



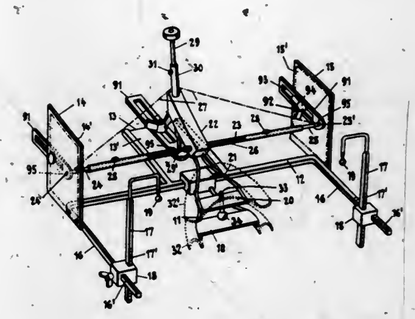
To a base member adapted to receive and support an upwardly open dental impression, a carrier member is keyed for separation by relative vertical movement. An arched element has a first leg positioned in depending relationship to the dental impression which leg is adapted to separably suspend a dowel oriented relative a tooth axis of said impression. A second leg of the arched element is received and supported in a mass of plastic material on the carrier member.

3,552,019
SUB-BRACKET FOR DENTAL ATTACHMENTS
Russell S. Crapanzano, 8133 Royalwood Drive, Baton Rouge, La. 70806
Filed Apr. 29, 1966, Ser. No. 546,230
Int. Cl. A61c *19/02*
U.S. Cl. 32—22 15 Claims



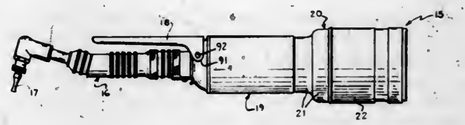
A sub-bracket assembly for positioning one or a plurality of line type dental attachments at a convenient location on a conventional dental operatory unit. Each attachment has associated therewith a pulley and spring arrangement for permitting the line of the attachment to be pulled outwardly for use and to be returned by spring means after usage. When used for a plurality of line type dental attachments, each attachment has its own pulley and spring arrangement, the plurality of arrangements being mounted in stacked relationship to each other within the sub-bracket.

3,552,020
DEVICE COMPRISING A MEASURING INSTRUMENT FOR RECORDING THE INDIVIDUAL CHEWING MOTIONS OF A PERSON AND A HINGE MECHANISM FOR GRINDING IN THE MASTICATION CONTOUR OF ARTIFICIAL TEETH
Roland Weber, Place St. Francois 2, Lausanne, Switzerland
Filed Oct. 26, 1965, Ser. No. 505,271
Int. Cl. A61c *11/00*
U.S. Cl. 32—32 18 Claims



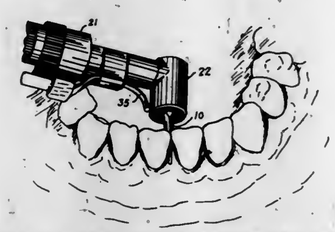
A device comprised of a measuring instrument for recording masticatory motions and a hinged mechanism for grinding the mastication contour into artificial teeth based on the recorded motions obtained by the measuring instrument. The measuring instrument contains means for recording the three-dimensional masticatory motions and also for determining the condylar axis of the lower jaw. The hinged mechanism contains a frame structure arranged to be aligned on the condylar axis by means of the measuring instrument with adjustably positionable guiding devices located on the frame structure by means of the recorded measurements from the measuring instrument for effecting the mastication contour.

3,552,021
COMPACTING DEVICE FOR DENTAL AMALGAM
Joseph A. Graceffo and Helida R. Graceffo, both of 60 Cayuga St., Seneca Falls, N.Y. 13148
Filed Apr. 9, 1969, Ser. No. 814,745
Int. Cl. A61c *3/08*
U.S. Cl. 32—55 4 Claims



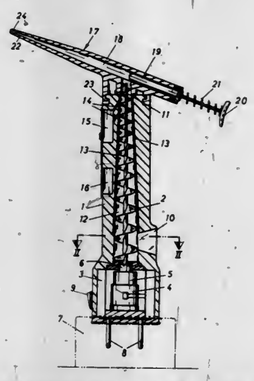
A device for compacting amalgam used to fill a cavity in a tooth. The compacting is accomplished by a rapidly reciprocating spindle or hammer driven by a coil spring contained within the device. The spring can be wound by a few turns of the handle and provides more than enough energy to fully compact the amalgam required for a normal filling.

3,552,022
APPARATUS FOR CLEANING OR POLISHING OF TEETH
Per Axel Torbjörn Axelsson, Drottninggatan 27, Karlstad, Sweden
Filed July 5, 1968, Ser. No. 742,800
Int. Cl. A61c *3/06*
U.S. Cl. 32—58 4 Claims



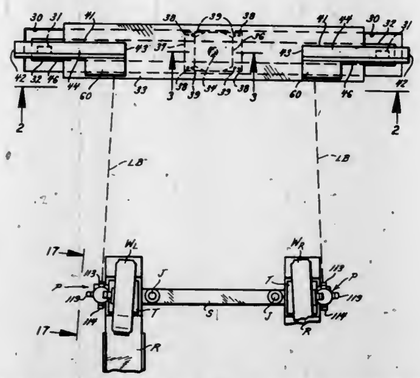
A dental motor-driven tool is described by means of which the approximative teeth faces at all teeth interspaces can be cleaned or polished. The tool has a conical stem portion that can easily be inserted in and removed from a handle wherein a reciprocating socket therefor is placed. The operating end of the tool is wedge-like and pointed, two broad sides being rough in order to abrade the teeth faces and the third face being narrow and smooth in order not to hurt the gums.

3,552,023
DENTAL INSTRUMENT
Gunnar Ingemar Sigvard Osbeck, 35 Vasagatan, S–411 37 Goteborg, Sweden
Filed Jan. 16, 1969, Ser. No. 791,696
Claims priority, application Sweden, Jan. 17, 1968, 599/68
U.S. Cl. A61c *5/04*
U.S. Cl. 32—60 4 Claims



The present invention relates to a dental instrument for mixing and discharging amalgam to be filled into a cavity in a tooth and the object of the invention is to provide such an instrument that can be operated by the dentist himself without the need of any assistant. The instrument according to the invention comprises to this end a screw driven by a motor and rotatably housed in a screw housing, the latter provided with a device for introducing a silver alloy in the shape of a powder, that may be compressed, and mercury at one of its ends and having openings to allow a pressing out of mercury in excess at its opposite end and in a known, tube-shaped channel in communication with the discharge end of the screw housing and a means displaceable in said channel for pressing out, in portions, amalgam at the opening of the channel into the tooth to be filled, said displaceable means adapted to close, momentarily, the discharge end of the screw housing.

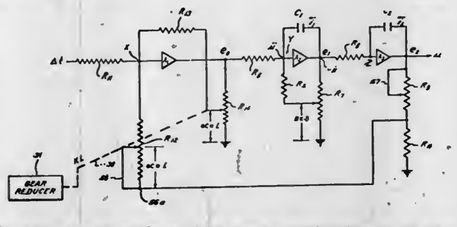
3,552,024
VEHICLE WHEEL ALIGNMENT DIAGNOSIS CENTER AND ALIGNMENT APPARATUS THEREFOR
Lee Hunter, 13501 Ladue Road, Ladue, Mo. 63141
Filed July 24, 1968, Ser. No. 747,268
Int. Cl. G01c *15/12*
U.S. Cl. 33—46 14 Claims



Apparatus for checking the alignment characteristics of vehicle wheels, such as caster, camber, king-pin inclination, toe and chassis-to-wheel alignment. The apparatus is arranged so it can be used in a drive-through alignment diagnosis center or station equipped with means to locate the vehicle in a predetermined position for checking the geometry of the wheels with light projectors and matching charts.

The apparatus also includes means associated with the light projectors of the alignment components for accommodating the apparatus to drive through stations, and for permitting reduction in the size of cooperating components so that greater flexibility is achieved.

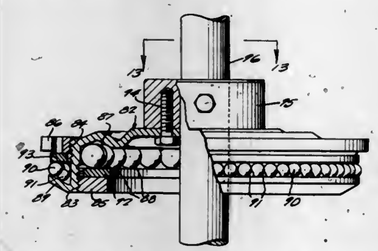
3,552,025
APPARATUS FOR DETERMINING DEPTH OF A WELL TOOL IN A BOREHOLE BY MEASUREMENT OF TENSION
William A. Whitfill, Houston, Tex., assignor, by mesne assignments, to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Original application Jan. 3, 1966, Ser. No. 518,415, now Patent No. 3,465,448. Divided and this application Feb. 10, 1969, Ser. No. 822,772
Int. Cl. G01b *3/12, 5/04*
U.S. Cl. 33—133 3 Claims



In accordance with an illustrative embodiment of the present invention, apparatus for accurately and continuously determining changes in depth of a tool in a borehole are disclosed. More particularly, the tensile force between the tool and its supporting cable is measured,

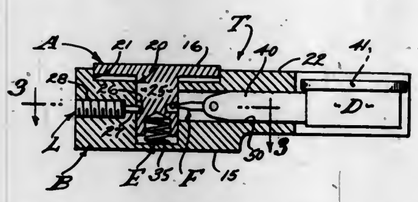
as is the movement of the cable at the surface of the earth. The tension and cable movement measurements are then combined in a computer along with a plurality of constants representative of various characteristics of the cable and its surrounding medium to produce an output signal representative of the movement of the tool due to the change in tension. The computer solves a second order differential equation which includes inverse and inverse squared functions of the tool depth. Potentiometers which vary directly linear with depth are provided in appropriate feedback paths of the computer to produce these inverse and inverse squared functions. The computer output signal is then combined with the original cable movement measurement to produce a signal representative of the instantaneous changes in depth of the tool.

3,552,026
PRECISE ANGLE MEASURING DEVICE
Leo N. Fedoroff, 3446 Dunbar St., Vancouver, British Columbia, Canada
Filed Apr. 17, 1969, Ser. No. 816,961
Int. Cl. B23f *23/08*
U.S. Cl. 33—174 13 Claims



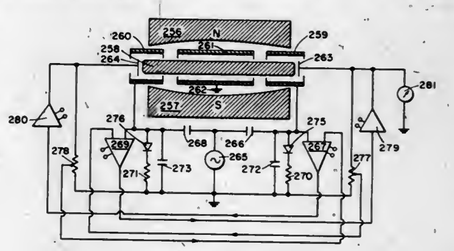
A diving head has a ring-shaped body portion with at least one annular seat portion with an array of hardened spheres therein. An opposing axially movable annular seat element contacts the spheres on their sides remote from the seat of the body portion. A nut in threaded engagement with the ring-shaped body portion and in frictional engagement with the annular seat element is tightened sufficiently to cause mutual contact of all of the spheres preventing any movement thereof. The spheres may then be used in cooperation with an indexing bar for precise angular measurement.

3,552,027
TARGET FOR NUMERICALLY CONTROLLED MACHINE TOOLS
Delbert W. Jacobsen, Los Angeles, Calif., assignor to Astro Tool Co., Inc., Hawthorne, Calif., a corporation of California
Filed Nov. 12, 1968, Ser. No. 774,973
Int. Cl. B27g *23/00*
U.S. Cl. 33—185 9 Claims



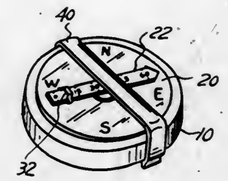
This invention relates to the establishment of an axis or reference plane in the operational setting up of machine tools, whereby a cutter or the like is oriented to a workpiece that is to be machined thereby. More particularly, a target instrument is provided to be seated upon a measurement surface and measurably depressed through positioning engagement with the cutter to an exacting measurable position for the establishment of the desired axis or reference plane, and following which the instrument is further depressed so as to be released from its positioning engagement with the cutter that remains oriented thereby. With this target instrument a precision dial indicator is useable to its ultimate capability in accurately establishing said cutter-to-work relationship, and with the greatest facility.

3,552,028
APPARATUS FOR MEASURING SMALL DEVIATIONS FROM A TRUE HORIZONTAL PLANE
Ivan Simon, Belmont, Mass., assignor to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Original application Aug. 29, 1967, Ser. No. 664,137. Divided and this application May 29, 1969, Ser. No. 828,824
Int. Cl. G01c *9/100*
U.S. Cl. 33—206 8 Claims



An apparatus adapted continuously to measure and record small deviations from a true horizontal plane such as those deviations which may occur continuously or recurrently as a result of ground motion and the like. The apparatus comprises a diamagnetic body suspended in a magnetic field of a configuration which constrains the body radially but permits it to move axially within certain limits. The amount of axial movement is used as a measure of horizontal deviation. The suspension is frictionless, and the apparatus may be made to be relatively rugged and stable over extended periods of time. A zero-rebalancing servo system is provided.

3,552,029
COMPASS
Mark Wayne, 15530 Thatcher, Detroit, Mich. 48535
Filed Feb. 5, 1968, Ser. No. 703,090
Int. Cl. G01c *23/00, 17/00*
U.S. Cl. 33—222 8 Claims



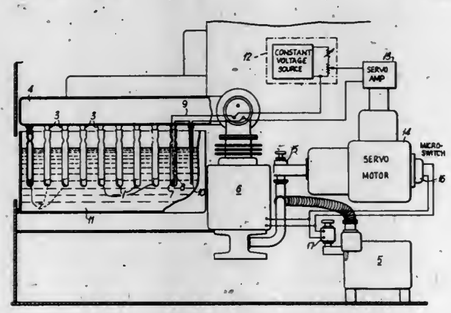
A compass having a direction of travel indicator mounted thereto above the magnetic needle and selectively rotatable to a position indicating the direction of travel. The indicator includes a pointer graduated along its length in portions of time and a member is slidable along the length of the pointer to a position indicating

elapsed time. A resilient washer underlies the pointer, and the pointer and index member can be retained in a set position by the pressure of a cover or clip member applied over the top of the compass.

3,552,030
ISOTHERMAL DRYING APPARATUS AND METHOD

Alfred Charles Jason, Aberdeen, and Angus Roy MacKenzie, Stonehaven, Scotland, and Terence George Mitchell, Romsey, England, assignors to National Research Development Corporation, London, England, a British corporation

Filed Oct. 28, 1968, Ser. No. 771,194
Claims priority, application Great Britain, Nov. 1, 1967, 49,679/67
Int. Cl. F26b 5/06
U.S. Cl. 34—5 9 Claims

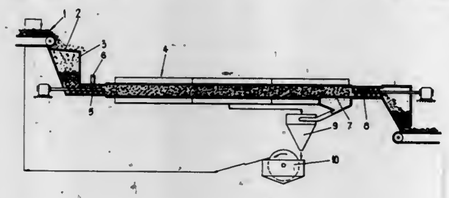


A method of drying specimens under isothermal conditions in which receptables containing the specimens are uniformly heated to a predetermined temperature, the receptacles are partially evacuated and the total pressure in the receptacles is varied to maintain the loss of heat from the specimens due to evaporative cooling substantially equal to the rate at which heat is supplied to the specimen. When the desiccation of the specimen is completed, the receptacles are evacuated to a high vacuum and hermeticaly sealed.

3,552,031
SEPARATION OF WATER FROM SOLID ORGANIC MATERIALS

David Gordon Evans, Ringwood, Victoria, and Stanley Robert Slemon, Mount Waverley, Victoria, Australia, assignors to The University of Melbourne, Melbourne, Victoria, Australia, a body corporate

Filed Dec. 30, 1968, Ser. No. 787,865
Claims priority, application Australia, Jan. 26, 1968, 32,607/68
Int. Cl. F26b 3/00
U.S. Cl. 34—9 4 Claims

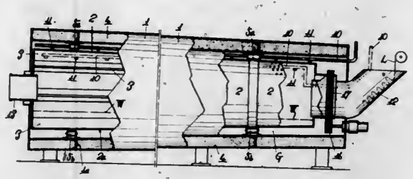


Water is separated from solid organic material, for example brown coal as mined by treatment in the presence of a fluid medium at an elevated temperature and a pressure exceeding the saturation pressure but below 5000 p.s.i.

3,552,032
METHOD AND EQUIPMENT FOR RELAX SETTING

Kiyoshi Otaka, 187 Gyogazuka Ikenoue, Itami, Hyogo Prefecture, Japan

Filed May 14, 1968, Ser. No. 729,070
Claims priority, application Japan, May 18, 1967, 42/31,609
Int. Cl. F26b 3/00
U.S. Cl. 34—9 5 Claims

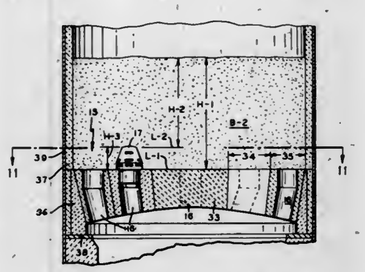


A method and equipment for relax setting and creping, wherein fabric is treated within a rotating drum which is heated by dry hot wind or steam, and the fabric thus treated is free from such defects as creasing, unlevel creping, etc., that are usually experienced with the treatment by the washer which uses hot water.

3,552,033
DIFFUSION NOZZLE FOR SOLIDS FLUIDIZING APPARATUS

Andrew B. Steever, Old Greenwich, and Richard E. Svencer, Norwalk, Conn., assignors to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware

Filed Sept. 3, 1968, Ser. No. 756,927
Int. Cl. F26b 17/10
U.S. Cl. 34—57 11 Claims



Improved nonsifting high capacity nozzle for diffusion of a fluidizing gas upwardly through the constriction plate of a solids fluidizing apparatus, featuring a nozzle head having a radially directed gas passages in multilevel arrangement, with internal graduated flow constricting means so constructed and arranged that pressure differentials between the passage of the upper level and the passage of the lower level are compensated for.

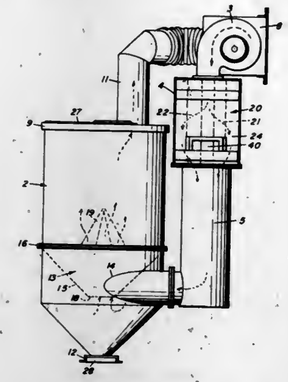
3,552,034
PARTICLE DRYING APPARATUS

Ernest N. May, Jr., Washington, D.C., assignor to Universal Dynamics Corporation, Woodbridge, Va., a corporation of Virginia

Filed June 17, 1968, Ser. No. 737,632
Int. Cl. F26b 21/04
U.S. Cl. 34—80 1 Claim

An apparatus for drying particulate material comprising a vertical drying chamber having a gas inlet and outlet and a particle inlet and outlet, a desiccant chamber

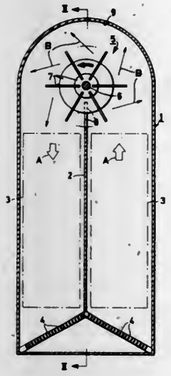
housing removable desiccant cartridges, and means for circulating drying gas in the apparatus. A gas-solid separator, such as a filter or cyclone may be provided to clean the recirculating gas before it enters the desiccant chamber to be dried.



3,552,035
APPARATUS FOR TREATING GOODS WITH A HEATED GASEOUS MEDIUM

Gosta Robert Olin, Saltsjo-Duvnas, Sweden, assignor to Norrmalms Industrier Aktiebolag, Saltsjo-Duvnas, Sweden, a Swedish joint-stock company

Filed Apr. 16, 1969, Ser. No. 816,569
Claims priority, application Sweden, Apr. 29, 1968, 5,770/68
Int. Cl. F26b 21/06
U.S. Cl. 34—191 7 Claims

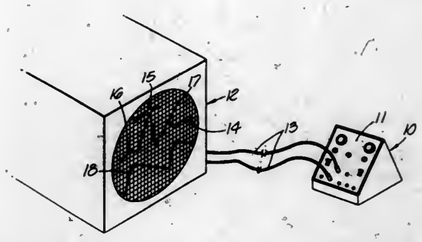


An apparatus for treating goods with a heated gaseous medium includes at least one compartment for receiving the goods to be treated and a reversible blower unit for circulating the medium therethrough, and the blower unit of the apparatus comprises a reversible rotor having one or more radial impellers, and a stationary, symmetrical casing surrounding the rotor and having a pair of circumferentially spaced openings communicating with the goods receiving compartment, there being no rotary or otherwise movable valve means co-operating with the rotor for directing the medium flow to or from the same and the direction of medium flow through the compartment being solely determined by the selected direction of rotation of the rotor itself.

3,552,036
ECG AND BLOOD PRESSURE SIGNALS SIMULATOR

Leo M. Mahler, Ventura County, Calif., assignor to Statham Instruments, Inc., Oxnard, Calif., a corporation of California

Filed Nov. 1, 1968, Ser. No. 772,648
Int. Cl. G09b 9/00
U.S. Cl. 35—17 7 Claims

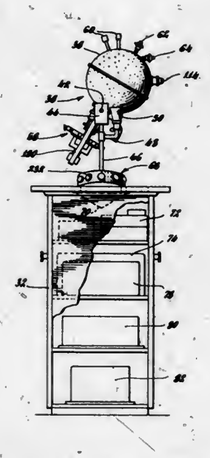


Pulse-generating and shaping circuits generate a composite output signal simulating an ECG signal for display on cathode-ray presentation equipment. The circuits are selectively controllable to provide the QRS, P and T waves of individually prescribed amplitudes and variable relative locations along the X-axis. The QRS wave may be made to extend either positively in the Y direction, or inverted to extend negatively. A further aspect is the provision of additional pulse signal generating circuitry for producing a pulse train representative of blood pressure as measured within the aorta.

3,552,037
PRE-PROGRAMMED PLANETARIUMS

Philip Stern, Fairfield, Conn., assignor to Planetariums Unlimited, Inc., Holbrook, N.Y.

Filed May 19, 1966, Ser. No. 551,366
Int. Cl. G09b 27/06
U.S. Cl. 35—42.5 10 Claims



A pre-programmed planetarium controlled by a synchronized timing track on a tape recorder. Planetarium lectures for the planetarium and time signals synchronized with the lectures are recorded on magnetic tape. The signals actuate a stepping switch and produce sequential energization of various functions of the planetarium. A

plurality of individual start pointers are fixedly mounted to the star projector of the planetarium. Each has an individually adjustable means for focusing a target image at or near a star to be located. The star pointers are connected to a stepping switch which is actuated at preselected intervals by time signals from the tape recorder.

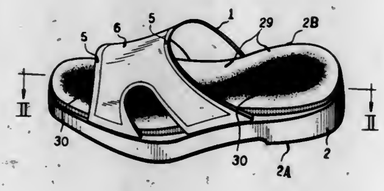
ERRATUM

For Class 35—60 see:
Patent No. 3,552,042

3,552,038
STERILIZED FOOTWEAR
Rune Edberg, Orebro, Sweden, assignor to Arbesko Aktiebolag, Orebro, Sweden
No Drawing. Filed Sept. 30, 1968, Ser. No. 763,956
Claims priority, application Switzerland, Dec. 11, 1967, 16,952/67
Int. Cl. A43b *00/00*
U.S. Cl. 36—2.5 **6 Claims**

Footwear such as a shoe has a wooden sole to which is secured an upper made of a fabric coated with emulsified polyvinylchloride containing a softening agent and a stabilizing agent. Such footwear is capable of being repeatedly sterilized for a period between 15 and 60 minutes and at a temperature between 100° C. and 150° C. without substantially changing its shape, and is hence particularly suitable for use in an environment requiring the use of sterilized footwear.

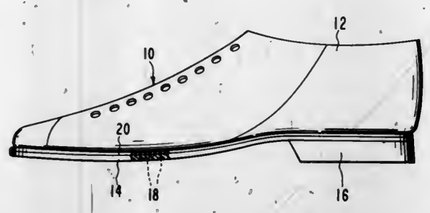
3,552,039
SANDAL
Tatsuo Fukuoka, 25, 4-ban, 2-chome, Shin-Minami Fukushima, Tokushima, Tokushima Prefecture, Japan
Filed Oct. 24, 1968, Ser. No. 770,324
Claims priority, application Japan, Nov. 8, 1967, 42/94,522
Int. Cl. A43b *3/10, 13/06*
U.S. Cl. 36—11.5 **13 Claims**



A sandal molded from synthetic resin material having a main body providing a sole, and a band extending between opposite sides of the sole. The band has an upper expanded portion adjacent each edge and a recess in each expanded portion facing each other. A split-mold is provided including protrusions on the inner walls inclined towards each other for positioning a band cover therebetween.

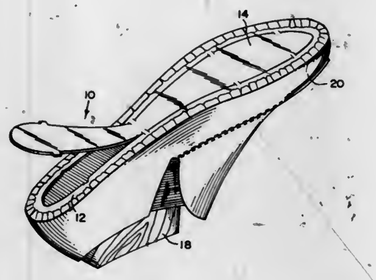
3,552,040
BOWLING SHOE
Leon B. Welco and Jack J. Blondolillo, Gilroy, and Philip Van Arnam, Los Gatos, Calif., assignors to Smoothslide Corp., San Jose, Calif., a corporation of California
Filed Oct. 9, 1968, Ser. No. 766,219
Int. Cl. A43b *13/12*
U.S. Cl. 36—30 **1 Claim**

A bowling shoe having an improved sole of fluorocarbon material permitting the wearer to approach the foul line of a bowling lane properly notwithstanding the presence of foreign matter on the sole or the approach. The sole may be put on the shoe when it is being made



or can be applied to the sole of an existing shoe. The sole is of a size and at a location such that it will provide the foot support at the sole portion of the shoe.

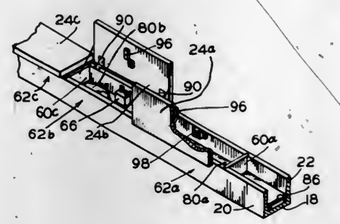
3,552,041
CROSS-LINKED RAND INSOLE AND SHOE
Charles F. Batchelder, Milton, and Jerome A. Rubico, Boston, Mass., assignors to Batchelder-Rubico, Inc., Boston, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 671,727, Sept. 29, 1967, which is a division of application Ser. No. 310,029, Sept. 19, 1963. This application Nov. 6, 1969, Ser. No. 871,625
Int. Cl. A43b *13/38*
U.S. Cl. 36—43 **12 Claims**



A cross-linked rand insole and shoe incorporating the same. The cross-linked rand insole comprises a peripheral rand portion and a central, core portion which are interconnected by a plurality of frangible links. After lasting the upper and its components to the rand portion of the insole, the core portion is removed by breaking the frangible links. Thereafter, conventional shoemaking operations are performed on the lasted upper to produce a finished shoe.

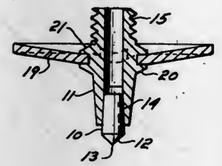
3,552,042
EQUIPMENT UNIT
Eli Rabineau, 78 Stoneleigh Road, Scarsdale, N.Y. 10583
Filed Apr. 14, 1967, Ser. No. 630,947
Int. Cl. A47b *47/00, 41/00*
U.S. Cl. 35—60 **3 Claims**

A trough like cabinet adapted to receive the wiring, controls, headsets, and other equipment required to place a number of students in communication with a teacher and a console in a classroom environment; a plurality of such cabinets being adapted for disposition within a classroom at a level below normal desk height but above the floor. Each cabinet is divided into sections, one for each student, with each section having a hinged cover; the covers opening alternately to each side of the cabinet and being locked in their closed positions by a locking system con-



trolled from the console. Each cabinet section has a readily removable floor spaced from hte cabinet bottom to form a channel within which the wiring may be placed; the elements dividing the cabinet into sections also being readily removable.

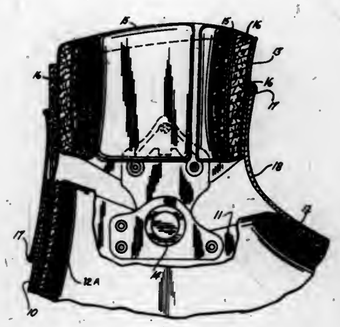
3,552,043
WEAR-RESISTING SPIKES FOR SHOES
Louis J. Moffa, 224 Garden Ave., Horsham, Pa. 19044
Filed May 1, 1969, Ser. No. 820,818
Int. Cl. A43c *15/00*
U.S. Cl. 36—67 **2 Claims**



A tungsten carbide small spike is enclosed and secured in a metal jacket of softer and less hard material than the spike but with the spike projecting out of the jacket. This jacket has an externally threaded upper end portion for reception in the usual internally threaded metal insert commonly found in golf shoes. A usual dished flange around a mid-portion of said jacket limits the degree to which the jacket threaded upper end can be inserted into an insert in a usual golf shoe.

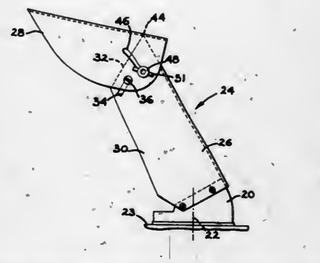
3,552,044
CONFORMABLE PAD FILLED WITH ELASTOMERIC PARTICLES
Robert W. Wiele, Minneapolis, Minn., assignor, by mesne assignments, to Sports Technology, Inc., Eden Prairie, Minn., a corporation of Delaware
Continuation-in-part of application Ser. No. 695,167, Jan. 2, 1968. This application Dec. 30, 1968, Ser. No. 787,862
Int. Cl. A63f *5/00;* **A43b**
U.S. Cl. 36—71 **14 Claims**

A pad which will conform to irregular objects, such as portions of the human body, relatively quickly and which is filled with elastomeric particles coated with a thin layer of a lubricant. The elastomeric particles are preferably in the range of 1/16–¼ inch in major dimension and upon load application flow readily at first and later act much like an open cell foam material as the particles



redistribute between the padded surface and the supporting surface toward a uniform load distribution.

3,552,045
DISCHARGE CHUTE FOR SNOW CASTER
Walter F. Fieber, Saukville, Wis., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Sept. 18, 1968, Ser. No. 760,741
Int. Cl. E01h *5/00*
U.S. Cl. 37—43 **3 Claims**

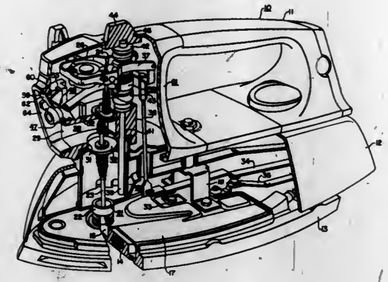


A pivot stud and a locking stud interconnect two generally U-shaped conduit sections. The pivot stud operates in a linear slot, the locking stud operates in a curvilinear slot, and the studs are fixed relative to each other. The slots are so formed that one section can be angularly adjusted and locked, relative to the other, through a range of positions in which close spacing is maintained between the exterior surface of one conduit section and the interior surface of the other section to minimize leakage.

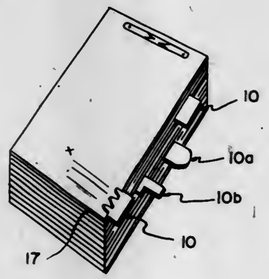
3,552,046
SPRAY MECHANISM FOR IRONS
Clarence G. Phifer, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 16, 1968, Ser. No. 759,993
Int. Cl. D06f *75/06*
U.S. Cl. 38—77.5 **9 Claims**

Spray mechanism for a fabric conditioning device such as an iron. The mechanism is characterized by the provision of a nozzle which is manually adjustable to provide more than one spray pattern and to also provide spray

patterns which are widely dispersed to thereby effect greater ironing efficiency. The mechanism is further characterized in that the nozzle can be installed without tools and it serves to mount a trim member to the iron handle.



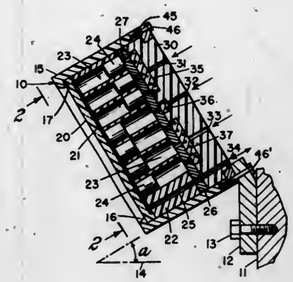
3,552,047
MOBILE INDICIAL DEVICE
Rowena R. Dalziel, 503 E. South St., Geneseo, Ill. 61254
Filed Aug. 20, 1968, Ser. No. 753,963
Int. Cl. G09f *3/16*
U.S. Cl. 40—23 **8 Claims**



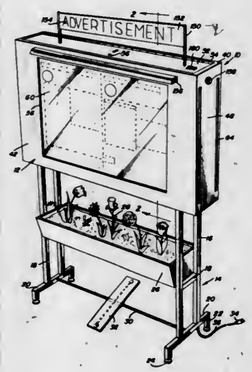
A mobile indicial device is disclosed herein which has a body, gripping tangs, a friction gripping surface and is most appropriately utilized as a detachable marker for documents and the like. The device is shown in conjunction with documents to show the best use thereof.

3,552,048
DISPLAY DEVICE
Robert F. O'Keefe, Trumbull, Conn., assignor to Pitney-Bowes, Inc., Stamford, Conn., a corporation of Delaware
Filed July 1, 1968, Ser. No. 741,598
Int. Cl. G09f *11/00*
U.S. Cl. 40—28 **8 Claims**

A fluid operated display device wherein a 7 x 5 matrix of movable display elements are selectively moved by fluid pressure to forward display positions and rearward invisible positions. Each fluid operated display element is magnetically retained in its retracted position and is similarly yieldably retained in its forward display portion either by the action of gravity or by another magnetic means.



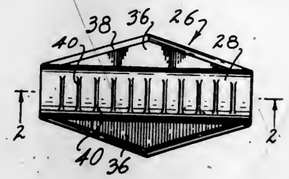
3,552,049
TRAVELLING BELT DISPLAY
Allen M. Foote, Flat Rock, N.C., assignor of fifty percent to Ted L. Somerville, Atlanta, Ga.
Filed Jan. 4, 1968, Ser. No. 695,664
Int. Cl. G09f *11/28*
U.S. Cl. 40—32 **7 Claims**



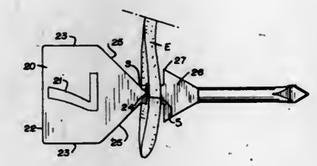
A display machine employing an endless belt as a carrier for various messages which can be printed, drawn or otherwise associated with the belt for movement past a viewing area for observation. The travelling belt may be illuminated and stopped at a desired position by a viewer operated switch. The machine includes a novel mechanism for moving the rollers over which the belt is entrained relative to each other for enabling removal of the belt and also to retain the belt in taut condition.

3,552,050
KNOCKDOWN FRAME FOR PICTURES OR THE LIKE
Jack M. Marateck, New York, N.Y. (785 Mace Ave., Bronx, N.Y. 10467)
Filed June 23, 1969, Ser. No. 835,462
Int. Cl. G09f *1/12*
U.S. Cl. 40—155 **19 Claims**

A picture frame assembly formed of sides having juxtaposed mitered ends, each mitered end having an aperture bored therethrough at right angles to its mitered face, each aperture having an enlarged bore end portion opening into its mitered face; a coupling element disposed in the enlarged bore portions of the apertures of juxtaposed frame sides; each coupling element threaded at each end and engaged at each end by a threaded member inserted through the other end of each aperture into which it is inserted.



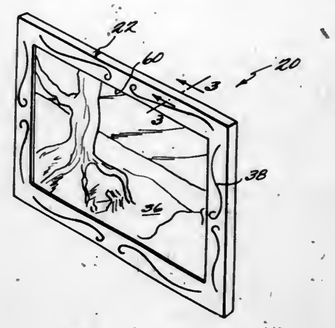
3,552,051
EAR TAG
Eugene B. Ritchey, Rte. 2, Box 43, Fort Lupton, Colo. 80621
Continuation of application Ser. No. 503,150, Oct. 23, 1965. This application May 16, 1969, Ser. No. 859,218
Int. Cl. G09f *3/04*
U.S. Cl. 40—301 **10 Claims**



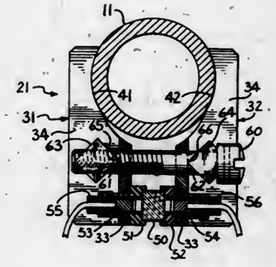
The invention is a combination marking tag for animals and an insertion tool for inserting the tag into the ear or other skin area of an animal, and comprises a tag having an arrow-shaped head connected by a narrow neck portion to a marking panel, and as an insertion tool a hollow tube having one end split and flattened with sharpened edges for cutting a slit in the animal's skin, the tag being connected to the rear end of the tool by folding the shoulders of the arrow and inserting the head with the edges folded into the tube end, the tag being inserted in the animal's skin by cutting a slit in the skin with the cutting end of the tool and passing the tool through the slit so that the tag is dislodged from the tool and locked in the skin with the narrow neck portion in the slit.

3,552,052
PICTURE FRAME
Cecil G. Allen, 1122 E. Jefferson, Harlingen, Tex. 78550
Filed Feb. 5, 1969, Ser. No. 796,734
Int. Cl. G09f *1/12*
U.S. Cl. 40—156 **13 Claims**

A frame for mounting and displaying pictures and the like comprising a unitary frame cover having a reinforcing member therein filled with a foam plastic and provided with two pairs of opposed retaining flaps secured to the rear face of the frame cover with one pair of flaps overlapping and being interconnected by adjustable locking clips so that pictures of varying thickness can be mounted within the frame. In addition, a detachable rear cover of stretchable material is provided for the back of the frame to cover the retaining flaps.



3,552,053
MEANS FOR COUNTING SHOTS FIRED FROM A GUN
Kenneth W. Jarvis, Old Lyme, Conn., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware
Filed Feb. 24, 1969, Ser. No. 801,421
Int. Cl. F41c *27/00*
U.S. Cl. 42—1 **11 Claims**

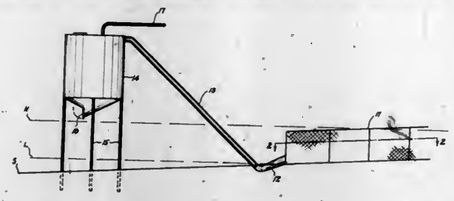


A device for counting shots fired by a gun consisting of a frame clamped to the gun barrel including a piezoelectric crystal which is stressed by reason of the transient radial expansion of the barrel to produce electrical output pulses which are sensed by a threshold detector and counted in a register.

3,552,054
FISH TRAP
Edward Norman Hansen, 19 Egham Road, Victoria Park, Western Australia, Australia
Filed Oct. 16, 1968, Ser. No. 768,136
Int. Cl. A01k *79/00*
U.S. Cl. 43—6.5 **3 Claims**

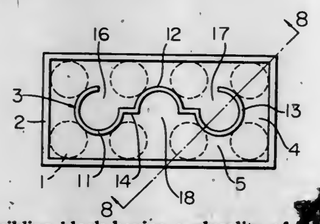
A trapping net arranged to be at least partially submerged at high tide, a collecting tank adapted to be filled with water, the interior of the tank communicating with the space defined by the net by way of a conduit arranged

to be filled with water, the conduit being of such dimensions as to allow the passage of fish from the net to the



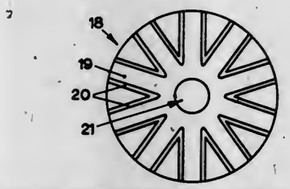
tank, the fish being caused to enter the conduit when the water level in the net drops with the tide.

3,552,055
TOY BUILDING BLOCKS
Takashi Matsubayashi and Hirozo Matsubayashi, Habikino-shi, Japan, assignors to Nintendo Playing Card Co., Ltd., Kyoto, Japan, a Japanese body corporate
Filed Dec. 11, 1968, Ser. No. 782,871
Claims priority, application Japan, Dec. 16, 1967, 42/105,450
Int. Cl. A63h *33/10*
U.S. Cl. 46—26 **3 Claims**



A toy building block having a plurality of cylindrical projections formed on one side and an elastic clamping projection on the opposite side thereof. In assembling such blocks said elastic clamping projection of one block engages with the cylindrical projections of another block so as to be combined to form one piece.

3,552,056
CONNECTING ELEMENT FOR CONNECTING SLOTTED STRUCTURAL ELEMENTS IN TOY CONSTRUCTION KITS
Kevin F. Meates, 6 Clifford Ave., Christchurch 1, South Island, New Zealand
Filed Dec. 13, 1967, Ser. No. 690,327
Claims priority, application New Zealand, Oct. 19, 1967, 150,420
Int. Cl. A63h *33/10*
U.S. Cl. 46—29 **3 Claims**



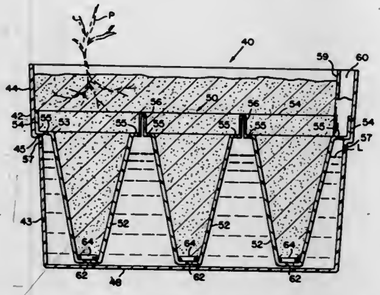
Connecting means adapted to engage frictionally in slots formed in the ends of elongated rectangular structural elements provided in the toy construction kits, so as to interconnect two, three, four, or up to ten such structural elements. Circular disc connectors may have radial slots bridged by cubiform portions for joining the elongated members in either radical or perpendicular relation to the disc.

3,552,057
FIGURE TOY
Yolande Marie Antoinette de Perthuis de Laillevault, 35 Rue de la Faisanderie, Paris 16, France
Filed May 29, 1968, Ser. No. 733,023
Int. Cl. A63h *3/00*
U.S. Cl. 46—151 **4 Claims**



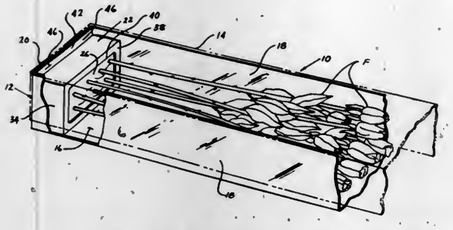
A figure toy has a skeleton or armature of pliable filamentary material such as flexible cord or bendable wire. On the armature is a plurality of laminae, which may be separate discs but which preferably are formed by a helix of flexible material such as cloth or plastic strip. The laminae are preferably pleated so as to be gathered about the armature.

3,552,058
PLANTER WITH RESERVOIR
James C. Fici, 310 South Drive, Rochester, N.Y. 14612
Filed Apr. 22, 1968, Ser. No. 723,025
Int. Cl. A01g *27/00*
U.S. Cl. 47—38 **2 Claims**



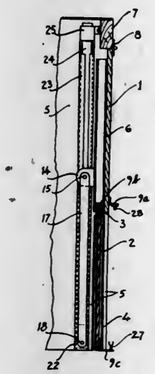
A container has an internal shoulder between its top and bottom separating the upper soil-holding section of the container from the lower, reservoir section thereof. At least one, inverted, truncated-conical receptacle is removably seated on the shoulder to suppert the lower end of the receptacle just above the bottom of the container. A duct through the upper section of the container permits delivering water to the reservoir section, beneath the receptacle. The water seeps through a hole in the bottom of the receptacle, so that when the receptacle and the upper section are filled with soil, the soil in the receptacle is saturated to the level of the water in the reservoir, but the soil in the upper section draws water from the saturated soil by capillary action only as needed, therefore protecting any roots planted therein.

3,552,059
CUT FLOWER PACKAGE
Burt D. Moore, Dayton, Ohio, assignor to Moore Paper Boxes, Incorporated, Dayton, Ohio, a corporation of Ohio
Filed Dec. 7, 1967, Ser. No. 688,817
Int. Cl. A47g *7/02*
U.S. Cl. 47—41.12 **11 Claims**



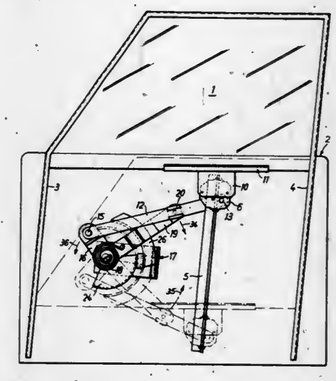
A water-filled, water-retentive material packaged in a readily-puncturable plastic film and in a cardboard box having a large opening therein is stapled to one end of a cardboard cut flower box. Cut flowers are individually placed in the cut flower box with their cut stems punctured through the plastic film and lodged in the water-filled material to maintain the flower stems spaced and wetted. The plastic film forms a seal around the flower stems substantially preventing escape of water from the flower base.

3,552,060
DOORS
Patrick Timothy Boyle, 27 Clune Road, Finglas, Dublin 11, Ireland
Filed Nov. 29, 1968, Ser. No. 779,717
Claims priority, application Ireland, Nov. 28, 1967, 905/67
Int. Cl. E05d *15/22*
U.S. Cl. 49—202 **13 Claims**



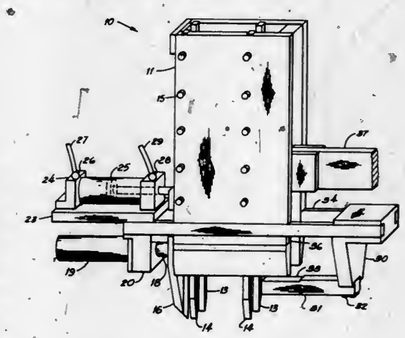
A door construction comprising a pair of door panels, one of said door panels being hinged to a door frame and having guide members secured to one side thereof for containing a second door panel which is slidable with reference to said guide members, the second door panel being also slidable, in the closed position of the hinged door panel, in guide members secured to the door frame, the arrangement being such that, when the slidable door panel is located in the guide members secured to the door frame, the slidable door panel prevents swinging movement of the hinged door panel, whereas, upon sliding movement of the slidable door panel into the guide members secured to the hinged door panel and out of the guide members secured to the door frame, both door panels are movable as a unit about the hinged edge of the hinged door panel.

3,552,061
DEVICE FOR OPENING AND CLOSING A WINDOW
Friedrich Hermann, Weisskirchen, Offenbach, Germany, assignor to Firma H. T. Golde G.m.b.H., Frankfurt am Main, Germany
Filed Apr. 16, 1969, Ser. No. 816,496
Claims priority, application Germany, Apr. 16, 1968, 1,759,276
Int. Cl. E05f *11/44*
U.S. Cl. 49—351 **13 Claims**



A device for opening and closing a window, such as in a vehicle door, is comprised of an arm for moving the window. A guide arm and an actuating arm are pivotally mounted on a stationary collar pin and are in engagement with means for rotating them in opposite directions about the pin. The guide arm is pivotally connected to the end of the arm for moving the window and a slide member connects the actuating arm to the arm so that the end of the arm connected to the window travels in a substantially rectilinear path as it moves the window.

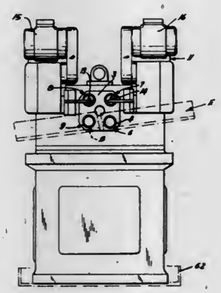
3,552,062
APPARATUS FOR SUPPLYING PARTS
Ithamer M. Brown, P.O. Box 144, Kirklin, Ind. 46050
Filed Sept. 18, 1968, Ser. No. 760,517
Int. Cl. B24b *47/02*
U.S. Cl. 51—215 **7 Claims**



Apparatus for automatically supplying parts to a machine consisting of a magazine to receive and hold the

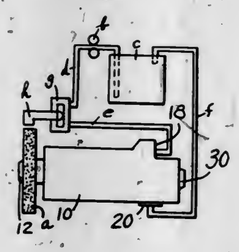
parts with guides along which the parts move, means for releasing a part upon a signal, and means for taking a part which has been released and supplying it to the machine.

3,552,063
APPARATUS FOR THE GRINDING AND HONING OF ANNULAR BODIES
Ernst Thielenhaus, Wuppertal-Elberfeld, Germany, assignor to Maschinenfabrik Ernst Thielenhaus, Wuppertal-Barmen, Germany, a corporation of Germany
Filed Mar. 26, 1969, Ser. No. 810,529
Claims priority, application Germany, Mar. 28, 1968, 1,752,064
Int. Cl. B24b 7/00
U.S. Cl. 51—3 10 Claims



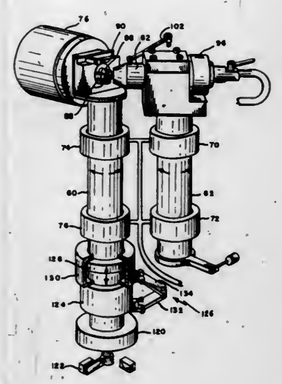
A system for the internal machining of rings, wherein spindles are juxtaposed with a turret plate and register with seats in the latter for fluid centering of the rings with respect to the spindles. The tools engage the workpieces from the opposite side of the turret plate.

3,552,064
SPINDLE ASSEMBLIES FOR GRINDING WHEELS
Peter Alan Mason, Kenilworth, England, assignor to Wickman Machine Tool Sales Limited, Coventry, England
Filed Nov. 14, 1967, Ser. No. 682,778
Claims priority, application Great Britain, Nov. 18, 1966, 51,780/66
Int. Cl. B24b 7/00, 5/00, 53/00
U.S. Cl. 51—5 2 Claims



A grinding wheel spindle assembly comprises an hydraulic motor arranged to drive a rotatable part for carrying a grinding wheel, control means whereby the flow of fluid is varied as dressing of the wheel takes place, and therefore changes in its diameter, such flow changes varying the speed of rotation of said part to maintain the peripheral speed substantially constant.

3,552,065
BEARING RACE GROOVE GRINDER
Ernest B. Dane, Jr., Belmont, Mass., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 29, 1969, Ser. No. 820,176
Int. Cl. B24b 7/00
U.S. Cl. 51—5 9 Claims



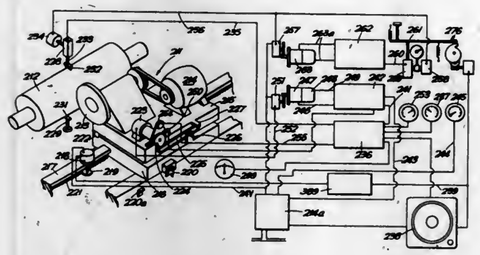
The invention includes an original embodiment and an improved modification of the original device. In the first modification three vertical shafts are carried on a base and each is provided with pressurized hydraulic bearings which control the motions of the three shafts carrying respectively the workhead, the grinding head and the dressing tool. For dressing, the grinding tool swings about its vertical axis for contact with the dressing tool. In the improved device the third shaft carrying the dressing tool is eliminated and the dressing tool is placed on the workhead in a vertical line above the center of the workpiece, so that the dressing tool and workpiece are moved into and out of operative position with respect to the grinding tool by raising and lowering the work shaft. Both the work shaft and the grinding shaft are mounted to provide oscillation about vertical axes. The radius of oscillation corresponds to the radius of curvature sought in the race groove being ground.

A fail safe device prevents vertical movement of the work shaft as long as the grinding tool is still in the race.

3,552,066
GRINDING MACHINES
Robert Gladstone, Weybridge, Surrey, England, assignor to Wiggins Teape Research & Development Limited, London, England, a British company
Filed Feb. 5, 1969, Ser. No. 796,705
Int. Cl. B24b 5/04
U.S. Cl. 51—49 6 Claims

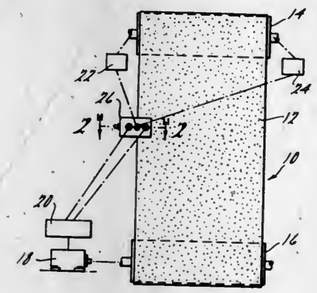
A grinding machine comprises a grinding wheel for grinding a circumferential surface of a workpiece of circular cross-section such as a steel roll; traversing means adapted to effect relative longitudinal traversing movement in the direction of the axis of the workpiece, between the grinding wheel and the workpiece; rotary means for rotating the workpiece while it is being ground; gauging means for determining, while the grinding wheel is grinding the workpiece, any difference between a datum value and the diameter of the particular circumference of the workpiece on which the grinding wheel is acting; means, controlled by the gauging means, for adjusting the position of the grinding wheel in a sense to bring said

difference to a predetermined value; a movable datum member providing said datum value; a cam rotation of which is adapted to effect adjustment of the position of said datum member, thereby adjusting the datum value; control means, actuated by the traversing means, and



controlling the cam driving means in a manner to relate the rotational position of the cam to the position of the traversing means, the control means being adjustable in a manner to vary the relation between the rotational position of the cam and the position of the traversing means.

3,552,067
ABRASIVE BELT DETECTOR
Witold C. Przygocki, Southfield, Mich., assignor to Murray-Way Corporation, Birmingham, Mich., a corporation of Michigan
Filed Jan. 17, 1969, Ser. No. 791,960
Int. Cl. B24b 21/18
U.S. Cl. 51—135 8 Claims

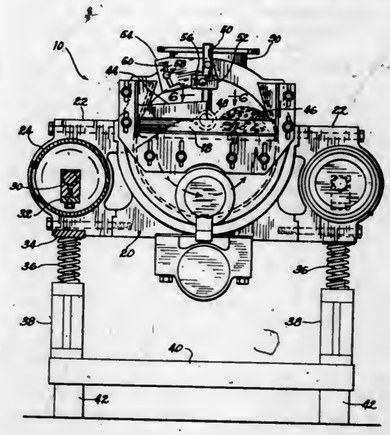


Apparatus for use with an endless abrasive belt operable from air flow to automatically oscillate the belt transversely and to provide detection for broken belt or overtravel to automatically stop the movement of the belt.

3,552,068
VIBRATOR CONSTRUCTION FOR THE SURFACE TREATMENT OF ARTICLES
Harvey G. Van Fossen, Mishawaka, Ind., assignor to The Wheelabrator Corporation, Mishawaka, Ind., a corporation of Delaware
Filed Sept. 9, 1968, Ser. No. 758,382
Int. Cl. B24b 31/06; B02c 17/08
U.S. Cl. 51—163 10 Claims

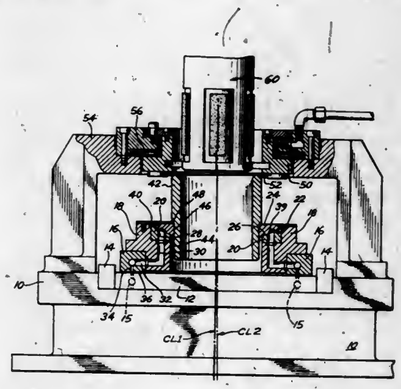
A vibrator construction of the type wherein articles and finishing media are disposed in a container which is

associated with a movable supporting structure which is resiliently mounted on a base structure. Eccentric shafts are mounted inside housings which are attached to the supporting structure so that driving of the shafts will impart vibrations to the container for the articles and media whereby intimate contact can be achieved. The eccentric



shafts are laterally offset with respect to the axis of the container with one shaft housing being secured to the supporting structure on each side of the container, and with the axis of the shafts being in about the same plane as the center of gravity of the container holding the articles and media. A common drive motor is provided for driving both eccentric shafts.

3,552,069
FLOATING SEAT STRUCTURE FOR HONING MACHINES AND THE LIKE
Joseph L. Butler, Centerville, Ind., assignor to National Automatic Tool Company, Inc., Richmond, Ind., a corporation of Indiana
Filed Aug. 4, 1967, Ser. No. 658,492
Int. Cl. B24b 49/00, 9/00, 19/00
U.S. Cl. 51—165 7 Claims



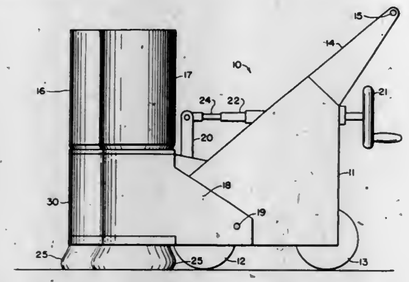
A floating seat structure for honing machines, drilling machines, reaming machines and the like, which coacts

with a workpiece and is floated on a film of fluid under pressure so as to readily seek an aligned position with respect to a tool before a workpiece clamping means is operated.

3,552,070
TORQUE LIMITER

Peter F. Reiss, Bayside, N.Y., assignor to Oztec Industries, Inc., a corporation of New York

Filed Dec. 16, 1968, Ser. No. 783,938
Int. Cl. B24b *23/00, 25/00*
U.S. Cl. 51—177 11 Claims



In a floor grinder, a motor drives a hollow vertical shaft. A lower shaft telescopes into the hollow shaft, is spring loaded downward, and has a grinding plate fixed to its lower projecting end. The hollow shaft has at least one spiral drum cam cutout formed in it and the lower shaft has a cam follower extending into the drum cam cutout so that excessive torque imposed by frictional resistance encountered by the grinding plate causes the drum cam cutout to raise the cam follower and the lower shaft and lift the grinding plate thereby limiting torque.

3,552,071
PROCESS FOR POLISHING CRYSTALLINE SILICON

Richard P. Albanese, Milford, and Glenn H. McIntyre, Jr., Pennington, N.J., assignors to Tizon Chemical Corporation, Flemington, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 30, 1967, Ser. No. 679,248
Int. Cl. B24b *7/22, 3/14*
U.S. Cl. 51—281 7 Claims

A process is provided for polishing crystalline silicon employing an aqueous polishing slurry containing from about 0.25 to about 50% of an alkaline earth metal hydroxide of which from about 0.05 to about 50% is undissolved and having a pH of at least 9. Examples of such polishing slurries include aqueous slurries of calcium hydroxide and strontium hydroxide.

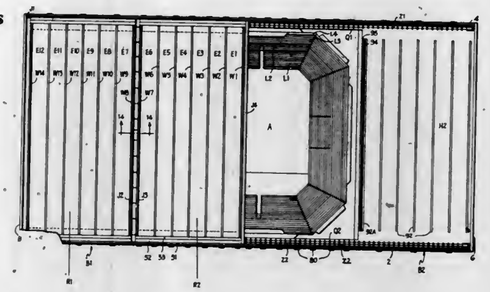
The aqueous slurry of the alkaline earth metal hydroxide can be formed by mixing the alkaline earth metal hydroxide and water, or by forming the hydroxide in situ in water, e.g. by reacting an alkaline earth metal compound which reacts in an aqueous system with a base to produce the alkaline earth metal hydroxide.

3,552,072
METHOD AND APPARATUS FOR HOUSING AN ENCLOSED AREA WITH AERO-TRUSSED STRUCTURES

James P. O'Connell, 3 Rosemont St., Malden, Mass. 02148

Filed Oct. 11, 1968, Ser. No. 766,754
Int. Cl. E04b *1/345, 7/16;* E04g *11/04*
U.S. Cl. 52—2 15 Claims

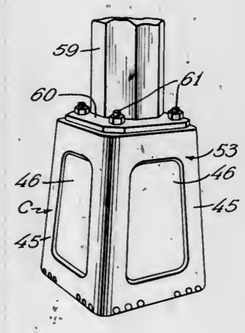
An improved building technique which utilizes a novel light-weight aero-trussed roof construction. The aero-trussed roof is embodied in one form in a stadium-type housing structure which encloses an arena area used for public entertainment. The housing structure includes spaced apart side wall which may have moveable roof sections of considerable magnitude and span adjustable on the side walls towards and away from one another to shelter or exposed the area as desired. The aero-trussed roof sections whether moveable or stationary are comprised by reinforced gas-filled bodies which are inflated from a suitable gas supply within the structure and novel power driven carriage means may be provided, where moveable roof sections are used, for rapidly advancing or retracting the gas-inflated sections in a position for sheltering or exposing the enclosed arena area as may be required.



3,552,073
BREAKAWAY LIGHTING STANDARD

Paul A. Millerbernd, Winsted, Minn. 55395

Filed Oct. 17, 1968, Ser. No. 768,478
Int. Cl. E02d *27/42*
U.S. Cl. 52—98 10 Claims



A breakaway lighting standard is provided including a base plate, and a standard base to which the light standard is supported. The standard base is formed of sheet material, and is anchored to the base plate with a series of spaced areas of attachment which will withstand normal stresses acting upon the standard, but which will successively shear when the standard base is struck by a vehicle, permitting the vehicle to continue movement to lessen damage to the vehicle and standard.

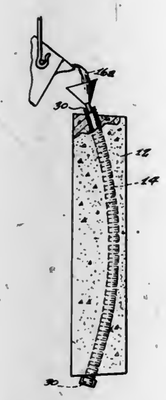
ERRATA

For Classes 52—181 and 52—211 see:
Patent Nos. 3,552,084 and 3,552,085

3,552,074
PRESTRESSED CONCRETE MEMBERS AND METHOD OF PRESTRESSING THE SAME

Leon Rajchman, 253 W. 73rd St., New York, N.Y. 10023

Filed Nov. 29, 1967, Ser. No. 686,461
Int. Cl. E04c *3/10*
U.S. Cl. 52—223 10 Claims

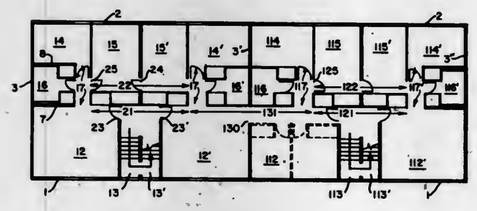


A concrete member comprised of a precast concrete mass with an inner, irregular surfaced opening therethrough, and having subsequently a molten metal poured thereinto, the metal upon cooling providing a contracting stress to the concrete.

3,552,075
DWELLING UNIT OF THE FIXED FLOOR-PLAN TYPE

Robert F. Crump, 1503 Thackeray Drive, Louisville, Ky. 40205

Filed May 28, 1969, Ser. No. 828,525
Int. Cl. E04h *1/00, 1/04*
U.S. Cl. 52—236 15 Claims



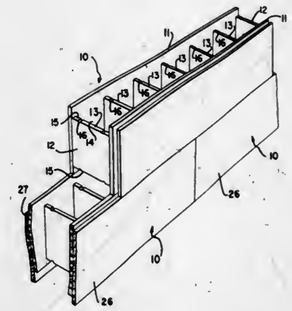
A dwelling unit of substantially fixed floor plan has front, rear and opposite side boundary walls enclosing a dwelling space embracing a peripheral area surrounding a rectangular center area. Fixed peripheral wall means in the peripheral area cooperate with said boundary walls to provide: along each front wall, a pair of front corner rooms separated by an access hall; along each rear wall, a pair of rear corner rooms separated by a pair of back rooms; and, along each side wall, an outer bathroom and an inner transversely-extending bathroom corridor, the bathroom separating and the corridor interconnecting adjacent front and rear corner rooms. Fixed center wall means in the center area provide a closet wall, extending longitudinally from one bathroom corridor to the other, and cooperate with said peripheral wall means to provide a pair of similarly-extending hall and center corridors, respectively extending along the front and back sides of the closet wall, the front-hall corridor passing through a pair of access doorways, one for each front corner room.

The foregoing dwelling unit provides one large apartment having a fixed floor plan, which embraces 6 rooms, 2 baths and an access hall. By installing a removable closure across the middle of the center corridor, said unit provides a pair of 3 room, 1 bath apartments, each accessible from the access hall. By locating that removable closure across either end of the center corridor, one apartment is reduced to 2 rooms, the other increased to 4 rooms.

3,552,076
CONCRETE FORM

Werner K. H. Gregori, East Oakville, Ontario, Canada, assignor to Roher-Bohm Limited, Nassau, Bahamas, a corporation of the Bahamas

Continuation-in-part of application Ser. No. 580,912, Sept. 21, 1966, which is a continuation-in-part of application Ser. No. 569,908, Aug. 3, 1966, now abandoned. This application Oct. 24, 1968, Ser. No. 770,233
Claims priority, application Canada, Mar. 22, 1966, 955,523
Int. Cl. E04b *2/20;* E04c *2/20*
U.S. Cl. 52—309 10 Claims



A self-supporting concrete form of rigid, low-density foamed plastic adapted to be left in place to provide insulation for a wall formed of a plurality of such forms which have been filled with concrete. The forms have vertical cavities extending therethrough and longitudinally extending channels so as to provide vertical columns of concrete interconnected by integral horizontal concrete beams.

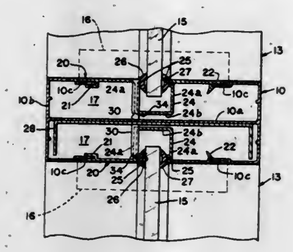
3,552,077
SPACER IN A MULLION WALL CONSTRUCTION

James W. Hemminger, Buchanan, Mich., assignor to American Metal Climax, Inc., New York, N.Y., a corporation of New York

Filed Apr. 14, 1969, Ser. No. 815,540
Int. Cl. E04b *2/62, 2/88;* E06b *1/18*
U.S. Cl. 52—393 2 Claims

There is provided a spacer for use with a wall construction of the general type having a hollow vertical mullion

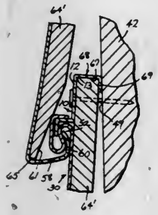
and interconnecting horizontal mullions or structural elements. The vertical mullion includes a filler having a glazing channel of generally U-shaped section formed therein. The spacer includes a longitudinally extending top cross bar and a longitudinally bifurcated downwardly depending bar of resilient material and adapted to snap over a leg over the glazing channel so as to prevent deflection of the filler section inwardly relative to the vertical mullion.



3,552,078
BUILDING SIDING

Lee H. Mattes, South Bend, Ind., assignor to Mastic Corporation, South Bend, Ind., a corporation of Indiana

Filed Sept. 16, 1968, Ser. No. 762,216
Int. Cl. E04d *1/00*
U.S. Cl. 52—520 5 Claims



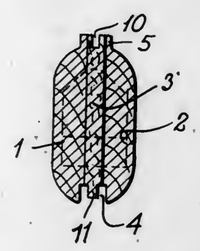
A building siding unit having an attachment strip which is adapted for securement to a building structure and which includes a forwardly extending retainer part which interlockingly and slidably engages a retainer means of a face panel to support said panel and to permit free relative longitudinal movement between the attachment strip and the panel.

3,552,079
LAMINATED TONGUE AND GROOVE BUILDING ELEMENT

Aage Mortensen, Hvidovre, Denmark, assignor to A/S V. Jeppesens Savvaerk, Soborg, Denmark

Filed Oct. 14, 1968, Ser. No. 767,425
Claims priority, application Denmark, Oct. 25, 1967, 5,323/67; Sweden, Nov. 8, 1967, 15,304/67
Int. Cl. E04b *1/10*; E04c *1/10, 2/24*
U.S. Cl. 52—593 4 Claims

A building element comprising a panel-shaped insulating material extending between two timber half-beams, the whole element being formed as a beam with one or more tongues and grooves and with the insulating material extending in the full height of the beam from the bottom of a groove or a surface between two tongues to the opposite edge of the beam, and an angle joint between two walls made of building elements having notches round a neck section for mutual connection of the elements.



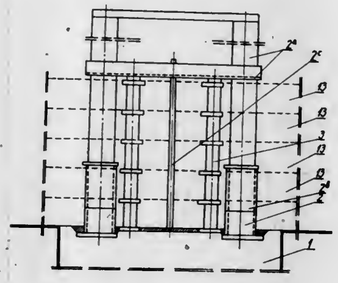
ERRATUM

For Class 52—618 see:
Patent No. 3,552,086

3,552,080
METHOD FOR ERECTING MULTISTORY BUILDINGS

Hristo Ivanov Gretchenliev and Gueorgui Stanoev Dimitrov, Sofia, Bulgaria, assignors to NISI, Sofia, Bulgaria

Filed Jan. 21, 1969, Ser. No. 792,465
Claims priority, application Bulgaria, Jan. 25, 1968, 9,298
Int. Cl. E04b *1/35*
U.S. Cl. 52—745 7 Claims

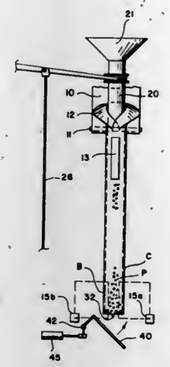


A method of erecting multistory structures in which a plurality of floor slabs and the roof slab are stacked above the foundation on the construction site and are coupled together for joint movement. Steel-support members extend through the stack and serve temporarily to retain the entire stack at each successive tier, whereby the lowermost slab is propped against these steel members, a column is inserted beneath the lowest slab, the lowest slab is detached from the stack and the remaining slabs eliminated to the next tier.

3,552,081
METHOD AND APPARATUS FOR PACKAGING WITH A MOVABLE MANDREL AND MOVABLE SEALING JAWS

William C. Leasure, Houston, Tex., assignor to Mira-Pak Inc., Houston, Tex.

Continuation-in-part of application Ser. No. 691,762, Dec. 19, 1967. This application June 24, 1968, Ser. No. 739,348
Int. Cl. B65b *51/30*
U.S. Cl. 53—28 12 Claims

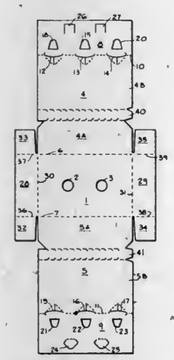


A method and an apparatus for packaging including reciprocating sealing jaws and a mandrel movable within a tubular length of material for assisting in flattening the end of the tubular length of material remote from the former.

3,552,082
METHOD FOR DISPLAYING AN ASSEMBLY OF LIKE ARTICLES

Sam B. Howard, Smyrna, Ga., assignor to The Mead Corporation, a corporation of Ohio

Filed Apr. 1, 1968, Ser. No. 717,567
Int. Cl. B65d *5/18, 5/54*
U.S. Cl. 53—32 1 Claim

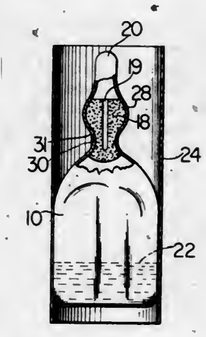


A combination transport and display device comprises a main panel, a pair of side walls foldably joined to side edges of the main panel and a pair of lap panels foldably joined to the edges of the side walls remote from the main panel and secured together, and panels foldably joined to the ends of the main panel, corner flaps adjoining the ends of the end panels to the adjacent areas of the side walls, the side walls being severable to form a tray-like structure including the main panel, the end panels and associated flaps together with the adjacent portions of the side walls. During formation of the article group, the articles are preferably arranged in a rectilinear relationship to each other and are inverted and the main panel is then disposed atop the bottoms of the articles during the formation of the article group. The device is then transported to a point of use or display and severance of the side walls follows inversion of the article group so that the articles are disposed upright and atop the main panel.

3,552,083
APPARATUS AND METHOD FOR STORING AND RELEASING A VOLATILE SUBSTANCE

Harold Willids Andersen, Oyster Bay, Harold W. Andersen, Laurel Hollow, and Charles H. Harrison, Oyster Bay Cove, N.Y., assignors to H. W. Andersen Products, Inc., Oyster Bay, N.Y., a corporation of New York

Original application Apr. 14, 1965, Ser. No. 448,090, now Patent No. 3,476,506, dated Nov. 4, 1969. Divided and this application Jan. 9, 1969, Ser. No. 790,100
Int. Cl. B65b *3/04*
U.S. Cl. 53—37 2 Claims

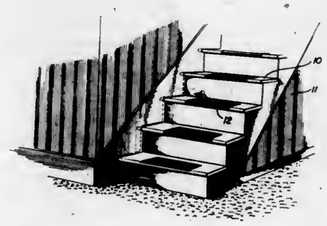


An ampule or the like having a material containing space and a spout connected through a restricted neck, a stopper in the neck being penetrated to place the material in the containing space and the spout being sealed after placement of the material.

3,552,084
STAIR TREAD

Louis A. Cormier, 42 Central St., Southbridge, Mass. 01550

Filed Oct. 11, 1968, Ser. No. 778,365
Int. Cl. E04f *11/16*
U.S. Cl. 52—181 5 Claims

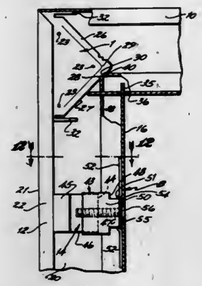


This invention relates to a stair tread and, more particularly, to a system for remodeling new or renovating worn stair treads which involves routing a recess in the stair and placing an inert in the recess.

3,552,085
MOUNTING ARRANGEMENT FOR METAL DOOR FRAMES

Harold L. Woodrum, West Chester, Ohio, assignor to The Steelcraft Manufacturing Company, Cincinnati, Ohio, a corporation of Ohio

Filed Feb. 20, 1969, Ser. No. 801,033
Int. Cl. E06b 1/04
U.S. Cl. 52—211 5 Claims

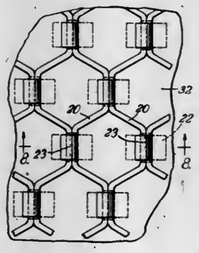


A sectional door frame of sheet metal construction, comprising a horizontal header and a pair of vertical jambs hingedly connected to the end of the header to facilitate installation of the frame, the frame members having mitered ends seated against one another upon installation of the frame in a door opening. The mitered ends of the jambs at opposite sides include triangular corner clips which interfit the mitered ends of the header to align the jambs and header upon installation. The sides of the triangular corner clips include notches engaged by the end portions of the header to lock the header and jambs in assembly, combined with pins which are driven in place to join the members in a positive manner at the corners. In addition, the jambs each include a clamp located near its upper end, the clamps being engaged against the opposite sides of the door opening and being adjustable to locate the frame, with the lower end of the jambs secured to a base anchor to facilitate installation and adjustment.

3,552,086
SANDWICH STRUCTURAL PANEL OF CELLULAR CORE TYPE

John W. Allen, Flossmoor, Ill., assignor to Stanray Corporation, Chicago, Ill., a corporation of Delaware

Filed Apr. 7, 1967, Ser. No. 629,266
Int. Cl. E04c 2/36
U.S. Cl. 52—618 7 Claims

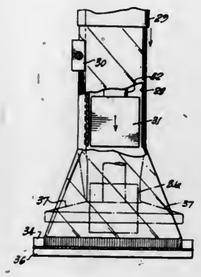


A sandwich structural panel of cellular core type wherein integral tongues or tabs are spaced along the edges of the core material which register with and project through slots in skin sheets of the panel and are folded thereover to hold the skin sheets to the core material.

3,552,087
METHOD OF MAKING DISPENSING CONTAINERS

William S. Schneider, Glendale, and Arthur P. Corella, North Hollywood, Calif., assignors of eleven and one-fourth percent to Wayne V. Rodgers, South Pasadena, Calif., and ten percent to Carl Schneider, Peninsula, Calif.

Original application Aug. 21, 1964, Ser. No. 391,130. Divided and this application June 29, 1967, Ser. No. 650,077
Int. Cl. B65b 9/06
U.S. Cl. 53—28 8 Claims

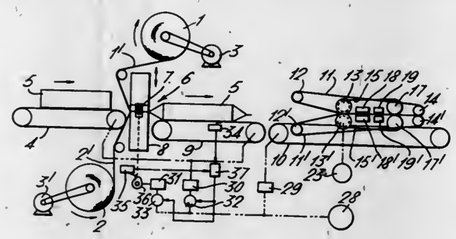


The method involves making a "stand-up" package from flexible film of the heat sealable variety, by crushing and flattening one end of a tube and then thermally molding or setting the film to form stiffened, self-sustaining folds.

3,552,088
METHOD OF AND APPARATUS FOR PACKING ARTICLES

Akira Niwa, Kyoto, Japan, assignor to Nishimura Mfg. Co., Ltd., Kyoto, Japan, a corporation of Japan

Filed July 18, 1968, Ser. No. 745,817
Int. Cl. B65b 9/02
U.S. Cl. 53—28 4 Claims

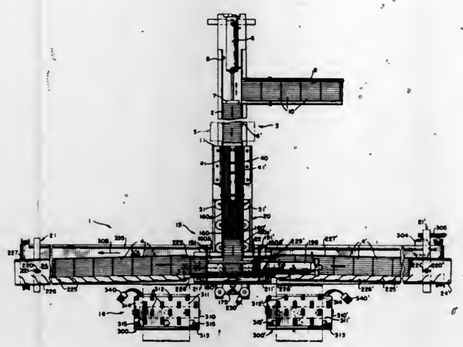


A method of and apparatus for individually and successively packing articles by the use of continuous sheets of heat-sealable packing material. Articles to be packed are succesively placed at a predetermined spacing between a pair of continuous sheets of heat-sealable packing material, and the sheets are sealed and at the same time cut transversely thereof between said articles to provide a series of packages each having its opposite lateral sides not yet sealed. The packages are then successively conveyed in a predetermined direction, and as they are conveyed, the opposite lateral sides of the packing sheets of each package are sealed while they are being pulled farther forward in the direction of movement of the package, or outwardly aslant in the forward direction, whereby occurrence of wrinkles in the finished packages is completely prevented.

3,552,089
PACKAGING MACHINE

Thomas W. Bushnell, East Aurora, N.Y., assignor to J. W. Clement Company, Depew, N.Y.

Filed July 17, 1968, Ser. No. 745,552
Int. Cl. B65b 35/30, 57/10, 67/02
U.S. Cl. 53—61 19 Claims

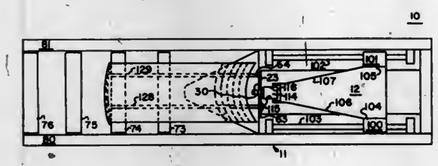


A book packaging machine for automatically separating books from the leading end of a row of books, so as to form lifts of a size suitable for packaging, and feeding the lifts alternately in opposite direction transversely of the path of row travel. The machine features a floating head separator, which is adapted, while separating the leading end of the row of books into lifts, to move in response to feeding movement of the row in order to prevent the occurrence of undesired pressure build up therein.

3,552,090
BAG FEEDING, OPENING AND FILLING APPARATUS

John T. Roberts, Simpsonville, and Ralph L. Wing, Greenville, S.C., assignors to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut

Filed Sept. 11, 1967, Ser. No. 666,854
Int. Cl. B65b 43/12
U.S. Cl. 53—71 22 Claims

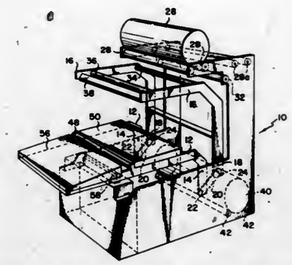


This invention is directed to apparatus for sequentially packing items in a chain of imbricated bags mounted on two strands of tape including a stationary support table, a tape puller, a forced air bag opener, a tray for inserting articles in the bag, indexing means operated by the bags for positioning the bags for loading; a method for sequentially loading such a chain of bags, supporting the bags in the loading position, opening the bags by directing air stream over and then into the bag, loading article via tray into bags; a special power supply apparatus for driving the tape puller including air motor, drive clutch and lock clutch; and a cartridge equipped chain of imbricated bags; all as further described hereafter.

3,552,091
APPARATUS FOR PACKAGING ARTICLES IN THERMOPLASTIC HEAT-SHRINKABLE MATERIALS

Andrew L. Johnston III, Colonial Heights, and Herbert S. Bailey, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Filed Sept. 12, 1968, Ser. No. 759,327
Int. Cl. B65b 13/04
U.S. Cl. 53—198 5 Claims

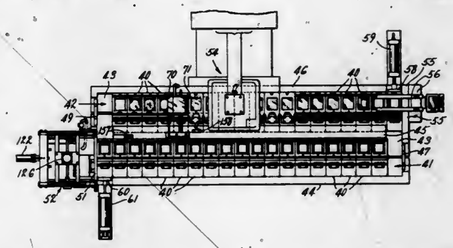


Apparatus for encapsulating articles in heat-shrinkable materials wherein a pair of bipartite web joints are formed on the bottom of a tray carrier. Means are provided to cause an overfeed of an upper source of thermoplastic web material and for preventing any substantial feeding from a lower source of thermoplastic web material after a seal is made between the webs so as to position a heat sealed juncture therebetween for subsequent semi-automatic encapsulation of the article.

3,552,092
PACKAGING MACHINES

Murgatroyd H. Jenkins, St. Clair, Mo., assignor to Beltx Corporation, St. Louis, Mo.

Filed June 3, 1968, Ser. No. 734,173
Int. Cl. B65b 47/04
U.S. Cl. 53—183 19 Claims



A packaging machine having a plunger forming from a flat blank an open sided box with outspread flanges and a jig in which the formed blank is held together while a film placed over the open side of the box is sealed to the flanges at a sealing station.

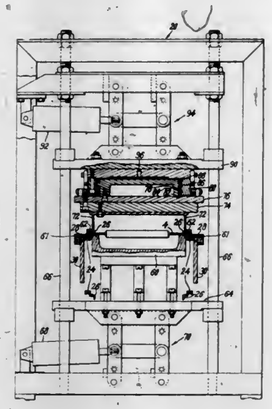
3,552,093
PACKAGING MACHINES

Kenneth R. Heiser, Pendleton, and Kenneth E. Frerichs, Anderson, Ind., assignors, by mesne assignments, to International Inpak Incorporated, New York, N.Y., a corporation of Delaware

Filed Sept. 16, 1968, Ser. No. 759,923
Int. Cl. B65b 51/14
U.S. Cl. 53—373 4 Claims

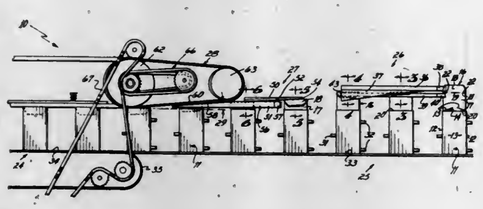
A packaging machine having a series of stations at which blanks are operated upon to form packages, guideways engaging opposite marginal faces of the blanks, lugs

movable intermittently to feed blanks along the guideways and to locate the blanks at each station and retarders



engaging the blanks and associated with each station to maintain the blanks against the lugs for accurate location.

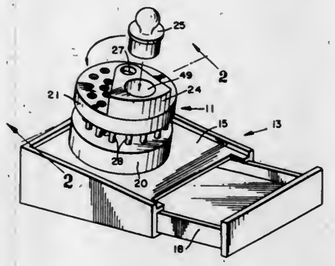
3,552,094
CLOSING APPARATUS FOR CARTONER
William C. Daily, Covington, and Wesley J. Rece, Jr., California, Ky., assignors to R. A. Jones & Co., Inc., Cincinnati, Ohio, a corporation of Kentucky
Filed Dec. 4, 1968, Ser. No. 781,013
Int. Cl. B65b 7/26
U.S. Cl. 53—376 **7 Claims**



An apparatus for closing the tuck flap of a carton while the carton is being transported upon a continuously moving conveyor. The apparatus includes a pair of plows for partially closing the carton and an angulated belt which engages the tuck flap to force it into the carton.

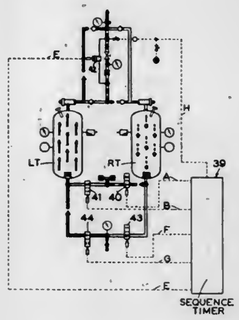
3,552,095
MANUAL CAPSULE FILLING APPARATUS
Harry E. Inman, Indianapolis, Ind., assignor to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana
Filed Apr. 18, 1968, Ser. No. 722,255
Int. Cl. B65b 67/00
U.S. Cl. 53—390 **5 Claims**

A manual filling apparatus designed for rapid separation of pharmaceutical capsule sections through the use of two plates having cavities for receiving the capsule sections with means therein for removably retaining the sections while a medicament is put into the exposed open ends of half of the capsule sections and a plurality of rods positioned to enter into the cavities containing



the filled sections and reassemble them with the remaining empty capsule sections.

3,552,096
APPARATUS FOR DRYING AIR OR OTHER GAS
Philip Dayson, St. Laurent, Montreal, Canada, assignor to Pall Corporation, Glen Cove, N.Y., a corporation of New York
Filed July 11, 1967, Ser. No. 652,550
Claims priority, application Great Britain, July 13, 1966, 31,539/66
Int. Cl. B01d 153/04
U.S. Cl. 55—163 **4 Claims**

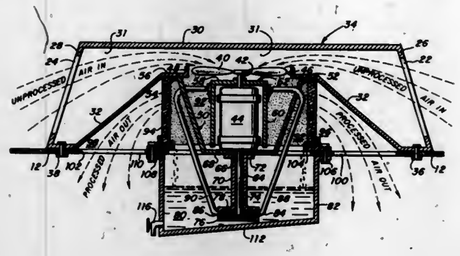


A gas processing apparatus employing effluent gas to drive a timing and switching apparatus and a gas driven timing and switching apparatus are provided by this invention. The timing and switching apparatus employs a turbine driven by gas flow to drive and time the actuation of a plurality of valves which control flow to a plurality of lines. The gas processing apparatus provides the flow of effluent fluid which is employed to drive the turbine.

3,552,097
AIR PROCESSING UNIT
George John Grasseler, Stow, Mass., assignor to G & G Engineering Corporation, Watertown, Mass., a corporation of Massachusetts
Original application Nov. 24, 1967, Ser. No. 685,449, now Patent No. 3,472,147, dated Oct. 14, 1969. Divided and this application Jan. 29, 1969, Ser. No. 822,335
Int. Cl. B01d 47/16
U.S. Cl. 55—230 **15 Claims**

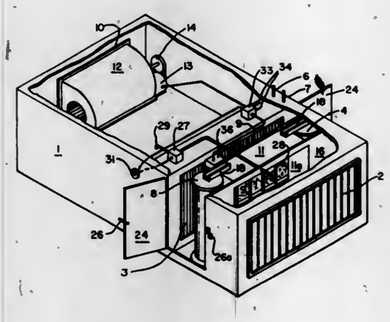
An air processing system including a unit having a housing with inlet and outlet ports, a fan for drawing air

into the inlet port and forcing it out the outlet port, a rotatable dispersion shell having a dispersing surface extending in the direction of the axis of rotation of the shell for creating, from water directed against it, a moist atmosphere between the inlet and outlet ports, a reservoir of water associated with the housing, a pump for moving water from the reservoir and directing it against the dis-



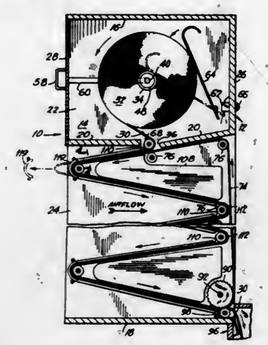
persing surface, drive means for driving the fan, the pump, and the dispersion shell, and further including means for mounting the housing to a vehicle cab, a transparent enclosure included with the vehicle cab for preventing loss of processed air from the cab while increasing the field of view, and a relief mechanism to prevent excessive pressure build-up in the cab.

3,552,098
AIR FILTER CONTROL ARRANGEMENT
Thomas L. Cochran, Davenport, Iowa, assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed July 12, 1968, Ser. No. 744,546
Int. Cl. B01d 46/18
U.S. Cl. 55—274 **4 Claims**



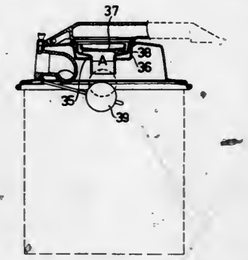
Apparatus to indicate the condition of air filter media in an air flow conduit and to control the replacement of such air filter media which includes means sensitive to change in differential air pressure between the upstream and downstream side of the media to indicate the condition of the media, media advance control means to advance a selected length of new media into the air flow stream, and switch means inter-connected with the filter media advance means to terminate air flow through the conduit when the filter media is changed so there is no differential pressure across the media and the differential pressure sensing means is reset.

3,552,099
GAS FILTERS
Frederich Floyd, Kent County, England, assignor to Ozonair Engineering Company Limited, Rochester, England, a British company
Filed Apr. 29, 1968, Ser. No. 724,964
Claims priority, application Great Britain, Apr. 27, 1967, 19,369/67
Int. Cl. B01d 46/22
U.S. Cl. 55—354 **7 Claims**



A gas filter having a porous sheet conveyor supporting and moving a filtering web along a zig-zag path across a casing with flexible sealing strips mounted in channels extending along the sides of the casing.

3,552,100
VACUUM CLEANER
Ture Ekenberg, Handen, Sweden, assignor to Svenska Innovationskonsortiet, Stockholm, Sweden, a Swedish consortium
Filed Sept. 17, 1968, Ser. No. 760,293
Claims priority, application Sweden, Sept. 18, 1967, 12,813/67
Int. Cl. B01d 50/00
U.S. Cl. 55—337 **2 Claims**

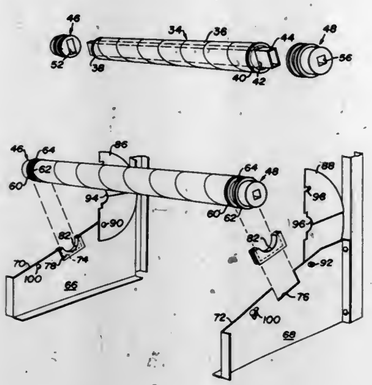


A water and/or vacuum cleaner which includes a detachable upright collecting tank for water and larger particles provided with a cyclone effect for separation of the water and the larger particles in the collecting tank and a dust filter located in the direction of flow before the motor unit for the cleaner.

3,552,101
FILTER APPARATUS
Louis S. Papp, Chagrin Falls, Ohio, assignor to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Jan. 23, 1969, Ser. No. 793,312
Int. Cl. B01d 46/18
U.S. Cl. 55—354 **17 Claims**

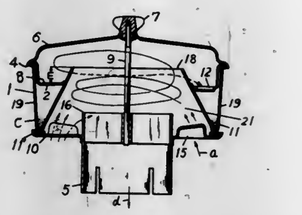
An air filter apparatus of the type utilizing as a disposable filter medium at least one web of permeable

material which is fed from a supply roll through an air filter zone to a take up roll in which the take up roll is so supported that the take up roll can be readily and rapidly replaced and also so that a series of similar



units, each embodying such a web, can be mounted in alignment and have their take up rolls drive connected for concomitant advancement either manually or by a powered drive train.

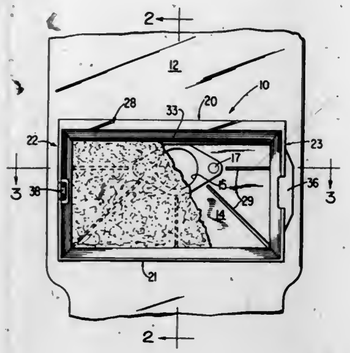
3,552,102
DIRECTIONAL-CHANGE AIR CLEANING DEVICE
Takashi Araki, Kawasaki-shi, Japan, assignor to Kabushiki Kaisha Komatsu Seisakusho (Komatsu Mfg. Co., Ltd.), Tokyo, Japan
Filed Dec. 18, 1968, Ser. No. 784,706
Claims priority, application Japan, Dec. 20, 1967, 42/106,180
Int. Cl. B01d *45/12*
U.S. Cl. 55—449 **3 Claims**



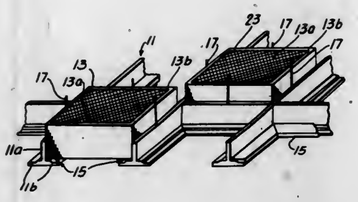
A directional-change air cleaning device for separating dust from air comprising an annular plate extending between a frusto-conical and cylindrical wall having a sloped wall defining a slot in the directional change swirl separator.

3,552,103
INTERNAL COMBUSTION ENGINE AIR FILTER
Edward A. Smith, Glenville, Conn., assignor to GAF Corporation, Glenville, Conn., a corporation of Delaware
Filed Nov. 26, 1968, Ser. No. 779,061
Int. Cl. B01d *27/08*
U.S. Cl. 55—486 **7 Claims**

A holder for a filter element wherein the filter element is clamped between inner flanges formed in a base and a retaining ring. The retaining ring is detachably attached to the base and the base is provided with an opening connectable to the air intake of an engine. Upstanding supporting ribs are provided on the bottom wall of the base to support the inner portion of a flat filter element. The filter element may have an outer layer of a chemical and weather resistant porous material.

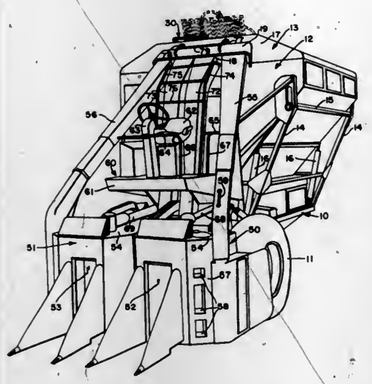


3,552,104
TWO-STAGED COMPRESSION OF A SEALING GASKET
Walter Bruce Wood, Bridgeville, Pa., assignor, by mesne assignments, to American Air Filter Company, Inc., a corporation of Delaware
Filed Oct. 7, 1968, Ser. No. 765,403
Int. Cl. F24f *3/16;* **E04b** *1/92*
U.S. Cl. 55—502 **4 Claims**



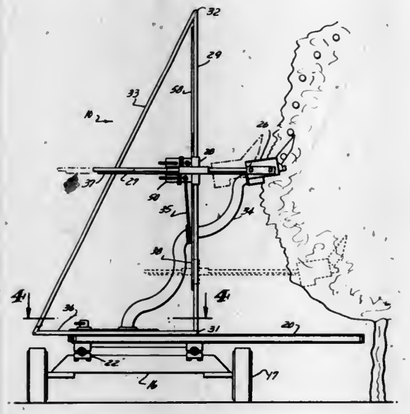
A support and a panel assembly includes an elongated member having two thickness dimensions which provide a thick lip and a thin lip. The panel assembly comprises a panel having an upper and a lower surface on which a resilient closed-cell sealing gasket is bonded to the perimeter of one of the surfaces with the gasket engageable with the thick lip and the thin lip of the elongated member. A clamping means for biasing the panel and the elongated member together causes a two-staged compression of the sealing gasket. Thus, a zone of greater compression of the gasket occurs between the thick lip and the surface of the panel and a zone of lesser compression of the gasket occurs between the thin lip and the surface of the panel. Should particulate matter diffuse through the gasket at the zone of greater compression because of the deterioration of the sealing integrity of the gasket, then the particulate matter will be excluded from passing through the gasket at the zone of lesser compression.

3,552,105
COTTON HARVESTER
Karl Irvine Graham, Des Moines, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed May 9, 1968, Ser. No. 727,843
Int. Cl. A01d *45/20*
U.S. Cl. 56—12 **16 Claims**



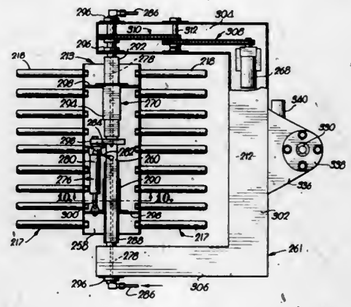
A combination of steps, ladders and hand rails for use with a cotton picker with the steps beginning adjacent the ground on the forward outer side of a picker unit and extending upwardly to the operator's platform with an entrance to one side of the operator's seat and continuing upwardly to the upper side of the basket where a hand rail extends lengthwise of the basket for affording balance and support to a person walking on top of the basket.

3,552,106
FRUIT PICKING APPARATUS
James R. Baxter, 3 W. Rose St., Kissimmee, Fla. 32741
Filed June 3, 1968, Ser. No. 734,026
Int. Cl. A01g *19/08*
U.S. Cl. 56—328 **8 Claims**



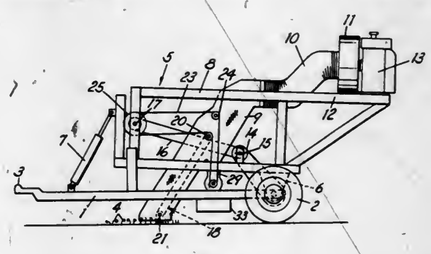
A fruit picking apparatus especially adapted to harvest citrus fruit and having a rake or comb with a plurality of teeth for combing through tree foliage to catch the fruit therein. The fruit slides to the end of the comb teeth where a switch actuates a solenoid cutter adapted to cut the stem holding the fruit at a point very close to the fruit. A transporting means is provided to comb the foliage with power means and to move the picking apparatus around a large portion of the tree without shifting the carriage frame and wheels.

3,552,107
FRUIT PICKER HEAD
Lloyd H. Swift, 1004 N. Jefferson, Carrollton, Mo. 64633
Continuation-in-part of application Ser. No. 559,578, June 22, 1966. This application Aug. 5, 1968, Ser. No. 750,281
Int. Cl. A01g *19/08*
U.S. Cl. 56—328 **6 Claims**



A machine for picking fruit has a boom-supported head provided with fingers for dislodging the fruit and collecting it within a container that moves with the head during manipulation of the boom as well as during movement of the head relative to the boom. Dislodgment is effected also by continuous oscillatory movement imparted to the fingers as they are raised, lowered, tilted and otherwise moved into and out of the tree among its branches. In an advantageous embodiment of the invention the fingers are also rotated constantly to remove, receive and deliver the fruit to the boom-supported container.

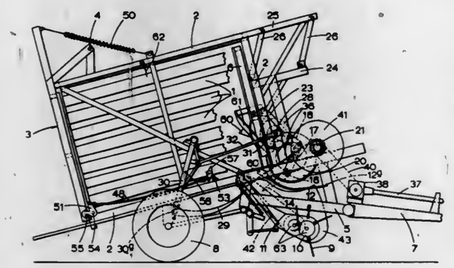
3,552,108
BERRY HARVESTING MACHINE
Ahmed A. Kattan and Glenn S. Nelson, Fayetteville, Ark., assignors to Blueberry Equipment, Inc., South Haven, Mich.
Filed July 3, 1968, Ser. No. 742,356
Int. Cl. A01g *19/00*
U.S. Cl. 56—330 **10 Claims**



A mobile carriage supports a suction hood to advance the open lower end of the hood in closely spaced relation over the plant bed. A blower on the carriage sucks air through the hood at 6000 FPM to lift the berries off the

ground. A series of picking combs are advanced around a conveyor in the hood to pull the berries from their stems. Brushes alternated between the picking combs sweep away foliage and assist the air flow in lifting the berries upright. The conveyor discharges the berries into a rotating air lock valve from where they are discharged to a receiving container.

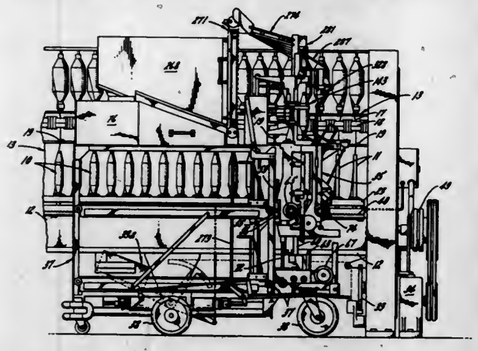
3,552,109
BALERS
Patrick Anthony Molteno Murray, Painswick Lodge, and David Craig, Dell Farm, both of Painswick, Gloucestershire, England
Filed Aug. 22, 1968, Ser. No. 754,694
Claims priority, application Great Britain, Aug. 25, 1967, 39,269/67
Int. Cl. A01d *39/00, 43/02, 75/00*
U.S. Cl. 56—343 **11 Claims**



A pick-up baler which, as it travels over a field, automatically picks up a crop, such as straw or hay, and delivers it in small bundles at the bottom of the front end of a chamber, which is the size of each bale to be formed. The bundles are delivered by circulating packing fingers and accumulate in loops of twine that are expanded by the increasing quantity of crop in the chamber, the crop gradually being compressed by a reciprocating packing plate mounted to undergo a comparatively short stroke at the front of the chamber. When the chamber is full, the twines are tied round the bale by knotting mechanism including needles mounted to traverse only a short distance relatively to the size of the front face of the bale. As the needles return to their inoperative positions, they cause the unlatching of a tail gate through which the completed bale is discharged on to the ground.

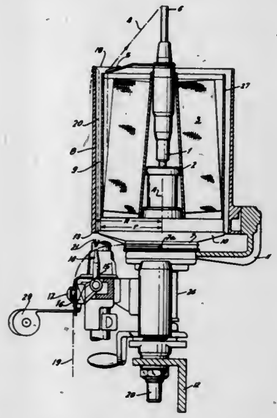
3,552,110
MACHINE AND METHOD FOR AUTOMATICALLY DOFFING AND DONNING
Richard D. Livingston, Rockford, Ill., assignor to Barber-Colman Company, Rockford, Ill., a corporation of Illinois
Filed Nov. 10, 1966, Ser. No. 593,536
Int. Cl. D01h *9/10*
U.S. Cl. 57—53 **69 Claims**

During the continuous travel of a head 35 along a spinning frame, filled bobbins 10 are doffed upwardly successively and empty bobbins are donned onto the spindles. Other mechanisms carried by the head operate in precisely timed relation to catch each doffed bobbin (FIG. 26), transfer it laterally (FIG. 28) while maintaining the unwound thread *ab* of the doffed bobbin unbroken and under positive control during stripping of this thread upwardly off from the spindle, laying a short length of the traveler end portion of this thread around the base of the empty spindle and severing of the thread between the spindle base and the doffed bobbin as an empty bobbin is donned onto the spindle thus gripping the traveler end between the spindle base and bobbin butt. After the severing, the unwound thread of the doffed bobbin is elevated above the nose of this bobbin and, during the lateral transfer of the bobbin, a length of this



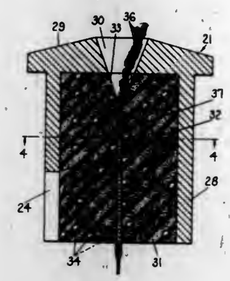
thread adjacent the doffed bobbin is tucked downwardly into the hole in the bobbin, the remaining length being cut off and discarded.

3,552,111
THREADING ARRANGEMENT FOR SPINNING AND TWISTING MACHINES
Aloys Treus, Havixbeck, Westphalia, and Hans Gutbrod, Munster, Westphalia, Germany, assignors to Hamel G.m.b.H. Zwirnerei- und Spinnereimaschinen, Munster, Westphalia, Germany, a corporation of Germany
Filed Apr. 23, 1969, Ser. No. 818,481
Claims priority, application Germany, Apr. 25, 1968, 1,760,264
Int. Cl. D01h *1/10, 7/86, 13/00*
U.S. Cl. 57—58.49 **10 Claims**



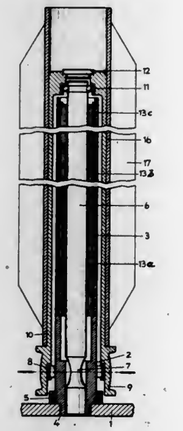
A thread spinning or twisting apparatus wherein a thread is drawn up off a yarn package wound on a hollow core, then passed axially down through the core and twisted by a flyer rotating about the core axis and beneath the yarn package. The thread is finally led axially up between the package and a circumferentially continuous (unbroken and uninterrupted) sleeve coaxial therewith and forming therewith an annular balloon-confining space. A threading arrangement comprising an upwardly directed concave nozzle actuatable by a knee or foot valve directs a gas stream up in the space between the package and the sleeve to project the thread therethrough.

3,552,112
THREAD FORMING GRIPPER
Leo L. Chabot, Cumberland, R.I., assignor, by mesne assignments, to Electrospin Corporation, Columbus, Ohio, a corporation of Ohio
Filed June 17, 1969, Ser. No. 833,989
Int. Cl. D01h *7/02, 7/92*
U.S. Cl. 57—77.4 **9 Claims**



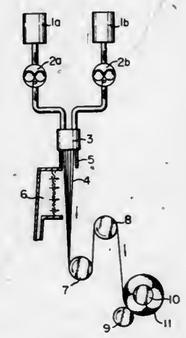
A rotatable gripping member adapted to receive and spin textile fibers into thread including a resilient gripper having a multiplicity of gripping surfaces formed along the internal longitudinal extent of an axial bore extending therethrough and which receives the fibers into one end of the bore, spins them together and expels them at the opposite end as a continuous length of thread.

3,552,113
SPINNING AND TWISTING SPINDLE
Helmut P. Staufert, Stuttgart, Germany, assignor to Stuttgarter Spindelfabrik Novibra G.m.b.H., Stuttgart, Germany
Filed Sept. 20, 1968, Ser. No. 761,058
Claims priority, application Germany, Sept. 21, 1967, 1,710,010
Int. Cl. D01h *7/04*
U.S. Cl. 57—130 **10 Claims**



A spinning and twisting spindle in which the bobbin receiving member rotates about a bearing housing comprising two coaxially arranged parts connected at the lower end thereof, of which one part is movable in the manner of a pendulum from the lower end and at the upper end receives a guiding bearing for the rotating spindle parts, whereas the other part is entirely nonmovable and connected to the spindle rail and supports the members between the two parts for absorbing oscillations and also supports the lower guiding bearing for the rotating spindle parts.

3,552,114
POTENTIALLY CRIMPABLE COMPOSITE FILAMENT YARN MADE OF THERMOPLASTIC HIGH POLYMERS AND USABLE FOR A CREPE FABRIC
Mototada Fukuhara, Akira Ueno, Isao Nihei, and Chikara Sano, Mishima-shi, Japan, assignors to Toray Industries, Inc., Tokyo, Japan, a company of Japan
Filed Sept. 4, 1968, Ser. No. 757,363
Claims priority, application Japan, Sept. 6, 1967, 42/56,944
Int. Cl. D02g *3/02*
U.S. Cl. 57—140 **5 Claims**



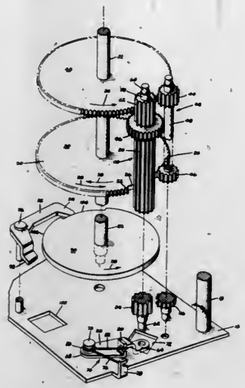
A self-crimpable composite filament yarn comprising at least single filament composed of two kinds of thermoplastic high polymers having different viscosities and arranged in an eccentric disposition in the cross section of each filament. Material high polymers should be chosen from polyester groups and the difference in viscosities thereof should be larger than 0.05.

A crepe fabric containing the filaments can be provided with remarkably improved pebbles.

3,552,115
INTERVAL TIMER FOR PROVIDING A FIXED AND LOCKED TIMED CYCLE
Gerhard K. Losert, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed May 2, 1969, Ser. No. 821,220
Int. Cl. G04f *1/00*
U.S. Cl. 58—22.9 **6 Claims**

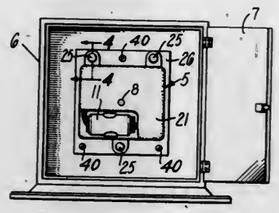
An interval timer for providing a fixed, timed cycle which, when set, cannot be changed in function or timing includes a segmental gear manually rotated in one direction by a setting shaft from an unset position to a set position. The segmental gear has a toothed segment and a mutilated segment equal in angular extent to the angular extent of the manual rotation from the unset to the set position. First and second pinions are provided and continuously mesh with an idler gear. The second pinion is continuously rotated by a driving motor through a suitable gear train, thereby continuously driving the idler gear and the first pinion. Both pinions are freely rotatable in the mutilated segment of the segmental gear when it is in its unset position. Manual rotation of the segmental gear away from its unset position toward its set position moves the toothed segment into alignment

with the second pinion. The second pinion is mounted on a spring biased lever for pivotal movement toward and away from the toothed segment, thus permitting the toothed segment to ratchet past the second pinion during manual rotation of the segmental gear from the unset to the set position. Upon reaching the set position, the



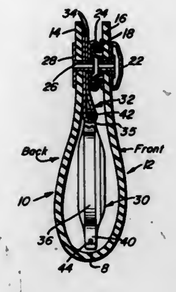
toothed segment moves into mesh with the first pinion, which is maintained in mesh therewith, thereby inhibiting further manual rotation of the segmental gear in either direction. The segmental gear thereafter is driven in the same one direction toward its unset position, first by both pinions and finally by only the first pinion.

3,552,116
TIMEPIECE HAVING VIBRATION ISOLATION MEANS
Philip Alden Sidell, West Hartford, Conn., and Cecil Frank Clifford, Somerset, England, assignors to The Ingraham Company, Bristol, Conn., a corporation of Connecticut
Filed Aug. 3, 1967, Ser. No. 664,590
Claims priority, application Great Britain, Aug. 17, 1966, 36,856/66
Int. Cl. G04c *3/00*
U.S. Cl. 58—23 **13 Claims**



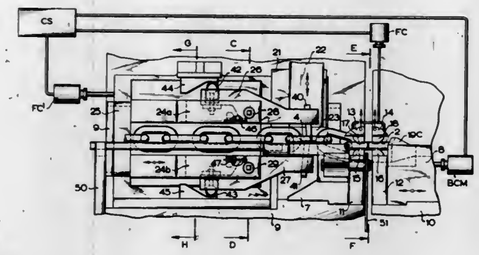
A drive mechanism for use with a timepiece having a housing, the drive mechanism including a frame, an output member mounted on the frame, a vibratory element drivingly connected to the output member and a vibration isolating mounting unit securing the frame to the timepiece housing, the vibration isolating mounting unit having a characteristic natural frequency below that of the vibratory element, and having freedom of movement in the direction of a component of vibratory movement of the frame at a position thereon where the mounting unit is attached.

3,552,117
WRIST WATCH JACKET
Horace T. Parris, 704 N. 74th St., East St. Louis, Ill. 62203
Filed Dec. 5, 1968, Ser. No. 781,524
Int. Cl. G04b *43/00*
U.S. Cl. 58—105 **4 Claims**



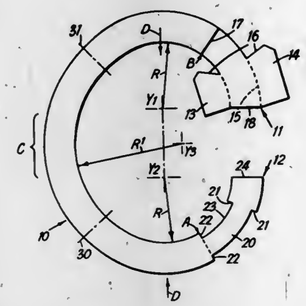
A pouch-type sheet rubber jacket which makes it practical and safe for workmen to protectively mount a wrist watch within the confines of the jacket and carry the jacketed watch in the user's clothes pocket. By making the jacket of acid resisting resilient sheet rubber, the encased watch will not tarnish. This innovation converts a wrist watch to a "pocket" watch and is stirrup-like in construction and characterized by imperforate front and back flaps foldably joined and normally snapped together. An edge of the front flap can be peeled back to expose the dial.

3,552,118
CHAIN MAKING
Hans Reiter, 23 Pestalozzistrasse; and Heinrich Hannig, 9 Arnoldstrasse, both of 4354 Datteln, Germany; and Heinrich Falkenrich, 5 Schottelkamp, 4351 Henrichenburg, Germany
Filed Dec. 4, 1967, Ser. No. 687,623
Claims priority, application Germany, Dec. 6, 1966, B 90,154
Int. Cl. B21l *15/00*
U.S. Cl. 59—29 **17 Claims**



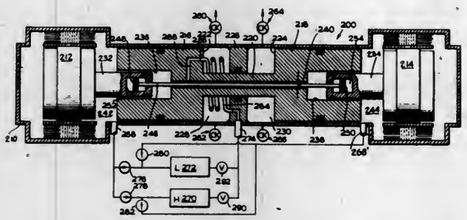
A machine for automatically welding together the two ends of each open link of a round-link chain which connects two other links of the chain to each other, and simultaneously removing flash from the previously welded link. The link from which the flash is to be removed is clamped in position slightly before the link to be welded is clamped, thereby enabling a slight movement of the link to be welded toward the other link to provide slack. Thus, after all of the links in horizontal alinement have been welded and the flash removed therefrom, the shortened chain may again be passed through the machine with the links which were previously vertically alined arranged in horizontal alinement and these links are then welded and the flash removed, thereby completely welding the chain on the same machine.

3,552,119
MEANS FOR SECURING PIECES OF JEWELRY TO ONE ANOTHER
Douglas George Newman, 46 Silver Lane, Billingshurst, England, and John Frederick Newman 18 Mill Drive, Henfield, England
Filed Apr. 22, 1968, Ser. No. 723,218
Claims priority, application Great Britain, Apr. 26, 1967, 19,117/67
Int. Cl. F16g *15/02*
U.S. Cl. 59—85 **1 Claim**



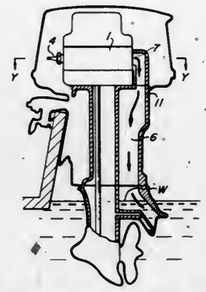
A method and means of connecting pieces of jewelry to one another as a result of mechanical interengagement only. The interengaged parts can and preferably are, deformed as by a pair of pliers.

3,552,120
STIRLING CYCLE TYPE THERMAL DEVICE
William T. Beale, Athens, Ohio, assignor to Research Corporation, New York, N.Y., a nonprofit corporation of New York
Feb. 1, 1967. This application Mar. 5, 1969, Ser. No. 812,530
Int. Cl. F03g *7/06;* **F25b** *9/00*
U.S. Cl. 60—24 **10 Claims**



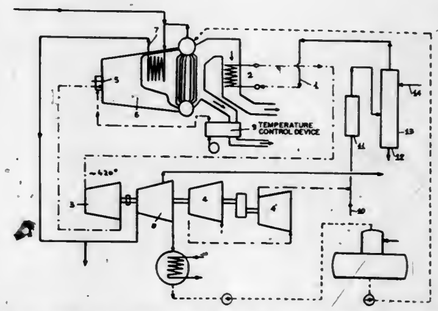
A Stirling cycle thermal engine or refrigerating device wherein there is no primary mechanical connection between the displacer pistons and their associated power pistons, including various mechanical and pressure fluid means for varying the power output from or the power input to the device.

3,552,121
MEANS FOR PREVENTING REVERSE WATER FLOW THROUGH EXHAUST PIPE OF A ROTARY PISTON TYPE MARINE ENGINE
Kenichi Kitagawa, Shiga-ken, Akira Kadono, Hikone-shi, and Rikichi Homura and Mitsuhiro Ohta, Nagahama-shi, Japan, assignors to Yanmar Diesel Engine Co., Ltd., Kita-ku, Osaka, Japan, a corporation of Japan
Filed Dec. 4, 1968, Ser. No. 781,185
Claims priority, application Japan, Dec. 25, 1967, 42/83,475
Int. Cl. F01m *1/14;* **F02b** *55/16;* **B63h** *21/26*
U.S. Cl. 60—30 **2 Claims**



A reverse water flow arrester for a Wankel type rotary piston engine having an exhaust pipe with one end connected with an exhaust working chamber of the engine and the other end inserted into water for discharging exhaust gas thereinto, said arrester comprising a vacuum valve for relieving negative pressure created during engine start within said engine exhaust working chamber in order to prevent the water taken into the engine due to the negative pressure, and means for interconnecting the vacuum valve with engine starting means to open said valve during engine start.

3,552,122
PROCESS FOR THE UTILIZATION OF THE EXHAUSTED GASES FROM AN ETHYLENE OXIDE SYNTHESIS REACTOR
Mario Parmegiani, San Donato Milanese, and Oreste Bellofatto, Milan, Italy, assignors to Snam Progetti S.p.A., Milan, Italy, a company of Italy
Filed Aug. 6, 1968, Ser. No. 750,644
Claims priority, application Italy, Aug. 8, 1967, 19,320/67
Int. Cl. F02c *7/02*
U.S. Cl. 60—39.18 **1 Claim**



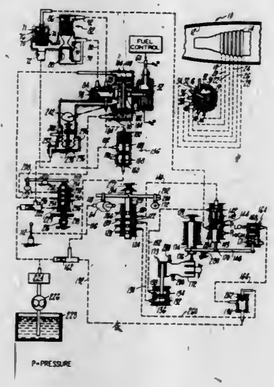
A process for recovering both mechanical energy and thermal energy from the exhaust gases of an ethylene oxide synthesis reactor. The exhaust gases are passed in heat

exchange relationship with boiler flue gases which are used to drive a gas turbine which is coupled to the drive shaft of an air compressor. The exhaust gases discharging from the turbine are then burned in the steam boiler. Steam generated in the boiler is used to drive a steam turbine which is also coupled to the drive shaft of the air compressor.

3,552,123
SEQUENTIAL FUEL CONTROL

Donald E. Anschutz, Wilbraham, Mass., and Kail L. Linebrink, Bloomfield, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed June 26, 1969, Ser. No. 836,827
Int. Cl. F02g 1/06; F02k 3/10, 3/04
U.S. Cl. 60—39.28 **9 Claims**

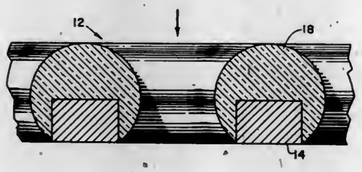


A rotary distributor valve sequentially operated in response to power lever position and fill flow interconnects metered fuel from a main fuel control and burner segments of a powerplant only after the segments and their interconnecting flow lines are filled with fuel.

3,552,124
ION THRUSTOR ACCELERATOR SYSTEM

Bruce A. Banks, North Olmsted, and Shigeo Nakanishi, Berea, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Sept. 9, 1968, Ser. No. 758,390
Int. Cl. F03h 5/00
U.S. Cl. 60—202 **1 Claim**

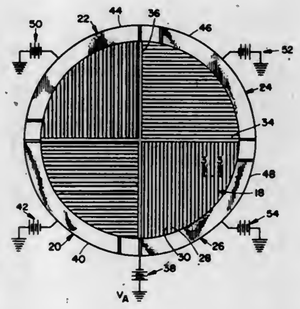


A single coated grid accelerator system for an ion thrustor. The grid is coated with an insulating material that is bonded to its surface.

3,552,125
ION BEAM DEFLECTOR

Bruce A. Banks, Olmsted Township, and Harold R. Kaufman, Berea, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed June 6, 1969, Ser. No. 830,978
Int. Cl. F03h 5/00
U.S. Cl. 60—202 **10 Claims**



Electrically orienting the thrust vector of an electrostatic ion thrustor having a glass-coated grid system. Highly negative potentials are applied to conductors that are mounted in pairs and arranged in arrays to form the grid. These electrical potentials are independently varied in each array to obtain the desired amount of ion beam vectoring.

3,552,126
HYPERGOLIC HYDRAZINE AND AMINE PROPELLANT AND ROCKET PROPULSION METHOD

Robert C. Ahlert, Woodland Hills, Jacob Silverman, Canoga Park, Stanley A. Greene, Woodland Hills, and Richard K. Young, Canoga Park, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware

No Drawing. Filed Apr. 2, 1959, Ser. No. 804,062
Int. Cl. C06d 5/08
U.S. Cl. 60—212 **10 Claims**

6. A method of producing thrust which comprises ejecting from a reaction chamber the gaseous products produced by the spontaneous combustion of an oxidizing agent consisting essentially of nitrogen tetroxide and a liquid fuel composition consisting essentially of hydrazine and from about two to about twenty weight percent of ethylene diamine.

3,552,127
COMPOSITE HIGH ENERGY ROCKET PROPELLANTS AND PROCESS FOR SAME

Jacque C. Morrell, 8 Oxford St., Chevy Chase, Md. 20015

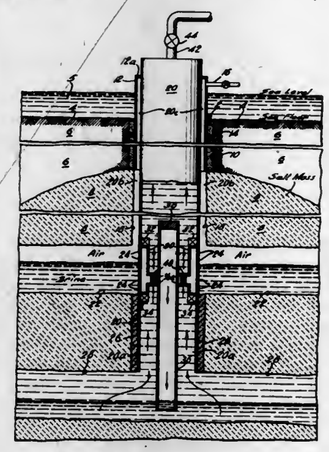
No Drawing. Continuation-in-part of application Ser. No. 100,755, Apr. 4, 1961. This application Aug. 25, 1964, Ser. No. 392,000
Int. Cl. C06d 5/00, 5/10
U.S. Cl. 60—215 **23 Claims**

1. A high energy rocket propellant composition which comprises a substantially stable fluid dispersion of a solid high energy compound in finely divided form in the internal phase in a combustible hydrocarbon liquid in the external phase, the said high energy compound being selected from the group consisting of beryllium hydride, aluminum hydride, magnesium borohydride, decaborane, and lithium amide, said composition being further characterized in that the specific gravity of said hydrocarbon liquid in the external phase and that of the said suspended finely divided high energy compound in the internal phase is correlated to prevent substantial separation of the two phases.

3,552,128
UNDERGROUND CAVERN FOR STORAGE OF HYDROCARBONS

Austen M. Shook, New Orleans, La., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed June 2, 1969, Ser. No. 829,416
Int. Cl. B65g 5/00; F16k 21/18; E21f 17/16
U.S. Cl. 61—.5 **4 Claims**

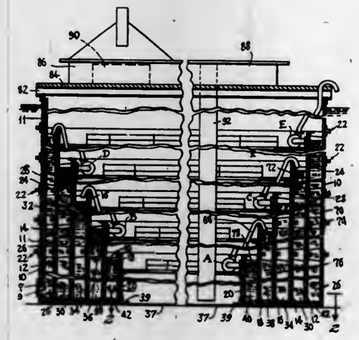


A system for storing a liquid hydrocarbon product in an underground cavern with an upper cavern for holding displacing fluid and a lower cavern for holding a liquid hydrocarbon product, disposed one above the other and a well bore from the surface of the earth to the upper cavern extending also into the lower cavern with means for withdrawing stored fluid from the lower cavern to the surface of the earth and at the same time allowing liquid from the upper cavern to flow through the well bore to the lower cavern without mixing with the liquid hydrocarbon product.

3,552,129
HIGH PRESSURE RESISTANT COFFERDAM

George H. Hooper, Bridgeport, Conn., assignor of one-half to Douglas A. Finkelstone, Bridgeport, Conn.

Filed Jan. 26, 1968, Ser. No. 700,866
Int. Cl. E02b 1/00
U.S. Cl. 61—34 **10 Claims**



A cofferdam of simple, generally circular configuration, adapted to withstand powerful external pressures at considerable depths. The cofferdam comprises concentric spaced cylindrical structures of graduated heights, being progressively less high at the inside. Seepage water in the spaces is continuously pumped out, and the weight of such water counteracts the powerful outside pressures at the intervals where the cylinders are not braced, thereby obviating the necessity for continuous massive bracing and structural elements at the lower portions of the dam.

3,552,130
METHOD OF FORMING A SUBSTANTIALLY LIQUID IMPERVIOUS WALL IN AN EARTH FORMATION

Richard E. Landau, 717 Cornwell Ave., West Hempstead, N.Y. 11552

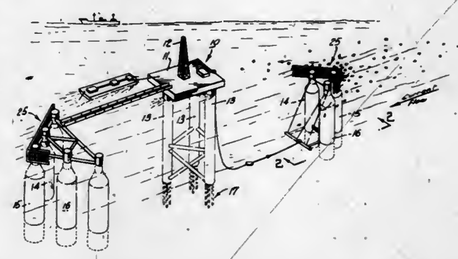
No Drawing. Filed Oct. 28, 1966, Ser. No. 590,217
Int. Cl. E02d 3/12, 3/14
U.S. Cl. 61—35 **12 Claims**

1. The method of forming a liquid impervious wall-like zone within an earth formation comprising backfilling a plurality of cavities by cutting into the formation, establishing at least a portion of said cavities with a substantially sandy wall forming filler material; and introducing into said cavity limits at least a second material to coact with said filler material to form said liquid impervious wall-like zone.

3,552,131
OFFSHORE INSTALLATION

George E. Mott, Metairie, La., and Edison R. Ezekiel, Columbia, S.C., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed June 24, 1968, Ser. No. 739,422
Int. Cl. E02d 27/38; E02b 3/06
U.S. Cl. 61—46 **3 Claims**



The invention relates to an installation particularly for the drilling and subsequent production of an offshore oil well from an elevated marine platform. It relates further to means for conveniently storing crude oil on a provisional basis until subsequent transfer to a shore based refining or storage facility. The provisional storage means includes one or more tanks, imbedded in the ocean floor and so arranged remotely from the marine platform to protect the latter from environmental conditions inherent to the location.

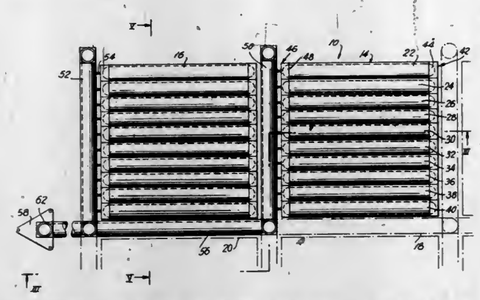
3,552,132
OIL TERMINAL AND METHOD FOR FABRICATING THE SAME

Hans Christer Georgii, 42 Rindogatan, Stockholm, Sweden

Filed Aug. 8, 1968, Ser. No. 751,112
Claims priority, application Sweden, Aug. 9, 1967, 11,318
Int. Cl. E02d 29/00
U.S. Cl. 61—46 **9 Claims**

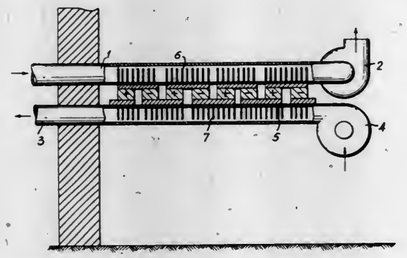
A method of making an oil terminal is proposed, according to which a battery of concrete cylinders is cast in situ, whereafter the battery is sunk into position on

the ocean floor to provide a storage depot for oil. Communication ducts and a control tower are connected to the battery for optimum utilization of the same. The oil can be removed by the use of surface vessels through the



intermediary of a flexible hose. Alternatively, the oil can be removed by a submarine vessel. The battery of cylinders can be formed by a flotational process in which the cylinders as they are cast are gradually sunk below the surface of the water.

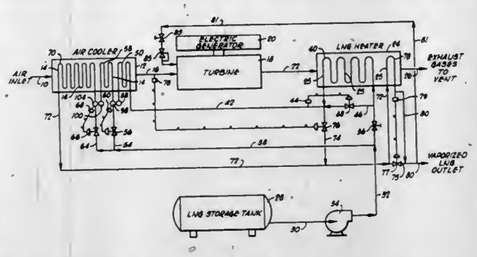
3,552,133
HEATING AND COOLING UNIT
Sergei Meerovich Lukomsky, Poselok Sokol, ul. Polenova 19, kv. 1, Moscow, U.S.S.R.
Filed Feb. 20, 1968, Ser. No. 706,861
Int. Cl. F25b *21/02*
U.S. Cl. 62—3 1 Claim



A heating and cooling unit comprises a semi-conductor thermoelectric generator having hot and cold junctions, the heat exchanging surfaces of one junction being located in a duct near the entrance thereof while the heat exchanging surfaces of the other junction are located in a second duct near the exit thereof, the arrangement being such that air is drawn through one duct from a first space to a second while the other duct conveys the air from the second space to the first, the air flowing in opposite directions in the ducts.

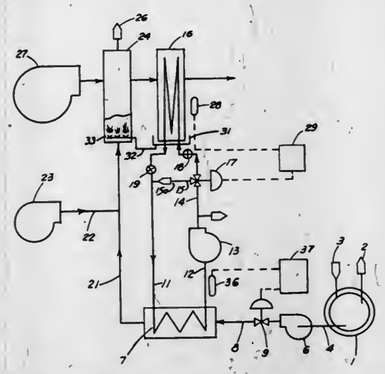
3,552,134
PROCESS AND APPARATUS FOR VAPORIZING LIQUEFIED NATURAL GAS
Edwin M. Arenson, El Reno, Okla., assignor to Black, Sivalls & Bryson, Inc., Oklahoma City, Okla., a corporation of Delaware
Filed July 22, 1969, Ser. No. 843,413
Int. Cl. F17c *7/02*; F02m *31/00*
U.S. Cl. 62—53 14 Claims

The present invention relates to an improved process and apparatus for vaporizing liquefied natural gas with turbine exhaust gases wherein the vaporized natural gas is passed through heat exchange tubes in a heat exchanger for cooling the input air to the turbine. A stream of liquefied natural gas is vaporized and heated with the turbine exhaust gases to a temperature which will bring about the formation of a minimum quantity of ice on the outside surfaces of a first bank of said heat exchange tubes, and is passed through said first bank of heat exchange tubes to cool the turbine input air. A second stream of liquefied natural gas is then combined with the vaporized natural gas stream to cool the resulting combined stream to a temperature which will bring about



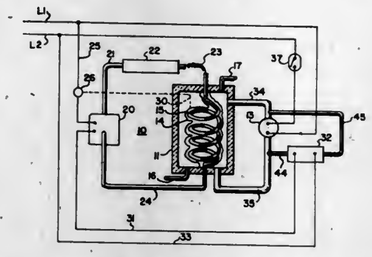
the formation of a minimum quantity of ice on the outside surfaces of a second bank of said heat exchange tubes. The combined stream is then passed through the second bank of heat exchange tubes so that the turbine input air is cooled further. As many additional banks of heat exchange tubes may be provided as are required to cool the air to a desired tempertaure, and the stream of natural gas recooled with additional streams of liquefied natural gas in the manner described above before it enters each bank.

3,552,135
FLUID COOLING ARRANGEMENT EMPLOYING LIQUIFIED GAS
James E. Peavler, Maryland Heights, Mo., assignor to American Air Filters Company, Inc., Louisville, Ky., a corporation of Delaware
Filed May 19, 1969, Ser. No. 825,670
Int. Cl. F25d *17/06*
U.S. Cl. 62—91 10 Claims



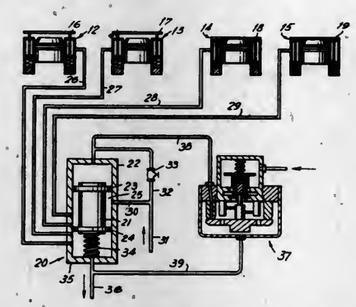
A high capacity cooling system where first and second vaporizable-condensible fluids are used to cool a selected fluid without adversely exposing the selected fluid to extremely low temperature. The first vaporizable-condensible fluid is passed through a heat exchange device in heat exchange relation with the second, vaporizable-condensible fluid whereby the first fluid is vaporized and the second fluid is cooled. The second fluid is then expanded and passed through a heat exchange device in heat exchange relation with the selected fluid to cool the selected fluid and the vaporized first fluid emitted from the first heat exchange device is then passed to a heat exchange device to precool the selected fluid before heat exchange with the second fluid.

3,552,136
SAFETY CONTROL FOR WATER CHILLERS
Russell E. Cook, Columbus, Ohio, assignor to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio
Filed Dec. 19, 1968, Ser. No. 785,090
Int. Cl. F25c *1/08*
U.S. Cl. 62—139 8 Claims



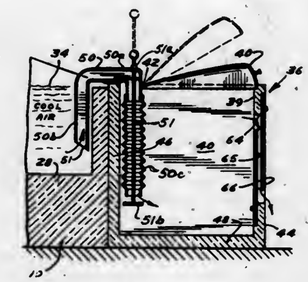
A water chilling machine, having a water freezing unit in a chamber through which water to be chilled is circulated by a pump, is shut down to discontinue freezing unit operation when the pressure differential between the inlet and outlet of the pump is below a given degree, which may occur due to lack of water, clogging of water conduits, etc., and also when that differential increases to a predetermined degree over normal, which occurs, for example, when an undesirable accumulation of ice occurs in the chamber.

3,552,137
REFRIGERATION COMPRESSOR CAPACITY CONTROL SYSTEM
Hans P. Christensen, Arhus, and Alfred Froslev, Tranbjerg, Denmark, assignors to A/S Thomas Ths. Sabroe & Co., Arhus, Denmark, a Danish joint-stock company
Filed Nov. 14, 1968, Ser. No. 775,788
Claims priority, application Denmark, Nov. 16, 1967, 5,738/67
Int. Cl. F25b *4/00*
U.S. Cl. 62—196 5 Claims



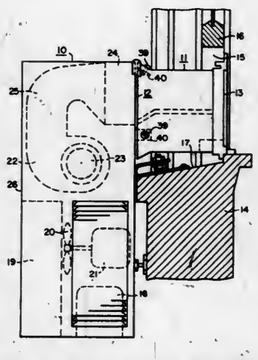
A multi-cylinder refrigeration compressor capacity control system, in which a plurality of compressor unloader mechanisms are operated by means of a capacity control valve having a displaceable valve member the position of which is adjustable in response to the compressor suction pressure in cooperation with an opposed valve actuating pressure. The actuating pressure is varied by means of a pressure control valve in accordance with the required amount of cold, the pressure control valve connecting the compressor suction side to the actuating pressure side of the capacity control valve through a nozzle. A nozzle-closing plate can be positioned in a more or less inclined position by a spring-loaded bellows, and the nozzle and nozzle-closing plate are rotationally adjustable in relation to one another.

3,552,138
REFRIGERATED DISPLAY UNIT
Bob K. Davis, Minneapolis, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed Oct. 13, 1965, Ser. No. 495,568
Int. Cl. A47f *3/04*
U.S. Cl. 62—249 12 Claims



1. A combined auxiliary refrigeration and display case for use with a primary display case comprising an enclosure formed from a heat insulating material defining a storage compartment in the enclosure, an opening in the enclosure for inserting and withdrawing food products therefrom and a duct means extending from the auxiliary refrigeration and display case to said primary display case for conveying cool air from the primary display case into the auxiliary display case.

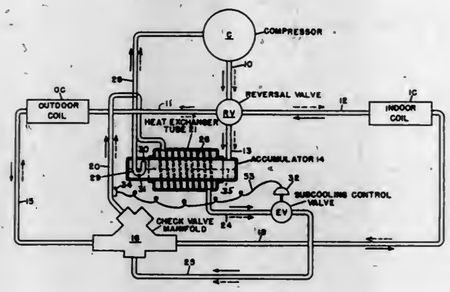
3,552,139
AIR CONDITIONER DUCT SECTION
Michael D. Ulich, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 5, 1968, Ser. No. 781,517
Int. Cl. F25d *23/12*
U.S. Cl. 62—262 8 Claims



An air conditioner of the outside mounted type having a one piece air conditioning duct section in which the

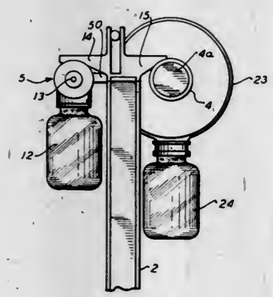
walls are formed in a one-shot molding operation of an expanded resinous polymer providing a close cell, rigid, wall structure.

3,552,140
REFRIGERATION SYSTEM WITH ACCUMULATOR
Robert T. Palmer, Sharon, Mass., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 19, 1968, Ser. No. 785,095
Int. Cl. F25b *13/00*
U.S. Cl. 62—324 3 Claims



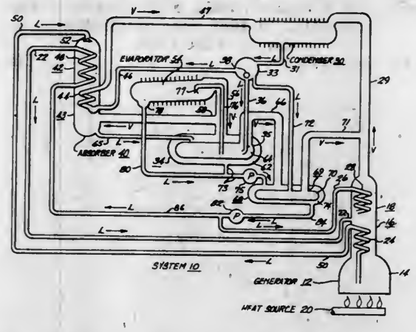
A refrigeration system has a compressor, a condenser, a tube around an accumulator, a subcooling control valve, an evaporator, and the accumulator connected in series in the order named. The heat exchange between the high pressure liquid flowing through the tube around the accumulator and the liquid within the accumulator evaporates excess liquid flowing from the evaporator into the accumulator, the high pressure liquid being subcooled by this heat exchange. This subcooling plus that provided by the subcooling control valve so increases the refrigeration effect that the subcooling control valve overfeeds the evaporator.

3,552,141
CONTROLLED ENVIRONMENT TENT
James D. Valenta, Madison, Wis., assignor to Air Reduction Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 19, 1968, Ser. No. 746,202
Int. Cl. A61m *16/02*
U.S. Cl. 62—407 4 Claims



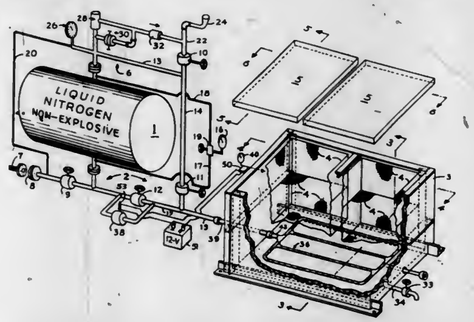
A controlled environment tent having a mechanical refrigeration system with removable and sterilizable heat exchange apparatus.

3,552,142
ABSORPTION REFRIGERATION SYSTEM WITH MULTIPLE ABSORPTION STAGES
Ralph C. Schlichtig, 11212 3rd S., Seattle, Wash. 98168
Filed Jan. 16, 1969, Ser. No. 791,650
Int. Cl. F25f *29/00*
U.S. Cl. 62—485 5 Claims



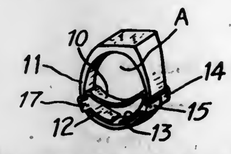
This refrigeration system includes a first absorber, an evaporation heat exchanger, a second absorber for drawing refrigerant vapor from the evaporation heat exchanger and absorbing the refrigerant vapor in an absorbent to thereby enrich the refrigerant in the absorbent passing successively through the first absorber, the evaporation heat exchanger, and the second absorber so that the boiling point of the enriched solution is so lowered that boiling of the enriched solution can be initiated within a heat exchange conduit associated with the first absorber thereby increasing the C.O.P. and making the generator more effective in separating refrigerant from enriched solution.

3,552,143
FISH COOLING AND PRESERVING SYSTEM
David Lee Johnson, Waveland, Miss., assignor of fifty percent to Marion Luther Dodson, M.D., Waveland, Miss.
Filed Nov. 20, 1968, Ser. No. 777,387
Int. Cl. F27b *19/00*; F17c *7/02*
U.S. Cl. 62—514 15 Claims



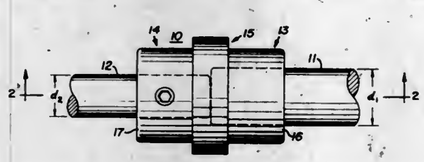
An apparatus and method, using boiled-off gas from liquid nitrogen, for cooling and preserving fish, meat or other spoilable products, especially adapted to cool fish (for example, shellfish) on fishing vessels. It comprises a box (placed in the hold of a fishing craft and easily opened from its top only), a removable wire-mesh basket or set of baskets in the box, means for supplying cold gaseous nitrogen from the bottom of the box, upward thru the basket and spoilable products, and means to maintain the gas at above-atmospheric pressure while it is in the box. This pressure forces nitrogen into the fish, thus cooling it and also preserving it against attack by aerobic bacteria. After the basket means is filled it and its cooled contents may be easily removed from the box.

3,552,144
DEVICE FOR ADJUSTING THE SIZE OF A RING
Joseph A. Cormier, 132 Main St., Spencer, Mass. 01562
Continuation of application Ser. No. 663,765, Aug. 28, 1967. This application Sept. 15, 1969, Ser. No. 858,198
Int. Cl. A44c *9/02*
U.S. Cl. 63—15.6 1 Claim



A resilient filler to be fitted into a large size ring to adapt it to fit a smaller finger, having a bridge element to fit against the inside of the finger of the wearer, spring members to gently urge the bridge element into firm finger engagement and integral clip elements by which the ring sizer is more or less permanently attached to the ring.

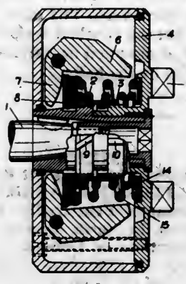
3,552,145
FLEXIBLE SHAFT COUPLING
Forrest A. Barton, Rockland, and Stratis George Belezos, Canton, Mass., assignors to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed July 31, 1968, Ser. No. 749,096
Int. Cl. F16d *3/12*, *3/64*
U.S. Cl. 64—14 3 Claims



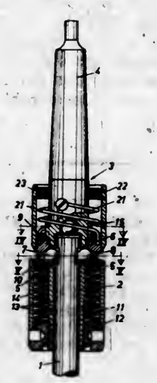
A flexible shaft coupling including a pair of rigid elements having axially extending interdigitated lugs and a flexible resilient one-piece element interposed between the rigid elements for transmitting torque therebetween, the flexible element including an annular ring surrounding the lugs and a plurality of fingers formed integrally with the ring and projecting radially inwardly therefrom between adjacent ones of the lugs.

3,552,146
DEVICE FOR ADJUSTING THE BEGINNING OF FUEL INJECTION OF AN INJECTION PUMP
Anton Pischinger and Max Haubenhofer, Graz, Austria, assignors to Friedmann & Maier, Hallein, near Salzburg, Austria, a corporation of Austria
Filed Dec. 17, 1968, Ser. No. 784,408
Claims priority, application Austria, Dec. 22, 1967, A 11,643/67
Int. Cl. F16d *5/00*; F16h *35/08*
U.S. Cl. 64—25 3 Claims

A device for adjusting the beginning of fuel injection of an injection pump in which the driving torque is transmitted from a coupling via an axially movable sleeve to a second coupling, with the teeth of one coupling having a pitch different from the teeth of the other coupling and an adjusting device cooperates with the sleeve to move the axially movable sleeve whereby the relative angular position of both couplings is altered. At least the driving flanks of the teeth of one coupling are inclined relative to the radial direction to such an extent that upon transmitting the driving torque by the couplings frictional forces are developed which in total are equal to or greater than the thrust component generated in view of the bevel gearing of one of the couplings.



3,552,147
COMBINED OVERLOAD CLUTCH AND CHUCK
Ture A. Johansson, Goteborg, and Tor Allan Wikholm, Partille, Sweden, assignors to Eriksbergs Mek. Verkstads Aktiebolag, Hisingen, Goteborg, Sweden
Filed Nov. 19, 1968, Ser. No. 776,898
Claims priority, application Sweden, Nov. 24, 1967, 16,127; Dec. 13, 1967, 17,135
Int. Cl. F16d *7/00*, *43/20*
U.S. Cl. 64—29 11 Claims



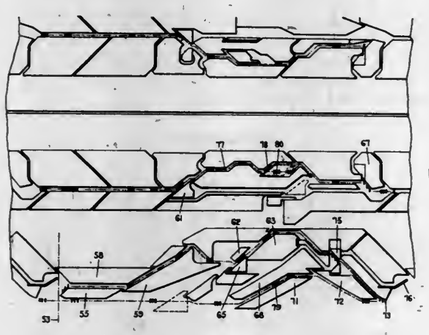
A chuck, especially for mounting a rotatable tool in a working machine, is devised as an overload clutch, which means that a first member (the tool shaft), is provided with at least two peripheral grooves located eccentrically in relation to the axis of rotation. The other tubular member (the chuck part of the machine) is opposite to each

groove in a first member mounted therein provided with a radially directed recess in which a rolling body, e.g. a steel ball is fitted. This body cooperates with a bevelled surface in the tubular member and is subjected to an elastic pressure by a spring. When the torque becomes too great, so that the first member tends to turn in relation to the enclosing tubular member, the balls will be forced radially outwards along the bevelled surface. The clutch may be devised in such a manner that the tool shaft is ejected from the clutch when this occurs and/or further in such a manner that the bevelled surface can be adjusted when the tool shaft is mounted or dismounted to minimize the resistance offered by the balls.

3,552,148
CAM ARRANGEMENT FOR KNITTING PATTERNED FABRICS

Frederick C. Wiesinger, Feasterville, Pa., assignor, by mesne assignments, to North American Rockwell Corporation, a corporation of Delaware

Filed Aug. 27, 1968, Ser. No. 755,603
Int. Cl. D04b 9/10
U.S. Cl. 66—14 **4 Claims**



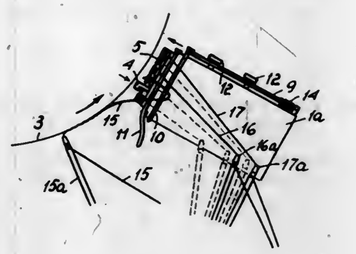
An arrangement of cams in multifeed, independent needle knitting machines of the double cylinder type whereby machine operations as single-selection or double-selection at each feed is interchangeably performed. The cylinder cams provide opportunity for knitting from single-selection patterns at cam sections capable of being set up for double selections.

3,552,149
THREAD DISPLACEMENT DEVICE FOR USE WITH CUTTING AND GRIPPING UNITS OF DOUBLE CYLINDER KNITTING MACHINES

Francesco Lonati, Via S. Polo 11, Brescia, Italy

Filed Apr. 14, 1969, Ser. No. 815,574
Claims priority, application Italy, Apr. 19, 1968, 15,491/68, Patent 832,245
Int. Cl. D04b 15/60
U.S. Cl. 66—14 **6 Claims**

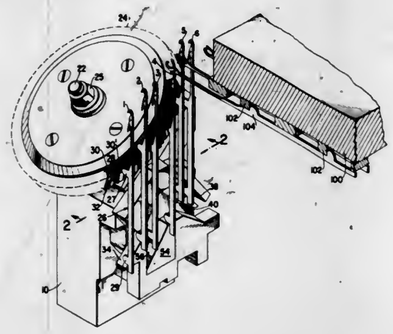
This disclosure relates to a device for the displacement of thread end portions adjacent the cutting and gripping members of double cylinder knitting machines, said device comprising a substantially rectilinear wire-like element for the displacement of the thread end portions during the opening of said cutting and gripping members and arranged to extend transversally adjacent the upper end of the latter, a support carrying said wire-like member and mounted for to-and-fro movement on the fixed structure of said cutting and gripping members, and a transverse arm mounted on said support and arranged to displace the mobile blades of said cutting and gripping members.



3,552,150
CYLINDER AND DIAL KNITTING MACHINES WITH PATTERN WHEELS

Lester Mishcon, Miami Beach, Fla., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey

Continuation-in-part of application Ser. No. 670,097 Sept. 25, 1967. This application June 11, 1968, Ser. No. 736,116
The portion of the term of the patent subsequent to May 26, 1987, has been disclaimed
Int. Cl. D04b 9/08, 15/76
U.S. Cl. 66—25 **2 Claims**



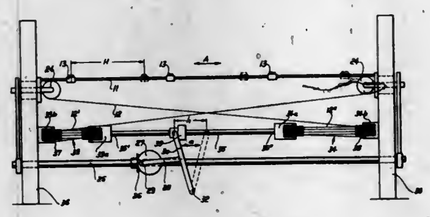
A cylinder and dial knitting machine equipped with pattern wheels is described, which machine provides double the production and patterning capability of equivalent-sized prior art machines. Such features are brought about by the utilization, in such a pattern wheel machine, of two-butt cylinder needles, a first butt of each such needle being for selective engagement only with pattern wheels, and the second butt of each such needle being for engagement only with cams associated with each pattern wheel, the cams associated with each pattern wheel including a raise cam for placing the needles in such positions that the pattern wheel may eventually selectively operate on the respective first butts, a stitch cam for lowering needles as they move beyond the pattern wheel and a placer cam between the raise and stitch cams. Such practice permits the pattern wheels and associated cams to be packed around the periphery of the knitting machine, with attendant high cloth production and patterning versatility.

The raise and placer cams are guarded to permit the machine to operate at higher speed with less attention and to thereby further increase productivity.

3,552,151
KNITTING MACHINE WITH A WEFT THREAD LAYING DEVICE

Georg Schüler and Walter Schmidt, Schauenstein, and Karl Vogel, Helmbrechts, Germany, assignors to Industriewerk Schauenstein, Schauenstein, Upper Franconia, Germany

Filed Apr. 16, 1968, Ser. No. 721,763
Claims priority, application Germany, Apr. 19, 1967, J 33,485, J 33,486
Int. Cl. D04b 23/00
U.S. Cl. 66—86 **13 Claims**

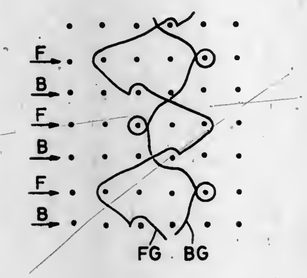


A knitting machine with a weft thread laying device, having thread holders extending to the comb plate and thread inserters arranged between the thread holders and a thread guide which is movably guided on rails extending parallel to the comb plate and has a thread guiding member above the thread holder.

3,552,152
METHOD OF KNITTING

Peter Koppenburg, Buchenweg 2, Obertshausen, Offenbach am Main, Germany

Filed Dec. 15, 1967, Ser. No. 690,822
Claims priority, application Germany, Dec. 19, 1966, M 72,072
Int. Cl. D04b 11/04
U.S. Cl. 66—88 **2 Claims**

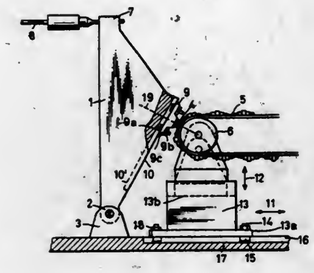


A cloth consisting of a closed-lap plain warp fabric and of a superposed open-lap tricot fabric is made on a two-needle bed Raschel knitting machine having two guide bars which are fully threaded. Each guide bar makes overlaps on the opposite needle bed while the other guide bar makes underlaps and laying-in motions on the same, fully set needle bed, whereby the wales of the two fabrics are interlocked, the underlaps of each fabric being bound to the stitches of the other.

3,552,153
PATTERNING MECHANISM FOR A WARP KNITTING MACHINE

Karl Kohl, Offenbacher Landstr. 20, Hainstadt am Main, Germany

Filed Nov. 17, 1967, Ser. No. 683,990
Claims priority, application Germany, Nov. 22, 1966, M 71,728
Int. Cl. D04b 15/66
U.S. Cl. 66—154 **6 Claims**

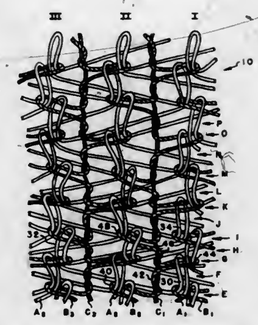


The length of all endwise movements of a guide bar on a warp knitting machine is increased or decreased in the same ratio without changing the pattern drum and/or chain by shifting the point of engagement between a roller on the associated shogging lever and the pattern drum or chain in a radial direction relative to the pivot axis about which the shogging lever oscillates. The roller may be shifted along the lever, or the pattern drum mounting shifted on the machine frame, or both.

3,552,154
KNIT FABRIC

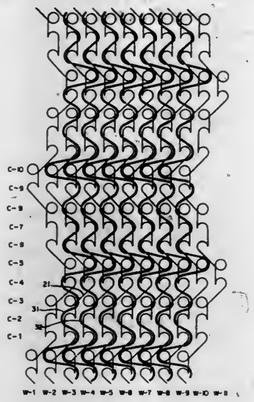
Bascum G. Lesley, Pickens, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of South Carolina

Filed Apr. 14, 1969, Ser. No. 815,572
Int. Cl. D04b 23/06
U.S. Cl. 66—192 **5 Claims**



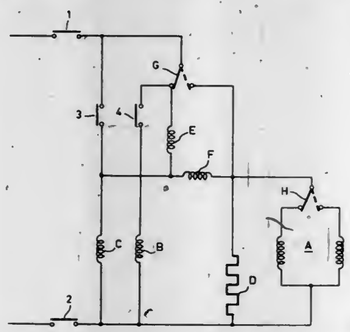
An elastic warp knit fabric comprising a ground construction composed of inelastic threads knitted in a plurality of courses and wales of single thread stitches, and elastic threads inlaid between the wales and extending generally parallel thereto.

3,552,155
WARP KNIT FABRIC AND METHOD
Hans Hartung, West Point, Pa., assignor to Penn Elastic Company, West Point, Pa., a corporation of Delaware
Filed June 6, 1969, Ser. No. 831,136
Int. Cl. D04b *23/06*
U.S. Cl. 66—192 12 Claims



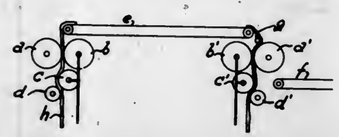
A warp knit fabric for ladies' figure control garments having a satin surface effect and a method of making same comprising interlacing elastic yarn so that at least two strands thereof pass under the outer legs of a non-elastic base yarn of two adjacent courses and repeating said interlacing steps after every three subsequent courses of the base yarn.

3,552,156
WASHING AND SPIN-DRYING MACHINE
Dominique Toulemonde and Yves Albert Daniel Thibaut, Somme, France, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 18, 1968, Ser. No. 760,452
Int. Cl. D06f *33/02*
U.S. Cl. 68—12 8 Claims



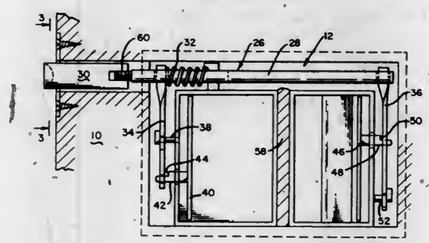
An automatic washing machine including a source of electric energy and a two-position safety switch. The energizing winding of the water supply valve and the winding of the drain pump motor are connected in series with one position of the safety switch across the energy source. A heating element and the drum motor winding are connected in parallel. This parallel combination is connected in series with the second position of the safety switch across the energy source. The motor winding for the programming device is connected between the junction of the valve winding and the drain pump winding and the junction of the second position of the safety switch with the parallel combination of the heating element and the drum motor winding.

3,552,157
MACHINE FOR THE CONTINUOUS PROCESSING OF SKINS
Silvio Repetto, Modena, Italy, assignor to S.p.A. Luigi Rizzi & Co., an Italian company
Filed Jan. 24, 1969, Ser. No. 800,800
Claims priority, application Italy, Jan. 27, 1968, 12,100/68; Nov. 13, 1968, 23,681/68
Int. Cl. C14b *1/06*
U.S. Cl. 69—42 8 Claims



A machine for processing sheet materials such as leather or skins including a plurality of cylinders defining a manually fed unit and a plurality of cylinders defining an automatically controlled unit. The apparatus includes at least one controlled conveyor belt or cylinder for transferring the piece being processed. The cylinder units effect selective preparation and processing of the pieces being processed.

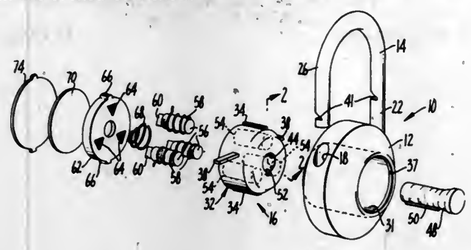
3,552,158
FLUSH LATCH
Johan Van Lengen, 2406 Washington St., San Francisco, Calif. 94115
Filed May 23, 1969, Ser. No. 827,277
Int. Cl. E05b *5/00, 9/02*; E05c *1/16*
U.S. Cl. 70—146 4 Claims



A flush latch is provided for a door which can be opened from either side by a simple scooping movement of the fingers. The flush latch allows doors to be stacked flat with the latch installed, lending itself to prefabrication. In accordance with one embodiment of the invention a key lock is also provided while in accordance with another embodiment a one-way lever lock is provided so that the door can be locked from one side by a simple movement of the lever.

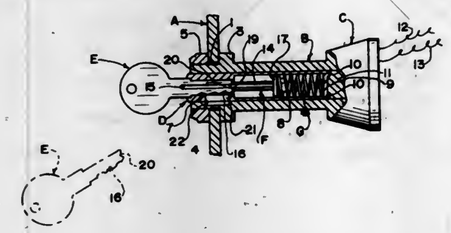
3,552,159
MAGNETIC KEY AND LOCK
Clark E. Craig, Modesto, Calif. (USS Wahklakum County, FPO New York, N.Y. 09501)
Filed Mar. 5, 1969, Ser. No. 804,394
Int. Cl. E05b *19/26, 47/00*
U.S. Cl. 70—276 9 Claims

A key and padlock combination comprised of a housing, bow, locking mechanism and magnetized key. The locking mechanism includes a cylinder received within the housing and a bolt carried by the cylinder for movement into and out of locking engagement with notches in the bow. A plurality of rotatable magnetic tumblers are carried within the cylinder to normally hold the bolt in the locked condition.



When the key is inserted into a keyway in the cylinder, the tumblers are rotationally aligned by the magnetic field of the key in such a way as to permit disengagement of the bolt from the bow, thereby unlocking the padlock.

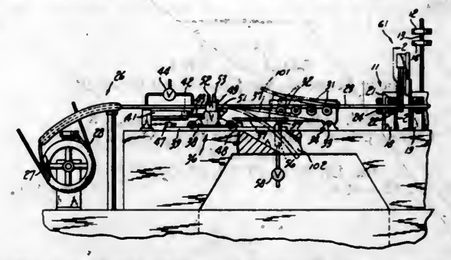
3,552,160
KEY EJECTOR LOCKS
Alfred A. Kleebauer, 174 Flood Ave., San Francisco, Calif. 94131
Filed Sept. 25, 1968, Ser. No. 762,398
Int. Cl. E05b *17/00*
U.S. Cl. 70—388 1 Claim



A key ejector lock in which novel spring actuating means is used for autimatically ejecting the key from the lock as soon as the tumbler barrel in the lock is returned to its normal starting position. In a modified form of the invention the key ejecting means includes a torsional spring that is compressed when the key is inserted into the lock and the spring is given a torsional when the key is rotated in one direction in the lock for opening the lock. The torsional force of the spring aids in rotating the tumbler barrel and key in the reverse direction when the key is freed so that the key is returned to its initial position and then the expanding force of the compressed spring is sufficient to eject the key from the lock.

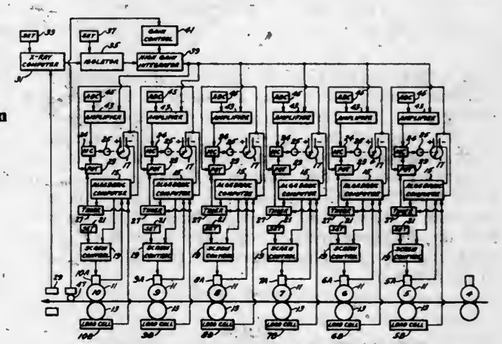
3,552,161
MILL PROTECTING DEVICE
Howard W. Garbe, Madison, N.J., and Harold S. Moss, Brooklyn, N.Y., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Apr. 26, 1967, Ser. No. 633,885
Int. Cl. B21d *55/00*
U.S. Cl. 72—4 14 Claims

Upon sensing a dimensional irregularity in rod being rolled from continuously cast bar by a mill, a sensing mechanism operates a switch to stop the mill and to sever and divert further continuously cast bar from the mill. The sensing mechanism is formed of radially movable



switch actuating members surrounding the moving rod and spaced from the rod by a predetermined tolerance.

3,552,162
ROLLING MILL CONTROL SYSTEM
George C. Gingher, Jr., Sparrows Point, and Lawrence J. Hubert, Baltimore, Md., assignors to Bethlehem Steel Corporation, a corporation of Delaware
Filed Apr. 22, 1968, Ser. No. 723,176
Int. Cl. B21b *37/12*
U.S. Cl. 72—8 13 Claims



A rolling mill has a gagemeter control on substantially every mill stand. An X-ray gage deviation signal is fed through an isolator unit which provides a wide dead-band within the gage tolerance for a particular order. If the gage deviation signal exceeds the width of the dead-band the deviation signal is integrated in a high gain integrator and used to change the set point of the gagemeters on each gagemeter controlled mill stand until the X-ray gage deviation returns within the dead-band provided by the isolator unit.

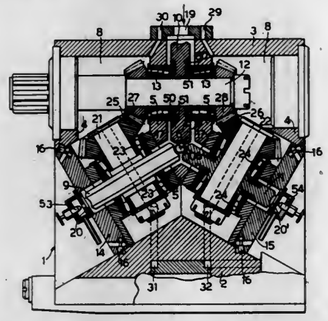
3,552,163
METHOD AND APPARATUS FOR CUTTING METAL BILLETS AND THE LIKE INTO LENGTHS
Henry B. Lloyd, Ty-Luc, Wenvoe, near Cardiff, Wales, assignor to G.K.N. Steel Company Limited, Glamorgan, Wales, a British company
Filed Apr. 29, 1968, Ser. No. 724,756
Claims priority, application Great Britain, Apr. 29, 1967, 19,870/67
Int. Cl. B21b *37/00*
U.S. Cl. 72—14 16 Claims



Method and apparatus for controlling the cutting into length of metal billets and bars, following the hot rolling

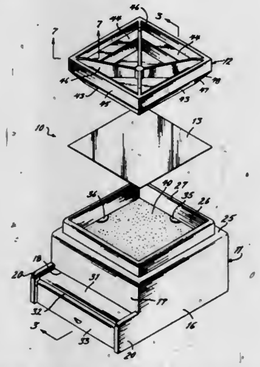
thereof, in such a manner as to minimise the amount of scrap left from the bloom or billet which is being rolled.

3,552,164
ROLLING MILL
Ilario Properzi, Via Cosimo del Fante 10, Milan, Italy
Filed Feb. 19, 1968, Ser. No. 706,378
Claims priority, application Italy, Mar. 29, 1967, 14,306/67
Int. Cl. B21b *45/02, 45/04, 27/10*
U.S. Cl. 72—45 6 Claims



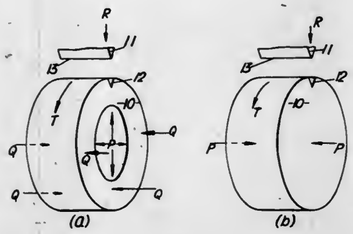
A rolling unit in a rolling mill for rolling metal stock comprises three rolls spaced at angles of 120° about a rolling axis. The peripheral outlines of the rollers define the shape of the cross-section desired for the metal stock. Means are provided for simultaneously cooling and lubricating with a first fluid at adjustable pressure the metal stock and the stock-engaging surfaces of the rolls and with a second fluid at independently adjustable pressure the guide members which serve to guide the metal stock and the remaining portions of the rolls not cooled by the first fluid.

3,552,165
DOMESTIC-PAN-FORMING DEVICE
John H. Taylor, 410 S. Harvey Ave., Ferguson, Mo. 63135
Filed May 22, 1968, Ser. No. 731,000
Int. Cl. B21d *26/00*
U.S. Cl. 72—57 5 Claims



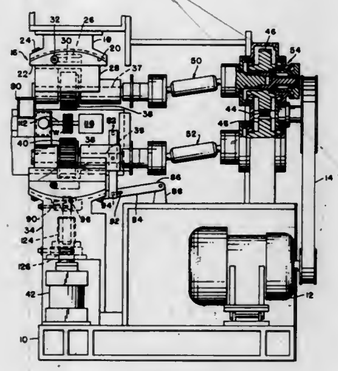
This disclosure relates to a domestic-pan former wherein an open housing includes a resiliently depressible backing member, and a die is engageable in the housing against the backing member for deforming a deformable sheet into conforming engagement with the die.

3,552,166
FORMING OF ANNULAR WORKPIECES
Alan Lawrence Percival, Cambridge, England, assignor to National Research Development Corporation, London, England, a British corporation
Filed Jan. 29, 1968, Ser. No. 701,225
Int. Cl. B21h *5/02*; B21k *1/30*
U.S. Cl. 72—58 12 Claims



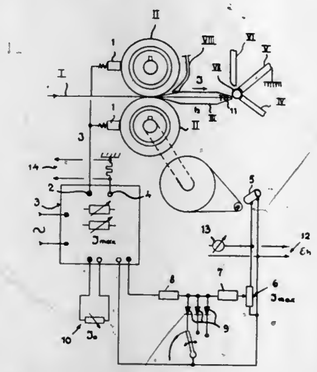
A method of forming a workpiece comprising moving a forming tool relative to at least a part of the workpiece to effect forming by plastic flow and applying a tensile stress to at least a part of the workpiece during the forming in a direction substantially perpendicular to the direction of said relative movement so as to assist at least part of the forming process.

3,552,167
GEAR ROLLING EQUIPMENT
Benjamin F. Bregi, Grosse Pointe Shores, Arthur B. Bassoff, Oak Park, and Russell W. Anthony, Harper Woods, Mich., assignors to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Sept. 26, 1968, Ser. No. 762,898
Int. Cl. B21h *5/02*
U.S. Cl. 72—94 13 Claims



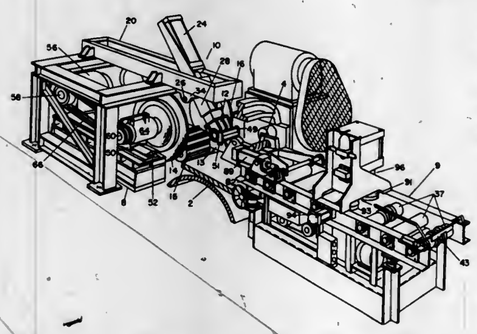
Gear rolling apparatus comprising a pair of rolling dies. Means are provided for driving both of said dies positively in timed rotation while providing for timing adjustment between the dies. One of the dies is vertically movable toward the other to apply rolling pressure. An arbor supports a work blank intermediate the dies, and means are provided for moving the work arbor toward the stationary die one-half the amount of movement of the movable die.

3,552,168
APPARATUS FOR TEMPERING SPRINGS IN A SPRING SPINNING MACHINE
Lars Erik Svensson, Tullinge, and Nils Lennart Wahlström, Monsteras, Sweden, assignors to AB Industrifjadrar, Monsteras, Sweden
Filed May 17, 1968, Ser. No. 730,165
Claims priority, application Sweden, May 17, 1967, 6,878/67
Int. Cl. B21k *21/00*
U.S. Cl. 72—128 4 Claims



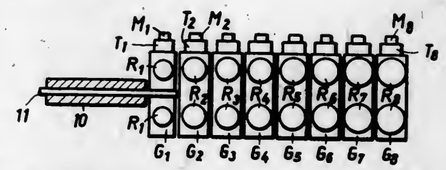
In an apparatus for tempering springs in a spring spinning machine the heating of the spring wire to temper it is realized with the aid by means of electric current which is brought to flow through the spring wire. The heating current is controlled in such a way in relation to the speed of advancing the spring wire that the heating current in regard of output is increased or decreased linearly with respect to the increase or decrease of the speed of advance of the spring wire. This is attained in that the speed of the spring wire is caused to influence a tachometer generator which produces a control current directly proportional to said speed.

3,552,169
SPRING END FINISHING
Samuel Fein, Irwin, and Regis A. Vey, Ben Avon, Pa., assignors to Crucible Steel Company of America, Pittsburgh, Pa., a corporation of New Jersey
Filed Mar. 15, 1968, Ser. No. 716,277
Int. Cl. B21f *11/00*
U.S. Cl. 72—129 9 Claims



This patent discloses machinery for finishing the end bearing surfaces of railway freight car truck springs. In making such springs, it has hitherto been conventional to taper the ends of the bars from which the springs are made as a separate operation, prior to heating the tapered-end bars to a coiling temperature and coiling them to form the springs. In accordance with the invention, the end-tapering operation is omitted, yet railway truck springs having good end bearing surfaces are obtained, this being done by the use of the machinery of the instant invention, which comprises equipment for simultaneously hot-machining opposite ends of a coiled, untapered spring bar. Grinding or sawing may be used. Apparatus for practicing the invention comprises means for removing the coiled spring bar from the mandrel upon which it is coiled, means for supporting the coil during the hot-machining operation, and means for finishing the coil ends, to leave flat bearing surfaces thereon. The equipment for controlling the operation of the spring end finishing machine of the invention to render it automatic is described. Superior properties of springs so made are indicated.

3,552,170
METHOD OF TREATING HOLLOW BLOOMS IN ROLLING MILLS
Gerd Pfeiffer and Horst Biller, Mulheim (Ruhr), and Claus Schrey, Oberhausen, Rhineland, Germany, assignors, by mesne assignments, to Mannesmannrohren Werke G.m.b.H., Dusseldorf, Germany
Filed Feb. 3, 1969, Ser. No. 799,147
Claims priority, application Germany, Feb. 1, 1968, 1,652,564
Int. Cl. B21b *17/10*,
U.S. Cl. 72—209 10 Claims

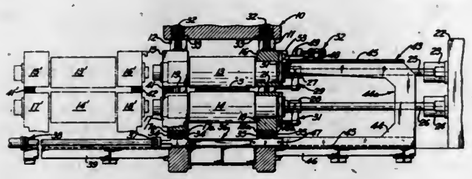


The operation of drives for the rolls of a row of roll stands in a rolling mill for treatment of hollow blooms which are mounted on mandrels and are converted into tubular articles during a pass through the mill is regulated in such a way that the speed of those rolls which engage the bloom is reduced when the leading end of the bloom reaches the rolls of the second stand and, where appropriate, again when the leading end of the bloom reaches the rolls of one or more next-following stands, and when the trailing end of the bloom leaves the rolls of the first stand and, where appropriate, again when the trailing end of the bloom leaves the rolls of one or more next-following stands. The reduction in the speed rolls is a fraction of the difference between the speed of the mandrel prior and subsequent to entry of the leading end of the bloom into a particular stand or a fraction of the difference between the speed of the mandrel prior and subsequent to issue of the trailing end of the bloom out of a particular stand.

3,552,171
ROLL CHANGING DEVICE FOR ROLLING MILLS
Charles Storer Shumaker, Glenshaw, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa.
Filed May 14, 1968, Ser. No. 729,026
Claims priority, application Great Britain, June 5, 1967, 25,866/67
Int. Cl. B21b *31/10*
U.S. Cl. 72—239 5 Claims

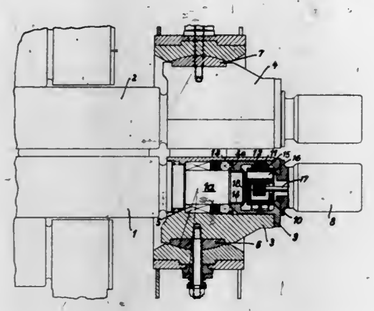
The disclosure provides a roll changing device for a rolling mill having a housing for supporting upper and lower roll assemblies and drives located at one side of

the housing for transmitting torque to at least one of said roll assemblies, a C-shaped support is located at the drive side of the mill for carrying at least the drive side



of the upper roll assembly through the housing during removal of the upper roll assembly. The lower roll assembly is removed from the housing by a standard roll changing rod.

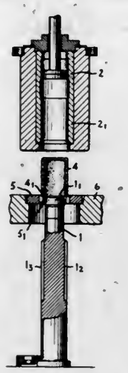
3,552,172
PLATE TRUEING OR FLATTENING MACHINE
Paul Hamacher, St. Ingbert, Saar, Germany, assignor to Verwaltungsgesellschaft Moeller und Neuman offene Handelsgesellschaft
Filed May 25, 1967, Ser. No. 641,183
Claims priority, application Germany, May 27, 1966, V 31,144
Int. Cl. B21b *35/00*
U.S. Cl. 72—249 **6 Claims**



A plate trueing or flattening machine is provided with an individual drive for each of the trueing rolls. Each driving motor is selected according to the load on the respective roll and the driving motor and a reduction gear are carried by tiltably supported bearing casings.

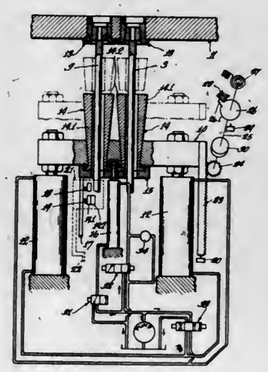
3,552,173
ARRANGEMENT FOR THE EXTRUSION OF TUBULAR ELEMENTS FABRICATED BY MEANS OF A PRESS AND ALSO THE PRESSES USED TO OBTAIN THESE ELEMENTS
Oreste Biginelli, Rue Buffon, Clermont-Ferrand, France
Filed Dec. 22, 1967, Ser. No. 692,920
Claims priority, application France, Jan. 12, 1967, 90,986
Int. Cl. B21c *35/00*
U.S. Cl. 72—257 **4 Claims**

A die-forming press for forming a tubular object having a bottom comprises a hollow cylindrical die closed at one end and comprising a forming chamber at the closed end and a guiding sleeve portion extending beyond the forming chamber a distance greater than the depth of the forming chamber. A punch tool movable into the die has a head portion of smaller cross-section and a guiding portion extending rearwardly of the head and fitting closely in the guiding sleeve portion of the die. The guiding portion of the punch tool enters the guiding sleeve portion of the die before pressure engagement of the head of the



punch with the material to be formed to assure correct positioning of the head portion relative to the die cavity. The guiding portion of the punch tool has axially extending grooves to receive corresponding projections of an extraction ring for removing the formed object from the punch tool.

3,552,174
STOCK PUSHING APPARATUS AND METHOD
George David McGoogan, Youngstown, Paul Douglas Noble, Lowellville, Joseph Leonard Shultz, Warren, and Floyd William Diehl, Austintown, Ohio, assignors to The McKay Machine Company, Youngstown, Ohio
Filed Dec. 7, 1967, Ser. No. 688,910
Int. Cl. B21c *1/26*
U.S. Cl. 72—284 **4 Claims**

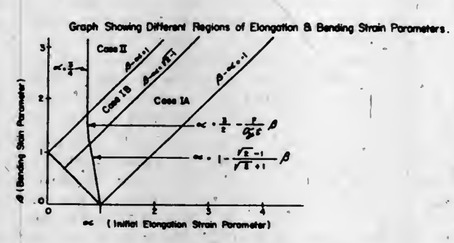


Apparatus and method for pushing elongated stock longitudinally through a die and the like, which strongly resists stock passage therethrough, by gripping the stock between jaws and shifting the latter toward the die. The jaws are mounted on a carriage which is reciprocable along a predetermined path of travel toward and away

from the die and such jaws are also reciprocable along the same travel path, but relative to the carriage, toward and away from stock gripping relation.

To minimize the length of stock at any one time subjected to longitudinal compression thus minimizing any tendency of the stock to buckle under such compression, a two-fold approach is employed: Firstly, the jaws are reciprocated by the carriage but a short distance in alternately gripping the stock and moving with the carriage toward the die to force the stock therethrough and releasing the stock and moving away from the die prior to regripping the stock and again forcing it through the die. Secondly, by novel mode of jaw release, each stock pushing stroke of the carriage terminates with the jaws virtually against the die. The novel mode of jaw release at the end of each stock pushing carriage stroke comprises holding the jaws against movement while the carriage is shifted away from the die. This results in relative movement between the carriage and the jaws to release the latter from stock gripping relation.

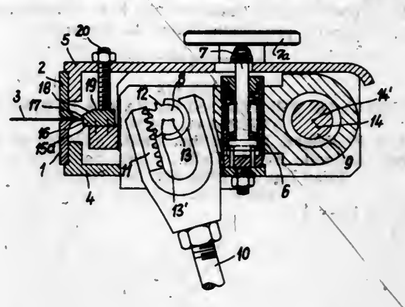
3,552,175
METHODS OF PERMANENTLY ELONGATING STRIP
Martin G. Kinnavy, Warren, Ohio, assignor, by mesne assignments, of 40/90 interest to Richard W. Herr, Cortland, Ohio; 15/90 interest to Salem Corporation, Carnegie, Pa., a corporation of Pennsylvania; and 35/90 interest to a Trust whose trustees are Richard W. Herr, Jean L. Herr, both of Cortland, Ohio, The Union Savings & Trust Company, Warren, Ohio, and John U. Anderson, Jr., Pittsburgh, Pa.
Filed Feb. 28, 1968, Ser. No. 708,947
Int. Cl. B21d *11/02*
U.S. Cl. 72—296 **10 Claims**



A strip is permanently elongated by applying a tension force to it and constraining it while under tension to at least one bend and at least one bend reversal which causes yielding and an incremental elongation strain that is produced between a bend and a subsequent bend reversal in which the magnitude of incremental elongation strain is related to the applied tension force and the applied bending strains.

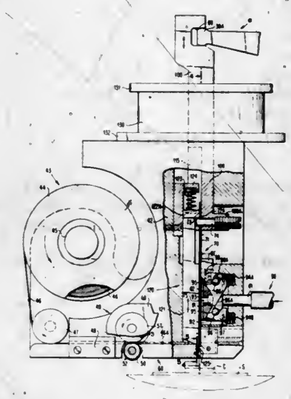
3,552,176
DEVICE FOR ROUNDING CUTOUT PIECES OF VERY THIN SHEET METAL
Walter Sommer, Essen, Germany, assignor to Fried. Krupp Gesellschaft mit beschrankter Haftung, Essen, Germany
Filed Sept. 11, 1967, Ser. No. 666,622
Claims priority, application Germany, Sept. 10, 1966, 1,527,926
Int. Cl. B21d *5/00, 19/00*
U.S. Cl. 72—312 **3 Claims**

A device for folding the end portion of a metal sheet by a relatively large angle, preferably an angle in excess of 135°. The device is characterized primarily by the arrangement of a single folding rail which has a nose portion and an inclined surface portion and the movement of which is so controlled that first the said nose portion folds the respective metal sheet end portion by 90° and subsequently the said inclined surface portion



folds the thus folded end portion beyond said 90° to the desired total folding angle.

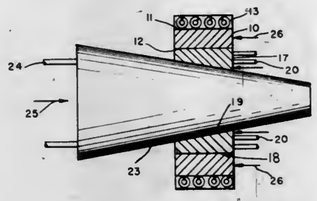
3,552,177
STRAP FORMER AND PLACEMENT APPARATUS
Anthony W. Orlando, Highland, and Anthony A. Pantusco, Newburgh, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Feb. 19, 1968, Ser. No. 706,444
Int. Cl. B21d *28/00, 31/00*
U.S. Cl. 72—338 **10 Claims**



Apparatus for forming and depositing discrete portions (straps) of formed, preferably pretinned material at a predetermined position, such as on a substrate. As disclosed, the apparatus includes a pair of contiguous forming and drive rolls having circumferentially disposed, substantially complementary forms adapted for receiving and forming therebetween at least one continuous strip of material which is supplied to the rolls on a reel type supply dispenser. The rolls feed the formed strip onto a tray, the tray having, at one end thereof, a terminal fixed first shear end adapted to cooperate with a perpendicularly oriented reciprocating shear blade, the terminal shear end and shear blade operating to remove the discrete portions of the strip. The shear blade also includes vacuum holding means for retaining a discrete portion (strap) upon shear of the strip, the shear moving past the terminal shear end for depositing the discrete portion upon subjacent substrates. The apparatus also includes a novel

dimpling pad which operates adjacent to the shear blade for providing an indentation in the strip prior to the shearing of the strip, so that the strap next to be sheared and positioned on the substrate will have dimples therein for location on projections from the substrate.

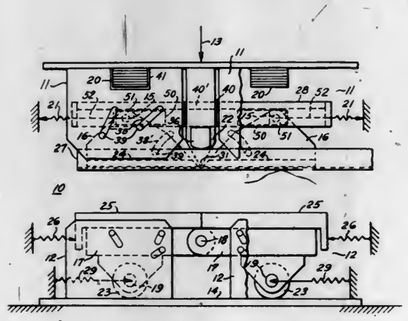
3,552,178
METHOD OF PRESTRESSING PARTS SUBJECT TO THERMAL SHOCK
Robert P. Felgar, Jr., Malibu, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Jan. 26, 1968, Ser. No. 700,925
Int. Cl. B21d *31/00*
U.S. Cl. 72—342 **11 Claims**



A method of prestressing refractory metals, ceramics and graphite including heating a surface of an article made from one of the refractory materials until it is hot enough to flow plastically, the heating being slow enough to avoid thermal shock; then applying a pressure to the article to cause the heated surface to flow plastically and be deformed, and cooling the surface, thereby providing residual stresses in the surface and residual stresses of opposite sign in the surface opposite the heated surface.

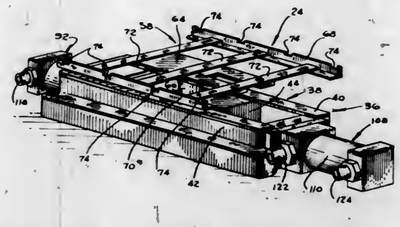
A prestressed article of manufacture made of a refractory material, the prestress having been applied in accordance with the above method.

3,552,179
UNIVERSAL BENDING MACHINE
Alexander T. Kapustin, Oakland, Calif., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed Jan. 15, 1968, Ser. No. 697,851
Int. Cl. B21d *7/00*
U.S. Cl. 72—389 **2 Claims**



An apparatus for bending structural members to any desired angle without distortion of the member, comprising opposing pairs of bending dies resiliently mounted respectively on a fixed bed and a moving ram.

3,552,180
AUTOMATIC AIR OPERATED FEED UNIT
Richard N. Hall, Greenwood, and John Dahl and Gerald O. Hall, Indianapolis, Ind., assignors to Hall Tool & Engineering, Inc., Indianapolis, Ind., a corporation of Indiana
Filed Apr. 25, 1968, Ser. No. 724,080
Int. Cl. B21d *43/00*
U.S. Cl. 72—419 **9 Claims**

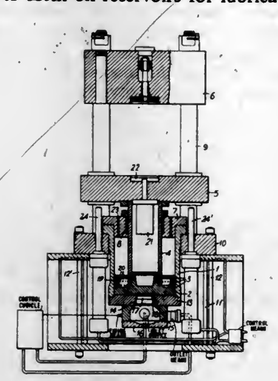


For use with a plurality of serially and equally spaced operating stations, such as die stations in a press, means for moving a plurality of workpieces serially through such stations, the moving means comprising guide means arranged to extend alongside such stations, carriage means arranged for reciprocation along the guide means, platform means, means for mounting the platform means on the carriage means for reciprocation in a direction transverse to the guide means, first drive means arranged to reciprocate the carriage means a distance equal to the spacing between such operating stations and second drive means arranged to reciprocate the platform means. The platform means comprises means for supporting such a plurality of workpieces with the spacing between such workpieces being equal to the spacing between such stations. The platform means is disposed so that, when the carriage means is at either end of its travel, each of certain of such workpieces is aligned with one of such stations, and, when the platform means is reciprocated in one direction, such workpieces are engaged thereby and moved away from such stations, and when the platform means is reciprocated in the opposite direction, such workpieces are moved thereby toward and deposited at such stations. Means is provided for controlling the second drive means to reciprocate the platform means in the said one direction when the carriage means is at one end of its travel and in the said opposite direction when the carriage means is at the opposite end of its travel.

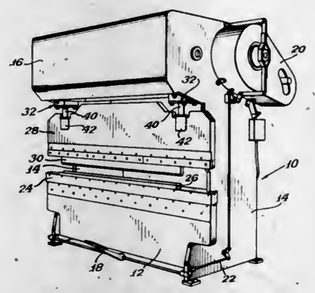
3,552,181
IMPULSE-FORMING AND LIKE MACHINES
Lin Tak Chan, Smethwick, and Stephen Albert Tobias, Birmingham, England, assignors to National Research Development Corporation, London, England, a British corporation
Filed Dec. 12, 1967, Ser. No. 689,820
Claims priority, application Great Britain, Dec. 13, 1966, 55,855/66
Int. Cl. B21j *9/10*
U.S. Cl. 72—430 **6 Claims**

An impulse-forming, forging or like machine is of the kind in which the moving member is moved by pressure of a gas, possibly air, applied initially to a sealed portion of the operating area of a piston member associated with the moving member, the seal being broken subsequently to enable the pressurised gas to be applied suddenly to substantially the full operating area of the piston to cause said moving member to be impulsed, and the machine is arranged for operation with a substantially upward impacting stroke of the moving member so that gravitational forces provide at least part of the effort of returning the moving member and its piston member to their initial set

positions. Use is made possible of so shaping the piston member as to form oil reservoirs for lubricating the piston; ducts may be provided, leading from said reservoirs to the vicinity of the piston rings.



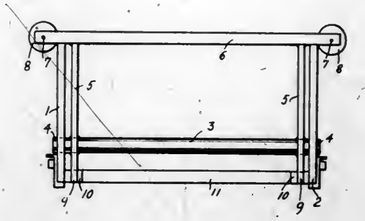
3,552,182
PRESS BRAKE WITH HYDRAULIC RAM ADJUSTMENT
Kenneth J. Handler, Wilmette, Ill., assignor to Wisconsin Machine Corporation, a corporation of Illinois
Filed Nov. 20, 1968, Ser. No. 777,346
Int. Cl. B21d *55/00*
U.S. Cl. 72—432 **3 Claims**



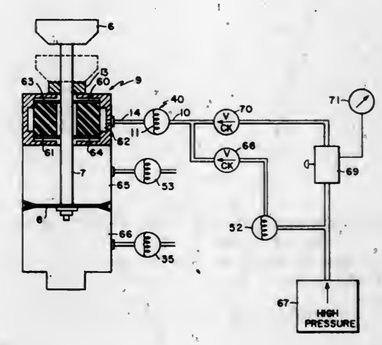
A press brake for bending metal. A hydraulic cylinder and piston arrangement is fixed at its upper end to the drive means and is fixed at its moving end to the ram. A hydraulic pump is connected to the hydraulic drive cylinder to adjust the spacing between the upper and moving ends of the cylinder and piston arrangement so that the spacing between the ram and the bed is adjusted to the desired amount. Means are provided to lock the hydraulic fluid in place on each side of the piston in the hydraulic cylinder so that the ram remains locked at the fixed spacing. Relief means are interconnected to the hydraulic fluid on the high pressure side of the piston for relieving the fluid pressure at a preselected level to avoid damage to the press brake.

3,552,183
HYDRAULICALLY OPERATED POWER PRESS
Robert Heitmann, 21–23 Brauhausstrasse, Hamburg, Germany
Filed Feb. 13, 1969, Ser. No. 799,011
Int. Cl. B21j *9/18*
U.S. Cl. 72—450 **2 Claims**

A hydraulically operated power press comprises two horizontally spaced upright members which are interconnected by means of a torsionproof shaft mounted between them, and an upper torsionproof cross member which extends parallel to said shaft. Two lever tumblers are mounted on said shaft and extend in close parallel relationship to the inner sides of said upright members. A press beam is associated with said two lever tumblers through the intermediary of two pressure bars pivoted to one end of each of said lever tumblers. Two hydraulic rams are provided to act upon the opposite ends of said lever tumblers thereby to swing said lever tumblers about said torsionproof shaft so that the press beam is raised and lowered from and onto a press table in permanent parallel relationship to the latter.



3,552,184
POST SHOCK CONTROL SYSTEM
Charles F. Breese, Owasso, and J. R. Leach and Carroll R. Roberts, Tulsa, Okla., assignors to Avco Corporation, Tulsa, Okla., a corporation of Delaware
Filed Sept. 3, 1968, Ser. No. 756,980
Int. Cl. G01n *3/08*
U.S. Cl. 73—12 **6 Claims**

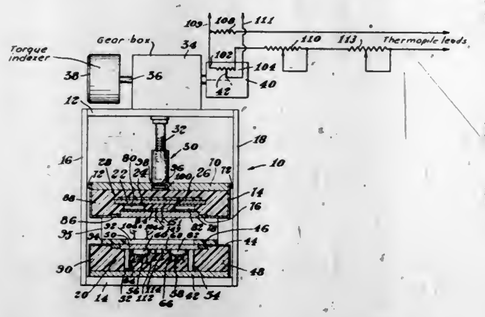


The present invention is an improvement in shock testing machines of the type that include a carriage, an anvil, and means for raising, holding, and releasing the carriage and braking it on rebound. In the machine disclosed the carriage is first raised to an elevated position, then charged in such manner as to determine the degree of impact on a fixed anvil, the carriage being held by a pneumatic brake as it is charged. Finally the carriage is released so that it impacts the anvil, developing a shock pulse, and rebounds, the rebounding being terminated by reapplication of the brake. The present invention provides an improvement comprising valving and circuitry so arranged that the carriage is held in fully elevated position by the application of pneumatic line pressure to the brake, but rebound is terminated by the application of a lesser and regulated pressure to the brake.

3,552,185
THERMAL CONDUCTIVITY APPARATUS

John V. Goode, Jr., and Zack J. Moore, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Oct. 9, 1968, Ser. No. 766,181
Int. Cl. G01n 25/18
U.S. Cl. 73—15 7 Claims



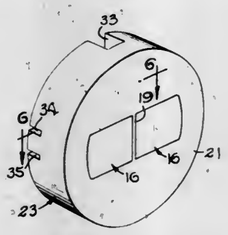
This invention comprises an apparatus employing thermoelectric heat pumps to effect the required level of temperature control necessary to provide an adequate measurement of the thermal conductivity of insulating foams.

The method of establishing a fixed thermal difference across the sample is accomplished by placing the sample between two surfaces whose temperatures are accurately controlled. The cold plate temperature is accurately set and controlled by a thermoelectric heat pump driven by a high gain proportional controller. The hot plate is also operated at an accurately controlled temperature, heat being supplied from a close-coupled proportionally controlled low mass heater. The heat flow through the sample is measured with a heat flow transducer which produces an EMF that is proportional to the heat flow per unit time and area through the foam. The EMF thus derived is voltage divided by a slide wire which is mechanically coupled to an in-place thickness indicator, and the appropriate analog corrections are made to provide a signal for direct digital read-out of "K."

3,552,186
APPARATUS FOR MEASURING THE DEW POINT TEMPERATURE OF A GAS

Hugh R. Sproul, Rockton, Ill., assignor to Alco Standard Corporation, Valley Forge, Pa., a corporation of Ohio

Filed Apr. 1, 1969, Ser. No. 812,089
Int. Cl. G01n 25/04
U.S. Cl. 73—17 3 Claims

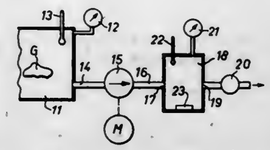


The dew point temperature of a gas is measured by a thermocouple operable to detect and signal the temperature of a sensing plate which is alternately cooled and heated to cause moisture in the gas to periodically condense between a pair of electrodes supported on one surface of the plate. The sensing plate is made of a highly thermally conductive material such as beryllium oxide to reduce the temperature differential between the condensing surface and the thermocouple and thereby improve the accuracy and sensitivity of the apparatus. To increase the service life of the apparatus, the electrodes are seated in recesses in the sensing plate and are flush with the condensing surface.

3,552,187
DEVICE FOR MEASURING THE RELATIVE MOISTURE CONTENT OF GASES

Kurd G. Groninger, Wettingen, Switzerland, assignor to Sina AG, Zurich, Switzerland

Filed Feb. 15, 1968, Ser. No. 705,761
Int. Cl. G01n 25/56, 27/02
U.S. Cl. 73—29 8 Claims

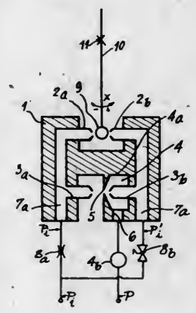


An apparatus for measuring the moisture content of a gas sample, which apparatus includes a chamber for receiving the gas sample and means for compressing the gas sample supplied to the chamber for increasing the number of gas molecules per unit volume of the chamber. The chamber has a moisture measuring head located therein, which head has a hydroscopic electric resistor having a resistive valve which varies in dependence on the relative humidity within the chamber, the hydroscopic electric resistor being connected to an external electric measuring circuit.

3,552,188
PNEUMATIC GAP DETECTOR FOR A FORCE MICROMETER BALANCE AND SIMILAR DEVICES

Jean-Noel Gaston Andre Rolland, Montrogue, France, assignor to Compagnie des Compteurs, Paris, France, a company of France.

Filed Sept. 25, 1969, Ser. No. 860,934
Claims priority, application France, Sept. 27, 1968, 167,868
Int. Cl. G01b 13/12
U.S. Cl. 73—37.5 2 Claims

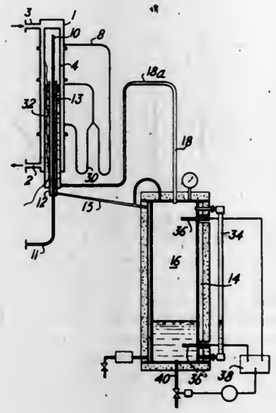


A pneumatic gap detector for a force micrometer balance and similar devices has a ball fixed to a member whose position gap is to be detected. The gap detector has a first and second pair of nozzles with the ball being placed between the first pair of nozzles. The detector also has a pressure chamber surrounding one of the second pair of nozzles forming a pneumatic differential amplifier. A pressure detector is connected to the pressure chamber of the amplifier to detect the position gap.

3,552,189
APPARATUS FOR DETECTING SCALE FORMATION

Pierre Courvoisier, Grenoble, Emile Muratore, Egreve, Andre Roche, Clermont Ferrand, and Paul Vignet, Grenoble, France, assignors to Commissariat a l'Energie Atomique, Paris, France

Filed July 10, 1969, Ser. No. 840,655
Claims priority, application France, July 26, 1968, 160,692
Int. Cl. G01n 17/00
U.S. Cl. 73—61.2 10 Claims



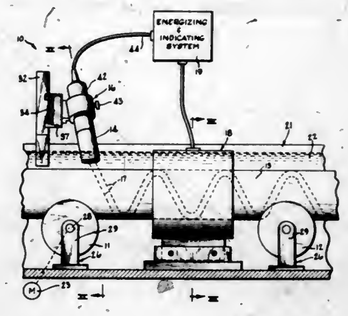
Apparatus to detect danger of scale formation on a surface for the transfer of heat between a scale-forming fluid and a fluid in the form of vapor even before any deposit has begun to form has a duct for the circulation of scale-forming fluid which has been withdrawn from the heat-transfer system to be monitored. There is a monitoring tube in the duct with means for maintaining said tube at a temperature which is slightly higher than that of the heat-transfer surface, and means for detecting the formation of a deposit on the wall of said tube. The heating means may be a circulation system in which vapor withdrawn from the heat-transfer system is brought into contact with the internal wall of the monitoring tube.

3,552,190
ACOUSTIC TESTING SYSTEM FOR ELONGATED OBJECTS

Bernard J. Lefebvre, Roselle, Ill., assignor to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware

Filed July 11, 1967, Ser. No. 652,592
Int. Cl. G01n 29/04
U.S. Cl. 73—67.7 13 Claims

Testing apparatus in which energy is transmitted along an elongated object to be reflected by inhomogeneities transversely out of the object to receiving means. Preferably, ultrasonic energy is transmitted into the object at an angle such that it impinges upon substantially the entire cross-section and most preferably, the angle is such that the energy travels in a generally helical path. The receiving means comprises either a plurality of transducers

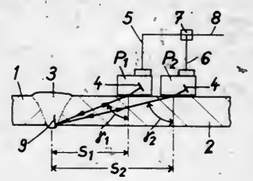


in angularly spaced relation around the object, or a cylindrical transducer encircling the object.

3,552,191
METHOD OF TESTING WORKPIECES BY MEANS OF ULTRA-SOUND WAVES ACCORDING TO THE IMPULSE ECHO METHOD

Josef Heseding, Essen, Germany, assignor to Ruhrgas Aktiengesellschaft, Essen, Germany

Filed Jan. 30, 1968, Ser. No. 701,580
Claims priority, application Germany, Jan. 31, 1967, R 45,162
Int. Cl. G01n 29/04
U.S. Cl. 73—67.7 7 Claims



A method of and apparatus for non-destructively examining workpieces, especially welding seams, by means of ultra-sound waves according to the impulse-echo method, in which ultra-sound waves are emitted from at least two separate ultra-sound emitter-receiver angular testing heads and sent into the workpiece zone to be examined in such a way that the sound waves of said emitter-receivers meet in said zone while said emitter-receivers are so spaced from the workpiece zone to be examined that the sound waves from one emitter-receiver require more time to reach the workpiece zone to be examined than the sound waves from the other emitter-receiver, means being provided for recording echoes received by said emitter-receivers.

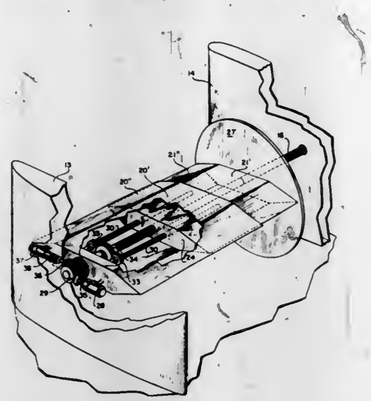
3,552,192
ROTARY EXCITATION DEVICE

William F. Grosser, Marietta, Ga., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Feb. 16, 1968, Ser. No. 706,032
Int. Cl. G01m 7/00
U.S. Cl. 73—71.5 10 Claims

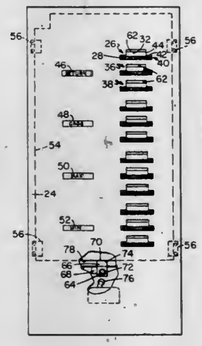
An aerodynamic vane is mounted for rotation on the primary control surfaces of an aircraft remote from the

longitudinal centerline to excite the primary structural modes throughout the aircraft basic frequencies during a flight flutter or dynamic response test program. Full 360° rotation of these vanes gives improved excitation perpendicular to the mounting plane, as well as in the fore and



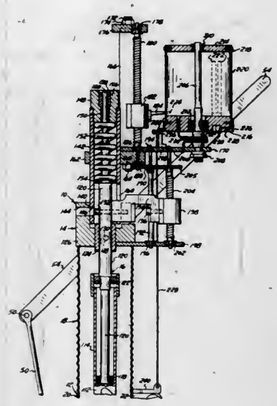
aft direction with a minimum size vane resulting in fewer and simplified mounting and operational problems. Each vane is linearly adjustable to vary span-wise according to the speed of the aircraft to effect a relatively constant excitation force.

3,552,193
MATERIAL TESTER WITH MODE INDICATOR
Robert J. Belliveau, South Weymouth, Mass., assignor to Instron Corporation, Canton, Mass., a corporation of Massachusetts
Filed Nov. 8, 1968, Ser. No. 774,323
Int. Cl. G01n *3/08*
U.S. Cl. 73—93 **8 Claims**



Materials testing apparatus has a crosshead movable in opposite directions, respectively, during two modes of testing, control circuitry having an element with positions corresponding to each mode, separate indicia for each mode for indicating crosshead position, a shutter with two positions in each of which the indicia for the then operative mode are made visible and the indicia for the other mode are obscured, and selector mechanism for selecting the condition of the element and the position of the shutter.

3,552,194
SOIL PENETRATION AND SHEAR MEASURING INSTRUMENT
Edward M. Hawes, 32418 Birkshire Road, St. Claire Shores, Mich. 48082
Filed July 12, 1968, Ser. No. 744,359
Int. Cl. G01n *3/14, 3/24*; F16h *29/20*
U.S. Cl. 73—84 **9 Claims**

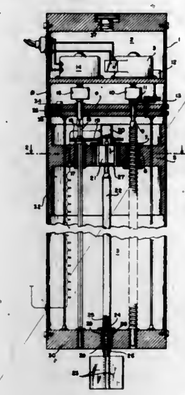


In this instrument, a sinkage plate attached to a vertical shaft is selectively pushed straight downward for straight penetration or in a spiral path for shear penetration by means of a rotary nut threadedly engaging a rotary fast-thread screw shaft which is selectively connected or disconnected from the nut for unitary or relative motion therebetween by means of a selective clutch. The screw shaft at its upper end is engaged by the lower end of a non-rotatable shaft through a thrust bearing. The non-rotatable shaft is in turn engaged by and subjected to the thrust of a calibrated compression loading spring, the upper end of which is given an initial loading by manually moving downward an upper spring abutment structure carrying a rotary recording drum. The downward motion of the non-rotatable shaft is transmitted through a carriage and motion-multiplying mechanism to a scriber which records the motion on a chart attached to the rotary drum. The resulting graph shows the resistance offered by the ground to the penetration of the sinkage plate either direct or in shear, depending on whether the screw shaft is locked by a clutch against rotation or is unlocked and free to rotate. The recording drum is spring-wound and its rotation is controlled by a flexible cable wound around a portion of the drum and guided downward over a pulley to an anchorage on the substantially immovable base structure of the instrument.

3,552,195
VANE SHEAR DEVICE
Thomas J. Koprowski, Agoura, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Dec. 13, 1968, Ser. No. 783,592
Int. Cl. G01n *3/24*
U.S. Cl. 73—101 **4 Claims**

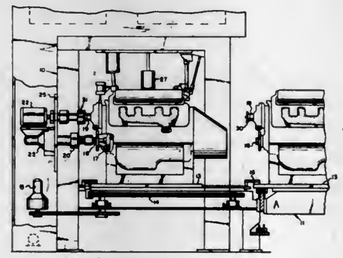
A device capable of being remotely controlled to measure the shear strength of sediment in an aquatic environment is disclosed. A constant torque is induced by a motor through a kinetic energy device, such as spring vanes, into a paddle on the end of a oil pressurized shaft. When the bottom sediment resists the torque the potentiometer

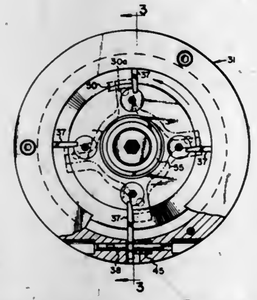
monitors the relative rotation between the motor rotation and the shaft paddle. The torque application rate, the



yield point, the strain rate, and the ultimate shear of the sediment can be recorded.

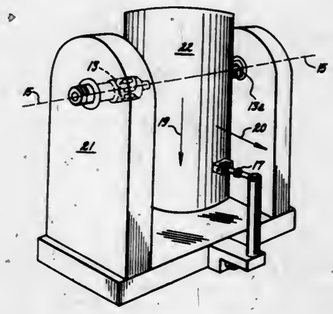
3,552,196
TEST STAND FOR VEHICLE ENGINES
Andrew F. Schrom, Livonia, Mich., assignor to Scans Associates, Inc., Livonia, Mich., a corporation of Michigan
Filed July 18, 1968, Ser. No. 745,926
Int. Cl. G01m *15/00*
U.S. Cl. 73—117.2 **7 Claims**





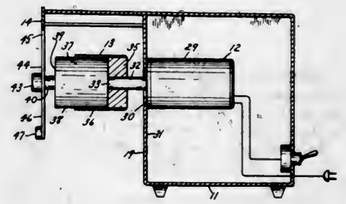
The application discloses an improved test stand for motor vehicle engines, which stands receive test engines automatically and which includes a device for starting such engines from its front end by direct drive connection with its crankshaft. The invention solves the problem of testing simultaneously with the engine also its water pump, which testing had heretofore been considered impracticable due to wide variations of the distance between the center line of the crankshaft and of the water pump shaft and the resulting misregistry in the stand between the water pump driving means of the test stand and the water pump shaft of the test engine. The application discloses a connection bringing into axial registry only the crankshaft and the engine starting device and taking care of the resulting misregistry between the water pump shaft and its electric motor driving means by a coupling comprising only driving members contacting but not physically connected to the driven member on the water pump shaft.

3,552,197
FORCE RESOLVER FOR INFLIGHT THRUST DETERMINATION
Carlo Pavone, Los Angeles, and Hans Karl Ziebarth, Pacific Palisades, Calif., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 25, 1968, Ser. No. 778,473
Int. Cl. G01l *5/16*
U.S. Cl. 73—117.4 **3 Claims**



A direct thrust determination system for determining the total force applied by one or more engines in a VTOL aircraft by resolving for each engine mount the thrust force into force components along three orthogonal directions and separately adding the force components along each orthogonal direction and, in addition, for determining the total moment about each of three arbitrary axes of the aircraft which moments are applied by the engines, by summing the products of each parallel force component by its distance from each one of the arbitrary axes.

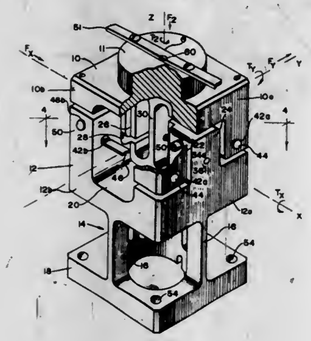
3,552,198
TORQUE MEASURING DEVICE
Samuel J. Friedland, Jericho, N.Y., assignor to Collectron Corporation, New York, N.Y.
Filed July 23, 1968, Ser. No. 746,960
Int. Cl. G01l *3/16*
U.S. Cl. 73—134 **1 Claim**



A device for determining static and dynamic torque of a rotary device including a housing and a shaft mounted

for rotation within said housing, including means for rotating the housing at a predetermined rate, and weighted lever means frictionally engageable upon the shaft, said lever means cooperating with scale means indicating a value corresponding to torque developed.

3,552,199
MOMENT TRANSDUCER
Jean-Pierre A. Pugnaire, Arlington, and Herman W. Erichsen, Dedham, Mass., assignors to Bytrex, Inc., Waltham, Mass.
Filed Oct. 17, 1968, Ser. No. 768,236
Int. Cl. G01l 1/22, 1/26
U.S. Cl. 73—141 **6 Claims**

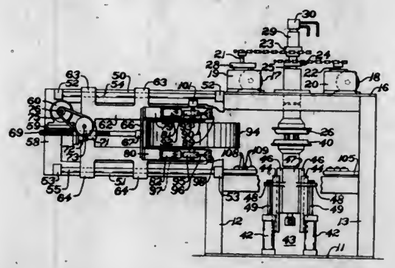


A transducer for measuring differences in masses or the moment product by a large mass employs a floating head and a stationary body connected by way of an elastic support beam which is relatively easily bendable in only one direction when a bending moment is applied to the floating head. A gaging beam loaded with strain sensors extends perpendicularly through an opening at the geometrical center of the support beam. One end of the gaging beam is connected to the floating head and its other end is connected to the stationary body. In response to an applied moment, the floating head rotates about a point at the intersection of the two beams and subjects the gaging beam to a pure bending moment. The characteristics of the two beams are selected so that the energy absorbed by the gaging beam is relatively small compared to the energy absorbed by the support beam. Yet the stress produced thereby is quite large, thereby maximizing the transducer output.

The transducer is relatively unresponsive to spurious forces and moments and the transducer is also protected against overload. In addition, a closed bellows system minimizes oscillations in the transducer.

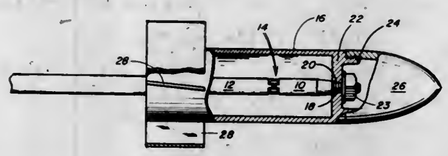
3,552,200
TIRE UNIFORMITY MACHINE
Otto E. Hermanns and Ralph F. Cooper, Akron, Ohio, assignors to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Feb. 16, 1966, Ser. No. 527,854
Int. Cl. G01m 17/02
U.S. Cl. 73—146 **13 Claims**

A tire uniformity testing machine has a pair of spaced flanges which support a pneumatic tire in cooperation with a movable load wheel which is moved toward and away from the tire to maintain a preset load on the tire. A sensing means mounted on the load wheel of the carriage which supports the load wheel measures lateral and



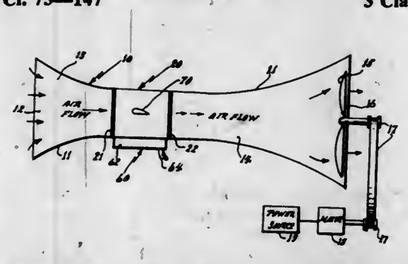
radial force variations due to tire non-uniformity construction as the tire is rotated.

3,552,201
WINDTUNNEL ROLL-MOMENT BALANCE
Eugene V. Horanoff, Clarksville, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 11, 1968, Ser. No. 766,890
Int. Cl. G01m 9/00
U.S. Cl. 73—147 **4 Claims**



A windtunnel roll-moment balance having an elongated cylindrical support for an aerodynamic body connected to a sting by a pair of diametrically opposed roll flexures and eight symmetrically disposed flexures which permit the roll flexures to deflect in response to a rolling moment while preventing the roll flexures from deflection in response to pitch and yaw forces.

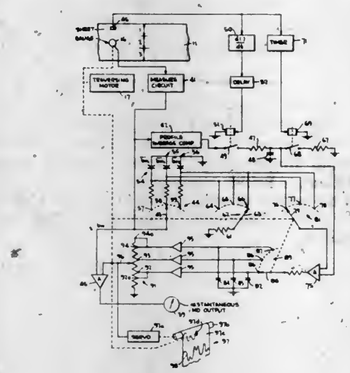
3,552,202
WINDTUNNEL FOR VTOL AND STOL AIRCRAFT MODELS
Richard A. Kroeger and Fred L. Heltsley, Tullahoma, Tenn., and Morris R. Smith, Birmingham, Ala., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Nov. 13, 1968, Ser. No. 775,391
Int. Cl. G01m 9/00
U.S. Cl. 73—147 **3 Claims**



An apparatus for achieving interference-free velocity distribution in the planes of the walls of a subsonic wind tunnel for testing models of aerodynamic vehicles which

induce large flow distortions near the walls. Sets of adjustable louvers make up the test section walls and extend both upstream and downstream of the model to be tested. The louvers open into the static pressure region of the environment outside the wind tunnel. The floor, starting beneath the model and extending downstream, is comprised of a series of flapper vanes which open into a plenum chamber which is at an adjustable pressure level. This serves to scavenge and exhaust the downward air and jet from the model. The adjustability of the wall louvers, coupled with the adjustable pressure scavenging system, permits very close and continuous matching of the desired streamlines. When the louvers and scavenge vanes are closed the wind tunnel operates as a conventional wind tunnel.

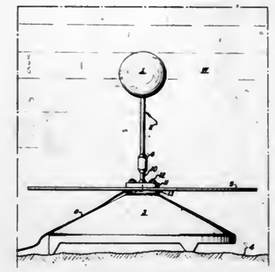
3,552,203
SYSTEM FOR AND METHOD OF MEASURING SHEET PROPERTIES
Edward J. Freeh, Tucson, Ariz., assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Nov. 13, 1967, Ser. No. 682,336
Int. Cl. G01n 33/34; D21f 7/06
U.S. Cl. 73—159 **53 Claims**



A machine direction property of a moving sheet is measured by determining deviations between the average value of the property in a plurality of zones in a cross direction and an average value of the property for all the zones, as derived from a detector scanning across the sheet, and comparing the deviations with the detector output. The detector scans across the sheet a number of times to accumulate the deviations in each zone over a long time interval. Measurements made during successive scans are time weighted. Measurements between zones are interpolated as a function of a detector position. A machine direction parameter is controlled in response to the measured machine direction property.

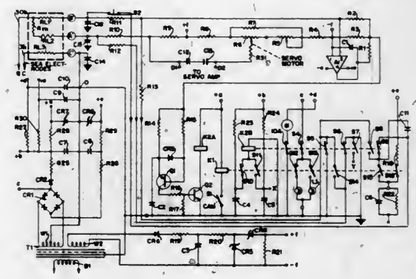
3,552,204
MEANS FOR DETECTING AND RECORDING WATER WAVE DIRECTION
Louis Tourmen, Grenoble, France, assignor to Société Grenobloise d'Etudes et d'Applications Hydrauliques (SOGREAH), Grenoble, France, a corporation of France
Filed Apr. 8, 1968, Ser. No. 719,379
Claims priority, application France, Apr. 13, 1967, 5,092
Int. Cl. G01p 5/04
U.S. Cl. 73—170 **10 Claims**

The apparatus includes an immersed obstacle having a vertical symmetrical rotational axis, and mounted on a rod having a slight bend under water pressure on the obstacle. The direction of bend of the rod by such water



pressure which is caused by the movement of the waves, is measured by suitable recording means.

3,552,205
APPARATUS FOR MEASURING PROPERTIES OF A FLUID BODY FROM AN AIRBORNE VEHICLE
Samuel A. Francis, Marion, Mass., assignor to Buzzards Corp., Marion, Mass., a corporation of Massachusetts
Filed July 24, 1968, Ser. No. 747,191
Int. Cl. G01d 1/10
U.S. Cl. 73—170 **7 Claims**

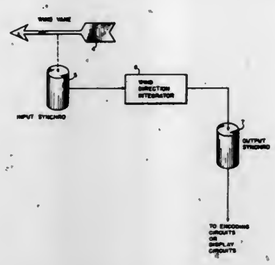


A probe containing a property sensing element and two electrodes of a "sea switch" is deployed from the airborne vehicle and is electrically connected by a three-wire cable to a bridge measuring circuit and recorder located aboard the vehicle. When the probe lands in the fluid the two electrodes are connected by the conductive fluid, the sensing element becomes a measured part of the bridge circuit, and a signal is produced to initiate the operation of a balancing servosystem and of the recorder.

3,552,206
THREE VECTOR WIND DIRECTION INTEGRATOR
Charles A. Lauter, Jr., Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 10, 1969, Ser. No. 805,502
Int. Cl. G01p 13/02
U.S. Cl. 73—188 **6 Claims**

The invention consists of apparatus for measuring the average wind direction comprising an input synchro transmitter coupled to a wind vane for producing component signals representing the instantaneous position of

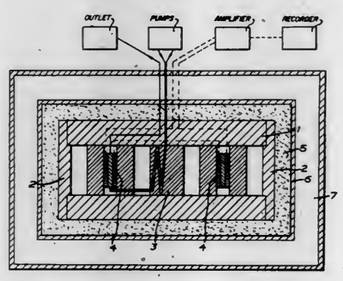
the vane. These signals are detected, integrated and applied to an output synchro the shaft of which is positioned in accordance with the combined integrated signals from the synchro transmitter.



3,552,207
METHODS AND APPARATUS FOR CONTINUOUSLY ANALYSING LIQUIDS BY MICROCALORIMETRIC MEASUREMENT OF THE THERMAL FLOW OF THE LIQUID

Paul Robin Monk, Lockleys, Adelaide, South Australia, Australia, and Bertil Ingemar Wadsö, Lund, Sweden, assignors to LKB-Produkter AB, Mariehall, Sweden

Filed Mar. 18, 1969, Ser. No. 808,170
Claims priority, application Sweden, Mar. 20, 1968, 3,662/68
Int. Cl. G01k *17/10;* **G01n** *25/20*
U.S. Cl. 73—190 **18 Claims**



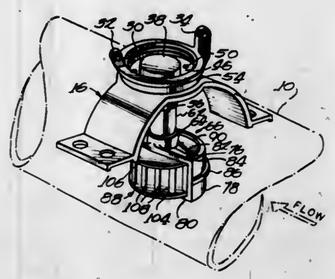
A method for continuously analyzing liquids by microcalorimetric measurement wherein the liquid is caused to flow through a heat exchanger arranged in heat equilibrium with a pair of thermopiles. The heat-equalized liquid is then caused to flow through an elongated channel in a measuring cell in thermal contact with one of the thermopiles. Voltage charges due to chemical and physical processes as the liquid passes through the cell are then measured.

3,552,208
IMPELLER-TYPE FLOWMETER

Richard W. Destache, Milwaukee, and Donald J. Kullmann, Fox Point, Wis., assignors to Badger Meter Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin

Filed May 31, 1968, Ser. No. 733,393
Int. Cl. G01f *1/08*
U.S. Cl. 73—230 **3 Claims**

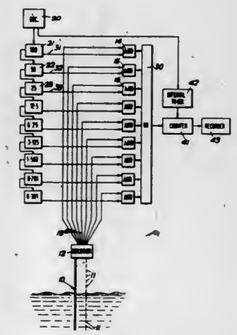
A flowmeter having a partially shielded impeller and a support housing which is mounted on a saddle adapted to be clamped to a conventional conduit over an opening in the conduit wall through which the impeller is inserted to be submerged in the flow stream, with the support housing secured to the saddle by a slot and screw arrangement accessible externally of the assembly for providing angular adjustment of the housing and shield about the axis of the impeller to effect calibration of the meter. The support housing includes a multi-part telescopically joined vertical support assembly for ready adaptation to various installations.



3,552,209
LIQUID LEVEL INDICATORS

James Stewart Johnston, Bognor Regis, England, assignor to Rosemount Engineering Company Limited, Bognor Regis, England, a British company

Continuation-in-part of application Ser. No. 722,461, Apr. 18, 1968. This application Sept. 8, 1969, Ser. No. 856,134
Int. Cl. G01f *23/00*
U.S. Cl. 73—304 **14 Claims**



A liquid level indicator, particularly suitable as a tide gauge, indicates the mean level of a liquid. A number of sensing elements, e.g. capacitive electrodes or conductivity sensors, spaced vertically, sense the presence or absence of liquid at each electrode and give signals which may be converted to a binary digital number indicating the instantaneous level. This digital output signal controls a series of AND gates to pass pulses which, for each gate, are at a rate corresponding to the significance of the appropriate digit. The pulses are non-coincident pulses obtained by dividing down the output of an oscillator. The total number of pulses from all the gates over a predetermined period is fed to a counter which indicates the mean level over that period. By using pulse trains, the level is averaged over a period of time enabling the mean level to be determined to an accuracy better than the electrode spacing.

3,552,210
TEMPERATURE INDICATING UTENSIL

Robert C. Wright, Jr., 18 Lafayette Ave., Hingham, Mass. 02043

Filed Apr. 17, 1969, Ser. No. 816,910
Int. Cl. G01k *1/14, 7/22*
U.S. Cl. 73—352 **9 Claims**



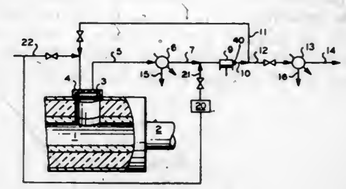
A utensil, for example a fork, for measuring and indicating the internal temperature of food, comprises a handle with impaling means, for example fork tines, extending therefrom to be inserted into the food for manipulating it. The impaling means terminates in a tubular member having a sharp tip to facilitate penetration of the food. Mounted within the tubular means at the tip is a temperature sensitive element, e.g. a thermistor, which varies, e.g. by varying its resistance, according to temperature. An electrical energy source, for example a battery, is mounted within the handle, and a current meter is mounted on the handle. A circuit interconnects the temperature sensor, battery, and meter so that current flow through the meter varies with the temperature sensor and thereby indicates the temperature at the tip of the tubular member.

3,552,211
MIXED PHASE SAMPLING SYSTEM

Robert E. Dollinger, Borger, Tex., Robert H. Kallenberger, Bartlesville, Okla., and Arthur E. Frazier, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Oct. 9, 1968, Ser. No. 766,145
Int. Cl. G01n *1/24*
U.S. Cl. 73—421.5 **5 Claims**

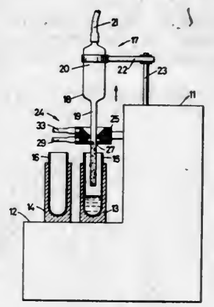
A sample of the gas included in carbon black smoke is obtained by drawing the gas sample through a reversible-flow filter and a first and a second cooler. A compressor, which draws the gas sample into the apparatus, is connected between the first and second coolers and has a conduit routed back to the filter. Thus, a portion of the sample gases withdrawn through the filter, first cooler and compressor is reintroducable to the filter for cleaning solids from the filter.



3,552,212
DEVICE FOR CLEANING THE EXTERIOR OF AN ELONGATED BODY

Erik Lars Öhlin, Stockholmsvagen 46C, Stocksund, Sweden

Filed Dec. 3, 1968, Ser. No. 780,787
Claims priority, application Sweden, Dec. 6, 1967, 16,779/67
Int. Cl. G01n *1/14;* **B08b** *3/00*
U.S. Cl. 73—423 **4 Claims**



A device for cleaning the outer surface of a take-off tube in a liquid analysis apparatus or other elongated bodies of uniform cross-section. A collar having a bore slightly larger in diameter than the take-off tube is positioned so that the portion of the take-off tube to be cleaned passes through the bore when it is moved up and down to aspirate samples. Suction is applied to the annular space between the walls of the bore and the take-off tube to cause air or a wash-liquid to flow around the take-off tube in the bore and entrain any loosely adhering sample deposits on the outer surface of the take-off tube.

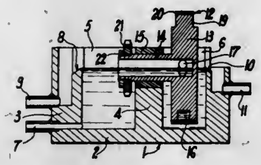
3,552,213
LIQUID METERING WHEEL

Pierre Auchapt, Bagnols-sur-Ceze, and André Brun, Orsan, France, assignors to Commissariat a l'Energie Atomique, Paris, France

Filed June 3, 1969, Ser. No. 830,052
Claims priority, application France, June 27, 1966, 156,771
Int. Cl. G01n *1/10*
U.S. Cl. 73—424 **5 Claims**

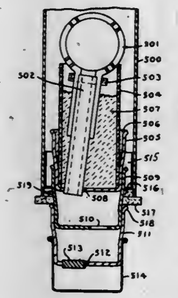
The metering wheel includes an open vessel with a partition wall which defines on each side two chambers

each associated with a constant-level weir, a metering disc carried by a hollow rotary shaft which is rotatably mounted in leak-tight manner within a bearing carried by the partition wall and immersed in one of the chambers. The metering disc is formed by a flat cylinder which comprises on the one hand an internal cavity having a development of 180° within the interior of the disc and a volume which is equal to the flow to be metered per



complete revolution of the disc and a connecting duct for providing a radial communication between said cavity and the hollow shaft. The disc comprises on the other hand a portion of reduced thickness over a development of 180° which is complementary to the development of the internal cavity, the reduction in volume of the disc within said portion of reduced thickness being such as to correspond to one-half the volume of said cavity.

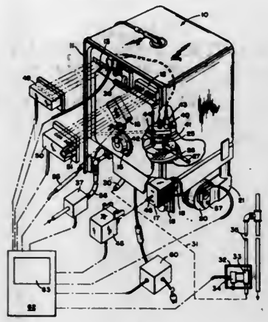
3,552,214
DEVICE FOR SAMPLING MOLTEN METAL
William J. Collins, Gary, Ind.
(7005 Madison St., Merrillville, Ind. 46410)
Original application Mar. 18, 1968, Ser. No. 713,640. Divided and this application Mar. 25, 1969, Ser. No. 818,177
Int. Cl. G01n *1/12*
U.S. Cl. 73—425.4 10 Claims



A molten metal sampler of the type comprising an elongated tubular housing having a sample receiver mounted in the lower end thereof so that molten metal flows into the receiver and solidifies when the housing is inserted into a molten metal bath. The invention involves a ring shaped support for facilitating removal of the receiver from the housing after the device is removed from the bath.

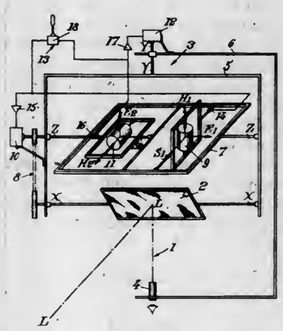
3,552,215
TESTER FOR TIMER CONTROLLED DEVICE
Stuart E. Athey, Troy, Ohio, assignor to The Hobart Manufacturing Company, Troy, Ohio, a corporation of Ohio
Filed Jan. 3, 1969, Ser. No. 788,902
Int. Cl. G01m *19/00*
U.S. Cl. 73—432 10 Claims

An apparatus for testing timer controlled devices such as dishwashers, having a timer mechanism which controls electrically the components of the device in a programmed sequence, includes an auxiliary timer drive motor which is temporarily connected to the internal timer to move it rapidly through its operating cycle, transducers connected to various components within the device to sense their



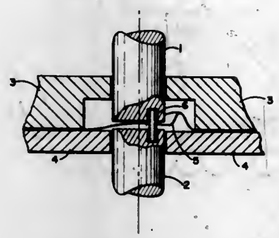
operating conditions, circuit means sensing if any component deviates from its prescribed limits and if it operates at the proper time during the programmed sequence, and indicator lamps for specifically identifying any component which fails to operate properly.

3,552,216
AIMING APPARATUS INCLUDING GYROSCOPIC REFERENCE SYSTEM
Marcel Pasquet, Neuilly-sur-Seine, France, assignor to Societe d'Applications Generales d'Electricite et de Mecanique SAGEM, Paris, France
Filed Oct. 23, 1968, Ser. No. 769,931
Claims priority, application France, Oct. 31, 1967, 126,637
Int. Cl. G01c *19/00*
U.S. Cl. 74—5.34 10 Claims



A movable element, such as a mirror—which is supported by a gimbal system in a manner to be able to pivot about a first axis, which can itself pivot about a second axis orthogonal to the first axis—reflects a propagatory phenomenon, such as optical radiation, on to a receiver—which is disposed so that the propagatory phenomenon that it receives is coaxial to the second axis. The movable element is controlled by a reference platform stabilized and piloted by two gyroscopes having each a single degree of freedom.

3,552,217
CONTROL APPARATUS
Timothy B. Sands, Acton, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Jan. 30, 1969, Ser. No. 795,203
Int. Cl. F16j *15/50*
U.S. Cl. 74—18 3 Claims



A hermetic sealed shaft coupling for transmission of rotary motion through a partition. Motion is transmitted from one moving member to another through a flexible membrane providing a hermetic seal between the two members.

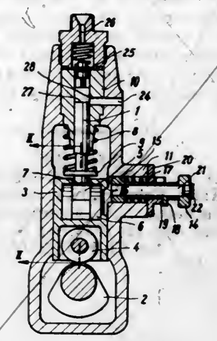
3,552,218
TUBULAR FLEXIBLE REMOTE MULTIPLE CONTROL
Walter V. Gregory, Jr., Candelwood Isle, Conn., assignor to Controlex Corporation of America, Croton Falls, N.Y., a corporation of New York
Filed Jan. 28, 1969, Ser. No. 794,617
Int. Cl. F16c *1/20*
U.S. Cl. 74—501 9 Claims



The novel tubular flexible remote control has two or more push-pull members, each of which is movable on rolling elements disposed on its opposite sides. Such control with two push-pull members may be coupled with a chain and sprocket mounted on a rotatable shaft so that by pulling one member or the other the shaft may be rotated in either direction and thus effect the remote operation of a valve, a boat rudder or the like.

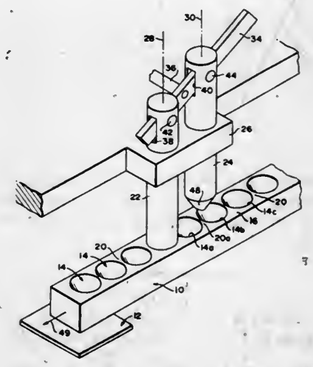
3,552,219
FUEL INJECTION PUMP FOR INTERNAL COMBUSTION ENGINES HAVING A PLURALITY OF COMBUSTION CHAMBERS
Josef Berg, Cologne-Kalk, Germany, assignor to Klockner-Humboldt-Deutz Aktiengesellschaft, Cologne-Deutz, Germany
Filed Apr. 18, 1969, Ser. No. 817,414
Claims priority, application Germany, Apr. 27, 1968, 1,751,477
Int. Cl. F16h *25/08, 53/06*; F04b *49/00*
U.S. Cl. 74—55 4 Claims

A fuel injection pump for internal combustion engines, in which a reciprocable pushrod has rotatably adjustably mounted therein a prismatic shaft with a plurality of substantially plane sides differently spaced from the axis of rotation of said prismatic shaft means, said prismatic



shaft means having its axis of rotation extending substantially perpendicularly with regard to the reciprocatory movement of the injection plunger resting on any selected substantialy plane side of said prismatic shaft means.

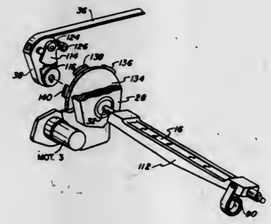
3,552,220
PRECISION INCREMENTAL STEPPING DEVICE
Donald E. MacDermod, Rowley, Mass., assignor to Teradyne Components, Lowell, Mass., a corporation of Massachusetts
Filed Mar. 19, 1969, Ser. No. 808,412
Int. Cl. F16h *21/54*
U.S. Cl. 74—107 18 Claims

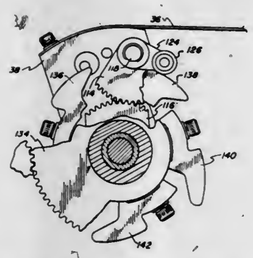


A precision incremental stepping device including a movable indexing member having a plurality of identical conical depressions formed thereon at spaced regular intervals. A pair of plungers having identical conical ends, complementary to the conical depressions on the indexing member are mounted above the indexing member for alternating movement that is toward and away from the depressions so that as one plunger moves downwardly toward the indexing member the other plunger will move upwardly away from the indexing member. The axes of the plungers are spaced so that when the cone of one plunger is in engagement with a given depression, the cone of the other, remote plunger will be disposed above

and in misalignment between a selected pair of depressions. When the position of the plungers is reversed to move the remote plunger downwardly toward the indexing member, the cone of the downwardly moving plunger is guided into a predetermined one of the selected pair of depressions by means of a truncated surface formed on the cone which engages the desired one of the depressions. Downward movement of the plunger is continued until its cone is wedged into and is seated fully, in complementary engagement, in the predetermined depression to cause the indexing member to advance by a predetermined increment.

3,552,221
SPEED CONVERTING MECHANISM
Donald W. Tates, Fairport, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 15, 1968, Ser. No. 721,468
Int. Cl. F16h *27/10*
U.S. Cl. 74—142 **6 Claims**

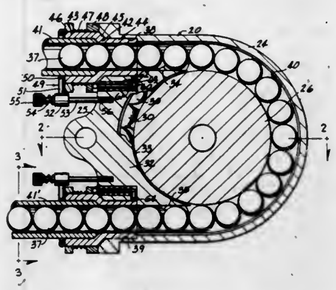




A mechanism for selectively converting a constant velocity, constant throw movement of a tape into a rotary oscillation of an object scanning mirror at a preselected constant velocity.

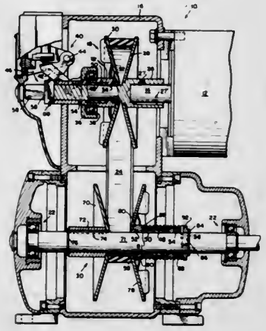
3,552,222
POWER TRANSFER DEVICE
Francis B. Eck, 605 Brookline Drive SE., Marietta, Ga. 30060
Filed Nov. 14, 1968, Ser. No. 784,504
Int. Cl. F16h *5/00*
U.S. Cl. 74—216.3 **6 Claims**

A power transfer device having a pair of sprocket housings connected by a pair of flexible tubes, the tubes and the sprocket housings forming an endless track through which a plurality of juxtaposed spheres or balls are passed. The rotation of a sprocket in one housing causes transfer of the balls in their continuous path so as to rotate the sprocket in the other housing. Each sprocket is bifurcated and an arcuate member is placed adjacent the sprockets to facilitate the transfer of the balls from the housings to the tubes. A quick disconnect assembly is provided between the ports of each housing and the tubes, by which the tubes may be readily disconnected. The inadvertent discharge of the balls from the tubes and the housings is prevented by check members. The sprocket of the present



invention cooperates, in certain embodiments with a rack or a worm gear or a planetary arrangement.

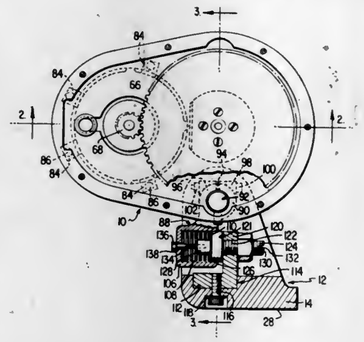
3,552,223
LIQUID-LUBRICATED EXPANSIBLE V-PULLEY SYSTEM
Woodrow R. Glasson, Glen A. Malcom, George M. Lambert, and Jackie W. Shumaker, Columbus, Ind., assignors to The Reliance Electric and Engineering Company, Cleveland, Ohio, a corporation of Ohio
Filed Jan. 6, 1969, Ser. No. 789,312
Int. Cl. F16h *55/56*
U.S. Cl. 74—230.17 **15 Claims**



A resiliently-expansible V-pulley comprising a hub, a coned disc axially movable on the hub, the coned disc having an axial bore for telescopically receiving the hub, the bore being formed with a peripherally and axially extending cutout intermediate its ends and providing a reservoir. Means providing a seal between the disc and the hub at each end of the reservoir are provided and porous means disposed in and substantially filling the reservoir is provided, the porous means being impregnated by liquid lubricant. The lubricant, which is fed to the outer surface of the hub by the porous means, serves to prevent fretting corrosion. Means for preventing relative rotation between the disc and the hub is provided, which means does not penetrate the reservoir. In one embodiment of the invention, this means includes a key carried by the sleeve portion of the disc so that, in its axially innermost position, the key is axially outwardly from the reservoir; in another embodiment, the conventional coiled compression spring which urges the disc axially inwardly provides a driving connection between the disc and the

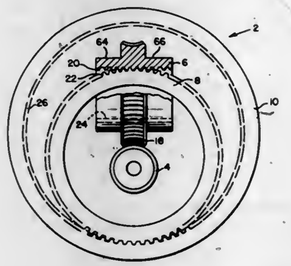
hub, one end of the spring being connected to the disc and the opposite end of the spring being connected to the hub; and in a further embodiment, the driving connection between the disc and the hub is provided through the cartridge which contains the compression spring.

3,552,224
LATERALLY SHIFTABLE GEARBOX ASSEMBLY WITH PRELOAD ADJUSTMENT
John W. Dobrauz, Chicago, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed June 27, 1969, Ser. No. 837,188
Int. Cl. F16h *19/04, 55/18, 57/00*
U.S. Cl. 74—405 **13 Claims**



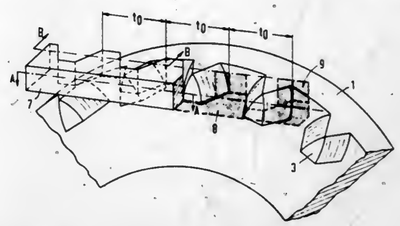
A gearbox assembly including a motor driven pinion gear is fixed to a pivot shaft which in turn is rotatably mounted on a stationary bracket. A plunger lever is coupled to the pivot shaft by a split collar allowing angular adjustment of the plunger lever on the pivot shaft. A coil spring biasing the plunger lever and the pinion gear into mesh with the driven rack gear is adjusted to relieve or increase the spring-biasing force.

3,552,225
INTERNAL WORM AND SPEED REDUCER USING AN INTERNAL WORM
Donald M. Van Voorhis, 54 Heatherhurst Drive, Pittsford, N.Y. 14534
Filed Oct. 24, 1968, Ser. No. 770,272
Int. Cl. F16h *1/16, 1/18, 1/20*
U.S. Cl. 74—425 **7 Claims**



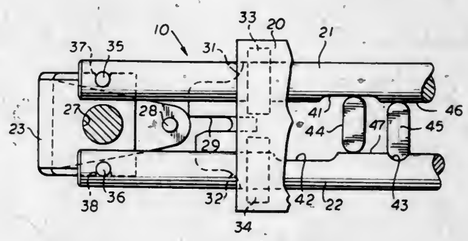
An internal worm for use in gears, and a speed reducer using the internal worm and having only four moving parts.

3,552,226
GEAR WITH INVOLUTE TEETH
Karlheinz Roth, Rudolf-Wilke-Str. 11, Braunschweig, Germany
Filed July 29, 1969, Ser. No. 845,727
Claims priority, application Germany, July 31, 1968, 1,775,345
Int. Cl. F16h *55/08*
U.S. Cl. 74—457 **8 Claims**



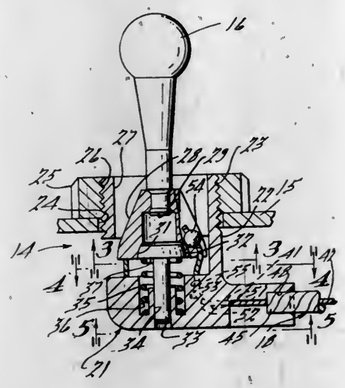
A gear has involute teeth arranged in a circular and coaxial group on one or both lateral faces of a cylindrical or disc-shaped gear body. In the axial direction the teeth have a wedge-like shape whose width increases toward the part of attachment of the tooth. The utilizable portion of the teeth flanks is shaped so as to remain in continuous rolling engagement in both rolling directions with a reference rack configuration of constant division whose teeth width continuously varies in the direction parallel to the gear axis. In a gear pair such a gear meshes with another gear of the same tooth design whose axis of rotation is parallel to that of the first-mentioned gear. While the above-mentioned rack concept serves to geometrically define the gear teeth, a rack of this type may also serve as a tool for producing the tooth flanks of the gear.

3,552,227
SHIFT CONTROL MECHANISM FOR DUAL RAIL TRANSMISSION
Ronald C. Schroeder and Robert L. Dowler, Fort Wayne, Ind., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Oct. 7, 1968, Ser. No. 765,449
Int. Cl. G05g *5/10*
U.S. Cl. 74—477 **9 Claims**



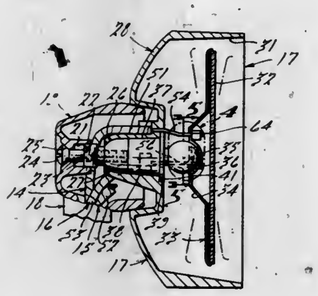
A single lever actuated shift control mechanism for selectively effecting the engagement and disengagement of a transmission for a four wheel drive vehicle. The mechanism includes a pair of gear controlling rails which are moved longitudinally either individually or together to establish a neutral condition, a low speed forward drive to all four wheels and a high speed forward drive to all four wheels or to only two of the wheels. The various ratios are selected purely by the fore and aft movement of the shift lever.

3,552,228
REMOTE CONTROL MIRROR
Wilford B. Shrode, Huntington Woods, Mich., assignor to C. M. Hall Lamp Company, a corporation of Michigan
Filed Oct. 14, 1968, Ser. No. 767,353
Int. Cl. F16c 1/10; G02b 7/18
U.S. Cl. 74—501 9 Claims



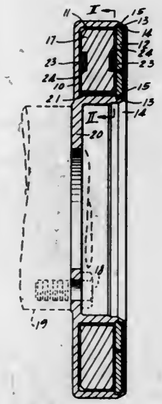
A remote controlled, rear view mirror for a motor vehicle. The mirror includes a universally pivotally supported mirror head, a control member supported for universal pivotal movement and a plurality of wire actuators for transmitting control movement from the control member to the mirror head. The control member is constructed to provide a compact assembly wherein the control wires are turned through a 90° angle by a guide surface formed integrally with a supporting member of the control member. In addition, the wire actuators are all disposed in substantially planar relationship after they have been turned through the right angle.

3,552,229
REMOTE CONTROL MIRROR AND METHOD OF MANUFACTURE THEREOF
James M. Cummins, Warren, and Robert J. Smith, Farmington, Mich., assignors to C. M. Hall Lamp Company, a corporation of Michigan
Filed Oct. 21, 1968, Ser. No. 769,305
Int. Cl. F16c 1/10; G02b 7/18
U.S. Cl. 74—501 11 Claims



A remote controlled outside rear view mirror assembly for automotive vehicles. The mirror assembly includes a control member, a remotely positioned mirror and a plurality of flexible transmitters for transmitting movement between the control member and the mirror. An improved structure is provided for attaching one end of the flexible transmitters to the associated component whereby the actuator ends and component are held in their assembled relationship.

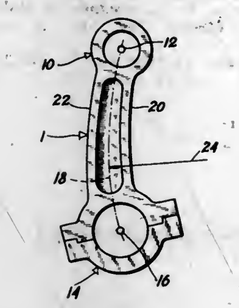
3,552,230
OPTIMUMLY TUNED AND EFFICIENT VISCOUS DAMPERS
Ronald L. McLean, Tonawanda, N.Y., assignor to Houdaille Industries, Inc., Buffalo, N.Y., a corporation of Delaware
Filed Jan. 8, 1969, Ser. No. 789,800
Int. Cl. F16f 15/10
U.S. Cl. 74—574 12 Claims



A vibration damper has means for attaching it to a structure subject to vibrations, i.e., a crankshaft, and comprising relatively movable members one of which is an inertia mass and one of which defines a housing relative to the other member to retain a viscous damping fluid in a shear film coupling between the members, elastomeric tuning spring bearing means under precompression between and frictionally engaging with the members functioning to effect tuning and damping by resilient flexing spring action of the bearing means in addition to viscous shear damping by said viscous fluid and to enable guided stress relief safety relative sliding displacement of the members on the bearing means, while constantly maintaining the shear film spaced relation between the members. Efficient tuning and shear damping by a viscoelastic material is enabled.

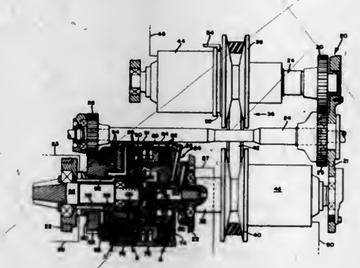
3,552,231
CONNECTING ROD
Štefan Kotoč, Prague, Czechoslovakia, assignor to Ustav pro vyzkum motorovych vozidel, Prague, Czechoslovakia
Filed July 24, 1968, Ser. No. 747,228
Claims priority, application Czechoslovakia, July 27, 1967, 5,499/67
Int. Cl. F16c 7/00
U.S. Cl. 74—579 6 Claims

A connecting rod adapted to interconnect the crankshaft and piston of an engine. The rod has a pair of opposed ends, one of which is connected to a wrist pin secured in the piston and swingable about the axis thereof, the other end of which is connected to a crankpin secured to the crank and swingable about the axis thereof.



The connecting rod is continuously curved along its entire length and has a center line which intersects these axes.

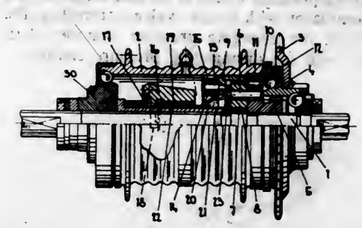
3,552,232
TRANSMISSION CONTROL
James Henry Kress, Cedar Falls, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Sept. 26, 1966, Ser. No. 582,120
Int. Cl. F16h 37/00; B60k 23/02
U.S. Cl. 74—689 37 Claims



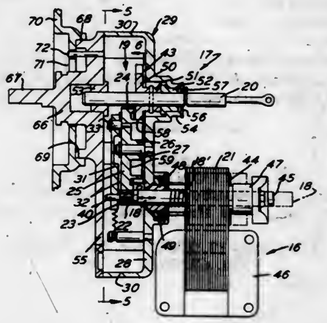
A control system for an infinitely variable, multi-range transmission providing an infinitely variable speed within a finite range through a combined variable-diameter pulley-type drive in conjunction with a planetry drive wherein the control system establishes the variable drive and controls the planetry drive connections by selectively coupling the elements of the transmission to provide different speed ranges.

3,552,233
AUTOMATICALLY SHIFTING MULTI-SPEED HUB
Hans Joachim Schwerdhöfer, Schweinfurt, Germany, assignor to Fichtel & Sachs A.G., Schweinfurt, Germany
Filed Sept. 20, 1968, Ser. No. 761,262
Claims priority, application Germany, Oct. 17, 1967, 1,605,779
Int. Cl. F16h 5/42
U.S. Cl. 74—752 5 Claims

A multiple speed hub for a bicycle or like vehicle has a planetary gear transmission built into the hub shell. The driver and a first set of pawls are mounted on the planet carrier. A second set of pawls is mounted on the ring gear and is normally withdrawn from a ratchet on the hub shell. Centrifugal weights are coupled to the planet carrier or the ring gear either directly or through speed-increasing gearing and release the second set of pawls against the restraint of a return spring at sufficient speed of the associated transmission element. The centrifugal weights and all associated drive elements are stopped during freewheeling.



3,552,234
FILM DRIVE MECHANISM
Harold Gallina, Belleville, N.J., assignor to Elco Corporation, Willow Grove, Pa., a corporation of Delaware
Filed Apr. 4, 1969, Ser. No. 813,589
Int. Cl. G03b 1/38
U.S. Cl. 74—820 12 Claims

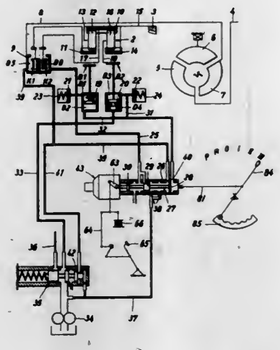


The output shaft of a film drive is rotated through a fixed angle each time an electric motor is energized independently of the number of revolutions of the motor. When the motor is energized, a pinion on the motor shaft engages a spur gear having an interrupted toothed periphery. The spur gear is held by a pawl in an initial position so that upon energization of the motor, the pinion turns the gear through a fixed angle at which point the interrupted periphery of the gear becomes aligned with the pinion stopping further rotation of the gear. The pawl cooperates with the pinion and gear to maintain the gear in its new position as long as the motor remains energized. After the motor is de-energized, the pawl is effective to return the gear to its original position.

3,552,235
HYDRAULIC CONTROL FOR CHANGE SPEED GEAR TRANSMISSION
Imre Szodfridt, Ditzingen, Germany, assignor to Firma Dr.-Ing. h.c.F. Porsche Kg, Stuttgart-Zuffenhausen, Germany
Filed Aug. 6, 1968, Ser. No. 750,523
Claims priority, application Germany, Aug. 16, 1967, 1,630,954
Int. Cl. B60k 21/06
U.S. Cl. 74—865 20 Claims

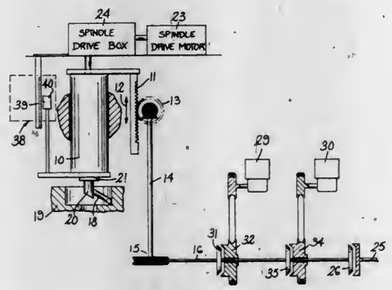
A hydraulic three-speed gear transmission employing two fluid operated friction clutches and two band brakes

with respective double acting servo pistons. The disengaging chamber of one servo piston is disrectly connected with the engaging pressure chamber of one clutch and a pressure accumulator with a slide valve controlling the pressure thereto; the engaging pressure chamber is directly connected with the disengaging pressure chamber of the



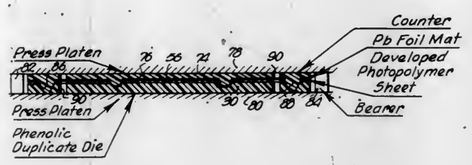
second servo piston and a second fluid accumulator selectively receiving pressure under the control of the slide valve. The slide valve is controlled according to the barometric pressure, the engine load and the engine speed, with a manual override. A pressure regulator is provided for a part of the hydraulic circuit.

3,552,236
Z-AXIS CONTROL SYSTEM
Jozsef Meszaros, Simsbury, Conn., assignor to Pratt & Whitney Inc., West Hartford, Conn., a corporation of Delaware
Filed May 17, 1968, Ser. No. 729,994
Int. Cl. B23b *39/00*
U.S. Cl. 77—4 **8 Claims**



This invention is directed to control system positioning for the quill of a jig borer. In particular, this invention utilizes a plurality of creep motors responsive to command signals from a control circuit. The control circuit continuously compares the position of the quill with the selected combination of spindle speed and quill feed. Depending on this combination, the creep motors assume control over the final positioning of the quill. For some combinations of the spindle feeds and speeds, the plurality of creep motors is energized periodically to bring the quill velocity to a required level for final positioning without loss of cycle time.

3,552,237
COUNTERS FOR FLAT AND ROTARY EMBOSSING DIES
Stanley W. Otto, Kansas City, Mo., and Seth W. Warrell, Shawnee Mission, Kans., assignors to Hallmark Cards, Incorporated, Kansas City, Mo., a corporation of Missouri
Filed Feb. 21, 1968, Ser. No. 707,218
Int. Cl. B21k *5/20*
U.S. Cl. 76—107 **13 Claims**

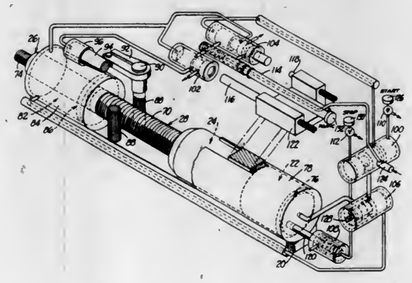


A premade, molded, translucent, thermosetting synthetic resin counter for use against a modeled embossing die. Background relief and paper clearance are both provided in the modeled design surface of the counter. The counter is formed off of the press by first preparing a mask using pressure sensitive film developed against the die or an artist-engraved master thereof followed by fixing of the film so that the design area is opaque and the remainder transparent. A sheet of photosensitive material of a thickness equal to the desired paper clearance is exposed through the mask and then developed to remove the protected portions thereof which correspond to the design. The counter matrix is molded against a laminate made up in successive order of the die or master, the developed photosensitive material and a layer of lead foil of a thickness equal to the paper clearance required in the counter.

ERRATUM

For Class 77—4 see:
Patent No. 3,552,236

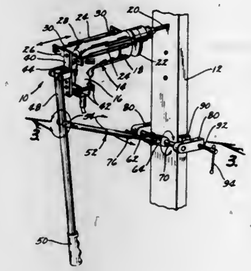
3,552,238
STRUCTURE FOR POSITIVELY FEEDING TOOLS SUCH AS DRILLS AND THE LIKE
Robert C. Quackenbush, Glendale, Calif., assignor of one-half to Arthur B. Quackenbush, Glendale, Calif.
Filed June 19, 1968, Ser. No. 738,270
Int. Cl. B23b *39/10, 47/08, 47/22*
U.S. Cl. 77—32.8 **18 Claims**



A drive motor is forwardly connected to a spindle and a lead screw, all generaly axially aligned and movable

in a housing as a unit forwardly in a fast feed stroke part, then forwardly in a positive feed feed stroke part and then rearwardly in a fast retraction stroke. During the feed stroke, the unit is urged forwardly by a first fluid cylinder formed by a part of the housing surrounding the drive motor and a rearward part of the drive motor with lead screw nuts actionable with the lead screw to overpower the first fluid cylinder and control the unit movement during the positive feed feed stroke part. A second fluid cylinder formed by a part of the housing surrounding the spindle and a piston plate surrounding the spindle moves the unit rearwardly in the retraction stroke. The drive motor is a fluid motor and receives drive fluid directly internally of the first fluid cylinder. Selectively actionable stop means stops the unit movement at any point during said strokes, and selectively actionable return means automatically shifts the unit movement to the rearward retraction stroke at any time during the forward feed stroke.

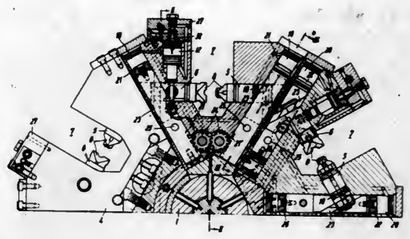
3,552,239
PORTABLE DRILL PRESS
Roy L. Yeaman, 1228 Lincolnway, Ames, Iowa 50010, and Otis D. Corbin, Nevada, Iowa 50201
Filed June 12, 1968, Ser. No. 736,413
Int. Cl. B23b *45/14*
U.S. Cl. 77—55 **6 Claims**



A device for securing a portable drill to the material being worked upon and providing leverage through a fulcrum for applying pressure to the drill. The fulcrum is extendable and slidably and pivotally connected to the stationary base support while the lever is pivotally and rotatably connected to the fulcrum. The drill attachment means is rotatably and pivotally connected to the lever outwardly of a handle means thereon oppositely disposed from the fulcrum.

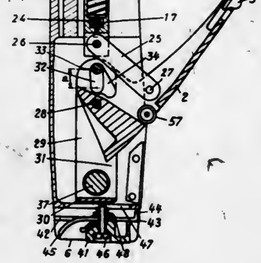
3,552,240
WORK SUPPORT FOR MULTI-STATION MACHINE TOOLS
Kurt Wüsteney, Dutzen uber Minden, and Otto Lehmann, Sennestadt, Germany, assignors to Werkzeugmaschinenfabrik Gildemeister & Comp. Akt-Ges., Bielefeld, Germany
Filed July 2, 1968, Ser. No. 742,063
Claims priority, application Germany, July 21, 1967, 1,627,036
Int. Cl. B23b *39/20;* **B23g** *3/00;* **B23p** *23/02*
U.S. Cl. 77—64 **17 Claims**

A work support for use in double-end or opposed-head machine tools comprises an indexible shaft **1** which carries a turret composed of several housings **4** each of which accommodates a pair of coaxial work holders **5, 6** movable toward and away from each other by a drive including two pairs of pistons **21, 22.** The work holders are rotatable in their housings to change the orientation of workpieces, and one holder **6** of each pair can be rotated between several angular positions by a piston-operated rack and pinion drive **9, 10.** A locking device **13–17** can fix the holder **6** in each angular position. The move-



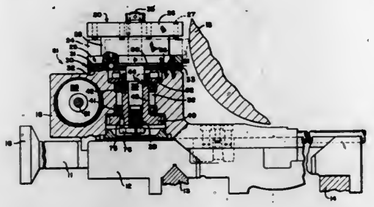
ments of pistons in each drive are synchronized (by **21', 24, 25**) to insure simultaneous movement of the respective pairs of holders in opposite directions and through identical distances.

3,552,241
APPARATUS FOR OPENING OF BOTTLES, CANS, CONTAINERS, CASKS, AND THE LIKE
Walter Steiner, 14 Oberseenerstrasse, Winterthur, Switzerland
Filed Dec. 11, 1968, Ser. No. 782,922
Claims priority, application Switzerland, Dec. 12, 1967, 17,416/67; Jan. 26, 1968, 1,249/68
Int. Cl. B67b *7/08, 7/44*
U.S. Cl. 81—3.1 **19 Claims**



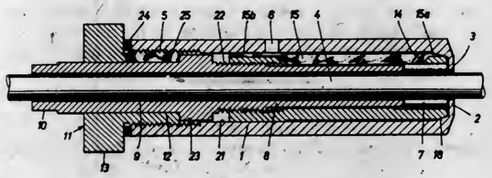
There is disclosed an apparatus for opening bottles, cans, containers, casks and the like which is of the type incorporating a needle which piercingly extends through the cork into the internal compartment of a bottle or the like. By means of this needle and through the action of a pump unit, air can be conveyed beneath the cork. According to the invention, the pump unit encompasses a piston member situated in a housing, this piston member being actuated by a lever member rotatably mounted in the housing. Furthermore, a can opener mechanism is arranged at a portion of the housing which faces away from the cork puller or removal mechanism. This can opener mechanism can be actuated by a rotary knob seated upon the shaft of a transport wheel.

3,552,242
POWER OPERATED INDEXING TURRET
Guy E. Morgan, Jr., and Richard C. Montanus, Springfield, Ohio, assignors to The Springfield Machine Tool Company, Springfield, Ohio, a corporation of Ohio
Filed Dec. 23, 1968, Ser. No. 785,997
Int. Cl. B23b 29/28
U.S. Cl. 82—36 5 Claims



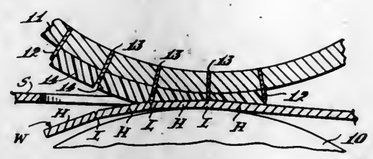
An indexing turret includes a rotatably supported tool holder adapted to carry a plurality of tools in angularly spaced relation. Alignment means, including a first part fixed to the turret frame and a second part of the tool holder, aligns the tool holder to position a selected one of a plurality of tools in an operating position. The tool holder is supported by a shaft having a threaded end which cooperates with a motor driven gear to move the tool holder axially to separate the alignment means and then to rotate the tool holder. Restraining means holds the tool holder in the operating position as the motor driven gear reverses direction to move the shaft axially downwardly thus initially positioning the tool holder prior to engagement of the alignment means which then accurately aligns the tool holder and prevents further rotation of the tool holder. A switch automatically disconnects the motor when the tool holder has been thus positioned.

3,552,243
GUIDING SLEEVE FOR AUTOMATIC LATHES WITH A SLIDING HEADSTOCK
Harold Habegger, Sous Graitery, Bern, Switzerland
Filed Jan. 30, 1969, Ser. No. 795,243
Claims priority, application Switzerland, Oct. 17, 1968, 1,936/68
Int. Cl. B23b 25/00
U.S. Cl. 82—38 2 Claims



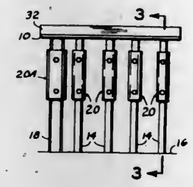
The guiding sleeve engages and guides the bar of stock machined upon by the lathe only by means of a crown of rotary rollers located in a chuck permitting the clearance of the stock bar to be adjusted. The rollers are held in their axial position with an axial free play which can be adjusted by means of a calibrated spacing ring inserted between two pieces of the guiding sleeve, which are screwed into one another until the spacing ring is locked.

3,552,244
ROTARY DIE STRIPPING
Kilby P. Smith, Jr., 75 Greenough St., Brookline, Mass.
Filed Apr. 17, 1969, Ser. No. 816,909
Int. Cl. B26d 3/08; B31b 1/14
U.S. Cl. 83—9 7 Claims



Waste sections of sheet material cut with a rotary die are stripped from the sheet material by means which divide the waste section into hinged, connected portions, the hinge lines lying substantially parallel to the axis of rotation of the rotary die. The hinged, connected portions of the waste section are effectively stripped, one after another, by the expelling action of ejection material, e.g., a resilient pad, mounted within the cutting die that cuts out the waste section.

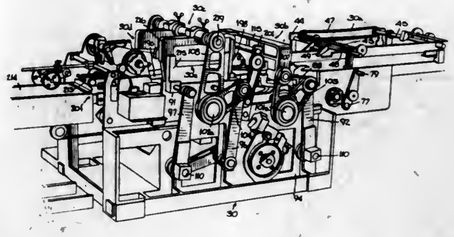
3,552,245
PANEL TEMPLATE MAKER
Burl D. Dickerson, 14355 Elm, San Leandro, Calif.
Filed June 25, 1968, Ser. No. 739,792
Int. Cl. B26d 3/08, 7/26
U.S. Cl. 83—11 1 Claim



A sleeve sized for cooperatively surrounding the free end of a conduit is adjustably secured thereto by a setscrew. A tubular template cutter, having a sharpened end, is coaxially received by the free end of the sleeve and is rigidly secured therein by a bolt so that when template forming material is forced against the cutter the cutter forms a hole in the template material coaxial with respect to the conduit.

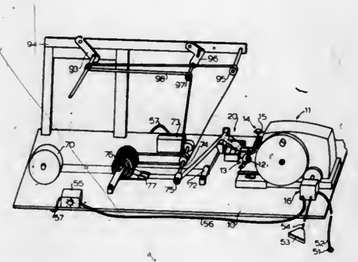
3,552,246
BOOK TRIMMING MACHINE
Robert A. Bryson, Easton, Pa., Thomas C. Kennicott, Janesville, Wis., and Ernest J. Sarring, Fort Thomas, Ky., assignors to T. W. & C. B. Sheridan Company, Easton, Pa., a corporation of New York (organized in 1964).
Filed June 18, 1968, Ser. No. 737,969
Int. Cl. B65h 35/06
U.S. Cl. 83—23 49 Claims

The disclosure relates to a machine for performing trimming operations upon the front and side edges of a book as the book continues to advance through the machine. The machine includes a front edge trimming table which is reciprocated in a horizontal direction and receives a book from an infeed conveyor as the table moves in the direction of the conveyor. As the table continues to move in the direction of the infeed conveyor, the book is clamped to the table and the front edge of the book is trimmed. The machine further includes a side edge trimming table which is reciprocated in synchronism but substantially out of phase with the front edge trimming table. As the front edge table completes its motion in the direction of the infeed conveyor and as the side edge table is about to move in the same direction, the book having its front edge trimmed is advanced onto the side edge table. As the side edge table continues to move in the direction of the infeed conveyor, the book is clamped to the side edge table and the side edges of the book



are trimmed. Toward the end of the forward motion of the side edge table, the book is released to a conveyor which advances it from the machine.

3,552,247
APPARATUS AND METHOD FOR DIRECT MOUNTING OF MICROTOME TISSUE SPECIMENS
John E. P. Pickett, 3323 Pinafore Drive, Durham, N.C.
Filed July 24, 1969, Ser. No. 844,362
Int. Cl. B26d 4/46
U.S. Cl. 83—24 12 Claims

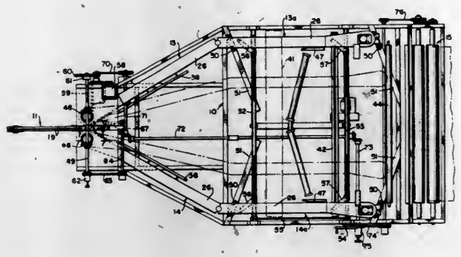


Microtome cut tissue sections are mounted directly onto a film base by a method and apparatus which eliminates the usual interim manual lifting of the cut sections from the blade and the usual water bath and manual floating steps. A microtome trough filled with a liquid receives the cut tissue sections directly from the microtome knife. The sections are floated across the trough and into contact with a film which is passed through the trough. The film with the sections adhered thereto are then fed into a reel.

3,552,248
TENTER MEANS FOR FABRICS AND THE LIKE
David Pernick, Brooklyn, N.Y., assignor to Knitting Specialty Machinery Corporation, Brooklyn, N.Y., a domestic corporation. by direct and mesne assignments
Filed Jan. 21, 1969, Ser. No. 792,714
Int. Cl. D06c 3/02
U.S. Cl. 83—151 19 Claims

The invention is directed to a novel pin tenter apparatus, in which tenter pins, arranged for engagement with the edges of a fabric or other web, are pivoted on the tenter chain and are arranged for mechanically actuated movement between generally horizontal and generally vertical positions. The arrangement enables the tenter pins to pick up a vertically

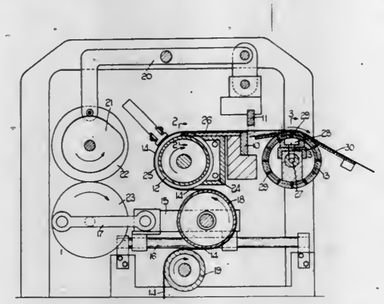
draped web, draw it out horizontally, and then release it. The novel tenter mechanism has broad application, but is particularly useful for applications such as the slitting and opening of tubular knitted fabric.



3,552,249
MECHANISM FOR CUTTING A MOVING WEB OF SHEET MATERIAL

Reginald Leonard Ballard, Purley, Reading, Berkshire, and Ensor William Harold Steer, Wythall, Birmingham, assignors to Phillips Engineering Limited, Birmingham, England

Filed June 7, 1968, Ser. No. 735,331
Claims priority, application Great Britain, June 9, 1967, 26,739/67
Int. Cl. B26d *5/16, 5/26*
U.S. Cl. 83—152 3 Claims



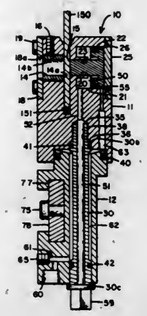
A mechanism for cutting a moving web of sheet material to form a plurality of separate sheets of material, the mechanism comprising a pair of relatively movable blades disposed between a pair of driven rollers around which the web of material is passed, a movable carriage having a freely rotatable guide roller around which the web passes before passing around the first of said driven rollers, means for moving said carriage so as temporarily to arrest movement of the web between the driven rollers by forming a loop in the material and means synchronized with said carriage moving means for actuating the blades to cut the material whilst the web is arrested as aforesaid, there being also provided in association with each driven roller suction means for holding material on to the peripheries thereof.

3,552,250
CONTAINER HOLE PUNCHING MECHANISMS

Donald T. Nordvik, Brooklyn Park, Minn., assignor to Gould-National Batteries, Inc., St. Paul, Minn., a corporation of Delaware

Filed Nov. 19, 1968, Ser. No. 777,111
Int. Cl. B26d *5/12*
U.S. Cl. 83—162 6 Claims

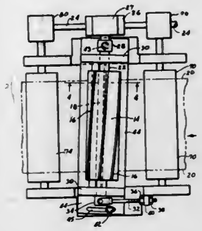
A gang punching mechanism having a movable mounted power actuated punch for pressure shearing an opening in sidewalls of a plastic container.



3,552,251
ROTARY SLIT CUTTER

Herbert E. Neff, Short Hills, N.J., and William R. Chestnut, West Caldwell, N.J., assignors to Bobst Champlain, Inc., Roseland, N.J., a corporation of New York

Filed Dec. 3, 1968, Ser. No. 780,862
Int. Cl. B23d *25/02*
U.S. Cl. 83—299 12 Claims



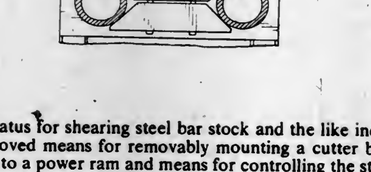
The slit cutter comprises a rotary cylinder carrying knives, and a stationary fixed knife the cutting edge of which is ground away or relieved except at those parts along its length where the web is to be slit. All of the rotary knives cooperate with the resulting intermittent edge of the single fixed knife. The knives are preferably helically mounted on the cylinder, and the cylinder and fixed knife are skewed at an angle such that the resulting slits are perpendicular to the long axis of the web. There is a metering roll ahead of the knives, and a pull roll following the knives, both driven accurately at web speed, and serving to maintain control of the web independently of the knives, which are preferably but not necessarily driven at web speed. Means is provided to properly register the slits with the printing on the web.

3,552,252
VENEER DEFECT DETECTOR AND CLIPPER CONTROL

Carl W. Maxey; Grant R. Montague, Everett; Warren L. Leyde, Seattle, Wash., and Eugene L. Bryan, Arcata, Calif., assignors to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio

Continuation of application Ser. No. 553,940, May 25, 1966, now abandoned. This application Jan. 15, 1969, Ser. No. 800,324
Int. Cl. B26d *5/34*
U.S. Cl. 83—362 21 Claims

Apparatus for providing actuating signals to a cutting device having asymmetrical actuation response characteristics in such a way that material is cut precisely at preselected locations includes manual or electronic means for generating cutting command signals, either as a result of a defect in the material or after predetermined lengths of material have moved through the cutting device, and means for introducing a time delay between the cutting command signals and those signals which actuate the cutting device.



The magnitude of the time delay is determined by the speed at which the material moves through the cutting device and by the response characteristics of the cutting device to the actuating signals. If no defects are found in the material, the material will be cut automatically into predetermined standard lengths.

3,552,253
BAR SHEAR APPARATUS

Thomas J. MacDonald, Elmhurst, Ill., assignor to Am Forge, Inc., Chicago, Ill., a corporation of Illinois

Filed Aug. 26, 1968, Ser. No. 755,256
Int. Cl. B26d *5/38, 5/08, 1/10*
U.S. Cl. 83—372 7 Claims

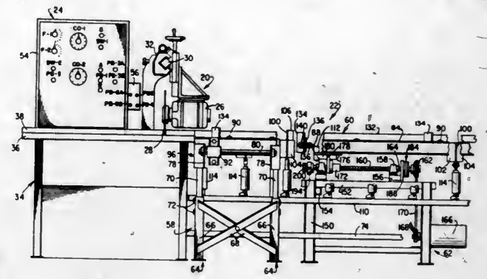
Apparatus for shearing steel bar stock and the like including improved means for removably mounting a cutter block member to a power ram and means for controlling the stroke of the ram through use of an electrical timing device.

3,552,254
APPARATUS FOR GAUGING WORK LENGTHS

Robert L. Marczy, 1455 N. Sandburg Terrace, Chicago, Ill.

Filed Jan. 4, 1968, Ser. No. 695,789
Int. Cl. B26d *7/16*
U.S. Cl. 83—461 13 Claims

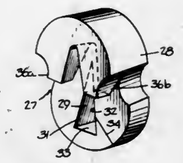
Apparatus for gauging work lengths includes a work bed, work stops on the bed individually movable between work-engaging and out of the way positions, means for effecting relative movement between the bed and a tool to vary the distances between the tool and the stops, means for sensing and signalling the relative movement, brake means for arresting the relative movement, work clamp means on the bed movable between clamping and release positions, and remote control means for selectively moving the stops, actuating the relative movement means, deactuating the relative movement means cooperatively with the sensing and signalling means, actuating the brake means, and moving the clamp means.



3,552,255
MUTE FOR STRINGED INSTRUMENTS

Henryk Kaston, 10 Woodlands Ave., White Plains, N.Y.

Continuation-in-part of application Ser. No. 735005, June 6, 1968, now abandoned. This application May 26, 1969, Ser. No. 843,258
Int. Cl. G10d *3/04*
U.S. Cl. 84—310 14 Claims



A mute having a groove in one direction to fit over the edge of the bridge of a violin or other stringed instruments, at least one slot of limited dimensions to allow the mute to be slipped onto a string or strings and to remain there both when the mute is in use and when it is not, and one of two channels or passageways perpendicular to the groove to encircle one or two strings.

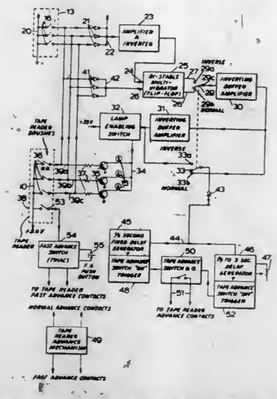
3,552,256
TEACHING DEVICE FOR MUSICAL INSTRUMENTS

Randolph Spencer Soanes, Willowdale, John D. Fourdraine, Toronto, and Egon S. Manthey, Don Mills, Ontario, Canada, assignors to Rice Honeywell, Willowdale, Toronto, Canada, by mesne assignments

Filed Oct. 28, 1968, Ser. No. 771,254
Int. Cl. G09b *15/08*
U.S. Cl. 84—478 6 Claims

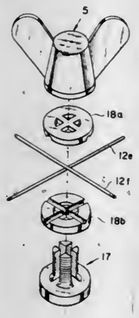
A teaching device primarily intended for keyboard instruments having a plurality of lamps arranged in a row above the keyboard, each lamp corresponding to a particular key. Beside each lamp is a switch, which is actuated when the key is depressed. A lesson (consisting of a piece of music to be played) is recorded on paper tape, and indicia recorded on the tape is read by a tape reader mechanism and is used for controlling the illumination of the lamps. At the start of a lesson, certain lamps are illuminated, indicating certain notes to

be played, and when these notes have been played correctly the lamps are briefly extinguished, and the tape reader



mechanism automatically is advanced to its next position whereupon a new sequence of lamps is illuminated.

3,552,257
FASTENER ADAPTED FOR WIRE CAGE
Atsushi Tanabe, No. 977 Nishikumado, Numazu, Shizuokaken, Japan
Continuation-in-part of application Ser. No. 641,312, May 25, 1967, now abandoned. This application Apr. 11, 1969, Ser. No. 815,328
Int. Cl. F16b *35/02*
U.S. Cl. 85—1 **7 Claims**



In a nut and bolt fastener, an axially cut notch wide enough to accommodate a single wire therein of predetermined gauge, said notch extending from the end of an externally threaded bolt shank to the head thereof is made by cutting out the central longitudinal portion of the shank. The fastener can secure another wire or plate to be held to a support wire by inserting the support wire together with a second wire into the notch, or inserting the support wire only into the notch and passing the notched shank through an aperture of a plate, and screwing a wing nut towards them.

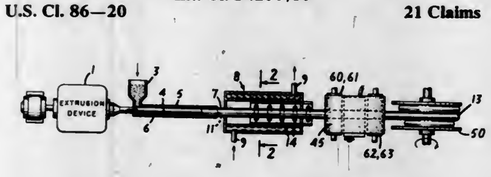
3,552,258
BOLT ANCHORS
Clifford C. Warner, 3063 Albion St., Denver, Colo.
Continuation-in-part of application Ser. No. 298,922, July 31, 1963, now abandoned. This application July 20, 1965, Ser. No. 477,345
Int. Cl. F16b *13/10*
U.S. Cl. 85—66 **11 Claims**

An anchor device for attachment within a borehole in rock or the like comprising: a cylindrical member adapted to be received in said hole; at least one longitudinal slot in said cylindrical member and a cam surface associated with said slot; rock gripping means within said slot having a biting edge and a curved surface, generally opposite said biting edge, in engagement with said cam surface and both movable and rollable along said cam surface, and means within said slot for activating said rock gripping means, so that at least a portion of said rock gripping means, as it pivots, including said biting



edge, is forced out of said slot and into the sides of said borehole in securing said device in said borehole, said activating means being resilient and compressible by said rock gripping means as said member is moved into said borehole and such compression tending to cause said biting edge to move into said rock to assist said rock gripping means to be moved into said rock by moving along and turning on said cam surface.

3,552,259
PROCESS AND APPARATUS FOR PREPARING DETONATING AND DEFLAGRATING FUSE AND PRODUCT
George L. Griffith, Coopersburg, Pa., assignor to Commercican Solvents Corporation, New York, N.Y., a corporation of Maryland
Continuation-in-part of application Ser. No. 503,796, Oct. 23, 1965, now Patent No. 3,327,582, which in turn is a continuation-in-part of 596,028, Sept. 1, 1966, now Patent No. 3,367,266, which in turn is a continuation-in-part of 574,881, Aug. 3, 1966, now abandoned. This application July 19, 1968, Ser. No. 752,114
Int. Cl. F42c *9/10*
U.S. Cl. 86—20 **21 Claims**

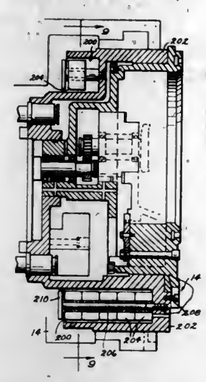


Process and apparatus are provided for preparing detonating and deflagrating fuse or cord, simultaneously forming the wrapper for the fuse or cord and filling the wrapper with detonating or deflagrating low explosive. The apparatus also desirably includes means for cracking or pulverizing and desirably increasing the degree of confinement of the continuous column of detonating or deflagrating fuse or cord, so as to form a product of high sensitivity and high rate.

3,552,260
MEANS FOR BALANCING CRADLE OF GEAR CUTTING MACHINE
Ernst J. Hunkeler, Fairport, Charles E. Remmell, Rochester, and Robert A. Waasdorp, Fairport, N.Y., assignors to The Gleason Works, Rochester, N.Y., a corporation of New York
Filed Oct. 1, 1968, Ser. No. 764,218
Int. Cl. B23f *23/00*
U.S. Cl. 90—1 **5 Claims**

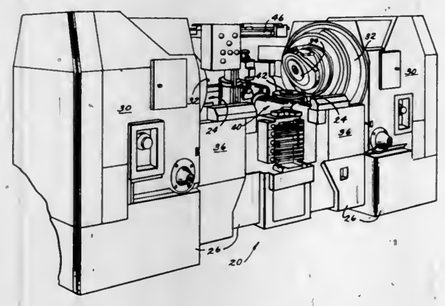
An improved cradle is provided in a gear cutting machine so that bevel gears can be cut by a novel method which involves controlled axial movements of the cradle toward and away from a work spindle. In addition to providing conventional rotational movements to the cradle, there is provided a means for axially reciprocating the cradle in a timed relation-

ship with rotations of a work spindle and with rolling movements of the cradle. The cradle includes a cylindrical surface which is journaled within a cradle housing, and novel means are disclosed for adjusting the balance of the cradle within its housing after it has been assembled in a gear cutting



machine. The balancing means comprise a plurality of support members positioned within pockets spaced about the circumference of the cradle. Weight elements, adapted to be simply and detachably secured to the support members, are selectively placed on the support members to achieve cradle balance.

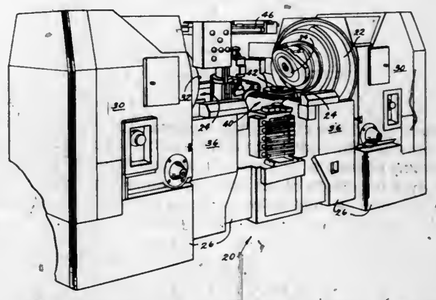
3,552,261
BEVEL GEAR MAKING
Ernst J. Hunkeler, Fairport, and Felix P. Wrubleski, Rochester, N.Y., assignors to The Gleason Works, Rochester, N.Y., a corporation of New York
Filed Oct. 1, 1968, Ser. No. 764,212
Int. Cl. B23f *9/10*
U.S. Cl. 90—5 **15 Claims**



A bevel gear making machine is provided with a structural orientation of cradle housing, cradle, tool holder and workhead assembly wherein the tool is designed to rotate about a generally horizontal axis while the work is designed to rotate about a generally vertical axis, and wherein supporting side wall members are provided for securely holding the workhead assembly against vibration during cutting operations. This orientation of these parts may be provided at two cutting stations to constitute a unitary double machine, and such a double machine may be adapted either for two roughing or two finishing operations. Further, two of these double machines may be arranged so as to provide four adjacent cutting stations, two for roughing and two for finishing.

In combination with the structure mentioned above, a control arrangement is provided for the generating train whereby a higher production rate is possible. The control arrangement and the cutting tool are provided with their own separate power sources, independent of the generating train power source, and the control arrangement for the generating train is separate from the generating train itself.

3,552,262
WORKHEAD ASSEMBLY AND MOUNTING THEREFOR, IN BEVEL GEAR MAKING MACHINES
Ernst J. Hunkeler, Fairport; Earl Roy Beman, Rochester, and Frank M. Whalley, Rochester, N.Y., assignors to The Gleason Works, Rochester, N.Y., a corporation of New York
Filed Oct. 1, 1968, Ser. No. 764,221
Int. Cl. B23f *9/10*
U.S. Cl. 90—5 **19 Claims**

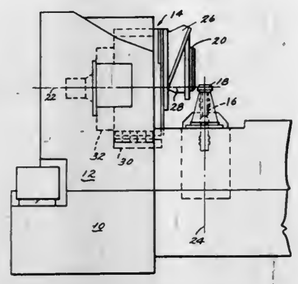


In a bevel gear making machine, a workhead assembly mounts the work for rotation about a vertical or generally vertical axis and in a stable secure position, permitting multiple movements of the workhead for various purposes, as will be understood. The workhead assembly is mounted between and supported by two spaced and parallel upstanding side walls of the machine frame and includes a workhead, a swinging base, and a slidable base connected together so that the workhead assembly is slidable back and forth in a direction parallel to the side walls. The side walls, and the swinging base and workhead are pivotable about an axis extending between the side walls. The horizontal slidable motion of the workhead adapts it for movement between work loading and unloading and cutting positions, and the pivotal movement of the workhead enables the axis of rotation of the work spindle to be adjusted so as to be in a vertical or somewhat inclined from the vertical position during cutting operations.

3,552,263
CRADLE ASSEMBLY FOR GEAR CUTTING MACHINE AND MEANS FOR MOVING CRADLE AXIALLY
Ernst J. Hunkeler, Fairport; Frank A. Smith, West Webster, and Frederick C. Walrath, Rochester, N.Y., assignors to The Gleason Works, Rochester, N.Y., a corporation of New York
Filed Oct. 1, 1968, Ser. No. 764,222
Int. Cl. B23f *9/10*
U.S. Cl. 90—5 **27 Claims**

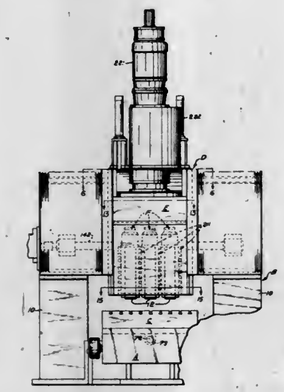
An improved cradle is provided in a gear cutting machine so that bevel gears can be cut by a novel method which involves controlled axial movements of the cradle within its housing toward and away from a work spindle. In addition to providing conventional rotational movements to the cradle, there is provided a means for axially reciprocating the cradle within its housing in a timed relationship with rotations of a work spindle and with rolling movements of the cradle. The cradle includes a cylindrical surface which is journaled within a cradle housing, and hydraulically operated pistons function to advance the cradle axially toward a work spindle. Return

movements of the cradle, away from a work spindle, are dictated by a crank member which is oscillated back and forth to accommodate axial movements of the cradle. The crank member derives its oscillating movements from a first cam and follower means associated with a drive means of the gear cutting machine. In addition, a second cam and follower



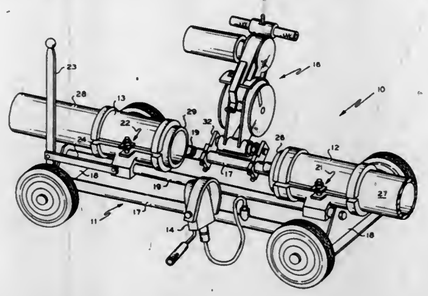
means, which also effects axial movement of the cradle, may be provided for controlling helical motion of a cutter during a cutting operation. The second cam and follower means can override the effects of the first cam and follower means, and the second cam and follower means derives its movements from rotational movements of the cradle.

3,552,264
MACHINE TOOL
Wilbur E. Meinke, Scotch Plains, N.J., assignor to The New Britain Machine Company, New Britain, Conn., a corporation of Connecticut
Original application July 11, 1966, Ser. No. 564,122, now Patent No. 3,455,610, dated July 15, 1969. Divided and this application Jan. 28, 1969, Ser. No. 794,739
Int. Cl. B23c *1/08*; B23b *39/16*
U.S. Cl. 90—11 **9 Claims**



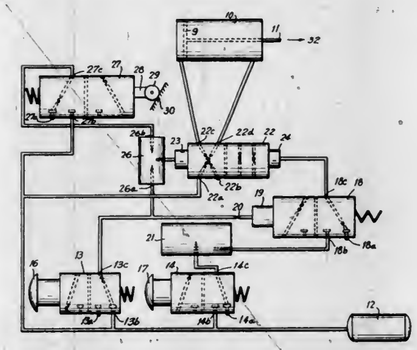
A machine tool having a spindle head saddle horizontally movable along a rail, a spindle head connected to the saddle for vertical movement, a plurality of vertically adjustable spindle assemblies carried by the spindle head each including a tool spindle having a driven gear connected thereto, a plurality of driven shafts corresponding in number to the spindle assemblies, journaled in the spindle head adjacent to the spindle assemblies and each having a driving gear connected thereto and engageable with the driven gear connected to the spindle of the adjacent spindle assembly, power means operatively connected to the shafts for rotating said shafts and said tool spindles, and means including eccentrically mounted members carried by the saddle and the spindle head and engageable with ways on the rail and saddle for adjusting the saddle and spindle head relative to their supporting members.

3,552,265
METHOD AND APPARATUS FOR FACING THERMOPLASTIC PIPE
Calvin M. Lucas, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 1, 1968, Ser. No. 772,553
Int. Cl. B23c *3/12*; B27c *1/00*; B31b *31/18*
U.S. Cl. 90—21 **1 Claim**



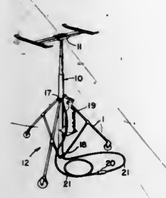
An apparatus and method for facing the ends of a pair of thermoplastic pipe joints preparatory to joining them by a heat fusion process. The apparatus includes a rotatable disc assembly provided with planing means. As a joint of pipe is fed toward the disc assembly, the planing means conditions its leading edge forming a smooth, squared end.

3,552,266
FLUID PRESSURE CONTROL SYSTEM
Walter Tanenblatt, 12 Fourth Road, Great Neck, N.Y.
Filed June 17, 1968, Ser. No. 737,686
Int. Cl. F15b *21/10*, *21/02*
U.S. Cl. 91—35 **6 Claims**



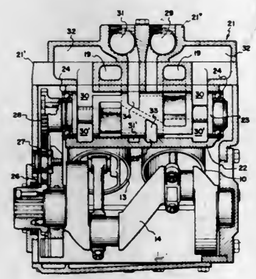
A two-hand fluid pressure control system includes a first hand controlled valve having inlets connected to pressure and exhaust and an outlet biased to the pressure inlet and a second hand controlled valve having inlets connected to pressure and exhaust and an outlet biased to the exhaust inlet. The first valve outlet is connected through a shuttle valve to a first actuating cylinder of a fourth valve which controls a machine actuating cylinder, and through a flow control pilot to the actuating cylinder of a third valve. The third valve includes an exhaust inlet and a second inlet connected through a pressure responsive flow timing device to the second valve outlet and an outlet connected to an opposing actuating cylinder of the third valve. A machine actuated valve connects the shuttle valve alternatively to pressure or exhaust.

3,552,267
MULTISTAGE TELESCOPIC HOIST
Sherman W. Bushnell, Jr., 1213 East Cherry St., Seattle, Wash. 98122
Filed Oct. 24, 1968, Ser. No. 770,310
Int. Cl. F15b *11/18*
U.S. Cl. 91—168 **4 Claims**



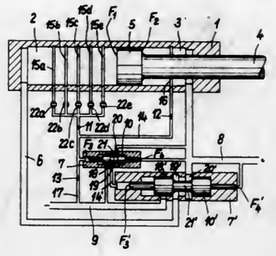
A multistage telescopic hoist operable by pressurized compressible fluid is provided with an internal check valve and hollow probe mechanism associated with a tubular base section and at least a lowermost tubular section telescopically contained within the base section to provide lowering of the hoist without oscillation tendency.

3,552,268
V-TYPE FLUID DRIVEN MOTOR
Frank V. McCay, Jr., Salt Lake City, Utah, assignor to Envirotech Corporation, Salt Lake City, Utah, a corporation of Delaware
Filed Oct. 2, 1968, Ser. No. 764,513
Int. Cl. F01l *33/02*; F15b *13/07*
U.S. Cl. 91—180 **6 Claims**



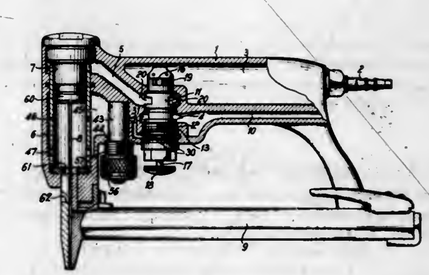
A V-type air motor having a rotary valve journalled at both ends in antifriction bearings. Exhaust porting for initial release of pressure from the cylinders is arranged adjacent the bearings while the high-pressure air distribution ports and lands are located near the longitudinal center of the valve remote from the bearings. The high-pressure air distribution zones are located symmetrically about the valve axis to balance the valve. The valve rotates in a housing located in heat exchange relationship with the interior of the crankcase whereby the cooling effect of expanding exhaust air prevents overheating of crankcase oil while residual heat prevents buildup of ice in the valve.

3,552,269
HYDRAULICALLY OPERABLE LINEAR MOTOR
Friedrich-Karl Arndt, Essen, Germany, assignor to Fried.Krupp Gesellschaft mit beschrankter Haftung, Essen, Germany
Filed Mar. 24, 1969, Ser. No. 809,902
Claims priority, application Germany, Mar. 27, 1968, 1,703,061
Int. Cl. F01l *25/06*, *31/00*
U.S. Cl. 91—277 **7 Claims**



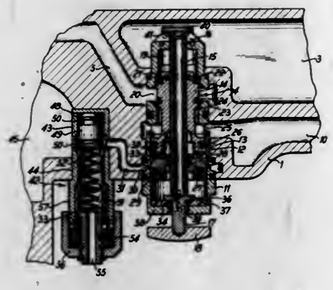
A hydraulically operable linear motor comprising a cylinder and a piston reciprocable in said cylinder and having one side connected with a piston rod extending through said cylinder so as to define on said one piston side an annular effective surface which is continuously subjected to the working pressure while the other side is alternately subjected to the working pressure and to an exhaust pressure, hydraulically operable control valve means governing the communication of said other side with the working pressure and the exhaust pressure while groove means in said cylinder at both sides of said piston and communicating with said control valve are controlled by said piston.

3,552,270
PNEUMATIC STAPLER DEVICE
Wilfried Lange, 7 Brockhold, 3101 Altenhagen, Germany
Filed July 15, 1968, Ser. No. 744,796
Claims priority, application Germany, July 13, 1967, 1,603,839
Int. Cl. F01l *25/06*
U.S. Cl. 91—291 **5 Claims**



A pneumatically operated stapler device is provided with a control valve appliance which enables single or repeated

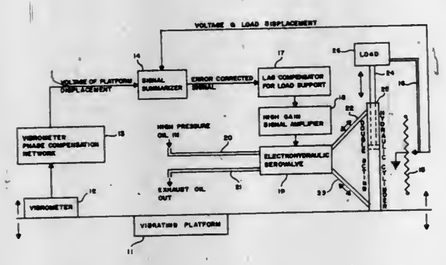
working strokes with adjustable sequence and which is operated by compressed air admitted by an air duct communicating the chamber of said control valve with an additional air chamber of the working cylinder.



3,552,271
VIBRATION DAMPING DEVICE

Charles W. Suggs, 1507 Trailwood Drive, Raleigh, N.C., and Larry F. Stikeleather, 7525 Parkview Drive, Greendale, Wis. 53129

Filed Nov. 12, 1968, Ser. No. 783,448
Int. Cl. F15b *20/00*, *13/16*
U.S. Cl. 91—360 13 Claims



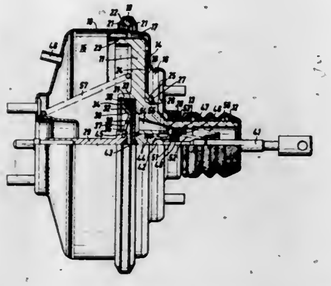
In abstract, a preferred embodiment of this invention is a vibration attenuator which effectively isolates a load from a vibrating platform through an active load suspension system. This attenuator is particularly adaptable to the seats and cabs of offroad vehicles.

3,552,272
FLUID PRESSURE OPERATED SERVO-DEVICES

David Parsons, Leamington Spa, Warwickshire, England, assignor to Automotive Products Company Limited, Leamington Spa, Warwickshire, England

Filed Jan. 22, 1969, Ser. No. 793,112
Int. Cl. F15b *9/10*; F16j *3/00*
U.S. Cl. 91—369 4 Claims

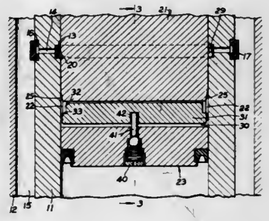
A fluid pressure operated servodevice for assisting the operation of vehicle brakes including a movable wall, a pedal controlled valve operable to produce a pressure differential across the said movable wall, and an output member, has levers to transmit reaction force to the pedal, a resilient connecting member between the movable wall and the output member transmitting the braking effort directly to the output member independently of the levers until the said effort is sufficient to cause the said member to yield and bring the lever means into operation.



3,552,273
PISTON AND CYLINDER UNIT HAVING STROKE LIMITING MEANS

Harold Frederick Resuggan, Birmingham, England, assignor to Webley & Scott Limited, Birmingham, England, a British company

Filed Dec. 11, 1968, Ser. No. 783,033
Claims priority, application Great Britain, Oct. 1, 1968, 46454/68
Int. Cl. F15b *15/22*; F16j *1/00*
U.S. Cl. 91—401 8 Claims



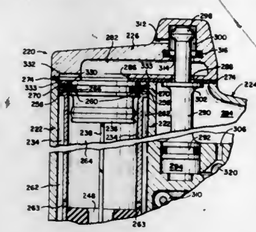
A fluid-powered piston and cylinder unit provided with limit means for limiting the stroke of the piston in the cylinder, the limit means comprising a sidewall of an annular recess in the piston and a piston ring accommodated in an annular groove in the cylinder, the ring being spring-loaded radially inwardly so as to project into the piston recess with the recess and groove in register, whereby the piston ring is engageable with the sidewall of the annular rebate positively to limit the piston stroke in one direction.

3,552,274
PNEUMATIC PISTON RETURN SYSTEM FOR IMPACT TOOLS

Paul W. Bojan and Robert L. Wolfberg, Chicago, Ill., assignors to Signode Corporation, Chicago, Ill., a corporation of Delaware

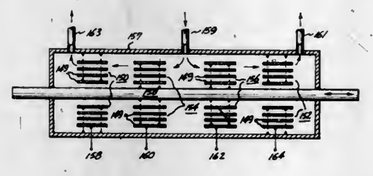
Filed May 27, 1968, Ser. No. 732,441
Int. Cl. F15b *15/17*, *13/042*
U.S. Cl. 91—416 4 Claims

A piston return system for air cylinders wherein live air, when introduced into the cylinder on the pressure side of the piston initiates the power stroke. During the power stroke and for a short time thereafter, a special deformable sealing ring which operates in the manner of a check valve introduces live air into an annulus which surrounds the cylinder and communicates with the other side of the piston, such air serving to return the piston when air pressure is relieved on the pressure side thereof.



3,552,275
ELECTRIC FLUID ACTUATOR

Harold K. Chaney, and Halvor T. Strandrud, Seattle, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware. Original application Oct. 23, 1965, now Patent No. 3,416,549. Divided and this application July 29, 1968, Ser. No. 763,039
Filed July 29, 1968, Ser. No. 763,039
Int. Cl. F15b *11/08*; F16k *9/00*
U.S. Cl. 91—418 4 Claims

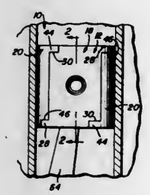


Electric fluid actuator apparatus utilizing electrically conducting plates with a field control source whereby an electric or magnetic field is established between the plates to control the effective viscosity of fluid located therebetween. Flow of fluid within the actuator mechanism is initiated by constant flow pumps and controlled by the field control source to establish fluid pressures acting to displace the actuator mechanism.

3,552,276
EXPANDABLE CYLINDRICAL PISTON

Joseph H. Morrow, 1268 Daniel St., Clarksville, Tenn. 37040

Filed Sept. 13, 1968, Ser. No. 759,701
Int. Cl. F16j *1/06*
U.S. Cl. 92—193 9 Claims

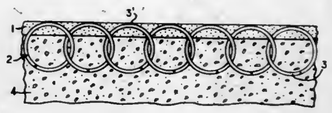


A cylindrical piston constructed to compensate for the relative wear between the cylinder wall and the piston. The piston is comprised of four arcuate segments with a top insert with the four segments being urged outwardly by a spring steel cylinder mounted on the inner circumference of the four arcuate segments.

3,552,277
CONSTRUCTION ELEMENT WITH HELICALLY WOUND ANCHOR LATTICE

David Avital, 39 rue Patou, 59 Lille, France

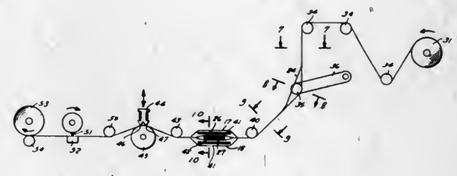
Continuation-in-part of application Ser. No. 497,933, Oct. 19, 1965, now abandoned. This application Feb. 23, 1968, Ser. No. 707,869
Int. Cl. E01c *5/00*
U.S. Cl. 94—15 2 Claims



A construction element configuration for use in making construction elements for roads or panels for structures and the like and a new joint or anchor therefor. The element comprises a slab or sheet of material, which generally is resilient, having a helical wound lattice partially embedded therein for anchoring the slab or sheet to another material. The anchor means comprises a plurality of metallic wire or rod elements each having a springlike configuration consisting of helically wound turns or coils. The helical convolutions of each element are coaxial about a respective longitudinal axis and the axes of the elements are generally parallel and corresponding coils of next adjacent anchor elements are interlaced so that the elements jointly define a lattice arrangement that can be embedded in another material to anchor the slab or element thereto. The anchoring lattice strengthens the slab and provides excellent distribution of stresses to which the arrangement may be subjected when anchored.

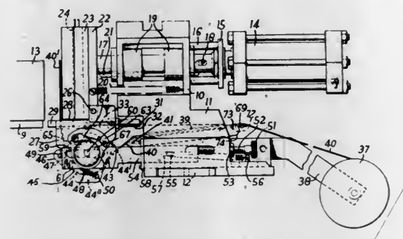
3,552,278
METHOD AND APPARATUS FOR MAKING INTERCONNECTED BAGS HAVING CLOSURE FLAPS AND BOTTOM GUSSETS

William Guenther, Hicksville, N.Y., assignor to Lion Packaging Products Company, Inc., a corporation of New York. Original application Oct. 9, 1967, Ser. No. 673,726, now Patent No. 3,469,769, dated Sept. 30, 1969. Divided and this application Jan. 23, 1969, Ser. No. 810,432
Filed Jan. 23, 1969, Ser. No. 810,432
Int. Cl. B31b *1/00*
U.S. Cl. 93—8 3 Claims



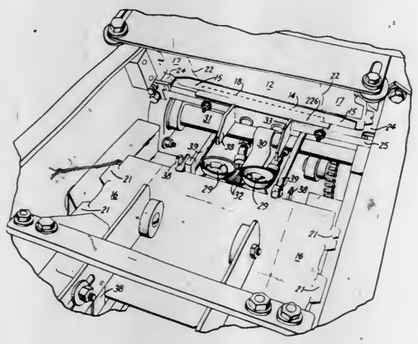
Continuous web of heat-sealable material having J-shaped cross-sectional shape advanced over a bar having an angular slot. Lip of wider ply of the material guided through slot to fold lip back against outer face of wider ply. As material passes over outer faces of two spaced-apart support plates, an intermediate plate pushes folded edge into region between the support plates to form a gusset. Material then provided with pairs of closely spaced seal lines, and line of perforations between each pair of seal lines.

3,552,279
BOX-STAYING UNIT
Arthur George Turner, Norwich, Norfolk, England, assignor to Andrew & Suter Limited, St. Albans, Hertfordshire, England
Filed Sept. 9, 1968, Ser. No. 758,534
Claims priority, application Great Britain, Sept. 7, 1967, 40,997/67
Int. Cl. B31b 1/72
U.S. Cl. 93—41 8 Claims



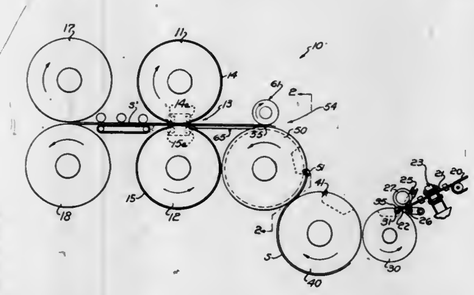
A former block for applying stay paper to successive box blanks on a box former is alternately advanced towards and withdrawn from a corner edge of the latter. A device for feeding stay paper in front of the former block is drivably connected to said former block through a one-way drive and an adjustable lost-motion device. The one-way drive ensures that stay paper is fed during the withdrawal only of the former block and the setting of the lost-motion device determines the length of stay paper fed during each withdrawal. A stay-paper-severing device is actuated by engagement with the box former during the last part of the advance of the former block to sever the previously positioned length of stay paper before it is applied to the blank.

3,552,280
DEVICES FOR SQUARING TUBULAR FOLDING BOX BLANKS
Eugene P. Jaroch, Menlo Park, Calif., assignor to Kliklok Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 18, 1968, Ser. No. 784,622
Int. Cl. B31b 1/76
U.S. Cl. 93—53 5 Claims



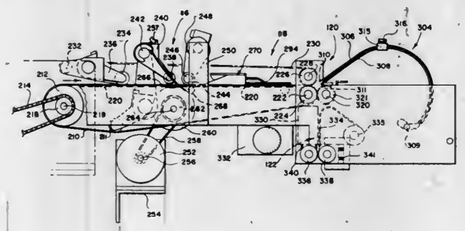
A device is disclosed for squaring flat collapsed tubular folding box blanks disposed upright in a horizontally extending stack in which the endmost blank is retained by lugs overlapping the blank marginally. A suction cup draws the blank out of the grip of retaining elements and drags the lower blank portion over a cam, thus causing the minor panel which is engaged by the cam to assume an angular position to the cup-held major panel. An abutment element is provided above the cam for engaging the upper portion of the withdrawn blank in a position in which the blank has sufficient space behind it to expand. The abutment element also catches second blanks in case of accidental double feeding.

3,552,281
CUTTER AND CREASER
Paul A. Feick, Chagrin Falls, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Oct. 24, 1968, Ser. No. 770,298
Int. Cl. B31b 1/14
U.S. Cl. 93—58.2 10 Claims



Apparatus for cutting and/or creasing sheets comprises a pair of cylinders defining a cutting and/or creasing nip. The cylinders carry means for effecting the cutting and creasing of the sheets advanced into the nip. The apparatus also includes means for advancing the sheets in a registered condition into the nip. The means for advancing the sheets into the nip comprises feed roll means defining a feeding nip located in advance of the cutting and/or creasing nip. Gripper means engages the leading edge of a sheet and carries the leading edge of the sheet into the feeding nip and then releases the leading edge of the sheet so that the sheet is fed into the cutting and creasing nip by the feed roller means. Suitable means is provided for guiding the movement of the sheet from the feeding nip and to the cutting and creasing nip.

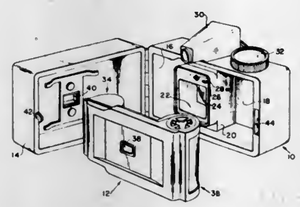
3,552,282
CONTINUOUS FORMS ENVELOPE CONVERTER SYSTEM
Paul O. Wilson, Severna Park, Md., assignor to Baltimore Business Forms Inc., Baltimore, Md., a corporatin of Maryland. a part interest
Filed Aug. 9, 1968, Ser. No. 751,467
Int. Cl. B31b 1/00
U.S. Cl. 93—61 30 Claims



A continuous forms press converts a roll of envelope paper into a continuous envelope form having a plurality of transverse perforated lines dividing the form into envelope blanks, a plurality of transverse score lines defining fold lines on the envelope blanks, longitudinal perforated lines and score lines defining side trim zones and side flaps, lines of sprocket holes along the side margins of the form, and adhesive coatings on a seal flap and adjacent side margins of a top sheet of each blank. The press folds the continuous form into a zigzag folded stack suitable for feeding into a computer printout device or automatic typewriter where the forms are automatically addressed from addresses contained in a tape or punch card memory. The continuous form is again folded into a zigzag stack and fed into a continuous forms envelope converter which includes means for separating the continuous form into separate envelope blanks, means for trimming the side trim zones from the blanks, means for folding over the side flaps, means for folding over a top sheet of each blank over a bottom sheet thereof along a transverse fold line, and means for activating the adhesive coatings adjacent the side margins of the top sheet and securing the side flaps thereto for completing the envelopes.

ERRATUM
For Class 94—15 see:
Patent No. 3,552,277

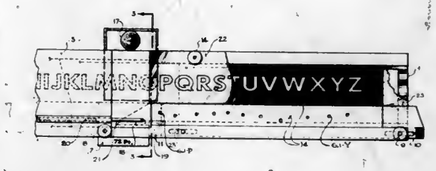
3,552,283
GROUND PLANE INDICIA MEANS
David Lockman Babcock, and Hubert Nerwin, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Mar. 27, 1968, Ser. No. 716,576
Int. Cl. G03b 17/24
U.S. Cl. 95—1.1 13 Claims



A ground plane indicia device providing an image on exposed photographic film for the purpose of indicating the ground plane on the developed negative or positive print, regardless of the camera attitude at the time of shooting. The device comprises a transparent body which houses a weighted element adapted to nest in the lowermost corner of the body, under the discipline of the gravitational force. The transparent body may be positioned within the camera body proper, or within a roll film cartridge, the only requirement being that the transparent body be in the path of the exposing light from the subject being photographed to the film at the film plane of the camera. The developed negative or positive film contains an arrowlike imprint on the periphery of the film frame, the arrow pointing toward the ground plane, so that it may be used to conveniently orient the film or transparency.

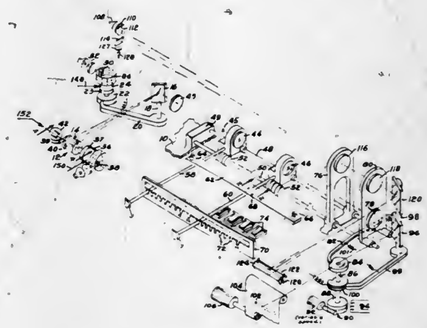
3,552,284
PHOTOTYPESETTING APPARATUS FOR DISPLAY TYPOGRAPHY
Arless B. Noble, Shawnee, Okla. (428 Chautauqua, Norman, Okla, 73069)
Filed May 3, 1966, Ser. No. 547,400
Int. Cl. B41b 13/10
U.S. Cl. 95—4.5 3 Claims

A device for producing "display" typography by photographic means, also known as "photolettering." A photomatrix is fixed to the underside of a transparent member forming an indexing slide. This slide has on it a pattern of small holes corresponding lengthwise to the positions of the characters on the matrix, and transversely according to the width of the characters. The indexing slide is guided by guideways affixed to the base, which also holds and guides the paper or film. The operator sets a character by inserting the point of a stylus into the hole corresponding to the character, and moving the slide toward the center of the device, where the printing light is. The stylus moves the strip and the paper or film to a limiting point in the form of a cam



stop which is disposed at an angle and the point at which the cam stop is contacted depends on the transverse position of the hole constraining its motion. Thus the appropriate advance of the film or paper is accomplished with the positioning of the character, and the exposure is then made in any suitable way.

3,552,285
TURRET FONT PHOTOCOMPOSING MACHINE
John M. McCall, Huntington Station, N.Y., assignor to Fairchild Camera and Instrument Corporation, Syosset, N.Y., a corporation of Delaware
Original application Jan. 11, 1966, Ser. No. 519,906, now Patent No. 3,434,402, dated Mar. 25, 1965. Divided and this application June 18, 1968, Ser. No. 793,622
Int. Cl. B41b 15/34
U.S. Cl. 95—4.5 2 Claims

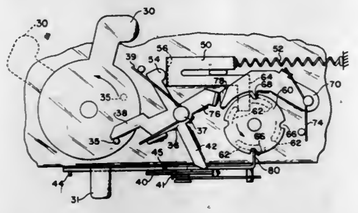


A photocomposing apparatus employing a variable-magnification lens system for projecting characters from a character font onto a record film at a variety of effective point-sizes, and in which positive and readily settable detent elements are provided to position the lens elements at the various precise positions required for the desired range of point sizes, by simple manual operations carried out in a few seconds for each such change.

3,552,286
FLASH CAMERA
William H. Horton, Rush, and Allan M. Palmer, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 6, 1968, Ser. No. 726,954
Int. Cl. G03b 19/02
U.S. Cl. 95—11 7 Claims

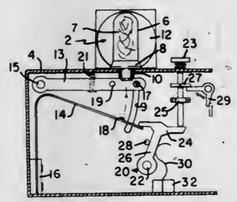
A photographic flashcube camera having a single member such as the shutter driver to coordinate the film wind with shutter operation and flashcube indexing. In a preferred

form, movement of a film-winding lever cocks a shutter driver. The driver, in turn, engages and cocks or energizes a



flashcube indexing mechanism. This mechanism then is released, when an exposure is made, to index the flashcube.

3,552,287
PHOTOFLASH LAMP FIRING MECHANISM
William C. Fink, Williamsport, and John W. Shaffer, Montoursville, Pa., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey. by mesne assignment
Filed Feb. 23, 1968, Ser. No. 707,649
Int. Cl. G03b *9/70*
U.S. Cl. 95—11.5 **6 Claims**



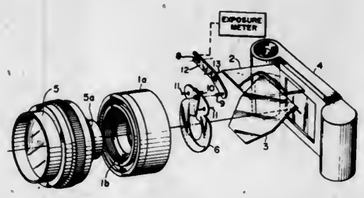
A photographic camera having a photoflash lamp firing mechanism for percussive-type flashlamps. The lamp firing mechanism consists of a metal spring which is released from its energized position in response to operation of the camera shutter and strikes the percussive-type lamp to effect the firing thereof. The firing mechanism also has a setting member accessible from outside the camera casing for moving the metal spring to its energized position.

3,552,288
GREY-SCALE TEST SLIDE
Ferrand David Ernest Corley, 2 Wimbleton Crescent, Islington, Ontario, Canada
Filed Jan. 19, 1968, Ser. No. 699,174
Int. Cl. G03b *33/00*
U.S. Cl. 95—12.2 **4 Claims**



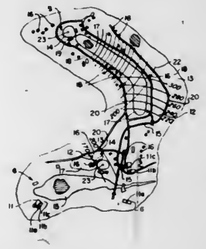
This specification describes a film slide, or in some cases a length of motion picture film, which is used to test the alignment of the camera or separate cameras in a colour telecine camera chain. The slide or other piece of film will incorporate an overall uniform density background area and a central rectangular portion consisting of a series of strips of varying density of grey, varying from almost black to light grey. The slide or other piece of film is a piece of dye image colour film which when developed is characterized by an absence of any substantial quantity of silver image forming materials in which the images are formed by reacted dyes, and each of the images, although appearing in various densities of grey to the naked eye, in fact will provide a precisely proportioned response to red, green and blue light respectively, and in addition provides an overall precisely proportioned graduation in density from strip to strip to form a so-called "staircase wedge," thereby providing a standard whereby to test and if necessary adjust the colour telecine camera chain. The specification also discloses a preferred method of making such a slide.

3,552,289
IRIS MECHANISM IN BODY OF INTERCHANGEABLE-LENS CAMERA
Sakae Fujimoto, Tokyo, Japan, assignor to Kabushiki Kaisha Ricoh, Tokyo, Japan, a corporation of Japan
Filed Sept. 29, 1967, Ser. No. 671,714
Claims priority, application Japan, Oct. 7, 1966, 41/66103
Int. Cl. G03b *7/12, 19/12*
U.S. Cl. 95—64 **1 Claim**



A camera body adapted to receive various interchangeable lenses of the same *f*-number is equipped with an iris (which may be coupled to an exposure meter) in its body behind the position occupied by the lens so that a single iris may be employed with all lenses.

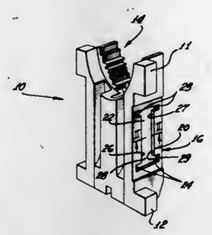
3,552,290
SCALE MAP OF GOLF COURSE HOLES AND METHOD OF PRODUCING SAME
Frederick Charles Brechtel, 919 Edinburgh Rd., SW., Calgary, Alberta, Canada
Filed Aug. 21, 1967, Ser. No. 661,960
Int. Cl. G09b *25/08*
U.S. Cl. 95—85 **6 Claims**



A map of golf course hole layout produced as reproduction of one or plurality of aerial photographs by camera positioned at uniform distance from terrain along course showing each fairway and playing area between tee and green, said reproduction being substantially free from distortion throughout playing area with natural and artificial landmarks shown. Distance scale established by actual measurement along course represented by annotated indicia applied between two selected visible points used in measurement. Other indicia are applied to reproduction in arcuate pattern

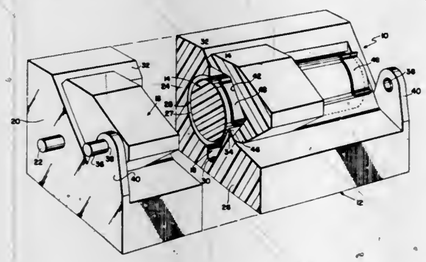
across playing area using indicated point on green as a center and in established scale distance units.

3,552,291
PHOTOCOMPOSING MATRIX
Lewis E. Hall, 1228 Finegrove Ave., Hacienda Heights, Calif., and Leonard Metz, 1935 Kerns Ave., San Marino, Calif.
Filed Dec. 29, 1967, Ser. No. 694,714
Int. Cl. B41b *11/00*
U.S. Cl. 95—85 **13 Claims**



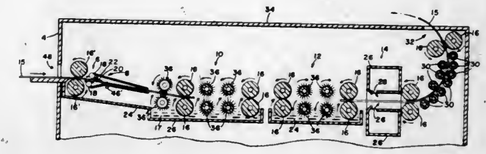
A character-incised matrix, typically of brass, conventionally settable and distributable in a linesetting machine, and distinguished from a conventional matrix in providing high reflectance contrast between the area bearing character intelligence and the surrounding area. A salvage process for making such a matrix from a worn and even damaged conventional matrix, by removing a portion of matrix material from the character face to provide a very shallow depth of incision—of the order of 0.005 inch or less—whereby the incision outline on the modified character face is virtually congruent with the intelligence bearing area at the bottom of the incision; or by modifying the original manufacturing process of a matrix by providing a shallow depth of incision of the magnitude above-mentioned; and increasing the above-mentioned reflectance contrast of the matrix. When the removal of matrix material includes machining, the incision is desirably first packed with a removable packing substance having hardness and strength characteristics comparable to the matrix material, in order to assure accuracy of incision edges after machining, free of burrs, tool chatter marks and other irregularities.

3,552,292
PHOTOGRAPHIC PROCESSING APPARATUS
Nicholas Gold, Arlington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Apr. 22, 1968, Ser. No. 723,040
Int. Cl. G03d *5/06*
U.S. Cl. 95—89 **2 Claims**



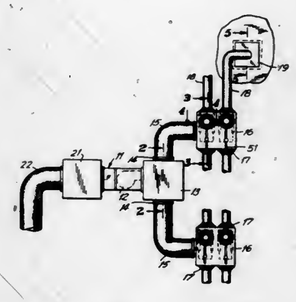
Apparatus for applying an accurately predetermined quantity of a liquid processing agent uniformly to successive exposed areas of photosensitive sheet material. The apparatus includes an applicator roll with a grooved surface rotated in a liquid-containing well and the sheet material is moved upwardly at an angle in contact with the oppositely moving surface of the roll to form a meniscus of the liquid between the roll surface and the sheet material. One side of the well is higher than the other and includes a cylindrical surface cooperating with the roll surface to form a throat for controlling the quantity of liquid carried upwardly by the roll through the throat into contact with the sheet.

3,552,293
WEB PROCESSING DEVICE
William L. Cuthbert, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 30, 1968, Ser. No. 756,676
Int. Cl. G03d *3/12*
U.S. Cl. 95—94 **9 Claims**



A photographic processing device or the like in which a web being transported is engageable at one or more stations by processing rollers having a nonsmooth or roughened periphery, and whose peripheral speed exceeds the transport speed of the web. The processing device includes mechanism for driving the rollers in one direction so that the portion of the periphery thereof engageable with the leading end of the web is moving in the direction of web transport, and for reversing the direction of rotation of the rollers so that the portion of the periphery thereof engageable with the trailing end of the web is moving in the opposite direction of web transport.

3,552,294
AIR-CONDITIONING DISTRIBUTION SYSTEM
Sam Goldberg, 1961 Leonard Lane, Merrick, N.Y. 11566
Filed Jan. 22, 1969, Ser. No. 792,991
Int. Cl. F24f *1/00*
U.S. Cl. 98—39 **7 Claims**

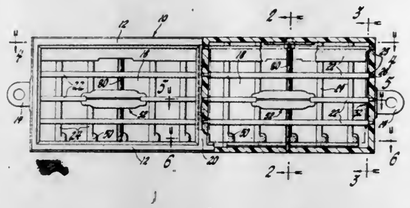


An air-conditioning distribution system in combination with a heat exchanger and blower which can be used to distribute cooled or heated air to various locations throughout a building without the use of usual ducting. By utilization of one or more distribution boxes located on the supply side of the air distribution system, air can be distributed in controlled amounts to various locations throughout the building by means of flexible tubing eliminating the necessity for metal ducting fabricated to the specific dimensional requirements of the building. By eliminating the metal ducts, a standard or modular system can be supplied which can be readily installed on the premises in accordance with the requirements of the building.

3,552,295
AIR CONDITIONER GRILL HAVING PIVOTING HORIZONTAL AND VERTICAL LOUVERS

William A. Armstrong, Grosse Ile, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Feb. 13, 1969, Ser. No. 799,028
Int. Cl. F24f 13/00
U.S. Cl. 98—110 1 Claim

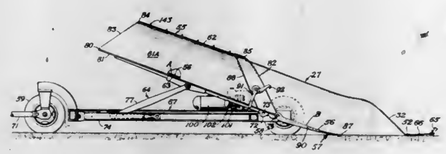


In preferred form an air directing grill mountable at the outlet of an air conveying tube having pivotal horizontal and pivotal vertical louvers for directing airflow in alternate directions. Interconnecting means link the horizontal louvers for limited rotation together and second interconnecting means link the vertical louvers for rotation together. Vertical adjustment of a knob which is supported on one of the horizontal louvers pivots the interconnected horizontal louvers to change the elevational path of air flowing from the outlet. The knob is mounted on the one horizontal louver to permit linear horizontal sliding adjustment thereon. This sliding adjustment of the knob causes a protruding portion on the knob to rotate a crankshaft on a vertical axis which through a gear drive means pivots the vertical louvers to change the lateral path of the flowing air from the outlet.

3,552,296
MEANS FOR ENSILAGING

William J. Flittie, Dallas, Tex., assignor to Henry C. Goldwire, Irving, Tex.

Original application Oct. 31, 1966, Ser. No. 590,866, now Patent No. 3,427,790, dated Feb. 18, 1969. Divided and this application Sept. 19, 1968, Ser. No. 760,921
Int. Cl. A01f 25/16
U.S. Cl. 99—235 29 Claims

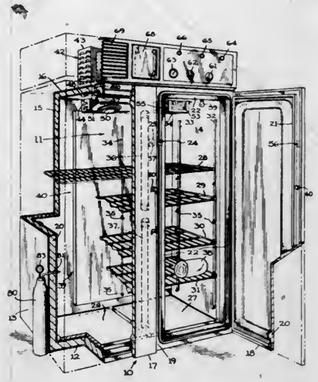


A tubular receiver for forming vegetable feedstuff portions into a mass of predetermined shape as they are deposited therein, the mass having peripheral portions sloping upwardly and inwardly relative to the mass and each extending at a respective angle to the bottom face of the mass approaching the angle of repose of the feedstuff portions. A capsule contained in and lining the receiver contains the feedstuff mass. In one embodiment, the capsule has a bottom portion which receives and lies beneath the feedstuff mass, the capsule having a further portion adapted to being placed over the mass and sealingly connected to the bottom portion. The configuration of the mass yielded by the receiver permits the use of a capsule or container of lightweight, readily expendable materials or a capsule of largely preshaped construction and made of heavier, reuseable materials.

3,552,297
APPARATUS FOR AGING AND FLAVORING MEAT

Beverly E. Williams, La Grange, Ill., assignor to Kathryn I. Williams, La Grange Park, Ill.

Filed Aug. 15, 1967, Ser. No. 660,625
Int. Cl. A47j 47/06
U.S. Cl. 99—271 11 Claims

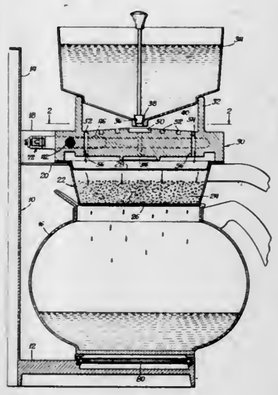


A controlled area is provided within which meat is stored for a period of one to four days at a controlled temperature of 65° F. to 75° F. in the presence of Thamnidium. Access to the area is avoided while the aging process is taking place and after the aging process is completed, bacterial development in the area and on the meat is inhibited by the energization of germicidal lamps. In the aging process, activity of the mold spores of Thamnidium is stimulated by atomizing liquid Thamnidium into the treatment area. Air, oxygen, Freon gas or other suitable gas may be utilized as the propellent.

3,552,298
DRIP-TYPE COFFEE MAKER

Dale E. Bufkin, Willard G. Murphy, and Norman A. Beam, Macon, Mo., assignors to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware

Filed Apr. 17, 1969, Ser. No. 817,019
Int. Cl. A47j 31/10
U.S. Cl. 99—281 10 Claims



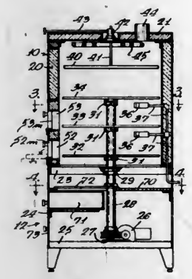
A drip-type coffee maker with a heating plate having passage means from an upper inlet to a lower outlet, and having a primary heater operable to heat water flowing through the passage means to an outlet temperature sufficient for brewing coffee, a thermostat operable at a given low-limit

temperature to energize the primary heater, and a secondary heater effective under continuous operation in normal ambient condition with no water contacting the heating plate to maintain the heating plate above the low-limit temperature to preclude cycling of the primary heater and further with the residual heat in the heating plate to heat even the initial water discharge from the lower outlet to an elevated temperature.

3,552,299
ROTARY OVEN

Martin A. Patoka, Oak Park, Ill., assignor to Tru-Broil Corporation, Oak Park, Ill., a corporation of Illinois

Filed May 5, 1969, Ser. No. 821,623
Int. Cl. A47j 37/04
U.S. Cl. 99—339 10 Claims

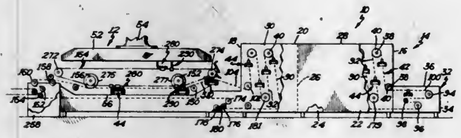


Improvements in rotary oven of the general character disclosed in U.S. Pat. Nos. 2,372,362 and 2,419,261; i.e., a cylindrical oven enclosing a plurality of rotary cooking shelves, burners above some of the shelves whereby those below the burners may be used for broiling and those above the burners may be used for baking, a door accommodating access to the bake shelves, horizontally elongate door means for each broiler shelf accommodating placing of food thereon for such selective arc of rotation as to cause the same to be cooked "well done," "medium" or "rare," and discharge means for each broil deck spaced circumferentially from the respective door means for automatically discharging the food after its preselected arc of rotary movement in the oven; the improvements including structural refinements, a new vertically adjustable bake shelf, a water heating coil providing more complete utilization of available heat, a new crumb or waste collector and tray, more efficient and effective burners and improved speed control means for the cooking shelves.

3,552,300
APPARATUS FOR PROOFING AND FRYING BAKERY GOODS

Joseph Matzke, 4701 Park Ave., Minneapolis, Minn., and Gary R. Zempel, 5156 Danens Drive, Edina, Minn. 55435

Filed Dec. 18, 1967, Ser. No. 691,570
Int. Cl. A47j 37/12
U.S. Cl. 99—352 10 Claims

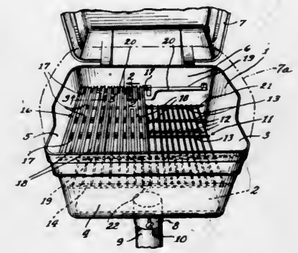


An apparatus for proofing and frying bakery goods including a frying vessel containing a heated oil and a proofing cabinet adjacent to the inlet of the vessel with a single endless chain conveyor running through both the proofing cabinet and the frying vessel for transporting yeast-leavened bakery goods directly from the cabinet into the frying vessel. Trays on the conveyor support bakery goods. A holddown conveyor mounted above the fryer is provided with covers which enclose bakery goods while submerged to limit their expansion.

3,552,301
COOKING-GRILL CONSTRUCTION

George A. McNeff, Dallas, Tex., assignor to Interlake Steel Corporation, Chicago, Ill., a corporation of New York

Filed Mar. 6, 1969, Ser. No. 804,775
Int. Cl. A47j 37/07
U.S. Cl. 99—445 6 Claims

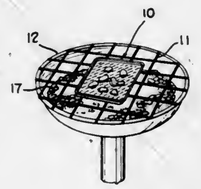


A cooking grill of the outdoor type for use with solid or gaseous fuel having improved melted fat runoff means which includes channel-shaped troughs for catching the melted fat as it drips from the food being cooked. The troughs are sloped toward a sidewall of the grill provided with groove means to receive the melted fat from the ends of the troughs and to direct it centrally of the sidewall. The bottom wall of the grill is provided with a drain and all the bottom is sloped toward the drain so that melted fat received from the groove means pours out the drain.

3,552,302
BARBECUE GRILL

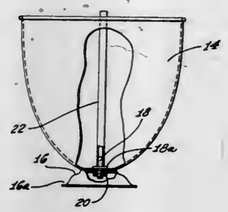
Samuel L. Gilberg, 7045 Cornell, University City, Mo. 63130

Filed Oct. 3, 1968, Ser. No. 764,888
Int. Cl. A47j 37/07
U.S. Cl. 99—444 4 Claims



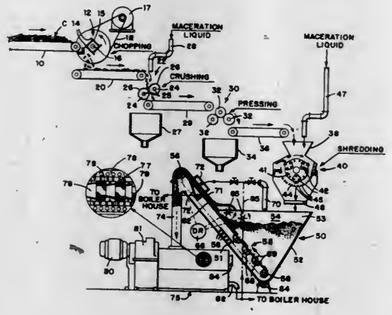
The grill is of the type supported over an open fire, and includes a plate having a continuous rim and a plurality of slits, interiorly of the rim, perforating the plate. The slits are of a size to admit smoke, exclude flame and allow the drainage of grease. Each slit is provided with downwardly depending, integral stiffening flanges forming the elongate margins of the slit. The stiffening flanges are oriented to reinforce the grill in two directions.

3,552,303
CAKE PAN ASSEMBLY
Douglas R. Parrish, 314 W. 58th St., Los Angeles, Calif.
Filed July 22, 1968, Ser. No. 746,686
Int. Cl. A47j *37/01*
U.S. Cl. 99—447 **2 Claims**



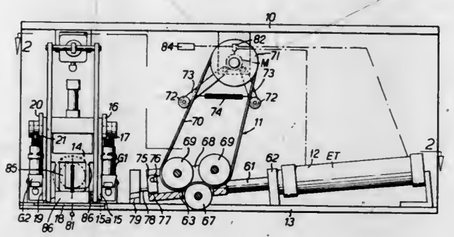
A cake pan assembly is provided which is particularly suited for baking cakes of a particular shape. The cake pan assembly of the invention provides a convenient means for baking cakes which have a shape basically approximating a paraboloid. Such cakes are used as the bases for the ultimate design of a doll cake, or of a design having other configurations based on the paraboloid shape. The improved cake pan assembly also includes a removable elongated heat conductive member to assure that the cake will be baked uniformly throughout, and it has a base for supporting the paraboloid pan in an upright position.

3,552,304
PROCESS AND APPARATUS FOR TREATING SUCROSE BEARING MATERIALS
Alfred W. French and Forest J. Starrett, Jr., Piqua, Ohio, assignors to The French Oil Mill Machinery Company, Piqua, Ohio, a corporation of Ohio
Filed June 26, 1967, Ser. No. 648,744
Int. Cl. B30b *9/02, 15/30*
U.S. Cl. 100—37 **16 Claims**



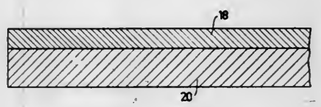
Sugar cane or sugar cane bagasse is shredded to rupture a maximum of its cells, and is formed into a bed of generally uniform thickness on an endless conveyor. The bed is saturated with maceration liquid by directing a flow of liquid through the bed which is then fed into a mechanical press which carries away expressed liquid immediately as the material is pressed. Part or all of the expressed liquid is recirculated as maceration liquid. Some maceration liquid may be added during the shredding, and the shredded material may be detained before pressing to enhance maceration. The moving thick bed of the shredded material also acts as a filter to the liquid.

3,552,305
TENSIONING APPARATUS
John Dorney and Colin Robinson, Berkshire, England, assignors to Power Industries Limited, Berkshire, England, a British company
Filed Aug. 16, 1968, Ser. No. 753,242
Claims priority, application Great Britain, Aug. 16, 1967, 37,690/67
Int. Cl. B65b *13/22*
U.S. Cl. 100—4 **13 Claims**



In a package binding machine for use with synthetic resin binding material, there is incorporated a primary tensioning device adapted to draw a loop of tape onto a package and to apply a small initial tension to the tape, and a secondary tensioning device adapted to apply a final tension to the tape and arranged to repeat its tensioning stroke any number of times necessary to bring the loop to a required final tension.

3,552,306
MULTILAYER PRESS FOR PRODUCTION OF SHEETS OR BOARDS OF FIBROUS MATERIAL
Rolf Bertil Reinhall, Lidingo, Sweden, assignor to Defibrator Aktiebolag, Stockholm, Sweden, a corporation of Sweden
Filed June 18, 1968, Ser. No. 737,894
Claims priority, application Sweden, June 26, 1967, 9181/1967
Int. Cl. B30b *15/34*
U.S. Cl. 100—93 **1 Claim**

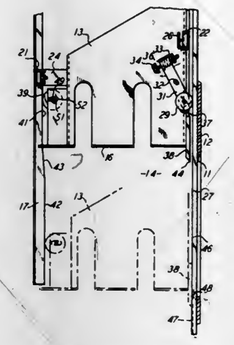


A press plate of a heated press made of two coherent layers of which the layer nearest to the press plate has a greater coefficient of thermal expansion than the sagging of the plate due to its own weight is effectively counteracted.

3,552,307
BALER HAVING A SELF-LOCATING PLUNGER
Phillip G. Venable, Orion, Ill., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed July 9, 1969, Ser. No. 840,229
Int. Cl. B30b *15/58*
U.S. Cl. 100—98 **4 Claims**

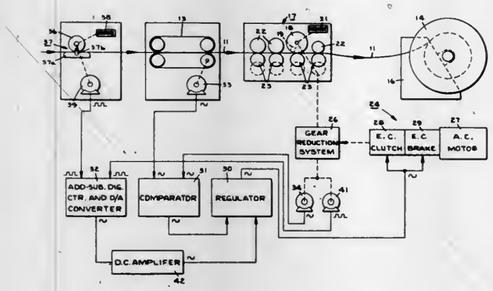
A baler having a self-locating plunger, and a bale case defines the bale chamber and the case has an inlet opening on one side. The plunger is guided in its reciprocation in the bale case, and it carries a knife which moves against a shear bar for cutting the crop. The bale plunger is guided by a ramp or inclined surface which moves the knife into shearing relationship with the shear bar, and the knife is offset just before it reaches the shear bar and then is retained in the offset

or shearing position while it moves over the shear bar. Rollers are mounted on the plunger for guiding it in the bale



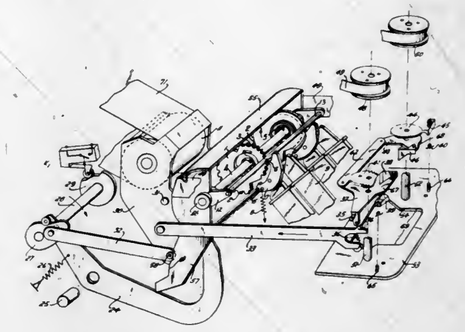
case, and the plunger is therefore adjustable relative to the guides and the shear bar.

3,552,308
SYNCHRONIZING THE MOVEMENT OF FIRST AND SECOND ARTICLES AND PRINTING MARKINGS ON ONE OF THE ARTICLES
Robert F. Minehart, Phoenix, Ariz., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 26, 1968, Ser. No. 779,120
Int. Cl. B41f *17/10, 13/12;* **B65h** *23/18*
U.S. Cl. 101—37 **17 Claims**



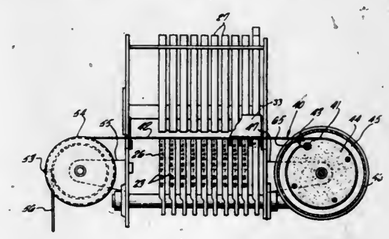
In synchronizing the movement of first and second articles, such as an elongated strand (jacketed cable) and a rotatable printing wheel mechanism for printing markings on the strand at accurately spaced intervals, the printing wheel mechanism is rotatably driven by a variable speed drive mechanism. The variable speed drive mechanism and a strand advancing mechanism drive respective signal generating devices, the signals of which are compared to produce a coarse analogue control signal representative of any difference therebetween. Similarly, the variable speed drive mechanism and a rotatable control member which is rotatably driven through frictional engagement with the advancing strand, drive digital signal generating devices, the signals of which are compared and used to produce an overriding fine analogue control signal representative of any difference between them. The coarse and fine analogue control signals then are combined to produce a signal for controlling the speed of the variable speed drive mechanism, and thus of the printing wheel mechanism.

3,552,309
ACTUATING MEANS, RESETTING MEANS AND RIBBON FEED MEANS IN SETTABLE PRINTING MACHINES
Ivan Tenev Stantchev and Stefan Todorov Bakardjiev, both of Boulevard Anton Ivanov No. 1, Sofia, Bulgaria
Continuation-in-part of application Ser. No. 703,391, Feb. 6, 1968, now abandoned. This application Apr. 24, 1969, Ser. No. 818,996
Int. Cl. B41j *1/48, 33/46;* **B41k** *1/48*
U.S. Cl. 101—96 **12 Claims**



A typing machine wherein a plurality of coaxial type members are selectively turnable about their common axis to bring selected types to a given typing line. A swingable bail coacts with the type members for returning them all simultaneously to a given starting position, and a drive which is actuated at each typing cycle coacts with the bail for swinging the latter to return the type members to the starting position after the actual typing of each typing cycle has occurred. The impressions of the types are transferred through an inking ribbon which has its feed between a pair of spools automatically reversed in response to tension in the ribbon when unwinding thereof from either one of the spools terminates. The ribbon has a pair of different colors, and it is possible to select one of these colors for the typing on a paper which is itself supported on a rotary platen. A frame which carries the platen is swingable, and a transmission from the drive swings the latter frame to bring the platen to the typing line at each typing cycle.

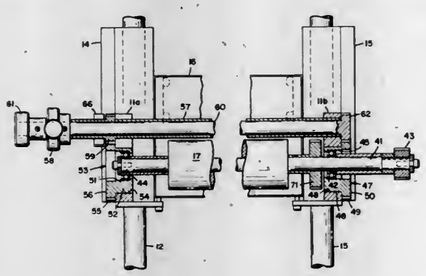
3,552,310
RIBBON INKER MEANS IN ZERO PRINT SUPPRESSING MEANS
John G. Clary, Pasadena, Calif., assignor to Addmaster Corporation, San Gabriel, Calif., a corporation of California
Filed Mar. 20, 1969, Ser. No. 808,863
Int. Cl. B41j *33/24;* **B41f** *31/18*
U.S. Cl. 101—102 **10 Claims**



A device for eliminating the printing of zeros to the left of the highermost denominational significant digit of an amount comprising a flexible elongate strip movable endwise between the type members and printing hammers associated

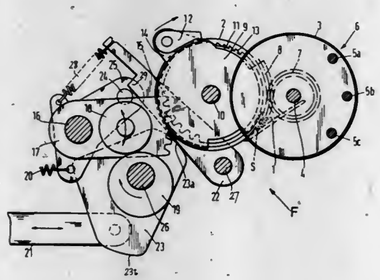
therewith. The strip includes an ink pervious section for transferring a visible print to a paper tape and a contiguous ink impervious section. The strip is spring moved endwise and a stop element is carried thereby to arrest against the type member registering the highermost significant digit, causing the ink impervious section to block transfer of a visible imprint of zero characters to the left of the highermost significant digit. In a modified form, the strip is moved to different positions by the pin carriage.

3,552,311
DAMPENING SYSTEM FOR A LITHOGRAPHIC PRESS
Nello J. Petri, 1450 Bancroft Ave., San Francisco, Calif.
Filed July 12, 1968, Ser. No. 744,399
Int. Cl. B41l *25/00*
U.S. Cl. 101—148 **3 Claims**



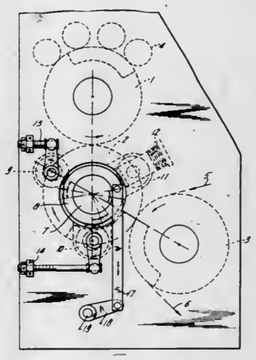
A dampening system for a lithographic press in which there is a train of rollers from the dampening fluid pan to the form roller of the press comprising a pan roller, a smooth, resilient-surfaced metering roller and a chrome-surfaced transfer roller. The metering and transfer rollers are mounted in parallelism a fixed distance apart so that the surface pressure therebetween is uniform throughout the length of the rollers. The pan roller is mounted so that the surface pressure against and along the length of the metering roller can be varied to permit the transfer of a proper amount of dampening fluid by the pan roller to the entire length of the metering roller or only to one end thereof.

3,552,312
APPARATUS FOR CONTROLLING THE SUPPLY OF INK AND DAMPENING FLUID IN AN OFFSET PRINTING MACHINE
Heinz Joachim Schinke, Unterkirnach, and Hermann Raible, St. Georgen, Germany, assignors to Math Bauerle GmbH, St. Georgen, Germany
Filed Apr. 16, 1968, Ser. No. 721,861
Claims priority, application Germany, Apr. 17, 1967, B92102
Int. Cl. B41f *31/12*; **B41l** *25/02*
U.S. Cl. 101—148 **6 Claims**



The rate of ink supply in an offset printing machine having an ink fountain roller operated by a pawl and ratchet is controlled by a deflector cam acting on the pawl to vary its effective stroke, and by a manually operated control disc which adjusts the position of the cam. A transfer roller in the roller train of the dampening mechanism is rocked toward and away from simultaneous engagement with a water fountain roller and a distributing roller, and its dwell time in the engaged position is controlled by an adjustable linkage manually set by another control disc. A control bar simultaneously stops the ink and water supplies by interrupting the drive train of the pawl and by keeping the transfer roller out of the engaged position.

3,552,313
CYLINDER CONTROLLING AND INTERRUPTER STRUCTURE FOR PRINTING PRESSES
Willi Jeschke, Heidelberg, Germany, assignor to Heidelberger Druckmaschinen Aktiengesellschaft, Heidelberg, Germany, a corporation of Germany
Continuation of application Ser. No. 491,666, Sept. 30, 1965, now abandoned. This application Oct. 7, 1968, Ser. No. 781,665
Int. Cl. B41f *13/26*, *13/36*
U.S. Cl. 101—218 **18 Claims**

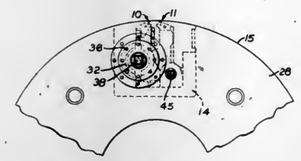


Printing press includes a pair of outer cylinders and an intermediate cylinder, all having parallel axes, and an assembly operatively connected to the intermediate cylinder for supporting the latter for rotary movement and for movement toward and away from an operative position with respect to the outer cylinders. The assembly includes at each end of the intermediate cylinder a pair of thrust-absorbing members, one of which extends through a plane which includes the axis of the outer cylinders and the other of which extends through a plane which includes the axis of the intermediate cylinder and the axis of the other of the outer cylinders.

3,552,314
PRINTING PLATE LOCK UP DEVICES
Charles Henry Skinner, Chiswick, London, and Michael Leonard Hart, Beckenham Kent, England, assignors to Baker Perkins Limited, Peterborough, England, a British company
Filed June 24, 1968, Ser. No. 739,380
Claims priority, application England, May 30, 1967, 24820
Int. Cl. B41f *27/06*, *27/12*
U.S. Cl. 101—378 **19 Claims**

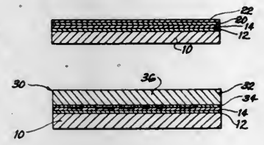
A printing plate lock up device, especially for side by side mounting of a plurality of thin printing plates for web offset

printing, wherein a spring loaded tensioning member adapted to engage one end of each printing plate is displaceable to



relax tension of the plate by means of a cam shaft rotatable from one end of the printing cylinder.

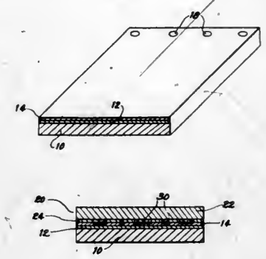
3,552,315
OFFSET MASTER FOR IMAGING BY DIFFUSION TRANSFER WITH NUCLEATING AGENT, CADIUM SALT AND A SALT OF ZIRCONIUM, THORIUM OR TITANIUM
Mary K. Ormsbee, River Forest, Ill., assignor to A. B. Dick Company, Niles, Ill., a corporation of Illinois
Filed Feb. 14, 1966, Ser. No. 526,988
Int. Cl. B41n *1/04*, *1/12*; **G03o** *5/54*
U.S. Cl. 101—459 **8 Claims**



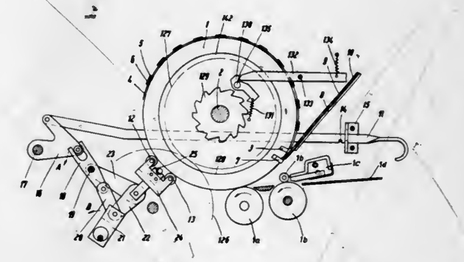
The preparation of an offset master for imaging to provide an oleophilic ink receptive image by diffusion transfer from an exposed silver halide negative in which the offset master has a surface which is water insoluble, water receptive, hydrophilic and lithographic and in which the lithographic surface is provided with one or more coatings providing the combination of a nucleating agent, a water soluble salt of cadmium and a water soluble salt of a metal selected from the group consisting of zirconium, thorium and titanium and in which the cadmium salt may be placed in whole or in part with an antioxidant.

3,552,316
DTR OFFSET MASTER AND COMPOSITION FOR PREPARATION OF SAME
Mary K. Ormsbee, River Forest, Ill., assignor to A. B. Dick Company, Niles, Ill., a corporation of Illinois
Filed Feb. 14, 1966, Ser. No. 527,028
Int. Cl. B41n *1/04*, *1/12*; **G03o** *5/54*
U.S. Cl. 101—459 **9 Claims**

An offset master adapted to be imaged to provide an ink receptive oleophilic image by diffusion transfer from an exposed silver halide negative in which the offset master is formed of a base sheet having a water soluble, water receptive, hydrophilic lithographic surface on which the image is deposited and which includes the combination on the lithographic surface of a nucleating agent for silver halide, a sensitizing dyestuff which renders more hydrophobic and ink receptive the silver image that is formed by reduction of silver halide on the lithographic surface of the master and a water soluble salt selected from the group consisting of zirconium, thorium and titanium, and which may include a cadmium salt in addition to the zirconium, thorium or titanium salt.



3,552,317
METHOD OF ACTUATING A MASTER AND PRINTING THEREFROM WHILE ON A PRINTING DRUM
Gerhard Ritzerfeld, Franzensbader Strasse 21, Berlin-Grunewald, Germany
Filed Feb. 3, 1967, Ser. No. 619,495
Claims priority, application Germany, Feb. 8, 1966, R42589
Int. Cl. B41m *5/20*; **G01n** *21/34*
U.S. Cl. 101—471 **10 Claims**



The heat absorbing text of a printing master is placed in contact with a dye coating on a sheet and irradiated so that portions of the dye coating in contact with the heat absorbing text melt and adhere to the heat absorbing text while the remainder of the dye coating remains on the sheet when the same is pulled off the master.

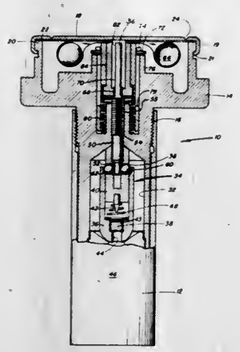
ERRATUM

For Class 102—7.2 see.
Patent No. 3,552,326

3,552,318
ORDNANCE FUZE
George S. Briggs, Adelphi, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed May 3, 1968, Ser. No. 726,379
Int. Cl. F42c *15/12*, *15/28*, *19/04*
U.S. Cl. 102—81.2 **6 Claims**

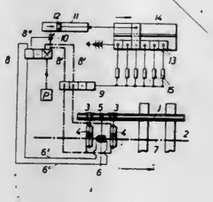
An arming mechanism for an ordinance fuze which is protectively covered and sealed prior to deployment of the weapon containing the fuze. A prescored cover is torn from the fuze during deployment of the weapon to allow a plurality of vanes normally housed within the fuze to be extended

externally of the fuze casing by a spring. The vanes are circumferentially constrained about an arming rod such that



upon rotation within the airstream the arming rod is axially removed from the fuze detonator.

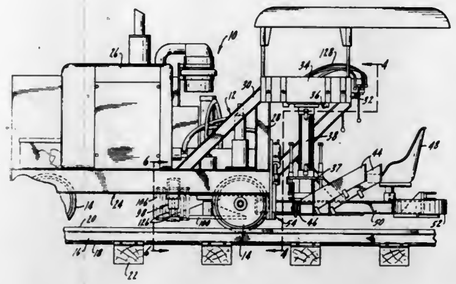
3,552,319
TRACK LINING
Franz Plasser and Josef Theurer, both of Johannesgrasse 3, Vienna, Austria
Filed July 9, 1968, Ser. No. 743,478
Claims priority, application Austria, July 13, 1967, 6,581/67
Int. Cl. E01b 33/02
U.S. Cl. 104—8 7 Claims



A track point is lined by laterally moving it beyond the desired position to take into consideration the springback of the track due to the track tension caused by the lateral movement.

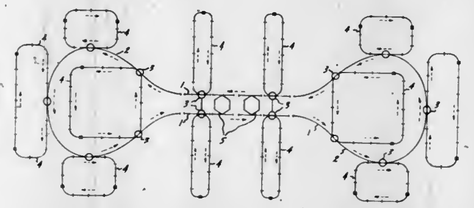
3,552,320
RAIL GAGING AND RENEWING DEVICE
Robert R. Traupmann, Wauwatosa, Wis., assignor to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 2, 1968, Ser. No. 749,648
Int. Cl. E01b 29/26
U.S. Cl. 104—17 2 Claims

A rail gaging and renewing device which is preferably hydraulically operated and constructed for gaging track by moving a loose rail to the proper gage from a fixed rail including a spike driving assembly and a clamping structure to



prevent the device from lifting off the rails during spiking operations.

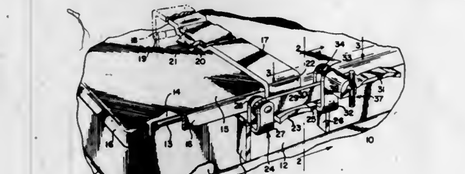
3,552,321
COMBINED LOCAL FEEDER AND NONSTOP EXPRESS TRAIN
Paul D. Priebe, 421 Summit East 304, Seattle, Wash. 98102
Filed Feb. 26, 1968, Ser. No. 708,297
Int. Cl. B61k 1/00; B61i 3/00
U.S. Cl. 104—18 14 Claims



Local cars may be detached from a nonstop express train in motion at various communities and provided with road wheels for circulation through such communities. A through car has a center rail undercarriage and lateral stabilizer wheels engageable with side tracks. A local car can be connected to a through car by the local car being propelled by a switch engine. Alternatively a harness on the through car can be caught by a hook depending from an overhead local car to start the local car and pull it down a descent onto the main track, after which such harness can be shortened to couple the local car and the through car. Bottom and side rails are carried by cradles suspended from catenary cables supported by towers.

3,552,322
TOY IN WHICH AN OBJECT IS MOVED ON A SURFACE
Garth A. Clowes, Palos Verdes Estates, Calif., assignor to Eldon Industries, Inc., Hawthorne, Calif., a corporation of California
Filed Sept. 25, 1968, Ser. No. 762,575
Int. Cl. B61b 13/12; A63f 9/14
U.S. Cl. 104—172 5 Claims

A toy is disclosed with which objects may be moved on a track structure. Such a track structure includes an upper surface, an enclosed channel located beneath such a surface, and a groove connecting the channel with the surface. A drive structure is located within this channel which is sufficiently large so as to be incapable of passing through the groove. It includes a series of bodies which fit within the channel so as to be capable of being moved in the channel and a series of flexible links of smaller dimension than the bodies connecting at least some of the adjacent to said bodies. Means are provided for advancing the drive structures in the channel. An object to be moved on the upper surfaces of the track structure carries a projection which fits



between adjacent to the bodies of the drive structure through the groove. Such an object will normally be a toy vehicle.

3,552,323
SLIDING HOPPER GATE ACTUATING MECHANISM
George B. Dorey, Westmount, Quebec, Canada, assignor to Continental Transport Appliances Limited, Montreal, Quebec, Canada, a corporation of Canada
Filed Feb. 20, 1968, Ser. No. 706,903
Int. Cl. B61d 7/02, 7/20, 7/26
U.S. Cl. 105—282 3 Claims

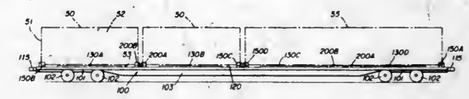


A discharge outlet assembly for a hopper car comprising a sliding gate for controlling discharge of lading and a folding multiple link chain connection connecting the gate with a rotatable operating shaft for moving the gate in either direction by rotation of the shaft. More particularly the arrangement comprises oppositely facing bearing walls for retaining jointed links in folded relation on the shaft during closing movement of the gate by shaft rotation.

3,552,324
HOPPER CAR HATCH AND COVER ASSEMBLY WITH SPRING LOADED SEAL PIN LOCKING ARRANGEMENT
Harold M. Schilf, Birmingham, and Louis A. Letanosky, Fairfield, Ala., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed July 22, 1968, Ser. No. 746,537
Int. Cl. B61d 39/00
U.S. Cl. 105—377 5 Claims

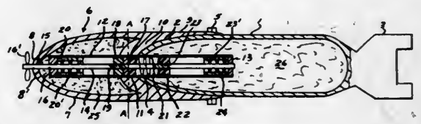
A railroad hopper car hatch opening is provided with a cover hingedly connected to the roof structure of the car and a latch mechanism is provided for latching the cover in a closed position. The latch mechanism includes a hinged arm which clampingly engages a flanged hinge strap to secure the cover. The free end of the hinged arm is locked in the latched position by its engagement within a recess provided by a pair of upstanding bracket members, and a spring loaded pin engages and maintains the arm in its latched position, with the pin including an aperture through which a car seal may be inserted.

3,552,325
FREIGHT TRANSPORTATION SYSTEM AND COMPONENTS THEREOF
Samuel H. Enochian, Thornton, Ill., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York
Filed Jan. 31, 1968, Ser. No. 702,006
Int. Cl. B65j 1/22; B60p 7/08
U.S. Cl. 105—366 6 Claims



There is disclosed a freight transportation system comprising a railway car having a deck bridging spaced-apart running gears for supporting both road semitrailers and containers on the deck, longitudinally spaced-apart pairs of longitudinally extending guide rails mounted on the deck with the guide rails in each pair being laterally spaced-apart a distance to engage and guide the inner sides of the road wheels of the road semitrailer, sets of container bolsters respectively mountable in first and second positions in the spaces between adjacent sets of guide rails and in the spaces between the outer ends of the end guide rails in adjacent end of the deck, each of the container bolsters in the first positions thereof having the outer edges in alignment with the outer edges of the guide rails to span the distances therebetween and to the end of the deck, the bolsters in the second positions thereof being in alignment with each other transversely of the deck for supporting one end of a freight container thereon; the system also includes side transfer plates mountable between the adjacent ends of a set of container bolsters to span the space therebetween thus to permit side loading of a container onto the bolsters; two species of container bolsters are provided, one useful at the ends of the car and at the center of the car and the other useful intermediate an end of the car and the center of the car.

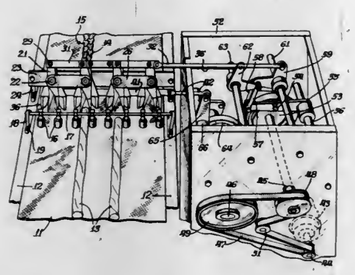
3,552,326
LOW AERIAL BURST DETONATING DEVICE
William J. Howe, Marysville, Calif. (Rte. 1, Alexandria, Pa., 16611)
Filed Dec. 19, 1968, Ser. No. 785,460
Int. Cl. F42b 25/00
U.S. Cl. 102—7.2 6 Claims



A low aerial burst or surface burst detonation shell which is constituted of an accessory to be bolted to a conventional form of bomb. The accessory includes a compartment separated from the interior of the bomb and contains an explosive material which, when detonated, provides a jet stream issuing from the front end of the accessory to propel the bomb in a direction opposite from its original direction. A fuse casing extends through the accessory compartment and into the interior of the main bomb. The fuse is divided into separate portions, each having its own primer device. An arming shaft fitted with an end propeller passes through both fuse compartments. The striking devices in the respective fuse compartments comprise heavy rings threadedly mounted on the shaft and when the latter is rotated by the propeller, the rings are released at the threaded position and placed in an armed condition. As the shell enters the ground, the primer in the forward part of the fuse is detonated by the forward striking ring and the "retro" charge exploded to provide a jet stream which propels the shell backwards. The

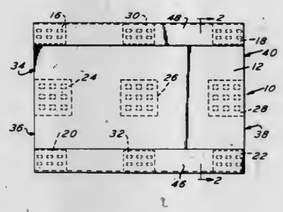
second compartment of the fuse contains a compression spring which abuts the second or rear striking ring of the fuse. The spring, upon removal of a compressive force exercised by the striking ring during the retro travel drives the ring against the primer and explodes the bomb at a predetermined position above the ground.

3,552,327
ALLIGATOR PASTRY FORMER
Alfred L. Meyer, Wood Dale, Ill., assignor to Anetsberger Brothers, Inc., a corporation of Illinois
Filed Jan. 3, 1969, Ser. No. 788,882
Int. Cl. A21c *11/12*
U.S. Cl. 107—8 **6 Claims**



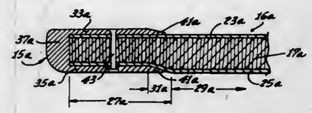
Machine for cutting dough snakes transversely of their movement on a conveyor in a plane forming an acute angle with conveyor and to a depth short of the conveyor and for transversely displacing the upper portions of the thus partially severed sections alternately in opposite directions to automatically form alligator pastry.

3,552,328
PALLET
Matthew A. Sullivan, Elkins Park, Pa., assignor to Sullifoam, Inc., Willow Grove, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 622,808, Mar. 13, 1967, now Patent No. 3,380,403. This application Apr. 3, 1968, Ser. No. 718,567
Int. Cl. B65d *19/18*
U.S. Cl. 108—51 **3 Claims**



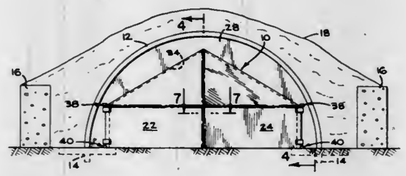
A pallet is provided having spaced apertured blocks of rigid foam polymeric material bonded or otherwise secured between layers of corrugated paperboard. The pallet may be rendered substantially waterproof. In one embodiment, C-shaped support members may be connected to at least some of the edges of the pallet to increase the strength and durability of the pallet. Openings may be provided in the C-shaped support members to permit the tines of a fork lift truck to engage the pallet to effect movement thereof. When the C-shaped support members are secured to each of the edges of the pallet, the pallet will be rendered substantially waterproof. In another embodiment, the bottom layer of corrugated paperboard may be eliminated and the top layer utilized to envelop some of the blocks. An intermediate strip of corrugated paperboard may be used to provide a base for the remaining blocks.

3,552,329
PANEL CONSTRUCTION AND METHOD
Peter P. Parris, Costa Mesa, Calif., assignor to Tridair Industries, Redondo Beach, Calif., by mesne assignment
Continuation of Ser. No. 623,714, April 21, 1967. This application Dec. 10, 1969, Ser. No. 880,480
Int. Cl. B65d *19/24*
U.S. Cl. 108—51 **12 Claims**



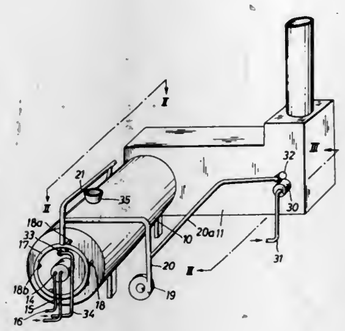
The method as disclosed herein includes applying a compressive force to the faces of a sandwich panel in excess of the crushing proportional limit of the sandwich panel and below the force at which the panel structurally fails and substantially weakens to permanently reduce the thickness and increase the density of the core of the sandwich panel. The compressive force is applied along a preselected zone such as a marginal portion of the sandwich panel to reduce the thickness thereof while allowing the thickness of the main portion of the panel to remain substantially unchanged. The portion of reduced thickness is integrally joined to the remainder of the panel by a tapered transition portion. A suitable accessory member such as an edge member or a joining member is then secured to the marginal portion to increase the strength of and protect the marginal portion. The panels may be used for various purposes such as pallets.

3,552,330
ARMORED CLOSURE FOR AN AIRCRAFT HANGAR
Donald W. Youmans, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Mar. 27, 1969, Ser. No. 813,806
Int. Cl. E05g *1/02*
U.S. Cl. 109—1 **10 Claims**



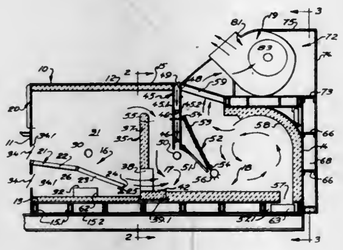
A hangar is provided with a transverse apertured bulkhead, inward of its open end, that is supported on a truss framework which is mounted free of the hangar structure. Armor plate clamshell doors pivoted for horizontal swinging movement to the truss lie inward of the end of the hangar and clear of the bulkhead aperture when open, and cooperatively form an inverted prow-shaped outer deflecting surface when closed.

3,552,331
DEVICE FOR BURNING OF MATERIALS, ESPECIALLY OF WASTE OILS, OILS SLUDGES AND CHEMICAL WASTE PRODUCTS DIFFICULT TO BURN
Peter Widdig, Nr. 30 Frank St., Rodenkirchen, to Cologne, Germany
Filed Sept. 25, 1968, Ser. No. 764,981
Int. Cl. F23g *7/00*
U.S. Cl. 110—7 **6 Claims**



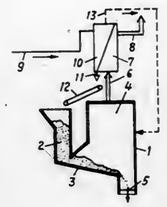
A device for burning difficult burnable materials having two combustion chambers connected with each other, each having a coordinated air supply wherein the second chamber has a greater volume than the first chamber.

3,552,332
INCINERATOR
Earl A. Mattenley, Ste.306, 12975 106th Ave., North Surrey, British Columbia, Canada
Filed Oct. 14, 1968, Ser. No. 767,384
Int. Cl. F23g *5/12*
U.S. Cl. 110—8 **7 Claims**



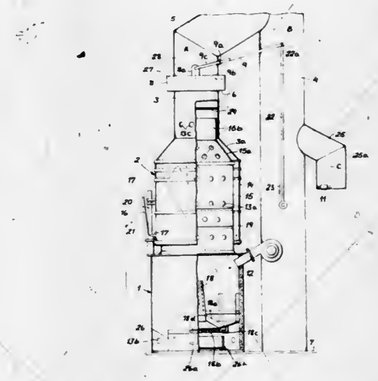
An incinerator having a primary burner for receiving waste to be burned and a secondary burning chamber and settling chamber through which the smoke and gasses from the primary burning chamber successively pass. A suction fan is provided at an outlet in the settling chamber to provide a draft and a heat retentive baffle member is positioned between the primary and secondary chambers in the path of the waste gasses and smoke to divide and preheat the gasses and smoke flowing from the primary chamber into the secondary chamber.

3,552,333
PROCESS FOR THE CONCOMITANT INCINERATION OF SOLID REFUSE AND OF AQUEOUS SEWAGE SLUDGE
Otto Salamon, Zurich, Switzerland, assignor to Von Roll AG, Gerlafingen, Switzerland, a corporation of Switzerland
Filed Nov. 22, 1968, Ser. No. 778,098
Claims priority, application Switzerland, July 8, 1968, 10,154/68
Int. Cl. F23g *5/00*
U.S. Cl. 110—8 **11 Claims**



A novel process is disclosed for the concomitant incineration of solid refuse and of aqueous sewage sludge. The process utilizes thermal dewatering of the sludge prior to its incineration by means of heat resulting from the incineration of the solid refuse, the dried sludge then being added to the solid refuse and burnt together. Any malodorous gases or vapors produced are reconducted into the combustion chamber of the incinerator utilized whereby odorless operation is ensured. Various operational layouts for carrying out the novel process are also described herein.

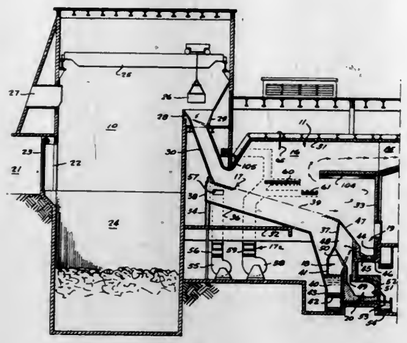
3,552,334
INCINERATOR
Helmut Springer, Marl, and Fritz Bienick, Dorsten, Germany, said Bienick, assignor to said Springer
Filed Jan. 31, 1969, Ser. No. 795,546
Int. Cl. F23g *5/00*
U.S. Cl. 110—8 **10 Claims**



An incinerator has a lower combustion portion preferably equipped with a burner and an upper afterburning portion which can be swung off the lower portion. This upper portion has an upper outlet mouth. A chimney extends alongside the portions and has a lateral flue which opens just above the upper outlet mouth. A collar on the flue controls the amount of air let in at the gap between the flue's end and the mouth and this collar can be lifted also to swing out the upper afterburning portion for loading the combustibles into the burning chamber. A flap on the chimney below where the flue is con-

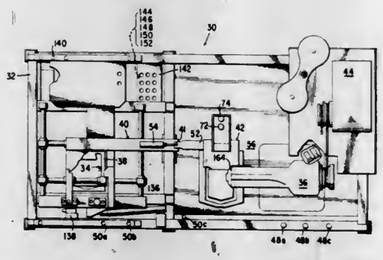
nected is biased closed by a weight and, on excessive draft, opens to control this draft.

3,552,335
REFUSE DISPOSAL SYSTEM
Miro Dvirka, Long Island City, N.Y., assignor to Hagan Industries, Incorporated, Corona, N.Y., a corporation of New York
Filed May 1, 1969, Ser. No. 820,923
Int. Cl. F23g *5/00*
U.S. Cl. 110—8 **28 Claims**



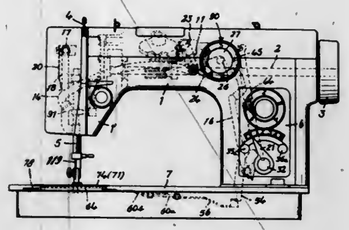
A refuse disposal system including a combustion chamber, means for supporting refuse to be burned, disposed in the combustion chamber, means for charging refuse onto the support means, means for removing ash residue from the combustion chamber, means for discharging the gaseous products of combustion from the combustion chamber and means for supplying a controlled amount of combustion air to the combustion chamber to obtain maximum combustion efficiency of the refuse and prevent excessive temperatures harmful to the structural and mechanical components of the system.

3,552,336
AUTOMATIC SETTING AND SEWING OF POCKET PIECES TO GARMENTS
Robert C. Brandriff, and Walter F. Chapman, Rockaway, N.J., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed May 26, 1969, Ser. No. 827,865
Int. Cl. D05b *21/00*
U.S. Cl. 112—121.15 **10 Claims**



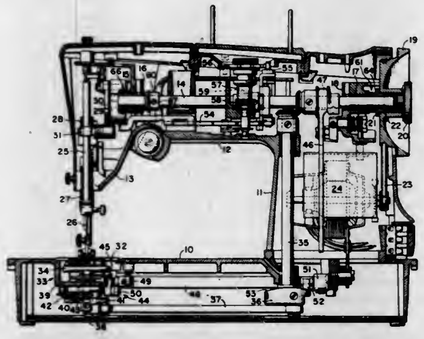
This disclosure relates to a method and apparatus for automatically setting and sewing a pocket piece to a garment wherein the pocket is loaded into a clamp of a fixture in which the pocket shape is set and a sewing margin established in a shape corresponding to a template connected to the frame carrying the fixture. Pneumatic controls permit the fixture to be operated in a step fashion permitting the pocket piece to be set and subsequently sewn to the garment along the margin. If the fabric and pocket piece are patterned, the pneumatic controls can be operated to permit alignment of the garment with respect to the pocket piece. In addition, a dart guide is provided to prevent flagging at the corners of the pocket.

3,552,337
NEEDLE PLATE DEVICE FOR A ZIGZAG SEWING MACHINE
Susumu Hanyu, Hachioji-shi, and Noboru Kasuga, Koganei-shi, Japan, assignors to Janome Sewing Machine Co., Ltd., Chuo-ku, Tokyo, Japan
Filed Aug. 28, 1968, Ser. No. 755,971
Claims priority, application Japan, Aug. 29, 1967, 42/55,014
Int. Cl. D05b *3/02*
U.S. Cl. 112—158 **11 Claims**



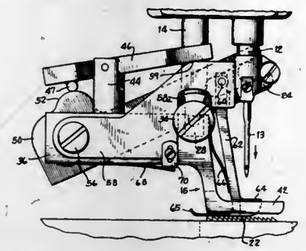
The needle bar of a zigzag sewing machine is set by manual operation of a knob to a central position, and to nonoscillation so that the reciprocating needle makes a straight seam. The same operation of the knob actuates a needle plate element to reduce the slot in the needle plate to a central opening for the passage of the needle so that the stitched fabric cannot be pressed into the slot by the reciprocating needle.

3,552,338
MEANS FOR ELIMINATION OF END PLAY IN A SEWING MACHINE
Thomas G. Graham, Jersey City, N.J., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed June 6, 1969, Ser. No. 831,023
Int. Cl. D05b *69/32*
U.S. Cl. 112—218 **4 Claims**



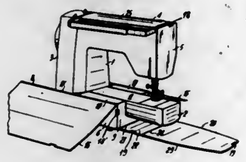
A construction and arrangement for operably combining in a unique manner a thrust bearing and a spring washer to substantially eliminate undesirable end play in the arm shaft of a sewing machine during its operation.

3,552,339
ALTERNATING PRESSER FOOT ATTACHMENT
Edward L. Seaman, 65 Harvard St., Garden City, N.Y.
Filed Aug. 29, 1968, Ser. No. 756,141
Int. Cl. D05b *27/04*
U.S. Cl. 112—212 **2 Claims**



Top-feed attachment means for a drop-feed sewing machine having a lift pressure foot, said attachment means comprising a vibrating presser moveable relatively to the movement of the presser foot by operation of the needle bar into and out of engagement with a plurality of superimposed workpieces being fed to the machine, so that the workpieces will be moved simultaneously through the machine during a sewing operation.

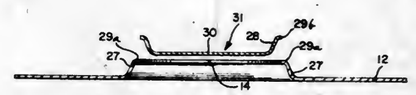
3,552,340
SEWING MACHINE
Marcel Fresard, Petit-Lancy, Switzerland, assignor to Mefina S. A. Fribourg, Switzerland, a company of Switzerland
Filed Sept. 24, 1968, Ser. No. 761,944
Claims priority, application Switzerland, Oct. 10, 1967, 14,124/67
Int. Cl. D05b *73/10, 77/00*
U.S. Cl. 112—258 **2 Claims**



The sewing machine casing incorporates a lower free arm and is slidably mounted in a base that serves as part of the work surface when the free arm is located within the base. The casing can be moved forward so that the free arm overhangs one end of the base. The sewing machine also has two swinging sides and an end flap for shutting up the machine after work is finished, and which, when open, serve as ramps leading to the work surface.

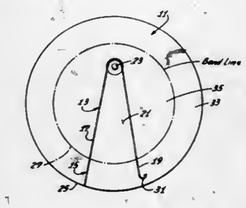
3,552,341
METHOD FOR FORMING A ROOF HATCH ASSEMBLY
William W. Lannin, Hammond, Ind., assignor to Stanray Corporation, Chicago, Ill., a corporation of Delaware
Filed Aug. 1, 1968, Ser. No. 749,389
Int. Cl. B21d *28/08*
U.S. Cl. 113—116 **10 Claims**

A method for forming a freight vehicle roof hatch assembly including a circular hatch frame formed integral with a roof sheet and a hatch cover formed from a cutout defining the hatch frame opening. The roof sheet is drawn or stretched into an annular raised section at the location at which the hatch frame is desired. The annular raised section is cut to remove a substantially dish-shaped section so that an opening bounded by an upstanding wall remains on the roof sheet. The upstanding wall is thereafter reformed to a substantially conical configuration of which the end is formed



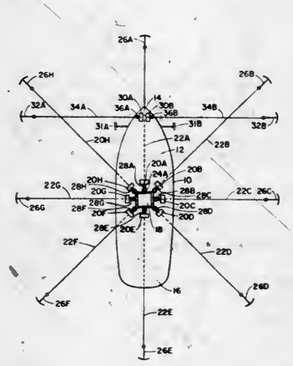
with an outwardly curled lip. The dish-shaped section is reformed into a circular hatch cover having a depending flange seatable about the curled lip.

3,552,342
EASY-OPENING CLOSURE
Omar L. Brown, Dayton, Ohio, assignor to Ermal C. Fraze, Dayton, Ohio, by mesne assignments
Original application Mar. 21, 1968, Ser. No. 714,989.
Divided and this application Aug. 22, 1969, Ser. No. 872,791
Int. Cl. B21d *51/00*
U.S. Cl. 113—121 **11 Claims**



This disclosure describes a cap for use in closing the open end of a container. The cap is constructed of sheet material and is scored to form a tear portion at least partially removable from the cap. The cap has an end wall and a peripheral wall joined by a bend portion and the score is either discontinuous at the bend portion or of increased residual at the bend portion.

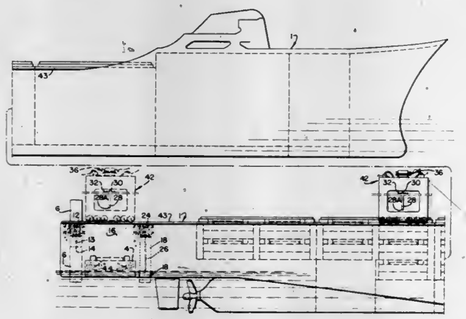
3,552,343
DRILLING SHIP MOORING SYSTEM
Gordon R. Scott, Calgary, Alberta, Canada, assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Jan. 10, 1969, Ser. No. 790,284
Int. Cl. B63b *35/44, 21/00*
U.S. Cl. 114—0.5 **2 Claims**



An anchoring system for a drilling vessel floating on a body of water. A plurality of anchor cables extend from "moon-

pool" anchor winches mounted on the deck of the drilling vessel which surrounds the moonpool. These anchor lines go downwardly along the wall of the moonpool and then outwardly to anchors spaced from the ship. There are two "bow" anchor winches mounted on the bow of the ship. When the ship is in its "normal" or "neutral" position, the anchor lines from these extend outwardly perpendicular to the longitudinal axis of the drilling vessel. By taking up on one of the bow anchor lines and letting out on the other, the ship can be made to rotate about its moonpool for approximately a total of 150°. At the same time, the moonpool anchor lines are let in or payed out, from the moonpool anchor winches, as necessary to retain the desired tension on each such anchor line.

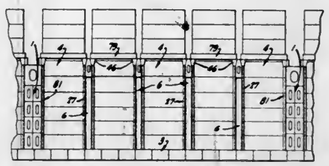
3,552,344
APPARATUS FOR STABILIZING A BARGE WITHIN A TRANSFER WELL OF A CATAMARAN TYPE VESSEL FOR LOADING THE BARGE ONTO OR REMOVING IT FROM THE VESSEL
John Hart Wilson, c/o Wilson Manufacturing Company, Inc., Box 1031, Wichita Falls, Tex.
Filed Oct. 24, 1967, Ser. No. 677,520
Int. Cl. B63b *35/44*
U.S. Cl. 114—43.5 **5 Claims**



An arrangement associated with a catamaran type vessel for bringing a raft, barge or other floating object between spaced apart, rearwardly extending hull portions of the vessel, which hull portions extend into and above the water to define a water area to receive a barge, raft or other floating object. Provision is made to enclose at least the rear of the area between the rearwardly extending hull portions of the vessel, with a gate or fender which extends into and above the water so as to define a quiescent water area which is free from the influence of the waves. Provision is also made for stabilizing the barge or the like against relative lateral movement, whereupon, a gantry crane is moved over the barge or the like and with connectors provided intermediate the hoisting equipment and the gantry crane, the barge or the like is hoisted from the water and lowered into the hold of the vessel or onto the deck thereof, and by reversing the steps, a barge can be moved from the vessel into the quiescent water area preparatory to making the barge water borne.

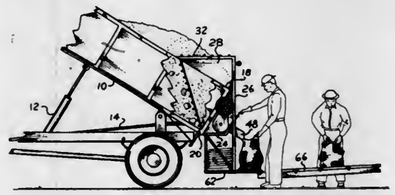
3,552,345
FLEXIBLE HOLD STRUCTURE IN CONTAINERSHIP
Leslie A. Harlander, Orinda, Warren N. Boyer, San Mateo, and Michael A. Jordan, Oakland, Calif., assignors to Matson Navigation Company, San Francisco, Calif., a corporation of California
Filed Oct. 14, 1968, Ser. No. 767,317
Int. Cl. B63b *25/00*
U.S. Cl. 114—72 **13 Claims**

Hold structure in a containership providing vertically disposed cell frames adapted to be supported within a hold different distances apart to receive therebetween cargo containers, including means on said frames to hold stacks of said containers spaced apart and against lateral shifting relative to each other and to the hold of the ship. Said cell frames are of



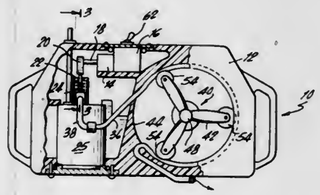
generally skeleton structure readily lifted and moved by dockside cranes to adjusted positions.

3,552,346
SAND-BAGGING ATTACHMENT FOR DUMP TRUCKS
Kenneth S. Garden, 130 W. Owens Ave., North Las Vegas, Nev. 89030
Continuation of application Ser. No. 826,754, Apr. 17, 1969, now abandoned, which is a continuation of application Ser. No. 704,169, Feb. 8, 1968, now abandoned. This application Oct. 27, 1969, Ser. No. 871,732
Int. Cl. B65b *1/22*
U.S. Cl. 141—72 **4 Claims**



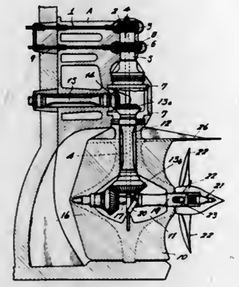
A sand bagger adapted for association with the rear end of the rearwardly tiltable body of a dump truck for receiving loose sand or soil from said body and including a power vibrated hopper equipped with an auger for uniformly distributing sand transversely in the hopper, the latter having multiple manually controlled gated bagging chutes for withdrawing sand from said hopper at a multiple of bagging stations.

3,552,347
GAS POWERED SWIMMING AID
Caryl C. B. Hastings, 5 Arrow St., Cambridge, Mass. 02138
Filed Mar. 20, 1969, Ser. No. 808,847
Int. Cl. B63g *8/08*
U.S. Cl. 115—6.1 **8 Claims**



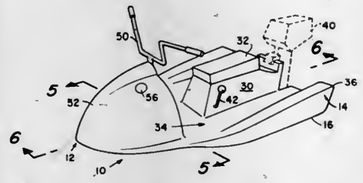
A marine propulsion device which operates by transfer of electrical energy to the intermittent discharge of a nontoxic gas into the confines of a nonporous tubing and the subsequent driving of a propeller by the gas discharge. The device includes a frame having cam means reciprocally operating a spring tensioned rod which controls the discharge of compressed gas from a container.

3,552,348
MARINE PROPULSION DRIVE
Kiyoshi Shima, No. 1917, Tsujido Kanagawa-ken, Fujisawa-shi, Japan
Filed Apr. 23, 1969, Ser. No. 818,690
Claims priority, application Japan, Apr. 27, 1968, 43/28314
Int. Cl. B63h *3/02*
U.S. Cl. 115—35 **3 Claims**



A simple steering gear wherein a cylindrical member, into which a propeller shaft is slidably inserted, is connected to a rod in such a manner that the movement of the rod is transmitted to the member to move it. The member is provided with long holes having teeth, each of which being engaged with a blade at the teeth so as to rotate the blade in accordance with the movement of the member.

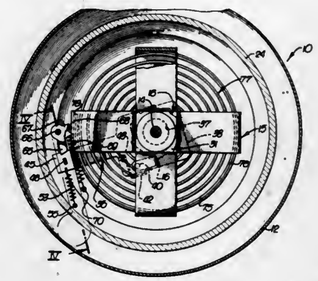
3,552,349
WATERCRAFT AND METHOD OF FABRICATING THE SAME
Harvey L. Snow, San Jose, Calif., assignor to Hydro Cycle Inc., San Jose, Calif., a corporation of California
Continuation-in-part of application Ser. No. 684,310, Nov. 20, 1967, now abandoned. This application Oct. 21, 1968, Ser. No. 766,672
Int. Cl. B63b *1/18*
U.S. Cl. 115—70 **19 Claims**



A watercraft including a hull having a central narrow elongated planing surface below its keel, shallow-angled hull surfaces projecting outwardly therefrom, and a superstructure including a pedestal seat and a handle bar at the front operably interconnected to an outboard motor at the rear thereof.

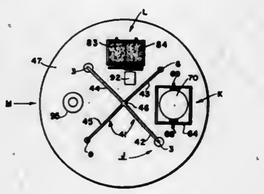
3,552,350
VISUAL SIGNAL MEANS FOR A FIRE DETECTION ALARM
Richard D. Ranney, Hermosa Beach, and Eldridge H. Smiley, Rosemead, Calif., assignors to Emdeko Distributing, Inc., Salt Lake City, Utah, a corporation of Utah
Filed July 14, 1969, Ser. No. 841,206
Int. Cl. G08b *17/00*
U.S. Cl. 116—106 **10 Claims**

A visual signal means for a fire detection alarm device in which a flag-type signal means is normally biased into exposed, readily visible position to indicate that the driving or spring motor is not fully wound or energized. A latch member, responsive to the spring motor during its final winding into fully energized condition, positions the latch member at that time for latchable engagement with the flag means



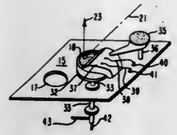
when manually positioned in nonexposed relation with respect to the alarm; the flag means being virtually immediately exposable upon initial unwinding action of the spring motor by release of the latch member which immediately responds to such initial unwinding action.

3,552,351
COATING APPARATUS
Michel H. Willem, Cusset, France, assignor to Societe Europeene d'Isolateurs en Verre (Sediver), Paris, France
Original application May 11, 1966, Ser. No. 549,203, now Patent No. 3,392,230. Divided and this application Feb. 27, 1968, Ser. No. 708,706
Claims priority, application France, May 17, 1965 Patent 17,277
Int. Cl. B05c *11/12*
U.S. Cl. 118—6 **11 Claims**



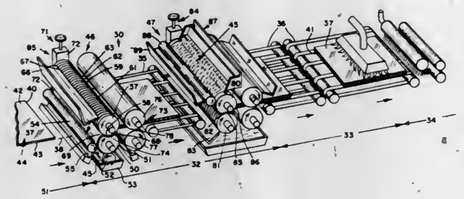
Apparatus for the in situ formation of and application to electrical insulator parts, of gaskets and pads, preferably of mica fibers, which gaskets and pads are interposed between the interfaces of the parts in their final assembled and rigidly interconnected relation. A rotor turnable about a fixed vertical axis has arms which are automatically and sequentially indexed to a plurality of fixed work stations. Each alternate one of the arms supports a first part, while each of the remaining arms supports a second part which is to be assembled with a first part. At one station means apply a coating of adhesive to the area of the part over which a gasket or pad is to be formed. At a second and subsequent station, flocking is applied to the adhesive-coated area, and at a third station excess flocking adhering to areas not coated with adhesive, is removed and collected for reuse. The flocking may be applied electrostatically to form in situ, a gasket wherein the fibers are parallel and upstanding like the bristles of a brush.

3,552,352
ELECTRON BEAM VAPORIZATION COATING APPARATUS
Ronald Frank McConnell, Pompton Lakes, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 13, 1968, Ser. No. 705,197
Int. Cl. C23c *13/12*
U.S. Cl. 118—49.5 3 Claims



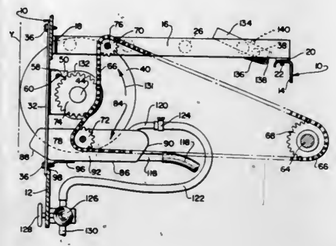
An apparatus for the vapor deposition of refractory substances on the surface of substrate materials is provided which includes a chamber adapted to be vacuumized, means rotatably disposed within said chamber adapted to support a source of refractory material, electron-gun means operatively disposed in cooperative association with said chamber adapted to impinge a beam of electrons upon said refractory materials and means adapted to convey a substrate material adjacent openings in masking means within said chamber substantially in alignment with said source of refractory material whereby electron bombardment of said refractory material causes evaporation thereof and deposition thereof on said substrate material and rotation of said source of refractory material permits a substantially uniform rate of evaporation thereof.

3,552,353
APPARATUS FOR APPLYING HIGH VISCOSITY COATINGS
Raymond A. Labombarde, Lowell Road, Nashua, N.H.
Filed Dec. 5, 1966, Ser. No. 599,283
Int. Cl. B05c *11/00*
U.S. Cl. 118—70 9 Claims



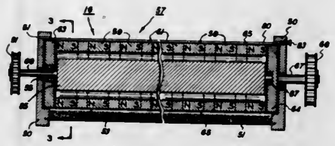
An apparatus and method for high speed roll-coating application of high viscosity coatings on a succession of individual, advancing, flat, box blanks, especially such blanks of limp paper, without "wind-up" on the rolls and without "globbing" at the roll nip. A resilient rubber-coating applicator roll forms a coating nip with a hard faced backer roll and the applicator roll is arcuately deformed by backer roll and the applicator roll is arcuately deformed by backer roll pressure at the nip to avoid "wind-up" on the applicator roll while the hard face of the backer roll is covered with minute, closely-spaced recesses to avoid "wind-up" thereon while also carrying "globs" through the nip for disposal. The metering roll may also be recessed and form an arcuate depression in the metering nip for advantageous results.

3,552,354
YARN TREATING APPARATUS
Stanley C. Kershaw, Lincoln, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Feb. 16, 1968, Ser. No. 706,075
Int. Cl. B05c *1/04*
U.S. Cl. 118—234 7 Claims



Yarn-treating apparatus including a rotatable applicator roll for treating an advancing strand of yarn and is movable between a retracted, operative position in which the roll is coupled to a drive mechanism and an extended, servicing position in which the roll is uncoupled from the drive mechanism. A supply trough provides treating material for the applicator roll and is adjustable for varying the depth of the treating material in the trough.

3,552,355
DEVELOPMENT APPARATUS
Thomas J. Flint, Herkimer, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 22, 1968, Ser. No. 723,041
Int. Cl. B05b *5/00*
U.S. Cl. 118—627 6 Claims

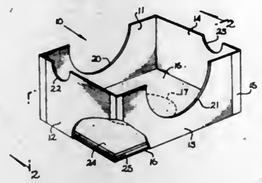


A developing apparatus for applying toner particles to a photoconductive surface carrying a latent electrostatic image. The apparatus comprises a transport roll having a developer coating made up of magnetic toner material which is moved first past a charging device which applies a uniform charge to the surface of the coating of a polarity opposite that of the latent image and then wave forming elements which cause an undulation of the surface of the coating while in close proximity with the latent image. A rotating linear magnet device is disposed interior of the roll for effecting oscillating movement of the wave forming elements and for enhancing fluidization of the developer material during development of the latent images.

3,552,356
PET AMUSEMENT DEVICE
Dolores Rosenthal, 1284 Havenhurst Drive, Los Angeles, Calif. 90046
Filed Dec. 19, 1968, Ser. No. 785,161
Int. Cl. A01k *01/00*
U.S. Cl. 119—1 11 Claims

A pet amusement device is disclosed herein having four contiguous sidewalls defining a central cavity and joined together at one end by a base having a central opening

formed therein. Each of the sidewalls is formed with semicircular openings cut along the edge of the sidewalls respectively, which serve as passageways from the exterior of the device to the internal cavity. A floor partition is insertably

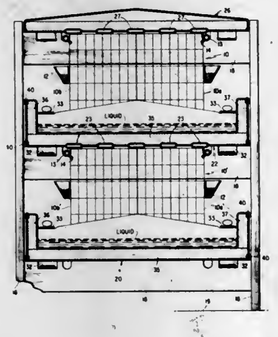


disposed in the cavity having a perimeter in frictional engagement with the inner surfaces of the sidewalls and having integrally formed risers carried on the opposite ends thereof operable as spacers to raise the partition above the base when so disposed.

3,552,357
ARTIFICIAL OYSTER CULTCH AND METHOD OF PRODUCING SAME
Daniel B. Quayle, Wellington, and Trevor P. Clark, North Vancouver, British Columbia, Canada, assignors to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada
No Drawing. Filed June 2, 1969, Ser. No. 829,723
Int. Cl. A01k *61/00*
U.S. Cl. 119—4 20 Claims

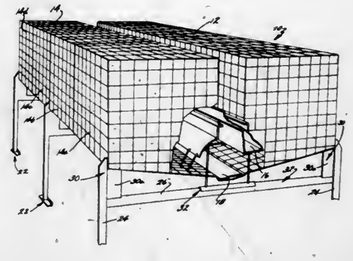
A composition for artificial oyster cultches made up of a compressed mixture of hydraulic cement, lime, an antislime lubricant, gypsum, and a fibre binding material, said compressed mixture being substantially saturated with a catalyzed aqueous solution. The method of making oyster cultches which comprise mixing in the dry state said cement, lime, antislime lubricant, gypsum and fibre binding material, pressing said mixture into cultches under high pressure, substantially saturating the formed cultches with the catalyzed aqueous solution, and hardening the formed cultches.

3,552,358
ANIMAL HOUSE AIR-CONDITIONING AND MANURE DISPOSAL SYSTEM
James M. Launder, Wabash, Ind., assignor to Horizons Unlimited Problems Solved By Ideas Corporation (HUPSI), Wabash, Ind., a corporation of Indiana
Filed Sept. 29, 1967, Ser. No. 671,770
Int. Cl. A01k *31/00*
U.S. Cl. 119—22 9 Claims



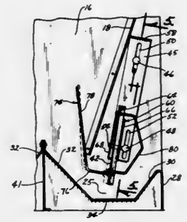
Animal manure is dropped into a trough of chilled liquid running beneath openings in the floor of an animal house. The chilled liquid stabilizes the manure, conveys it to a convenient location for disposal and/or utilization, and cools and dehumidifies the air in the animal house.

3,552,359
ANIMAL CAGE SUSPENSION SYSTEM
Jewel Graves, Holland, and Willis R. Voran, Zeeland, Mich., assignors to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware. by mesne assignments
Filed Feb. 1, 1968, Ser. No. 702,349
Int. Cl. A01k *31/16*
U.S. Cl. 119—48 13 Claims



A support standard having a crossbar and a pair of spaced legs depending downwardly from the crossbar, with support portions rising from the crossbar at either end thereof to engage only the lateral corners of an elevated poultry confinement cage or, where a pair of back-to-back cages are utilized, as is normally the case, to engage the outermost corner of each such cage and the mutually spaced front walls thereof, with the crossbar extending beneath the floor of the cages at all other points.

3,552,360
ANIMAL FEEDER
Floyd O. Nelson, P. O. Box 452; 118 Broad St., Sioux Rapids, Iowa 50585
Filed Dec. 13, 1968, Ser. No. 783,670
Int. Cl. A01k *05/00*
U.S. Cl. 119—53.5 6 Claims

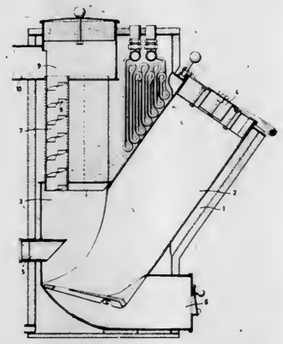


A device for holding and dispensing feed to animals in response to their agitation of a metering gate having agitation members carried thereon and extending inwardly and upwardly into the feed storage compartment. The metering gate is connected through an adjustable bracket to the end walls of the feeder for multidirectional adjustment. The metering gate is permitted limited longitudinal and pivotal movement to effect multidirectional agitation of the feed in the feeder.

3,552,361
CENTRAL HEATING BOILER

Pentti Kalervo Helpio, Uusikaupunki, Finland, assignor to Uudenkaupungin Telakka Oy, Uusikaupunki, Finland

Filed June 27, 1969, Ser. No. 837,198
Int. Cl. F22b *31/00*
U.S. Cl. 122—22 11 Claims

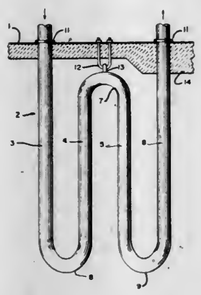


Central heating boiler for alternatively utilizing a solid fuel, such as wood and a fluid fuel, such as oil having a vertically disposed tube and an obliquely disposed tube intersecting therewith with the obliquely disposed tube being at an angle greater than the gliding angle so as to automatically feed such fuel toward the intersection for burning and provided with means for mounting a fluid fuel burner for projecting a flame downwardly within the oblique tube.

3,552,362
TUBE HEATER

Arthur W. Francis, Glenside, Pa., assignor to Selas Corporation of America, Dresher, Pa., a corporation of Pennsylvania

Filed Feb. 14, 1969, Ser. No. 799,182
Int. Cl. F22b *37/24*
U.S. Cl. 122—510 5 Claims



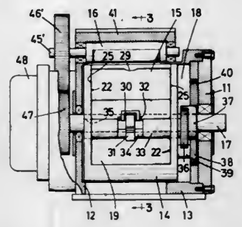
A coil for use in the pyrolysis of hydrocarbons and the like which has legs of unequal length to compensate for expansion during heating.

3,552,363
ROTARY ENGINE

Eisuke Funakoshi, No. 217 Chojabaru, Kasuya-cho, Kasuya-gun, Fukuoka-ken, Japan

Filed Sept. 30, 1968, Ser. No. 763,610
Claims priority, application Japan, Nov. 6, 1967, 42/71,810
Int. Cl. F02b *53/00*
U.S. Cl. 123—8.47 3 Claims

A rotary engine of the alternating piston type comprising a main rotor and subrotor. The main rotor and subrotor are connected by a system of eccentrically mounted linkage means and gear means for converting the relative alternating

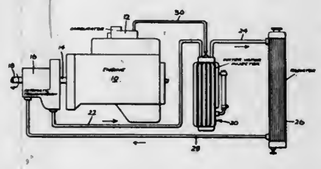


motion of the main rotor and subrotor into a clockwise rotating force of the main rotor.

3,552,364
WATER VAPOR INJECTOR

Laurel J. Short and Pedro S. Parra, Fort Wayne, Ind., assignors to Ardee Corporation, Fort Wayne, Ind., a corporation of Indiana

Filed July 9, 1969, Ser. No. 840,209
Int. Cl. F02d *19/00*, *47/00*; F02b *77/00*
U.S. Cl. 123—25 10 Claims

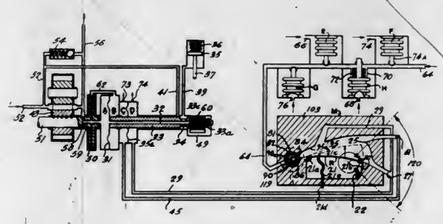


An internal combustion engine is provided with a carburetor operatively connected with a water injector means. An automatic transmission is operatively connected to the engine, and transmission fluid from the automatic transmission passes through a heat exchanger in a watertight container of the water injector means to cool the transmission fluid and to heat the water in the container to produce water vapor which is then mixed with the gasoline in the venturi tube of the carburetor.

3,552,365
A POWER CONTROL APPARATUS FOR AN ENGINE

Joseph E. Williams, St. Leonard, Quebec, Canada, assignor to Montreal Locomotive Works, Limited, Montreal, Quebec, Canada

Filed Mar. 29, 1968, Ser. No. 717,227
Claims priority, application Great Britain, Apr. 4, 1967, 15324/67
Int. Cl. F02d *11/08*
U.S. Cl. 123—103 2 Claims



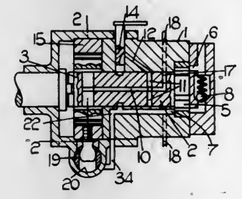
A speed regulating mechanism for an engine or other power unit, made up of a governor and speed-setting device.

The governor is connected to the power unit and drives a speed-sensing centrifugal device which acts on a diaphragm in a servovalve mechanism, in response to engine speed. The speed-setting device supplies an opposing force to the diaphragm so that the servovalve mechanism is moved by the resultant force of the respective centrifugal and speed-setting device to adjust engine speed. The speed-setting device is a fluidic control responsive to operator speed setting and is subject to overriding control signals dependent on engine parameters, including the condition of the lubricating system, engine-intake manifold pressure, abnormal ambient temperature, and atmospheric pressure.

3,552,366
LIQUID FUEL PUMPING APPARATUS

Kenneth Albert Walters Kemp, Ealing, London, England, assignor to C.A.V. Limited, London, England, a British company

Filed Sept. 17, 1968, Ser. No. 760,195
Claims priority, application Great Britain, Sept. 22, 1967, 43,232/67
U.S. Cl. 123—139 1 Claim

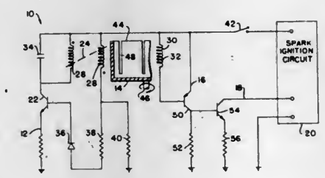


A liquid fuel pumping apparatus for supplying fuel to an internal combustion engine and including an injection pump including a member movable by a piston to vary the timing of injection of fuel, the piston containing a servovalve, one end of which is subjected to a first fluid pressure dependent upon the speed at which the apparatus is driven, and the other end of which is subjected to a second fluid pressure which varies in accordance with the load on the associated engine, the servovalve acting to control the fluid pressure applied to the piston.

3,552,367
STRUCTURE FOR AND METHOD OF ELECTRONIC SIGNAL SWITCHING

Ralph L. Slitti, Jr., Detroit, Donald G. Noble, Royal Oak, and William F. Shunn, Fraser, Mich., assignors to Holley Carburetor Company, Warren, Mich., a corporation of Michigan

Filed June 17, 1968, Ser. No. 737,478
Int. Cl. F02p *7/00*
U.S. Cl. 123—146.5 5 Claims



The structure for electronic signal switching disclosed includes trigger signal producing structure, including a transformer having primary and secondary windings and means for controlled shielding of the secondary winding from the primary winding to produce coupling of the transformer windings only when a trigger signal is desired.

In one modification of the invention the trigger signal producing structure is included in signal switching structure substituted for the usual breaker points in a vehicle spark ignition circuit and the shielding between the primary and secondary windings of the transformer is accomplished by a slotted rotating rail or cup positioned in the vehicle distributor cap and rotated in accordance with engine speed. In this embodiment of the invention a blocking oscillator provides a continuous electric signal to the primary winding of the transformer which is a bifilar wound coil, the secondary winding of the transformer energizes a semiconductor sensing unit, which in turn energizes a switching semiconductor connected to make or break the vehicle ignition circuit in the manner of the usual breaker points.

In a second embodiment of the invention the switching circuit is a darlington amplifier, an integrating circuit receives the output of the blocking oscillator to turn the amplifier on, and a silicon controlled rectifier is connected to short the integrating circuit and turn the amplifier off when the secondary winding of the transformer is not shielded from the primary winding thereof. The amplifier in this embodiment is connected to conduct current through a load, such as an amplifier in an ignition circuit.

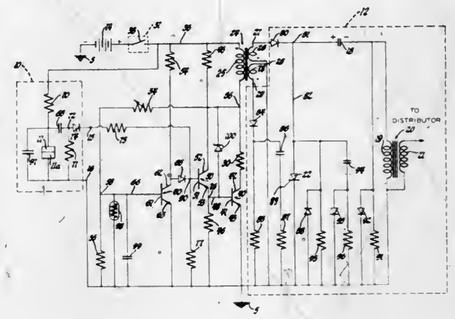
Both embodiments of the invention may be compensated for voltage variations and temperature by known voltage regulating circuits and commercially known compensating circuits. The second embodiment of the invention may be implemented by commercially procurable voltage and temperature compensated integrated semiconductor circuits.

The method of producing electronic signal switching comprises producing trigger pulses by means of controlled shielding of an energized transformer primary winding from the transformer secondary winding and providing switching in accordance with energizing of the transformer secondary winding.

3,552,368
CURRENT RESPONSIVE CONVERTER CIRCUIT

James R. Hunter, Donald O. Ruff, and Gerald O. Huntzinger, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

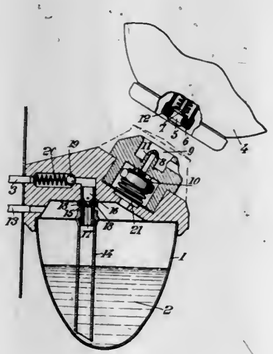
Filed Nov. 8, 1968, Ser. No. 774,331
Int. Cl. F02p *3/06*
U.S. Cl. 123—148 5 Claims



A current responsive converter circuit for producing the charging potential for the ignition capacitor of a capacitor discharge ignition system. The primary winding of the converter transformer, a control resistor and the current carrying electrodes of a switching transistor are connected in series across a direct current potential source. The base electrode of the switching transistor is connected to the emitter electrode of a trigger transistor which is maintained normally nonconducting by a normally conducting control transistor. An externally generated ignition signal applied across the base-emitter electrodes of the trigger transistor triggers this device conductive through the collector-emitter electrodes thereof to complete a base-emitter circuit for the switching transistor which, consequently, conducts through the collec-

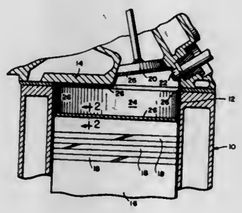
tor-emitter electrodes thereof. The conducting switching transistor establishes an energizing circuit for the series connected primary winding and control resistor and substantially removes the base drive current from the control transistor to extinguish this device. The resulting potential drop across the control resistor is applied across the base-emitter electrodes of the control transistor in a polarity relationship to produce base-emitter and, consequently, collector-emitter conduction therethrough when the current flow through the control resistor produces a potential drop of a predetermined magnitude to provide a circuit in shunt with the base-emitter electrodes of the trigger transistor to extinguish this device and, consequently, the switching transistor.

3,552,369
AUXILIARY COLD-STARTING CARBURETORS FOR INTERNAL COMBUSTION ENGINES AND FEEDER TANKS THEREOF
Maurice Frisch, 24, Parc de l'Ile Verte, 78 Chatou, France
Filed Sept. 11, 1968, Ser. No. 759,088
Claims priority, application France, Sept. 15, 1967, 121,231
Int. Cl. F02m *1/04*
U.S. Cl. 123—180 3 Claims

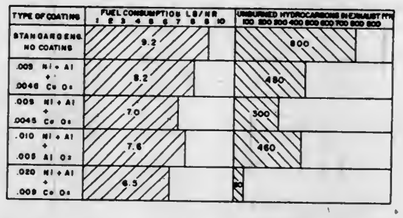


This auxiliary carburetor comprises a reservoir which is recharged with liquid, in ordinary, nonatomized liquid form, from a recharge tank through check valves. The liquid is expelled, under air pressure, through a dipping tube and a diffuser which atomizes this liquid.

3,552,370
INTERNAL COMBUSTION ENGINE
Southwick W. Briggs, 6420 Western Ave., Chevy Chase, Md.
Filed Feb. 20, 1969, Ser. No. 801,124
Int. Cl. F02b *23/00*; F16j *1/04*; C23c *7/00*
U.S. Cl. 123—191 12 Claims

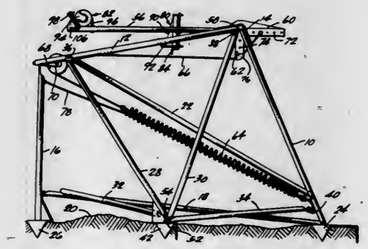


An internal combustion engine having combustion chamber wall surfaces coated with a heat insulating base layer including nickel and aluminum for retarding heat transfer by conduction and an outer layer including copper for reflecting infrared radiation, and a method for applying



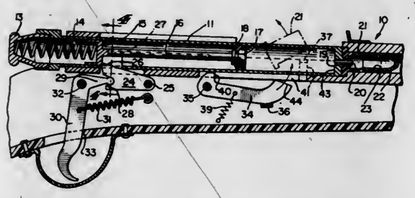
said coating to the combustion chamber wall surfaces of the engine.

3,552,371
BASEBALL PITCHING MACHINE
Edward W. Kahelin, 812 5th St., Manhattan Beach, Calif.
Filed Feb. 9, 1968, Ser. No. 704,435
Int. Cl. F41b *3/04*
U.S. Cl. 124—7 4 Claims



A portable manually operated collapsible baseball pitching machine having a centrifugally actuated ball throwing arm that is spring actuated, using a low force, long stroke concept with a vernier ball velocity and height control that is easily adjusted and regulated.

3,552,372
TOY AIR RIFLE WITH EJECTION OF SPENT CASING
James W. Wilkerson, Rte. 5, Savannah, Tenn. 38372
Continuation-in-part of application Ser. No. 481,560, Aug. 23, 1965, now abandoned. This application Apr. 26, 1968, Ser. No. 724,510
Int. Cl. F41b *11/00*
U.S. Cl. 124—15 5 Claims



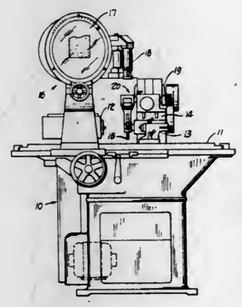
A toy air rifle designed to dispatch a hollow projectile from its cylindrical casing by means of air forced through this casing by a spring loaded compression piston located in a movable cylinder and characterized by frictional engagement of the cylinder housing said compression piston with the projectile casing and a pivotally mounted member for positive ejection of the spent casing.

3,552,373
ARCHERY BOW WITH VARIABLE STRENGTH ADJUSTING MEANS
Jerome M. Van Hecke, Magnolia, Ark., assignor to W.H. Boswell, Waldo, Ark., a part interest to each and C.C. Sigle, Waldo, Ark., a part interest to each
Filed Jan. 6, 1969, Ser. No. 789,311
Int. Cl. F41b *5/00*
U.S. Cl. 124—24 5 Claims



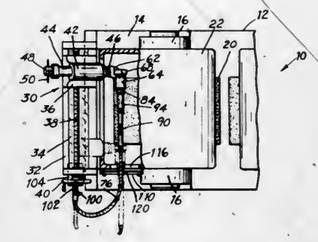
An archery bow comprising a frame member having a left half and a right half, first and second arm members pivotally attached at one end to said left and right halves, the arms being of equal length and attached equidistant from the outer ends of the left and right halves of the frame, a bowstring connecting the unattached ends of the first and second arms, means resiliently connecting the unattached ends of the first and second arms to the outer end portion of the left and right halves respectively, whereby when the bowstring is drawn, the resilient connecting means are distended.

3,552,374
GRINDING WHEEL DRESSER
William J. Knuff, Maple Heights, Ohio, assignor to Brown & Sharpe Mfg. Co., Precision Park, North Kingstown, R.I., a corporation of Delaware
Filed Mar. 25, 1968, Ser. No. 715,751
Int. Cl. B24d *53/00*; B24b *51/00*
U.S. Cl. 125—11 3 Claims



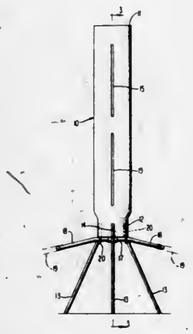
A surface dresser, adapted to shape the surface of the abrasive wheel of a cylindrical grinding machine, having bracket means permanently mounted on the grinding wheel support column. Geometric curve generator means, including cutter means adapted to engage the peripheral surface of the abrasive wheel, removably mounted on the bracket means and translatable thereof in a horizontal plane both normal and parallel to the axis of the abrasive wheel shaft. The axis of rotation of the geometric curve generator means being unobstructed, to permit passage therethrough of the optical axis of optical viewing means, whereby the travel path of the dresser tool can be observed at normal eye level by the operator.

3,552,375
ROTARY TRUING ATTACHMENT FOR WHEEL TRUING DEVICES
Albert H. Carr, Jr., Northboro, and Albert W. Ratkiewicz, South Grafton, Mass., assignors to Norton Company, Worcester, Mass., a corporation of Massachusetts
Filed Oct. 23, 1968, Ser. No. 769,794
Int. Cl. B24d *53/00*
U.S. Cl. 125—11 2 Claims



An attachment for driving a diamond roll-truing device wherein the diamond roll is rotatably driven by a flexible shaft within a flexible casing that is coupled to an independent drive motor fixed to the machine. One or more rigid elongated sleeves are fixed about the flexible casing adjacent the diamond roll housing to prevent the flexible casing from sagging and contacting the grinding wheel as the truing roll is traversed across the grinding wheel face.

3,552,376
ORCHARD HEATER
Dale A. Olsen, Rte. 2, Box 2160, Wapato, Wash. 98951
Filed Mar. 17, 1969, Ser. No. 807,589
Int. Cl. A01g *13/06*; F23d *13/24*
U.S. Cl. 126—59.5 1 Claim

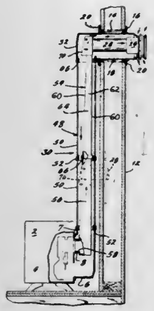


An efficient and economical orchard heater utilizing propane as a fuel is characterized by a slender upright closed top chamber for gaseous fuel having narrow longitudinal sidewall slits through which carburetion and combustion takes place.

3,552,377
CONDUIT ASSEMBLY

Ralph R. Hodges, Belleville, Ill., assignor to Empire Stove Company, Belleville, Ill., a corporation of Illinois

Filed Mar. 4, 1969, Ser. No. 804,206
Int. Cl. F23j *11/00*; F24g *3/00*
U.S. Cl. 126—85 17 Claims

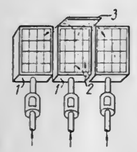


A conduit assembly for conveying fresh combustion air to and flue gases away from the combustion chamber of a heater and including an intake pipe connectable with the inlet to the combustion chamber and a tapered flue pipe disposed within the intake pipe and connected to the outlet of the combustion chamber. An elbow fits on the opposite end of the intake pipe and a transition, which is contained within the elbow, is connected to the opposite end of the flue pipe for changing the direction of the flue gases. The transition is adjustable for connection with the flue pipe at any selected location along the taper of the latter.

3,552,378
GAS PANEL OF INFRARED RADIATION

Alexandr Vasilievich Zavadsky, Ul. Artema 76, kv. 13; Georgy Fedorovich Mogilevsky, Malo Mastitskaya ul. 30; Anatoly Vitalievich Markovsky, Vyborgskay ul. 80/17, kv. 16, and Georgy Sergeevich Marchenko, Ul. Ivana Sergienko 11, kv. 67, all of Kiev, U.S.S.R.

Filed Dec. 18, 1968, Ser. No. 784,766
Int. Cl. F23d *13/12*; F24c *3/04*
U.S. Cl. 126—92 9 Claims

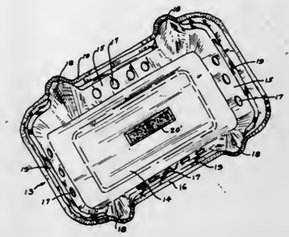


A gas panel for infrared radiation comprises a gas supply conduit to which are connected infrared burners in substantially horizontal rows. An ignition device is secured to a burner in one of the rows and screens are mounted in that row of burners over at least every second burner in the path of ascending flow of combustion products, so that in the process of firing the burners of the panel the flame is directed to adjacent burners for ignition thereof. The burners may be horizontal or vertical or in a mixed arrangement, and they may be slightly staggered in each row. The screens can be flat or curved and in the latter case, the concave surfaces of the screens face the burners.

3,552,379
FOOD PACKAGE AND HEATER THEREFOR

Robert E. Clarke, 1410 Saratoga Drive, Bel Air, Md. 21014

Filed Nov. 22, 1968, Ser. No. 778,227
Int. Cl. A47g *23/04*
U.S. Cl. 126—262 4 Claims

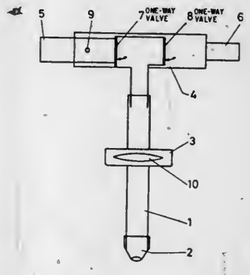


A food package having a tray-type receptacle for food and a heater therefor comprised of a tray of dimensions similar to the food tray and adapted to support the same thereupon, a combustible material in the second tray, the second tray having air intake openings in the sidewalls thereof near the bottom and pressed out portions in its sidewalls extending to the top edge thereof forming vents for the products of combustion and to direct the heat uniformly throughout the lower surface of the food receptacle and around the sidewalls thereof.

3,552,380
APPARATUS FOR INHALATION TESTS WITH RODENTS

Wolfgang Karl Joachim Heldt, Wasser, Breisgau, Germany, assignor to Gallaher Limited, London, England

Filed Sept. 5, 1967, Ser. No. 665,604
Claims priority, application Great Britain, May 11, 1967, 21,995/67
Int. Cl. A61b *10/00*
U.S. Cl. 128—2 3 Claims



A cigarette smoke inhalation device for rodents consists of a catheter placed in the throat of the rodent so as to exclude nasal respiration, a bit surrounding the catheter allowing gripping by the teeth of the rodent so as to maintain the catheter in position, and a three way valve acting as a cigarette holder with means for controlling the admixture of air to the cigarette smoke.

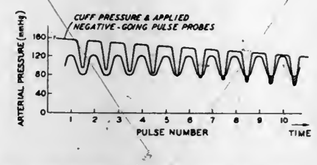
3,552,381
SPHYGMOMANOMETRIC METHOD AND APPARATUS

Gordon K. Burns, Colts Neck, and Jeofry S. Courtney-Pratt, Springfield, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York

Filed May 23, 1967, Ser. No. 640,628
Int. Cl. A61b *5/02*
U.S. Cl. 128—2.05 10 Claims

Diastolic blood pressure measurement by arterial auscultation is afforded by arresting flow as with a pressure cuff and

then applying increasingly negative pressure probes to the cuff generally coincident with each phono- or electrocardiographically ascertained minimum of the heart's pressure cycle, maintaining the negative wave amplitude always in excess of the pulse pressure. Cuff pressure at the onset of Korotkow sound signifies diastolic pressure level. Apparatus

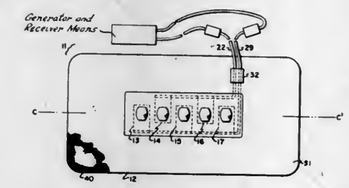


is described for unattended, automatic and continuous blood pressure monitoring using this method for diastolic readings. Cuff pressure in one embodiment is held constant as increasingly large negative pressure excursions are applied; in another embodiment cuff pressure is decreased while the negative pressure excursions are held constant in amplitude.

3,552,382
ULTRASONIC TRANSDUCER ASSEMBLY FOR BIOLOGICAL INSPECTIONS

Bruce Elson Mount, Wayne, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

Filed Jan. 11, 1968, Ser. No. 697,091
Int. Cl. A61b *5/02*
U.S. Cl. 128—2.05 12 Claims



An ultrasonic search device and method for examining physical properties within an animal or a human body, including an array of ultrasonic transducers separably mounted on a supporting member constructed to conform with and be held against the curvature of a body area, for irradiating a selected section of a body with ultrasonic energy and focusing the reflected transmitted ultrasonic energy therefrom. Associated with the transducers may be separate lens means for coupling the transducers with the body and for direction of the ultrasonic energy. The ultrasonic search device can be employed for blood pressure monitoring by placement with an inflatable cuff applied about a body limb for detection of an artery to be occluded by cuff pressure variations.

3,552,383
METHOD AND SYSTEM FOR ESTIMATION OF ARTERIAL PRESSURE

Dean T. E. Krueger, Rochester, Minn., and Louis C. Sheppard, Birmingham, Ala., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

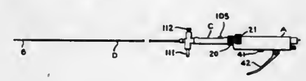
Filed Jan. 8, 1969, Ser. No. 789,778
Int. Cl. A61b *5/02*
U.S. Cl. 128—2.05 30 Claims

A method and apparatus for automatically following and monitoring systolic and diastolic blood pressure in an animal organism is disclosed. The pressure of an occluding cuff on the organism is controlled by decisional logic to increase or decrease in fixed increments the pressure in the cuff. The decision to increase or decrease depends upon the existence and amplitude of the Korotkoff sounds detected during a sample period which may comprise a preset number of heartbeats. The Korotkoff signals are analyzed for the purpose of indicating whether the cuff pressure is just above or just below the systolic (or diastolic) blood pressure and the actual cuff pressure is changed accordingly. Multiple samples are made for systolic blood pressure and those samples for which an acceptable Korotkoff pulse is detected are averaged. Then multiple samples are made for diastolic blood pressure. The method and apparatus is based on the typical Korotkoff sound envelope seen when going from above systolic pressure to below diastolic pressure.

3,552,384
CONTROLLABLE TIP GUIDE BODY AND CATHETER

Will R. Pierie, Tustin, Donald A. Raible, Corona, and David L. Swendson, Garden Grove, Calif., assignors to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois, by mesne assignment

Filed July 3, 1967, Ser. No. 650,863
Int. Cl. A61b *05/02*; A61m *25/00*
U.S. Cl. 128—2.05 17 Claims

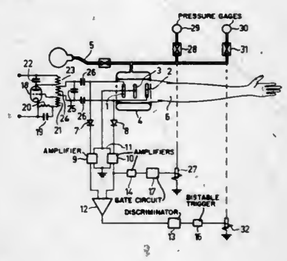


A device for general and selective angiography and other purposes having a handle, controllable tip guide body, injection tube unit and catheter outer body wherein the tip of the guide body may be bent, rotated, exposed and sheathed in the catheter by control means on the handle and injection tube unit, and locked in selected position, the several parts being usable as a complete assemblage and in different combinations. The guide body is made torsionally rigid so that the rotation of the tip corresponds to the manipulation of a rotator on the handle, the guide body rotating within the catheter outer body which is nonrotatable. The guide body extends through the injection tube unit which is interposed between the handle and the catheter outer body. The injection tube unit has a sliding telescoping part for extending the catheter outer body to sheath the guide body and for retracting the catheter outer body to unsheath the tip of the guide body. For certain purposes the injection tube unit and catheter outer body may be removed and the guide body and handle used together as an operative unit. Also, the guide body is conveniently removable from the handle.

3,552,385
DEVICE FOR MEASURING BLOOD PRESSURE

Frits Jacques Janssen, Emmasingel, Eindhoven, Netherlands, assignor to U. S. Philips Corporation, New York, N.Y., a corporation of Delaware, by mesne assignment

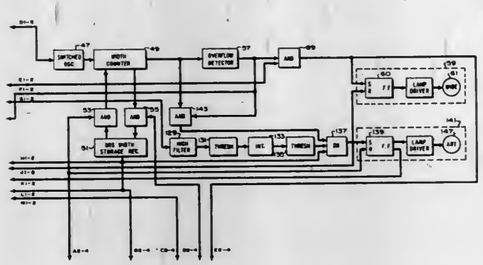
Filed Apr. 5, 1968, Ser. No. 718,997
Claims priority, application Netherlands, Apr. 13, 1967, 6705195
Int. Cl. A61b *5/02*
U.S. Cl. 128—2.05 7 Claims



A device for measuring blood pressure comprising two outer electrodes and a central electrode pressed against an

artery by an inflatable pressure cuff. High frequency energy is supplied to the outer electrodes. Voltage pulses are produced between each outer electrode and the central electrode and are compared in a difference amplifier to produce an output voltage determined by the phase shift therebetween. A threshold discriminator having a variable threshold voltage determined by the peak value of the input voltage is coupled to the output of said difference amplifier and operates a pressure valve relay when the amplifier output voltage falls below the threshold voltage.

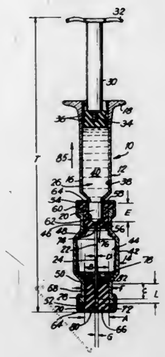
3,552,386
ARRHYTHMIA DETECTING APPARATUS AND METHOD
Thomas C. Horth, Burlington, Mass., assignor to Hewlett - Packard Company, Palo Alto, Calif., a corporation of California
Continuation-in-part of application Ser. No. 687,379, Dec. 1, 1967, now Patent No. 3,524,442. This application Dec. 23, 1968, Ser. No. 786,002
Int. Cl. A61b *5/04*
U.S. Cl. 128—2.06 **12 Claims**



A system operates to threshold detect electrocardiographic (ECG) signals received from a patient to determine the presence of QRS wave portions. The width of the QRS waves is measured by digital techniques. During a first operating period, a QRS width is stored in memory as a "normal" for the patient, and during a subsequent operating period, the patient's QRS waves are compared with the stored "normal". The system responds only to selected ECG pulses having a predetermined derivative threshold and predetermined time duration relationships. Additional digital circuitry detects when QRS waves are premature by a predetermined amount. The recurrence of abnormally wide or premature QRS waves causes the activation of alarms and control signals.

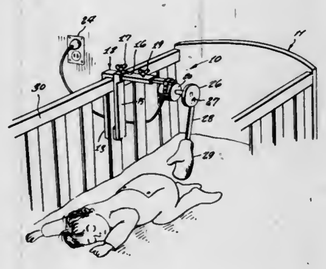
3,552,387
COMBINATION SYRINGE AND VIAL
Peter A. Stevens, Bradley Road-Chesham Farm, Middlebury, Conn. 06762
Filed July 16, 1968, Ser. No. 745,156
Int. Cl. A61m *05/18, 05/24*
U.S. Cl. 128—218 **18 Claims**

The invention relates to a combination syringe and vial, each containing a separate chamber having an individual ingredient therein. The syringe and vial are assembled in interconnected relation to each other with the hub and cannula of the syringe extending within the vial in a manner to simultaneously support and seal the hub of the syringe with respect to a first closure in the vial and the distal portion of the cannula with respect to a second closure supported by the vial and in spaced-apart relation to the first closure, to maintain the respective chambers sealed off from each other. The first closure has a preformed axial bore extending entirely therethrough, and the second closure has a preformed axially extending channel therein. The dispensing of the ingredients occurs by displacing in a longitudinal direction the syringe and vial until the seal between the distal portion of the cannula and second closure is released, permitting movement of the plunger in the syringe to force the ingredient



therein into the vial with resultant mixing of the two ingredients.

3,552,388
BABY PATTING MACHINE
Thomas V. Zelenka, Hanford, Calif. (205 S. Lemoore Ave., Lemoore, Calif. 93245)
Filed Nov. 7, 1968, Ser. No. 774,081
Int. Cl. A61h *23/00*
U.S. Cl. 128—55 **4 Claims**

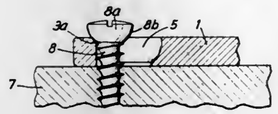


A device for patting a baby to sleep by means of periodic pats upon the rump or hind part of the baby, the device comprising a bracket supporting a motor having pulley on the motor shaft, and the pulley supporting an arm having a soft pad at one end which pats the baby.

3,552,389
OSTEOSYNTHETIC PRESSURE PLATE CONSTRUCTION
Martin Allgower and Stefan Perren, Chur, and Max E. Russenberger, Schaffhausen, Switzerland, assignors to Synthes AG, Chur, Switzerland
Filed June 16, 1967, Ser. No. 646,542
Claims priority, application Switzerland, June 22, 1966, 9068/66
Int. Cl. A61f *5/04*
U.S. Cl. 128—92 **10 Claims**

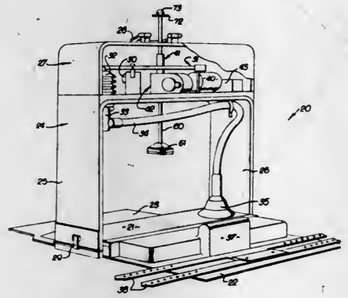
An osteosynthetic pressure plate includes a slot formation for receiving a bone-fixing screw which is adapted to be secured to a bone part which is to be mended. The slot is formed with an edge which includes an oblique portion or ramp having an inclination such that when it is engaged by the underside of a head portion of a bone-fixing screw there will be a displacement of the pressure plate in a direction to move the ramp portion away from the fixing screw and to cause the plate to apply a pressure to hold the bone parts in

tight engagement. The plate is advantageously useable with screws having heads of spherical form or conical form, for example. The inclination of the ramp and the configuration of the walls bounding the slot of the pressure plate are such that there will be a uniform and even shifting of the plate



having the slot when the ramp of the walls bounding the slot is engaged by the screw head to cause the desired displacement of the pressure plate in order to displace the bone fragment toward tighter engagement with the adjacent bone fragment and into pressure engagement therewith.

3,552,390
CARDIOPULMONARY RESUSCITATING APPARATUS
John T. Muller, Box 296, Hanover, N.J. 07936
Filed Apr. 15, 1968, Ser. No. 721,301
Int. Cl. A62b *7/00*
U.S. Cl. 128—145.6 **25 Claims**



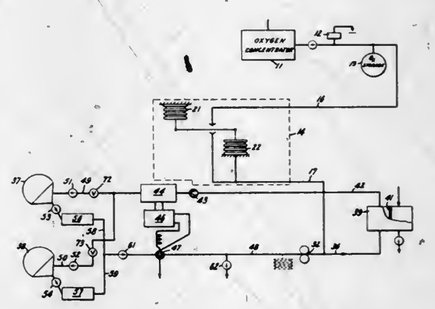
Cardiopulmonary resuscitating apparatus for automatically providing constant, substantial rhythmic heart perfusion at a rate equal to a normal heart beat and timed ventilation of the patient's lungs to provide artificial ventilation and circulation during cardiac arrest.

3,552,391
APPARATUS FOR MAINTAINING A STABILIZED OXYGEN ATMOSPHERE ABOUT THE HEAD OF A PATIENT
David W. Deaton, 823 Plymouth Road, Apt. C, Dallas, Tex.
Filed July 2, 1969, Ser. No. 838,461
Int. Cl. A61m *15/00*
U.S. Cl. 128—203 **11 Claims**

A sidewall forms an open-top chamber having dimensions for containing the head of a patient and permitting free access to the head of the patient. An opening is defined in the sidewall for receiving the neck portion of the patient. Inlet structure supplies a metered supply of oxygen through the sidewall so as to induce flow currents within the chamber which tends to maintain a stabilized oxygen atmosphere about the head of the patient. A flexible sealing curtain is attached to the opening through the sidewall for sealing with the neck of the patient to eliminate leakage of the oxygen.



3,552,392
AIRCRAFT CLOSED CIRCUIT BREATHING SYSTEM
Angelo Dounoucos, Schenectady, N.Y., and John W. Harrison, Manchester, Mass., assignors to General Electric Company, a corporation of New York
Filed July 1, 1968, Ser. No. 741,527
Int. Cl. A61m *15/00;* **A62b** *7/02*
U.S. Cl. 128—204 **3 Claims**

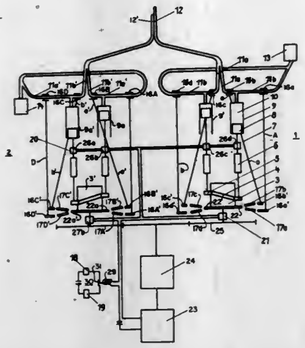


An improvement is presented in an aircraft oxygen closed circuit breathing system wherein in place of the previously proposed flexible breathing bag rendering the system volume a variable, a compressor is employed converting the system to one having a variable pressure and a constant volume.

3,552,393
TRANSFUSION DEVICE
Werner Willgerodt, Leipzig, Germany, assignor to VEB Medizintechnik Leipzig, Leipzig, Germany
Continuation of application Ser. No. 535,976, Mar. 21, 1966, now abandoned. This application July 31, 1969, Ser. No. 847,825
Int. Cl. A61m *1/02*
U.S. Cl. 128—214.2 **2 Claims**

A blood transfusion device for infusion of blood into a human body and for simultaneous removal of blood therefrom is equipped with two pair of pumps and respective valves arranged in two distinct units whereby, while one unit is removing the blood from the body through a distinct removing conduit, the other is supplying the blood through a distinct infusion conduit, the arrangement being such that a

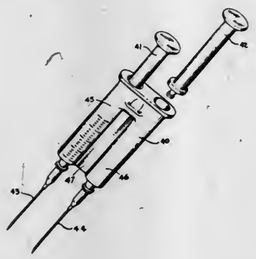
direct connection is made between the body and the receiving vessel through the removing conduit and another direct connection is made between the container holding the infusion fluid and the body through the infusion conduit.



3,552,394
ONE-PIECE MULTIPLE HYPODERMIC SYRINGE ARRANGEMENT

Ferrell S. Horn, 308 Brookside Drive, Auburn, Ala. 36830

Original application Apr. 12, 1966, Ser. No. 541,995, now Patent No. 3,467,096. Divided and this application July 14, 1969, Ser. No. 841,348
Int. Cl. A61m *05/22, 05/32*
U.S. Cl. 128—218 4 Claims



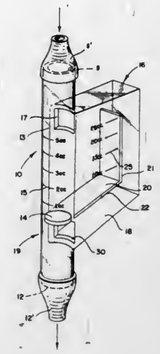
A dual hypodermic syringe device utilizing a pair of laterally spaced barrels with an interconnecting portion occupying the space between the barrels. The interconnecting portion extends for a substantial portion of the length of the barrels. The barrels are disposed in essentially parallel relationship, and a needle is associated with each barrel. The barrels and interconnecting portion are made from a common piece of material, and in each barrel a movable plunger is disposed. The spacing of the needles is less than 68 mm. such that an injection may be given to a patient that involves only a single sensation of pain.

3,552,395
PEDIATRIC DRAINAGE UNIT

Robert E. Bidwell, Wantagh, Sidney Mishkin, Roslyn, Leonard D. Kurtz, Woodmere, and Edward J. Hallstein, Smithtown, N.Y.; said Bidwell and said Mishkin assignors to Deknatel, Incorporated

Filed May 17, 1968, Ser. No. 729,992
Int. Cl. A61f *5/44*
U.S. Cl. 128—276 14 Claims

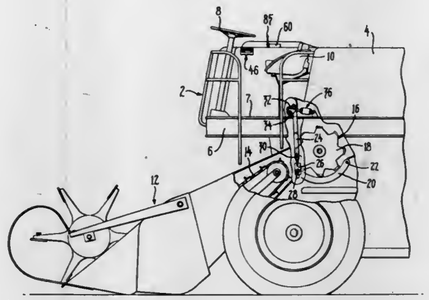
A pediatric drainage unit constituted by a one-piece integral unit having an inlet, an outlet, and a small collection chamber for receiving liquids entering the inlet, the chamber being calibrated in one cubic centimeter increments. A large reservoir is positioned adjacent the chamber for receiving the overflow therefrom, and a channel is provided from the top of the chamber, across the top of the reservoir and down around the reservoir to the outlet, the channel being adapted to pass to the outlet all of the gases entering the inlet and the liquid overflowing from the reservoir.



3,552,396
POWER ADJUSTED CONCAVE

Robert B. Gerhardt, Birmingham, and Ralph L. Tweedale, Southfield, Mich., assignors to Massey-Ferguson Inc., Detroit, Mich.

Filed Oct. 23, 1967, Ser. No. 677,356
Int. Cl. A01f *12/24*
U.S. Cl. 130—27 12 Claims

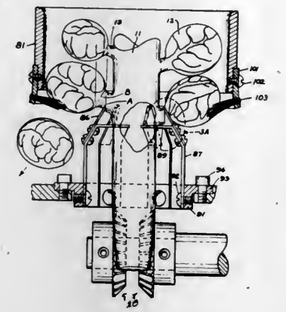


A hydraulically adjustable concave for the threshing assembly of an agricultural combine. A hydraulic ram is connected with the concave through a linkage, and a movable control valve element actuates the ram to raise and lower the concave. In one embodiment, a warning signal responds to overloading. A second embodiment includes a followup control system in which the concave automatically moves away from the concave on overload and returns to a preset position when the obstruction causing the overload has passed from between the concave and cylinder.

3,552,397
MACHINE FOR REMOVING EDIBLE SPROUTS FROM A BRUSSELS SPROUTS STALK

Harrison Greenough, Gearhart, Oreg., assignor to E. H. Carruthers Company, Warrenton, Oreg., a corporation of Oregon

Continuation of application Ser. No. 561,148, June 28, 1966, now abandoned. This application Dec. 23, 1968, Ser. No. 787,305
Int. Cl. A01d
U.S. Cl. 130—30 6 Claims

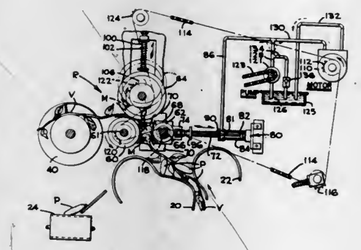


A method and apparatus for removing sprouts from a Brussels sprouts stalk including rotating knife means defining a central opening through which the stalk of the plant is fed as the knife means cut off the sprouts. Each knife is spaced from the stalk by a stalk guide cutting through the semihard bark and riding on the hard woody shell of the stalk. The knives are held at an angle to the stalk axis to cut off the sprouts in a plane tangent to the sprouts and perpendicular to the centerline of the pedicel.

3,552,398
HARVESTER WITH TORQUE RESPONSIVE SNAPPING ROLLS

Olin L. Looker, Milford, and Larry L. Slates, Hoopeston, Ill., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Jan. 24, 1969, Ser. No. 793,780
Int. Cl. A01d *45/00*
U.S. Cl. 130—30 8 Claims

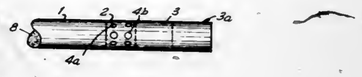


The snapping rolls of a cucumber harvester are spring pressed together but hydraulic cylinders can retract one roll in response to an increase in the hydraulic pressure required to drive the rolls by a hydraulic motor, thereby preventing plugging of the rolls by roots, etc.

3,552,399
AIR-SMOKE HOMOGENIZING FILTER

Alfred Andreas, 141 Lexington Ave., New York, N.Y.

Continuation-in-part of application Ser. No. 667,955, Sept. 15, 1967, now abandoned. This application May 19, 1969, Ser. No. 830,188
Int. Cl. A24d *1/04*; A24f *5/04*
U.S. Cl. 131—10.5 9 Claims



An air-smoke homogenizing filter having longitudinal channels with a mouth end and an end opposite to the mouth end with a closed central portion adapted for abutting relationship with the end of the tobacco or the mouthpiece of a cigarette. A plurality of spaced longitudinal channels is disposed around a central axis channel and may be of a smaller cross-sectional dimension than the center axis channel. A plurality of transverse channels are provided which pass through the filter with the outward extremities thereof communicating with the ambient air and the inward extremities communicating with the central and/or the longitudinal channels, the diameter of the transverse and longitudinal channels preferably being less than that of the central channel. The homogenizing filter may be positioned at the smoke discharge end of the column of tobacco making up the cigarette and may have a conventional filter placed before or after the homogenizing filter and may be used with or without a hollow mouthpiece. The filter may be integrally made or made up of interfiltering constituent elements. Likewise the filter can be positioned in a cigarette holder.

3,552,400
FILTER PLUG OF STAPLE FIBER FILTER ELEMENTS AND THE LIKE

Richard M. Berger, and Reavis C. Sproull, Richmond, Va., assignors to American Filtrona Corporation, Richmond, Va., a corporation of New York

Filed June 8, 1967, Ser. No. 644,614
Int. Cl. A24d *01/04*; A24f *07/04*
U.S. Cl. 131—261 11 Claims

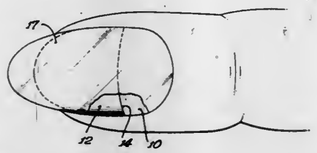


The production of a filter plug comprising staple fiber smoke filter elements and the like directly from a continuous filamentary tow. The plug comprises filamentary staple fibers and has an AFC hardness in excess of 180 and a density of less than 0.120 grams per cubic centimeter. The filter plugs have functional and physical characteristics comparable to prior art filter elements, but require 20–30 percent less material. The filter elements can be supplemented by various additive materials.

3,552,401
SYNTHETIC NAIL STRUCTURE

Joseph B. Michaelson, North Hollywood, and Angie F. Criswell, 13203 Moorepark, Sherman Oaks, Calif. 91403

Original application July 12, 1963, Ser. No. 294,706, now Patent No. 3,483,289. Divided and this application Aug. 14, 1968, Ser. No. 769,771
Int. Cl. A45d *29/00*
U.S. Cl. 132—73 7 Claims

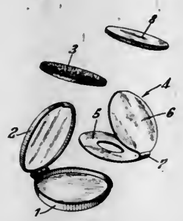


A solvent-permeable, supple and conformable synthetic nail structure which is differentially responsive to solvent and shaped for invisible securement to a human nail.

3,552,402
COMPACT DISC

Judith Levy, Flushing, N.Y., assignor to Clairol Incorporated, New York, N.Y., a corporation of Delaware

Filed Oct. 15, 1968, Ser. No. 767,664
Int. Cl. A45d *33/00*
U.S. Cl. 132—82 1 Claim

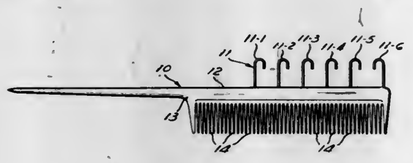


This invention relates to a unique compact having means to maintain a makeup applicator separated from the makeup. This compact comprises a base, a cover, a pressed powder cake, an applicator and a separator element. The separator element comprises two plastic discs joined by a plastic hinge, one of the discs being secured to the interior of the compact base. The remaining disc is free to pivot to a position covering the makeup, thereby protecting the makeup from contamination.

3,552,403
HAIR-COLORING METHOD AND APPARATUS THEREFOR

Joseph T. Sestito, 4348 W. 134th St., Cleveland, Ohio

Filed Nov. 13, 1967, Ser. No. 682,315
Int. Cl. A45d *24/00*
U.S. Cl. 132—150 4 Claims

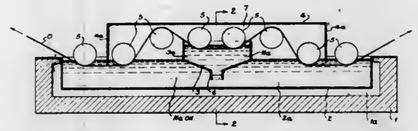


Hair-coloring method and device therefor whereby smaller strands of hair are simultaneously separated from larger strands or locks by means of a series of coplanar hooks, preferably on the back of a comb; the separated strands are then separately colored to provide frosting, highlighting, or shadowing (reverse highlighting) effects.

3,552,404
INSTALLATION FOR THE DESCALING OF METALS

Rudolf Kuhn, Koppern, Taunus, Germany, assignor to Deutsche Gold-und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

Filed Feb. 16, 1968, Ser. No. 706,108
Claims priority, application Germany, Feb. 16, 1967, D 52,292; July 13, 1967, D 53,583
Int. Cl. B08b *3/08*
U.S. Cl. 134—64 6 Claims

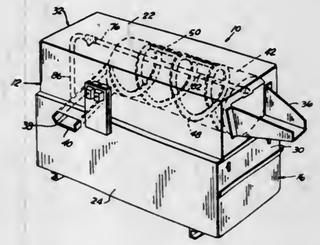


Metals having metal oxide scales are descaled with molten sodium metal. The descaling can be preceded and followed by treatment of the metal with molten alkali metal hydroxide.

3,552,405
APPARATUS FOR CLEANING OR TREATING ARTICLES

Fred B. Apel, 24051 Seneca, Oak Park, Mich. 48237

Filed Aug. 15, 1968, Ser. No. 752,844
Int. Cl. B08b *3/02*
U.S. Cl. 134—65 7 Claims

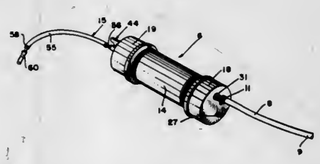


A washing machine apparatus for cleaning small industrial parts comprising a housing, containing a pump and a supply of fluid, a tumbler, driving means and a spray system within said tumbler, a feed chute to feed parts into said tumbler and a discharge chute to expel clean parts from said tumbler.

3,552,406
BEARING AND FITTING DEVICE AND METHOD

Ernest E. Whaley, 400 Pleasant Drive, Yorktown, Ind. 47396

Filed June 11, 1968, Ser. No. 736,221
Int. Cl. B08b *9/00*
U.S. Cl. 134—167 2 Claims

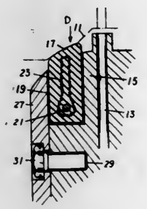


A bearing fitting and freeing device having a housing adapted to receive a penetrating oil for injection under air pressure into zerk fittings, bearing devices, or the like to flush out old grease, unfreeze the area and allow new grease to be injected therein. More particularly the freeing device has a main housing assembly adapted to receive air pressure at one end and provided at the opposite end with a flexible discharge hose regulated through a control valve to force fluid contained within the housing assembly outwardly under the air pressure into grease zerks, bearings or the like. The invention also relates to a method of applying penetrating oil under fluid pressure to flush out grease zerks and the like.

3,552,407
METHOD OF ADJUSTING A BUTTERFLY VALVE SEAL

Itsuro Hirano, 2, Sendagaya 1-chome, Shibuya-ku, Tokyo, Japan

Filed Dec. 11, 1968, Ser. No. 782,879
Claims priority, application Japan, Dec. 20, 1967, 42/81,154
Int. Cl. F16k *1/22, 1/228*
U.S. Cl. 137—15 5 Claims

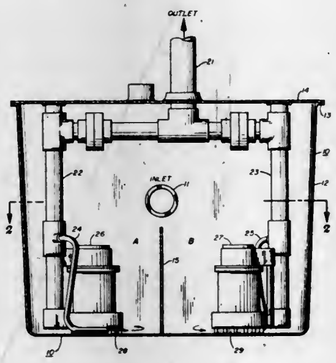


A butterfly valve characterized by the provision of a ring packing kept displaceably and deformably in place by either the valve seat or the butterfly leaf. The ring packing is of an elastomer in which a metal wire ring is embedded concentrically with the ring. A fibrous material may also be additionally embedded in the ring packing mounted in a radially opened peripheral groove formed on the valve seat or the butterfly leaf, in which the ring packing is displaceable. The metal wire ring facilitates restoring the ring packing elastically from an irregular compressed form to a proper regular form, for example, towards a true circle and/or to ease bringing the ring packing into a complete and proper closed position, without collapsing, buckling and/or yielding the metal wire ring.

3,552,408
WASTE LIFT SYSTEM

Franklin W. Dowdican, Rte. 1, Talala, Okla., and Harry R. Aschan, 2547 E. 18th St., Tulsa, Okla. 74104

Filed Feb. 1, 1968, Ser. No. 702,477
Int. Cl. F17d *1/14*
U.S. Cl. 137—13 4 Claims

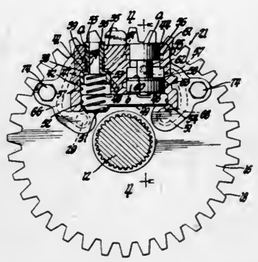


A container is connected to a source of waste. Two pumps are mounted in separate compartments within the container and supplied from the source in parallel. The pumps are connected together to discharge waste through a common outlet.

3,552,409
GOVERNOR

Raymond P. Michnay, Wiesbaden, Germany, and Ivan R. Johnson, Toorak, Victoria, Australia, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 23, 1968, Ser. No. 754,912
Int. Cl. G05d *13/30*
U.S. Cl. 137—54 10 Claims

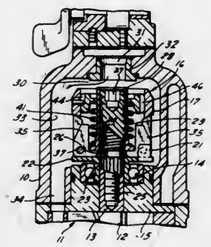


The governor shown has a high-speed valve which receives fluid from a source and is subject to centrifugal force to supply a high level governor pressure to the low-speed governor valve which at high speeds merely connects the high-speed governor pressure to the governor line and at low speeds regulates the governor pressure at a lower value for low-speed control. Both valves are mounted substantially radially in parallel stepped through bores in a single valve body so that both bores are simultaneously drilled and simultaneously finished. The high-speed valve is a small diameter hollow movable valve element of extremely lightweight. The low-speed valve is a large diameter solid movable valve element to provide the additional weight in a one-piece valve element.

3,552,410
CENTRIFUGAL GOVERNOR HAVING A SPRING-ADJUSTING RING AND VALVE-CLEANING MEANS

Lester A. Amtsberg, Utica, N.Y., assignor to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey

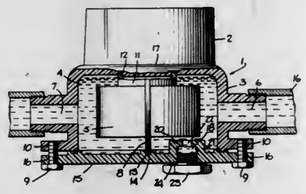
Filed Dec. 13, 1968, Ser. No. 783,596
Int. Cl. G05d *13/10*
U.S. Cl. 137—56 13 Claims



A speed-responsive centrifugal governor is mounted upon the rotor portion of a pneumatic motor, the governor having a sleeve valve which is slidable relative to an inlet against the force of a compression spring by means of centrifugally actuable weights so as to regulate air flow to the motor accordingly as the load and speed of the motor varies. Tension of the spring can be selectively varied by means of an ad-

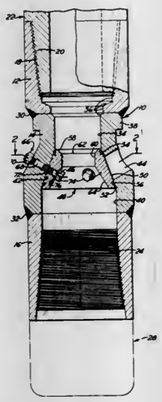
justable ring so as to prevent the speed of the motor from exceeding a predesigned maximum rate. The ring is retained upon the spring by means of pins fixed overhead in the body of the governor, each of which pins is releasably engaged by a selected one of a plurality of notches formed in the periphery of the ring. By angularly adjusting the ring to engage the pins with other notches at selectively higher or lower levels, the tension of the spring can be varied. A shaft clamping the governor to the motor has a helical surface groove which is adapted during sliding of the valve to allow inlet air to sweep the opposed sliding surfaces of the valve and shaft clean of dirt that might otherwise inhibit free valve movement.

3,552,411
FREEZE PROTECTOR
Abraham Branitzky, 279 W. 154th St., Harvey, Ill.
Filed Aug. 29, 1968, Ser. No. 756,231
Int. Cl. G01f *15/10*
U.S. Cl. 137—60 **15 Claims**



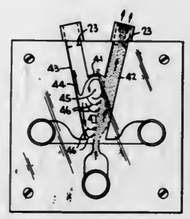
The bottom plate of a meter body has a compartment communicating with the main internal cavity of the meter. The compartment also communicates with the exterior through an opening in the bottom plate. This opening is closed off by a plate or plug having a substantially higher heat conductivity than the meter body.

3,552,412
DRILL STRING DUMP VALVE
Donald K. Hagar and Joseph L. Pekarek, Pittsburgh, Pa.
Filed Oct. 19, 1967, Ser. No. 676,409
Int. Cl. F16k *31/00*
U.S. Cl. 137—70 **6 Claims**



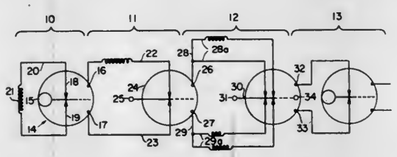
The invention comprises an improved drill string dump valve comprising a moveable member having a downwardly and outwardly sloping sealing surface. The valve comprises structure to permit the moveable member with its operating member thereon to fall free and unrestricted downwardly away from the relief ports.

3,552,413
FEEDBACK DIVIDER FOR FLUID AMPLIFIER
Raymond W. Warren, McLean, Va., and Ralph G. Barclay, and John Gerald Moorhead, Silver Spring, Md., said Warren assignor to the United States of America as represented by the Secretary of the Army
Original application Sept. 10, 1962, Ser. No. 222,748, now Patent No. 3,397,713, dated Aug. 20, 1968. Divided and this application June 12, 1964, Ser. No. 374,865
Int. Cl. F15c *1/08*
U.S. Cl. 137—81.5 **4 Claims**



This invention relates to pure fluid amplifiers having dynamic feedback dividers for providing a feedback which contributes assistance to the boundary layer lock-on phenomena.

3,552,414
PULSATING FLUID PRESSURE FREQUENCY RECTIFIER
Trevor G. Sutton, Tempe, Ariz., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Jan. 24, 1968, Ser. No. 700,128
Int. Cl. F15c *1/14*
U.S. Cl. 137—81.5 **9 Claims**

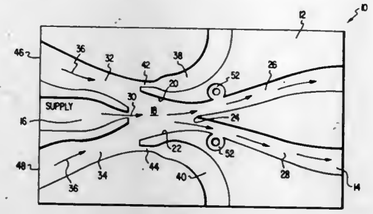


The pulsating fluid pressure frequency rectifier shown herein comprises a proportional amplifier having a power stream-forming nozzle, a plurality of output ports, control nozzles for applying control streams to the sides of the power stream to deflect fluid under pressure to the output ports, and fluid pressure conductors for receiving pulsating fluid streams from a suitable oscillator. The conductors are arranged to split such streams into a plurality of branch streams, shift the frequency phase and amplitude of the pulsating branch streams relative to one another to produce, in effect, a DC stream of requisite amplitude, and direct the resulting rectified stream against the power stream to produce a fluid pressure signal of required strength and uniformity.

3,552,415
JET ENTRAINMENT CONTROL FOR A FLUIDIC DEVICE
Donald A. Small, Castine, Maine, assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Apr. 3, 1969, Ser. No. 813,194
Int. Cl. F15c *1/04*
U.S. Cl. 137—81.5 **8 Claims**

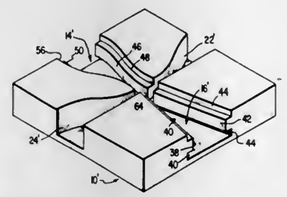
A fluidic device is provided with entrainment passages to the sides of the power stream supply nozzle which open up

into the upper end of the interaction chamber. A control stream selectively directed into an entrainment passage in opposition to entrainment flow creates a low pressure zone between the power stream and the control stream causing the



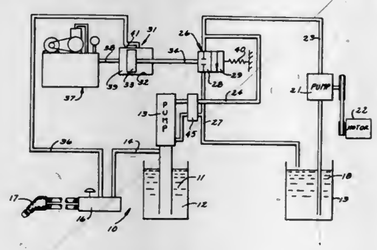
power stream to deflect towards that side of the interaction chamber. Maintenance of the power stream within a desired outlet passage may be achieved by feedback from that outlet passage to form the control stream.

3,552,416
WALL ATTACHMENT FLUIDIC DEVICE
Lynn G. Amos, Powell, Tenn., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Apr. 29, 1969, Ser. No. 820,202
Int. Cl. F15c *1/08, 5/00*
U.S. Cl. 137—81.5 **10 Claims**



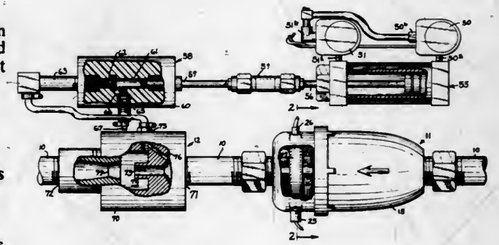
Providing the attachment wall of a fluidic device interaction region downstream of the control port with laterally spaced parallel wall portions. The nonrectangular cross section provides areas of strong and weak wall attachment with the weak attachment flow being readily detached in response to low power control signals to pull the strong attachment flow from its laterally displaced wall.

3,552,417
PUMP CONSTRUCTION
Casper M. Goff, Comstock Township, Kalamazoo County, Mich. (Rte. #1 Box 246, Galesburg, Mich. 49053)
Filed Nov. 13, 1968, Ser. No. 775,310
Int. Cl. G05d *11/00*
U.S. Cl. 137—98 **6 Claims**



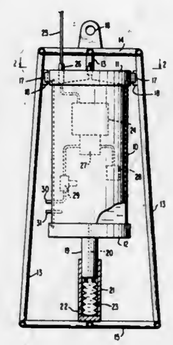
Apparatus for controlling the pressure applied to a liquid which is supplied to a nozzle wherein the pressurized liquid is mixed with a pressurized gas. Valve means controls the pressure applied to the liquid, and a variable chamber means is arranged to actuate the valve means. The variable chamber means contains work means responsive to changes in pressure in the gas whereby to actuate the valve means and thereby reduce the pressure on the liquid.

3,552,418
PROPORTIONAL METERING APPARATUS
James D. Kress, St. Paul, Minn., assignor to Economics Laboratory, Inc., St. Paul, Minn., a corporation of Delaware
Filed Sept. 9, 1968, Ser. No. 758,400
Int. Cl. G05d *11/035, 11/13*
U.S. Cl. 137—101.21 **7 Claims**



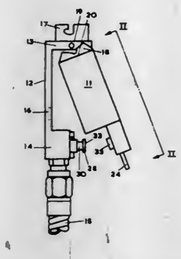
A disc mounted in a stream of fluid for rotation at a rate proportional to the rate of flow of the fluid and constructed to interrupt a light beam at least once per revolution to provide a series of pulses which are utilized to time an injection motor so that a material is introduced into the stream in an amount proportional to the rate of flow of the fluid in the stream.

3,552,419
DEEP SUBMERSIBLE POWER ASSEMBLY
Clement Walker Weston, Jr., Box 53252, New Orleans, La.
Filed May 6, 1969, Ser. No. 822,258
Int. Cl. E03b *7/00*; **F01k** *23/00*
U.S. Cl. 137—236 **11 Claims**



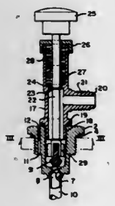
A deep sea power unit for performing a variety of work operations at substantially unlimited depths on the ocean floor. Power components are enclosed in a fluid-filled casing and an external pressurizing means is exposed to ambient sea pressure and is also subjected to the weight of the apparatus to assure at all times a positive pressure differential in the component casing and the exclusion of sea water therefrom.

3,552,420
DEMAND REGULATOR
David M. Robertson, 45 Raith Gardens, Kirkcaldy, Fife, Scotland
Filed Feb. 8, 1968, Ser. No. 704,020
Int. Cl. F16k 43/00; F16l 55/06
U.S. Cl. 137—315 7 Claims



In a demand regulator for a gas breathing system replacement of a defective regulator by a spare regulator is facilitated by using a holder in which a housing for the regulator proper is detachably mounted. The holder has the inlet and outlet conduits secured to it, and the housing is positively latched in place.

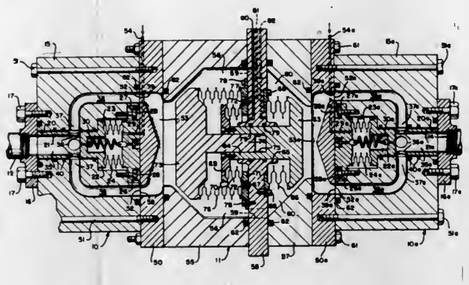
3,552,421
SINGLE TRIP VALVE APPARATUS
William C. Yocum, Lebanon Township, Pa., assignor to Superior Valve Company, Washington, Pa.
Filed June 8, 1967, Ser. No. 644,504
Int. Cl. F16k 43/00
U.S. Cl. 137—321 4 Claims



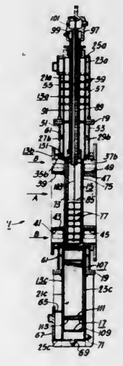
The application discloses valve apparatus suitable for, but not limited to use upon one trip, throw away fluid containers. A valve body is fitted to the container and has a bore with a port in the end for withdrawal of fluid from the container. A valve head threads into the bore to close the port. A separate member closes the bore and encloses a stem so that the valve head can be operated to open the port and permit controlled discharge of fluid from the container.

3,552,422
VALVE SYSTEM
Fredrick E. Michelson, 95 Walnut St., Walpole, and Leslie A. Runton, 8 Elm St., Canton, Mass.
Filed Sept. 4, 1968, Ser. No. 757,427
Int. Cl. F16k 43/00
U.S. Cl. 137—329.1 9 Claims

A valve assembly for use in pipelines including a main valve housing having a valve chamber with opposed inlet and outlet ports. Valve heads in the chamber are advanced toward the respective ports to close the same. Auxiliary valves are disposed in housings between said ports and the downstream and upstream portions of the pipeline to close the pipelines for isolating the main valve housing so as to prevent loss of fluid or of pressure in the lines while the main valve housing is removed for purposes of repair or replacement. All valves are actuated by expandable bellows in response to the pressure of a control fluid.

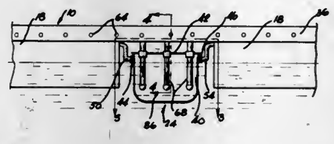


3,552,423
BURNER SHUT-OFF VALVE FOR HOT BLAST STOVE
Joseph A. Vietorisz, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Filed June 18, 1968, Ser. No. 738,003
Int. Cl. F16k 49/00
U.S. Cl. 137—340 10 Claims



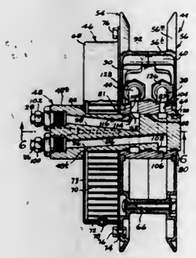
This burner shutoff valve includes a three-piece housing with a valve disc and guide vane movably mounted therein; the middle portion of the housing being jacketed and water cooled. The valve disc has guide pins and guide bars that cooperate with fixed guideways mounted to the housing so that scraping of the valve seat is prevented during travel of the disc. Also, the weight of the valve disc when lowered enough urges and maintains the valve disc in a seated position. The guide vane has a shape which cooperates with the valve housing to produce a venturi section in the valve through which a gaseous fluid, either air or fuel, flows toward the burner. If air flows in the venturi section, then fuel flows through the valve, but around the venturi section.

3,552,424
FLOATING LIFT STATION
Kenneth L. Thompson, Huntington Beach, Calif., assignor to Ye Dock Master, Inc., a corporation of California
Filed Apr. 23, 1969, Ser. No. 818,658
Int. Cl. F16l 5/00
U.S. Cl. 137—343 12 Claims



A sewer system for a floating wharf utilizing a floating lift station. Means are provided for gravity feeding sewage from a plurality of floating boat slips to a floating holding tank at the lift station, and means are provided for transferring sewage from the holding tank to a main sewage conduit.

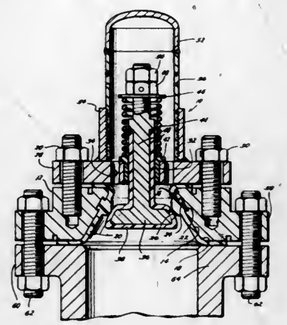
3,552,425
LIFT TRUCK WITH LINE TAKE-UP UNIT
Harlan D. Olson, Portland, Oreg., assignor to Cascade Corporation, Portland, Oreg., a corporation of Oregon
Filed Oct. 6, 1967, Ser. No. 673,493
Int. Cl. B65h 75/46, 75/48
U.S. Cl. 137—355.17 3 Claims



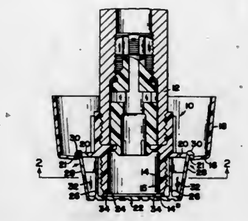
A lift truck with mast assembly having a line takeup unit mounted on the outer mast section in the assembly for handling line extending between the truck and components on the carriage carried on the assembly. The takeup unit includes a pair of oppositely disposed shroud sections, which are matching counterparts, connected by bolts extending in an axial direction through internal bosses integral with hub parts in the reel. The hub parts are integral with the shroud sections and together define an internal chamber which is opened up on separation of the shroud sections. A spring assembly mounted on one shroud section remains undisturbed on separating the other shroud sections. Line is connected to a connector disposed within the chamber and journaled on a journal member which extends from inside the hub outwardly beyond the spring assembly to a mounting on the outer mast section.

3,552,426
VACUUM BREAKER DEVICE
Clarence H. Hester, and Frank G. Weeden, Houston, Tex., assignors to John L. Dore Co., Houston, Tex., a corporation of Texas
Filed July 10, 1969, Ser. No. 840,794
Int. Cl. F16k 27/12; 15/02
U.S. Cl. 137—375 7 Claims

A vacuum breaker device for preventing excessive buildup of vacuum within a piping system or vessel containing corrosive fluid. The device includes a body member having a liner secured within an axial bore in the body member, the liner having an annular raised seat to receive a lined valve member that is yieldably biased against such raised seat.

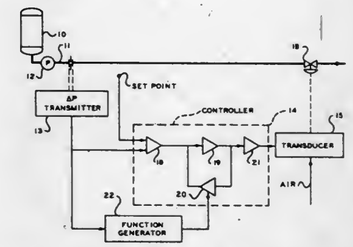


3,552,427
VALVE CAP
Irvin D. Jacobson, Painesville, Ohio, assignor to Perfection Corporation, Madison, Ohio, a corporation of Ohio
Filed Apr. 23, 1968, Ser. No. 723,405
Int. Cl. F16k 27/08
U.S. Cl. 137—382 6 Claims



A valve cap for releasably covering the outlet of a drain valve draincock having a cup-shaped body covering the draincock aperture and integral fingers adapted to secure the cap releasably to the drain valve.

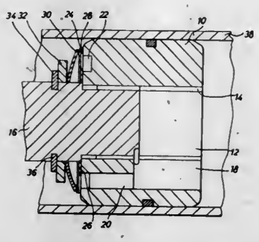
3,552,428
AUTOMATICALLY TUNED PROCESS CONTROLLER
Troy J. Pemberton, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 20, 1968, Ser. No. 738,470
Int. Cl. G05d 7/06
U.S. Cl. 137—486 7 Claims



A process control system is compensated for nonlinearities in the control loop by means of a variable gain feedback ele-

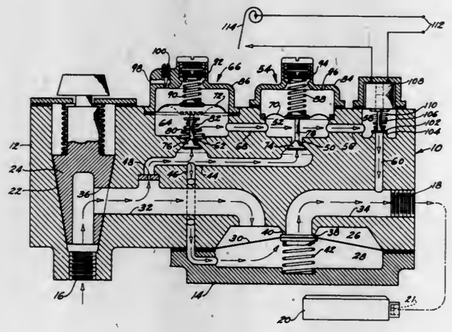
ment in the controller. The gain of the feedback element is adjusted by the output signal from a function generator, the input of which is the measured variable. The function generator is calibrated to compensate for the nonlinearity of the control loop.

3,552,429
HYDRAULIC PISTONS
Ronald S. Dickinson, York, England, assignor to Armstrong Patents Co. Limited, London, England, a British Company
Filed Oct. 3, 1968, Ser. No. 764,774
Claims priority, application Great Britain, Oct. 5, 1967, 45,425/67
Int. Cl. F16k *47/10*
U.S. Cl. 137—493.8 **7 Claims**



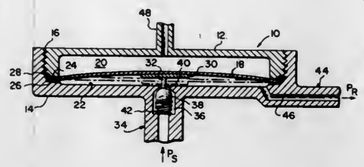
The invention concerns piston assemblies, more especially for use in hydraulic dampers, and provides for this purpose a piston which is axially bored, threaded to receive a screwed piston rod and axially ported to permit fluid flow through it, the ports being opened and closed to allow the fluid flow by a valve disc mounted on the piston rod. In a modification, the end of the piston remote from the piston rod is recessed to receive a second control valve, the piston bore serving in part to define the recess, and the piston rod is provided with axial and radial passage means communicating with the piston bore and permitting fluid flow in the opposite direction under the control of said second valve.

3,552,430
STEPPED OPENING DIAPHRAGM GAS VALVE
John J. Love, St. Louis, Mo., assignor to Emerson Electric Co., St. Louis, Mo., a corporation of Missouri
Filed May 7, 1969, Ser. No. 822,576
Int. Cl. F16k *17/10;, 31/42*
U.S. Cl. 137—495 **5 Claims**



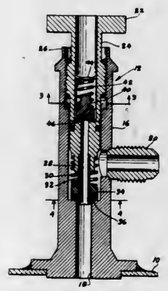
A biased closed, fluid pressure operated gas valve in which supply line pressure is applied to both sides of the valve actuator to hold the valve closed and in which line pressure is bled off from one side of the actuator under control of two, parallel connected, pressure regulators, one of which permits bleed off at a rate which effects an initial opening step of the valve and the other of which includes time delay means and permits, after a delay, a greater bleedoff rate, thereby effecting a second opening step of the valve.

3,552,431
FLUIDIC PRESSURE REGULATOR
Albertus E. Schmidlin, Caldwell, N.J., assignor to Singer-General Precision, Inc., a corporation of Delaware
Filed July 5, 1968, Ser. No. 742,839
Int. Cl. F16k *31/38*
U.S. Cl. 137—505.42 **2 Claims**



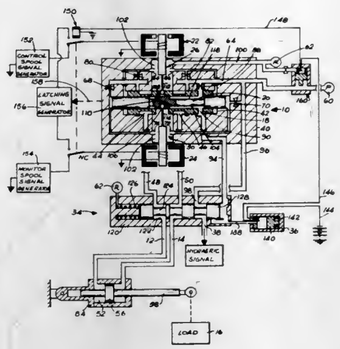
A fluidic pressure regulator comprising a hollow housing having a diaphragm therein which forms a chamber through which fluid is passed. Means are provided for applying a load to the diaphragm in an opposite direction to the force exerted by the pressurized fluid on the diaphragm, which load varies in response to changes in the pressure of the fluid passing into the chamber.

3,552,432
ANTIREFILL SAFETY VALVE
William Wagner, Miami Beach, Fla. (c/o Watsco, Inc., 1800 W. 4th Ave., Hialeah, Fla., 33010)
Filed June 3, 1969, Ser. No. 829,927
Int. Cl. F16k *35/00*
U.S. Cl. 137—523 **7 Claims**



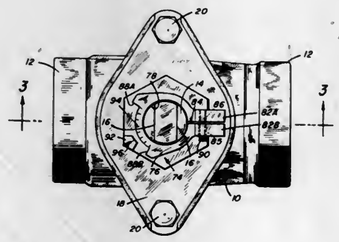
A valve for pressure systems having a spring-urged sealing member attached to a threaded handle in which handle movement is controlled by means of a stop after filling of the pressure system which limits retrograde movement of the handle sufficiently to avoid mechanical opening of the sealing member. Sufficient handle movement is retained to reduce the spring bias against the sealing member to below system pressure so that the sealing member is hydraulically opened by that pressure until discharge of system contents and pressure, whereupon the sealing member is spring-closed and cannot be reopened.

3,552,433
CONCENTRIC SPOOL VALVE
Richard K. Mason, Granada Hills, Calif., assignor to Bell Aerospace Corporation, a corporation of Delaware
Filed June 13, 1969, Ser. No. 832,966
Int. Cl. F16k *37/00, 11/07*
U.S. Cl. 137—553 **12 Claims**



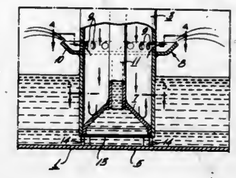
A device which compares the position of concentric spools which normally move in unison. Any disagreement in the relative position of the spool positions above a predetermined amount uncovers a flow port which results in a hydraeric signal being generated to indicate the disagreement.

3,552,434
CAMMED PLUG VALVE
Norman H. Haenky, Tulsa, Okla., assignor to FWI, Inc., Tulsa, Okla., a corporation of Delaware
Filed Apr. 18, 1969, Ser. No. 817,394
Int. Cl. F16k *37/00, 5/14, 51/00*
U.S. Cl. 137—556 **13 Claims**



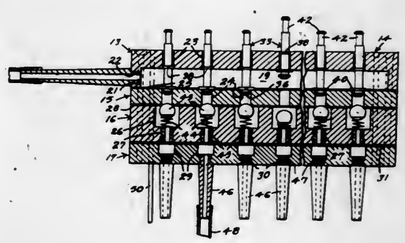
The invention relates to a plug valve including a body having a fluid passageway therethrough, a cylindrical plug chamber in the passageway, and a generally cylindrical plug rotatably positioned in the chamber, the plug having an axial opening therethrough alignable with the fluid passageway in one position and transverse to the fluid passageway in the other, the plug member having a cam surface thereon engageable with the body to force the plug against the body to block fluid flow when the valve is in the closed position.

3,552,435
FILLING ARRANGEMENT FOR SUBTERRANEAN STORAGE TANKS
Craig R. Andersson, East Liverpool, Ohio, and Albert Thomas Olenzak, Media, Pa., assignors to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed Dec. 3, 1968, Ser. No. 780,804
Int. Cl. F17c *13/00;* **B65d** *25/02*
U.S. Cl. 137—592 **4 Claims**



A fill pipe for a subterranean storage tank has a hydraulic jump therein, near the bottom of the pipe and near the bottom of the tank, to absorb a portion of the kinetic energy of the falling liquid. The fill pipe has a smaller pipe therein, to enable removal of water from the tank floor.

3,552,436
VALVE CONTROLLED FLUID PROGRAMMER
Weldon R. Stewart, 1009 Wayside Drive, Austin, Tex. 78703
Filed Oct. 6, 1967, Ser. No. 673,459
Int. Cl. F16d *1/00*
U.S. Cl. 137—608 **10 Claims**

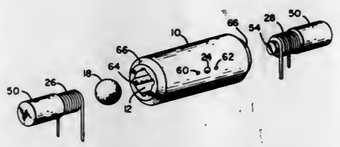


A fluid programmer utilizing a plurality of manually actuated valves for programming fluid-controlled machines to enable the function, sequence or timing thereof to be accurately and rapidly varied, by altering or adjusting the fluid circuits thereto emanating from a plurality of fluid supply sources which feed into the programmer, and which are selectively directed from the programmer through desired outlet circuits for the fluid to the machine being controlled.

3,552,437
ELECTRO-FLUIDIC INTERFACE DEVICE
Robert L. Blosser, Jr., Bountiful, Utah, and Gary B. Woehler, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 15, 1969, Ser. No. 791,388
Int. Cl. F16k *11/02*
U.S. Cl. 137—625.4 **8 Claims**

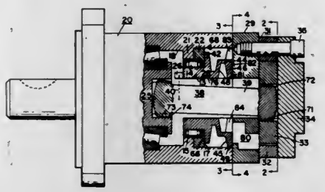
An interface device for providing electrical responses to fluidic signals, and for providing fluidic responses to electrical signals is described. The interface device disclosed has a housing with ports for receiving fluidic signals, and a chamber in which a ball member is movably disposed. A pair of electrically conductive coils in combination with magnetic

circuits receive electrical signals for providing fluidic responses by moving the ball to control fluid flow, and for providing



electrical signals in response to ball movement caused by the fluidic signals.

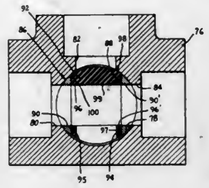
3,552,438
AXIAL FIXATION MEANS FOR ROTARY VALVE
George V. Woodling, 22077 W. Lake Road, Rocky River, Ohio 44116
Original application Mar. 22, 1968, Ser. No. 715,247.
Divided and this application June 12, 1969, Ser. No. 832,713
Int. Cl. F16k *11/02*
U.S. Cl. 137—625.21 4 Claims



Stationary valve and rotary valve for an orbital device having operating fluid chambers, in which the stationary valve has a stationary valve face and a plurality of fluid openings communicating with the fluid chambers. The rotary valve is mounted between the stationary valve face and an annular bushing which is axially supported by an internal housing rim. The rotary valve terminates in flange means comprising an external-rim flange and an internal-rim flange interconnected by a common intermediate annular body portion which has an end face defining substantially a circular sealing band disposed between first and second series of commutating fluid connection means commutatingly registering with the fluid openings in the stationary valve face, axial fixation means is operatively movable with said rotary valve in an axial direction to axially fix the sealing engagement between the rotary valve and the stationary valve.

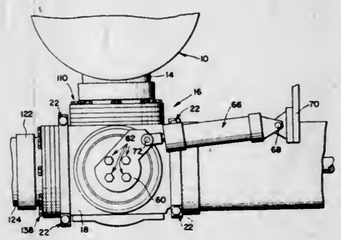
3,552,439
PLUG VALVE WITH RESILIENT SEAL
Chester A. Siver, 10 Fair Hill Lane, Suffield, Conn. 06078
Filed Nov. 7, 1967, Ser. No. 681,234
Int. Cl. F16k *5/14, 11/00*
U.S. Cl. 137—625.47 15 Claims

There are disclosed plug valves having positive sealing means. The valves have a principal plug rotatably seated within an internal chamber of a housing, which has inlet and outlet openings, and a secondary plug slideably received in a channel of the principal plug. The principal plug has a flow path, generally perpendicular to the axis of the channel, and the secondary plug has a sealing face alignable with an outlet opening of the housing. The principal plug may be positioned so that the flow path aligns between an inlet and outlet, providing a conduit therebetween, or it may be rotated to align the channel, and hence the secondary plug, between the openings. In this position upstream fluid bears against the secondary plug and slides it against the surface of the housing



about the outlet opening to produce sealing engagement therewith.

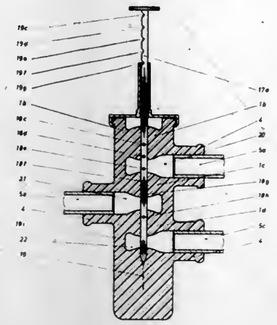
3,552,440
VALVE FOR CONTROLLING FLOW OF CONCRETE
Thomas H. Smith, West Palm Beach, Fla., assignor to Hercules Concrete Pumps, Inc., Laurel, Miss., a corporation of Mississippi
Filed Jan. 9, 1969, Ser. No. 790,124
Int. Cl. F16k *5/06*
U.S. Cl. 137—625.47 10 Claims



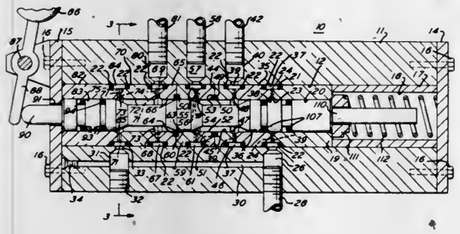
A cast housing rotatably supports a stainless steel ball valve having three ports formed therein to provide a three-way arrangement. First and second valve seat means extend through openings formed in the housing and engage the outer surface of the ball valve. Sealing means is disposed between each of said valve seat means and the housing to provide a fluid-tight seal. Means is provided for adjusting the position of each of said valve seat means with respect to the housing to compensate for wear of the components.

3,552,441
PIERCABLE CLOSURE DIAPHRAGM FOR A CHAMBER
Hartmut Luhleich, Geesthacht, Germany (Chlodivigplatz 15, 516 Dueren, Germany)
Filed Sept. 26, 1967, Ser. No. 670,600
Int. Cl. F16k *11/07*
U.S. Cl. 137—625.48 18 Claims

A diaphragm having opposite surfaces of convex shape, in the manner of a lens, and constituted of elastic material to enable its being pierced by the sharp end of a hollow element and form a seal with the hollow element during penetration and withdrawal thereof, whereby the diaphragm can constitute a closure for an open vessel and prevent contamination of its interior.



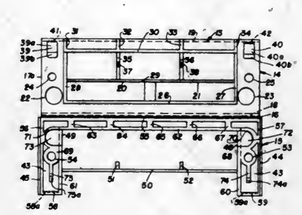
3,552,442
SECTIONAL SLEEVE VALVE
John G. Knowles, 1018 Fox Chase Road, Philadelphia, Pa.
Filed Oct. 1, 1968, Ser. No. 764,232
Int. Cl. F16k *11/07*
U.S. Cl. 137—625.69 4 Claims



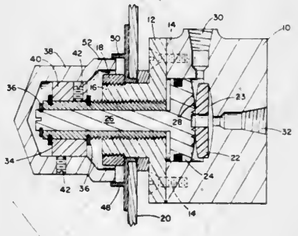
A general purpose valve for supplying fluid including air under pressure selectively to one of two outlets which may be connected to two cylinders or the opposite ends of a cylinder and the construction of which includes a valve body with a single internal piston therein that may be positioned to permit fluid flow to either one of the outlets while the other is exhausted to a third outlet.

3,552,443
ONE-PIECE DUCT AND METHOD OF MAKING IT
William H. Yake, Connersville, Ind., assignor to Design and Manufacturing Corporation, Connersville, Ind., a corporation of Indiana
Filed June 19, 1969, Ser. No. 834,844
Int. Cl. F15d *1/04*
U.S. Cl. 138—37 5 Claims

A one-piece molded duct and method of making it. The duct comprises two halves joined together by an integral bendable portion. The bendable portion comprises a fluid-tight hinge about which the duct halves may be pivoted into opposed and abutted position to form the finished duct. Means are provided to maintain the halves in opposed and abutted position. Each duct half may be provided with baffle means which assume a proper relationship when the duct halves are in their opposed and abutted position.



3,552,444
VARIABLE THROTTLE VALVE FOR LOGIC APPLICATIONS
George Napoleon Levesque, Warwick, R.I., assignor to Brown & Sharpe Manufacturing Company, North Kingstown, R.I., a corporation of Delaware
Filed Apr. 21, 1969, Ser. No. 817,701
Int. Cl. F15d *1/02*
U.S. Cl. 138—43 5 Claims

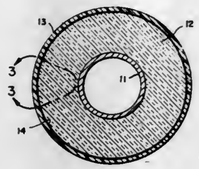


The disclosure of the invention is a variable throttle valve which consists of two cooperating valve elements having oppositely disposed relatively diverging surfaces, at least one of which is an elastomer, one of said surfaces having a spiral capillary restrictor groove, and means for relatively moving said surfaces toward and away from one another to control the effective length of said spiral capillary restrictor groove.

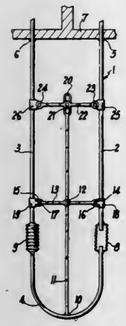
3,552,445
INSULATED PIPE ASSEMBLY
Thomas I. Andrews, Los Altos Hills, Calif., assignor to Seefore Corporation, San Jose, Calif., a corporation of California
Continuation-in-part of application Ser. No. 496,080, Oct. 14, 1965, now abandoned. This application Apr. 18, 1969, Ser. No. 817,492
Int. Cl. F16l *59/00*
U.S. Cl. 138—144 4 Claims

An insulated pipe assembly including a porous insulation surrounding a pipe, a protective reinforced plastic case surrounding and encasing the insulation, and a barrier therebetween. Said barrier comprises an absorbent layer, such as paper, partially infused with and bonded to a polyethylene layer which is wrapped about and in contact

with the insulation. The plastic case is formed in situ about the barrier, penetrating said absorbent layer and mechanically interlocking therewith for forming a unitary plastic case about the insulation.



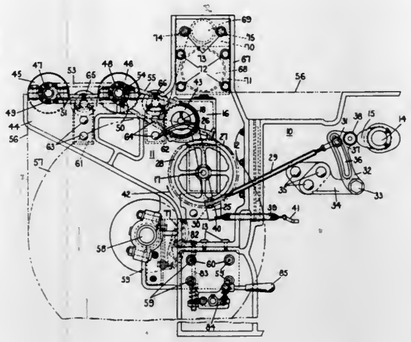
3,552,446
DEVICE FOR EQUALIZING DIFFERENTIAL EXPANSIONS IN A U-SHAPED PIPE
Aimé Barroil, Moirans, and André Teytu, Grenoble, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed June 23, 1969, Ser. No. 835,571
Claims priority, application France, July 11, 1968, 158,753
Int. Cl. F16l *3/18*
U.S. Cl. 138—178 3 Claims



The device comprises two bellows elements placed respectively in each of the two arms of a U-shaped pipe and a unit providing a connection between the arms. The unit comprises a tie rod which is rigidly fixed at one end to the central portion of the U and which is substantially parallel to the two pipe arms. The tie rod is pivotally attached to the center of a transverse link rod which couples the two pipe arms and is provided at the end remote from the central portion of the U with axial guide means which are adapted to cooperate with a second transverse link rod. The ends of the two link rods are pivotally attached to the two arms of the pipe.

3,552,447
LOOM LET-OFF
Harold J. Cosetta, Hopedale, Mass., assignor to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed June 4, 1969, Ser. No. 830,239
Int. Cl. D03d *49/06*
U.S. Cl. 139—100 5 Claims

A positive warp let-off mechanism for a loom having a continuously rotating cam adapted to intermittently rotate a ratchet wheel which through a transmission gear housing intermittently rotates a pair of driven rolls about which warp threads from the warp beam extend and by which said threads are drawn from said beam.

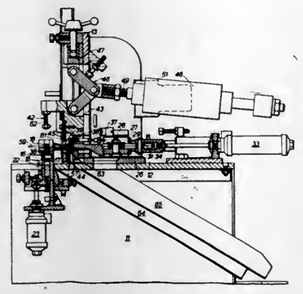


3,552,448
CHECK STRAP
Robert L. Springfield, 106 Galphin Drive, Greenville, S.C.
Filed May 26, 1969, Ser. No. 827,616
Int. Cl. D03d *49/40*
U.S. Cl. 139—161 3 Claims

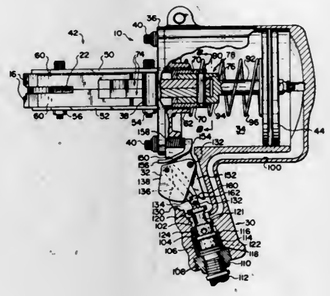
A check strap assembly of the type having a guide rod carrying a loop of elongated flat strap material encompassing a loom picker stick and positioned for sliding movement adjacent each end thereof on the guide rod has, a first elongated flat strap portion extending between the ends maintaining constant spacing therebetween, and a second elongated flat strap portion integrally with one end of the first elongated flat strap portion extending laterally therefrom substantially at a right angle thereto for reception upon the guide rod for joining the ends of the loops.

3,552,449
MACHINE FOR SECURING AND ELECTRICALLY CONNECTING AN ELECTRICAL CABLE TO AN ELECTRICAL CONNECTOR
Thomas George Woodward, Solihull, Eric John Wright, Sutton Coldfield, and Albert Thomas Hayes, Marston Green, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Mar. 27, 1968, Ser. No. 716,373
Claims priority, application Great Britain, Mar. 28, 1967, 14062/67;14063/67;1406467
Int. Cl. B21f *15/00*
U.S. Cl. 140—1 11 Claims

A machine for securing and electrically connecting an electrical cable to an electrical connector includes a gripping mechanism for gripping the cable. Means operable automatically when the cable is gripped by the gripping mechanism for stripping a length of the insulating sheath from the end of the cable, and further means operable automatically when the sheath has been stripped from the cable for crimping a connector to at least the bared core of the cable while the cable is still held by the gripping mechanism.



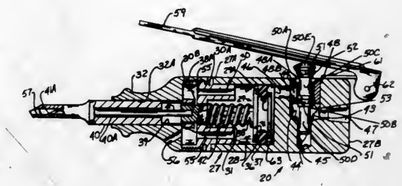
3,552,450
PNEUMATIC SEAL-CRIMPING TOOL FOR TENSIONED STRAPPING LOOPS
Larry D. Plunkett, Crystal Lake, Ill., assignor to Signode Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 10, 1968, Ser. No. 782,533
Int. Cl. B21f *9/02, 15/06*
U.S. Cl. 140—93.4 10 Claims



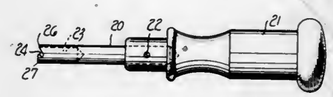
A trigger-actuated pneumatic tool for crimping a metal seal around the overlapping portions of a tensioned strapping loop, utilizing a pair of piston-actuated crimping jaws to compress the seal. Full crimping depth is assured by a pneumatic control arrangement whereby the crimping jaws will not release the seal until the latter has been fully crimped. A secondary feature resides in a particular jaw structure which enables a shorter piston stroke to effect a full seal crimp, thereby reducing tool height and weight.

3,552,451
POWER TOOL
James A. Pawloski, East Woodstock, Conn. 06224
Filed Dec. 11, 1967, Ser. No. 698,085
Int. Cl. B21f *1/00*; B25b *25/00*
U.S. Cl. 140—123 7 Claims

This invention is directed to a power tool for cutting and bending or laying over wire and the tool is particularly adapted for use in the manufacture of printed circuits or circuit boards. The tool comprises a housing having a fluid-actuated piston to which a cutting quill is mounted for movement relative to a quill guide extending forwardly of the housing. The tip end of the quill guide is provided with a notch for receiving a wire extending transversely to the movement of the quill; and a valve means is provided in the housing for controlling the flow of an actuating fluid to the piston and connected quill for effecting the actuation of the piston and connected quill with a positive quick-acting impact to result in severing and bending a wire lead.



3,552,452
HAND WIRE WRAPPING TOOL WITH AN ORIENTATION AND CAM FEATURE
Everett E. Stigall, Kernersville, N.C., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Sept. 6, 1968, Ser. No. 758,070
Int. Cl. B21f *15/00*
U.S. Cl. 140—124 2 Claims

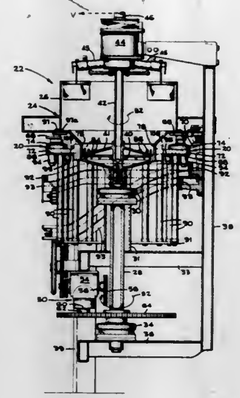


A hand tool wraps a wire about a terminal, having a slot for receiving the wire. Embodied in the tool is a hollow-nosed shank where the nose has an oblique slot and an indentation, diametrically opposed to each other, for initially contacting the wire after placing the shank over the terminal to provide a perpendicular orientation of the tool with the wire. During the wrapping operation lobes on the nose of the shank ride over the wire to impart a helical wrap of wire about the terminal.

3,552,453
METHOD AND APPARATUS FOR FILLING CONTAINERS
Robert R. Ball and Sherman H. Creed, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed June 24, 1968, Ser. No. 739,233
Int. Cl. B65b *3/18*
U.S. Cl. 141—7 7 Claims

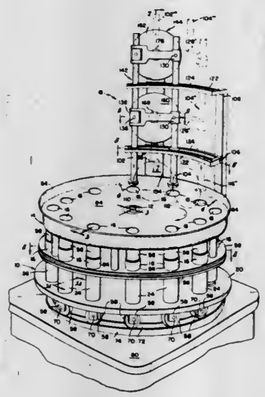
Empty cans are fed to a multiple filling head turret, and as the turret rotates the filling heads are turned through four positions. In the first position the filling head rotor valve is indexed allowing venting to the atmosphere. In the second position a vacuum is drawn in the can. At the third position dual passages allow syrup to flow into the container while the vacuum channel remains open. In the fourth position the pri-

mary syrup passage remains fully open while the vacuum is drawn through the restricted portion of the vacuum channel,



drawing off the remaining air, excess syrup and foam, insuring complete filling of the can.

3,552,454
CAN FILLER
William A. Deming, Sr., 343 S. Madison Apt. 18, Pasadena, Calif. 91106
Continuation-in-part of application Ser. No. 537,449, Mar. 25, 1966, now abandoned. This application Oct. 22, 1968, Ser. No. 777,961
Int. Cl. B65b *1/20*
U.S. Cl. 141—71 **15 Claims**

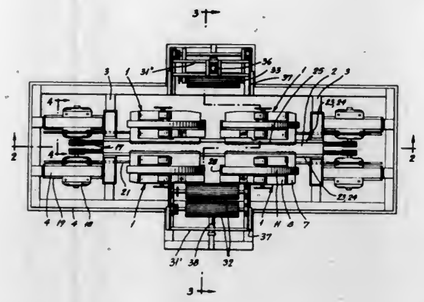


Can-filling apparatus in which a series of cans and associated aligned measuring boxes forming can extensions are moved in an arcuate path through a packing station after the cans and boxes have been loosely filled with particulate material. A pair of plungers are moved in a combined arcuate and orbital path to force the material simultaneously from a pair of boxes into an associated pair of cans.

ERRATUM

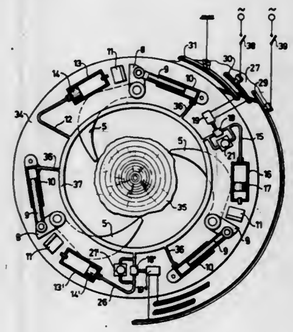
For Class 141—72 see:
Patent No. 3,552,346

3,552,455
BANDMILLS MOUNTING AND FEED ROLL ASSEMBLY
Gaston Pinat, 5384 Jules Fournier St., Montreal-North, Quebec, Canada
Filed July 1, 1968, Ser. No. 741,779
Int. Cl. B27b *15/08*
U.S. Cl. 143—22 **5 Claims**



Means for mounting bandmills assemblies to form multiple bandmills machine units for use in sawing logs and lumber into cants or boards wherein the bandmills assemblies are slidably mounted in a cantilevered manner on two or four slideways fastened in a superposed position onto a supporting beam, whereby the bandmills assemblies are approached one another to a short distance and further including movable roll assemblies which can be approached close to the bandmills saw blades and retracted to allow removal of the saw blades from the wheels of the bandmills. The resulting mounting is easily and quickly installed in a sawmill.

3,552,456
DEBARKING MACHINE OF THE HOLLOW ROTOR TYPE
Nils Olof Johansson, Vallingby, Sweden, assignor to Brundell Och Jonsson AB, Gavle, Sweden, a corporation of Sweden
Filed Mar. 18, 1969, Ser. No. 808,065
Claims priority, application Sweden, Mar. 25, 1968, 3940/1968
Int. Cl. B27l *1/00*
U.S. Cl. 144—208 **2 Claims**



The invention relates to a debarking machine comprising a hollow rotor carrying debarking tools pivotable to and from the axis of the rotor. The machine is of the type in which hydraulic power transmitting means are adapted to act upon the tools to move them onto the axis of the rotor, while pressure accumulator means are mounted on the rotor to supply pressurized liquid to said power transmitting means.

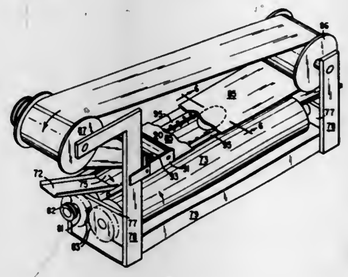
3,552,457
LOG BREAK-DOWN METHOD AND APPARATUS
Arie Bos, Ladysmith, British Columbia, Canada, and Ronald L. Greenough, Tomasville, Ala., assignors to MacMillan Bloedel Limited, Vancouver, British Columbia, Canada
Filed May 29, 1968, Ser. No. 733,181
Int. Cl. B27b *1/00*
U.S. Cl. 144—312 **28 Claims**



Method and apparatus for breaking down logs in a continuous or substantially continuous manner into useful products, such as pulp chips, boards and/or timbers. The method entails conveying each log past a set of cutting elements arranged to cut one or two flat horizontal surfaces thereon. It preferably includes placing the cut log with the flat surface or surfaces on a suitable conveyor, and moving the log past a second set of cutting elements arranged to repeat the original cutting operation. The method preferably includes removing slab areas of the logs as pulp chips while simultaneously removing boards therefrom during formation of the flat areas at each set of cutting elements.

The apparatus is designed to carry out part or all of said method. The apparatus grips each log from below and moves it horizontally past said first set of cutting elements arranged above the log, and it preferably includes a second stage wherein the log after being turned over is transported past said second set of cutting elements arranged above the turned log.

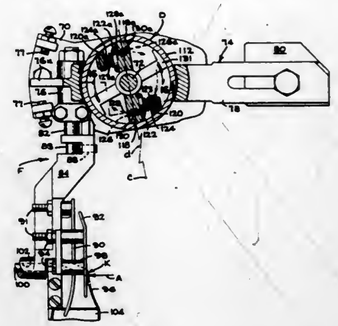
3,552,458
APPARATUS FOR DE-SHELLING HARD-COOKED EGGS
John C. Whitman, Port Byron, N.Y., assignor to Agway Inc., Syracuse, N.Y., a corporation of Delaware
Filed Mar. 25, 1968, Ser. No. 715,684
Int. Cl. A47g *19/28*
U.S. Cl. 146—2 **3 Claims**



A hard-cooked egg deshelling mechanism including a shell cracking means, as a tumbling barrel arrangement, or compressor belt structure, and cracked shell removing means in the form of a pair of rotating resilient rolls along which the cracked eggs are advanced by a belt.

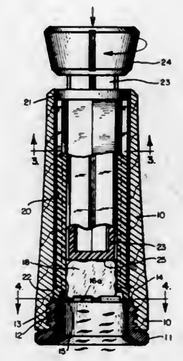
3,552,459
DAMPED ROTARY PEELING HEAD
Leslie Vadas, Los Gatos, Calif., assignor to Castle & Cooke, Inc., Honolulu, Hawaii, by mesne assignments
Filed May 22, 1968, Ser. No. 731,237
Int. Cl. A23n *15/00*
U.S. Cl. 146—6 **4 Claims**

A rotary head for the contour peeling of pineapples has bell crank knife arms pivotally mounted on a rotor through which the pineapples are passed for contour peeling. A torsion spring urges the knives toward the fruit and a counterweight opposes the effect of centrifugal force on the knife. A



hydraulic vane type damper is connected to the knife arm at its pivot point on the rotor, for freely accommodating knife motion toward the fruit while resisting sudden outward motion of the knife.

3,552,460
APPARATUS FOR CUTTING BLOCK OF CHOCOLATE OR THE LIKE
Leighton H. Cooney, 1042 Cherokee Road, Wilmette, Ill. 60091
Filed Feb. 3, 1969, Ser. No. 795,909
Int. Cl. B02c *18/00, 19/20*
U.S. Cl. 146—60 **6 Claims**

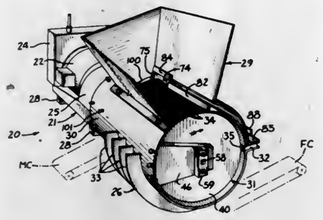


A tubular housing having fixed blades in the bottom thereof, a rotatable, noncylindrical barrel within said housing having a follower therein for rotating said barrel and also for urging a block of material into contact with said blades.

3,552,461
SEPARATOR MACHINE FOR BONELESS COMMINUTED MEAT AND OTHER FOOD PRODUCTS
Stephen A. Paoli, 520 6th St., Rockford, Ill. 61108
Filed Feb. 17, 1969, Ser. No. 799,763
Int. Cl. A22c *17/00*
U.S. Cl. 146—76 **10 Claims**

An improved separator machine for the continuous production of boneless comminuted meat and other smooth comminuted food products. The machine is adapted to receive raw material, such as a dressed animal carcass or any portion thereof, or whole fruit or vegetables, reduced to a coarse agglomeration of fragmented hard and soft tissues

which are separated automatically and continuously and discharged separately. The machine incorporates an improved feeding means which increases its productivity and eliminates the necessity for manual intervention.



3,552,462

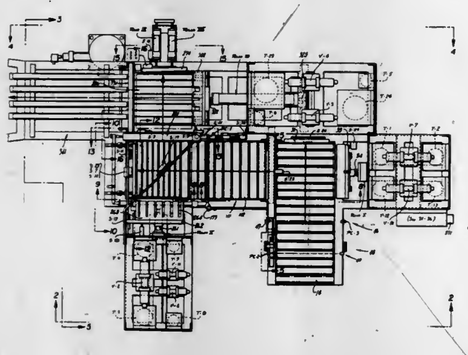
APPARATUS FOR HANDLING BLOCK-LIKE ARTICLES

Alfred E. Comstock, Frontenac, Minn., and Burdsal Gardner Wilcox, Oakland, Calif., assignors to Safeway Stores, Incorporated, Oakland, Calif., a corporation of Maryland

Original application Oct. 9, 1964, Ser. No. 402,746, now Patent No. 3,433,278. Divided and this application Nov. 29, 1968, Ser. No. 779,734

Int. Cl. B26d *7/06*

U.S. Cl. 146—78 **16 Claims**



Apparatus for handling blocklike articles having first and second conveyor means, means controlled by the first conveyor means for causing parts to be delivered by the second conveyor means to the first conveyor means at spaced intervals so that the parts are advanced onto and carried on the first conveyor means at spaced intervals with at least certain of the parts on the second conveyor means being disposed one immediately behind the other in the direction of advance of the second conveyor means.

3,552,463

EAR CORN ADAPTER FOR FORAGE HARVESTERS

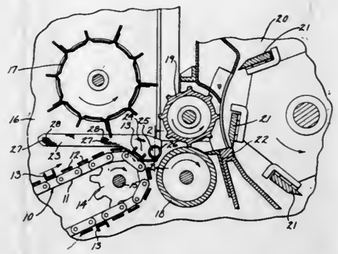
Wilmer E. Witt, Appleton, Wis., assignor to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Nov. 25, 1968, Ser. No. 778,599

Int. Cl. A01d *55/00*

U.S. Cl. 146—120 **8 Claims**

The adapter comprises a pair of spaced arms which are removably connectable to the sidewalls of the throat of a forage harvester, the inner ends of the arms having projecting studs which are removably inserted in the ends of a pipe to support the pipe in a predetermined position between the inner end of the apron feed conveyor and the smooth feed roll over which material is fed to the rotary cutter of the forage harvester, the pipe insuring proper feeding of ear corn from the conveyor into the rotary cutter without jamming.



3,552,464

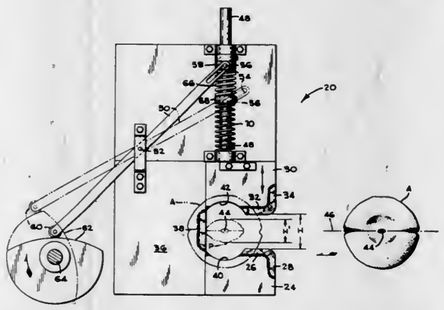
METHOD OF PITTING SPLIT-PIT PEACHES

William B. Haver and James L. Reimers, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed July 3, 1968, Ser. No. 742,337

Int. Cl. A23n *3/08*; **A47j** *23/00*

U.S. Cl. 146—237 **2 Claims**



Peaches with structurally weak pits are twist pitted by orienting the suture plane of the peach normal to the bisecting and gripping blades. The plane in which the bisected flesh halves are twisted does not coincide with the suture plane of the pit, thereby avoiding split pits.

3,552,465

INSTALLATION FOR PROCESSING GRAINS WITH A LIQUID, IN PARTICULAR CEREAL GRAINS

Jean-Jacques Asper, Geneva, and Gunter Breitling, Petit-Lancy, Geneva, Switzerland, assignors to Pates Alimentaires Rivoire & Carret, Marseille, France

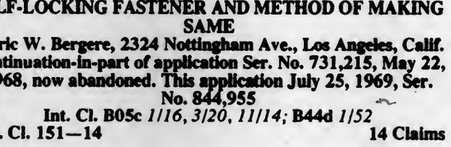
Filed Apr. 22, 1968, Ser. No. 722,842

Claims priority, application Switzerland, Apr. 21, 1967, 5761/67

Int. Cl. B02b *3/12*

U.S. Cl. 146—256 **1 Claim**

An installation for processing grain with a liquid comprises one or more processing units, each unit including a frustoconical drum mounted for rotation about a horizontal axis so that grain introduced at the broad end of the drum through a central inlet opening first comes into contact with a processing liquid contained in the lowermost portion of the drum and then is moved out of the liquid towards the narrow end of the drum under the action of a helical partition mounted inside the drum and axially thereof, so as first to drain the grain and then to discharge the grain through the narrow end of the drum to the drum of any subsequent processing unit.



3,552,466

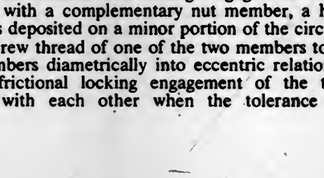
INFLATABLE FREIGHT CONTAINER

Bert S. Fairchilds, Miami, Fla., assignor to Hoover Aircraft Products Co., Miami, Fla., a corporation of Florida

Filed Oct. 11, 1968, Ser. No. 766,767

Int. Cl. B65d *89/02*, *7/28*; **B65j** *1/02*

U.S. Cl. 150—0.5 **4 Claims**



A freight container having a wall or walls which can be inflated to confine freight and which can be collapsed to greatly reduce the volume of the container. In preferred embodiments the inflatable walls are made up of sealed cells of flexible material each having two opposed areas connected together by many threads which limit spreading of the cell. A valve is provided for each cell for inflation and deflation thereof.

3,552,467

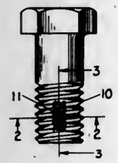
SELF-LOCKING FASTENER AND METHOD OF MAKING SAME

Emric W. Bergere, 2324 Nottingham Ave., Los Angeles, Calif.

Continuation-in-part of application Ser. No. 731,215, May 22, 1968, now abandoned. This application July 25, 1969, Ser. No. 844,955

Int. Cl. B05c *1/16*, *3/20*, *11/14*; **B44d** *1/52*

U.S. Cl. 151—14 **14 Claims**



To cause mutual self-locking engagement of a screw member with a complementary nut member, a hard metal plating is deposited on a minor portion of the circumference of the screw thread of one of the two members to force the two members diametrically into eccentric relationship with mutual frictional locking engagement of the two screw threads with each other when the tolerance clearance between the two screw threads is maximum. At substantially lesser clearances, the nut member is elastically deformed elliptically.

3,552,468

PNEUMATIC TIRE WITH REDUCED SUSCEPTIBILITY TO DEFECTS

William C. Gallagher, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Sept. 12, 1967, Ser. No. 667,244

Int. Cl. B60c *9/04*

U.S. Cl. 152—359 **13 Claims**



Pneumatic tires and like mold-cured cord reinforced elastomeric articles are rendered less susceptible to blow or blister defects by combining with the continuous filament strength cord auxiliary gas receiving voids provided by a small yarn of staple fiber thereby increasing the total voids volume and enabling contained air or gas to be safely retained within the tire or article.

The foregoing abstract is not to be taken as limiting the invention of this application, and in order to understand the full nature and extent of the technical disclosure of this application, reference must be made to the accompanying drawing and the following detailed description.

3,552,469

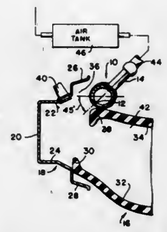
TIRE BEAD SEATER

Lee M. Corless, 610 Roslyn Road, Grosse Pointe Woods, Mich. 48236

Filed Feb. 19, 1969, Ser. No. 800,679

Int. Cl. B60c *25/06*

U.S. Cl. 157—1.1 **27 Claims**

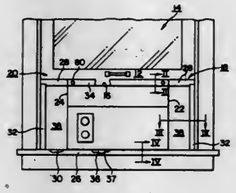


A method and apparatus for inflating tubeless tires on a vehicle wheel is provided. The apparatus comprises an annular tube of larger diameter than the wheel to be received over the wheel adjacent to the rim of the wheel. Orifice means are provided on the periphery of the tube for injecting air under pressure through the space between the wheel rim and the bead of an uninflated tubeless tire mounted on the wheel. Inlet means are provided on the tube for supplying air under pressure to the interior of the tube.

The method comprises first mounting a noninflated tubeless tire on a vehicle wheel. The annular tube is then placed on the wheel and air under pressure is injected into the tire from the annular tube through the space between the wheel rim and the adjacent tire bead to partially inflate the tire and

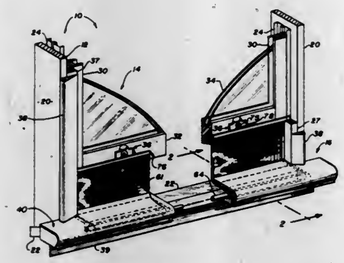
cause the tire sidewall and bead to almost make sealing contact with the wheel rim. The tire is then completely inflated by injecting air under pressure through the conventional tire valve.

3,552,470
ROOM AIR CONDITIONER MOUNTING ARRANGEMENT
Frederick S. Metcalfe, Columbus, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 30, 1965, Ser. No. 476,105
Int. Cl. E06b *7/03*
U.S. Cl. 160—26 **8 Claims**



Room air conditioner mounting and closure apparatus in which a frame-carried, self-coiling, flexible sheet with a permanently coiled set is used to cover and uncover the space between the side of the air conditioner and the facing building element.

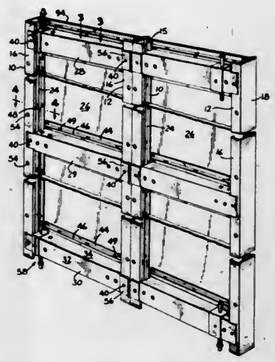
3,552,471
WINDOW AND SCREEN ASSEMBLY
Richard Hurst and Raymond M. Hurst, both of R.D. 3, Lititz, Pa. 12543
Continuation of application Ser. No. 669,189, Sept. 20, 1967 now abandoned. This application July 7, 1969, Ser. No. 845,637
Int. Cl. E06b *9/08*
U.S. Cl. 160—27 **13 Claims**



A window having a slidably mounted sash and a stool which is mounted on the window sill and carries a roll of screen. The screen extends through a passage in the stool and is detachably connected to the lower rail of the sash.

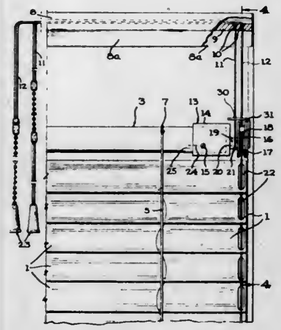
3,552,472
PANEL ASSEMBLY
Raymond H. Aubrey, Rte. 2, Box 95–B, Ocala, Fla. 32670
Filed Sept. 10, 1968, Ser. No. 758,763
Int. Cl. E06b *03/72, 03/76*
U.S. Cl. 160—130 **10 Claims**

An assembly for use in a door panel or the like comprises a pair of spaced substantially parallel rigid longitudinal channels which include tracks for receiving a substantially planar sheet of cover material and crossmembers are arranged to contact the inner face of the sheet material, the channels and braces being attached to the inner face by an adhesive. The longitudinal channel and crossmembers may be adjustable to provide a variable dimension assembly. The crossmembers



include an elongated tongue which is arranged to extend into an elongated slot formed in the longitudinal channels to position the channels in a selected spaced relationship from each other and rigidify the structure.

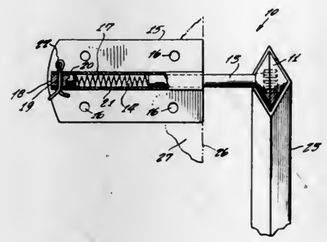
3,552,473
VENETIAN BLIND
Bo Sven Olof Persson, 6 Villavagen, 37040 Jamjoslatt, Ronneby, Sweden
Continuation-in-part of application Ser. No. 612,899, Jan. 31, 1967, now abandoned. This application May 26, 1969, Ser. No. 827,509
Int. Cl. E06b *09/26, 09/30*
U.S. Cl. 160—166 **9 Claims**



The venetian blind comprises a case with essentially only two pull units constituted by two sets of control cords extending from the case. Each set consists of two cords connected with opposite sides of the blind and then running adjacently with one another where they extend from the case essentially as a single cord because the two cords of each set are joined together at their outer extremity for connection with and for concurrent operation by a pull handle or knob. An upper and a lower bar are provided with ladder tapes carrying a plurality of slats arranged between said bars. The blind may be lowered completely towards the lower edge of a window case by one set of control cords, or it may be lifted entirely towards the upper edge, by the other set of cords, each set acting in unison. The latter set constitute lifting cords to effect said pulling up of the lower bar and also for selectively inclining the slats; while the former set of two

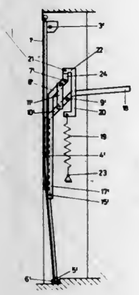
control cords, due to their mode of initial and eccentric attachment to the upper bar, are responsible for the initial predetermined angularity of the slats, usually in a fully closed position, in addition to serving as the combined support, and lowering and raising cords for the top or upper bar.

3,552,474
DIAMOND ROLLER
John E. Finnegan, Altoona, Pa. (218 3rd Ave., Duncansville, Pa. 16635)
Filed Feb. 17, 1969, Ser. No. 799,755
Int. Cl. E05d *15/38*
U.S. Cl. 160—201 **2 Claims**



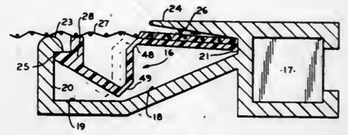
An improved roller for supporting an overhead sliding door to a track, the roller comprising a diamond configurated roller element movable along a transversely configurated diamond track, the roller being mounted on a roller bearing at one end of a shaft fitted into a bracket plate and urged into longitudinal or axial adjustment by means of a back up compression spring.

3,552,475
FOLDING DOOR
Engelbert Fehr, Poststrasse 9443, Widnau, Switzerland
Filed July 16, 1969, Ser. No. 842,326
Claims priority, application Austria, July 18, 1968, 6935/68
Int. Cl. E05d *15/26*
U.S. Cl. 160—207 **10 Claims**



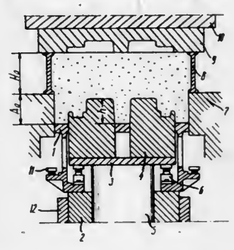
A folding garage door consists of two superposed, hingedly connected plate members, the upper edge of the upper plate member being pivoted to the door frame. The door is opened and closed by means of an operating lever pivoted to the door frame and linked to a motion transmitting lever which is hinged to the lower plate member and to the door frame. The several pivots are arranged in such a manner that the door remains open until closed manually. The door weight may be balanced by a spring attached to the motion transmitting lever.

3,552,476
METHOD OF SCREENING
Frank M. Le Tarte, 9094 Yager Road, Smith Creek, Mich.
Filed Apr. 12, 1968, Ser. No. 721,010
Int. Cl. E06b *9/52*
U.S. Cl. 160—371 **4 Claims**



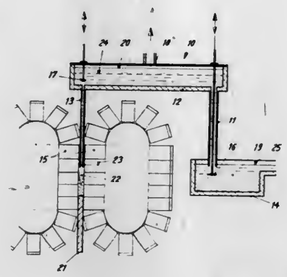
An improved screen assembly and method of making same employing a frame having an elongated channel or slot extending around the periphery of the opening to be screened. Clips are attached to the screening material and snapped into the longitudinal channel to retain the screening material in the frame. Preferably, the screening material is formed of plastic coated fiberglass or other inextensible, flexible material and preferably the clips are formed of a plastic material having substantial resilience, such as nylon, a polyamide resin sold by E. I. du Pont Company. The clips are provided with integral spring and screening material-engaging portions. Each of these portions provides a part of a means for fastening the clip to the frame. The spring portion resiliently engages the inner surface of the channel (i.e., the surface facing away from the area inclosed by the frame) and thus provides the assembled screen with sufficient resilience to protect the material from destructive forces normal to the screen. The screening material engaging portion of the clip slideably contacts the inner surface of an inwardly projecting lip. This inner surface is substantially parallel to the plane of the screening material, allowing the material-engaging portion of the clip to slide transversely in said channel while retaining the clip in said channel.

3,552,477
METHOD OF MAKING FOUNDRY MOULDS
Benedikt Veniaminovich Rabinovich, Yauzsky bulvar 14, kv. 16, and Fedor Filippovich Rezinskikh, Kerchinskaya ul., 26. kv. 9, both of Moscow, U.S.S.R.
Filed Aug. 31, 1967, Ser. No. 664,730
Int. Cl. B22c *15/08*
U.S. Cl. 164—44 **5 Claims**



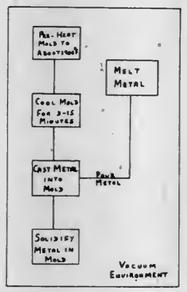
A method is provided for making foundry moulds which comprises pressing moulding sand in a flask between a thrust plate and a pattern plate with patterns therein, and pressing the moulding sand also by a stripper plate. The pattern plate and stripper plate are moved independently of each other along a portion of a complete pressing stroke and at the end of the pressing stroke both plates are moved simultaneously to complete the motion. Thereupon the patterns are slightly withdrawn from the thusly compacted mould by the stripper plate whereafter all of the components are returned to the initial position.

3,552,478
METHOD FOR STARTING AND MAINTAINING THE SUPPLY OF METAL TO A DOWNWARD OPERATING CONTINUOUS CASTING MOLD
Wilhelm Friedrich Lauener, Langenhard, Switzerland, assignor to Prolizenz A. G., Chur, Switzerland, a corporation of Switzerland
Filed Sept. 9, 1968, Ser. No. 758,270
Claims priority, application Switzerland, Sept. 7, 1967, 12507/67
Int. Cl. B22d *11/10, 11/06*
U.S. Cl. 164—64 2 Claims



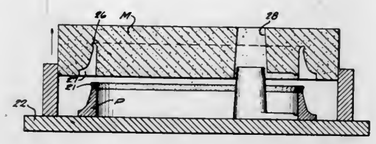
A method for starting and maintaining the supply of metal to a downward operating continuous casting mold has the steps of sucking metal from a reservoir up through a riser into a launder above the reservoir, then closing the riser and keeping closed the downcomer to the mold, thereafter letting the pressure rise in the launder and subsequently opening the downcomer; then letting the metal flow and starting the casting, thereafter rarefying the air pressure in the launder, and then opening the riser again.

3,552,479
CASTING PROCESS INVOLVING COOLING OF A SHELL MOLD PRIOR TO CASTING METAL THEREIN
John Hockin, Palatine, Ill., assignor to Martin Metals Company, Wheeling, Ill., a corporation of Delaware, by mesne assignments
Filed Nov. 22, 1967, Ser. No. 684,916
Int. Cl. B22d *27/16*
U.S. Cl. 164—65 4 Claims



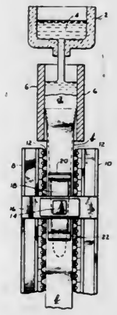
Method of precision casting of high temperature, nickel-base alloys in ceramic shell molds wherein, immediately prior to casting, a preheated shell mold is permitted to cool to provide a condition wherein there are substantial temperature differentials throughout the shell mold. Substantially enhanced characteristics are obtained in the resultant casting.

3,552,480
PATTERN FOR MAKING A SAND MOLD WITH A BACK DRAFT
George V. Harris, Racine, Wis., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California, by mesne assignments
Filed July 12, 1968, Ser. No. 744,484
Int. Cl. B22c *7/00*
U.S. Cl. 164—245 14 Claims



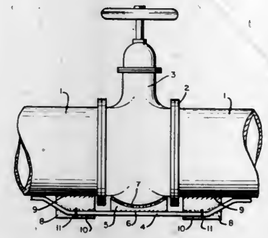
A composite metal and flexible material pattern for making a heat cured sand mold, the flexible material being used in the area of back draft to permit the use of a one piece pattern which can be removed without damage to the sand mold. The metal of the composite pattern functions to conduct heat to cure the resin bonded sand mold at a high curing heat. A method of making a sand mold of the heat-cured type. An improved product made from such a mold.

3,552,481
APPARATUS FOR REMOVING GAS FROM MOLTEN METAL DURING CONTINUOUS CASTING
Joseph D. Gricol, Flat Rock, Mich., assignor to Concast Incorporated, New York, N.Y., a corporation of Delaware
Original application Dec. 13, 1965, Ser. No. 513,244, now Patent No. 3,397,733, dated Aug. 20, 1968. Divided and this application Apr. 24, 1968, Ser. No. 723,704
Int. Cl. B22d *11/12*
U.S. Cl. 164—260 3 Claims



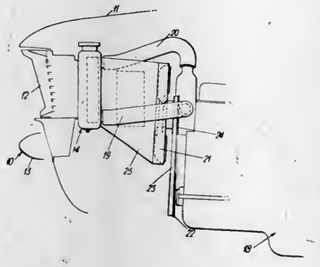
This is apparatus for applying vibrations to a slab of cast metal emerging from a continuous-casting mold at a position along the slab at which the interior of the slab is still molten, and for adjusting the frequency of the vibrations to be in resonance with the portion of solidified metal skin around the slab between the position at which the vibrations are applied and the point at which the skin is formed in the mold. The amplitude of the vibrations are thus adjusted to facilitate the escape of uncombined oxygen from the molten metal in the mold.

3,552,482
METHOD FOR HEATING ARTICLES HAVING COMPLICATED FORMS
Masao Ando, Kanagawaken, Japan, assignor to Chisso Corporation, Osaka, Japan, an organization of Japan
Filed Jan. 10, 1969, Ser. No. 790,329
Claims priority, application Japan, Jan. 31, 1968, 43/5924
Int. Cl. F28d *7/02*
U.S. Cl. 165—1 2 Claims



Method for heating an article having a part of complicated form by a tracing pipe which comprises causing heat to conduct through the medium of metal piece fixed between said article and said tracing pipe.

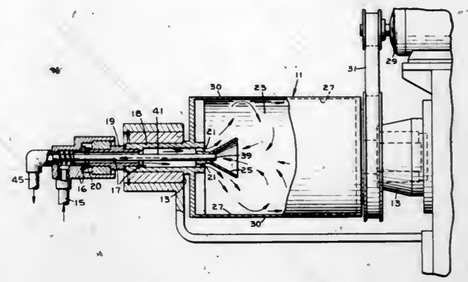
3,552,483
MOTOR VEHICLE COOLER SYSTEMS
Reginald Harry North, Headington, Oxford, and Peter Norman Taylor, Luton, England, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 22, 1969, Ser. No. 793,096
Claims priority, application Great Britain, Jan. 25, 1968, 3981/68
Int. Cl. F58f *19/00*
U.S. Cl. 165—11 4 Claims



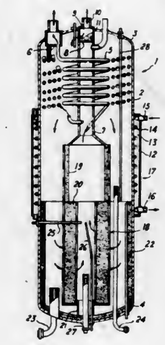
A motor vehicle engine-cooler system comprising a radiator, a fan, a duct surrounding the fan and extending to the radiator, and a pivoted flap mounted to close an opening in a wall of the duct. When the air pressure in the duct exceeds the ambient air pressure in the engine compartment by a predetermined amount, the flap pivots to open the opening against a biasing force which normally urges the flap to the position in which it closes the opening.

3,552,484
HEAT TRANSFER APPARATUS WITH ROTATING DRUM
James Kral, Jr., Hickory Hills, John G. Meyer, and James F. Stoltz, La Grange, Ill., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 1, 1968, Ser. No. 764,168
Int. Cl. F28d *11/02*
U.S. Cl. 165—89 1 Claim

A water-cooled, chilling roller drum for absorbing heat from a sheetlike object passing around the roll and wherein the coldest of the cooling water is maintained in contact with the inner surface of the drum by centrifugal force. As the water is heated, it is displaced by cooler, heavier water and moves toward the axis of the rotating drum and is withdrawn from the drum through an exit port that is substantially coaxial with the drum.



3,552,485
COLD TRAP
Jean-Pierre Le Jannou and Noel Lions, Manosque, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Oct. 7, 1968, Ser. No. 765,546
Claims priority, application France, Oct. 20, 1967, 125,315
Int. Cl. F28b *19/00*
U.S. Cl. 165—119 5 Claims



A cold trap for a liquid metal circulation system comprises a circulation vessel containing successively an economizer coil unit, a heat exchanger for effecting the cooling of the liquid metal and a filter unit for impurities. The filter unit is made up of two sections mounted in end-to-end relation. The first section is of small thickness and is placed at the level of said heat exchanger whilst the second filter section is of greater thickness and is placed at the outlet of the heat exchanger. Said second filter section has the shape of a cylinder whose lateral surface is in contact with the flow of cooled liquid metal and is connected internally to the economizer coil unit so as to permit the discharge of liquid metal from the trap.

3,552,486
VALVE CONTROLLED FLUID CONDUCTING WELL TOOL

Erwin Burns, Los Angeles, and Leslie M. Jones, Buena Park, Calif. (both c/o Burns Tool Company, 8346 Salt Lake Ave., Bell, Calif., 90201)

Filed Nov. 3, 1969, Ser. No. 873,357
Int. Cl. E21b *23/00, 49/00*
U.S. Cl. 166—147 10 Claims



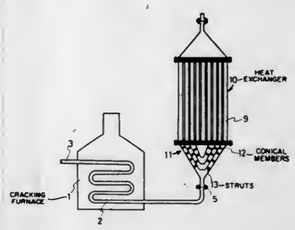
A rotary operable shutoff valve means for use in connection and combination with fluid-conducting well tools comprising a cylindrical body with a large upstream bore and a small downstream bore, a piston with a large upstream end engaged in the upstream bore and a small downstream end engaged in the downstream bore, and keyed in the body for axial movement, an axial-extending port in the piston radially offset from the axis of the piston, a fluid-conducting stem with an upstream end rotatably engaged in the downstream bore, and having an axially extending port offset from the axis of the piston and shiftable into and out of register with the port in the piston upon rotation of the stem relative to the body, said piston and stem having flat, opposing end surfaces, sealing means in said end surface of the piston about the port therein and engageable on said end surface of the stem, the cross-sectional area of the upstream end of the piston being greater than the downstream end thereof whereby fluid pressure urges the piston and sealing means into tight pressure-sealing engagement with the stem when the ports are out of register.

3,552,487
QUENCHING APPARATUS FOR USE WITH THERMAL CRACKING SYSTEM

Ichiro Tokumitsu and Mitsumaro Okamura, Tokuyama-shi, Yamaguchi-ken, Japan, assignors to Idemitsu Petrochemical Co., Ltd.

Filed Oct. 21, 1968, Ser. No. 769,009
Claims priority, application Japan, Nov. 29, 1967, 42/99,727
Int. Cl. F28d *7/00*
U.S. Cl. 165—174 1 Claim

The quenching apparatus is composed of a header and cooling pipes. The header consists of a plurality of relatively closely spaced, hollow frustoconical members having a smaller diameter that communicated with a conduit in the furnace and a larger diameter that communicates with the

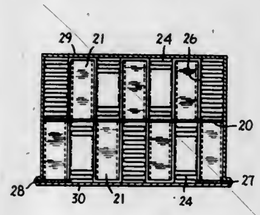


cooling pipes. The conical members are disposed coaxially and have radiating fins thereon.

3,552,488
PLATE-FIN HEAT EXCHANGER

Bernard Grill, Westbury, and Donald M. Lee, Flushing, N.Y., assignors to Pall Corporation, Glen Cove, N.Y., a corporation of New York

Filed Dec. 27, 1968, Ser. No. 787,412
Int. Cl. F28f *3/00*
U.S. Cl. 165—166 12 Claims



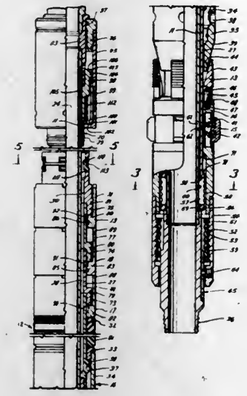
A plate-fin heat exchanger is provided in which the plate is a continuous convoluted sheet which separates the fluids between which heat is to be transferred. Corrugated fins are juxtaposed between the convolutions of the plate, and in heat-conducting contact therewith, the plate and fins thereby providing a high heat transfer surface area for efficient heat exchange. By providing a continuous convoluted plate, cross leakage between the fluids at any point along the plate surface is precluded.

3,552,489
WELL PACKER APPARATUS

William O. Berryman, Houston, Tex., assignor to Schlumberger Technology Corporation, New York, N.Y., a corporation of Texas

Filed Dec. 4, 1968, Ser. No. 781,031
Int. Cl. E21b *33/129, 23/06*
U.S. Cl. 166—120 14 Claims

An illustrative embodiment of the present invention in retrievable well packers includes a body member carrying settable packing means adapted to sealingly engage a well casing wall, normally retracted slip means, and expander means movable downwardly relative to said slip means for shifting said slip means outwardly into gripping contact with a well casing wall, and hydraulic means above said packing means and coupled in force transmitting relationship thereto, said hydraulic means being responsive to greater fluid pressure in the well bore below said packing means than above said packing means for applying setting force to said packing



means and said expander means to retain said packing means and said slip means in set positions.

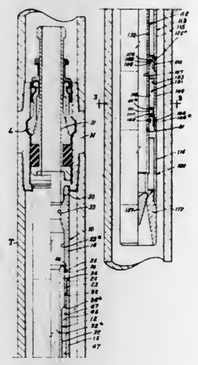
ERRATUM

For Class 166—147 see:
Patent No. 3,552,486

3,552,490
PRESSURE REGULATOR FOR WELL FLOW CONDUCTORS

William W. Dollison, Dallas, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware

Filed Dec. 23, 1968, Ser. No. 786,151
Int. Cl. E21b *33/00*; F16k *31/12*
U.S. Cl. 166—224 19 Claims

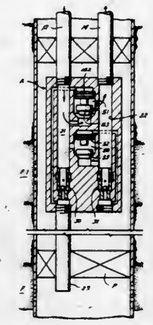


A pressure regulator for use for subsurface well installation for regulating surface pressure of the well having a valve member actuated by biasing means which may comprise compressed gas, a spring, or a combination thereof, to deliver a substantially constant predetermined downstream pressure. The valve is provided with structure permitting reverse flow and with means for damping movement of the valve element.

3,552,491
COMMUNICATING VALVE ASSEMBLY FOR MULTIPLE WELL FORMATIONS

Roy E. Thompson, 18 Colony Road, Gretna, La. 70053

Filed Feb. 17, 1969, Ser. No. 799,702
Int. Cl. E21b *33/122*
U.S. Cl. 166—224 8 Claims

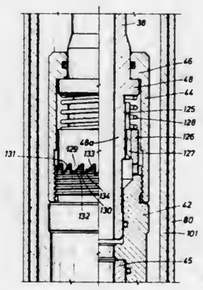


A communicating valve assembly for multiple well formation production and for controlled circulation of fluid between pipe strings connected thereto wherein two control valves are disposed between the two pipe strings in conjunction with a check valve for each pipe string, and wherein the control valves are constructed so that upon increasing the pressure in either of the strings above the well formation pressure in communication with such string, one of the control valves opens to direct fluid from one pipe string to the other, whereby tools may be pumped upwardly and out of either pipe string or the well be "killed" by increasing the pressure in only one of the strings.

3,552,492
WELL TOOL SAFETY JOINT

Albert A. Mullins, Richmond, Tex., assignor to Schlumberger Technology Corporation, New York, N.Y., a corporation of Texas

Filed July 23, 1969, Ser. No. 844,015
Int. Cl. E21b *23/00*
U.S. Cl. 166—237 9 Claims



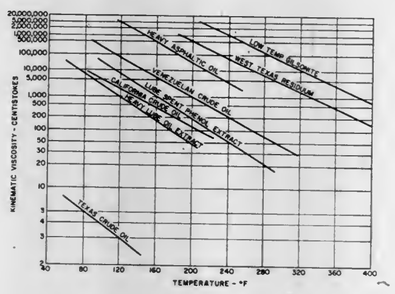
A well tool safety joint according to the following technical disclosure includes an upper member connected to the pipe string and having a swivel coupling to a lower member. The lower member is constituted by separable parts connected by a left-hand thread. A one-way clutch coacts between the upper and lower members to enable right-hand rotation of the lower member relative to the upper member but to prevent right-hand rotation of the upper member relative to

the lower member, so that right-hand rotation of the upper and lower members by the pipe string will effect unthreading of the left-hand connection in the event that one of the separable parts becomes lodged in the well.

3,552,493
METHOD FOR TREATING A PART OF A PERMEABLE FORMATION
Cornelis Bezemer, Rijswijk, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Dec. 30, 1968, Ser. No. 788,107
Claims priority, application Great Britain, Mar. 18, 1968, 12,778
Int. Cl. E21b *33/138*
U.S. Cl. 166—295 **11 Claims**

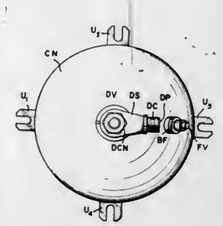
A method of consolidating permeable unconsolidated formations with an epoxy forming resin under controlled reaction and temperature conditions using three premixed solutions which are to be supplied to the field, one solution comprising epoxide dissolved in aromatic hydrocarbons, the second solution comprising a curing agent dissolved in aromatic and nonaromatic hydrocarbons and the third solution containing phenol and m.p. cresol dissolved in aromatic and nonaromatic hydrocarbons. By suitably choosing the amount of the third solution, the mixture of the three solutions can be used in a temperature range of from 20° C. to 100° C. A part of a permeable formation surrounding a well is treated with a resin-forming composition which on hardening at the formation temperature forms a film consisting of a hardened resin covering the surfaces of the sand grains of the formation.

3,552,494
PROCESS OF HYDRAULIC FRACTURING WITH VISCOUS OIL-IN-WATER EMULSION
Othar M. Kiel, Houston, Tex., assignor to Esso Production Research Company, a corporation of Delaware
Continuation-in-part of application Ser. No. 655,356, July 24, 1967, now abandoned, which is a continuation-in-part of application Ser. No. 421,578, Dec. 28, 1964, now abandoned, and a continuation-in-part of 641,275, May 25, 1967, now Patent No. 3,378,074. This application Mar. 17, 1969, Ser. No. 807,834
Int. Cl. E21b *43/26*
U.S. Cl. 166—308 **12 Claims**



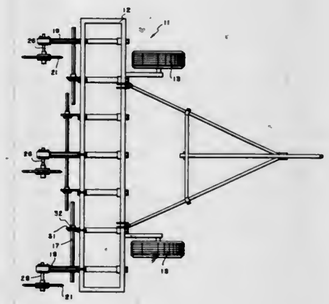
A method for the hydraulic fracturing of a subterranean formation wherein an oil-in-water emulsion containing a heavy crude oil, petroleum fraction, or similar hydrocarbon oil having a viscosity in excess of about 1500 centipoises at 100° F. is injected into a well at a rate sufficient to open a fracture in the exposed formation.

3,552,495
FIRE EXTINGUISHER
John Robert Fiero, Glendora, Calif., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed June 6, 1968, Ser. No. 735,093
Int. Cl. A62c *35/02*
U.S. Cl. 169—28 **26 Claims**



This covers a fire extinguisher having a container which is to be filled with fire-extinguishing liquid or gas or both, along with a gas or gasses for supercharging the contents of the container. One of the gases may be inert and may be used to detect leakage from the container. The equipment also includes a discharge valve having a rupturable disc which, in response to a space wave or waves, becomes ruptured to discharge the contents of the container. The equipment includes a filler valve through which the contents are supplied to the container, the filler valve also including a rupturable disc which, in response to pressure within the container exceeding a predetermined value, releases the contents of the container. The rupturable disc may be replaced by a temperature sensitive material which, in response to an elevated temperature of predetermined value, releases the contents of the container.

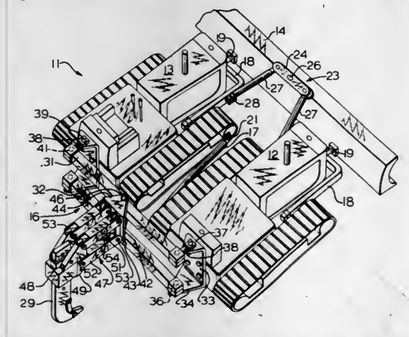
3,552,496
ROD WEEDER
Everett J. Tasset, c/o American Products, Inc., Spearville, Kans. 67876
Continuation-in-part of application Ser. No. 658,805, Aug. 7, 1967, now abandoned. This application Apr. 10, 1968, Ser. No. 725,565
Int. Cl. A01b *39/19*
U.S. Cl. 172—44 **2 Claims**



A rod weeder is mounted for operation preferably on and carried by an earth working implement, such as a spring tooth harrow. In a preferred embodiment, drive means is provided having two pulley wheels and a crisscross belt trained over the pulley wheels thereby rotating the rod weeder in a direction opposite the direction of rotation of the wheels of the implement as it is towed along underneath the ground. The housing for the drive is provided with two parallel sides maintained in a spaced relation and an upper plate. The pulley wheels are provided with a plurality of apertures positioned within the side surfaces of the pulley wheels which provides a cleaning effect for the pulley wheels thereby preventing soil and/or weed from interfering with the drive mechanism.

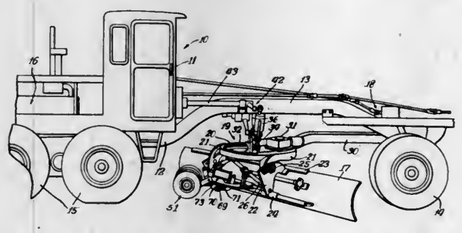
In another preferred embodiment, a drive means is provided having three sprocket wheel means and an endless chain member. The chain member is trained over the two extreme sprocket wheel means and positioned below and adjacent a third sprocket wheel means which is intermediate said first and second sprocket wheel means. The third sprocket wheel means is secured to the axle of the drive wheel and upon movement of the drive wheel the third sprocket wheel and the chain member rotate the first and second sprocket wheel means and turn the rod weeder in a clockwise direction. The first and second sprocket wheel means are provided with a plurality of apertures positioned within the side surface thereof which provides a cleaning effect and prevents soil and/or weeds from clogging the drive mechanism.

3,552,497
UNITIZED SIDE-BY-SIDE TRACTOR AND RIPPER COMBINATION
Robert N. Stedman, Chillicothe, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed May 9, 1968, Ser. No. 728,026
Int. Cl. A01b *51/02*; **E02f** *3/12*; **B60d** *1/16*
U.S. Cl. 172—292 **7 Claims**



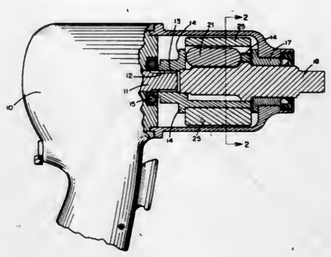
A pair of tractors are disposed in side-by-side relationship and are coupled together for unitized operation by front, rear and diagonal cross bracing which provides for a limited amount of transverse and longitudinal oscillation of either tractor relative to the other. The rear cross brace structure is defined in part by ripper tooth-mounting members in an arrangement which does not block the independent oscillation of either tractor.

3,552,498
ROAD GRADER BLADE MOUNTING MEANS
Robert M. Stauber, York, Nebr., assignor to Blair Manufacturing Co., Inc., a corporation of Nebraska
Filed Feb. 19, 1968, Ser. No. 706,300
Int. Cl. E02f *3/12*
U.S. Cl. 172—783 **12 Claims**



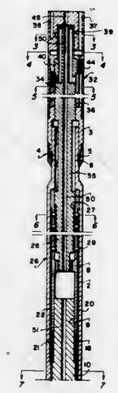
A road grader having means for mounting the blade to the frame for vertical adjustability by adjustment of the connection of control wheel means to the blade support. The blade is urged downwardly by coil spring means extending intermediate the frame and the blade carrier.

3,552,499
ROTARY POWER TOOL CLUTCH MECHANISM
Spencer B. Maurer, 13753 County Line Road, Chagrin Falls, Ohio 44022
Filed Oct. 10, 1968, Ser. No. 766,584
Int. Cl. B25d *15/00*
U.S. Cl. 173—93 **7 Claims**



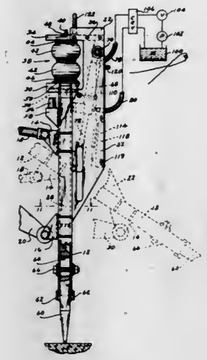
This invention pertains to a rotary impact power tool, such as a wrench, wherein a motor drives a cage member which mounts an impact element between an outside positioned hammer member and an inside positioned output shaft having an impact-receiving jaw. Cam means periodically actuated by the output shaft move the hammer member ahead of the cage member to move the impact element radially inwardly to engage the impact-receiving jaw.

3,552,500
HYDRAULIC DRILL
Carl R. Peterson, Princeton, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 7, 1968, Ser. No. 750,969
Int. Cl. E21b *1/10*
U.S. Cl. 173—105 **5 Claims**



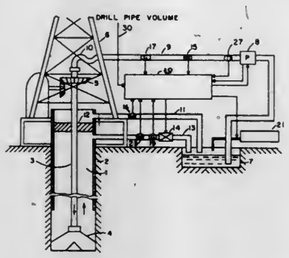
A hydraulic drill containing a reciprocating piston driven by a pair of hydraulic fluid columns. Impulses are applied alternately to the pair of fluid columns by a pump located in the drill and driven by a motor also located in the drill.

3,552,501
DEVICE FOR BREAKING PAVEMENT AND THE LIKE
John B. Weiss, 5535 19th Ave., Kenosha, Wis. 53140
Filed June 30, 1969, Ser. No. 837,694
Int. Cl. E01c *23/09*
U.S. Cl. 173—119 4 Claims



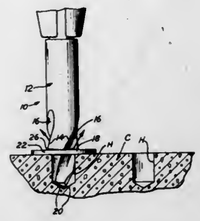
An impact tool to be mounted upon an implement, for breaking pavements and similar material. It comprises a hammer that is retracted against an "air spring" or similar means by a hydraulic cylinder to store energy in the spring. Means is provided to release the hammer so retracted, and permitting it to make impact with a chisel or point resting on the material to be broken. This tool can be positioned for operation in a horizontal, as well as in a vertical position.

3,552,502
APPARATUS FOR AUTOMATICALLY CONTROLLING THE KILLING OF OIL AND GAS WELLS
William Paul Wilson, Sr., Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Dec. 21, 1967, Ser. No. 692,458
Int. Cl. E21b *7/00, 21/00*
U.S. Cl. 175—25 9 Claims



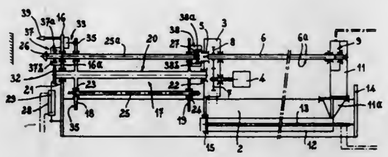
A pair of flow meters, one in the flow line and one in the stand pipe line, are connected into an alarm system, a sufficiently large differential indicating an impending blowout. The alarm system automatically lifts the kelly joint out of the rotary bushing, automatically slows the circulating mud pump and closes the blowout preventer. A computer utilizing sensed drill pipe pressure and the monitored mud weight and volume within the drill pipe controls an adjustable choke within a choke mud line located beneath the blowout preventer. The computer calculates the necessary mud weight to kill the well while circulating drilling fluid through the hole, and maintains a constant and correct pressure on the formation, while pumping out formation fluids that have invaded the well bore. The computer also causes barite to be automatically introduced into the mud tanks to raise drilling fluid to required weight.

3,552,503
DRILL AND CLEAN-OUT FOR BLIND HOLES
Charles S. Lebar, Woodcreek Road & Rte. 63, Barrington Hills, Ill. 60010
Filed Feb. 7, 1969, Ser. No. 797,409
Int. Cl. B23b *51/08*
U.S. Cl. 175—40 2 Claims



A clean-out drill for filling and cleaning out the residue of drilling from blind holes is provided by the combination of a drill shank having helical relief flutes and with a reduced-diameter cutting terminal section of selected diameter and length providing a shoulder spaced from the cutting tip, and with a simple washer fitted over the reduced-section drill shank and welded to the abutment lands between the relief flutes on the drill shank. The circular hole of the washer cooperates with the relief flutes to provide discharge passageways through which the residue of drilling is moved from one side to the other side of the washer for effecting discharge by centrifugal force laterally of the blind hole.

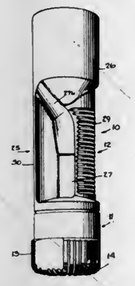
3,552,504
DRILL SLIDE
Louis Laurent Chappuis, Lyon, France, assignor to Societe d'Etude et de Construction de Machines pour Toutes Industries Secoma
Filed Mar. 25, 1969, Ser. No. 810,182
Claims priority, application France, Mar. 29, 1968, 49,843
Int. Cl. E21b *19/14*; F21b *19/00*
U.S. Cl. 175—52 10 Claims



A drill slide supports at the center of its slide beam a rotary drive head having a motor, a drive chuck for a drive rod, and reducing gears. A translating carriage slides on the beam between the rear end of the beam and the rotary drive head and supports a thrust-bearing on the rear end of the drive rod. The carriage is moved by a double-acting hydraulic or pneumatic jack fixed to the beam. At the front of the beam is fixed a guide head and between the guide head and the rotary drive head the beam supports a rotatable barrel housing a drill and several drill extension shafts. The drive rod, the extension shafts and the drill have complementary threads and tappings at their couplable ends. Clamps are fixed on the barrel flanges to hold the drill or extension pieces for screwing and unscrewing. The drive rod and extension piece rear end are noncircular over the length of a threading. A free rotatory ring on the rear flange of the barrel is of suitable

width to coordinate the coupling. A jack acting on a cam rotates the barrel to fixed angular positions to align the drill or extension shafts with the drive rod and a spring-retracted finger is displaced by hydraulic means into a detent to lock the angular position.

3,552,505
CORE BIT AND CORE CRUSHER APPARATUS
Charles T. Thompson, Dallas, Tex., Frank B. Kidd, New Iberia, La., and William R. Henry, Corpus Christi, Tex., assignors to American Coldset Corporation, Teterboro, N.J., a corporation of Texas
Filed Nov. 22, 1968, Ser. No. 778,195
Int. Cl. E21b *9/16*; E21c *13/02*
U.S. Cl. 175—57 15 Claims



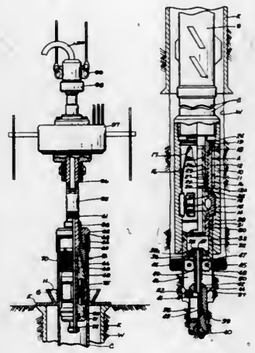
A well-boring apparatus is disclosed as including a core bit to cut material within a borehole in the form of a core during a well-drilling operation and a core crusher to crush the core material between the wall of the borehole and the core crusher. The core bit and core crusher also include passages for delivering fluid to the bottom of the borehole to serve as a cutting fluid for the core bit and to flush the core material from the cutting surfaces of the core bit.

3,552,506
DRILL ROD UNCOUPLING AND STORAGE APPARATUS
James R. Mayer, Dallas, Tex., assignor to Gardner-Denver Company, Quincy, Ill., a corporation of Delaware
Filed Sept. 6, 1968, Ser. No. 757,950
Int. Cl. E21b *19/14*
U.S. Cl. 175—85 8 Claims



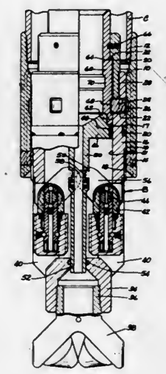
An uncoupling and storage apparatus for multiple sections of extension drill rods having spaced rack members for storing drill rod sections laterally in line with the drill string and interconnected to transfer extension drill rods seriatim to and from the drill string. Spaced substantially arcuate openings in one of the rack members provide jaw surfaces for cooperatively forming with a sliding member a clamp mechanism for nonrotatively clamping a drill rod section for uncoupling from the drill string. The sliding member of the clamp mechanism has predetermined spaced recesses providing complementary jaw surfaces for clamping only the drill rod section which is successively in position to be uncoupled from the drill string.

3,552,507
SYSTEM FOR ROTARY DRILLING OF WELLS USING CASING AS THE DRILL STRING
Cicero C. Brown, c/o Brown Oil Tools, Inc. P.O. Box 19236, Houston, Tex. 77024
Filed Nov. 25, 1968, Ser. No. 778,509
Int. Cl. E21b *9/26*
U.S. Cl. 175—258 10 Claims



A rotary well drilling system employing well casing as the drill string; a bit assembly having radially expansible cutters bodily insertable and removable through the bore of the casing and releasably connected thereto; and a drive connection means releasably insertable into the upper end of the casing bore including casing-gripping means nonthreadedly engageable with the casing bore wall for transmitting rotational torque to the casing.

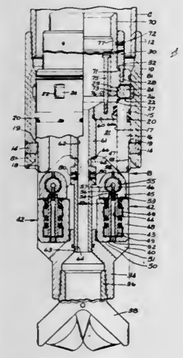
3,552,508
APPARATUS FOR ROTARY DRILLING OF WELLS USING CASING AS THE DRILL PIPE
Cicero C. Brown, c/o Brown Oil Tools, Inc. P.O. Box 19236, Houston, Tex. 77024
Filed Mar. 3, 1969, Ser. No. 803,911
Int. Cl. E21b *9/26*
U.S. Cl. 175—258 7 Claims



A drilling system employing casing as drill pipe and a bit

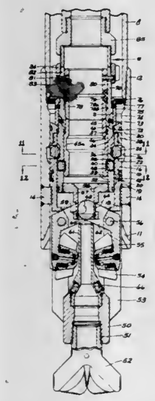
section which is bodily insertable and removable through the casing and releasably attachable thereto for rotation with the casing.

3,552,509
APPARATUS FOR ROTARY DRILLING OF WELLS USING CASING AS DRILL PIPE
Cicero C. Brown, c/o Brown Oil Tools, Inc. P.O. Box 19236, Houston, Tex. 77024
Filed Sept. 11, 1969, Ser. No. 857,046
Int. Cl. E21b *9/26*
U.S. Cl. 175—258 **11 Claims**



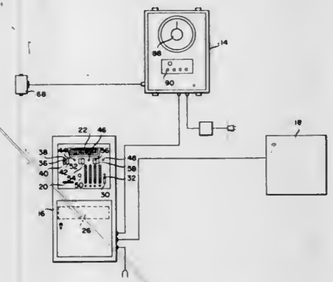
A drilling system employing casing as drill pipe and a bit section which is bodily insertable and removable through the casing and releasably attachable thereto for rotation with the casing.

3,552,510
APPARATUS FOR ROTARY DRILLING OF WELLS USING CASING AS THE DRILL PIPE
Cicero C. Brown, c/o Brown Oil Tools, Inc., P.O. Box 19236, Houston, Tex. 77024
Continuation-in-part of applications Ser. No. 803,911, Mar. 3, 1969, and Ser. No. 857,046, Sept. 11, 1969. This application Oct. 8, 1969, Ser. No. 864,747
Int. Cl. F21b *9/26*
U.S. Cl. 175—261 **12 Claims**



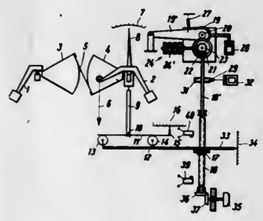
A drilling system employing casing as drill pipe and a bit section which is bodily insertable and removable through the casing and releasably attachable thereto for rotation with the casing.

3,552,511
METHOD AND APPARATUS FOR CALCULATING A PIECE COUNT BY WEIGHING CALCULATIONS
Robert L. Marcheso, Flanders, and Bohdan Lukaschewsky, Parsippay, N.J., assignors to Fairbanks Morse Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 25, 1968, Ser. No. 724,109
Int. Cl. G01g *19/00*
U.S. Cl. 177—1 **29 Claims**



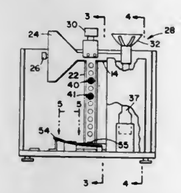
The piece count calculating method and apparatus operates to determine the number of pieces in a container or the number of pieces to be placed into a container by employing known values primarily provided by a weighing system to automatically calculate a desired unknown value. The basic weight values are converted to pulse signals and digital calculator techniques are utilized to accomplish the calculation with the ultimate result being expressed in whole numbers.

3,552,512
AUTOMATIC PRICE CALCULATION SCALE
Manfred Kammerer and Hans Schick, Ebingen, Germany, assignors to August Sauter KG, Ebingen, Germany, a partnership
Filed Mar. 4, 1969, Ser. No. 804,121
Claims priority, application Germany, Mar. 20, 1968, 1,774,008
Int. Cl. G01g *23/22*
U.S. Cl. 177—25 **17 Claims**



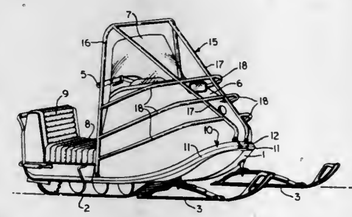
An automatic price calculation scale is disclosed, the scale including an inclination pendulum which is deflectable through an angle about a rotational axis in dependence on the weight to be measured. An elongated guide means is attached to the pendulum means and extends in a direction generally outwardly from the rotational axis thereof. Slide means are displaceably mounted in the guide means at an adjustable distance from the rotational axis of the pendulum means and a displaceable horizontally extending member is pivotally connected to the slide means and is mounted on a carriage means which is vertically displaceable. Angular deflection of the pendulum means brings about a horizontal movement of the horizontally extending member, the extent of the horizontal movement being indicative of and read as the total price of the object being weighed and further being a function of the angular deflection of the pendulum and the distance that the slide means is mounted from the rotational axis of the pendulum means determined by the vertical displacement of the carriage means. The vertical displacement of the carriage means is automatically undertaken in response to a base price scale for the object set on an electrical keyboard switching means.

3,552,513
COUNTING AND COMPUTING SCALES
James T. Sawyer, 5721 Tannahill Circle SE., Huntsville, Ala.
Filed Oct. 23, 1969, Ser. No. 868,746
Int. Cl. G01g *1/04, 19/41*
U.S. Cl. 177—25 **6 Claims**



A computing scales consisting of a generally T-shaped pendulum in which the pendulum is pivoted for suspension at the cross points of the "T," and range scaling of the scales is adjusted by the addition of weights at predetermined points along a vertical portion of the "T" below the pivot suspension point.

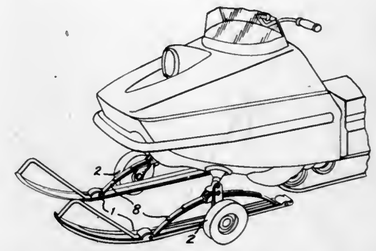
3,552,514
RETICULAR SHIELD FOR VEHICLES
James R. Alpers, Rte. 5, Box 482B; Blair Township; Grand Traverse County, Traverse City, Mich. 49684
Filed Sept. 6, 1968, Ser. No. 757,930
Int. Cl. B60r *19/00*
U.S. Cl. 180—5 **4 Claims**



A shield for protecting self-propelled vehicles, particularly off-the-road vehicles, and their occupants from damage or injury in the event of collision with an obstacle, which includes a reticular enclosure for the front, lateral and upper sides of the forward portion of the vehicle.

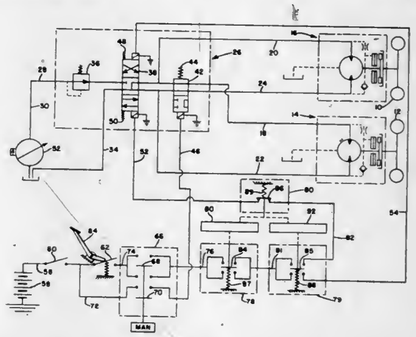
3,552,515
FRONT WHEEL DEVICE FOR SNOWMOBILES
Fujihiko Tomita, Shizuoka-ken, Japan, assignor to Yamaha Hatsudoki Kabushiki Kaisha, Shizuoka-ken, Japan
Filed Dec. 24, 1968, Ser. No. 786,604
Int. Cl. B62b *13/18*
U.S. Cl. 180—5 **10 Claims**

A front wheel device, for a snowmobile having a power driven endless track and a steerable ski, comprising a vertically elongated strut, a wheel journaled at the bottom of the strut, and a ski supporter. The upper end of the strut is removably mountable on the steering column, which pivotally suspends the steering ski under the body of the



snowmobile, with the ski supporter lifting the ski from ground engagement, thereby enabling steerage of the snowmobile by the wheel while running over snowless and ice-free roads and terrain.

3,552,516
MECHANICAL TRANSMISSION AND HYDROSTATIC FOUR-WHEEL DRIVE CONTROL INTERLOCK
Lawrence Ray Beard and Lewis Kie Davis, Waterloo, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Jan. 8, 1969, Ser. No. 789,774
Int. Cl. B60k *23/08*
U.S. Cl. 180—66 **4 Claims**

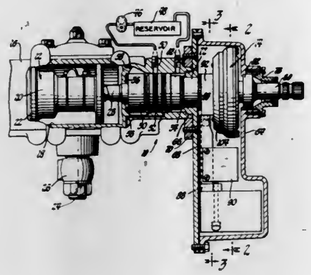


A four-wheel drive tractor having transmission means connected to the rear wheels, gear and range shift levers for manipulating the transmission to various modes of operation, a hydraulic pump and a pair of hydraulic motors for driving the front wheels, a solenoid-operated valve for controlling the operation of the hydraulic fluid motors, and electrical circuit means for controlling the current to said control valve and including a series of switches operated in response to movement of the gear and range shift levers to effect shifting of the control valve and thereby change the mode of operation of the fluid motors in response to changes in the modes of operation of the transmission.

3,552,517
VEHICLE POWER STEERING GEAR WITH LATERAL ACCELERATION FEEDBACK MEANS
Donald L. Nordeen, Orchard Lake, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 21, 1968, Ser. No. 769,005
Int. Cl. B62d *5/06*
U.S. Cl. 180—79.2 **6 Claims**

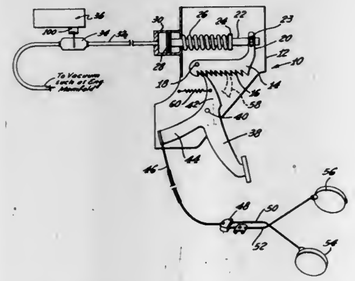
A vehicle power steering unit of the type including an output or pitman shaft, an hydraulic servomotor connected to

the output shaft, an input steering shaft and a pair of relatively rotatable hydraulic control valve elements each connected to one of the input and output shafts further incorporates a lateral acceleration feedback arrangement including a pendulum rotatably mounted within the steering gear housing and provided with a portion forming a sun gear in one of two planetary gear sets which are interconnected for torque transmission between the input and output shafts of the steering unit. Input shaft rotation steering the vehicle out of a straight line path into a curve is transmitted through the planetary sets and operates under road load on the output



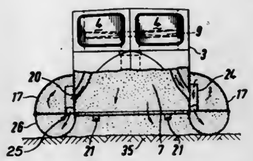
shaft to move the pendulum from an equilibrium position thereby deriving an artificial road "feel" commensurate with the amount of movement of the valve elements from neutral relation under the input rotation. Followup of the servomotor transmits through the output shaft and the planetary sets to return the pendulum to equilibrium position and the valve elements to neutral relation. With the vehicle in the curve, lateral acceleration centrifugal forces experienced in the vehicle operate on the pendulum causing it to apply a reaction torque on the input shaft proportional to the vehicle lateral acceleration.

3,552,518
VEHICLE ANTI-THEFT DEVICE UTILIZING THE PARKING BRAKE
Sam Aidner, 700 N. Arden Drive, Beverly Hills, Calif. 94710, and Anthony J. Russo, Los Angeles, Calif.
Filed Nov. 20, 1967, Ser. No. 684,268
Int. Cl. B60r *25/00*
U.S. Cl. 180—114 **8 Claims**



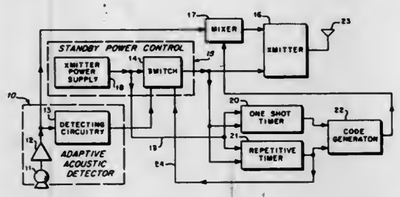
This invention relates to an antitheft device for use with an automobile of the type including a vacuum release parking brake mechanism. In the present invention a valve is included in the vacuum line which controls the release of the parking brake and a lock is coupled to the valve so as to control the operation of the valve. Specifically, the valve is controlled so that the vacuum does not release the parking brake when the lock is in the locked position. In a particular embodiment of the invention, the lock is a combination lock so that the operator of the automobile does not have to carry any additional keys.

3,552,519
AIR-CUSHION VEHICLES
Cedrick Hewer Wren, Whitstable, England, assignor to Curtis Dyna-Products Corporation, Westfield, Ind., a corporation of Indiana
Filed June 28, 1968, Ser. No. 740,920
Claims priority, application Great Britain, Sept. 4, 1967, 40292/67
Int. Cl. B60v *1/00, 1/16*
U.S. Cl. 180—124 **1 Claim**



An air-cushion vehicle has inflatable means confining the cushion, preferably in the form of a skirt, acting between the ground and the vehicle undersurface.

3,552,520
DETECTING AND TRANSMITTING SYSTEM WITH INTERVAL TIMING MEANS
Henry Nauberelt, Cherry Hill, N.J., assignor to the United States of America as represented by the Secretary of the Navy
Filed Feb. 27, 1968, Ser. No. 710,702
Int. Cl. G01l *1/08*
U.S. Cl. 181—0.5 **23 Claims**

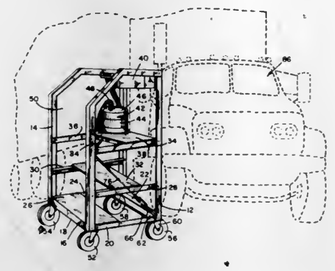


A detector provides a signal for switching on the power supply of a proximately positioned transmitter upon the detection of desired information. A signal representative of the desired information is transmitted and, at predetermined times thereafter, coded signature signals are produced for transmission, these latter signals being supplied by a code generator upon the receipt thereto of pulses from a one-shot and/or repetitive interval timer. The system consumes no power in the standby mode.

3,552,521
APPARATUS FOR WASHING LARGE VEHICLES
Ruben R. Tate, 126 S. Kaw, Bartlesville, Okla. 74003
Filed June 6, 1969, Ser. No. 831,134
Int. Cl. E06c *5/00*
U.S. Cl. 182—17 **7 Claims**

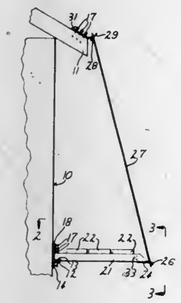
An apparatus for facilitating the washing of large vehicles such as tractor and trailer rigs and the like, comprising a rolling stairway having a liquid reservoir thereon and including a vacuum apparatus, if desired. The apparatus may be readily rolled into the desired position in the proximity of the large vehicle and the operator or service person may climb the stairs to the desired elevation in order to more easily reach the upper areas of the vehicle for cleaning thereof. The liquid reservoir may contain a suitable cleansing solution for

facilitating the washing operation for the serviceman. The wheels of the washing apparatus may be selectively locked



against rotation when the device is in position to preclude accidental rolling thereof when in use.

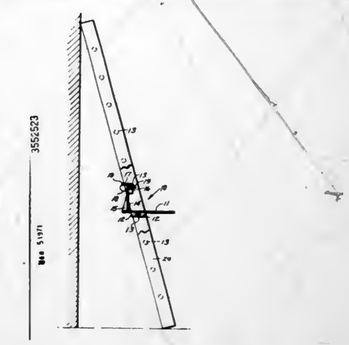
3,552,522
PORTABLE SCAFFOLD
Wilson H. Bobo, 44 Arlington Drive, Tuscaloosa, Ala. 35401
Filed May 13, 1969, Ser. No. 824,094
Int. Cl. E04g *3/08*
U.S. Cl. 182—82 **2 Claims**



A portable scaffold having horizontal support detachably connected to side of building. Lateral support is carried by horizontal support and projects therefrom to support load carrying members. Outer end of lateral support is detachably connected to one end of upstanding support with other end of upstanding support connected to stationary member.

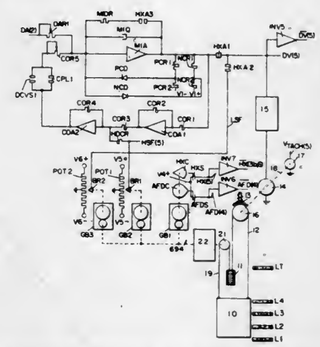
3,552,523
LADDER SCAFFOLD
Riley Jackson Berkley, 421 Prairie Lake Drive, Fern Park, Fla. 32730
Filed July 24, 1969, Ser. No. 844,499
Int. Cl. E06c *7/16*
U.S. Cl. 182—121 **4 Claims**

A device for attachment to ladders which will give the painter or other user a solid smooth surface to stand on. This device may be also used with a second one of similar construction, the both units being supported upon the rungs of



the ladder, one being used to stand upon and the other being used to rest paint or other material thereupon.

3,552,524
SPEED DICTATION APPARATUS FOR ELEVATOR MOTOR CONTROL SYSTEM
Sidney Howard Benjamin, Brooklyn, and Otto Albert Krauer, Tuckahoe, N.Y., assignors to Otis Elevator Company, New York, N.Y., a corporation of New Jersey
Filed Feb. 3, 1969, Ser. No. 795,842
Int. Cl. B66b *1/28*
U.S. Cl. 187—29 **9 Claims**

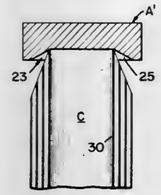


Speed dictation apparatus for a high-speed elevator motor control system which generates a time-controlled speed dictation signal to control the speed of the car in a predetermined manner so that it is accelerated at the same predetermined rate for any length of trip. A distance-controlled speed dictation signal is also generated. This is operable to control the speed of the car during its deceleration in a predetermined manner as a function of its distance from a selected landing at which it is to stop. The car is decelerated in substantially the same predetermined manner as it would be by the distance-controlled signal notwithstanding the continued generation of the time-controlled signal which would otherwise cause the motor to control the speed of the car in a different manner.

3,552,525
ENERGY ABSORBER
Conrad R. Schudel, Danville, Calif., assignor to Hexcel Corporation, Dublin, Calif., a corporation of California
Filed Feb. 12, 1969, Ser. No. 798,645
Int. Cl. F16f *7/12*
U.S. Cl. 188—1 **8 Claims**

An energy absorber wherein a tubular honeycomb member having a conically tapered end is collapsed by an anvil. The

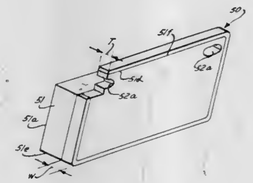
anvil has a concavity to accommodate the collapsed conically tapered end of the tubular honeycomb member and compresses the honeycomb energy absorbent member along a wave front which is substantially normal to the direction of honeycomb collapse.



3,552,526
BRAKESHOE CONSTRUCTION FOR DISK BRAKES

Freidrich Beuchle and Heinz Hahm, Frankfurt am Main, Hans Christof Klein, Hattersheim am Main, and Hans Albert Beller, Bad Vilbel, Germany, assignors to Alfred Teves GmbH, Frankfurt am Main, Germany, a corporation of Germany

Continuation-in-part of application Ser. No. 699,203, Jan. 19, 1968, now Patent No. 3,477,551. This application May 23, 1969, Ser. No. 827,186
Claims priority, application Germany, Jan. 28, 1967, T 33,098, T 33,099, T 33,100, T 33,101, T 33,102, T 33,103, T 33,104, T 33,105, T 33,106, T 33,107; Feb. 17, 1967, T 33,229
Int. Cl. F16d *65/02*
U.S. Cl. 188—73.1 3 Claims



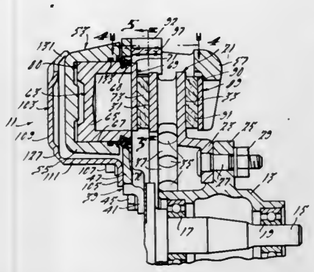
A brakeshoe construction for a disc brake in which a brake lining of ceramic or ceramiclike material is surrounded in whole or in part by a frame into the opening or window of which the brake lining extends. The frame surrounds a large step milled into the lining material. Guide apertures for the guide rods of a disc brake are formed integrally by lugs of the frame or web or are located within the frame.

3,552,527
DISK BRAKE CALIPER AND MOUNTING STRUCTURE

Edward J. Hayes, Livonia, Mich., assignor to Kelsey-Hays Company, a corporation of Delaware

Filed Oct. 31, 1968, Ser. No. 772,244
Int. Cl. F16d *65/02*
U.S. Cl. 188—73.3 8 Claims

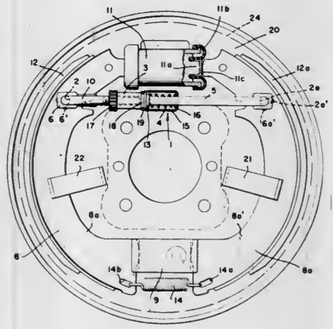
A sliding caliper-type disc brake embodying a torque plate having a pair of integral flanges that directly take the torque from one of the brake pads. The torque from the other brake pad is transmitted to the caliper and is taken from the caliper by a second pair of integral flanges of the torque plate. In addition, a flexible strap is connected to the caliper for positioning the caliper relative to the associated disc.



3,552,528
ADJUSTMENT DEVICE FOR A DRUM BRAKE

Hermann Seip, Bad Vilbel, Germany, assignor to Alfred Teves GmbH, Frankfurt Main, Germany, a corporation of Germany

Filed June 4, 1968, Ser. No. 734,449
Claims priority, application Germany, June 15, 1967, T34104
Int. Cl. F16d *65/56*
U.S. Cl. 188—79.5 10 Claims



An adjustment device for a drum brake comprises two coaxial portions, e.g. telescopically interconnected rods, one of which is variable as to length, and a restoring spring connecting the two portions and holding them in mutual abutment in a rest position of the brake while each rod is pivotally attached to one of the brakeshoes.

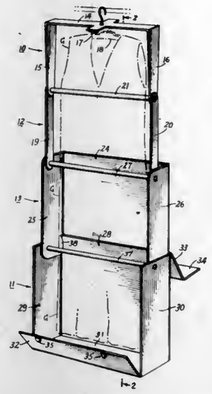
3,552,529
FOLDABLE GARMENT CONTAINER

Louis Marshall, Bronx, N.Y., assignor to General Utility Bag Corporation, Jersey City, N.J., a corporation of New York

Filed May 29, 1969, Ser. No. 829,011
Int. Cl. A47b *61/06*
U.S. Cl. 190—13 4 Claims

The invention embodies a foldable container structure particularly adapted for receiving clothing in full length depending condition and which folds into looped formation with the folding of the parts of the container structure to closed relation. The container structure includes a plurality of sections which are swingably connected together by crossbars in end to end relation and which successively decrease in size to

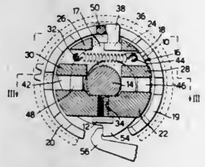
permit of the swinging of the sections into folded relation and the nesting of the sections in closed relation and with the clothing arranged in looped formation about the crossbars within the nested sections.



3,552,530
DOG CLUTCH

Alessandro Cortona, Banchette, and Giuseppe Calano, Mercenasco, Italy, assignors to Ing. C. Olivetti & C., S.p.A., Ivrea, Turin, Italy, a corporation of Italy

Filed Dec. 16, 1968, Ser. No. 783,864
Claims priority, application Italy, Dec. 19, 1967, 54,169/67
Int. Cl. F16d *11/02*
U.S. Cl. 192—28 3 Claims



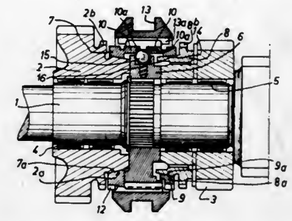
A dog clutch comprising; a rotatable driving member, a ring affixed to the driving member and having a plurality of axially extending teeth integral therewith, a rotatable driven member, and a coupling dog carried by the driven member and being movable radially of the ring for selective engagement between two of the teeth, so that when the coupling dog engages between two of the teeth to connect the driving member to the driven member, centrifugal force urges the coupling dog outwardly radially of the ring and thereby assists in keeping the coupling dog engaged between said two teeth.

3,552,531
SYNCHRONISED GEAR BOX

Albert Grosseau, Chaville, France, assignor to Societe Anonyme Andre Citroen, Berliet, Panhard, France, a corporation of France

Filed July 7, 1969, Ser. No. 839,358
Claims priority, application France, July 8, 1968, 3525
Int. Cl. F16d *11/00*; F16h *3/38*
U.S. Cl. 192—53 5 Claims

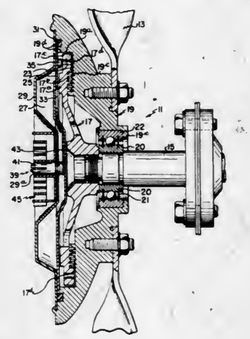
A synchronized gear box comprises a pinion rotatably mounted on a shaft and an externally toothed hub mounted for rotation with the shaft. The pinion includes a conical friction surface that is in permanent engagement with a conical friction surface of a synchronizing ring. A lug projecting axially from the ring is rotated in an axial groove in the hub whereby the ring is rotated with the hub, but has limited angular movement relative thereto. During rotation of the hub a ball movable in a radial passage therein is centrifugally forced into engagement with an axially inclined surface the lug thus thrusting the friction surface of the ring into driving engagement with the friction surface of the pinion. When the pinion and hub are rotating at the same speed teeth on the external surface of the synchronizing ring allow an internally toothed selector ring to slide over the synchronizing ring to positively connect the hub to the pinion.



3,552,532
FLUID COUPLING DEVICE

Vernon H. Thomas, Marshall, Mich., and Richard M. McGuire, Honolulu, Hawaii, assignors to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

Filed Aug. 12, 1968, Ser. No. 751,800
Int. Cl. F16d *31/08*, *43/25*
U.S. Cl. 192—58 2 Claims



A fluid coupling device includes relatively rotatable input and output members. The output member defines a working chamber in which a portion of the input member rotates, and a fluid in the working chamber transmits torque between the input and output members. A fluid reservoir is provided adjacent to the working chamber, and a flow of fluid is effected between the reservoir and the working chamber by operation of a flow control means. The flow control means includes a valve shaft located in an opening in the output member and an O-ring seal member provides a seal between the shaft and the output member. The seal has an external groove which abuts the surfaces of the output member surrounding the opening in which the shaft is disposed. The valve shaft is axially positioned in the opening by an annular groove formed in the valve shaft which receives an internal portion of the O-ring shaped seal member.

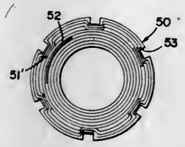
3,552,533
CARBONIZED FRICTION ARTICLE

Jacob Nitz, Solon, and Glenn R. Graham, Novelty, Ohio, assignors to Abex Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 1, 1968, Ser. No. 764,120
Int. Cl. F16d *13/60*
U.S. Cl. 192—107 12 Claims

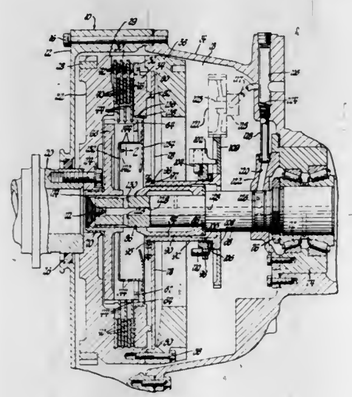
A friction article is a structural part (rather than just a fac-

ing) substantially entirely of carbon. The article is made up from sooner or later carbonized filaments which are bonded with an ultimately carbonized resin. For some operational



requirements it is appropriate to attach a wearing surface which could be carbon of a different sort or which might not be carbon.

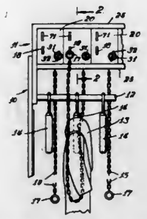
3,552,534
WET CLUTCH OIL SLINGER
Luther N. Kern, Berkley, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 23, 1968, Ser. No. 754,844
Int. Cl. F16d *13/72*
U.S. Cl. 192—113 **10 Claims**



The clutch shown has an oil slinger comprising an annular plate pressed or snap-fitted in a groove formed in the inside surface of the conventional clutch presser plate which rotates with the engine flywheel. The plate is made of solid sheet metal in order to serve as a wall of an oil reservoir or trough. The slinger further comprises a drum having one end flange thereof secured to the annular plate and a second radially inwardly extending flange at the other end serving as the other wall of the annular oil trough. The center portion of the drum is perforated, and oil which collects in the rotating trough is thrown outwardly through the perforations under the action of centrifugal force and confined between the flywheel and annular plate, providing continuous lubrication for the clutch plates or discs, regardless of whether the clutch is engaged or disengaged.

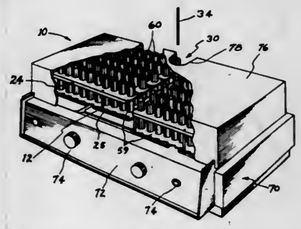
3,552,535
CONVERTIBLE COIN OPERATED LOCKING MECHANISM
Herman D. Strang, 308 Ridge St., Algonquin, Ill. 60102
Filed Jan. 22, 1969, Ser. No. 792,923
Int. Cl. G07f *5/00*
U.S. Cl. 194—74 **4 Claims**

A locking device capable of being readily converted from a coin controlled to noncoin controlled condition. A pivotal bolt shield is normally backed out of a bolt-blocking position by a coin which serves as a linkage element. This shield can also be retained in a swing-away position in which the bolt is



not blocked. When the shield is in the latter position, the mechanism does not require a coin to operate.

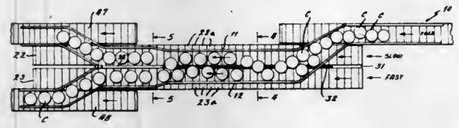
3,552,536
TEST SAMPLE CARRIER TRANSPORT APPARATUS
Robert J. Emary, Oberlin, Ohio, assignor to Gilford Instrument Laboratories Inc., Oberlin, Ohio, a corporation of Ohio
Filed Apr. 15, 1969, Ser. No. 816,360
Int. Cl. A47f *3/08*; B23q *5/22*; B65g *19/02*
U.S. Cl. 198—19 **14 Claims**



A table is arranged for transporting a plurality of test sample carriers in a manner to bring each sample into proper position at a testing station, stop a sufficient time to make the test and then move on to the next sample, repeating this until all samples have been tested. The samples are mounted on carriers which slide on the table. The table is rectangular so that each carrier is required to move in a generally rectangular path. Means are provided for supporting two columns arranged horizontally, each column consisting of a plurality of carriers. There is an endless flexible sprocket chain below the carrier-supporting table which has pins projecting above the table to engage suitable notches formed in the base of each carrier on the opposite long edges thereof. By suitable guide wheels, the flexible sprocket chain follows a path in which there are two inward excursions ending in dwell points, one for each column. The location of the pins and the geometry of the chain path are such that the lateral movement of the columns of carriers is stopped while the endwise movement of the front carrier of each column is effected, and this being done without stopping the continuous movement of the chain. In this way, the front carrier of each column may be translated endwise to leave a space for the next carrier to occupy, but without interference. The lateral movement and endwise movement of the carriers of one column are respectively opposite in direction to those of the other column. Suitable programming means activated by teeth or pins on the carriers stops the entire operation of the drive mechanism each time a sample reaches the testing station and starts the mechanism after the testing has been done.

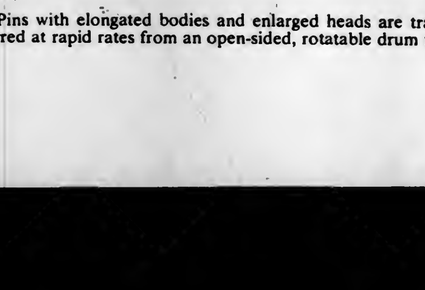
3,552,537
CONTAINER FLOW CONTROL CONVEYOR SYSTEM
Michael Vamvakas, Rocky River, Ohio, assignor to Barry-Wehmiller Company, St. Louis, Mo., a corporation of Missouri
Filed July 22, 1968, Ser. No. 746,371
Int. Cl. B65g *47/26*
U.S. Cl. 198—31 **10 Claims**

A conveyor system in which a plurality of conveyors are operated at predetermined speeds to move a stream of containers through a transition zone where the containers are controlled against jamming by divider means to organize the



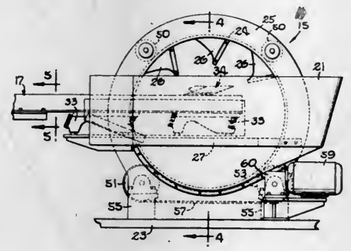
flow stream into at least two streams for purposes of feeding separate processing apparatus or for other purposes.

3,552,538
TURNOVER MECHANISMS
Henry Francis Triggs and Frnak Bert Lawton, West Drayton, England, assignors to Ryemor Engineering Limited, West Drayton, Middlesex, England, a British company
Filed May 24, 1968, Ser. No. 731,891
Claims priority, application Great Britain, May 25, 1967, 24390/67
Int. Cl. B65g *47/24*
U.S. Cl. 198—33 **2 Claims**



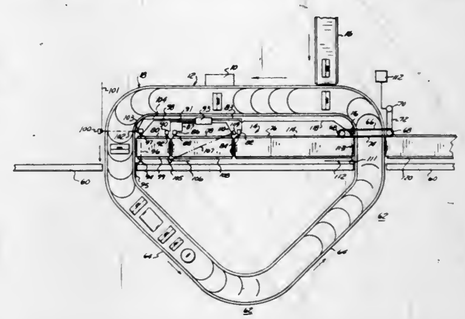
A mechanism for turning over relatively flat articles being advanced by a conveyor, which includes means for lifting the front of each article upwardly, when it reaches a predetermined point, to pivot about its rear edge resting upon the conveyor, means for engaging the rear edge to prevent sliding movement of the article in a direction opposite to the direction of motion of the conveyor, and support means for receiving the article when it overbalances about its rear edge, the said lifting means thereafter being lowered to control forward sliding movement of the edge, initially the rear one but now the forward one, of the article.

3,552,539
MACHINE FOR FEEDING WORKPIECES
Donald E. Rutter, Rockford, Ill., assignor to Dixon Automatic Tool, Inc., Rockford, Ill., a corporation of Illinois
Filed Sept. 6, 1968, Ser. No. 758,087
Int. Cl. B65g *47/24*
U.S. Cl. 198—33 **10 Claims**



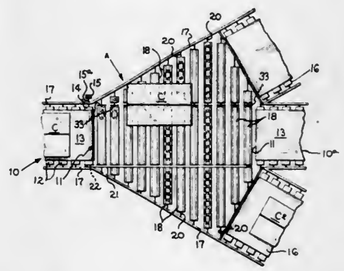
Pins with elongated bodies and enlarged heads are transferred at rapid rates from an open-sided, rotatable drum to a delivery chute as they gravitate along a multichanneled tray projecting into the open side of the drum to catch the pins. The tray is formed with a series of spaced slots which are sized to hold the heads of the pins while permitting the bodies to swing downwardly through the slots thereby to turn all of the pins into upright positions before the pins are delivered to the chute. The drum is rotatably supported and driven solely along its outer periphery to avoid obstructing and filling up the interior of the drum with supporting structure.

3,552,540
CONVEYOR SYSTEM FOR ARTICLES
Robert J. Piper, Detroit, Mich., assignor to Stearns Manufacturing Co., Inc., Flat Rock, Mich., a corporation of Michigan
Filed July 19, 1968, Ser. No. 746,125
Int. Cl. B07c *7/00*; B65g *37/00*
U.S. Cl. 198—102 **10 Claims**



A conveyor system for baggage including a main conveyor adapted to move bags through an area where they are displayed so that their owners may claim them. Those bags which are not removed pass on to and are returned to a point on the main conveyor upstream of the display area. Control means are provided for giving priority on the main conveyor to bags which are newly introduced to the system over those bags being returned by the secondary conveyor.

3,552,541
ARTICLE HANDLING APPARATUS
Darius O. Riggs, Ottawa Lake, Mich., assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Jan. 29, 1969, Ser. No. 795,121
Int. Cl. B65g *13/10*
U.S. Cl. 198—127 **14 Claims**



The present invention is a novel means for diverting cartons and similar articles after discharge from a conventional inclined roller or roller belt-type conveyor to one or more takeoff branch conveyors and comprises a set of driven carrier-rollers axially parallel to the rollers of the inclined con-

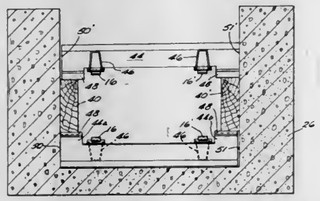
veyor, this set of carrier-rollers being positioned in a diverting area provided at a "break-point" in the inclined conveyor and extending across the normal "straight-through" conveyor path, as well as just ahead of the branch conveyor, there being a set of bidirectional supplemental rollers arranged circumferentially about the medial portion of the carrier-rollers and adjustable as to their axial position to divert cartons generally laterally onto groups of supplemental peripheral rollers mounted in the "end zones" of the carrier-rollers, these latter supplemental rollers having their axes fixed so that together with the force of gravity, they subject the cartons resting thereon, to both a slight retrograde and limited lateral movement and thereafter advance the cartons along a fixed side, or guide rail onto the branch conveyor.

3,552,542

PIT CLEANER AND ELEVATOR FOR ANIMAL HOUSES

William R. Comber, Holland, and Elmer J. Boer, Zeeland, Mich., assignors to U.S. Industries, Inc., a corporation of Delaware. by mesne assignments

Filed Feb. 1, 1968, Ser. No. 702,414
Int. Cl. B65g *19/10*
U.S. Cl. 198—174 **16 Claims**



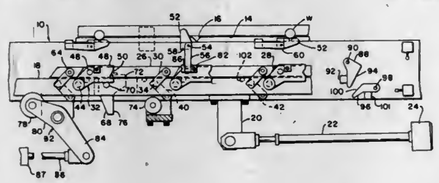
A plurality of mutually spaced scraper blades secured to an endless conveyor member comprising a pair of spaced chains, to be pulled thereby along the length of a manure pit in an animal or poultry house to clean such pit, wherein a raillike load-bearing member is rigidly secured to each side of such pit and each scraper blade has a runnerlike member arranged to slide along such rail when the blade is moved through the pit, in order to positively hold the blade downwardly with respect to the bottom of the pit and resist movement of the blade away from the pit bottom as a result of contact with relatively fixed obstructions. Each spaced scraper blade has a side extremity arranged to scrape a side of the pit, and the blades are arranged in an alternating fashion wherein successive blades scrape opposite sides of the pit. The conveyor chains are arranged in a waving, undulating pattern such that tension forces applied to the chains when the blades are pulled through the pit tend to straighten the chains from their undulating pattern and to bias the scraping side extremities of the blades against their respective sides of the pit, to facilitate scraping thereof.

3,552,543

ACCUMULATING LIFT AND CARRY CONVEYOR

Peter J. Manetta, Warren, Mich., assignor to Simplex Corporation, Detroit, Mich., a corporation of Michigan

Filed Sept. 30, 1968, Ser. No. 763,819
Int. Cl. B65g *25/04*
U.S. Cl. 198—219 **13 Claims**



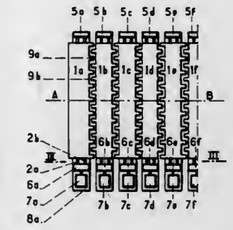
A conveyor for transferring articles from station to station in an operation which includes lifting the article, transporting it to the new station, and lowering the article into position. Means are provided to sense the presence or absence of an article at every station and to provide for advance of articles from every station in rear of the most advanced empty station.

3,552,544

VARIABLE SPEED CONVEYOR

Pierre Patin, 58, rue de Sevres 92, Boulogne-sur-Seine, France

Filed Mar. 20, 1969, Ser. No. 808,728
Claims priority, application France, Apr. 4, 1968, 147,042
Int. Cl. B65g *25/00*
U.S. Cl. 198—219 **12 Claims**



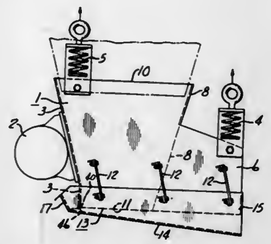
A variable speed conveyor comprising a series of closely-spaced oblong elements the upper faces of which form the conveying surface, each element extending transversely of the conveyor and being orbited rapidly in a plane perpendicular to said surface while remaining parallel to itself under the action of a drive unit, the drive units imparting to said elements orbital movements of vibratory nature which are progressively variable from the first element to the last one.

3,552,545

VIBRATORY HOPPER AND TROUGH COUPLED AS A TWO-MASS TUNED VIBRATORY SYSTEM

Byron King Hartman, 910 Lakeview Drive, Chicago, Ill.

Filed Feb. 27, 1969, Ser. No. 805,993
Int. Cl. B65g *27/00*
U.S. Cl. 198—220 **8 Claims**



A vibratory hopper and trough combination comprising a two-mass spring coupled system having one mode of vibration and tuned close to but less than the frequency of the applied vibratory force. One mass comprises an independently mounted bottom or discharge portion of the hopper and its contained material. The other mass is the trough for carrying the material away from the hopper discharge opening. The force generating means of the two-mass spring coupled system may be attached to either mass to produce a periodically varying force to keep the system in vibration. The frequency of the exciting force is variable to a maximum of approximately 90 percent of the natural frequency of the system, and thereby there is provided a method for controlling delivery rate of the material. This system provides vibration in the bottom portion of the feed hopper to insure free flow of material therefrom thereby eliminating auxiliary

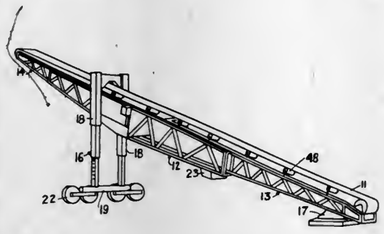
vibrators. Also eliminated by the present system are the auxiliary masses which were associated with tuned vibratory feeders of the prior art, such auxiliary masses being required in order to provide a reaction mass for the vibrated trough.

3,552,546

PORTABLE BELT CONVEYOR WITH RADIUS MOVEMENT AND HYDRAULIC TELESCOPING AND RAISING

James D. Rath, Cedar Rapids, Iowa, assignor to Pettibone Corporation, Chicago, Ill., a corporation of Delaware

Filed Nov. 4, 1968, Ser. No. 772,896
Int. Cl. B65g *15/26, 41/00*
U.S. Cl. 198—233 **20 Claims**



A very long belt conveyor is reduced to road transportable length by hydraulically telescoping both of its ends, drawing them under a section of roller way which is cammed up by them and lowered for the lowest possible center of gravity, and for lower clearance. The main frame is supported near a midposition by two-legged hydraulic standard. A "fifth wheel" on the lower end of the main frame can be lowered by hydraulically collapsing the standard, for resting on a tractor truck. Each leg is in three telescoping parts enclosing a hydraulic cylinder and piston combination also in three parts, the two legs being kept in step as they expand and contract by an endless chain for each coupled by a torque tube. At the foot of each leg a pair of tandem wheels is carried by an equalizer beam which in turn rocks in a yoke which may swing between a road travel position and a radius swing position, the yoke being carried by an extendable section hydraulically actuated for providing wide separation of the support points during operation and contracting to a legal spacing for road travel. To accommodate the geometric changes resulting from raising or lowering the conveyor while the wheels are in the radius swinging position. A swing-axis pedestal for the low end of the conveyor has a guide slot that shifts the lift axis correctly according to the changing slope of the conveyor. Both telescopic sections of the conveyor are moved simultaneously by a cable system which is actuated by a cylinder with a single piston projecting from both ends to pay out cable at one end while drawing it in at the other, one direction of movement tensioning the cable for retracting the telescopic sections and the other direction of movement tensioning the cable, or a different cable, for expanding the conveyor. Various safety features and other details are disclosed.

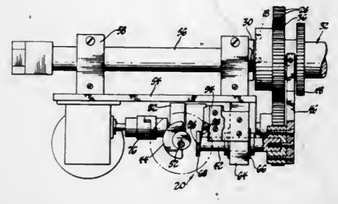
3,552,547

AUTOMATIC MOLD DISC CONTROL SYSTEM FOR A LINECASTING MACHINE

Gerald A. Fasse and Eugene A. Mychalowych, Warren, Mich., assignors to Booth Newspapers, Inc., Detroit, Mich., a corporation of Michigan

Filed Mar. 29, 1968, Ser. No. 717,305
Int. Cl. B41b *11/54*
U.S. Cl. 199—55 **10 Claims**

A mold disc indexing assembly for use with a linecasting machine assembly. The mold disc includes a plurality of molding cavities whereby the mold disc may be indexed to a position where a selected cavity is in an operative position for movement between casting and ejecting positions. The machine includes a main drive shaft and a driven member rotated thereby. A control member is axially shiftable on the main drive shaft between a first position in positive driven engagement through a pin and hole with the driven member and a second position in nondriven engagement with the driven member. The control member includes a control gear in meshing engagement with gear teeth disposed about the circumference of the mold disc. A biasing means urges the control member axially along the main drive shaft toward the first position wherein the pin is disposed in the hole so that the main drive shaft rotates the control member to rotate the mold disc. A forked member is operatively connected to the control member and is moved by a cam follower which is in turn moved by a cam. Upon rotation of the cam, the control member is moved between the first and second positions, the second position being for indexing the mold disc to move another selective mold cavity into position for movement between the molding and ejecting positions. A drive gear is in meshing engagement with the control gear on the control member and the drive gear is rotated by a motor through an electrically actuatable clutch. The end face of the control member has three holes therein and a recess extends circumferentially from each hole. There is a control means for rotating the cam and for engaging or activating the clutch and for sensing indexing movement of the mold disc whereby the cam is rotated to disengage the control member from driving engagement with the main drive shaft, and for activating the clutch so that the drive gear rotates the control member to index the mold disc. The control means also develops a warning signal for rotating the cam before the mold disc reaches the desired position so that the pin engages one of the recesses and slides therealong while being guided thereby to the desired hole. Thus, when the mold disc reaches the desired operative position the drive shaft will enter positive driving engagement with the control member precisely when the mold disc reaches the operative position. This prevents the mold disc from moving past the desired operative position. The control means includes a register for storing the desired position of the mold disc with a plurality of electronic gates being coupled to the register. The output of each of the gates is representative of a particular operative position of the mold disc.

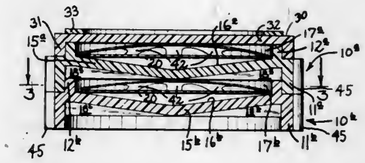


3,552,548

WAFER STORAGE AND SHIPPING CONTAINER

Victor C. Wallestad, Edina, and Joel A. Elftmann, Bloomington, Minn., assignors to Fluroware, Inc., Chaska, Minn., a corporation of Minnesota

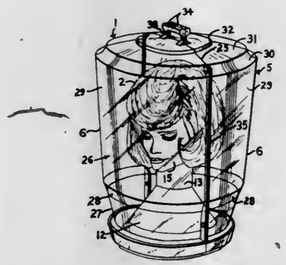
Filed Aug. 5, 1968, Ser. No. 750,104
Int. Cl. B65d *21/02, 81/08*
U.S. Cl. 206—1 **2 Claims**



A housing having a generally circular cross section with a wafer-receiving cavity therein and an opening having an inner dimension larger than the peripheral dimension of the wafer, an inner surface of said cavity which tapers inwardly from the outer edges thereof generally toward the center and

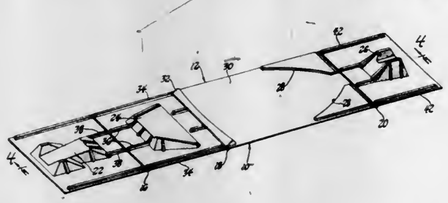
away from the opening so that only the outermost edges of the wafer touch the sides of the cavity, a spring having a generally semispherical shape positioned above the wafer to engage only the edges thereof and a cover or a similar housing affixed over the opening of the cavity in sealing engagement in abutting relationship with the central portion of the spring to hold the wafer relatively immovable.

3,552,549
WIG CONTAINER
Bertram T. Creese, Overland Park, Kans., Edgar M. Lieberman, and David Maslan, Kansas City, Mo., assignors to Mercantile Stores Company, Inc., New York, N.Y., a corporation of Delaware
Filed May 21, 1969, Ser. No. 826,636
Int. Cl. A45c *11/02*; B65d *7/12, 85/18*
U.S. Cl. 206—8 **10 Claims**



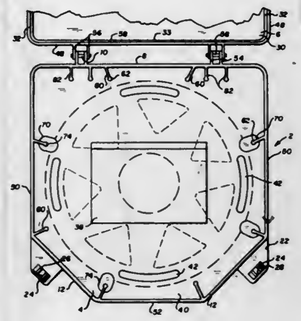
A wig container or case for carrying and displaying a wig or wiglet has a wig support structure with a generally cylindrical base and a wig or wiglet support portion extending upwardly from the base. The container or case has a pair of generally semicylindrical case or container portions which engage upper and lower surfaces of the base and enclose the wig support portion. Flanges extend radially outwardly from mating edges of sidewalls of each of the container portions and interengaging means associated with the flanges hold same together whereby the wig container may be lifted by a handle extending upwardly from cover portions of the case members.

3,552,550
INTERIOR PACKAGE
Hazen J. Carroll, Farmington, Mich., assignor to Carroll Container Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 6, 1968, Ser. No. 773,892
Int. Cl. B65d *85/30, 25/12, 5/50*
U.S. Cl. 206—46 **2 Claims**



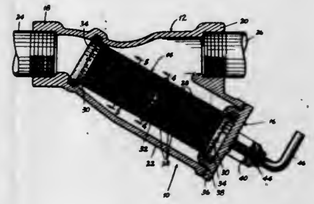
In a preferred form the present invention relates to a contoured plastic sheet that is foldable into an open-sided box type configuration encompassing an article to be packed, the folded sheet and article therein adapted to be inserted as a unit into a box having substantially the same size interior dimensions as the external dimensions of the folded sheet. In this manner the article to be packed is effectively suspended within the outer box or container and is not subjected to direct shock load transmitted through the wall of the container.

3,552,551
FILM REEL SHIPPING CASE
Norman P. Goldberg, Charles H. Cohen, Eugene D. Goalstone, and Seymour Goldberg, Denver, Colo., assignors to Goldberg Brothers, Inc., Denver, Colo., a corporation of Colorado
Filed Mar. 5, 1969, Ser. No. 804,425
Int. Cl. B65d *43/10, 85/67*
U.S. Cl. 206—52 **10 Claims**



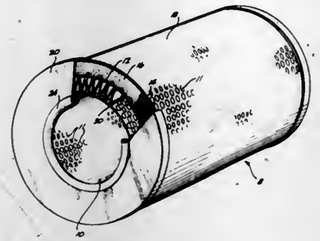
This invention relates to a film reel shipping case having a moulded body and lid hingedly attached thereto and releasably fastened at the corners remote from the hinges by bifurcated fasteners, the legs of which are normally spring-biased apart, but which can be squeezed together by normal finger pressure to release same. Inside the body are a plurality of integrally formed inwardly directed webs positioned to engage the circumferential margin of a shallow cylindrical reel can and hold same in spaced relation to the sidewalls. Removable spacers are also provided that slip onto certain of these webs and cooperate therewith to engage and hold the reel alone securely in place by taking up the space in the case ordinarily occupied by the reel can.

3,552,552
ROD-TYPE SCREEN FOR SUSPENSION FERTILIZERS
Douglas Johnston, Athens, Ala., assignor to Decatur Foundry & Machine Co., Inc., Decatur, Ala., a corporation of Alabama
Filed July 17, 1968, Ser. No. 745,508
Int. Cl. B01d *35/28, 41/04*
U.S. Cl. 210—447 **6 Claims**



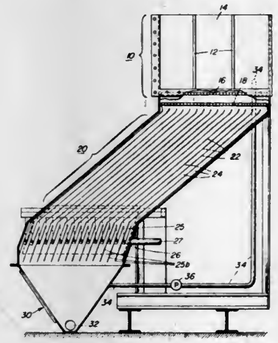
A liquid fertilizer strainer screen for efficiently screening suspension fertilizers to prevent clogging of nozzles and orifices handling the fertilizer comprising a plurality of small diameter rods equispaced about one-sixteenth of an inch apart mounted at each end in nylon rings to form a cylinder, said rods being reinforced substantially midway by a band of nylon that extends around the outside of the rods. The screen is disposed at an angle within and is a part of a fertilizer strainer, which also includes a casing adapted to be disposed in a liquid fertilizer line for straining the fertilizer as it passes through the screen.

3,552,553
DUAL MEDIA FILTRATION CARTRIDGE
James E. Reading, Sepulveda, Calif., assignor to Torite Enterprises, Inc., San Fernando, Calif., a corporation of California
Filed Oct. 6, 1967, Ser. No. 673,405
Int. Cl. B01d *27/06*
U.S. Cl. 210—484 **19 Claims**



A fluid filter cartridge which includes a dual stage filtration media, the first stage of which is a precleaner of depth medium composed of a foamlike material for removing contamination of a first predetermined fineness and a second stage surface medium which may be composed of a pleated paper or felt-type media which removes contaminations passed by the first stage filter. The cartridge is further characterized by the foamlike medium having convolute structural configuration on one surface thereof which causes the material of the foamlike medium to bear evenly on the pleated paper filter media.

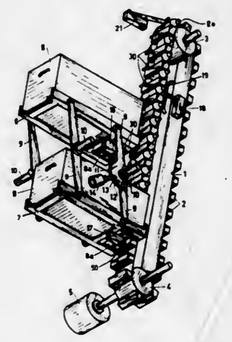
3,552,554
FLOW STABILIZING THROUGH LAMINAR SEPARATION APPARATUS
Gunnar Olgard, Nynashamn, Sweden, assignor to Rederiaktiebolaget Nordstjernan
Filed Sept. 15, 1969, Ser. No. 857,759
Claims priority, application Sweden, Sept. 20, 1968, 12,705/68
Int. Cl. B01d *21/10, 21/24*
U.S. Cl. 210—519 **18 Claims**



Apparatus for the continuous separation of material suspended in a liquid such as sewage or industrial waste of the type wherein the liquid passes down through a multiplicity of parallel, inclined units formed of parallel spaced inclined plates on which sediment deposits and then slides down as a layer with a layer of clarified liquid above it. Pockets attached to the underside of the plates receive the clarified liquid which is drawn off from them by discharge pipes at the bottom.

Vertical flow stabilization plates and also horizontal grids are provided in the inlet to said units to overcome cross flows and turbulences. In the sedimentation units, flow stabilization is accomplished by parallel spaced baffle plates extending in the direction of flow, and by transverse perforated plates in each unit to provide uniform suction across each unit, and by bypassing some clarified liquid with the sediment and recirculating it.

3,552,555
APPARATUS FOR CHARGING A TEXTILE MACHINE WITH CREEL BOBBINS OR THE LIKE
Rudolf Jenny, Horgen, Switzerland, assignor to Maschinenfabrik Schweiter AG., Horgen, Switzerland, a corporation of Switzerland
Filed June 28, 1968, Ser. No. 741,030
Claims priority, application Switzerland, July 27, 1967, 10,646/67
Int. Cl. B65b *21/02*
U.S. Cl. 214—307 **14 Claims**

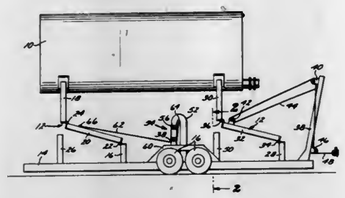


An apparatus for charging a textile machine with creel bobbins, or the like, especially a winding machine or loom, which is of the type comprising lifting means for the removal of bobbins from a supply container. The lifting means comprises a transport device, for instance in the form of an endless transport band or chain, arranged at an inclination with respect to the vertical. A pair of platform members are disposed in spaced and superimposed relationship with respect to one another. Means serve to mount the platform members so as to be displaceable relative to the transport device. These platform members are located transverse with respect to the transport device, for instance either substantially perpendicular thereto or in such a manner as to enclose an acute angle which opens towards the top. A respective supply container for the bobbins is removably mounted at each platform member. Each of the supply containers has an opening at the side facing the transport device. Further, positioning means controllable as a function of the depletion of bobbins in one of the supply containers and the loaded condition of the transport device with bobbins are operably connected with the platform members for bringing about in dependency upon one another an alternate positioning of the respective platform members and the respective supply containers located thereon at the transport device.

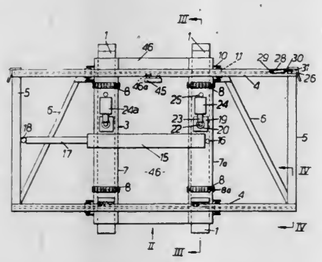
3,552,556
APPARATUS FOR TRANSPORTING AND LIFTING LOADS
Vriel A. Hall, 503 Presidio, San Clemente, Calif. 92672
Filed Jan. 15, 1969, Ser. No. 791,390
Int. Cl. B60p *1/02*
U.S. Cl. 214—512 **6 Claims**

This invention relates to wheeled load conveyances of the type having a load container to be elevated when the con-

veyance is not moving and is to be stabilized against movement. The embodiment shown in the drawing is incorporated in a portable water carrier which includes a vehicle frame mounted on wheels and a water tank mounted on the frame by a supporting structure which can be moved to elevate the load above the frame. A stabilizing structure is included to which the weight of the vehicle and the load can be transferred to remove that weight from the wheels. Force is applied to the movable supporting structure to raise the tank and this movement is utilized to transfer weight from the wheels to the stabilizing structure, which in this case is the frame itself. Force is applied by a block and tackle arrangement to raise the tank from the frame. A second block and tackle arrangement utilizes that movement, the relative movement between the frame and the tank, to accomplish relative movement between the wheels and the frame whereby to transfer the load between the wheels and frame.



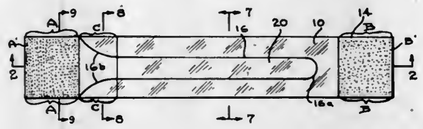
3,552,557
LIFTING APPARATUS
Alan William Green, Linslade, England, assignor to Lancer Boss Limited, Leighton Buzzard, England, a company of Great Britain
Filed Aug. 30, 1968, Ser. No. 756,570
Claims priority, application Great Britain, Sept. 4, 1967, 40380/67
Int. Cl. B66f *9/14*
U.S. Cl. 214—620 **9 Claims**



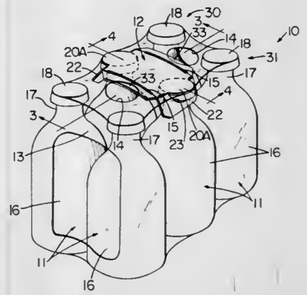
A load lifting attachment for a fork lift device comprising elements engaged by the forks, a frame mounted for relative movement on the elements, lifting devices on the frame and operable to engage a load from above, and power operated means to slew the elements on the forks, to move the frame transversely of the elements, and to cause the lifting devices to engage the load.

3,552,558
STERILE PACKAGE FOR CLINICAL THERMOMETERS AND THE LIKE AND METHOD OF MAKING IT
George W. Poncy, 59 Dale Drive, Chatham, N.J. 07928
Filed June 11, 1968, Ser. No. 736,218
Int. Cl. A61b *19/02;* **B65d** *85/08*
U.S. Cl. 206—63.2 **29 Claims**

A sterile, disposable, sheath and sheath cover for thermometers and the like, and method of making it, packaged so as to preserve the sterility of the sheath during handling and storage, the sheath cover comprising the packaging material being strippable from the sheath along a tear seal to expose the same for clinical use when a thermometer or the like is inserted into the sheath. The package is particularly designed for economical mass production.

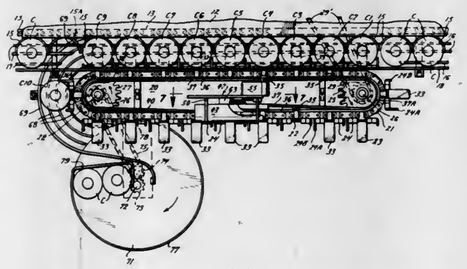


3,552,559
PACKAGE AND METHOD OF MAKING SAME
Thomas E. Kirby, Jr., Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Mar. 21, 1969, Ser. No. 809,110
Int. Cl. B65d *71/00, 85/62*
U.S. Cl. 206—65 **13 Claims**



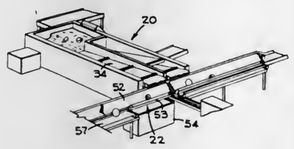
A package, and method of making same, comprised of a plurality of containers and a carrier held together by an overwrap which is shrunk therearound, the overwrap has a finger receiving opening therein adjacent one edge portion of the carrier enabling a finger to be inserted therethrough and engaged under the carrier for carrying purposes.

3,552,560
CONTAINER EJECTION SYSTEM AND APPARATUS THEREFOR
Momir Babunovic, Des Peres, and James R. Gender, Kirkwood, Mo., assignors to Barry-Wehmiller Company, St. Louis, Mo., a corporation of Missouri
Filed Feb. 28, 1969, Ser. No. 803,212
Int. Cl. B07c *3/02*
U.S. Cl. 209—73 **9 Claims**



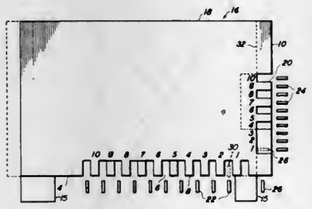
A system for handling containers while moving at high speeds in which there is provided apparatus for inspecting the containers for any of several characteristics which would require the rejection thereof as not suitable for processing, and apparatus cooperating with the inspection devices for removing the rejected containers from the stream of containers which pass one or more inspection stations. The apparatus includes means for creating a high speed series of container supports within the normal path of container motion and means by which the supports are selectively removed from the container path of normal travel so a rejected container can be dropped from the path for any reason and caused to move in a different path suitable for visual inspection.

3,552,561
AUTOMATIC SCULLERY APPARATUS
Erik I. Naslund, Santa Clara, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application Apr. 6, 1967, Ser. No. 628,957, now Patent No. 3,483,877. Divided and this application Dec. 23, 1968, Ser. No. 822,755
Int Cl. B07c
U.S. Cl. 209—73 **8 Claims**



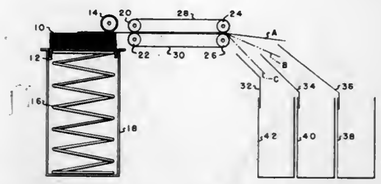
An automatic scullery system and individual components thereof comprising a debris sorter which utilizes two inclined perpendicular belts, one of which is of a wire mesh and is spaced from the second belt and a size sorter which uses fixed diverters or cams that overlie a conveying surface to divert plasticware items off the conveying surface according to their respective sizes and shapes.

3,552,562
RANDOM ACCESS RETRIEVAL SYSTEM
Morton Silverberg, Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Nov. 9, 1967, Ser. No. 681,688
Int. Cl. B07c *3/10*
U.S. Cl. 209—80.5 **3 Claims**



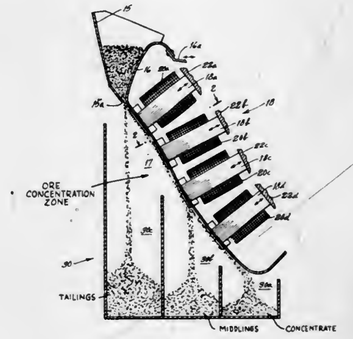
An edge-notched card retrieval system wherein a first group of interposer rods selectively and sequentially interrogate the code positions along one edge of a group of cards while a second group of interposer rods interrogate the code positions along another edge which is perpendicular to the first-mentioned edge. The coded card has at least two perpendicular edges bearing code notches and/or teeth. The code on one edge is the complement of the code on the other edge.

3,552,563
METHOD TO SORT CURRENCY
Philip N. Smith, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of South Carolina
Filed Dec. 9, 1968, Ser. No. 782,276
Int. Cl. B07c *1/16*
U.S. Cl. 209—115 **1 Claim**



Method to sort old and worn out currency which should be removed from circulation from currency which is either new or still usable by detecting the stiffness of the bill to sort the old currency from new currency.

3,552,564
FERROMAGNETIC ORE CONCENTRATOR AND METHOD OF PROCESSING ORES THEREWITH
John Ernest Burgener, Clarkson, Ontario, and Peter Mladenovich, Scarborough, Ontario, Canada, assignors to Burgener Technical Enterprises Limited, Ontario, Canada, a Canadian corporation
Filed Apr. 25, 1967, Ser. No. 633,473
Int. Cl. B03c *1/08, 1/24*
U.S. Cl. 209—214 **24 Claims**



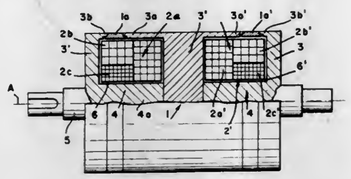
A ferromagnetic ore concentrator having an inclined, adjustable nonmagnetic plate, at the top portion and on one side of which is supplied particulate material, including ferromagnetic particles. One or more magnetic core structures are positioned on the other side of the plate to create a varying magnetic field in which the lines of force are predominantly in the direction of the normal downward movement of the particles past the plate. The magnetic field cyclically varies to and from substantially zero intensity, and is predominantly of a single polarity. Separated material is collected below the plate.

A magnetic circuit is utilized, characterized by a magnetic core having a "lossy" hysteresis loop. Primary and secondary coils are wound on the core and are magnetically coupled together, the primary coil being energized by alternating current and the secondary coil being included in a circuit which limits the flow of current substantially to a single direction, such as by a diode shorting the secondary coil.

3,552,565
MAGNETIC SEPARATOR

Lothar Fritz, 3 Waldstrasse 5159, Cologne, Germany

Filed May 22, 1968, Ser. No. 731,134
Claims priority, application Germany, May 23, 1967, F52,488; Mar. 12, 1968, F55,037
Int. Cl. B03c *1/02*; H01f *17/06*
U.S. Cl. 209—219 7 Claims

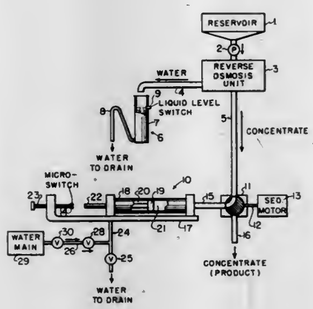


A suspended magnet, rotary drum, magnetic pulley or like separator or cobber for the recovery of magnetic materials from comminuted nonmagnetic materials and wherein a ferromagnetic coil constitutes part of the means for energizing a ferromagnetic circuit and also constitutes part of this circuit.

3,552,566
REVERSE OSMOSIS SYSTEM FOR CONCENTRATING LIQUID FOODS

Edison Lowe, El Cerrito, and Everett L. Durkee, El Sobrante, Calif., assignors to the United States of America as represented by the Secretary of Agriculture

Filed Feb. 18, 1969, Ser. No. 800,193
Int. Cl. B01d *31/00*
U.S. Cl. 210—86 5 Claims



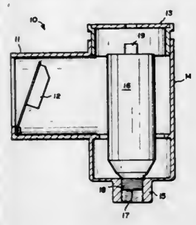
Process and apparatus by which concentrated products produced at high pressures within a reverse osmosis concentrator may be withdrawn at a predetermined degree of concentration and without damage to their intrinsic properties even though they exhibit non-Newtonian properties. The invention is of particular importance in preparing concentrated products from liquid foods such as juices, lacteal fluids, egg white, etc.

3,552,567
SKIMMER PROTECTOR

George F. Arp, 557 Whitney Road, Fairport, N.Y. 14450

Filed Jan. 7, 1970, Ser. No. 1,216
Int. Cl. E04h *3/20*
U.S. Cl. 210—169 6 Claims

A hollow, blow-molded body of resilient resin material is screwed into the intake pipe of a swimming pool skimmer to extend into the walled region of the skimmer to provide a

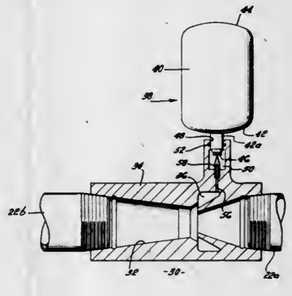


compressible body absorbing the expansion of ice during winter freezeup of the pool.

3,552,568
POOL CHLORINATION

Charles E. Wade, Covina, Calif., assignor to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California

Filed Nov. 22, 1967, Ser. No. 685,147
Int. Cl. E04h *3/20*
U.S. Cl. 210—169 4 Claims

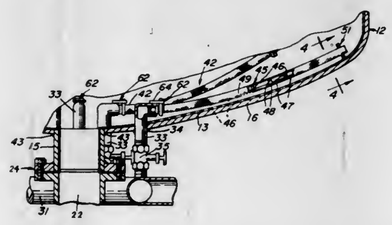


Pool chlorination is effected safely and swiftly by discharging pressurized Cl_2 into the pool water recirculation system from a pressure resistant container, suitably having a ruptureable closure arranged for directionally controlled release of the Cl_2 contents.

3,552,569
APPARATUS FOR PROCESSING MATERIALS

James F. Zievers, LaGrange; Russell W. Rietesel, Chicago, and Henry Jr. Schmidt, Hinsdale, Ill., assignors to Industrial Filter & Pump Mfg. Co., Cicero, Ill., a corporation of Illinois

Filed Aug. 30, 1967, Ser. No. 664,525
Int. Cl. B01d *33/30*
U.S. Cl. 210—189 10 Claims



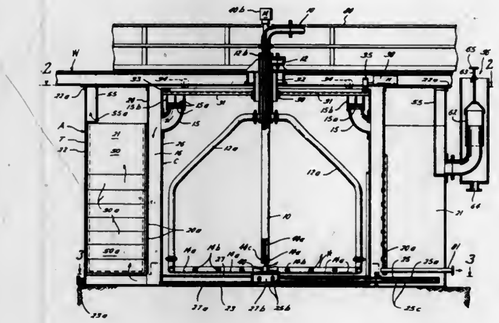
Apparatus for regenerating materials by an ion exchange process or the like includes a vessel having a sloping bottom

wall terminating in a material feed opening, a manifold connected to the central portion of the bottom wall of the vessel, and a series of radially extending perforated feed conduits communicating with the manifold and mounted in close proximity to the bottom wall within the vessel. The feed conduits extend radially from the manifold relative to the central axis of the vessel along its bottom wall so that regenerating fluid may be supplied to the vessel to regenerate the material contained therein.

3,552,570
LIQUID TREATING APPARATUS

Arthur W. Busch, Houston, Tex., assignor to Wastech, Inc., a corporation of Texas

Filed Oct. 20, 1969, Ser. No. 867,558
Int. Cl. C02c *1/12*
U.S. Cl. 210—197 9 Claims

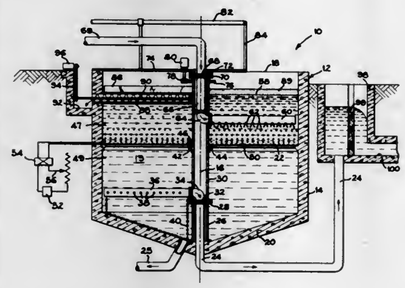


An apparatus for the biological treatment of dilute aqueous streams containing dissolved organic substances, or for other chemical or biochemical treatment of waste water or other liquids, wherein means are provided for controlling the process reaction rate of the liquid as it flows through the apparatus.

3,552,571
ELECTROFLOTATION APPARATUS

Peter J. Neuspiel, Chicago, Ill., and Milton Spiegel, Los Angeles, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed Oct. 1, 1969, Ser. No. 862,753
Int. Cl. B01d *21/24*
U.S. Cl. 210—221 6 Claims

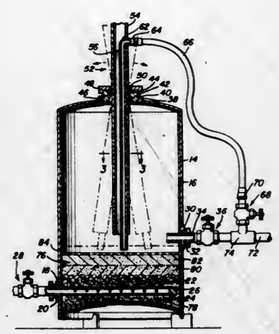


A cylindrical-shaped tank has a grate of electrodes disposed horizontally across the open circular cross section thereof and at least one distributor arm is mounted to revolve in a horizontal plane above the grate of electrodes for evenly distributing liquid to be treated. By electrolysis of the liquid, a uniform upward flow of gas bubbles is produced to lift suspended solids and immiscible liquid to the surface of the liquid within the tank, while clarified liquid sinks downward between the bubbles towards the bottom of the tank.

3,552,572
SEDIMENT TRAP

Cleophas L. Lehmann, 1123 6th Ave. S. E., Aberdeen, S. Dak. 57401

Filed July 23, 1968, Ser. No. 746,926
Int. Cl. B01d *29/38*
U.S. Cl. 210—271 10 Claims

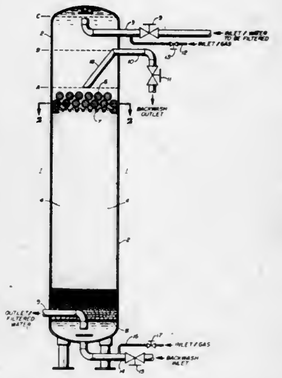


A sediment trap whose cleaning operation involves a siphoning action to be used on the surface of the filter bed to draw off accumulated silt and solids without disturbing the stratified layers of the filtering bed.

3,552,573
FILTERING APPARATUS

Isaac Paul Mail, Tulsa, Okla., assignor to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 737,721, July 17, 1968, now abandoned. This application Aug. 8, 1969, Ser. No. 857,266
Int. Cl. B01d *23/10*
U.S. Cl. 210—275 4 Claims



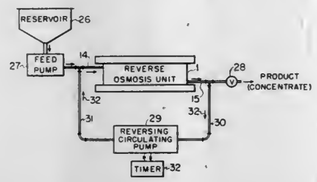
A vertical vessel has a filter bed disposed in its lower portion for normal filtering of solid particulates from contaminated liquid passed down through the bed. Vertical passages are formed to extend below the upper surface of the

filter bed with a layer of smooth-surfaced bodies arranged to reduce the cross-sectional area of the vessel to impart desired velocity to the particulates in the liquid.

3,552,574
REVERSE OSMOSIS SYSTEM

Edison Lowe, El Cerrito, and Everett L. Durkee, El Sobrante, Calif., assignors to the United States of America, as represented by the Secretary of Agriculture

Filed June 30, 1969, Ser. No. 837,480
Int. Cl. B01d *13/00*
U.S. Cl. 210—353 **1 Claim**

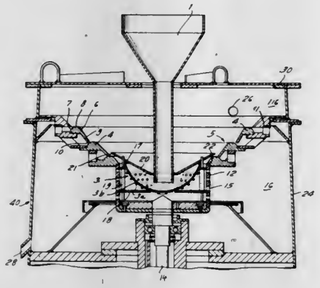


Reverse osmosis system provided with means for promoting turbulence and for scouring the membrane surface whereby to prevent concentration polarization and skinning (false membrane formation). These valuable results are attained by periodic movement of a plurality of free spheres in the interface zone, at or near the membrane surface.

3,552,575
CENTRIFUGE

Gunther Hultsch, Munich, Germany, assignor to Krauss-Maffei Aktiengesellschaft, Munich-Allach, Germany

Filed Dec. 2, 1968, Ser. No. 780,531
Claims priority, application Germany, Dec. 15, 1967, P1632304
Int. Cl. B04b *3/00, 7/08, 11/06*
U.S. Cl. 210—369 **14 Claims**

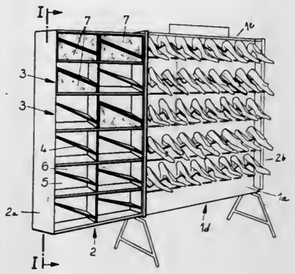


A centrifuge wherein a hollow apertured cylindrical carrier supports and rotates a primary and a secondary separating unit. The primary unit includes a perforated conical or semispherical bowl which is separably accommodated in the carrier and receives incoming material whereby some of the liquid fraction penetrates through the bowl and escapes through the carrier. The remainder travels upwardly beyond the open top of the bowl and travels along the upwardly and outwardly sloping inner annular surfaces of rings in the secondary unit. The solid fraction travels upwardly beyond the inner surfaces of successive rings. The liquid fraction adheres to such surfaces and flows along convex top surfaces and thereupon along downwardly and outwardly sloping outer surfaces of the rings.

3,552,576
DISPLAY UNIT

Joachim Lahr, Mozartplatz 4, Koblenz-Oberwerth, Germany

Filed Mar. 13, 1968, Ser. No. 712,854
Claims priority, application Germany, Mar. 18, 1967, L 561,049
Int. Cl. A47f *7/08*
U.S. Cl. 211—36 **5 Claims**

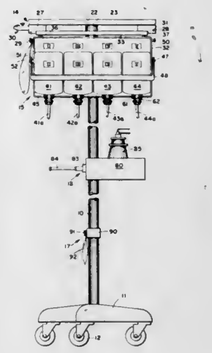


A unit for displaying and storing pairs of items for sale in which a storage unit is movably mounted within a display unit having front and rear panels and means for displaying one item of the pair attached to the panels.

3,552,577
APPARATUS FOR TRANSPORTING LIQUIDS

Allen Latham Jr., Jamaica Plain, Mass, assignor to Cryogenic Technology, Inc., Waltham, Mass., a corporation of Delaware

Filed Oct. 2, 1969, Ser. No. 863,122
Int. Cl. A47b *73/00*
U.S. Cl. 211—74 **11 Claims**

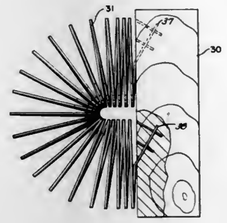


An apparatus for transporting liquids from one area to another while maintained in a predetermined order. Liquids for processing are contained in bottles or plastic pouches which are held in a carrier adapted to be slidably transferred to processing apparatus. The transport dolly is particularly suitable for use in processing human blood.

3,552,578
EXPANDABLE RETAINER

John C. Swingle, 643 W. Liberty St., Medina, Ohio 44246

Continuation-in-part of application Ser. No. 563,476, July 7, 1966, now Patent No. 3,391,794, dated July 9, 1968. This application Aug. 1, 1967, Ser. No. 657,641
Int. Cl. A47g *29/00*
U.S. Cl. 211—120 **5 Claims**

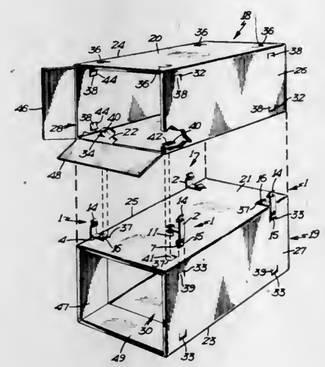


A letter or material holder made of a flexible resilient member in the form of a spiral and biased in a contracted position. Means are provided to secure the ends of the resilient member to allow it to expand and contract.

3,552,579
TILE CASE ASSEMBLY AND STACKING CLIP THEREFOR

Peter A. Simon, Leonard M. Paletz, Benjamin Fiterman, Mariyn D. Johnson, and Carl S. Ahlberg, Minneapolis, Minn., assignors to Safco Products Co., Minneapolis, Minn., a corporation of Minnesota

Filed Nov. 25, 1968, Ser. No. 778,706
Int. Cl. A47b *87/02*; F16b *12/10*
U.S. Cl. 211—126 **7 Claims**

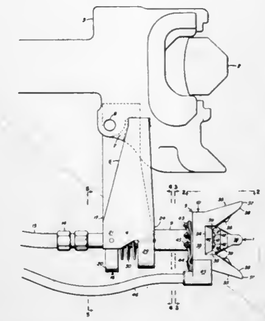


A flexible, T-shaped clip having retention shoulders projecting from the opposite ends of its elongated crossmember as well as from the free end of its central web section is utilized to hold a plurality of stacked fiberboard containers together by inserting the retention shoulders of the crossmember in aligned apertures of adjoining, vertical sidewalls of two containers and engaging the opposed shoulders on the horizontally extending web section in the abutting top and bottom walls of the two containers through apertures therein. Raised beads on the retention shoulders assist in holding them in locking engagement with the apertured walls of the containers.

3,552,580
AUTOMATIC TRAIN LINE CONNECTOR

Geoffrey W. Cope, Williamsville, N.Y., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed Feb. 19, 1968, Ser. No. 706,484
Int. Cl. B61g *5/10*; B61d *7/00*
U.S. Cl. 213—1.3 **11 Claims**

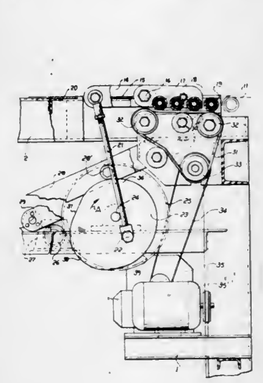


A connector suspendable from a mechanical railway coupler for automatically connecting train air and electric lines incident to mechanical coupling of adjoining railway cars, a coupler member of the connector having a head carrying gathering wings and normally yieldable held in coupling position but released therefrom and universally angleable on contact with a mating connector for aligning the heads and also having wedging surfaces on the head to compensate for wear.

3,552,581
UNIT TURNOVER SYSTEM

Pierre Gagnon and Pierre La Forest, Montreal, Quebec, Canada, assignors to Paco Corporation, Montreal, Quebec, Canada

Filed Oct. 1, 1968, Ser. No. 775,974
Int. Cl. B25j *3/00*; B65g *47/24*
U.S. Cl. 214—1 **11 Claims**

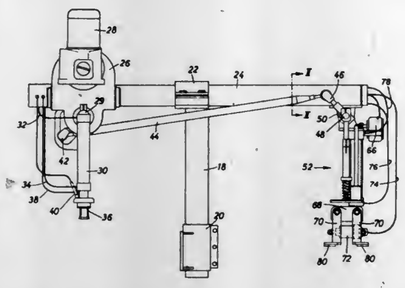


A turnover system for concrete blocks and the like units comprising two support members pivoted about a common substantially horizontal axis and means to oscillate said support members towards and away from each other and in such a way that the unit supported on a first member will be engaged by the second member before the unit has started to turn away from said first member under the action of gravity, whereby the units are gently turned on their sides without damage thereto.

3,552,582
APPARATUS FOR INVERTING FRAGILE ARTICLES

Klaus-E. Hanft, Selb, Bavaria, Germany, assignor to Gebruder Netzsch, Maschinenfabrik, Selb, Bavaria, Germany a corporation of Bavaria

Filed Apr. 7, 1969, Ser. No. 813,846
Claims priority, application Germany, Dec. 21, 1968, 1,816,787
Int. Cl. B65g 69/00
U.S. Cl. 214—1 9 Claims

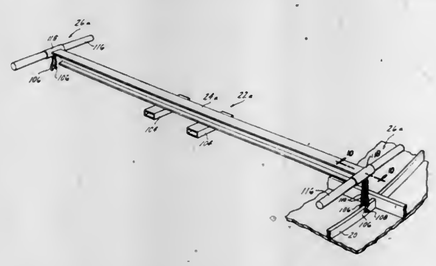


Apparatus particularly adapted for transferring or handling fragile articles such as ceramic beakers, cups and the like in which it is desired to take the articles from a production in one attitude and invert the articles and deposit them for subsequent manufacturing procedures in which a common support member pivotally supports at opposite ends power-operated handling and transfer assemblies in which one includes a fluid motor assembly and suction cup and the other includes a spring-urged base and gripping fingers, and in which a motor on the support member coordinates and causes the respective assemblies to move through a cycle including picking up or vertically depositing the fragile articles, and transferring the articles when the assemblies are disposed in a horizontal attitude whereby assemblies pivot in an arc of 90° respectively and the articles are inverted 180°.

3,552,583
PANEL ERECTION APPARATUS

Norman R. Toffolon, Plaineville, Conn. (22 Waterville Road, Farmington, Conn. 06032)

Original application May 10, 1967, Ser. No. 637,553, now Patent No. 3,462,025, Original application Sept. 26, 1966, Ser. No. 589,159, now Patent No. 3,333,322, Continuation-in-part of application Ser. No. 138,520, Sept. 15, 1961, now abandoned. Divided and this application May 23, 1969, Ser. No. 827,321
Int. Cl. B35j 3/00
U.S. Cl. 214—1 6 Claims

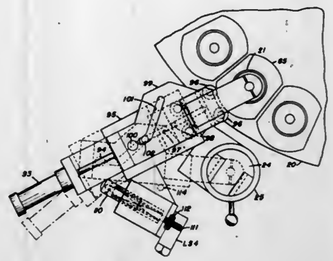


Apparatus for erecting prefabricated panels comprising a beam assembly for supporting counterbalancing similar panels at opposite ends and accommodating manipulation of the panels whereby they can be picked up, transported, and swung about one or more axes for erection in situ.

3,552,584
WORK HANDLING DEVICE

Robert G. Heinrich, Rochester, N.Y., assignor to Hamco Machine and Electronics, Corporation, Rochester, N.Y., a corporation of New York

Original application Jan. 3, 1968, Ser. No. 606,908, now Patent No. 3,492,762, dated Feb. 3, 1970. Divided and this application Mar. 24, 1969, Ser. No. 809,499
Int. Cl. B65g 59/04
U.S. Cl. 214—8.5 6 Claims

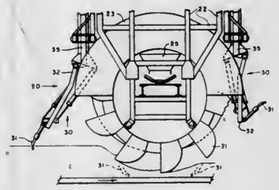


A device for handling thin, waferlike elements and by which such elements can be transferred discretely from a supply stack to a rotatable carrier and from said carrier to a receiving stack. The transfer is accomplished by a mechanism that is operated in timed relation to the rotation of the carrier and by means of a vacuum that is applied for a period of time sufficient to effect the transfer. The mechanism includes an arrangement of members whereby one of the members is maintained in a path of movement that is the same as that of said element when on said carrier. During such maintenance period, the element is deposited on the carrier or removed therefrom.

3,552,585
CLEAN UP MECHANISM

Imre Adler, Vernona, N.J., assignor to Hewitt-Robins Incorporated, Stamford, Conn.

Continuation of application Ser. No. 669,891, Sept. 22, 1967, now abandoned. This application Oct. 20, 1969, Ser. No. 867,950
Int. Cl. B63b 27/00
U.S. Cl. 214—14 6 Claims

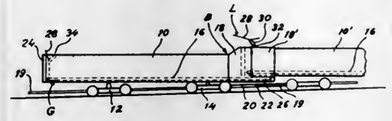


This invention relates to an improvement in an unloading system having a bucket wheel unloader and a backhoe-type cleanup device which can scoop the material into a position where it can be picked up by the rotating bucket wheel. The improvement consists of having the cleanup device vertically movable relative the bucket wheel and in providing a control means which will limit the maximum downward force which can be exerted by the cleanup device on the bottom of the barge.

3,552,586
SHUTTLE TRAIN

Gunnar Elisson Edlund, Bonassund, Sweden, assignor to Aktiebolaget Hagglund & Soner, Ornskoldsvik, Sweden, a corporation of Sweden

Filed Feb. 20, 1969, Ser. No. 801,015
Claims priority, application Sweden, Feb. 21, 1968, 2237/1968
Int. Cl. B65g 67/10, 15/22
U.S. Cl. 214—38 5 Claims

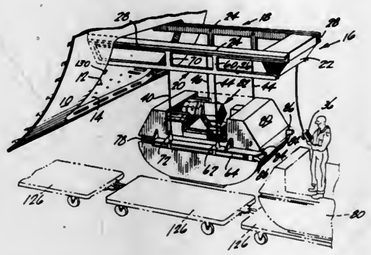


A shuttle train consists of a plurality of cars, each car having a conveyor extending along the entire length of the car and inclined toward its rear end, each car further having a widened rear end adapted to receive the front end of the following car, so that the cars can be telescoped one into the other, the conveyors partially overlapping each other and cooperating with separating walls having projections slidable along the upper edge of the car body.

3,552,587
POWERED HOIST-BAGGAGE CONTAINER HANDLING SYSTEM

Robert A. Warren, Long Beach, Calif., assignor to McDonnell Douglas Corporation, a corporation of Maryland

Filed Apr. 16, 1968, Ser. No. 721,729
Int. Cl. B60p 1/54
U.S. Cl. 214—75 4 Claims



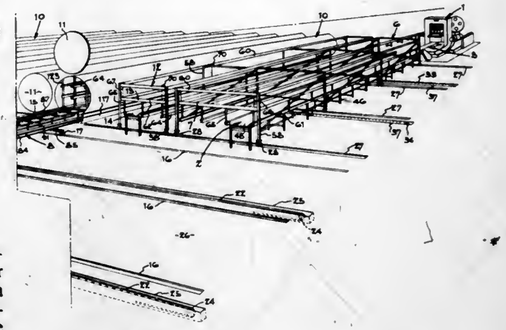
A cargo handling system to place cargo load supporting elements in the fuselage of a vehicle comprising a hoist mechanism supported by the vehicle which automatically places within the vehicle or removes therefrom the load supporting elements. The hoist mechanism includes a two position latching system which in the first position affects automatic securing to the load supporting element and in the second position is not secured to the load supporting element.

3,552,588
TRANSFER MECHANISM FOR BLOCK HANDLING APPARATUS

William E. Todd, Cincinnati, Ohio, assignor to The E. W. Buschman Company, Inc., Cincinnati, Ohio, a corporation of Ohio

Filed Apr. 30, 1968, Ser. No. 810,038
Int. Cl. B25j 5/02
U.S. Cl. 214—89 2 Claims

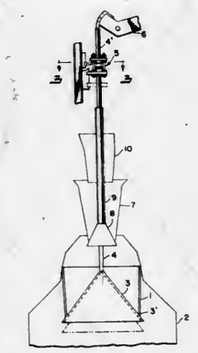
A transfer device that is composed of a mobile frame that spans a first conveyor. The frame is movable in a direction transverse to the first conveyor. A load lifting means is vertically movable within said frame from a position straddling the first conveyor to a position above the first conveyor. The lifting means being capable of engaging a load that has accumulated on the first conveyor as it moves from its straddling position to a position above the first conveyor. The frame moves the load transversely to the first conveyor and the lifting means is then lowered to deposit the load on a second conveyor adjacent and parallel to the first conveyor.



3,552,589
PROCESS FOR MAINTAINING PRESSURE TIGHT SEAL ON BLAST FURNACE BELLS

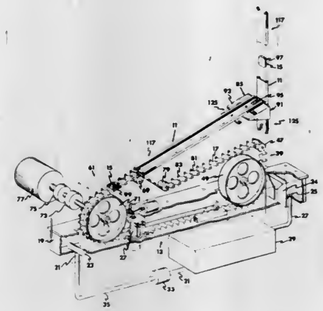
Stephen W. Wheeler, Youngstown, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey

Original application Dec. 6, 1965, Ser. No. 511,835, now Patent No. 3,372,918, dated Mar. 12, 1968. Divided and this application Mar. 4, 1968, Ser. No. 752,400
Int. Cl. C21b 7/18; F27b 1/20
U.S. Cl. 214—152 3 Claims



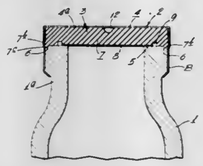
The disclosed process involves the method of grinding or pulverizing any material which may collect on the bell of a blast furnace and thereby might prevent close contact of the bell with the bell seat. This method comprises imparting to the bell a rotational force just prior to the contact of the bell with the bell seat and thereby this motion of the bell as it comes into contact with the bell seat effects a pulverizing of such material and permits the bell to come into a pressure tight contact with the bell seat.

3,552,590
MAGAZINE FOR USE WITH AN INTEGRATED CIRCUIT TEST APPARATUS
August A. Zachmeier, Joppa, Md., assignor to AAI Corporation, Cockeysville, Md., a corporation of Maryland
Filed Oct. 18, 1967, Ser. No. 676,136
Int. Cl. B65b *21/02*
U.S. Cl. 214—301 **2 Claims**



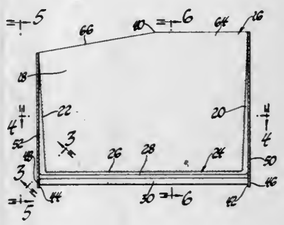
A magazine and an environmental test chamber and transport apparatus with which it may be used are disclosed for sequentially and automatically testing a plurality of packaged integrated circuits. A plurality of packaged integrated circuits loaded in a magazine are fed into an input section of the test apparatus and onto a transport tape when the loaded magazine is inserted into the input section. After being fed onto the transport tape, the movement of the tape carries the packaged integrated circuits into a nonconductive, temperature controlled, liquid bath and into a test assembly which is submerged in the bath. Upon entering the test assembly, each packaged integrated circuit undergoes a series of computer-controlled tests to determine its electrical characteristics. When the tests are completed, the transport tape carries the packaged integrated circuits from the test assembly and out of the liquid bath to a discharge section of the test apparatus where they are ejected into an empty magazine inserted into the discharge section of the test apparatus.

3,552,591
PIERCEABLE CLOSURE FOR MEDICINE BOTTLES
Hans Wimmer, Vicht, Germany, assignor to The West Company, Phoenixville, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 779,544, Nov. 27, 1968, now abandoned. This application Dec. 10, 1969, Ser. No. 880,483
Claims priority, application Germany, Nov. 27, 1968, 1,566,542
Int. Cl. B65d *41/20, 41/50, 41/22*
U.S. Cl. 215—37 **9 Claims**



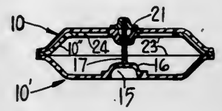
A medicine bottle closure that can be stuck through, with a flanged cap and with a sealing disc, which is made of at least two different materials and which is anchored on the front face of the bottle mouth, characterized in that a sealing disc 3 which seals the flat front face 5 of the bottle mouth 1*a*, which is made with a bevel-off 6 of its outer rim, consists of a layer, preferably of a Teflon disc 8 or of a similar foil, which covers the bottle opening and approximately half the bottleneck front-face 5 annular area delimited by its outer and inner diameters, and consists of an elastomeric gastight covering disc 7 which covers the bottle opening and the entire front face, upon the middle zone of which disc is applied the Teflon disc 8 and characterized in that this covering disc 7 carries at its outer rim, as an anchorage, a ridge 7*b* that fits the bevel 6 at the outer rim of the bottle mouth.

3,552,592
MATERIAL HANDLING TRAY
Larry R. Hartman, Kalamazoo, Mich., assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed May 1, 1969, Ser. No. 820,791
Int. Cl. B65d *1/00, 1/34*
U.S. Cl. 220—1 **6 Claims**



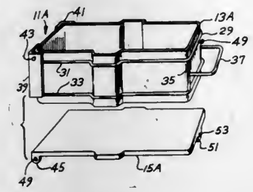
Material handling apparatus comprising a one-piece molded plastic tray for receiving articles, packages and other material fed to the tray manually or by a conveyor such as in grocery store checkout counters and the like. The tray is molded in one piece from ABS (acrylonitrile-butadiene-styrene) resins and is formed with two substantially parallel sides and an end wall with an unobstructed entrance end for receiving articles or material fed to the tray. The tray is formed in such a manner that it has no sharp corners at the junctions between the side and end walls and the bottom wall, the plastic material of the tray providing a low friction surface for receiving and collecting articles and packages.

3,552,593
NESTABLE CONTAINER
Alexander Szopo, 346 Suydam St., New Brunswick, N.J.
Filed May 29, 1969, Ser. No. 829,081
Int. Cl. B65d *11/00, 21/00*
U.S. Cl. 220—4 **3 Claims**



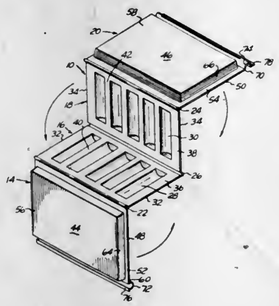
A nestable container consists of a lower dish-shaped vessel made of sheet material and having a central opening, with another similarly-shaped upper vessel superimposed in lip-to-lip abutment over the lower vessel which also has a central opening. An inwardly hollowed boss covers the opening on the inside of the lower vessel, and a vertically directed screw is attached to the boss, and it extends through the opening in the upper vessel. On the inside of the upper vessel, a boss covers the opening, and it has a central hole through which the screw projects. A nut, having a raised center portion, is screwed on the end of the screw to keep the entire package together for holding nuts, candy, etc., or even screws, nails, and the like. An improved package has a third similar inverted vessel, with the central portion removed, sealed at the edges to the lower vessel, to form an open container. In this case, the first-mentioned inverted container is used as a cover and closing means.

3,552,594
COMPUTER CARD CARRYING BOX
David W. Lewis and George L. Falkenhagen, Charlottesville, Va; assignors to Leo J. Aubel, Deerfield, Ill.
Filed Sept. 11, 1968, Ser. No. 759,180
Int. Cl. B65d *7/24*
U.S. Cl. 220—8 **1 Claim**



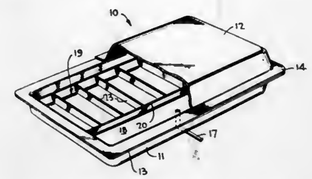
A computer card box is disclosed for storing and carrying computer (IBM) cards, the card box being readily expandable and having pockets for accommodating a band which holds the cards.

3,552,595
A ONE-PIECE FOLDABLE PROTECTIVE CONTAINER FOR ARTICLES
George Loyd Gerner, 121 Blairsalen Ave., Carmel, Ind., and William L. Brickson, 4363 Monitor Dr., Indianapolis, Ind.
Filed Feb. 19, 1969, Ser. No. 800,401
Int. Cl. B65d *25/00*
U.S. Cl. 220—16 **10 Claims**



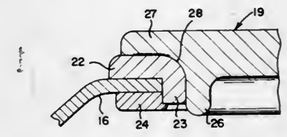
Four panels, preferably of resilient synthetic sheet plastic material, are hingedly connected to one another along successive edges thereof. The two inner panels are hinged to each other and provided with aligned pairs of article-receiving recessed portions facing one another, the recesses of each inner panel being spaced laterally apart from each other and from the edges of that panel. The outer panels are hinged to remaining edges of the inner panels and are dished to fold into margin-to-margin engagement with the inner panels so as to completely enclose the folded inner panels but to remain spaced away from the walls of the recessed portions thereof. In one form of the invention (FIGS. 1 to 4) the hinged connections between the various panels are along mutually parallel edges of the panels. In a modification thereof (FIGS. 5 to 7), the hinged connections between the outer and inner panels are along edges which are perpendicular to the hinged connection between the inner panels.

3,552,596
GAS TANK
James E. Landon, 2526 E. Avalon Dr., Phoenix, Ariz. 85016
Filed Sept. 9, 1968, Ser. No. 758,480
Int. Cl. B65d *25/04, 7/02*
U.S. Cl. 220—22 **1 Claim**



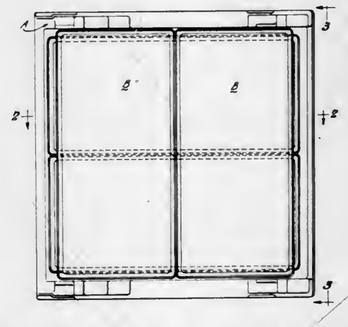
A motor vehicle gas tank designed to have a reserve section so that, as the gas is fully drained in the area of the gas feed means, a sufficient quantity of gas from the reserve section will be made to spill over into the feed area when the motor vehicle is braked or when the tank is otherwise tilted.

3,552,597
EASY OPENING CONTAINER
Jens L. Moller, Westmont, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 3, 1969, Ser. No. 788,863
Int. Cl. B65d *17/20, 17/24, 39/00*
U.S. Cl. 220—53 **7 Claims**



A three component easy opening ends structure for a metal container. The easy opening structure comprises a two-piece bonded lip bounding an opening formed in the container. A closure member is releasably bonded to the lip and separable therefrom upon the application of a pulling force.

3,552,598
CARRIER CONTAINER AND INSERT COMBINATION
James D. Wilson, Long Beach, Calif., assignor to Banner Metals, Inc., Compton, Calif., a corporation of Ohio
Filed Dec. 20, 1968, Ser. No. 785,513
Int. Cl. B65d *21/04;* **A47f** *3/14*
U.S. Cl. 220—23.83 **5 Claims**

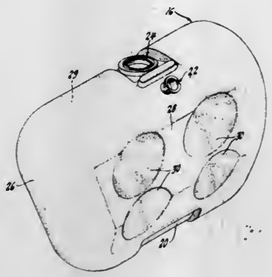


The invention relates to an improved plastic container combination in which a nestable-stackable container serves as a carrier for a stack of nestable-stackable trays.

3,552,599
BLOW MOLDED FUEL TANK

Harry L. Redding, Pontiac, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Sept. 12, 1968, Ser. No. 759,302
Int. Cl. B65d *11/22*
U.S. Cl. 220—72 2 Claims

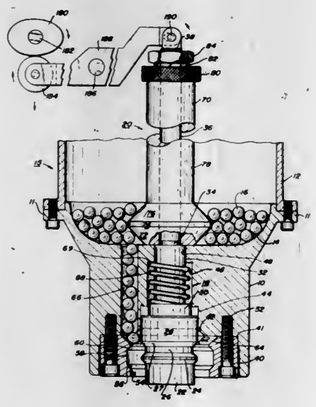


In preferred form, a plastic automobile fuel tank with truncated conical projections formed within two opposite sides of the fuel tank and extending into the fuel tank interior, the adjoining truncated ends of two oppositely directed projections being fused together to impart rigidity to the fuel tank by the formation of hourglass-shaped columns through the fuel tank interior and being provided with a notch to initiate a parting path between the fused projections allowing the fuel tank to expand without rupturing if excessive internal pressure occurs. The aforementioned columns in cooperation with the sides of the fuel tank serve to reinforce the tank against internal and external forces that would undesirable distort the tank.

3,552,600
DISPENSER FOR LIKE-SIZED BALLS

Howard S. Hoffman, Livingston, N.J., assignor to G & H Mechanical Laboratory, Inc., Wayne, N.J., a corporation of New Jersey

Filed Oct. 7, 1968, Ser. No. 765,367
Int. Cl. F16c *43/06*
U.S. Cl. 221—1 15 Claims

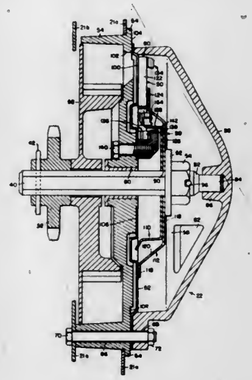


A dispenser for a determined number of like-sized balls includes a stationary housing and bowl wherein balls from the supply in the bowl are fed single file through one or more vertical passageways or guides to an abutment ring adjacent a vertical spindle. This spindle is vertically disposed and is slidably mounted in the housing wherein it is reciprocated to an upper and lower limit of movement. At its upper limit of movement the spindle brings a receiving groove in way of the balls resting on the abutment ring with this groove receiving one ball from each vertical guideway. This abutment ring cooperates with the groove to provide a restriction which permits only one ball from each guideway to flow into the receiving groove. The balls in this groove are carried downwardly by the spindle until at its lower limit of movement the balls in the receiving groove are brought in way of a discharge outlet whereby the balls are dispensed in a determined pattern from the apparatus. At every full or complete cycle of spindle reciprocation one ball is received and dispensed from each vertical passageway.

3,552,601
SEED SELECTING MECHANISM

Harold Valentine Hansen, Cordova, Lester Carl Wolf, East Moline, Virgil Robert McCumber, Moline, and Robert Leroy Chidester, East Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Apr. 12, 1968, Ser. No. 720,950
Int. Cl. B65h *3/28*; A01c *5/00*
U.S. Cl. 221—219 23 Claims



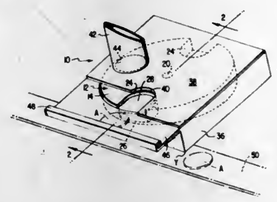
A seed selecting mechanism for a planter, the mechanism having a plurality of seed selecting fingers carried by a rotatable finger holder. Each finger, when passing through a supply of seeds, engages a seed and subsequently slides it along a plate until it discharges the seed through an aperture in the plate. The seed selecting finger is provided with a seed engaging portion having two separate cell-forming portions. The surface of the plate is provided with two depressed areas which cause extra seeds engaged by the selector to drop back to the seed supply prior to discharge.

3,552,602
ARTICLE TRANSFER DEVICE

David C. Duncan, II, 780 Norman Place, Westfield, N.J.

Filed Apr. 18, 1969, Ser. No. 817,456
Int. Cl. B65g *59/10*
U.S. Cl. 221—235 10 Claims

An article transfer device including a rotatable wheel having at least one recessed pocket therein, an ejecting member disposed within the pocket and biasing means normally urging the ejecting member upwardly out of the pocket. A plate extends partially over the wheel and articles are gravitationally fed individually through an opening in the plate and into the pocket. As the wheel rotates, the article introduced into the pocket is sandwiched between the ejecting member and the underside of the plate and the biasing means are compressed. As the pocket rotates beneath a cutaway portion of the plate, the ejecting member ejects the article out of

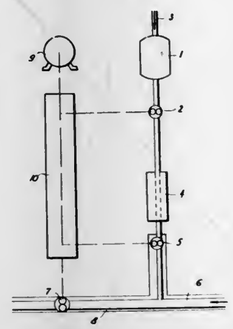


the pocket, under influence of the biasing means, and the article is directed onto a guide ramp.

3,552,603
DEVICE FOR THE FEEDING OF MIXTURES INTO MELTED MASSES OF SYNTHETIC POLYMERS

Pavol Hrivnak; Koloman Ondrejmiska; Amadeus Pechar, Svit, and Jan Koren, Poprad, Czechoslovakia, assignors to Vyskumny ustav chemickych vlakon, Svit, Czechoslovakia, a firm

Filed Dec. 26, 1968, Ser. No. 792,197
Int. Cl. B67d *5/60*, *5/62*
U.S. Cl. 222—1 9 Claims



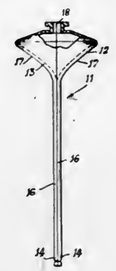
Apparatus for feeding mixtures to molten masses of synthetic polymers which comprises a storage container for the mixtures to be fed, a first unheated feed pump connected thereto, a supply line from said first unheated feed pump to a heating member, a second heated feed pump connected to the heating member, a feed inlet for the molten mass, said inlet connected to said second heated feed pump and downstream thereof, a third feed pump for the molten mass of polymer downstream of said second heated feed pump and said feed inlet, and a transfer mechanism from which each of the said three pumps is driven. The apparatus is useful for adding pigmented pastes as well as other dispersions and liquids to polymer melts, including such materials as antioxidants, modifiers, softeners, and others. Polymers used may include polyolefins, polyesters and polyamides.

3,552,604
CONTAINER WITH ELASTIC MEMORY TOWARDS SQUEEZED POSITION

Richard A. Gordon, 95 W. 3rd St., Freeport, N.Y. 11520

Filed Apr. 9, 1968, Ser. No. 720,001
Int. Cl. B65d *35/28*
U.S. Cl. 222—95 6 Claims

An integrally molded squeezable plastic tube is shown which has a body which is made of material having a "memory" and includes a pair of opposed walls. The walls are so molded so that they normally assume their squeezed position. Each of the walls has a pair of opposite end portions. An intervening portion extends downwardly from each of the end portions. The adjacent end portions at each end of the opposed walls are joined to one another. The adjacent intermediate portions extending from one end portion of the walls are molded so that they are normally in closely adjacent relationship with one another while the adjacent intermediate portions extending from the opposite end portion of the walls are molded so that they are normally spaced from one another. An exit opening within the tube is provided adjacent



the junction between the normally spaced walls and a cap is provided normally closing the exit opening.

A method of making the tube described above is also shown. This includes the steps of obtaining a mold which has a dividing member which is formed with a relatively narrow elongated portion at one end thereof and a widened portion at the opposite end. A liquid thermoplastic material is molded about the dividing member and allowed to harden. The formed tube is then removed from the mold.

3,552,605
DROP DISPENSER WITH VENT

Gary L. Hein, Decatur, Ill., assignor to Lincoln Laboratories, Inc., Decatur, Ill., a corporation of Indiana

Filed Sept. 9, 1968, Ser. No. 758,409
Int. Cl. B65d *37/00*
U.S. Cl. 222—207 2 Claims



A manually operable drop dispenser for biological fluids is provided by a conical plastic cap having a restricted drop defining tip at its apex and shaped to provide flattened, opposed pinch surfaces intermediate the ends of the cap. A closable vent hole is provided in one of the two pinch surfaces and operates to vent expanding heated air from within the cap so as to prevent inadvertent discharge of liquid that is retained in the restricted drop-defining tip of the dispenser.

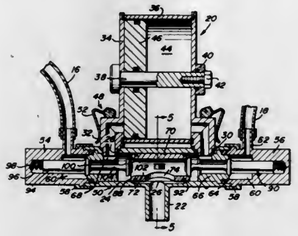
3,552,606
LIQUID METERING DISPENSER

Russell E. Kraft, Fort Lauderdale, Fla., and William E. Kallas, Punxsutawney, Pa., assignors to Beverage-Air Company, a corporation of Delaware

Filed Dec. 11, 1967, Ser. No. 689,620
Int. Cl. G01f *11/04*, *11/08*
U.S. Cl. 222—249 12 Claims

Liquid under pressure within a bulk container is dispensed in measured quantities through a valve assembly having an

actuated valve element engageable with a pair of spring-biased valves to control inflow and outflow from opposite sides of a piston within a fluid-measuring chamber. The measuring chamber is remote from or removably clamped to the

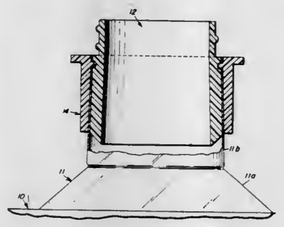


valve assembly which includes a tubular valve body closed at opposite ends by closure caps that slidably mount the spring-biased valves and connect the valve assembly to the pressurized container.

ERRATUM

For Class 222—276 see:
Patent No. 3,552,623

3,552,607
POUR-SPOUT CLOSURE FOR PLASTIC CONTAINER
Edgar Burley Edwards, Warren, Pa., and Rudolf Karl Andrew Kreidel, Norwalk, Conn., assignors to Techs Incorporated, Warren, Pa., a corporation of Delaware
Filed July 8, 1968, Ser. No. 743,115
Int. Cl. B65d *5/74*
U.S. Cl. 222—566 **10 Claims**



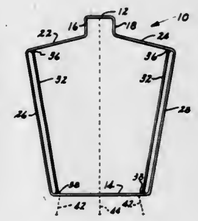
A thin-walled plastic inner container or liner is provided for use with a fiber or steel protective outer container. The wall is uniformly thin and the liner may be blow molded. It is desired to place the outlet in the end and adjacent a corner or a side to permit ease of pouring from the container. A neck is molded with the thin walled liner and is approximately of the same thickness. It has a first frustoconical portion integral with container and an outer frustoconical portion to the latter of which is attached the pour-spout that may have a removable screw cap closure. The outer neck portion has a frustoconical inward taper of about 1½° from bottom to top. An annular nozzle member or pour-spout has an outer wall that is frustoconical with an approximate 1½° taper and its inner wall is parallel thereto. The neck portion is smaller than the pour-spout and is stretched to receive the pour-spout therein. Adjacent the upper end of the pour-spout in its outer surface is an annular recess or notch and above this recessed end is a reduced externally threaded outer end. Forced over the outer neck portion that is in place on the outside of the pour-spout is a locking-compression ring having its inner wall of frustoconical shape and like taper to the outer wall of the outer neck portion and installed pour-spout. There is an annular inwardly extending bead adjacent the upper end of the locking-compression ring and it locks the liner outer neck portion into the recess on the pour-spout. The upper end of the locking-compression ring has an outwardly extending flange that is scalloped and assists in assembly as well as positioning of the container under a filling spout for filling the container. An internally threaded closure screw cap is threadedly received on the end of the pour-spout.

3,552,608
PRESSURIZED CONTAINER FOOD VALVE
Charles R. Sperry, Arlington, and Roger L. Gibson, Lowell, Mass., assignors to Synectics Development Corporation, Cambridge, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 623,061, Mar. 14, 1967, now abandoned. This application Nov. 12, 1968, Ser. No. 775,592
Int. Cl. B67d *3/00*
U.S. Cl. 222—516 **1 Claim**



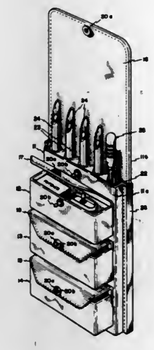
A pressurized container valve for particulate matter and the like having a rotatable sphere with a diverging aperture extending nondiametrically therethrough. The sphere is contained in a sleeve with a seal between the sphere and sleeve across a diameter of the sphere. The seal is shaped to provide or is associated with means to effect a shearing action at the inner end of the aperture. A wire finger interconnects the spherical gate and sealing means for controlled actuation of the gate.

3,552,609
GARMENT HANGER
Abraham Alpert, 19941 Ardmore Ave., Detroit, Mich. 48235
Filed Mar. 27, 1968, Ser. No. 716,394
Int. Cl. A47f *7/19*
U.S. Cl. 223—93 **6 Claims**



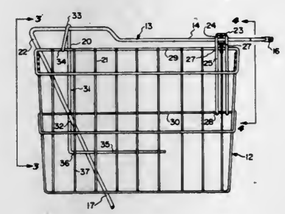
A soft goods garment support device, wherein a frame is formed of substantially the same configuration as the garment to be displayed thereon, the said frame having a resilient member disposed along at least one upstanding edge thereof for the support of the garment when said garment is positioned therearound, with the excess material in said garment being disposed between said resilient member and the frame so as to provide a neat, aesthetic and ornamental display of the garment.

3,552,610
CARRIER FOR AMMUNITION AND ACCESSORIES FOR SMALL-BORE RIFLES
Lloyd A. Coleman and Ann G. Coleman, both of 3772 South 9th East 51, Salt Lake City, Utah 84106
Filed Feb. 14, 1969, Ser. No. 799,415
Int. Cl. F42b *39/02*
U.S. Cl. 224—17 **8 Claims**



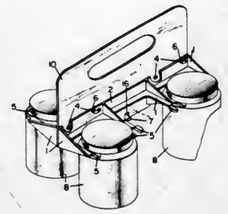
A carrier for ammunition and accessories for small-bore rifles including a full-length pouch partitioned into a plurality of longitudinal, full-length compartments for the storage of tubular cartridge dispensers and a jointed cleaning rod, and a plurality of storage pockets attached to the outside of one wall of the full-length pouch for storage of conventional cartridge boxes and gun-cleaning accessories. The carrier may be adapted for carrying from the waist on a belt.

3,552,611
BICYCLE SADDLE BASKETS
Mahlon J. Smith, Niles, Mich., assignor to Androck Incorporated, Worcester, Mass., a corporation of Massachusetts
Filed Oct. 8, 1968, Ser. No. 765,801
Int. Cl. B62j *9/00*
U.S. Cl. 224—32 **3 Claims**



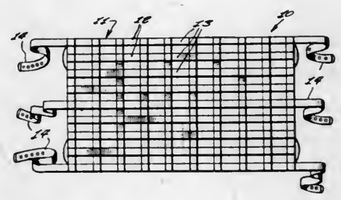
Each saddle basket has an interfitting slip connection with the rear end of the luggage carrier consisting of a generally V-shaped portion on the carrier rack in a substantially vertical plane that fit inside a transversely disposed loop provided on the inner side of the basket, these interfitting wire parts being springable so that a resilient wedging action is obtainable when the basket is forced forwardly prior to the fastening of a clamp means provided on the forward portion of the basket, fastening the basket to the luggage carrier rack. Thus, the basket can be attached to or removed from the bicycle in a few minutes and, therefore, need not be an incumberance on the bicycle when it is not going to be used.

3,552,612
RACK STRUCTURE
Howard A. Greis, Holden, Mass., assignor to Control Molding Corporation, Staten Island, N.Y., a corporation of New York
Filed July 11, 1968, Ser. No. 744,224
Int. Cl. B65d *85/62*
U.S. Cl. 224—45 **2 Claims**



The invention is a rack structure made of molded plastic, wire or sheet metal, which on one face has a series of arms into which the necks of a group of jars, bottles or similar capped cans can be snapped to hold them in a row. On the other side of the structure are a series of hooks which permit the rack to be mounted into the holes in the perforated board which is commonly used for storage walls or display racks, or into a single wall-mountable bracket. The rack structure is also fitted with cavities such that when two of them are mounted back-to-back with a cardboard, sheet plastic, or wire handle between them or otherwise locked to them, the hooks on one rack mate with the cavities on the other so that the assembly forms a multiple container carrier.

3,552,613
SPORTSMAN'S CARGO NET
Walter A. Nye, 700 Gum St. Bldg. 35 - Apt # 2035, Anchorage, Alaska
Filed July 30, 1968, Ser. No. 748,683
Int. Cl. B60r *11/00*
U.S. Cl. 224—42.46 **2 Claims**

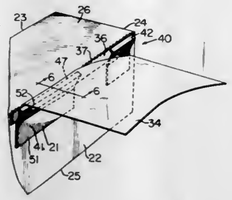


A cargo net attachable between opposite gunnels of a canoe or boat so as to transport cargo in an elevated position above the boat or canoe bottom thereby preventing the same from being wet by any water in the bottom of the vessel.

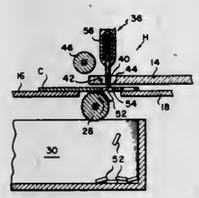
3,552,614
PROTECTIVE SHIELD FOR SHEET MATERIAL CUTTER
Calvin L. Wilson and John H. Fox, Jr., Chesterfield County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 2, 1968, Ser. No. 764,581
Int. Cl. B26f *3/02*
U.S. Cl. 225—20 **9 Claims**

A protective shield for the cutting edge of a sheet material cutter wherein such shield has a protective portion which is

normally resiliently held in a protective position over such cutting edge and is adapted to be engaged by the sheet material and displaced from its protective position during a normal cutting operation and upon completion of the cutting operation is resiliently returned to its protective position.

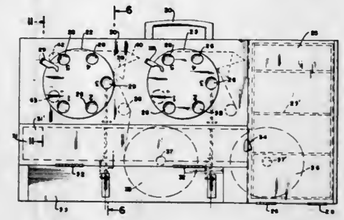


3,552,615
SCORING DEVICE FOR PUNCHING AND REMOVING CHIPS FROM COMPUTER PUNCH CARDS
Robert H. Murray, 2412 Lancaster Court, Falls Church, Va.
Filed July 9, 1968, Ser. No. 743,564
Int. Cl. B26f *1/04, 1/32*
U.S. Cl. 225—97 **38 Claims**



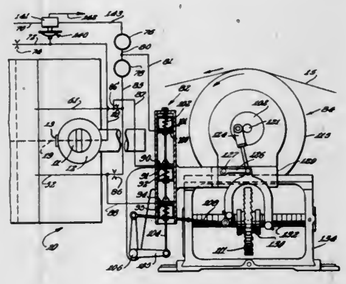
A scoring device for punching and removing chips from computer punch cards comprising a card support means, a cover means for said card support means, said card support means and cover means forming a slot for receiving a computer punch card, means associated with said card support and cover means for guiding a card between said card support and cover means, means mounted beneath the card support means for collecting the chips, means for aligning a card in initial predetermined position within the slot, means in the cover for receiving a punch, means associated with the support means cooperating with the punch means for holding the chips against the punch during the movement of the punch, means cooperating with the punch for advancing the card from the initial predetermined position to a second predetermined position, and means for limiting the travel of the punch during punching operations.

3,552,616
TICKET DISPENSER
Vern K. Mason, 2542 Clover Drive, Grand Forks, N. Dak.
Filed June 28, 1968, Ser. No. 741,046
Int. Cl. B26f *3/02;* **B65h** *17/04*
U.S. Cl. 225—103 **6 Claims**



The invention is a ticket dispensing device comprising a rectangular box with a pair of rotatable dials mounted thereon, means in response to said dial to feed the selected number of tickets out the forward end of said device, and out of the confines of the box and to sever the ticket from the ticket roll, a handle for carrying said box from place to place, a cash compartment within said box for making change for the purchase of said tickets, said box having a pivotally mounted panel adjacent said dials for providing access to said cash compartment.

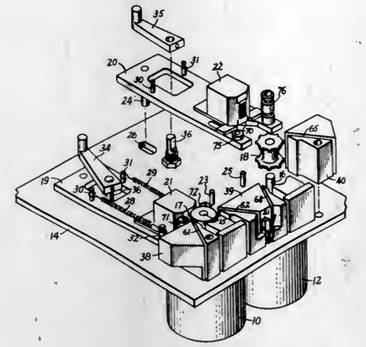
3,552,617
FLUID SENSING AND AMPLIFYING NOZZLE AND CONTROL
Paul W. Jacobsen and Richard N. Klaeser, Kiel, Wis., assignors to H. G. Weber and Company, Inc., Kiel, Wis., a corporation of Wisconsin
Filed Jan. 22, 1969, Ser. No. 793,075
Int. Cl. B65h *25/26*
U.S. Cl. 226—22 **15 Claims**



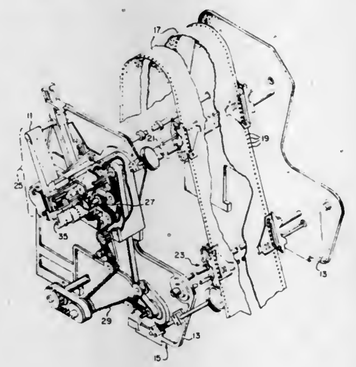
A fluid sensing and amplifying system comprising a sensing head having a pair of pilot fluid discharge nozzles coacting to sense edge position and directed toward respective interior chambers, flexible diaphragms having one side thereof exposed to pressure in the respective chambers and having plates carried at the opposite side thereof controlling respective working fluid discharge orifices, the pressure variations upstream of said working orifices being of magnitude to directly control an edge position correcting device for a moving web, the device automatically shifting to a quiescent condition in response to a failure of fluid pressure to the sensing head.

3,552,618
TAPE HANDLING AND STORAGE APPARATUS
John A. Molnar, Fairfield, Conn., assignor to Wiltek, Inc., Wilton, Conn.
Filed Nov. 13, 1968, Ser. No. 775,295
Int. Cl. G11b *15/04*
U.S. Cl. 226—25 **15 Claims**

A tape handling mechanism and horizontal storage bin for a continuous loop of magnetic tape includes slotted tape guides positioned at critical angles to achieve a smooth and uniform passage of tape from the bin onto a pair of separately operable sprocket drives, past read and write heads tangential to the sprocket drives, and from the sprocket drives back into the bin, while preventing gripping or jamming of the tape loop in the confined bin. A pair of tape guide slots between the read and write heads guides tape into a buffer loop whenever data is recorded by the write head more rapidly than recorded data is read out by the read head. A first tape tension switch operates when the buffer loop is too tight, to cause the write head sprocket to advance tape without recording data, while a second tape tension switch prevents further operation of the recording head sprocket when the buffer store is completely filled.



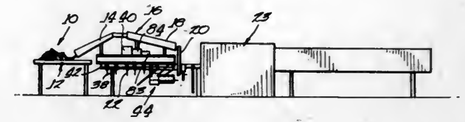
3,552,619
LINE SPACING SELECTOR WITH SLIDABLE TAPE READER
Raymond A. Skiba, Detroit, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Jan. 6, 1969, Ser. No. 789,126
Int. Cl. G03b *1/24*
U.S. Cl. 226—76 **5 Claims**



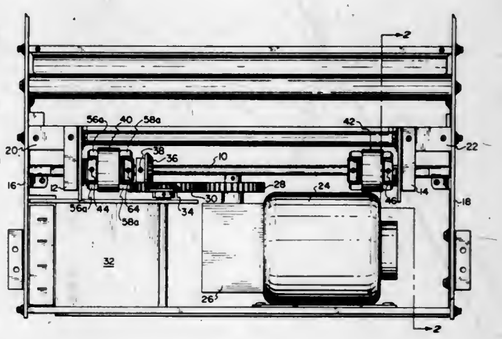
Apparatus for selecting the spacing or density of operations (number of operations per unit length of material) in a machine for advancing material and performing operations thereon according to format information carried on an endless tape. The format tape is selectively movable between two positions on coaxially aligned drive means; the tape is driven at a different speed in each position, each speed resulting in a different spacing of operations. A tape reader is slidable to each of the tape positions.

3,552,620
HANGER LOADING APPARATUS
William H. Neubeck, Jr., Justice, Ill., assignor to Julian Engineering Company, Chicago, Ill., a corporation of Illinois
Filed Mar. 28, 1969, Ser. No. 811,348
Int. Cl. B65h *17/00*
U.S. Cl. 226—105 **17 Claims**

In a machine for transporting strands of material such as a linked sausage strand along a predetermined path on hangers which are pivotally mounted on a travelling conveyor, means is provided for feeding the strands downwardly into the path of the hangers at a predetermined location. Each hanger is swung rearwardly from its normal hanging position as it is moved toward said location, and means is provided for forcibly swinging the hanger forwardly from a rearwardly disposed position through its normal hanging position and through said location, whereby the strands of material may be festooned over the hanger.



3,552,621
CHART DRIVE MECHANISM
Albert Kupferschmidt, Chicago, Ill., assignor to Beckman Instruments, Inc., a corporation of California
Filed Sept. 3, 1968, Ser. No. 757,016
Int. Cl. B65h *17/20*
U.S. Cl. 226—174 **4 Claims**

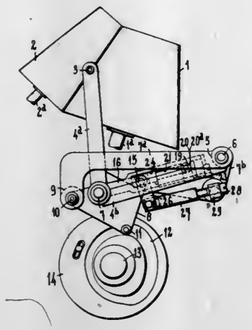


A chart paper drive mechanism is provided in which the chart paper is driven by a pair of drive roller cartridges the rollers of which engage the chart paper near the edges thereof. Each drive roller cartridge is provided with its own friction clutch mechanism which may be independently adjusted to give a desired value of torque at which the drive roller will slip. By equalizing the preset torque of each cartridge the chart paper is driven in a uniform manner and any tendency to skew or weave is rapidly corrected. Also, the cartridges may be readily adjusted to different positions on the drive shaft to accommodate different widths of chart paper.

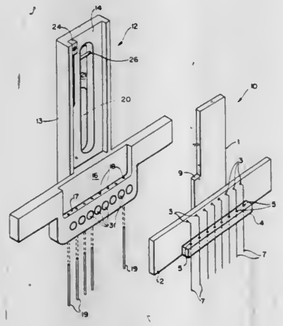
3,552,622
DEVICE FOR DRAWING A THREAD FOR A THREAD PACKAGE
Theodorus Fransen, Deurne, Netherlands, assignor to N. V Machinefabriek L. Te Strake, Deurne, Netherlands
Filed Sept. 24, 1968, Ser. No. 762,043
Int. Cl. B65h *51/06*
U.S. Cl. 226—178 **8 Claims**

The device comprises at least one conical roller, and a thread guide cooperating with the roller for orienting a thread at the circumference of the roller. The thread guide is in the form of a control arm which is provided with a thread eye and which is mounted for movement in a path such that

the thread eye is displaced substantially parallel to a generatrix of the conical roller. A pivoted rocker arm is coupled to the control arm and is rocked by means of a cam mounted on a rotatable shaft.

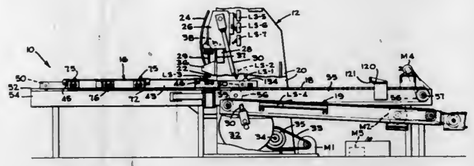


3,552,623
MULTIPLE SAMPLE APPLICATOR
Leslie D. Holybee, Cupertino, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Mar. 13, 1968, Ser. No. 712,758
Int. Cl. G01f *11/00*
U.S. Cl. 222—276 **11 Claims**



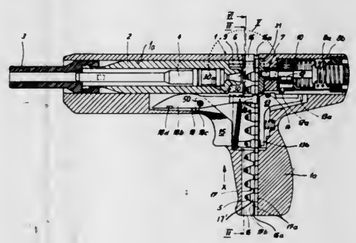
A multisample dispenser including a first member for supporting a plurality of capillary tubes and a second member cooperating with and movably disposed with respect to said first member for carrying a like plurality of needlelike wire elements. Each of the wire elements is movably inserted inside a corresponding capillary tube to form a plurality of dispensing elements capable of simultaneously dispensing a plurality of predetermined sample quantities. The first member also includes a plurality of easily removable flexible retaining means each of which is arranged to firmly hold a capillary tube in the first member. Each wire element is coated with a relatively dense lubricant to provide a liquid-tight seal between the wire element and the inner wall of the capillary tube in which the element is inserted.

3,552,624
ASSEMBLY JIG FOR THE NAILING OF WOOD FRAME MEMBERS
Edgar G. M. Dykeman, deceased, late of Riverside, Calif., by Kathaleen M. Dykeman, Administratrix, Riverside, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Apr. 24, 1968, Ser. No. 724,683
Int. Cl. B27f *7/06*
U.S. Cl. 227—3 **13 Claims**



A jig for assembling the stringers and deck boards of a pallet and carrying them beneath a nailing machine structure where they can be nailed together. The jig contains a pair of laterally adjustable, pivotally mounted support members for supporting the opposite longitudinal ends of the underlying stringers, the support members being arranged to be cammed outwardly when they have cleared the nailing machine structure to cause the partially constructed pallet to drop from the jig.

3,552,625
EXPLOSIVE CHARGE OPERATED SETTING TOOL OR GUN
Karl-Ernst Udert, Matschils, Liechtenstein, assignor to Hilti Aktiengesellschaft, Schaan, Furstentum, Liechtenstein
Filed Mar. 11, 1969, Ser. No. 806,184
Claims priority, application Germany, Nov. 13, 1968, 1,808,703
Int. Cl. B25c *1/14*
U.S. Cl. 227—10 **12 Claims**



An explosive charge operated setting tool or gun for driving anchoring elements into hard receiving material such as concrete or steel comprises a housing in which is axially slidable a hollow barrel. A drive piston is slidable within the barrel and it is moved forward rapidly under the force of an explosive charge to drive an anchoring element which is positioned within a stand plate end portion of the barrel into the receiving material. The barrel has an inner end portion which terminates in an outwardly flaring cartridge chamber. The housing, together with a pistol grip extension or handle, defines a magazine channel which extends at substantially right angles to the movement and direction of the barrel. A disposable magazine preferably of a resilient material such as plastic is provided with a plurality of tubular projections defining cartridge receiving recesses. Cartridges are held in the magazine within the recesses so that the forward tips project outwardly in a direction toward the barrel and they are successively aligned with the barrel for successive firing thereof. At the rear, the cartridge magazine abuts against the cartridge chamber breech at its rear end and its opposite end which includes the tubular projection surrounding the cartridge and the base of the band provide a sealing engagement with the portion of the barrel surrounding the cartridge receiving chamber therein. The plastic band of the cartridge magazine forms a necessary wall portion of the closed cartridge chamber and it provides a sealing for the gases upon explosion of the cartridge and during the initial forward movement of the barrel and the drive piston therein.

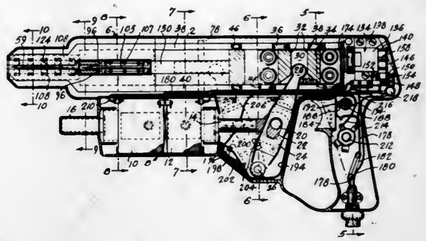
3,552,626
INSTRUMENT FOR CIRCULAR SUTURING OF HOLLOW BODY ORGANS
Georgy Vasilievich Astafiev, Rizhsky proezed, 7 kv. 108; Anatoly Nikolaevich Ozhgikhin, Oktiabrsbaya ulitsa, 60, korpus 2, kv. 20; Svetoslav Ivanovich Babkin, ul. Dmitria Ulianeva, 9.11, korpus 1, kv. 16; Pavel Iosifovich Androsov, 4 Selskokhozyaistvenny proezed, 1/3, kv. 267, and Tatiana Lukianovna Ivanova, Gorodok Mosseveta, 2 proezed, 7, kv. 7, all of Moscow, U.S.S.R.
Filed Apr. 4, 1968, Ser. No. 718,728
Int. Cl. B31b *1/00;* **B27f** *7/00*
U.S. Cl. 227—76 **4 Claims**



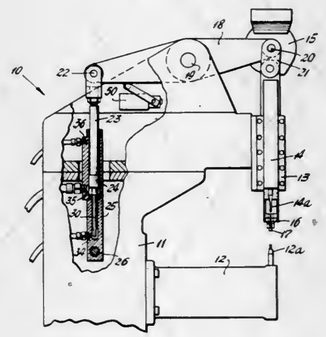
An instrument is provided for placing circular staple anastomoses between the organs of the alimentary canal during a surgical operation. The instrument has an extension tube for engaging interchangeable operating heads of different diameter, the operating heads carrying a staple head and a staple ejector. Additional extension tubes of different length can be added so that the instrument may have variable length to permit placement of anastomoses at different depths.

3,552,627
ELECTRICAL GUN HAMMER AND NAIL DRIVER
Angel Moreno, 4266 Old Orchard Ave., Apt. 23, Montreal, 28, Quebec, Canada
Filed Mar. 7, 1969, Ser. No. 805,291
Int. Cl. B25c *5/06*
U.S. Cl. 227—121 **7 Claims**

An electrically operated hammer and nail driver in which nails are fed from a magazine and are aligned and driven forward by hammer means through a discharge nozzle, and includes a solenoid having reversely wound double coils and an axially reciprocable armature within the solenoid, and a reversing switch in the path of the hammer means and adapted to supply current to the double coils of the solenoid to effect reciprocation of the hammer means.



3,552,628
FLUID ACTUATED RIVETING APPARATUS
Thomas W. Hotchkiss, Orange, and Richard L. Markus, Bridgeport, Conn., assignors to Rayrivet, Inc., Bridgeport, Conn., a corporation of Connecticut. by mesne assignments
Filed May 2, 1969, Ser. No. 821,404
Int. Cl. B21j *15/10*
U.S. Cl. 227—51 **9 Claims**

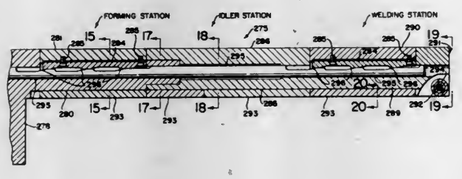


A machine for upsetting rivets by a reciprocating stroke of a driver in which the driver is hydraulically actuated and its speed during its stroke is varied to decrease the cycle time for the setting of a rivet by having an initial fast movement prior to the driver engaging the rivet, a slow powerful stroke for setting the rivet and a fast return stroke. A piston and cylinder actuate the driver and by their construction control the speed and additionally enable the driver to exert a predetermined force on the rivet before shifting to its return stroke.

3,552,629
METHOD AND MACHINE FOR FORMING LAP WELDED ALUMINUM CAN BODIES

Ronald H. D. Armbruster, Battle Creek, and Roger J. Nelsen, Hastings, Mich., assignors to E. W. Bliss Company, Canton, Ohio, a corporation of Delaware

Continuation of application Ser. No. 573,971, Aug. 22, 1966, now abandoned. This application July 7, 1969, Ser. No. 845,633
Int. Cl. B23k *1/06, 5/20*
U.S. Cl. 228—1 15 Claims

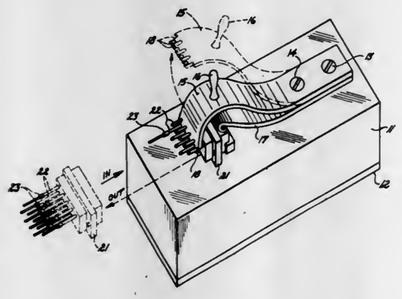


Method and apparatus for forming lap welded can bodies by wrapping rectangular metal blanks about a cylindrical forming horn and welding the overlapped joint portions ultrasonically while the blank is clamped to the horn.

3,552,630
HEAT SINK AND HOLDING DEVICE

John A. Dean, Brea, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Air Force

Filed Oct. 14, 1968, Ser. No. 767,198
Int. Cl. B23k *1/00*
U.S. Cl. 228—46 4 Claims

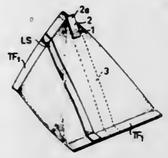


A heat sink and holding device for use in soldering a plurality of electrical leads. The complete array of electrical leads is connected to a common heat sink which also holds all of the leads while each lead is soldered individually. The device comprises two spring clips of high heat conductive material connected to a base of heavy material and having a nonskid bottom. One of the spring clips comes in contact with each wire lead and acts as the main heat sink portion. The other spring clip acts primarily as a holder.

3,552,631
PACKAGING MATERIAL HAVING A STRIP ON ONE SIDE AND COVERING TAPES ON THE OTHER SIDE

Alfred Fuchs, Lund, Sweden, assignor to AB Tetra Pak, Lund, Sweden, a Swedish company

Original application Oct. 6, 1966, Ser. No. 584,904, now Patent No. 3,471,351, dated Oct. 7, 1969. Divided and this application Feb. 24, 1969, Ser. No. 822,343
Int. Cl. B65d *17/00, 83/00*
U.S. Cl. 229—7 2 Claims

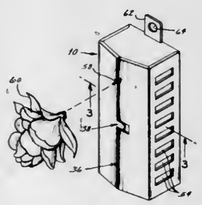


Packaging material and package made therefrom which has an opening therein covered by a pull tab on one side and a strip of elongated material on the other side sealing the edges of the opening and being sealed to that portion of the pull tab assembly through the opening.

3,552,632
AIR-FRESHENER DISPENSER

Norman E. Wilson, 2801 Locust St., University City, Mo.

Filed Mar. 20, 1969, Ser. No. 808,964
Int. Cl. B65d *5/20*
U.S. Cl. 229—30 8 Claims



An air-freshener dispenser is comprised of a compartment for containing air-freshening materials and having a plurality of openings in its walls. The front wall of the compartment is formed by a pair of hinged doors joined together by a latch. Flexion of the sidewalls causes the doors to swing open so as to permit removal of the contents of the compartment.

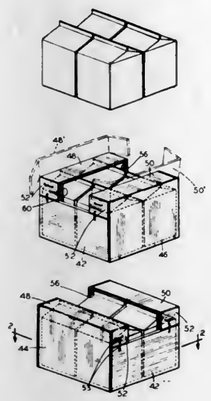
3,552,633
PALLET CASE

Lester K. Ketler, Indianapolis, Ind., assignor to Inland Container Corporation, Indianapolis, Ind., a corporation of Indiana

Continuation-in-part of application Ser. No. 770,179, Oct. 24, 1968, now abandoned. This application Oct. 27, 1969, Ser. No. 870,017
Int. Cl. B65d *5/20*
U.S. Cl. 229—30 13 Claims

Pallet case for cartons or bottles has a bottom panel, upright side panels, rectangular end panels and cover panels hinged by scoring to the end panels, all formed from a single sheet of suitably scored and cut fiberboard. The end panels along each side edge have integral corner column members extending upright between the bottom and cover panels and

lying against the interior surface of the side panels. Corner flaps depending from each side edge of the cover panels lie



exterior of said column members and terminate at or just above the upper edge of the side panels.

3,552,634
CONTAINERS

Jacques Honoré Gaspard Ollier, 17, rue General Henrion-Bertier-92, Neuilly-Sur-Seine; Georges Frederic Grosshans, 53, bis rue de Boulainvilliers-75, Paris, and Robert Gaston Masson, 10, Boulevard de Courbevore-92, Neuilly-sur-Seine, France

Filed Nov. 23, 1966, Ser. No. 596,604
Claims priority, application France, Nov. 26, 1965, 40,008
Int. Cl. B65d *5/64, 43/00, 51/18*
U.S. Cl. 229—43 7 Claims

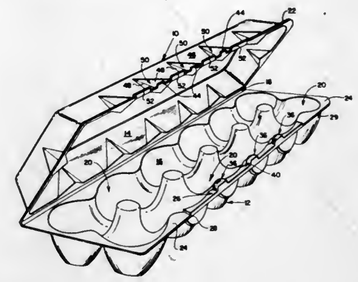
The container comprises a plastic box, an inner, reusable lid and an outer lid. The box has an inner flange against which a peripheral flange of the inner lid bears, and an outer flange to which the outer lid is welded. A pocket can be located between the inner and outer flanges of the box opposite a region of the edge of the inner lid to permit the introduction of a flat implement under said edge for lifting the inner lid. And/or the outer lid can be welded not only to the outer flange of the box but also to the periphery of the inner lid.

3,552,635
LOCKING MECHANISM FOR EGG CARTONS

Theodore P. Martens, Pittsburgh, and James R. Patton, Pittsburgh, Pa., assignors to Sinclair-Koppers Company, Pittsburgh, Pa., a partnership of Delaware

Filed May 23, 1969, Ser. No. 827,240
Int. Cl. B65d *85/32, 1/24*
U.S. Cl. 229—44 7 Claims

A locking mechanism for an egg carton having an integrally hinged tray and cover. The locking mechanism includes a plurality of locking flanges that extend forwardly from the bottom longitudinal edge of the cover's front wall and that fit into a plurality of rearwardly opening locking fingers on the top of the tray's front wall when the carton is closed. To prevent inadvertent opening of the carton, the fingers form part of a locking flap that is hingedly connected to the tray's front wall and that folds into the interior of the

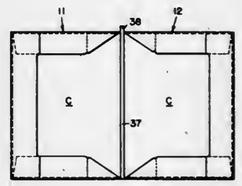


tray, where the packaged eggs hold the flap and its attached fingers in proper locking position.

3,552,636
BOX FOR TYPEWRITER CARBON PAPER

Joseph E. Geary, Rochester, N.Y., assignor to Knee Lox Manufacturing Company, Rochester, N.Y., a corporation of Pennsylvania

Filed Oct. 18, 1968, Ser. No. 768,741
Int. Cl. B65d *5/54*
U.S. Cl. 229—51 3 Claims



A box for holding carbon paper is made in two sections connected by a tear strip. The two sections are identical. Each has an integral pocket formed by flaps at the two ends and along one side of the base portion of the section. A plurality of carbon sheets can be held in each pocket. In use, the two sections are separated from one another by tearing away the connecting tear strip; and both sections can then be stored on the tilted partitions of a typist's desk drawer for ready access to and return of the carbon sheets to the box section.

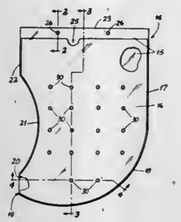
3,552,637
BANANA BAG

William S. Swinford, New Orleans, La., assignor to Standard Fruit and Steamship Co., Inc., New Orleans, La., a corporation of Delaware

Filed Apr. 30, 1969, Ser. No. 820,426
Int. Cl. B65d *31/16*
U.S. Cl. 229—53 2 Claims

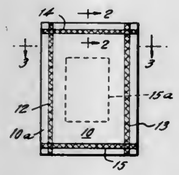
A bag made of plastic material such as polyethylene in the shape of several fingers of bananas. Each bag has an upper "gathering portion" adjacent the main opening, and beyond that portion, a concavo-convex portion shaped to receive several fingers of bananas and to conform generally to the shape thereof. It may have an open corner for crown protrusion and/or perforations, for ventilation purposes. After the banana fingers are put into the bag, the gathering portion is gathered together and bound with a wire-type binder or other means such as tape or cord. The bags are made from a tube of plastic material that is slit lengthwise, and folded into a J section. The J sheeting is cut into rectangles of size to permit

the making of a bag from each rectangle, in an operation wherein the shape of a bag is formed in each rectangle, sealed around its periphery and perforated so that the surplus material outside the seal can be pulled away. At this time, the rectangles are formed with air holes through their panels and with wicketing holes in the lip portion formed by the overlap



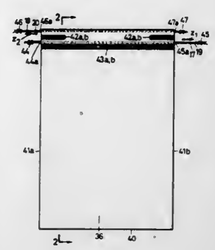
of the J sheet. These wicket holes enable the rectangles to be impaled with others on a wicket to form a stack. When stacked, the surplus material is pulled away from the sealed sides of the bags as permitted by the perforations, and may be reground, pelleted and re-extruded to make new film. Thereafter, individual bags may be pulled off the wickets and used.

3,552,638
PEEL-OPEN THERMOPLASTIC PACKAGE FOR STERILIZED ARTICLES
John J. Quackenbush, Monroe, Conn., assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Aug. 14, 1968, Ser. No. 752,689
Int. Cl. B65d *33/16, 75/30*
U.S. Cl. 229—66 **7 Claims**



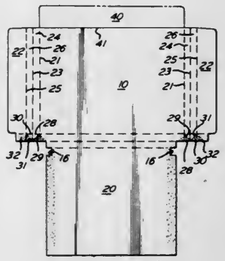
A peel-open bag formed of two opposing panels of laminated plastic layers. The panels are heat-sealed to one another along their tops, bottoms and sides to enclose a sterilized article. The laminated layers are of diverse plastics, the interior layers of which form a heat seal which is stronger than the bonding strength between the laminated layers. In order to open the bag, the panels are peeled apart, causing one of the layers to delaminate and tear along the heat seal. The panels are formed of laminates of polyethylene on the inside and Surlyn A on the outside.

3,552,639
BAG
Alfons Meyer, Donauschwabenstrasse 40, 705 Waiblingen, Germany
Filed Jan. 21, 1969, Ser. No. 792,724
Which is a division of Ser. No. 547,567, May 4, 1966, now Patent No. 3,512,456
Claims priority, application Germany May 8, 1965 and Jan. 12, 1966, M65,170 and M67,977
Int. Cl. B65d *33/28*
U.S. Cl. 229—63 **7 Claims**



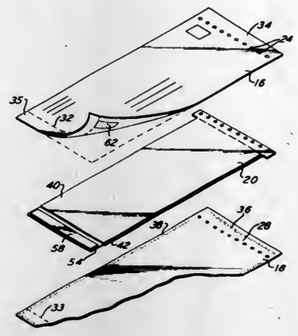
A flat mass-produced bag, preferably of plastic, of a rectangular shape made of two layers and having a mouth at one side adapted to be closed by draw strings which are slidable in hems formed adjacent to the mouth by folding over the free ends of both layers and securing them to the layers. The draw strings have a length greater than the width of the bag and the ends of each pair of corresponding strings are knotted together outside of each lateral side of the bag. When the two knotted pairs of strings are pulled in opposite directions, the mouth of the bag will be drawn closed toward its center.

3,552,640
EXPANSIBLE GUSSET ENVELOPE WITH SIDE FLAP SEAMS
Frank L. Young, 401 Caranel Circle, Penn Valley, Pa.
Filed Apr. 14, 1969, Ser. No. 815,805
Int. Cl. B65d *27/00*
U.S. Cl. 229—68 **2 Claims**



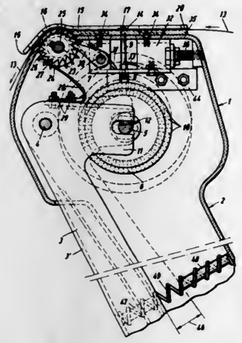
An expansible gusset envelope having a full front panel and a back panel with side seams all formed from a single paperboard blank. The method of fabrication can either be by hand or machine formed in a continuous operation in which all side and bottom gusset panels are interiorly folded and flattened between the front and back panel at the completion of the operations. In its completed form, the envelope is easily expanded into boxlike configuration by pressing the side and bottom gusset panels outwardly.

3,552,641
ENVELOPE ASSEMBLY
Leslie J. Bell, 436 E. Elkhart St. 19134, and Kenneth E. Rush, 11913 Academy Road 19154, both of Philadelphia, Pa.
Filed July 31, 1968, Ser. No. 749,094
Int. Cl. B65d *27/10*
U.S. Cl. 229—69 **2 Claims**



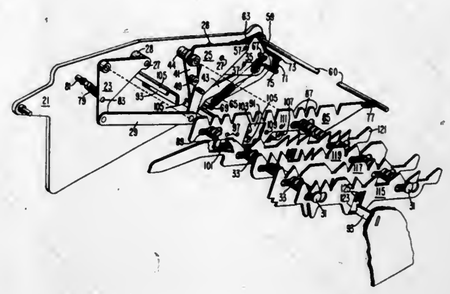
A continuous envelope assembly including a plurality of outer envelopes having insert material therein. The insert material is aligned within the outer envelope and is not attached to the outer envelope.

3,552,642
DEVICE FOR PUNCHING RECORDING MEDIA
Hermann Flessner, 262 Markstrasse, Bochum-Querenburg, Germany
Filed Nov. 14, 1968, Ser. No. 775,744
Claims priority, application Germany, Nov. 29, 1967, 1,549,730
Int. Cl. G06k *1/10*
U.S. Cl. 234—100 **12 Claims**



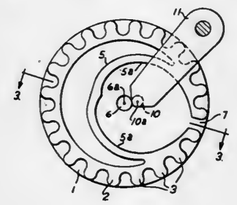
A recording tape punch comprises a housing incorporating a rotatable die wheel and a row of punches selectively operable by engagement with the die wheel periphery when the die wheel is displaced. The die wheel periphery is provided with apertures or dogs arranged in lines transversely of the wheel, the apertures or dogs in each line being arranged in the form of a code which is identified by an indicator wheel rotatable with the die wheel so that the punches in the row which are operated when any individual line is in register with the punches pierce the tape in accordance with a code shown by the indicator wheel. The die wheel is displaced by an operating handle which serves to advance a tape feed during its return movement.

3,552,643
EASY DEPRESSION CONTROL MECHANISM FOR A CALCULATING MACHINE
Donald R. Crain, Livonia, and Charles A. Haase, Dowagiac, Mich., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 24, 1969, Ser. No. 818,867
Int. Cl. G06c *21/00*
U.S. Cl. 235—60 **14 Claims**



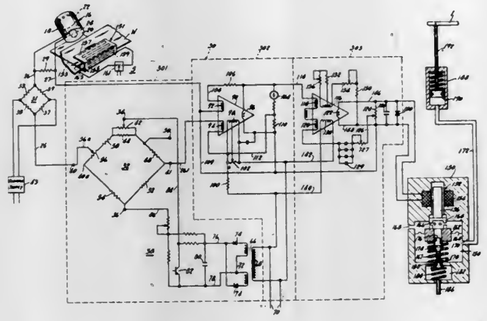
A self-contained mechanism comprising a plurality of translatably mounted operation control slides is attachable to one of the side frames of a calculating machine in juxtaposition with the key stems of a plurality of operation control keys disposed in the keyboard of such machine. Upon depression of any one of these operation control keys, a cycle initiating slide is activated, and at least one control slide corresponding to the depressed key is simultaneously translated from a central inactive home position to either a forward or rearward activating position wherein selected cooperation is provided with the various mechanisms of the calculating machine to produce corresponding machine functions.

3,552,644
RESETTING APPARATUS
Alfred Zielke, Peine, Germany, assignor to ELMEG Elektro-Mechanik GmbH, Peine, Germany
Filed May 5, 1969, Ser. No. 821,746
Claims priority, application Germany, May 11, 1968, P1,774,253
Int. Cl. G07g *1/00*; **G06c** *15/42*
U.S. Cl. 235—144 **6 Claims**



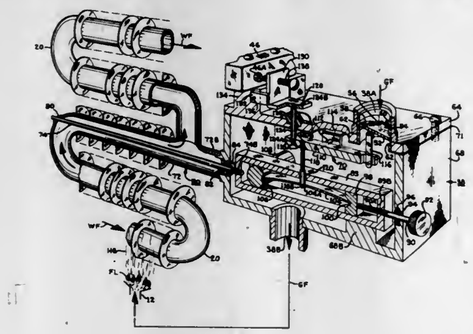
Apparatus for resetting a stepable roller of a counting mechanism. The resetting apparatus includes a cam surface that faces the axis of rotation of the roller. The cam surface extends away from the axis and preferably terminates adjacent the circumference of the roller. A finger mounted on a resetting lever is adapted to engage the cam surface. Means are also provided for moving the finger from a position adjacent the axis of rotation toward the circumference of the roller so that the cam surface is engaged and the roller is thereby rotated to its starting position.

3,552,645
CONTROL SYSTEM FOR WEB HEAT TREATING APPARATUS
Shelton F. Boyd, Menomonee Falls, Wis., assignor to Faustel, Inc., Butler, Wis., a corporation of Wisconsin
Filed Dec. 10, 1968, Ser. No. 782,653
Int. Cl. F27b *9/28*; G01k *7/14*, *13/04*
U.S. Cl. 236—15 10 Claims



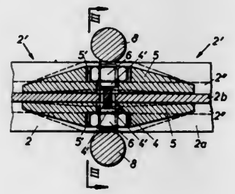
A temperature sensing means for ascertaining the temperature of a heated moving web includes a sensory means generating an electric signal responsive to the radiation emanating from the web. A control means generating a signal in opposition to the signal of the sensory means provides an error signal equal to the difference between the desired and sensed temperatures of the web. The temperature sensing means includes means for compensating for the emissivity of the web. The temperature sensing means may be incorporated in a temperature control system having an electromechanical means responsive to the error signal for controlling the heat supplied by a web heating apparatus to the web so that the actual temperature of the web equals the desired temperature.

3,552,646
BOILER CONTROL USING ROD AND TUBE TYPE TEMPERATURE SENSOR
Thomas E. Hayes, Goshen, Ind., assignor to Penn Controls, Inc., Oak Brook, Ill., a corporation of Delaware
Filed Oct. 11, 1968, Ser. No. 766,908
Int. Cl. F23n *1/00*
U.S. Cl. 236—20 11 Claims



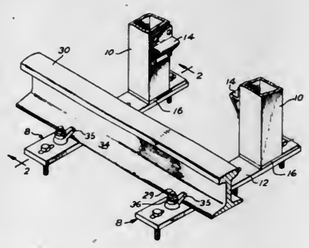
A rod and tube type temperature sensor is provided in a boiler by forming the tube portion of the sensor as an integral part of the boiler heat exchanger tubing through which the fluid being heated flows. The rod member of the sensor is coaxially positioned within the associated tube portion with one of its ends fixed against relative movement with respect to such tube portion. The other end of the rod protrudes through an aperture defined in the boiler tubing. Sealing means is provided encircling the rod where it protrudes out of the boiler tubing to prevent the escape of fluid from the boiler. The rod member and the tube portion of the sensor have different coefficients of expansion such that, as hot gases heat the tubing which transmit such heat to the water flowing inside of the tubing and over the interiorally positioned rod member, expansion and contraction of the tubing relative to the free rod end occurs to provide an output actuating force which may be used for control and indicating purposes.

3,552,647
TEMPORARY RAIL JOINT
Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna I., Austria
Filed June 20, 1968, Ser. No. 738,610
Claims priority, application Austria, July 12, 1967, 6534/67
Int. Cl. E01b *11/00*
U.S. Cl. 238—243 7 Claims



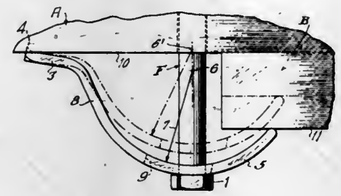
Two rail ends are temporarily interconnected by two clamping members extending along the webs of the rail ends by bridging the rail ends to hold the webs clamped therebetween. The two clamping members are centrally anchored on a spacing member positioned between the rail ends.

3,552,648
RAIL MOUNTING ARRANGEMENT
Harry W. Thompson, Chicago, Ill., assignor to Interlake Steel Corporation, Chicago, Ill., a corporation of New York
Filed June 25, 1968, Ser. No. 739,758
Int. Cl. E01b *3/00*, *3/20*
U.S. Cl. 238—287 5 Claims



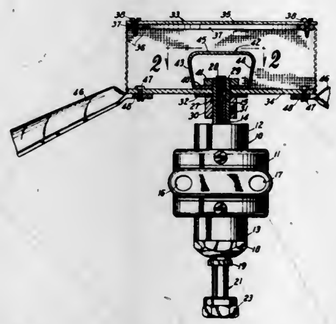
A rail mounting arrangement for fixing a rail relative to storage racks comprises a rigid plate upon which a support member of the storage racks is adapted to be mounted upon a face thereof and including studs spaced a predetermined distance from the support member for attaching the rail in predetermined spaced relationship to the support member. Anchoring means is also provided for anchoring the plate to the floor of the storage space and a shim arrangement is provided for positioning and maintaining the height of the plate with respect to the floor.

3,552,649
RAILROAD BRIDGE TIE ANCHOR
Garwood N. Burwell, Madison, N.J., assignor to The Rails Company, Hamden, Conn., a corporation of Cennecticut and The Rails Company, Maplewood, N.J., a corporation of Connecticut
Filed Aug. 23, 1968, Ser. No. 754,835
Int. Cl. E01b *9/44*
U.S. Cl. 238—310 6 Claims



An elongated resilient clip rectangular in cross section has a flat end bearing portion and an arcuate end portion to engage the lower face of a railway tie and the lower side of a cover plate on a bridge girder. Said arcuate portion has an elongated slot, upwardly through which and through the tie, passes a bolt which has a head at one end underlying said arcuate portion and means at its other end to tense the bolt.

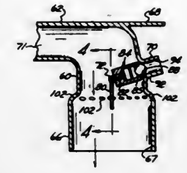
3,552,650
LIQUID DIFFUSION SPRAYING MECHANISM
Keith Hilton Patrick, Auburn, Ala., assignor to Ring Around Products, Inc., Montgomery, Ala., a corporation of Delaware
Filed Nov. 29, 1967, Ser. No. 686,425
Int. Cl. A01n *17/02*
U.S. Cl. 239—8 17 Claims



A liquid diffusion-spraying mechanism having an air motor for driving a rotary cage or slinger which carries impeller blades outwardly of the cage. A nozzle, passing through the central portion of the air motor, discharges liquid against a central baffle which deflects the liquid outwardly. Thence, the liquid passes through a peripheral screen in the cage and is broken up in small particles which are slung into the path of air created by the impeller blades.

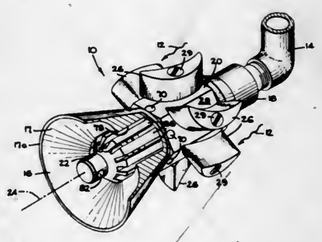
A group of the liquid diffusion-spraying mechanisms are readily arranged on a spray boom in spaced relationship, the axes of the mechanisms being parallel to each other. The air motors are arranged in series so that compressed air from a single source passes successively through the air motors for driving each of them. Valves are provided by which one or several of the mechanisms may be shut off.

3,552,651
COMBINED FAUCET AND DRINKING FOUNTAIN
Harry F. Garrison, 7470 Gerald Ave., Warren, Mich. 48092
Filed May 27, 1968, Ser. No. 732,123
Int. Cl. E03c *1/02*
U.S. Cl. 239—25 1 Claim



This faucet near the nozzle outlet has a drinking fountain spout which is opened and closed by a swinging valve member on a pivot shaft which also carries a baffle plate. The pivot shaft is rotated by a handle.

3,552,652
ATOMIZING NOZZLE
Leon D. Greenwood, Lansing, Mich., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Sept. 10, 1968, Ser. No. 758,866
Int. Cl. A01n *17/08*
U.S. Cl. 239—77 12 Claims

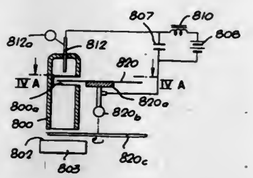


An atomizing nozzle which is mounted in and rotated by an air blast to disseminate liquid agricultural chemicals, and which is effective to provide a predictable degree of atomization over a wide range of flow rates.

3,552,653
IMPACT DEPOSITION OF PARTICULATE MATERIALS
Kiyoshi Inoue, 182-3-Chome Tamagawayoga-Machi, Setagaya-ku, Tokyo, Japan
Continuation-in-part of application Ser. No. 574,056, Aug. 22, 1966, now Patent No. 3,461,268, and a continuation-in-part of 629,633, Apr. 10, 1967, now Patent No. 3,461,268.
This application Jan. 10, 1968, Ser. No. 696,757
Int. Cl. B44d *1/52*
U.S. Cl. 239—81 6 Claims

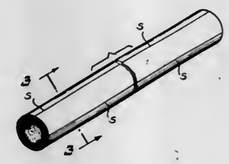
Method of and apparatus for the high-energy rate deposition of particulate materials upon a receiving surface whereby the particles are preheated, preferably concurrently with their formation from a coherent body by subjecting the body to a plasma or electrically fusing the body, and projected against the substrate by intermittent spark discharge, a discharge electrode for this purpose being located behind the

particle cloud in the direction of propagation of the particles. Alternatively, encapsulated doses of the particles or masses



thereof may successively be disposed in the path of the discharge electrode upon a rotatable turret or disc.

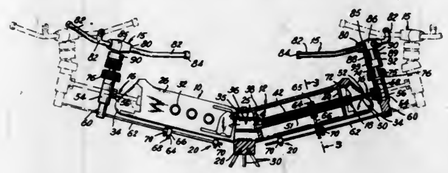
3,552,654
IRRIGATION CONDUIT AND COMPOSITION AND METHOD FOR PRODUCING SUCH
Lewis C. Thomas, 3204 NW. 61st St. Terrace, Oklahoma City, Okla. 73112
Continuation of application Ser. No. 648,078, June 22, 1967, now abandoned. This application June 18, 1969, Ser. No. 835,303
Int. Cl. A01g *27/00*
U.S. Cl. 239—145 **5 Claims**



The invention is directed to a composition and the use of this composition to the production of particular articles of manufacture commonly known as irrigation or soaking conduits. According to the process of the invention, a foamable thermoplastic resin composition is extruded in such a way so as to obtain a conduit having a wall structure composed of a cellular body of interconnecting pores. During the extrusion process, the outer surface of the conduit is treated in such a way so as to produce an outer surface or skin which is substantially impervious to water. The conduit thus prepared is then provided with a score line or score lines which destroy the water-impervious nature of the outer surface. In use, these conduits are maintained under water pressure which causes the water seep through the pores of the wall and ultimately to the score lines which permit the water to seep from the conduit. The irrigation or soaking of lands is thereby obtained.

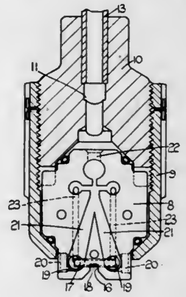
3,552,655
ADJUSTABLE SPRINKLER
Thomas F. Feeney, 6317 Liebig Ave., Bronx, N.Y. 10471
Filed Jan. 21, 1969, Ser. No. 792,361
Int. Cl. B05b *15/06*
U.S. Cl. 239—281 **13 Claims**

The invention relates to an adjustable sprinkler unit which is adapted to have its distributing means in the form of spaced-apart rotary heads angular adjustable such that the area of coverage by the unit may be selected as to both elevation and area. In addition extension means operatively associated with the distributing means permits the rotary



heads to be horizontally extended relative to each other to further regulate the area of coverage by the sprinkler unit.

3,552,656
SPRAYERS
Robert Thomas John Skinner, Kenilworth, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Oct. 23, 1968, Ser. No. 770,007
Int. Cl. F23d *11/16*
U.S. Cl. 239—419.3 **3 Claims**

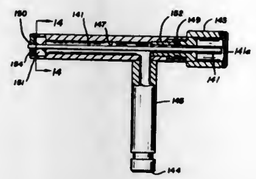


A sprayer comprising a body, a tube mounted transversely across the body, the tube having a transverse slot, the supply passages to opposite ends of the tube respectively, a common inlet communicating with the supply passages and a further pair of passages between the supply passages and opposite sides of the inlet respectively.

3,552,657
ASPIRATOR ASSEMBLY FOR A PREMIX BURNER
James J. Chisholm, Penfield, and Henry J. Emmel, Irondequoit, N.Y., assignors to Bausch & Lomb, Incorporated, Rochester, N.Y., a corporation of New York
Original application Feb. 20, 1967, Ser. No. 617,103, now Patent No. 3,523,748. Divided and this application June 6, 1969, Ser. No. 831,065
Int. Cl. B05b *7/06*
U.S. Cl. 239—424 **1 Claim**

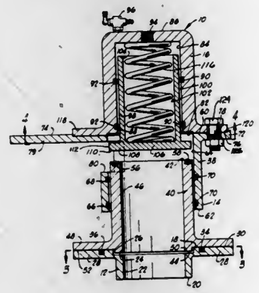
A lamp housing and burner assembly is disclosed for use with photometric apparatus for determining and/or measuring the concentration of atoms by an atomic absorption phenomenon. A plurality of adjustable light sources emitting radiation that is characteristic of particular atoms are mounted in radial relation about an optical means. The optical means is adapted to select radiation from a particular source and to direct a beam of radiation through a flame zone of a burner into which a test solution is aspirated. The burner is a slot type burner that is rotatably, horizontally, and vertically adjustable to control the position of the flame through which the beam passes. An adjustable aspirator assembly is provided for the burner to control the aspiration efficiency.

A piezoelectric ignition system is provided for the burner that automatically moves a spark device into and out of the



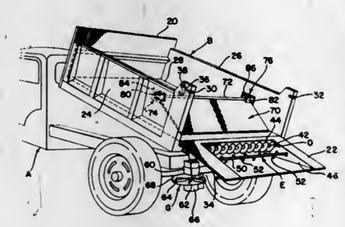
flame zone while simultaneously generating a high voltage for creating the spark.

3,552,658
SPRAY VALVE ASSEMBLY
Mack D. Sons, Albuquerque, N. Mex., assignor to W & W Steel Company, Oklahoma City, Okla., a corporation of Oklahoma
Filed June 3, 1969, Ser. No. 829,937
Int. Cl. B05b *1/32*
U.S. Cl. 239—456 **9 Claims**



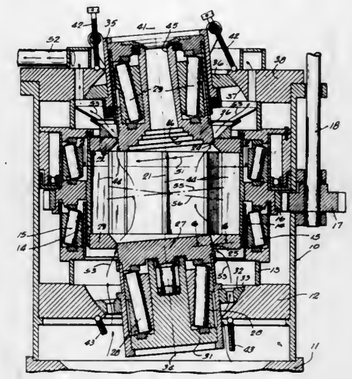
A spray valve assembly adapted to discharge a flow of fluid, such as water, in a controlled spray pattern, which incorporates a valve actuation device and wherein the volume and direction of the discharging fluid is controllable.

3,552,659
SPREADER HOPPER FOR DUMP TRUCK
Edward T. Meyer, Shaker Heights, Ohio, assignor to Meyer Products, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Sept. 20, 1968, Ser. No. 761,210
Int. Cl. E01c *19/20*
U.S. Cl. 239—657 **7 Claims**



A dump truck bed defines a tiltable container including a partition dividing the container into two compartments. One compartment is substantially smaller than the other and defines a spreader hopper for dispensing particulate material through an outlet when the container is in horizontal position. The spreader hopper is refilled by tilting the container so that material flows past the partition into the spreader hopper.

3,552,660
METHOD AND APPARATUS FOR THE AUTOGENOUS CRUSHING OF STONE AND THE LIKE
John D. Hamaker, 4401 N. Grand River Ave., Lansing, Mich.
Filed June 3, 1969, Ser. No. 829,880
Int. Cl. B02c *19/00*, *17/14*
U.S. Cl. 241—18 **16 Claims**

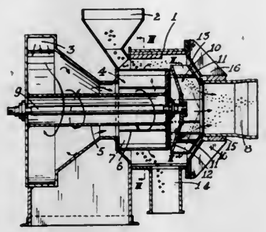


This disclosure relates to a high pressure autogenous stone crushing method and apparatus. A large volume of chunks of stone or like fracturable material is assembled in a deep bed or mass in which proximate chunks are in mutual engagement, with voids intervening therebetween. High pressure is imposed on the mass, and a portion of the mass is then sequentially reciprocated with respect to other portions to mutually shift the chunks and develop chunk rupturing stress between chunks. The comminuted particles are removed pneumatically or by gravity through a screen.

3,552,661
MILL WITH ROTATING AIR STREAM
Ronald Frederick Bourne, Transvaal, Republic of South Africa, assignor to the Asbestos Grading Equipment Company (South Africa)(Proprietary), Limited
Filed Nov. 21, 1968, Ser. No. 777,707
Claims priority, application South Africa, Dec. 6, 1967, 67/7359
Int. Cl. B02c *19/06*
U.S. Cl. 241—39 **2 Claims**

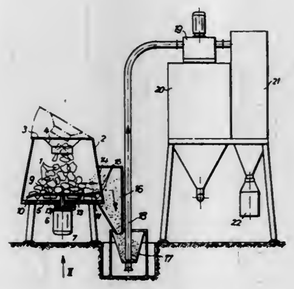
A mill comprising a casing and a drumlike stator mounted axially within the casing and in spaced relationship to the wall thereof. The stator is open at the end adjacent the mill inlet and closed at the end adjacent the mill outlet. An inlet to the casing is provided through which air may be introduced into the interior of the stator. A plurality of vanes is associated with the peripheral wall of the stator and extends lengthwise thereof. Slots are provided between the vanes through which air emerges from the stator with a rotational movement imparted by the vanes. An inlet to the casing is provided through which material to be processed may be introduced into the annular space between the wall of the casing and the peripheral wall of the stator there to be contacted by the rotating air stream. An axial outlet from the casing is provided at the opposite end to the air inlet. A drive shaft extends axially into the casing with a vaned classifier rotor

mounted on the inner end of the drive shaft between the stator and the outlet. The rotating airstream causes the material



particles to rub against one another and also to be impacted against the interior of the casing.

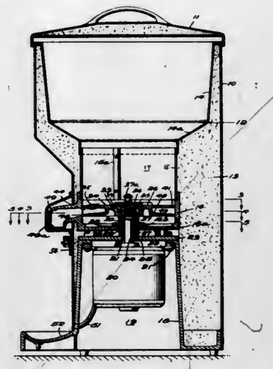
3,552,662
DEVICE FOR REGAINING COMPONENTS OF KNOCKED-OUT MOLD AND CORE SAND PIECES
Konrad Grob, Goldach, Kenton St. Gall, Switzerland, assignor to Alfred Gutmann Gesellschaft fur Maschinenbau, Hamburg, Germany
Filed Dec. 20, 1968, Ser. No. 785,630
Claims priority, application Germany, Dec. 21, 1967, 1,583,540
Int. Cl. B02c *13/14*
U.S. Cl. 241—41 **5 Claims**



A device for regaining components of knocked-out mold and core sand pieces, in which said knocked-out pieces are crushed in a container and conveyed through perforations to a separator for filtering out the dust component from the crushed material and feeding the remainder into a storage container.

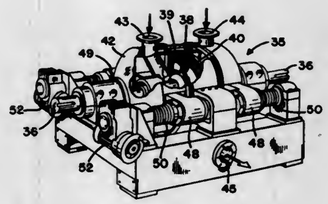
3,552,663
ICE SHAVING MACHINE
John Royals, 21 E. Seminary Ave., Lutherville, Md. 21093
Filed Dec. 5, 1968, Ser. No. 781,550
Int. Cl. B02c *18/12*
U.S. Cl. 241—92 **9 Claims**

A machine for producing shaved ice for use in making ice confections comprises an upright housing which includes a thermally insulated chamber for storing ice in chunk form, and a motor driven rotor located at the lower part of the chamber that includes blades on the upper face thereof which shave the ice and deliver it through a slot into a chamber from which it is ejected by centrifugal force into a discharge outlet. The rotor is removably attached to the motor shaft by fastening means accessible from the interior of the ice chamber so as to permit the rotor to be easily



removed for cleaning of the rotor as well as the interior of the ice chamber.

3,552,664
DISC-TYPE REFINERS
William Herbert, and James H. Riedel, Middletown, Ohio, assignors to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio
Filed June 28, 1968, Ser. No. 740,884
Int. Cl. B02c *7/06, 7/12*
U.S. Cl. 241—260 **5 Claims**

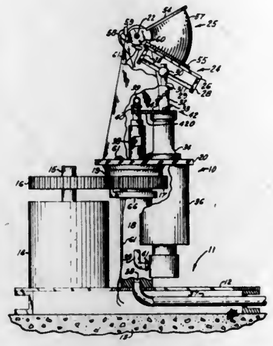


A disc-type fibrous cellulosic stock refiner has bar-and-groove-type rotating and stationary refining plates in which the working or bar section has a D_i/D_o ratio of between 0.55 and 0.85, and in which the operation of the refiner work input into the stock is analogized to the absorption of energy in a clutch or disc brake.

3,552,665
INDEXING MECHANISM FOR A FILAMENT WINDING MACHINE
John Hill Kelly, Hartselle, Ala., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware
Filed Feb. 13, 1969, Ser. No. 798,987
Int. Cl. B65h *54/64;* **F16h** *27/02*
U.S. Cl. 242—7.21 **10 Claims**

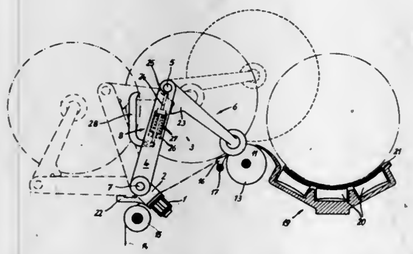
This winding machine includes a frame rotatably driven to wind filament onto a mandrel carried on the frame. To distribute the windings, the frame has an oscillated cradle pivoted thereon to support the mandrel. The cradle is oscillated by an indexing means which includes a shaft with a helically arranged row of pins projecting at right angles from the shaft. The shaft projects through a rotated indexing plate having one or more apertures which are aligned with succeeding pins to allow stepwise longitudinal movement of the shaft which is connected by linkage to the cradle to oscillate

same and the mandrel carried thereby. The shaft is urged to move in either direction by an air motor controlled by limit



switches actuated by the mandrel to reverse the direction of movement of the shaft.

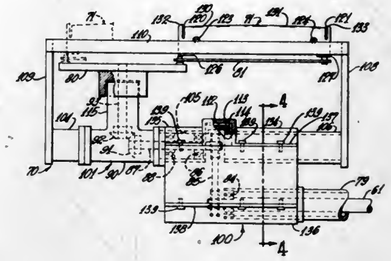
3,552,666
BOBBIN FRAME ON UPWARD TWISTING MACHINES
Heinz Stenmans, Grefrath; Gustav Franzen, Neersen, and Ulrich Lossa, Krefeld, Germany, assignors to Palitex Project Company G.m.b.H., Krefeld, Germany
Filed Sept. 25, 1967, Ser. No. 670,081
Claims priority, application Germany, July 27, 1967, P 42,687
Int. Cl. B65h *54/02, 75/02*
U.S. Cl. 242—35.5 **8 Claims**



A bobbin frame on upward twisting machines having a machine frame and also having conveyor means arranged adjacent to the machine for receiving filled bobbins. The bobbin frame is pivotally supported by pivot means on the machine frame and comprises bobbin-sleeve-receiving means for substantially coaxially therewith supporting a bobbin sleeve held between two supporting arms and adapted to be fitted with a bobbin rotatable as thread is wound up or wound off therefrom and also includes means for selectively increasing and decreasing the distance between said pivot means and said bobbin-sleeve-receiving means to thereby selectively increase the pivoting radius of said bobbin frame for depositing the bobbin itself on the conveyor means.

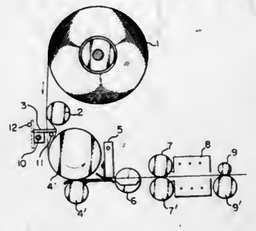
3,552,667
APPARATUS FOR PACKAGING LINEAR MATERIAL
Roy E. Smith, Toledo, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Aug. 2, 1968, Ser. No. 749,705
Int. Cl. B65h *54/30*
U.S. Cl. 242—43 **7 Claims**

Apparatus for and method of packaging linear material using a collector for packaging advancing linear material and traversing means distributing the advancing material on the collector wherein the linear material may freely move



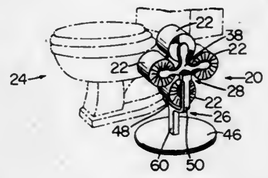
laterally of the traversing path and away from the collecting surface throughout the package build.

3,552,668
ROLLING CURL REMOVING DEVICE FOR ROLLED PHOTOSENSITIVE PAPER
Tadaaki Kanno, Tokyo, Japan, assignor to Kabushiki Kaisha Ricoh, Tokyo, Japan
Filed Oct. 21, 1968, Ser. No. 769,138
Claims priority, application Japan, Oct. 21, 1967, 42/89140
Int. Cl. B65h *75/02*
U.S. Cl. 242—55 **7 Claims**



There is disclosed herein a rolling curl removing device for rolled photosensitive paper used in reproduction apparatus wherein the rewound photosensitive paper is curled in the direction opposite to the rolling curl so as to remove the rolling curl. This rolling curl removing action is stopped at the same time that the photosensitive paper stops being fed.

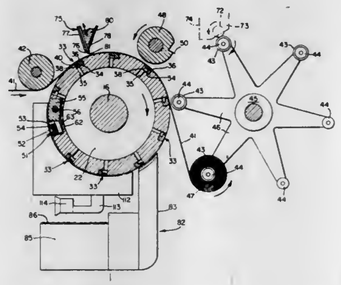
3,552,669
PLURAL TISSUE ROLL SUPPORT
Phillip A. Earnest, 3350 Germantown St., Dayton, Ohio 45480
Filed Apr. 15, 1968, Ser. No. 721,282
Int. Cl. A47k *10/22;* **B65h** *19/06*
U.S. Cl. 242—55.3 **3 Claims**



This application discloses a plural tissue roll support suitable for receiving and holding a plurality of tissue rolls, such as toilet paper rolls and the like. Such support has a support

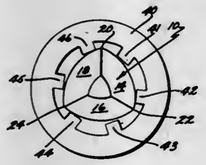
frame with opposed shaft-holding members. Shaft ends are respectively held by such shaft-holding members. Two opposed plural tissue roll supporting plates are freely rotatably and longitudinally movable on such shaft to hold a plurality of such rolls around such shaft. Each of the plates may have radial arms, with such arms having inward flanges to engage the centers of hollow tissue rolls to hold such rolls between such plates. The support frame has a base, a yoke on the base with two upward arms to shaft-holding means at the upper ends of the upward arms. Upwardly open shaft end receiving channels are provided at the upper ends of the upward arms to receive the shaft, and from which channels the shaft may be removed and into which channels the shaft may be inserted. The top roll may have its wrapper removed, so the tissue can be unrolled from such top roll. The other rolls around the shaft may remain covered by their wrappers, if desired.

3,552,670
WEB WINDING APPARATUS
Walter H. Herman, Wilbraham, Mass., assignor to Scott Paper Company, Delaware County, Pa., a corporation of Pennsylvania
Filed June 12, 1968, Ser. No. 736,322
Int. Cl. B65h *19/20*
U.S. Cl. 242—56 **30 Claims**



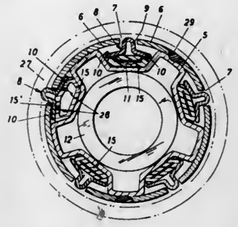
A bedroll is disclosed having openings in its surface communicating with a partial vacuum for positively holding a web to the bedroll so as to control it in the event of a breakout. The arrangement and use of such a bedroll with a turret winder and a brokechute, and the advantages of this apparatus in connection with web winding in preventing and handling breakouts and in accomplishing reliable transfer of the lead end of the web to a new core, are disclosed.

3,552,671
DRIVE SPINDLE FOR TAPE REELS
Robert E. Wood, Ann Arbor, Mich., assignor to Sycor Inc., Ann Arbor, Mich., a corporation of Delaware
Filed Feb. 27, 1969, Ser. No. 802,776
Int. Cl. B65h *17/02*
U.S. Cl. 242—68.3 **18 Claims**



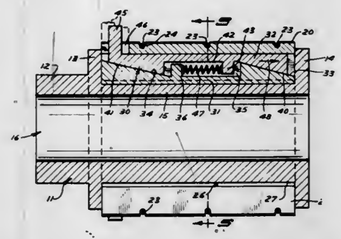
A drive spindle, particularly for internally ridged or toothed winding reels and the like, generally comprising an elongated shaftlike member, and characterized by a reel-engaging end having a rounded triangular cross section at any plane transversely intersecting its axis, and with a longitudinally tapered configuration, with camlike side surfaces converging at such end.

3,552,672
ROLL SPINDLE
Karl Einar Lage Grettve, Lilla Edet, Sweden, assignor to Aktiebologet Aero-Shaft, Lilla Edet, Sweden, by mesne assignments
Filed Feb. 25, 1969, Ser. No. 802,066
Claims priority, application Sweden, Feb. 27, 1968, 2,527/68
Int. Cl. B65h *75/24*
U.S. Cl. 242—72 **7 Claims**



A drive spindle for gripping the winding sleeve for paper rolls by means of inflatable hoses arranged in notches in the spindle surface. When inflated, these hoses displace pressing elements preferably in the shape of profiled rails outwards into gripping engagement with the winding sleeve which is thereby held firmly in contact with the spindle, and in the deflated state of the hoses, the sleeve can be easily removed from the spindle without any risk of damages to either the spindle or the sleeve. The engagement between the spindle and the sleeve is further enhanced by rails disposed on the spindle surface and cooperating with the pressing elements.

3,552,673
EXPANDING CHUCK
William J. Evers, 949 Myrtle Lane, Green Bay, Wis.
Continuation of application Ser. No. 691,108, Dec. 7, 1967, now abandoned. This application Apr. 9, 1969, Ser. No. 837,971
Int. Cl. B65h *75/24*
U.S. Cl. 242—72.1 **14 Claims**

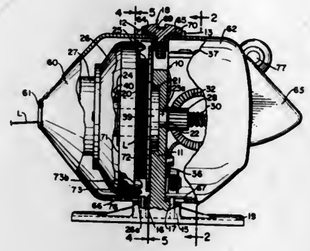


An automatically expanding chuck for supporting tubular rolls which has sections that can be expanded to grip the interior of a tubular roll, the chuck has outer sections which are expanded radially outward by cams. The cams are in turn actuated by the end surface of the roll in which the chuck is inserted.

3,552,674
SPINNING REEL
R. Dell Hull, 6101 E. Apache St., Tulsa, Okla. 74106
Original application July 28, 1965, Ser. No. 475,365, now Patent No. 3,416,746. Divided and this application Oct. 15, 1968, Ser. No. 767,640
Int. Cl. A01k *89/00*
U.S. Cl. 242—84.2 **2 Claims**

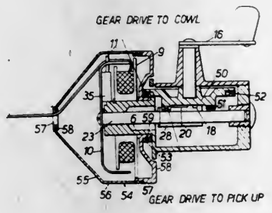
This closed-face spinning reel has a cup-shaped pickup head provided with notches for winding fishing line onto a normally stationary spool upon rotation of the pickup head

about the spool. The spool has its forward wall near the outer periphery turned rearwardly and outwardly and then reversely bent forwardly and outwardly to define a double flange terminating at a diameter slightly less than that of the pickup head. The spool is normally held stationary by a radially adjustable friction brake engageable with a rearwardly extending hub on the spool. The spool can be rotated by a pull on



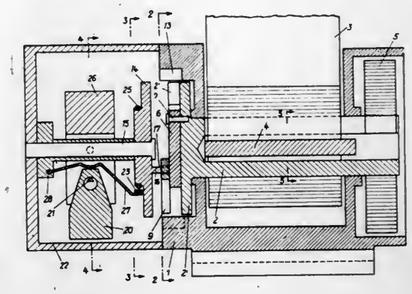
the line that overcomes the frictional setting of said brake. Teeth at the rear side of the spool cooperate with a leaf spring to give an audible signal upon rotation of the spool. The pickup head and spool mechanism and pickup head drive mechanism are respectively located on opposite sides of a transverse frame wall. Front and rear covers are connected at opposite sides of said frame wall by pins and a cover lock screw.

3,552,675
CLOSED FACE FISHING REEL
Kenneth Patrick Morritt, Falmouth, Cornwall, England, assignor to K. P. Morritt Limited, Falmouth, Cornwall, England, a company of Great Britain and Northern Ireland
Filed July 5, 1968, Ser. No. 742,883
Claims priority, application Great Britain, July 4, 1967, 30,657/67; Mar. 1, 1968, 10,190/68
Int. Cl. A01k *89/00*
U.S. Cl. 242—84.21 **6 Claims**



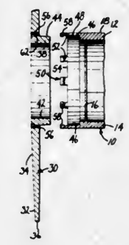
A closed-face fishing reel has a rotatable cowl which is constrained to rotate in unison with a rotatable line pickup. The cowl surrounds and protects both the line pickup and the spool and is provided in its endwall with a line guide which is disposed on the common axis of rotation of both the spool and the line pickup. Means may be provided for superimposing a reciprocatory movement on the rotation of the line pickup to provide for uniform distribution of the line convolutions over the axial length of the spool.

3,552,676
EMERGENCY LOCKING RETRACTOR FOR SAFETY BELT
Georges Robert Weber, 16 Chemin de Rojoux, Geneva, Switzerland
Filed Mar. 3, 1969, Ser. No. 803,829
Claims priority, application Switzerland, Mar. 1, 1968, 3100/68
Int. Cl. B65h *75/48*
U.S. Cl. 242—107.4 **4 Claims**



An automatic locking mechanism for the strap-winding pin is operated by a flywheel controlled by a pendulum-operated brake to lock the pin against rotation when the strap is suddenly pulled on. A balanced mass makes the mechanism insensitive to inclinations of the vehicle.

3,552,677
KNOCKDOWN SPOOL
Hugh H. Hacker, St. Paul, Minn., assignor to Plastics, Inc., St. Paul, Minn., a corporation of Minnesota
Filed Dec. 16, 1968, Ser. No. 783,874
Int. Cl. B65h *75/14*
U.S. Cl. 242—118.61 **1 Claim**

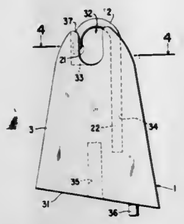


A knockdown spool comprising a drum consisting of two identical juxtaposed staves semicircular in cross section whose edges have longitudinal grooves and tongues engageable therewith for restraining circumferential and radial movement between the staves, said spool further including identical end flanges having apertures therein to receive resilient stems on said staves and said end flanges further having shoulders engageable with catches on said stems together with inclined guides guiding said catches into engagement with said shoulders and locking the end flanges on said drum.

ERRATUM

For Class 242—131 see:
Patent No. 3,552,693

3,552,678
THREAD GUIDE FOR SEWING MACHINES
Robert M. Du Ross, Homer, N.Y., assignor to The Singer Company, New York, N.Y., a corporation of New Jersey
Filed Jan. 6, 1969, Ser. No. 789,137
Int. Cl. B65h *57/04*
U.S. Cl. 242—157 **2 Claims**

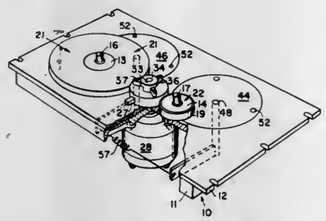


A thread guide having self-threading means which allow for quick threading without actually passing a thread endwise through an opening in the guide. The guide comprises a post mounted on a sewing machine and a hook shaped wire keeper secured in the post whereby the thread is slid against an outside portion of the keeper into a thread accommodating slot formed in the post where it is retained by the keeper.

3,552,679
YARN PACKAGE
Christopher John Rollason, Pontypool, and Gerald Henry Sutcliff Tinsley, Doncaster, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Nov. 13, 1968, Ser. No. 775,511
Claims priority, application Great Britain, Nov. 17, 1967, 52486/67
Int. Cl. B65h *55/00;* **D01h** *1/26*
U.S. Cl. 242—159 **2 Claims**

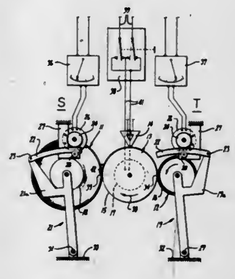
A yarn package comprising freshly drawn polyamide yarn in which the yarn on withdrawal possesses substantially constant shrinkage tension throughout its wound length by arranging for the yarn to be wound onto the package at different balloon (wind-on) tensions.

3,552,680
TAPE TRANSPORT APPARATUS
Chester W. Newell, San Jose, Calif., assignor to Newell Industries, Inc., Sunnyvale, Calif., a corporation of California
Filed Nov. 16, 1967, Ser. No. 683,701
Int. Cl. F16d *3/14;* **G11b** *15/32*
U.S. Cl. 242—192 **3 Claims**



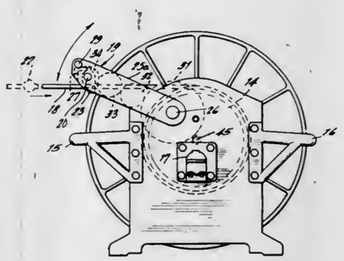
A magnetic tape transport feeds pliable tape from supply to take-up rolls by means of a motor driven capstan engaging the rolls. A yieldable resilient coupling between motor and capstan takes out "once around" motor speed fluctuations but forms a solid drive connection for rapid acceleration of the system. Bearings supporting the capstan and the rolls all lie in a common plane coplanar to the plane of both the rolls and the capstan to eliminate forces acting upon the bearings other than those forces acting normal to the axis defined by the bearings. In addition, the rolls are carried on pivotable radius arms which include broad confronting support surfaces precluding tilting or twisting of the radius arms. Viscous material between the confronting surface serves to introduce a viscous drag to movement of the radius arms which aids in eliminating transient disturbances at the interface between each roll and the capstan, and also serves to provide a differential of compressive forces acting across the tape drive capstan so as to maintain the tape under tension across the capstan.

3,552,681
TAPE TRANSPORT APPARATUS
Charles A. Vogel and James William Forrest Blackie, Sunnyvale, Calif., assignors to Newell Industries, Inc., Sunnyvale, Calif., a corporation of California
Filed June 26, 1968, Ser. No. 740,349
Int. Cl. G11b *15/32*
U.S. Cl. 242—192 **6 Claims**



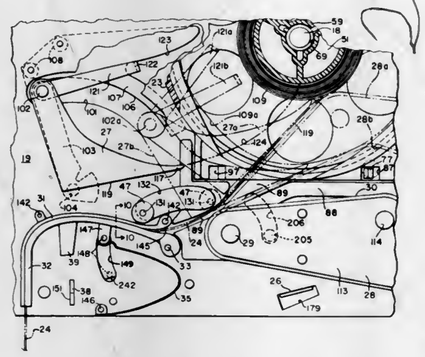
A tape-driving means forming a tape-engaging interface in the nip between a rotating driven body and a rotating resilient annular driving body is formed in a manner whereby increased pressure applied between the driving and driven bodies serves to cause the driven body to run slightly slower than the calculated speed of the resilient driving body. A tape transport arrangement includes supply and takeup rolls engaging the resilient driving body. Pressures are applied to urge the supply roll and takeup roll each independently into engagement with the resilient driving body. The resilient driving body is characterized by the property in that within a limited range of applied interface pressures the tape at the supply interface can be made to progress relative to the tire in either of two directions, i.e., either positively toward the takeup interface or negatively away from the takeup interface in response to lesser or greater applied pressure, respectively.

3,552,682
LEVEL WIND DEVICE
Ralph E. Walsh, Long Branch, N.J., assignor to Breeze Corporations, Inc., Union, N.J., a corporation of New Jersey
Filed Oct. 22, 1968, Ser. No. 769,609
Int. Cl. B65h *54/28*
U.S. Cl. 242—158.3 **7 Claims**



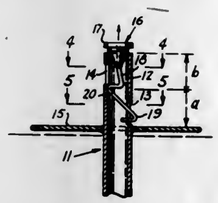
A level wind assembly for use with cables having electronic sensing elements attached thereto which permits the cables to be reeled in and laid upon a drum despite the projecting sensing elements. The level wind mechanism is swingably mounted and cammed out of the path of the sensing devices without interference with its cable orienting drive.

3,552,683
CINEMATOGRAPHIC PROJECTORS OR THE LIKE AND CARTRIDGES FOR USE THEREWITH
John J. Bundschuh, and Robert J. Roman, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 24, 1967, Ser. No. 685,616
Int. Cl. G11b *15/32, 15/66, 23/10*
U.S. Cl. 242—192 **3 Claims**



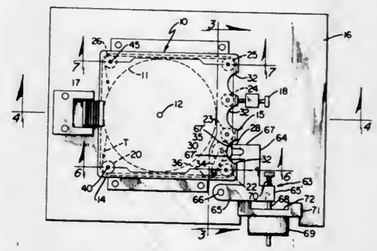
A machine such as a cinematographic projector is convertible to accommodate either a film supply cartridge or an unenclosed film supply reel, such conversion being automatically accompanied by corresponding changes in the mode of operation of the machine. The machine has thereon a stripping mechanism adapted to separate the leading end of the film from a supply roll. The stripping mechanism includes a stripper member movable from a first location out of engagement with the roll to a second location in engagement with the outermost convolution on the roll, a drive member movable from a first position out of engagement with the roll to a second position in engagement with the roll, and means for sequentially moving the stripper member from the first location to the second location and then the drive member from the first position to the second position while the stripper member remains in the second location.

3,552,684
COAXIAL REEL MOUNT
Cesar L. Pineda, 1414 17th St. NW., Apt. 304, Washington, D.C.
Filed Jan. 17, 1968, Ser. No. 698,653
Int. Cl. B65h *17/02;* **G03b** *1/04;* **G11b** *23/08*
U.S. Cl. 242—194 **4 Claims**



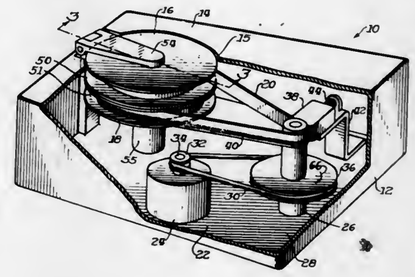
In devices such as tape recorders, moving picture projectors and the like, the reels may be mounted on a single spindle having means for selectively engaging a selected reel for purposes of takeup or rewind. Specifically, the single spindle is provided with a single actuator which has latch means which may selectively engage a notch or slot of that reel which is to be driven, and thus to have that reel function as the takeup reel, or alternatively, as the rewind reel.

3,552,685
TAPE TRANSPORT ASSEMBLY
Raymond B. Larsen, Riverton, Wyo., assignor to Datel Corporation, Falls Church, Va., a corporation of Delaware
Filed Oct. 8, 1968, Ser. No. 765,839
Int. Cl. G03b *1/04;* **G11b** *15/32*
U.S. Cl. 242—194 **11 Claims**



The present invention is adapted for use with a tape transport system of the type having coaxial supply and pickup reels with a spring member to maintain a constant tension on the tape as it is threaded past the capstan. In accordance with the present invention a unique form of guide roll assembly is enclosed within the tape cartridge to guide the tape across the capstan without binding or stretching and without necessitating removal of the tape from the cartridge; and further a brake mechanism is cooperative with a pressure roll to effect instantaneous braking by direct engagement with at least one of the reels.

3,552,686
WEB-REELING DEVICE WITH RADIALLY COMPRESSIBLE MEMBERS
Richard M. Davidson, Northbrook, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed June 27, 1969, Ser. No. 837,075
Int. Cl. B11b *15/32;* **G03b** *1/04*
U.S. Cl. 242—201 **10 Claims**

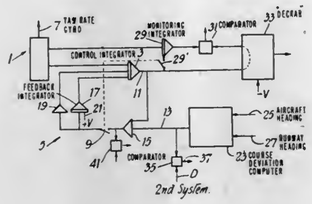


Web-handling apparatus featuring a drive mechanism and configuration common to both the feed and takeup reels and further including radially compressible spring members located about the hub portions of the reels.

3,552,687
AIRCRAFT ALIGNMENT SYSTEMS

Ronald W. Howard, Roy Atkin, and Geoffrey S. Bishop, London, England, assignors to Elliott Brothers (London) Limited, London, England, a British company

Filed Nov. 14, 1967, Ser. No. 682,762
Claims priority, application Great Britain, Nov. 17, 1966, 51528/66
Int. Cl. B64c *13/18*
U.S. Cl. 244—77 17 Claims



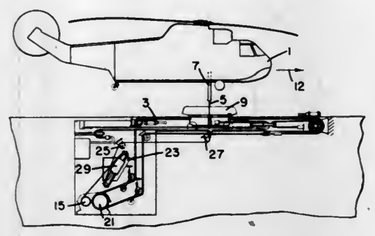
The present invention is directed to providing at the output of a control integrator by the use of a yaw-rate gyro, a course deviation indicator (course deviation being the difference between runway heading and aircraft heading) and a feedback arrangement, a signal at the start of a terminal stage of landing, which accurately represents the course deviation, if any, then existing, and thereafter with the feedback arrangement inoperative, varying the output signal of the control integrator according to the output signal of the yaw rate gyro until a suitable kickoff or decrab altitude is reached. The feedback arrangement may be between the output and the input of the control gyro or between the output and the input of a means for synchronizing the control integrator to eliminate from the output signal thereof any component due to rate-gyro offset. In the first case, the feedback arrangement consists of a circuit providing a differentiator receiving an output signal from the course deviation indicator and the output signal of the control integrator, a feedback integrator receiving the differentiator output signal via a switch by means of which the feedback circuit can be disabled, and feeding its output signal to the control integrator which also receives the output signal of the yaw-rate gyro. When the feedback circuit is operative i.e. up to the start of the terminal stage, the differentiator serves to produce a differential signal if any undue variation occurs between the course deviation signal and the output signal of the control integrator, which differential signal is fed to the input of the control integrator so that the output signal thereof is slaved to the course deviation signal. In the second case, the synchronising means comprises an amplifier receiving the output signal of the yaw-rate gyro and producing a signal which is fed to the input of the control integrator which also receives the output signal of the course deviation indicator. The feedback arrangement comprises a feedback integrator and a switch by means of which the feedback arrangement can be disabled at the start of the terminal stage of the landing phase.

3,552,688
HELICOPTER LANDING MEANS

Asbjorn Baekken, Dartmouth, Nova Scotia, Canada, assignor to Fairey Canada Ltd., Dartmouth, Nova Scotia, Canada, a corporation of Canada

Filed Mar. 10, 1969, Ser. No. 805,608
Claims priority, application Canada, Sept. 4, 1968, 029.185
Int. Cl. B64f *1/12*
U.S. Cl. 244—115 13 Claims

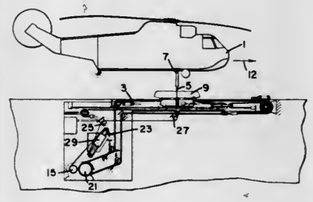
Trap means, for grasping a probe carried by a helicopter and used on board ship to secure a helicopter to the ship at the instant of touchdown, comprise a hydraulic system arranged to move together two arresting beams which trap the probe and hold it in trapped position.



3,552,689
HELICOPTER LANDING SECURING DEVICE

Asbjorn Baekken, Dartmouth, Nova Scotia, Canada, assignor to Fairey Canada Ltd., Dartmouth, Nova Scotia, Canada, a corporation of Canada

Filed Mar. 11, 1969, Ser. No. 806,210
Claims priority, application Canada, Sept. 4, 1968, 29,184
Int. Cl. B64f *1/12*
U.S. Cl. 244—115 5 Claims

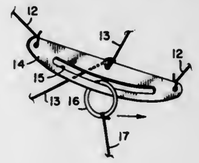


A trap device for grasping a probe carried by a helicopter when that helicopter lands on the deck of a ship; in the trap device two parallel arresting beams are moved towards one another to grip between them the probe, which probably is not in a dead central position, so that one beam must travel further than the other; clutch means operating on the means for moving the two beams, to lock the beams in their probe-engaging positions; the clutch means according to the described embodiment including two teethed clutch members normally held together by springs but movable apart (to free the clutch) by hydraulic piston means.

3,552,690
KITE CONTROL DEVICE

Lloyd S. Turner, 15 E. Main St., Los Gatos, Calif.

Filed May 31, 1968, Ser. No. 733,615
Int. Cl. B64c *31/06*; A63h *27/08*
U.S. Cl. 244—155 6 Claims

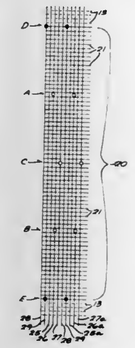


A kite provided with a control device attached to the conventional vertical stick and horizontal cross bow of the kite by strings or cords. This device is provided with an elongated slot for receiving a ring slidable therein. The kite towline is attached to this ring. The kite may be maneuvered and the direction of movement or flight thereof may be changed by momentarily relaxing the tension on the towline so that the ring slides from one end of the slot to the other.

3,552,691
SEAM FOR WOVEN PAPERMAKING FABRICS

Herbert C. Haller, Appleton, Wis., assignor to Appleton Wire Works Corp., Appleton, Wis., a corporation of Wisconsin

Filed Dec. 18, 1967, Ser. No. 691,414
Int. Cl. B21f *27/00*
U.S. Cl. 245—10 5 Claims

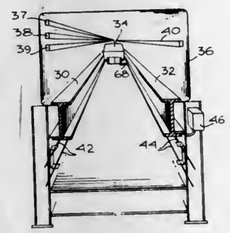


A seam for joining opposite ends of a woven fabric to form a loop or belt in which some warps of the fabric terminate along the seam in a pattern of the type having the ends of three adjacent warps arranged in a three-warp configuration along first, second and third zones, with the third zone between the first and second, and other warps between those arranged in the three-warp pattern terminate along zones located outside of the first three zones.

3,552,692
RAILWAY CONTROL SYSTEM

Geza Horeczky, Pacific Palisades, Calif., assignor to The Dashaveyor Company, Venice, Calif., a corporation of California

Filed Aug. 9, 1968, Ser. No. 751,415
Int. Cl. B61l *3/18*
U.S. Cl. 246—63 9 Claims

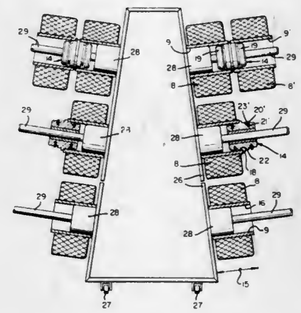


A railway control system is provided in which one loop of wire extends for the length of a block along each block. The length of the trackway is divided into blocks. Provision is made for exciting each wire loop with a signal current. Each train has means for detecting signal current being present in a wire loop in response to which a train car continues to run. However, there is also provided a means responsive to the presence of a train within a block to remove signal current from the wire loop in the block preceding the one in which the train is. As a result, the possibility of a rear end collision is eliminated. Also start up of all trains is made sequential. Provision is also made for sensing that all flights moving in one direction have been cleared from a single line trackway before any flights moving in the other direction are permitted to enter that trackway.

3,552,693
TWIN-SPOOL HOLDER FOR TWINING AND SPINNING MACHINERY

Siegfried Scherf, Munster-Gremmendorf, Westphalia, Germany, assignor to Hamel G.m.b.H. Zwirnerei-u. Spinnereimaschinen, Munster, Westphalia, Germany, a corporation of Germany

Filed June 16, 1969, Ser. No. 833,280
Claims priority, application Germany, June 14, 1968, 1,760,637
Int. Cl. B65h *49/02*; D02h *1/00*; D03j *5/08*
U.S. Cl. 242—131 10 Claims

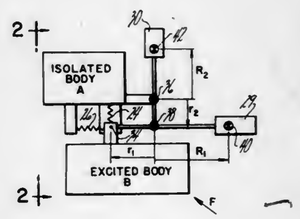


Two spools, each with a hollow core, are stacked in a cylindrical housing with the aid of a central body having a hollow stem traversed by a tubular spindle through which the threads from the spools are guided, this body having two axially spaced cylindrical centering surfaces, fitting snugly into adjoining ends of the corresponding spool cores, and an annular ridge between these shoulders separating the cores. The spool cores are removably retained on the central body by oversized elastic discs axially spaced from the cylindrical shoulders.

3,552,694
THREE-DIMENSIONAL VIBRATION ISOLATOR

William G. Flannelly, South Windsor, Conn., assignor to Kaman Corporation, Bloomfield, Conn., a corporation of Connecticut

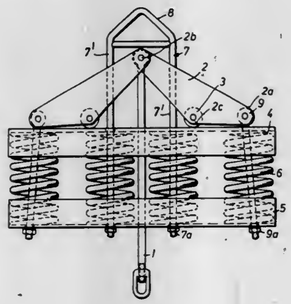
Filed Mar. 18, 1969, Ser. No. 808,224
Int. Cl. F16f *1/22*
U.S. Cl. 248—20 7 Claims



The disclosure is of a passive vibration isolator for reducing the transmission of vibratory displacements and forces from a vibrationally excited base or body to an isolated body.

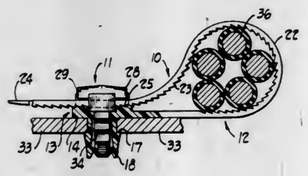
The excited body is one which may vibrate in three orthogonal directions either independently or simultaneously. The isolated body is connected with the excited body by a spring means which statically supports it and permits the excited body to move resiliently relative to it in the three orthogonal directions. Also, between the excited body and the isolated body are two weighted levers which are so pivotally connected to the bodies and to one another as to produce inertial forces which counteract the forces produced by the vibration of the excited body and thereby reduce, in all three directions of relative movement, the vibratory forces transmitted to the isolated body from the excited body.

3,552,695
ELASTIC PIPE HANGER
Gerhard Liesegang, Hamburg, Germany, assignor to Lisega Rohrleitungszubehor G.m.b.H., Hamburg, Germany
Filed Oct. 7, 1968, Ser. No. 765,435
Int. Cl. F16l *3/00*
U.S. Cl. 248—54 **7 Claims**



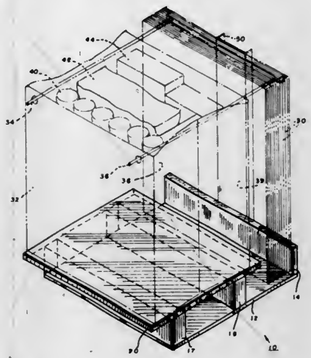
A pipe hanger wherein two toggle levers are symmetrically hinged to a tie bar carrying the pipe and by which a load on the pipe is transmitted to a spring system supported on a fixed abutment, the spring system comprising one or more helical springs arranged parallel and symmetrical with respect to the tie bar and held between a movable upper yoke and a stationary lower yoke. The outer end of each of the toggle levers is connected to the lower pressure yoke through a pivotable drag link whereas the apex of the toggle lever is slidably supported on the upper pressure yoke.

3,552,696
CABLE RETAINER
Emil H. Orenick and Emil J. Orenick, 9011 W. Moreland Road, Parma, Ohio
Filed May 29, 1969, Ser. No. 828,869
Int. Cl. F16l *3/22*
U.S. Cl. 248—68 **1 Claim**



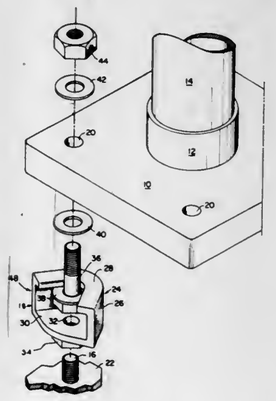
A loop retainer for securing and supporting cables, wires, electrical components, and the like, from structural members, comprising an elongated strap having an anchor-plug at one end thereof for securing said end to a structural member. A separate lock-head, having a slot for receiving the free end of the strap therethrough, insertable in the anchor-plug to permanently anchor both the looped strap and the anchor-plug on the structural member, to provide a retainer loop of any desired capacity, limited only by the length of the strap.

3,552,697
BAG SUPPORT STAND
Patrick J. Pinto, Freehold, N.J., assignor to William E. Young, Stamford, Conn.
Filed Nov. 13, 1968, Ser. No. 775,425
Int. Cl. B65b *67/12*
U.S. Cl. 248—97 **4 Claims**



A bag support stand in combination with a bag holder having a pair of arms is disposed to engage and retain a grouping of self-opening plastic bags on these arms. The bags in their folded condition are slidably retained on the arms of the holder through apertures formed in the sides and panels of the bags. In their folded condition, the bags hang so that their lowermost portion is further down from the arms than is the plane of the bottom of the bag in its open condition. The stand has a platform spaced a determined distance from the back support of the holder and the platform is spaced a determined distance from the rods so as to engage and support the bottom of the bag as it is filled with groceries and the like.

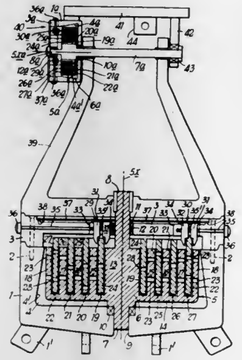
3,552,698
BREAK-AWAY COUPLING FOR POLES
Robert E. Kinney, Pennington, N.J., assignor to W. F. Keegan & Company, Inc., Havertown, Pa., a corporation of Pennsylvania
Filed June 18, 1968, Ser. No. 737,988
Int. Cl. F16m *13/00*
U.S. Cl. 248—158 **4 Claims**



A pole-supporting member, a fixed foundation, and coupling means connecting said member to said foundation

with a controlled force and in such a manner that, when subjected to horizontal impact of a given value, the pole is automatically disengaged from the coupling and is free to move in the direction of the impact.

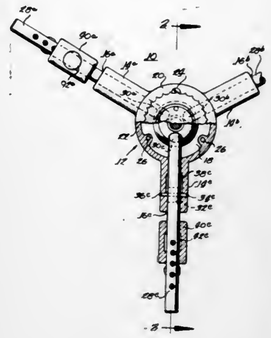
3,552,699
MOUNTING HEADS FOR CAMERAS OR LIKE DEVICES
Harry J. Baker, Greenford, Middlesex, England, assignor to Ronford Limited, Bisley, Surrey, England, a British company
Filed July 10, 1969, Ser. No. 840,767
Claims priority, application Great Britain, July 22, 1968, 34849/68
Int. Cl. F16m *11/12*
U.S. Cl. 248—183 **26 Claims**



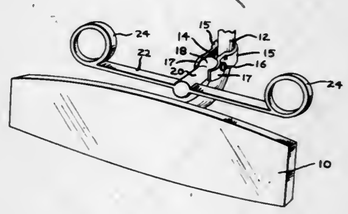
The disclosure of this specification relates to a mounting head (particularly for cameras) comprising a rotor assembly rotatably mounted in a body part of which the body can be coupled to a stand and a rotor of the rotor assembly can be coupled to a camera. The rotor assembly includes at least two ring members located in separate chambers in the rotor, containing viscous fluid to be capable of rotary movement relative to the rotor through both the chambers and the viscous fluid. Ring-engaging means is provided by which one or more of the ring members can be secured relative to the body so that the degree of feel during relative rotation between the rotor and body can be selectively adjusted by varying the ring members which are held stationary relative to the body part.

3,552,700
WHEEL GAUGE ADAPTER
Wallace F. Mitchell, Arlington Heights, Ill., assignor to Ammco Tools, Inc., Chicago, Ill., a corporation of Illinois
Filed Sept. 12, 1968, Ser. No. 759,303
Int. Cl. G01b *5/255*
U.S. Cl. 248—205 **4 Claims**

A gauge adapter for a wheel includes three symmetrically arranged jaws mounted on arms radiating from a central housing and a manually rotatable knob having thereon a planar mounting surface for the gauge. Each of the arms has a different wedge-shaped cam follower formed onto its inner end. By rotating the knob, a lead screw attached thereto is turned in the central housing to drive a collar that threadedly engages the lead screw and carries a wedge-shaped cam to drive the cam followers and arms outward. The arms are spring-biased inward and the jaws are locked to the arms at any of a plurality of locations to grip the rim of a wheel as the arms are driven outward.



3,552,701
INTERIOR AUTO MIRROR SUPPORT FOR SUNGLASSES OR THE LIKE
Anthony Montagano, 45 Eastview Ave., Pleasantville, N.Y.
Filed July 2, 1968, Ser. No. 741,955
Int. Cl. A47f *5/00*
U.S. Cl. 248—309 **9 Claims**

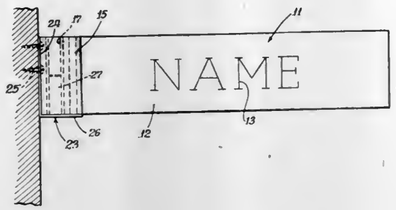


An interior auto mirror sunglass support which may be adjustable for various configurations of mirror support posts. The support may be integrally incorporated in new interior mirror constructions or incorporated with existing auto mirrors. The support either is removably secured to a mirror support post or is fixed on the mirror frame itself.

3,552,702
SIGN HOLDER
Edward M. Springer, Chicago, Ill., assignor to Heyer Inc., Chicago, Ill., a corporation of Illinois
Filed Jan. 10, 1969, Ser. No. 790,289
Int. Cl. G09f *7/18*
U.S. Cl. 248—316 **6 Claims**

Sign holder comprising bracket with vertical leg attachable with screws to supporting structure and horizontal leg with vertical post upstanding therefrom and spaced from vertical leg, and base of extruded aluminum having bore slidably engaging vertical leg and grooved to clear heads of screws and outer end channeled to form central vertical rib for abutting engagement with inner edge of sign to assure proper alignment and opposed arms spaced from each other to receive

and frictionally engage opposite surfaces of sign to alone secure base to sign, whereby sign and base are firmly

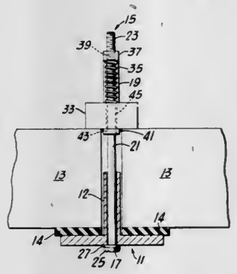


mountable on and readily removable as a unit from the bracket.

3,552,703
MEAT HOOK
Bernard M. Ronellenfitch, 400, 209 8th Ave. SW., Calgary, Alberta, Canada
No Drawing. **Filed Feb. 23, 1968, Ser. No. 707,447**
Int. Cl. F16b *45/00;* **A22c** *15/00;* **B32b** *15/08*
U.S. Cl. 248—339 **11 Claims**

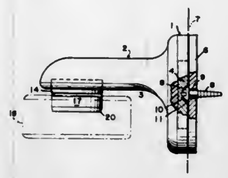
A corrosion-resistant steel meat hook having a primer layer and a cured polyurethane elastomer bonded thereto, said elastomer having sufficient hardness, abrasion resistance and load bearing capacity to resist rupture at the point of suspension.

3,552,704
CLAMPING DEVICE FOR SIMULTANEOUSLY SECURING TWO PANELS TO A SUPPORT
Robert W. Pond, Bethel Park, Pa., assignor to American Air Filter Company, Inc., a corporation of Delaware. by mesne assignments
Filed Oct. 14, 1968, Ser. No. 767,088
Int. Cl. F16b *21/02*
U.S. Cl. 248—342 **3 Claims**



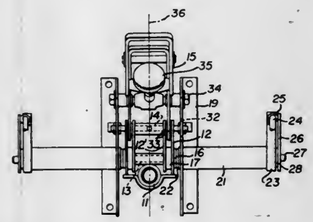
A novel clamping device for use in simultaneously securing two panels to a support comprises a bolt and a fastening means. The bolt has a shank with a threaded portion at one end for engaging the fastening means and an enlarged head portion at the other end for engaging the support. The fastening means comprises a nut, a panel engagement member and a biasing means. The nut has a member disposable between the two panels. The panel engagement member is interposed between the two panels and the nut. The biasing means is disposed between the nut and the panel engagement member for urging the panel engagement member away from the nut.

3,552,705
MAGNETIC MEANS FOR HOLDING A BAR OF SOAP AND ATTACHING THE SOAPHOLDER TO A WALL
Eldred E. Caster, Rte.1, Box 26, Scotts Mills, Oreg.
Filed Jan. 31, 1969, Ser. No. 795,437
Int. Cl. A47k *5/05;* **A47g** *29/00*
U.S. Cl. 248—206 **1 Claim**



A holder for cake or bar soap including a magnet embedded within the holder for magnetic attachment to an armature in the form of a metal disk secured to and preferably embedded in and flush with a wall or other support, and a second magnet embedded within the holder for independently supporting a bar of soap also having an armature embedded therein. The combination holder and bar soap is adapted for singlehanded operation in attaching the holder to a support and in detaching the soap from the holder without disturbing the attachment of the holder.

3,552,706
CHAIR CONTROL
Roy Shingler, Harlow, England, assignor to Stewart-Warner Limited, Harlow, England
Filed June 7, 1968, Ser. No. 753,043
Int. Cl. A47c *7/00*
U.S. Cl. 248—373 **3 Claims**

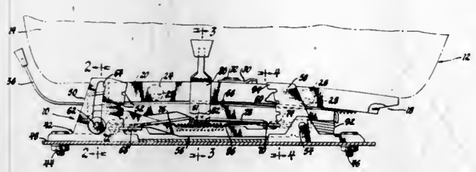


This invention is a chair control for controlling tilting of a seat in relation to a pedestal or a seat back in relation to a seat or both types of movement. A chair control is frequently sold as a unit to a chair manufacturer for fitting to a pedestal and a seat. The control uses torsion bar restraint against tilting with a single bar providing restraint against both types of tilting. The reaction is taken at the center of the torsion bar at slightly spaced points for separation of the reaction stresses. Two parts of the torsion bar may have different torsional stress characteristics so that one will fail before the other and the occupant will not be likely to be thrown from the seat due to all torsional restraint disappearing at one moment.

3,552,707
MANUALLY OPERABLE SEAT ADJUSTER MECHANISM
Akira Tanaka, Northridge, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 6, 1969, Ser. No. 831,123
Int. Cl. F16m *11/24*
U.S. Cl. 248—394 **6 Claims**

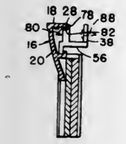
A manually operable seat adjuster mechanism for supporting a vehicle seat on a base for selective tilting movement

about first and second horizontal axes located respectively adjacent to the front end and the rear end of the seat and extending normal to the longitudinal axis of the vehicle. The mechanism is characterized by having a pair of lever mem-



bers pivotally interconnected and interposed between the base and the seat and supported for adjustable movement to a plurality of vertically spaced positions to permit height adjustment of either the front end or the rear end of the seat.

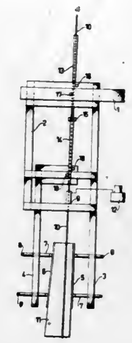
3,552,708
DISPLAY FRAME HAVING ADJUSTABLE HANGING CLIP
David U. Hillstrom, Detroit, Mich., assignor to Marketing/Displays, Inc., Detroit, Mich., a corporation of Michigan
Filed July 24, 1967, Ser. No. 655,539
Int. Cl. A47g *1/16*
U.S. Cl. 248—498 **6 Claims**



The frame comprises separate frame members joined together to form a rectangular structure for receiving a display device such as a placard. A bracket having a pair of legs forming a right angle is provided at each corner of the frame to secure the frame members together. Each frame member has a pair of oppositely disposed, longitudinally extending grooves on the rear side which receive the legs of the brackets. A screw is provided on each leg of the brackets. Each screw has an enlarged head which clamps against a lip portion on the frame members to fasten the brackets to the frame.

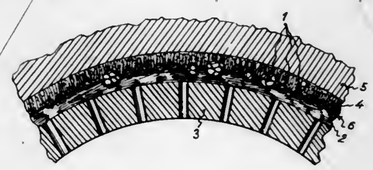
The upper frame member is utilized to mount the adjustable hanging clip. The adjustable hanging clip has upwardly and downwardly extending projections. The downwardly extending projection is received in the lower groove. The upwardly extending projection is depressible downwardly for insertion into the upper groove. A hanger structure is provided on the clip and is spaced rearwardly from the projections so that it will not have to extend above the frame. The positionment of the hanger member results in a lever action from the point of securement of the hanger structure to the frame resulting in the frame tending to rotate towards the support structure on which the hanger is secured. This prevents stress being applied to the depressible upwardly extending projection. The clip is slidable along the frame member to permit centering.

3,552,709
ARRANGEMENT IN SLIDING FORM EQUIPMENTS FOR ERECTING CONCRETE STRUCTURES HAVING AT LEAST ONE INCLINED WALL SURFACE
Sven-Erik Vilhelm Svensson, Huddinge, Sweden, assignor to AB Byggforbattring, Stockholm, Sweden, a corporation of Sweden
Filed May 8, 1968, Ser. No. 727,553
Claims priority, application Sweden, May 11, 1967, 6,651/67
Int. Cl. E04g *11/22*
U.S. Cl. 249—20 **8 Claims**



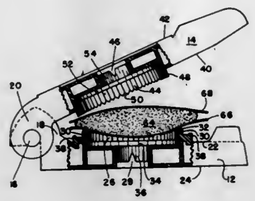
A pair of sliding forms are supported by a yoke, at least one of the sliding forms being supported for movement in a horizontal direction. A climbing rod is adapted to be gradually imbedded in the erected concrete structure, and lifting means is operatively associated with the climbing rod for lifting the yoke along the climbing rod. Wedge means is mounted on the climbing rod and cooperates with a portion of the yoke for moving at least one of the sliding forms in a horizontal direction upon lifting the yoke along the associated climbing rod.

3,552,710
APPARATUS FOR MAKING ENGRAVING ROLLS
Karl-Heinz Roosen, Schlebahn, Germany, assignor to Kleinewefers Gravuren GmbH, Krefeld, Germany
Original application May 31, 1966, Ser. No. 553,856, now Patent No. 3,387,351, dated June 11, 1968. Divided and this application Apr. 5, 1968, Ser. No. 719,200
Int. Cl. B22d *19/00*
U.S. Cl. 249—83 **9 Claims**



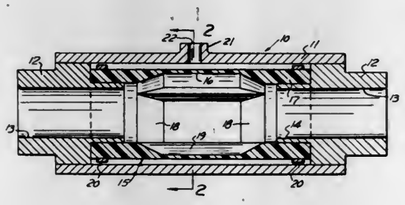
An apparatus for making engraving rolls having as a printing surface a surface in relief which is complementary to the one surface of a selected member having a pattern in relief on said one surface which comprises an auxiliary cylinder adapted to be inserted in said member when the latter is formed to a cylinder with said one surface on the inside thereof for supporting said member which latter is supported by a working cylinder from the outside to permit removal of said auxiliary cylinder to expose the said one surface of said member, said working cylinder being composed of relatively movable portions to permit enlargement thereof to release said member therefrom.

3,552,711
MOLDING DEVICE
George E. De Laney, and Allen A. Greenberg, Cincinnati, Ohio, assignors to Rainbow Crafts, Inc., Cincinnati, Ohio, a corporation of Delaware
Filed Feb. 26, 1969, Ser. No. 802,466
Int. Cl. B41b 11/54
U.S. Cl. 249—170 10 Claims



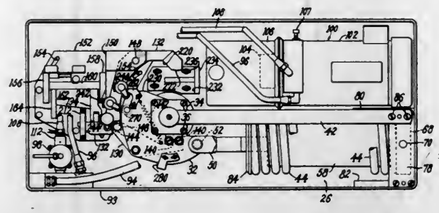
A molding device having a hingedly connected base and cover. The base has an upper face with a recessed portion. An upstanding ridge completely surrounds such recess with a series of teeth along its upper edge. The cover has a lower face with a recessed portion. A closed ridge extends downwardly from the recessed portion and completely surrounds such portion. This downwardly extending ridge has a series of teeth extending completely along its lower edge. The teeth of the downwardly extending ridge and the teeth of the upstanding ridge mesh in cooperative engagement when the cover is closed over the base. When the cover is closed over the base the base and cover teeth are positioned for rolling, folding and cutting the foil of a lamination of foil, malleable material, and foil when a large enough lamination thereof is properly positioned between the teeth. Each recess contains an embossed design which is pressed into the upper and lower foil laminations when the cover is closed on the base.

3,552,712
COLLAPSIBLE TUBE VALVE
Carl H. Whitlock, Key Largo, Fla., assignor to Whitlock, Inc., Farmington, Mich.
Continuation-in-part of application Ser. No. 481,231, Aug. 20, 1965, now abandoned. This application Mar. 24, 1969, Ser. No. 809,594
Int. Cl. F16k 7/07
U.S. Cl. 251—5. 1 Claim



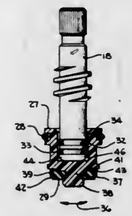
A pressure collapsible, resilient valve tube having thick wall end portions with a thin wall intermediate valving portion provided with inwardly directed, integral ribs, wherein application of uniform pressure to the exterior of the valving portion progressively collapses it longitudinally and radially inwardly between the ribs to close the valve.

3,552,713
VALVE OPERATING MECHANISM
Gunther K. E. Kleeberg, Lexington, Mass., assignor to E. B. V. Systems, Inc., Warwick, R.I., a corporation of Maryland
Filed Apr. 4, 1969, Ser. No. 813,644
Int. Cl. F16k 31/44, 31/363
U.S. Cl. 251—69 11 Claims



Valve operating mechanism in which a rotatably mounted valve operating member is directly connected to the valve stem and is urged by a helical coil spring in one direction, characterized by a fluid pressure operated piston in a cylinder for moving the valve operating member in the opposite direction to compress and cock the spring and means including a latching member for holding the valve operating member against movement by the cocked spring and a solenoid for moving the latching member to an inoperative position thus to release the valve operating member to the action of said spring.

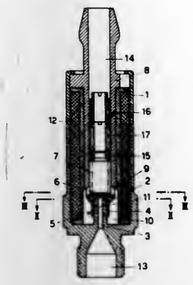
3,552,714
TORQUE FREE VALVE ASSEMBLY
Charles J. Manville, Saint Petersburg Beach, Fla., assignor to Manville Manufacturing Corporation, Pontiac, Mich., a corporation of Michigan
Filed May 8, 1968, Ser. No. 727,616
Int. Cl. F16k 25/00, 37/00
U.S. Cl. 251—88 1 Claim



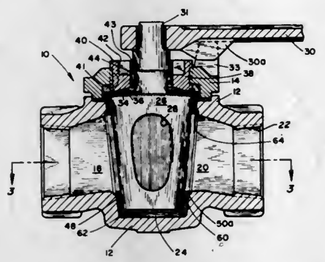
A valve housing with a fluid inlet and fluid outlet and a valve seat in a passageway therebetween. A seal mount in the passageway, with a bib-washer thereon to engage the valve seat, and with an O-ring thereon to prevent leakage from the housing along the valve operating stem. A split ring freely received on a groove in the stem and snugly received in a bore on the seal mount for connection therebetween, permitting free-floating seal action and torque-free stem rotation for valve operation.

3,552,715
SOLENOID VALVE
Aldo Bassi, Milan, Italy, assignor to Alfa Romeo S.P.A., Milan, Italy, a company of Italy
Filed Nov. 5, 1968, Ser. No. 773,581
Claims priority, application Italy, Dec. 21, 1967, 24,236/67
Int. Cl. F16k 31/06
U.S. Cl. 251—139 5 Claims

A solenoid valve which includes a magnetic nucleus, a movable valve element of material sensible to a magnetic field, and an electric circuitry which creates a circulating magnetic flux which involves said magnetic nucleus and said movable element, so that the movable element is internally guided.



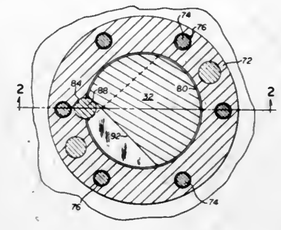
3,552,716
PLUG VALVE WITH A FLEXIBLE PORT PLATE
Pieter F. Hoos, Greensburg, Pa., assignor to Walworth Company, New York, N.Y., a corporation of Massachusetts
Filed June 3, 1969, Ser. No. 830,005
Int. Cl. F16k 5/16
U.S. Cl. 251—184 11 Claims



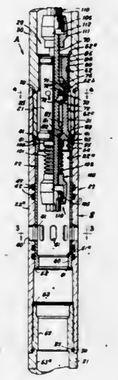
A tapered plug valve with thin flexible plates of metal or the like to seal against the plug, the plates being restrained against lateral or circumferential movement in the valve body by means of axial extensions inserted in the flow ports. A backing liner of elastomeric material seals the flexible port plates to the body and enables them to conform to the curvature of the tapered plug. A top closure with self-adjusting plug loading comprises a Belleville spring which is pressed by a loading ring against the top shoulder of the plug. Any leakage past the upstream port plate seal causes a pressure buildup in the valve housing which exerts an additional torsional force on the Belleville spring about the load ring to increase axial plug load until the upstream port is again sealed.

3,552,717
BALL VALVE HAVING TRUNNION STOP
Alton D. Oliver, Houston, Tex., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Dec. 4, 1968, Ser. No. 781,028
Int. Cl. F16k 51/00
U.S. Cl. 251—285 10 Claims

A rotatable plug valve having trunnions rotatably mounting a plug member within the valve chamber thereof, which plug member is rotatable between open and closed positions and is precisely stopped at each extremity of rotational movement to positively control the flow of fluid through the valve. The valve is provided with a stop pin, which is disposed in a stop pin recess located generally parallel with the axis of the plug trunnions and is disposed in intersecting relation with one of the trunnion bores so that the stop pin is partially exposed along its length within the trunnion bore. Stop surface means on one of the trunnions is engageable with the stop member to limit rotation of the valve element at each extremity of its travel. The stop member is so related to the valve body structure as to prevent the stop pin from being sheared as high magnitude forces are applied thereto.



3,552,718
SLIDING SLEEVE VALVE AND OPERATOR THEREFOR
Harry E. Schwegman, Richardson, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Mar. 1, 1968, Ser. No. 709,652
Int. Cl. F16k 31/46
U.S. Cl. 251—291 19 Claims

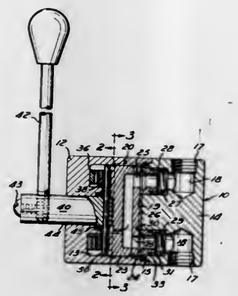


A well tool operable in a well flow conductor by means of fluid operated pumpdown apparatus, wire line operated tools, rods or a tubing string, for moving a shiftable sleeve member between operating positions in said conductor, said tool having sleeve engaging shifting keys swingably mounted on the body engageable with the sleeve for shifting the same longitudinally, and arranged for swingable manipulation past the sleeve after it has been shifted. The keys are also radially contractible for movement past restrictions which cannot be cleared by swingable movement of the keys.

3,552,719
ROTARY VALVE
Donald J. Murauskas, Cleveland, Ohio, assignor, by mesne assignment to Snap-Tite, Inc., Union City, Pa.
Original application May 18, 1969, Ser. No. 639,349, now Patent No. 3,473,551. Divided and this application Feb. 18, 1969, Ser. No. 832,515
Int. Cl. F16k 35/04
U.S. Cl. 251—297 4 Claims

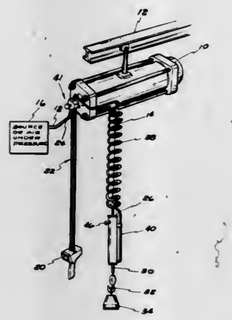
A rotary selector control valve employing a ported rotor assembly rotatable in a ported housing wherein the rotor assembly is provided with drive and position detent arrange-

ments which can be varied for different design configurations. The rotor drive includes a radial pin positioned in any of a series of open slots formed in the rotor. The detent ar-



rangement has recesses in the housing around the rotor and leaf spring detent elements within the recesses allow different configurations.

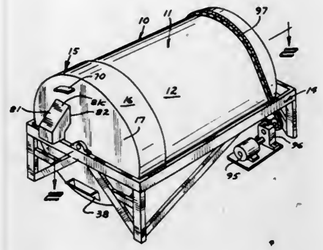
3,552,720
BALANCING APPARATUS FOR HOISTS
Lorne J. McKendrick, 5131 Surfwood Drive, Milford, Mich.
Filed Sept. 30, 1968, Ser. No. 763,827
Int. Cl. B66d *1/00*
U.S. Cl. 254—135 **15 Claims**



A hoist having a lifting cable for raising and lowering a pneumatic balancing attachment and a load with respect to a suspended position is disclosed. The balancing attachment allows the load to be manually, vertically positioned by a fingertip effort between suspended positions without vertically moving the cable.

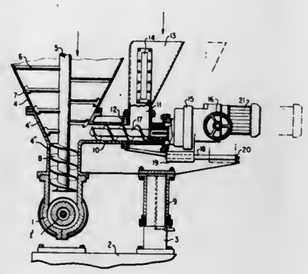
3,552,721
PARTICULATE MATERIAL MIXING MACHINE
Charles E. Phillips, Box 65, Downsville, Wis. 54735
Filed Oct. 11, 1968, Ser. No. 766,853
Int. Cl. B01f *9/06*
U.S. Cl. 259—3 **36 Claims**

A particulate material mixing machine having a rotatable open-ended drum with scoops attached thereto to elevate material within a stationary hood enclosing the drum open end and material received from a stationary hopper within the drum. Drum mechanism elevates material and directs it into the hopper, a baffle attached to the hood blocking any substantial flow of material from the drum to the scoops except that which passes through the hopper. A hood discharge chute receives material elevated by the scoops. The scoops are stationary relative the drum in one embodiment and in the other some of the scoops are pivotable. The drum has front inclined troughs for directing material in a direction



away from the hood and rear inclined troughs for directing material in the opposite direction.

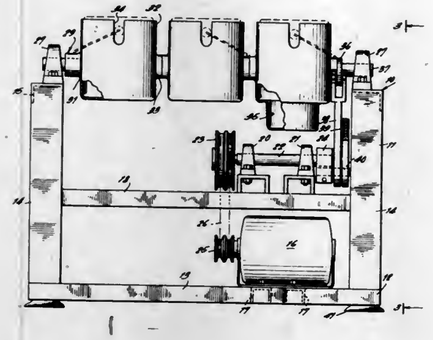
3,552,722
CONTINUOUSLY OPERABLE MIXING AND KNEADING DEVICE
Fritz Sutter, Pratteln, Switzerland, assignor to Buss Aktiengesellschaft, Basel, Switzerland, a corporation of Switzerland
Filed Apr. 29, 1968, Ser. No. 724,735
Claims priority, application Switzerland, Apr. 27, 1967, 6,157/67
Int. Cl. B01f *7/00*
U.S. Cl. 259—21 **3 Claims**



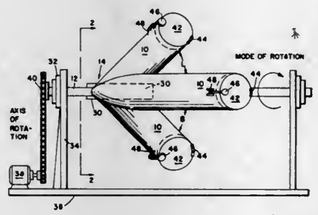
A continuously operating mixing and kneading apparatus for uniformly blending powdered plastics and cut pieces of calendered plastic sheet material comprising a first vertical casing with axial worm rotating on a shaft, a conical feed hopper projecting from the open end of the vertical casing and the shaft-carrying bar means at the top of the hopper and radially inclined blades between the bars and the worm, and additional feeding means constituting a horizontal casing, a second worm and a second feed hopper, the second worm rotating radially in respect to the first worm to uniformly and smoothly convey the proportions of materials delivered to it by the second worm while the rotational movement of the bars and the blades provides smooth and uniform feeding.

3,552,723
PAINT STIRRER
William W. Stefany, Bernardsville, N.J., assignor to Red Devil Incorporated, Union, N.J., a corporation of New Jersey
Filed Oct. 15, 1968, Ser. No. 767,779
Int. Cl. B01f *11/00*
U.S. Cl. 259—56 **3 Claims**

A device for stirring paint within sealed cans in which the can is given an unequal rocking motion about a pivot point causing the paint to circulate in one direction within the can.



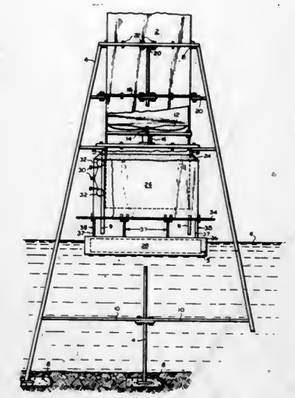
3,552,724
POWER BLENDER
Gail J. Thomsen, 708 28th St., Union City, N.J. 07087
Filed June 18, 1968, Ser. No. 738,035
Int. Cl. B01f *9/02*
U.S. Cl. 259—81 **5 Claims**



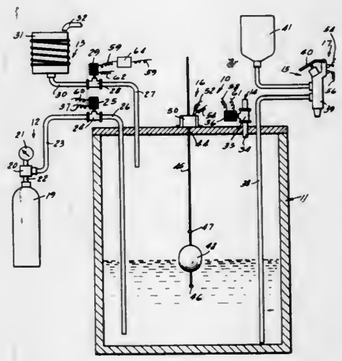
A mixing machine which comprises a plurality of hollow legs attached to a rotating shaft wherein each of the legs extends from the shaft at predetermined angle and wherein all of the legs pass through a plane perpendicular to the axis of rotation of the shaft.

3,552,725
ACCELERATION UNITS
Bartow Ray, McLean, Va., assignor to Future Products Development Corporation, a corporation of Virginia
Filed Mar. 28, 1969, Ser. No. 811,410
Int. Cl. C02c *5/04*; **B01f** *3/04*
U.S. Cl. 261—24 **5 Claims**

A device for accelerating evaporation and oxidation in sewage systems comprising a frame, a cylindrical housing slidably contained in the frame, a motor driven fan located within the housing and a floatable hood attached to the lower end of the housing whereby the inlet space between the air inlet and the water level may be maintained at a constant level.

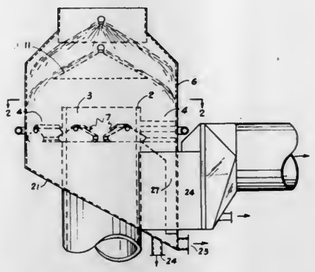


3,552,726
MOTORLESS CARBONATOR AND METHOD OF OPERATION
Elroy J. Kraft, Park Ridge, Ill., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed Dec. 11, 1968, Ser. No. 783,030
Int. Cl. B01f *3/04*
U.S. Cl. 261—50 **4 Claims**



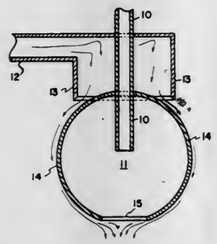
A motorless carbonator with a mixing chamber having associated therewith a water supply system, a gas supply system, a vent system, a liquid level sensing device, and a dispensing device. The sensing device is adapted to sense a minimum and a maximum desired fluid level in the chamber and to actuate valves controlling the water supply, gas supply and vent in accordance therewith. The water supply valve has a time delay device to allow venting of the chamber prior to water inflow and the dispensing device is adapted to override actuation of the valves by the sensing device while the dispensing device is in operation.

3,552,727
GAS SCRUBBING APPARATUS
Raymond C. Ortgies, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware
Filed Sept. 18, 1968, Ser. No. 760,446
Int. Cl. B01d *47/00, 47/10*
U.S. Cl. 261—109 **6 Claims**



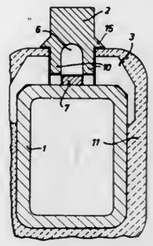
An improved gas scrubbing apparatus including a housing surrounding an open-end stack to provide a passageway therebetween, the passageway having a plurality of pairs of oppositely inclined baffle members spaced to provide a plurality of gas apertures in such passageway, scrubbing liquid being introduced along the inclined surfaces of the baffle members to flow into the gas apertures and scrub gases passing therethrough as they are deflected from the open-end stack into the passageway.

3,552,728
GAS SCRUBBING APPARATUS
Francis A. Wisdom, Kemah, Tex., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Oct. 26, 1966, Ser. No. 589,573
Int. Cl. B01d *47/02;* **B01f** *3/04, 5/00*
U.S. Cl. 261—112 **5 Claims**



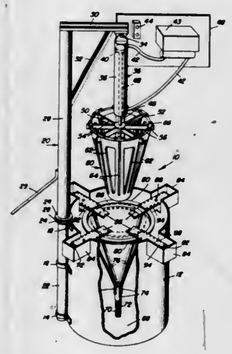
An apparatus for scrubbing gases vented from analytical instruments. The scrubber has a vertical gas conduit and a chamber with a spheroidal exterior surface. A coaxial liquid conduit surrounds a portion of the vertical gas conduit so as to form an annular space between the gas conduit and the liquid conduit. The lower end of the gas conduit is in open communication with the chamber. The lower end of the liquid conduit is circular and lies in a single horizontal plane and opens in close proximity to the upper surface of the chamber. The spheroidal exterior surface of the chamber has a circular horizontal cross section and is axially aligned with the gas conduit and the liquid conduit. The diameter of the circular horizontal cross section varies constantly and uniformly in a nonlinear manner from the top of the chamber to the bottom of the chamber in such a manner as to make the exterior of the chamber widest at a point between the top and the bottom of the chamber. The bottom of the chamber has an opening the center of which lies on the common axis of the spheroidal exterior surface of the chamber and the gas and liquid conduits. The opening is of such a size that fluid flowing down the exterior surface of the chamber will come together to form a seal over the opening. The exterior of the chamber is widest at the midpoint between the bottom and the top of the chamber. The interior surface of the chamber conforms to the spherical shape of the interior surface of the chamber. The vertical gas conduit has a circular horizontal cross section and extends to the center of the chamber.

3,552,729
SLIDEWAY CONSTRUCTION
Gunter Hepp, Oberhausen; Christian Brockmann, Essen, and Hans Christoph Pohl, Norf near Neus, Germany, assignors to Koppers-Wistra-Ofenbau Gesellschaft Mit Beschrankter, Haftung, Essen, Germany
Filed Oct. 1, 1968, Ser. No. 767,581
Claims priority, application Germany, Sept. 30, 1967, 1,583,381
Int. Cl. F27b *9/14*
U.S. Cl. 263—6 **14 Claims**



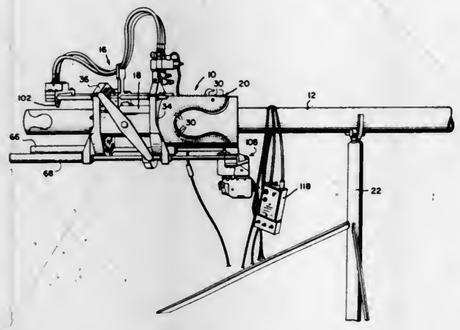
A support rail in a slideway for pusher furnaces includes at least one elongated tubular support member having a longitudinally extending surface portion thereon. A pair of raised ribs are rigid with the support member and extend longitudinally thereof at opposite sides of the surface portion. An elongated rider shoe of polygonal cross section has longitudinally extending wider and narrower surfaces and is supported with one of the narrower surfaces on the surface portion of a tubular member, resting loosely thereon between the ribs which support it.

3,552,730
QUENCHING DEVICE
Ralph E. Kawecki, New Britain, Conn., assignor to Southington Manufacturing, Inc., Southington, Conn., a corporation of Connecticut
Filed Nov. 12, 1968, Ser. No. 774,620
Int. Cl. C21d *1/62*
U.S. Cl. 266—6 **10 Claims**



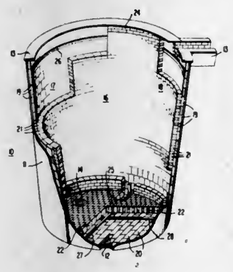
This invention is a quenching device for holding or securing a hot circle apertured planar metal workpiece against planar and circular distortion while the hot workpiece is being quenched. It includes a quenching tank, a number of radially outwardly slidable workpiece supporting arms, and an inverted cast iron cone supported on a spider extending through vertical slots in the cone, so that as the spider descends under the control of a fluid motor, the cone first comes to rest through the circle aperture on the workpiece and the spider descends further until it grips the top of the workpiece and holds it down against the supporting arms, which meantime are moving under the weight of the cone and action of the fluid motor down into the quenching medium, the spider thus holding the workpiece against planar distortion, and the cone holding against circular distortion, while it is quenching.

3,552,731
APPARATUS
Lawrence R. Selkirk, Tulsa, Okla., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
Filed July 31, 1968, Ser. No. 749,080
Int. Cl. B23k *5/00*
U.S. Cl. 266—23 **10 Claims**



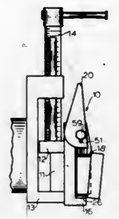
Apparatus for automatically cutting pipe or tubing according to a desired pattern by securing the pattern to the tubing and by rotatably mounting around the tubing a constant linear speed, positive contact drive which traces the pattern and which is connected by a transfer arm to a cutting tool.

3,552,732
REFRACTORY LINED LADLE HAVING MEANS TO FACILITATE REMOVAL OF THE LINING
Kendal Wesley Rice, Baltimore, Md., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed Dec. 21, 1967, Ser. No. 692,339
Int. Cl. B22d *41/02*
U.S. Cl. 266—43 **6 Claims**



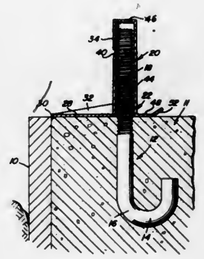
A ladle having an outer metal shell which is lined with a refractory material and which has interposed between the shell and the refractory a metal band which facilitates removal of the lining when it has become worn.

3,552,733
MICROTOME CHUCK ADAPTER FOR HISTOLOGIC TISSUE RECEPTACLE
John E. P. Pickett, 3323 Pinafore Drive, Durham, N.C. 27705
Filed Dec. 19, 1968, Ser. No. 785,280
Int. Cl. B23q *3/06*
U.S. Cl. 269—216 **8 Claims**



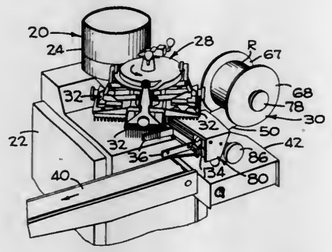
An adapter for a microtome chuck holds a histologic tissue receptacle by a clamping action and for that type receptacle having a boat detachably secured to the embedding box includes means effective to prize off the boat.

3,552,734
ANCHOR BOLT SETTER
James Severino, Encino, and Evans S. Burk, Canoga Park, Calif., assignors to Michael J. Schiff, Woodland Hills, a part interest; David H. Victor, Los Angeles, a part interest and Philip M. Schreiber, Westwood, Calif., a part interest
Filed May 20, 1969, Ser. No. 826,175
Int. Cl. B23q *3/18;* **E04c** *5/18*
U.S. Cl. 269—287 **8 Claims**



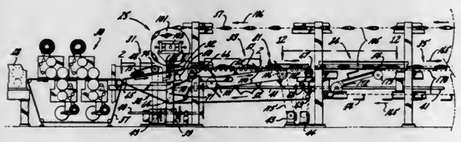
A manually applicable anchor bolt positioning, depth-gauging, setting and thread protecting device for an anchor bolt of a type which is embedded in a concrete foundation. The cap is sleeved over and protectively encloses the screw-thread stud. It is temporarily held by struck-out thread-engaging detents. The J-shaped shank, with the base-equipped cap attached, is sunk in the wet concrete with the outer free end of the adapter or gauging finger contacting the pouring form. The overall base provides a depth gauge. When the usual "mud sill" is readied for use the finger-tab of the frangible tear strip is caught hold of and the tear strip is ripped free to sever the base flange, and divide the then fractured cap, after which it is discarded.

3,552,735
FOOD MOLDING MACHINE HAVING VARIABLE LENGTH FEED OF SEPARATOR WEB
Eugene F. Felstehausen, Hoopeston, Ill., assignor to FMC Corporation,, San Jose, Calif., a corporation of Delaware
Original application Dec. 1, 1966, Ser. No. 598,288, now Patent No. 3,461,483. Divided and this application Mar. 24, 1969, Ser. No. 833,223
Int. Cl. B65h *39/02*; A22c *7/00*
U.S. Cl. 270—58 **4 Claims**



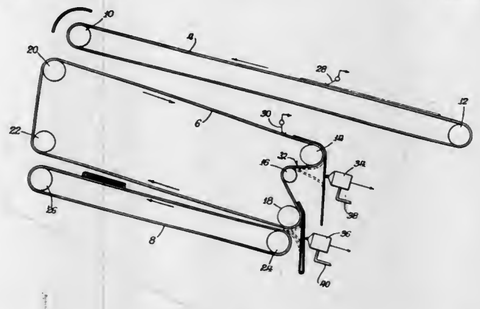
A selectively variable length of the leading end portion of a rolled web of separator material, such as waxed paper, is advanced into underlying relation to the patty discharge station of a food-molding machine and is severed to form a separate sheet which intercepts the patty dropped thereon so that the patties in an accumulated stack of patties are separated from one another. A crimping roller transversely corrugates the web before it is severed to lend it beam strength so that thin, inexpensive web materials can be used, and to minimize contact with the patty so that there is less of the usual tendency of the patty and separator sheet to stick together.

3,552,736
METHOD AND APPARATUS FOR FOLDING DISPOSABLE DIAPERS
Richard H. Frick, Neenah, Wis., and Terry M. Weber, East Flat Rock, N.C., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Nov. 18, 1968, Ser. No. 776,351
Int. Cl. B65h *45/00*
U.S. Cl. 270—61 **29 Claims**



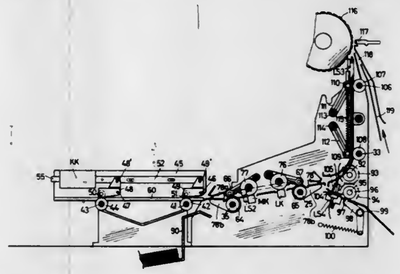
A method and apparatus for folding precut sheet material, such as disposable diaper blanks, as they move in spaced-apart relation along a conveyor path. The folder includes apparatus for preliminarily folding the blank along a medially located transverse fold line and over a triangular-shaped folding board and further apparatus for diagonally folding over the legs of the folding board the material initially located along the transverse fold line on either side of the center thereof and for tucking this material between the upper and lower portions of the preliminarily folded blank while also reversely interfolding therebetween the material initially located along the transverse fold line most distant from the center thereof. The folding apparatus also includes means for picking the folded blank off the folding board and for stripping it from the picker. A preferred form of the apparatus also includes automatic glue guns for applying discrete spots of adhesive at specific points on the underside of the blank prior to the folding operation.

3,552,737
TWO SWITCH CONTROL SYSTEM FOR MEASURING MINIMUM SIZE ARTICLES MOVING IN CLOSELY FOLLOWING SUCCESSION
Rumult Iltis, Cincinnati, Ohio, assignor to McGraw-Edison Company, Elgin, Ill., a corporation of Delaware
Filed Feb. 19, 1969, Ser. No. 800,640
Int. Cl. B65h *45/04*
U.S. Cl. 270—84 **18 Claims**



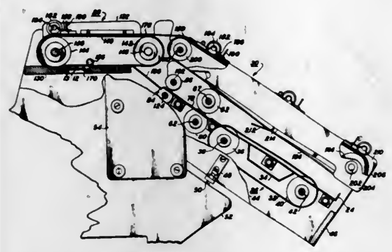
A circuit for locating fractional lengths of articles moving on a belt in synchronization with high and low rate pulses having a 2:1 ratio. First, second and third counters having equal count capacities are provided. A low pulse rate is applied to the first counter so that it accumulates a count representative of the full length of an article. A very high repetitive frequency pulse train is then applied to all three counters until the count capacity of the first counter is filled thereby leaving an unfilled count capacity on the second and third counters representative of the full length of an article as measured by the low pulse rate. By then applying the high rate pulse to the second counter, the midlength of the article may be located. By applying the low pulse rate to the third counter while the high pulse rate is applied to the second counter and then applying the high pulse rate to the third counter, the quarter-length of the article may be located.

3,552,738
APPARATUS FOR PROCESSING CARDS HAVING PRINTED AND RECORDED DATA
Bernhard Hettich, Villingen; Heinrich Kammerer, Neuhausen, and Friedrich Fleck, Villingen, Germany, assignors to Kienzle Apparate GmbH, Villingen, Germany
Filed Apr. 23, 1969, Ser. No. 818,525
Claims priority, application Switzerland, Apr. 24, 1968, 6077/68
Int. Cl. B65h *5/22*
U.S. Cl. 271—3 **12 Claims**



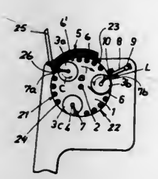
Under the control of a computer and a keyboard, a selected card with printed and recorded data, is read out and then held in a card storage station while correlated cards are read out, imprinted, and discharged, whereupon the card is transported from storage station to the printing station for receiving data derived from the correlated cards.

3,552,739
SHEET HANDLING APPARATUS
Russell R. Roberts, Ontario, and James D. Smith, Pittsford, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Sept. 12, 1968, Ser. No. 759,285
Int. Cl. B65h *3/04*, *9/06*
U.S. Cl. 271—4 **3 Claims**



Sheet handling apparatus for forwarding sheets of a stack of documents to be copied. The apparatus sequentially feeds the sheets past an exposure station and then returns them to the top of the stack so that they may be refed in a recirculating manner. This permits the creating of a precollated output of copy when used in conjunction with a continuous and automatic reproducing machine.

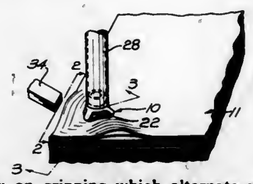
3,552,740
APPARATUS FOR THE DESTACKING OF SHEETS ESPECIALLY FOLDED SHEETS ADAPTED TO RECEIVE AN INSERT
Rudolf Hepp, Schmidt-Ott-Strasse, 7a, Berlin 41, Germany
Continuation-in-part of application Ser. No. 690,445, Dec. 14, 1967. This application May 1, 1969, Ser. No. 820,889
Int. Cl. B65h *5/00*
U.S. Cl. 271—12 **8 Claims**



An apparatus for the destacking of folded sheets to enable them to receive an insert in the formation of signatures, book blocks and the like which includes a drum rotatable beneath the stack and provided with a plurality of angularly equispaced pickup rolls. The pickup rolls are rotatable in a sense opposite the sense of rotation of the drum and are provided with sheet-engaging arrangements, e.g. suction apertures, adapted to entrain the folded edge of the sheet at the bottom of the stack as the drum rotates each roll therepast. At a location angularly spaced from the stack in the direction of rotation of the drum and sufficient to permit the sheet-entraining roll to rotate through about one revolution, a gripper lever draws the folded edge of the sheet away from the drum on a forward stroke and, upon a return stroke, feeds the folded sheet, with its folded edge rearwardly in the direction of movement of the sheet, between the belts of a conveyor which delivers the folded sheets to a fold-spreading device.

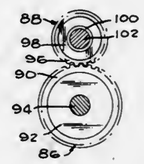
3,552,741
SHEET GRIPPING MEANS
Alfred J. Staines, Shaker Heights, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed July 26, 1968, Ser. No. 748,019
Int. Cl. B65h *3/08*
U.S. Cl. 271—26 **9 Claims**

Sheet gripping suckers adapted to separate a sheet from the top of a pile preparatory to forwarding the sheet to a sheet-handling mechanism, the sucker having skirt portions



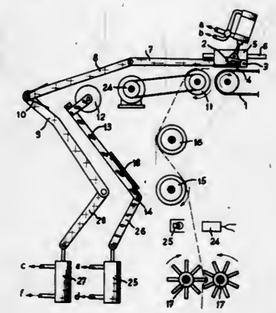
which flex on gripping which alternate with skirt portions that do not have substantial flexing.

3,552,742
MAGNETICALLY ENGAGED ROLLERS FOR CARD TRANSPORT
Jack Rooklyn, Northridge, Calif., assignor to Republic Corporation, Beverly Hills, Calif., a corporation of California
Filed June 25, 1968, Ser. No. 739,704
Int. Cl. B65h *5/06*, *7/08*; F16h *55/18*
U.S. Cl. 271—51 **4 Claims**



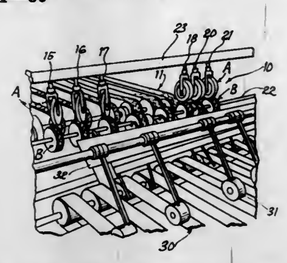
A card transport for moving cards accurately but without creasing them, comprising several pairs of pinch rollers between which the cards move. Each pair of pinch rollers includes a driven roller which is a permanent magnet and an idler roller constructed of soft iron, so they remain in contact by magnetic attraction until a card passes through. In a first pair of rollers, the driven and normally idler rollers are connected by gears, and backlash is eliminated from the gears by constructing one as a permanent magnet and the other of soft iron.

3,552,743
MACHINE FOR FEEDING PIECES OF LINEN ONTO A CONVEYOR
Pierre Baboz, 62, Bd Pierpont-Morgan, Aix-Les-Bains, France
Filed Sept. 3, 1968, Ser. No. 756,816
Claims priority, application France, Sept. 8, 1967, 120,436
Int. Cl. B65h *5/04*
U.S. Cl. 271—54 **10 Claims**



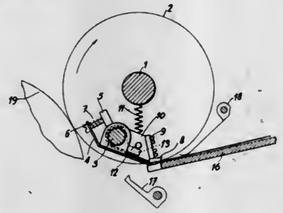
A feeding machine for laying pieces of linen onto a belt conveyor which comprises a displaceable clamping device effecting a reciprocal movement from a rest position to a feeding position. Said machine comprises further an intermittently driven driving drum cooperating with an angularly movable pressing drum to forward a piece of linen.

3,552,744
DEVICE FOR SEPARATING MULTIPLE OUT SHEETS
Lawrence Dillard Wertz, Rittman, and Lewis Wesley Lutz, Wadsworth, Ohio, assignors to Packaging Corporation of America, Evanston, Ill., a corporation of Delaware
Filed Feb. 5, 1968, Ser. No. 703,000
Int. Cl. B65h *29/20*
U.S. Cl. 271—80 **3 Claims**



A pair of roller means are provided between which multiple out sheets are caused to pass upon being discharged from high speed printer slotters, rotary die cutters or the like. The sheets while passing between the roller means are frictionally engaged thereby and diverted sidewise from their intended forward movement causing separation between the adjacent discharged sheets.

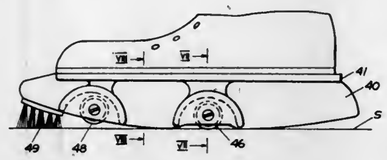
3,552,745
ROTARY TRANSFER MECHANISM FOR PRINTING MACHINES
Josef Jurný, Sebranice u Kunstatu, Czechoslovakia, assignor to Adamovske strojirny, narodni podnik, Adamov, Czechoslovakia
Filed Aug. 20, 1968, Ser. No. 754,038
Claims priority, application Czechoslovakia, Aug. 28, 1967, 6,099/67
Int. Cl. B65h *29/06*
U.S. Cl. 271—82 **3 Claims**



The grippers of the transfer mechanism are actuated by a swingable axle carrying a control lever with a roller travelling in the groove of a cam. A guide member is slidably mounted in the cam and is operated by a bent lever actuated by a cam plate so as to impart rocking movement to the swingable axis. The latter carries sleeves with abutments for gripping the paper sheet and with fingers, adapted to engage abutment pins cooperating with set screws to control the deflection of the grippers.

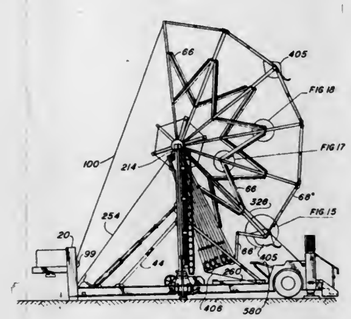
3,552,746
SKATE AND SKATING SURFACE
Harry S. Nagin, 191 Presidential Blvd., Bala Cynwyd, Pa. 19004
Continuation-in-part of application Ser. No. 681,414, Nov. 8, 1967. This application Feb. 7, 1969, Ser. No. 797,630
Int. Cl. A63c *1/30, 19/10*
U.S. Cl. 272—3 **11 Claims**

A skate especially designed for use on a resin surface having a low coefficient of friction to simulate ice skating and an improved skating surface for use in combination therewith. To prevent side slip and develop forward thrust and provide for braking, a friction element is provided on the skate runner which may be selectively effective for this purpose, but does not interfere with forward glide. It preferably comprises a roller element with a



friction rim that is effective only when the skate is maneuvered is such manner that the roll periphery is at a proper angle to prevent free turning of the roll. The skating surface is formed of panels of sheeted reinforced polyester containing anti-friction, and desirably anti-static, additives and cured under heat and pressure.

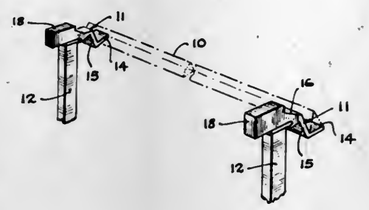
3,552,747
PORTABLE FOLDING FERRIS WHEEL
William C. Deem, Jacksonville, Ill., assignor to Eli Bridge Company, Jacksonville, Ill., a corporation of Illinois
Filed Feb. 6, 1969, Ser. No. 797,159
Int. Cl. A65g *1/00*
U.S. Cl. 272—29 **28 Claims**



The disclosure describes a mobile full scale unit characterized by base-pivoted main support menbers with automatic locking diagonal braces supporting the main axle, spaced hub members about the axle having slotted radial sections, an inner derrick wheel on the axle which has rotatable diametric members adapted to be pivoted into a radially spaced position and held by cable segments, adjustable frictional hub members supporting the derrick wheel, a collapsible ferris wheel comprising a plurality of opposed spoke sections joined with hinged cross braces and hinged outer rim members, the wheel being carried on the axle through cleats which engage the slotted hub sections in sequence during unfolding, disengage in the opposite direction during the folding and a retainer ring and pin combination in the hub to hold the center of the assembled wheel securely. A single prime mover is used to raise the support members, pull the ferris wheel into its fanned-out position around and by means of the derrick wheel, drive the ferris wheel once it is

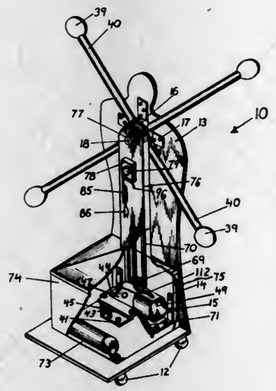
assembled and also collapse the ferris wheel into a transportable compact arrangement on the mobile unit. Other embodiments are disclosed.

3,552,748
APPARATUS FOR HOLDING A POLE VAULTING BAR
Thomas Thomas, 1110 Breezy Meadow Lane, Spencer, Iowa 51301
Filed Dec. 30, 1968, Ser. No. 787,841
Int. Cl. A63b *5/06*
U.S. Cl. 272—59 **7 Claims**



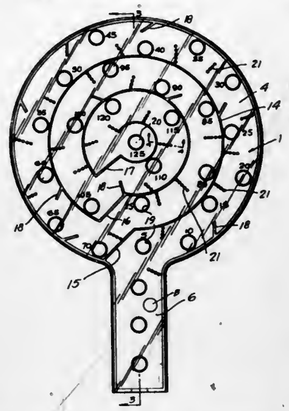
A cradle for holding a pole vault or high jump bar is yieldably connected by an arm which holds the cradle a sufficient distance from the standards to allow free movement of the cradle with respect to the standards. Pivoted counterweights, magnets, springs or flexible connecting arms return the cradle to the original position after it is tripped.

3,552,749
BASKETBALL PRACTICING AID
Joe M. Piggotte, 812 Patterson Drive, South Daytona, Fla. 32019
Filed July 30, 1968, Ser. No. 748,751
Int. Cl. A63b *69/00*
U.S. Cl. 273—1.5 **6 Claims**



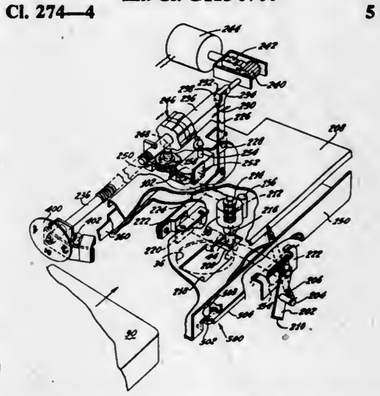
A device for use by basketball players in practicing the shooting of baskets over a defensive player and for use in practicing passing of the ball between offensive players, over or around a defensive player. The device includes a life-size figure of an adult male and rotatably driven arms, encased in a cushioning material, which project outwardly from the figure and which may be rotated in either direction. The apparatus is capable of use by a single player or a group of players.

3,552,750
SPIRAL SURFACE GAME
Edward Lomberk, 569 Horseneck Road, Montville, N.J. 07045, and Edgar C. Rosston, 543 W. 215th St., New York, N.Y. 10034
Filed Aug. 13, 1968, Ser. No. 752,354
Int. Cl. A63b *67/08*
U.S. Cl. 273—112 **6 Claims**



The present game is played by manually holding the handle of the present game housing, inserting one ball at a time in the upper open end of the handle, manually manipulating the game in an effort to move the inserted ball along a spiral path, past obstructions, avoiding as many holes in the path as possible in an effort to reach the center or end hole of the path with the ball and when the ball drops through one of the holes, tilting the game to move the ball out of the bottom open end of the handle, repeating with other balls and adding the score from indicia alongside the openings through which the balls have dropped.

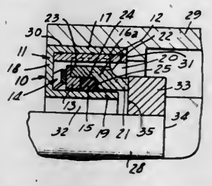
3,552,751
TAPE CARTRIDGE SYSTEM
James W. Kelso, Pacific Palisades, Calif., assignor to Tenna Corporation, Cleveland, Ohio
Filed July 14, 1967, Ser. No. 653,437
Int. Cl. G11b *5/00*
U.S. Cl. 274—4 **5 Claims**



A cartridge player includes two sets of cams for controlling the position of a reproducing head to reproduce the information on either four track or eight-track tape cartridges, and a feeler arm and associated linkage for automatically switching between the cams upon the insertion of either four-track or eight-track cartridges. After

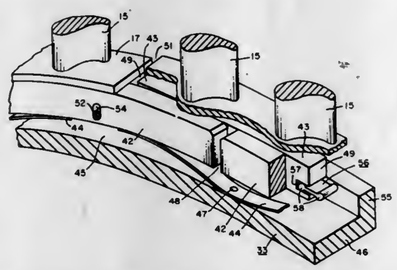
the four track or eight track cartridge is inserted, an actuating member is controlled by a switch on the front panel of the machine to rotate the appropriate cam to present different camming surfaces to control the position of the reproducing head. The player also includes a locking member having an acute forward facing angle portion which is mounted at the end of a resilient member so as to lock the eight-track cartridge while permitting the easy insertion of the four-track cartridge, and a resiliently mounted pinch roller and a cam member located at the bottom of the pinch roller facilitates the removal of the four track cartridge from the player.

3,552,752
SHAFT SEAL
Bruno V. Lojkutz, Chicago, Ill., assignor to Gits Bros. Mfg. Co., Chicago, Ill., a corporation of Delaware
Filed Aug. 30, 1968, Ser. No. 756,674
Int. Cl. F16j *9/00, 15/40*
U.S. Cl. 277—40 **6 Claims**



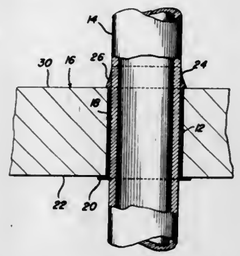
A face-type shaft seal having components including a spring urged seal ring selectively retained and removed from an open end casing by a key and slot arrangement including a T-shaped key on the inner surface of the outer peripheral wall of the casing and having a leg coacting with an axially extending peripheral slot in the seal ring which is slidable in the casing and projects through the open end of the casing. This leg holds the seal ring against rotation relative to the casing but accommodates full axial movement of the seal ring in the casing. The T-shaped key has a head adapted to be selectively received in the slot for removal of the seal ring through the open end of the casing or the head may be misaligned from the slot to overlie an end face of the seal ring for retaining the components in the casing. One or more key and slot combinations can be used.

3,552,753
HIGH EFFICIENCY STATIC SEAL ASSEMBLY
George M. Mierley, Sr., Wilmington, Del., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 26, 1968, Ser. No. 740,219
Int. Cl. F16j *9/24, 15/00*
U.S. Cl. 277—137 **6 Claims**



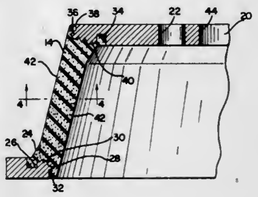
An annular static shield is provided at the entrance to the stator of an axial flow turbine. The seal includes two adjacent spring loaded segmented rings so arranged in a seal housing that the gaps between segments of the high pressure ring overlap the gaps between segments of the low pressure ring. The segments of the low pressure ring are oriented circumferentially to be in line with the gaps in the inner shroud of a stator vane segment. Thus, a radial offset between two adjacent shroud ends will not push the segments of the low pressure seal away from contact with the shroud sealing surface.

3,552,754
TUBE PLATE SEAL
William J. Bow, Morristown, N.J., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Interior
Continuation of application Ser. No. 622,813, Mar. 13, 1967. This application Sept. 15, 1969, Ser. No. 861,219
Int. Cl. B61f *15/22;* **F16j** *9/04*
U.S. Cl. 277—178 **3 Claims**



A tube to tube plate seal wherein the plate is provided with holes through which the tubes extend, comprising a molded cylindrical resilient insert to be disposed between the tube and tube plate having at one end a radially extending flange engaging a surface of the tube plate, at the other end an inwardly tapered inner surface engaging the outside of the tube, and intermediate the tapered end and flange, a peripheral raised area engaging the plate and holding the insert within the plate hole and the tapered end in sealing engagement with the tube.

3,552,755
DIRECTIONALLY REINFORCED RUBBER AND SEAL UNIT MADE THEREFROM
Jimmie D. Leonard, Crystal Lake, Ill., assignor to Chicago Rawhide Manufacturing Company, Elgin, Ill., a corporation of Illinois
Filed Feb. 26, 1968, Ser. No. 708,343
Int. Cl. F16j *15/16*
U.S. Cl. 277—212 **5 Claims**

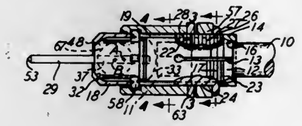


A reinforced rubber sheet material in which a plurality of long fluorocarbon polymer strands made of fine individual fibers are disposed in a generally parallel orientation in respect to a given axis of said rubber sheet. The rubber totally surrounds or encapsulates the fluorocarbon polymer strands, without necessarily being chemically bonded to such strands.

The rubber sheet material is made by adding a particulate fluorocarbon polymer to an uncured rubber composition and subjecting the mass to a series of milling, shearing, or rolling operations to create fibers from the polymer, to cause the fibers to associate into strands, and to orient the strands in relation to one axis of the rubber sheet.

In a torsional deflection seal constructed from a rubber sheet material prepared according to the present invention, the fibers have the effect of leaving substantially unaltered the shear modulus of the material along one axis, and at the same time adding substantial tensile strength along another axis, so that a resulting seal member may readily undergo torsional deflection but resist undue deflection or radial "ballooning" when subjected to an internal gas or like fluid pressure.

3,552,756
RADIALLY ADJUSTABLE TOOL HOLDER
Alan F. Christensen, 3401 17th St., Racine, Wis. 53405
Filed Mar. 6, 1968, Ser. No. 710,835
Int. Cl. B23b *31/34*
U.S. Cl. 279—6 **7 Claims**



A radially adjustable tool holder with a collet for securing a tool, and with a spindle mountable member for mounting the collet and tool onto a spindle. A collet clamp is interposed between the spindle mountable member and the collet, and the clamp includes two adjustable members so that the collet can be radially adjusted with respect to the spindle mountable member and thus the tool can be adjusted with respect to the axis of the spindle mountable member. The movable members are in the forms of two spheres, and together they provide for universal movement of the tool so that the tool can be disposed in any selected position with respect to the axis of the spindle mountable member. A cam and cam follower are cooperative between the spindle mountable member and the collet clamp for the radial adjustment mentioned. Also, lock members are provided for securing the collet clamp in adjusted positions, and for securing the spindle mountable member onto a spindle.

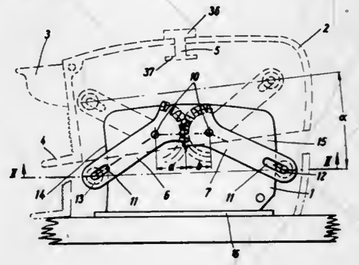
3,552,757
HOLDER FOR TOOL OR WORKPIECE
Martinus J. Salters, Zaandam, Netherlands, assignor to Staatsbedrijf Artillerie-Inrichtingen, Hembrug-Zaandam, Netherlands, a state-owned company of the Netherlands
Filed Aug. 19, 1968, Ser. No. 753,517
Claims priority, application Netherlands, Aug. 29, 1967, 6711832
Int. Cl. B23b *31/36*
U.S. Cl. 279—6 **4 Claims**

A holder for tool or workpiece. The holder comprises a casing and a sliding bush which is disposed with provision for displacement in a channel or bore and in which a carrier is disposed eccentrically for receiving the tool or workpiece. To perform both preliminary working and after-working with one tool such that only one tool must be accurately adjusted, the axis of the channel for the sliding bush enclosed in acute angle with the axis of the casing.

3,552,758
DEVICE FOR AUTOMATICALLY COUPLING AN INSERT MEMBER TO A DRIVING MEMBER
Gustav Siegler, 34 Kirchheimerstrasse, 7317 Wendlingen (Neckar), Germany
Filed Oct. 28, 1968, Ser. No. 771,264
Int. Cl. B23b *31/22*
U.S. Cl. 279—75 **3 Claims**

A device for automatically coupling an insert member to a driving member, in particular an adjusting sleeve or toolholder to a machine-tool chuck. Said two members are coupled with the aid of radially shiftable coupling means and fixed in their coupled position with the aid of an axially shiftable coupling piece. A locking member fixedly locates said coupling piece in an ineffective position, and at least one blocking member fixedly locates the locking member in its locked position. A portion of the blocking member takes up said locking member as a whole and is brought to its effective position by shifting the blocking member when placing the insert member or toolholder into the chuck whereby the locking member is disengaged from its locking position.

3,552,759
HEEL RETAINER FOR SKI BINDING
Paul Unger, 113 Bruckwiesenstrasse, 8501 Altenberg, near Nuremberg, Germany
Filed May 20, 1969, Ser. No. 826,158
Claims priority, application Germany, June 1, 1968, 1,703,516
Int. Cl. A63c *9/00*
U.S. Cl. 280—11.35 **13 Claims**

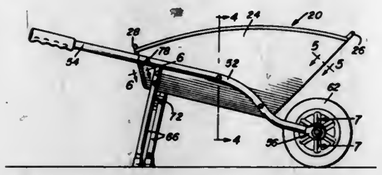


Heel retainer for ski binding having a support retained on the ski or its base plate and a top part to be optionally latched for starts and unlatched for competition or cross-country runs and which carries the sole retainer and is connected with the support and may be raised from the support by a certain amount for cross-country runs, whereas the support there is provided an inner housing encompassing the release elements, retaining springs and the like and which effects the release, while the top part is in the form of an outer housing that can optionally be latched by a releasable latching device and where between the outer housing and the inner housing a controlled guiding means is disposed which with the latching means released permits displacement of the outer housing upwardly in accordance with the raising of the ski boot for competition runs.

3,552,760
FOLDING WHEELBARROW
Richard Sine, 505 E. 5th St., Reno, Nev. 89501
Filed Aug. 22, 1968, Ser. No. 754,587
Int. Cl. B62b *1/20*
U.S. Cl. 280—36 **9 Claims**

A folding wheelbarrow including, in its unfolded operative position, outwardly sloping side, front and rear

panels surrounding a bottom panel in a material-confining manner. The bottom panel, as well as the front and rear panels, are hingedly mounted to one side panel and selectively foldable thereagainst, after which the second side panel is also folded against the first side panel so as to sandwich the bottom, front and rear panels therebe-

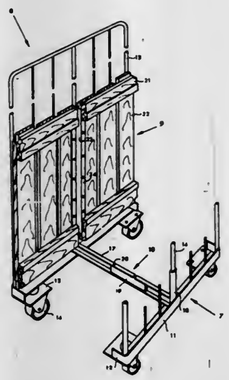


tween. The collapsing and unfolding of the wheelbarrow is effected through the two handles therefor which are swivelly mounted on the wheel axle for swinging movement toward and away from each other, appropriate stop means limiting the opening swinging of the handles. A folding sifter bottom can also be provided.

3,552,761
COLLAPSIBLE LOAD PALLET

Åke E. Sjöblom, Orebro, Sweden, assignor to Aktiebolaget Grythyttans Stalmobler, Grythttan, Sweden, a corporation of Sweden

Filed Apr. 8, 1969, Ser. No. 814,318
Claims priority, application Sweden, Apr. 8, 1968, 4,701/68
Int. Cl. B62b *1/12*
U.S. Cl. 280—42 **16 Claims**

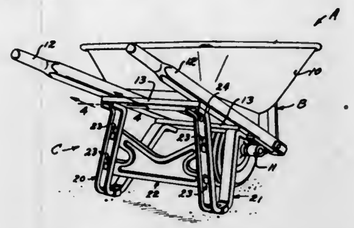


A collapsible load pallet comprising two end frames connected by a link which moves between an open position to hold the frames spaced-apart, and a folded position to permit the frames to move to a side by side folded position. A generally flat pallet deck is attached to one of the frames for movement between a vertical raised position and a horizontal lowered position in which the pallet deck rests on and spans the distance between the frames. A lock is carried on the pallet deck to lock the link in the open position when the pallet deck is in lowered position.

3,552,762
WHEELBARROW LEG ASSEMBLY

Roy W. Garber, Elizabethtown, Pa., assignor to Jackson Manufacturing Co., Harrisburg, Pa., a corporation of Pennsylvania

Filed Feb. 28, 1969, Ser. No. 803,148
Int. Cl. B62b *11/00*
U.S. Cl. 280—47.33 **7 Claims**

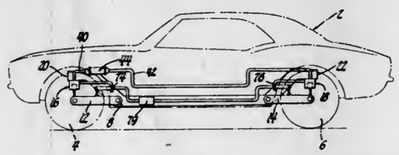


A wheelbarrow leg assembly having a brace extendant between a pair of supporting legs, disconnectable connector means being provided for rigidly attaching the brace to the legs on attachment of the legs to the wheelbarrow frame.

3,552,763
INTERCONNECTED VEHICLE SUSPENSION WITH PITCH DISPLACEMENT AND LEVEL CONTROL SYSTEM

Thomas P. Yasin, Birmingham, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 22, 1968, Ser. No. 754,680
Int. Cl. B60g *19/04*
U.S. Cl. 280—104 **4 Claims**



In a preferred embodiment, a motor vehicle sprung mass is elastically supported relative to front and rear wheels by longitudinally spaced fluid springs arranged in communication with opposite ends of a transducer assembly which automatically responds to changes in the ratios of pressures of the respective springs induced by pitch displacement of the sprung mass. The transducer is formed and arranged so as to automatically establish an increasing effective area acting on the fluid within the spring exhibiting a diminishing pressure and a decreasing effective area acting on the spring exhibiting an increasing pressure thereby acting to restore pitch equilibrium to the sprung mass for each change in load distribution thereon. Individual height sensing leveling valves associated with each spring function independently to vary the volume of fluid in each spring and enable restoration of the sprung mass to a level attitude.

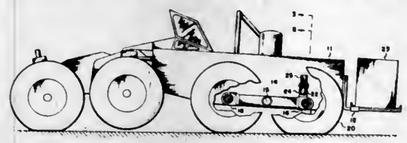
3,552,764
MATERIAL HANDLING MACHINE

Daniel M. Schwartz, Los Altos, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Jan. 2, 1969, Ser. No. 788,394
Int. Cl. B60g *5/02*
U.S. Cl. 280—104.5 **6 Claims**

The load handling capability of a material handling machine having a walking beam suspension is increased by a stop member selectively positionable between the body of the machine and the walking beams to limit the

pivotal movement, in one direction, of the walking beam. The stop member may be a load transmitting block which is extendible from the vehicle body to limit the upward movement of the end of the walking beam adjacent the

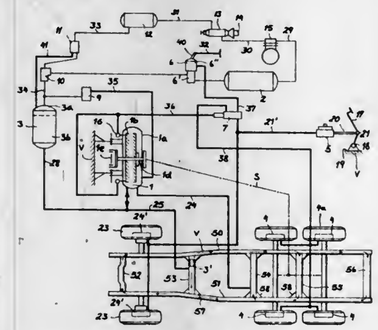


material handling structure. The pivot point about which the weight of the vehicle counteracts the force of the applied load is thereby shifted from the axis of the walking beam to its stopped end.

3,552,765
HYDRODYNAMIC-BRAKE SYSTEM WITH HEAT DISSIPATION FROM THE CHASSIS

Fritz Ostwald, Buchschlag, Germany, assignor to Alfred Teves G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed Sept. 17, 1968, Ser. No. 760,162
Claims priority, application Germany, Sept. 21, 1967, T 34,842
Int. Cl. B62d *21/00*
U.S. Cl. 280—106 **9 Claims**



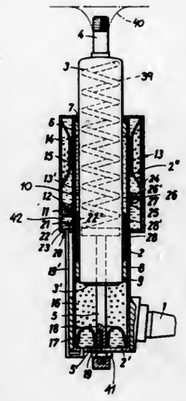
A hydrodynamic-brake system for an automotive vehicle, especially heavy-duty trucks, trailer-tractor combinations, and semitrailers in which the hydrodynamic brake circulates a braking fluid which is heated in proportion to the degree of braking of the vehicle, the heat being dissipated by the chassis. The chassis or vehicle frame is provided with ducts through which the hydrodynamic-brake system circulates the braking fluid to dissipate the braking energy in the form of heat by indirect heat exchange with the air via the thermally conductive chassis or a portion thereof.

3,552,766
HYDRAULIC SUSPENSION SYSTEM FOR AUTOMOTIVE VEHICLES

Herbert Jean Willich, Ennepetal-Altenvoerde, Germany, assignor to August Bilstein, Ennepetal-Altenvoerde, Germany, a corporation of Germany

Filed Feb. 3, 1969, Ser. No. 796,124
Claims priority, application Germany, Feb. 3, 1968, 1,655,923
Int. Cl. B60g *15/12*
U.S. Cl. 280—124 **10 Claims**

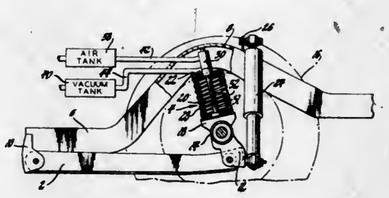
The cylinder (3) of a dashpot assembly, having a piston (5) secured to a surrounding (2), forms with that sleeve a pressure accumulator subdivided by a flexible membrane into an air compartment (16), and an oil compartment (17), the latter compartment communicating through a first check valve with a pumping chamber (10) which in turn communicates through a second check valve with an oil reservoir; the second check valve is shunted by a spring-loaded regulating valve. The pumping chamber has end walls respectively rigid with the sleeve and with the dashpot cylinder whereby relative motions of this cylinder and its piston tend to draw hydraulic liquid from the reservoir to the oil compartment to increase the gas pressure resisting contraction of the dashpot assembly. In a normal position of the assembly, this pumping action is suppressed by a cam (28), holding either the second check valve (20, FIG. 1) or the regulating valve (24, FIG. 2) permanently open, the latter valve being also held open in an extended position of the dashpot assembly to facilitate the return of excess liquid from the oil compartment to the reservoir; in the last-mentioned position the first check valve (20 or 30) is concurrently held open by a cam (28, FIG. 1) or a spring (32, FIG. 2) to complete the fluid path.



3,552,767
VEHICLE SUSPENSION HAVING A DUAL MODE COMPOSITE SPRING

Ming-Chih Yew, Sterling Heights, and Bernard J. Finn, Troy, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

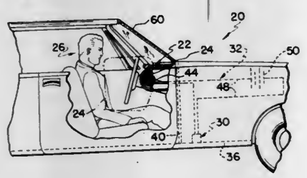
Filed May 1, 1969, Ser. No. 820,732
Int. Cl. B60g *3/14*
U.S. Cl. 280—124 **5 Claims**



A vehicle suspension having a dual mode composite spring which supports the sprung mass above the unsprung mass and includes a primary spring acting in

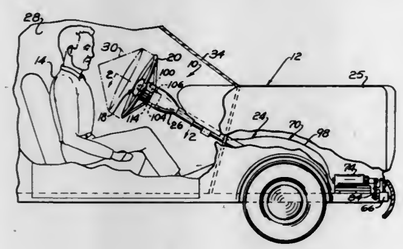
parallel with a fluid spring which uses a vacuum to simulate a load on the primary spring when the vehicle is carrying less than the design load and adds to the lifting capacity of the primary spring by supplying positive pressure to the fluid spring when the vehicle is heavily loaded.

3,552,768
CRASH SENSOR
Hermann Kaiser, Detroit, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 20, 1968, Ser. No. 753,948
Int. Cl. B60r 21/00
U.S. Cl. 280—150 12 Claims



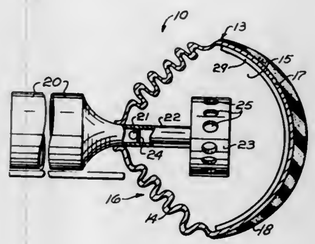
An improved sensor assembly for actuating a vehicle safety apparatus upon the occurrence of a collision includes an annular mass which is urged against an energy-absorbing stop by a plurality of resiliently yieldable contact fingers with sufficient force to prevent movement of the mass to an actuated position due to vehicle braking and the encountering of normal road conditions. When a collision occurs, the mass moves against the influence of the contact fingers to the actuated position in which the contact fingers engage a circular fixed contact to complete a circuit for effecting operation of the vehicle safety apparatus.

3,552,769
SAFETY APPARATUS
Robert M. Kemmerer, Southgate, and Richard Chute, Huntington Woods, Mich., assignors to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Oct. 2, 1968, Ser. No. 764,502
Int. Cl. B60r 21/00
U.S. Cl. 280—150 24 Claims



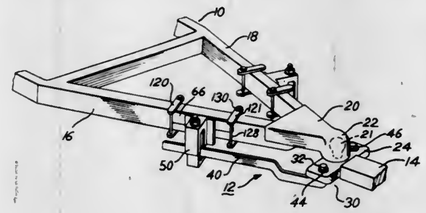
An improved safety apparatus for protecting an occupant of a vehicle during an accident includes an expansible confinement for restraining movement of the occupant during the accident. A sensor assembly senses an accident condition and ignites a detonating fuse assembly which in turn activates a source of fluid to inflate the confinement in response to operation of the sensor assembly.

3,552,770
SAFETY DEVICE
Charles O. Berryman, Detroit, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 662,679, Aug. 23, 1967. This application Nov. 21, 1968, Ser. No. 777,734
Int. Cl. B60r 21/00
U.S. Cl. 280—150 7 Claims



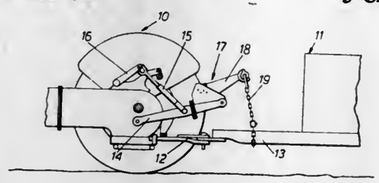
A safety device for protecting an occupant of a vehicle during an accident comprises a confinement supported on the vehicle. The confinement is supported in an inoperative collapsed condition and is expanded to an operative condition upon the occurrence of an accident. One embodiment of the present invention includes a zero reaction diffuser for directing flow from a fluid reservoir into a confinement upon the occurrence of an accident to expand the confinement. Another embodiment includes gas generating material that is activated upon the occurrence of an accident to rapidly produce gas to expand the confinement.

3,552,771
LOAD DISTRIBUTING TRAILER HITCH
Grover E. Hendricks, 2241 Lake St., Niles, Mich. 49120
Filed Mar. 28, 1969, Ser. No. 811,296
Int. Cl. B60d 1/06
U.S. Cl. 280—406 10 Claims



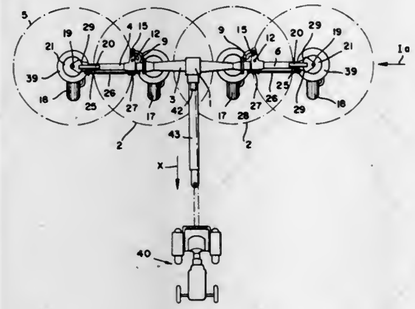
A load distributing trailer hitch having a ball mount and two rearwardly extending load distributing bars connected to the ball mount on vertical axes in laterally spaced relation to the ball and a support device for the rear ends of each of the bars having a housing with a carriage slidable vertically therein. The bars rest on a friction plate mounted in the carriage, and the friction plate is supported by a resilient member which absorbs the shock and excess stresses resulting from variations in load during the normal operation of the vehicles. The carriage is adjustable to various heights relative to the frame to obtain optimum load distributing conditions.

3,552,772
WEIGHT TRANSFER HITCH
Walter J. Scott, Coventry, England, assignor to Massey-Ferguson Services N.V., Curacao, Netherlands Antilles, a corporation of the Netherlands Antilles
Filed Oct. 3, 1968, Ser. No. 764,702
Claims priority, application Great Britain, Nov. 28, 1967, 54,032/67
Int. Cl. B62d 53/00
U.S. Cl. 280—405 3 Claims



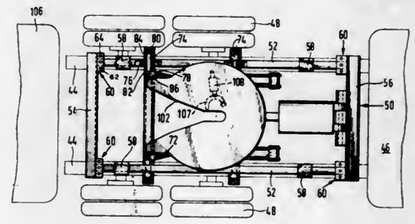
A weight transfer hitch mounted on the lower draft links of a tractor, the hitch including pins connected to the rear ball joints of the draft links and releasable loading carrying brackets embracing the draft links forwardly of the ball joints in a manner so as to allow pivoting of the draft links on their longitudinal axes relative to the hitch, such pivoting occurring during raising and lowering of the draft links. The load carrying brackets have opposed convex inner portions that contact the sides of the draft links to permit the pivoting and at the same time carry lateral loads imposed during turning of the tractor.

3,552,773
ROTARY-RAKE HAYMAKING MACHINE WITH PIVOTAL ARMS
Josef Purrer, Berthold Binder, and Martin Maier, Gottmadingen, Germany, assignors to Maschinenfabrik Fahr AG, Gottmadingen, Germany, a corporation of Germany
Filed May 14, 1969, Ser. No. 824,404
Claims priority, application Germany, May 16, 1968, 1,757,499
Int. Cl. B62d 53/00
U.S. Cl. 280—413 10 Claims



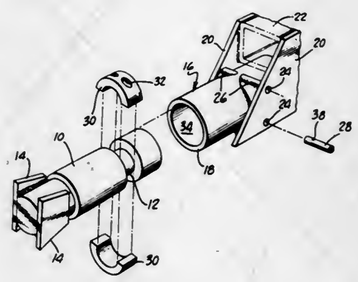
A haymaking machine (e.g. a rake or tedder) has two rotary rakes mounted on opposite ends of a support beam extending transverse to the direction of travel with a wheel parallel to that direction under each rake. Each beam end carries an arm with a further rake pivotal through 90° or more from a work position aligned with the beam to a transport position extending along behind the beam thereto. Each wheel of each outer rake can be arrested to lie generally transverse to the arm by a lock mechanism. When the arm is freed at the pivot and starts to swing toward the rear, a force-transmitting member engageable with the beam is automatically actuated and frees the wheel lock mechanism thereby allowing for free swiveling of the outer wheel.

3,552,774
FIFTH WHEEL UNIT
Horst Gottler, Munich, Germany, assignor to Johann Rockinger Spezialfabrik fur Anhanger-Kupplungen, Munich, Germany
Filed May 12, 1969, Ser. No. 825,130
Claims priority, application Germany, May 16, 1968, 1,755,502
Int. Cl. B62d 53/06
U.S. Cl. 280—425 8 Claims



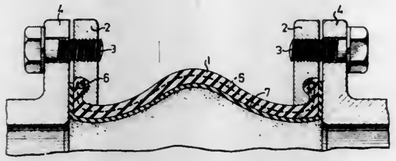
A fifth wheel unit for mounting a fifth wheel to a semitrailer truck. The fifth wheel is mounted on a frame. The frame consists of at least two longitudinal support members and at least two transverse connection members. Connecting means connect said longitudinal support members and said transverse members. The connection means are so constructed that the distance of the longitudinal support members from one another can be varied.

3,552,775
TRAILER HITCH COUPLING
Richard E. Warner, 1530 Edgewood Drive, Lodi, Calif. 95240
Filed Mar. 6, 1968, Ser. No. 711,022
Int. Cl. B60d 1/14
U.S. Cl. 280—492 5 Claims



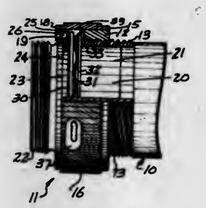
A trailer coupling device for use with a conventional ball hitch in which a cylindrical pintle having an annular groove is assembled with adapter plates having annular projections on their inner surfaces for engaging the groove. The outer surfaces of the adapter plates are shaped to conform the assembly to the shape and size of the receiver on a towing vehicle. Lock pins pass through the receiver and the adapter plates to retain the pintle in place in the receiver while permitting it to rotate within the adapter plates.

3,552,776
DEFORMABLE PIPE CONNECTOR
Werner Leymann, Hannover-Linden, Germany, assignor to Continental Gummi-Werke Aktiengesellschaft, Hannover, Germany
Filed Apr. 18, 1969, Ser. No. 817,373
Claims priority, application Germany, Apr. 23, 1968, 1,750,343
Int. Cl. F16l 55/00
U.S. Cl. 285—16 2 Claims



A pipe connector unit and method of making same, according to which a deformable pipe connector body of a bellows-like shape with reinforcing insert means therein has loosely detachably inserted therein a lining body which is detachably clamped at its end flanges to the end flanges of the connector body, said lining body and said connector body forming individual separate bodies.

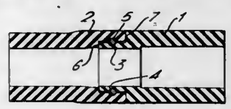
3,552,777
SELF-LOCKING DEVICE FOR COUPLINGS
Lawrence O. Heinrich, Hayward, and Joseph E. Wilcox, Redwood City, Calif., assignors to United Air Lines, Inc., Chicago, Ill., a corporation of Delaware
Filed Feb. 23, 1968, Ser. No. 707,783
Int. Cl. F16l 55/00
U.S. Cl. 285—81 9 Claims



A self-locking threaded electrical connector is disclosed. One of two mating sections of the connector has a plurality of indentations or holes which move over a plurality of balls as the two mating sections are threaded together. As the connector is tightened it becomes more difficult to move the indentations past the balls and eventually a locked condition is established. A tactile and visual indication of the properly mated condition is provided.

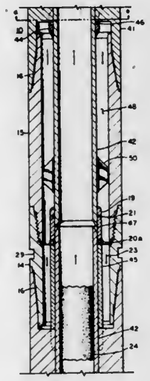
3,552,778
SWIVEL COUPLINGS FOR USE IN BREATHING OR ANAESTHETIC OR OTHER MEDICAL APPARATUS
Robert Hans Muller, London, England, assignor to J. G. Franklin & Sons, Ltd., Dalston, London, England, a corporation of England
Filed May 5, 1969, Ser. No. 821,906
Int. Cl. F16l 11/04
U.S. Cl. 285—94 5 Claims

A swivel coupling for coupling tubular parts of a breathing or other medical apparatus, comprising cooperating tubular components at least the coupling end portions of which are of a semi-rigid rubber or rubber-like material, one of said components having a male end portion and the other having a female end portion, a projecting annular rib or bead on one of said portions produced by insetting a solid or rigid ring into a peripheral surface or into a peripheral groove of said portion and the other



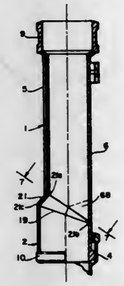
of said portions having a cooperating groove, the components having been snapped together axially to engage the rib or bead of the one component into the groove of the other component and axially retained relatively to one another with the female portion forming a bearing rotatably supporting the male component.

3,552,779
DUAL-CONDUIT DRILL PIPE FOR EARTH BORING
Homer I. Henderson, 2220 Live Oak, San Angelo, Tex. 76901
Filed May 31, 1968, Ser. No. 733,350
Int. Cl. F16l 39/04
U.S. Cl. 285—133 2 Claims



A dual-conduit drill pipe comprising individual "lengths," or "joints," which "lengths" are permanently assembled components forming dual longitudinal passages, or conduits, and which "lengths" are adapted to be threadedly connected, one to another, to form a "string" of dual-conduit drilling pipe. One object of the invention is to solve the high thermal stress problem due to differential thermal expansion experienced in dual-conduit drilling operations, wherein the fluid in one conduit may be at a considerably higher temperature than the fluid in the other conduit. For shallow drilling this is herein accomplished by extruding a dual-conduit section of a soft, low strength aluminum alloy, with the high thermal conductivity of the aluminum alloy providing a heat exchange factor sufficient to reduce the differential temperature and hence the thermal stress to safe values. Intermediate depth drilling requires higher strength aluminum alloys, and these cannot be extruded in such a full section, multiple-void, hollow-shape and consequently two extrusions are made and assembled by welding in such a manner as to provide for limited, relative longitudinal movement and expansion of the inner tube. Deep drilling requires a high strength, high hardness aluminum alloy and such an alloy can be extruded only as cylinders, or tubes, at this stage of the extrusion art. Consequently, for deep drilling the outer tube has welded thereto longitudinal, inwardly projecting, fins to space and retain the inner tube and to provide for relative longitudinal movement and expansion. For extreme depth drilling the latter construction can be of steel. The lightness of aluminum is desirable in a drill pipe, in all respects except for imposing weight on the drill bit. To solve this shortcoming, there is a disclosed, special, heavy, dual-conduit drill pipe of steel, that is immune to buckling when caused by minor differential thermal expansion, found at the bottom of the hole.

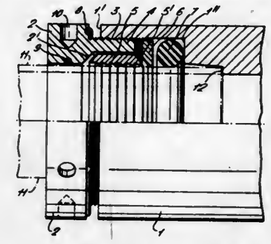
3,552,780
CONNECTOR FOR JOINING RECTANGULAR AND CIRCULAR CONDUITS
Frederick A. Warren, Atlanta, Ga., assignor to Benjamin W. Bradford, Decatur, Ga.
Filed Oct. 7, 1968, Ser. No. 765,453
Int. Cl. F16l 13/12, 3/04
U.S. Cl. 285—176 7 Claims



A connector for adjoining a conduit of rectangular cross section with another conduit of circular cross section is provided at its ends with a portion of rectangular cross section and with another portion of circular cross section which portions are adjoined to form a unitary structure. The junction between the end portions of the connector is formed in such a way that the circular portion is bevelled and arranged in tangential relationship to three interconnecting sides of the portion of rectangular cross section and the fourth side thereof is adjoined to the bevelled end of the circular portion by an arcuate segment. The portion of the connector which is of rectangular cross section is provided at its outer end with a collar portion for receiving the end of a rectangular conduit and a water-tight junction is formed therebetween by means of lead caulking and to which is bonded a ring of alloy formed integrally with the rectangular conduit.

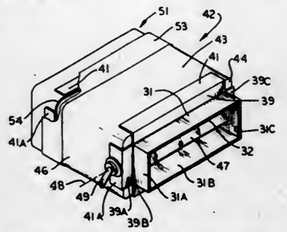
3,552,781
PIPE OR HOSE COUPLING
Arvid Frimann Helland, Snaroya, Norway, assignor to Raufoss Ammunisjonsfabrikker
Filed May 26, 1969, Ser. No. 827,617
Claims priority, application Norway, May 28, 1968, 2,084/68
Int. Cl. F16l 21/06
U.S. Cl. 285—322 5 Claims

A fluid coupling for the end of a pipe or hose. A nipple mounted on the end of the pipe or hose forms an open-ended annular space, within which is located a sealing gasket and a clamping sleeve. A tightening nut, when threadedly engaged into the annular space, acts directly (a) on the clamping sleeve causing it to grip the hose or



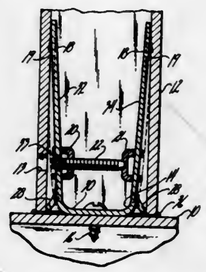
pipe and (b) on the gasket, bypassing the clamping sleeve, to compress the gasket.

3,552,782
DUCT CONNECTOR SYSTEM
John E. O'Neal, Indianapolis, Ind., assignor of sixty percent to John J. Cotton, Indianapolis, Ind.
Filed Aug. 13, 1968, Ser. No. 752,381
Int. Cl. F16l 25/00
U.S. Cl. 285—398 5 Claims



Air conditioning system ducts of compressed glass fiber insulating boards are connected together and to dampers, heat exchangers, turning vanes, and other accessories by a sheet-metal rail formed to receive and support lengths of duct.

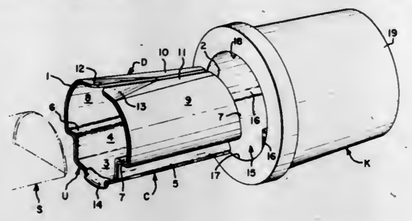
3,552,783
SUPPORT BRACKET
John B. Tavano, 28 Edgewood Ave., Torrington, Conn. 06790
Filed Feb. 14, 1969, Ser. No. 799,206
Int. Cl. F16b 5/00
U.S. Cl. 287—20 8 Claims



A tubular upright is assembled with a horizontal support member or sill by a U-shaped support bracket having its legs located in the open end of the upright, and having its web portion attached to the upper surface of the support or sill. A single hole in the upright provides access to an Allen screw which is threadably received in one of two jaws located between these legs. The Allen screw abuts the other jaw so that they serve to bow the

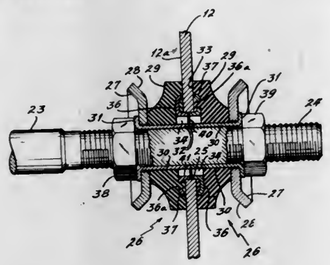
legs of the U-shaped member outwardly to anchor the upright by drawing it downwardly against the sill. The web portion of the bracket is somewhat narrower than the width of the open end of the tubular upright to permit this bowing action, and locating tabs in the legs help to position the upright vertically during assembly.

3,552,784
CLIPS TO HOLD KNOBS ON SHAFTS
Robert Graham Lundergan, Camp Hill, Eugene Leonard Gombar, Harrisburg, and Frederick Jean Maltais, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Sept. 4, 1969, Ser. No. 855,228
Int. Cl. F16d *1/06*
U.S. Cl. 287—53 **5 Claims**



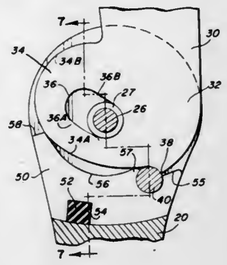
A clip to hold a knob on a D-shaped shaft has a general D-shaped configuration split and tapered from one end to the other and adapted to frictionally fit within a hollow section of the knob. A projecting tab digs into the inner wall of the hollow section of the knob to maintain the clip within the knob. The split tapered configuration allows the shaft to be easily inserted into the clip and becomes less tapered during insertion to frictionally engage and hold the clip within the knob and onto the shaft.

3,552,785
ELASTIC JOINT ASSEMBLY FOR AUTOMOBILE SUSPENSION STRUT RODS
Clifton L. Elder, Hazelwood, Mo., Lawrence H. Fitch, Cahokia, Ill., Ronald I. Kornblum, University City, Mo., and William C. Wehner, Detroit, Mich., assignors to Moog Industries, Inc., St. Louis, Mo., a corporation of Missouri
Filed Aug. 22, 1968, Ser. No. 754,622
Int. Cl. B60g *11/18*
U.S. Cl. 287—85 **8 Claims**



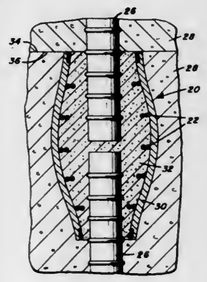
A bushing assembly for yieldably connecting the forward end of the strut rod of a vehicle wheel suspension assembly to a part of the chassis or frame. The bushing assembly needs to be pliable or yieldable as the strut rod pivots about a point on the frame which is different from the control arm pivot point also on the frame. The bushing assembly forms the strut rod pivot and must be pliable to avoid destruction resulting from tension, compression and shear forces imposed thereon.

3,552,786
MECHANICAL JOINT ASSEMBLY
Rainer K. Schmid, 137 E. Arapahoe, Thermopolis, Wyo. 82443
Filed May 12, 1969, Ser. No. 823,841
Int. Cl. F16c *11/00*
U.S. Cl. 287—100 **5 Claims**



A mechanical joint assembly having a predetermined sequence of movements comprising: upper and lower rail members joined together by a pivot pin, said upper member having a rearwardly projecting cam lobe at its lower end and said lower member having an upper portion adapted to receive the upper member; a recessed cam element pivotally mounted on the upper portion of the lower member and adapted to frictionally engage with said cam lobe as the members rotate with respect to each other; biasing means urging said element into contact with the cam lobe; and an enlarged elongated slot in one of said members for receiving said pivot pin. The assembly is arranged such that the pin slides freely within the slot as the lower member rotates through an initial arc with respect to the upper member. Further rotation of the lower member brings the pin into engagement with the slot, whereby the pin is held from sliding and acts as the pivot point for the lower member. The assembly additionally includes stop means for positively locking the members in an aligned relationship.

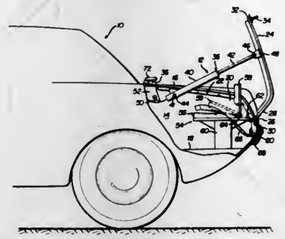
3,552,787
WIRE CAGE-TYPE SPLICE SLEEVE FOR REINFORCING BARS
Alfred A. Yee, 3169 Alika Ave., Honolulu, Hawaii 96817
Continuation-in-part of application Ser. No. 740,646, June 27, 1968. This application Oct. 28, 1968, Ser. No. 771,262
Int. Cl. F16b *7/00*
U.S. Cl. 287—108 **11 Claims**



Elongated splice sleeve for reinforcing bars defined by a series of generally aligned wire coils, either helical or annular, engaged with and interconnected by generally

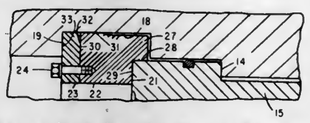
longitudinally extending wires welded thereto. A coating of cementitious material is applied about the exterior of the wires for defining a grout containing interior, with the overall sleeve being either of a cylindrical configuration or of a configuration tapering from a maximum diameter at the center thereof to minimum diameters at the opposed ends. The necessity for the cementitious coating can be avoided by a positioning of the coils in direct engagement with each other.

3,552,788
TRUNK SEAT
Carl Christensen, Dayton, Ohio (1100 NE. 1st Ave., Fort Lauderdale, Fla. 33304)
Filed Sept. 17, 1968, Ser. No. 760,207
Int. Cl. B60n *1/00*
U.S. Cl. 296—64 **5 Claims**



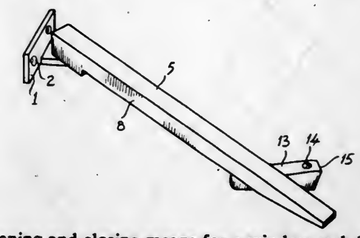
A method of converting an existing trunk of an automobile into a trunk seat, including steps of disconnecting hinges of the existing trunk lid to free the trunk lid, reconnecting the trunk lid to the body of the automobile at the trunk opening so that the lid normally closes the trunk opening and can swing upward and rearward to open the trunk, providing a latch at the front of the lid for releasably latching the lid in closed position, and mounting a seat in the trunk so that a person may sit on the seat when the trunk lid is open. The invention also includes the structure comprising at least two telescoping legs connected respectively to the trunk lid and to the body of the automobile at opposite sides of the trunk opening for retaining the lid in an open position, latch means including a part at the front of the lid for holding the lid closed, and a seat mounted in the trunk space including a swingable back which may be lowered to permit closing of the lid.

3,552,789
PRESSURE VESSEL HEAD RETAINER
Ted C. Evans, Olean, N.Y., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Oct. 10, 1968, Ser. No. 766,436
Int. Cl. B65d *45/32, 53/02*
U.S. Cl. 292—256.6 **9 Claims**



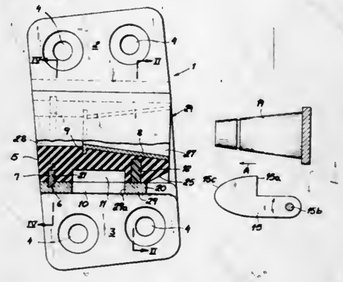
An enclosure for a barrel-type centrifugal compressor or other pressure vessel consisting of a cylindrical casing closed by end heads received within the cylindrical casing in sealed relation therewith. The case is provided with an internal annular groove which accommodates a retainer ring assembly consisting of a shear ring and a locking ring, each made up of several segments. The shear ring is generally rectangular in cross section and is provided with an axially extending annular lip, which overlies the periphery of the end head, and with an external bearing surface for engaging the groove bottom. The locking ring occupies the space in the groove between its outer face and the shear ring. The shear ring segments and locking ring segments are bolted together to form an integral retainer ring assembly. Rotation of the retainer ring assembly, under loading in shear, is prevented by the lip and bearing surface.

3,552,790
WINDOWS AND MEANS FOR OPENING AND CLOSING SAME
Desmond E. C. Webster, 1 Sweetmount Park, Dublin, Ireland
Filed Oct. 10, 1968, Ser. No. 766,466
Claims priority, application Ireland, Oct. 19, 1967, 1,262/67
Int. Cl. E05c *17/16*
U.S. Cl. 292—268 **3 Claims**



Opening and closing means for a window sash hingedly connected to a window frame, said means including a lever arm articulately connected at one end thereof to the window sash, a lever arm locating member secured to the window frame, the lever arm being slidable relative to the locating member, when the window is open, upon upward movement of the lever arm relative to the locating member, and means for securing the lever arm in a number of alternative positions relative to the retaining member.

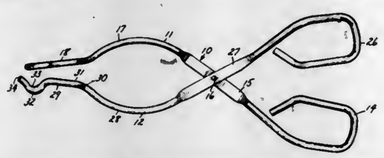
3,552,791
VEHICULAR DOOR LATCH
Hans Dieter Watermann, Metzkausen, Germany, assignor to Arn. Kiekert Sohne, Heiligenhaus, Germany, a corporation of Germany
Filed June 16, 1969, Ser. No. 833,281
Claims priority, application Germany, June 19, 1968, K 61,526
Int. Cl. E05b *15/02*; **E05c** *19/00*
U.S. Cl. 292—340 **10 Claims**



A latch for a vehicle door has a U-shaped metal plate which is fastened to the doorpost to form a passage in line with a centering pin on the door. An elastic (rubber) cushioning body is held in this passage by a metal fastening strip received in confronting and registering grooves in the body and the interior of the passage. A tapered bore is formed in this elastic body and is lined with a metal sleeve. The passage has a throughgoing rectangular slot registering with a corresponding depression in the body

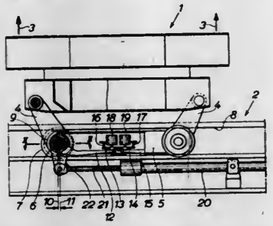
so that a locking bolt, dog or pawl can engage in the slot and against the body when the door is shut and the pin is fitted into the centering sleeve.

3,552,792
COFFEE BASKET HANDLING IMPLEMENT
Jules Granat and Adele Granat, both of 242—16 131 Road, Rosedale, N.Y. 11422
Filed Oct. 14, 1968, Ser. No. 767,134
Int. Cl. A47j *45/00*
U.S. Cl. 294—28 2 Claims



A tonglike device for handling the coffee-retaining basket in a coffee percolator having means for engaging the hollow stem thereof on the inner and outer surfaces.

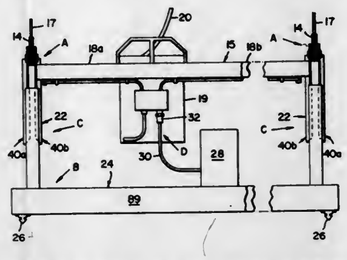
3,552,793
AUTOMATICALLY SELF-LEVELING GRIPPING DEVICE SUSPENDED FROM THE HOISTING ROPES OF A CRANE
Keijo Lehtonen, 6 Perjalahdentie As. 27, Riihimaki, Finland
Filed May 10, 1968, Ser. No. 728,201
Claims priority, application Finland, Apr. 2, 1968, 899/68
Int. Cl. B66c *1/00*
U.S. Cl. 294—67 5 Claims



A gripping device is suspended from the hoisting ropes of a crane and the device is composed of two parts one above the other, the lower part being suspended from a carriage with two axles, which are in turn suspended by pivoted arms from the upper part. The lower part in its suspension by the carriage is movable by an actuating device in a horizontal direction with reference to the upper part. The wheels of the carriage are journalled on the axles eccentrically with respect to the bearing carrying the pivoted arms and on either axle there is integrally fixed a protruding arm, the ends of which arms cooperate with limit switches for starting or stopping the actuating device.

3,552,794
CRANE COUPLING
Lawrence A. Wright, Alameda, Calif., assignor to Pacific Coast Engineering Company, Alameda, Calif.
Filed Oct. 16, 1967, Ser. No. 675,488
Int. Cl. B66c *1/10*
U.S. Cl. 294—81 2 Claims

A crane coupling permitting rapid interchange of connection between a crane hoist block or other lifting apparatus and one of a plurality of remotely-actuated spreaders of differing sizes, wherein each size of spreader is designed for handling uniformly sized cargo articles or containers of common dimension. To permit rapid change of such spreaders, the lifting apparatus hoist block and selected spreader each have complementary attachment members. These attachment members are adapted for quickly gathering and aligning the hoist block and spreader so as to guide them into slidable engagement to a position of registry. In the position of registry, a pin mounted for reciprocal movement with respect to one of the attachment members penetrates through an aperture defined in the other of the members in order to effect the desired

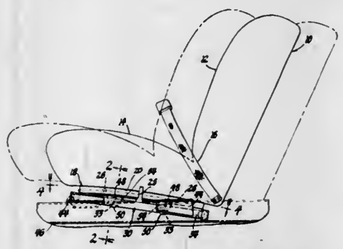


attachment. As attached to the lifting apparatus the spreader is remotely actuated by non-load bearing connections, which connections are protected from inadvertent separation or severance. This protection is afforded by an interlock attached to the coupling and integrated with the lift apparatus that restricts movement of the hoist block when the pin is retracted and restores hoist movement upon manual separation of these non-load bearing connections.

ERRATUM

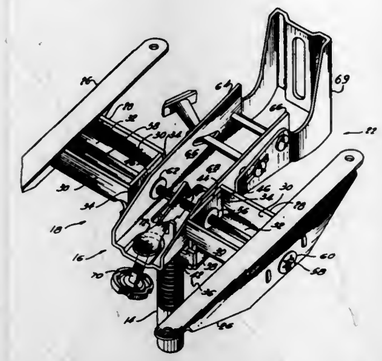
For Class 296—64 see:
Patent No. 3,552,788

3,552,795
ENERGY ABSORBING SEAT SUPPORT
Donald C. Perkins, Lansing, and Leonard P. Silk, East Lansing, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 23, 1968, Ser. No. 769,821
Int. Cl. B60r *21/10*
U.S. Cl. 297—216 1 Claim



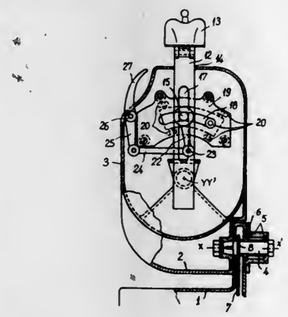
An energy absorbing support assembly for supporting a vehicle seating unit on a vehicle floor. The energy absorbing support includes a pair of parallel and laterally spaced channel members, each of which accommodates a pair of longitudinally spaced rollers carried along a lower side edge of the seating unit. Each roller has a diameter greater than the vertical distance between inner bearing surfaces of the channel member and is located in a well which serves to hold the roller from movement relative to the associated channel member except when excessively large forwardly or rearwardly directed inertial forces act on the seating unit at which time the rollers deform the bearing surfaces in the channel member.

3,552,796
TORSION BAR CHAIR CONTROL
Philip J. Williams, Bridgeport, Conn., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Mar. 24, 1969, Ser. No. 809,600
Int. Cl. A47c *3/00*
U.S. Cl. 297—304 6 Claims



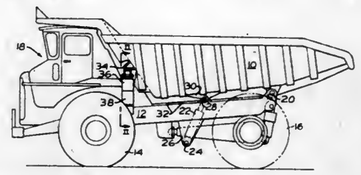
The following specification describes a seat support for a torsion bar chain control in which the seat support includes a pair of U-shaped channel sections each having one end fixed to a respective bar end and interconnected by an integrally formed U-shaped body. The body nests a U-shaped bracket which rotatably supports the bar and renders the structure rigid.

3,552,797
ARMCHAIRS FOR DENTAL TREATMENT
Olivier Marie André d'Houdain, Paris, France, assignor to Societe Industrielle de Fabrication et de Transformation, Paris, France
Filed July 1, 1968, Ser. No. 741,581
Claims priority, application France, Aug. 3, 1967, 116,815
Int. Cl. A61g *15/00*
U.S. Cl. 297—355 2 Claims



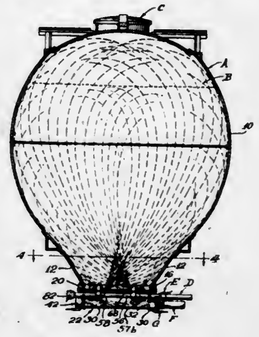
An armchair for dental treatment which comprises a frame which, in addition to the normal articulation permitting the forward and backward movement of the backrest portion, is provided with means permitting a second articulation of the backrest portion at right angles to the normal articulation. Thus the inventive chair allows an inclined lateral movement of the upper part of the patient's body without substantially altering the positioning of the rest of his body.

3,552,798
DUMP TRUCK BODY SUPPORTING MEANS
Carroll R. Cole and Alfred W. Sieving, Decatur, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Feb. 3, 1969, Ser. No. 795,893
Int. Cl. B60p *1/04*
U.S. Cl. 298—22 6 Claims



Means to support and cause centering of the forward portion of the body of a rear dump truck to enhance the distribution of weight on the truck frame and to reduce stresses at the hinge connection between the rear of the body and the frame.

3,552,799
SPARGER TYPE UNLOADING APPARATUS FOR RAILROAD CARS
Clarence J. Koranda, Western Springs, Ill., assignor to North American Car Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 748,264, July 29, 1968. This application July 18, 1969, Ser. No. 842,895
Int. Cl. B65g *53/30*
U.S. Cl. 302—14 17 Claims

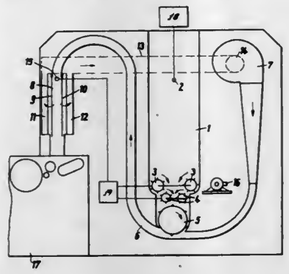


Method and apparatus for unloading dry bulk commodity from the body of a railroad car by discharging liquid in the form of streams in upward and lateral directions, into direct contact with the commodity for creating a slurry of all of the commodity in the body for expeditious removal of the commodity from the body of the car.

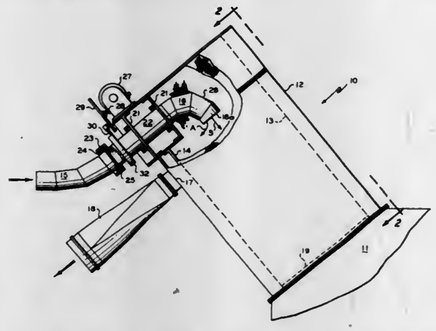
3,552,800
APPARATUS FOR THE PNEUMATIC FEEDING OF FIBER TUFTS TO SPINNING MILL MACHINERY
Hermann Truetzschler, Rheydt, Germany, assignor to Truetzschler & Co., Rheydt-Odenkirchen, Germany, a German corporation
Filed Sept. 23, 1968, Ser. No. 761,606
Claims priority, application Germany, Sept. 28, 1967, T 23,139
Int. Cl. B65g *53/40*
U.S. Cl. 302—40 7 Claims

Apparatus for feeding fiber tufts to a picker pneumatically comprising a feeding chute, a secondary chute and a pneumatic duct therebetween; a primary roller

having pin means protruding from the surface thereof at the juncture of the feed and pneumatic chutes, secondary feed rollers above the primary roller; and air-pervious wall means on the secondary chute.



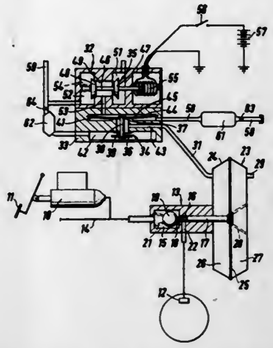
3,552,801
STAPLE FIBER FEEDER FOR BALING PRESS
Eual W. Gilbreth, Greenville, S.C., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 27, 1968, Ser. No. 779,494
Int. Cl. B65g *53/40*
U.S. Cl. 302—61 **6 Claims**



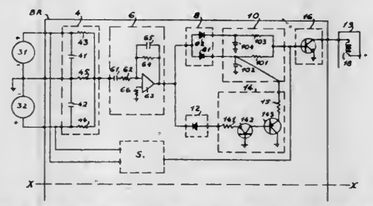
An air-staple separator having an inlet line for pneumatically conducting staple to a separator chamber. The inlet line includes a spout pivotally mounted on said separator and oscillatable to distribute staple uniformly in said separator chamber.

3,552,802
MEANS FOR PREVENTING SKIDDING OF VEHICLE WHEELS
Mervyn B. Packer and James Jesty, Warwickshire, England, assignors to Automotive Products Company Limited, Warwickshire, England
Filed Feb. 14, 1969, Ser. No. 799,342
Claims priority, application Great Britain, Feb. 15, 1968, 7,478/68
Int. Cl. B60t *8/06*
U.S. Cl. 303—21 **5 Claims**

A fluid pressure braking system, including means operated by a fluid servo-device to isolate a brake operating cylinder from its associated pressure source when a tendency to skid is sensed, and to reduce the pressure in said operating cylinder, has the pressure in the working chamber of the servo motor controlled by a valve actuated by a skid sensing device, the valve being connected to sources of relatively lower and higher pressure and the connection to at least one of said sources being through a flow restricting device, and an auxiliary reservoir being connected between the restriction and the valve so that a rapid initial change in pressure in the working chamber takes place due to equalisation of pressure in the working chamber and reservoir, followed by a slow change due to the flow restriction.



3,552,803
SYSTEM FOR CONTROLLING THE BRAKING MEMBERS OF A VEHICLE ON WHEELS
René Lucien, Neuilly-sur-Seine, France, assignor to Societe Anonyme dite: Messier, Paris, France
Filed Jan. 16, 1969, Ser. No. 849,224
Claims priority, application France, Jan. 17, 1968, 136,432
Int. Cl. B60t *8/08*
U.S. Cl. 303—21 **5 Claims**



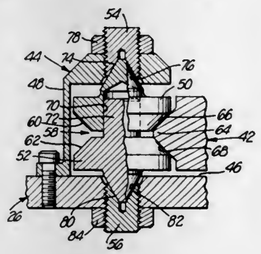
In a vehicle on wheels with hydraulic braking, a system for reducing the braking order given by the pilot as a function of the deceleration of the braked wheels due to their braking and then as a function of their acceleration due to the reduction. The system comprises, for each braked wheel, a device adapted to supply a signal proportional to the speed of the braked wheel, and a differentiator circuit controlled by at least one such signal, which gives a signal measuring the acceleration. A first uni-directional voltage-threshold circuit is controlled by the acceleration signal and produces an output signal only if the acceleration signal corresponds to a deceleration having an amplitude exceeding a selected value, and an impedance network comprising at least one capacitance is charged by the output signal of the first uni-directional circuit. A second uni-directional circuit is controlled by the acceleration signal and produces an output signal only if the acceleration signal corresponds to an acceleration. An amplifier with impedances of which at least one automatically decreases with the input signal to the amplifier, is controlled by the output signal of the second uni-directional conductor, which discharges the capacitance of the impedance network through the impedance of the amplifier, and a circuit is controlled by the voltage of the capacitance and operates a pressure-reducing electrovalve to proportionally reduce the braking pressure ordered by the pilot.

3,552,804
DAMPED SHAFT ASSEMBLY
Joseph W. Bracken, Jr., Redford Township, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 4, 1968, Ser. No. 773,063
Int. Cl. F16f *15/16*
U.S. Cl. 308—1 **10 Claims**



A long thin shaft is inherently damped against vibration which would otherwise occur at critical speeds of the shaft by virtue of a hollow shaft enclosing and rotating with the shaft and slightly spaced from it, with a damping material filling the space between the two shafts.

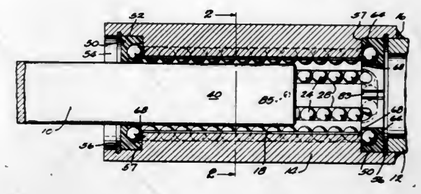
3,552,805
ROLLER MOUNTING MECHANISM FOR TEMPLATE GUIDED TOOL
Laurel E. Dunlap, 4510 Mary Ellen Ave., Sherman Oaks, Calif. 91403
Original application June 24, 1968, Ser. No. 739,249. Divided and this application Jan. 16, 1970, Ser. No. 3,362
Int. Cl. F16c *29/06*
U.S. Cl. 308—6 **5 Claims**



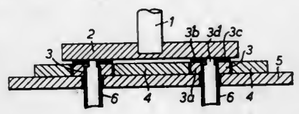
A supporting track has angular, longitudinal side edges engaged by angular roller surfaces on laterally spaced sets of supporting rollers to longitudinally movably support the carriage. Pressure cylinders constantly laterally urge the supporting rollers at one of the track sides toward said side for maintaining support roller gripping. Longitudinally spaced sets of guide roller assemblies on the carriage have V-shaped roller surfaces engaging mating roller surfaces on lateral side edges of a guide plate to support the guide plate laterally movable. Each roller assembly has independently adjustable upper and lower roller parts for aligning the guide plate. A template controls lateral movement of the guide plate and a tool thereon during longitudinal movement of the carriage along the supporting track.

3,552,806
FULL RECIRCULATING LINEAR BALL BEARINGS WITH SHAFT TELESCOPING WHILE TRANSMITTING TORQUE
Anthony V. Weasler and Bennett B. Reak, West Bend, Wis., assignors to Weasler Engineering & Mfg. Co., Inc., West Bend, Wis., a corporation of Wisconsin
Filed Nov. 8, 1968, Ser. No. 774,386
Int. Cl. F16c *29/06*
U.S. Cl. 308—6 **11 Claims**

The inner member of the telescopic shaft has true rectilinear ball races ground after heat treating. Opposite each of said surfaces the outer member has two channels in which balls are confined and can move freely. These channels have narrow slots through which portions of the balls are exposed to contact the inner member. The arrangement confines the balls against escape from the channels when the inner member is withdrawn from the outer member. End caps provide transfer passages from one channel to the other so that the circulation is in a closed path. Split rings anchor the end caps in the outer member and prongs integral with the end caps interlock the end caps with the sleeve-like outer member and the inner member is also keyed to maintain the assembly in proper orientation.



3,552,807
BEARINGS
Eric Albert Blount, Chelmsford, England, assignor to The Marconi Company Limited, London, England, a British company
Filed July 28, 1969, Ser. No. 845,157
Claims priority, application Great Britain, Aug. 9, 1968, 38,257/68
Int. Cl. F16c *17/16*
U.S. Cl. 308—9 **7 Claims**

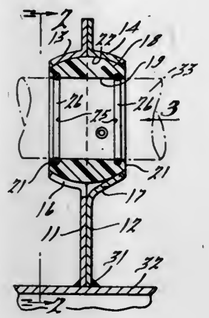


High load bearing which has one of its load bearing surfaces composed of deformable plastic plates, each plate having an aperture through which oil at high pressure is passed to the bearing surface. Linked to this aperture are shallow grooves formed in the bearing surface, but not extending to the periphery of the bearing surface so that the oil is contained within the deformable plates. The oil pressure is higher than the load per unit bearing surface area, but less than will break the oil seal between the deformable plates, which may be nylon or PTFE, and the other bearing surface.

3,552,808
BRAKE CAM SHAFT BEARING
Robert V. Mathers, Grosse Pointe Farms, and William Trampus, Madison Heights, Mich., assignors to Fruehauf Corporation, Detroit, Mich., a corporation of Michigan
Filed Oct. 3, 1968, Ser. No. 764,869
Int. Cl. F16c *35/06*
U.S. Cl. 308—29 **4 Claims**

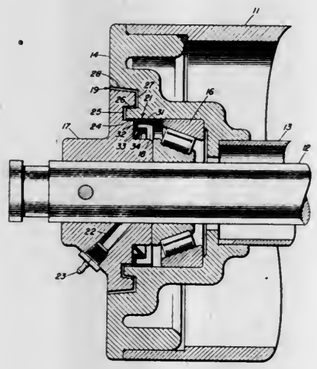
The bearing has a body made of two stampings which have truncated spherical sections forming a socket for supporting a truncated spherical body which passes therewithin in one position and is rotated thereafter to oper-

able position. One of said stampings containing a through slot and the other a recess. A greased fitting on the trun-



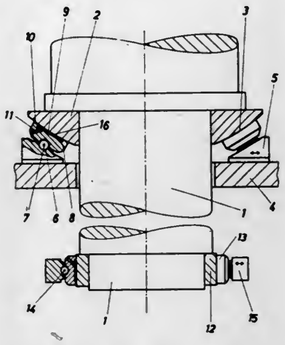
cated ball moves into a slot which prevents the rotation of the ball within the socket when in operable position.

3,552,809
LUBRICANT AND DUST SEAL CONFIGURATION
Billy E. Owens, Pineville, W. Va., assignor, by mesne assignments, to Owens Manufacturing Inc., a corporation of Delaware
Filed Jan. 29, 1969, Ser. No. 794,922
Int. Cl. F16c *1/24, 33/72*
U.S. Cl. 308—36.4 **9 Claims**



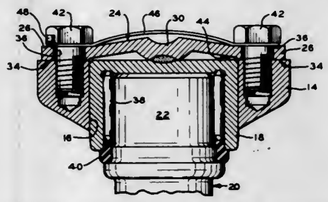
A seal for the bearing of a rotating member is described. The seal is designed to greatly inhibit the ingress of foreign matter from without and the egress of lubricant from within. The facing between the rotating and nonrotating members is formed in a labyrinth to substantially increase the length of the path foreign matter must travel before reaching an elastic seal. Action of the seal greatly inhibits the further travel of any foreign matter and also prevents leakage of the lubricating substance. A unique configuration of the labyrinth employs the laws of centrifugal force to further protect against the entrance of foreign matter. The configuration of the elastic seal substantially reduces friction and thereby increases efficiency, reliability, and usefulness of unit containing the inventive seal.

3,552,810
HYDROSTATIC BEARING
Heinrich Korrenn, 28 Segnitzstrasse, 872 Schweinfurt, Germany
Filed Nov. 6, 1968, Ser. No. 773,907
Claims priority, application Germany, Nov. 6, 1967, 1,625,568
Int. Cl. F16c *17/06*
U.S. Cl. 308—160 **10 Claims**



A hydrostatic bearing in which several cushions of fluid medium under hydrostatic pressure transmit the load between a fixed part and a rotating supported part and in which the fluid cushions are grouped together in several groups each of them being associated with a separate pump for supplying the fluid medium so that on failure of one or more pumps or cushions the bearing remains in action.

3,552,811
BEARING RACE ASSEMBLY
John A. Kayser, Oregon, Ohio, assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed Jan. 8, 1969, Ser. No. 789,767
Int. Cl. F16c *19/34*
U.S. Cl. 308—176 **4 Claims**

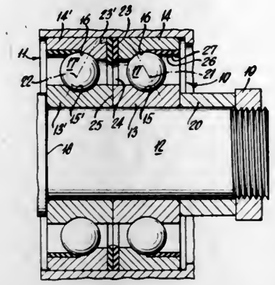


In a universal joint having a pair of yokes and a journal cross with trunions located within apertures in the yokes, a closed end bearing race slidably mounted within the apertures surrounding the trunnion ends. The improvement being a bearing plate secured to the closed end of the bearing race and comprising a resilient body portion which preloads the universal joint while simultaneously preventing rotation of the bearing cap.

3,552,812
ANGULAR-CONTACT BEARING CONSTRUCTION
Ralph S. Howe, Jr., New Britain, Conn., assignor to Textron, Inc., Providence, R.I., a corporation of Delaware
Filed June 11, 1969, Ser. No. 832,354
Int. Cl. F16c *13/10*
U.S. Cl. 308—189 **16 Claims**

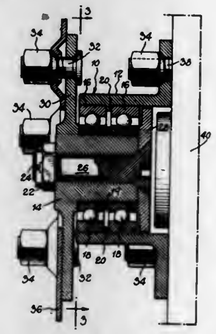
The invention contemplates an angular-contact ball-bearing construction in which the relieved side wall of one of the races embodies a circumferentially extending liner

of resilient material. The resilient material radially straddles the circular intercept between the ball race and the radial plane containing the locus of centers of ball-race curvature. The resilient material deflects upon assembly



of the rings and balls, into unit-handling relationship. The resilient material also retains the assembly against mechanical-shock damage. Various embodiments and various preloading techniques are described.

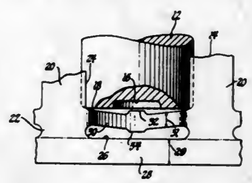
3,552,813
REMOVABLE FREE WHEELING HUB
Michael Brescia, Jr., 12 Old Milford Lane, West Milford, N.J. 07480, and Peter Brescia, 1135 Roosevelt Ave., New Milford, N.J. 07646
Filed Jan. 31, 1969, Ser. No. 795,655
Int. Cl. F16c *19/02*
U.S. Cl. 308—191 **4 Claims**



A removable, free wheeling, hub for attachment between the drive axle and the wheel of a vehicle when the vehicle is towed having a fixed support removably affixed to the drive axle and a member partially within the fixed support and rotatable with respect thereto to which the wheel is removably affixed.

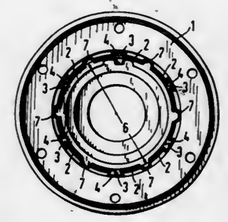
3,552,814
CAGE FOR ROLLER BEARING
Ralph Altson, deceased, late of Erie County, Ohio, by John A. Altson, Port Jefferson, and George R. Altson, both legal representatives, Rochester, N.Y., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Apr. 30, 1969, Ser. No. 821,172
Int. Cl. F16c *133/46*
U.S. Cl. 308—217 **6 Claims**

A cage for roller bearings is designed with arcuate deformable retaining members spanning the roller pockets adjacent each end of the pockets. The retaining members include a nib which is disposed in a recess in the roller end face to retain the rollers on the cage when the retaining members are deformed. The retaining members are spaced from the cage end rings with the relatively rigid end rings



maintaining dimensional control of the cage. A race with two integral shoulders can also be included in the assembly.

3,552,815
LINED BEARING
Josef Keller, Schweinfurt, Germany, assignor to Fichtel & Sachs A.G., Schweinfurt, Germany
Filed Sept. 13, 1968, Ser. No. 759,697
Claims priority, application Germany, Sept. 15, 1967, 1,625,538
Int. Cl. F16c *33/04*
U.S. Cl. 308—238 **10 Claims**

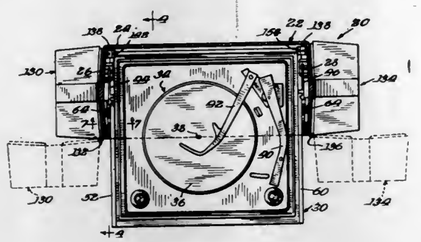


A metallic sleeve bearing is provided with an internal liner consisting of circumferentially spaced, thin, plastic plate segments each having an outer rib conformingly received in a dovetail groove of the sleeve surface, the groove being open in one axial direction and flaring toward the open end. The radius of curvature of each segment is sufficiently greater than that of the sleeve surface to cause the circumferentially terminal edge portions of the segments to be pressed against the sleeve surface by the resiliency of the segment, and the rib to be locked in the associated groove.

3,552,816
PORTABLE PHONOGRAPH RECORD PLAYER
Gerald L. Wolanin, Baroda, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Feb. 27, 1969, Ser. No. 802,918
Int. Cl. A47b; G11b *1/00*
U.S. Cl. 312—8 **13 Claims**

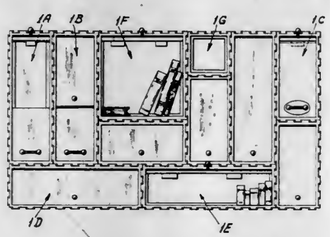
A phonograph record player of the type comprising a generally upright carrying case or housing having front and back walls and spaced side walls and a turntable tray or base positioned in, and forming a closure portion of, an enlarged opening in the front wall of the carrying case or housing. A double-pivot arrangement is used to support the turntable base between the side walls of the carrying case or housing for movement between a generally upright storage position and a generally horizontal record playing position. Portions of the turntable tray

or base are adapted to unlatch latching means which are operative between movable speaker enclosures and the



housing when the turntable tray or base is moved to the generally horizontal record playing position.

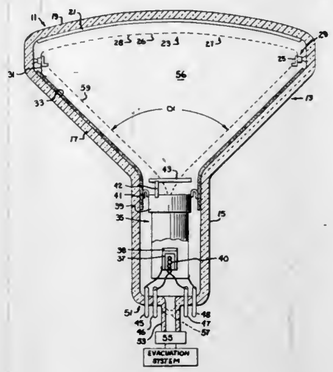
3,552,817
COMPARTMENTED STORAGE CABINET
Egilio Marcolongo, Milan, Italy, assignor to Terry Plastic di Guizzardi Claudio, Gottardo Alfio e Marcolongo Egilio, Soc. di fatto Cascine Olona, Settimo Milanese, Milano, Italy, an Italian corporation
Filed Sept. 3, 1968, Ser. No. 757,081
Claims priority, application Italy, Aug. 31, 1967, 9,541/67
Int. Cl. A47b *87/02*
U.S. Cl. 312—107 **10 Claims**



Storage cabinet assembled from interfitting, peripherally fluted and ribbed prismatic units forming compartments of rectangular cross-section with hinged doors at their front ends and, if desired, drawers slidable in the several compartments, adjacent units being yieldably interlocked by mating formations on their dovetailed ribs and flutes.

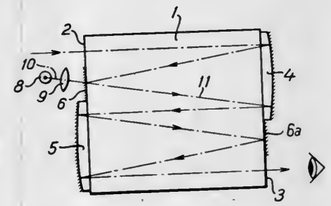
3,552,818
METHOD FOR PROCESSING A CATHODE RAY TUBE HAVING IMPROVED LIFE
David Benda, Geneva, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Original application Nov. 17, 1966, Ser. No. 595,104, now Patent No. 3,432,712, dated Mar. 11, 1969. Divided and this application July 18, 1968, Ser. No. 745,812
Int. Cl. H01j *9/38*
U.S. Cl. 316—11 **5 Claims**

A method for processing an improved cathode ray tube employing an open metallic structure positioned relative to the screen, for example, a shadow mask color tube wherein the mask is a continuous selected gaseous giving mechanism during tube operation. During tube processing the mask sorbs a selected introduced gas such as hydrogen. Electron beam impingement of the mask during subsequent tube operation effects gradual release of the occluded selected gas from the mask to provide a replenishable partial pressure of hydrogen which in relation to the



total tube pressure is consistent for the promotion of enhanced emission and extended tube life.

3,552,819
ILLUMINATED RETICLE FOR OPTICAL VIEWING INSTRUMENTS
Walter Mandler, Midland, Ontario, Canada, assignor to Ernst Leitz GmbH, Wetzlar, Germany
Filed Nov. 6, 1967, Ser. No. 680,835
Claims priority, application Germany, Nov. 10, 1966, L 55,022
Int. Cl. G02f *27/32*
U.S. Cl. 350—10 **5 Claims**

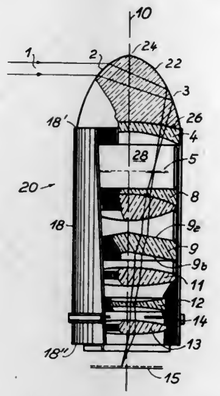


In an optical viewing instrument comprising at least one mirror surface on which an intermediate image is formed and more particularly in a catoptric gun sight a reticle is produced on said mirror surface by removing the reflective coating in appropriate shape. Behind the mirror a light source is arranged for illumination of said reticle and means are provided adapted to adjust the intensity of said illumination to the brightness of the object to be observed.

3,552,820
PANORAMIC VIEW OBJECTIVE USING AN ASPHERICAL LENS
Heinz Brachvogel, 5445 Eggenwil, Aargau, Switzerland
Filed May 29, 1967, Ser. No. 642,044
Claims priority, application Switzerland, June 1, 1966, 7,954/66
Int. Cl. G02b *13/06*
U.S. Cl. 350—21 **12 Claims**

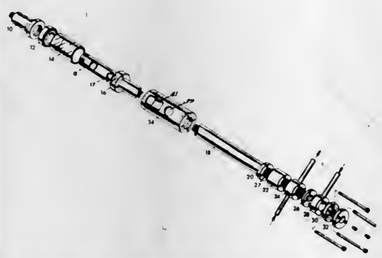
A panoramic view objective comprised of a compound lens arrangement in a lens housing with an aspherical lens providing the entrance surface for light rays into the objective. The aspherical surface of the lens is divided

into an outer portion diverging from the apex of the lens and an inner portion located adjacent the outer portion. Rays are refracted by the outer portion into the lens and are totally reflected by the inner surface of the inner portion and are oriented to pass through the lens housing. Within the housing an achromatic adjusting lens is positioned adjacent the surface of the aspherical lens and an intermediate image plane is disposed within the housing between the achromatic adjusting lens and an adjacent field lens. The field lens has a focal length



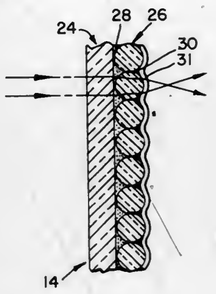
greater than the distance between it and the image plane. Adjacent the field lens on the opposite side from the intermediate image plane is a plate member having conically-shaped spaced parallel faces for orienting the rays in a parallel arrangement and directing them toward the optical axis of the lens housing. Rearwardly of the parallel plate an asymmetrical arrangement of lenses in combination with an aperture are provided for collecting and producing the image in an image plane adjacent the rearward end of the lens housing.

3,552,821
BORESCOPE FOR USE AT HIGH TEMPERATURES AND PRESSURES
Newbold O. Cross, Berkeley Heights, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Sept. 5, 1967, Ser. No. 665,377
Int. Cl. G02b
U.S. Cl. 350—63 **4 Claims**



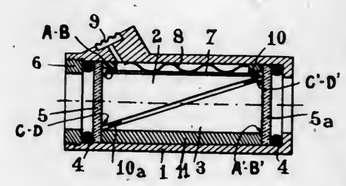
A borescope for use in visual inspection of the internal conditions of operating pressure vessels and process equipment which comprises an optical borescope provided with a temperature and pressure-resistant outer housing and associated components. The borescope is cooled by a cooling fluid circulated through a portion of the space between the borescope housing and the outer housing, and returned through another portion of said space and is protected from dust and pressure damage by the outer housing.

3,552,822
REAR PROJECTION SCREEN
Gerald Altman, 41 Westminster Road, Newton, Mass. 02159
Continuation-in-part of application Ser. No. 531,298, Mar. 2, 1966. This application June 7, 1968, Ser. No. 735,237
Int. Cl. G03b *21/60*
U.S. Cl. 350—126 **5 Claims**



A rear projection screen of high efficiency is constructed with a refracting microsphere component which includes a distribution of microspheres on a transparent support and an antireflection component which is not adverse to high optical transmissivity for light from a projector and which enhances transmissivity and/or absorbtivity for light emanating from the general direction of an observer.

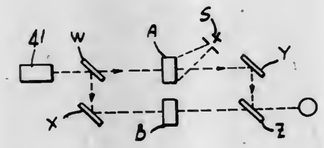
3,552,823
POLARIZER
Jacques Badoz, Bagneux, Michel Billardon, Chilly-Mazarin, Jean Virloget, Le Mesnil-Saint-Denis, and Marcel Debrie, Sevres, France, assignors to Centre National de la Recherche Scientfique, Paris, and Societe Francaise d'Instruments de Controle et d'Analyses, Le Mesnil-Saint-Denis, Yvelines, France
Filed Aug. 8, 1966, Ser. No. 570,842
Claims priority, application France, Aug. 16, 1965, 28,011
Int. Cl. G02f *1/24*; G02b *5/04*
U.S. Cl. 350—157 **9 Claims**



A polarizer comprises two prisms mounted in a sleeve having windows at opposite ends and filled with liquid. The prisms have different ordinary and extraordinary indices of refraction while the liquid has a single index lower than the indices of the prisms. The liquid serves the dual

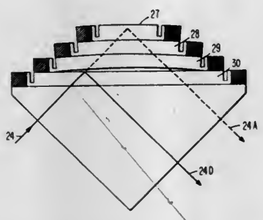
function of protecting the prisms and of cooperating with the prisms to effect the emission of one polarized beam and the total reflection of the other.

3,552,824
PHOTOCHROMIC LIGHT VALVE
Zoltan J. Kiss, Belle Mead, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed May 13, 1968, Ser. No. 728,474
Int. Cl. G02f 1/38
U.S. Cl. 350—160 2 Claims



A light valve comprises a photochromic body which can be made to change its index of refraction by irradiating the body with light of a wavelength specific for the photochromic material of the body. The photochromic body is combined with means for modulating a light source so as to cause an image to be formed in response to a refractive index change. For example, a photochromic body may be incorporated in a Fabry-Perot cavity or in a Wollaston type prism configuration.

3,552,825
VARIABLE DIGITAL LIGHT DEFLECTOR
Anton G. Wellbrock, Boulder, Colo., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Mar. 28, 1969, Ser. No. 811,289
Int. Cl. G02f 3/00
U.S. Cl. 350—160 7 Claims



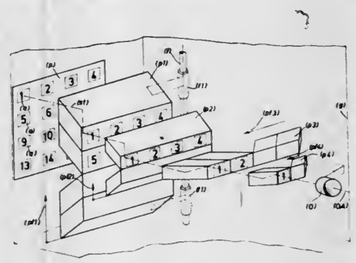
Variable digital light deflection is obtained by stacking light deflection plates on the hypotenuse of a right-angle prism. Light enters one face of the prism and strikes the hypotenuse of the prism at an angle equal to or greater than the critical angle. Normally, the light will be totally internally reflected in the prism and pass out the other face of the prism. However, if a deflector plate is attached to the hypotenuse of the prism and is making optical contact with the hypotenuse of the prism, the total internal reflection will be frustrated, and the light beam will pass into the deflector plate. The deflector plates may be stacked one on top of the other. The phenomenon of total internal reflection and frustration of total internal reflection is used to control how many deflector plates the light beam passes through before it is totally internally reflected and moves back through the deflector plates, the prism, and out the face of the prism. The deflector plates may be solid glass plates or liquid cells. They may be energized by a piezoelectric crystal to flex and thereby make or break optical contact.

3,552,826
VARIABLE INTERFERENCE REFLECTOR
Garnet R. Hanes, Jerzy A. Dobrowolski, and Cornells J. Van der Hoeven, Ottawa, Ontario, Canada, assignors to Canadian Patents and Development Limited, Ottaway, Ontario, Canada, a corporation of Canada
Filed Feb. 19, 1968, Ser. No. 706,595
Claims priority, application Canada, Jan. 31, 1968, 11,204
Int. Cl. G02b 5/28
U.S. Cl. 350—166 3 Claims



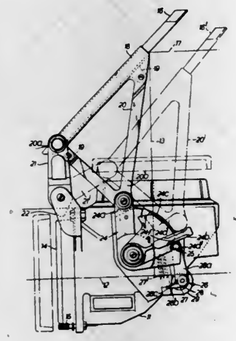
A reflector device capable of providing a desired value of reflectance and having a multi-layer reflecting surface which gradually decreases in thickness, for example exponentially, from one end to the other end so that the reflectance value at any point is dependent on the position of the point and varies logarithmically across the surface. The device is provided with two controls, one being a reflectance adjustment control and the other a wavelength adjustment control.

3,552,827
DEVICE FOR OPTICAL SELECTION OF IMAGE AREAS
Hans Linde, Berlin, Germany, assignor to H. Berthold Messsinglinienfabrik und Schriftgiesserei A.G., Berlin, Germany, a German company
Filed July 12, 1967, Ser. No. 652,807
Int. Cl. G02b 27/14
U.S. Cl. 350—171 9 Claims



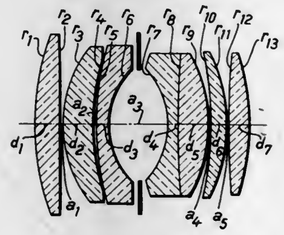
A planar array of image areas is scanned by an optical selector comprising a series of reflector stages, the reflectors of each stage being a set of parallelogrammatic prisms with internal reflecting surfaces designed to shift an incoming beam parallel to itself in a predetermined direction of displacement in which the entire stage is selectively shiftable to channel light from different image areas to the similarly shiftable deflectors of the next-following stage. The number of prisms decreases progressively from one stage to the next, the prisms of each stage except the last being divided into two groups which are alternatively made effective upon their displacement in the beam-shifting direction.

3,552,828
MOUNTING ARRANGEMENTS FOR A REPLACEABLE SEMI-REFLECTIVE MEMBER OF A HEAD UP DISPLAY DEVICE
Ernest G. Lawrence and Thomas H. K. Hughes, London, England, assignors to Elliott Brothers (London) Limited, London, England, a British company
Filed Aug. 1, 1968, Ser. No. 749,376
Claims priority, application Great Britain, Aug. 9, 1967, 36,574/67
Int. Cl. G02f 27/14
U.S. Cl. 350—174 5 Claims



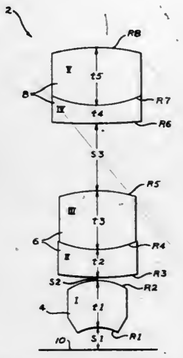
The semi-reflective member is replaceably mounted by edge members having similar temperature coefficient of expansion. The edge members are mounted on a framework so that the semi-reflective member can be moved between at least two predetermined positions. These positions are finely adjustable by an eccentrically mounted adjusting arrangement.

3,552,829
PHOTOGRAPHIC GAUSS TYPE OBJECTIVE
Heinz Marquardt, Wetzlar, Germany, assignor to Ernst Leitz G.m.b.H., Wetzlar, Germany
Filed Dec. 2, 1968, Ser. No. 780,520
Claims priority, application Germany, Dec. 9, 1967, 1,268,873
Int. Cl. G02b 9/62, 11/32
U.S. Cl. 350—176 1 Claim



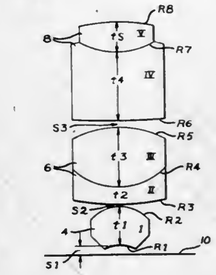
A photographic Gauss type obective is disclosed which comprises in the direction of light travel three singlet lens members in front of the objective diaphragm and a cemented double lens member followed by two singlet lens members behind the diaphragm. The relative aperture is at least as great as f:1.4, while the back focal distance is greater than 70% of the objective's focal length, and the field angle is about ±20°.

3,552,830
THREE MEMBER MICROSCOPE OBJECTIVE HAVING A MAGNIFICATION OF 20×
Arthur H. Shoemaker, East Aurora, N.Y., assignor to American Optical Corporation, Southbridge, Mass., a corporation of Delaware
Filed Dec. 9, 1968, Ser. No. 782,066
Int. Cl. G02b 9/12, 21/02
U.S. Cl. 350—176 2 Claims



A three member microscope objective having a numerical aperture of substantially 0.50 and a magnification of substantially 20×.

3,552,831
THREE MEMBER MICROSCOPE OBJECTIVE HAVING A MAGNIFICATION OF 40×
Arthur H. Shoemaker, East Aurora, N.Y., assignor to American Optical Corporation, Southbridge, Mass., a corporation of Delaware
Filed Dec. 9, 1968, Ser. No. 782,270
Int. Cl. G02b 9/12, 21/02
U.S. Cl. 350—176 2 Claims



A three member microscope objective having a numerical aperture of substantially 0.66 and a magnification of substantially 40×.

3,552,832
OPTICAL PROFILE PROJECTION SYSTEMS
David Demaine, Barnet, England, assignor to The Rank Organisation Limited, London, England, a company of Great Britain and Northern Ireland
Continuation-in-part of application Ser. No. 758,330, Sept. 9, 1968. This application Oct. 27, 1969, Ser. No. 869,803
Int. Cl. G02b 3/00, 9/00, 9/62
U.S. Cl. 350—212 6 Claims

An optical profile projector having an afocal optical objective providing telecentric projection, which comprises four components arranged in two pairs symmetrical with

respect to a central diaphragm, the inner and outer components of the respective pairs being simultaneously and relatedly movable in such a manner as to maintain the symmetry of the arrangement, the laws of movement being such as to provide variation of the object plane/

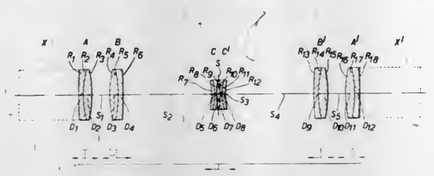
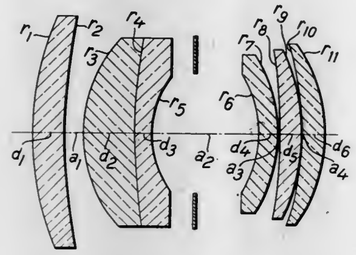


image plane distance whilst maintaining constant the overall magnification of the objective, the latter preferably being simultaneously subjected to an overall movement in order also to maintain constant the position of the image plane.

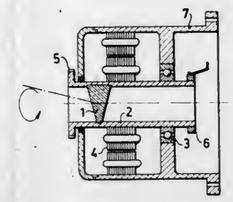
3,552,833
PHOTOGRAPHIC GAUSS TYPE OBJECTIVE
Heinz Marquardt, Wetzlar, Germany, assignor to Firma Ernst Leitz, G.m.b.H., Wetzlar, Germany
Filed Dec. 2, 1968, Ser. No. 780,428
Claims priority, application Germany, Dec. 30, 1967, 1,269,385
Int. Cl. G02b *9/60*
U.S. Cl. 350—217 **1 Claim**



A photographic Gauss type objective is disclosed which comprises five meniscus lens members. In front of the objective diaphragm in the direction of light travel are aligned one singlet converging meniscus and one cemented negative meniscus. Behind the diaphragm are arranged three singlet meniscus lens members whereof the first one is negative while the remaining two are positive. The objective has a relative aperture of at least *f*:2.8, a field angle of ±18°, and it can be used in an image scale field ranging from ∞:1 to 1:1.

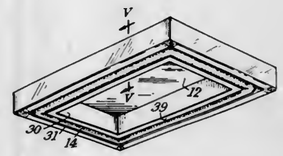
3,552,834
OPTICAL INSTRUMENT FOR MEASURING OR CONTROLLING ANGULAR POSITIONS
Georg Vogl, Saltsjobaden, and Bo Hogstrom, Danderyd, Sweden, assignors, by mesne assignments, to Jungner Instrument Aktiebolag, Stockholm, Sweden
Filed May 8, 1967, Ser. No. 636,977
Claims priority, application Sweden, May 10, 1966, 6,394/66
Int. Cl. G02f *1/34*
U.S. Cl. 350—285 **2 Claims**

The optical instrument of the present invention is utilized for measuring or setting angular positions. The optical system is disposed inside a tube which is rotatably mounted in a stationary casing in such a manner that the optical radiation passes through the tube. The rotor of a synchro is supported on the tube and the stator of the synchro is supported on the casing. The rotor can be provided with slip rings to supply electrical current



to the rotor winding, or the tube can be manufactured from a magnetic material part of which is formed as a rotor. A multi-pole synchro can be combined with a single-pole synchro in order to provide a coarse-fine signal.

3,552,835
RETAINING STRIP AND CHANNEL FOR STRETCHED REFLECTOR
George Y. Benzies, Woking, England, assignor to British Aircraft Corporation Limited (formerly British Aircraft Corporation (Operating) Limited), London, England, a British company
Filed Feb. 18, 1969, Ser. No. 800,141
Claims priority, application Great Britain, Feb. 22, 1968, 8,711/68
Int. Cl. G02l *5/08*
U.S. Cl. 350—288 **8 Claims**

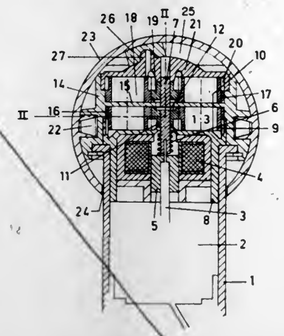


Mirrors having reflecting surfaces of metallised flexible plastic film are disclosed, in which the film is secured to a rigid backing member by having its peripheral portion trapped in a channel extending around the backing member by means of a deformable strip of resilient material which is forced into the channel and held there under compression.

3,552,836
ELECTRIC ADJUSTING MEANS FOR AZIMUTH AND ELEVATION ADJUSTMENT
Aane Adriaan Oskam, De Meern, Netherlands, assignor to Technische Industrie A. C. Koot N.V., Montfoort, Netherlands
Continuation-in-part of application Ser. No. 701,353, Jan. 29, 1968. This application June 11, 1969, Ser. No. 833,890
Claims priority, application Netherlands, Aug. 24, 1967, 6711630
Int. Cl. G02b *5/08*
U.S. Cl. 350—289 **20 Claims**

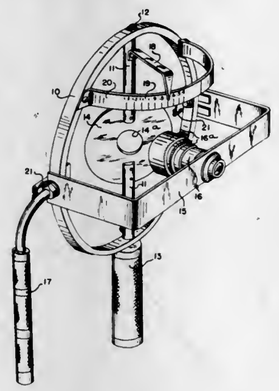
An adjusting means for azimuth and elevation adjustment comprising a hollow support and a universal joint connected to the support and to the part to be adjusted. A reversible electric motor is mounted in the support having a shaft, a reduction gear and an electro-magnetically controlled coupling. Planetary transmission means

are provided and means whereby the shaft may optionally be coupled with each of said transmission means by a reduction gear and an electro-magnetically controlled



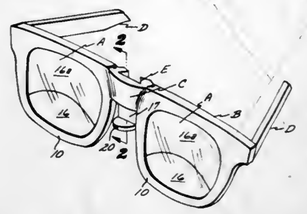
coupling. The transmission means are capable of acting on the universal joint to bring about a rotation around two different axes.

3,552,837
HAND-HELD APPARATUS FOR DETERMINING THE ECCENTRICITY OF A CORNEA
David Volk, 2460 Fairmount Blvd., Cleveland, Ohio 44106
Continuation-in-part of application Ser. No. 689,164, Dec. 8, 1967. This application Nov. 26, 1968, Ser. No. 778,950
Int. Cl. A61b *3/10*
U.S. Cl. 351—13 **1 Claim**



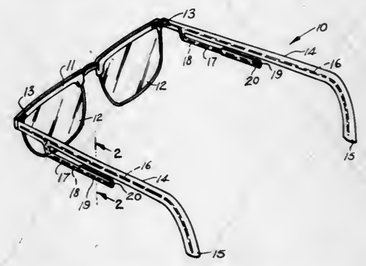
There is presented a unitary hand-held apparatus for determining the shape of the anterior surface of the human cornea in terms of the eccentricity of conicoids of revolution which approximate the shape of the cornea, in wich an illuminated circular target is presented to a non-apical portion of said cornea, rotated a given angle, and the reflected image of said target is observed through a telescope whose optical axis forms a given angle with the optical axis of said cornea, the center of said circular target lying on the optical axis of said telescope, and said circular target being rotatable about a diameter thereof which is perpendicular to the optical axis of said telescope, said target being rotated about said diameter until said image appears substantially as a circle, and using that angle of rotation of said target to determine the eccentricitry of the cornea.

3,552,838
BRIDGE ADJUSTMENT FOR BIFOCAL EYEGLASSES
Thomas R. Hawks, 801 E. 37th St., Long Beach, Calif. 90807
Filed Sept. 13, 1968, Ser. No. 759,676
Int. Cl. G02c *7/06*
U.S. Cl. 351—55 **1 Claim**



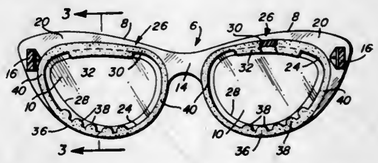
A bridge adjustment for bifocal eyeglasses that permits a pair of lenses and frame supporting same to be moved relative to the wearer's nose to a position where the lower reading portion of the lenses are in alignment with the eyes of the user when the rest is looking up or down.

3,552,839
SPECTACLES WITH CHEEKBONE ENGAGING OFFSET PADDED ARMS
James Leslie Manning, 1348 Madison St., Denver, Colo. 80206
Filed Dec. 30, 1968, Ser. No. 787,883
Int. Cl. G02c *5/18*
U.S. Cl. 351—123 **1 Claim**



An eye glass frame having the side frame portion equipped with an offset arm which is cushioned and adjustable in order to keep pressure off the nose of the wearer.

3,552,840
EYEGLASS FRAME CONSTRUCTION FOR REMOVABLE LENSES
Lorna R. Braget, P.O. Box 59, Bagley, Minn. 56621
Filed Sept. 16, 1968, Ser. No. 759,841
Int. Cl. G02c *5/00*
U.S. Cl. 351—154 **3 Claims**



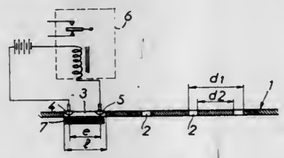
Readily changeable eyeglass lenses, more particularly, a frame with lens mounting rims having inward surfaces rabbeted to provide grooves each having a ledge-like lens

seating and backing flange. Each groove functions to lodge the compressibly resilient molding therein. Top and bottom portions of the molding are respectively provided with a lens piloting and retaining lip-like guard and a row of pliant ear-like detents which can be flexed at will. The user can pop out the lenses and snap them in place in a selectively usable alternate frame. One set of lenses can be used in highly decorative frames of unique shapes, colors and design to harmonize with apparel and costume jewelry.

3,552,841
DEVICE FOR AUTOMATICALLY CONTROLLING THE RUNNING OF A CINEMATOGRAPHIC PROJECTOR

Charles Michelson, Paris, France, assignor to Teverama S.A., Lausanne, Vaud, Switzerland, a company of Switzerland

Continuation-in-part of application Ser. No. 584,160, Oct. 4, 1966. This application Mar. 19, 1968, Ser. No. 714,212
Claims priority, application France, Mar. 24, 1967, 100,266
Int. Cl. G03b *21/50*
U.S. Cl. 352—92 **1 Claim**

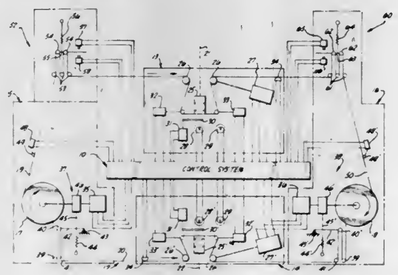


The film-driving electric motor of a movie projector is automatically controlled by a switch which senses a recess formed at a particular location of the film as it unwinds through the projector. This recess is a longitudinally elongated slot aligned with the standard perforations of the film and much longer than each perforation. The control switch operates by means of two small, independently movable, contact studs positioned in alignment with the perforations and slot and spaced from each other by a distance slightly smaller than the slot length.

3,552,842
MOTION PICTURE PROJECTOR CONTROL SYSTEM

John Kellner Taillon, Sierra Madre, Calif., assignor to Bell & Howell Company, Pasadena, Calif., a corporation of Illinois

Filed Feb. 3, 1969, Ser. No. 795,992
Int. Cl. G03b *21/02, 21/43*
U.S. Cl. 352—125 **28 Claims**

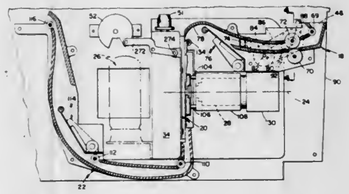


A control system for a motion picture projection installation having a pair of lengths of motion picture film passed along separate film paths through separate reversible drive means between a pair of reels upon which the films are cowound in reciprocal head-to-tail bifilar relation. The control system includes means for sensing the quantity of film present in one of the film paths between one reel and film display means located intermediate the reels. The control system also includes means for controlling the drive means to maintain said film quantity between predetermined limits.

3,552,843
MOTION PICTURE PROJECTOR

Gary Kaess, Newton, and Robert G. Palmer, Canton, Mass., assignors, by mesne assignments, to Atlas-Rand Corporation, Clifton, N.J., a corporation of New Jersey

Filed Sept. 12, 1967, Ser. No. 667,208
Int. Cl. G03b *1/22*
U.S. Cl. 352—191 **10 Claims**

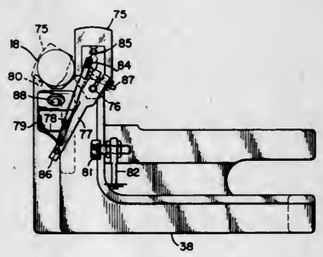


A self-threading, sprocketless motion picture projector has a main claw drive which engages film just before the projection aperture. The pressure plate has an offset so that no significant resistance to film movement occurs prior to engagement by the claw. Also, an entrance side guide is pivoted into place by the film after its leading edge has passed the projection aperture. A rubber surfaced auxiliary drive roller mounted on a pivoted arm engages the film as it is introduced into the guide opening. This drive roller is lightly biased into contact with the film and is driven 5% faster than the claw drive. Main drive control includes an SCR circuit and adjustments that control the position and travel of the claw.

3,552,844
OPTICAL WEIGHING SCALE

Frederick C. Carroll, Toledo, Ohio, assignor to The Reliance Electric and Engineering Company, Toledo, Ohio, a corporation of Ohio

Filed Feb. 23, 1968, Ser. No. 707,506
Int. Cl. G01g *23/32*; G03b *21/00, 3/00, 21/28*
U.S. Cl. 353—41 **8 Claims**

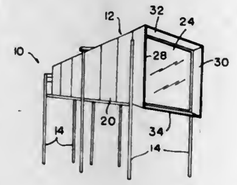


A projection system in a weighing scale. The weighing scale includes a display screen and means for projecting images onto the screen including a load-responsive chart having successive series of indicia on a plurality of surfaces arranged in spaced relation from each other, a carriage movable along the chart, and lens means. The lens means includes a projection lens carried by the carriage for projecting images of indicia from each of the series onto the screen. The projection lens has a fixed distance from the chart and is focused on one of the indicia surfaces. The lens means also includes a focal length changing means insertable or removable in the optical path between the projection lens and the chart for changing the effective optical path length to focus the projection lens on only one of the indicia surfaces at any one time and, thus, for accomplishing the focusing.

3,552,845
DISPLAY DEVICE

Challie Yates, Jr., Ashland, Ky., assignor to Video Ads, Inc., Detroit, Mich., a corporation of Kentucky

Filed Feb. 19, 1968, Ser. No. 706,573
Int. Cl. G03b *12/22*
U.S. Cl. 353—74 **3 Claims**

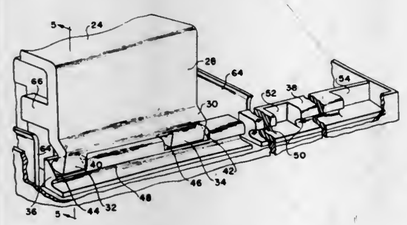


The portable outdoor display device comprises an elongated housing, a projector within the housing for projecting a plurality of different images such as ads in sequence upon the projection screen closing the front end of the housing for viewing from the outside, light sensitive means for activating the projector when darkness falls and for de-activating it when sunlight appears and a thermostatically controlled heater and an exhaust fan for the housing.

3,552,846
SLIDE STACK HANDLING SYSTEM FOR PROJECTORS

David E. Hansen, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 1, 1968, Ser. No. 725,749
Int. Cl. G03b *23/00*
U.S. Cl. 353—103 **18 Claims**

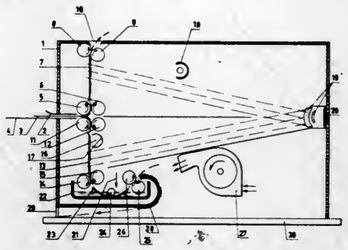


A slide stack handling system for slide projectors comprising a slide holder for releasably holding a stack of slides and cooperating with structure on the projector to release the slides when the slide holder is moved to a slide releasing position in the supply chamber of the projector. After all of the slides have been projected, the slide holder is movable to a slide gripping position in the slide take-up chamber for gripping the stack of slides and for removal of the slide holder from the projector. The removed slide holder serves as a cover for a receptacle to provide slide storage.

3,552,847
MEANS FOR CONVEYING ELECTRICALLY CHARGED PHOTOCOPY PAPER

Harm Kleinstra, Soest, Netherlands, and Joseph E. De Langhe, Berchem-Antwerp, Belgium, assignors to Nederlandsche Fotografische Industrie N.V., Soestduinen, Netherlands, a corporation of the Netherlands

Filed Feb. 6, 1968, Ser. No. 703,437
Claims priority, application Netherlands, Mar. 3, 1967, 6703453
Int. Cl. G03g *15/00*
U.S. Cl. 355—3 **5 Claims**

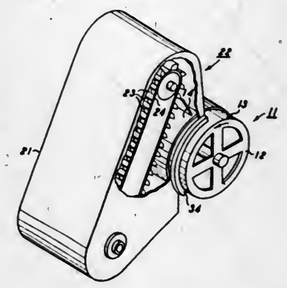


The present invention relates to a fixedly mounted supporting element serving as a counterelectrode of the charging device, and having a discontinuous surface in contact with the electrostatically charged photocopy paper. The discontinuous surface reduces the tendency of the charged paper to adhere to the counter-electrode, and to ensure smooth conveyance of the copying paper.

3,552,848
XEROGRAPHIC PLATE

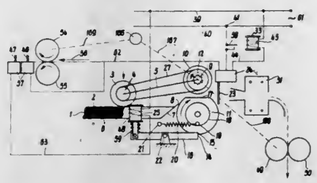
Edward M. Van Wagner, Webster, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Original application Sept. 25, 1963, Ser. No. 311,476. Divided and this application Nov. 20, 1967, Ser. No. 714,135
Int. Cl. G03g *15/00*
U.S. Cl. 355—3 **1 Claim**



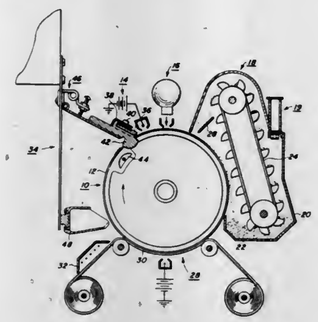
A xerographic apparatus having a photosensitive member in the form of a xerographic drum, said drum having a conductive substrate, a thin layer of chromium contained on said substrate, and a layer of photoconductive insulating amorphous selenium covering the central portion of said chromium coated drum leaving the two peripheral edges of said drum coated only with a chromium layer, means for forming a latent electrostatic image on the photoconductive insulating layer, developer means including a developer housing for developing said latent electrostatic image, means adapted to form a contact seal between a portion of said developer housing and a portion of the chromium coated edges of the xerographic drum, and means to move said xerographic drum with respect to said imaging and developer means.

3,552,849
APPARATUS FOR TRANSPORTING SHEETS OF COPYING PAPER IN A COPYING DEVICE
Walter Limberger, Hamburg-Poppenbuttel, Germany, assignor to Fa. Lumoprint Zindler KG, Hamburg, Germany
Filed Apr. 12, 1968, Ser. No. 726,638
Claims priority, application Germany, Apr. 18, 1967, L 56,277
Int. Cl. G03b *27/08*; G03g *15/00*
U.S. Cl. 355—14 11 Claims



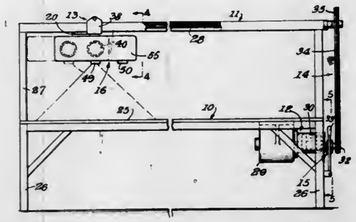
An improved apparatus for delivering a sheet of copying paper in a copying apparatus from a stack into a "ready" position, wherein the improvement comprises the application of a more or less indefinite withdrawing force acting on the topmost sheet of the stack and pushing the same under a stop, deflection of which switches off the application of this withdrawing force, followed by the application of an advancing force becoming effective as a function of the introduction of an original to be copied, so as to collect the sheet of copying paper from the "ready" position.

3,552,850
LUBRICATED BLADE CLEANING OF IMAGING PHOTOCONDUCTIVE MEMBERS
Stephen F. Royka, Fairport, and Robert L. Emerald, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Feb. 1, 1968, Ser. No. 702,306
Int. Cl. G03g *13/08, 15/00*
U.S. Cl. 355—15 21 Claims



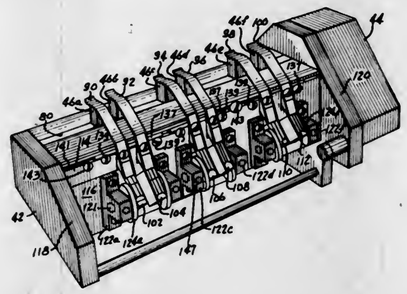
An imaging system employing a reusable electrostatographic imaging surface cleaning station comprising at least one self-adjusting flexible cleaning blade for pressure contact cleaning of the imaging surface and means to supply a dry solid lubricant to the imaging surface. The leading face of at least one cleaning blade is preferably positioned to form an acute angle of less than about 90° and greater than about 20° with the confronting portion of the imaging surface or plane tangent to the imaging surface at the line of blade contact.

3,552,851
PHOTOGRAPHING, DEVELOPING AND PROJECTING APPARATUS AND METHOD
Arthur C. Gross, 7545 Hampton Ave., Los Angeles, Calif. 90046
Filed Dec. 11, 1968, Ser. No. 782,885
Int. Cl. G03b *27/50*
U.S. Cl. 355—27 6 Claims



Apparatus and method to photograph a layout of patterns on a table while the camera traverses the length thereof, develop the exposed film, and then project the photographed picture of the layout on a sensitized sheet covering the table during return movement of the camera and developer to initial position. The exposed sheet may thereafter be printed and used as a guide for cutting a lay of material upon which a print of the above picture is placed.

3,552,852
FILM COPYING APPARATUS
Henry F. Stemke, Morton Grove, and William W. Morris, Skokie, Ill., assignors to Peterson Enterprises, Incorporated, Glenview, Ill., a corporation of Illinois
Filed Aug. 19, 1968, Ser. No. 753,652
Int. Cl. G03b *27/76*
U.S. Cl. 355—35 13 Claims



Improved film copying apparatus including protective systems which, in the preferred embodiment, check each light valve for each light change against the predetermined program and automatically stop the equipment and ignore subsequent information whenever an operational anomaly is observed.

3,552,853
HOLOGRAMIC IDENTIFICATION SYSTEM
Harold A. Sanders, Huntington Woods, and Grover W. Trytten, Ann Arbor, Mich., assignors to Chain Lakes Research Associates, Inc., Detroit, Mich., a corporation of Michigan
Filed July 1, 1968, Ser. No. 741,489
Int. Cl. A44c *3/00*; G03b
U.S. Cl. 355—133 6 Claims

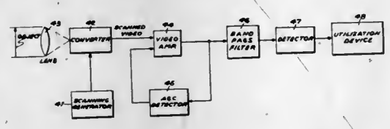
A system for identifying goods and the like consisting in making an original reflection hologram of a plurality of information data relative to such goods, dividing

the hologram into a plurality of elementary chips each including the totality of the information recorded in the original hologram and attaching one chip, by adhesive or



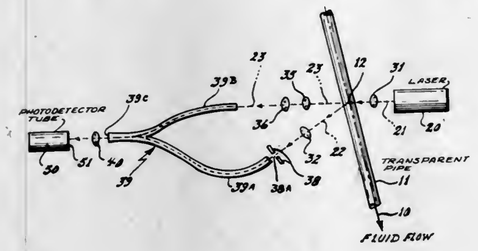
the like, to each article of the goods. The information recorded in the chip is illegible and can be reconstructed only by means of an appropriate viewer decoder.

3,552,854
DETECTION AND RANGING SYSTEM USING ELECTRO-OPTICAL MEANS
Burton A. Babb, Stephen J. Erst, and Wendell A. Cook, Fort Wayne, Ind., assignors to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Maryland
Filed Aug. 14, 1967, Ser. No. 660,403
Int. Cl. G01c *3/09*
U.S. Cl. 356—4 8 Claims



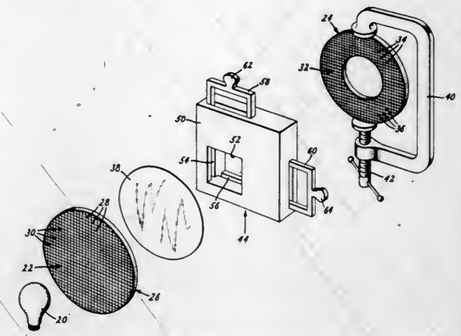
A passive electro-optical means of extracting range information from a scanned video signal. The technique combines the optical principle of depth of field with knowledge of the spectral (frequency) content of scanned video information.

3,552,855
LASER VELOCIMETER UTILIZING FIBER OPTICS
Frank L. Crosswy and Andrew E. Lennert, Tullahoma, and Henry T. Kalb, Manchester, Tenn., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 16, 1969, Ser. No. 816,705
Int. Cl. G01p *5/00*
U.S. Cl. 356—28 2 Claims



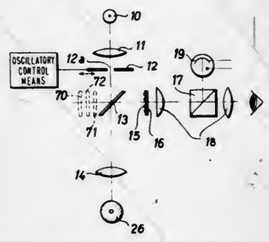
A laser velocimeter comprising a laser for transmitting a light beam to a flowing fluid, which scatters a portion of the light beam; an optical system including optical fibers bundle for directing portions of the scattered and/or unscattered light beam; and a photodetector for receiving the fibers bundle output in order to obtain the flow velocity of the fluid.

3,552,856
TECHNIQUE FOR ANALYZING DEFORMATION IN A TEST SPECIMEN
Cletus R. Schwallie, Claymont, Del., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed June 12, 1968, Ser. No. 736,434
Int. Cl. G01b *11/16*
U.S. Cl. 356—32 18 Claims



Apparatus for analyzing deformation in a test specimen. When an image of a master grid is superposed on a congruent working grid of a test specimen or, conversely, the working grid is superposed on the master grid, and the specimen is deformed, successive fringes appear which are essentially parallel to the grid lines. A barrier in the form of an opaque element is positioned between the master grid and the specimen so as to obscure part of the image. In one position of the opaque element, one set of a resulting display of fringes appears as colors of a spectrum and the other set appears in black and white; in another position of the opaque element, only one set of fringes is apparent in black and white.

3,552,857
OPTICAL DEVICE FOR THE DETERMINATION OF THE SPACING OF AN OBJECT AND ITS ANGULAR DEVIATION RELATIVE TO AN INITIAL POSITION
Fromund Hock, Wetzlar, Karl Lang, Atzbach, Kreis Wetzlar, and Heribert Lüssem, Braunfels, Kreis Wetzlar, Germany, assignors to Fa. Ernst Leitz GmbH
Filed Apr. 19, 1966, Ser. No. 543,576
Claims priority, application Germany, Apr. 24, 1965, L 50,566
Int. Cl. G01b *11/26*; G01n *21/00*
U.S. Cl. 356—73 12 Claims



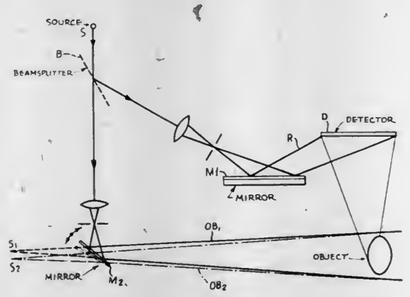
A multi-purpose optical measuring device in which an image of an oscillating luminous scanning mark is projected, via a beam splitter and an objective lens, onto a reflecting surface of an object to be located, positioned, or measured, or onto a reflector rigidly connected thereto. The image of the scanning mark, after reflection from the object, is projected through the objective lens and the

beam splitter onto an index carrier having a plurality of indices. Said image coacts with said indices to produce optical signals which are indicative of any lateral or angular displacement of the object. An eyepiece and/or a photoelectric transducer are positioned adjacent to the index carrier for evaluation of said signals.

3,552,858
CONTOUR GENERATION BY WAVEFRONT RECONSTRUCTION

Kenneth A. Haines and Bernard P. Hildebrand, Ann Arbor, Mich., assignors, by mesne assignments, to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

Filed Sept. 13, 1966, Ser. No. 579,111
Int. Cl. G01b *15/04*
U.S. Cl. 356—109 **14 Claims**



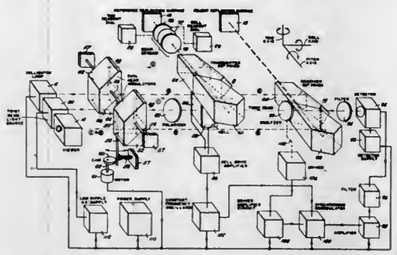
1. A method of producing a multiple hologram of an object comprising:
(a) directing a first beam of radiation onto the object from a source of coherent radiation,
(b) positioning a detector to receive the reflected radiation from the object,
(c) directing a reference beam of radiation at a selected angle with respect to said first beam onto the detector from a source of coherent radiation to interfere with the reflected radiation, thereby producing a pattern of interference fringes on the detector, the first beam being coherent with respect to the reference beam to form a cooperating pair of beams, and
(d) directing a second beam of radiation onto the object for reflection of radiation from the object onto said detector while illuminating said detector with said reference beam, said second beam and said reference beam being coherent to provide a second cooperating pair of beams having a selected angle therebetween, said first and second beams of radiation having a finite angle therebetween so that upon reconstruction of the object there are produced multiple images of the object which interfere with each other to form interference bands.

3,552,859
OPTICAL INSTRUMENT FOR DETERMINING THE PARALLELISM OR NONPARALLELISM OF TWO REFLECTING SURFACES

John L. Snyder III, Garland, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Mar. 4, 1964, Ser. No. 349,454
Int. Cl. G01n *21/44;* **G01b** *10/27*
U.S. Cl. 356—114 **15 Claims**

An optical apparatus is disclosed for use in measuring the parallelism or degree of nonparallelism of two reflecting surfaces which are separated laterally along a line parallel to said surfaces—has been inserted before the period. The apparatus measures the exact degree of non-

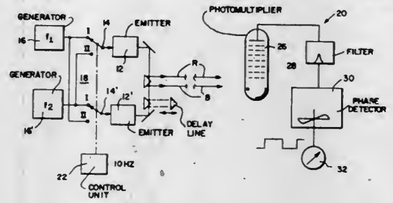


parallelism and is insensitive to small movements about any axis of rotation.

3,552,860
REFRACTION MEASURING APPARATUS

Carl-Erik Granqvist, Lidingo, Sweden, assignor to AGA Aktiebolag, Lidingo, Sweden, a corporation of Sweden

Filed June 9, 1969, Ser. No. 831,307
Claims priority, application Sweden, June 7, 1968, 7,648/68
Int. Cl. G01n *21/46*
U.S. Cl. 356—128 **7 Claims**



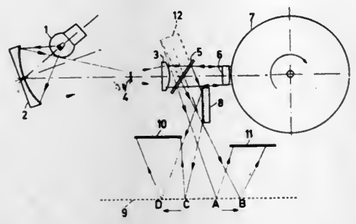
A system for measuring the refractive index along a path is provided wherein two light signals, which are of different colors and which are intensity-modulated with different frequencies, are transmitted along the path to a receiver including a phase detector. The phase detector produces an output in accordance with the phase difference between the signals, which output is a measure of the difference in refractive index for the two colors. The receiver includes a photomultiplier tube which provides heterodyning of the signals to form a difference-frequency signal whose phase represents the phase difference between the two color signals. Each color is alternately modulated with one or the other of two frequencies resulting in a doubling of the signal at the receiver. One of the signals may be delayed at the transmitter so that the signals are of equal phase at the receiver, the receiver serving as a null instrument and the delay being a measure of the refractive index.

3,552,861
DEVICE FOR DETERMINING THE DISPLACEMENT OF A COMPONENT OF A MACHINE TOOL WITH THE AID OF A GRATING MECHANICALLY CONNECTED TO THE COMPONENT

Scato Albarda, Emmasingel, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 3, 1967, Ser. No. 672,596
Claims priority, application Netherlands, Oct. 6, 1966, 6614064
Int. Cl. G01b *11/04;* **G02b** *5/12*
U.S. Cl. 356—169 **4 Claims**

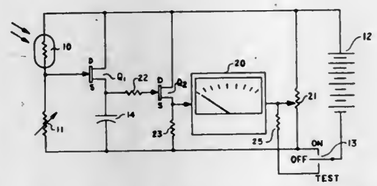
A device for determining the linear displacement of a machine tool on which a first grating is placed. A scanning image formed by projecting the image of an additional fixed gating onto a rotating polyhedron reflector is bifurcated by an image inverting mirror. The scanning image and spatially separated inverted scanning image are projected onto different portions of the first grating.



3,552,862
PHOTOGRAPHIC FLASH METER

Stanley Weinberg, P.O. Box 34647, Palms, Calif. 90034

Filed June 19, 1968, Ser. No. 738,264
Int. Cl. G01j *1/46, 1/44*
U.S. Cl. 356—215 **6 Claims**



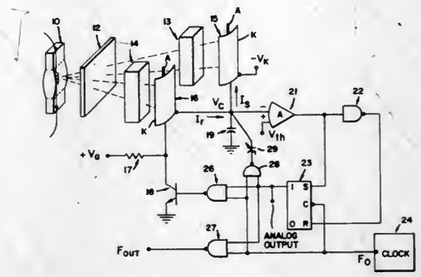
A flash meter with a static display of total light is provided by an integrating capacitor connected across the gate and source of a first junction-type field-effect transistor that drives an ammeter. When power is removed from the transistor, the gate-source junction becomes forward biased to allow the capacitor to discharge. To charge the capacitor to a voltage proportional to the total light of a strobe, a second junction-type field-effect transistor couples the capacitor to a voltage-dividing network comprising a photoconductive cell and a calibrating potentiometer. To test the meter power battery, a switch places the battery across the ammeter and channel of the first transistor in series.

3,552,863
METHOD AND APPARATUS FOR COMPARING THE TRANSMITTANCE OF A SAMPLE AND A STANDARD

Douglas H. Smith, San Carlos, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed July 28, 1967, Ser. No. 656,819
Int. Cl. G01n *21/22*
U.S. Cl. 356—206 **23 Claims**

A transmittance to frequency converter where a common light source illuminates a sample cuvette and a reference cuvette. The transmitted light is individually measured by two phototubes. The time average output currents of the two phototubes are of opposite polarities and are combined in an integrating capacitor coupled to a comparator. The comparator is part of feedback control loop which provides for control of the time average of the reference current to make it equal to the average sample current. A transistor switch controls the "on" time of the reference phototube to thereby control of the time average of the reference current. The duty cycle

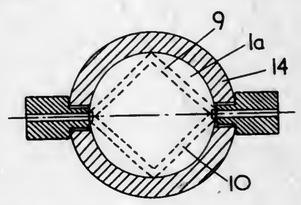


of the switch is proportional to the transmittance of the sample.

3,552,864
LIQUID RECEIVING CELLS FOR ANALYTICAL INSTRUMENTS

John Shields, Newcastle-upon-Tyne, England, assignor to Sir Howard Grubb Parsons & Company Limited, Newcastle-upon-Tyne, England, a British company

Filed Nov. 21, 1967, Ser. No. 684,827
Claims priority, application Great Britain, Dec. 19, 1966, 56,779
Int. Cl. G01n *1/10*
U.S. Cl. 356—246 **4 Claims**



A cell for receiving liquid for use in analytical instruments of the kind in which the property of a liquid to absorb radiation is made use of to determine the composition of the liquid, comprising two windows of material transparent to the radiation to be used and, located in spaced relation to define a space therebetween for the flow of liquid to be analysed, and means defining a groove on the surface bounding the space of at least one of said windows to thereby provide an additional path for the said flow of liquid between inlet and outlet means.

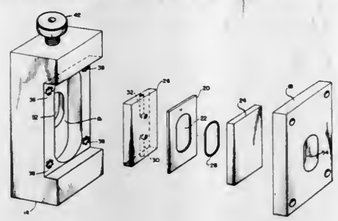
3,552,865
HIGH PRESSURE FLOW-THROUGH CUVETTE

Arthur T. Leung, Palo Alto, and James W. Vaughan, Los Altos, Calif., assignors to Beckman Instruments, Inc., a corporation of California

Filed Apr. 1, 1968, Ser. No. 717,706
Int. Cl. G01n *1/10*
U.S. Cl. 356—246 **2 Claims**

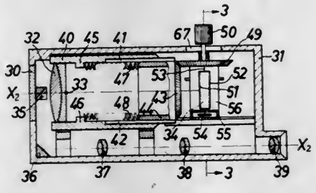
A cuvette for monitoring a flowing liquid stream including a flow cell assembly enclosed within a light opaque housing. The flow cell assembly includes a slender or narrow gasket member having an oval shaped aperture formed therein sandwiched between a pair of light transparent plates. The aperture formed in the gasket member is lined by an O-ring seal and bonded on either side by the inner face of each plate to define an analyzing chamber having a sufficiently small cross-section or thickness to permit a relative viscous liquid stream to freely flow through the chamber without any danger of turbulence or trapping of air bubbles contained in the stream. One of

the transparent plates includes inlet and outlet passageways communicating with the analyzing chamber through which the liquid stream is continuously fed into and removed from the chamber. The housing serves to clamp or tightly hold the slender gasket firmly between the pair



of transparent plates and is provided with a pair of apertures axially aligned with each other and the flow cell assembly to provide a light path orthogonal to the direction of liquid flow along which a light beam of a selected wavelength is transmitted.

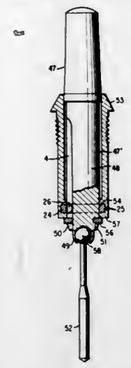
3,552,866
AUTOMATIC LEVELING TELESCOPE INCLUDING A REVERSIBLE TWO-SIDED PENDULUM MIRROR
Gerhard Huther, Jena, Germany, assignor to VEB Carl Zeiss Jena, Jena, Germany
Continuation of application Ser. No. 405,334, Oct. 19, 1964. This application Oct. 17, 1968, Ser. No. 788,668
Int. Cl. G01c *9/12*
U.S. Cl. 356—250 **5 Claims**



A telescope, particularly for measuring or sighting as for geodetic purposes, comprising a rotatable tubular member in axial alignment with a light entrance aperture and having an objective mounted therein for rotation therewith, a collimating mark fixed near the optical axis of the objective, a pendulum mirror for automatic leveling of the sighting line of the telescope, the mirror having front and back reflecting surfaces and being positioned so that imaging rays entering the aperture pass through the objective to the mirror and are reflected therefrom back to the objective, means for focusing imaging rays traversing the objective onto the collimating mark, an eyepiece for viewing the collimating mark, and an optical system for directing images reflected from the mirror to the eyepiece.

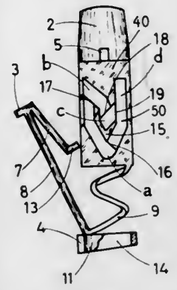
3,552,867
TRIGGER SWING PROTRACT-RETRACT MECHANISM FOR BALL POINT PENS HAVING DIFFERENT COLORED INK RESERVOIRS
Karl Heinrich Heinz, 13 Finkernstrasse, 8280 Kreuzlingen, Switzerland
Filed July 24, 1968, Ser. No. 747,159
Claims priority, application Germany, July 24, 1967, 1,561,834
Int. Cl. B43k *5/16, 24/06*
U.S. Cl. 401—110 **1 Claim**

A trigger swing protract-retract mechanism for ball point pens which have several different colored fluid ink reservoirs, wherein a spring stirrup ring is provided with an internal cam surface for engagement with the curved longitudinal notch of the trigger body. In a preferred embodiment, the ring is open and the internal cam surface lies opposite the open arms of the ring at an end



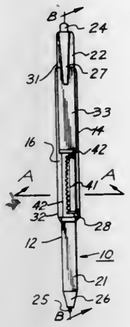
of the trigger so that the ring positively engages the notch to resist displacement while permitting the trigger to be freely moved to various positions for selecting one of the different colored reservoirs.

3,552,868
WRITING INSTRUMENT, ESPECIALLY BALL-POINT PEN
Francis Levoin, Lugano, Switzerland, assignor to Cado Etablissement, Vaduz, Liechtenstein, a corporation of Liechtenstein
Filed Nov. 4, 1968, Ser. No. 773,018
Claims priority, application Switzerland, Nov. 14, 1967, 15,853/67
Int. Cl. B43k *5/16*
U.S. Cl. 401—110 **4 Claims**



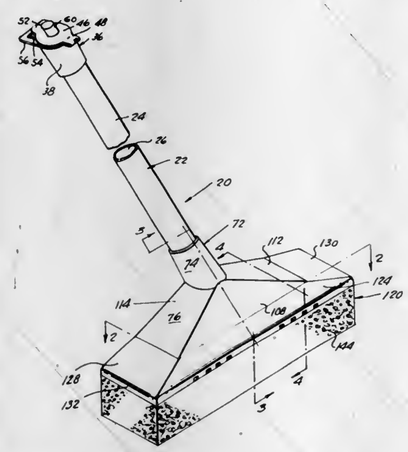
There is disclosed a writing instrument, in particular a ball-point pen which comprises a housing sleeve member and a writing cartridge displaceably arranged in such housing sleeve member. Means are disposed in the housing sleeve member for controlling the displacement of the writing cartridge. The displacement controlling means incorporate a push button protruding from the upper region of the housing sleeve member and acting directly upon the writing cartridge. Furthermore, such displacement controlling means additionally incorporates groove means provided at a surface movably connected with the push button, such groove means defining an endless track. There is also provided a resilient tongue, and a guide pin is secured to the resilient tongue and is supported against axial displacement at the housing sleeve member. This guide pin engages with the groove means defining the closed track. Furthermore, means serve to prevent a relative rotation about the axis of the ball-point pen between the surface equipped with the groove means and the guide pin.

3,552,869
COMBINATION WRITING INSTRUMENT AND STAMP CARRIER
Stanley R. Johnson, 1019 W. Cossitt Ave., La Grange, Ill. 60525
Filed Oct. 14, 1968, Ser. No. 767,074
Int. Cl. B43k *29/00*
U.S. Cl. 401—195 **1 Claim**



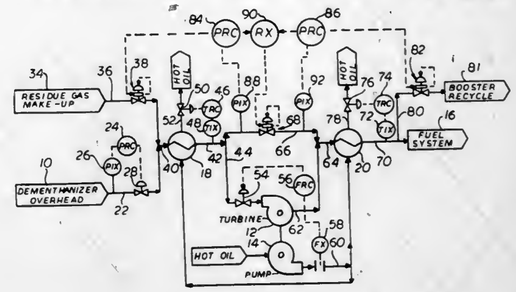
A combination writing instrument and stamp carrier in which a body member is provided with a tubular member circumscribed thereabout and coacting therewith to define a chamber therebetween, this tubular member includes means axially slidable relative to the body member between first and second positions to permit selective access into said chamber.

3,552,870
MOP-APPLICATOR
Ray G. Brooks, Irving, Tex., assignor to C. E. Shepherd, Houston, Tex.
Filed July 12, 1968, Ser. No. 744,432
Int. Cl. A46b *11/04*
U.S. Cl. 401—206 **2 Claims**



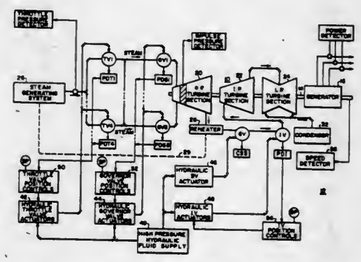
A combined mop and wax applicator has a storage area for fluid to be dispensed within its handle and has plunger means associated with a base closure. The plunger is operated by pressure applied thereto during operation. The mop-applicator has an optional squeeze plate assembly, and may have means for deactivating the plunger.

3,552,871
METHOD AND APPARATUS FOR A GAS SUPPLY CONTROL SYSTEM
Marvin A. Remke, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 9, 1969, Ser. No. 790,056
Int. Cl. F01d *17/08*
U.S. Cl. 415—1 **16 Claims**



Fuel gas under pressure from a plant process source is used to drive a turbine, with the turbine exhaust gases supplying a plant fuel gas system. An auxiliary feed is also connected to the turbine inlet, and an excess fuel diversion conduit is connected to the turbine outlet to divert turbine exhaust gases in excess of the fuel system requirements. A turbine bypass connects the turbine inlet to the turbine outlet. An adjustable valve is provided in each of the auxiliary feed conduits, the turbine bypass and the exhaust divert conduit, with a turbine inlet pressure controller controlling the auxiliary feed valve, a turbine outlet pressure controller controlling the divert valve, and the two controllers selectively controlling the bypass valve to insure an adequate supply of fuel gas to the fuel system while maintaining the desired turbine power output.

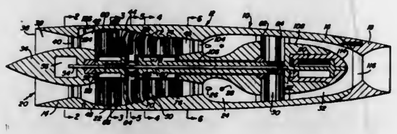
3,552,872
COMPUTER POSITIONING CONTROL SYSTEM WITH MANUAL BACKUP CONTROL ESPECIALLY ADAPTED FOR OPERATING STEAM TURBINE VALVES
Theodore C. Giras and William W. Barns, Jr., Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 14, 1969, Ser. No. 815,882
Int. Cl. F01b *25/00*
U.S. Cl. 415—17 **17 Claims**



A digital computer system generates time series turbine valve position setpoint control words which are converted

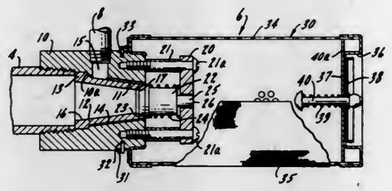
to analog values and multiplexed for application to track and hold circuits associated with respective electrohydraulic turbine valve position control loops. During manual operation, a manual control applies a setpoint control signal to all of the track and hold circuits in parallel. A read multiplexer keeps the computer updated on valve positions during manual control.

3,552,873
SUPERSONIC JET ENGINE
John N. Ghougasian, 666 W. 188th St., New York, N.Y. 10050
Filed Jan. 10, 1969, Ser. No. 790,256
Int. Cl. F04d 27/00, 19/00; F02c 9/02
U.S. Cl. 415—49 20 Claims



A jet engine aerodynamically designed internally for efficient operation under supersonic airflow conditions is made compatible with subsonic conditions by use of variable flow restricting throat passages in the air inlet section of the engine and between the compressor and the combustion chambers. Supersonic pressure recovery is thereby produced under subsonic conditions for start-up purposes. Efficiency is improved by counter-rotating impellers in the compressor having sweep angle blade tips.

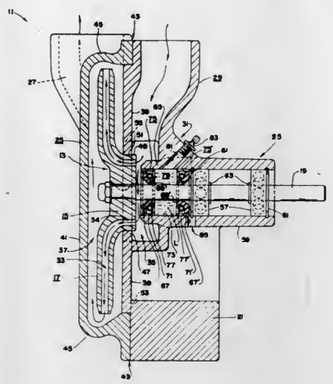
3,552,874
PURGED AIR HYDRAULIC FLUID SYSTEM
Walter J. Kudlaty, Elmhurst, Ill., assignor to Marvel Engineering Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 10, 1969, Ser. No. 797,856
Int. Cl. F04d 9/00; F04f 5/48
U.S. Cl. 415—121 11 Claims



A hydraulic system effective to remove air from hydraulic fluid at the intake side of a pump and an air-liquid separating structure incorporating an acceleration sleeve, a variable orifice and a disperser sleeve effective to draw said air from said intake side for dispersal within a reservoir.

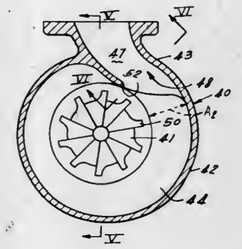
3,552,875
CENTRIFUGAL LIQUID PUMP MEANS
William J. Bond, Jr., Memphis, Tenn., assignor to Ace Pump Corporation, Memphis, Tenn., a corporation of Tennessee
Filed Dec. 20, 1968, Ser. No. 785,500
Int. Cl. F01d 5/08; F16c 1/24; B65d 53/00
U.S. Cl. 415—175 6 Claims

Centrifugal liquid pump means particularly including means for sealing the impeller shaft of the pump against air or liquid leakage. The impeller shaft extends through a pair of annular sealing units which in turn are stationarily sealingly secured in the pump housing. The pair of seals each include a semi-resilient seal element having a lip portion runningly circumferentially embracing the impeller shaft. The pair of sealing units are spaced axially



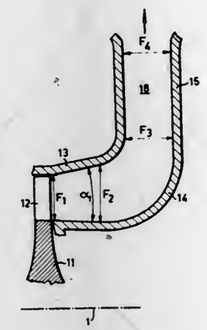
wide apart and are arranged with the lip portions thereof confrontingly arranged. The space between the pair of seal units defines a lubricant chamber adapted for containing lubricant for lubricating the running engagement of the sealing lip edges of the sealing units on the impeller shaft.

3,552,876
PULSE SENSITIVE TURBINE NOZZLE
Stanley H. Updike, Mentor, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed June 12, 1968, Ser. No. 736,424
Int. Cl. F01d 9/02
U.S. Cl. 415—205 3 Claims



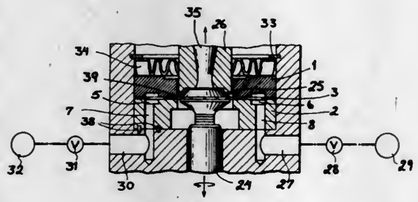
A radial inflow turbine effective to recover blowdown energy from the exhaust ports of an internal combustion engine which has two manifolds feeding from the exhaust ports to the turbine housing, the housing having an inlet throat divided by a wall only through the effective nozzle area to a point where exhaust gases have been accelerated to maximum tangential velocity prior to entry into the turbine wheel, the housing thereafter having an undivided single circumferential gas flow chamber sized to provide uniform distribution at constant tangential velocity to the turbine vanes.

3,552,877
OUTLET HOUSING FOR AN AXIAL-FLOW TURBOMACHINE
Alfred Christ, Viktor Schreiber, and Erhard Tomica, Zurich, Switzerland, assignors to Escher Wyss Limited, Zurich, Switzerland, a corporation of Switzerland
Filed Feb. 14, 1969, Ser. No. 799,251
Claims priority, application Switzerland, Feb. 15, 1968, 2,258/68
Int. Cl. F01d 1/02, 1/04
U.S. Cl. 415—209 10 Claims



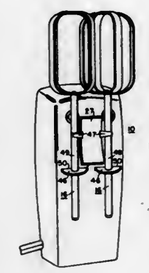
An outlet housing for an axial-flow turbomachine, having an axial diffusor with annular channel, a deflector terminating in radial direction and a radial diffusor. The flow cross-section within the deflector decreases by from 5% to 15% in direction of flow. The aperture angle of the axial diffusor is at least 12° and 55° at the most. When the axial diffusor has a great aperture angle and is correspondingly short, guide walls are provided with the deflector and the radial diffusor.

3,552,878
NOZZLE-RING ASSEMBLY FOR AN EXPANSION TURBINE
Bernhard Schreiber, Lechenich, Germany, assignor to Linde Aktiengesellschaft, Hollriegelskreuth, Germany, a corporation of Germany
Filed Oct. 4, 1968, Ser. No. 765,255
Claims priority, application Germany, Oct. 4, 1967, 1,576,973
Int. Cl. F01d 15/06, 1/00
U.S. Cl. 415—217 11 Claims



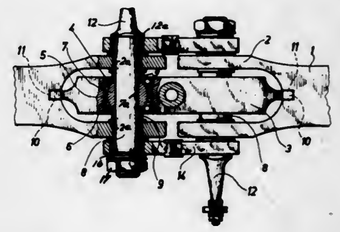
A nozzle ring for an expansion turbine comprises two flat rings with an annular disk sandwiched between them. The disk is formed with inwardly opening tangential notches which form passages with confronting flanks of the rings. A sectoral channel formed in one of the rings acts as a manifold to supply compressed gas to the passages subtended thereby.

3,552,879
BEATER STORAGE FOR HAND MIXER
Walton E. Sparks, Lexington, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 28, 1969, Ser. No. 803,229
Int. Cl. A47j 43/04
U.S. Cl. 416—63 5 Claims



Hand-held food mixer characterized by the incorporation of means for removably attaching the beater structure of the housing thereof, for storage purposes.

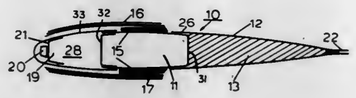
3,552,880
BLADE CONNECTION FOR HELICOPTERS
Christoph Fischer, Bremen, Germany, assignor to Vereinigte Flugtechnische Werke Gesellschaft mit beschrankter Haftung fruher "Weser" Flugzeugbau/Focke - Wulf/Heinkel - Flugzeugbau, Bremen, Germany
Filed Sept. 27, 1968, Ser. No. 763,089
Int. Cl. B64c 27/38
U.S. Cl. 416—104 6 Claims



In combination with a helicopter rotor having a shaft and a hub body connected to said shaft, a blade connection which includes: rotor blade means having the inner portion thereof fork-shaped and straddling a portion of said hub body, bolt means extending in a direction perpendicular to the longitudinal extension of said rotor blade means and connecting said inner portion of said blade means to said hub body, and one-joint bearing means including ball body means passed

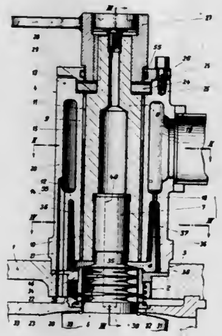
through by said bolt means and having oppositely located peripheral areas of said ball body means flattened where said bolt means enters and leaves said ball body means, said ball body means also including an outer body substantially coaxially arranged with and surrounding said ball body means.

3,552,881
CONSTRUCTION OF ROTOR BLADES FOR ROTARY WING AIRCRAFT
Victor A. B. Rogers, Sherborne, and Anthony B. D. Leigh, Yeovil, England, assignors to Westland Aircraft Limited, Yeovil, Somerset, England
Filed July 5, 1968, Ser. No. 742,844
Claims priority, application Great Britain, May 20, 1968, 23,885/68
Int. Cl. B64c *27/46*
U.S. Cl. 416—145 **25 Claims**



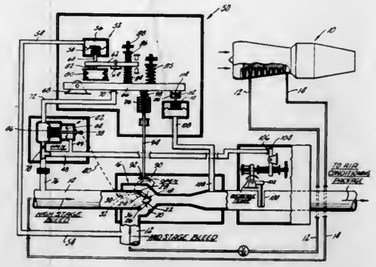
This invention relates to the construction of rotor blades for rotary wing aircraft, and in particular, helicopters.

3,552,882
BLADE CONSTRUCTION FOR A VANE RING FOR TURBOENGINES
Ferdinand Zerlauth, Winterthur, Switzerland, assignor to Sulzer Brothers, Ltd., Winterthur, Switzerland, a corporation of Switzerland
Filed Nov. 27, 1968, Ser. No. 779,356
Claims priority, application Switzerland, July 26, 1968, 11,277/68
Int. Cl. F01d *25/12, 5/00*
U.S. Cl. 416—241 **3 Claims**



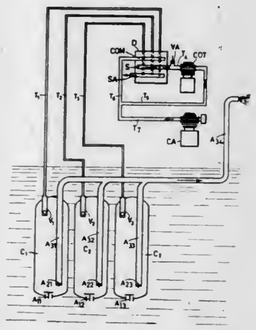
The blade part which contacts the working medium of the engine is made of different materials from the axle journal in order to operate efficiently at high thermal loads. The working medium contacting part can either be force-fit or shrunk-fit in the journal or united with the journal by compound casting.

3,552,883
EJECTOR CONTROL SYSTEM
Roger D. Weatherbee, Windsor Locks, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Feb. 24, 1969, Ser. No. 801,673
Int. Cl. F04b *23/04*
U.S. Cl. 417—76 **8 Claims**



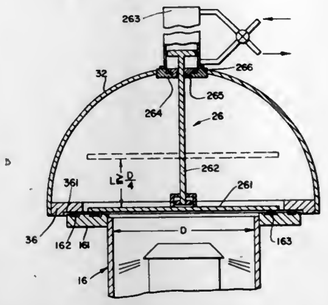
An ejector for augmenting the flow from the midstage bleed of an aircraft compressor by driving the primary nozzle by high-stage bleed for supplying pressurized air to an aircraft air-conditioning system includes a control responding to midstage bleed pressure to control the areas of the primary and secondary nozzles of the ejector. Temperature and pressure override means further control the ejector in accordance with a predetermined flow-pressure schedule.

3,552,884
FLUID PUMPING STATION WORKING ON THE COMPRESSED AIR PRINCIPLE WITH PARTIAL RECOVERY AND RE-CYCLING OF THE AIR
Giovanni Faldi, Via Por S. Maria, Florence, Italy
Filed July 15, 1968, Ser. No. 744,772
Claims priority, application Italy, July 20, 1967, 18,634/67
Int. Cl. F04f *1/00, 11/00*
U.S. Cl. 417—122 **5 Claims**



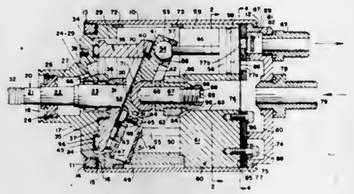
A device for pumping fluids by means of compressed air which is compressed in succession into a plurality of chambers submerged in the fluid to be pumped, comprising an auxiliary compressor for transferring some compressed air from the chamber from which the fluid has been expelled to another chamber which is still filled with fluid.

3,552,885
VACUUM APPARATUS
Benjamin Bassan, Framingham, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
Filed Sept. 19, 1968, Ser. No. 760,960
Int. Cl. F04f *9/00*
U.S. Cl. 417—152 **3 Claims**



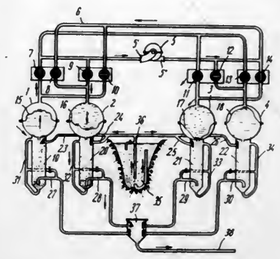
Vacuum apparatus with a chamber and diffusion pump for evacuating the chamber via a high conductance Quonset-hut form extension of the chamber. The extension is a semi-cylindrical shell with a thick flat plate as a base. The diffusion pump inlet is connected to a port in the flat plate base via a demountable seal and has an extra sealing provision for allowing a valve within the extension to seat on the diffusion pump inlet. The arrangement affords over-all high speed and throughput consistent with structural integrity and economy of manufacture.

3,552,886
COMPRESSOR UNIT WITH SELF-CONTAINED DRIVE MEANS
John W. Olson, Jr., Oklahoma City, Okla., assignor to John E. Mitchell Company, Dallas, Tex., a corporation of Missouri
Filed Nov. 13, 1968, Ser. No. 775,334
Int. Cl. F04b *1/12, 27/08*
U.S. Cl. 417—269 **5 Claims**



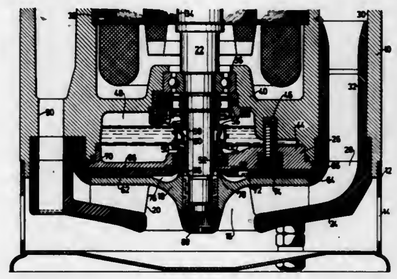
A multiple piston compressor unit and drive means therefor for use in mobilized air conditioning systems such as used with automotive vehicles characterized by compact size, smooth performance, economy, minimum performance, weight, whereby high volumetric compressor efficiency is attained at low speeds as well as high speeds without adverse torque peak loads on the driving means; and including piston actuating means of such simple form and of such low consumption of power by friction and slight generation of heat that lubrication by oil mist circulating therethrough with suitable refrigerant through the refrigeration circuit provides sufficient lubrication and the usual oil sump is eliminated, thereby providing a compressor unit of cylindrical form with the axis of the cylinder coinciding with the axes of all components of the piston actuating means.

3,552,887
PUMPING PLANT FOR PUMPING FLUIDS CARRYING SOLID PARTICLES
Sergei Antonovich Korzhaev, Oktyabrsky prospekt 164, kv. 33; Vladimir Vasilievich Dobrovolsky, Poselok VUGI 12, kv. 44; Oleg Mikhailovich Kodolov, Ulitsa Initsiativnaya 30, kv. 21; and Gennady Pavlovich Dmitriev, Poselok VUGI 1, kv. 22, all of Ljubertsy Moskovskoi oblasti, U.S.S.R.
Filed Oct. 23, 1968, Ser. No. 770,004
Int. Cl. F04b *17/00*
U.S. Cl. 417—395 **5 Claims**



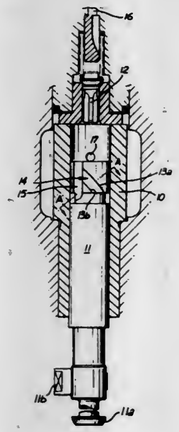
A pumping plant for handling fluids carrying solid particles comprises pressure-suction chambers each separated by a diaphragm into an upper cavity filled with working fluid and connected to a pump, and a lower cavity filled with fluid to be treated. The lower cavity is connected to a vertical elongated accumulating settler in which the solid particles of the fluid to be treated are settled. The upper portion of the settler is supplied with the fluid to be treated and clarified fluid at the top of the settler is circulated to the bottom of the settler by an external pipe to form a pulp with the accumulated solids which is externally discharged.

3,552,888
ARRANGEMENT IN PUMPS
Alf Anders Anselm Eriksson, Nacka, Sweden, assignor to Aktiebolaget Svenska Precisionsverktyg, Nacka, Sweden, a corporation of Sweden
Filed Dec. 9, 1968, Ser. No. 782,061
Claims priority, application Sweden, Dec. 11, 1967, 17,017/67
Int. Cl. F04d *13/02, 29/02*
U.S. Cl. 417—423 **7 Claims**



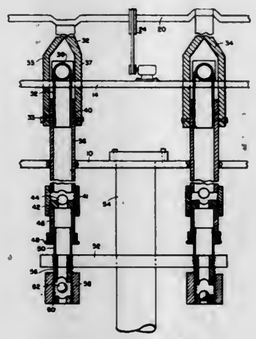
A pump particularly for liquids containing abrasive solid particles and designed so as to prevent the solid particles from penetrating between those packing surfaces of the pump that separate the pump shaft bearings and the interior of the pump driving motor from the pump chamber by means of a second, readily replaceable packing.

3,552,889
LIQUID FUEL INJECTION PUMPS
John Patrick Stewart Curran and John Richard Ireland, Gloucester, England, assignors to Bryce Berger Limited, Gloucestershire, England, a corporation of Great Britain
Filed Feb. 25, 1969, Ser. No. 801,952
Claims priority, application Great Britain, Feb. 27, 1968, 9,358/68
Int. Cl. F04b 7/04, 39/10, 7/00
U.S. Cl. 417—494 6 Claims



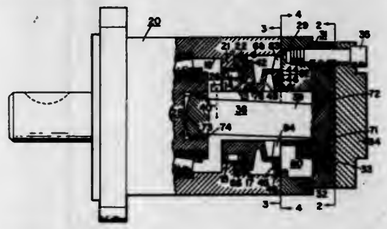
A liquid fuel pump including a plunger which has a generally helical escape channel formed in its periphery. The bottom, that is the base, of the channel is formed so as to be of a progressively varying depth across the width of the channel.

3,552,890
PUMP
William J. Williams, Rte. 2, Box 301, Springtown, Tex. 76082
Filed Jan. 22, 1969, Ser. No. 792,957
Int. Cl. F04b 21/04, 23/04, 23/06
U.S. Cl. 417—529 1 Claim



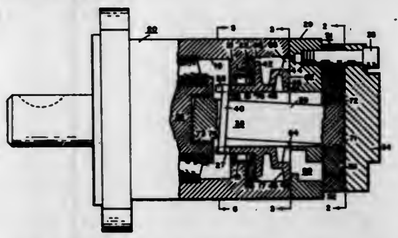
A deep well pump or the like has an overhead crankshaft which drives two connecting rods, the latter in turn reciprocating two elongated pipes extending down into the well. A support element extends down into the well and carries two stationary cylinder means on which the elongated pipes reciprocate. Valve means on the elongated pipes and cylinder means control the pumping action as the elongated pipes are reciprocated by the crankshaft.

3,552,891
VALVE MEANS FOR FLUID PRESSURE OPERATING MEANS
George V. Woodling, 22077 W. Lake Road, Rocky River, Ohio 44116
Original application Mar. 22, 1968, Ser. No. 715,247. Divided and this application June 12, 1969, Ser. No. 832,646
The portion of the term of the patent subsequent to Oct. 15, 1985, has been dedicated to the Public
Int. Cl. F01c 1/10; F16k 25/00
U.S. Cl. 418—54 10 Claims



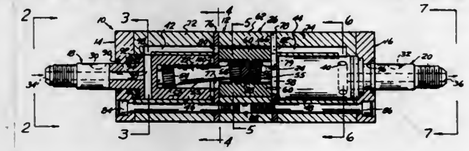
Stationary valve and rotary valve for an orbital device having operating fluid chambers, in which the stationary valve has a stationary valve face and a plurality of fluid openings communicating with the fluid chambers. The rotary valve is mounted between the stationary valve face and an annular bushing which is axially supported by an internal housing rim. The rotary valve terminates in flange means comprising an external-rim flange and an internal-rim flange interconnected by a common intermediate annular body portion which has an end face defining substantially a circular sealing band disposed between first and second series of commutating fluid connection means commutatingly registering with the fluid openings in the stationary valve face.

3,552,892
ROTATIONAL DRIVE MEANS FOR ROTARY VALVE IN FLUID PRESSURE DEVICE
George V. Woodling, 22077 W. Lake Road, Rocky River, Ohio 44116
Continuation-in-part of application Ser. No. 742,571, July 5, 1968. This application Feb. 6, 1969, Ser. No. 797,223
Int. Cl. F01c 1/08
U.S. Cl. 418—61 1 Claim



The drive means is especially adapted to rotate a rotary valve in a fluid pressure device having stator means and rotor means constituting a fluid stator-rotor mechanism. An actuating shaft operatively connected to the rotor means is disposed to rotate the rotary valve one rotation for each rotation of the actuating shaft. The rotary valve has a first axis about which it is disposed to rotate. The actuating shaft extends through a central opening in the rotary valve and has a second axis disposed for substantially circular orbital movement about the first axis. The actuating shaft is also disposed for rotational movement about the second axis and has a combined movement comprising said substantially circular orbital movement and said rotational movement. The rotary valve and the actuating shaft have an overlapping circumferential driving relationship therebetween, whereby the rotary valve is rotated in response to the combined movement of the actuating shaft with the orbital movement substantially free from drive interference.

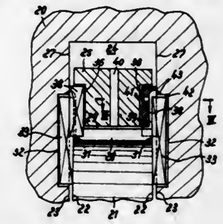
3,552,893
ROTARY CASING ORBITAL GEAR-ROTOR MOTOR
Eugene Richardson, Southfield, Mich., assignor to Lamina, Inc., Oak Park, Mich., a corporation of Michigan
Filed May 7, 1969, Ser. No. 822,376
Int. Cl. F04c 1/02, 1/06
U.S. Cl. 418—61 10 Claims



Axially-spaced stationary inlet and outlet shafts are held against rotation and provided with longitudinal inlet and outlet passageways leading to circumferentially-spaced radial fluid inlet and outlet passageways which in turn communicate successively with circumferentially-spaced longitudinal fluid inlet and outlet passageways in axially-spaced rotary fluid-distributing inlet and outlet barrels disposed on opposite sides of and drivingly connected to an internally-toothed outer rotor which meshes with and surrounds an externally-toothed inner stator which is internally-splined and coupled to the stationary shafts by a pair of double-headed externally-splined drive links which oscillate but do not rotate while meshing with internally-splined bores in the stationary shafts. A single drive link may be used in low-torque motors since the two shafts are held against rotation in proper phase relationship by their interconnecting frame structure. Hydraulic pressure fluid is supplied to the stationary inlet shaft and discharged successively through the longitudinal input barrel passageways into the successively expanding and contracting fluid chambers between the teeth of the stator and rotor, thereby imparting rotation to the internally-toothed outer rotor and thence to the remainder of the casing consisting of the two barrels and outer rotor. The casing thereupon becomes a drive pulley capable of driving a belt directly or capable of carrying another driving member, such as a gear, sprocket, cam or wheel. The fluid from the gear-rotor motor thus constituted is discharged through the outlet barrel and hollow outlet shaft. This motor is especially valuable where space is at a premium and extreme compactness is desired and required.

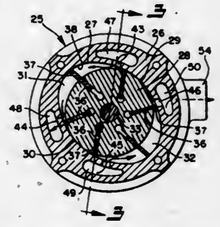
3,552,894
SEALING STRIP
Werner Johann Hermann Schröder, Rudolf Prescher, and Peter Klaus Jurgen Müller, Essen, Germany, assignors to Fried. Krupp Gesellschaft mit beschrankter Haftung, Essen, Germany
Filed Aug. 27, 1968, Ser. No. 755,644
Claims priority, application Germany, Sept. 2, 1967, 1,576,896
Int. Cl. F01c 19/00
U.S. Cl. 418—139 1 Claim

A rotary piston machine in which one of two members rotatable relative to each other has guided in pockets thereof sealing slides each of which is pressed against the other member, and in which the ends of the gaps between first strip means in said sealing slides and the respective adjacent portions of said other member is covered by cover strips arranged in grooves provided in said pocket containing member and extending in the direction of displacement of said sealing slides, means being provided for sealingly pressing said cover strips



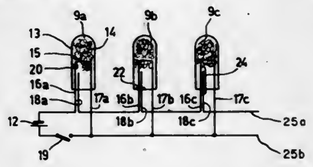
against side wall portions of said other member and against additional strips respectively located in lateral grooves of said sealing slides.

3,552,895
DRY ROTARY VANE PUMP
Eugene S. Bayley, Elyria, Ohio, assignor to Lear Siegler, Inc., Maple Heights, Ohio, a corporation of Delaware
Filed May 14, 1969, Ser. No. 824,559
Int. Cl. F01c 21/00; F04c 15/00
U.S. Cl. 418—178 10 Claims



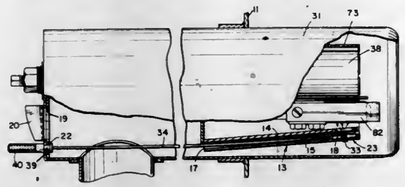
A dry rotary vane pump having an aluminum bore and rotor with a hard aluminum oxide coating to inhibit wear caused by sliding friction between parts. A Teflon or like plastic coating may be applied to the external surfaces of the rotor to further reduce wear and eliminate the need for wear plates at the ends of the rotor.

3,552,896
FLASH UNIT
Hermann Kuhlmann, Hamburg-Blankenese, Germany, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 2, 1967, Ser. No. 620,047
Claims priority, application Germany, Mar. 2, 1966, P 38,883
Int. Cl. F21k 5/02
U.S. Cl. 431—95 3 Claims



A flash lamp unit has a plurality of flash bulbs carried by a base for sequential ignition. Upon the ignition of each bulb, a junction means therein melts and flows to join a third electrode wire within the bulb to one of the first and second pole wires bridged by the filament in the bulb. This electrode is connected at its remote end to the first wire in an adjacent bulb to permit closing of its ignition circuit.

3,552,897
IGNITER
Paul D. Cox, Ridgeville, Ind., assignor to Cox Manufacturing Co., Inc., Ridgeville, Ind., a corporation of Indiana
Filed Apr. 29, 1969, Ser. No. 820,254
Int. Cl. F23q *2/16*
U.S. Cl. 431—273 **6 Claims**



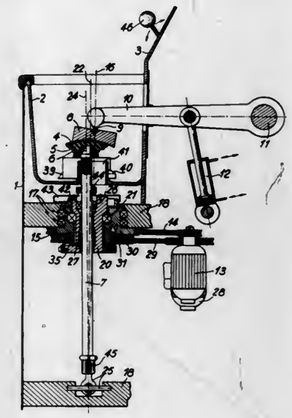
A fluid fuel burner particularly adapted for mobile homes and the like and comprising a mixer casing, means for supplying fuel and air to the casing including a drum within the casing, a guideway near the open, forward end of the drum and slidably and removably receiving the forward end portion of a flint-and-striker-wheel sparking device which includes an elongated, resiliently flexible shaft means operatively connected to the striker wheel and projecting rearwardly through an access opening in the substantially closed rear end of the casing, the rear portion of the shaft means being journal-supported in the rear wall of the casing whereby said shaft means may be turned to actuate the striker wheel of the sparking device without disturbing the sparking device, said access opening being guarded by a spring-biased door, through which opening the sparking device may be bodily withdrawn for repair, adjustment or replenishment of the flint-and-striker-wheel assembly. That assembly comprises a tablet formed from a metal strip folded upon itself, slotted through the fold to accommodate the striker wheel, and distorted to define a slot-traversing tunnel in which the shaft means is journalled and to define a second tunnel aligned with the slot, opening into the slot and opening through the remote end of the tablet, for the accommodation of a flint, a coiled spring and a backer element.

3,552,898
METHOD OF JOINING METAL PARTS
Jack Raymond Bird, Derby, Douglas Wilson Hall, Shirley, near Ashbourne, and Peter William John Bye, Derby, England, assignors to Rolls Royce Limited, Derby, England, a British company
No Drawing. Continuation-in-part of application Ser. No. 329,224, Dec. 9, 1963. This application Apr. 1, 1968, Ser. No. 717,892
Int. Cl. B23k *31/02, 35/38*
U.S. Cl. 29—494 **13 Claims**

Nickel base alloy parts are diffusion bonded together by heat treating the parts in vacuum at a temperature within 100° C. of the solidus temperature, placing the parts in direct contact with each other and heating the parts to a temperature which is below the solidus temperature without the application of external pressure.

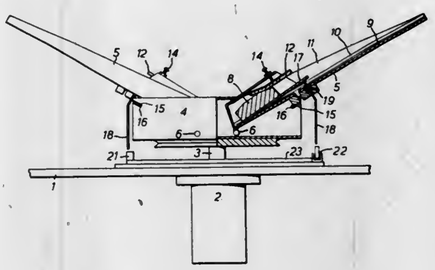
3,552,899
LENS SURFACING MACHINE
Luc Tagnon, Saint-Mande, France, assignor to Societe des Lunetiers, Temkine & Cie, Paris, France
Filed Mar. 19, 1968, Ser. No. 714,265
Claims priority, application France, Mar. 21, 1967, 99,640
Int. Cl. B24b *13/02*
U.S. Cl. 51—160 **4 Claims**

Machine for grinding down and polishing ophthalmic lenses, in which the movements of the tool on the lens surface are obtained by means of spindles driven for translational motion by an arm exerting separately the tool pressure on the lens, characterized in that each spindle supported by a fixed universal joint receives the movements of two eccentrics driven from separate motors having parallel output shafts, either directly, in which case the spindle arm is driven by the first eccentric revolving



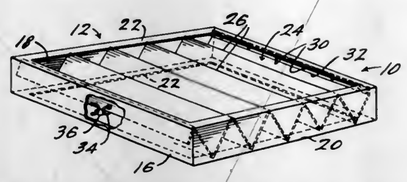
in the other eccentric, or through the medium of perpendicular connecting-rods secured to the spindle arm by means of a universal joint, and that the tool control arm is actuated by an actuator mounted on damping devices and so pivoted that the tool designed for surfacing a toroidal surface has its equator constantly maintained in a fixed direction.

3,552,900
CENTRIFUGAL TRAPSHOOTING DEVICE
Geoffrey Frederick Newill, 116 Nibthwaite Road, Harrow, England
Filed May 27, 1968, Ser. No. 732,191
Claims priority, application Great Britain, Aug. 9, 1967, 36,503
Int. Cl. F41b *3/04*
U.S. Cl. 124—6 **4 Claims**



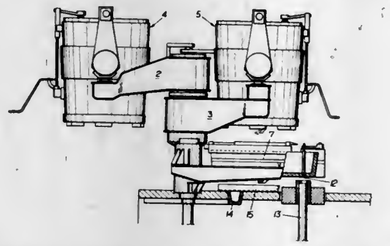
A trapshooting launcher for disc targets having a motor for rotating the pivotally mounted target launching arms. The launching arms have two spring detents engaging each target on each target launching arm. One detent is manually adjustable and the other is tripped by a trigger on the launching arm after the latter has engaged a trip abutment on the launcher's stationary base.

3,552,901
SMOKE CONTROL DAMPER OR THE LIKE
Edward H. Johnson, 706 Phillips Ave., Maumee, Ohio 43537, and Raymond L. Alley, 3918 Rushland Ave., Toledo, Ohio 43613
Filed Dec. 6, 1967, Ser. No. 688,390
The portion of the term of the patent subsequent to July 28, 1987, has been disclaimed
Int. Cl. E05f *15/20*
U.S. Cl. 160—1 **6 Claims**



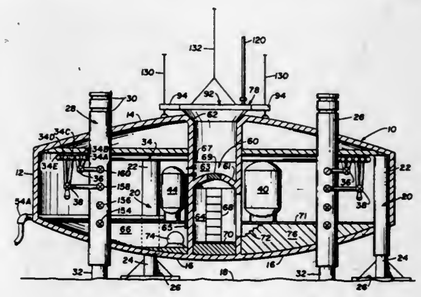
A smoke control damper or similar closure device includes an imperforate sheet folded back and forth to form blade sections. The sheet is mounted within a frame and normally held in an extended position, across the frame, when the device is closed. The blade sections formed by the folded sheet are substantially parallel when the sheet is in the retracted position and the device is open. When the sheet is extended, the blade sections form a zigzag pattern across the frame. The closure device is effective for a smoke control damper because there are no joints or hinges between adjacent blades which are subject to leaking and subject to possible binding and thus being inoperative when needed. The construction also minimizes the number of parts required and reduced labor costs in fabricating the device. By designing the sheet so that it is in a stressed condition when closed, the sheet can be caused to automatically open the damper when it is released, without the necessity of employing any weights, springs, motors, etc., although such can be used, if desired.

3,552,902
CONTINUOUS CASTING APPARATUS WITH MOVABLE LADLES AND TUNDISHES
Rudolf Schöffmann and Anton Kubera, Linz, Austria, assignors to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria
Filed Jan. 29, 1968, Ser. No. 701,408
Claims priority, application Austria, Feb. 6, 1967, A 1,084/67
Int. Cl. B22d *11/10*
U.S. Cl. 164—281 **4 Claims**



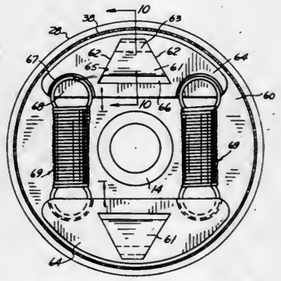
Apparatus for continuous casting of metal including a pair of ladle-supporting carrier arms pivotally mounted on a common vertical arbor between a common ladle receiving position and a pair of pouring positions. A pair of tundishes also are provided, each separately pivotable about its own vertical support between a casting position beneath a ladle when in one of the pouring positions, and an inactive position. Thus, each tundish, when in its casting position, can receive the outputs of ladles carried by either of the carrier arms. As one ladle is emptied, the ladle on the other carrier arm is being replaced with a full ladle and moved into pouring position over the tundish, thereby enabling continuous casting. Provisions are made for ready cleaning and replacement of the tundishes.

3,552,903
SUBSEA PRODUCTION SATELLITE
Robert D. Townsend, Jr., Paris, France, assignor to Mobil Oil Corporation, a corporation of New York
Continuation of application Ser. No. 521,745, Jan. 19, 1966. This application June 28, 1968, Ser. No. 740,915
The portion of the term of the patent subsequent to July 9, 1985, has been disclaimed
Int. Cl. E21b *7/12, 33/035, 43/01*
U.S. Cl. 166—.5 **10 Claims**



The specification discloses a subsea production satellite having a watertight shell with wellhead cylinders extending vertically therethrough. After the satellite is leveled on a marine bottom, wells are drilled through the satellite wellhead cylinders and the casings hung therein. The wells are controlled and produced directly into the satellite through ports in the walls of the wellhead cylinders within the satellite. A travel chamber is provided for transporting personnel and equipment between the satellite and the water surface.

3,552,904
CENTRIFUGAL CLUTCH
Warren H. De Lancey, Elyria, Ohio, assignor to R. W. Beckett Corporation, North Ridgeville, Ohio, a corporation of Ohio
Filed Sept. 24, 1968, Ser. No. 761,931
Int. Cl. F16d *43/14*
U.S. Cl. 192—105 **4 Claims**



A centrifugal clutch having drive and driven members, the former including a disc and hub, a pair of weights with arcuate outer surfaces pivotally mounted at their

adjacent one ends upon said disc and constrained to radial movements, a spring interconnecting their adjacent other ends in tension maintaining the weights in a radial inward "release" position, the driven member including a drum overlying and spaced from the disc and weights and having a hub journalled on the disc hub, and a sleeve of friction material mounted upon and around the interior of said drum normally spaced from the weights; a modified clutch wherein the weight pivots are diametrically opposed, and springs interconnect the respect opposite ends of the weights; and a further modification wherein the weights are constrained to radial movements.

CHEMICAL

3,552,905
METHOD FOR PRODUCING PERMANENT, PRESS, DYED, POLYESTER - CELLULOSIC BLENDED FABRICS

Mario Francesco Sartori, North Hills, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 31, 1967, Ser. No. 612,802
Int. Cl. D06p *7/00*
U.S. Cl. 8—17 **10 Claims**

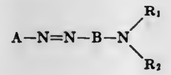
A method, and the product thereof, for producing permanent press, dyed, polyester-cellulosic blended fabrics by dyeing the polyester portion of the blended fabric, by the Thermosol or pressure dyeing process, with a 2-benzamido - 4 - disubstituted aminoazobenzene, for example, 2 - benzamido - 4 - bis(2 - acetoxyethyl)amino-4'-nitroazobenzene, applying a permanent press resin, and curing the resin at a temperature of at least 300° F.

3,552,906
PROCESS FOR DYEING AND PRINTING LINEAR POLYESTER FIBERS AND SAID DYED FIBERS

Visvanathan Ramanathan and Richard Peter, Basel, and Hans-Joerg Angliker, Riehen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Jan. 3, 1968, Ser. No. 695,336
Claims priority, application Switzerland, Jan. 10, 1967, 299/67
Int. Cl. D06p *1/02*
U.S. Cl. 8—41 **9 Claims**

Linear polyester fibers dyed and process for dyeing or printing linear polyester fibers with a water insoluble azo dyestuff of the formula



in which A represents a thiazole, benzthiazole or thiadiazole radical bound in the 2-position to the azo group or a benzene radical which may be substituted, R_1 denotes an alkyl group which may be substituted and R_2 denotes a residue of the formula —alkylene—$OCOR_3$, in which R_3 represents a residue which contains a nitrogen-containing 6-membered ring.

3,552,907
INDUSTRIAL PROCESS FOR BLEACHING LIBERIAN FIBRES BY APPLYING CHLORINATED DERIVATIVES OF CYANURIC ACID

Jean Bouvet, Vernon, and Pierre L. Lhoste, Paris, France, assignors, by mesne assignments, to Azote et Produits Chimiques S.A., Toulouse, France, a corporation of France

No Drawing. Filed Sept. 5, 1967, Ser. No. 665,275
Claims priority, application France, Sept. 6, 1966, 75,421
Int. Cl. D06l *3/06*
U.S. Cl. 8—108 **9 Claims**

A rapid process of industrial bleaching of textile products with a basis of Liberian fibres such as linen, hemp, or jute, consisting in three essential stages, in the course of which the unbleached product is brought successively into contact with a strongly alkaline aqueous bath, under a steam atmosphere at 100° C., a bath constituted by an aqueous solution with a pH of 4–5 of chlorocyanuric derivatives at 20–50° C. having an available chlorine content of 7 to 15 g./l., and an alkaline bath of hydrogen peroxide, it being possible to precede these three treatments with a preliminary treatment in a bath identical to that of the second treatment; the preliminary treatment and the second treatment may be conducted either in continuous operation like the first and third treatments, or semicontinuously, by winding.

3,552,908
DIMENSIONALLY STABILIZED ELASTIC FABRICS

David L. Drum, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of South Carolina

No Drawing. Continuation of application Ser. No. 778,821, Nov. 25, 1968. This application Mar. 24, 1969, Ser. No. 809,955
Int. Cl. D06m *9/00*
U.S. Cl. 8—115.6 **20 Claims**

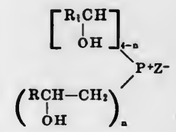
A process, and the resulting products, for providing dimensionally stabilized elastic fabrics having improved moisture absorbency, anti-static properties, and resistance to soil redeposition upon washing, wherein a treating composition containing a dimensionally stabilizing resin and a polyalkoxy compound is applied to the fabrics, and the fabrics thereafter are treated to simultaneously react the components and cure the resin on the fabrics.

3,552,909
TREATMENT OF CELLULOSIC MATERIALS WITH HYDROXYALKYL PHOSPHONIUM SALTS

William J. Vullo, North Tonawanda, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Original application Apr. 18, 1966, Ser. No. 543,081, now Patent No. 3,452,098, dated June 24, 1969. Divided and this application Nov. 5, 1968, Ser. No. 773,638
Int. Cl. D06m *13/16, 13/28*
U.S. Cl. 8—120 **10 Claims**

Treatment of cellulosic textile materials to impart crease and flame resistance thereto with hydroxyalkyl phosphonium salts having the formula:



wherein *n* is a number from 2 to 3, Z is the anion of a salt-forming acid, R is selected from the group consisting of hydrogen and lower alkyl groups containing from 1 to 2 carbon atoms and R, is selected from the group consisting of hydrogen and lower alkyl groups containing from 1 to 3 carbon atoms.

3,552,910
METHOD OF SHRINKPROOFING A PROTEINACEOUS TEXTILE MATERIAL AND PRODUCT THEREOF

George M. Wagner, Lewiston, and William J. Vullo, Tonawanda, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

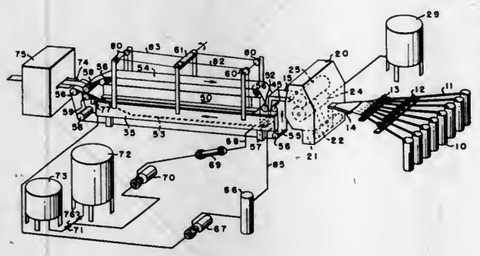
No Drawing. Filed Nov. 26, 1965, Ser. No. 510,028
Int. Cl. D06m *13/42*
U.S. Cl. 8—127.6 **8 Claims**

A process for shrinkproofing wool by contacting it with a polyaryl polyisocyanate or a polyaryl polyisocyanate modified by reaction with an alcohol, thio-alcohol, organic acid, amine or amide and then curing the treated wool with water. Desirably, the polyisocyanate is a polymethylene polyphenyl isocyanate or a poly(isocyanatophenyl)methane, applied in an organic solvent and the water cure is effected by immersing the treated wool in warm water.

3,552,911
CONTINUOUS UNIFORM GRAFTING PROCESS FOR KERATIN FIBERS

Emile E. Habib, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware

Filed May 22, 1967, Ser. No. 640,155
Int. Cl. D06m *13/02*
U.S. Cl. 8—128 **22 Claims**



A useful continuous process for uniformly grafting ethylenically unsaturated compounds into keratin fibers comprising progressively conveying the substrate through an ethylenically unsaturated compound wherein the substrate is coated with the compound and thereafter submerging the coated substrate in a catalyst solution wherein the ethylenically unsaturated compound is absorbed and polymerized within the substrate.

3,552,912
METHOD OF REMOVING SULFUR DIOXIDE, NITROGEN DIOXIDE AND CARBON DIOXIDE FROM GASES

Roger F. Bartholomew, Corning, and Harmon M. Garfinkel, Horseheads, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

No Drawing. Filed Nov. 14, 1969, Ser. No. 877,048
Int. Cl. C01b *53/00, 53/34*
U.S. Cl. 23—2 **3 Claims**

Method of removing sulfur dioxide and/or nitrogen dioxide and/or carbon dioxide from gaseous mixtures comprising contacting said gaseous mixture first with a molten nitrate selected from the group consisting of sodium nitrate, silver nitrate and potassium nitrate and then with a molten hydroxide selected from the group consisting of sodium hydroxide and potassium hydroxide or with a molten mixture of at least one of said nitrates and hydroxides.

3,552,913
METHOD OF DECOMPOSING NITROGEN OXIDES

Ruth E. Stephens, Detroit, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application Aug. 31, 1966, Ser. No. 576,202, now Patent No. 3,483,138, dated Dec. 9, 1969. Divided and this application July 22, 1969, Ser. No. 843,772
Int. Cl. B01d *53/00*
U.S. Cl. 23—2 **6 Claims**

A method of decomposing nitrogen oxide is provided by contacting an oxide of nitrogen-containing gas with a suitable catalyst, said catalyst consisting of 0.001 to 25 weight percent of neodymium in an oxide form, usually with a catalyst support.

3,552,914
PROCESS OF REFINING BADDELEYITE

Ekkehard Greinacher and Wilhelm Brugger, Essen, Germany, assignors to Th. A.-G. Goldschmidt, Essen, Germany

No Drawing. Filed Jan. 22, 1968, Ser. No. 699,356
Claims priority, application Germany, Mar. 17, 1967, G 49,598
Int. Cl. C22b *59/00*
U.S. Cl. 23—19 **6 Claims**

Process for refining baddeleyite. Comminuted baddeleyite is subjected to two successive extraction stages. In the first stage, the comminuted ore is leached with a leaching liquor above 80° C., the liquor containing at least 120 g./l. of HCl, 1 to 30 g./l of fluoride ions and 10 to 50 g./l. of SO_4 ions. The leaching liquor may also contain 2 to 20 g./l. of NO_3 ions. The solid residue is thereafter leached in a second stage at a temperature below 60° C. with hydrochloric acid containing at least 200 g. of HCl/l.

3,552,915
SINTERED WOLLASTONITE

David Rostoker, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

No Drawing. Filed Apr. 20, 1967, Ser. No. 632,199
Int. Cl. C01b *33/00;* **B29d** *27/08*
U.S. Cl. 23—110 **1 Claim**

This invention relates to the manufacture of porous bodies of fibrous beta-wollastonite by sintering preformed bodies of beta-wollastonite at a temperature of about 1150° C. which is near but below that at which beta-wollastonite undergoes a phase transformation to alpha-wollastonite. These bodies are particularly useful as kiln furniture.

3,552,916
ACICULAR ANHYDROUS TRIBASIC LEAD SULFATE AND ITS METHOD OF PREPARATION

Edward L. White, Freehold, N.J., and Adrian R. Pitrot, Uniondale, N.Y., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey

Filed Nov. 4, 1966, Ser. No. 592,052
Int. Cl. C01g *21/20*
U.S. Cl. 23—127 **5 Claims**

Acicular anhydrous tribasic lead sulfate is prepared by heating hydrous tribasic lead sulfate at temperatures between about 180° C. and 400° C.

3,552,917

RECLAMATION OF THE CHROMIUM CONTENT FROM WASTE SLUDGES CONTAINING SOLID BARIUM CHROMATE

Charles O. Weiss, Princeton, N.J., assignor to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 28, 1969, Ser. No. 811,639
Int. Cl. C01g 37/12
U.S. Cl. 23—145 7 Claims

A process is provided for recovering the chromium content from waste sludge produced from the separation of the sludge as precipitated solids from the waste effluent streams of metal finishing processes, the chromium content of the sludge being in the form of barium chromate. The above is achieved by forming an aqueous slurry of the sludge, adding sulfuric acid thereto, agitating the resulting admixture for a period of time at ambient temperature, separating the insolubles therefrom, adding to the filtrate from the separation an amount of a carbonate selected from the group consisting of Ca^{+2}, Sr^{+2}, Ba^{+2}, and Pb^{+2} to precipitate out a substantial portion of the sulfate ion from the solution, again separating the insolubles from the reacting environment, adding to the filtrate of the second separation step strontium carbonate to precipitate out the remaining sulfate ion, and separating the insolubles from the reacting environment to obtain a solution containing all the CrO_3 content from the initial extraction.

3,552,918

PROCESS FOR THE PRODUCTION OF PHOSPHORIC ACID

Elliot B. Fitch, Weston, and Elliott J. Roberts, Westport, Conn., and William C. Weber, London, England, assignors to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware

Filed Nov. 8, 1966, Ser. No. 592,776
Int. Cl. C01b 25/22
U.S. Cl. 23—165 7 Claims

Process for producing high strength phosphoric acid having a P_2O_5 content from about 37% to 45% by acidulating phosphate rock in two zones under conditions such that the calcium sulphate is initially precipitated as the semi-hydrate. In the first zone, the rock is reacted with an acid medium containing insufficient sulphuric acid for stoichiometric reaction with the available calcium in the rock but sufficient to produce a slurry of calcium sulphate semi-hydrate suspended in phosphoric acid and containing dissolved monocalcium phosphate. Thereafter, the resulting slurry is transferred to a second zone containing a sulphate concentration in excess of the amount required to precipitate all the monocalcium phosphate as calcium sulphate semi-hydrate. A portion of the slurry from said second zone is recycled to said first zone as acidulating medium.

3,552,919

PROCESS FOR THE MANUFACTURE OF PHOSPHORIC ACID

Elliott J. Roberts, Westport, Conn., assignor to Dorr-Oliver Incorporated, Stamford, Conn., a corporation of Delaware

Filed May 13, 1968, Ser. No. 728,561
Int. Cl. C01b 25/18, 17/14
U.S. Cl. 23—165 17 Claims

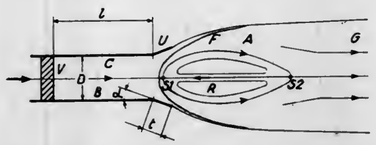
Process for producing phosphoric acid by the acidulation of phosphate rock wherein substantially all the required acid is regenerated within the process. The preferred process comprises the steps of treating by-product calcium sulphate, in the form of gypsum, with ammonium carbonate to produce ammonium sulphate and calcium carbonate, thereafter reacting the thus produced ammonium sulphate with fluosilicic acid to produce ammonium fluosilicate crystals and sulphuric acid. The fluosilicic acid is regenerated by reacting the resulting ammonium fluosilicate with ammonium bisulphate, to produce fluosilicic acid and ammonium sulphate. The ammonium sulphate is heated to drive off ammonium and regenerate ammonium bisulphate.

3,552,920

PROCESS FOR THE COMBUSTION OF TITANIUM TETRACHLORIDE WITH OXYGEN FOR THE PRODUCTION OF TITANIUM DIOXIDE

Gianfranco Bedetti, Milan, Italy, assignor to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

Filed Aug. 11, 1967, Ser. No. 660,035
Claims priority, application Italy, Aug. 16, 1966, 19,039/66
Int. Cl. C01g 23/04
U.S. Cl. 23—202 5 Claims



Described are a process and apparatus for the combustion of titanium tetrachloride with oxygen to titanium dioxide. The process is characterized by:

(a) two gas streams are fed into the reaction zone:
  (1) a first stream formed by a mixture of titanium tetrachloride, oxygen and eventually nucleant and rutilizing substances;
  (2) a second stream, concentrically enveloped by the first one and containing an auxiliary fuel and oxygen, totally or partially premixed;
(b) to both streams, or only to the inner one, a swirl-flow is impressed with such an intensity that they leave the burner to reach the reaction zone as an annular jet or a gaseous film which encloses a central recirculation completely immersed in the resulting stream leaving the burner.

3,552,921

REMOVING SULFUR DIOXIDE FROM HOT GAS

George C. Blytas, Kensington, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Aug. 28, 1968, Ser. No. 755,874
Int. Cl. C01b 17/56, 17/72
U.S. Cl. 23—167 17 Claims

Removing sulfur dioxide from hot gas that contains sulfur dioxide and oxygen by contacting the gas with a molten salt system including potassium sulfate and potassium pyrosulfate and a third salt that depresses the melting point of the system, circulating the salt system between a gas contacting zone at a maximum temperature of 550° C. to a regenerating zone where the temperature of the system is raised to at least 600° C. to drive off sulfur trioxide.

3,552,922

METHOD FOR THE MANUFACTURE OF CARBON FIBER

Toshikatsu Ishikawa, Tokyo, and Masutaka Morishita, Yokohama, Japan, assignors to Nippon Carbon Company, Limited, Tokyo, Japan

Filed July 14, 1967, Ser. No. 653,461
Claims priority, application Japan, Aug. 3, 1966, 41/50,717; Jan. 19, 1967, 42/3,320
Int. Cl. C01b 31/07
U.S. Cl. 23—209.1 10 Claims

A continuous length of filament is spun from a molten pyrolytic liquid obtained by treating petroleum acid sludge. The filament thus produced is treated in a resinous solution in order to modify the surface thereof and produce an infusible one, which is subjected to a carbonizing treatment to make a carbon fiber, and further to a graphitizing treatment to make a graphite fiber.

3,552,923

PRODUCTION OF CARBON FIBERS

William George David Carpenter, Trencrom, 92 Salisbury Road, and William Johnson, 14 Pierrefondes Ave., both of Farnborough, England; Thomas Lloyd, Potters Hatch, Crondall, Farnham, England; Patrick McMullen, Elm Cottage, Bentley, England; and William Watt, 28 Farnborough, Farnborough, England

Filed June 26, 1967, Ser. No. 648,916
Claims priority, application Great Britain, June 28, 1966, 28,879/66
Int. Cl. C01b 31/07
U.S. Cl. 23—209.1 5 Claims

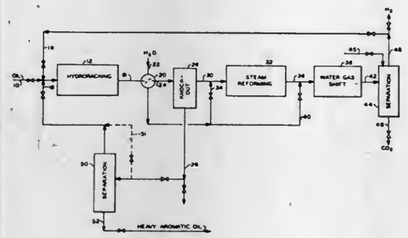
Apparatus and process for the production of continuous lengths of carbon fibers of high strength and high Young's modulus from fibers of organic polymer material. The apparatus comprises a supply spool for the polymer fiber, brake means for the supply spool, and oxidizing oven including means to support and drive the fiber through the oven at a pre-determined rate and to hold the fiber taut to control its length, take-up means to collect the oxidized fiber from the oven, drive means for the take-up means, a carbonizing furnace for carbonizing the oxidized fiber, a supply spool for supplying oxidized fiber to the carbonizing furnace, and take-up means for collecting carbonized fiber from the carbonizing furnace. A process for the production of the carbon fiber comprises oxidizing the polymer fiber in the oxidizing atmosphere of an oven through which the fiber is passed, holding the fiber under tension throughout the oxidizing step such that the fibers do not shrink, continuing oxidation for a time such that substantially complete penetration of oxygen is achieved throughout the fiber, and carbonizing the oxidized fibers by passing the fibers from a supply spool through a furnace in which the fiber is carbonized in a non-oxidizing atmosphere, the fibers being permitted to shrink during the carbonization step.

3,552,924

HYDROGEN MANUFACTURE

Harold J. Hepp, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Aug. 15, 1966, Ser. No. 572,316
Int. Cl. C01b 1/18
U.S. Cl. 23—212 8 Claims



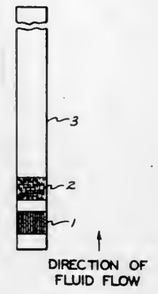
A process for producing hydrogen from an excess refinery stream or mixture of refinery streams by hydrocracking, steam reforming a vaporous fraction from the hydrocracking step, contacting the effluent from the reforming step admixed with additional steam with a water gas shift catalyst, recycling a portion of the hydrogen separated from the shift reaction to the hydrocracking step, and recovering the remainder of the hydrogen as product.

3,552,925

WHOLE BLOOD SEPARATION METHOD AND TEST USING SAME

Marion Cook Fetter, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

Filed July 13, 1967, Ser. No. 653,260
Int. Cl. G01n 31/06, 31/22, 33/16
U.S. Cl. 23—230 3 Claims



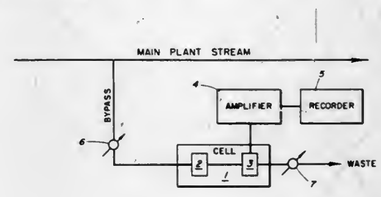
A method for separating whole blood into a substantially colorless fluid and the red cell components or residue comprising contacting the whole blood with a water-soluble salt having an inorganic cation such as potassium citrate, ammonium sulfate, zinc sulfate and the like. In a preferable use of this means to effect a test device and method for detecting soluble constituents in whole blood, a matrix containing the salt is positioned adjacent to a test reagent specifically reactable with and giving a detectable response to said soluble constituent, the whole blood first being contacted with the salt and the colorless fluid thus obtained then contacted with the test reagent.

3,552,926

PROCESS FOR CONTINUOUS ANALYSIS OF NITROGLYCERIN AND RELATED NITRATE ESTERS

Mae I. Fauth, Oxon Hill, and Annie C. Richardson, Eastover, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed Dec. 10, 1968, Ser. No. 782,564
Int. Cl. G01n 21/20
U.S. Cl. 23—230 7 Claims

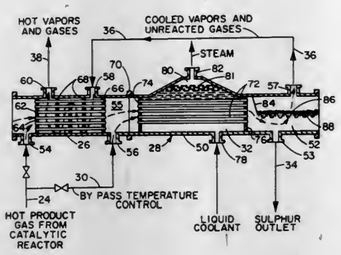


A continuous method for determining the stability of nitroglycerin by detecting the presence of nitrite ion through a color test which consists of adding to the nitrate ester a color producing reagent such as a Griess type reagent, containing (1) sulfanilic acid, and (2) 1-naphthylamine, 1-naphthylamine oxalate or N-(1-napthyl)ethylenediamine dihydrochloride and detecting the color change.

3,552,927
SULFUR RECOVERY APPARATUS

George M. Franklin, Lorenz V. Kunkel, and Willard A. Lewis, Tulsa, Okla., assignors to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed July 7, 1967, Ser. No. 651,770
Int. Cl. B01d 5/00; C01b 17/04
U.S. Cl. 23—252 7 Claims

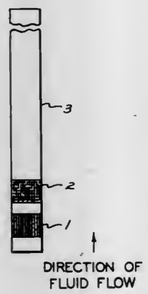


A unitized apparatus for use in processing gases in the conversion of hydrogen sulfide to free sulfur is composed of a reheat section, a condensing section and a sulfur separation chamber. Reheat gas is supplied either from the boiler attached to the furnace or from reactor fluid. The hot stream is indirectly heat exchanged with cooled gas from the separation chamber and the resulting preheated feed gas sent to the next reactor. Gases used for the reheating step are taken to the condensing section where free sulfur present is converted into liquid form and flows into the separation chamber from which it is removed.

3,552,928
WHOLE BLOOD SEPARATION MEANS AND TEST SYSTEM USING SAME

Marion Cook Fetter, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

Filed July 19, 1967, Ser. No. 654,573
Int. Cl. G01n 31/06, 31/22, 33/16
U.S. Cl. 23—253 6 Claims

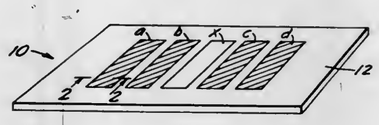


Means for separating whole blood into a substantially colorless fluid and the red cell components or residue, said means comprising contacting the whole blood with certain amino acids such as glycine, alanine and/or derivatives thereof. In a preferable use of this means to effect a test device and method for detecting soluble constituents in whole blood, a matrix containing the amino acid or derivative thereof is positioned adjacent to a test reagent specifically reactable with and giving a detectable response to said soluble constituent, the whole blood first being contacted with the amino acid and the colorless fluid thus obtained then contacted with the test reagent.

3,552,929
DIAGNOSIS MEANS

Richard P. Fields, Woodbury, and John J. Neumayer, St. Paul, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Jan. 23, 1968, Ser. No. 699,962
Int. Cl. A61b 5/10; G01b 31/22
U.S. Cl. 23—253 9 Claims

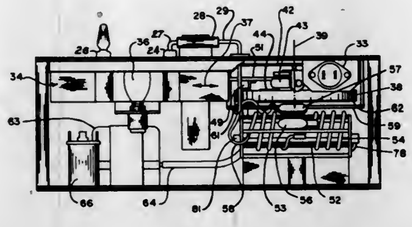


A device for detecting halide ion concentration in fluids. The device comprises a transparent backing material and a substrate adhered thereto. The substrate is divided into a plurality of distinct regions which contain different, predetermined amounts of halide-sensitive reagent.

3,552,930
BREATH SAMPLING AND ANALYZING APPARATUS

Robert F. Borkenstein, 831 S. High St., Bloomington, Ind. 47401

Filed Mar. 6, 1968, Ser. No. 711,005
Int. Cl. G01n 1/22, 21/02, 33/16
U.S. Cl. 23—254 14 Claims

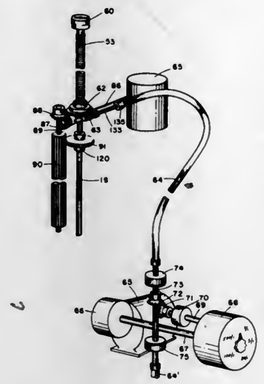


A motor-driven, multistation, program directing valve wheel or disc having passageways therein for cooperating with a sample taking tube, a sample receiving and measuring cylinder, and a delivery tube, in a suitable sequence. A plurality of cams on the disc and a plurality of strategically placed cam-operated switches associated therewith and with a shuttle piston coordinating switch in the sample receiver and measuring cylinder for establishing and maintaining a sequence of operating steps. Alarm means, a purge pump, and a color-coded stage indicator, all associated with the program disc and switches. A photometer with a sampling ampoule associated with the delivery tube, and a standard ampoule for reference, and associated nullmeter and balancing means, with a direct reading percent-alcohol register.

3,552,931
APPARATUS FOR IMPARTING TRANSLATIONAL AND ROTATIONAL MOTION

Paul R. Doherty, Woburn, and Thomas P. Hosmer, Concord, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed July 14, 1967, Ser. No. 653,478
Int. Cl. B01j 17/00; B23b 47/18
U.S. Cl. 23—273 10 Claims



A pulling head which is capable of imparting both translational and rotational motion to a body. The pulling head is rugged, capable of retaining its alignment and is particularly well suited for use with crystal growing furnaces where the moving pulling head rod must extend into atmospheres in which the pressure and/or temperature differs materially from the ambient atmosphere.

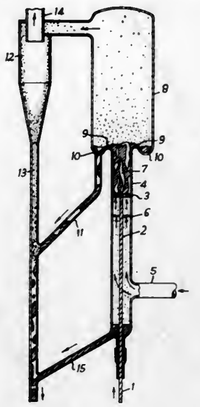
The greatly increased activity in the growing synthetic crystals from a melt and the refining of crystalline materials by the so-called zone refining process have brought about the demand for improved mechanisms for accomplishing these operations. Thus, for example, there has developed in recent years a great body of art in the growing of materials for semiconductors as well as crystals for lasers. There are a number of techniques available for growing these synthetic crystalline and intercrystalline materials. Practically all of these techniques require that either the growing crystal, the mechanism for delivering a molten material to be crystallized, or a preformed rod of a material be moved during the process. Such movement must be both rotational and translational and it must be accomplished at precise and constant axial and angular velocities.

3,552,932
ADIPONITRILE APPARATUS

John Wilkinson Badham, Balwyn, Victoria, Australia, assignor to Imperial Chemical Industries of Australia and New Zealand Limited, Victoria, Australia, a corporation of Australia

Original application Dec. 12, 1966, Ser. No. 600,913. Divided and this application Nov. 25, 1968, Ser. No. 821,519
Claims priority, application Australia, Dec. 15, 1965, 67,937/65
Int. Cl. B01j 1/00
U.S. Cl. 23—285 4 Claims

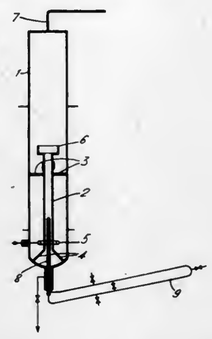
Apparatus for continuously reacting a liquid amalgam with a liquid aqueous organic phase comprising water and a monomer so as to effect conversion of the monomer to its hydrodimer. The apparatus comprises an enclosed essentially vertical reaction vessel, a vertically adjustable distributor plate extending essentially horizontally across the vessel, means for maintaining a dense fluidized bed of amalgam above the distributor plate and supported thereby, a disengagement space above the fluidized bed in which the spent amalgam and liquid aqueous organic phase may separate from each other, means for feeding amalgam into the fluidized bed above the distributor plate, means for feeding liquid aqueous organic phase into the vessel below the distributor plate which is provided with orifices through which the liquid aqueous organic phase may pass upwardly, and means for removing the spent amalgam and liquid aqueous phase containing the said hydrodimer from the vessel in the disengagement space.



3,552,933
REACTION VESSEL HAVING INTERNAL RECYCLE MEANS

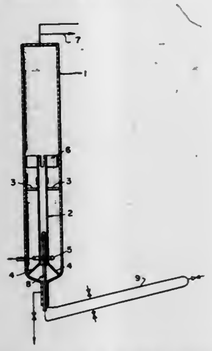
Eric Lloyd Jones, Hull, David Anthony Claydon, Kirkella, and Julius Ernest Ellis, Tadworth, England, assignors to BP Chemicals (U.K.) Limited, London, England, a British company

Filed Apr. 26, 1968, Ser. No. 724,416
Claims priority, application Great Britain, May 13, 1967, 22,295/67
Int. Cl. B01j 1/00
U.S. Cl. 23—285 5 Claims



A reaction vessel which is a closed vessel containing a partition dividing the vessel into two zones which intercommunicate above and below the partition. Gas is introduced into the lower part of one of the zones to create a density difference between liquid either side of the partition, thereby causing the liquid to circulate. A flange on top of the partition projecting into the zone into which gas is introduced assists disengagement of gas from liquid at the top of the vessel and therefore causes the rate of circulation to be increased.

3,552,934
REACTION VESSEL HAVING INTERNAL RECYCLE MEANS
David Anthony Claydon, Kirkella, and Julius Ernest Ellis, Tadworth, England, assignors to BP Chemicals (U.K.) Limited, London, England, a British company
Filed May 2, 1968, Ser. No. 726,116
Claims priority, application Great Britain, May 13, 1967, 22,295/67
Int. Cl. B01j *1/00*
U.S. Cl. 23—285 8 Claims



A reaction vessel which is a vessel divided by a partition into two zones which intercommunicate above and below the partition. Gas is introduced into the lower part of one of the zones to create a density difference between the liquid contents of the two zones and cause the liquid to circulate. The partition has a head which is a plurality of channels projecting into one of the zones, to assist in separation of gas from liquid at the top of the vessel and thereby increase the circulation rate. Slots may also be cut in the partition to increase the circulation rate.

3,552,935
PURIFYING ALKALI METAL HYDROXIDE BY ZONE-FREE MELTING
Josef Vepřek-Šiška, Viktor Ettel, and Karel Eckschlager, Prague, Czechoslovakia, assignors to Ceskoslovenska Akademie VED, Prague, Czechoslovakia
No Drawing. Filed May 27, 1968, Ser. No. 732,103
Int. Cl. B01j *17/08*; C01d *1/04*
U.S. Cl. 23—301 10 Claims

Alkali metal hydroxides of extreme purity are prepared by converting the contaminated hydroxides to the corresponding hydrates which have melting points nearer ordinary temperature than the anhydrous hydroxides, and subjecting the solid hydrates to refining by zone melting. The anhydrous hydroxides may be recovered, if necessary, by the removal of water from the purified hydrates. The process can be performed in containers faced with fluorocarbon or other plastics.

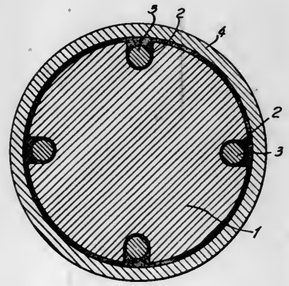
3,552,936
CERTAIN ALKALI METAL AND NITROSYL DIFLUOROCHLORATES AND THEIR PREPARATION
Karl O. Christe, Berkeley, Jacques P. Guertin, El Cerrito, and Attila E. Pavlath, Berkeley, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 11, 1965, Ser. No. 478,996
Int. Cl. C01b *21/52*; C01d *11/00*
U.S. Cl. 23—367 5 Claims

Difluorochlorates(I) of cesium, rubidium, potassium, and nitrosyl and their preparation by reaction of corresponding fluorides and chlorine monofluoride. Representative compounds are nitrosyl difluorochlorate(I), potassium difluorochlorate(I), rubidium difluorochlorate (I) and cesium difluorochlorate(I).

3,552,937
SINTERED ALLOYS OF A CHROMIUM CARBIDE-TUNGSTEN CARBIDE-NICKEL SYSTEM
Satoru Mito and Kazuo Suzuki, Yokohama-shi, Shinichi Murata, Tokyo, and Hiroshi Yoshida, Yokohama-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Feb. 6, 1969, Ser. No. 797,208
Claims priority, application Japan, Feb. 10, 1968, 43/7,959
Int. Cl. C22c *29/00*
U.S. Cl. 29—182.7 1 Claim

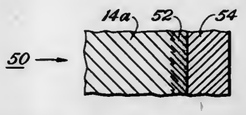
Sintered alloys mainly consisting of 25 to 75 percent by weight of chromium carbide Cr_3C_2, 10 to 43 percent by weight of tungsten carbide WC and 15 to 50 percent by weight of nickel Ni and containing one percent max. by weight of impurities. These alloys are fully resistant to chemical corrosion and cavitation erosion.

3,552,938
SECURITY STEEL MEMBERS WITH CARBIDE INSERTS
Cedo Draca, St. Laurent, Montreal, Quebec, Canada, assignor to C.M. Windows & Stained Glass Ltd., Montreal, Quebec Canada
Filed Jan. 21, 1969, Ser. No. 792,483
Int. Cl. B32b *9/00, 15/02*
U.S. Cl. 29—191.6 5 Claims



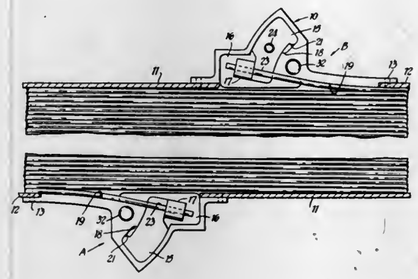
The invention relates to a novel structure for security steel members of vastly improved tool cutting resistance, the structure consisting of a steel bar having a plurality of tungsten or other high hardness carbides filled longitudinally extending grooves, the whole being clad in a steel sleeve and bonded.

3,552,939
METAL CARBIDE COATINGS ON METAL SUBSTRATES
James R. Darnell and Donald A. Tarver, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Original application Aug. 5, 1964, Ser. No. 387,725, now Patent No. 3,368,914, dated Feb. 13, 1968. Divided and this application Dec. 6, 1967, Ser. No. 721,886
Int. Cl. B32b *15/16*
U.S. Cl. 29—195 16 Claims



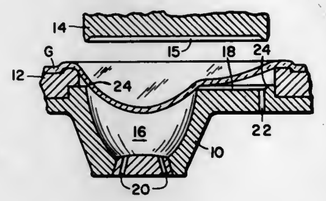
A metal substrate selected from steel, nickel and nickel-base alloys having a refractory metal diffused into a surface region thereof is provided with a coherent coat of a refractory metal carbide adherently bonded to the diffused surface region of the substrate.

3,552,940
CIRCUMFERENTIAL STRESSING OF CONCRETE PRESSURE VESSELS
John Richard Portas, Ruislip, and Rodney Richard Carter, Reading, England, assignors to Taylor Woodrow Construction Limited, Southall, Middlesex, England, a British company
Filed Mar. 6, 1968, Ser. No. 711,026
Claims priority, application Great Britain, Mar. 7, 1967, 10,774/67
Int. Cl. B21d *39/00*; F16g *11/00*; E04c *3/10*
U.S. Cl. 29—452 11 Claims



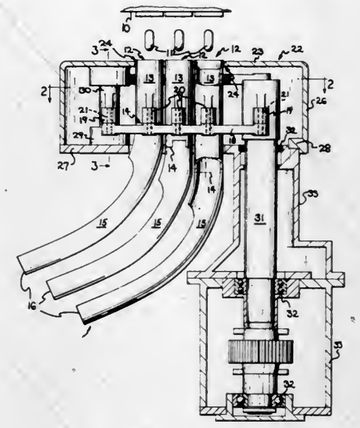
In cases where pre-stressing strands are wound under tension around a concrete pressure vessel in order circumferentially to stress the same and the windings are disposed in troughs or channels in or on the outer surface of the vessel the terminal end of each prestressing strand is anchored through the medium of an anchorage member which is supported for limited sliding movement in an appropriately shaped recess in one wall of the trough or channel in which the windings of the strand have been laid. With the anchorage member in a position wherein it projects from the recess the terminal end of the strand is attached to said member which is thereafter forced together with the anchored end portion of the strand into the recess clear of the trough or channel.

3,552,941
FORMING HANDLED VITREOUS ARTICLES
James W. Giffen, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Nov. 4, 1968, Ser. No. 773,266
Int. Cl. C03b *9/04, 23/02, 23/06*
U.S. Cl. 65—67 11 Claims



A cup-shaped article, having dimensionally uniform sidewalls, is formed and trimmed from a sheet of heat-softened glass with a substantially planar integral handle, and the handle is then shaped to a desired form.

3,552,942
MULTIPLE MOLD CHARGE HANDLING APPARATUS
Urban P. Trudeau, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Filed Dec. 18, 1968, Ser. No. 784,803
Int. Cl. C03b *7/00*
U.S. Cl. 65—304 5 Claims



Apparatus for oscillating a set of three scoops or chutes which direct segregated mold charges or gobs of molten glass to three-cavity molds of a plural-section forming machine, such scoops being arranged in tandem, or nested, and each having an upper end constantly in register with a bottom outlet, or orifice, of a feeder, the oscillating means being a parallel link unit disposed horizontally within a rigid housing or jacket, one end of the parallel link unit being supported on a shaft which is journaled in bearings within the jacket, while the other end of such unit is connected to and supported by a vertical shaft, the latter also functioning to actuate the parallel link unit.

3,552,943
ALKALATED HUMIC ACID-SILICA COMPOSITIONS FOR FERTILIZERS AND THE LIKE AND METHODS OF MAKING SAME
Roger W. McCormack, Pittsburgh, Pa., assignor to Scientism Laboratories, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed June 26, 1967, Ser. No. 649,010
Int. Cl. C05f *11/00, 11/02*
U.S. Cl. 71—23 19 Claims

Fertilizer materials and the like, including alkalated humic acid-silica compositions.

3,552,944
PRODUCTION OF PHOSPHATE FERTILIZERS
Ulrich Hauschild and Joachim Massonne, Hannover, and Hans Werner Schmidt, Isernhagen Niederhagener Bauerschaft, Germany, assignors to Kali-Chemie Aktiengesellschaft, Hannover, Germany
No Drawing. Filed Nov. 6, 1967, Ser. No. 680,976
Claims priority, application Germany, Nov. 9, 1966, K 60,666; Apr. 12, 1967, K 61,972
Int. Cl. C05b *13/06*
U.S. Cl. 71—33 10 Claims

Raw phosphate is granulated with silica, an aqueous alkali metal hydroxide solution, and 10 to 70 percent, calculated on the total mixture, of the end product as

obtained in the process, preferably in hot condition and/or in the presence of the hot carbon dioxide containing waste gases of a rotary kiln, and the granulated mixture is calcined in a rotary kiln.

3,552,945

HERBITOXIC ORGANOTIN COMPOUNDS AND METHOD USING SAME

Larry Plonsker, Troy, and Norman R. Wright, Detroit, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Nov. 15, 1967, Ser. No. 683,115
Int. Cl. A01n 9/00
U.S. Cl. 71—97 1 Claim

A method of controlling undesirable vegetation by contacting plants with a formulation containing, as the active ingredient, an organotin compound having the general formula:

RR'R''SnX

where the R groups have about 12 carbon atoms and X is selected from the cyano, hydroxy, azido groups and alkyl derivatives of these. Typical active compounds are triethyltin cyanide, triphenyltin acetonitrile, triethyltin hydroxide, tri-n-butyltin azide.

3,552,946

PREPARATION OF ALUMINUM POWDER

Gottfried J. Brendel, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 718,956, Apr. 4, 1968, which is a continuation-in-part of application Ser. No. 390,225, Aug. 17, 1964. This application Sept. 2, 1969, Ser. No. 854,774
Int. Cl. B22f 9/00; C22b 21/00
U.S. Cl. 75—.5 6 Claims

Pure aluminum powder is prepared by pyrolyzing an amine alane such as the trimethylamine complex of aluminum hydride in solution.

3,552,947

METHOD FOR MELTING TITANIUM-BASE ALLOYS

Vincent C. Petersen, North Fayette Township, Allegheny County, and Russell C. Buehl, Beaver, Pa., assignors to Crucible Inc., a corporation of Delaware

Filed Jan. 18, 1968, Ser. No. 698,795
Int. Cl. C22d 7/00; C22c 15/00
U.S. Cl. 75—10 5 Claims

The present invention relates to a method for producing alloys containing effective and substantial quantities of molybdenum. More particularly, the invention relates to a method for producing molybdenum-containing, titanium-base alloys exhibiting a substantially homogeneous microstructure wherein the molybdenum is dissolved and dispersed substantially uniformly throughout the matrix metal. This is achieved by providing a charge of porous molybdenum particles, mixing said charge with a charge of particulate material, which may be titanium, zirconium or base alloys thereof, forming a consumable electrode from said mixture, and vacuum arc melting said consumable electrode to form the desired homogeneous alloy.

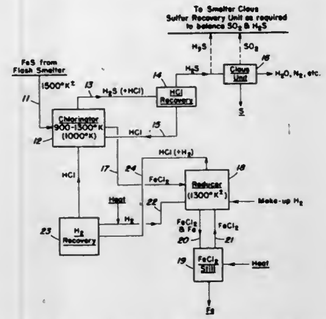
3,552,948

REDUCTION OF METAL SULFIDES

Salvatore A. Guerrieri, Rowayton, Conn., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware

Filed June 9, 1967, Ser. No. 644,908
Int. Cl. C22b 5/18; C01b 17/06
U.S. Cl. 75—34 4 Claims

Process for refining a metal sulfide, illustratively ferrous sulfide, wherein the sulfide in molten form is contacted with hydrogen chloride gas in a chlorinator whereby the metal sulfide is converted to the corresponding metal chloride, the metal chloride then being passed to a reducer where it is reduced to iron by contact with hydrogen gas. The iron thus produced is withdrawn as a



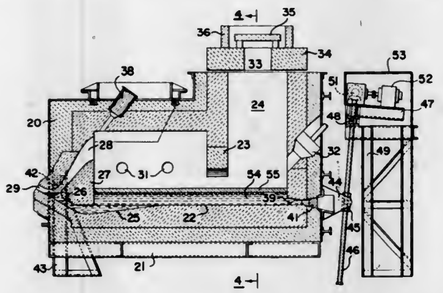
slurry in molten ferrous chloride and thereafter separated by vaporizing the ferrous chloride. The hydrogen sulfide produced by the reaction of metal sulfide and hydrogen chloride is passed to a Claus unit for the production of elemental sulfur.

3,552,949

METAL MELTING PROCESS

Frank J. Boyle, Philadelphia, Pa., assignor to Selas Corporation of America, Dresher, Pa., a corporation of Pennsylvania

Filed Feb. 26, 1965, Ser. No. 435,654
Int. Cl. C22b 7/00
U.S. Cl. 75—65 4 Claims



Brass is melted by placing it in solid form under a bath of molten glass in a melting furnace chamber. Heat is applied to the glass and through the glass to the metal. The surface of the glass is rippled, by a stream of gases from a burner, to increase its surface area and the transfer of heat through it to the brass.

3,552,950

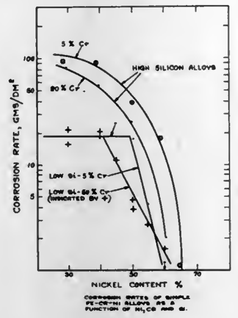
HIGH TEMPERATURE CORROSION RESISTANT Fe-G-Ni-Mn ALLOY

Gene R. Rundell and Alvin E. Nehrenberg, Lockport, N.Y., assignors to Simonds Saw and Steel Company, Fitchburg, Mass., a corporation of Massachusetts

Filed June 14, 1967, Ser. No. 646,130
Int. Cl. C22c 19/00, 39/02
U.S. Cl. 75—122 5 Claims

Age hardenable, austenitic alloy characterized by high elevated and ambient temperature hardness, strength and corrosion resistance, particularly adapted for internal combustion engine valves, and consisting essentially of about: 20–70% nickel, 4–20% manganese, 12–40% chromium,

up to 0.5% carbon, up to 0.3% nitrogen, up to 0.6% silicon, up to 5% molybdenum, up to 6% titanium, up



to 4% each of aluminum and copper, up to 0.2% boron, balance substantially iron.

3,552,951

SMOKELESS MANUFACTURE OF NICKEL-MAGNESIUM ALLOYS

Robert D. Schelleng, Ramapo, N.Y., assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 27, 1968, Ser. No. 787,548
Int. Cl. C22c 19/00
U.S. Cl. 75—170 5 Claims

Nickel magnesium alloys are produced with negligible production of magnesium oxide smoke by introducing particulate nickel into molten magnesium at a temperature only slightly above the melting point of magnesium and then introducing the resulting alloy into a bath of molten nickel.

3,552,952

NICKEL-CHROMIUM ALLOYS ADAPTED FOR USE IN CONTACT WITH MOLTEN GLASS

Stuart Walter Ker Shaw, Coldfield, England, assignor to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 26, 1968, Ser. No. 779,207
Claims priority, application Great Britain, Dec. 4, 1967, 54,997/67; Aug. 14, 1968, 38,869/68
Int. Cl. C22c 19/00
U.S. Cl. 75—171 17 Claims

Nickel-base alloys containing correlated percentages of carbon, chromium, tungsten, tantalum and preferably zirconium afford good corrosion resistance and exhibit highly satisfactory elevated temperature properties (circa 1080° C.), characteristics which render the alloys particularly suitable for use in contact with such media as molten glass.

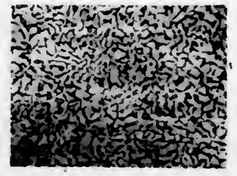
3,552,953

COBALT-CHROMIUM BASE ALLOY AND ARTICLES PRODUCED THEREFROM

Franklin D. Lemkey, Oxford, England, and Earl R. Thompson, Glastonbury, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Jan. 10, 1969, Ser. No. 790,369
Int. Cl. C22c 19/00
U.S. Cl. 75—171 11 Claims

Alloys containing cobalt, chromium and carbon, particularly in a relationship wherein two primary phases freeze simultaneously from a melt, are cast into articles having superior high temperature strength and oxidation/sulfidation resistance, the cast articles comprising



a matrix containing about 30 weight percent chromium and a dispersed phase comprising about 35–40 percent of a mixed carbide of the composition $(Cr, Co)_{23}C_6$.

3,552,954

METHOD OF MAKING INTERNALLY OXIDIZED DISPERSION HARDENED COPPER PRODUCT

Allen S. McDonald, Jr., Bridgeport, Conn., assignor to Handy & Harman, Fairfield, Conn., a corporation of New York

No Drawing. Filed Sept. 20, 1968, Ser. No. 761,335
Int. Cl. C22c 31/04
U.S. Cl. 75—206 14 Claims

A wrought, ductile, product comprising a copper matrix through which particles of a metal oxide are intimately dispersed is made by internally oxidizing at a high temperature (preferably 1400° F. to 1700° F.) an alloy of copper and one or more readily oxidized metals having oxides of high heats of formation. The oxidation converts the metal alloyed with the copper to oxide and saturates the copper matrix with oxygen. The oxidized metal is heated (preferably at 1400° F. to 1700° F.) in hydrogen until the oxygen dissolved in the copper matrix (but not the oxide of the metal alloyed initially with the copper) is reduced, resulting in severe embrittlement of the metal. The resulting copper product is broken up mechanically to granular form, and then is formed into an extrusion billet which is extruded hot (at say 1700° F. to 1900° F.) into a ductile, workable shape of suitable cross section. The extruded shape may be cold worked to final form.

3,552,955

METHOD OF MAKING TOOLS FROM METAL PARTICLES

Ernest T. Martyniuk, Troy, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

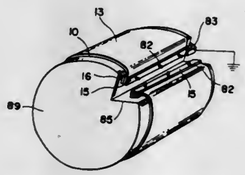
Filed Nov. 13, 1968, Ser. No. 775,453
Int. Cl. B22f 3/26
U.S. Cl. 75—212 4 Claims

A method of forming tools such as dies, electrical discharge machining electrodes, assembly line fixtures and the like from relatively small metal particles is disclosed. In a preferred embodiment, Fe_3O_4 or CuO coated metal particles are first wetted with a film of concentrated phosphoric acid and a quantity of the acid wetted, oxide coated particles are immediately molded into a mass of predetermined configuration. A metal phosphate chemical bond quickly forms to temporarily bond the particles together, they are subsequently sintered in a reducing atmosphere and then infiltrated with a suitable braze alloy.

3,552,956
METHOD FOR TREATING ELECTROPHOTOGRAPHIC RECORDING MATERIALS WITH PROTECTIVE OVERCOATINGS
Shigeru Sadamatsu, Odawara-shi, and Satoru Honjo, Kita-Adachigun, Saitama, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
No Drawing. Filed Jan. 25, 1967, Ser. No. 611,563
Claims priority, application Japan, Jan. 25, 1966, 41/4,244
Int. Cl. G03g *13/22*
U.S. Cl. 96—1 6 Claims

In a recording element for electrophotographic marking having on an electro-conductive plate such as a metallic plate, a photoconductive layer composed of a comparatively large quantity of ZnO and an epoxy-ester resin binder, the deterioration of the properties of the layer, such as adhesivity to a primer coating caused by the high content of ZnO and the occurrence of faults caused by the weak adhesivity of the layer are prevented by applying a thin epoxy-ester resin coating to the layer, after forming a visible image electrophotographically.

3,552,957
CLAMPED PHOTOCONDUCTIVE UNIT FOR ELECTROPHOTOGRAPHY
Howard T. Hodges, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Mar. 6, 1967, Ser. No. 620,906
Int. Cl. G03g *5/00*
U.S. Cl. 96—1.5 11 Claims



A photoconductive member carrying a broad clamp preassembled in permanent nonfracturing electrical contact with an extremely thin conductive layer of such member and providing an electrical and mechanical coupling between the conductive layer and electrophotographic apparatus. The clamp may contain mounting perforations to facilitate physical attachment to such apparatus.

3,552,958
ELECTROPHOTOGRAPHIC COMPOSITION AND ELEMENT
Edward J. Seus, Penfield, and George A. Reynolds, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed July 17, 1968, Ser. No. 745,397
Int. Cl. G03g *5/06*
U.S. Cl. 96—1.5 11 Claims

Aryl and heterocyclic-substituted cyclopropenylium salts are sensitizers for organic photoconductors.

3,552,959
ELECTROPHOTOGRAPHIC COPYING PAPER
Nario Yamaguchi and Kazuo Tubuko, Tokyo, Japan, assignors to Kabushiki Kaisha Ricoh, Tokyo, Japan, a corporation of Japan
Filed Mar. 18, 1968, Ser. No. 713,893
Claims priority, application Japan, Mar. 23, 1967, 42/17,650
Int. Cl. G03g *5/06*
U.S. Cl. 96—1.6 6 Claims

An electrophotographic copying paper comprising a support paper and a photoconductive layer (which is a light-sensitive layer) coated on one surface of said support and containing an organic photoconductive material, wherein said photoconductive layer further contains a metal nitrate, with or without an organic acid.

3,552,960
SILVER DYE BLEACH PROCESS USING BLEACHABLE NITRO-ARYL DYES
Hideo Kondo and Shigeru Watanabe, Kanagawa, Japan, assignors to Fuji Photo Film Co., Ltd., Kanagawa, Japan
No Drawing. Filed July 19, 1967, Ser. No. 654,349
Claims priority, application Japan, July 19, 1966, 41/47,188
Int. Cl. G03c *1/10, 5/52*
U.S. Cl. 96—20 29 Claims

The compounds are of the class of Nobel nitro dyes, useful in a silver dye bleaching method of color photography, having as the chromophore a nitro group, and as the auxochrome —OX (wherein X represents a hydrogen atom, an alkali metal or ½ calcium and ammonium) or —NHY (wherein Y represents a hydrogen atom, a lower alkyl group, a substituted alkyl group, a cyclic alkyl group, an aryl group and a substituted aryl group), and the —NHY may form a ring together with —O— or —N—R (wherein R is an aryl group or a substituted aryl group).

3,552,961
PHOTOGRAPHIC VESICULAR MATERIALS AND IMAGING PROCESS THEREFOR
Norman T. Notley, Pasadena, Calif., and Irwin M. Senentz, Jr., Metairie, La., assignors to Kalvar Corporation, New Orleans, La., a corporation of Louisiana
No Drawing. Application Aug. 12, 1968, Ser. No. 768,943, which is a continuation of application Ser. No. 403,633, Oct. 13, 1964. Divided and this application Dec. 31, 1969, Ser. No. 889,701
Int. Cl. G03c *5/34, 1/52, 5/00*
U.S. Cl. 96—48 11 Claims

Vesicular photographic materials comprising a polymeric vehicle and a light decomposable agent. The polymeric material is a mixture of a resin A and a resin B. By adjusting the relative proportions of these resins, the photographic gamma of the film can be altered. The resin A is an ester or acetal of polyvinyl alcohol. The resin B is an epoxy resin, a phenol formaldehyde resin, a urea-formaldehyde resin, a melamine-formaldehyde resin, a cellulose ester, a silicone resin, an isocyanate resin or a copolymer of maleic anhydride with styrene. Preferably, the amount of resin A is at least 50% and the amount of resin B is up to 50%.

3,552,962
PHOTOGRAPHIC VESICULAR MATERIALS AND IMAGING PROCESS THEREFOR
Norman T. Notley, Pasadena, Calif., and Irwin M. Senentz, Jr., Metairie, La., assignors to Kalvar Corporation, New Orleans, La., a corporation of Louisiana
No Drawing. Application Aug. 12, 1968, Ser. No. 768,943, which is a continuation of application Ser. No. 403,633, Oct. 13, 1964. Divided and this application Dec. 31, 1969, Ser. No. 889,731
Int. Cl. G03c *5/34, 1/52, 5/00*
U.S. Cl. 96—48 11 Claims

Vesicular photographic materials comprising a polymeric vehicle and a light decomposable agent. The polymeric material is a mixture of a resin A and a resin B. By adjusting the relative proportions of these resins, the photographic gamma of the film can be altered. The resin A is an ester or acetal of polyvinyl alcohol. The resin B is an epoxy resin, a phenol formaldehyde resin, a urea-formaldehyde resin, a melamine-formaldehyde resin, a cellulose ester, a silicone resin, an isocyanate resin or a copolymer of maleic anhydride with styrene. Preferably, the amount of resin A is at least 50% and the amount of resin B is up to 50%.

3,552,963
PHOTOGRAPHIC VESICULAR MATERIALS AND IMAGING PROCESS THEREFOR
Norman T. Notley, Pasadena, Calif., and Irwin M. Senentz, Jr., Metairie, La., assignors to Kalvar Corporation, New Orleans, La., a corporation of Louisiana
No Drawing. Application Aug. 12, 1968, Ser. No. 768,943, which is a continuation of application Ser. No. 403,633, Oct. 13, 1964. Divided and this application Dec. 31, 1969, Ser. No. 889,734
Int. Cl. G03c *5/34, 1/52, 5/00*
U.S. Cl. 96—48 11 Claims

Vesicular photographic materials comprising a polymeric vehicle and a light decomposable agent. The polymeric material is a mixture of a resin A and a resin B. By adjusting the relative proportions of these resins, the photographic gamma of the film can be altered. The resin A is an ester or acetal of polyvinyl alcohol. The resin B is an epoxy resin, a phenol formaldehyde resin, a urea-formaldehyde resin, a melamine-formaldehyde resin, a cellulose ester, a silicone resin, an isocyanate resin or a copolymer of maleic anhydride with styrene. Preferably, the amount of resin A is at least 50% and the amount of resin B is up to 50%.

3,552,964
PHOTOGRAPHIC VESICULAR MATERIALS AND IMAGING PROCESS THEREFOR
Norman T. Notley, Pasadena, Calif., and Irwin M. Senentz, Jr., Metairie, La., assignors to Kalvar Corporation, New Orleans, La., a corporation of Louisiana
No Drawing. Application Aug. 12, 1968, Ser. No. 768,943, which is a continuation of application Ser. No. 403,633, Oct. 13, 1964. Divided and this application Dec. 31, 1969, Ser. No. 889,735
Int. Cl. G03c *5/34, 1/52, 5/00*
U.S. Cl. 96—48 11 Claims

Vesicular photographic materials comprising a polymeric vehicle and a light decomposable agent. The polymeric material is a mixture of a resin A and a resin B. By adjusting the relative proportions of these resins, the photographic gamma of the film can be altered. The resin A is an ester or acetal of polyvinyl alcohol. The resin B is an epoxy resin, a phenol formaldehyde resin, a urea-formaldehyde resin, a melamine-formaldehyde resin, a cellulose ester, a silicone resin, an isocyanate resin or a copolymer of maleic anhydride with styrene. Preferably, the amount of resin A is at least 50% and the amount of resin B is up to 50%.

3,552,965
PHOTOGRAPHIC VESICULAR MATERIALS AND IMAGING PROCESS THEREFOR
Norman T. Notley, Pasadena, Calif., and Irwin M. Senentz, Jr., Metairie, La., assignors to Kalvar Corporation, New Orleans, La., a corporation of Louisiana
No Drawing. Application Aug. 12, 1968, Ser. No. 768,943, Patent No. 3,498,786, which is a continuation of application Ser. No. 403,633, Oct. 13, 1964. Divided and this application Dec. 31, 1969, Ser. No. 889,736
Int. Cl. G03c *5/34, 1/52, 5/00*
U.S. Cl. 96—48 11 Claims

Vesicular photographic materials comprising a polymeric vehicle and a light decomposable agent. The polymeric material is a mixture of a resin A and a resin B. By adjusting the relative proportions of these resins, the photographic gamma of the film can be altered. The resin A is an ester or acetal of polyvinyl alcohol. The resin B is an epoxy resin, a phenol formaldehyde resin, a urea-formaldehyde resin, a melamine-formaldehyde resin, a cellulose ester, a silicone resin, an isocyanate resin or a copolymer of maleic anhydride with styrene. Preferably, the amount of resin A is at least 50% and the amount of resin B is up to 50%.

3,552,966
COLOR PHOTOGRAPHIC DEVELOPMENT PROCESS
Gerhard Kuhn, Leverkusen, Albin Graf, Munich, Franz Moll, Cologne-Stammheim, and Rigobert Otto, Leverkusen, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed May 24, 1967, Ser. No. 640,825
Claims priority, application Germany, July 2, 1966, A 52,918
Int. Cl. G03c *7/30, 7/40*
U.S. Cl. 96—54 3 Claims

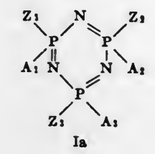
The sensitivity of color photographic material is increased and its image grain size reduced by treating the material after color development and before bleaching, with an aqueous alkaline bath containing per liter 0.01 to 1.0 gram of a black-white developer of the p-aminophenol or 1-phenylpyrazolidone series. The bath may contain antioxidants, alkali metal sulfites, sequestering agents and stabilizers.

3,552,967
COLOR DEVELOPER COMPOSITION
Hikoharu Hara, Yoshio Yamamuro, and Motozumi Asakawa, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
No Drawing. Filed Nov. 16, 1967, Ser. No. 683,490
Claims priority, application Japan, Nov. 16, 1966, 41/75,358
Int. Cl. G03c *7/30*
U.S. Cl. 96—55 2 Claims

A color developer composition containing a color developing agent, a principal coupler and, as a regulatory coupler, at least one compound selected from the group consisting of 1 - naphthol, 2,4 - dichloro - 1 - naphthol, 2,4-dibromo - 1 - naphthol, 2,4 - dichloro - 5 - (p - toluenesulfonamide) - 1 - naphthol and 1,5 - dihydroxy - 2,6 - dibromonaphthalene.

3,552,968
PHOTOGRAPHIC DEVELOPMENT PROCESS
Jozef Frans Willems, Wilrijk, Belgium, assignor to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company
No Drawing. Filed July 5, 1967, Ser. No. 651,136
Claims priority, application Great Britain, Aug. 19, 1966, 37,178/66
Int. Cl. G03c *5/30, 1/48, 1/02*
U.S. Cl. 96—66.3 5 Claims

A photographic light-sensitive material comprising a silver halide emulsion layer containing a compound corresponding to one of the following structural Formulae *Ia* or *Ib*:


Ia

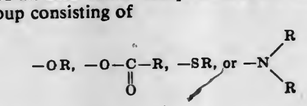

Ib

wherein:

each of A_1, A_2, A_3, A_4, Z_1, Z_2, Z_3, and Z_4 stands for a chlorine atom or a polyoxyalkylene group of the formula $—(OR_1)_n—X$, at least one of the groups A_1, A_2, A_3, A_4, Z_1, Z_2, Z_3, or Z_4 being the group $—(OR_1)_n—X$ wherein n represents an integer of at least 5, the

$$—(OR_1)—$$

group representing repeating units entirely consisting of ethylene oxide units or a mixture of ethylene oxide units and propylene oxide units, and X being a terminal group that is unreactive with respect to an active halogen atom of an acid halide compound and is selected from the group consisting of



wherein R is an alkyl, an aryl, a cycloalkyl, or a heterocyclic radical, said radicals being unreactive with respect to said active halogen atom

is described. The silver halide emulsion has a high developing activation in combination with a very low fog production.

3,552,969

PHOTOGRAPHIC COMPOSITIONS AND PROCESSES

Richard W. Henn, Nancy H. King, and John J. Surash, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 25, 1967, Ser. No. 670,389

Int. Cl. G03c *5/30*

U.S. Cl. 96—66 **21 Claims**

Photographic developer compositions, such as liquid concentrates, containing a silver halide developing agent, an organic activator and a polyvinylpyrrolidone. Solutions comprising developer concentrates diluted with water and their use for developing photographic elements are also disclosed.

3,552,970

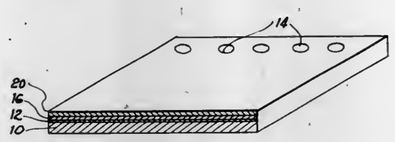
SINGLE SHEET MASTER FOR DIFFUSION TRANSFER

Mary K. Ormsbee, River Forest, Ill., assignor to A. B. Dick Company, Niles, Ill., a corporation of Illinois

Continuation-in-part of applications Ser. No. 526,988, and Ser. No. 527,028, both filed Feb. 14, 1966. This application Nov. 17, 1966, Ser. No. 595,156

Int. Cl. G03c *1/48, 5/54;* **B41n** *1/04*

U.S. Cl. 96—76 **7 Claims**



An offset master adapted to be imaged to provide an oleophilic ink receptive image by diffusion transfer from an exposed silver halide in which the master comprises a base sheet having a water insoluble, water receptive, hydrophilic lithographic surface with a nucleating agent on the surface and a water soluble salt of a metal selected from the group consisting of zirconium, thorium and titanium, and with a silver halide negative stratum forming an integral part of the master overlying the lithographic surface. A cadmium salt and a sensitizing dyestuff may be included as a part of the treating materials overlying the lithographic surface but underlying the silver halide negative stratum of the completed master.

3,552,971

POSITIVE SHEET FOR DIFFUSION TRANSFER

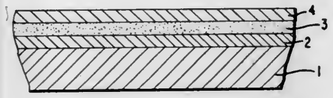
Haruo Takenaka, Akiyasu Shiozawa, and Tadahiro Fujiwara, Kanagawa, Japan, assignors to Fuji Photo Film Co., Ltd., Kanagawa, Japan

Filed Dec. 5, 1967, Ser. No. 688,029

Claims priority, application Japan, Dec. 5, 1966, 41/79,680

Int. Cl. G03c *1/48, 5/54*

U.S. Cl. 96—76 **2 Claims**



A positive sheet for diffusion transfer comprising a support, a subbing layer, an image-receiving layer and a surface layer, said surface layer comprising a polymer insoluble in water and soluble in an alkaline aqueous solution and an organic solvent.

3,552,972

ANTISTATIC LAYER FOR PHOTOGRAPHIC MATERIALS

Karl-Otto Meyer, Leverkusen, Richard Schlffmann, Cologne-Flittard, and Wolfgang Himmelmann, Cologne-Stammheim, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Nov. 7, 1967, Ser. No. 681,094

Claims priority, application Germany, Nov. 15, 1966, A 54,080

Int. Cl. G03c *1/06, 1/82*

U.S. Cl. 96—87 **2 Claims**

Certain polyglycol derivatives are very effective antistatic agents for photographic films carrying gelatin layers. These agents are of the formula:

$$[RO-(CH_2-CH_2-O)_{n_1}-[CH_2-\underset{\displaystyle CH_3}{\underset{|}{CH}}-O-(CH_2-CH_2-O)_{n_2}]_m-COX]_yR'$$

wherein:

R is an alkyl having 6–18 carbon atoms, a phenyl group including a substituted phenyl group;
X is 0 or an imino group;
R^1 is a y-valent organic group of the phenyl or naphthyl series;
n_1 or n_2 is an integer from 4 to 8;
m is 0 or 1 and
y is 1, 2, or 3.

3,552,973

LIGHT SENSITIVE HEXAARYLBIIMIDAZOLE/p-AMINOPHENYL KETONE COMPOSITIONS

David Henry Fishman, West Orange, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 20, 1967, Ser. No. 654,677

Int. Cl. G03c *1/72*

U.S. Cl. 96—90 **22 Claims**

Photoactivatible compositions comprising, basically, a hexaarylbiimidazole and selected p-aminophenyl ketones

having absorption maximally in the near ultraviolet region. The basic composition can be combined with a leuco dye alone or with a leuco dye and an image fixing system. The compositions may be employed with inert solvents, plasticizers and/or binders.

3,552,974

PHOTOGRAPHIC SILVER HALIDE EMULSIONS CONTAINING STYRYL SENSITIZING DYES

Roy Arthur Jeffreys, Hatch End, England, assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application Jan. 3, 1966, Ser. No. 518,010, now Patent No. 3,506,655, dated Apr. 14, 1970. Divided and this application Sept. 10, 1969, Ser. No. 856,808

Int. Cl. G03c *1/08*

U.S. Cl. 96—129 **16 Claims**

Styryl, hemicyanine, merocyanine, complex, oxamine and other cyanine dyes useful as sensitizers for photographic silver halide emulsions are prepared by reacting certain enamine compounds with an amino substituted aldehyde, a 2-alkylthioheterocyclic quaternary salt, a 2-(2-acetanilidovinyl) heterocyclic quaternary salt, a 2-(4-acetanilidobutadienyl) heterocyclic quaternary salt, an alkoxymethylene derivative of a ketomethylene heterocyclic compound or ethylisoformanilide.

3,552,975

HOP FLAVORS FOR MALT BEVERAGES AND THE LIKE

Leonard R. Worden and Paul H. Todd, Jr., Kalamazoo, Mich., assignors to Kalamazoo Spice Extraction Company, Kalamazoo, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of application Ser. No. 436,271, Mar. 1, 1965. This application June 11, 1969, Ser. No. 832,449

Int. Cl. C07c *49/58;* **C12c** *9/02*

U.S. Cl. 99—50.5 **8 Claims**

Process for producing 4-deoxytetrahydrohumulone from lupulone by hydrogenolysis thereof after downward adjustment of pH into the acid range, optional subsequent oxygenation to tetrahydrohumulone, and optional isomerization and reduction to produce hexahydroisohumulone; hexahydroisohumulone itself; use of hexahydroisohumulone, in beverage flavoring; beverages flavored therewith; and employment of the portion of the non-volatile non-isomerizable hop extract fraction which dissolves in water at a pH of at least 9 as starting material in the first-mentioned production processes; use of tetrahydroisohumulone in beverage flavoring, especially by isomerizing tetrahydrohumulone in the beverage; beverages and especially malt beverages so flavored.

3,552,976

METHOD OF BREWING SINGLE CUP QUANTITIES OF BEVERAGE

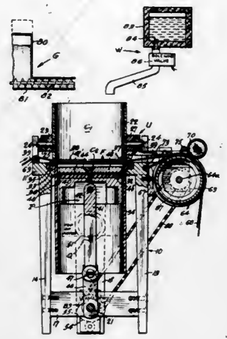
Alan M. King, Westmount, Quebec, Canada, assignor to Vendking Ltd., Greenfield Park, Quebec, Canada

Filed Nov. 3, 1966, Ser. No. 591,816

Int. Cl. A23f *1/08*

U.S. Cl. 99—71 **6 Claims**

Method for brewing beverage from hot water and ground beverage material comprising the steps of: supplying the hot water and beverage material, having a floor permeable to gas and liquid and impermeable to the material, forcing air upwardly through the floor of the chamber to agitate the water and beverage material for a predetermined time and then withdrawing the beverage down through the chamber floor.



3,552,977

MICROCRYSTALLINE STEARYL FUMARIC COMPOUNDS AS BREAD SOFTENERS AND DOUGH IMPROVERS

Edward F. Bouchard, Northport, and Carl P. Hetzel, Bellrose, N.Y., assignors to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 508,527, Nov. 18, 1965. This application Sept. 27, 1966, Ser. No. 582,240

Int. Cl. A21d *2/16*

U.S. Cl. 99—91 **10 Claims**

Microcrystalline monostearyl fumaric acid and certain of its metal salts are incorporated in yeast-leavened doughs prior to baking, in order to improve the shelf life of the baked goods.

3,552,978

METHOD FOR IMPROVING THE QUALITY OF MEAT-CONTAINING FOODS

Petrus Adam Inklaar, Diepenveen, Netherlands, assignor to Vasco Industries Corp., New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 14, 1966, Ser. No. 527,063

Claims priority, application Netherlands, Feb. 15, 1965, 6501845

Int. Cl. A23b *1/03, 1/12, 3/10*

U.S. Cl. 99—107 **19 Claims**

Meat-containing foods such as fresh cut meat, sausage, etc. are given improved qualities of moisture retention, color retention, texture and taste by contacting the animal meat content with monobasic amino acids and/or salts thereof, e.g., histidine, cysteine, glycine, lysine, or protein hydrolysis products containing such amino acids, in the form of dissolved or finely divided solid compositions thereof having a pH between 6 and 12 and an acid buffering capacity in aqueous solution. The amino acid substance may be mixed with non-toxic alkaline or acidic material giving it the required pH value, and/or with meat curing salts or compounds which sequester calcium ions. Solutions of the compositions are injected or soaked into cut meat; powders of them are rubbed on cut meat surfaces or mixed into sausage stuffings.

3,552,979
PROCESS OF COATING AND ROASTING NUTS

Norman F. Kruse, Park Forest, Ill., assignor to CPC International Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 25, 1967, Ser. No. 663,237

Int. Cl. A23b *9/00*

U.S. Cl. 99—126 4 Claims

A process for treating nut meats is disclosed. The use of a molten sorbitol rich blend of sorbitol-mannitol for preheating nut meats prior to roasting is disclosed.

3,552,980
PACKAGED FOOD PRODUCT AND PROCESS FOR MAKING SAME

Irwin Cooper, Staten Island, N.Y., and Edwin Leon Sexton, Red Bank and Daniel Melnick, Teaneck, N.J., and Marcus I. Wegner, Lanham, Md., assignors to CPC International Inc., a corporation of Delaware

Continuation-in-part of application Ser. No. 594,015, Nov. 14, 1966. This application Nov. 12, 1969, Ser. No. 876,026

Int. Cl. A23l *1/36, 1/38, 1/06*

U.S. Cl. 99—128 23 Claims

A hydrophilic spread such as peanut butter is packaged in contact with a modified sweet aqueous spread, which is virtually indistinguishable in flavor, texture, spreadability and mouthing characteristics from a conventional jelly, jam, or the like. The modified sweet aqueous spread, which can readily be prepared by modifying a suitable conventional jelly, jam, or the like, has the following composition; from about 10% to about 20% water; from about 10% to about 20% of a non-aqueous edible liquid viscosity reducing agent such as glycerine, the water and viscosity reducing agent being present in an amount of from about 25% to about 35%; from about 10% to about 30% corn syrup solids; the remainder of the spread comprising water-soluble carbohydrates, naturally-occurring fruit solids, plus, if desired, minor amounts of various optional ingredients customarily present in jellies, jams, or the like. The spread is further characterized by less than 50% of the non-aqueous portion thereof comprising carbohydrate materials having a molecular weight of less than 200. The two spreads can be packaged in contact with one another for an indefinite period of time, without any water migrating from the modified sweet aqueous spread into the hydrophilic spread, and without any crystallization of the sugars contained in the modified sweet aqueous spread.

3,552,981
FERMENTING WHEY AND PRODUCING SOY SAUCE FROM FERMENTED WHEY

Anthony J. Luksas, Chicago, Ill., assignor to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 743,014, July 8, 1968. This application May 29, 1969, Ser. No. 829,126

Int. Cl. H23c *21/00;* A23l *1/22*

U.S. Cl. 99—145 10 Claims

Whey is fermented with a lactase enzyme under aerobic conditions with agitation to obtain a ferment. To the ferment is added a hydrolyzed vegetable protein and salt and the mixture is heated to at least 150° F. After heating a fermented type soy sauce is obtained. This can be mixed with non-fermented soy sauce or additional hydrolyzed vegetable protein to give a fermented oriental type soy sauce flavor.

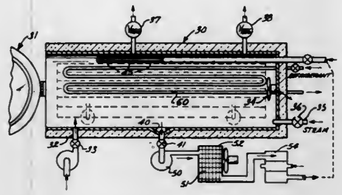
3,552,982
APPARATUS AND METHOD FOR PACKAGING FOODS

Thomas A. Savidge, 1719 13th St., Anacortes, Wash. 98221

Filed Mar. 13, 1968, Ser. No. 717,483

Int. Cl. A23l *3/10*

U.S. Cl. 99—214 4 Claims



Food products, especially meats such as chicken, and other poultry, fish, especially smoked salmon and the like, are packaged, cooked and preserved by sealing them first in a gas tight, heat resistant wrapper, subjecting to pressure greater than steam pressure at cooking temperature to collapse the wrapper tightly about the food, cooking at a temperature in excess of 230° F. while maintaining the pressure, and chilling to normal temperature while maintaining the pressure. Chilling may be accomplished indirectly, as by circulating cold water in the walls of the cooking and pressure vessel, or directly by spraying distilled or mineral-free water directly onto the packages which remain collapsed tightly about the food.

3,552,983
FOUNDRY SAND COMPOSITIONS

John V. Phillips, 248 Voss Road, Bethel Park, Pa. 15102

No Drawing. Filed July 30, 1969, Ser. No. 846,288

Int. Cl. B28b *7/34*

U.S. Cl. 106—38.35 4 Claims

A foundry mold and core sand composition is provided made up of Chromite Sand, Chromite Sand Flour, Bentonite, Cereal Binder and water which composition may be stored for extended periods of time in the mixed condition without deterioration and which may be used for patching, for the formation of intricate molds and cores and for any other use to which foundry sand composition are conventionally used.

3,552,984
GUNNABLE REFRACTORY

Jacques R. Martinet and Jim E. Allen, San Jose, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

No Drawing. Filed Dec. 18, 1967, Ser. No. 691,189

Int. Cl. C04b *35/04, 35/52*

U.S. Cl. 106—56 12 Claims

A gunnable refractory composition shows greatly enhanced sticking and reduced rebound, especially when gunned onto a hot surface, when plaster of paris is used as plasticizer in the composition. A preferred bond to achieve rapid setting is one containing both monosodium dihydrogen phosphate and potassium tripolyphosphate. A preferred composition also contains hydrated lime and carbon, for example in the form of graphite.

3,552,985
METHOD FOR MAKING ASBESTOS-CEMENT SHAPES

Frederick E. Hawkins, Ambler, Pa., assignor to Certain-Teed Products Corporation, Ardmore, Pa., a corporation of Maryland

Filed Sept. 4, 1968, Ser. No. 757,280

Int. Cl. C04b *31/08*

U.S. Cl. 106—99 4 Claims

A mixing technique for use in preparing the wetted mixture or furnish employed for extrusion of asbestos-cement shapes. The mixing technique comprises initial dry mixing of the asbestos and cement and the subsequent addition of the water in a plurality, preferably two stages, the mixing operation being continued after addition of the water of the first stage but being terminated substantially immediately upon addition of the water of the second stage. By the mixing following the first water addition the ingredients are thoroughly wetted out prior to the second water addition. By terminating the mixing substantially immediately upon completion of the second water addition the water of the second addition acts in the manner of a lubricant between the particles, thereby facilitating extrusion.

3,552,986
PRINTING AND COATING UNTREATED POLYOLEFINS

Robert W. Bassemir, Jamaica, N.Y., and Richard Dennis, East Rutherford, and Gerald I. Nass, West New York, N.J., assignors to Sun Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 24, 1967, Ser. No. 685,268

Int. Cl. C08d *1/00;* C08f *1/18, 1/24*

U.S. Cl. 117—12 17 Claims

Untreated polyolefin surfaces may be coated or printed with a solvent-free composition comprising a polymerizable polyethylenically unsaturated ester and a photoinitiator with or without a colorant.

3,552,987
METHOD FOR FABRICATING A SEAMLESS PLASTIC SURFACE HAVING AN EMBOSSED, MULTICOLORED, TEXTURED, AND PATTERNED APPEARANCE

Sam E. Smith, 121 Tillman Lane, Athens, Ga. 30601

Filed June 3, 1968, Ser. No. 733,869

Int. Cl. B44c *1/06*

U.S. Cl. 117—25 4 Claims



The present invention relates to a method and apparatus for fabricating a seamless plastic surface having an embossed multicolored, textured, and patterned appearance. The method includes applying a liquid plastic to the surface, positioning a template of a given pattern over the liquid plastic, distributing color particles onto the exposed liquid plastic within the confines of the template, removing the template, and allowing the coated surface to dry.

The template of the present invention has its outer boundary walls of greater height than the inner dividing walls. The width of the dividing wall is determined by the desired width of the pattern separation lines. Both the outer walls and the dividing walls are taped upwardly to prevent color particles from lodging on the template. The under surfaces of the template are formed either concave or with depending flanges so as to prevent the template from picking up any appreciable amount of liquid plastic when it is removed. The template is flexible so as to conform to irregularities in the surface to be coated.

3,552,988
METHOD OF MAKING TERRAZZO FLOOR COVERINGS

Mario J. Bolardi, 2501 Arlington Road, Cleveland Heights, Ohio 44118

Filed Nov. 4, 1968, Ser. No. 772,948

Int. Cl. B44c *1/06*

U.S. Cl. 117—27 3 Claims



This invention is a method of forming, in situ, a resinous terrazzo floor covering which is comprised of a mixture of aggregate and binder. In the resulting floor covering a major portion of the aggregate material is disposed at or in proximity to the wear surface which serves to extend the useful life of the covering. The method includes mixing from one-third to one-half of the total aggregate required with all of the fluid binder and spreading the mixture evenly over a preconditioned floor with a trowel; any fines or fillers to be used are also incorporated into the first layer as part of the aggregate. Immediately thereafter the remainder of the aggregate is sprinkled over the first layer. After the top layer of chips or aggregate has been sprinkled on, it is forced into the first layer as by troweling or the equivalent. Subsequently, after the resin is cured, the surface is ground smooth and because the largest concentration of chips is near the ground surface, a decorative, hard surface is exposed to foot traffic.

3,552,989
CATHODE RAY TUBE SCREEN FORMING PROCESS

Anthony V. Gallaro, Auburn, N.Y., and Bryce W. Van Noy, Columbia Crossroads, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Application Nov. 21, 1967, Ser. No. 689,227, now Patent No. 3,439,208, which is a continuation of application Ser. No. 500,085, Oct. 21, 1965. Divided and this application May 22, 1968, Ser. No. 731,036

Int. Cl. H01j *31/20*

U.S. Cl. 117—33.5 6 Claims

A process for making a luminescent screen for a cathode ray tube to provide a display of color indicia relating to fixed and moving objects in a surveillance system employing a specific rate of scan. An inner layer of a UV excitable long persistence phosphor, having visible radiant energy emission, is disposed on a screen supporting surface. A filter layer is heat formed thereover to provide a barrier to the passage of cathode rays therethrough. Disposed on the filter layer, in proximal relationship to the cathode ray source, is an outer screen layer comprising a mixture

of two electron responsive phosphors, one having short persistence and radiant energy emission in the UV region of the spectrum and the other having medium persistence and visible radiant energy emission.

3,552,990
CORRECTION MATERIAL HAVING METALLIC ADDITIVE
Victor Barouh, 935 Plum Tree Road W., Westbury, N.Y. 11590
Filed Apr. 3, 1967, Ser. No. 627,953
Int. Cl. B41m *5/02*
U.S. Cl. 117—36.1 **1 Claim**



A correction material for use in masking erroneously typed impressions comprising a sheet of paper having a coating of a pigment containing titanium dioxide and magnesium silicate together with a binder of vinyl chloride-vinyl acetate copolymer. An additive of aluminum gives unexpected results. The pigment and additive are mixed in a solution of methyl-ethyl-ketone and toluene and the binder.

3,552,991
TRANSFER PAPER
George R. E. Daniels, Boston, Mass., assignor to The Carter's Ink Company, Cambridge, Mass., a corporation of Massachusetts
No Drawing. Filed May 1, 1967, Ser. No. 634,921
Int. Cl. B41m *5/10*
U.S. Cl. 117—36.1 **3 Claims**

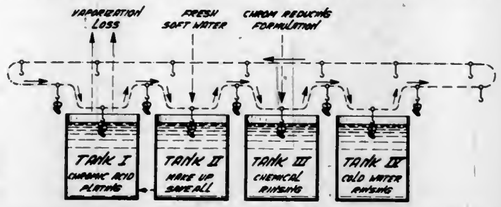
A pencil carbon paper is formed from a transfer coating comprising a vinylidene chloride polymer and polyvinyl acetate with a transfer ink having a sperm oil medium.

3,552,992
FROSTED COATINGS FOR GLASS
James M. Self and Paul C. Yates, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 29, 1967, Ser. No. 686,711
Int. Cl. C03c *17/22*
U.S. Cl. 117—54 **6 Claims**

The present invention relates to a method and composition for coating glass surfaces to produce a light diffusing coating primarily for application in frosted light bulbs. A glass surface is sprayed or otherwise coated with a colloidal silica aquasol having an ultimate particle size of less than 30 millimicrons. The glass surface is held at a temperature above 90° C. during the coating process.

3,552,993
PROCESS FOR RINSING CHROMIUM PLATED PARTS
Harry W. Buchanan, Portsmouth, Va., assignor to Virginia Chemicals Inc., Portsmouth, Va., a corporation of Maine
Filed June 9, 1969, Ser. No. 831,346
Int. Cl. B44d *1/44*
U.S. Cl. 117—62 **5 Claims**

By this process and through the use of this product one may enhance the rinsing of objects which are wetted with dilute chromic acid. A primary example would involve rinsing chromium plated objects in which the luster thereof is to be preserved and water spotting is to be avoided. By this practice, one may insure that waste rinse waters are free of contamination by the toxic hexavalent chromium ion which formerly developed in such rinsing. In at least one water rinse herein, one may combine a reducing agent with buffer and surfactant herein. This

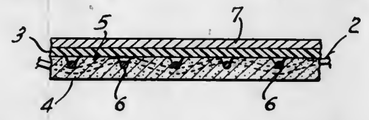


reduces chromic acid staining and develops at the same time an anti-pollutant waste rinse water. Essentially, the process may be defined as chemically rinsing objects which have been wetted with chromic acid solution, with an additive comprising:

(a) a chromic acid reducing agent
(b) a buffer to stabilize the agent and
(c) a surfactant to insure rinse wetting.

Moreover, the process has even wider utility in reducing the hexavalent chromium ions in solution from any source whatsoever, viz: "etch" bath; chromic acid plating bath, etc.

3,552,994
PRESSURE SENSITIVE ADHESIVE SHEET
Charles D. Dipner, Cranford, N.J., assignor to Johnson & Johnson, a corporation of New Jersey
Filed Mar. 2, 1967, Ser. No. 619,981
Int. Cl. A61l *15/06;* **C09j** *7/04*
U.S. Cl. 117—68.5 **4 Claims**

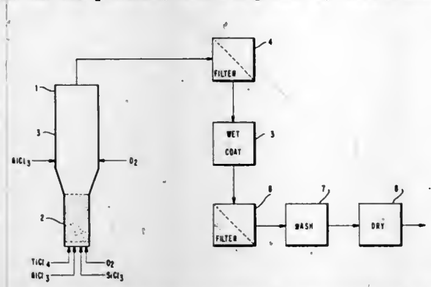


Tape constructions are disclosed in which in contrast to conventional practice, a primer for the adhesive is disposed on the opposite side of the tape backing from the adhesive, the adhesive being anchored to the primer through openings provided in the backing substrate. Thus, the primer need only adhere tenaciously to the adhesive and need not adhere to the backing substrate, thus eliminating complex primer formulation problems normally encountered. Since the primer is interposed on the outer surface of the tape backing, it may provide a base for other coatings and, when utilizing fibrous substrates, significant advantages in flexibility and conformability of the resulting tape are obtained by virtue of the elimination of the direct bond conventionally provided between these coatings and the substrate.

3,552,995
PRODUCTION OF COATED TITANIUM DIOXIDE PARTICLES
Stanley Powell, Acklam, Middlesbrough, England, assignor to British Titan Products Company Limited, Billingham, England, a corporation of England
Filed July 10, 1968, Ser. No. 743,605
Claims priority, application Great Britain, July 11, 1967, 31,870/67
Int. Cl. C09c *1/36;* **B44d** *1/16*
U.S. Cl. 117—69 **19 Claims**

A process for the production of coated metal oxide particles comprising oxidising a metal halide in the vapour phase to provide a suspension of starting metal oxide particles in a hot gas stream, introducing a different metal

halide into the gas stream to dry coat a different metal oxide on the particles, recovering the dry coated metal

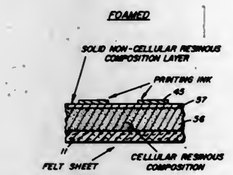


oxide particles from the gas stream and subjecting them to a wet coating process.

3,552,996
METHOD OF COATING 4-METHYL PENTENE-1 POLYMERS
Michael Cass, Bedford, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Dec. 18, 1967, Ser. No. 691,169
Claims priority, application Great Britain, Jan. 6, 1967, 974/67
Int. Cl. B32b *27/32;* **B44d** *1/14*
U.S. Cl. 117—71 **8 Claims**

The surface of a 4-methyl pentene-1 polymer is contacted with a coating solution of a coating medium in carbon tetrachloride or chloroform. The contacting may be effected at ambient temperature, particularly when using carbon tetrachloride. The coating solution may be used as a primer, a further coating being applied to the surface after treating with the primer. The coating solution can contain 10 to 50% by volume of the coating medium. Using a primer containing a thermosetting resin, the resin is only partially cured before applying the further coating.

3,552,997
PROCESS OF PREPARING CELLULAR LAMINATES HAVING A NONCELLULAR SURFACE STRATUM
William H. Powell, Livingston, Leon B. Palmer, Little Falls, and Robert P. Conger, Park Ridge, N.J., assignors, by mesne assignments, to Congoleum Industries, Inc., Kearny, N.J., a corporation of Delaware
Filed July 25, 1968, Ser. No. 747,512
Int. Cl. C08j *1/30;* **B32b** *5/20*
U.S. Cl. 117—72 **17 Claims**



This invention relates to a cellular foam laminate having a noncellular surface layer. The laminate is prepared by incorporating in a foamable resinous composition a thermodecomposable chemical blowing agent and an accelerator which is substantially insoluble in the resinous composition and which lowers the temperature at which the blowing agent decomposes. The resinous composition is then formed into a solid layer and an inhibitor is applied uniformly over the surface. The inhibitor is a compound which is at least partially soluble in the foamable resinous composition and will combine with the accelerator to prevent it from lowering the decomposition temperature of the blowing agent. The penetration of the inhibitor is controlled so that it only penetrates in effective concentration to the thickness desired for the wear layer. The composition is then carefully heated to decompose the blowing agent in contact with the accelerator without decomposing the blowing agent in the area of inhibitor penetration.

3,552,998
PROCESS FOR COATING A NONPOROUS SUBSTRATE WITH POLYVINYLIDENE CHLORIDE USING A POLYURETHANE PRECOAT AND PRODUCTS THEREOF
Philip L. Weyna, Crystal Lake, and David A. Frey, Woodstock, Ill., assignors to Morton International, Inc., Chicago, Ill., a corporation of Delaware
No Drawing. Filed Mar. 20, 1968, Ser. No. 714,448
Int. Cl. B32b *27/08;* **B44d** *1/14*
U.S. Cl. 117—76 **8 Claims**

A method of applying and adhering a film of vinylidene chloride polymers and copolymers to a nonporous substrate, and the product produced thereby. In particular, a method of bonding a film of vinylidene chloride polymer to a nonporous substrate, such as a plastic film or metal foil, and improving the strength of the bond established therebetwen by using a polyurethane precoat as a bonding medium.

3,552,999
ADHESIVE COMPOSITION AND RUBBER-POLYESTER COMPOSITION BONDED THEREWITH, COMPRISING POLYESTER - POLYURETHANE WITH ETHYLENIC UNSATURATION
Takeo Shima, Yukiharu Asami, Shunzo Ishizaki, Shoji Kawase, and Masao Yoshimura, Iwakuni-shi, Japan, assignors to Teijin Limited, Osaka, Japan, a corporation of Japan
No Drawing. Continuation of application Ser. No. 697,586, Jan. 15, 1968, which is a continuation-in-part of abandoned application Ser. No. 612,335, Jan. 30, 1967. This application July 23, 1969, Ser. No. 844,198
Claims priority, application Japan, Feb. 2, 1966, 41/6,057; May 16, 1966, 41/31,310, Nov. 9, 1966, 41/73,672; Jan. 16, 1967, 42/2,996
Int. Cl. B32b *25/08, 27/08, 27/31*
U.S. Cl. 117—76 **8 Claims**

Improvement in bonding of articles, such as tire cord, of ethylene terephthalate or ethylene 2,6-naphthalate polyester to rubbers. The article is coated with a polyester-polyurethane polymer, characterized in that the polyester segments in said polyester-polyurethane are derived from an ethylene terephthalate polyester or ethylene 2,6-naphthalate polyester and the remaining segments contain ethylenic unsaturations in an amount of at least one per 500 of the molecular weight of said polyester-polyurethane polymer. The ratio of the polyester segments in said polyester-polyurethane is ½ to 9/1 by weight. The article is then heated to a temperature above 100° C. and bonded to rubber by a method known per se. Thus, a firm bonding between the article and rubber can be obtained. The bonding can be further strengthened by the help of an adhesive agent such as a resorcinol-Formalin/latex.

3,553,000
PROCESS FOR DURABLY SETTING A DESIRED CONFIGURATION IN A CELLULOSIC MATERIAL
Carlo Piazza, Naperville, Ill., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of South Carolina
No Drawing. Continuation-in-part of application Ser. No. 493,867, Oct. 7, 1965. This application July 1, 1969, Ser. No. 838,336
Int. Cl. C08f *1/22;* **D06m** *13/40*
U.S. Cl. 117—93.1 **5 Claims**

A process for durably setting a desired configuration in a cellulosic material in which a corona polymerizable

material having functional groups reactive with cellulose hydroxy groups is applied to the material and corona polymerized. The material is then placed in the desired configuration and a reaction is initiated between the cellulose hydroxy groups and the above mentioned reactive functional groups.

3,553,001
PROCESS FOR COATING TITANIUM DIOXIDE ON SOLID MATERIALS

Hanswolfgang Kohlschutter, Helmut Getrost, Walter Reich, Hubert Rossler, and Walter Horl, Darmstadt, Germany, assignors to E. Merck A.G., Darmstadt, Germany

No Drawing. Continuation of application Ser. No. 469,328, July 2, 1965. This application Jan. 2, 1969, Ser. No. 791,861
Int. Cl. B44d *1/12*; C03c *17/22*
U.S. Cl. 117—100 14 Claims

A process for the production of coatings based on titanium dioxide, which process comprises feeding two solutions concurrently to an aqueous suspension of material to be coated having a temperature of about 50–100° C. and a pH between 0.5 and 3.5, said two solutions being

(a) an aqueous 0.001 to 0.2 molar solution of a titanium salt having a content in free acid corresponding to a normality of 0.002 to 1.5; and

(b) an aqueous 0.025 to 8 normal alkali metal base with the provision that the feeding of the alkali metal base is maintained so that it is just capable of neutralizing the acid contained in the titanium salt solution as well as the acid produced during the reaction, and that the quantity of titanium salt added per minute is kept within the order of magnitude of about 0.01 to 20×10^{-5} moles per square meter of surface to be coated.

3,553,002
THERMAL PROTECTION ABLATION SPRAY SYSTEM

William M. Haraway, Jr., Hampton, and Robert T. Magee, Newport News, Va., assignors to the United States of America as represented by the Administrator of National Aeronautics and Space Administration

Filed July 31, 1967, Ser. No. 657,742
Int. Cl. B44d *1/08*; C03c *25/02*
U.S. Cl. 117—104 5 Claims

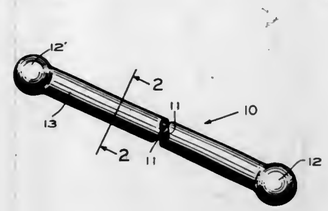


This invention relates to a method of making and applying a sprayable fiber reinforced ablation material having a variety of fragile filler ingredients therein.

3,553,003
FIBER REINFORCEMENT

Herbert E. Carlton and Erlan E. Rose, Columbus, Ohio, assignors to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware

Filed Feb. 26, 1968, Ser. No. 708,166
Int. Cl. C23c *11/00*
U.S. Cl. 117—106 8 Claims



A fiber reinforcement having knob-like end portions and comprised of an inorganic fiber covered with a chemical vapor-plated coating of greater thickness at the ends than therebetween.

3,553,004
METHOD OF GALVANIZING EMPLOYING ROLLS OF AN AIR HARDENING DIE STEEL

Paul E. Schnedler, Middletown, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

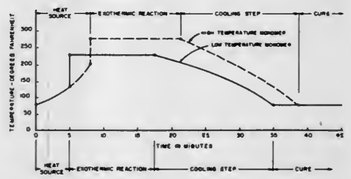
Continuation-in-part of application Ser. No. 481,865, Aug. 23, 1965. This application Feb. 10, 1969, Ser. No. 813,361
Int. Cl. C23c *1/02*
U.S. Cl. 117—114 3 Claims

Method of galvanizing ferrous strand utilizing rolls of an air hardening die steel. In galvanizing apparatus, sinker, stabilizer and exit rolls subjected to molten zinc consisting of an air hardening die steel which is wettable by molten zinc and substantially resistant to formation of iron-zinc alloy.

3,553,005
METHOD FOR PRODUCING A PLASTIC IMPREGNATED ARTICLE

Edward L. Moragne, 4723 Nenana, Houston, Tex. 77025

Continuation-in-part of application Ser. No. 633,048, Apr. 24, 1967. This application Jan. 25, 1968, Ser. No. 700,601
Int. Cl. B44d *1/28*
U.S. Cl. 117—119 6 Claims



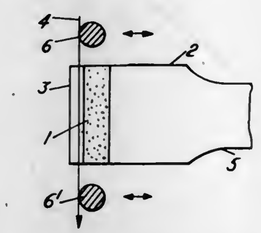
Porous material is vacuum impregnated with a treated methyl or ethyl monomer and the impregnated material is thereafter heated by an external heat source to the temperature required to initiate polymerization of the monomer. The external heat source is thereafter removed and the heat generated by the initial polymerization of the monomer is used to complete the polymerization of the remaining monomer. The quality and type of additive employed control the polymerization rate, polymerization

temperature, the amount of monomer remaining in the finished product and the time required to cure the polymerized monomer.

3,553,006
PROCESS FOR TREATING MOVING YARNS OR STRIPS WITH A LIQUID

Patrick Beau, Bron, and Michel Buzano, Villeurbanne, France, assignors to Societe Rhodiaceta, Paris, France, a French body corporate

Filed July 31, 1967, Ser. No. 657,377
Claims priority, application France, Aug. 3, 1966, 71,958
Int. Cl. D06c *29/00*
U.S. Cl. 117—120 4 Claims

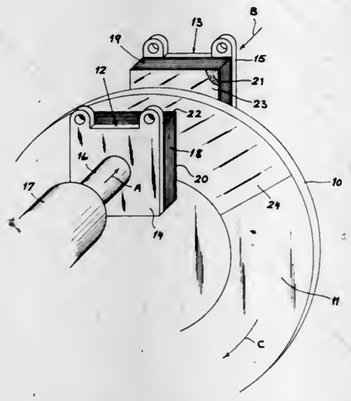


In order to treat a yarn or strip with a liquid such as an oiling or sizing composition, the liquid is passed through a porous partition so as to form a stable film on an essentially plane external surface of the partition and the yarn or strip is moved in continuous contact with the film but does not directly contact the partition.

3,553,007
METHOD OF TREATING BRAKE DISKS

Erich Hennig, Konigstein, Germany, assignor to Alfred Teves G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany

Filed Dec. 27, 1967, Ser. No. 693,908
Claims priority, application Germany, Jan. 7, 1967, T 32,929
Int. Cl. B44d *1/02*
U.S. Cl. 117—120 7 Claims



A method of treating a brake disk to render its braking faces corrosion-resistant wherein a nonmetallic corrosion-resistant coating substance is applied to the braking surface of a brakeshoe and the brakeshoe is held against the rotating brake disk to transfer the coating from the brakeshoe to the disk and causing the coating to bond to the disk, the coating having approximately the same coefficient of friction as the brake and being thermally activatable so as to transfer only upon the development of frictional heat; the coating material also has a greater adhesion to the disk surface than to the brake lining material.

3,553,008
PROCESS FOR THE PRODUCTION OF MICROPOROUS SHEET-FORM PRODUCTS PERMEABLE TO WATER VAPOUR

Artur Reischl and Harro Traubel, Leverkusen, and Bruno Zorn, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 606,562, Jan. 3, 1967. This application Feb. 28, 1969, Ser. No. 803,437
Claims priority, application Germany, Jan. 3, 1966, F 48,079
Int. Cl. B44d *1/44*; D06n *3/14*
U.S. Cl. 117—161 10 Claims

A process for producing a vapor permeable, microporous, leatherlike sheet material by dissolving a polyurethane in a first liquid (solvent) to which is added a second liquid (non-solvent) in which the polyurethane is insoluble but which is miscible with the solvent, shaping the solution on a suitable substrate and removing both the solvent and the non-solvent.

3,553,009
PROCESS OF PREPARING AN ELECTROPHOTOGRAPHIC MATERIAL

Helmut Hoegl, Grand-Lancy, Geneva, and Giacomo Barchietto, Petit-Lancy, Geneva, Switzerland, assignors to Battelle Memorial Institute, Columbus, Ohio, a corporation of Ohio

No Drawing. Continuation of application Ser. No. 451,662, Apr. 28, 1965. This application Jan. 9, 1970, Ser. No. 3,552
Int. Cl. C09d *5/24*; G03g *5/06*
U.S. Cl. 117—201 2 Claims

A process for preparing a photoconductive material which comprises contacting an organic polymeric resinous film with an impregnation agent comprising a photosensitizing material is disclosed.

3,553,010
CARBON OR GRAPHITE FORMED BODY

Ottmar Rubisch, Meitingen, near Augsburg, Germany, assignor to Sigri Elektrographit Gesellschaft mit beschrankter Haftung, Meitingen, near Augsburg, Germany, a corporation of Germany

No Drawing. Filed July 24, 1968, Ser. No. 747,129
Claims priority, application Germany, July 26, 1967, 1,615,404, 1,671,065
Int. Cl. B44d *1/20*
U.S. Cl. 117—217 5 Claims

This invention relates to a carbon or graphite formed body, and more particularly an arc electrode having a protective layer which arrests oxidation, and which includes a primary layer, applied upon a carbon or graphite formed body, and a metallic cover layer comprised essentially of aluminum over the primary layer. The primary layer is comprised of 90 to 100%, preferably 95 to 98.9%, of silicon and 0 to 10%, preferably 1.1 to 5.0%, of sodium, magnesium, calcium, boron, aluminum, titanium, zirconium, manganese, iron, carbon, nitrogen phosphorus and oxygen, separately or in combination. The cover layer is comprised of 85 to 100%, preferably 93

to 99.5%, aluminum and 0 to 15%, preferably 0.5 to 7%, sodium, magnesium, boron, silicon, phosphorus, oxygen, copper, zinc, lead, titanium, zirconium, chromium, manganese, iron, cobalt and nickel, separately or in combination.

3,553,011

COIL-FORMING INSULATED ELECTRIC WIRES AND METHOD FOR SHAPING SAID WIRES INTO COILS

Harunobu Gunji, Tokyo, Noriyoshi Ohkura, Tokorozawa-shi, and Takashi Naganuma, Tokyo, Japan, assignors to Hitachi Cable, Ltd., and Hanashima Electric Wire Co., Ltd., both of Tokyo, Japan, both corporations of Japan

No Drawing. Filed Sept. 26, 1967, Ser. No. 670,773
Claims priority, application Japan, Dec. 9, 1966, 41/80,346, 41/80,347
Int. Cl. B44c *1/36;* **H01b** *3/30*
U.S. Cl. 117—218 **12 Claims**

A coil-forming insulated electric wire coated with an insulating material prepared by dissolving in a solvent 100 parts by weight of a base comprising an alcohol-soluble copolyamide resin with or without 5–100 parts by weight of a polyurethane elastomer, and 5–75 parts by weight of a functional resin which does not react with said resin to form any substantial three-dimensional structure, and baking the coating at about 400° C.

A coil shaping method, wherein the insulated wire is coiled and immersed in an alcohol for 1–60 seconds, or coiled in an alcohol atmosphere, and baked at 100°–200° C. for 10 minutes to 5 hours.

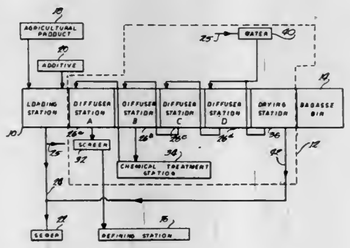
Said coil is superior to conventional coils in deformation and abrasion resistances, etc. In the present method, differing from the conventional, the braking is effected by employing only a high temperature furnace.

3,553,012

METHOD AND APPARATUS FOR PROCESSING AGRICULTURAL PRODUCTS

James F. Zievers, La Grange, and Earl A. Borre, Itasca, Ill., assignors to Industrial Filter & Pump Mfg. Co., Cicero, Ill., a corporation of Illinois

Filed Apr. 3, 1968, Ser. No. 718,609
Int. Cl. C13d *1/04, 1/12*
U.S. Cl. 127—5 **18 Claims**



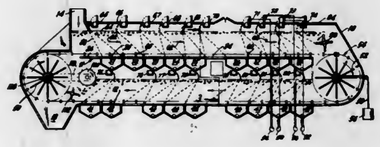
A sugar bearing agricultural product is fed to a conveyor system in controllable amounts from a hopper and transported thereon through six diffuser stations, a drying station and finally into a bagasse bin. Liquid at between 120° F. and 140° F. is pumped from a trough in the bottom of each station to a weir at the top of the previous station from which it pours onto the agricultural product to remove sugar. This liquid is purified by a defecation operation after passing through the agricultural product in the second station and then is passed through the agricultural product in the first station to remove fines formed by the defecation operation.

3,553,013

APPARATUS FOR DIFFUSION AND LIXIVIATION OF SUGAR CANE, BEET-SUGAR OR SWEET SORGHUM

Jerónimo E. Díaz-Compain, P.O. Box 370, Cathedral Station, New York, N.Y. 10025

Filed May 15, 1968, Ser. No. 729,190
Int. Cl. B01d *11/03;* **C13d** *1/10, 1/12*
U.S. Cl. 127—5 **7 Claims**



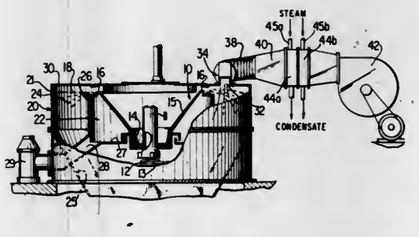
An apparatus for treating a product such as sugar beet, sugar cane, sweet sorghum and the like, comprises a closed housing the interior of which is subdivided into two or more decks having both screen and heating areas and including an endless conveyor arranged between two adjacent decks for moving pushers to transport the material to be treated over the screen and heating areas. A constituent of the product, such as a sugar from sugar beet chips, is extracted by directing liquid over the material as it is advanced and collecting the juices below the screens in tanks and thereafter recirculating it in a counterflow manner.

3,553,014

CONTINUOUS CENTRIFUGAL APPARATUS AND METHOD FOR PRODUCING SHIPPING SUGAR

Joseph B. Bange, 437 Edwards Ave., Hamilton, Ohio 45013

Filed Feb. 19, 1968, Ser. No. 706,251
Int. Cl. B01d *33/40;* **C13f** *1/06, 1/10*
U.S. Cl. 127—19 **8 Claims**



Raw sugar of shipping quality is produced from A or B massecuite in a continuous conical screen centrifugal machine with the required rate of output and keeping quality, by passing the purged sugar grains flying from the rim of the centrifugal basket into, and then from the machine with, a whirling annulus of hot air maintained constantly in downward displacement within the sugar compartment of the machine by a massive air inflow heated to a temperature above 115° F., as by means of a blower delivering air through a heat exchanger and thence through an intake substantially tangential to the head of the sugar compartment.

3,553,015

ALKALINE BATH REMOVAL OF SCALE FROM TITANIUM WORKPIECES

Charles L. Dohogne, San Pedro, Calif., assignor to Purex Corporation, Ltd., Lakewood, Calif., a corporation of California

No Drawing. Filed June 30, 1969, Ser. No. 837,950
Int. Cl. C23g *1/22*
U.S. Cl. 134—2 **5 Claims**

Titanium scale, generally comprising oxides and nitrides of titanium, may be removed from titanium workpieces by immersing the workpiece in an elevated temperature aqueous bath between about 180° F. and 200° F. containing per gallon from 3.1 to 5 pounds of the mixture consisting essentially of sodium gluconate, 8–30 weight percent, triethanolamine, 3–24 weight percent and sodium hydroxide, balance to 100 weight percent, and removing the workpiece from the bath following removal of scale from the workpiece.

3,553,016

METHOD AND COMPOSITION FOR TREATING STAINLESS STEEL

Henry W. Foelsch, Elmhurst, Ill., assignor to Lithcote Corporation, Melrose Park, Ill., a corporation of Delaware

No Drawing. Filed June 2, 1967, Ser. No. 643,041
Int. Cl. C23g *1/02*
U.S. Cl. 134—3 **10 Claims**

A composition for cleaning and treating stainless steel is disclosed comprising an aqueous solution of nitric acid and a thickening agent with or without a wetting agent. In one embodiment compositions containing nitric acid and a thickening agent of the group consisting of finely divided silica, seed flour and their mixtures and boric acid are disclosed. The method of cleaning comprises applying a coating of the composition to the surface of the metal, allowing the coating to remain for at least about one-half hour and removing the coating from the surface. The treated surface may be subjected to further passivation.

3,553,017

STORAGE BATTERY CONSTITUTING A CLOSED SYSTEM

Joseph B. Morrill, 831 E. Rosemary Road, Lake Forest, Ill. 60045

Filed Sept. 2, 1966, Ser. No. 577,003
Int. Cl. H01m *35/00*
U.S. Cl. 136—6 **8 Claims**

A storage battery constituting a closed system and having a pair of inert electrodes with electrolyte therebetween, wherein said electrolyte contains a metallic cation of intermediate oxidation state, the equilibrium of which with the corresponding metal and with a corresponding cation of higher oxidation state favors reduction of said cation of said higher oxidation state by said metal to said cation of intermediate oxidation state, said battery constituting a closed system isolating said electrodes and said electrolyte from oxidation-reduction sources external to said housing.

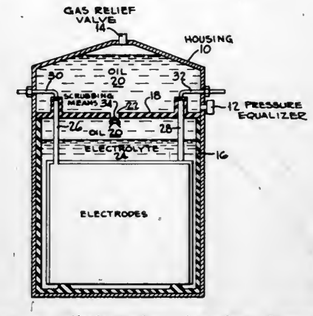
3,553,018

PRESSURE EQUALIZED DEEP SUBMERGENCE BATTERY HAVING GAS BUBBLE-ELECTROLYTE SCRUBBING MEANS BENEATH THE COVER

Earl L. Daniels, Jr., Dresher, and Elmer M. Strohlein, Philadelphia, Pa., assignors to ESB Incorporated, a corporation of Delaware

Filed Sept. 26, 1968, Ser. No. 762,792
Int. Cl. H01m *1/06*
U.S. Cl. 136—6 **2 Claims**

A pressure equalized deep submergence battery for immersion in a salt or fresh water medium comprises the combination of a battery situated within a housing filled with an electrically nonconductive liquid such as oil. The housing is pressure equalized. The cover over each cell of the battery has an opening which provides access by the oil to the electrolyte in the interior of the cell, and



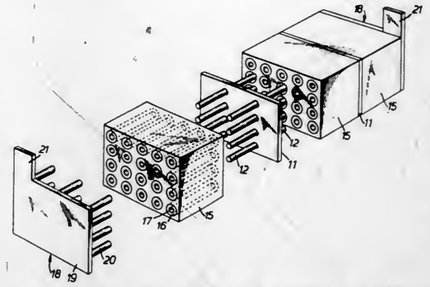
each cell has an oil-electrolyte interface beneath the cover. The battery is provided with a gas bubble-electrolyte scrubbing means in the layer of oil beneath the cell cover.

3,553,019

MULTICELL ELECTRIC STORAGE BATTERY HAVING ELECTRODES FORMED BY SPINES PROJECTING FROM THE PARTITIONS BETWEEN CELLS

Charles J. Bushrod and Patrick Ewart McKellen, Manchester, England, assignors to Electric Power Storage Limited, Manchester, England

Filed July 23, 1968, Ser. No. 746,933
Claims priority, application Great Britain, July 26, 1967, 34,460/67
Int. Cl. H01m *13/10, 35/00*
U.S. Cl. 136—6 **15 Claims**



In a multicell electric storage battery the electrodes are formed by spines projecting from the partitions between cells, into both the adjacent cells so that each spine in one cell is in direct connection with a spine in a neighbouring cell. Within each cell the spines projecting from one partition are surrounded by positive active material and those from the other partition by negative active material, received in bores in blocks of separator material and/or surrounded by individual separating sheaths.

3,553,020

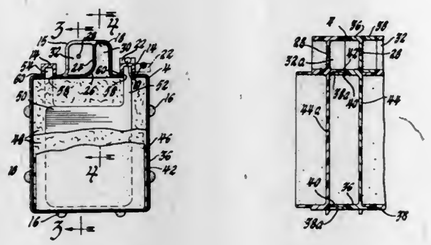
SPILL-PROOF BATTERY

Ralph L. Corbin and Richard A. Jones, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Dec. 20, 1968, Ser. No. 785,524
Int. Cl. H01m *35/04*
U.S. Cl. 136—6 **9 Claims**

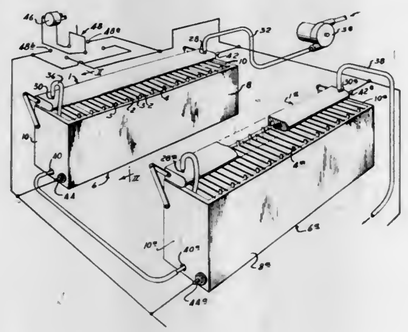
A spill-proof storage battery including a unitized assembly of serially-arranged, nested, cell containers, each

container having cell groups compressed therein. The cell groups including positive and negative plates and a separator between the plates, which separator has discrete



layers of porous materials coacting to immobilize the battery's electrolyte and prevent internal shorting between the plates.

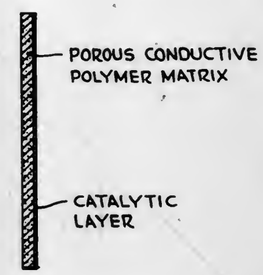
3,553,021
CHARGE BAR CONNECTION FOR BATTERY PLATES
William J. Eberle, 1013 Slocum St., Dallas, Tex. 75207
Filed Sept. 26, 1968, Ser. No. 762,703
Int. Cl. H01m *35/18*; H01r *3/04*
U.S. Cl. 136—82 **11 Claims**



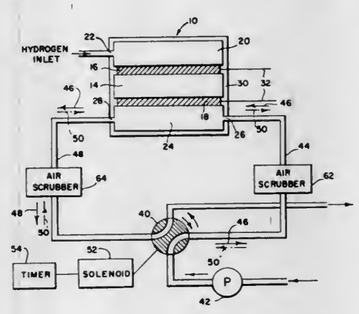
A charge bar connection for battery plates, comprising an expandable tube extending through a conductor for electrical current, whereby a connection is achieved by inflation of the tube, causing it to expand, thereby clamping outwardly extending connector lugs on the plates.

3,553,022
ELECTROCHEMICAL CELL
Derek P. Gregory, Glastonbury, Conn., assignor, by mesne assignments, to Leesona Corporation, Cranston, R.I., a corporation of Massachusetts
Filed Sept. 30, 1965, Ser. No. 491,761
Int. Cl. H01m *27/00*
U.S. Cl. 136—86 **11 Claims**

An improved lightweight electrode comprising an inert polymer in a major amount and a conductive material in a minor amount formed as a conductive matrix and having a catalytic layer on at least one surface of the conductive matrix and the disposition of the electrode in an electrochemical cell are described.



3,553,023
FUEL CELL GAS REVERSAL METHOD AND SYSTEM
Timothy Doyle, Annapolis, Md., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Oct. 24, 1966, Ser. No. 589,049
Int. Cl. H01m *27/00*
U.S. Cl. 136—86 **18 Claims**



A system for periodically reversing the direction of flow of a reactant gas through a fuel cell to prevent a local drying-out of the cell in the region adjacent the inlet end of the cell.

3,553,024
ELECTROCHEMICAL DEVICE UTILIZING AN ELECTRODE COMPRISING A CONTINUOUS PTFE FILM WHICH IS GAS PERMEABLE AND FREE FROM LIQUID ELECTROLYTE SEEPAGE
Jerry Haskel Fishman, New York, N.Y., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Feb. 20, 1967, Ser. No. 617,244
Int. Cl. H01m *13/00, 27/00*
U.S. Cl. 136—86 **19 Claims**

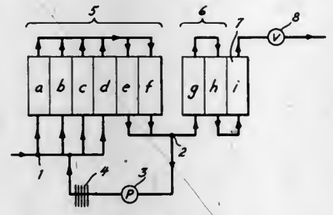
An improved electrode for use in electrochemical cells and electrochemical cells utilizing the improved electrodes are described. The improvement resides in the use of an unsintered polytetrafluoroethylene film in contradistinction to a sintered polytetrafluoroethylene film

in an electrode construciton. The unsintered polytetrafluoroethylene film is adjacent a catalyst layer. The electrodes provide enhanced electrochemical performance and stability in the electrochemical cell.

3,553,025
FUEL CELL WITH AN ELECTRODE COMPRISING BARIUM TANTALUM BRONZE OR STRONTIUM NIOBIUM BRONZE
Bernard Patrick John Bockris, Philadelphia, Pa., and Darko Sepa and Aleksandar Damjanovic, Belgrade, Yugoslavia, assignors, by mesne assignments, to Research Corporation, New York, N.Y., a non-profit corporation of New York
No Drawing. Filed Oct. 31, 1967, Ser. No. 679,569
Int. Cl. H01m *27/04*
U.S. Cl. 136—86 **2 Claims**

Barium tantalum and strontium niobium bronzes are catalysts for oxygen reduction at the cathode in fuel cells.

3,553,026
METHOD OF REMOVING WATER OF REACTION DURING FUEL CELL OPERATION
August Winsel, Kelkheim, Germany, assignor to Varta Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany
Filed Dec. 12, 1967, Ser. No. 690,008
Claims priority, application Germany, Dec. 14, 1966, V 32,551
Int. Cl. H01m *27/02*
U.S. Cl. 136—86 **16 Claims**



A process and a fuel cell battery comprising porous gas diffusion electrodes which is operated to remove water of reaction by passing one or both gas mixtures containing gaseous reactants and inert gas through a first group or groups of interconnected gas spaces of electrodes of equal polarity, dehumidifying a portion or all of the effluent gas mixture containing gaseous reactant, recycling dehumidified gas to the first group of gas spaces and passing a portion of the effluent gas from the first group of gas spaces to a second group of gas spaces connected in series for gas flow, and venting the inert gases from the last gas space in the series with a minimum loss of the reactant gases.

3,553,027
ELECTROCHEMICAL CELL WITH LEAD-CONTAINING ELECTROLYTE AND METHOD OF GENERATING ELECTRICITY
Harry G. Oswin, Chauncey, N.Y., James E. Oxley, Hollywood Hills, Calif., and Charles W. Fleischmann, Hempstead, N.Y., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Feb. 2, 1968, Ser. No. 702,657
Int. Cl. H01m *27/00*
U.S. Cl. 136—86 **10 Claims**

An improved rechargeable cell for generating electrical energy is described. The cell comprises a zinc anode, an alkaline electrolyte and a cathode. The electrolyte contains minor amounts of lead ions. The lead ions suppress dendrite formation upon charging the cell greatly increasing the cell's life.

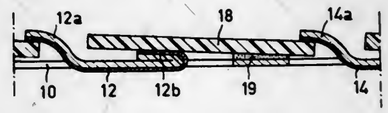
3,553,028
METHOD FOR GENERATING ELECTRICITY IN HYDRAZINE-OXYGEN FUEL CELL
Seigo Matsuda, Wayland, Mass., assignor to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
Filed Dec. 16, 1968, Ser. No. 783,886
Int. Cl. H01m *27/00*
U.S. Cl. 136—86 **7 Claims**

The performance characteristics of a hydrazine fuel cell anode can be selectively adjusted and/or controlled by introducing minor amounts of sulfur or selenium to the site of anodic activity.

3,553,029
ELECTRODE WITH CARBON LAYER AND FUEL CELL THEREWITH
Karl V. Kordesch, Lakewood, and William G. Darland, Jr., Parma, Ohio, assignors to Union Carbide Corporation, a corporation of New York
Continuation of application Ser. No. 477,173, Aug. 4, 1965. This application July 17, 1969, Ser. No. 847,508
Int. Cl. H01m *27/00*
U.S. Cl. 136—86 **5 Claims**

A fuel cell including a multilayer electrode comprising (a) a metal liquid repellent, gas permeable layer, (b) a liquid permeable, conductive layer, and (c) a middle layer containing carbon. Where the electrode is a fuel electrode, the middle layer is catalyzed with metals catalytically active in fuel cell anode reactions. The repellent can be a hydrophobic resin, such as polytetrafluoroethylene.

3,553,030
RADIATION-SENSITIVE SEMICONDUCTOR DEVICE
Jean Lebrun, Paris, France, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 12, 1968, Ser. No. 774,852
Claims priority, application France, Nov. 15, 1967, 128,265
Int. Cl. H01e *15/00*
U.S. Cl. 136—89 **10 Claims**



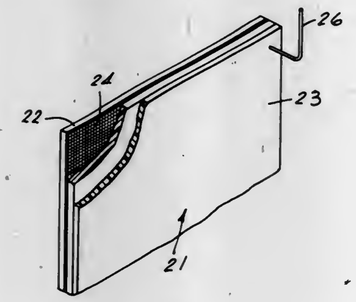
A flexible panel provided with solar batteries characterized in that it comprises a flexible insulating support having on at least one of its faces metallic zones at least some of which are cut across the thickness of the support to form tags for the electric interconnection of said radiation-sensitive elements and at least partially for fixing said elements to said support.

3,553,031
ELECTROCHEMICAL CELLS
Joseph J. Byrne, Marblehead, and David L. Williams, Reading, Mass., assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
Continuation-in-part of application Ser. No. 600,212, Dec. 8, 1966. This application Sept. 17, 1968, Ser. No. 760,321
Int. Cl. H01m *13/00, 17/00*
U.S. Cl. 136—100 **17 Claims**

An electrochemical cell characterized by a high energy density in combination with a high current density having an anode system containing lithium, a cathode system containing monohaloisocyanuric acid or dihaloisocyanuric

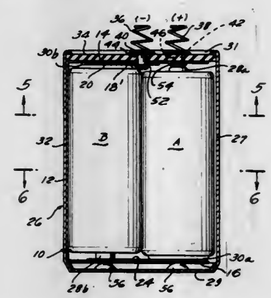
acid or trihaloisocyanuric acid or mixtures thereof and a nonaqueous electrolyte system comprising methyl formate.

3,553,032
METHOD OF MAKING A FUEL CELL ELECTRODE BY THERMAL DECOMPOSITION OF SILVER CARBONATE
Hideo Baba, Masayoshi Gando, and Yoshio Yamashita, Tokyo, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan
Original application Oct. 25, 1966, Ser. No. 589,340. Divided and this application Jan. 21, 1969, Ser. No. 810,065
Int. Cl. B29d *27/00*; H01m *13/04*
U.S. Cl. 136—120 **4 Claims**



A method of making a fuel cell electrode is disclosed by forming a pressed layer of a polymer, an electrically conductive material and silver carbonate and thermally decomposing the silver carbonate to form silver and render the layer porous.

3,553,033
PRINTED CIRCUIT LANTERN BATTERY CONSTRUCTION
Maurice Page, Lake Hiawatha, N.J., assignor to Bright Star Industries, Inc., Clifton, N.J., a corporation of Delaware
Filed Aug. 23, 1968, Ser. No. 754,897
Int. Cl. H01n *1/04*
U.S. Cl. 136—132 **13 Claims**



A printed circuit for connecting a plurality of dry cells having upper and lower terminals, the circuit being in the form of a flexible sheet of insulating material which extends along the side and across the top and bottom of the cells, conductive cell-terminal-engaging strips being provided on those portions of the sheet which extend across the top and bottom of the cells, thereby to connect the batteries in a predetermined circuit arrangement. That sheet portion extending across the top of the cells may be secured to the top cover of the battery assembly.

3,553,034
COMPOSITION AND PROCESS FOR INHIBITING CORROSION OF ZINC SURFACES
Grahame J. Harvey, Kotara South, New South Wales, and Donald I. Cameron, Merewether Heights, New South Wales, Australia, assignors to John Lysaght (Australia) Limited
No Drawing. Filed Apr. 4, 1968, Ser. No. 718,902
Claims priority, application Australia, Apr. 20, 1967, 20,591
Int. Cl. C23f *7/26*
U.S. Cl. 148—6.2 **8 Claims**

A process for providing a corrosion resistant passivating film on a zinc surface, wherein the surface is treated with an aqueous solution of a chromic acid with part of the hexavalent chromium reduced to or replaced by trivalent chromium, with the pH of the solution maintained in the range of 2.8–3.8 by the addition of a pH control agent.

3,553,035
PROCESS FOR MAKING HIGH INITIAL PERMEABILITY IRON-NICKEL ALLOYS
David A. Colling, Murrysville, and Robert G. Aspden, Export, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Filed Aug. 5, 1968, Ser. No. 749,988
Int. Cl. C22f *1/10*; H01f *1/16*
U.S. Cl. 148—120 **7 Claims**

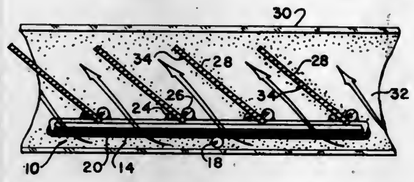
A process is described in which a nickel-iron magnetic alloy is heat treated at relatively low annealing temperatures to produce a product with a high initial permeability. Critical steps include control of the sulfur content and a heat treatment which produces, in the material, a coarse grained secondary recrystallized microstructure.

3,553,036
PRODUCTION OF DOPED ZONES IN SEMICONDUCTOR BODIES
Werner Langheinrich, Ulm (Danube), and Max Kuisl, Bellenberg, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed Oct. 11, 1966, Ser. No. 585,924
Claims priority, application Germany, Oct. 16, 1965, T 29,593
Int. Cl. H01l *7/44*
U.S. Cl. 148—187 **5 Claims**

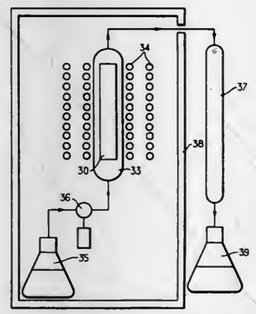
A method for producing doped zones in selected regions of one surface of a semiconductor body by the diffusion in of a selected impurity, the method being carried out by covering those regions in which doped zones are not to be formed with an oxidizing material which serves to oxidize the selected impurity so as to convert it into a nondiffusing substance, thereby permitting the selected impurity to diffuse into only the selected surface regions.

3,553,037
GAS DIFFUSION METHOD FOR FABRICATING SEMICONDUCTOR DEVICES
Harvey W. Bell III, San Jose, Calif., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Apr. 5, 1968, Ser. No. 719,174
Int. Cl. H01l *7/00, 7/44*
U.S. Cl. 148—189 **2 Claims**

A supporting device for semiconductor wafers to be used during deposition and diffusion process steps by which the wafers are oriented at an upward sloping angle in the direction of gas flow. The wafers are loaded on the devices so that the surfaces at which the semiconductor devices are being fabricated are facing downward and towards the downstream end to thereby provide an even gas flow across the face of each wafer and prevent the deposit on the desired surfaces of any contaminants which might be knocked loose from the interior surface of the reaction tube.



3,553,038
METHOD FOR FORMATION OF A TITANIUM CARBIDE SURFACE LAYER ON TITANIUM AND TITANIUM ALLOY PARTS
Martin Marcel Marie Ader, Paris, France, assignor to Centre Stephanois de Recherches Mecaniques Hydromecanique et Frottement, Saint-Etienne, France
Filed Oct. 21, 1968, Ser. No. 769,302
Int. Cl. C23c *9/10, 11/10*
U.S. Cl. 148—20.3 **19 Claims**

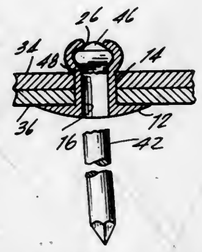


A method of formation of a layer of titanium carbide at the surface of a component of titanium or titanium alloy in which the said component is associated with a fluid medium having a base of a carbon compound such as carbon disulphide or carbon tetrachloride or a mixture of these two, and is subjected in said medium to a heat treatment of short duration by high frequency current, bringing the surface of said component to a temperature higher than 1100° C. and preferably higher than 1350° C. The invention also comprises the components or parts made by this method.

3,553,039
AMMONIUM PERCHLORATE-AMMONIUM NITRATE EXPLOSIVE COMPOSITION CONTAINING EXCESS CHLORIDE ION
Arthur G. Keenan and Robert F. Siegmund, Miami, Fla., assignors to Research Corporation, New York, N.Y., a nonprofit corporation of New York
Filed July 15, 1968, Ser. No. 744,989
Int. Cl. C06b *1/04*
U.S. Cl. 149—41 **4 Claims**

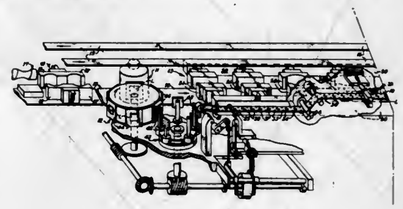
An ammonium perchlorate explosive composition comprising ammonium perchlorate, at least 5% by weight of ammonium nitrate, at least 0.003% by weight of a metal and at least one chloride anion per metal atom in excess of the ratio of chloride anion to metal atom that would be obtained by adding the metal as its chloride salt.

3,553,040
METHOD FOR SURFACE TREATMENT OF BLIND RIVETS
Walter Bell, Monroe, N.Y., assignor to Star Expansion Industries Corporation, Mountainville, N.Y., a corporation of Delaware
Filed Sept. 21, 1967, Ser. No. 669,494
Int. Cl. C23g *1/14*
U.S. Cl. 156—3 **6 Claims**



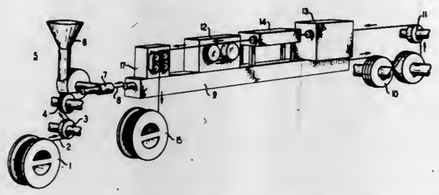
This invention is directed to a method for treating the surface of a blind rivet so that looseness and/or loss of the mandrel head contained therein will be effectively prevented. The method comprises subjecting the rivet and mandrel to contact with a cleaning solution, preferably caustic solution, for a time sufficient to render the surfaces thereof free of contaminants such as lubricants, thin films of oil, or the like. A resultingly cleaned or treated surface on rivet and mandrel is provided thereby, which mandrel when pulled through the rivet bore will cause enrobing of the rivet shank over the mandrel head in tight enveloping relationship.

3,553,041
METHOD OF AND MEANS FOR DETECTING CONDITIONS IN THE LABEL AREAS OF LABELED ARTICLES
George W. von Hofe, Millington, N.J., assignor to New Jersey Machine Corporation, Hoboken, N.J., a corporation of New Jersey
Filed Dec. 13, 1967, Ser. No. 690,271
Int. Cl. B07c *5/07*; B29c *27/22*
U.S. Cl. 156—378 **12 Claims**



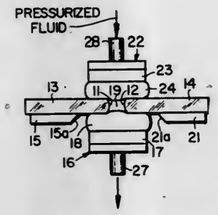
This invention is directed to the combination of means for feeding articles along a given path and for positively holding the same during such feed thereof, means for applying labels to the articles while so held, means for inspecting the label bearing areas of the labeled articles while still positively held by said feeding means, and means for exercising a supervisory action on an inspected article in the event conditions at the inspected label bearing area thereof are not in accordance with given standards.

3,553,042
TINSEL RIBBON CONDUCTOR WITH TUBED POLYMER INSULATION AND METHOD FOR MAKING SAME
Eugene R. Cocco, Baltimore, Md., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Dec. 27, 1968, Ser. No. 787,377
Int. Cl. H01b *13/14*
U.S. Cl. 156—50 6 Claims



This disclosure describes a telephone cord structure consisting of a plurality of tubed polymer insulated tinsel conductors enclosed in a polymer outer jacket. A method for producing the cord includes the steps of reheating and stretching the polymer insulation to achieve increased tensile modulus and strain memory and to gain additional conductor length.

3,553,043
METHOD OF BONDING SELECTED EDGES OF GLASS
Elmer L. Anderson, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed May 3, 1967, Ser. No. 635,901
Int. Cl. B32b *17/06*
U.S. Cl. 156—107 4 Claims

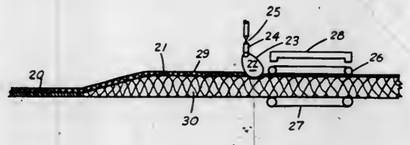


A method of bonding to each other uncured silicone rubber and glass by using flexible, resilient or elastic membranes actuated by heated pressurized fluid to press the glass and rubber into intimate contact with each other while at least partially curing the rubber by heat supplied thereto through the membranes from the heated fluid.

3,553,044
PROCESS FOR TRANSFERRING A DESIGN TO A SURFACE
John W. McDermott, Louisville, Ky., assignor to Celanese Coatings Company, a corporation of Delaware
No Drawing. Filed July 27, 1967, Ser. No. 656,362
Int. Cl. B32b *31/12*
U.S. Cl. 156—155 3 Claims

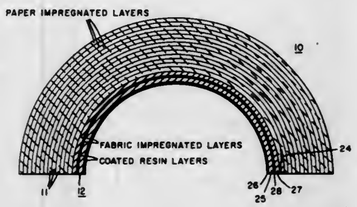
A process for incorporating a decal as an integral part of a coating surface without the decal adding any appreciable thickness or unevenness to the coating surface is disclosed which comprises applying a printed decal on a solvent soluble polymeric base and applying over the decal a clear coating containing a solvent for the base, wherein the base is dissolved by the solvent and the decal is incorporated into the clear coating.

3,553,045
METHOD FOR FORMING TWO-LAYERED EXPANDED FILAMENTOUS MAT IN WHICH ONE LAYER IS COMPRESSED TO FORM A SKIN-BACK LAYER
George J. Heh, Louisville, Ky., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Kentucky
Filed Nov. 23, 1965, Ser. No. 509,274
Int. Cl. B23b *17/04*; B32f *31/20*
U.S. Cl. 156—174 1 Claim



A method for manufacturing a laminated filamentous mats and for forming a skin-back layer of high filament density on one side of such expanded filamentous mats.

3,553,046
IMPACT RESISTANT LAMINATED SPIN BOBBIN
Thomas G. Crawford, Hampton, and William E. Kearse, Fairfax, S.C., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 2, 1968, Ser. No. 695,161
Int. Cl. B65h *81/02*
U.S. Cl. 156—184 7 Claims



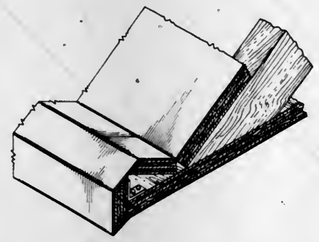
A new and improved safety inner tubular liner is incorporated into a composite laminated tubular voidless bobbin. The inner tubular liner is made up of layers of cresylic acid-phenol formaldehyde resin and cotton fabric impregnated with cresylic acid phenol formaldehyde resin. The inner tubular liner is formed by resin impregnating a cotton sheet material, coating the impregnated sheet on one side with an additional amount of the resin, advancing to the B stage, passing the sheet, resin coating face up, over a hot roll and winding onto a heated mandrel.

3,553,047
PROCESS FOR TREATING TEXTILES
George Frederick Godden, Harlow, England, assignor to Revertex Limited, London, England
No Drawing. Filed Apr. 6, 1967, Ser. No. 628,840
Claims priority, application Great Britain, Apr. 6, 1966, 15,381/66
Int. Cl. B31f *1/00*
U.S. Cl. 156—209 7 Claims

In a process for backing a textile material by the steps of compounding a rubber latex mix from a latex selected from the group consisting of natural rubber latex, synthetic rubber latex, and a blend of such latices, a mineral filler and a gelling control agent comprising zinc oxide, adding a gelling agent to the mix, applying the mix to one side of said fabric, providing a pattern in the wet mix and

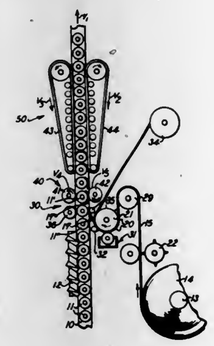
subjecting the backed fabric to heat to gel and dry the patterned mix, the improvement which comprises using a stationary applicator for providing the pattern in the mix, the viscosity of the mix being such as to substantially retain said pattern therein.

3,553,048
METHOD OF MAKING A SURFACE OVERLAY PRODUCT
Arthur S. Ryan, Kelso, Wash., assignor to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington
Filed May 29, 1967, Ser. No. 642,032
Int. Cl. B32b *3/04*
U.S. Cl. 156—216 7 Claims



A method of making an overlay product by routing portions of a flat, substantially rigid substrate material prior to application of the surface overlay, applying an overlay material of substantially the same dimensions as the substrate to the surface of the substrate having the routed-out portions, trimming away portions of the substrate material to effect a desired configuration and bending the surface overlay material to conform to the design desired.

3,553,049
METHOD OF AND APPARATUS FOR APPLYING LABELS TO BOTTLES
Edwin K. Wolff, Stockholm, N.J., assignor to New Jersey Machine Corporation, Hoboken, N.J., a corporation of New Jersey
Filed June 2, 1967, Ser. No. 643,183
Int. Cl. B65c *3/16*
U.S. Cl. 156—250 16 Claims



This invention provides means for successively attaching to bottles the successive terminal labels in a continuous web and means for then successively separating the terminal applied labels from the web by the application of force.

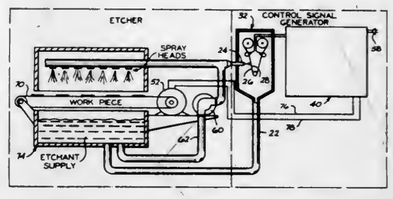
3,553,050
PROMOTING THE ADHESION OF HALOGEN-CONTAINING RESINS TO TEXTILES
James D. Harris, Macclesfield, and Colin D. Ashurst, Hale Barns, England, assignors to Hardman & Holden Limited, Lancaster, England, a British company
No Drawing. Filed June 2, 1969, Ser. No. 829,756
Claims priority, application Great Britain, June 7, 1968, 27,284/68
Int. Cl. C09j *5/06*
U.S. Cl. 156—306 9 Claims

The adhesion of halogen-containing vinyl resins to synthetic and glass fibre textiles is promoted by incorporation in the said resin of a polyhydric phenol and hexamethylene tetramine.

3,553,051
SELF-SUPPORTING ADHESIVE TAPE COMPRISING SYNTHETIC TRANS-1,4 POLYISOPRENE AND METHOD OF USING SAID TAPE
Wolfgang Warrach, Frederick Bernard Swinney, and Eric George Kent, Sarnia, Ontario, Canada, assignors to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate and body politic
No Drawing. Filed Oct. 21, 1965, Ser. No. 500,159
Claims priority, application Canada, Mar. 9, 1965, 925,114
Int. Cl. B32b *27/30*; C09j *7/02*
U.S. Cl. 156—309 4 Claims

A method of bonding materials such as fabrics, leather, wood and paper by a thermoplastic adhesive composition based on crystalline trans-1,4 polymer of a conjugated diolefine, for example, trans-1,4 polyisoprene, and optionally containing compatible resin and/or filler. This composition may be used in the form of a self-supporting adhesive tape and is adhesively activated by heat or solvent before or after contacting said materials.

3,553,052
ETCHING CONTROL DEVICE
Elmer Charles Jubb, Jr., Baltimore, Md., assignor to Louis A. Scholz, Sykesville, Md.
Filed Oct. 24, 1965, Ser. No. 504,436
Int. Cl. C23f *1/00, 1/02*
U.S. Cl. 156—345 15 Claims

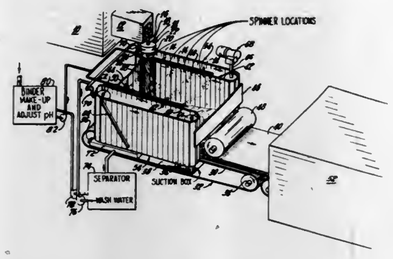


This invention pertains to improvements in controllers for automatic etching machines; for example, those that are used in etching printed circuits, and, more particularly, for the improvement in controllers comprising using a separately web-carried monitor test material with multiple sampling capability.

3,553,053
MOVABLE WALL CONSTRUCTION FOR GLASS FIBER FORMING HOODS AND THE LIKE
Arthur B. Havens, Toledo, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 694,974
Int. Cl. B29j *5/04*; E05d *15/06*
U.S. Cl. 156—371 12 Claims

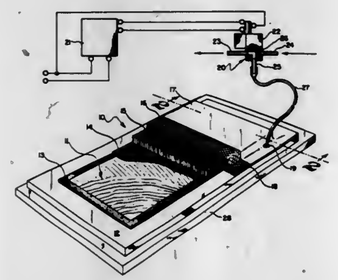
A movable wall construction made up of a plurality of vertical flights or segments which can quickly and easily

be removed from a moving and guiding structure for the segments. The invention has particular advantages for



the construction of movable side walls of forming hoods for producing glass fiber mats and the like.

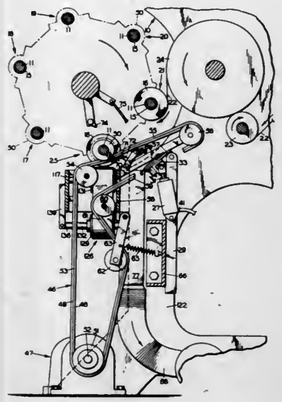
3,553,054
LAMINATED STRUCTURAL MEMBERS
Louis Maus, Tulsa, Okla., assignor to North American Rockwell Corporation, a corporation of Delaware
Original application Oct. 15, 1968, Ser. No. 767,756. Divided and this application Jan. 12, 1970, Ser. No. 2,230
Int. Cl. B32b *31/20*; B29c *17/06*
U.S. Cl. 156—382 **5 Claims**



Apparatus and methods are disclosed for vacuum-bag manufacture of thermosetting resin-impregnated fabric layers into forms suitable for structural member applications. The resulting laminated assembly develops edgewise compressive strength, inter-laminar shear strength, structural modulus, and density properties that are significantly improved over the like properties developed in comparable laminates made by known vacuum-bag apparatus and manufacturing methods.

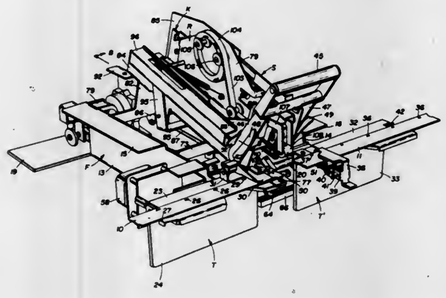
3,553,055
APPARATUS FOR ADHERING AN OUTER TAIL PORTION OF A WOUND ROLL TO AN UNDERLYING CONVOLUTION
Stanley Adolf Janik, Richmond, British Columbia, Canada, assignor to Crown Zellerbach Canada Limited, Vancouver, British Columbia, Canada, a corporation of British Columbia
Filed Feb. 6, 1968, Ser. No. 703,400
Int. Cl. B65c *1/04*
U.S. Cl. 156—450 **10 Claims**

After a wound tissue roll leaves a roll-forming station in a winding machine, the roll is rotated about its own longitudinal axis in an unwinding direction to extend a tail portion of the roll a predetermined distance into a vacuum box where the tail is temporarily halted while an adhesive applicator is moved along a trackway to apply adhesive to an exposed portion of the roll along a



line parallel to the longitudinal axis of the roll. The tail is then completely rewound on the roll to sandwich the adhesive between the tail and an underlying convolution, and the roll is removed from the winding machine.

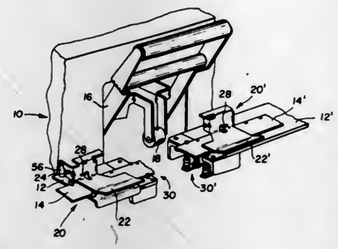
3,553,056
STRIP SPLICING DEVICE
Robert E. Cole and Donald J. Arganbright, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 23, 1967, Ser. No. 662,685
Int. Cl. B31f *5/00*; G03d *15/04*
U.S. Cl. 156—505 **13 Claims**



A semi-automatic device in which strips to be spliced are positioned by hand and the ends of the strips are cut off and perforated by a hand-operated cutoff handle is provided. Release of the cutoff handle initiates the automatic cycle in which the ends of the strips are brought into abutment and a splicing tape crimped, fed, applied and cut to complete the splice. The support tables for the strips are moved by means of a motor and slip-clutch arrangement to position the film ends and initiate the taping operation. By means of a slip clutch the tables are held in positive engagement during the entire taping operation. This avoids the necessity of turning the motor off

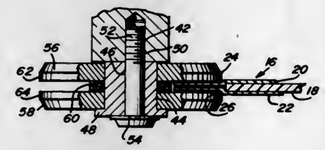
and on again within a second or so and protects the motor from burning out during the application of the tape.

3,553,057
FILM CLAMPING AND RETAINING DEVICE
Robert J. Blackman, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a company of New Jersey
Filed Sept. 27, 1968, Ser. No. 763,231
Int. Cl. B31f *5/00*
U.S. Cl. 156—505 **10 Claims**



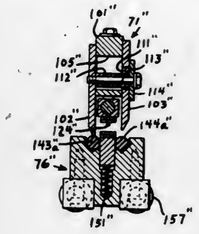
A film clamping and retaining device for a film splicer or the like in which film retaining pins are movable from a normal inoperative position to a film loading position. After a film strip is loaded in the splicer, the film retaining pins are movable to a film retaining position for releasably holding the film strip to the splicer table. The pins are released for movement to their normal inoperative position by the action of a pressure roller as it rolls over a tape placed on the film end to secure the tape thereto.

3,553,058
LAMINATED FILM GUIDE MECHANISM
Paul J. Good, Springwater, N.Y., assignor to D-S Industries, Inc., a corporation of New York
Filed Nov. 9, 1967, Ser. No. 681,767
Int. Cl. B32b *31/20*; B65h *17/44*; F16h *7/18*
U.S. Cl. 156—510 **10 Claims**



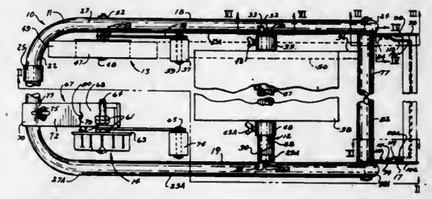
A guiding structure for use in trimming the side edge portions of an elongated panel assembly consisting of a center sheet laminated between upper and lower sheets of laminating material including opposite side edge portions extending outwardly of the side edges of the center sheet and pressed and secured tightly together so as to form, slightly outwardly of the side edges of the center sheet, upper and lower shoulders extending along and facing outwardly of both side edge portions of the panel assembly, the guide structure including opposing portions each consisting of a pair of axially spaced discs of equal diameter journalled for rotation from a suitable support member in a manner such that the axis of rotation of each pair of discs may be shifted along a path extending between the pairs of discs and the peripheral edges of each pair of discs being rollingly engaged with the corresponding shoulders with the adjacent extended edge portions of the upper and lower sheets of laminating material received between the discs of the corresponding pair of discs.

3,553,059
HEAT SEALING APPARATUS
Roger H. Stohlquist, Rockford, Ill., assignor to Anderson Bros. Mfg. Co., Rockford, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 618,739, Feb. 27, 1967. This application Dec. 4, 1968, Ser. No. 780,994
Int. Cl. B32b *31/08*; B29c *27/06*
U.S. Cl. 156—515 **19 Claims**



Articles, either singly or in groups, are wrapped by advancing the articles along a path into one side of a curtain of the wrapping material to draw the material across the lead and at least partially along the top and bottom sides of the article. Overlapping portions of the curtain are then brought together closely adjacent the trial side of the article, and the overlapping portions are severed and sealed at opposite sides of the severance by jaws. The jaws have an intermediate sealing jaw and spaced clamping jaws at opposite sides of the sealing jaw supported for limited movement relative to the sealing jaw and relative to each other.

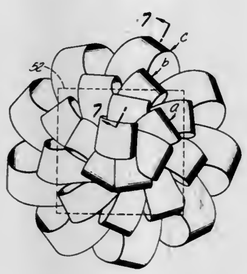
3,553,060
TUBULAR APRON TAPER
Edward Waltz, Grand Rapids, Mich., assignor to The E. O. Bulman Manufacturing Company, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Feb. 9, 1967, Ser. No. 614,874
Int. Cl. B32b *31/08, 31/18*
U.S. Cl. 156—516 **7 Claims**



The apron taper has a frame structure upon which a roll of sheet material is rotatably supported so that said material can be unwound from the roll and passed over

a cutting edge mounted on the frame for separation of a portion of the material from the remainder of the roll. One or more rolls of tape having adhesive material thereon are rotatably supported upon the frame and guided to engage the sheet material, preferably adjacent an edge thereof, so that the tape and sheet material are caused to adhere to each other automatically as the sheet material is removed from its roll.

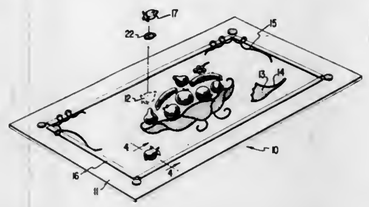
3,553,061
PRE-ASSEMBLED DECORATIVE PRODUCTS WITH RIBBON LOOPS
William S. West, San Marino, Calif., assignor to West, Inc., Farmington, N. Mex., a corporation of New Mexico
Filed Oct. 2, 1967, Ser. No. 672,120
Int. Cl. D04d *7/10*
U.S. Cl. 161—10 **5 Claims**



Apparatus for fabricating a pre-assembled decorative trimming article in which a ribbon is spirally wound around a composite mandrel structure to form successive loops, such mandrel having an elongate fixed tape guide member in parallel relation with a spaced rotatable feed screw, an adhesive tape being fed along the guide member in a position to be engaged by the successive ribbon loops, these loops after being thus secured together being then passed between a pair of pressing rollers by which they are creased along an edge of the tape so as to continuously produce a pre-assembled trimming as an article of manufacture which can be utilized per se for wrapping around a support to provide a decorative trim with the ribbon loops extending outwardly from the tape, or if desired utilized as a basic component for fabricating a unique composite decorative article such as a rosette or the like in which, for example, concentric rings of the pre-assembled trimming material are adhesively secured adjacent the loop creases to a base member in such a manner that the tape forms an upstanding collar, and the loops will extend in an upstanding position with their outer ends in spaced relation.

3,553,062
ORNAMENTAL RELIEF PLAQUE INCORPORATING APPLIQUE MATERIAL AND METHOD OF MAKING THE SAME
Samuel D. Berlin, 8219 Marcie Drive, Stevenson, Md. 21153
Filed Oct. 31, 1967, Ser. No. 679,426
Int. Cl. B44f *7/00*
U.S. Cl. 161—18 **3 Claims**

A relief plaque in kit form including a panel board having a design thereon, a plurality of applique material pieces of the same general shape as the designs on the board and having coded indicia to indicate a discrete design area of the board to which each applique piece is to be applied. A sheet of padding material is provided along with a template for the purpose of cutting the padding into shapes corresponding to the applique pieces,

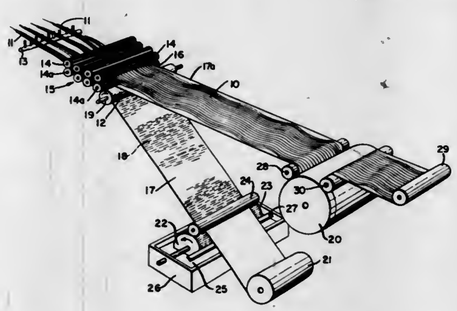


the padding adapted to be interposed between the pieces and the panel board to achieve a three-dimensional effect.

3,553,063
STRENGTHENING CERAMIC ARTICLES
John E. Megles, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
No Drawing. Filed Dec. 11, 1967, Ser. No. 689,338
Int. Cl. C03c *17/00*
U.S. Cl. 161—43 **4 Claims**

This invention relates to the chemical strengthening of sintered ceramic articles of high alumina compositions. The process of the invention comprises contacting a sintered article consisting essentially, by weight, of about 50–70% alumina and 26–50% nepheline syenite, the total of the alumina and nepheline syenite constituting about 88–100% of the article, 0–10% kaolinitic clay, and 0–2% of a mineralizer, with an external source of potassium ions such that the potassium ions diffuse into a surface layer within the article, replacing sodium ions originally present therein, and thereby causing compressive stresses to be set up in the surface layer resulting in an increase in the mechanical strength of the article which, in some instances, is more than twice that of the untreated article.

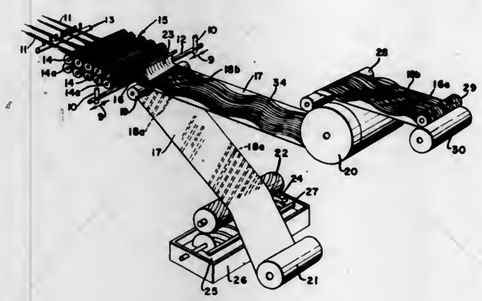
3,553,064
HIGHLY-DRAFTED, SINUSOIDAL PATTERNED NONWOVEN FABRIC LAMINATES AND METHOD OF MAKING SAME
Ronald H. Wideman, Menasha, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed May 20, 1966, Ser. No. 551,605
Int. Cl. B32b *5/12, 7/14;* **D04h** *1/74*
U.S. Cl. 161—59 **15 Claims**



A nonwoven fabric comprising at least one layer of highly-drafted, staple length fibers extended to substantially their full length and arranged in a sinusoidal pattern with the fibers embedded in and bonded by a spaced patterned layer of flexible adhesive to at least one layer

of lightweight cellulose wadding and the method of making same are disclosed. Also disclosed is the method and product resulting from laminating two such nonwoven fabrics together wtih the fiber layers facing one another and with the sinusoidal pattern of fibers in the opposing layers out of phase with one another.

3,553,065
HIGHLY-DRAFTED SINUSOIDAL PATTERNED NONWOVEN FABRIC AND METHOD OF MAKING
Robert J. Stumpf, Appleton, and William L. Mowers, Oshkosh, Wis., assignors to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed May 27, 1966, Ser. No. 553,483
Int. Cl. B32b *5/12, 7/14;* **D04h** *1/74*
U.S. Cl. 161—59 **14 Claims**



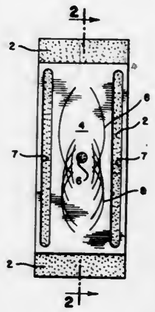
An adhesively-bonded nonwoven fabric comprising a web of highly-drafted, individually parallelized fibers arranged in a sinusoidal pattern and bonded by an open pattern of flexible adhesive and the method of making the fabric are disclosed. The method includes the use of a release coated carrier sheet on which the open pattern of adhesive is printed prior to placing the highly-drafted web of fibers in a sinusoidal pattern on the surface of the adhesive while maintaining the fibers under tension. The fibers are embedded in the adhesive on the carrier sheet and the bonded web is stripped from the carrier sheet. Also disclosed is the method and product resulting from laminating two such nonwoven fabrics together with the fiber webs facing one another and with the sinusoidal pattern of fibers in the opposing web out of phase with one another.

3,553,066
FILLED CUSHION MATELASSÉ FABRIC AND METHOD
Stanley J. Cavalier, Larry B. Raper, and Harold B. Walker, Rocky Mount, N.C.; said Raper and Walker assignors to Burlington Industries, Inc., a corporation of Delaware
Filed Sept. 5, 1967, Ser. No. 665,598
Int. Cl. D03d *3/08, 11/02*
U.S. Cl. 161—73 **10 Claims**



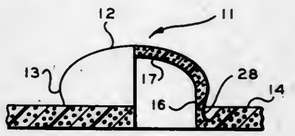
This invention relates to a matelassé, upholstery fabric and to the methods of producing an improved fabric of this type having superior design appearance and physical characteristics. A preferred form of the fabric is characterized by a ground of heat shrinkable yarns into which the face fabric is tied at selected points to form irregular pockets. The non-uniform and randomly spaced pockets as well as uniform parallel pleats between the face fabric and the ground fabric are filled with an elastomeric material, which is injected into the pockets or pleats through a foraminous backing.

3,553,067
LAMINATED SHEET FOR EVALUATING DIFFUSIVE REACTIONS
James L. Dwyer, Lincoln, Richard A. Paine, Bedford, and Charles W. Souza, Pinehurst, Mass., assignors to Millipore Corporation, Bedford, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 626,323, Mar. 27, 1967. This application Mar. 25, 1968, Ser. No. 715,647
Int. Cl. B01d *13/02;* **B32b** *3/10, 5/18*
U.S. Cl. 161—113 **10 Claims**



A laminated sheet consisting of a base sheet of stiff but flexible plastic, a porous plastic membrane sheet which has a multiplicity of micro-pores bonded to the base sheet, and a thin imperable plastic sheet similarly bonded to the other side of the porous plastic sheet.

3,553,068
FOAMED CUSHIONING MATERIAL
Harold D. Coale, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 11, 1967, Ser. No. 674,610
Int. Cl. B32b *1/00, 3/00*
U.S. Cl. 161—125 **7 Claims**

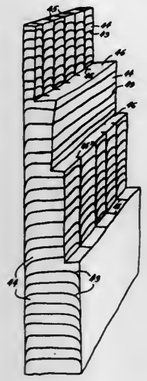


A cushioning material is produced by forming a softened sheet of foamed thermoplastic material in a forming press to produce hollow, raised projections of the foamed material on the sheet.

3,553,069
SYNTHETIC POLYMER SHEET
Ole-Bendt Rasmussen, 24 Rugmarken, Farum, Denmark
Filed Oct. 3, 1967, Ser. No. 672,562
Claims priority, application Great Britain, Oct. 5, 1966, 44,525/66
Int. Cl. B29c *27/02;* **B32b** *3/02, 5/18*
U.S. Cl. 16—143 **7 Claims**

A synthetic sheet including at least two polymer materials forming separate phases interspersed with each

other in the sheet, at least one of said phases being in the form of lamellae traversing a substantial part of the thick-



ness of said sheet and being interconnected by filaments embedded in incisions formed in the edges thereof.

3,553,070

OPEN SCRIM-LIKE NETWORK FOAM PRODUCT

Arnold F. Sparks, Holcomb, N.Y., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Mar. 21, 1968, Ser. No. 714,809
Int. Cl. B32b 5/20, 7/02
U.S. Cl. 161—160 6 Claims

The present invention relates to tubular thermoplastic film laminates comprising at least two layers of thermoplastic film, the exterior layer being characterized in that it is formed of foamed thermoplastic and the interior layer being characterized by being formed from non-foam thermoplastic. The novel laminar structures of the present invention are further characterized by having been formed by the continuous extrusion of the laminar structures through a single annular die orifice.

3,553,071

NOVEL PRINTING SHEET MATERIAL

John A. Willett, Wellesley, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed Aug. 19, 1966, Ser. No. 573,636
Int. Cl. B29c 19/04; B32b 27/08
U.S. Cl. 161—162 7 Claims



A printing plate blank having a differential dielectric loss factor through its thickness may be formed into a printing plate by dielectric heating so that the high dielectric loss zone melts and is molded to the type form while the low dielectric loss zone remains dimensionally stable. A grinding layer may be applied to the side opposite the printing face to enable precise grinding of the plate to correct dimensions.

3,553,072

VIBRATION DAMPED SANDWICH SYSTEMS

Hermann Oberst, Hofheim, Taunus, Joachim Ebigt and Günther Duve, Frankfurt am Main, and Alfred Schommer, Bad Soden, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

Filed Nov. 18, 1968, Ser. No. 776,631
Claims priority, application Germany, Dec. 5, 1967, 1,700,121
Int. Cl. B32b 15/08; C08f 19/02
U.S. Cl. 161—165 4 Claims

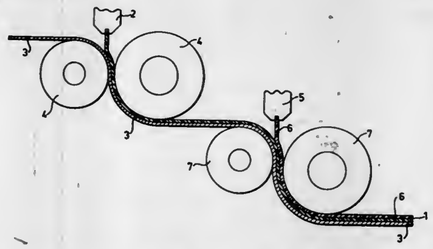
A vibration damped sandwich system comprising two hard plates and interposed between the plates a vibration damping interlayer comprising a graft polymer of a mixture of 66% by weight of styrene and 34% by weight of acroylonitrile on copolymers of 10 to 30% by weight of vinyl acetate and 90 to 70% by weight of ethylene.

3,553,073

PACKAGING MATERIAL INCLUDING AT LEAST THREE LAMINATION LAYERS OF MATERIALS HAVING DIFFERENT VISCOSITIES, AND A PACKAGE PRODUCED THEREFROM

Hans Anders Rausing and Thorsten Lennartsson Lindh, Lund, Sweden, assignors to AB Tetra Pak, Lund, Sweden, a Swedish company

Filed Feb. 10, 1966, Ser. No. 526,471
Claims priority, application Switzerland, Feb. 23, 1965, 2,436/65
Int. Cl. B32b 7/02, 27/08, 27/10
U.S. Cl. 161—166 3 Claims



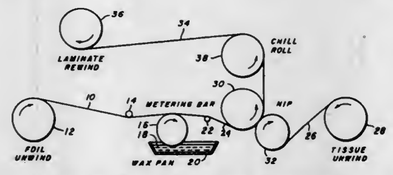
A laminated packaging material is disclosed comprising an outer layer of paper, an inner heat sealable layer of polyethylene, and an intermediate layer of polypropylene.

3,553,074

COIL OF SHEET MATERIAL WAX-TISSUE LAMINATE IN WHICH A LUBRICANT IN THE WAX MIGRATES THROUGH THE TISSUE TO BE SHEET MATERIAL

James E. Knepp, Pittsburgh, Pa., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 13, 1968, Ser. No. 712,818
Int. Cl. B32b 15/12, 31/06
U.S. Cl. 161—223 6 Claims



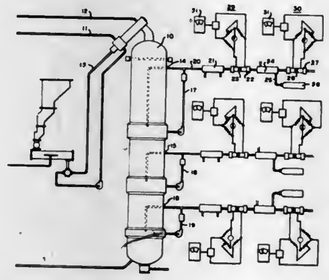
Texturing the surface of the sheet material-wax-tissue laminate by adding a lubricant to the wax which is coated on the sheet material prior to laminating with the tissue. The lubricant, which is preferably liquid at room temperature, migrates through the tissue layer to the surface of the layer of sheet material which becomes adjacent thereto when the laminate is coiled.

3,553,075

METHOD FOR CONTROLLING THE HYDROXIDE ION CONCENTRATION IN PULP DIGESTION LIQUOR

Hubert M. Rivers, Upper St. Clair Township, Allegheny County, Pa., assignor to Calgon Corporation

Filed Apr. 1, 1968, Ser. No. 717,564
Int. Cl. D21c 7/12
U.S. Cl. 162—49 11 Claims



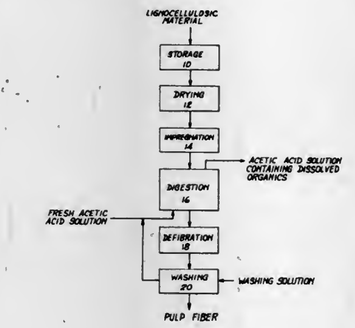
A method is provided for automatically controlling the the hydroxide concentration of pulp digester liquor by determining the differential conductivity of the liquor at spaced stages in the cooking process and adjusting the hydroxide concentration in the bath from a previously prepared curve of conductivity differences versus hydroxide ion concentration.

3,553,076

NON-CATALYTIC PROCESS FOR THE PRODUCTION OF CELLULOSE FROM LIGNOCELLULOSIC MATERIALS USING ACETIC ACID

Gerrit G. De Haas and Charles J. Lang, Longview, Wash., assignors to Weyerhaeuser Company, Tacoma, Wash., a corporation of Washington

Filed Jan. 22, 1968, Ser. No. 699,580
Int. Cl. D21c 3/20
U.S. Cl. 162—76 13 Claims



A non-catalytic process for producing cellulose from lignocellulosic materials by delignifying the lignocellulosic materials with a solution containing at least 50% by weight of acetic acid at a temperature between 150° C. and 205° C. Preferably the process is carried out on a continuous basis with countercurrent contact of the acetic acid solution and the lignocellulosic material.

3,553,077

ASBESTOS-PORTLAND CEMENT PIPES WITH MONOETHANOLAMINES, DIETHANOLAMINES, AND TRIETHANOLAMINES AS QUICK-SETTING AGENTS

Stephen Mark Quint, Basking Ridge, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Mar. 31, 1967, Ser. No. 627,325
Int. Cl. C04b 13/26, 15/16
U.S. Cl. 162—154 10 Claims

An improvment in the formation of asbestos-portland hydraulic cement pipe by means of the common wet-forming procedure wherein the ingredients of the product, including portland cement as the binder phase, are collected in the form of a thin wet sheet of furnish from a dilute water suspension thereof, and the thin wet sheet of furnish ingredients is superimposed in layers upon itself into a laminated body such as a section of pipe by convolutely winding and accumulating it about itself while consolidating the superimposed layers into an integrated mass; the improvement constituting reducing slumping or sag in newly formed and yet incompletely hydration set pipe products of such a wet-forming procedure by means of the application of a minor amount of an aqueous solution of alkanol amine from the group of monoethanolamines, diethanolamines, and triethanolamines, to the thin wet sheet of furnish ingredients containing portland cement intermediate its formation by collection of the furnish ingredients from the aqueous suspension and its superimpositioning into a laminated body by convolute winding, accumulating and consolidating into an integrated mass.

3,553,078

PROCESS FOR MANUFACTURE OF NONWOVEN FABRICS OR PAPER BY WET SIEVING OF VISCOSE FIBERS

Yoshikazu Aoki, Otsu, and Teruji Kamei, Akira Hayami, and Masahiro Kitano, Kyoto, Japan, assignors to Tachikawa Research Institute Higashiyama-ku, Kyoto, Japan, a corporation of Japan

No Drawing. Filed Apr. 5, 1968, Ser. No. 719,247
Claims priority, application Japan, Apr. 26, 1967, 42/26,267
Int. Cl. D21f 11/00
U.S. Cl. 162—157 3 Claims

Staple fibers formed from stable incompletely regenerated cellulose filaments are dispersed in water and thereafter formed into paper or a nonwoven fabric. The filaments, which have a primary swelling value of from 1900 to 10,000, are formed by the viscose process wherein viscose is spun through a spinneret into a coagulating bath of 8–18 g./l. sulfuric acid, 0.2–1.0 g./l. zinc sulfate and 20–100 g./l. sodium sulfate at a temperature of from 15–35° C.

3,553,079

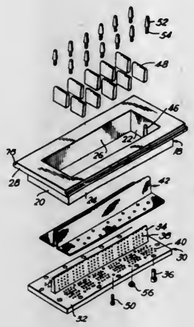
MOLDING APPARATUS

Lloyd Hornbostel, Jr., Beloit, Wis., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 7, 1967, Ser. No. 688,873
Int. Cl. D21j 7/00
U.S. Cl. 162—383 9 Claims

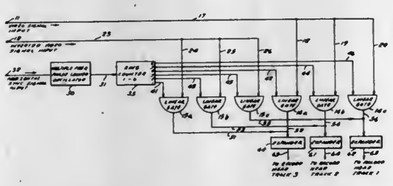
In an apparatus for forming molded pulp articles, a forming mold having at least a partial foraminous forming surface is adapted to mold an article consisting of a plurality of planting units or blocks separated at one end

and joined to one another by a common web of pulp material at the other end, said molded article having a low-



bulk density and porosity adapting it to be used as a plant growth medium.

3,553,080
CIRCUITRY FOR RECORDING AND REPRODUCING VIDEO SIGNAL INFORMATION AS MULTIPLE LIMITED BANDWIDTH SIGNALS
Robert J. Hammond, Stevensville, Mich., assignor to V-M Corporation, Benton Harbor, Mich., a corporation of Michigan
Filed Feb. 21, 1968, Ser. No. 707,030
Int. Cl. H04n *5/78, 7/06, 7/12*
U.S. Cl. 178—6 **16 Claims**

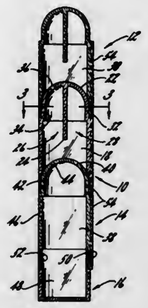


This invention relates to signal circuitry and apparatus particularly adapted for providing an intermediate recording of video signal information which may be achieved in various ways, such as electromagnetically, and which under normal conditions because of band width particularly normally could not be accurately recorded due to limitations in the recording element. In its broadest form, the invention provides for translating video signal information into a series of pulses which then are expanded prior to being recorded and subsequent to recording are reconverted into electrical signaling energy from which the video information is later produced.

3,553,081
PROCESS OF MICROBIOLOGICAL OXIDATION
Charles T. Goodhue and James R. Schaeffer, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed May 8, 1968, Ser. No. 727,726
Int. Cl. C12d *1/02*
U.S. Cl. 195—30 **9 Claims**

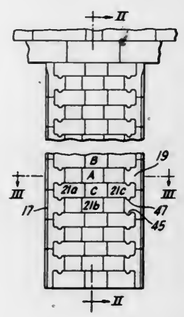
L(+)-beta-hydroxyalkanoic acids can be obtained by subjecting alkanoic acids to the oxidizing activity of one or more of the microorganisms *Pseudomonas putida, Pseudomonas fluorescens, Arthrobacter oxydans,* and *Arthrobacter crystallopietes.*

3,553,082
METHOD AND MEANS FOR DETECTING COLIFORM BACTERIA IN WATER
Clifford C. Hach, Ames, Iowa, assignor to Hach Chemical Company, Ames, Iowa, a corporation of Iowa
Filed Sept. 13, 1967, Ser. No. 667,578
Int. Cl. C12k *1/00;* **G01n** *33/18*
U.S. Cl. 195—127 **10 Claims**



A method and means for determining the presence or absence of specific bacteria such as coliform bacteria in a test sample by contacting a first nutrient medium such as a lactose broth in a first environment with a liquid sample, maintaining a second nutrient medium such as a brilliant green lactose bile broth solution in a second environment in contact with the test sample and the first nutrient medium so that a predetermined rate of transfer takes place and observing the environments to determine whether any physical or chemical change takes place, characteristic of the bacteria under determination, such as gas formation.

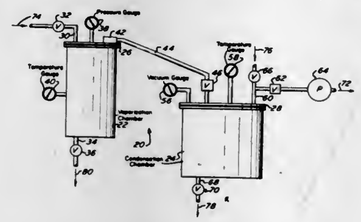
3,553,083
DOOR JAMB STRUCTURE FOR COKE OVEN BATTERY
Linwood G. Tucker, Pittsburgh, and Earl W. Simpson, Bethel Park, Pa., assignors to Koppers Company, Inc., a corporation of Delaware
Filed May 28, 1969, Ser. No. 828,673
Int. Cl. C10b *29/02*
U.S. Cl. 202—223 **9 Claims**



A coke oven door jamb structure in accordance with the invention includes a pair of spaced apart end jamb bricks arranged in vertical courses. Between the end jamb bricks are vertically arranged courses of intermediary bricks; each course including a plurality of such bricks. The end jamb bricks are of equal size and shape except at the top

and bottom of the heating wall. A stretcher brick and two corner bricks in each horizontal course of vertically arranged courses coact with the end jamb and intermediary bricks to form the end heating flue wall.

3,553,084
VACUUM DISTILLATION PROCESS AND APPARATUS WITH DIRECT AIR CONTACT CONDENSING FOR DESALINATION OF WATER
Jacob J. Creskoff, Wynnewood, Pa., assignor to Vacuum Concrete Corporation of America, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 15, 1968, Ser. No. 713,348
Int. Cl. B10d *3/10*
U.S. Cl. 203—2 **6 Claims**



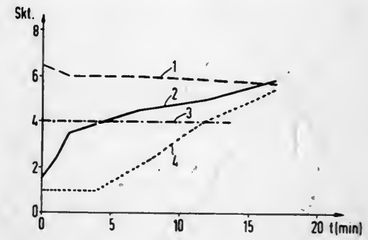
A method or apparatus of desalinating water which comprises heating saline water; providing the heated saline water in a first chamber; connecting the first chamber to a second chamber which is at a reduced pressure; the reduced pressure from said second chamber causing increased boiling of said heated saline water in said first chamber so that the saline water vaporizes rapidly. The vapor is drawn into said chamber by the partial vacuum; the first chamber and the second chamber are disconnected when the second chamber reaches a predetermined temperature and atmospheric pressure is then applied to the second chamber to condense the vapor-steam content of the second chamber. The vapor is immediately condensed thereby producing an aerated desalinated water in the second chamber.

3,553,085
METHOD OF PREPARING SURFACES OF PLASTIC FOR ELECTRO-DEPOSITION
Kurt Heymann, Berlin, Germany, assignor to Schering AG, Berlin and Bergkamen, Germany
No Drawing. Filed Nov. 28, 1967, Ser. No. 686,310
Int. Cl. C23b *5/60*
U.S. Cl. 204—30 **3 Claims**

The specification discloses a method and compositions for preparing plastic surfaces to receive a metallic deposit. A solution comprising a noble metal salt and sulfuric acid is used to achieve simultaneous roughening and activation of the surface. In a preferred embodiment, the solution also contains an oxidizing agent.

3,553,086
METHOD FOR INCREASING THE COERCIVE FIELD STRENGTH OF STORAGE ELEMENTS EMPLOYING THIN MAGNETIC LAYERS
Burkhard Littwin, Munich, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany, a corporation of Germany
Filed Dec. 22, 1967, Ser. No. 692,952
Claims priority, application Germany, Dec. 29, 1966, S 107,660
Int. Cl. C23b *5/52, 5/48*
U.S. Cl. 204—37 **10 Claims**

A method of increasing the coercive field strength of storage elements in the form of a storage layer, and the production of a storage matrix employing such elements, in which a ferromagnetic, preferably nickle-iron, material having a uniaxial anisotropy of magnetization is employed, comprising the steps of conductively or electrochemically applying a nonmagnetic metal, nonmagnetic compound or nonmagnetic alloy to the storage layer, and tempering the coated arrangement by the application of heat during and/or subsequent to the applying step, to effect a diffusion of such coating material



into the storage layers, the metal of such coating, for example, expediently may be indium, cadmium, zinc, tin or bismuth. In producing a storage matrix the ferromagnetic material is applied to the surface of one side of a carrier plate, the areas forming storage areas are masked by isolating material and the nonmagnetic material applied to the unmasked positions, following which the arrangement is tempered, excess material not vapor diffused removed, and the isolating material removed.

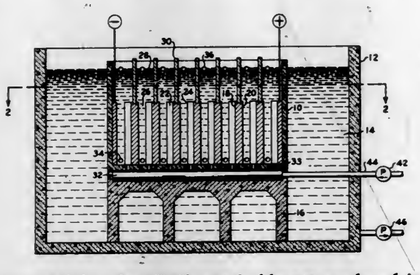
3,553,087
METHOD OF MANUFACTURING SOLID ELECTROLYTIC CAPACITORS
Akio Muramatsu, Suzaka-shi, Japan, assignor to Fujitsu Limited, Kawasaki, Japan, a corporation of Japan
Filed Dec. 5, 1967, Ser. No. 689,150
Claims priority, application Japan, Dec. 6, 1966, 41/79,978
Int. Cl. C23f *17/00;* **C23b** *5/52;* **H01g** *9/00*
U.S. Cl. 204—38 **3 Claims**

Described is a method of manufacturing solid electrolytic capacitors comprising the steps of etching and forming a film-forming metal such as Al, Ta, Nb, Zr, Hf or Ti. Forming a semiconductor layer of manganese dioxide by pyrolysis of solution of manganese nitrate in water and forming the opposite electrode. In the formation of the semiconductor layer 5 to 20% of manganese carbonate powder is added to a solution of manganese nitrate in water which mixture is then pyrolized.

3,553,088
METHOD OF PRODUCING ALKALI METAL CHLORATE
Morris P. Grotheer, John E. Currey, and Edward H. Cook, Jr., Lewiston, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Original application Nov. 30, 1965, Ser. No. 510,617. Divided and this application May 27, 1969, Ser. No. 842,764
Int. Cl. B01k *1/00;* **C01b** *11/26*
U.S. Cl. 204—95 **8 Claims**

Alkali metal chlorates are produced by providing a mixing zone for the reaction of a chlorine containing anolyte and alkali metal hydroxide containing catholyte formed by the electrolysis of an alkali metal chloride in a diaphragm type electrolytic cell in such manner that separate anolyte and catholyte feed solutions are intro-

duced into the respective compartments of the electrolytic cell. The catholyte feed solution is drawn from a reser-



voir containing the alkali metal chlorate produced in the mixing zone.

3,553,089
RADIATION TREATMENT OF MATERIALS
Alan I. Mytelka, 12 Riviera Drive, Somerville, N.J. 08876, and Raymond M. Manganelli, 1053 Grove St., Elizabeth, N.J.
No Drawing. Filed Sept. 22, 1967, Ser. No. 669,695
Int. Cl. B01j *1/10*
U.S. Cl. 204—157.1 **4 Claims**

Aqueous waste effluents containing organic materials dissolved or suspended therein are rendered more suitable for subsequent treatment and/or disposal by adjusting the pH to a value in the range 9–12 and subjecting the waste effluent to penetrative ionizing radiation in the presence of oxygen and in the presence of a multivalent metal cation, such as a ferrous ion. Desirably, a chloride ion is incorporated in the waste effluent during treatment. This treatment is particularly applicable to the treatment of the highly colored waste effluents produced in the manufacture of dyestuffs, especially azo dyestuffs.

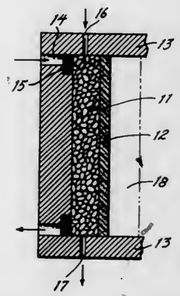
3,553,090
METHOD FOR THE STABILIZING OF POLYOXYMETHYLENE USING HIGH ENERGY RADIATION AND ACETIC ANHYDRIDE
Hisao Yamashina and Akihiko Ito, Takasaki-shi, Tadashi Iwai, Miura-gun, Kanagawa-ken, Koichiro Yayashi, Osaka-fu, and Seizo Okamura, Kyoto-shi, Japan, assignors to Japan Atomic Energy Research Institute
No Drawing. Filed May 12, 1967, Ser. No. 637,890
Claims priority, application Japan, May 21, 1966, 41/32,153
Int. Cl. C08f *1/16*
U.S. Cl. 204—159.21 **9 Claims**

The present disclosure is directed to esterification of highly crystalline polyoxymethylene induced by ionizing radiation in the presence of acetic anhydride. The polyoxymethylene of highly crystalline structure, which is not easily esterified, is now thoroughly esterified in a heterogenous system at rather low temperature by applying an ionizing radiation and thus its thermal stability is remarkably improved.

3,553,091
METHOD OF PHOTONITROSATION OF CYCLOALKANES
Fumio Nishikawa, 8 Denjiyama, Narumi-cho, Midori-ku; Ryoichi Yasuda, 40 1-chome, Shijo-cho, Minami-ku; and Keiji Nakao, 19 2-chome, Matsuzono-cho, Mizuho-ku, all of Nagoya, Japan
Filed Aug. 14, 1967, Ser. No. 660,340
Claims priority, application Japan, Aug. 17, 1966, 41/53,661
Int. Cl. B01j *1/10*
U.S. Cl. 204—162 **2 Claims**

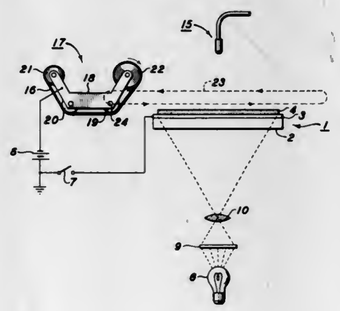
An improvement of a known so-called photonitrosation method for cycloalkanes by which the cycloalkanes are nitrosated under the irradiation of light with a nitrosating agent to form corresponding nitrosation products. This improvement is achieved by using a light from the sodium vapor lamp as a light source which meets the conditions of (a) and (b) specified in the main claim.

3,553,092
ELECTRODIALYSIS PROCESS AND CELL
Konrad Mund, Pockelsstrasse 4, Braunschweig, Germany; Ralf Wendtland, Hornauerweg 14, Fischbach, Taunus, Germany; and August Winsel, Gundelhardstrasse 58, Kelkheim, Taunus, Germany
Filed Dec. 1, 1966, Ser. No. 598,507
Claims priority, application Germany, Dec. 4, 1965, S 100,800
Int. Cl. B01k *1/00*; B01d *13/02*
U.S. Cl. 204—180 **29 Claims**



Process and device for electrodialysis. The process involves supplying electrolyte to a cell having two electrodes which have an ion-exchange layer sandwiched between them. Gas can also be passed concurrently through the electrodes.

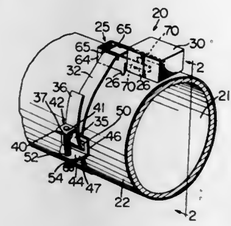
3,553,093
COLOR PHOTOELECTROPHORETIC IMAGING PROCESS
Robert C. Putnam, Rochester, and Ira S. Stein, Penfield, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Mar. 19, 1965, Ser. No. 441,106
Int. Cl. G03g *13/22*
U.S. Cl. 204—181 **6 Claims**



A suspension comprising electrically photosensitive particles dispersed in a carrier liquid is exposed to image-

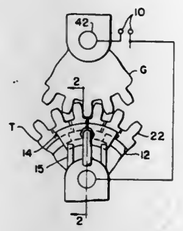
wise light and field between at least two electrodes forming a pigment image on the surface of one of the electrodes. The other electrode is removed, cleaned or replaced and the imagewise exposure and field application is repeated at least one additional time, improving the quality of the final image.

3,553,094
DEVICE FOR CATHODICALLY PROTECTING A METAL PIPE
Irvin C. Scott, Jr., Richmond, and Layle B. Barker, Henrico County, Va., assignors to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Apr. 22, 1968, Ser. No. 722,987
Int. Cl. C23f *13/00*
U.S. Cl. 204—197 **13 Claims**



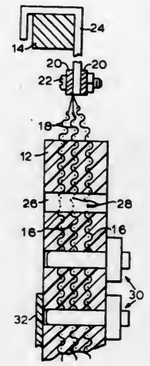
This disclosure relates to a device for cathodically protecting coated metal pipe which comprises a sacrificial anode in combination with simple means enabling such anode to be readily electrically connected to such pipe in the field without requiring special tools or equipment.

3,553,095
METHOD AND APPARATUS FOR ECM GEAR FINISHING
David W. Daniel, Birmingham, Mich., assignor, by mesne assignments, to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Dec. 18, 1967, Ser. No. 691,341
Int. Cl. C23b *5/68*
U.S. Cl. 204—212 **9 Claims**



Method and apparatus for finishing gears by running the gear in mesh with a gearlike finishing tool having teeth provided with electrically conducting side surface portions, maintaining the conducting side surface portions of the tool teeth spaced from the adjacent tooth surfaces of the gear, providing a flow of electrolyte in the spaces substantially enclosed between the meshing teeth of the gear and tool, and passing a flow of direct electrical current between the teeth of the gear and tool. The apparatus includes means for limiting the flow of electrolyte to the zone of mesh between the gear and tool, tools of special form for carrying out the method, and a novel method of producing the tools by ECM.

3,553,096
ARTICLE HOLDER FOR ELECTRODEPOSITING COATINGS ON ARTICLES
Donald W. Coir, Detroit, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Nov. 18, 1968, Ser. No. 776,611
Int. Cl. C23b *5/70*
U.S. Cl. 204—297 **4 Claims**

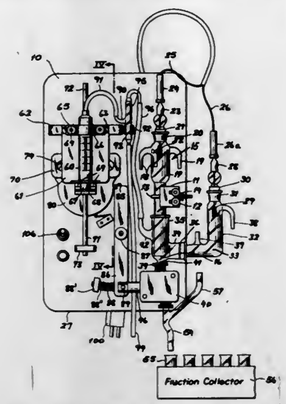


An article holder for supporting articles while being subjected to electrodepositing action, such as electroplating, which is composed of a relatively thick pad or sheet of resiliently compressible, electrically insulating material having embedded therein one or more woven wire mesh screen being in planes parallel to and spaced apart from one another and to the opposite surfaces of the sheet. For retaining the articles in place during this operation, the insulating sheet is drilled or otherwise shaped to provide holes each opening out on at least one surface of the sheet and extending through the embedded wire screens so that severed wires are exposed in the holes. Articles to be subjected to electrodepositing action are shaped with a part thereof which is snugly received in a hole and held or retained in this manner on the holder while other exposed areas of the article receive the electrodeposited coating. The inserted part of each such article is engaged by the exposed severed wires of the screens to form an electrical connection therewith. Provision is made for electrically connecting each such embedded wire screen to an external source of electrical energy.

3,553,097
FRACTIONAL ELECTROPHORESIS SEPARATOR
Joseph Buchler, Fort Lee, N.J., assignor to Buchler Instrument, Inc., Fort Lee, N.J., a corporation of the United States of America
Filed Dec. 29, 1967, Ser. No. 698,373
Int. Cl. B01k *5/00*
U.S. Cl. 204—299 **12 Claims**

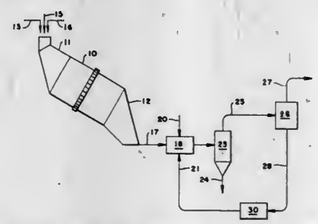
To perform electrophoresis in a column having a gel-supported sample suspended between upper and lower buffer solutions across which an electric field is applied, with continuous circulation of the upper buffer through a reservoir, the lower buffer is periodically discharged into a fraction collector under the control of a valve mechanically operated from a rotating cam which is rigid with a crank mechanism actuating a syringe, between discharges,

to supply fresh elution buffer to the bottom of the column. The valve opens during the suction stroke whereby



a syringe aspirates buffer from reservoir. A mechanism arrests the syringe plunger in midstroke to facilitate adjustment of crank eccentricity and stroke length.

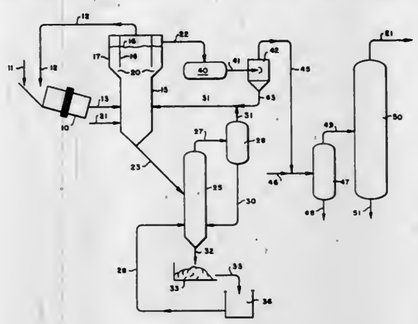
3,553,098
RECOVERY OF TAR FROM TAR SANDS
Elmond Lowell Claridge, George Edwards, and John Treanor Smith, Houston, Tex., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 15, 1968, Ser. No. 767,671
Int. Cl. C10g *1/04*
U.S. Cl. 208—11 **6 Claims**



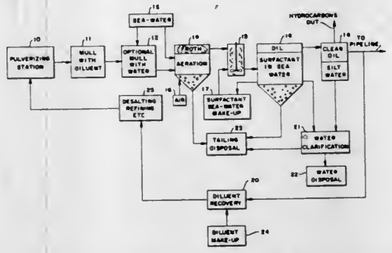
Separating tar from tar sand in a process including mixing tar sand with a hydrocarbon solvent to produce a mixed phase system including a hydrocarbon phase and a solid phase, introducing the mixture into a flowing aqueous stream under such conditions that the hydrocarbon phase has a maximum viscosity of two poises, that the differential velocity between each particle of sand and the flowing aqueous stream produces a Reynolds number of at least 150 in the system including the particle of sand and the surrounding aqueous phase, and that the volume ratio of aqueous phase to tar sand, exclusive of solvent, is at least four, and separately recovering solid phase, aqueous phase, and hydrocarbon phase.

3,553,099
PROCESS FOR EXTRACTING TAR FROM TAR SAND
William E. Savage, Castro Valley, and Harry A. Cheney, Berkeley, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Oct. 30, 1968, Ser. No. 771,959
Int. Cl. C10g *1/04*
U.S. Cl. 208—11 **6 Claims**

Separating tar from tar sand in a process where fines are excluded from the product with minimum particle separation equipment and solvent losses to the separated sand are very small, including maintaining a mobile bed of sand particles in a rising solvent stream in an extraction zone, withdrawing a solvent-tar mixture through a passageway that starts laterally within the mobile bed and terminates above it, the mixture being low in fines due to the filtering action of the mobile bed, and subjecting the solvent-tar stream to particle separation and solvent recovery, removing a sand-solvent stream from a lower portion of the mobile bed in the extraction zone and introducing it into an elutriation zone wherein a mobile bed of sand is maintained in a rising water stream, withdrawing liquid from the upper portion of the elutriation zone, separating it into a water phase and a hydrocarbon phase, returning the hydrocarbon phase to the extraction zone, returning water phase to the elutriation zone, and withdrawing water and sand from the lower portion of the elutriation zone.



3,553,100
UPGRADING OF OIL RECOVERED FROM BITUMINOUS SANDS
Robert M. Jorda, Houston, Tex., James H. Barkman, Jr., Ventura, Calif., and Homer F. Young, Houston, Tex.; said Jorda and said Barkman, Jr., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 18, 1968, Ser. No. 760,493
Int. Cl. C10g *1/04*
U.S. Cl. 208—11 **13 Claims**



A process for breaking or separating an emulsified mixture of liquid hydrocarbon, insoluble fluid and finely divided solid material. The emulsified mixture is mixed with a volume of hot brine having controlled pH and containing a surfactant material in which ethylene oxide groups acyl radicals, and from about 10 to 22 carbon atoms are contained in each of the molecules of a surfactant that exhibits a significant amount of solubility in both oil and brine. Hydrocarbon materials that are substantially free of solids and aqueous liquids and float in the brine are isolated and the hydrocarbon components of the isolated materials are recovered.

3,553,101
PREVENTION OF CORROSION USING HETEROCYCLIC NITROGEN COMPOUNDS
Zisis Andrew Foroulis, East Orange, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed May 17, 1968, Ser. No. 729,925
Int. Cl. B01d *3/24;* **C23f** *11/04, 14/02*
U.S. Cl. 208—47 **16 Claims**

Corrosion of metals by aqueous acidic solutions is markedly inhibited by the presence of a heterocyclic nitrogen compound having a 5-member ring containing 2 or 3 nitrogen atoms. Typical compounds are pyrazole and 1,2,4-triazole. Corrosion of chemical and petroleum process equipment handling hydrocarbon and other chemical streams containing acidic substances is minimized by the presence of a corrosion inhibitor of this invention.

3,553,102
HYDROCRACKING CATALYST AND METHOD OF PREPARATION
Edward J. Rosinski, Deptford, and Charles J. Plank, Woodbury, N.J., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Nov. 8, 1968, Ser. No. 774,502
Int. Cl. C10g *13/02;* **B01j** *11/74*
U.S. Cl. 208—111 **4 Claims**

An improved hydrocracking catalyst composition prepared by subjecting a crystalline aluminosilicate starting material, characterized by a silica/alumina mol ratio of at least 3, to up to about 35% alumina removal by treatment with a chelating agent, followed by contacting the resultant partially dealuminized crystalline aluminosilicate with a nonaqueous sulfur-containing solution of a platinum or palladium group metal, with the result that the metal is present in the catalyst composition, after drying, in the sulfided form.

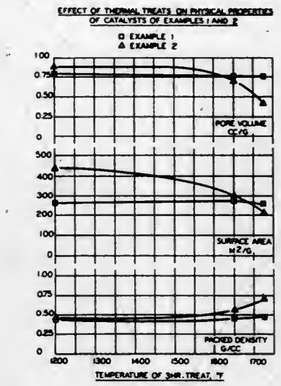
3,553,103
PREPARATION OF ZEOLITE CATALYSTS
Bernard Whiting Burbidge, Leatherhead, and Ian Montgomery Keen, Ashford, England, assignors to The British Petroleum Company Limited
No Drawing. Filed Jan. 13, 1969, Ser. No. 790,829
Claims priority, application Great Britain, Jan. 29, 1968, 4,421/68
Int. Cl. C10g *13/02;* **B01j** *11/40*
U.S. Cl. 208—111 **14 Claims**

In the preparation of a catalyst of a Group VIII metal component and a decationised zeolite, the decationised zeolite is aged in water for at least 1 week, preferably at least 3 weeks, before being contacted with a solution containing Group VIII metal cations. The method assists in obtaining even distribution of the Group VIII metal throughout the zeolite while using a minimal excess of Group VIII metal cation in the contacting solution. The preferred zeolite is mordenite.

The catalyst may be used for hydrocarbon conversion, e.g., hydrocracking, hydrogenation, dehydrogenation, disproportionation isomerisation, and selective cracking of n-paraffinic hydrocarbons.

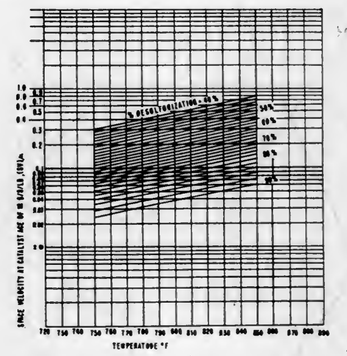
3,553,104
CATALYST MATRIX MATERIAL, COMPOSITE CATALYST, AND METHODS OF PREPARING SAME
William A. Stover, Woodbury, and Harry A. McVeigh, Laurel Springs, N.J., assignors to Mobil Oil Corporation, a corporation of New York
Continuation-in-part of application Ser. No. 627,429, Mar. 31, 1967. This application Dec. 26, 1967, Ser. No. 701,026
Int. Cl. B01j *11/40;* **C10g** *11/02*
U.S. Cl. 208—120 **36 Claims**

Catalyst matrix material for carrying active catalytic component. Matrix made up of (1) 20 to 95 wt. percent porous silica gel or silica-zirconia gel, the gel having pore volume of at least about 0.6 cc. per gram and (2) 5 to 80 wt. percent of weighting agent, such as clay. Method of preparing such matrix. Also discloses a composite catalyst made up of crystalline aluminosilicate particles contained in such matrix, the overall composite having a packed density of at least 0.3 gram/cc. Composite made by admixing with an aqueous alkali metal



silicate a particulate weighting agent such as clay, desirably dispersed in water, so as to coat the clay with alkali metal silicate, ageing at a pH of from about 8 to 10, optionally adding a zirconium salt, desirably as an aqueous solution, reducing the pH to about 4.0 to 7.0 to form a silica gel-weighting agent or a silica gel-zirconia gel-weighting agent matrix slurry, admixing a slurry of crystalline aluminosilicate, and drying in the form of particles suitable for fluid catalytic conversion.

3,553,105
APPLICATION OF CERTAIN EQUATIONS IN A HYDROGENATION PROCESS FOR REMOVING SULFUR FROM A LIQUID HYDROCARBON FEED
Edwin T. Layng, Summit, and Harold H. Stotler, Westfield, N.J., and Seong Tae Hwang, Kansas City, Mo., assignors to Hydrocarbon Research, Inc., New York, N.Y., a corporation of New Jersey
Filed Oct. 31, 1968, Ser. No. 772,121
Int. Cl. C10g *23/10*
U.S. Cl. 208—213 **7 Claims**



A process for the desulfurization of heavy gas oils or residuum by the ebullated bed catalytic system wherein

the factors of feed characterization, percent desulfurization, temperature, pressure, and space velocity, in consideration of catalyst age and activity, are critically adjusted and coordinated by the formula:

$$\frac{1}{(U_f)}=\frac{1}{1.25C_tC_sA}\left[\frac{W_f-W_p}{0.6_p{}^3\times10^{-6}}+\frac{W_f}{W_p}-1\right]$$

where:

W_f=average weight percent sulfur in feed
W_p=average weight percent sulfur in the butane and heavier liquid product
p=partial pressure of hydrogen in reactor (p.s.i.a.)
C_t=effect of temperature on the rate of reaction
C_s=effect of extent to which the oil is desulfurized on the rate of reaction
A=the activity of a particular catalyst with a particular age for a particular feedstock
U_f=barrels per day of fresh feed oil passed through the reactor per pound of catalyst present inside the reactor.

3,553,106
CATALYTIC REMOVAL OF VANADIUM AND NICKEL FROM OILS

Harry A. Hamilton, Natrona Heights, Howard G. McIlvried, Pittsburgh, and Raynor T. Sebulsky, O'Hara Township, Allegheny County, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

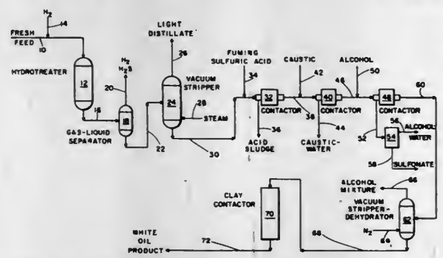
No Drawing. Filed June 28, 1968, Ser. No. 741,232
Int. Cl. C10g *17/00, 23/00*
U.S. Cl. 208—251 **8 Claims**

Vanadium and nickel are removed from petroleum oils by contact with a preformed vanadium oxide catalyst on activated alumina in the presence of hydrogen. The catalyst is prepared by contacting activated alumina with a non-oily medium containing a soluble vanadium compound.

3,553,107
PRODUCTION OF WHITE OILS FROM HYDROTREATED AND ACID CONTACTED OIL STOCKS

Robert E. Donaldson, Tokyo, Japan, and Harry C. Murphy, Jr., Apollo, and Harry C. Stauffer, Cheswick, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed June 5, 1968, Ser. No. 734,665
Int. Cl. C10g *17/06, 23/02*
U.S. Cl. 208—271 **8 Claims**



White oils are produced from a lubricating oil stock containing 5–30% aromatics by volume. The process subjects the lubricating oil stock to hydro-treatement at 650–725° F. at a pressure between 2,500–3,000 p.s.i.g. and LHSV of 0.5–3 with a catalyst containing a hydrogenating component selected from Group VI and Group VIII metals and a carrier for said metal component having an activity index of less than 25. The hydrotreatment step reduces the aromatic content to less than 4% by volume and no substantial hydrocracking occurs. The hydrotreated material is contacted with fuming sulfuric acid, 0.02–0.06 vol. of acid/volume of oil, the oil is neutralized with caustic and extracted with alcohol to remove sulfonates. The alcohol-extracted material may be further subjected to dehydration and then contacted with clay. The process provides a minimal production of acid sludge and sulfonate by-product with extremely high yield of final white oil.

3,553,108
HEAT SENSITIVE HIGH MOLECULAR WEIGHT RESISTOR

Wataru Shimotsuma, Moriguchi-shi, Akira Mizoguchi, Yokohama, and Toshio Shimizu, Daito-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Mar. 20, 1967, Ser. No. 624,155
Claims priority, application Japan, Mar. 23, 1966, 41/18,376; May 16, 1966, 41/31,584
Int. Cl. H01b *1/00;* **C07d** *49/34*
U.S. Cl. 252—500 **3 Claims**

A process for preparing a heat sensitive high molecular weight resistor excellent performance, which is produced by adding a conductivity-imparting compound to an insulating high molecular weight compound. As the conductivity-imparting compound, one having perchlorate ion, e.g. imidazolium perchlorate, may be employed, which is chemically combined with plasticizer.

3,553,109
RESISTOR COMPOSITIONS CONTAINING PYROCHLORE-RELATED OXIDES AND NOBLE METAL

Lewis C. Hoffman, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 748,952, July 31, 1968, which is a continuation-in-part of abandoned application Ser. No. 701,016, Jan. 26, 1968. This application Oct. 24, 1969, Ser. No. 869,351
Int. Cl. H01b *1/02*
U.S. Cl. 252—514 **11 Claims**

Resistor compositions, which yield, upon firing, smooth resistors having a wide range of resistances, low TCR's and good stability properties, comprising (1) an oxide of the formula

$$(M_xBi_{2-x})(M'_yRu_{2-y})O_{7-z}$$

wherein M is at least one metal selected from the group consisting of yttrium, lanthanum, thallium, indium, cadmium, lead and the rare earth metals of atomic number 58–71 inclusive, M' is at least one metal selected from the group consisting of platinum, titanium, tin, chromium, rhodium, iridium, rhenium, zirconium, antimony and germanium, (2) an inorganic binder, (3) noble metal, and (4) optionally, a binary oxide (e.g., Co_3O_4). The control over properties afforded by this combination of ingredients and proportions thereof enhances the significance of this invention.

3,553,110
PERFUME COMPOSITIONS CONTAINING UNCONJUGATED OCTANITRILES

Peter W. D. Mitchell, Atlantic Highlands, and Jack H. Blumenthal, Oakhurst, N.J., assignors to International Flavors & Fragrances, Inc., New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 2, 1967, Ser. No. 613,445
Int. Cl. C11b *9/00*
U.S. Cl. 252—522 **8 Claims**

This disclosure describes methods for the preparation and isolation of a variety of 7-methyl-2,6-octadienenitriles by condensation of cyanoacetic acid with 2-methylhept-2-ene-6-one in the presence of an amine or an acid addition salt of an amine at a temperature of from about 40° C. to 180° C. A mixture of nitriles is produced in the condensation reaction. The relative proportion of each

nitrile in the mixture can be controlled by control of the alkalinity of the reaction medium. The compounds and mixtures are useful as olfactory agents.

3,553,111
COMPOSITIONS FOR RENDERING SYNTHETIC HYDROPHOBIC MATERIAL ANTISTATIC

Wlodek L. Ginilewicz and Guiliano C. Tesoro, New York, N.Y., assignors to Millmaster Onyx Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Sept. 21, 1959, Ser. No. 841,032
Int. Cl. C08g *30/14*
U.S. Cl. 260—2 **15 Claims**

1. A composition suitable for minimizing the accumulation of charge of static electricity of a hydrophobic shaped structure comprising a mixture of a polyepoxide and a polyamine of the formula:

$$H[—X—CH_2CH_2—(OCH_2CH_2)_m—O—R—O—(CH_2CH_2O)_n—CH_2CH_2]_p—X—H$$

wherein —R— is an organic divalent radical, —X— is a member of the class consisting of amino nitrogen and divalent radical terminating in amino nitrogen, m and n are small whole numbers from about 3 to about 40 and p is an integer greater than 1.

3,553,112
EXPANDABLE ALKENYL AROMATIC POLYMERS CONTAINING INCORPORATED EXPANDABLE ALKENYL AROMATIC POLYMERS

Jerry L. Weinstein, Framingham, and Michal Niechwiadowicz and Hugh C. Crall, Leominster, Mass., assignors to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware

No Drawing. Filed Sept. 14, 1967, Ser. No. 667,652
Int. Cl. C08f *47/10;* **C08j** *1/26*
U.S. Cl. 260—2.5 **8 Claims**

Expandable alkenyl aromatic polymers containing 1 to 40% of expandable alkenyl aromatic polymer co-reacted therein, and processes for their manufacture.

3,553,113
PROCESS FOR MAKING FOAMED RESINS

Dietrich H. Heinert, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 589,528, Oct. 26, 1966. This application June 18, 1969, Ser. No. 834,550
Int. Cl. C08f *47/10;* **C08j** *1/22;* **C07c** *143/02*
U.S. Cl. 260—2.5 **4 Claims**

Ammonium carbamoylsulfonate decomposes to gaseous products on heating to moderate temperatures and is therefore useful as a blowing agent to foam both thermoplastic and thermoset resins. The compound can be prepared by contacting sulfur dioxide with ammonium cyanate in aqueous solution or by subjecting aqueous sodium carbamoylsulfonate to an ion exchange process.

3,553,114
METHOD OF COATING A DELIQUESCENT SUBSTANCE ONTO THE SURFACE OF FOAMABLE BEADS AND FOAMING THE BEADS; THE FOAMABLE AND FOAMED PRODUCTS OBTAINED THEREFROM

Patrick Vivian Burt, Newport, England, assignor to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed Nov. 29, 1967, Ser. No. 686,734
Claims priority, application Great Britain, Nov. 30, 1966, 53,681/66
Int. Cl. B44d *1/092;* **B26d** *7/10;* **C08j** *1/26*
U.S. Cl. 260—2.5 **7 Claims**

This invention relates to foamable resins and in particular to particles of foamable vinylaromatic polymers which when foamed and cut by hot wire technique exhibit improved cut surfaces due to a coating of a deliquescent substance on the foamable particles.

3,553,115
RUBBER MIXTURES

Jean Curchod, Paris, and Roland Cheritat, Le Perreux-sur-Marne, France, and Franz Rudolf Widmer and Gustav Widmer, Basel, Alfred Renner Muenchenstein, and Hans Batzer, Arlesheim, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Continuation-in-part of application Ser. No. 389,197, Aug. 12, 1964. This application Nov. 14, 1968, Ser. No. 775,964
Int. Cl. C08b *37/22*
U.S. Cl. 260—3 **4 Claims**

Light-colored, technically valuable vulcanisates are obtained according to the invention when natural or synthetic rubber is vulcanised in the presence of insoluble and infusible, finely dispersed aminoplasts having an inner surface of more than 10 square meters per gram and an average particle size smaller than 5μ.

3,553,116
MECHANICALLY AND FREEZE-THAW STABLE AQUEOUS EMULSIONS OF IMINATED CARBOXYLIC VINYL ACETATE/ETHYLENE COPOLYMERS AND PROCESS FOR PREPARING SAME

Charles A. Kaplan, Longview, Tex., and Robert A. Ripley, Ottawa, Ontario, Canada, assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 664,284, Aug. 30, 1967. This application Mar. 14, 1969, Ser. No. 807,410
Int. Cl. C08f *3/62, 27/08, 29/10*
U.S. Cl. 260—17 **23 Claims**

Mechanically and freeze-thaw stable aqueous emulsions of iminated carboxylic vinyl acetate/ethylene copolymers containing, as protective colloids, water-soluble polyvinyl alcohols or cellulose derivatives are provided. The dispersions are prepared by copolymerizing the monomers in the presence of the protective colloid and, thereafter, imitating the copolymer.

3,553,117
TERNARY SYSTEM FOR POLYACETAL STABILIZATION

Klemens Gutweiler, Frankfurt am Main, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Mar. 21, 1968, Ser. No. 714,810
Claims priority, application Germany, Apr. 8, 1967, F 52,069
Int. Cl. C08g *51/56*
U.S. Cl. 260—18 **11 Claims**

Polyacetals are stabilized using a stabilizer system consisting of an antioxidant, an alkaline earth metal salt and a tertiary amine.

3,553,118
DIIMINE COMPOUNDS AS CATALYSTS FOR THE POLYURETHANE REACTION

Bernardas Brizgys, Southgate, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed June 21, 1968, Ser. No. 738,772
Int. Cl. C08g *22/34, 22/36*
U.S. Cl. 260—18 **10 Claims**

Certain diimine compounds such as 1,2-ethylene bis (isohexylidine imine) have been found to be effective

catalysts for the polyurethane reaction. The diimines provide polyurethane compositions which have a pot life of from 0.5 hour to 3 hours, and a rate of cure between 12 to 15 hours at room temperature.

3,553,119

EPOXY RESIN ESTER PRODUCTION

Howard J. Wright, Kansas City, Mo., and Joseph H. Scherer, Shawnee Mission, Kans., assignors to Cook Paint & Varnish Company, Kansas City, Mo., a corporation of Delaware

No Drawing. Filed Dec. 18, 1968, Ser. No. 784,915

Int. Cl. C09d *3/58*

U.S. Cl. 260—18 **5 Claims**

An improvement in the process for the production of epoxy resin esters by (1) esterifying the water and sodium chloride containing reaction product of epichlorohydrin and bisphenol A with a fatty acid, (2) distilling off water during esterification, (3) reducing the product with a solvent for the ester, and (4) removing sodium chloride by-product in granular form. The process gives an ester characterized by lighter color and other improved qualities.

3,553,120

PREPARATION OF PLASTICS FROM POLYHYDRIC ARALIPHATIC ALCOHOLS

Josef Baltes, Hamburg, Friedrich Weghorst, Hamburg-Harburg, Zdzislaw Makus, Strasslach, Bavaria, Germany, assignors to Harburger Fettchemie Brinckman & Mergell GmbH., Hamburg-Harburg, Germany, a corporation of Germany

No Drawing. Application Feb. 16, 1967, Ser. No. 616,483, now Patent No. 3,472,816, dated Oct. 14, 1969, which is a continuation-in-part of application Ser. No. 386,083, July 29, 1964. Divided and this application Mar. 17, 1969, Ser. No. 828,042

Claims priority, application Germany, Aug. 8, 1963, H 49,900

Int. Cl. C08q *30/14*

U.S. Cl. 260—18 **1 Claim**

1. A resinous composition comprising the addition polymerization reaction product of a polyhydric araliphatic alcohol, a polyepoxide, and a polyamide amine selected from the class of amides consisting of dimeric fatty acid amides and araliphatic polycarboxylic amide-amines, the said amine being in the proportion of 20–95 parts, and wherein there is employed from 1–100 parts of the said polyhydric araliphatic alcohol to each 100 parts of polyepoxide, the said alcohol possessing the following characteristics:

(a) at least 2 residues of a fatty alcohol having 16–24 carbon atoms in the carbon chain,
(b) each chain terminating in a primary alcohol group,
(c) linking of the said chains being secured by an aromatic vinyl nucleus,
(d) an hydroxyl number of from 120–160, and
(e) an average molecular weight of 500–1000;

said alcohol having been prepared by hydrogenating a carboxyl compound prepared by subjecting a conjugated unsaturated fatty acid compound selected from the class of conjugated unsaturated fatty acid and C_1 to C_4 alkanol esters of the said acids to ionic copolymerization with an aromatic vinyl compound selected from the class consisting of styrene, alpha methyl styrene and vinyl toluene in the proportions of 1 mole of fatty acid compound to 0.2 to 5 moles of aromatic vinyl compound and controlling the temperature of the reacting mass to prevent the mass temperature from exceeding, at any time, a temperature of about 200° C.

3,553,121

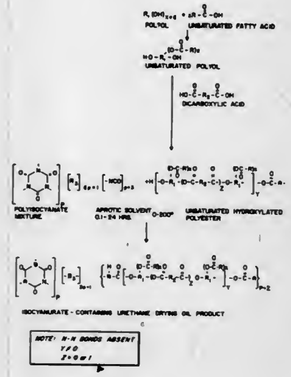
ESTER MODIFIED URETHANE DRYING OILS

Perry A. Argabright and Brian L. Phillips, Littleton, Colo., and Vernon J. Sinkey, Inver Grove Heights, Minn., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

Filed Feb. 25, 1969, Ser. No. 802,054

Int. Cl. C09d *3/64, 3/68, 3/72*

U.S. Cl. 260—22 **6 Claims**



Unsaturated isocyanurate-containing urethane drying oils, and a method of preparing same, by reacting hydroxylated polyesters with the products from organic dihalides and metal cyanates. The hydroxylated polyesters preferably comprise reaction products of a diacid or anhydride and hydroxyl-containing esters of polyols and unsaturated fatty acids.

3,553,122

ESTER MODIFIED URETHANE DRYING OILS

Perry A. Argabright and Brian L. Phillips, Littleton, Colo., and Vernon J. Sinkey, Inver Grove Heights, Minn., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 25, 1969, Ser. No. 802,215

Int. Cl. C09d *3/64, 3/68, 3/72*

U.S. Cl. 260—22 **9 Claims**

Urethane drying oils, and a method of preparing same, comprising reaction products of hydroxylated polyesters, organic dihalides and metal cyanates. The hydroxylated polyesters preferably comprise reaction products of a diacid or anhydride and hydroxyl-containing esters of polyols and unsaturated fatty acids.

3,553,123

ONE-STEP CLEAN AND POLISH COMPOSITION

John M. Behnke, Newark, N.J., assignor to Bristol-Myers Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 6, 1967, Ser. No. 628,817

Int. Cl. C09g *1/04*

U.S. Cl. 260—23 **4 Claims**

A composition used for cleaning and polishing surfaces, particularly wood surfaces in a one-step application. The composition is prepared as an oil-in-water emulsion which inverts into a water-in-oil emulsion upon application and

rubbing. The ingredients are wax, emulsifiers, resins, water, solvent, and fragrances in certain critical proportions.

3,553,124

COATING COMPOSITIONS COMPRISING ACRYLIC POLYMERS CONTAINING AN OXAZOLINE DRYING OIL CONSTITUENT

James M. Donatello, Wilmington, Del., and Aloysius N. Walus, Flint, Mich., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 491,815, Sept. 30, 1965. This application Aug. 23, 1968, Ser. No. 754,979

Int. Cl. C08f *7/12;* **C09d** *3/00*

U.S. Cl. 260—23 **1 Claim**

A coating composition in which the film-forming polymer consists essentially of:

(1) 30 to 70% by weight of methyl methacrylate,
(2) less than 35% by weight of an ester of acrylic or methacrylic acid of a C_2 to C_{12} saturated aliphatic monohydric alcohol,
(3) less than 10% by weight of acrylonitrile, and
(4) 15 to 35% by weight of an oxazoline drying oil constituent.

3,553,125

SEALANT COMPOSITION COMPRISING A MIXTURE OF A CROSS-LINKING ELASTOMER AND A GELLED OIL

Alan Watters, Waterlooville, England, assignor to Ralli Bondite Limited, Waterlooville, England, a British company

No Drawing. Filed Aug. 23, 1966, Ser. No. 574,317

Claims priority, application Great Britain, Aug. 26, 1965, 36,632/66

Int. Cl. C08c *11/22;* **C08d** *9/00*

U.S. Cl. 260—23.7 **18 Claims**

A two-part sealing composition; one part comprising 100 parts of cross-linking elastomer, 50–200 parts of an oil incorporated therein in the form of a gel, 300–3,000 parts of inert filler, 2–8 parts of anti-oxidant, and 0.5–30 parts of a curative system for said elastomer; the second part comprising 100 parts of cross-linking elastomer, 50–200 parts of an oil incorporated therein in the form of a gel, 300–3,000 parts of inert filler, 2–8 parts of anti-oxidant, and 1.5–30 parts of a room temperature accelerator. The sealing composition may be admixed prior to use. The invention also includes a method of compounding oil with an elastomer comprising providing the oil in the form of a gel and then compounding said gel with said elastomer.

3,553,126

METHOD OF REMOVAL OF MOLYBDATE IONS FROM WATER

Alfred W. Oberhofer, 11553 S. Kolin Ave., Alsip, Ill. 60658

No Drawing. Filed June 13, 1968, Ser. No. 736,577

The portion of the term of the patent subsequent to Dec. 3, 1985, has been disclaimed

Int. Cl. B01d *15/04*

U.S. Cl. 210—37 **8 Claims**

Selective removal of molybdate ions from water by contacting the water with an acidified, basic anion exchange resin, the pH of the influent being adjusted within the range from 3.0 to 4.5 so as to operate at maximum capacity for the resin.

3,553,127

ANTI-REFLASH DRY CHEMICAL AGENT

William R. Warnock, Menominee, Mich., and Donald V. Flatt, Hudson, and John R. Eastman, Marinette, Wis., assignors to The Ansul Company, Marinette, Wis., a corporation of Wisconsin

No Drawing. Continuation-in-part of application Ser. No. 638,574, May 15, 1967. This application Feb. 6, 1969, Ser. No. 797,232

Int. Cl. A62d *1/00*

U.S. Cl. 252—5 **16 Claims**

A dry powdered, fire extinguishing composition is provided which comprises a conventional fire extinguishing, powder base material, such as an alkali metal bicarbonate or the like, having a fluorocarbon surfactant adsorbed on its surface. The fluorocarbon surfactants have the formula $C_nF_{2n+1}CO—Z$ or $C_nF_{2n+1}SO_2—Z$.

The fluorocarbon surfactant is adsorbed on the powder base material by slurrying a surfactant solution or milling a powdered surfactant with the powder base material.

3,553,128

FIRE FIGHTING METHOD AND COMPOSITIONS

Forrest Arthur Wilson, San Antonio, Tex., assignor to Stull Chemical Company, San Antonio, Tex.

No Drawing. Filed Dec. 20, 1967, Ser. No. 697,271

Int. Cl. C09k *3/28*

U.S. Cl. 252—8.1 **3 Claims**

A thickened retardant for fighting fire comprising a water-in-oil emulsion having a chemical retardant dispersed in the aqueous phase and the aqueous phase comprising from about 80 to 99.5 parts by weight of the emulsion.

3,553,129

EMULSIFYING AND TEXTILE SOFTENING PHOSPHONIUM COMPOUNDS, PROCESS FOR PREPARING THE SAME AND OTHER COMPOUNDS, REACTIVE INTERMEDIATES

Terence William Rave, Wilmington, Del., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Original application Dec. 30, 1965, Ser. No. 517,826, now Patent No. 3,475,490. Divided and this application Aug. 21, 1968, Ser. No. 754,478

Int. Cl. B01f *17/16;* **C11d** *3/066;* **D06m**

U.S. Cl. 252—8.8 **11 Claims**

Novel phosphonium compounds and processes for their preparation are disclosed. These novel phosphonium compounds are useful as textile softening agents, emulsifying agents and anti-bacterial agents.

3,553,130

OIL RECOVERY

Charles A. Stratton, Copan, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Original application Oct. 26, 1966, Ser. No. 589,522, now Patent No. 3,401,748, dated Sept. 17, 1968. Divided and this application May 20, 1968, Ser. No. 730,613

Int. Cl. E21b *43/22, 43/20*

U.S. Cl. 252—8.55 **3 Claims**

An additive for an aqueous fluid used in recovering oil from a formation comprising a mixture of ethylene oxide adducts of alkyl phenols.

3,553,131
LUBRICANT CONTAINING AN AMINE-PHOSPHONATE COMBINED ADDITIVE
Herbert L. Hepplewhite, Woodbury Heights, N.J., and Henry E. Bieber, deceased, late of Mickleton, N.J., by Dianne Bieber, executrix, Fleetwood, Pa., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 632,899, Apr. 24, 1967. This application Sept. 26, 1969, Ser. No. 861,507
Int. Cl. C10m *1/46, 1/48*
U.S. Cl. 252—46.7 **15 Claims**

Novel compositions of synthetic ester lubricants containing in admixture an organic phosphonate and an organic amine having improved storage stability and load-carrying properties.

3,553,132
HEAT AND FLAME RESISTANT PYROLYZED CELLULAR MATERIAL AND PROCESS OF MAKING SAME
Michael Dunay, Fanwood, and Saunders E. Jamison, Summit, N.J., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 26, 1968, Ser. No. 707,955
Int. Cl. C09k *3/28*
U.S. Cl. 252—62 **9 Claims**

A solid organic foam having an inorganic compound, such as boric oxide or antimony oxide, substantially uniformly distributed therein is subjected to a pyrolysis treatment to produce a carbonized heat resistant material which finds utility in insulating and other similar applications. The resulting product retains the original cellular structure of the solid organic foam, exhibits enhanced resiliency at elevated temperatures, and is incapable of burning or evolving smoke or poisonous gases when subjected to an intense flame or heat. The product of the invention accordingly lacks the "total fire hazard" commonly exhibited by organic foam materials.

3,553,133
TONER MATERIAL AND COMPOSITIONS OF A POLYMERIC ORGANIC-SILICON DYE
James R. Olson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Oct. 1, 1969, Ser. No. 862,947
Int. Cl. G03g *9/09*
U.S. Cl. 252—62.1 **16 Claims**

An electroscopic toner for use in developing electrostatic charge patterns is comprised of free-flowing particles containing a polymeric organic-silicon dye having a bivalent diaminoanthraquinone moiety in the recurring unit. The toner can contain from 0 to about 95% by weight of a colorless polymeric binder material. Developer compositions can be formed using from about 1 to about 10% by weight of this toner mixed with from about 90 to about 99% by weight of carrier granules, such as powdered iron or glass beads.

3,553,134
SEMICONDUCTIVE PIEZOELECTRIC CERAMICS AND METHOD FOR MAKING THE SAME
Hiroshi Ikushima and Shigeru Hayakawa, Osaka, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan
Filed Oct. 21, 1968, Ser. No. 769,230
Claims priority, application Japan, Oct. 26, 1967, 42/70,049
Int. Cl. C04b *35/46, 35/48;* **H01v** *7/02*
U.S. Cl. 252—62.9 **2 Claims**

Semiconductive ceramics of the formula

$$Pb(Mg_{1/3}Nb_{2/3})_xTi_yZr_zO_3(x+y+z=1)$$

wherein Pb is replaced in part by a metal selected from the group consisting of Gd, Sm, Nd, Ce, La, Bi and Sb are characterized by low specific resistivity and superior electromechanical transducing properties. The ceramics are useful as elements of ultrasonic travelling-wave devices, e.g. an ultrasonic delay line element, an ultrasonic travelling wave amplifier, element, etc.

3,553,135
LITHIUM-TITANIUM-MANGANESE COPPER-MICROWAVE FERRITE
Paul D. Baba, San Carlos, and Subir K. Banerjee, Menlo Park, Calif., assignors to Ampex Corporation, Redwood City, Calif., a corporation of California
No Drawing. Filed July 11, 1968, Ser. No. 743,942
Int. Cl. C04b *35/26*
U.S. Cl. 252—62.59 **5 Claims**

A ferrite having a high remanence ratio and having an excellent temperature response is provided from a composition wherein

$$Li^{+}_{.5(1+x-y)}Fe^{3+}_{2.5-.5(3x+y)-z}Ti^{4+}_{x}Cu^{2+}_{y}Mn^{3+}_{z}O_4$$

x is from 0.1 to 1.0
y is from 0.01 to 0.4
z is from 0.01 to 0.3

3,553,136
REDUCTION OF VAPOR PRESSURE IN ABSORPTION TYPE REFRIGERATION CYCLE
Chester C. Lyon, Evansville, Ind., assignor to Arkla Industries, Inc., Evansville, Ind., a corporation of Delaware
Filed Oct. 5, 1967, Ser. No. 673,204
Int. Cl. C09k *3/02*
U.S. Cl. 252—69 **1 Claim**

An increase in the cooling capacity of an absorption-type refrigeration system employing water as refrigerant and an aqueous salt solution as absorbent is obtained by incorporating a small amount of ethylene glycol monobutyl ether or diethylene glycol monobutyl ether in the salt solution. The presence of the ether lowers the operating vapor pressure in the absorber section of this type of system and thereby effects a lower operating refrigerant temperature in the evaporator section.

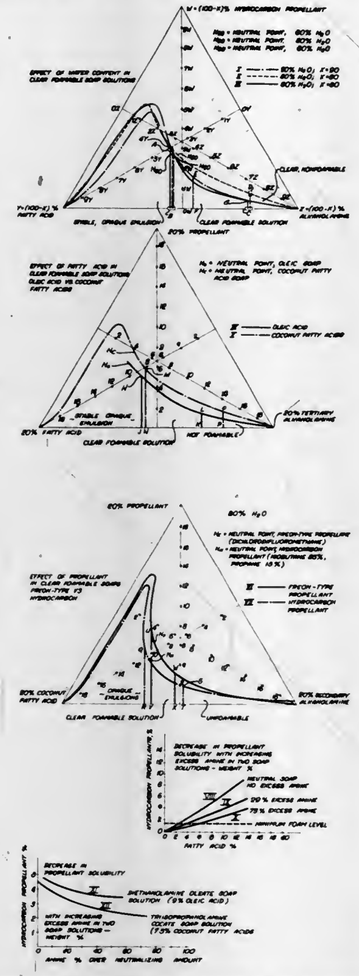
3,553,137
CORROSION INHIBITORS FOR METHOXYPROPANOL
Conrad D. Woods, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 29, 1967, Ser. No. 671,588
Int. Cl. C09k *3/02;* **C23f** *11/14, 11/18*
U.S. Cl. 252—75 **10 Claims**

The corrosive effect of methoxypropanol is inhibited by a three component mixture of (1) an alkali metal nitrite, (2) a piperazine, and (3) benzotriazole.

3,553,138
CLEAR AEROSOL SOAPS
Harry W. Mace, Milford, Conn., assignor to Aerosol Techniques Incorporated, Milford, Conn., a corporation of New York
Filed July 24, 1967, Ser. No. 655,510
Int. Cl. C11d *9/30, 9/38;* **C09k** *3/30*
U.S. Cl. 252—90 **14 Claims**

A clear, homogeneous and single phase soap composition which foams on release to normal pressure conditions and thus is useful in aerosol dispensers the location or size of which makes pre-use agitation inconvenient. The soap composition includes a fluid mutual solution of a major weight amount of water, a water insoluble liquid phase normally gaseous propellant the presence of which tends to lower the solubility of the soap and thus cause

precipitation of fatty acid in the solution, and a water soluble soap prepared from a water insoluble, but propellant soluble fatty acid and a water soluble, aliphatic



amine which is present in the solution in an amount sufficient to solubilize fatty acid precipitated and not dissolved in the solution by the propellant.

3,553,139
ENZYME CONTAINING DETERGENT COMPOSITION AND A PROCESS FOR CONGLUTINATION OF ENZYMES AND DETERGENT COMPOSITION
Charles Bruce McCarty, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Application Apr. 12, 1967, Ser. No. 635,293, which is a continuation-in-part of applications Ser. No. 544,846, Apr. 25, 1966, and Ser. No. 620,608, Mar. 6, 1967. Divided and this application Feb. 24, 1969, Ser. No. 801,773
Int. Cl. C11d *7/54*
U.S. Cl. 252—95 **6 Claims**

Detergent compositions containing an enzyme a percompound and a mixture of builder salts and organic detergents. The composition is milder than would be expected.

3,553,140
PERBORATE CONTAINING CONCENTRATES
Kurt Lindner and Elfriede Eichler, Berlin, Germany, assignors to Henkel & Cie G.m.b.H., Dusseldorf, Germany, a corporation of Germany
No Drawing. Filed May 26, 1967, Ser. No. 641,465
Claims priority, application Germany, Aug. 26, 1966, H 60,349
Int. Cl. C11d *7/56*
U.S. Cl. 252—99 **6 Claims**

Perborate containing concentrates suitable for use as bleaching and oxidizing agents and characterized by their prolonged shelf life are disclosed having the following composition:

(a) sodium perborate, and
(b) potassium hydroxide and/or non-oxidizable salt of an inorganic polybasic acid

wherein the total amount of potassium present in the concentrate in the form of its compounds amounts to 0.5 to 20 times the total amount of sodium present in the concentrate in the form of its compounds. The concentrates may be in the form of dry solids such as powders, granulates, or in the form of aqueous concentrates, the dry solid concentrates being employed in the preparation of the aqueous concentrates.

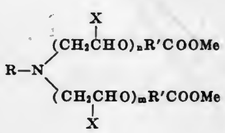
The aqueous concentrates prepared from the solid concentrates or as hereinafter set out have the following composition:

(a) 3 to 40% by weight of perborate ($NaBO_2 \cdot H_2O_2 \cdot 3H_2O$),
(b) 0.3 to 10 parts by weight of potassium hydroxide and/or non-oxidizable salt of an inorganic polybasic acid for each part by weight of perborate ($NaBO_2 \cdot H_2O_2 \cdot 3H_2O$), and
(c) water

wherein the total amount of potassium present in the concentrate in the form of its compounds amounts to 0.5 to 20 times the total amount of sodium present in the concentrate in the form of its compounds.

3,553,141
STERILIZING DETERGENT COMPOSITION
Mamoru Katsumi and Kazunori Nishizawa, Wakayama-shi, Japan, assignors to Kao Soap Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed July 31, 1967, Ser. No. 657,043
Claims priority, application Japan, Aug. 1, 1966, 41/50,100
Int. Cl. C11d *3/48, 1/18*
U.S. Cl. 252—106 **5 Claims**

A sterilizing detergent composition containing a long chain alkyl dimethyl benzyl ammonium saccharinate and an amphoteric surface active agent having the general formula



wherein R is an alkyl or alkenyl radical of C_8 to C_{18}, R' is an alkylene radical of C_1 to C_2, X is H or a CH_3 radical, Me is an alkali metal ion and n and m are integers of 0 to 5, the amount of said amphoteric surface active agent being sufficient to solubilize said saccharinate thereby in an aqueous medium.

3,553,142
AZEOTROPE AND SOLVENT COMPOSITIONS BASED ON 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE AND ACETONITRILE

Francis J. Figiel, Boonton, and Raymond A. Nesbitt, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 23, 1968, Ser. No. 786,478
Int. Cl. C11d 7/50, 7/30; C23g 5/02
U.S. Cl. 252—141 4 Claims

Certain mixtures of 1,1,2-trichloro-1,2,2-trifluoroethane and acetonitrile are useful as solvents to remove rosin fluxes from printed circuit boards. These mixtures are useful because of their unusually high solvency characteristics. A narrower class of such mixtures is particularly valuable because, in addition to high solvency characteristics, the mixtures exhibit essentially the constant boiling characteristics of a binary azeotrope which is formed between these components, thereby facilitating handling and purification of the solvent mixtures without significantly altering their compositions.

3,553,143
AMMONIUM HYDROXIDE CONTAINING WAX STRIPPER

Henry Bauer, San Pedro, Calif., assignor to Purex Corporation, Lakewood, Calif., a corporation of California

No Drawing. Filed Jan. 18, 1967, Ser. No. 610,013
Int. Cl. C11d 1/62
U.S. Cl. 252—152 5 Claims

A novel wax stripping composition is provided consisting essentially of a quaternary ammonium hydroxide in an aqueous alkaline solution, having a pH of at least 12, in effective proportions generally comprising at least 0.01% by weight of quaternary ammonium hydroxide. The quaternary ammonium hydroxide may be generated in situ in the solution by addition of an hydroxyl ion donor compound such as an alkali metal hydroxide or tertiary ammonium hydroxide and a water soluble, cationic, alkyl substituted quaternary ammonium salt.

3,553,144
PAINT STRIPPING COMPOSITION AND METHOD

Donald P. Murphy, Roseville, Mich., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Nov. 29, 1967, Ser. No. 686,718
Int. Cl. C11d 7/06
U.S. Cl. 252—158 3 Claims

An alkaline paint stripping composition comprising one or more alkaline materials such as alkali metal hydroxides, carbonates, phosphates, silicates, and an accelerating composition which contains alkylene glycol monophenyl ether and phenol or a substituted phenol. Various substituted phenols may be utilized in the composition, such as p-tertiarybutyl phenol, p-chloro-o-benzyl phenol and tetrachlorophenol. Desirably, the alkaline composition is dissolved in water, in amounts within the range of about 0.5 to 5 pounds per gallon and the resulting aqueous solution was applied to the painted substrate for a period sufficient to effect substantial loosening of the paint coating.

3,553,145
LIQUID DRAIN CLEANER

Charles John Butke and Lawrence William Gates, Cincinnati, Ohio, assignors to The Drackett Company, Cincinnati, Ohio, a corporation of Delaware

No Drawing. Filed Oct. 17, 1966, Ser. No. 586,966
Int. Cl. C09d 9/04; C11d 7/56; C23g 5/02
U.S. Cl. 252—170 8 Claims

A drain-cleaning composition and method of use, wherein the composition contains a chlorinated hydrocarbon solvent, and a special class of surfactants, the composition forming a water-in-oil emulsion on contact with water.

3,553,146
LIQUID DRAIN CLEANER

Charles John Butke and Lawrence William Gates, Cincinnati, Ohio, assignors to The Drackett Company, Cincinnati, Ohio, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 586,966, Oct. 17, 1966. This application Jan. 25, 1968, Ser. No. 700,356
Int. Cl. C09d 9/04; C11d 7/52; C23g 5/02
U.S. Cl. 252—170 5 Claims

An improved liquid drain cleaning composition comprising a chlorinated hydrocarbon solvent, a surfactant, and mineral oil.

3,553,147
METHODS USING HYDRAZINE, IN PARTICULAR IN THE METHODS OF PREPARATION OF CYCLOHEPTASULFIMIDE

Henri Garcia, Bagneux, France, assignor to Centre National de la Recherche Scientifique, Paris, France, a French government administration

No Drawing. Original application Dec. 27, 1965, Ser. No. 516,710, now Patent No. 3,447,911, dated June 3, 1969. Divided and this application Oct. 7, 1968, Ser. No. 798,502
Claims priority, application France, Jan. 6, 1965, 962
Int. Cl. C01b 21/16, 21/54
U.S. Cl. 252—188 5 Claims

The invention relates to a reactant capable of liberating anhydrous hydrazine in a medium which must be sheltered from water, which consists essentially of an activated silica gel containing adsorbed hydrazine hydrate.

3,553,148
METHOD OF MAKING A CALCIUM GEL AND THE PRODUCT OF THIS METHOD

Emile Louis Eugene Bourland, 6 Rue Gambetta, Persan 95, France

No Drawing. Filed Nov. 17, 1967, Ser. No. 683,806
Claims priority, application France, Nov. 21, 1966, 84,304
Int. Cl. A61k 27/00; B01j 13/00; C12k 1/10
U.S. Cl. 252—316 5 Claims

A method of making a calcium gel for use as an excipient for parenteral administration of a medicament and as a medium for the growth, suspension and preparation of biologically active materials wherein a saturated aqueous solution of at least one calcium organic salt (e.g. calcium lactate) slightly soluble in water, is admixed under agitation with a hot saturated solution containing, at least partially in suspension, calcium glycerophosphate. The gel is thixotropic and may contain magnesium or manganese organic salts as well.

3,553,149
DEMULSIFIER FOR WATER-PETROLEUM EMULSIONS

William Schoen and Leo Landau, Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 28, 1966, Ser. No. 605,233
Int. Cl. B01d 17/04
U.S. Cl. 252—340 2 Claims

A demulsifier for resolving water-petroleum emulsions is prepared by reacting together a paraffin wax oxidate and an alkyl phenol-ethylene oxide reaction product. One demulsifier is made from a paraffin wax oxidate having a neutralization number between 215 and 240 which is prepared from a paraffin wax having a melting point between 115 and 125° F. and an oil content less than 15 weight percent. This oxidate is reacted with a nonylphenol-ethylene oxide reaction product to produce the demulsifier.

3,553,150
TERTIARY ALKYL AMINE AND ALKYL ACID PHOSPHATE CORROSION INHIBITOR COMPOSITION

Robert H. Rosenwald, Western Springs, and Leonhard A. Goeller, Des Plaines, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Aug. 20, 1968, Ser. No. 753,864
Int. Cl. C23f 11/10
U.S. Cl. 252—389 10 Claims

Corrosion inhibitor composition of (1) one basic equivalent proportion of tertiary alkyl primary amine of 6–30 carbon atoms and (2) at least two acidic equivalent proportions of alkyl acid phosphate of 6–20 carbon atoms. The composition also may contain organic acid. The composition is particularly useful to inhibit pipe line and storage corrosion of hydrocarbon oils.

3,553,151
ISOMERIZATION CATALYST AND METHOD FOR PREPARING AND USING SAME

Joseph P. Giannetti, Allison Park, Alfred M. Henke, Springdale, and Raynor T. Sebulsky, Verona, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Mar. 4, 1968, Ser. No. 709,925
The portion of the term of the patent subsequent to Dec. 31, 1985, has been disclaimed
Int. Cl. B01j 11/78
U.S. Cl. 252—442 17 Claims

Low temperature isomerization catalyst compositions are prepared by treating a catalyst comprising alumina and a metalliferous material having hydrogenating activity with a bromide activating agent comprising a polybromide of a lower aliphatic hydrocarbon, carbonyl dibromide, dibromothione, an acetyl bromide, thionyl bromide, sulfur monobromide, a phosphorous bromide or a boron bromide.

3,553,152
AQUEOUS COATING COMPOSITION

Robert W. Kershaw, Frederick J. Lubbock, and Livia Polgar, Melbourne, Victoria, Australia, assignors to Balm Paints Limited, Victoria, Australia, a corporation of Australia

No Drawing. Filed Oct. 2, 1967, Ser. No. 672,024
Claims priority, application Australia, Oct. 18, 1966, 12,665
Int. Cl. C08f 45/24
U.S. Cl. 260—29.6 9 Claims

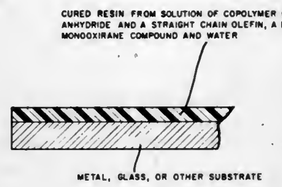
A coating composition consisting of an aqueous latex comprising 20 to 60% by weight of disperse resinous particles of average particle diameter 0.01 to 3.0 micron in combination with, as a thickening agent, from 0.1% to 10.0% by weight of a partial ether of poly(vinyl alcohol) in which from 1% to 50% of the hydroxyl groups of the poly(vinyl alcohol) are etherified, the degree of etherification in the preferred embodiment being related to the number of carbon atoms in the etherifying alcohol.

3,553,153
CURABLE RESIN COMPOSITION CONTAINING A SATURATED MONOOXIRANE COMPOUND, A SOLID POLYANHYDRIDE, WATER AND A SOLUBLE TERTIARY AMINE; AND METHOD OF PRODUCTION AND ARTICLE

Stanley M. Hazen, Cheswick, and William J. Heilman, Allison Park, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

Filed Jan. 2, 1968, Ser. No. 695,150
Int. Cl. C08f 3/02, 3/48
U.S. Cl. 260—29.6 13 Claims

Liquid coating and molding compositions are provided which are curable to an infusible resin article or coating of improved (lighter) color. The composition comprises a solution of a saturated monooxirane compound, for example, epichlorohydrin, a solid polyanhydride having succinic anhydride groups (excluding aromatic anhydrides in which the alpha carbon atoms of the anhydride group are included in the aromatic ring) for example, the copolymer of a straight chain alpha-monoolefin and a



maleic anhydride; water or methanol; and a soluble tertiary amine such as 3-picoline. The curing rate of the composition is controlled depending on the amount and manner of the water or methanol addition. The composition shows less shrinkage and weight loss during curing compared with the same composition minus the water or methanol. Thus, for example, films and coatings free of lifting and etching are obtained.

3,553,154
POLYTRIMELLITAMIDE SOLUTIONS FOR WIRE COATING

Jerome A. Preston and Harold R. Otis, Fort Wayne, Ind., assignors to Essex International, Inc., a corporation of Michigan

No Drawing. Filed Nov. 1, 1968, Ser. No. 772,809
Int. Cl. C08g 51/26
U.S. Cl. 260—30.2 2 Claims

A relatively low cost solution for application to magnet wire, containing polytrimellitamide polymer and a solvent therefor consisting of 30–80 weight percent N-methyl pyrrolidone and the remainder cyclohexanone. The solution is baked on the wire at above 250° C. to form a smooth, uniformly thick polyamide-imide coating.

3,553,155
VINYL CHLORIDE POLYMERS PLASTICIZED WITH MIXED PHENYL ALKYLPHENYL PHOSPHATES

Kenneth Malcolm Garrett, 26 Cranborne Gardens, Upminster, Essex, England

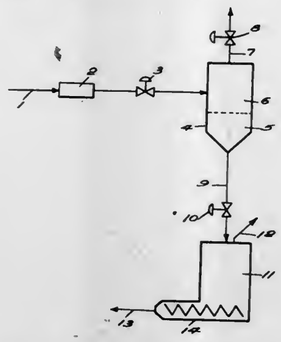
No Drawing. Continuation of application Ser. No. 595,354, Nov. 18, 1966. This application Jan. 6, 1969, Ser. No. 791,866
Int. Cl. C08c 1/60; C08f 45/50
U.S. Cl. 260—30.6 7 Claims

Plasticised flexible resin compositions having improved cold flex characteristics consisting essentially of polyvinyl chloride or a copolymer of vinyl chloride having at least 80% of the copolymer formed from the vinyl chloride. The plasticiser is a liquid mixed phenyl alkylphenyl phosphate in an amount of from 30–150 parts by weight per 100 parts by weight of the polymer. The said phosphate is represented by the average general formula $(RO)_3PO$. From 20–85 mole percent of the "R" groups are secondary alkylphenyl groups. Said secondary alkyl groups have from 3–4 carbon atoms. The remaining "R" groups are phenyl groups.

3,553,156
SEPARATION OF ETHYLENE COPOLYMER ELASTOMERS FROM THEIR SOLVENT SOLUTIONS

Colin Anolick and Edward Peter Goffinet, Jr., Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Dec. 15, 1966, Ser. No. 601,890
Int. Cl. B01d *43/00*; C08d *5/00*
U.S. Cl. 260—33.6 **5 Claims**



Separation of sulfur-curable ethylene copolymer elastomers (e.g., ethylene, propylene, 1,4-hexadiene copolymers) from their solutions in solvents (e.g., hexane) by heating under pressure to a point where two liquid phases form, the bottom phase containing most all the elastomer, decanting the bottom phase and flashing off the solvent therefrom to isolate solvent-free elastomer. Black can be incorporated by mixing into solution before decantation. If processing oil is to be included, it is mixed in after decantation but before flashing, whereas if both black and oil are to be included, they are mixed in before decantation.

3,553,157
POLYESTER COMPOSITIONS AND SHAPING PROCESS

Albert Jan Dijkstra, Isaac Goodman, and James Angus Wilson Reid, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed May 22, 1968, Ser. No. 731,028
Claims priority, application Great Britain, May 23, 1967, 23,986/67; Aug. 8, 1967, 36,361/67; Dec. 27, 1967, 58,670/67
Int. Cl. C08g *51/04*
U.S. Cl. 260—40 **53 Claims**

Preparing thick-walled shaped articles of improved physical properties from poly(ethylene terephthalate), especially by injection-moulding using a hot mould, by melt-shaping the polymer in admixture with a compound capable of reacting with at least two groups selected from —OH and —COOH; especially a polyisocyanate or uretidione oligomer thereof. The composition to be melt shaped may also contain glass fibres and a crystallisation promoter for the polymer.

3,553,158
POLYMER COMPOSITIONS CONTAINING TALC FILLER, POLAR ORGANIC COMPOUND AND ANTIOXIDANT

Evelyn G. Gilfillan, Audubon, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 30, 1968, Ser. No. 756,425
Int. Cl. C08f *45/04*, *45/58*
U.S. Cl. 260—41 **13 Claims**

In polypropylene compositions containing substantial amounts of talc as filler, the talc seriously decreases the oxidation stability of compositions containing conventional antioxidant systems. It has been found that this degrading effect is due to selective sorption of the antioxidants on the talc while the polymer composition is melted, as it normally is during some stages of processing. According to this invention, the stability of talc-filled polypropylene or other hydrocarbon polymer compositions is preserved by including as a "talc-deactivator" a polar organic compound which is selectively sorbed on the talc to the substantial exclusion of the antioxidants present in the composition, while not exerting a degrading action on the polymer composition.

3,553,159
MOLDED ARTICLE AND MOLDABLE COMPOSITION

Carl B. Miller and Richard A. Clark, Muskegon, Mich., and David T. Retford and Carl W. Lundgren, Cincinnati, Ohio, assignors to Brunswick Corporation, a corporation of Delaware

Filed May 22, 1967, Ser. No. 640,308
Int. Cl. C08d *9/10*
U.S. Cl. 260—41.5 **13 Claims**

A golf ball having at least the core portion of a composition including a major proportion of polybutadiene predominating in cis-polybutadiene units, a small amount of plasticizer (low molecular weight polyethylene), a cross-linking agent (butylene dimethacrylate) and catalyst (dicumyl peroxide) for the cross-linking agent, and a significant proportion of polyvinyl chloride or bisphenol A-epichlorhydrin polycondensation product as a reinforcing modifier for strengthening the polybutadiene under golf club impact conditions.

3,553,160
HEAT STABLE METHACRYLONITRILE METHACRYLIC ACID COPOLYMERS

Günter Schröder, Ober Ramstadt-Eiche, and Wolfgang Philipp Gänzler, Darmstadt, Germany, assignors to Rohm & Haas G.m.b.H., Darmstadt, Germany

No Drawing. Filed Oct. 3, 1967, Ser. No. 672,453
Claims priority, application France, Oct. 6, 1966, 78,977; Dec. 22, 1966, 88,509
Int. Cl. C08f *3/78*, *45/62*
U.S. Cl. 260—45.75 **3 Claims**

A method for making heat-stable copolymers of methacrylonitrile and methacrylic acid optionally containing lesser amounts of other copolymerizable olefinically unsaturated comonomers, principally styrene or a lower acrylate, by copolymerizing the monomers and heating the resultant copolymer at 150°–250° C. in the presence of a metal salt additive to improve optical clarity of the copolymers, said salt being a salt of a polyvalent metal and an unsaturated copolymerizable monocarboxylic or dicarboxylic acid.

3,553,161
POLYAMIDES STABILIZED AGAINST DEGRADATION WITH COPPER SALTS AND PHOSPHINE HALIDES

Karl Heinz Hermann, Krefeld-Bockum, August Böckmann, Krefeld, and Hans Rudolph, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 11, 1968, Ser. No. 735,972
Claims priority, application Germany, June 19, 1967, F 52,728
Int. Cl. C08g *51/60*, *51/62*
U.S. Cl. 260—45.75 **2 Claims**

Polyamides stabilized against degradation by heat and oxidative effects, containing as stabilizer a combination

consisting of (a) a copper compound and (b) a tertiary phosphine dihalide of the general formula



wherein R_1, R_2 and R_3, which may be different or not, represent alkyl, cycloalkyl, aryl or aralkyl radicals or R_1 and R_2 together represent an alkylene radical and R_3 represents an alkyl, cycloalkyl, aryl or aralkyl radical, and X represents chlorine, bromine or iodine.

3,553,162
CURABLE COPOLYMERS OF PERHALOACETONE AND EPOXIDES

Harry A. Smith, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 631,168, Apr. 17, 1967. This application June 27, 1969, Ser. No. 838,727
Int. Cl. C08g *15/00*
U.S. Cl. 260—47 **13 Claims**

This invention relates to curable interpolymers of a perhaloacetone and at least one polyepoxide which may additionally contain a lower alkylene monoepoxide. Such polymers are capable of being crosslinked through the pendent epoxide groups with a polyfunctional curing agent to produce halogen-containing polymers suitable for use as coating and adhesives.

3,553,163
STABILIZERS FOR POLYMERS

Ronald B. Spacht, Hudson, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 31, 1967, Ser. No. 664,602
Int. Cl. C08f *45/58*
U.S. Cl. 260—45.95 **9 Claims**

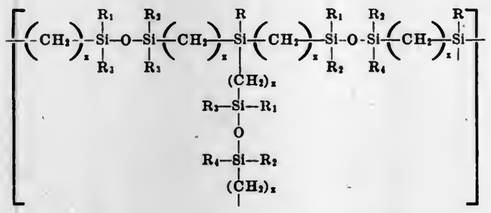
Alkylthio substituted mononuclear phenolic age resisters and age resistant polymers containing said age resisters.

3,553,164
ORGANOSILICON RESIN COMPOSITIONS

James William Curry, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

No Drawing. Filed July 31, 1968, Ser. No. 748,924
Int. Cl. C08f *11/04*
U.S. Cl. 260—46.5 **9 Claims**

Organosilicon resin compositions having repeating structural units represented by the structural formula:

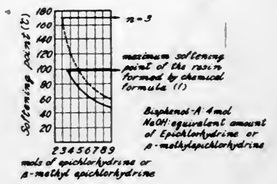


where R is selected from the group consisting of alkyls having from 1 to 30 carbon atoms, inclusive, cycloalkyls, aryls, arylalkyls, related ether containing organic groups, and carbalkoxy substituted derivatives thereof; R_1, R_2, R_3 and R_4 are each selected from the group consisting of alkyls having from 1 to 18 carbon atoms, inclusive, cycloalkyls, aryls, arylalkyls and the x is an integer from 2 to 8, inclusive.

3,553,165
METHOD FOR THE PREPARATION OF POLY-EPOXY CONDENSATES

Tomoo Kiryū, Zushi-shi, Japan, assignor to Chiyoda Kako Kensetsu Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Apr. 28, 1966, Ser. No. 546,055
Int. Cl. C08g *30/04*
U.S. Cl. 260—47 **7 Claims**



Epoxy resins having a maximum softening point above 95–97° C. are prepared by condensation of β-methyl epichlorohydrin or β-chloromethyl epichlorohydrin with bisphenol-A in a single reaction step in the absence of a solvent other than dioxane.

3,553,166
MIXTURES OF IMIDAZOLE COMPLEXES AND NITROGENOUS COMPOUND AS CURING AGENTS FOR EPOXY RESINS

Carl C. Anderson, Wen-Hsuan Chang, and Rostyslaw Dowbenko, Gibsonia, Pa., assignors to PPG Industries, Inc., a corporation of Pennsylvania

No Drawing. Filed Feb. 2, 1968, Ser. No. 702,528
Int. Cl. C08g *30/14*
U.S. Cl. 260—47 **16 Claims**

Epoxy resins are blended with a curing agent comprising a mixture of metal salt complexes of imidazoles and nitrogenous compounds such as urea, dicyandiamide, melamines and thioureas to form compositions which remain in the uncured state for long periods of time at room temperature, cure conveniently at elevated temperatures and have excellent shear strength and peel strength. These epoxy resin compositions may be used as coatings, adhesives, potting compounds, castings and laminates.

3,553,167
POLYESTERS

Hermann Schnell, Krefeld-Urdingen, Volker Böllert, Hamburg, and Gerhard Fritz, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

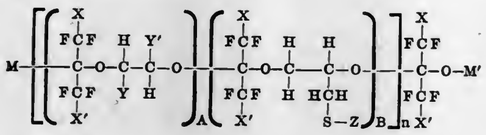
No Drawing. Continuation of application Ser. No. 476,143, July 30, 1965, which is a continuation-in-part of application Ser. No. 99,034, Mar. 29, 1961. This application Mar. 18, 1968, Ser. No. 714,116
Claims priority, application Germany, Mar. 30, 1960, F 30,871
Int. Cl. C08g *17/003*, *17/13*
U.S. Cl. 260—47 **9 Claims**

A process for preparing polymers by reacting a dicarboxylic acid, a diol or an hydroxycarboxylic acid and

a diaryl carbonate in a ratio of 1 mol of the dicarboxylic acid, at least 1 mol of the diol or the hydroxycarboxylic acid and at least 2 mols of the diaryl carbonate.

3,553,168
POLYMER COMPOSITIONS
Harry A. Smith, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Apr. 14, 1969, Ser. No. 816,056
Int. Cl. C08g 15/00
U.S. Cl. 260—63 11 Claims

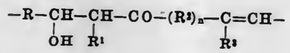
The present invention is a polymer composition characterized by the formula:



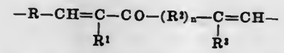
wherein X and X′ are hydrogen, fluorine, chlorine or halogenated or unsubstituted alkyls of up to 6 carbon atoms; Y and Y′ are hydrogen or alkyls having a combined total of up to 12 carbon atoms; Z is an alkyl of up to 12 carbon atoms; M is selected from the group consisting of alkali metal oxide, halogen, cyano and ester; M′ is an alkali metal; the relative molar proportions of A to B are from 0/100 to 99/1 and *n* is an integer representing the degree of polymerization having a value of at least 1.

3,553,169
NEW DIALDEHYDE-KETONE POLYCONDENSATES
Jean-Pierre Quentin, Lyon, and Michel Ruaud, Isere, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate
No Drawing. Filed Apr. 15, 1968, Ser. No. 721,149
Claims priority, application France, Apr. 28, 1967, 104,626; Feb. 14, 1968, 139,880
Int. Cl. C08g 3/00
U.S. Cl. 260—64 6 Claims

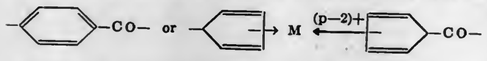
The invention provides (a) novel polycondensates consisting of units of formulae:



and



where R is a divalent aromatic radical, *n* is 0 or 1, R is



where M is a transition metal having a degree of oxidation *p*, and R^1 and R^3 are each hydrogen, an aliphatic or cycloaliphatic radical, or, when *n* is 0, together form a polymethylene chain; (b) a process for making such polycondensates by interfacial polymerization in the presence of a base of a dialdehyde of formula:

OHC—R—CHO

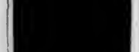
and a ketone of formula:

$$—R^1—CH_2—CO—(R^2)_n—CH_2—R^3$$

and (c) polymerizable compositions comprising the new polycondensates and a copolymerizable olefinic monomer.

3,553,170
COPOLYMERS OF VINYLBORON COMPOUNDS
William G. Woods, Fullerton, Irving S. Bengelsdorf, Tustin, and Don L. Hunter, Long Beach, Calif., assignors to United States Borax & Chemical Corporation, Los Angeles, Calif., a corporation of Nevada
No Drawing. Continuation-in-part of application Ser. No. 139,343, Sept. 20, 1961. This application Oct. 19, 1965, Ser. No. 498,122
The portion of the term of the patent subsequent to Feb. 8, 1983, has been disclaimed
Int. Cl. C08f 19/00, 19/02, 19/10
U.S. Cl. 260—66 12 Claims

Copolymers of a vinyldioxaborinane with an olefinicly unsaturated compound which is different from the vinyldioxaborinane and which contains unsaturated



groups.

3,553,171
PROCESS FOR PRODUCTION OF DIRECTLY SPINNABLE POLY(ETHYLENE TEREPHTHALATE)
Herbert Ocker, Leonberg, Germany, assignor to Werner & Pfleiderer, Stuttgart-Feuerbach, Germany, a corporation of Germany
Filed Oct. 9, 1968, Ser. No. 766,236
Claims priority, application Germany, Oct. 24, 1967, W 45,035
Int. Cl. C08g 17/01
U.S. Cl. 260—75 6 Claims

A process and installation therefor to produce a spinnable polyester composition and is particularly characterized in that pulverized dimethylterephthalate (DMT) and ethylene glycol are first mixed to form a homogeneous paste (preferably in a screw extruder with meshing screws and having a very short dwell time), then the paste is melted and heated to its ester-exchange temperature and is agitated at high speed (preferably using twin paddle screws with pilgrim-step or reciprocating step motions). After the addition of a suitable catalyst, the mixture is introduced to a series of screw-conveyor type reactors at a temperature of about 280 degrees Celsius (536 degrees Fahrenheit) and at pressures decreasing from about 60 torrs absolute down to from 0.1 to 0.3 torr absolute with the glycol content from 1% to 3% and the viscosity from 100 to 300 poises in the last reactor.

3,553,172
ELASTIC POLYURETHANE POLYMERS FROM ISOCYANATE TERMINATED PREPOLYMERS AND AROMATIC POLYESTERS
Wilhelm Thoma, Bergisch-Neukirchen and Heinrich Rinke, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Continuation-in-part of application Ser. No. 475,881, July 29, 1965. This application Feb. 18, 1969, Ser. No. 800,258
Claims priority, application Germany, Aug. 8, 1964, F 43,710
Int. Cl. C08g 22/08, 22/10, 53/00
U.S. Cl. 260—75 15 Claims

Elastic filaments and foils are prepared by reacting an NCO-terminated prepolymer prepared from an aliphatic dihydroxy compound having a melting point less than 60° C. and an aromatic diisocyanate with an aromatic polyester having a melting point greater than 180° C.

3,553,173
ELASTOMERIC FILAMENTS AND FIBERS WITH AN IMPROVED AFFINITY FOR DYES
Horst Wieden and Wolfgang Rellensmann, Dormagen, Hans Holtschmidt, Leverkusen-Steinbuchel, Ernst Roos, Cologne-Flittard, and Gunther Nischk, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Apr. 22, 1966, Ser. No. 544,382
Claims priority, application Germany, Apr. 24, 1965, F 45,903
Int. Cl. C08g 22/16, 51/44
U.S. Cl. 260—77.5 10 Claims

Elastomeric filaments are prepared from a polyurethane polymer which is the reaction product of an NCO terminated prepolymer and a chain extending composition comprised of a low molecular weight active hydrogen containing compound and a linear polyether glycol having oxygen and tertiary nitrogen atoms in the chain and a molecular weight of from 500 to 15,000.

3,553,174
REACTION PRODUCT OF A HYDROXYACRYLATE AND AN ALIPHATIC ISOCYANATE AND TRANSPARENT ARTICLE MADE THEREFROM
Robert W. Hausslein, Lexington, Arthur L. Walitt, Cambridge, and Henry E. Moivar, Jr., Billerica, Mass., assignors to Amicon Corporation, Lexington, Mass., a corporation of Massachusetts
No Drawing. Filed Nov. 27, 1967, Ser. No. 685,959
Int. Cl. C08g 22/08, 53/00
U.S. Cl. 260—77.5 8 Claims

A new process for forming transparent and abrasion-resistant articles of high impact resistance comprising the steps of carrying out step-growth polymerization of an aliphatic isocyanate compound and a hydroxyacrylate compound while concurrently carrying out chain-growth polymerization of said hydroxyacrylate compound. The invention also relates to novel compositions of matter formed by the aforesaid process and to the novel transparent articles formed therewith.

3,553,175
BETA LACTONE-POLYISOCYANATE CASTING COMPOSITIONS
Klaas Ruyter, Amsterdam, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 9, 1968, Ser. No. 782,487
Claims priority, application Netherlands, Jan. 10, 1968, 1,400
Int. Cl. C08g 22/08, 22/34
U.S. Cl. 260—77.5 12 Claims

Compositions are disclosed comprising (1) an α,α-dialkyl-β-lactone, (2) one or more organic polyisocyanate and (3) an anionic initiator containing (a) an atom from the group consisting of nitrogen, phosphorus, arsenic, sulfur, selenium or tellurium, and (b) at least 2 separate bonds between said atom and a carbon atom of an organic radical, which compositions are curable to tough hard products.

3,553,176
PROCESS FOR MODIFYING POLYOLEFINS
Yoshisato Fujisaki, Tokyo, Itsuho Aishima, Nobeoka, Hisaya Sakurai, Kawasaki, and Atsushi Kitaoka, Hironobu Kawasaki, and Minoru Oshima, Nobeoka, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan
No Drawing. Filed Aug. 22, 1967, Ser. No. 662,322
Claims priority, application Japan, Aug. 30, 1966, 41/57,197
Int. Cl. C08f 27/00, 27/06
U.S. Cl. 260—78.4 10 Claims

Process for modifying polyolefins which comprises reacting polyolefins with at least a modifier selected from the group consisting of sulfur, paraquinone dioxime and esters thereof, maleimide and derivatives thereof, halogenated benzoquinones, and unsaturated carboxylic acid and derivatives thereof, and, if required, inorganic additive by heating them in the presence of a tetravalent organotin compound.

3,553,177
PROCESS OF FORMING COPOLYMERS OF MALEIC ANHYDRIDE AND AN ALIPHATIC OLEFIN HAVING AT LEAST 30 CARBON ATOMS
Stanley M. Hazen, Cheswick, and William J. Heilman, Allison Park, Pa., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed May 26, 1969, Ser. No. 827,923
Int. Cl. C08f 25/00, 47/03
U.S. Cl. 260—78.5 9 Claims

Maleic anhydride and an aliphatic olefin having at least 30 carbon atoms per molecule are copolymerized in the presence of a solvent comprising an aliphatic ketone having from 3 to 5 carbon atoms, such as methylethylketone, and in the presence of a free-radical catalyst using a sufficient amount of ketone to maintain not only the reactants but also the copolymer products in solution. The unreacted monomers are precipitated from the reaction product solution in a filterable particulate solid form by cooling the reaction product solution to a temperature less than the crystallization temperature of the aliphatic olefin in the presence of sufficient additional amounts of ketone solvent, if required, to maintain the copolymer in solution and precipitate the olefin monomer in a finely divided filterable form. The precipitated monomer can then be separated from the copolymer solution by any suitable means, such as filtration.

3,553,178
CARBON DIOXIDE AS AN ETHYLENE POLYMER COAGULANT
Bert H. Clampitt and Rajindar K. Kochhar, Overland Park, and Robert K. Bartholomew, De Soto, Kans., and Harold L. Burrus, Grain Valley, Mo., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Filed Sept. 7, 1967, Ser. No. 665,962
Int. Cl. C08f 47/00
U.S. Cl. 260—80.72 9 Claims

Water-insoluble, self-emulsifiable ethylene polymers containing pendent carboxylate salt groups are recovered from aqueous dispersions of such polymers by contacting such dispersions with carbon dioxide.

3,553,179
ACRYLATE-TYPE ESTERS OF PERFLUOROPOLY-OXA-ALKANEAMIDOALKYL ALCOHOLS AND THEIR POLYMERS
Philip Lee Bartlett, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed May 6, 1968, Ser. No. 727,103
Int. Cl. C08f 3/62, 15/18
U.S. Cl. 260—80.72 7 Claims

Monomers of the formula

$$R_fO[CF(CF_3)CF_2O]_nCF(CF_3)C(O)—N(R')RO_2CC(R'')=CH_2$$

wherein R_f is perfluoroalkyl, *n* is 0–8, R′ is hydrogen or lower alkyl, R is alkylene, and R″ is hydrogen or methyl.

Homopolymers of the above-described monomers and

copolymers of them with vinylidene monomers. The polymers are useful as oil and water repellents and as metal corrosion inhibitors.

3,553,180
POLYMERS OF VINYLPYRIDINES AND POLYVINYL AROMATIC COMPOUNDS
James W. Cleary, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Nov. 1, 1968, Ser. No. 772,861
Int. Cl. C08f *1/08*
U.S. Cl. 260—80.72 8 Claims

Vinylpyridines are polymerized in the presence of a polyvinyl aromatic compound. The polymerization is carried out in a reaction medium comprising methanol and water. The resulting polymer is particularly useful as a catalyst support.

3,553,181
PROCESS FOR THE POLYMERIZATION AND COPOLYMERIZATION OF OLEFINS
André Delbouille, Brussels, and Jean-Louis Deroitte, Barvaux-sur-Ourthe, Belgium, assignors to Solvay & Cie, Brussels, Belgium, a Belgian corporation
No Drawing. Filed Nov. 16, 1967, Ser. No. 683,492
Claims priority, application France, Nov. 18, 1966, 84,118
Int. Cl. C08f *15/40*
U.S. Cl. 260—80.78 10 Claims

Olefins and diolefins are polymerized and copolymerized in the presence of a catalyst which is obtained by reacting a transition metal compound with macromolecular nitrogenous compound which is substantially free of hydroxyl groups and then activating the thus obtained product with an organometallic compound.

3,553,182
ALKENE OXIDE POLYMERIZATION CATALYZED BY ORGANOALUMINUM-ORGANOPHOSPHINE MIXTURES
Francis X. Mueller, Jr., Louisville, Ky., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed June 21, 1968, Ser. No. 738,864
Int. Cl. C08g *23/06*
U.S. Cl. 260—88.3 24 Claims

Alkene oxides containing 2 to 20 carbon atoms are polymerized in the presence of a catalyst formed by an organoaluminum compound and a triorganophosphine compound. One example of such a catalyst employs triisobutylaluminum and triphenylphosphine. In addition, these alkene oxides can be copolymerized with certain vinyl monomers.

3,553,183
INTERPOLYMERIC ANTI-CLUMPING ADDITIVES
Nathan D. Field, Allentown, Pa., and Donald H. Lorenz, Basking Ridge, N.J., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 27, 1969, Ser. No. 811,256
Int. Cl. C08f *1/11, 15/02*
U.S. Cl. 260—78.5 11 Claims

Process for interpolymerization of maleic anhydride with alkyl vinyl ethers in the presence of an anti-clumping agent comprising copolymers of maleic anhydride with higher alkyl vinyl ethers in high solids content whereby the interpolymer is recovered as a free-flowing powder after evaporation of the solvent and in which the anti-clumping agent is compatible with the lower alkyl vinyl ether maleic anhydride copolymer at substantially pH 7 and above even at the boiling point of the solution.

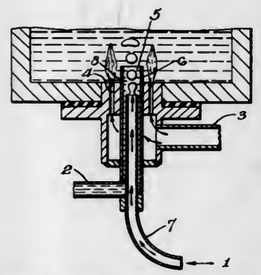
3,553,184
PROCESS FOR THE MANUFACTURE OF COPOLYMER DISPERSIONS OF VINYL ALKANOATES/VINYL CHLORIDES
Michael Lederer and Heinrich Koch, Frankfurt am Main, and Albrecht Harreus, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
No Drawing. Continuation of application Ser. No. 586,353, Oct. 13, 1966. This application Sept. 22, 1969, Ser. No. 860,123
Claims priority, application Germany, Oct. 23, 1965, F 47,500
Int. Cl. C08f *15/24*
U.S. Cl. 260—87.1 5 Claims

A process has been provided for the manufacture of aqueous copolymer dispersions based on vinyl chloride and vinyl esters of branched aliphatic carboxylic acids. A dispersion of improved stability is obtained by carrying out the polymerization of the monomer mixture in an aqueous solution of (a) hydroxyethyl cellulose with a OC_2H_4 content of 37 to 50%, (b) an oxyethylated alkyl phenol with 6 to 25 OC_2H_4 units in the molecule, and (c) as an ionic emulsifier, sodium lauryl sulfate.

3,553,185
PROCESS FOR PRODUCING POLYVINYLIDENE FLUORIDES HAVING HIGH HEAT STABILITY
Yasuo Amagi and Nobuo Bannai, Iwaki-shi, Japan, assignors to Kureha Kagaku Kogyo Kabushiki Kaisha, Tokyo-to, Japan
No Drawing. Continuation-in-part of application Ser. No. 595,018, Nov. 17, 1966. This application Nov. 3, 1969, Ser. No. 873,487
Claims priority, application Japan, Dec. 10, 1965, 40/75,942
Int. Cl. C08f *1/11, 1/80, 3/22*
U.S. Cl. 260—92.1 2 Claims

Polyvinylidene fluorides of excellent heat stability and desirable intrinsic viscosity are obtained by suspension or precipitation polymerization using a dialkylperoxidicarbonate as the polymerization catalyst.

3,553,186
RECOVERY OF POLYMER FROM DISPERSION IN WATER
Hildegard Schnoring, Wuppertal-Elbergeld, Willy Classe, Cologne-Stammheim, Diez Heine, Leverkusen-Kuepersteg, Herbert Nordt, Leverkusen, and Karl-Heinz Kreutzer, Cologne-Muelheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Jan. 5, 1968, Ser. No. 696,053
Int. Cl. C08d *5/00, 5/04*
U.S. Cl. 260—94.7 5 Claims



Polymers such as olefin polymers are recovered from solution in volatile hydrocarbon or halogenated hydrocarbon like toluene or carbon tetrachloride, by dispersing the solution in a liquid like water which is substantially immiscible with the solvent and with the polymer and then introducing the dispersion into a body of heated liquid like water kept at a temperature that causes the solvent to rapidly vaporize off. Recovery of vaporized solvent is excellent and polymer is also easily separated out from the heated body of liquid. Streams of steam can be introduced into the body of liquid around the introduced dispersion. The process can be carried out on a continuous basis using streams of the liquids and solution, without much danger of clogging the solution-introducing means.

3,553,187
CONTINUOUS PROCESS FOR PRODUCING POWDER POLYETHYLENE
Masaaki Takehisa, Tadao Yamada, Yoshio Takasaka, and Kazukiyo Miyanaga, Takasaki-shi, Japan, assignors to Japan Atomic Energy Research Institute
Filed Dec. 4, 1967, Ser. No. 687,619
Claims priority, application Japan, Dec. 2, 1966, 41/78,613
Int. Cl. C08f *3/04, 47/02*
U.S. Cl. 260—94.9 6 Claims

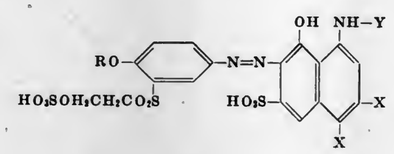
This invention is based in the finding that an aqueous solution (having a surface tension of 32.5 dyne/cm. or less) of an alkanol having 1–4 carbon atoms is suitable as a carrier or dispersion medium for continuously separating powder polyethylene which is produced by polymerizing ethylene at a temperature lower than the melting point of the produced polyethylene from the reaction vessel in the form of a slurry in which the powder polyethylene is dispersed.

3,553,188
PROCESS FOR PRODUCING SATURATED CARBOXYLIC ACIDS
Joseph Heckmaier and Gerhard Kunstle, Burghausen, Upper Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Bavaria, Germany, a corporation of Germany
Filed Aug. 19, 1968, Ser. No. 753,499
Claims priority, application Germany, Aug. 21, 1967, 1,668,845
Int. Cl. C08h *17/36*
U.S. Cl. 260—413 4 Claims

Process for producing saturated carboxylic acids by the catalytic hydrogenation of low-polymeric products which are formed during the reaction of ketene with ketones with 3 to 6 carbon atoms or aldehydes with 1 to 18, preferably 3 to 8 carbon atoms, which comprises heating the raw catalyst-containing low-polymeric product in a reaction zone in the presence of a Raney nickel hydrogenation catalyst at normal pressure and in the liquid phase at a gradually increasing reaction temperature within a range from 50 to 250° C., while circulating an excess quantity of dry hydrogen through said reaction zone.

3,553,189
AMINO-NAPHTHOL-AZO-PHENYL DYES
Hiroshi Sugiyama, Ashiya-shi, Hideo Otsuka, Ibaragi-shi, and Masakazu Yamamoto, Takarazuka-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Higashiku, Osaka, Japan, a corporation of Japan
No Drawing. Filed Nov. 24, 1967, Ser. No. 685,291
Claims priority, application Japan, Apr. 13, 1967, 42/23,838
Int. Cl. C07c *107/04*; C09b *29/30*
U.S. Cl. 260—198 15 Claims

Clear bluish red reactive dyes represented by the formula,



wherein R is methyl or ethyl; one X is hydrogen and the other X is a sulfonic acid group; and Y is an acetyl or chloroacetyl, or is a benzoyl or benzenesulfonyl group, the benzoyl or benzenesulfonyl may have halogen atoms or alkyls in the nucleus. These compounds are suitable for dyeing natural fibers such as cotton, linen and wool, as well as fibers of synthetics such as rayon, viscose, polyvinyl alcohol, and polyamides, and are characterized by excellent light and wash fastness.

3,553,190
PHENYL-AZO-PHENYL DYESTUFFS
Catherine Margaret Anderton, Brian Ribbons Fishwick, and John Lawson, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed July 12, 1967, Ser. No. 652,705
Claims priority, application Great Britain, July 15, 1966, 31,920/66
Int. Cl. C07c *107/06*; C09b *29/06*
U.S. Cl. 260—207 3 Claims

Water-insoluble azo dyestuffs derived from a diazo component, particularly of the benzene series, and as coupling component, an optionally substituted N-[(alk-oxy-alkoxycarbonyl)alkylene]aniline, and the use of the said dyestuffs for coloring synthetic textile materials.

3,553,191
AMINOETHYL CYCLODEXTRIN AND METHOD OF MAKING SAME
Stanley M. Parmerter, Wheaton, and Earle E. Allen, Jr., Chicago, Ill., assignors to CPC International Inc., a corporation of Delaware
No Drawing. Filed May 21, 1968, Ser. No. 730,909
Int. Cl. C08b *25/02*
U.S. Cl. 260—209 2 Claims

Cyclodextrin is reacted with ethylenimine to yield aminoethylcyclodextrin. The aminoethyl cyclodextrin may be used as a clathrating compound or as a paper sizing.

3,553,192
SUBSTITUTED (2'-DEOXYRIBOSYL) URACIL COMPOUNDS, COMPOSITIONS CONTAINING SAME AND PROCESS OF MAKING AND USING SAME
Kailash Kumar Gauri, Lentfohrden, Holstein, Germany, assignor to Robugen G.m.b.H., Esslingen (Neckar), Germany, a company of Germany
Filed July 15, 1968, Ser. No. 744,957
Int. Cl. C07d *51/52*
U.S. Cl. 260—211.5 9 Claims

5-alkyl substituted and 1,5-di-alkyl substituted 3-(2'-deoxyribosyl) uracil compounds wherein the alkyl in 5-position has 2 to 6 carbon atoms and the alkyl in 1-position has 1 to 3 carbon atoms have a surprisingly high virostatic activity. Especially valuable compounds are 5-ethyl-3-(2'-deoxyribosyl) uracil and 5-n-propyl-3-(2'-deoxyribosyl) uracil.

The compounds are used in the treatment of virus diseases and have proved of considerable value in the treatment of herpes infections by topical administration, for instance, in the form of solutions, ointments, powders, sprays, plasters, and others.

The virostatic agents are prepared, for instance, by reacting a reactive derivative of 5-alkyl or 1,5-dialkyl uracil, such as its mercury salt or its trimethyl silyl compound, with a reactive derivative of 2-deoxyribose, such as the 2-deoxyribofuranosyl chloride in which the hydroxyl groups are protected by conversion into the acyloxy groups, such as the p-chloro benzoyl groups. The acyl groups are split off from the reaction products, for in-

stance, by means of methanolic alkali metal methanolate or methanolic ammonia.

The β-anomer is the effective agent of the resulting mixture of β- and α-nucleosides.

3,553,193
METHOD OF OXIDIZING STARCH

David H. Le Roy, North Riverside, and Stanley M. Parmerter, Wheaton, Ill., assignors to CPC International Inc., a corporation of Delaware

No Drawing. Filed Apr. 10, 1968, Ser. No. 720,395
Int. Cl. C08b 19/01
U.S. Cl. 260—233.3 20 Claims

Covers a method of preparing carbonyl-containing starches. Particularly covers a method of preparing carbonyl starches by reaction of starch with either an alkali metal hypobromite or an alkali metal bromite under carefully controlled conditions to provide an oxidized starch product having a substantially greater proportion of carbonyl groups than carboxyl groups. Also covers a method of selectively oxidizing side chains of starch derivatives under the same process conditions whereby the underivatized starch hydroxy radicals contained in the anhydroglucose units are substantially non-oxidized.

3,553,194
STARCH PHOSPHONATES

Frank Verbanac and Kenneth B. Moser, Decatur, Ill., assignors to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware

No Drawing. Filed Dec. 28, 1967, Ser. No. 694,056
Int. Cl. C08b 19/04
U.S. Cl. 260—233.5 7 Claims

Starch ether phosphonates prepared by reacting starch with phosphonating agents, wherein the organo group bonded directly to the phosphorus atom is a vinyl group, an alkane substituted with a vicinal halohydroxy group, a vicinal epoxy group or an omega-halo group.

3,553,195
PROCESS FOR THE INHIBITION OF GRANULAR STARCH BASES

Wadym Jarowenko, Plainfield, N.J., assignor to National Starch and Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 3, 1968, Ser. No. 757,085
Int. Cl. C08b 19/02
U.S. Cl. 260—233.5 4 Claims

A process for the preparation of inhibited, intact granule starch products which comprises the reaction, in aqueous media, of a starch base and a tripolyphosphate salt. The thus produced inhibited starches display utility as thickening agents for food products and in various sizing, coating and adhesive applications.

3,553,196
HIGH-AMYLOSE STARCH ACETATE

Arthur M. Mark and Charles L. Mehltretter, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Ser. No. 812,926, Apr. 2, 1969. Divided and this application July 10, 1969, Ser. No. 855,439
Int. Cl. C08b 19/02
U.S. Cl. 260—233.5 1 Claim

Water-soluble food packaging films are cast from aqueous dispersions prepared by steam jet cooking high-amylose corn starch acetates of D.S. 0.21 to 0.31 at 177° C. to disintegrate the granules present. The acetates were produced in granule form by acetylating high-amylose corn starch of 70 percent apparent amylose content with acetic anhydride in a mixer at 90° to 95° C. for 30 minutes using 1.5 percent sodium hydroxide (based on dry starch) as catalyst.

3,553,197
3-(3',4'-DISUBSTITUTED PHENYL)-2-METHYL-AZIRIDINE-2-CARBOXYLIC ACID OR ESTERS

Victor J. Grenda, Warren, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 28, 1967, Ser. No. 619,161
Int. Cl. C07d 23/04
U.S. Cl. 260—239 4 Claims

α-Methyl-3,4-disubstituted phenylalanines are prepared by a process which comprises converting a 3,4-disubstituted-α-methylcinnamic acid derivative to a 2-methyl-2,3-dihalo-3(3',4'-disubstituted phenyl)propionic acid, reacting the 2,3-dihalo propionic acid with an amine to form a 3-(3',4'-disubstituted phenyl)-2-methyl-2-aziridine derivative and hydrogenolyzing the aziridine derivative to the desired product. The aziridine derivatives themselves are claimed. The α-methyl-3,4-disubstituted phenylalanines are useful compounds in the treatment of hypertension.

3,553,198
2,4,6-SUBSTITUTED-5-ARYLSULFONYL-PYRIMIDINES

Arthur A. Santilli, Havertown, Pa., Thomas S. Osdene, Richmond, Va., and Scott J. Childress, Philadelphia, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 519,193, Jan. 7, 1966. This application Mar. 7, 1968, Ser. No. 715,475
Int. Cl. C07d 51/42
U.S. Cl. 260—239.75 8 Claims

4-substituted-5-aryl-sulfonylpyrimidines, optionally substituted at positions 2 and 6, are prepared by condensing an amidine or substituted amidine with an appropriately-substituted-α-arylsulfonyl-β-lower alkoxy-acrylonitrile or a lower alkyl-α-arylsulfonyl-β-lower alkoxy-acrylyl ketone in the presence of an alkaline condensation agent. The compounds of this invention have cardiovascular activity, especially blood-pressure lowering activity.

3,553,199
REACTION OF 2-AMINOBENZOPHENONE AMINES AND BENZHYDRYL AMINES WITH DI-LEAVING GROUP-SUBSTITUTED ETHANE

Giles A. Archer, Essex Fells, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 17, 1967, Ser. No. 623,834
Int. Cl. C07d 53/06
U.S. Cl. 260—239 7 Claims

When benzophenone imines or benzhydrylamines are reacted with 1,2-di-leaving group-substituted ethanes, there are obtained known 1,4-benzodiazepines. The latter compounds are useful as anti-convulsants, muscle relaxants and sedatives.

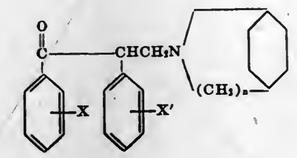
3,553,200
AZABICYCLOALKYL-PROPIOPHENONES

Robert Bruce Moffett, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed July 25, 1968, Ser. No. 747,450
Int. Cl. C07d
U.S. Cl. 260—239 2 Claims

This invention relates to novel 2-phenyl-3-(3-azabicyclo [3.2.2]nonan-3-yl)-propiophenones and their 2 - azabicyclo[2.2.2]octan-2-yl counterparts; it is inclusive of the

free base and acid addition salt forms of the compounds embraced by the formula



I

wherein *n* is selected from the group consisting of zero and one and X and X' are selected from the group consisting of hydrogen, lower-alkyl, fluorine, chlorine and bromine.

As used in this specification, the term "lower-alkyl" means alkyl of from one through four carbon atoms, e.g., methyl, ethyl, propyl, butyl, and isomeric forms thereof.

3,553,201
DEHYDRATED CRYSTALLINE 6-(1-AMINOCYCLOALKYLCARBOXAMIDO) PENICILLANIC ACIDS

Donald E. Clark, Norristown, Norman H. Grant, Wynnewood, and Harvey E. Alburn, Westchester, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 549,895, May 13, 1966. This application Oct. 3, 1967, Ser. No. 672,614
Int. Cl. C07d 99/16
U.S. Cl. 260—239.1 1 Claim

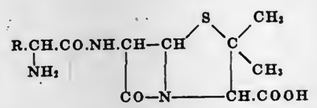
This invention is concerned with new and novel partially dehydrated and anhydrous 6-(1-aminocycloalkylcarboxamido)penicillanic acids and processes for the preparation thereof.

3,553,202
PRODUCTION OF AMINOACYLPENICILLINS

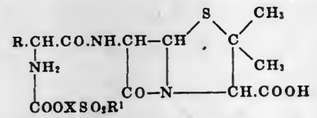
Brian William Hatt, Redhill, and Harry Smith, Maplehurst, near Horsham, England, assignors to Beecham Group Limited, Brentford, Middlesex, England, a British company

No Drawing. Continuation of application Ser. No. 533,818, Mar. 14, 1966. This application May 22, 1969, Ser. No. 828,435
Claims priority application Great Britain, Mar. 23, 1965, 12,138/65; July 17, 1965, 30,479/65
Int. Cl. C07d 99/16
U.S. Cl. 260—239.1 5 Claims

Aminoacylpenicillins of the formula:



are produced by reacting an N-protected penicillin of the formula:



wherein

R is a substituted or unsubstituted alkyl, aralkyl, aryl or heterocyclic group,

R^1 is a substituted or unsubstituted alkyl, aralkyl or aryl group, and

X is a divalent saturated hydrocarbon moiety having from 2 to 6 carbon atoms linked to the groups on either side through adjacent carbon atoms,

with a suitable base in an aqueous or partially aqueous solution at a pH between 8 and 11.5 and at a temperature between 0° C. and 50° C. Non-toxic pharmaceutically acceptable salts also form part of the present invention.

3,553,203
3-SUBSTITUTED PICOLINYL PENICILLINS AND CEPHALOSPORINS

J. S. Paul Schwarz, State College, Pa., and John T. Sheehan, Middlesex, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 656,002 and Ser. No. 656,026, both filed July 26, 1967. This application June 17, 1969, Ser. No. 834,157
Int. Cl. C07d 99/16, 99/24
U.S. Cl. 260—239.1 14 Claims

This invention relates to novel therapeutic agents related to penicillin and cephalosporin C. The compounds of the present invention contain the penicillin and cephalosporin C chemical structure substituted at the 6- or 7-position, respectively, with 3-substituted picolinic acid residues.

These compounds possess a high degree of activity against a large number of microorganisms, particularly penicillinase-producing microorganisms. In addition, the compounds of this invention are useful as animal feed supplements and as the active ingredient in germicidal preparations employed as surface disinfectants.

3,553,204
PROCESS FOR THE CONTINUOUS MANUFACTURE OF LACTAMS

Albert Gehring, Tamins, Guiseppe Bertrossa, Domat-Ems, and Hans-Joachim Schultze, Chur, Switzerland, assignors to Inventa A.G. fur Forschung und Patentverwertung; Zurich, Switzerland

Filed Jan. 10, 1967, Ser. No. 613,383
Claims priority, application Switzerland, Jan. 14, 1966, 526/66
Int. Cl. C07d 41/06
U.S. Cl. 260—239.3 10 Claims

A process for the continuous production of lactams which are starting materials for nylon-type polyamides, from cyclic ketoximes, using mineral acids as a catalyst, cycling oxime and acid by way of nozzles from continuous mixers in lieu of using agitator vessels. The nozzle delivery speed of the oxime and of the acid is at least twice the flow velocity of the cycle and the volume proportions of the product pumped per hour to oxime introduced is 50:1 to 150:1.

3,553,205
METHOD OF PRODUCING 7-NITROSUBSTITUTED 1,4-BENZODIAZEPINES

Poul Nedenskov, Birkerod, Denmark, assignor to Aktieselskabet Grindstedvaerket, Jens Baggesensvej, Arhus, Denmark, a firm

No Drawing. Filed Feb. 20, 1968, Ser. No. 706,795
Claims priority, application Great Britain, Feb. 28, 1967, 9,393/67
Int. Cl. C07d 53/06
U.S. Cl. 260—239.3 4 Claims

The invention relates to a new method of producing 7-nitro-di- and -tetrahydro-5-phenyl-2H-1,4-benzodiazepin-2-ones by introducing the phenyl group in 5-position in the corresponding N-oxides by a Grignard reaction.

3,553,206
7-LOWER ALKANOYL BENZODIAZEPINES
Pius Anton Wehrli, Verona, Rodney Ian Fryer, North Caldwell, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 838,677, July 2, 1969. This application Nov. 17, 1969, Ser. No. 877,490
Int. Cl. C07d *53/06*
U.S. Cl. 260—239 **11 Claims**

Benzodiazepines bearing a lower alkanoyl group in position-7 and processes for preparing the foregoing. Benzodiazepines bearing a lower alkanoyl group in position-7 are useful as an anticonvulsant, muscle relaxant and sedative agents.

3,553,207
PHENYLPYRAZOLODIAZEPINONE COMPOUNDS
Ivan C. Nordin, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Filed Dec. 16, 1968, Ser. No. 784,262
Int. Cl. C07d *53/02*
U.S. Cl. 260—239.3 **4 Claims**

6 - hydroxy- and 6 - acetoxy - 3 - methyl - 8 - phenylpyrazolo[4,3-e]-[1,4]diazepin - 5(1H) - one compounds substituted in the 1-position by methyl or ethyl and optionally in the 4-position by methyl; salts thereof; and their production by (a) reacting a 3-methyl-8-phenylpyrazolodiazepinone, 7-oxide compound with acetic anhydride to produce one of the 6-acetoxy compounds and (b) hydrolyzing one of the 6-acetoxy compounds to produce one of the corresponding 6-hydroxy compounds. The compounds of the invention are useful as anticonvulsant and anti-anxiety agents.

3,553,208
PROCESS FOR MAKING QUINOXALINE-DI-N-OXIDES
Eli Abushanab, Groton, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed July 5, 1968, Ser. No. 742,513
Int. Cl. C07d *51/78*
U.S. Cl. 260—250 **14 Claims**

A novel process consisting of the reaction between an o-quinonedioxime and a reagent such as an α-dicarbonyl compound, an α-hydroxycarbonyl compound, an α-halocarbonyl compound, an α-epoxycarbonyl compound or an α-epoxy halide.

3,553,209
3-METHYL-8-(2-THIENYL)PYRAZOLO[4,3-e][1,4] DIAZEPIN-5(1H)-ONE COMPOUNDS
Yvon J. L'Italien, Plymouth, and Ivan C. Nordin, Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Filed Dec. 16, 1968, Ser. No. 784,260
Int. Cl. C07d *53/02*
U.S. Cl. 260—239.3 **4 Claims**

3 - methyl-8-(2-thienyl)pyrazolo[4,3-e][1,4]diazepin-5(1H)-one compounds, 7-oxide derivatives thereof, and their salts, substituted in the 1-position by methyl or ethyl and optionally in the 4-position by methyl; and their production by (a) reacting a 4-amino-3-methyl-5-(2-thenoyl)pyrazole with a lower alkyl ester of glycine or a salt thereof, (b) reacting a 4-(2-haloacetamido)-3-methyl-5-(2-thenoyl)pyrazole or a salt thereof with ammonia, (c) reacting a 4-(2-aminoacetamido)-3-methyl-5-(2-thenoyl)pyrazole salt with a base, (d) reacting a 4-[2-(hydroxylamino)acetamido] - 3 - methyl-5-(2-thenoyl)pyrazole with a strong acid, (e) reacting one of the 3-methyl - 8 - (2-thienyl)pyrazolo[4,3-e][1,4]diazepin-5(1H)-one compounds with an oxidizing agent, and (f) reacting one of the 4-unsubstituted 3-methyl-8-(2-thienyl)-pyrazolo[4,3-e][1,4]diazepin-5(1H) ones or the 7-oxide derivatives thereof with a methylating agent in the presence of a base. The compounds of the invention are useful as anticonvulsant and anti-anxiety agents.

3,553,210
3-METHYL - 8 - PHENYLPYRAZOLO[4,3-e][1,4]DIAZEPIN-5(1H)-ONE, 7-OXIDE COMPOUNDS
Ivan C. Nordin, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Filed Dec. 16, 1968, Ser. No. 784,261
Int. Cl. C07d *53/02*
U.S. Cl. 260—239.3 **2 Claims**

3 - methyl-8-phenylpyrazolo[4,3-e][1,4]diazepin-5(1H)-one, 7-oxide compounds, substituted in the 1-position by methyl or ethyl and optionally in the 4-position by methyl; salts thereof; and their production by (a) reacting a 5 - benzoyl-4-[2-(hydroxylamino)acetamido]-3-methylpyrazole with a strong acid, (b) reacting a 3-methyl - 8 - phenylpyrazolo[4,3-e][1,4]diazepin-5(1H)-one with an oxidizing agent, and (c) reacting one of the 4-unsubstituted 3 - methyl-8-phenylpyrazolo[4,3-e][1,4]diazepin-5(1H)-one, 7-oxides with a methylating agent in the presence of a base. The compounds of the invention are useful as anticonvulsant and antianxiety agents.

3,553,211
QUATERNARY AMMONIUM STEROIDS
David J. Ellis, Mountain View, and David H. Rammler, Palo Alto, Calif., assignors to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Filed Aug. 8, 1968, Ser. No. 751,072
Int. Cl. C07c *173/10*
U.S. Cl. 260—239.5 **26 Claims**

Quaternary ammonium steroids having anti-bacterial activity which are prepared by the reaction of a diazabicycloalkene with a halogen substituted steroid or a steroid substituted with a displaceable radical such as methanesulfonyloxy or toluenesulfonyloxy.

3,553,212
2β,16β-DIAMINO-ANDROSTANES
Colin Leslie Hewett, Glasgow, and David Samuel Savage, Newton Mearns, Scotland, assignors to Organon Inc., West Orange, N.J., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 528,358, Feb. 18, 1966. This application Apr. 19, 1968, Ser. No. 722,545
Claims priority, application Great Britain, Feb. 19, 1965, 7,278/65
Int. Cl. C07c *173/10*
U.S. Cl. 260—239.5 **6 Claims**

2β,16β-diamino-androstane compounds oxygenated in the 3- and 17-positions, wherein the amino groups may be dialkylamino and heterocyclic amino groups, and their acid addition salts and quaternary ammonium salts, are prepared by reacting a 16α, 17α-oxido-, or a 16-keto-steroid with an amine at elevated temperature and pressure, followed by reduction to the corresponding 17β-hydroxy derivative. The compounds of the invention are highly active neuromuscular blocking agents and have a strong influence on the autonomic nervous system.

3,553,213
17α-AMINOALKYNYL-3-CHLORO 19-NORSTEROIDAL 3,5-DIENES
Donald W. Oliver, King of Prussia, and Gerhard R. Wendt, Havertown, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 17, 1969, Ser. No. 807,978
Int. Cl. C07c *173/10*
U.S. Cl. 260—239.5 **30 Claims**

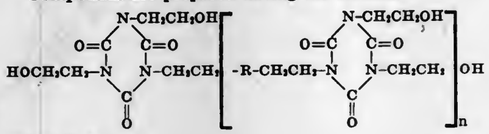
13 - alkyl - 17α - aminoalkynyl - 3 - chlorogona - 3,5-dien-17-ols and 17-alkanoates (1) and their salts are useful as trichomonacides, fungicides, amebicides and bactericides. Compounds (I) are prepared by treating the corresponding 13 - alkyl - 3 - chloro - 17α - ethynylgona-3,5-dien-17-ol or 17-alkanoate (II) with formaldehyde and an appropriately-substituted secondary amine.

3,553,214
1,4-DIHYDRO-3H-2,3-BENZOXAZINE DERIVATIVES
David G. Martin, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 686,733, Nov. 29, 1967. This application June 5, 1968, Ser. No. 734,547
Int. Cl. C07d *87/12*
U.S. Cl. 260—244 **2 Claims**

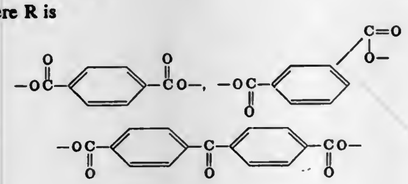
1,4-dihydro-3H-2,3-benzoxazine is reacted with halophenyl chloroformate to form halophenyl esters of 1,4-dihydro-3H-2,3-benzoxazine-3-carboxylic acid. The 1,4-dihydro-3H-2,3-benzoxazine-3-carboxylic acid halophenyl esters have utility as antifungal and antilipemic agents.

3,553,215
TETRAHYDRIC ISOCYANURATE
Edmund J. Zalewski and Manuel A. Jordan, Schenectady, N.Y., assignors to Schenectady Chemicals, Inc., Schenectady, N.Y., a corporation of New York
No Drawing. Filed Mar. 12, 1969, Ser. No. 806,709
Int. Cl. C07d *55/14*
U.S. Cl. 260—248 **3 Claims**

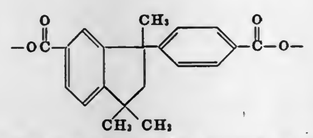
Compounds are prepared having the formula



where R is



or



Preferably R is the residue of terephthalic acid, and *n* is an integer from 1 to 6.

3,553,216
PROCESS FOR THE PRODUCTION OF CYTOSINE COMPOUNDS AND INTERMEDIATES FOR USE THEREIN
Leonard Doub, Bloomfield Hills, and Uldis Krolls, Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan
No Drawing. Continuation-in-part of application Ser. No. 476,694, Aug. 2, 1965. This application Mar. 4, 1968, Ser. No. 709,964
Int. Cl. C07d *51/28*
U.S. Cl. 260—256.4 **6 Claims**

Process for the production of cytosines, optionally substituted in the 1-position by lower alkyl or benzyl, and salts thereof, by the dehydrohalogenation of a 5-halo-5,6-dihydrocytosine or a salt thereof. The unsubstituted product, cytosine, is useful as an intermediate in the preparation of cytidine and the 1-substituted cytosine products are useful as intermediates in the preparation of N-sulfanilylcytosines.

3,553,217
2-(QUINOLINIMIDO)GLUTARIMIDE
Jorge P. Li, Ramona H. Jules, and John H. Biel, Milwaukee, Wis., assignors to Aldrich Chemical Company, Inc., Milwaukee, Wis., a corporation of Wisconsin
No Drawing. Filed Oct. 18, 1968, Ser. No. 768,904
Int. Cl. C07d *57/04*
U.S. Cl. 260—281 **3 Claims**

2-(quinolinimido)glutarimide exhibits sedative activity and is useful as a sedative in mammals. 2-(quinolinimido) glutaramic acid is useful as an intermediate in a process for preparing 2-(quinolinimido)glutarimide.

3,553,218
2-OXO-7-PHENYL-1,2,3,4,6,7-HEXAHYDRO-11bH-BENZO[a]QUINOLIZINES
Richard Unger, Darmstadt-Eberstadt, and Helmut Müller-Calgan, Darmstadt, Germany, assignors to E. Merck A.G., Darmstadt, Germany
No Drawing. Filed Jan. 6, 1967, Ser. No. 607,666
Claims priority, application Germany, Jan. 7, 1966, 1,595,977
Int. Cl. C07d *39/12*
U.S. Cl. 260—286 **10 Claims**

2-oxo-7-phenyl-1,2,3,4,6,7 - hexahydro - 11bH - benzo [a]quinolizines having an effect on the central nervous system.

3,553,219
MANUFACTURE OF PYRIDINE AND SUBSTITUTED PYRIDINES
John Anthony Corran, Runcorn, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Aug. 24, 1967, Ser. No. 662,897
Claims priority, application Great Britain, Sept. 5, 1966, 39,582/66
Int. Cl. C07d *31/14*
U.S. Cl. 260—290 **5 Claims**

Manufacture of pyridines by interaction of piperidine or a tetrahydropyridine with molecular oxygen in the vapour phase at an elevated temperature.

3,553,220
CATALYTIC OXIDATIVE DEHYDROGENATION OF ALKYLPYRIDINES
Robert W. Etherington, Jr., Pennington, and Koei-Liang Liauw, Clark, N.J., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Apr. 23, 1968, Ser. No. 723,608
Int. Cl. C07d *31/20*
U.S. Cl. 260—290 **8 Claims**

Ethylpyridines are oxidatively dehydrogenated to the corresponding vinylpyridines by contacting an ethylpyridine and molecular oxygen-containing gas with a catalyst containing gold metal in the vapor phase (400–750° C.). The gold may be on a support. The vinylpyridine products can be polymerized and copolymerized to thermoplastic polymers useful for making extruded or molded shapes.

3,553,221
CERTAIN INTERMEDIATES FOR THE PRODUCTION OF β-COLLIDINE
Juerg Albert Walter Gutzwiller, Cedar Grove, and Milan Radoje Uskokovic, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Filed Jan. 22, 1968, Ser. No. 699,334
Int. Cl. C07d *31/28, 31/32*
U.S. Cl. 260—290 **7 Claims**

The preparation of β-collidine from methyl vinyl ketone and an amine such as, for example, benzylamine,

through various intermediates, for example, 3-acetyl-1-benzyl - 1,2,5,6 - tetrahydro - 4 - methylpyridine, 3-acetyl - 1,2,5,6 - tetrahydro - 4 - methylpyridine, 3-acetyl - 4 - methylpyridine, 1 - benzyl - 3 - (1 - hydroxyethyl) - 1,2,5,6 - tetrahydro - 4 - methylpyridine, 3-(1-hydroxyethyl)-4-methylpyridine and 1-benzyl-3-ethylene-1,2,3,6-tetrahydro-4-methylpyridine, is described. β-Collidine, i.e., 3-ethyl-4-methylpyridine, is useful in the synthesis of, for example, dihydroquinidine.

3,553,222

PROCESS FOR THE PRODUCTION OF PYRIDINE AND ALKYL-DERIVATIVES OF PYRIDINE BY MEANS OF THERMAL HYDRODEALKYLATION OF HIGHER ALKYL AND ALKENYL PYRIDINES

Adriano Nenz, Romano Covini, Marcello Pieroni, and Jean Herzenberg, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy

No Drawing. Continuation of application Ser. No. 506,110, Nov. 2, 1965. This application Aug. 21, 1968, Ser. No. 755,509
Claims priority, application Italy, Nov. 11, 1964, 24,169/64
Int. Cl. C07d *31/00*
U.S. Cl. 260—290 6 Claims

Pyridine and alkyl derivatives of pyridine are produced by hydrodealkylation of higher alkyl and alkenyl pyridines at a temperature of from 625 to 900° C., under a pressure of between 5 and 60 atm. and in the presence of molecular hydrogen and a sulfurated compound such as carbon disulfide or hydrogen sulfide present in such quantities that the ratio by weight between the sulphur contained in the sulfurated compound and the derivatives of pyridine is between 0.005:100 and 5:100, and preferably between 0.01:100 and 1:100.

3,553,223

ACID CATALYZED CYCLIZATION OF TETRAHYDROPYRIDINES CONTAINING AN ELECTRON WITHDRAWING GROUP ON THE NITROGEN

Willy Leimgruber, Montclair, and Ernest Mohacsi, Nutley, N.J., assignors to Hoffman-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Jan. 5, 1968, Ser. No. 695,862
Int. Cl. C07d *39/00*
U.S. Cl. 260—294.7 2 Claims

There is described a process for the acid catalyzed cyclization of 2 - (4-methoxybenzyl)-3,4-dialkyl-1,2,5,6-tetrahydropyridines substituted at the nitrogen atom with electron withdrawing groups, to the corresponding benzomorphan compounds utilizing novel intermediates. The benzomorphan compounds so produced are useful as intermediates in the preparation of pharmaceutically active compounds, e.g., known benzomorphan derivatives exhibiting analgesic activity.

3,553,224

1(2H)-PYRIDINE-SULFONATES

John Valdemar Brammer Petersen, Horsholm, and Neils Clayson-Kaas, Farum, Denmark, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Original application Apr. 25, 1966, Ser. No. 544,685, now Patent No. 3,419,570. Divided and this application June 25, 1968, Ser. No. 751,650
Claims priority, application Switzerland, Apr. 29, 1965, 5,938/65, 5,939/65, 5,940/65
Int. Cl. C07d *29/42*
U.S. Cl. 260—294.8 3 Claims

3 - hydroxy-2-oxo- and 3-hydroxy-2-imino-1(2H)-pyridine-sulfonic acid salts are disclosed. The compounds are intermediates in the preparation of 2,3-pyridinediol.

3,553,225

1-(1-HYDROXY - 1 - PHENYL - 4-AMINOBUTYL)- AND 1-(1-PHENYL - 4 - AMINOBUTENYL)-ADAMANTANE DERIVATIVES

Carl Kaiser, Haddon Heights, N.J., and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 25, 1968, Ser. No. 715,507
Int. Cl. C07d *29/16, 29/12*
U.S. Cl. 260—294.7 3 Claims

1-(1-hydroxy-1-phenyl-4-aminobutyl)- and 1-(1-phenyl-4 - aminobutenyl)-adamantane derivatives in which the phenyl ring may be chloro, trifluoromethyl, methyl, methoxy or methylthio substituted and the amino group may be diloweralkylamino, N-piperidinyl, N-pyrrolidinyl, N'-lower alkyl-N-piperazinyl or N-morpholinyl are useful as tranquilizers. The compounds are generally prepared by reaction of an appropriate 1-adamantyl phenyl ketone with an aminopropyl magnesium halide to give the hydroxybutanes followed by acid dehydration to furnish the butene derivatives.

3,553,226

1-(2-BENZOYLCYCLOPROPYLMETHYL)-4-PHENYL-1,2,5,6-TETRAHYDROPYRIDINES

Carl Kaiser, Haddon Heights, N.J., and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 4, 1968, Ser. No. 718,915
Int. Cl. C07d *31/28*
U.S. Cl. 260—297 8 Claims

1 - (2 - benzoylcyclopropylmethyl) - 4 - phenyl-1,2,5,6-tetrahydropyridines and related 4-phenylpiperazines in which the benzoyl group and/or the phenyl moiety may be substituted by chloro, bromo, fluoro, trifluoromethyl, methyl or methoxy, as well as the ethylene ketals thereof, have tranquilizing activity. The compounds are generally prepared from a 2-benzoylcyclopropanecarboxylic acid via reaction of the triethylamine salt with ethyl chloroformate to give the mixed anhydride which is condensed with a 4-phenyl-4-piperidinol or 1-phenylpiperazine to give a corresponding amide. The ethylene ketal of the amide is reduced to the cyclopropylmethyl derivative which is hydrolyzed with acid to the free ketone product.

3,553,227

S-2-{[2 - (2 - THIAZOLYLCARBAMOYL)ETHYL] AMINO}ETHYL THIOSULFATE, SALTS THEREOF, AND METHODS FOR THEIR PRODUCTION

Roger D. Westland, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Aug. 5, 1968, Ser. No. 750,020
Int. Cl. C07d *71/34*
U.S. Cl. 260—306.8 4 Claims

S-2-{[2-(2-thiazolylcarbamoyl)ethyl]amino}ethyl thiosulfate and salts thereof, useful as schistosomacides, and their production by (1) reacting a 3-halo-N-2-thiazolylpropionamide compound with an alkali metal salt of S-2-aminoethyl thiosulfate, (2) reacting a hydrohalide salt of 3-[(2-haloethyl)amino]-N-2-thiazolylpropionamide with a thiosulfate salt in an aqueous solvent medium, and (3) reacting N-2-thiazolyl-1-ethyleneiminopropionamide with thiosulfuric acid or a salt thereof.

3,553,228

3-SUBSTITUTED-4H[1]BENZOPYRANO[3,4-d] ISOXAZOLES

Jules Freedman, Milwaukee, Wis., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 26, 1967, Ser. No. 670,772
Int. Cl. C07d *85/22*
U.S. Cl. 260—307 5 Claims

The compounds are 4H[1]benzopyrano[3,4-d]isoxazoles substituted in the 3 position which are useful in the preparation of wood preservatives, moth proofing agents, pickling inhibitors and skeletal muscle relaxants. Two species disclosed are 4H[1]benzopyrano[3,4-d]isoxazole-3 - carboxylic acid and 4H[1]benzopyrano[3,4-d]isoxazole-3-carboxamide.

3,553,229

3-ALKANOL DERIVATIVES OF 4H[1]BENZOPYRANO[3,4-d]ISOXAZOLES

Jules Freedman, Milwaukee, Wis., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 26, 1967, Ser. No. 670,775
Int. Cl. C07d *85/22*
U.S. Cl. 260—307 5 Claims

The compounds are derivatives of 3-alkanol-4H[1]benzopyrano[3,4-d]isoxazoles useful in the preparation of wood preservatives, moth proofing agents, pickling inhibitors and pharamaceutical agents. Two of the compounds disclosed are 4H[1]benzopyrano[3,4-d]isoxazole-3-methanol and 4H[1]benzopyrano[3,4 - d]isoxazole-3-methanol carbamate.

3,553,230

3-AMINOALKYL AND 3-AMINO DERIVATIVES OF 4H[1]BENZOPYRANO[3,4-d]ISOXAZOLES

Jules Freedman, Milwaukee, Wis., assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 26, 1967, Ser. No. 670,786
Int. Cl. C07d *85/22*
U.S. Cl. 260—307 5 Claims

The compounds are 3-aminoalkyl and 3-amino derivatives of 4H[1]benzopyrano[3,4-d]isoxazoles useful in the preparation of wood preservatives, moth proofing agents, pickling inhibitors and pharmaceutical agents. A species disclosed is 3 - aminomethyl - 4H[1]benzopyrano[3,4-d]isoxazole.

3,553,231

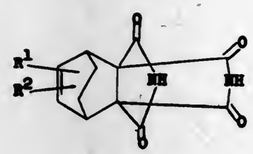
BICYCLO[2.2.2]OCT-5-ENE-BIS(2,3-DICARBOXIMIDE) COMPOUNDS

Milton Wolf, West Chester, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 12, 1968, Ser. No. 712,367
Int. Cl. C07d *27/28*
U.S. Cl. 260—326 8 Claims

The invention is directed to bicyclo[2.2.2]oct-5-ene-bis(2,3-dicarboximide) compounds which have central nervous system activity as depressants.

This invention relates to new and novel bicyclo[2.2.2]-oct-5-ene-bis(2,3 - dicarboximide)compounds. The compounds within the purview of the present invention are exemplified by those having the following formula:



where R^1 and R^2 are selected from the class consisting of hydrogen, lower alkyl, phenyl, halophenyl, lower alkoxyphenyl, and trifluoromethylphenyl.

As used herein, the terms "lower alkyl," "lower alkoxy" and the like, describe groups containing from one to about four carbon atoms.

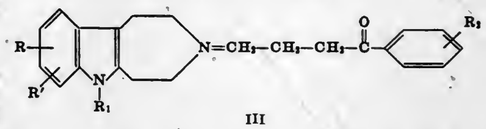
3,553,232

4-(1,4,5,6-TETRAHYDROAZEPINE[4,5-b]INDOLE-3(2H)-YL)BUTYROPHENONES

Jackson B. Hester, Jr., Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Aug. 25, 1967, Ser. No. 663,244
Int. Cl. C07d *57/02*
U.S. Cl. 260—326.5 10 Claims

The novel 4 - (1,4,5,6-tetrahydroazepino[4,5-b]indol-3(2H)-yl)butyrophenones of Formula III:



III

wherein R, R' and R_2 can be hydrogen, lower-alkoxy, lower-alkyl or halogen, and R_1 can be hydrogen or lower-alkyl, are produced by reacting a selected 1,2,3,4,5,6-hexahydroazepino[4,5-b]indole with a selected 4-halobutyrophenone in the presence of a base capable of neutralizing the hydrogen halide formed in this reaction. The novel compounds (III) including the acid addition salts thereof are tranquillizers, useful in the treatment of aggressive behavior or states of anxiety in mammals.

3,553,233

O-ALKYL-O-P-SUBSTITUTED PHENYL 2-THIENYL PHOSPHONOTHIOATES

Hajime Hirai, Toyonaka-shi, Keimei Fujimoto, Kyoto, Yositosi Okuno, Nishinomiya-shi, and Taizo Ogawa, Minoo-shi, Japan, and Hirosuke Yoshioka, Austin, Tex., assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Dec. 20, 1967, Ser. No. 691,990
Claims priority, application Japan, Dec. 29, 1966, 42/624; Jan. 9, 1967, 42/1,878
Int. Cl. C07d *63/12*; A01n *9/36*
U.S. Cl. 260—329 5 Claims

O-lower alkyl O-p-nitro- or p-cyanophenyl 2-thienyl phosphonothioates having strong insecticidal activities, and a process for preparing said compounds by hydrogen chloride-removing reaction of O-lower alkyl 2-thienyl-phosphonochloridothioates with p-cyano- or p-nitrophenol.

3,553,234

DIBENZO[d,g][1,3]DIOXOCIN-6-CARBOXYLIC ACIDS, ESTERS AND SALTS

Robert G. Johnson and Robert W. Fleming, Cincinnati, Ohio, David L. Wenstrup, Covington, Ky., and Takashi Kariya, Cincinnati, Ohio, assignors to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 18, 1969, Ser. No. 834,554
Int. Cl. C07d *21/00*
U.S. Cl. 260—340.3 7 Claims

Dibenzo[d,g][1,3]dioxocin-6-carboxylic acids, esters, and salts which are new compounds, reduce blood lipids, particularly lipoproteins containing cholesterol and triglycerides, in warm-blooded animals when administered orally.

3,553,235

7-ACYLOXY-4-METHYL-COUMARINS

Henry W. Kircher, Tucson, Ariz., and Thomas J. Jacks, Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture

Filed Sept. 30, 1968, Ser. No. 763,727
Int. Cl. C07d *7/28*
U.S. Cl. 260—343.2 5 Claims

This invention describes the synthesis of five fatty acyl esters. More particularly, this invention describes the

synthesis of five fatty acyl esters of 4-methylumbelliferone. Still more particularly, this invention describes the synthesis of five fatty acyl esters of 4-methylumbelliferone and their use as fluorogenic substrates to continuously follow the hydrolytic activity of carboxylesterases, such as acid and alkaline lipases.

3,553,236

PSORALENE AND ISOPSORALENE, PROCESS FOR THEIR ISOLATION AND SEPARATION

Antoine Hascher, Bombay, India, assignor to Franco-Indian Pharmaceuticals Private Limited, Bombay, India, a corporation

No Drawing. Filed Dec. 6, 1968, Ser. No. 781,997

Int. Cl. C07d *7/36*

U.S. Cl. 260—343.2 **3 Claims**

Psoralea corylifolia seeds are crushed, the essential oil containing the active principle is extracted by an organic solvent such as benzene and psoralene is precipitated by adding a hydrocarbon to the extract and isopsoralene is crystallized from mother liquor.

3,553,237

PROCESS FOR THE PREPARATION OF $\Delta^{4,7}$-3-KETO-STEROIDS

Max Salomon de Winter, Oss, Netherlands, assignor to Organon Inc., West Orange, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 18, 1968, Ser. No. 714,080

Claims priority, application Netherlands, Mar. 31, 1967, 6704679

Int. Cl. C07c *169/22*

U.S. Cl. 260—397.3 **1 Claim**

The present invention relates to an improved process for the conversion of $\Delta^{4,6}$-3-keto-steroids into $\Delta^{4,7}$-3-keto-steroids by reaction with a base in the presence of liquid ammonia.

3,553,238

PURIFICATION OF CARBOXYLIC ACID ESTERS WITH ANHYDROUS AMMONIA

Moses Cenker, Trenton, Mich., assignor to Wyandotte Chemicals Corporation, Wyandotte, Mich., a corporation of Michigan

No Drawing. Filed May 27, 1968, Ser. No. 732,075

Int. Cl. C07c *67/06*

U.S. Cl. 260—410.6 **6 Claims**

A process for removing sulfur-containing impurities from organic esters by treating said esters with anhydrous ammonia at a temperature of at least about 140° C. to precipitate the impurities, followed by removal of the precipitated impurities.

3,553,239

SEPARATION METHOD

Ted B. Haufe, Western Springs, and Kenneth D. Uitti, Bensenville, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 602,154, Dec. 16, 1966. This application Sept. 11, 1968, Ser. No. 759,228

Int. Cl. C11b *1/10*

U.S. Cl. 260—412.8 **8 Claims**

Method for producing an edible oil, such as soya bean oil, by contacting soya beans with a specific solvent obtained from a petroleum processing step for the production of gasoline boiling range products, such as benzene.

3,553,240

PROCESS FOR THE PREPARATION OF MONOARYLLEADTRIACYLATES AND DIARYLLEADDIACYLATES

Louis C. Willemsens, Utrecht, Netherlands, assignor to International Lead Zinc Research Organization, Inc., New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 704,247, Feb. 9, 1968. This application Oct. 23, 1968, Ser. No. 770,124

Claims priority, application Netherlands, Mar. 20, 1967, 6704140

Int. Cl. C07f *7/24*; C11c *1/00*

U.S. Cl. 260—436 **10 Claims**

A process for preparing monoarylleadtriacylates and diarylleaddiacylates from leadtetraacylate and triarylleadacylate or tetraryllead in a liquid organic medium with mercury diacylate as a catalyst.

3,553,241

AZACYCLOALKYLFERROCENE

John T. Suh and Claude I. Judd, Mequon, Wis., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 9, 1968, Ser. No. 766,290

Int. Cl. A61k *25/02*; C07f *15/02*

U.S. Cl. 260—439 **2 Claims**

The compounds are azacycloalkylferrocenes useful as petroleum additives and hematinic agents. A compound disclosed is 1,1'-(α-azabutylene)ferrocene.

3,553,242

PROCESS FOR PREPARING 1,3-DISILYL-1,3,2,4-DIAZADISILETIDINES

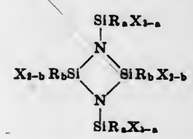
Walter Fink, Zurich, Switzerland, assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 625,309, Mar. 23, 1967. This application Apr. 26, 1968, Ser. No. 724,592

Int. Cl. C07f *7/02*

U.S. Cl. 260—448.2 **10 Claims**

A process for making compounds of formula



by reacting a cyclic silazane of the formula $(R_2SiNH)_c$ with a halosilane of the formula R_aSiX_{4-a} or by heating a compound of the formula $X_{3-a}R_aSiNHSiR_aX_{3-a}$ in the presence of a hydrochloric acid binding agent. These compounds find utility as high temperature resistant liquids and intermediate in the preparation of polymeric products.

3,553,243

METHOD OF INHIBITING EVOLUTION OF HYDROGEN CYANIDE FROM ORGANIC THIOCYANATE COMPOSITIONS

Delton William Hein, Darien, Donald Clifford Wehner, Fairfield, and Richard Parke Welcher, Old Greenwich, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 5, 1966, Ser. No. 540,193

Int. Cl. C07c *161/02, 161/04*

U.S. Cl. 260—454 **7 Claims**

Evolution of HCN from organic thiocyanate compositions is prevented by incorporating about 0.1% to 10%

by weight of a compound reactive with mercaptans and HCN such as a lower aldehyde, ethyl formate or 1-chloro-2,4-dinitrobenzene.

3,553,244

ESTERS OF CYANIC ACID

Ernst Grigat, Cologne-Stammheim, and Rolf Putter, Dusseldorf, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Continuation of application Ser. No. 339,333, Jan. 22, 1964. This application Feb. 12, 1968, Ser. No. 704,948

Claims priority, application Germany, Feb. 16, 1963, F 39,039; Apr. 3, 1963, F 39,393; Apr. 6, 1963, F 39,422; Aug. 7, 1963, F 40,440

Int. Cl. C07d *119/00*

U.S. Cl. 260—453 **16 Claims**

Cyanic acid esters having the formula

$$R\text{-}(O\text{—}C\equiv N)_x$$

in which R is an alkyl or cycloalkyl radical containing an electron-attracting substituent, an aryl radical, a substituted aryl radical free from the simultaneous presence of sterically hindered substituents in both ortho positions to the corresponding —O—C≡N group or heterocyclic radical, and x is a whole number from 1 to 6.

3,553,245

CYANOMETHYLIDENE ANILINE COMPOUNDS

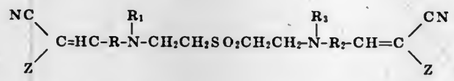
Max A. Weaver, John I. Dale III, and James M. Straley, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application Oct. 19, 1964, Ser. No. 404,955, now Patent No. 3,386,491, dated June 4, 1968. Divided and this application Apr. 2, 1968, Ser. No. 718,252

Int. Cl. C07c *121/70, 121/72*; D06p *3/70*

U.S. Cl. 260—465 **8 Claims**

Compounds having the formula



wherein Z is cyano, carbamoyl or alkoxycarbonyl; R and R_2 are p-phenylene groups; and R_1 and R_3 are alkyl, cyclohexyl, or phenyl groups are useful for dyeing hydrophobic textile materials.

3,553,246

PROCESS FOR PRODUCING UNSATURATED ALIPHATIC NITRILES

Naoya Kominami, Tokyo, Hitoshi Nakajima, Urawa-shi, and Takeo Kimura and Takio Sakurai, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Continuation-in-part of application Ser. No. 568,373, July 28, 1966. This application Mar. 21, 1969, Ser. No. 809,410

Claims priority, application Japan, Aug. 9, 1965, 40/48,035; Oct. 20, 1965, 40/63,951; Dec. 29, 1965, 40/80,895; Feb. 9, 1966, 41/7,178

Int. Cl. C07c *121/04*

U.S. Cl. 260—465.3 **6 Claims**

A process for producing lower olefinic nitriles by catalytically reacting in the gas phase at 100–500° C., a gas comprising ethylene, propylene, normal butylene or isobutylene, hydrogen cyanide and oxygen or a molecular oxygen-containing gas in the presence of a hydrogen halide and a catalyst which comprises palladium and rhodium and the oxides, hydroxides, inorganic acid salts or organic acid salts thereof.

3,553,247

PROCESS FOR THE MANUFACTURE OF α,α-DIALKYL-γ-CYANOBUTYRIC ACIDS

Helmut aus der Fünten, Mondorf, and Hermann Richtzenhain, Schwellenbach, Post Marialinden, Germany, assignors to Dynamit Nobel AG, Troisdorf, Bezirk Cologne, Germany

No Drawing. Filed Dec. 6, 1967, Ser. No. 688,353

Claims priority, application Germany, Dec. 13, 1966, D 51,762

Int. Cl. C07c *121/00*

U.S. Cl. 260—465.4 **8 Claims**

Oxidation of α,α-dialkyl-γ-cyanobutyraldehydes to their corresponding carboxylic acids using boric or titanic acid esters as catalysts.

3,553,248

METHOD OF RECOVERING ACRYLONITRILE MONOMER IN THE PRODUCTION OF A POLYMER

Eiichi Wakita and Kunio Tokumitsu, Fuji-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

Filed July 10, 1963, Ser. No. 294,101

Claims priority, application Japan, July 11, 1962, 37/28,518

Int. Cl. C07c *121/32*

U.S. Cl. 260—465.9 **7 Claims**

A method for the polymerization of acrylonitrile, said method comprising polymerizing acrylonitrile to produce a polymer slurry together with unpolymerized acrylonitrile, evaporating the unpolymerized acrylonitrile from the slurry, filtering the slurry which is now substantially free of unpolymerized acrylonitrile to produce a filtrate and a solid filtered polymer product, condensing the unpolymerized acrylonitrile by contacting the same with a cooling medium, said cooling medium being at a sufficiently low temperature to condense the gaseous monomer and being constituted by at least a portion of said filtrate, the condensed unpolymerized acrylonitrile in said cooling medium being recirculated together with the remaining portion of the filtrate for subsequent polymerization whereby substantially all of the acrylonitrile originally present may be polymerized.

3,553,249

NOVEL CYCLIC UNSATURATED ISOCYANATES

Thomas K. Brotherton and John W. Lynn, Charleston, and Robert J. Knopf, St. Albans, W. Va., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of applications Ser. No. 256,495, Jan. 25, 1963, now Patent No. 3,275,679, and Ser. No. 265,367, Mar. 15, 1963. This application Aug. 9, 1965, Ser. No. 478,400

Int. Cl. C07c *69/74*

U.S. Cl. 260—468 **5 Claims**

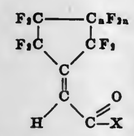
Isocyanate composition resulting from the reaction of isocyanates with compounds having an active hydrogen. The polymer contains a plurality of pendant isocyanato groups.

3,553,250
NOVEL FLUORINATED ACIDS AND DERIVATIVES THEREOF

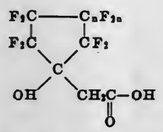
Richard F. Sweeney, Dover, and Alson K. Price, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 9, 1967, Ser. No. 659,340
Int. Cl. C07c *61/16, 69/74*
U.S. Cl. 260—468 **19 Claims**

Novel perfluorocycloalkylidenyl compounds of the formula:



wherein *n* may be 0–2 and may be OH, F, Cl, Oalkyl, Ocycloalkyl, or OM, wherein M is an alkali metal, alkaline earth metal, or —NH_4, may be derived from the corresponding (1-hydroxyperfluorocycloalkyl)acetic acids of the formula:



Perfluorocycloalkylidenyl compounds of the above formula wherein X is OH may be prepared from the corresponding (1 - hydroxyperfluorocycloalkyl)acetic acids by reacting the latter with concentrated (100%) H_2SO_4. The resulting acids may be converted into the corresponding acid chlorides, wherein X in the above formula is Cl, by reaction with benzotrichloride or into the corresponding acid fluorides, wherein X in the above formula is F, by reaction with thionyl chloride in the presence of an organic tertiary amine catalyst such as pyridine. The corresponding esters, wherein X in the above formula is Oalkyl or Ocycloalkyl, may be prepared from either of the acid halides by reaction of the latter with an alkanol or cycloalkanol. The esters may also be prepared from perfluorocycloalkanones by a Wittig reaction. Salts of the acids, wherein X in the above formula is OM, may be prepared by reacting the acids with an alkali metal or alkaline earth metal hydroxide or with ammonium hydroxide.

The perfluorocycloalkylidenyl acids and salts thereof are useful surface active agents. Any of the novel compounds wherein X is F, Cl, Oalkyl or Ocycloalkyl can be converted to the corresponding acids or acid salts.

3,553,251
ALICYCLIC COMPOUNDS

Hartmut Hauth, Riehen, Dietrich Stauffacher, Reinach, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz AG), Basel, Switzerland

No Drawing. Continuation-in-part of abandoned applications Ser. No. 446,698, Apr. 8, 1965, Ser. No. 535,005, Mar. 17, 1966, and Ser. No. 674,654, Oct. 11, 1967. This application Feb. 14, 1968, Ser. No. 705,297
Claims priority, application Switzerland, Apr. 17, 1964, 5,014/64; Mar. 5, 1965, 3,070/65, 3,071/65; Apr. 14, 1965, 5,265/65; Oct. 13, 1966, 14,791/66; Aug. 15, 1967, 11,437/67
Int. Cl. C07c *93/16, 69/74*
U.S. Cl. 260—468.5 **51 Claims**

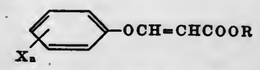
The compounds are of the class of mixtures of corresponding geometric isomers of 3-hydroxy-cassenic and isocassenic acid β-dimethylaminoethyl ester derivatives and also the separate geometric isomers 3β-hydroxy-14-desmethyl-cassenic and -isocassenic acid β(dimethylamino)ethyl ester. These compounds are useful as cariotonic agents with a positive inotropic effect. Important intermediates in the preparation of the compounds include 3-oxo- or 3β-acetoxy-14-desmethyl-cassenic and -isocassenic acid esters, which may be separated into the respective geometric isomers thereof by chromatography or fractional crystallization.

3,553,252
ESTERS OF ARYLOXYACRYLIC ACID

Akihiko Mine, Minoo-shi, Naganori Hino, Toyonaka-shi, Akira Fujinami, Takarazuka-shi, Katsuji Nodera, Nishinomiya-shi, Fukashi Horiuchi, Takarazuka-shi, and Yoshihiko Nishizawa, Nara-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Oct. 23, 1967, Ser. No. 677,017
Claims priority, application Japan, Oct. 27, 1966, 41/71,144; Feb. 25, 1967, 42/12,158
Int. Cl. C07c *69/76;* **A01n** *9/24*
U.S. Cl. 260—473 **1 Claim**

Novel esters of aryloxyacrylic acids as plant growth-regulating agents having selectivity among plants, particularly narrow-leaved plants. These compounds have the general formula:



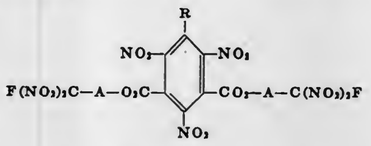
wherein X is the same or different halogen atoms and lower alkyl radicals; *n* is an integer of 1 to 4; and R is cycloalkyl radical of from 5 to 7 carbon atoms, which may have a methyl radical on the ring, or R is benzyl radical which may have one or more halogen atoms or methyl radicals as substituents.

3,553,253
ENERGETIC POLYNITRO-HALOGENATED AROMATIC ESTERS

Milton B. Frankel, Tarzana, and Gerald L. Rowley, Albany, Calif., assignors to North American Rockwell Corporation

No Drawing. Filed Feb. 16, 1968, Ser. No. 707,919
Int. Cl. C07c *69/76, 69/80*
U.S. Cl. 260—475 **7 Claims**

Novel, energetic aromatic compounds substituted with an ester moiety that is terminated with a dinitrofluoro group, and wherein said aromatic compounds are of the general formula



and wherein R is hydrogen, nitro, lower alkyl, or

$$CO_2—A—C(NO_2)_2F$$

and wherein A is lower alkylene. These compounds are useful as explosives.

3,553,254
TRIS[N,N-BIS(HYDROXYMETHYL)CARBAMIC] ACID ESTERS

Giuliana C. Tesoro, Dobbs Ferry, N.Y., and Donald R. Moore, Rutherford, N.J., assignors to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 6, 1966, Ser. No. 563,057
Int. Cl. C07c *125/06*
U.S. Cl. 260—482 **2 Claims**

Tris and higher aliphatic polycarbamates, are prepared by reacting polyaryl carbonate with ammonia or an amine in a basic medium. Polycarbamates may also be prepared by reacting an aliphatic polyol with an isocyanate ester.

3,553,255
NOVEL WATER SOLUBLE POLYMER

Nelson S. Marans, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Oct. 10, 1968, Ser. No. 766,624
Int. Cl. C07c *103/50*
U.S. Cl. 260—482 **10 Claims**

In abstract this invention is directed to a process for preparing a water soluble polymer comprising heating at about 125–250° C. a reaction mixture consisting essentially of an inert liquid medium boiling at about 120–260° C. at about 760 millimeters of mercury absolute pressure, N-(acetamide)-iminodiacetic acid and a member selected from a group consisting of diols having the formula HO—G—OH, amino alcohols having the formula HO—G—NH_2, and diamines having the formula

$$H_2N—G—NH_2$$

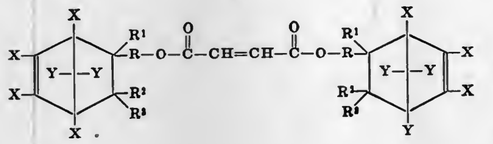
wherein G is an alkylene group having 2–6 carbon atoms. The mole ratio of the N-(acetamide)-iminodiacetic acid to the group member being about 1:08–1.2, to form the water soluble polymer and water while removing the water substantially as it is formed, separating and recovering the polymer, all as recited hereinafter.

3,553,256
HALOGEN CONTAINING MALEATES AND FUMARATES

Israel J. Dissen, Chicago, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 25, 1968, Ser. No. 724,259
Int. Cl. C07c *69/60*
U.S. Cl. 260—485 **6 Claims**

New chemical compositions of matter having the formula:



wherein X is selected from the group consisting of chlorine, bromine and fluorine; Y is selected from the group consisting of hydrogen, chlorine, bromine, fluorine and alkoxy; R is an alkylene group containing from one to six carbon atoms; R^1, R^2 and R^3 are selected from the group consisting of hydrogen and alkyl.

3,553,257
PREPARATION OF *d*-2-AMINO-1-BUTANOL SALTS

Imre Aurel Halmos, Summit, and Thomas Emory Ricketts, Plainfield, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

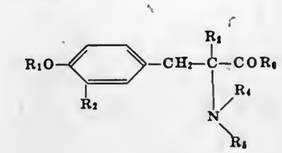
No Drawing. Filed Sept. 16, 1966, Ser. No. 579,842
Int. Cl. C07c *91/04*
U.S. Cl. 260—501.17 **7 Claims**

A racemic mixture of *dl*-2-amino-1-butanol is resolved with separation of the *d*-2-amino-1-butanol by crystallizing as a salt with L(+)-tartaric acid from an essentially anhydrous solution in ethanol or methanol. The salt is decomposed with calcium hydroxide to yield the *d*-2-amino-1-butanol. Water may be added to the residual anhydrous solution to separate the *l*-2-amino-1-butanol. Other listed volatile solvents may be present in the anhydrous ethanol or methanol without inhibiting the sharp separation.

3,553,258
PHENYLALANINE COMPOUNDS

Ado Kaiser, Neu-Frenkendorf, and Albert Langemann, Binningen, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed May 24, 1967, Ser. No. 640,842
Claims priority, application Switzerland, June 7, 1966, 8,245/66
Int. Cl. C07c *101/08*
U.S. Cl. 260—519 **7 Claims**



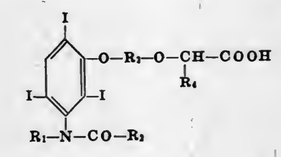
wherein R_1 is either hydrogen, lower alkyl or lower alkanoyl; R_2 is either lower alkyl, lower alkenyl, lower cycloalkyl, lower cycloalkenyl, phenyl or phenyl-lower alkyl; R_3 is lower alkyl; R_4 is either hydrogen or lower alkanoyl; R_5 is either hydrogen or lower alkanoyl; and R_6 is either hydroxy, lower alkoxy, amino or lower alkanoylamino; and pharmaceutically acceptable acid addition salts thereof, useful for inhibiting the sympathetic nervous system and inhibiting tyrosine-hydroxylase; processes for their production from the appropriate hydantoin, nitrile, nitro compound or isocyanate and resolution of the racemates of the compounds.

3,553,259
CONTRAST MEDIA FOR CHOLECYSTOGRAPHY

Ernst Felder and David Pitre, Milan, Italy, assignors to Bracco Industria Chimica, Società per Azioni, Milan, Italy

No Drawing. Filed May 14, 1968, Ser. No. 728,894
Claims priority, application Switzerland, May 29, 1967, 7,482/67
Int. Cl. C07c *103/32*
U.S. Cl. 260—519 **7 Claims**

Compounds of the formula



wherein R_1 and R_2 are lower alkyl, R_3 is lower, divalent alkylene, and R_4 is lower alkyl or phenyl, and their salts with physiologically tolerated metals and amines are radiopaque, tend to accumulate in the gall bladder of living creatures, and are non-toxic in effective amounts.

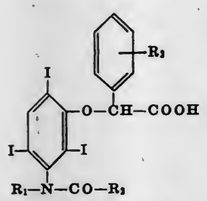
3,553,260

RADIOPAQUE DERIVATIVES OF α-PHENOXY-PHENYLACETIC ACID

Ernst Felder and Davide Pitre, Milan, Italy, assignors to Bracco Industria Chimica, Societa per Azioni, Milan, Italy

No Drawing. Filed May 14, 1968, Ser. No. 728,895
Claims priority, application Switzerland, May 29, 1967, 7,481/67
Int. Cl. C07c *103/32*
U.S. Cl. 260—519 **9 Claims**

α - (3 - N-alkyl-N-acetylamino-2,4,6-triiodophenoxy)-phenylacetic acid and closely related derivatives of the formula



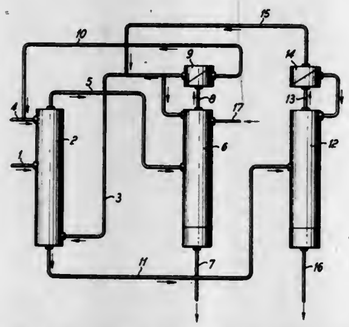
wherein R_1 is lower alkyl, R_2 is hydrogen or lower alkyl, and R_3 is hydrogen, halogen or lower alkyl, and the physiologically tolerated, water soluble metal or amine salts thereof are radiopaque, tend to accumulate in the gall bladder when applied orally, and are non-toxic in effective amounts. The corresponding lower alkyl esters are intermediates in the synthesis of the acids and salts.

3,553,261

PROCESS FOR ISOLATING ACRYLIC ACID FROM AQUEOUS CRUDE ACID BY EXTRACTION WITH AN ESTER, WATER WASHING AND AZEOTROPIC DISTILLATION OF THE WASHED EXTRACT

Kurt Sennewald and Klaus Gehrmann, Knapsack, near Cologne, Heinz Handte, Hurth, near Cologne, Heinz Erpenbach, Surth, and Helmut Reis, Hurth, near Cologne, Germany, assignors to Knapsack Aktiengesellschaft, Kapsack, near Cologne, Germany, a corporation of Germany

Filed June 14, 1968, Ser. No. 737,212
Claims priority, application Germany, June 29, 1967, K 62,675
Int. Cl. C07c *57/04*
U.S. Cl. 260—526 **7 Claims**



Isolation of pure acrylic acid from aqueous crude acid containing acrylic acid and in addition small proportions of acetic acid and possibly formaldehyde, by ethyl acetate extraction combined with a simultaneous water-wash of the resulting organic extract and distillative separation of the washed extract into (a) pure acrylic acid and (b) a readily boiling ethyl acetate/water-azeotrope comprising extracting the aqueous acrylic acid-containing crude acid by means of about 10 to 15 parts by weight ethyl acetate, per part by weight acrylic acid, and simultaneously washing the resulting organic extract by means of about 15 to 25 parts by weight water, per part by weight acrylic acid.

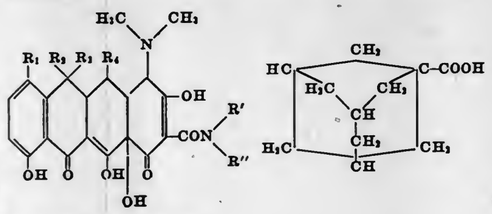
3,553,262

TETRACYCLIN ADAMANTOATES

Raymond Francois Jacques Sarbach and Dimitri Yavordios, Chatillon-sur-Chalaronne, France, assignors to Institut de Recherche Scientifique (I.R.S.), Ain, France, a French company

No Drawing. Filed Nov. 25, 1968, Ser. No. 778,839
Claims priority, application France, Dec. 1, 1967, 130,592
Int. Cl. C07c *103/19*
U.S. Cl. 260—559 **1 Claim**

The invention has the purpose of introducing adamantoates of tetracyclins into human therapeutics. Tetracyclin adamantoates comply with the general following formula:



in which, in particular:

R_1=H or Cl
R_2=H or CH_3
R_3=OH or forms a methylene radical with R_2
R_4=H or OH
R' and R'' represent hydrogen, identical or different alkylated, arylated, cycloalkylated, heterocyclic, etc., radicals.

3,553,263

N,N' - DIALKYL-PHENYLENEDIAMINE-BIGUANIDE AND USE AS ADDITIVE IN NON-AQUEOUS SUBSTRATES

Robert H. Rosenwald, Western Springs, and Earl A. Nielsen, Lombard, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Dec. 20, 1967, Ser. No. 691,993
Int. Cl. C07c *129/100*
U.S. Cl. 260—565 **6 Claims**

N^1-(p-alkylaminophenyl)-N^1-alkylbiguanide and use as additive in nonaqueous substrates. The invention is exemplified by N^1-(p-sec-octylaminophenyl)-N^1-sec-octylbiguanide and the use thereof as an antioxidant, corrosion inhibitor and/or anti-icing compound.

3,553,264

NOVEL CARBAMATES OF DICHLOROFORMALDEHYDE OXIME AND METHODS OF PREPARING AND USING SAME

Roger Williams Addor, Pennington, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed May 22, 1967, Ser. No. 640,330
Int. Cl. C07c *131/00*
U.S. Cl. 260—566 **3 Claims**

This invention relates to novel dihaloformaldehyde oxime carbamate compositions, a method for the preparation thereof, and has as its principal object the control of undesirable plant species therewith. More particularly, the invention relates to compounds and a method for the preparation of compounds of the formula:



wherein R represents lower alkyl, phenyl, halophenyl, (lower)alkyl-substituted phenyl or (lower)alkoxy-substituted phenyl, and X is a halogen atom, such as chlorine or bromine.

3,553,265

PROCESS FOR PREPARING NITROGEN-CONTAINING TERTIARY PHOSPHINES AND PHOSPHINE OXIDES

Ludwig Maier, Tiergartenstrasse 17, Kilchberg, Zurich, Switzerland

No Drawing. Filed July 27, 1967, Ser. No. 656,328
Claims priority, application Switzerland, Aug. 16, 1966, 11,909/66
Int. Cl. C07c *87/00, 87/06, 87/34*
U.S. Cl. 260—570.5 **8 Claims**

Process for preparing nitrogen-containing tertiary phosphines and phosphine oxides according to the following reaction:

$$R^1R^2P—PR^1R^2+2R^3CH(OH)NR^4R^5\rightarrow$$

$$R^1R^2PCH(R^3)NR^4R^5+R^1R^2P(O)CH(R^3)NR^4R^5+H_2O$$

The adduct of the aldehyde and amine, the second reactant above, can be made in situ by mixing an amine and an aldehyde with the biphosphine and heating, if necessary. Normally, the adduct will be made at temperatures in the range of about 0° to 40° C.; whereas, heating in the range of about 70°–150° C. will be used to make desired final products. Water and/or an alcohol will normally be used as a solvent for the reaction, and it is desirable to exclude oxygen during the reaction.

3,553,266

DIARALKYLAMINE DERIVATIVES

William F. Bruce, Havertown, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 502,370, Oct. 22, 1965. This application Aug. 8, 1968, Ser. No. 751,029
Int. Cl. C07c *91/22*
U.S. Cl. 260—570.6 **4 Claims**

Diaralkylamines are prepared by prolonged reaction of styrene oxide with selected hydroxyaralkylamines having alicyclic substituents of 3, 5 and 7 carbon atoms. The compounds have been found to be pharmacodynamically active and useful for bronchodilator effects.

3,553,267

3-DIMETHYLAMINO-1,2,3,4-TETRAHYDROFLUORENE

Frederick Edmund Ward, Elkhart, Ind., assignor to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana

No Drawing. Filed Mar. 11, 1968, Ser. No. 711,914
Int. Cl. C07c *87/64*
U.S. Cl. 260—576 **1 Claim**

A series of 3-amino-1,2,3,4-tetrahydrofluorenes that are useful as analgesic agents. These compounds are prepared by reacting a 1,9a-dihydrofluorene-3(2H)-one with a suitable secondary amine and reducing the resulting intermediate.

3,553,268

PROCESS FOR PREPARING ANILINE

Jack M. Solomon, West Caldwell, and Bernard R. Bluestein, Glen Rock, N.J., assignors to Witco Chemical Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 6, 1968, Ser. No. 734,876
Int. Cl. C07c *85/06, 85/08*
U.S. Cl. 260—581 **6 Claims**

Process for preparing aniline from cyclohexanone or mixtures thereof with cyclohexanol by passing the same, together with ammonia, in the vapor phase at atmospheric pressure, over a heated nickel on kieselguhr (or other inert carrier) catalyst.

3,553,269

METHOD FOR THE PREPARATION OF PHENOLSULFIDE STABILIZERS

Henry Hugh Richmond, Leninsky prospekt 86, kv. 319, and Elena Vasilievna Pronina, Ul. Gorkogo 8, korp. 2, kv. 38, both of Moscow, U.S.S.R.

No Drawing. Filed Feb. 28, 1967, Ser. No. 619,201
Int. Cl. C07c *149/38;* **C08f** *45/58*
U.S. Cl. 260—609 **6 Claims**

A method of preparing substituted phenolsulfides by reacting a mixture of tert-butyl cresols with sulfur dichloride in an organic solvent such as benzine, white spirit and petroleum ether.

3,553,270

PREPARATION OF PHENOLIC THIOETHERS

John C. Wollensak and Bernard R. Meltsner, Royal Oak, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 22, 1967, Ser. No. 692,658
Int. Cl. C07c *149/36;* **C08c** *13/08*
U.S. Cl. 260—609 **10 Claims**

The reaction of phenols unsubstituted in at least one position ortho or parato the hydroxyl group with formaldehyde and mono- or dimercaptans yields, respectively, α-(hydrocarbylthio)-cresols or α,α'-alkylene dithiobis compounds. For example, the reaction of 2,6-di-tert-butylphenol with formaldehyde and dodecyl mercaptan yields 2,6-di-tert-butyl-α-(dodecylthio)-p-cresol. The products are useful as antioxidants.

3,553,271

PROCESS FOR THE PREPARATION OF PHENOLIC COMPOUNDS

Noël Crenne and Jean-Claude Brunie, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Original application Apr. 18, 1966, Ser. No. 543,016. Divided and this application Aug. 26 1968. Ser. No. 772,882
Int. Cl. C07c *39/02, 43/20*
U.S. Cl. 260—613 **2 Claims**

Process for the preparation of organoperoxy-boranes and using said boranes to oxidize aromatic compounds to the corresponding phenolic compounds.

3,553,272

COMPOSITIONS FOR AND METHODS OF INHIBITING THE DISCOLORATION OF ALKYLATED PHENOLS

Charles P. Riley, Jr., Chelmsford, Mass., assignor to National Polychemicals, Inc., Wilmington, Mass., a corporation of Massachusetts

No Drawing. Continuation-in-part of application Ser. No. 549,189, May 11, 1966. This application Mar. 13, 1967, Ser. No. 622,405
The portion of the term of the patent subsequent to Jan. 14, 1986, has been disclaimed
Int. Cl. C07c *39/06*
U.S. Cl. 260—624 **10 Claims**

The discoloration of alkylated phenols is inhibited by the addition of an organic phosphite to the alkylated phenol or comelt of the alkylated phenol with thiodipropionic acid esters. The phosphite such as tris nonylphenyl phosphite may be incorporated as an additive to the melted product or during processing provided that it is incorporated and the stabilized product processed un-

der substantially nonhydrolysis conditions i.e. avoidance of aqueous solution, heat and acids.

For example, butylated hydroxy toluene is prevented from yellowing in storage by the addition of tris nonylphenyl phosphite to the melt or comelt of the final product or when it is incorporated at a point in the alkylation process which avoids latter hydrolysis of the phosphite so incorporated.

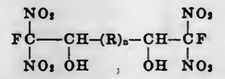
3,553,273

BIS(FLUORODINITROMETHYL)ALKYLENE DIOLS

Horst G. Adolph and Mortimer J. Kamlet, Silver Spring, Md., assignors to the United States of America as represented by the Secretary of the Navy

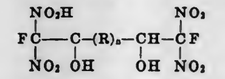
No Drawing. Filed Feb. 26, 1965, Ser. No. 436,993
Int. Cl. C07c *31/18, 31/34*
U.S. Cl. 260—633 12 Claims

1.



wherein R is alkylene and *n* is 0 to 3.

6. A method of producing a diol having the structure



wherein R is alkylene and *n* is 0 to 3 which comprises: adding fluorodinitromethane to an aqueous solution of a dialdehyde having the structure:

$$OHC—(R)_n—CHO$$

wherein R is alkylene and *n* is 0 to 3, maintaining the mixture at a temperature between about —10° C.+30° C., and recovering the resulting diol.

3,553,274

PROCESS FOR THE PREPARATION OF ALKYLATED BENZENES HAVING HALOGEN SUBSTITUENTS IN THE 3,5- OR 3,4,5-POSITIONS

Sheldon N. Lewis, Willow Grove, and Colin Swithenbank, Perkasie, Pa., assignors to Rohm & Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed June 28, 1967, Ser. No. 649,488
Int. Cl. C07c *25/04, 25/08, 25/10*
U.S. Cl. 260—650 8 Claims

Alkyl benzenes in which the alkyl group is of the secondary or tertiary type and which have halogen or methyl substituents in the 2,4- or 2,3,4-positions may be catalytically isomerized in good yield to the corresponding 3,5- and 3,4,5-substituted alkyl benzenes. Catalysts for the isomerization are $HAlBrCl_3$, $HAlBr_2Cl_2$, $HAlBr_3Cl$ and $HAlBr_4$. The resulting products are of particular interest as precursors for the corresponding benzoic acids.

3,553,275

SOLVENT EXTRACTION PROCESS FOR EXTRACTING LONG CHAIN ALKYL MONOHALIDES FROM LONG CHAIN ALKANES

Kamlesh Kumar Bhatia, Gainesville, Fla., assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Jan. 10, 1968, Ser. No. 696,884
Int. Cl. C07c *17/38*
U.S. Cl. 260—652 7 Claims

Process for separating long chain alkyl monohalides (chlorides or bromides) from the corresponding alkanes having chain lengths of from about 12 to about 24 carbon atoms comprising the step of mixing a solvent selected from the group consisting of propionitrile, nitroethane, and mixtures of acetone and methanol having ratios of acetone to methanol of from about 2:1 to about 9:1 with a mixture of said monohalides and alkanes to form an extract phase rich in said monohalides and a raffinate phase rich in said alkanes.

3,553,276

C_8-ALKYLAROMATIC ISOMERIZATION PROCESS

Charles V. Berger, Western Springs, and Charles S. Brearley, Chicago, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Apr. 4, 1969, Ser. No. 813,728
Int. Cl. C07c *15/06, 15/08, 5/24*
U.S. Cl. 260—668 9 Claims

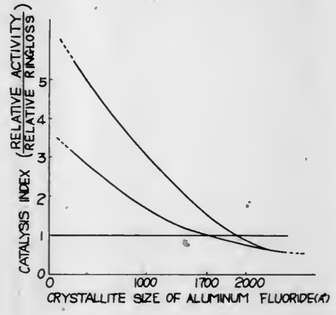
C_8-naphthene loss in a recycle C_8-alkylaromatic isomerization process is substantially lowered by controlling the presence of toluene in the reactor recycle feed thereby allowing efficient separation and removal of the toluene produced in each cycle through the reactor without excessive loss of the naphthenes.

3,553,277

METHOD OF THE DISPROPORTIONATION OF TOLUENE

Masaki Sato, Kamakura-shi, and Seiya Otani, Ohtsu-shi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Dec. 5, 1968, Ser. No. 781,507
Claims priority, application Japan, Dec. 7, 1967, 42/78,196
Int. Cl. B01j *11/78*; C01b *33/28*; C07c *3/58*
U.S. Cl. 260—672 17 Claims



A method of the preparation of benzene and xylene by the disproportionation of toluene by contacting toluene in the presence of hydrogen under heating with a catalyst which is prepared by mixing a dealkalized mordenite with an aluminum fluoride having a crystallite size of less than 1700 A. before the mixing for the preparation of the catalyst. The catalyst may contain copper or silver as the third component.

3,553,278

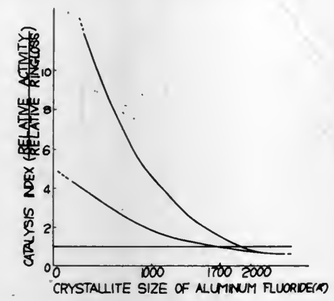
PROCESS FOR THE DISPROPORTIONATION OF TOLUENE

Masaki Sato, Kamakura-shi, and Seiya Otani, Ohtsu-shi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Dec. 5, 1968, Ser. No. 781,501
Claims priority, application Japan, Dec. 7, 1967, 42/78,197
Int. Cl. C07c *3/58*; C01b *33/28*; B01j *11/78*
U.S. Cl. 260—672 17 Claims

A process for the preparation of benzene and xylene by the disproportionation of toluene by contacting toluene

in the presence of hydrogen under heating with a catalyst which is prepared by mixing a dealkalized clinoptilolite with an aluminum fluoride having a crystallite size of



less than 1700 A. before the mixing for the preparation of the catalyst. The catalyst may contain copper or silver as the third component.

3,553,279

METHOD OF PRODUCING ETHYLENE

Mohendra S. Bawa, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Mar. 29, 1968, Ser. No. 717,132
Int. Cl. C07c *3/30*
U.S. Cl. 260—683 11 Claims

This specification discloses a method of producing an olefin, such as ethylene, characterized by physically contacting a hydrocarbon feed stream with a molten salt of either alkali metal carbonate, alkali metal hydroxide, or a mixture thereof for a sufficient time to allow reaction to form hydrocarbon products, containing ethylene as one of the major ingredients; separating the hydrocarbon products from the molten salt; and separating the ethylene from the hydrocarbon products. The salt is maintained at a temperature within the range of 350° C.–850° C. preferably 550° C.–700° C. In a specific embodiment, the molten salt is intimately contacted by an oxygen-containing gas to convert contaminants in the molten salt to gases which are withdrawn to regenerate the molten salt. The regenerated molten salt is recycled into contact with the hydrocarbon feed stream. The molten salt alleviates polymerization and isomerization problems; ties up contaminants in the hydrocarbon feed, preventing corrosion within the reactor and simplifying separation of the ethylene from the hydrocarbon products; effects reaction of the hydrocarbons at lower temperatures, allowing less expensive materials to be employed for the reaction vessels; and effects high yields of ethylene from higher molecular weight hydrocarbons.

3,553,280

PROCESS FOR DIMERIZING LOWER ALPHA-OLEFINS

Arthur D. Ketley, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Continuation-in-part of application Ser. No. 517,087, Nov. 23, 1965. This application May 31, 1968, Ser. No. 733,269
Int. Cl. C07c *3/18*
U.S. Cl. 260—683.15 12 Claims

A method for dimerizing a lower alpha olefin, said method comprising contacting the lower alpha olefin with a catalytic amount of a complex having the formula $R_2Pd_2Cl_4$, where R represents a lower alpha olefin molecule, in a reaction medium selected from the group consisting of; (i) chloroform containing a small amount of water or a lower monohydric alcohol; (ii) anisole; (iii) methylene chloride; (iv) nitrobenzene; and (v) nitroethane, at about 0–50° C., under a pressure of about 1–2000 atmosphere absolute, for about 0.5–100 hours, and separating and recovering the dimerized olefin.

3,553,281

ISOMERIZATION PROCESS AND CATALYST THEREFOR

Anthony George Goble and John Norman Haresnape, Sunbury-on-Thames, England, assignors to The British Petroleum Company Limited, London, England, a joint-stock corporation of Great Britain

No Drawing. Filed Sept. 1, 1961, Ser. No. 135,426
Claims priority, application Great Britain, Sept. 7, 1960, 30,821/60; Oct. 21, 1960, 36,154/60
Int. Cl. C07c *5/24*
U.S. Cl. 260—683.68 14 Claims

A catalyst suitable for the isomerization of C_4 and higher paraffinic hydrocarbons is prepared by contacting alumina with a compound of the formula



under conditions such that free aluminum chloride is not formed. X and Y may be the same or different and selected from H, Cl. Br, F or SCl, or X and Y together may be O or S. The catalyst may optionally contain a metal or metal compound having hydrogenating activity selected from Group VI*a* or VIII of the Periodic Table—the preferred being the platinum group metals.

3,553,282

SILOXANE CONTAINING POLYAMIDE ACID BLENDS

Fred F. Holub, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 638,579, May 5, 1967. This application Sept. 8, 1969, Ser. No. 856,144
Int. Cl. B44d *1/36*; C08g *47/02*
U.S. Cl. 260—824 20 Claims

This disclosure relates to siloxane containing polyamide acid blends convertible to corona resistant polymimide compositions. The siloxane containing polyamide acid blends comprise (A) a polyamide acid siloxane and (B) a silicon free polyamide acid, where (A) is utilized in the blend in an amount sufficient to provide at least one per-

cent by weight of chemically combined silicon based on the weight of the blend. These blends provide wire insulating compositions which can be employed in applications where resistance to corona is highly desirable.

3,553,283
EPOXY RESIN CURED WITH POLYMERCAPTAN ESTER AS OLEFIN POLYMER COATING
Richard C. Doss, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed June 29, 1967, Ser. No. 649,856
Int. Cl. B65d *85/00*; C08g *30/10, 30/14*
U.S. Cl. 260—830 **14 Claims**

A 1-olefin polymer substrate is coated with an epoxy resin cured with a curing agent containing at least one ester group and at least three thiol groups per molecule to impart an impact resistant, hydrocarbon impermeable coating to the polyolefin. A fluid aliphatic polyamide can be added to the epoxy formulation prior to completion of curing to give a more uniform surface to the coating.

3,553,284
COATING COMPOSITIONS COMPRISING A MIXTURE OF AN AMINOPLAST AND A POLYESTER FROM HEXAHYDROTEREPHTHALIC ACID
Franz Riemhofer, Walter Dittmann, and Ernst Christian Schütze, Marl, Germany, assignors to Chemische Werke Huels, A.G., Marl, Germany
No Drawing. Filed Nov. 6, 1968, Ser. No. 773,950
Claims priority, application Germany, Nov. 9, 1967, C 43,789
Int. Cl. C08g *37/38*; C07c *69/34*
U.S. Cl. 260—850 **13 Claims**

Exceptionally hard, highly elastic and chemically resistant coatings are obtained from compositions of:

(a) aminoplast and

(b) polyester of hexahydroterephthalic acid on a diol having adjacent hydroxy groups, e.g. ethylene glycol, butanediol-(2,3) or cyclohexenediol-(1,2).

3,553,285
VINYLCOPOLYMERS WITH POLYAMIDE GRAFT
Hugo Vernaleken, Georg Malamet, Ludwig Bottenbruch, and Heinrich Krimm, Krefeld-Bockum, and Hermann Schnell, Krefeld-Urdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Dec. 20, 1968, Ser. No. 785,754
Claims priority, application Germany, Jan. 4, 1968, 1,720,773
Int. Cl. C08g *41/04*
U.S. Cl. 260—857 **9 Claims**

Vinylcopolymers with a polyamide graft prepared by polycondensation of N-carbaryloxy-aminocarboxylic acids in the presence of copolymers of vinyl-monomers which contain masked isocyanate groups with evolution of the masking agent and carbon dioxide.

3,553,286
POLYAMIDES AND SULFONIC ACID GROUP CONTAINING VINYL POLYMERS
Hiroshi Murata, Kozo Katuda, and Tetsunosuke Kunitomo, Ohtsu-shi, Shosaku Sasaki, Shiga-ken, and Minoru Nishio, Ohtsu-shi, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
No Drawing. Filed July 31, 1967, Ser. No. 657,021
Claims priority, application Japan, Aug. 5, 1966, 41/51,037; Jan. 7, 1967, 42/1,230
Int. Cl. C08g *41/04*
U.S. Cl. 260—857 **1 Claim**

Polyamide compositions having durable antistatic effect, hygroscopicity, soil resistance and dyeability are obtained by adding a substantially linear and water- or alcohol-soluble vinyl polymer having 0.2 to 2.0 sulphonic acid groups per repeating unit, 10 to 95% of the said sulphonic acid groups being present in the form of a salt of lithium, potassium, sodium or calcium and 5 to 90% of the said sulphonic acid groups being present in the form of an ammonium salt or organic amine salt.

3,553,287
POLYMERIZATION OF POLYOLEFINS WITH MACROMOLECULAR COMPOUNDS REACTED WITH ORGANO ALUMINUM COMPOUNDS
André Delbouille, Brussels, and Paul Henriouile, Marilles, Belgium, assignors to Sobray & Cie, Brussels, Belgium, a corporation of Belgium
No Drawing. Filed June 10, 1968, Ser. No. 735,513
Claims priority, application France, June 22, 1967, 111,450
Int. Cl. C08f *29/12, 37/18*; C08g *41/04*
U.S. Cl. 260—857 **8 Claims**

Olefins are polymerized and copolymerized with one another and with diolefins in the presence of a new solid catalyst. The new catalyst is obtained by combining one or more transition metal compounds with the product of reaction of an organoaluminum compound and a macromolecular compound which contains at least one of the following reactive groups >C=O, >C=N, and —C≡N.

3,553,288
POLYAMIDE-POLYESTER COMPOSITION OF IMPROVED PHYSICAL PROPERTIES
Tomikazu Oda, Yoshiaki Inamoto, Takeshi Morikawa, Kogen Oo, and Umewaka Nakatani, Yamaguchi-ken, Japan, assignors to Teijin Limited, Osaka, Japan, a corporation of Japan
Continuation-in-part of application Ser. No. 612,036, Jan. 26, 1967. This application Feb. 10, 1969, Ser. No. 797,955
Claims priority, application Japan, Jan. 29, 1966, 41/5,097; Aug. 24, 1966, 41/55,729
Int. Cl. C08g *41/04*
U.S. Cl. 260—857 **6 Claims**

A polyamide composition essentially comprising:

(A) 80 to 90 parts by weight of poly-ε-caprolactam or polyhexamethylene adipamide,

(B) 20 to 10 parts by weight of a linear polyester of which more than 80 mole percent is composed of ethylene terephthalate units (with the proviso that the total amount of the said components (A) and (B) is 100 parts by weight), and

(C) 10 to 60% by weight, based on the said linear polyester (B), of a polyamide having a benzene nucleus or nuclei in the main polymer chain,

the said polyamide (C) being a linear polyamide composed of at least one dicarboxylic acid with 6–10 carbon atoms and at least one diamine with 6–10 carbon atoms or further of ε-caprolactam and having a melting point of less than 300° C., and at least 20% of the entire constituents consisting of the said dicarboxylic acid component having a benzene nucleus and/or the said diamine component having a benzene nucleus.

3,553,289
POLYOXAMIDES FROM 3-AMINOMETHYL-3,5,5-TRIMETHYL CYCLOHEXYLAMINE
Frederick Keith Duxbury, Mountfield, and Arthur Brian, Joseph Oldham, and Wendy Rawstron Smith, Manchester, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed May 6, 1968, Ser. No. 727,071
Claims priority, application Great Britain, May 10, 1967, 21,669/67
Int. Cl. C08g *41/04*
U.S. Cl. 260—857 **4 Claims**

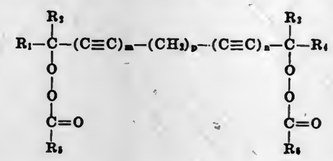
Polyoxamides and copolyoxamides of oxalic acid and 3-aminomethyl-3,5,5-trimethyl cyclohexylamine, optionally with other diamines. Preparation of such polyoxamides and copolyoxamides from oxalic esters and diamines. Fibre-forming blends of such polyoxamides with polyamides such as poly-(hexamethylene adipamide).

3,553,290
SPANDEX FIBERS STABILIZED WITH CONDENSATES OF SUBSTITUTED PHENOLS AND DIVINYL BENZENES
Oliver Larry Hunt, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Apr. 10, 1968, Ser. No. 720,379
Int. Cl. C08g *41/04*
U.S. Cl. 260—859 **11 Claims**

Resinous condensates of divinyl aromatic compounds and p-alkyl phenols with molecular weights in the range of 1500 to 4000 are incorporated into shaped articles of long-chain synthetic segmented polyurethanes such as spandex fibers to provide resistance to yellowing upon exposure to smog even after repeated dry-cleaning.

3,553,291
PROCESS OF CURING UNSATURATED POLYESTER RESINS USING ACETYLENIC DIPERESTERS
Ronald L. Friedman and Roger N. Lewis, Pinole, Calif., assignors to Argus Chemical Corporation, a corporation of Delaware
No Drawing. Original application Dec. 3, 1965, Ser. No. 511,354, now Patent No. 3,444,230, dated May 13, 1969. Divided and this application July 15, 1968, Ser. No. 770,879
Int. Cl. C08f *21/00*; C08g *17/12*
U.S. Cl. 260—861 **6 Claims**

Aliphatic diperesters of alkyne diols having the formula:



where R_1, R_2, R_3 and R_4 are lower hydrocarbon groups, m and n are 0 or 1 with the proviso that their sum is always at least one, p is a positive integer, and R_5 and R_6 are the same or different aliphatic groups of from 1 to 20 carbon atoms are useful as catalysts for the free radical initiated polymerization of polyesters. Use of these diperesters as catalysts eliminate various distortions in the structure of the finished molded resin product.

3,553,292
PRODUCT AND A METHOD OF IMPROVING THE SHELF LIFE OF UNCURED POLYESTERS
Eldon E. Stahly, Ellicott City, and Edwin W. Lard, Bowie, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Dec. 10, 1968, Ser. No. 782,747
Int. Cl. C08f *21/02*
U.S. Cl. 260—864 **8 Claims**

Inhibitors, such as, 2-(2-aminoethylamino)-5-nitropyridine, are added to uncured polyester resin systems to prevent gelation of those systems when they are stored at room temperature or at elevated temperatures for periods of time in excess of three years. Between 0.5 and 1.0 mole percent inhibitor is added to the uncured polyester systems.

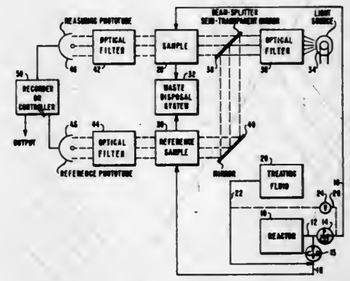
3,553,293
PRODUCT AND A METHOD OF IMPROVING THE SHELF LIFE OF UNCURED POLYESTER RESINS
Eldon E. Stahly, Ellicott City, and Edwin W. Lard, Bowie, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Dec. 10, 1968, Ser. No. 782,709
Int. Cl. C08f *21/02, 45/58*
U.S. Cl. 260—866 **10 Claims**

Dihydroxynaphthaquinones are added to uncured polyester resin systems to prevent gelation of those systems when they are stored at room temperature or at elevated temperatures for periods of time in excess of three years. Between 0.5 and 1.0 mole percent of the dihydroxynaphthaquinone is added to the uncured polyester systems.

3,553,294
POLYESTERS CONTAINING BICYCLO[2.2.1]HEPT-2-YL ACRYLATE AND METHACRYLATE
Charles W. McGary, Jr., Charleston, and Percy L. Smith, Dunbar, W. Va., assignors to Union Carbide Corporation, a corporation of New York
Filed July 24, 1967, Ser. No. 655,554
Int. Cl. C08l *21/00*
U.S. Cl. 260—871 **5 Claims**

Unsaturated polyesters are reacted with or crosslinked with bicyclo[2.2.1]hept-2-yl acrylate (BCHA) and the corresponding bicyclo[2.2.1]hept - 2 - yl methacrylate (BCHMA) either alone or in combination with other vinyl monomers commonly used for crosslinking unsaturated polyester resins. The use of or the incorporation of BCHA or BCHMA in polyester premixes drastically reduces the loss of vinyl monomer in polyester premixes and improves the ultraviolet stability without deleteriously affecting the resin properties. Examples are given illustrating the reduction of volatility of unsaturated polyester premixes which employ styrene and vinyltoluene as crosslinking monomers in combination with either BCHA or BCHMA. The resinous products containing BCHA or BCHMA are useful as molding compositions, protective coatings, adhesives and laminating resins.

3,553,295
POLYMERIZATION MONITOR
Arthur R. Bean, Jr., Buena Park, Donald W. Fraga, Redondo Beach, and Roger H. Mann, Coronado Del Mar, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Apr. 25, 1968, Ser. No. 724,206
Int. Cl. C08d *3/06, 3/10*
U.S. Cl. 260—879 **13 Claims**



A continuous indication of the active chain concentration in a homogeneous solution polymerization re-

action admixture is obtained by comparing the absorbance of transmitted radiation by active and deactivated portions of the reaction admixture.

3,553,296
ODOR RETAINING POLYOLEFIN COMPOSITION AND PROCESS FOR PREPARING THE SAME
Bruno Lothar Gaeckel, Westmount, Quebec, Canada, (123 Eglinton Ave. E., Toronto 12, Ontario, Canada)
No Drawing. Filed Mar. 17, 1969, Ser. No. 807,928
Int. Cl. C08f 29/12
U.S. Cl. 260—897 12 Claims

A polyolefin composition having improved odor retaining properties is prepared by blending polyethylene particles of a size of from 150 to 350 mesh with an odoriferous oil and then mixing the blend with the polyolefin in an amount of from 0.2 to 2.0 percent by weight.

3,553,297
PREPARATION OF 2-CHLORO-1-(2,4,5-TRICHLOROPHENYL)VINYL DIMETHYL PHOSPHATE
David E. Ramey, Modesto, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 20, 1968, Ser. No. 761,285
Int. Cl. C07f 9/08
U.S. Cl. 260—969 8 Claims

Production of the insecticide, 2 - chloro-1-(2,4,5-trichlorophenyl)vinyl dimethyl phosphate, by reaction of trimethyl phosphite selectively with 2,2,2',4',5'-pentachloroacetophenone in a mixture of isomeric pentachloroacetophenones is effected by carrying out the reaction in a liquid alkane as reaction medium.

3,553,298
HYDROLYTIC STABILIZED PHOSPHITE ESTERS
James J. Hodan, Williamsville, and William L. Schall, Buffalo, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Oct. 20, 1967, Ser. No. 676,709
Int. Cl. C07f 9/08
U.S. Cl. 260—967 16 Claims

This invention is directed to a novel phosphite ester composition containing particular nitrogen-containing compounds which stabilizes the phosphite ester against hydrolysis and remains in solution, relates to novel epoxy resin compositions containing the stabilized phosphite ester composition, and relates to the stabilizing use.

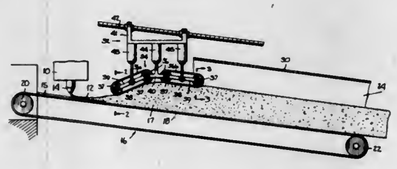
3,553,299
PROCESS OF PRODUCING SHAPED OPTICAL BODIES USEFUL AS AIDS TO VISION
Heinrich Thiele, 16 Hardenbergstrasse, Kiel, Germany, and Wilhelm P. Soehnges, 11 Bluetenstrasse, Munich, Germany
No Drawing. Filed Dec. 12, 1967, Ser. No. 690,028
Int. Cl. B29d 11/00, 11/02
U.S. Cl. 264—1 17 Claims

Optical lenses useful for replacing damaged or cataractous eye lenses, contact lenses, and other aids to vision are obtained by first preparing a colloidal solution of the peripheral part of animal or human eye lenses or of the lens nucleus or of both materials by means of aqueous solutions of acid or alkaline agents or salts such as alkali metal hydroxides, hydroxy carboxylic acids, for instance, lactic acid, tartaric acid, or citric acid, urea and its derivatives, lithium thiocyanate, and others which increase the solubility of the lens substance in water without affecting and denaturating the lens protein.

The resulting sol is then exposed to ion diffusion preferably through ion-permeable membranes in the desired shape whereby a gel is formed. Polyvalent metal ions and preferably copper, cadmium, zinc, and calcium ions are the preferred ions. Electrodialysis or change in the pH-value of the sol by means of hydrogen ions may also be used for gel formation.

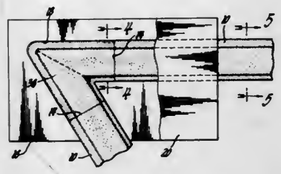
The resulting clear and transparent shaped gel with oriented filamentary protein molecules is then stabilized by cross-linking with agents such as formaldehyde, dialdehydes, diepoxides, and the like.

3,553,300
PROCESS FOR CONTROLLING THE UPPER SURFACE CONTOUR OF FOAMABLE POLYURETHANE DURING EXPANSION IN AN OPEN TOP MOLD
Fred Buff, Paramus, N.J., assignor to Tenneco Chemicals, Inc., New York, N.Y., a corporation of Delaware
Filed July 10, 1968, Ser. No. 743,832
Int. Cl. B29d 27/04
U.S. Cl. 264—41 3 Claims



A continuous molding process for controlling the upper contour of polyurethane foamed articles including an open topped trough-like conveyor into which a reaction mixture is poured and top pressure means which press down on about the center two thirds of the rising foaming mixture during selected portions of the foam rise process.

3,553,301
METHOD OF JOINING HOLLOW ELASTOMERIC STRIPS BY MOLDING A PARTIALLY FOAMABLE ELASTOMER THEREBETWEEN
Robert J. Reardon, Bradford, and William E. Robbins, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 16, 1967, Ser. No. 683,634
Int. Cl. B29d 27/00
U.S. Cl. 264—46 3 Claims

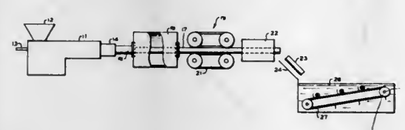


A corner member or the like is readily molded onto the end of an elastomeric weatherstrip having a hollow transverse section, by first preparing a composite molding member, one portion of which is a cured composition selected from the group consisting of neoprene rubber, styrenebutadiene rubber, natural rubber, urethane polymers and polyethylene and another portion of which is of uncured foamable material selected from the group consisting of neoprene rubber, styrene-butadiene rubber, natural rubber, urethane polymers and polyethylene. The composite member is positioned in a suitable mold together with an end of the hollow strip with the cured portion adjacent the hole in the end of the hollow strip. The pieces are heated to foam and cure the unreacted portion of the composite member whereby a molding is formed and bonded to the elongated strip.

3,553,302
METHOD OF PREPARING POLYOLEFIN RESIN PAPER
Rinnosuke Susuki, Tokyo, Hiroshi Hoshi, Narashino-shi, Jiro Saito and Hitoshi Iida, Tokyo, and Humio Ito, Ichikawa-shi, Japan, assignors to Lion Fat & Oil Co., Ltd., Tokyo, Japan
No Drawing. Filed Dec. 15, 1969, Ser. No. 885,340
Claims priority, application Japan, Dec. 20, 1968, 43/93,096; June 2, 1969, 44/42,474
Int. Cl. B29d 7/20
U.S. Cl. 264—49 12 Claims

A method of preparing an opaque and white polyolefin resin paper comprising the steps of: kneading a member selected from the group consisting of gypsum, calcium sulfate hemihydrate and soluble anhydrite as the filler with a polyolefin resin, subjecting thus kneaded resin to sheet-molding, and subsequently hydrating said filler by means of bringing the resultant sheet into contact with water; and a method of imparting paintable as well as printable properties to said opaque and white polyolefin resin paper comprising the steps of: kneading calcium sulfite, in addition to said filler, with a polyolefin resin, subjecting thus kneaded resin to sheet-molding and dipping in water, and subsequently bringing the resultant sheet into contact with an inorganic acid.

3,553,303
EXTRUDING THERMOPLASTIC TUBING
Frederick J. Zavasnik, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 21, 1967, Ser. No. 692,540
Int. Cl. B29c 17/14, 25/00
U.S. Cl. 264—150 3 Claims

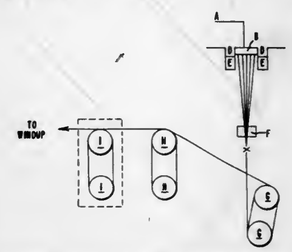


A length of extruded thermoplastic tubing is immersed in a liquid quench bath while the internal surfaces of the tubing are at a temperature above the crystalline freeze point of the thermoplastic in order to prevent the formation of large crystals.

3,553,304
METHOD OF SOLVENT CASTING POLY-1,3-BENZOXAZINE-2,4-DIONE ELECTRIC INSULATING FILMS
Eckart Reese, Dormagen, Wilhelm Rohm, Stommeln, Hermann Hofmeier, Dormagen, Ludwig Bottenbruch, Krefeld-Bockum, and Hermann Schnell, Krefeld-Uerdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Feb. 13, 1968, Ser. No. 704,989
Claims priority, application Germany, Feb. 21, 1967, F 51,579
Int. Cl. B29d 7/02; C08g 22/00; D01d 5/12
U.S. Cl. 264—210 2 Claims

The invention relates to poly-1,3-benzoxazine-2,4-dione electric insulating films obtained by casting a solution of a polymer consisting essentially of a poly-1,3-benzoxazine-2,4-dione in an inert organic solvent to form a film, drying and stretching said film, the poly-1,3-benzoxazine-2,4-dione being obtained by reaction of a di-o-hydroxyaryl dicarboxylic acid aryl ester with an organic diisocyanate in an organic solvent in a one step reaction.

3,553,305
MELT-SPINNING PROCESS
Tin Yam Au, 2207 Riviera Lane, Holiday Hills, Wilmington, Del. 19803
Continuation-in-part of application Ser. No. 671,832, Sept. 29, 1967. This application Oct. 16, 1968, Ser. No. 768,140
The portion of the term of the patent subsequent to Mar. 31, 1987, has been disclaimed
Int. Cl. D01d 5/12
U.S. Cl. 264—210 3 Claims

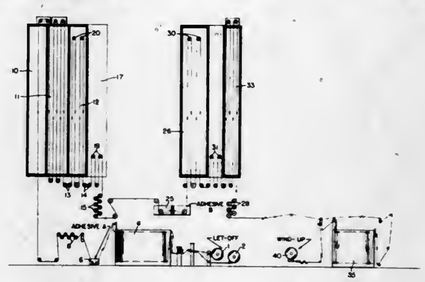


This invention provides a high-speed, melt-spinning process for producing textile fiber having an improved response to false-twist texturing.

3,553,306
FILMS AND FILAMENTS HAVING ION-EXCHANGE PROPERTIES AND PROCESS FOR MAKING SAME
John Armistead Church, Princeton Junction, N.J., assignor to American Can Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed Oct. 24, 1969, Ser. No. 869,360
Int. Cl. B29d 7/02; C08h 15/00; D01f 3/32
U.S. Cl. 264—218 21 Claims

Films and fibers or filaments having ion-exchange properties are made by the viscose process from cellulosic material to which certain ionic polymers have been graft polymerized prior to the regeneration of the cellulosic material.

3,553,307
TREATMENT OF POLYESTER TIRE CORD
Frederick J. Kovac, Akron, and Grover W. Rye, Cuyahoga Falls, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Continuation of application Ser. No. 376,750, June 22, 1964. This application Apr. 24, 1968, Ser. No. 748,136
Int. Cl. D02g 3/48; D02j 1/22
U.S. Cl. 264—290 4 Claims



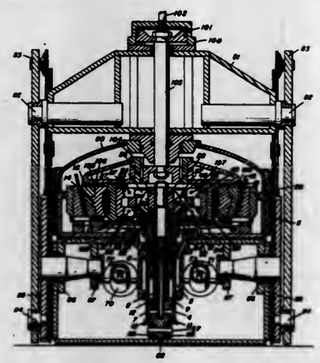
Treating polyester cord reinforcement for tires by subjecting the tire cord to a first stage of heat treatment at a temperature in excess of 440° F. and for a period of 30 to 70 seconds while stretching the cord from 2 to 10 percent of its original length, followed by a second stage of heat treatment at a temperature also in excess of 440° F., and preferably higher than the temperature of the

first stage, with an exposure time of 30 to 70 seconds and with the cord being permitted to shrink by 30 to 50 percent of the amount that it was stretched in the first stage treatment. An improved tire cord results.

3,553,308
METHOD FOR PREPARING POLYURETHANE MOLDED ARTICLES
Koji Kobayashi, Suita, and Noritoshi Mise, Osaka, Japan, assignors to Takeda Chemical Industries, Ltd., Osaka, Japan
No Drawing. Filed Aug. 7, 1968, Ser. No. 750,756
Claims priority, application Japan, Aug. 7, 1967, 42/50,611
Int. Cl. B29c *13/00*
U.S. Cl. 264—305 **2 Claims**

Polyurethane condoms of improved pinhole resistance yet with thickness of less than 50 microns are prepared by alternately dipping, at controlled speed, a condom mold in a polyurethane prepolymer solution and a curing solution, said prepolymer solution being of controlled NCO/OH ratio, molecular weight, viscosity and concentration. The alternate dipping is performed from 3 to 6 times.

3,553,309
METHOD FOR PRODUCING THE TREAD BAND OF FLEXIBLE TREAD RINGS WHILE IN A PLASTIC STATE
Antonio Pacciarini and Dario Giletta, Milan, Italy, assignors to Pirelli S.p.A., Milan, Italy
Original application June 2, 1964, Ser. No. 371,898, now Patent No. 3,358,330, dated Dec. 19, 1967. Divided and this application Oct. 9, 1967, Ser. No. 673,823
Claims priority, application Italy, July 27, 1963, 15,741/63, Patent 702,344
Int. Cl. B29h *5/02*
U.S. Cl. 264—313 **12 Claims**



A method of producing an embossed pattern along the peripheral band of a flexible ring in a plastic state, wherein the inner surface of the flexible ring is initially engaged by a collapsible inner ring after which the outer surface of the flexible ring is engaged by a plurality of sectors forming an outer mold and having radial projections on their inner surfaces corresponding to the pattern.

3,553,310
IMMUNOLOGICALLY REACTIVE PARTICLES
Louis L. Csizmas, Virendra Patel, and Raymond Vincent Davis, Elkhart, Ind., assignors to Miles Laboratories, Inc., Elkhart, Ind., a corporation of Indiana
No Drawing. Filed Dec. 28, 1967, Ser. No. 694,059
Int. Cl. A61k *9/00, 27/00*
U.S. Cl. 424—2 **6 Claims**

Insoluble reactive particles are formed and then directly chemically coupled with biological materials to form useful particles. The reactive particles are formed by attaching to the surfaces of discrete carried particles compounds which stabilize the particles and which form aldehyde active moieties on said surfaces. The useful compounds for this purpose are alpha, beta-unsaturated aldehydes and dialdehydes. Immunological testing can be carried out with the indicator particles of this invention when immunological materials are coupled to the carrier particles.

3,553,311
METHOD OF PRODUCING BIOLOGICAL STAINS AND REAGENTS FOR BIOCHEMICAL DETERMINATIONS USING ULTRASONIC ENERGY
Anthony William Smith, 1321 Pyramid Drive, Las Vegas, Nev. 89108
No Drawing. Filed June 30, 1965, Ser. No. 468,608
Int. Cl. G01n *1/30*
U.S. Cl. 424—3 **5 Claims**

A method for the manufacture of stains or other materials of the type employed to treat biological specimens is described. Ultrasonic energy, at a power level sufficient to induce cavitation, is applied to a mechanically mixed combination of a solute in a liquid solvent. A reduction in manufacturing time of approximately 300:1 is obtained in making Wright's stain solution and the resulting product penetrates the specimen approximately 60 times faster than Wright's stain produced by conventional methods. Various types of ultra-fine dispersions which may be produced by the method of the invention are described.

3,553,312
PROCESS FOR PRODUCING RUBELLA-VIRUS HEMAGGLUTINATING ANTIGEN
Sergio N. Delgado, Rockville, Md., assignor to Flow Laboratories Inc., Rockville, Md., a corporation of Delaware
No Drawing. Filed Feb. 26, 1968, Ser. No. 707,948
Int. Cl. G01n *33/16;* **A61k** *23/00*
U.S. Cl. 424—12 **14 Claims**

A process is provided for producing high titer rubella-virus hemagglutinating antigen. Rubella-virus hemagglutinin is first prepared by inoculating a tissue culture of baby hamster kidney cells maintained in a serum-free, nutrient tissue culture fluid with infectious rubella virus and incubating the inoculated cells to propagate the virus in the cells. After incubation, the pH of the fluid is adjusted to between about 9 and 10 to produce high titer rubella-virus hemagglutinin. The antigen is then prepared by destroying the infectivity of the virus without destroying its antigenicity. The antigen is useful in the detection of rubella immunity and rubella infection and in the evaluation of potential rubella vaccines.

3,553,313
MANUFACTURE OF GRANULATE FEED
Luis Picas Tort, Calle Balmes 65, Barcelona, Spain
No Drawing. Filed Dec. 20, 1967, Ser. No. 691,940
Claims priority, application Spain, Dec. 21, 1966, 335,415
Int. Cl. A61k *9/00, 19/00, 27/00*
U.S. Cl. 424—33 **5 Claims**

Production of a granulated feed which is soluble or may be emulsified in the water or milk fed to the animals, by grinding the raw material containing the ingredients entering into the preparation to be added to the water or milk, this grinding being carried out to obtain a ground material having the appropriate degree of fineness. The material is then mixed and homogenized followed by a wetting with at least one volatile organic solvent preferably selected from the group consisting of methanol, ethanol, isopropanol, acetone, benzene, dioctane, and toluene, containing an emulsifying substance or a suspension agent dissolved in the organic solvent. The emulsifying or suspension agent are preferably selected from the group consisting of polyvinyl pyrrolidone, n-lauryl sulphates, dioxtyl sodium sulphosuccinates, alginates and polyethylene glycols. The next step consists in granulating the paste obtained from the preceding step followed by drying the granulated material and screening the resulting mixture to a 10–150-mesh size

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3,553,314
ORAL COMPOSITIONS FOR CALCULUS RETARDATION
Marion D. Francis, Springfield Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Dec. 23, 1968, Ser. No. 786,355
Int. Cl. A61r *7/16*
U.S. Cl. 424—49 **8 Claims**

Oral compositions, such as toothpaste, mouthwash, and the like, containing certain methanecycloalkylhydroxydiphosphonic acids and their salts which retard dental calculus formation without damaging the tooth structure.

3,553,315
ORAL COMPOSITIONS FOR CALCULUS RETARDATION
Marion D. Francis, Springfield Township, Hamilton County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Dec. 24, 1968, Ser. No. 785,757
Int. Cl. A61k *7/16*
U.S. Cl. 424—49 **8 Claims**

Oral compositions, such as toothpaste, mouthwash, and the like, containing certain carboxyphosphonates as herein defined which retard dental calculus formation without damaging tooth structure.

3,553,316
ANTIPERSPIRANT COMPOSITIONS CONTAINING ALUMINUM CHELATES OF HYDROXY CARBOXYLIC ACIDS
Andrew M. Rubino, Caldwell, N.J., assignor to Armour Pharmaceutical Company, Berkeley Heights, N.J., a corporation of Delaware
No Drawing. Continuation-in-part of applications Ser. No. 236,168, Nov. 7, 1962, Ser. No. 255,218, Jan. 31, 1963, and Ser. No. 668,886, July 1, 1957. This application Apr. 25, 1966, Ser. No. 544,833
Int. Cl. A61k *1/00*
U.S. Cl. 424—68 **13 Claims**

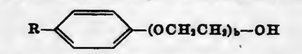
Antiperspirant and antacid aluminum chelates and methods for preparing the same in which an aluminum compound selected from the group consisting of alkali metal aluminates and aluminum chlorhydroxy complexes is chelated with water and alcohol soluble hydroxy carboxylic acids.

3,553,317
IgA ANTIBODY FROM LACTEAL FLUIDS
Joseph B. Michaelson, 6732 Coldwater Canyon, North Hollywood, Calif. 91606, and John W. Short, 1055 Grover St., Glendale, Calif. 91201
No Drawing. Original application Nov. 27, 1967, Ser. No. 685,949. Divided and this application June 2, 1969. Ser. No. 843,196
Int. Cl. C12b *1/00;* **C12k** *5/00*
U.S. Cl. 424—87 **4 Claims**

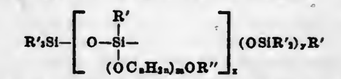
A new IgA antibody, a lactimmunin, has been discovered. Uniquely, the new product, derived from immune lacteal fluids such as milk whey or colostrum, confers passive immunity without sensitizing effects even when administered parenterally. The product is prepared by selectively cleaving the relatively large lacteal fluid derived antibody molecules into relatively smaller constituents having either allergenic or antibody properties and isolating the nonallergenic, antibody constituent. The cleaving is easily accomplished by proteolytic digestion of the immune lacteal fluid.

3,553,318
SPERMICIDAL ORGANOSILICON LUBRICANT COMPOSITION
Robert Craig Anderson, Seamill, Ernest Bingham Burns, Irvine, and Graham Westwood Cross, Saltcoats, Scotland, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Mar. 22, 1965, Ser. No. 441,872
Claims priority, application Great Britain, Apr. 6, 1964, 14,028
Int. Cl. A61k *27/00*
U.S. Cl. 424—184 **12 Claims**

There is provided a spermicidal organosilicon lubricant composition useful as a lubricant for condoms which comprises a spermicidal compound of the formula



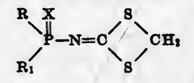
in which R is an alkyl group having from 6 to 20 carbon atoms and *b* is an integer having a value of from 6 to 20 inclusive, dissolved in a water insoluble polysiloxanepolyoxyalkylene copolymer of the formula



wherein R' is selected from the group consisting of methyl, ethyl, propyl, butyl, octyl, cyclohexyl, phenyl, tolyl, benzyl, and phenylethyl groups, R'' is selected from the group consisting of methyl, ethyl, propyl, n-butyl, octyl, cyclohexyl, phenyl and nonylphenyl groups and siloxanyl, *n* is 2, 3 or 4, *m* is an integer having a value of from 1 to 100, *x* is an integer having a value of from 1 to 199, *y* is an integer having a value of from 1 to 199 and *x*+*y* is an integer from 2 to 200 inclusive. The proportion of spermicidal compound dissolved in the polysiloxanepolyoxyalkylene copolymer is from 0.1 to 50 parts per 100 parts by weight of the composition.

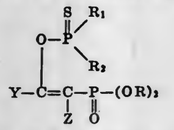
3,553,319
METHOD FOR CONTROLLING INSECTS WITH IMINO-1,3-DITHIETANES
Roger Williams Addor, Pennington, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Original application Apr. 21, 1967, Ser. No. 632,545, now Patent No. 3,470,207, dated Sept. 30, 1969. Divided and this application June 16, 1969, Ser. No. 833,769
Int. Cl. A01h *9/36*
U.S. Cl. 424—202 **10 Claims**

The present invention relates to novel imino-1,3-dithietanes and to methods for preparing the same. More particularly, the invention relates to 2-phosphinylimino-1,3-dithietanes or 2-phosphinothioylimino-1,3-dithietanes, to methods for their manufacture, and to compositions and methods for controlling a variety of pests employing the aforementioned 2-imino-1,3-dithietanes. Still more particularly, the invention is concerned with 2-imino-1,3-dithietanes represented by the structure:



wherein X is sulfur or oxygen, and R and R_1 each represent a radical, such as a lower alkyl, lower alkoxy or phenyl.

3,553,320
NOVEL INSECTICIDAL β-PHOSPHONYLVINYL PHOSPHATES AND METHOD FOR PREPARING SAME
Bernard Miller, Amherst, Mass., and Howard Margulies, Princeton Junction, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Original application Feb. 2, 1966, Ser. No. 524,457, now Patent No. 3,476,834, dated Nov. 4, 1969. Divided and this application Nov. 5, 1968, Ser. No. 773,654
Int. Cl. C01f 9/16, 9/24, 9/40
U.S. Cl. 424—204 10 Claims
A method of controlling insects which comprises the steps of: applying to an area to be protected from insects an effective amount of a compound of the formula:

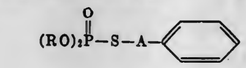


wherein R is lower alkyl or allyl; R_1 and R_2 are each (lower)alkoxy or —N(di(lower)alkyl); Y is (lower)alkyl or aryl; and Z represents hydrogen or alkyl.

3,553,321
STABILIZED CARRIER FOR PESTICIDAL FORMULATIONS
Robert Zilli, Somerville, and Garth Coombs, Martinsville, N.J., assignors to Johns-Manville Corporation, New York, N.Y., a corporation of New York
No Drawing. Continuation of application Ser. No. 344,240, Feb. 12, 1964. This application Feb. 10, 1967, Ser. No. 615,266
Int. Cl. A01n 9/00, 9/36
U.S. Cl. 424—213 12 Claims
A hydrothermal reaction product useful as a pesticidal carrier and the process of producing the product preferably by hydothermally reacting diatomaceous silica with lime and then reacting therewith carbon dioxide.

3,553,322
HELMINTH CONTROL
Duane K. Hass, Juan G. Morales, and Richard R. Whetstone, Modesto, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed July 21, 1967, Ser. No. 654,985
Int. Cl. A01n 9/36; A61k 27/00
U.S. Cl. 424—219 7 Claims
Internal helminth parasites of warm-blooded animals are controlled by certain methyl (C_4–C_{12}-alkyl) beta-chlorine-substituted vinyl phosphates.

3,553,323
METHOD OF CONTROLLING RICE BLAST WITH THIOLPHOSPHATES
Masaru Kado and Taizo Maeda, Shimizu, and Eiichi Yoshinaga, Ogasa-gun, Japan, assignors to Kumiai Chemical Industries Co., Ltd., Tokyo, Japan
No Drawing. Filed July 6, 1965, Ser. No. 469,905
Claims priority, application Japan, Mar. 31, 1965, 40/18,285
Int. Cl. A01n 9/36
U.S. Cl. 424—225 17 Claims
Undesired fungous growth is combatted by applying to the locus to be protected a fungicidally effective amount of a compound of the formula



wherein R is a lower alkyl radical, A is a radical selected from the group consisting of straight and branched chain alkylene radicals having 2 to 10 carbon atoms, in the presence of an inert carrier. These compositions are particularly useful for controlling noxious fungous organisms attacking agricultural products, more especially rice blast (*Piricularia oryzae*).

3,553,324
DISSOLUTION IMPROVING AMBUTONIUM OR PROTRIPTYLINE ADDITIVES IN CAPSULE AND TABLET DOSAGE FORMS OF A BENZODIAZEPINE, SUCH AS OXAZEPAM
John W. Poole, Norristown, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 25, 1968, Ser. No. 762,444
Int. Cl. A61k 27/10
U.S. Cl. 424—244 5 Claims
The disclosure is directed to a method of improving the dissolution of oxazepam from solid dosage forms by the addition of ambutonium bromide or protriptyline hydrochloride to oxazepam formulations.

3,553,325
METHOD FOR TREATING BURNS WITH METHENAMINE MANDELATE
Philip H. Taylor, 220 Cheltenham Road, Columbus, Ohio 43220
No Drawing. Filed Mar. 18, 1968, Ser. No. 714,053
Int. Cl. A61k 27/00
U.S. Cl. 424—249 2 Claims
The present invention relates to a novel method for treating a mammalian body afflicted with burns. This method is effected by applying topically to the affected site menthenamine mandelate.

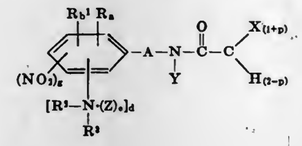
3,553,326
USE OF 2-(CYANOALKYL)AMINO-4-AMINO-6-SUBSTITUTED-s-TRIAZINES FOR INDUCING DEPRESSANT EFFECTS IN ANIMALS
James R. Albert and Jiro K. Kodama, Modesto, Calif., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 17, 1968, Ser. No. 721,924
Int. Cl. A61k 27/00
U.S. Cl. 424—249 18 Claims
Use of 2-(cyanoalkyl)amino-4-amino-6-substituted-s-triazines for inducing depressant effects in animals.

3,553,327
3,6-DIAMINO THIOXANTHENE-10,10-DIOXIDE IN THE TREATMENT OF EPILEPSY
William Veldkamp, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Nov. 1, 1968, Ser. No. 772,801
Int. Cl. A61k 27/00
U.S. Cl. 424—275 2 Claims
3,6-diaminothioxanthene-10,10-dioxide or pharmacologically acceptable acid addition salts thereof prepared in unit dosage form with pharmaceutical carriers for oral and parenteral administration to humans and animals. Process for treating convulsive seizure or migraine and process for inducing sedation or tranquilization by administering the composition at a dose of from 25 to 1000 mg. per dosage unit or from 0.5 mg. to 20 mg./kg. of body weight of subject.

3,553,328
STABLE CARBAMATE INSECTICIDE GRANULES
Theodore H. Koundakjian, Berkeley, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Feb. 28, 1967, Ser. No. 619,148
Int. Cl. A01n 9/20
U.S. Cl. 424—300 7 Claims
Shelf-stable granular insecticide formulations containing m-alkylphenyl-N-methylcarbamate such as m-amylphenyl-N-methylcarbamate, an absorbent clay or amorphous mineral silica which have pH's of less than about 7 measured in a 10 wt. percent slurry and contain less than about 8 wt. percent water and about 0.5 to 5 wt. percent aliphatic carboxylic acid having a pK_a of at least about 4, ethylacetoacetate, polyoxy alkylene partial ester of phosphoric acid or an aliphatic polyol having 2 to about 5 hydroxyl groups.

3,553,329
LIPID-NORMALIZING N-(PHENOXYPHENYL)-SULFAMIDES
Norman A. Nelson, Charlestown Township, Kalamazoo County, and Gary E. Vanden Berg, Texas Township, Kalamazoo County, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 654,081, July 18, 1967. This application Nov. 25, 1968, Ser. No. 778,790
Int. Cl. A01k 27/00
U.S. Cl. 424—321 2 Claims
Disclosed are compositions containing lipid-normalizing N-(phenoxyphenyl)sulfamides and pharmaceutically acceptable salts thereof. The active ingredients are prepared by reacting a phenoxyaniline with a suitable sulfamoyl halide.

3,553,330
ANIMAL FEED COMPOSITIONS AND METHODS EMPLOYING CERTAIN 2-HALOACETAMIDES
Ernest G. Jaworski, Olivette, and Gino J. Marco, Webster Groves, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Nov. 20, 1967, Ser. No. 684,470
Int. Cl. A61k 27/00
U.S. Cl. 424—324 15 Claims
Animal feed composition containing at least one compound of the formula



wherein X is halogen (Cl, Br, F and I), *p* is an integer from 0 to 2 inclusive, A is selected from the group consisting of alkylene of not more than 6 carbon atoms and alkenylene of at least 3 and not more than 6 carbon atoms, R is selected from the group consisting of alkyl, alkenyl and alkoxy of not more than 4 carbon atoms, *a* is an integer from 0 to 5, R^1 is halogen (Cl, Br, F and I), *b* is an integer from 0 to 3, R^2 and R^3 are selected from the group consisting of hydrogen and alkyl of not more than four carbon atoms, *e*, *d* and *g* are each integers from 0 to 1, Z is an acid forming a physiologically acceptable acid addition salt, and Y is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, phenyl, phenylalkyl and cinnamyl of not more than 12 carbon atoms.

3,553,331
PHARMACEUTICAL COMPOSITIONS AND METHODS UTILIZING 4-ALKYL-1,4-DIMETHYLCYCLOHEXYLAMINES AND 4-ALKYL-1,4-DIMETHYLCYCLOHEXANEMETHYLAMINES
Marvin Paulshock, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 700,705, Jan. 26, 1968, which is a continuation-in-part of application Ser. No. 370,373, May 26, 1964, now Patent No. 3,392,198. This application Feb. 28, 1969, Ser. No. 803,408
Int. Cl. A61k 27/00
U.S. Cl. 424—325 32 Claims
This invention relates to pharmaceutical compositions containing a compound of class of 4-alkyl-1,4-dimethylcyclohexylamines and 4-alkyl-1,4-dimethylcyclohexanemethylamines and to the use of such compositions to control influenza infections in warm-blooded animals. Typical compounds useful in these compositions and methods are 1,4,4-trimethylcyclohexylamine, N,N,1,4,4-pentamethylcyclohexanemethylamine, N,α,α,1,4,4-hexamethylcyclohexanemethylamine and the hydrochloride salts of the foregoing named compounds.

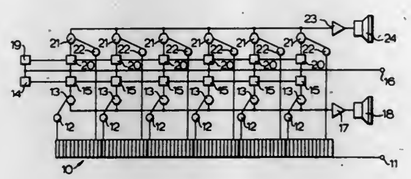
3,553,332
ANTI-TUBERCULAR BENZOPHENONE DERIVATIVES
Emanuel Grunberg, North Caldwell, N.J., assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 561,752, June 30, 1966, which is a continuation-in-part of application Ser. No. 556,268, June 9, 1966. This application June 27, 1967, Ser. No. 649,124
Int. Cl. A61k 27/00
U.S. Cl. 424—330 17 Claims
Benzophenone derivatives having a di-substituted amino-alkoxy substitutent on one phenyl ring and halo or nitro substituents on the other were found to be useful against mycobacterial infections, particularly *Mycobacterium tuberculosis*.

ELECTRICAL

3,553,333
ELECTRONIC ORGANS WITH PLURAL STOPS, CHANNELS, AND LOUDSPEAKERS

Andrew N. Shaw, 403 Patricia Drive, Burlington, Ontario, Canada

Filed Mar. 19, 1969, Ser. No. 808,506
Int. Cl. G10h *1/00, 5/00*
U.S. Cl. 84—1.01 **6 Claims**

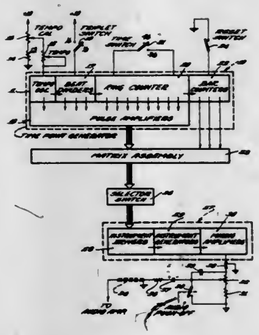


In an electronic organ comprising a plurality of stops there are provided a plurality of separate transducing channel means amplifiers, each having a corresponding separate loudspeaker fed from the amplifier; each amplifier receives the signals for a set of notes that are spaced 12 $+n$ half tones from one another where n is any positive whole integer including 0; preferably n is not greater than 43; when $n=0$ and the notes of each set are octavely related each amplifier may receive signals for a first set of notes of one stop and a second set of notes for another stop, the two sets being spaced half tones apart; alternatively each amplifier may receive a first set of notes at one stop together with at least one other set of notes from another stop, the notes of all the stops having the same basic frequency.

3,553,334
AUTOMATIC MUSICAL RHYTHM SYSTEM WITH OPTIONAL PLAYER CONTROL

Alfred B. Freeman, Skokie, Ill., assignor to Chicago Musical Instrument Co., Chicago, Ill., a corporation of Delaware

Filed Jan. 19, 1968, Ser. No. 699,149
Int. Cl. G10f *1/100;* **G10h** *1/02*
U.S. Cl. 84—1.03 **20 Claims**

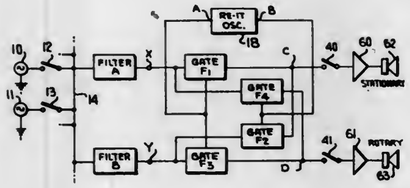


An electronic rhythm device including a clock generator of adjustable frequency, controls for the clock generator to produce evenly or unevenly spaced output signals, a ring counter driven by the clock generator and having controls to bypass some of the stages of the ring counter, a plurality of sound generator circuits, connecting means comprising a plurality of resistor matrices connected between the outputs of the ring counter and the outputs of the clock generator and the inputs of the sound generators, and an automatic follow circuit to control the clock generator rate and an alternative automatic follow circuit.

3,553,335
ELECTRONIC ORGAN HAVING PLURAL TONE SOURCES AND LOUDSPEAKERS WITH ALTERNATE REITERATIVE GATING, CROSS GATING, AND METHOD

David A. Bunger, Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

Filed Apr. 14, 1969, Ser. No. 815,756
Int. Cl. G10h *1/02, 5/00*
U.S. Cl. 84—1.03 **10 Claims**



In an electronic organ, a first means for producing musical tone signals is connected via a first field effect transistor (FET) gate to a first loudspeaker; a second means for producing musical tone signals different in characteristics with respect to pitch and/or tone color is connected via a second FET gate to a second loudspeaker; the first means is also connected to the second loudspeaker via a third FET gate; and the second means is connected via a fourth FET gate to the first loudspeaker. Three pairs of means are disclosed:

1. The first means comprises a tone signal source in series with a key switch and a first tone color filter, while the second means comprises the same signal source in series with the same key switch and a second tone color filter different from the first filter.

2. The first means comprises a first tone signal source in series with a first key switch and a first tone color filter, while the second means comprises a second, octavely related tone signal source in series with a second key switch and a second tone color filter which is different in characteristics from the first tone color filter.

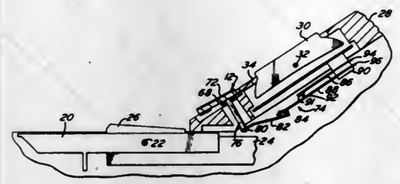
3. Same as 2, except that the first and second filters are similar.

3,553,336
ACCENTER TOUCH BAR FOR ELECTRONIC MUSICAL INSTRUMENT

Jerome Markowitz, Allentown, and Errol R. Griffith, Topton, Pa., assignors to Allen Organ Company, Macungie, Pa., a corporation of Pennsylvania

Filed June 20, 1968, Ser. No. 738,537
Int. Cl. G10h *3/00, 3/06, 1/02*
U.S. Cl. 84—1.09 **5 Claims**

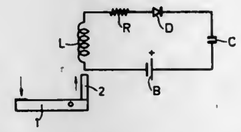
A touch bar is located closely adjacent the keyboard of an electronic musical instrument and forms part of a switch. The switch is connected in the instrument circuit so that when it is closed (or opened) the tonal quality of the audio output of the instrument is changed. The change may affect the intensity, pitch and/or timbre of the audio output. The touch bar is located so that it may be facilely struck by the player to produce varying musical effects.



3,553,337
CIRCUIT ARRANGEMENT FOR IMITATING THE TOUCH OF MUSICAL INSTRUMENTS WITH PERCUSSION

Popko Reinder Dijksterhuis, Bilthoven, and Casper Antonius Henricus Mulkens, Administrator, Eindhoven, Netherlands, assignors to U. S. Philips Corporation, New York, N.Y., a corporation of Delaware.

Filed Apr. 5, 1968, Ser. No. 719,832
Claims priority, application Netherlands, Apr. 8, 1967, 6705025
Int. Cl. G10h *1/02*
U.S. Cl. 84—1.13 **5 Claims**

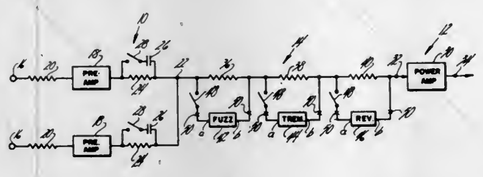


A circuit for controlling the amplitude of an audio oscillator in an electronic musical instrument in response to the intensity with which a key is depressed. A voltage produced by a coil in response to the movement of a magnet attached to the key charges and output capacitor through a resistor and a diode. A reverse bias of a predetermined level impressed on the diode insures that the time during which a charging voltage is impressed on the capacitor is approximately equal for all levels of voltage produced by the coil.

3,553,338
MUSIC AMPLIFIER WITH TONE MODIFYING STAGE

Howard E. Holman, Simsbury, Conn., assignor to Kaman Corporation, Bloomfield, Conn., a corporation of Connecticut

Filed Feb. 19, 1969, Ser. No. 800,515
Int. Cl. G10d *5/00;* **G10h** *1/02*
U.S. Cl. 84—1.14 **7 Claims**

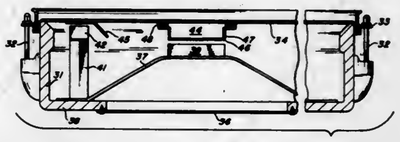


A music amplifier for amplifying voice or musical instrument signals has a tone-modifying stage including one or more tone modifying circuits for modifying or distorting the input signal to produce different musical effects, such as fuzz, tremolo or reverberation, in the output signal. Each tone-modifying circuit is separate from the remainder of the amplifier and may be either functionally disabled through the operation of a switch or physically removed from the amplifier for repair or replacement without otherwise impairing the operation of the amplifier.

3,553,339
DRUM-LIKE MUSICAL INSTRUMENTS WITH ELECTRICAL PICKUPS AND CIRCUITRY

Richard L. Dominguez, 7628 W. Mitchell Drive, Phoenix, and Samuel G.H. Peake, 6231 N. 59th Ave., Glendale, Ariz.

Filed Dec. 11, 1967, Ser. No. 689,495
Int. Cl. G10d *13/02*
U.S. Cl. 84—1.15 **5 Claims**

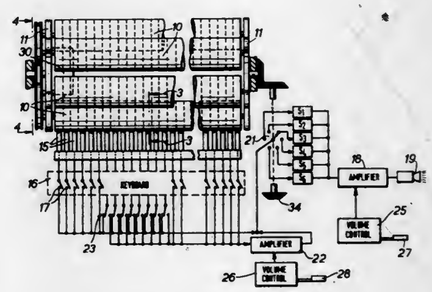


Musical instruments for electrically producing diverse drumlike sounds which include a rigid frame, a vibratable diaphragm carried by the frame, one or more metal foils on the diaphragm, and one or more variable reluctance pickup cartridges on the frame. A tom-tom is provided with a bridge and reverberation strings, and a snare is provided with a damping arm. A transportable cabinet with amplifiers, tone controls, and a speaker is provided for the tom-toms, snare, and other drumlike instruments.

3,553,340
MUSICAL INSTRUMENT

James Joseph McLoughlin, 298 Hagley Road, Edgbaston, England

Filed June 21, 1968, Ser. No. 739,007
Claims priority, application England, June 27, 1967, 29,599/67
Int. Cl. G10h *3/04;* **G10f** *1/00;* **G10h** *1/02*
U.S. Cl. 84—1.28 **3 Claims**

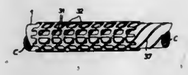


A musical instrument comprises an elongated drum on the curved surface of which there are a plurality of actual recordings of different notes of a musical instrument, the recordings being arranged at different axial positions on the drum, drive means for rotating the drum at a predetermined speed, and a plurality of pickup devices selectively operable to cause the notes recorded on the drum to be selectively reproducible.

3,553,341
ELECTRIC CABLE WITH GROUNDING MEANS

Jacques Hureau, Paris, France, assignor to Generale Alimentaire, Neuilly-sur-Seine, France, a French corporation

Original application May 18, 1967, Ser. No. 639,379, now Patent No. 3,473,986. Divided and this application July 1, 1969, Ser. No. 838,105
Int. Cl. H01r *3/06*
U.S. Cl. 174—6 **2 Claims**

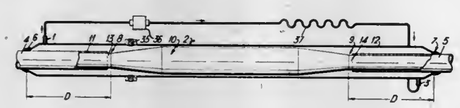


The invention resides in an electrical cable comprising a continuous insulated envelope with earth means on its outer face and a reticular sheath, of a synthetic substance, snugly fitted on said envelope and firmly applying thereagainst the said earth means.

3,553,342
ELECTRIC CABLE INSTALLATIONS AND JOINTS THEREFOR

Michael Savvas Papadopulos, Longfield, England, assignor to British Insulated Callender's Cables Limited, London, England

Filed Feb. 13, 1968, Ser. No. 705,068
Claims priority, application Great Britain, Feb. 14, 1967, 6,941/67
Int. Cl. H01b *7/34*
U.S. Cl. 174—15 **18 Claims**



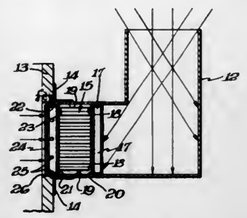
In a joint for an electric power cable, especially a fluid-filled cable, short lengths of cable adjacent to the built-up joint structure are cooled by circulating fluid. The short lengths, which may be sheathed or unsheathed, may project into an elongated fluid-tight enclosure surrounding the joint structure and through which dielectric fluid circulates. Alternatively supplementary enclosures for the short lengths may be located adjacent to the main enclosure and fluid circulated through the supplementary enclosures and a heat exchanger or exchangers.

3,553,343
VENTILATION APERTURE FOR SHIELDED ENCLOSURES

Frank E. Garlington, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts

Filed Nov. 19, 1968, Ser. No. 777,010
Int. Cl. H05k *9/00*
U.S. Cl. 174—35 **6 Claims**

A ventilation aperture for shielded enclosures is provided by a waveguide below cutoff grill placed within a magnetically shielded air duct housing. The grill is positioned within the housing by an improved sealing method so that positive



electrical contact is maintained between the grill and the interior walls of the housing.

3,553,344
HIGH VOLTAGE IGNITION WIRE

Lonnie R. Capehart, 305 W. Standley Ave., Ukiah, Calif.

Filed Mar. 14, 1969, Ser. No. 807,257
Int. Cl. H01b *11/06*
U.S. Cl. 174—36 **6 Claims**

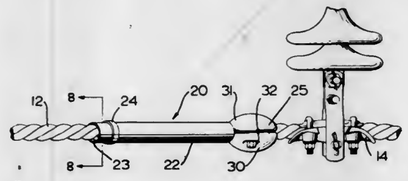


An improved high voltage ignition wire structure including a central conductor surrounded by insulation with at least one electrically conducting sheath about such insulation extending a part of the length of the wire and electrically connected to the central conductor at only one end thereof. A materially increased voltage output appears at the wire end for application of the same power input.

3,553,345
VIBRATION DAMPERS

Aubrey T. Edwards, Oakville, Ontario, Canada, assignor to N. Slater Company, a division of Slater Steel Industries Limited, Hamilton, Ontario, Canada, a corporation of Ontario

Filed Apr. 13, 1967, Ser. No. 630,648
Claims priority, application Canada, Apr. 15, 1966, 958,048
Int. Cl. H02g *7/14*
U.S. Cl. 174—42 **7 Claims**

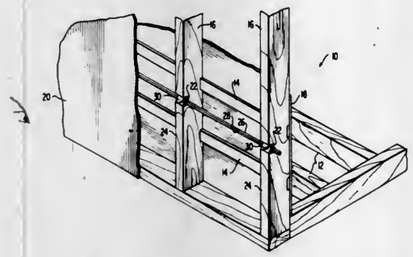


A vibration damper including a wire supported by a clamp, said vibration damper comprising an elongated damping member secured to inhibit longitudinal movement along the wire and having rigidity and character to damp substantial amounts of vibrational energy. The weight per foot of the damping member is in the range of from about 20 percent to about 125 percent of the weight per foot of the wire. The minimum length of the damping member is approximately 3 feet. At least a portion of the damping member is in contact with the wire and the damping member is free to move relative to the wire whereby impact between the wire and a portion of the damping member dissipates said vibrational energy.

3,553,346
CABLE PROTECTOR

Louis J. Ballantyne, Vero Beach, Fla., assignor to Automated Building Components, Inc., Miami, Fla., a corporation of Florida

Continuation-in-part of application Ser. No. 779,069, Nov. 26, 1968. This application June 4, 1969, Ser. No. 830,478
Int. Cl. H01b *7/00*
U.S. Cl. 174—48 **16 Claims**

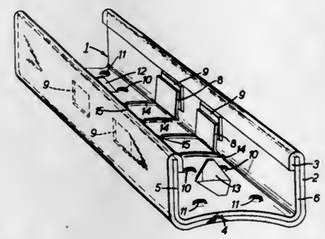


Disclosed is a protector plate, its method of manufacture, and protector plate assembly particularly adapted for protecting electric cables passing through the wood framework of a mobile home. The plate is stamped from sheet stock, preferably 16-gage galvanized mild steel, and bent to form perpendicular, horizontal and vertical legs. Extending from the horizontal leg are a pair of slender, elongated, naillike teeth adapted to be embedded in the base of a notch formed in a wall stud. The vertical leg is preferably hammered over to also engage the notch base and substantially encircle the cable to be protected.

3,553,347
WIRE CONNECTORS

John Patrick Harding, Bushey, and Reginald Robert Burges, Wanstead, London, England, assignors to Her Majesty's Postmaster General, London, England

Filed July 19, 1968, Ser. No. 746,135
Claims priority, application Great Britain, July 25, 1967, 34,163/67; Oct. 6, 1967, 45,659/67
Int. Cl. H01r *9/06;* **H02g** *15/08*
U.S. Cl. 174—84 **8 Claims**



Metallic crimping clips for joining together first and second insulated wires, each clip trough-shaped and having formed therein a series of integral strips and tangs so shaped that, on compressing a clip about the wires, the strips and tangs engage with the wires to form an electrically and mechanically permanent joint between the wires, the joint being capable of slight elastic movement under pressure.

3,553,348
POLYMERIC BLENDS FOR INSULATION COMPOSITION

Joseph E. Betts, Westport, Conn., assignor to General Electric Company, a corporation of New York

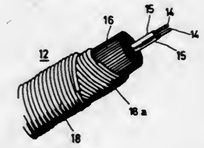
No Drawing. Filed Nov. 2, 1966, Ser. No. 591,415
Int. Cl. H01b *3/44*
U.S. Cl. 174—110 **10 Claims**

Disclosed is an electrical insulating composition for wire and cable comprising a cross linked ethylene copolymer having about 75 percent to 90 percent by weight of ethylene, a chlorine-containing polymer and a filler of magnesium silicate having a platelike structure and being coated with an alkoxy silane. Upon cross-linking the composition is characterized by a tensile strength at 150° C. of not less than 800 lbs./sq. in. and a dielectric strength of not less than 1,000 volts/mil.

3,553,349
FLEXIBLE SIGNAL TRANSMISSION CABLE

Werner Heinzmann, Ottobrunn, and Siegfried Pfahl, Hagen Holthausen, Germany, assignors to Messerschmitt-Boelkow Gesellschaft mit beschraenkter Haftung, Munich, Germany

Filed Apr. 1, 1969, Ser. No. 812,277
Claims priority, application Germany, Apr. 6, 1968, 1,765,133
Int. Cl. H01b *7/04*
U.S. Cl. 174—113 **2 Claims**

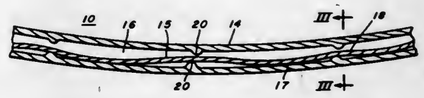


A flexible electrical cable for transmitting control signals between a control station and a rapidly moving aerodynamic body includes at least two parallel enamel-insulated conductor wires cemented together in parallel relation and extending centrally through a tension member formed by a large number of thin individual filaments, and further includes a covering closely embracing the wires and the tension member and comprising superposed layers wound around the tension member in opposite respective angular directions.

3,553,350
SELF-DAMPING CABLE

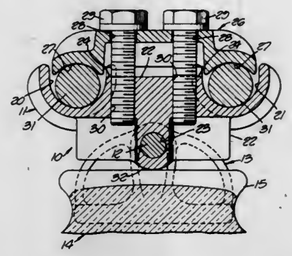
Charles B. Rawlins, Massena, N.Y., assignor to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 10, 1969, Ser. No. 865,306
Int. Cl. H01b *5/10;* **H02g** *7/14*
U.S. Cl. 174—130 **10 Claims**



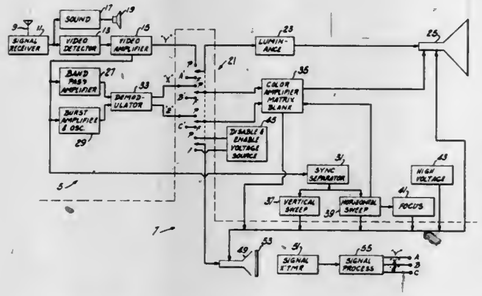
A self-damping conductor structure in which vibration energy is dissipated by the impact of an inner core with an outer mantle, the core being loosely supported within the mantle. Means are provided within the conductor for varying the spacing between the core and mantle at recurring intervals along the length of the conductor. When the core and mantle are suspended with different tension-to-weight ratios, the relative positions of the lines of action of the tension in the core and mantle vary cyclically along the length of the conductor between the supports permitting the core and mantle to contact each other with cyclically varying pressure along the conductor.

3,553,351
BUNDLE CONDUCTOR CLAMP
L. E. Lindsey, 222 Vista Ave., Pasadena, Calif. 91107
Filed June 23, 1969, Ser. No. 835,442
Int. Cl. H01b 17/16
U.S. Cl. 174—169 9 Claims



A clamping assembly for supporting a plurality of bundle conductors across the top of an upright insulator. The single main casting has a plurality of spaced-apart conductor channels equipped with a single clamp for all conductors and is supported for limited pivotal movement crosswise of threaded rod means provided with adjustable clamps at its ends for securing the assembly to an insulator top.

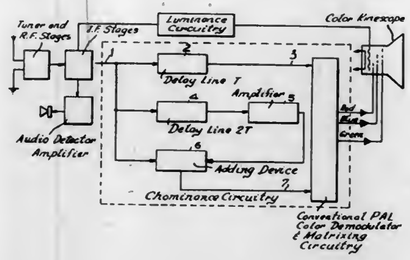
3,553,352
PHOTOGRAPHIC FILM AND TELEVISION SIGNAL REPRODUCTION APPARATUS
Charles Bailey Neal, William Daniel Schuster and Benton Boyd Scott, Batavia, N.Y., assignors to Sylvania Electric Products, Inc., a corporation of Delaware
Filed Aug. 1, 1967, Ser. No. 657,623
Int. Cl. H04n 9/02, 7/00
U.S. Cl. 178—5.2 11 Claims



A reproduction system combines an electrical-to-optical signal transducer and an optical-to-electrical signal transducer to provide an image reproduction of both transmitted programs and photographic films. Therein, a switching means is utilized for selectively applying electrical signals derived from transmitted signals and from photographic films to an image reproducer to provide an image display.

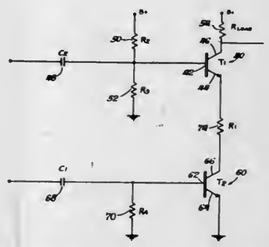
3,553,353
RECEIVER FOR PAL COLOR TELEVISION SYSTEM
Gérard Melchior, Asnieres, France, assignor to Compagnie Francaise de Television, a corporation of France
Filed Jan. 13, 1967, Ser. No. 609,140
Claims priority, application France, Jan. 21, 1966, 46,777
Int. Cl. H04n 9/40
U.S. Cl. 178—5.4 2 Claims

Phase errors in a PAL color television receiver are eliminated. The color signals are derived from the sum and difference of two terms, the first being the modulated subcarrier, delayed by a period substantially equal to the duration of a line while the other term represents a signal obtained by



mixing the nondelayed subcarrier with the subcarrier delayed by a period substantially twice as long as the duration of a line.

3,553,354
SYNCHRONOUS AM DEMODULATOR
Shanti S. Gupta, Evanston, and Sam P. Stamatis, Glenview, Ill., assignors to Wells-Gardner Electronics Corporation, Chicago, Ill., a corporation of Illinois
Filed Feb. 9, 1967, Ser. No. 615,005
Int. Cl. H04n 9/50
U.S. Cl. 178—5.4 6 Claims

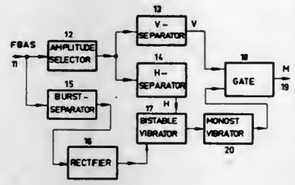


A demodulator system for color television receivers having two substantially identical demodulator means for demodulating respectively the red and blue color signals, each of the demodulator means comprising a combination demodulator and amplifier for the chrominance signal and a gate having a "cutoff" condition and a saturated condition whereby the chrominance signal is amplified and demodulated only when the gate is saturated.

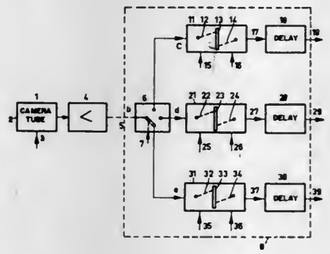
3,553,355
METHOD OF STORING COMPOSITE COLOR SIGNALS
Hubert Forster, Darmstadt-Eberstadt, Germany, assignor to Fernseh GmbH, Darmstadt, Germany, a corporation of Germany
Filed July 10, 1967, Ser. No. 652,292
Claims priority, application Germany, July 14, 1966, 49692
Int. Cl. H04n 9/44
U.S. Cl. 178—5.4 16 Claims

This invention relates to color television and more particularly to the storing of composite color signals coded in accordance with the PAL-AB system, as, for example, on a tape. According to one aspect of the present invention, there is provided a method and apparatus for storing and utilizing composite color signals coded in accordance with the PAL-AB system, wherein every fourth successive field is characterized by an identification signal which is derived from a composite color signal and recorded, and is subsequently employed to control not only line and field synchronization with another composite color signal but also to effect agreement

of the fields of both composite color signals with regard to their vertical, horizontal and color synchronizing signal components, for reproduction of the color pictures in desired controlled mutual relation.



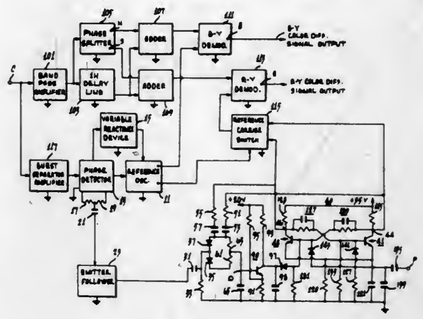
3,553,356
METHOD AND SYSTEM FOR GENERATING COLOR TELEVISION SIGNALS WITHOUT LOSS OF VERTICAL RESOLUTION
Hans-Robert Groll, Darmstadt-Eberstadt, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany
Filed Dec. 14, 1967, Ser. No. 690,544
Claims priority, application Germany, Dec. 16, 1966, F 50,970
Int. Cl. H04n 9/42
U.S. Cl. 178—5.4 15 Claims



The photosensitive surface of a color television tube contains three images, corresponding to the three primary colors, of an object to be televised. These three images are scanned sequentially in a time period corresponding to the standard line interval, the time for scanning each color image thus being a third of a standard line interval. Each of these compressed color signals is stored in a separate storage location. Each storage location is then scanned separately in a time corresponding to the full line interval. The thus generated full length color signals are then furnished simultaneously for transmission.

3,553,357
SWITCHING MODE CONTROL CIRCUITS
Peter Swift Carnt, Herrliberg, Switzerland, assignor to RCA Corporation, a corporation of Delaware
Filed Feb. 1, 1968, Ser. No. 702,400
Claims priority, application Great Britain, Feb. 2, 1967, 5,143/67
Int. Cl. H04n 9/44, 9/32
U.S. Cl. 178—5.4 8 Claims

Identification and control circuitry for establishing the correct mode of line to line switching in a PAL color television decoder. A phase detector for APC control of the receiver's reference color oscillator develops a half line frequency square wave in an auxiliary output circuit in response to line to line burst phase alternations. Derived square wave is compared in phase with output of switch-driving flip-flop circuit in a second phase detector to develop a DC control voltage of a first value when receiver switching mode is correct, and of a second value when switching mode is incorrect. Per one disclosed control technique, a resetting field frequency trigger is passed to the flip-flop circuit when control voltage value signifies incorrect switching. Per another disclosed control technique, flip-flop circuit is disabled when control voltage value signifies incorrect switching; restart and turnoff

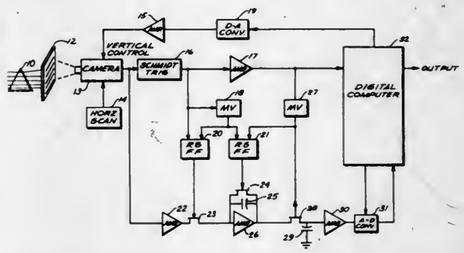


continues until flip-flop restarts in correct mode. Application of control techniques to SECAM receiver switching is further disclosed.

ERRATUM

For Class 178—6 see:
Patent No. 3,553,080

3,553,358
LINE INTENSITY INTEGRATING AUTOMATIC DATA ACQUISTION SYSTEM
George Lauer, Hollywood, Calif., assignor to North American Rockwell Corporation
Filed Oct. 13, 1967, Ser. No. 676,672
U.S. Cl. 178—6.8 3 Claims

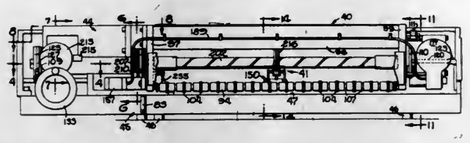


A television camera is used to scan a visual presentation of optically perceivable data in the form of lines of light under the control of a digital computer. A converter, responsive to the camera output, integrates the output signal over any selected television scan line, and generates a digital output representative of the scanned data. This data is then processed by the digital computer which also controls the camera scan.

3,553,359
FACSIMILE TRANSMITTER
Paul H. Dixon, Belvidere, and Burns Darsie and Jerry M. Zilka, Rockford, Ill., assignors to Dixon Automatic Tool, Inc., Rockford, Ill., a corporation of Illinois
Filed May 3, 1968, Ser. No. 726,409
Int. Cl. H04n 1/04
U.S. Cl. 178—7.1 25 Claims

A facsimile transmitter includes a pair of traveling scanners carried by a vertically shiftable head and alternately movable through an active or scanning stroke across a docu-

ment to be reproduced as the document is fed continuously beneath the scanners. A light source carried on the head transmits a collimated beam of light toward the active scanner which directs the light downwardly onto the document to detect the shade value thereof, picks up the light reflected upwardly from the document and directs such light in a collimated beam to a photomultiplier operable to send to a reproducing recorder an electrical signal varying in proportion to changes in the intensity of the beam and the shade value of the document. At the completion of its scanning stroke, each scanner is shifted to an inactive position out of



the light beam and is moved reversely through a return stroke while the other scanner is moved through a scanning stroke to direct the light from the source onto the document and then to the photomultiplier. By feeding the document beneath the scanners, documents of any length can be reproduced and, through the use of a vertically movable head, documents of various thicknesses can be reproduced. A pressure responsive actuating mechanism for lowering the head and specially constructed rollers for advancing the document insure uniform and straight line feeding of the document regardless of its thickness.

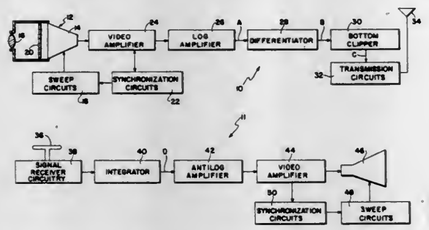
3,553,360
METHOD AND SYSTEM FOR IMAGE REPRODUCTION BASED ON SIGNIFICANT VISUAL BOUNDARIES OF ORIGINAL SUBJECT

Edwin H. Land, and John J. McCann, Cambridge, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Continuation-in-part of application Ser. No. 620,580, Feb. 8, 1967, now abandoned. This application Jan. 22, 1968, Ser. No. 699,496

Int. Cl. H04m *9/02, 3/00*

U.S. Cl. 178—6.8 **17 Claims**



In a television system, a subject is scanned to detect brightness ratios across visually significant boundary lines or edges between different areas of the subject. A signal is developed which represents the sequential multiplication of edge ratios of brightness detected on opposite sides of boundaries. This signal is employed to control the relative brightness of different areas of the image on the face of a television viewing screen. Applications to color television and other types of image reproduction systems are discussed.

3,553,361
CONDITIONAL REPLENISHMENT VIDEO SYSTEM WITH SAMPLE GROUPING

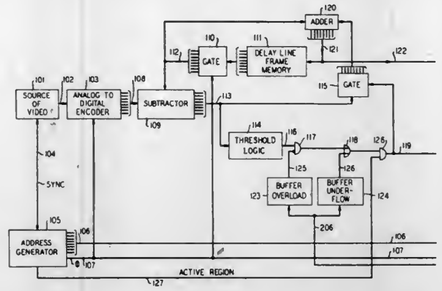
Frank W. Mounts, Colts Neck, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Apr. 30, 1969, Ser. No. 820,552

Int. Cl. H04b *1/66*

U.S. Cl. 178—7.1 **8 Claims**

A redundancy reduction system is described for processing video signals by comparing each amplitude sample derived from the video signal with a stored sample corresponding to the amplitude at the same spatial point location in a previous video frame. If a significant difference exists between the new sample and the stored sample, the amplitude for the new sample is selected for transmission to a receiving location. An address word is generated with each sample to indicate the location of that sample in a video line. The address word



for a sample is transmitted with the amplitude only when the transmitted sample follows a sample which has not been selected for transmission. A flag word whose value is distinguishable from all amplitude values is transmitted to indicate the end of a run of amplitude values. A synchronization word is transmitted between the samples in adjacent video lines in order to maintain line synchronization with the receiver.

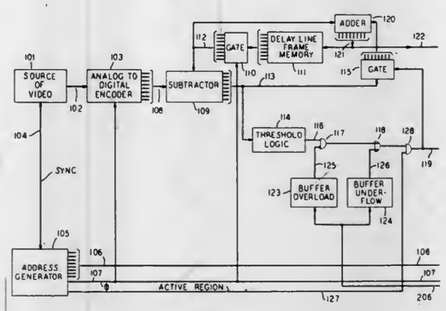
3,553,362
CONDITIONAL REPLENISHMENT VIDEO SYSTEM WITH RUN LENGTH CODING OF POSITION

Frank W. Mounts, Colts Necks, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New Jersey

Filed Apr. 30, 1969, Ser. No. 820,537

Int. Cl. H04b *1/66*

U.S. Cl. 178—7.1 **14 Claims**



A redundancy reduction system is described for processing video signals by comparing each amplitude sample derived from the video signal with a stored sample corresponding to the amplitude at the same spatial point location in a previous video frame. If a significant difference exists between the new sample and the stored sample, the amplitude for the new sample is selected for transmission to a receiving location. An address word is generated with each sample to indicate the location of that sample in a video line. When samples in two or more adjacent spatial point locations are selected for transmission, only the address word corresponding to the first location is transmitted. A code word, whose value indicates the number of samples in addition to the first which are to be associated with this single address word, is transmitted prior to the amplitude values for these additional samples. A synchronization word is transmitted between the samples in adjacent video lines in order to maintain line synchronization with the receiver.

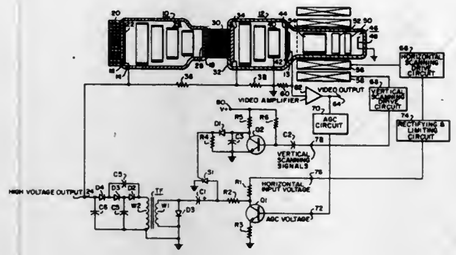
3,553,363
POWER SUPPLY FOR CAMERA SYSTEM INCLUDING IMAGE INTENSIFIER

Arthur E. Anderson, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 30, 1968, Ser. No. 787,881

Int. Cl. H04n *3/18, 3/20*

U.S. Cl. 178—7.2 **8 Claims**



A high voltage power supply for use in a camera system operative with an image intensifier is disclosed wherein the primary of a transformer is energized in response to a voltage derived by horizontal scanning signals, a gain control voltage proportional to the video output of the camera signal and vertical retrace signals so that a high voltage is induced at the secondary of the transformer during only the retrace portion of the vertical scanning signals which has a magnitude proportional to the gain control voltage with this high voltage being translated to the image intensifier.

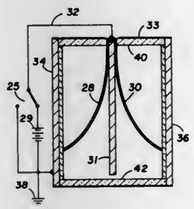
3,553,364
ELECTROMECHANICAL LIGHT VALVE

Ray H. Lee, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Mar. 15, 1968, Ser. No. 713,503

Int. Cl. H04n *5/74*

U.S. Cl. 178—7.3 **14 Claims**



An electromechanical light valve in an array of many such valves for controlling the transmission of light in continuously changing patterns. Each light valve consists of a housing having grounded conducted walls for shielding the interior thereof from external electrostatic forces produced by surrounding valves in the array or from other external forces. Light from a source enters one end of the housing through a light transparent and electrically insulating panel coated with a conductive film to which is mounted one or more electrostatically controlled leaf shutters. The leaf shutter and the conductive housing walls form a capacitor; connecting a voltage to the leaf shutter sets up a charge thereon thereby causing the shutter to be attracted to the housing walls. Voltages for charging the leaf shutters of all the valves in an array are generated by an XY scanner. A slight modification changes valve from a light transmissive device to a light reflective valve.

3,553,365
ARRANGEMENT FOR DERIVING NOISE-FREE SYNCHRONIZING INFORMATION FROM THE SYNC SIGNAL OF A TELEVISION SIGNAL

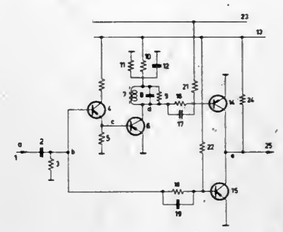
Edmund Jauernik, Goddelau, Germany, assignor to Fernseh G.m.b.H., Darmstadt, Germany

Filed Feb. 23, 1968, Ser. No. 707,807

Claims priority, application Germany, Feb. 25, 1967, F 51,639

Int. Cl. H04n *5/04*

U.S. Cl. 178—7.3 **2 Claims**



An electronic circuit arrangement for extracting noise-free synchronizing information from the sync signal of a television signal. The sync signal is applied to a differentiating circuit which provides spike-shaped impulses corresponding to the leading and trailing edges of the sync pulse. The leading or front edge of the pulse after differentiation is used to actuate a timing network in the form of an oscillator circuit or a delay line. The period of oscillation of the oscillator is made equal to the pulse width of the sync pulse. After the spike-impulse has been delayed for the duration of the sync pulse, it is applied to a comparison circuit which has as its second input the trailing edge of the sync pulse. If the two inputs to the comparator circuit occur at the same instant of time, an output is provided by the comparator indicating the presence of this condition. When the delay line is used the delay is made equal to the duration of the sync pulse.

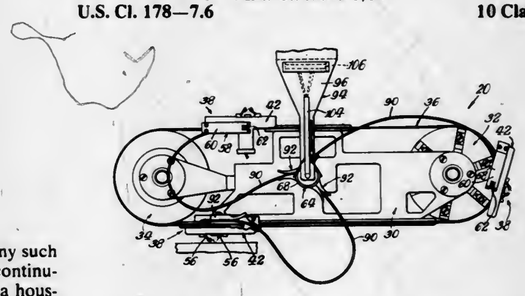
3,553,366
FACSIMILE FIBER OPTICS SCANNER ASSEMBLY

Frans Brouwer, Glencoe, Ill., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Filed Sept. 25, 1968, Ser. No. 762,389

Int. Cl. H04n *1/14*

U.S. Cl. 178—7.6 **10 Claims**

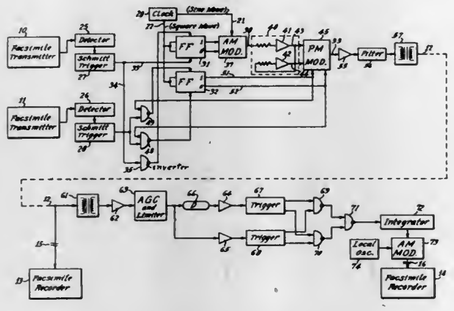


An optical scanner assembly having an endless movable timing belt assembly and a plurality of optical scanner units mounted on the timing belt assembly for movement therewith in scanning copy material. Flexible light pipe means extend between each of the optical scanner units and a single photocell means for receiving the projected images of object areas on the copy material and transmitting the same therethrough to the photocell means. Additional flexible light pipe means extend between a single light source means and each of the optical scanner units for receiving light from the light source means and transmitting the same therethrough to illuminate object areas of copy material being scanned. The light source means comprises a light source and auxiliary light pipe means.

3,553,367
FACSIMILE MULTIPLEX COMMUNICATION SYSTEM

Bert F. Krauss, Westport, Conn., and Bernard M. Rosenheck, Spring Valley, N.Y., assignors to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland

Filed May 10, 1968, Ser. No. 728,115
Int. Cl. H04l 5/00
U.S. Cl. 178—50 6 Claims

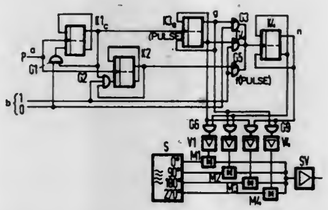


A system for multiplexing facsimile transmission on an audio frequency carrier. The signals from a first transmitter are converted to serial digital data and used to synchronously amplitude modulate the carrier. The signals from a second transmitter are converted to serial digital data and used to synchronously phase modulate the amplitude modulated carrier. A first facsimile recorder responds to the amplitude modulated carrier. The phase modulation component is converted into an amplitude modulated signal to drive a second facsimile recorder.

3,553,368
PHASE SHIFT KEYED TRANSMISSION OF DIBITS ENCODED TO ELIMINATE RECEIVER PHASE UNCERTAINTY

Hans Rudolph, Munich-Solln, Germany, assignor to Siemens & Halske Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Continuation of application Ser. No. 524,265, Feb. 1, 1966, now abandoned. This application June 4, 1969, Ser. No. 831,271
Int. Cl. H04l 27/18, 27/20
U.S. Cl. 178—67 13 Claims

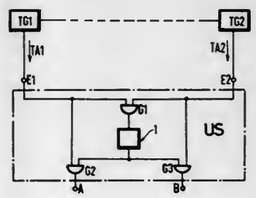


A method and apparatus for transmission of a binary information signal comprising sequential digital signal steps consisting of binary states ("0," "1"). one of which represents a steady modulation condition of the binary information signal, by multistage phase modulation utilizing a plurality of determinate phase shifts of a carrier frequency in which a joint transmission is effected of respective binary sequences of "n" number (n being an integer greater than 1) of signal steps each different sequence group being transmitted as a group by a respective one of said determinate phase shifts, utilizing for the transmission of the binary information signal only the absolutely necessary number of 2^{n-1} phase shifts, utilizing an additional phase shift to transmit as a group, the fixed number of n signal steps of the binary state representing such steady modulation condition of the binary information signal, and transmitting any signal steps which number less than n, separating two successive groups, without a change in phase (0° phase shift) as a continuation of the immediately preceding phase position.

3,553,369
SUPERVISION CIRCUIT FOR SYNCHRONIZATION TRANSMITTERS

Walter Flohrer, Post Gauting, Germany, assignor to Siemens Aktiengesellschaft, Berlin and Munich, Germany

Filed Jan. 23, 1968, Ser. No. 699,824
Claims priority, application Germany, Jan. 25, 1967, S 107,989
Int. Cl. H04b 3/46; H04m 3/22
U.S. Cl. 178—69 8 Claims

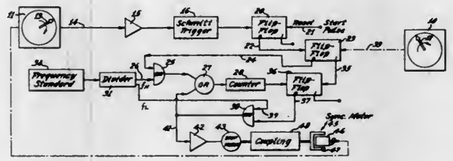


A circuit to supervise synchronization transmitters to determine if they are functioning properly, and if not, to substitute therefor correctly operating synchronization transmitters. A transistor arrangement is provided to obtain criteria indicative of the operating condition of the synchronization transmitters. A plurality of synchronization transmitters may be supervised to determine the operating conditions thereof with a single supervision circuit. Asynchronous operation of the transmitters is also indicated by the supervision circuit.

3,553,370
PHASING SYSTEM FOR FACSIMILE TRANSMITTER AND RECEIVER UTILIZING PULSE GENERATING AND COUNTING DEVICES

Bernard M. Rosenheck, Spring Valley, N.Y., assignor to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland

Filed Dec. 22, 1967, Ser. No. 692,789
Int. Cl. H04l 5/22, 7/08
U.S. Cl. 178—69.5 10 Claims

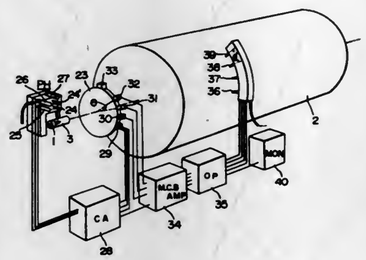


A phasing system for two synchronous rotating members, such as the scanning members of the transmitter and receiver of a facsimile system, in which an electronic pulse counter is employed to determine the phase discrepancy between rotating members, and the phase-adjusting means to effect phase correction is controlled by said pulse counter.

3,553,371
METHOD FOR ENLARGED MUTICOLOR PRINTING AND A DEVICE THEREFOR

Taro Suenaga, Tokyo, Japan, assignor to Nippon Enlarging Color Inc., Tokyo, Japan, a corporation of Japan

Filed Feb. 26, 1968, Ser. No. 708,002
Claims priority, application Japan, Dec. 29, 1967 and Feb 28, 1967, 42/84,305; 42/12,287
Int. Cl. H04n 9/02
U.S. Cl. 178—5.2 10 Claims

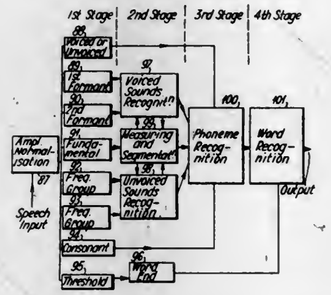


A method and device for enlarged multicolor printing, by scanning an original color picture; color separation of light beams corresponding to each spot of the original picture into primary colors; converting the light beams into electric signals representing density of each primary color; actuating spray guns, each assigned to said primary colors, responsive to said electric signals, with proper time delay, so that a spot on a synchronously driven printing medium, which corresponds to said scanned point of the original picture, is printed in an extremely enlarged dimension by said spray guns in multicolor.

3,553,372
SPEECH RECOGNITION APPARATUS

Esmond Philip Goodwin Wright, Bishop's Stortford, and Wincenty Bezdel, Harlow, Essex, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 18, 1966, Ser. No. 587,539
Claims priority, application Great Britain, Nov. 5, 1965, 46,984/65
Int. Cl. G10l 1/00
U.S. Cl. 179—1 2 Claims

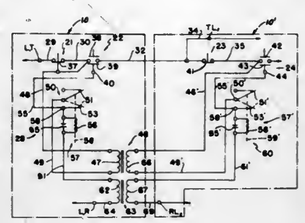


Speech recognition is effected by zero crossing analysis of the speech waveform wherein the time interval between consecutive zero crossings is measured, with these intervals and combinations thereof being subsequently identified. Measurement of the intervals is based on a nonlinear timescale, the rate of generation of which is dependent on the fundamental frequency of the speaker. Alterations in the timescale generation are effected due to the initial time constant of the timescale generator circuitry being proportional to and controlled by the variations in the fundamental frequency of the speech waveform.

3,553,373
MANUAL REROUTER SYSTEM FOR TELEPHONE SUBSCRIBER STATION WITH COMBINED CONFERENCE CALL FEATURE

Walter H. Shaw, 253 NE. 99th St., Miami Shores, Fla. 33153

Filed Dec. 29, 1966, Ser. No. 605,737
Int. Cl. H04m 3/58
U.S. Cl. 179—1 7 Claims

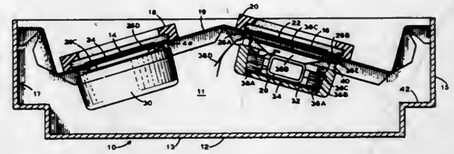


A subscriber station equipped with two connected desk sets is provided with circuitry which, in response to an incoming call on a line to one set, may hold that line, transmit over the second set of said station the dialing code of a selected reroute station, and complete a coupling link between the incoming and reroute lines for direct communication therebetween. The subscriber station may change the rerouting destination at will, and includes line-hold relay means actuated by plural momentary pushbutton switches. A coil of a relay wired to the first desk set is in series with a winding of an equal impedance transformer coupling the two sets to provide a holding circuit for the coupling.

3,553,374
ACOUSTIC COUPLER

Edgar Wolf, New Hyde Park, and Francis C. Marino, Huntington, N.Y., assignors to Digitronics Corporation, Albertson, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 628,847, Aug. 17, 1967, now abandoned , which is a continuation-in-part of application Ser. No. 482,340, Aug. 25, 1965, now abandoned. This application Mar. 20, 1969, Ser. No. 808,979
Int. Cl. H04r 1/28
U.S. Cl. 179—1 6 Claims

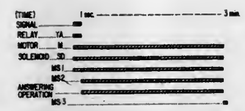


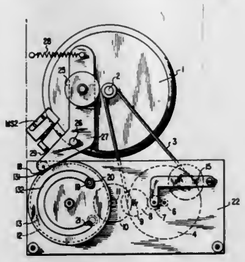
An acoustic coupler for coupling a telephone handset to a source of shift frequency signals representing binary information comprising an enclosure adapted to mount a handset on edge so that the microphone of the handset is oriented in a vertical position. The coupler's speaker, having a cone with a mouth portion, is tightly sealed within a housing with the mouth portion of the speaker cone in communication with an opening in the housing and the housing is sealed within the enclosure. The mouth portion of the speaker cone is also directly opposite and axially withdrawn from an exit port in the enclosure so that there is a passage between the mouth of the speaker cone and the interior of the enclosure. The area of the exit port is slightly smaller than the area of the mouth portion of the speaker cone, and the peripheral edge of the exit port is surrounded by a collar of elastomeric material to acoustically and sealingly engage the transmitter portion of the telephone handset. An acoustic energy absorbing material such as felt covers the mouth portion of the speaker cone to provide an acoustic low-pass filter and the walls of the enclosure to provide high audio frequency damping.

3,553,375
AUTOMATIC TELEPHONE ANSWERING APPARATUS

Akira Okamura, Shintokorozawa-Danchi, 84–402 No. 11–2-chome midori-cho, Tokorozawa-shi; Tomoaki Kosaka, No. 220–5-chome, makuhari-cho, Chiba-shi, and Hiroshi Aiba, No. 10–13, 2-chome, Igusa, Suginami-ku, Tokyo, Japan

Filed Mar. 14, 1967, Ser. No. 622,997
Claims priority, application Japan, Mar. 14, 1966, 41/15,684
Int. Cl. H04m *11/10*
U.S. Cl. 179—2 3 Claims



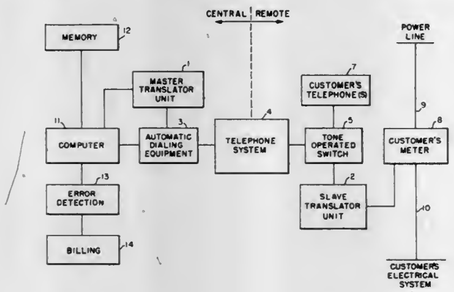


An automatic telephone answering apparatus which can be set by mechanical limit switch means a certain time period after the initial bell signal initiates operation of the apparatus.

3,553,376
REMOTE METER READING METHOD AND APPARATUS

Peter Bogaart, 1521 16th St. N.W., Canton, and Kenneth D. Rowe, 211 Hartford Drive, Hudson, Ohio

Filed Aug. 28, 1968, Ser. No. 756,029
Int. Cl. H04m *11/00*
U.S. Cl. 179—2 16 Claims

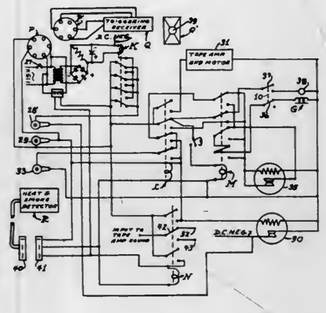


An apparatus for reading at a central station a multidial meter such as a utility meter or similar device located at a remote station by transmitting coded pulses representative of the digits shown on the meter over a conventional telephone line and decoding the pulses at a central station. To obtain a reading of any specific customer's meter, a master translator unit at the central station sends out a signal through the telephone system to a slave translator unit which is electromechanically connected to the customer's meter in such manner that a series of binary coded drums in the slave unit store coded information representing the amount of utility service used by the customer. The slave unit is designed to individually scan each bit of information stored in the coded drums and send a sequence of pulses through the telephone line with each pulse being representative of one bit of information. Upon receiving each pulse, the master translator unit sends it through a certain predetermined circuit to the proper location in a decoder which converts the information either into readable digits or into an output for a computer which compares the output with stored information on previous meter readings for computing the customer's bill.

3,553,377
EMERGENCY SELECTIVE MESSAGE SENDER FOR TELEPHONE

William E. Jones, 14207 Corvallis St., San Leandro, Calif.

Filed Jan. 22, 1968, Ser. No. 699,479
Int. Cl. H04m *11/04*
U.S. Cl. 179—5 4 Claims

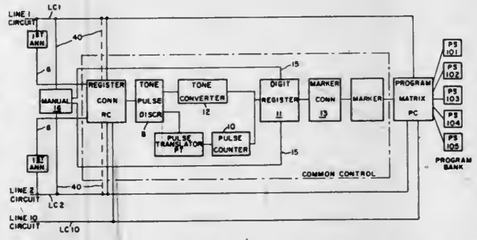


An emergency selective message sender that actuates a telephone dial automatically when an emergency arises and dials the telephone operator. The device is automatically actuated by heat or smoke and will send a selected message to the telephone operator about this. In case of a robbery, a switch can be closed by a person to manually actuate the device and another selected message will be sent to the telephone operator. The switch can be remote from the device and still cause the device to operate when the switch is actuated. The different messages are prerecorded on an endless tape and the proper selected message will be repeated so long as the device operates.

3,553,378
INFORMATION RETRIEVAL APPARATUS VIA TELEPHONE LINES PROVIDING SIMULTANEOUS ACCESSING OF SAME INFORMATION SOURCE

Soloman Alter, Hartsdale, John A. Goodfellow, Yonkers, and Robert F. Kane, New York, N.Y., assignors to Dialscan Systems, Inc., New York, N.Y., a corporation of New York

Filed May 6, 1968, Ser. No. 726,733
Int. Cl. H04m *1/64*, *11/08*
U.S. Cl. 179—6 19 Claims

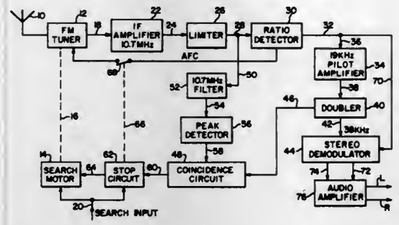


Information retrieval apparatus providing selective access by subscribers through telephone lines to a plurality of program sources is described. Common control equipment including a marker is employed for connecting each subscriber to a program matrix. All subscribers may access the same program nearly simultaneously. Crossbar switches are used for the marker in the common control equipment and for the program matrix.

3,553,379
SIGNAL SEEKING FM STEREO SYSTEM

Dirk J. Boomgaard, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed July 3, 1968, Ser. No. 742,249
Int. Cl. H04h *5/00*
U.S. Cl. 179—15 7 Claims

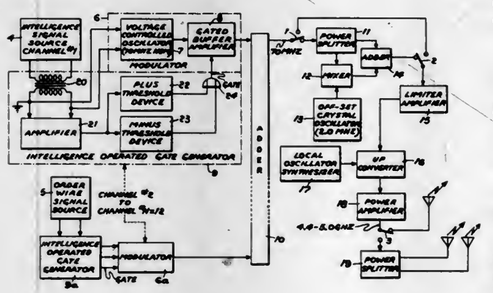


A signal seeking system for use in an FM stereo multiplex receiver is disclosed wherein the receiver includes tuning, intermediate frequency amplifying and detecting stages. A search mechanism, for example, a search motor, is provided for varying the tuned frequency of the tuning stage. When the 19 kHz. pilot signal from a stereo broadcast is received, a first output signal is provided. Also, when the output of the intermediate frequency amplifying stage is of a sufficient amplitude at the predetermined intermediate frequency of the receiver, a second output signal is provided. The first output, indicative of the reception of a stereo broadcast, and the second output, indicative that the receiver is tuned to the carrier frequency of the stereo station, are applied to a coincidence circuit which supplies an output to the search mechanism which stops the tuning operation at the frequency of the received stereo broadcast. Automatic frequency control is supplied to the tuning stage as the search mechanism is stopped for fine tuning the receiver to the received stereo broadcast.

3,553,380
MULTIPLEXING SYSTEM

Charles Greenwald, Livingston, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Delaware

Filed Oct. 25, 1968, Ser. No. 770,683
Int. Cl. H04j *1/06*
U.S. Cl. 179—15 9 Claims

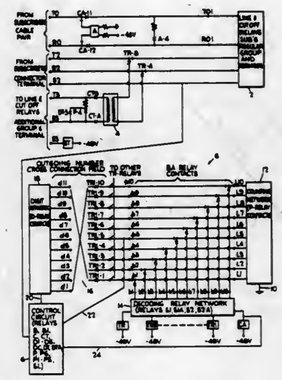


N voltage controlled oscillators produce N frequency multiplexed IF signals, each of which are frequency modulated by a different one of N intelligence signals when present. An intelligence signal-operated switch coupled to each of the oscillators prevent the IF signal of an associated oscillator from being coupled through an up converter to the transmitter power amplifier in the absence of intelligence signal at the input of the oscillator so that the given power output of the power amplifier is equally distributed between only the modulated IF signals.

3,553,381
TELEPHONE LINE TRANSFER CIRCUIT

Derek Leyburn, Saint Laurent, Quebec, Canada, assignor to The Bell Telephone Company of Canada, Montreal, Quebec, Canada

Filed Nov. 7, 1966, Ser. No. 592,363
Int. Cl. H04m *3/54*
U.S. Cl. 179—18 23 Claims



A telephone line transfer circuit that permits a subscriber to dial from his telephone any one of nine transfer codes to divert his incoming calls to any one of nine remote telephones, one for each transfer code. When a subscriber dials a transfer code, a transfer relay operates through a decoding network. The transfer relay switches the leads on which incoming calls are normally received away from the subscriber and through number generating means to an outgoing switching train. The decoding network also operates one of nine transfer number relays, and the operated transfer number relay sets the number generating means to generate the remote telephone number associated with the transfer code dialed. After generation of the remote number, the number generating means connects the caller through to the outgoing switching train and hence to the selected remote location.

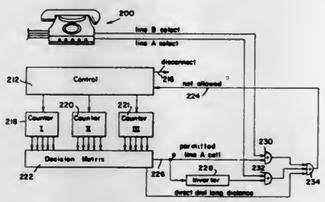
3,553,382
TOLL CALL SIGNALLING AND DIVERTING SYSTEM

Sidney G. Knox, and Richard N. Reynen, Oxnard, Calif., assignors to Edward R. Edelberg, a part interest; Louis S. Edelberg, a part interest; Oscar Rothenberg, a part interest and Marvin R. Miller, Los Angeles, Calif., a part interest

Filed Aug. 4, 1967, Ser. No. 658,504
Int. Cl. H04m *1/66*
U.S. Cl. 179—18 4 Claims

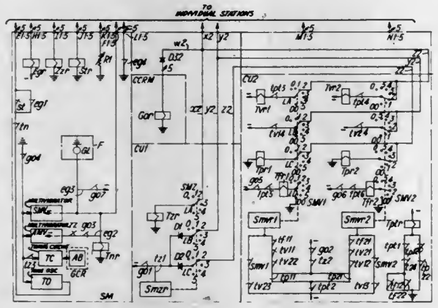
Apparatus adapted to be coupled to a telephone instrument for counting and storing the dial impulses of the initial digits of a number being dialed, and for applying the stored count to a gating circuit to determine if that call is a "toll" call. The gating circuit output can be used either to provide audible and/or visible signals, or can be utilized to interrupt the telephone circuits and prevent completion of the call.

When used in conjunction with telephone instruments having more than one line for serving different calling areas, the gat-



ing circuit output can be used to signal if, for a given call, the "least expensive" line is being utilized.

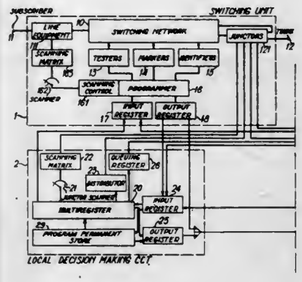
3,553,383
HOSPITAL COMMUNICATION SYSTEM HAVING PROVISION FOR CONNECTING PATIENT WITH NEAREST NURSE-OCCUPIED STATION
Gustaaf Rochtus, Blaasveld, Belgium, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 19, 1968, Ser. No. 714,273
Claims priority, application Netherlands, Mar. 22, 1967, 6704276
Int. Cl. H04m *3/00*
U.S. Cl. 179—18 **24 Claims**



A communication system adapted to find the closest available station to the calling station. The attempt to reach an available station out of a plurality of stations is accomplished by test means which test the availability of the plurality of stations so that they are selected in an order depending on the identity of the calling stations.

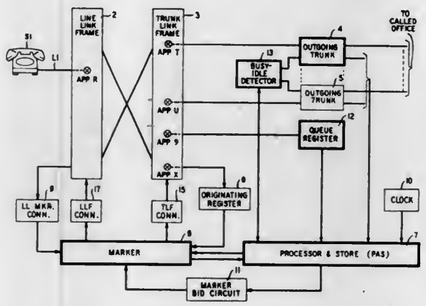
3,553,384
TELEPHONE SWITCHING UNIT WITH LOCAL AND REMOTE COMPUTER CONTROL
Pierre M. Lucas, 20 rue Tariel, Issy-Les-Moulineaux; Jacques M. Dondoux, 1 rue du Docteur Magnan; and Jean F. Duquesne, 120 rue de Javel, Paris, France
Filed Apr. 29, 1968, Ser. No. 724,736
Claims priority, application France, Apr. 28, 1967, 104,648
Int. Cl. H04q *3/54*
U.S. Cl. 179—18 **2 Claims**

A telephone switching system having a switching unit under the control of a local computer and a remote computer, each of said computers including a permanent program store having recorded therein the telephone switching phases for connect, disconnect and identification of the junctors and adapted to send noncyclical control signals to the switching unit, and a multiregister store having a plurality of store areas for temporary storage to record the state of test points, addresses and switching phases in the junctors and adapted to send cyclical test signals to the switching unit. When the local computer is in order, it is it which controls the switching unit. When the local computer is out of order, the switching unit is controlled by the remote computer. A processor is inserted between the switching unit and the



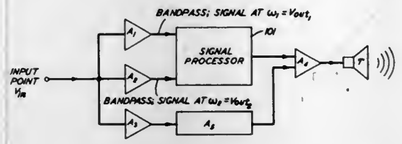
remote computer and includes a buffer store for conveying in transit the noncyclical signals from the remote computer to the switching unit and means for generating in the processor proper the test cyclical signals to the switching unit upon reception of specific signals from the remote computer.

3,553,385
QUEUING AND AUTOMATIC RETRY ARRANGEMENTS FOR COMMUNICATION SYSTEMS
Dennis J. Morgan, Westerville, and Carl C. Nielson, Granville, Ohio, assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Oct. 11, 1968, Ser. No. 766,753
Int. Cl. H04m *3/48*
U.S. Cl. 179—18 **10 Claims**



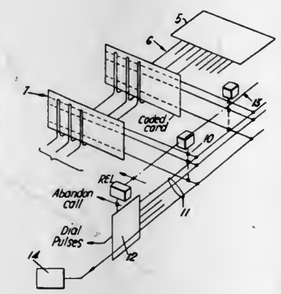
A switching system is arranged with control circuitry including a processor to store call completion information for subsequent automatic retry purposes on calling connections which are not completed initially. When a connection is blocked because of the unavailability of trunk circuits the completion information is stored in a high queue list; and when a trunk is available but the call blocks in a subsequent office or blocks because the called station is busy the completion information is stored in a low queue list. Calls are retried from the high queue list whenever a trunk becomes available and retried from the low queue list under periodic clock control. During the queuing interval the calling subscriber's line remains free for the origination or the termination of other connections.

3,553,386
TELEPHONE SUBSCRIBER PAGING ARRANGEMENT
John J. Golembeski, North Plainfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New Jersey
Filed July 16, 1968, Ser. No. 745,144
Int. Cl. H04m *1/26*
U.S. Cl. 179—84 **11 Claims**



A telephone set equipped with a tone ringer includes an FM slope detector circuit and a following AM detector circuit. A difference amplifier receives outputs from a tone ringer signal amplifier and from the AM detector. The tone ringer thus serves a dual purpose as a ringer and as a speaker that is responsive to detected voice FM signals. The set may be employed for on-hook paging or emergency voice announcements.

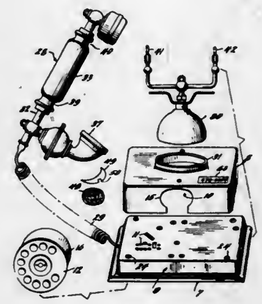
3,553,387
DIALING APPARATUS
George William Wells, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 26, 1967, Ser. No. 683,073
Claims priority, application Great Britain, Oct. 28, 1966, 48,372/66
Int. Cl. H04m *1/45*
U.S. Cl. 179—90 **2 Claims**



Whereas in the ordinary card dialer a card is put in a slot in the machine and is read by feelers, in this dialer all the cards are in the machine. Each has its own position therein to which a push button corresponds, and pushing a button closes contacts to electrically select and read the card for the wanted number.

3,553,388
MODULARIZED DECORATIVE TELEPHONE ENSEMBLE
Raymond Mirrer, Long Beach, N.Y., assignor to Design-A-Phone, Inc., New York, N.Y., a corporation of Delaware
Filed June 20, 1967, Ser. No. 647,545
U.S. Cl. 179—100 **3 Claims**

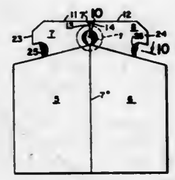
Both means and methods are disclosed which relate to a decorative universal telephone ensemble constructed in modular form for quick assembly and change of parts for repair or mix-and-match selection of parts of different color and design. Interfitting members comprise a choice of interchangeable decorative parts registered in position with special fasteners made to be removed manually without tools such as knurled fittings or thumb screws fitting over studs holding members in place so that a customer may assemble at the place of purchase such as a retail store a complete decorative phone ensemble designed from his choice of interchangeable decorative parts. The decorative phone assembly includes a base section with a visible outer rim surface and universal registration holes for holding and registering telephone company inserts from various sources, a decorative cover member creating a space between the cover and base for the telephone company mechanism, a handset switch-holder assembly resting on the cover and a decorative multiple part handset assembly fit together with a series of manually removable screw machine parts including at least one hollow tubing member with terminating bosses respectively tapped and threaded for assembly in registration.



A special dial cup assembly is provided with a conical bottom which registers with the bridge of a vertically disposed bracket to establish a comfortable dialing angle. The bracket may be a U-shaped member at front and back with extending legs or flanges constituting the sole fastening means between the cover and base and also with one such member holding at its bridge portion the dial cup at the conical bottom surface. A curved decorative medallion with a cloisonne pattern is part of the dial assembly and is held in various telephone dials provided by different sources by special members registering with its curved shape.

This structure produces at the retail store a large number of combinations derivable from a small stock of telephone sets with parts of different decorative design so that the customer may design his own ensemble by interfitting parts from a few different sets.

3,553,389
MAGNETIC TRANSDUCER WITH A LOW RELUCTANCE MASSIVE BACK GAP
Theodore W. Barger, Ladera, Calif., assignor to Barger Corporation, Sunnyvale, Calif., a corporation of California
Filed June 9, 1967, Ser. No. 644,855
Int. Cl. G11b *5/20, 5/22*
U.S. Cl. 179—100.2 **5 Claims**



The improved magnetic transducer is designed particularly for recording and reproducing very high frequencies of

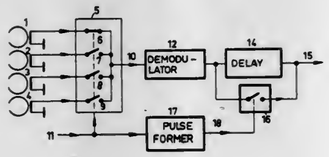
between 5 and 20 million cycles per second which includes television video frequencies. The transducer is made up of a pair of similar, separate halves, comprising massive body portions of relatively great width and thickness. The abutting surfaces of these body portions are lapped flat and true, and when assembled in contact with each other, constitute a back joint or back gap of extremely low reluctance. The body portion of each half carries integral therewith a head which is relatively small and thin, or narrow. These heads constitute elongated pole pieces, the tips of these pole pieces, when said halves are assembled, facing each other in closely spaced relation, providing between them a front or scanning gap. The cross section of said massive body portion is at least fifty times that of the pole piece tips adjacent the scanning gap, and the relative areas of said back and front gaps are on the order of at least twenty to one.

The relative thinness or narrowness of the pole pieces results in there being formed on the body portions, at each of the pole pieces, broad shoulders. Each of the heads has at each end, between the pole pieces and said shoulders, a coil-receiving notch, and a coil is wound in these pairs of notches around each head, these coils engaging the shoulders. These coils are relatively small. The effective coil length lying within a range of .005 to .03 inch. The notches at the gap ends of the pole pieces are substantially semicylindrical, and when in registry with each other, form a substantially circular opening extending transversely of the pole pieces, adjacent the gap. This circular opening lies immediately below the scanning gap, so that the shortest flux path through said gap extends circumferentially around said opening. This results in an exceptionally short flux path length ranging from .02 to .05 inch.

3,553,390
CIRCUIT ARRANGEMENT FOR SUPPRESSING SWITCH TRANSIENTS IN DEVICES FOR THE MAGNETIC STORAGE OF VIDEO SIGNALS EMPLOYING A PLURALITY OF MAGNETIC HEADS

Gerhard Krause, Darmstadt, Germany, assignor to Fenseh G.m.b.H., Darmstadt, Germany, a corporation of Germany

Filed Sept. 12, 1967, Ser. No. 667,879
Claims priority, application Germany, Sept. 17, 1966, F50223
Int. Cl. G11b 5/52; H04n 5/78
U.S. Cl. 179—100.2 4 Claims

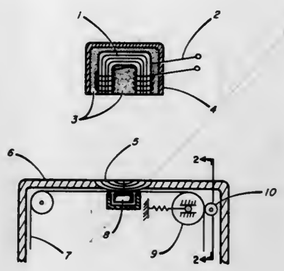


In a system for magnetically storing video signal segments in transverse tracks on a magnetic tape, and for detecting and reproducing those recorded signals into a continuous signal by angularly spaced magnetic heads arranged on the periphery of a rotating wheel, a circuit to suppress the effects of interference impulse signals developed during switching from one head to the other bypassing the combined signal from the several heads in operating sequence through a delay line which can be bypassed by a switch. The delay line delays the signal for an interval slightly longer than the duration of the interference impulse and during that delay the undelayed signal is transmitted through the direct bypass switch around the delay line, whereby the interference impulse signal expires in the delay line.

3,553,391
SEALED MAGNETIC TAPE CARTRIDGE WITH TRANSDUCER GAS EMBEDDED WITHIN A WALL OF THE CARTRIDGE

Dean C. Karnopp, Arlington, and John C. Heine, Cambridge, Mass., assignors to Bolt Beranek and Newman Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Jan. 8, 1968, Ser. No. 696,399
Int. Cl. G11b 5/24, 23/04
U.S. Cl. 179—100.2 1 Claim

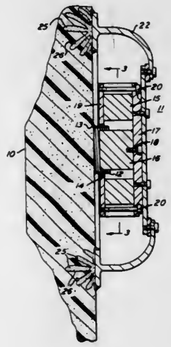


This disclosure deals with a novel combination of magnetic tape cartridge with read or record head which permits magnetic coupling through the wall of the cartridge with no loss in the quality of the aperture of the head and with only a negligible loss in amplitude of the signal, as compared with the operation of conventional read-record heads, but with the distinct advantage that the cartridge, including drive and pinch rollers, is completely sealed against the outside environment.

3,553,392
ELECTRODYNAMIC SOUND RADIATOR

Arthur Liebscher, Jenkintown, and Nils Harry Ljungman, Merion, Pa., assignors to Electronics Inc. of Pennsylvania, Willow Grove, Pa., a corporation of Pennsylvania

Filed Mar. 7, 1968, Ser. No. 711,313
Int. Cl. H04r 9/00
U.S. Cl. 179—115.5 1 Claim

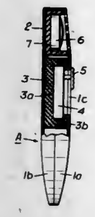


A sound radiator which includes a coil driven at audible frequencies and a magnet structure having an air gap within which the coil is moveable. The coil and magnet structure are attached to a body of stabilized foam plastic, such as polystyrene, polyurethane or bonded fibrous materials which may be in block, panel or other shape.

3,553,393
ELECTRO-ACOUSTIC TRANSDUCER HOUSING FOR DAMPENING VIBRATIONS

Rudolf Goerike, Vienna, Austria, assignor to Akustische V. Kino-Geraete Gesellschaft m.b.H., Vienna, Austria

Filed May 19, 1967, Ser. No. 639,745
Claims priority, application Australia, June 10, 1966, 5559/66
Int. Cl. H04r 1/28
U.S. Cl. 179—180 1 Claim



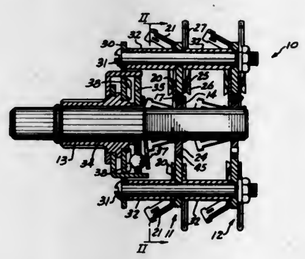
An electroacoustic transducer assembly having a deformable elastic material insert disposed within and in contact with the interior surface of a transducer assembly housing for dampening vibrations. The elastic material insert has recesses formed in it to receive various elements of the transducer assembly. Additionally, the insert may be formed with a metal part or inset, such as lead, for providing additional vibration dampening particularly at specific frequencies. A microphone constituting a part of the transducer assembly is mounted in the housing and may be located in the insert, or in a separate insert of elastic material. The contact between the deformable elastic material insert and the interior surface of the housing may be in point, linear or entire surface contact form.

A process for assembling a transducer assembly comprising forming an elastic material insert having a size so that it fits within the housing in deformable resilient contact, forming a recess in the insert material, installing various elements of the transducer assembly within the recesses in resilient contact with the insert and inserting the insert and the elements it contains into the housing whereby the insert is held in deformed resilient contact with the interior of the housing.

3,553,394
IMPROVED ELECTRIC SWITCH CERAMIC CONTACT SUPPORTING MEMBER

Aldrich John Zidlicky, Whitefish Bay, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

Filed May 13, 1968, Ser. No. 728,507
Int. Cl. H01h 19/58
U.S. Cl. 200—11 11 Claims

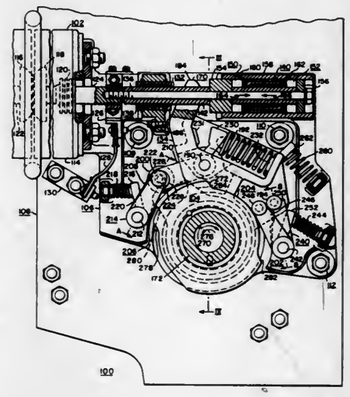


An electric switch having a dry electrically insulating film bonded permanently to one of two proximate facing surfaces of a pair of relatively movable ceramic members, such as facing generally cylindrical surfaces of rotor and stator members. The film reduces friction while acting as an electrical insulator and serves a very important function in preventing interengagement of the surfaces to thereby prevent the formation of ceramic dust particles which might otherwise engage between electrical contacts carried by the ceramic members. The film preferably is heat bonded to the surface and may comprise a tetrafluoroethylene (Teflon) combined with either a bonding resin material or a water base with modifiers, or a molybdenum, tungsten or other metal sulfide combined with a sodium silicate or with isopropanol. Further important features relate to methods by which dry film lubricants of superior qualities are obtained, firmly bonded to the surface.

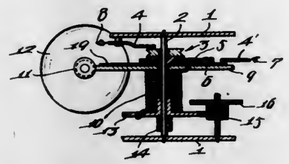
3,553,395
VACUUM SWITCH OPERATING MECHANISM WITH PLURAL DASHPOT CONTROLLER MEANS

Dale White, Sharpsville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

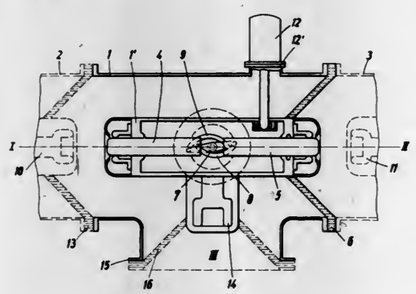
Filed Jan. 21, 1969, Ser. No. 792,349
Int. Cl. H01h 3/00
U.S. Cl. 200—18 15 Claims



another contact member contacting constantly with said disc conductor, the motor circuit being closed and opened intermittently by the switch device and because of the sliding operation, contact point troubles are eliminated.



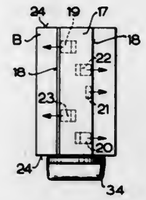
3,553,397
DISCONNECTING DEVICE FOR FULLY INSULATED HIGH-VOLTAGE ELECTRICAL SWITCHGEAR
Wolfgang Schmitz, Birkenau, Germany, assignor to Brown, Boveri & Cie Aktiengesellschaft, Mannheim, Germany, a corporation of Germany
Filed Jan. 7, 1969, Ser. No. 789,445
Claims priority, application Germany, Jan. 9, 1968, 1,615,835
Int. Cl. H01h *31/00*
U.S. Cl. 200—48 **2 Claims**



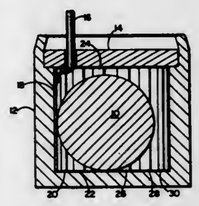
Disconnecting device for fully insulated high-voltage electrical switchgear includes an elongated electrically conductive middle portion and a pair of movable contact members located therein and serially electrically connected with one another, the contact members being displaceable individually along a path through a partial disconnect gap and into and out of a disconnect position for respectively breaking and making electrical contact with an adjacent electrical member. A tubular casing surrounds and is spaced from the middle portion, and is formed with a flanged lateral opening providing access from outside the casing to a fixed electrical contact member electrically connected to the movable contact members and extending from the middle portion in a direction transverse to the displacement path of the movable contact members.

3,553,398
CONNECTING BOXES INCLUDING SWITCHING MEANS FOR ILLUMINATING DEVICES
Heinz Seelbach, Kierspe, Germany, assignor to Reininghaus & Co., Ludenscheid, Germany, a corporation of Germany
Filed Apr. 23, 1969, Ser. No. 818,644
Claims priority, application Germany, Apr. 25, 1968, 1,764,213
Int. Cl. H01r *13/70*
U.S. Cl. 200—51 **2 Claims**

A lighting device with hollow supporting ledges to be secured in, or spaced apart from a securing face, said lighting device which comprises supporting ledges defining a hollow space open in lateral direction. Conducting bars are accessible laterally and connect boxes having an upper setoff head portion and adapted for carrying lamps. The connecting boxes interchange with the supporting ledges and are equipped with a plurality of spring tongues. The spring tongues, projecting laterally in pairs from the upper setoff head portion, serve as holding tongues and the remaining tongues as contact tongues. A cam roller is transferable selectively into operative engaging positions or in an inoperative position. The cam roller is transferable into two of the operative positions. One of the operative positions leads the holding tongues into a preliminary locking position, and the other of the operative positions leads the holding tongues into their final locking position and leads simultaneously the contact tongues into their engagement position at the conducting bars.

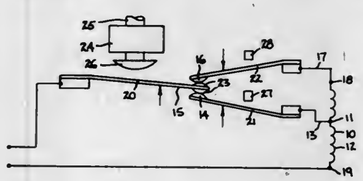


3,553,399
ANTIDISTURBANCE SWITCH WITH CONDUCTIVE HOUSING TOP AND BOTTOM AND PRINTED CIRCUIT GRID
Ralph T. Osen, Golden Valley, and Keith D. Bolster, Mound, Minn., assignors to Honewell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 12, 1968, Ser. No. 751,845
Int. Cl. H01h *35/14*
U.S. Cl. 200—61.45 **6 Claims**



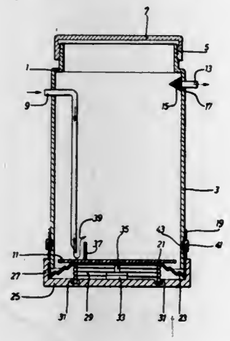
An antidisturbance or trembler switch for providing a switching function when forces external to the switch introduce relative motion between a conductive sphere and a cylindrical housing.

3,553,400
ZERO-LAG ELECTRICAL SWITCHING ELEMENT FOR MOTORS
Joseph Greenhut, 3333 Warrensville Center Road, Shaker Heights, Ohio 44120
Filed Jan. 31, 1969, Ser. No. 795,618
Int. Cl. H01h *35/10*
U.S. Cl. 200—80 **10 Claims**



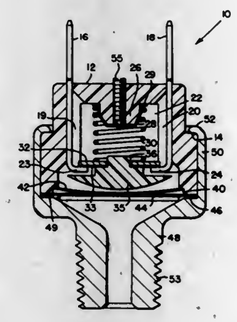
A single-pole double-throw speed responsive switching mechanism for the starting and running circuits of an electrical motor, in which the contact for the starting circuit is maintained in operative engagement with the pole of the switching mechanism during the transfer which establishes the running circuit of the motor. After the running circuit has been established by the switching mechanism, the starting circuit is opened.

3,553,401
SALT-SUPPLY CONTAINER AND SWITCH FOR A SOFTENING DEVICE
Werner Janecke, Saseler, Damm, Germany, assignor to U. S. Philips Corporation, New York, N.Y., a corporation of Delaware. by mesne assignments
Filed Aug. 6, 1968, Ser. No. 750,653
Claims priority, application Germany, Aug. 10, 1967, P 29,867
Int. Cl. H01h *35/24*
U.S. Cl. 200—81 **5 Claims**



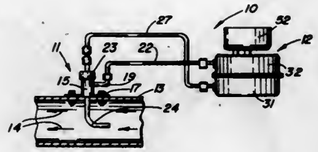
A device for softening water in apparatus such as a dishwasher, in which a quantity of salt depresses a container bottom to close a switch, and when sufficient salt is dissolved, the bottom rises opening the switch.

3,553,402
PRESSURE SWITCH WITH IMPROVED DIAPHRAGM AND SNAP ACTION DISC STRUCTURE
Charles John Hire, Pittsford, N.Y., assignor to Fasco Industries, Inc., Rochester, N.Y., a corporation of New York
Filed July 23, 1968, Ser. No. 746,903
Int. Cl. H01h *35/34*
U.S. Cl. 200—83 **4 Claims**



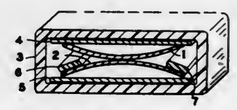
Two male terminals project from the closed end of a cup-shaped, dielectric switch housing; and a flexible diaphragm is secured over the opposite, open end of the housing for operation by a fluid pressure system. A bowed metal disc in the housing engages the diaphragm, so that upon predetermined increase in pressure in the fluid pressure system, the disc is snapped suddenly by the diaphragm to cause a spring-loaded, dielectric plunger to move a metal contact into contact with the male terminals. The spring pressure on the plunger is adjustable by a screw to adjust the reset pressure of the switch after it has been tripped, or in some cases to adjust the range or differential switch.

3,553,403
AIRFLOW SAFETY SWITCH
Samuel R. Porwancher, Chicago, Ill., assignor to Michigan Oven Company, Romulus, Mich., a corporation of Michigan
Filed May 5, 1969, Ser. No. 821,724
Int. Cl. H01h *35/34*
U.S. Cl. 200—83 **5 Claims**



An airflow safety switch, for sensing the flow of air or other gas within a duct, comprising a unitary sensing attachment for detecting both static and dynamic pressure within the duct, by means of two sensing conduits connecting to a single small opening in the duct wall, and diaphragm-actuated electrical switch means having suction and pressure chambers connected to the static and dynamic sensing conduits, respectively.

3,553,404
NORMALLY CLOSED PRESSURE SWITCH
Robert H. Koenig, Cambria Heights, N.Y., assignor to Tapeswitch Corporation of America, Farmingdale, N.Y.
Filed Sept. 24, 1968, Ser. No. 762,057
Int. Cl. H01h *3/14*
U.S. Cl. 200—85 **6 Claims**

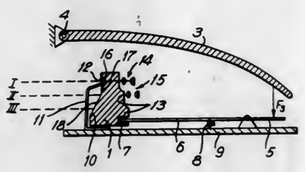


A normally closed pressure switch having a pair of curved contact members which are backed up by parallel stiffener plates. A pair of insulating strips are mounted between the outer edges of the contact members. When pressure is applied normal to the planes of the stiffener plates, the contact members are straightened and held separated by the insulating strips.

3,553,405
FOOT SWITCH FOR DICTATING MACHINE
Kurt Konrad Guettinger, Pfaffhausen, Switzerland, assignor to Dictaphone International AG, Wettingen, Aargau, Switzerland
Filed Sept. 4, 1968, Ser. No. 757,268
Claims priority, application Switzerland, Sept. 5, 1967, 12,363/67
Int. Cl. H01h *3/14*
U.S. Cl. 200—86.5 **12 Claims**

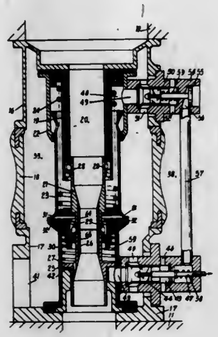
A foot-operated control switch having a contact actuating foot pedal which is moved into successive switch positions

against a spring force which increases from the first switch position to the next switch position. Because the forces



necessary to move the pedal are different for the successive switch positions, the switch positions are precisely defined.

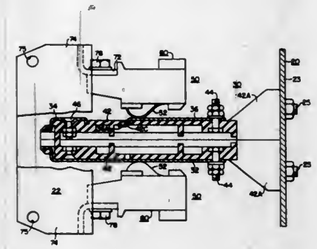
3,553,406
CIRCUIT-BREAKER OPERABLE BY EXTINGUISHING GAS PRESSURE DIFFERENTIAL
Rintje Boersma, Harmelen, Netherlands, assignor to N.V. COQ, Utrecht, Netherlands, a company of the Netherlands
Filed Mar. 28, 1968, Ser. No. 716,808
Claims priority, application Netherlands, Apr. 14, 1967, 67.05277
Int. Cl. H01h *33/86*
U.S. Cl. 200—148 **3 Claims**



A gas blast circuit breaker comprising at least two cooperating movable contacts, of which each one is attached to a piston adapted to be driven by the extinguishing gas, the stroke of one contact and its piston being smaller than that of the other contact and its piston, the piston having the smallest stroke being used to start the opening operation of the circuit breaker and to open a valve, the opening of said valve allowing extinguishing gas to escape and to extinguish the switching arc and effecting the exposure of the piston having the greater stroke to the pressure of the extinguishing gas, and means for automatically effecting a delayed reclosing operation of the circuit breaker.

3,553,407
DISCONNECTING CONTACT ASSEMBLY
Richard Hauser, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 24, 1968, Ser. No. 778,374
Int. Cl. H01h *1/46*
U.S. Cl. 200—166 **7 Claims**

A secondary disconnecting contact means for use with electrical apparatus such as circuit breakers or switches comprising separable relatively movable and stationary contact



assemblies each including a plurality of contact members mounted on an insulating support or housing.

3,553,408
CONTACT BREAKER ASSEMBLIES
William Lawrence Fry, Kings Norton, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Mar. 25, 1969, Ser. No. 810,187
Claims priority, application Great Britain, July 25, 1968, 35,481/68
Int. Cl. H01h *1/00*
U.S. Cl. 200—166 **4 Claims**

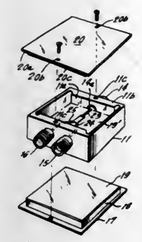


A contact breaker assembly in which one end of a conductive leaf spring is engaged in a longitudinally extending groove in an insulating heel member, and is trapped therein by a first limb of a conductive shell. A second limb of the shell engages a face of the heel member remote from the face containing said groove, and is provided with an extended portion carrying the movable contact. The first limb and the one end of said spring are provided with mating parts securing the shell to the spring whereby the shell and the spring are locked to the heel member.

3,553,409
CIRCUIT FRAME
Sanford S. Lehrfeld, Heightstown, N.J., assignor to Tek-Wave, Inc., Princeton, N.J., a corporation of New Jersey
Filed Oct. 15, 1968, Ser. No. 767,730
Int. Cl. H01h *9/04;* **H01p** *3/08*
U.S. Cl. 200—168 **6 Claims**

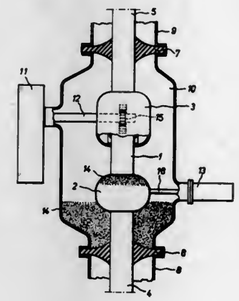
A circuit frame comprised of a one-piece metallic frame member having launchers secured thereto in a precise manner and provided with top and bottom covers for sealing the interior opening. At least one of the covers is provided with a mounting surface for supporting a microstrip circuit which makes an electrical interface with the launchers secured to the frame to provide for a plurality of coaxial-to-microstrip transitions. The top and bottom covers may be either soldered or mechanically fastened to the frame

member to protect the coaxial-to-microstrip electrical interface against dirt, dust, or other external influences. Precision



alignment of the launcher assemblies provides a circuit frame apparatus having highly reliable operating characteristics.

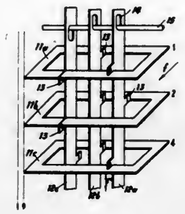
3,553,410
HIGH VOLTAGE SWITCHGEAR HOUSING WITH STICKY VISCOUS COATING FOR CATCHING METAL PARTICLES AND, THEREBY PROTECTING THE INSULATORS
Tibor Morva, Oberentfelden, Aargau, Switzerland, assignor to Sprecher & Schuh AG, Aarau, Switzerland
Filed Apr. 28, 1969, Ser. No. 819,764
Claims priority, application Switzerland, May 1, 1968, 6641/68
Int. Cl. H01h *33/64, 9/02*
U.S. Cl. 200—168 **3 Claims**



An encased high-voltage switch gear in which the metal parts carrying high voltage current are arranged within a grounded metal sheathing and fixed therein by means of insulating supports, said metal sheathing forming a sealed enclosure and the metal surfaces within said enclosure being at least partly coated with a sticky layer of viscous material, such as polyisobutylene or polyvinylisobutylether, whereby metal shavings present or formed by abrasion within said sheathing will stick to the viscous layer and will not deposit on the insulating supports and reduce their electric insulating properties.

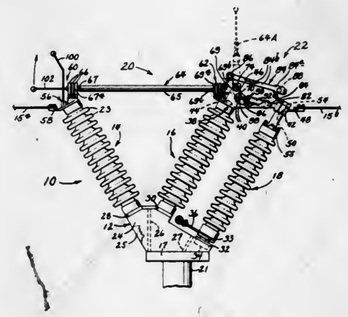
3,553,411
AUTOMATIC SWITCHING DEVICE
Roger Chaveneaud, Levallois, and Georges Janoska, Courbevoie, France, assignors to Societe a Responsabilite Limitee Societe Lamy d Etudes et De Recherches Soler, Courbevoie, France, a corporation of France
Filed Oct. 27, 1967, Ser. No. 678,658
Int. Cl. H01h *67/14*
U.S. Cl. 200—176 **4 Claims**

An automatic switching device has cooperating groups of selector and switch elements, each element being capable of being placed in either of two positions. The selector elements are individually positioned by means of input information signals to establish a selection condition. The switch elements are provided with stops, so arranged relative the selector elements that, when a particular selection condition has been established, only one switch element can be moved to its other position; equal forces are, therefore, applied to all the



switch elements, after a selection condition has been established, to cause the device to switch a corresponding one of output circuits associated with the switch elements, to provide output signals corresponding to the selection condition. The input and output signals can be any combination of known kinds of signals, such as electric, pneumatic or hydraulic.

3,553,412
HIGH VOLTAGE SWITCH ASSEMBLY
Charles E. Kerr, Jr., Hillsboro, Oreg., assignor to Eltec, Inc., Lake Oswego, Oreg., a corporation of Oregon
Filed Feb. 4, 1969, Ser. No. 796,529
Int. Cl. H01h *31/00*
U.S. Cl. 200—48 **7 Claims**

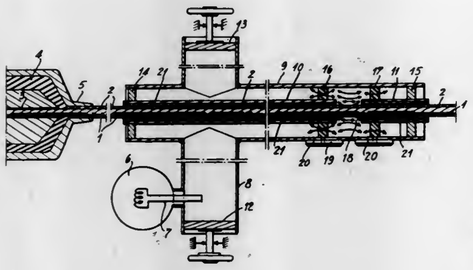


A high voltage switch assembly including a base, elongated insulators mounted on and diverging from the base, with the insulators occupying a common vertical plane, and a switch mounted adjacent the ends of the insulators which are remote from the base. The switch includes a blade pivoted for swinging in the common plane of the insulators. One of the insulators in the assembly is supported for rotation about its longitudinal axis, and is interconnected with the blade in such a fashion that rotation of the insulator produces swinging of the blade.

3,553,413
DEVICE FOR HEATING DIELECTRIC MATERIALS COATING AN ELECTRICITY CONDUCTING ELEMENT BY MEANS OF HYPERFREQUENCE WAVES

Joel Henri Auguste Soulier, 81 Boulevard Marceau, Colombes, France

Filed Mar. 27, 1969, Ser. No. 810,992
Claims priority, application France, Mar. 29, 1968, 146502
Int. Cl. H05b 9/00, 5/00
U.S. Cl. 219—10.55 7 Claims

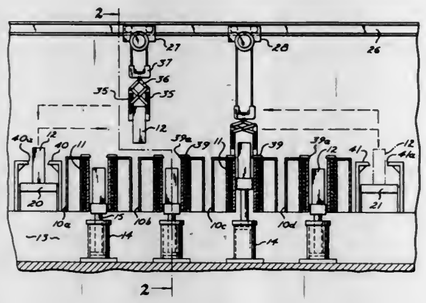


A device for heating dielectric materials coating an electricity conducting element by means of hyperfrequency waves comprising a tubular conducting casing closed at both ends by conducting members, two aligned tubular conducting cores separated by a space coaxially disposed inside said tubular casing thus forming a coaxial guide, the dielectric material covering the conductive element being made to pass inside said two spaced tubular cores, a generator connected to said coaxial guide producing hyperfrequence waves applied on the dielectric element on the space between said tubular cores.

3,553,414
SLAB TRANSFER APPARATUS

Bruce E. McArthur, 222 Lisbon St., Canfield, Ohio 44406

Filed Dec. 2, 1968, Ser. No. 780,451
Int. Cl. H05b 5/00, 9/02
U.S. Cl. 219—10.71 11 Claims

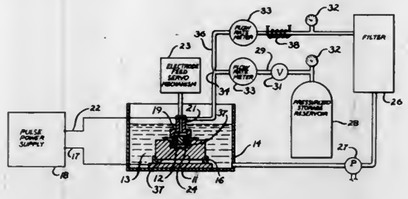


There is disclosed herein a plurality of aligned induction heaters which are open at both the top and bottom, lift means for partially ejecting a heated slab from each heater and receiving a cold slab, crane and hoist means for picking up a slab at any heater and transferring it to an outgoing conveyor, and crane and hoist means for picking up a cold slab from an incoming conveyor and delivering the same to a heater.

3,553,415
ELECTRIC DISCHARGE MACHINING EMPLOYING GAS DISPERSED IN A LIQUID DIELECTRIC

Dean C. Girard, San Leandro, Calif., assignor to Jean La Force, Fort Worth, Tex., a part interest

Filed Oct. 23, 1968, Ser. No. 769,981
Int. Cl. B23p 1/04, 1/08
U.S. Cl. 219—69 5 Claims

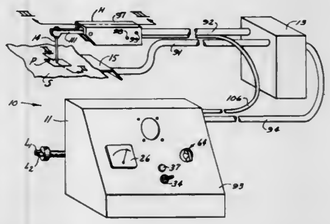


A spark erosion machining apparatus having a dielectric coolant feed system is described which incorporates into the liquid dielectric, prior to injection thereof into the spark gap between the electrode and the workpiece, a material component productive of a dispersed gas phase for accelerating swarf removal and machining rates.

3,553,416
WELDING EQUIPMENT

Lester C. Schmiege, Kalamazoo Township, and Wendell C. Zeluff, Cooper Township, Kalamazoo County, Mich., assignors to American Wire Cloth Company, Parchment, Mich., a corporation of Michigan

Filed Apr. 18, 1968, Ser. No. 722,326
Int. Cl. B23k 9/00
U.S. Cl. 219—78 7 Claims



A welding apparatus including a pair of electrodes connected by elongated electrical conductors to a transformer and a circuit for controlling the duration and strength of the welding current. One electrode is mounted upon a handle containing a normally open switch which is closed when said one electrode is pressed against an object. Closure of said switch initiates a current flow which is accurately terminated after a predetermined period of time controlled by the circuit.

3,553,417
WIRE BONDING AND SEVERING APPARATUS

Norman F. Smith, Methuen, and Edward T. Stocker, Georgetown, Mass., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

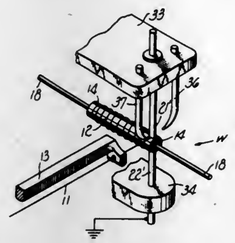
Filed Apr. 26, 1968, Ser. No. 724,329
Int. Cl. B23k 11/22
U.S. Cl. 219—78 7 Claims

Apparatus for welding a wire to spaced points on successively advanced articles includes an upper welding electrode and a grounded lower welding electrode. Two sparking electrodes are disposed adjacent the upper welding electrode. As the wire is bonded to a first point on an article, an electric arc jumps a gap between one sparking electrode and the grounded wire to sever off a leading end of the wire adjacent the first point. Subsequently, the other sparking electrode similarly severs the wire at a trailing end as it is welded to a second point on the article.

3,553,418
WELDING MACHINE AND PROCEDURE FOR WELDING ATTACHMENTS TO BASE MEMBERS AND HAVING PROVISION FOR CHECKING FOR THE PRESENCE OF A WELDED ATTACHMENT AND THE ADEQUACY OF THE WELD

Oscar W. Garver, Indianapolis, Ind.; Frederick E. Ullman, Winnetka; Christian H. Stettler, Northbrook, Ill., and Hans W. Kopp, Saint Gall, Switzerland, assignors to Grotnes Machine Works, Inc., Chicago, Ill., a corporation of Illinois

Division of Ser. No. 463,062, Apr. 29, 1965, Patent No. 3,490,904, which is a division of Ser. No. 180,415, Mar. 15, 1962, Patent No. 3,233,072
Int. Cl. B23k 11/10; H01h 3/16
U.S. Cl. 219—79 5 Claims

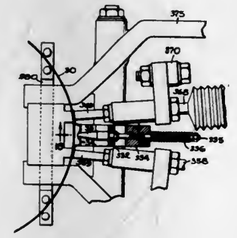


A welding machine and procedure for welding attachments to base members wherein provision is made for checking the products discharged from the welding station both for the presence of a welded attachment and the adequacy of the weld, and for signalling the detection of a defective condition.

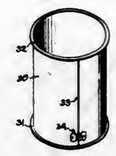
3,553,419
WELDING MACHINE HAVING PROVISION FOR PRECISE POSITIONING OF TWO OR MORE WORKPIECES RELATIVE TO ONE ANOTHER DURING HIGH-SPEED WELDING OPERATIONS

Oscar W. Garver, Indianapolis, Ind., Frederick E. Ullman, Winnetka; Christian H. Stettler, Northbrook, Ill., and Hans W. Kopp, St. Gall, Switzerland, assignors to Grotnes Machine Works, Inc., Chicago, Ill., a corporation of Illinois

Division of Ser. No. 463,062, Apr. 29, 1965, Patent No. 3,368,056, which is a division of Ser. No. 180,415, Mar. 15, 1962, Patent No. 3,233,072.
Int. Cl. B23k 11/10; H01h 3/16
U.S. Cl. 219—80 11 Claims



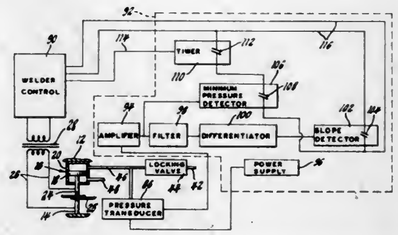
A welding machine for welding attachments to base members on a high speed production bases and wherein provision is made for rapidly feeding one or more of the attachments relative to each base member and for precisely positioning the attachments and base members relative to one another prior to and during a welding operation.



3,553,420
METHOD AND APPARATUS FOR CONTROL OF RESISTANCE WELDING

Thomas W. Shearer, Jr., Auburn Heights, Charles M. Peters, Grosse Pointe Park, and Jon D. Tincher, Warren, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 11, 1969, Ser. No. 840,929
Int. Cl. B23k 11/24
U.S. Cl. 219—110 10 Claims

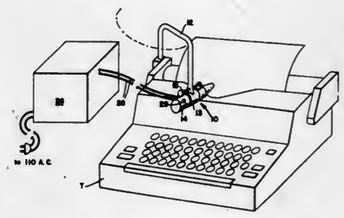


In spot welding, weld nugget growth is monitored by an arrangement including an hydraulically operated electrode, and a check valve to trap fluid in the hydraulic cylinder. Thermal expansion of the workpiece produces a force on the electrodes and a pressure rise in the hydraulic fluid. An electrical transducer senses the pressure rise and produces an electrical signal proportional to work expansion which operates a circuit for terminating welding current when the pressure rise ceases. For pneumatically driven electrodes, an auxiliary hydraulic locking cylinder provides the pressure signal.

3,553,421
METHOD OF AND APPARATUS FOR ERASING

Arthur L. Schawlow, 839 Esplanada Way, Stanford, Calif.

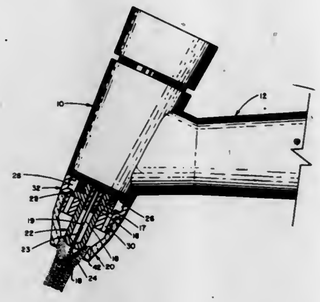
Continuation of application Ser. No. 471,811, July 18, 1965, now abandoned. This application Nov. 7, 1968, Ser. No. 784,977
Int. Cl. B23k 9/00
U.S. Cl. 219—121 7 Claims



A method of removing radiation-absorptive material from a base which is relatively nonabsorptive of the radiation. A short pulse at such energy level and in the order of milliseconds or less is generated and directed against the absorp-

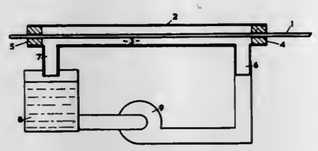
tive material. Energy is absorbed by the absorptive material to affect its heating and removal from the base. The base absorbs substantially a minimal amount of radiation and thus remains substantially intact.

3,553,422
PLASMA ARC WELDING METHOD AND APPARATUS
George H. McCoy, Allentown, Pa., assignor to Air Products and Chemicals, Inc., Allentown, Pa., a corporation of Delaware
Filed Apr. 28, 1969, Ser. No. 819,727
Int. Cl. B23k *9/00*
U.S. Cl. 219—121 **3 Claims**



Disclosed is a method and apparatus for minimizing the double arcing phenomena often associated with plasma arc torches. The invention is characterized in that by moving the shielding gas rapidly across the face of the torch tip at an angle to the plasma arc, the double arcing phenomena is minimized or eliminated.

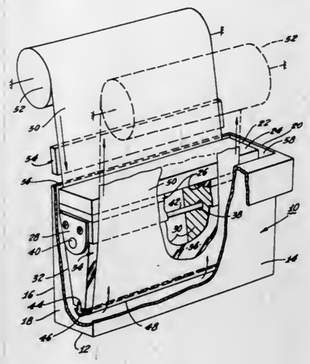
3,553,423
WIRE FEEDING
Brian C. Doxey, Welwyn, England, assignor to The British Oxygen Company Limited, a British Company
Filed May 2, 1968, Ser. No. 725,998
Claims priority, application Great Britain, May 5, 1967, 21,052/67
Int. Cl. B23k *9/00*
U.S. Cl. 219—130 **11 Claims**



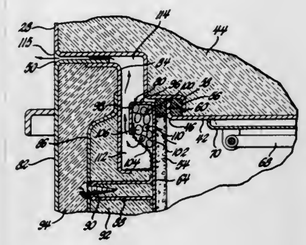
Thin bare welding wire is fed through a relatively long conduit from a drum to an arc welding torch by passing a stream of liquid along the conduit in the direction of wire feed. The liquid applies traction to the wire causing the wire to pass along the conduit even when the conduit is bent, looped or coiled. The liquid may be caused to flow in either an open or closed circuit; and if an open circuit is used the liquid may act as a flux in the welding process.

3,553,424
PAPER STABILIZATION HEATER
Carl P. Spaulding, San Marino, Calif., assignor to Litton Systems, Inc., Beverly Hills, Calif., a corporation of Maryland
Filed Feb. 25, 1969, Ser. No. 802,174
Int. Cl. F27b *9/06*; **H05b** *1/02*
U.S. Cl. 219—388 **13 Claims**

Apparatus for the heat stabilization of spectrally sensitized printout paper on a continuous basis having means for forming a latent image on the paper; means for transporting the paper into thermal contact with a passive heat shunt and raising the temperature of the paper a predetermined increment; heat reservoir means in thermal contact with the paper for raising the temperature an additional predetermined increment; heater means for raising the temperature of the paper to that required for stabilization of the image; means for maintaining the stabilization temperature for a predetermined period of time while the strip is in motion; means for returning the heat from the paper to the heat reservoir; and additional means for returning heat to the heat shunt.



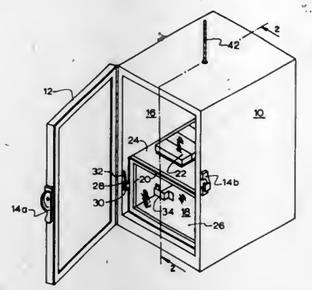
3,553,425
DOOR MOUNTED CATALYST EXHAUST ARRANGEMENT FOR A SELF-CLEANING OVEN
Millard E. Fry, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 23, 1969, Ser. No. 835,678
Int. Cl. F27d *11/00*; **A21d** *1/20*
U.S. Cl. 219—393 **4 Claims**



A heat-cleaning oven has a complete seal between the oven and the oven door and heating units in the oven for heating the oven to heat-cleaning temperature. The oven exhaust is through a chamber in the door which includes a catalyst for eliminating smoke and heating the portion of the door adjacent the seal.

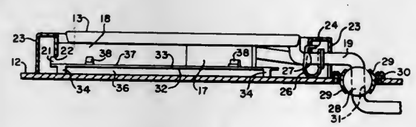
3,553,426
TEMPERATURE CONTROL APPARATUS
Aaron J. Fink, 614 Springer Terrace, Los Altos, Calif. 94022
Filed Mar. 22, 1968, Ser. No. 715,223
Int. Cl. A01k *41/02*; **F27d** *11/02*
U.S. Cl. 219—406 **7 Claims**

A temperature control apparatus incorporates separate compartments, adapted to be isolated from each other, but



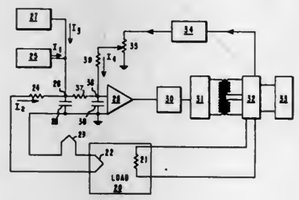
subject to the same constant temperature.

3,553,427
COOKING APPARATUS
Edmund H. Filipak, Lexington, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Dec. 27, 1968, Ser. No. 787,370
Int. Cl. H05b *3/68*
U.S. Cl. 219—463 **3 Claims**



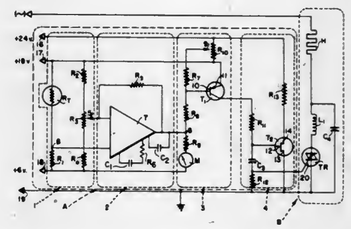
A cooking apparatus having surface heater structures supported above a top wall of the housing thereof. The top wall is devoid of conventional heater openings, consequently, the heater structures overlie portions of the top wall and are disposed substantially parallel thereto. Each heater structure is pivotal away from the top wall to facilitate cleaning of the top wall and also to permit removal of a combination heat shield and spacer for cleaning thereof.

3,553,428
APPARATUS AND METHOD FOR CONTROLLING THE POWER SUPPLIED TO A LOAD
John D. McGhee, Plymouth Meeting, Pa., assignor to E. I. du-Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Aug. 30, 1968, Ser. No. 756,475
Int. Cl. H05b *1/02*
U.S. Cl. 219—494 **19 Claims**



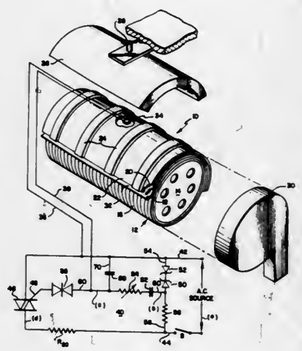
A method for controlling the power supplied to a load and an apparatus to accomplish this, comprising: a means for monitoring the voltage supplied to the load; a voltage squaring circuit adapted to generate a control signal proportional to the average value of the square of the voltage; and a proportional controller adapted to compare the control signal with a reference signal and to proportionally control the power supplied to the load. The proportional controller comprises: a control amplifier, adapted to convert the DC control signal to an AC signal and to amplify the AC signal; a novel demodulating circuit; and a proportional band adjustment.

3,553,429
TEMPERATURE CONTROL CIRCUIT
Raymond L. Nelson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Nov. 18, 1968, Ser. No. 776,655
Int. Cl. H05b *1/02*
U.S. Cl. 219—497 **6 Claims**



A temperature control circuit for accurately controlling the temperature of a medium includes a bridge which senses the temperature of the medium. The bridge supplies a signal representative of the temperature difference between the desired temperature and the actual temperature of the medium to a differential amplifier. A network coupled to the differential amplifier provides a visual indication of the temperature difference and amplifies the signal received from the differential amplifier. A relaxation oscillator network is coupled to the network to operate a triac. The triac controls a heater and thus regulates the temperature of the medium.

3,553,430
CONTROL SYSTEM AND APPARATUS FOR A HEATING STATION
Lawrence K. M. Ting, Arlington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Aug. 9, 1968, Ser. No. 751,462
Int. Cl. H05b *1/02*
U.S. Cl. 219—501 **20 Claims**



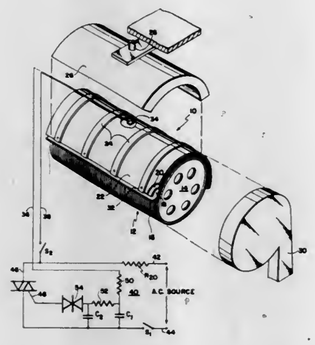
A control system for regulating the power input to the heating station of a processing device. The system utilizes a

gated, full-wave thyristor to regulate an AC power input to an electrical heating element. Using a thermistor as a temperature sensor, the control system functions to periodically sample heating station temperature at the commencement of each input power supply cycle. A signal threshold level is established within the sampling interval, below which full-power will be inserted through the thyristor.

3,553,431
CONTROL SYSTEM FOR A HEATING STATION

Christian C. Petersen, Westwood, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed May 27, 1968, Ser. No. 732,289
Int. Cl. H05b *1/02*
U.S. Cl. 219—505 15 Claims

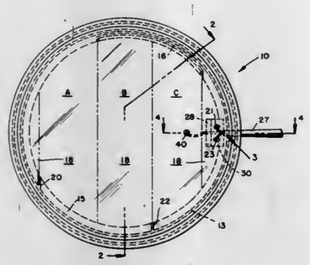


A control system for regulating the power input to the heating station of a processing device. The system utilizes a gated, full wave thyristor to regulate an AC power input to an electrical heating element. The heating element is selected having a relatively low mass to provide fast speed heat-up to target temperatures. A positive temperature coefficient thermistor is positioned in thermal bond with the heating element and is used in conjunction with an RC storage arrangement to gate the full wave control thyristor.

3,553,432
HEATED DOME WINDOW

David N. Livingston, Max R. Smith, and Charles T. Newmyer, China Lake, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed June 9, 1969, Ser. No. 831,551
Int. Cl. H05b *3/06*
U.S. Cl. 219—522 1 Claim

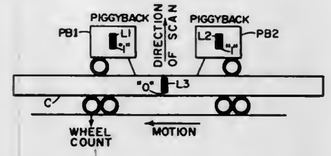


A transparent domical nose fairing of a guided missile is coated with an interrupted metallic film and electrically connected to a power source for heating the fairing when icing is likely. The film is preferrably applied on the inner surface over substantially all of the transparent area so that it also acts as a shield against radio frequency interference. If desired the external surface may be covered by an antireflectance coating to enhance the "vision."

3,553,433
DATA STORAGE AND TRANSFER APPARATUS FOR PLURAL-VEHICLE IDENTIFICATION SYSTEMS

Gordon B. Sorli, Burlington, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed May 2, 1967, Ser. No. 635,421
Int. Cl. G01m *21/30*; G06k *7/00, 7/10*
U.S. Cl. 235—61.7 10 Claims

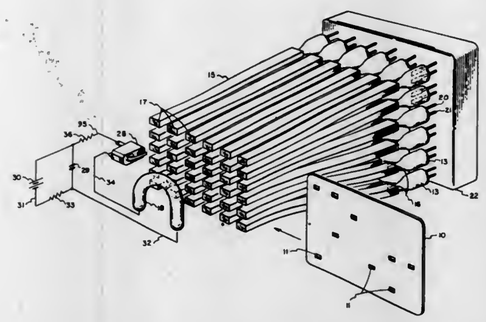


System for identifying a carrier vehicle and piggyback vehicles positioned thereon and for indicating the relationship of said piggyback vehicles to said carrier vehicle including apparatus for storing and transferring coded data sensed from a coded label affixed to the carrier vehicle and from coded labels affixed to the piggyback vehicles. The first coded digit of each piggyback vehicle label is made to differ from the first coded digit of the carrier vehicle label to distinguish between the two types of vehicles. As the carrier and piggyback vehicles pass a single label reading apparatus, the coded data is sensed from each of the labels, stored sequentially in a main register, monitored to determine the nature thereof, that is, whether carrier data or piggyback data, gated into serially coupled subsidiary registers corresponding to the various carrier and piggyback vehicles, and subsequently read out from the subsidiary registers in a predetermined association.

3,553,434
ARRANGEMENT FOR READING, RECORDING AND STORING INFORMATION

Robert A. Murray, Los Angeles, Calif., assignor to SCM Corporation, New York, N.Y., a corporation of New York

Filed Mar. 1, 1965, Ser. No. 435,852
Int. Cl. G06k *7/10*
U.S. Cl. 235—61.11 6 Claims

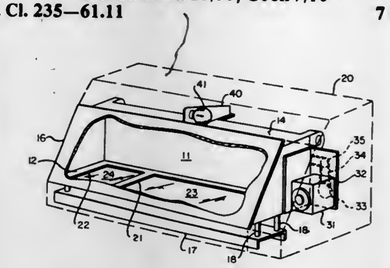


Use of a glow discharge device as a low cost yet reliable element of a perforated media reader is disclosed. In such a reader there is a glow lamp for each channel or code position and a bias voltage higher than the sustaining voltage but lower than the ignition voltage is applied to each lamp. Exposure of the lamps through a perforated record member to a pulsed source of radiant energy then results in selected ones of the glow lamps igniting and remaining on subsequent to the disappearance of the radiant energy source pulse. Thus, the glow lamps provide storage of the information and there is no need for auxiliary storage equipment.

3,553,435
PHOTOELECTRIC PUNCHED CARD AND DOCUMENT READER

James L. Pike, Sunnyvale, Calif., assignor to Data Pathing Incorporated, Palo Alto, Calif., a corporation of California

Filed Nov. 21, 1966, Ser. No. 595,925
Int. Cl. G01n *21/30*; G06k *7/10*
U.S. Cl. 235—61.11 7 Claims

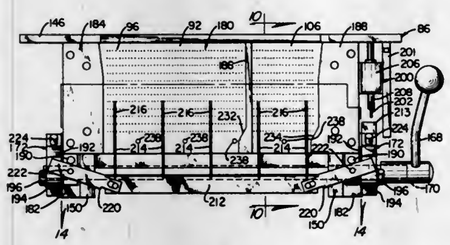


A photoelectric punched card reader includes a rectangular receptacle for receiving a card which is then scanned by a light source and photoresponsive devices supported by a carriage which moves across the stationary card.

3,553,436
DATA COLLECTION STATION AND STATIC CARD READER THEREFOR

Richard C. Webb, Broomfield, and Robert T. Heath, Denver, Colo., assignors to Colorado Instruments, Inc., Broomfield, Colo., a corporation of Colorado

Filed Feb. 9, 1967, Ser. No. 614,865
Int. Cl. G06k *7/04*; H01h *43/08*
U.S. Cl. 235—61.11 14 Claims

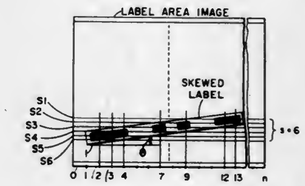


A static card reader comprising a card receiving chamber having spaced-apart, generally parallel inner and outer walls, a switching chamber including a plurality of circuit portions, a first printed circuit board, and other printed circuit boards, means for moving said chambers relative to each other from a card inserting position to a card reading position, said means being disposed in a position not to preclude visual observation of the card to the outer wall of said card chamber, and card ejection means operated in response to the return of the chambers to the card inserting position, said ejection means being engageable with the lower edge of the card for elevating it in said card chamber to a position in which it may be manually removed from same. Each circuit portion contained within the switching chamber has a first part disposed upon said first printed circuit board and a second part disposed upon one of the other printed circuit boards. Each second part of each circuit portion includes a switching contact biased to a normally closed position with a corresponding first part of said circuit portion. Each switch actuator has a corresponding switching contact, both of which are formed from a single piece of electrically conducting material. Each switch actuator is adapted to move through corresponding apertures in a punched card or to be precluded from moving through the punched card when engageable with a nonperforated portion of same. Each switching contact, upon being brought into engagement with a corresponding first part of said circuit portion, is constructed for movement across said corresponding first part of said circuit portion thereby effecting a wiping action thereacross to facilitate maintaining good electrical contact between said first and second circuit portions.

3,553,437
OPTICAL LABEL READING SYSTEM AND APPARATUS

Wilson P. Boothroyd, Carlisle, Mass., assignor to Sylvania Electric Products, Inc., a corporation of Delaware

Filed May 2, 1967, Ser. No. 635,557
Int. Cl. G06k *7/015*; G01n *21/30*; G06k *9/04*
U.S. Cl. 235—61.11 6 Claims

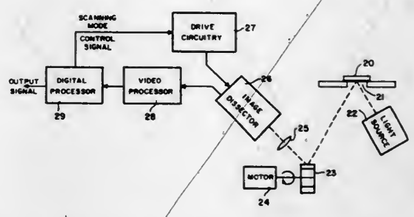


Optical label reading system including apparatus for reading coded labels affixed to moving objects or vehicles. A label bearing a code pattern formed of retroreflective material is attached to an object or a vehicle in a predetermined "label area." When the object or vehicle appears within a predetermined region or "read zone" of the optical label reading apparatus, the label area is flash illuminated by a source of light and, as a result, a reflected optical image of the coded label and label area is translated through an optical shutter and lens onto a photoconductive image surface of a vidicon tube and stored thereby. The stored image of the vidicon tube is read out by a television-type raster scanning pattern and the video output signal from the vidicon tube, after suitable processing, is applied to suitable logic and decoder circuitry for decoding thereof.

3,553,438
MARK SENSING SYSTEM

Melvin H. Blitz, Framingham, and George G. Pick, Lexington, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

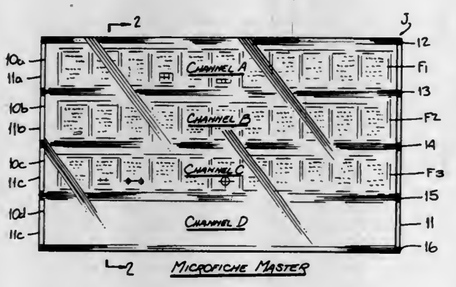
Filed July 18, 1969, Ser. No. 846,644
Int. Cl. G06k *7/10*; H04n *3/00, 7/00*
U.S. Cl. 235—61.11 8 Claims



Mark sensing systems for reading a light-reflecting label which includes a plurality of radial data code elements circu-

larly arranged in a predetermined coded format around a bull's eye acquisition target formed from a plurality of concentric ring code elements. In accordance with one embodiment of the invention, an image of the label is derived by a rotating mirror wheel and directed onto an image dissector, and the image is linearly scanned in the image dissector to determine the presence of the label by sensing the image of the acquisition target, and then circularly scanned to derive the data content of the label by sensing the images of the radial data code elements. In other embodiments of the invention, the image of the label is scanned simultaneously in a linear scan pattern and a circular scan pattern or, alternatively, in a cycloidal scan pattern. An all-electronic version of the invention, requiring no rotating mirror wheel, is also disclosed.

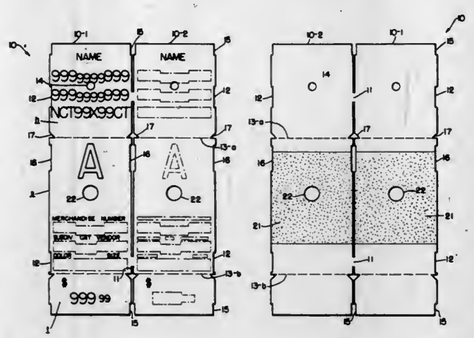
3,553,439
MICROFICHE MASTER HAVING MAGNETIC TRACKS
Isidore Dorman, Whitestone, N.Y., assignor to Bellhow Jackets Inc., a corporation of Delaware. by mesne assignments
Filed Oct. 4, 1967, Ser. No. 672,793
Int. Cl. G06k *19/02*; **G09f** *1/12*; **G11b** *5/00*
U.S. Cl. 235—61.12 **4 Claims**



A microfiche master or other forms of a transparent multiple-channel jacket for storing and displaying data such as microfilm images, the jacket being constituted by two superposed panels of flexible clear-plastic sheeting which are joined together by spaced ribs defining chambers or channels wherein microfilm strips may be inserted, at least one rib having a hot-melt coating to effect bonding thereof to the panels, which coating has a finely divided magnetizable material dispersed therein whereby the rib provides a magnetic recording track adapted to receive identifying data to facilitate automatic filing and retrieval of the jacket.

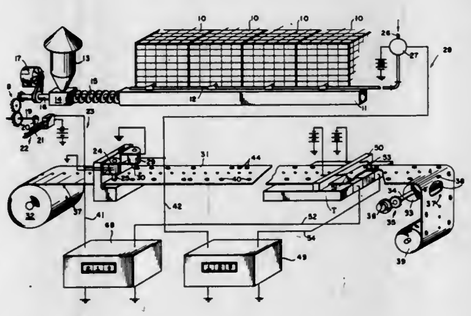
3,553,440
CONTROL TICKET
Robert C. Dale, Wellesley, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Nov. 9, 1967, Ser. No. 681,876
Int. Cl. G06k *21/00*
U.S. Cl. 235—61.12 **4 Claims**

A multiple control ticket accommodating both interpretable information and nonvisually-interpretable, but machine-readable information. The ticket is "multiple" in the sense of having a number of detachable sections. At least one of the sections is imprinted with specified information, while at least one other section contains magnetizable material for receiving the machine-readable information. Illustratively, the magnetizable material is in the form of a coating and each coated section has an aperture for positioning a recording head with respect to the coating. The aperture is surrounded by the coating, without making contact, to facilitate fabrication of the ticket. Notches are provided to facilitate detachment of the sections and lessen the likelihood of any delamination, peeling or tearing that could damage the magnetic coating. In addition, the ticket desirably contains two apertures that are so located that the ticket can be folded



over with the apertures in alignment. This facilitates ticket attachment and protects the coating.

3,553,441
DIRECT COMPUTING STATISTICAL SYSTEM
Mark Launder, Wabash, Ind., assignor to Horizons Unlimited-Problems Solved By Ideas Corporation, Wabash, Ind., a corporation of Indiana
Filed June 20, 1966, Ser. No. 558,922
Int. Cl. G01f *11/28*; **G11b** *3/00*
U.S. Cl. 235—92 **12 Claims**

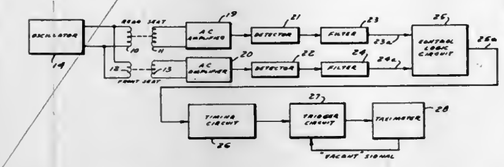


A statistical system is disclosed for monitoring a process such as an automated animal house wherein a tape memory having information indicative of a first variable and a rate of advancement indicative of a second variable is monitored at first and second points and the two monitored items of information are used to increment and decrement the contents of a register to yield a consumption rate of the first variable per unit of the second variable.

3,553,442
TAXI PASSENGER DETECTION ARRANGEMENT
Emanuel S. Weisbart, New York, N.Y., assignor to Efficient Instruments Corporation, Long Island City, N.Y.
Filed Aug. 1, 1967, Ser. No. 657,592
Int. Cl. G07b *13/00*
U.S. Cl. 235—92 **10 Claims**

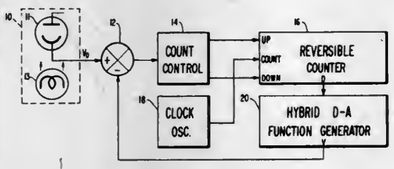
An electronic arrangement for actuating a taximeter within a taxicab, when either the rear seat or front seat of the taxicab becomes occupied. Electromagnetic coils are mounted within the rear and front seats and located with respect to each other so that when either one of the seats becomes occupied, electrical signals become transmitted from the coils.

The signals originating from the electromagnetic coils are amplified, rectified, and filtered to obtain suitable DC signals for actuating control circuitry. A solid state logic circuit accepts the DC signals representing the occupancy of either the rear or front seats, and transmits an actuating signal to a timing circuit which includes a delay of 25 seconds before a corresponding signal is generated through this timing circuit. The solid state logic circuit has provision whereby the actuat-



ing signal to the timing circuit is transmitted only when the signals originating from either the rear or front seats of the taxicab, are above a predetermined level. The solid state logic circuit also has provision whereby the timing circuit is actuated when the signals originating from either the rear or front seats are below a predetermined level. After the elapse of 25 seconds, determined by the timing circuit, a trigger circuit actuates the taximeter provided the latter has not already been actuated previously.

3,553,443
HYBRID FUNCTION GENERATOR FOR OPTICAL SENSING SYSTEMS
Hugh G. Neil, P.O. Box 1950, Knoxville, Tenn. 37901
Filed Feb. 3, 1969, Ser. No. 795,935
Int. Cl. G06g *7/26*
U.S. Cl. 235—150.53 **22 Claims**



A hybrid digital-to-analogue function generator for generating analogue voltages which are nonlinear functions of an input digital number. The function generator uses digital-to-analogue converters which have two reference voltage inputs, E_o greater than E_i, the output voltage of each converter being defined as:

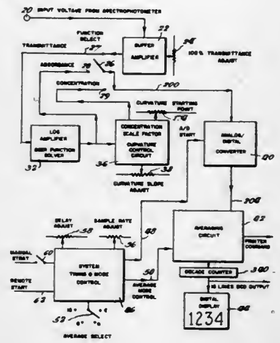
$$V = D(E_0 - E_i) + E_i.$$

A particular converter having these characteristics is disclosed. A variety of complex functions are generated using three basic techniques, either separately or in combination. The first technique is serial connection of any number of these D-A converters. The second contemplates varying one of the reference voltage inputs as, for example, by feeding back a percentage of the output of the D-A converter. The third technique describes the effect of varying the other reference voltage input by feeding back a percentage of the output of the D-A converter. An example of combining two of these techniques to approximate an inverse exponential is described and illustrated in an optical fiber-sensing system.

3,553,444
ABSORBANCE AND CONCENTRATION COMPUTER
Peter P. Tong, Madison, Wis., assignor to T & T Technology, Inc., a corporation of Wisconsin
Filed July 2, 1968, Ser. No. 742,019
Int. Cl. G06f *15/20*
U.S. Cl. 235—151.35 **48 Claims**

A system which provides digital readout representative of the transmittance, absorbance and concentration characteristics of a sample which has been analyzed by a spectrotransmittance of the sample. The system can be selectively operated to show the desired characteristic of the sample in digital form.

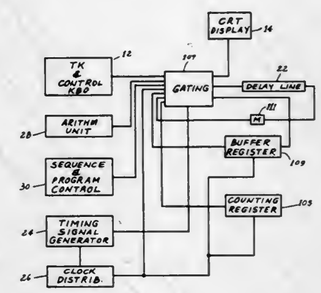
If the absorbance is to be displayed, the spectrophotometer output signal is fed through a circuit which provides a log function to convert the transmittance characteristic to an absorbance characteristic in accordance with Beer's law. The output signal of the log function circuit is fed to a digital system which includes an analogue to digital converter coupled to an averaging system. A timing control circuit including a selective delay circuit and a master flip-flop is utilized to control the output of the analogue to digital converter and



the averaging system. The averaging system is coupled to a digital readout device for displaying the absorbance in digital form.

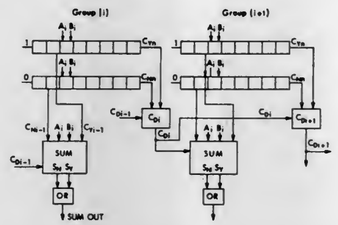
If the concentration characteristic of the sample is to be displayed, the output of the log function circuit is fed to a curvature control circuit. The curvature control circuit can act to modify the output of the log function circuit to correct for deviation from linearity of the output of the atomic absorption spectrophotometer if the sample has high absorbance. The output of the curvature control circuit is fed to the above-described digital system for displaying the concentration in digital form.

3,553,445
MULTICIPHER ENTRY
Jorge Hernandez, Larkspur, Calif., assignor to SCM Corporation
Filed Aug. 22, 1966, Ser. No. 573,953
Int. Cl. G06f *7/38*, *3/00*
U.S. Cl. 235—156 **11 Claims**



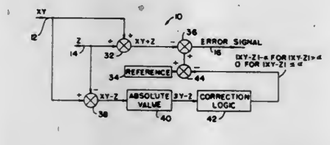
A data entry device with provision for automatically spacing the entry of digits is disclosed. In particular, an improved ten-key keyboard provides for entry of digits with automatic provision of a desired spacing between groups of digits as a result of operating a special key.

3,553,446
CARRY DETERMINATION LOGIC
Joseph F. Kruy, West Newton, Mass., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 4, 1966, Ser. No. 570,223
Int. Cl. G06f 7/50; H03k 19/10
U.S. Cl. 235—175 **9 Claims**



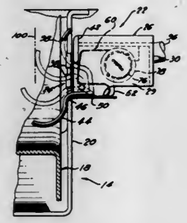
Carry determination logic for use in a conditional sum adder is constructed using high-speed tunnel diode circuitry connected with current switching circuitry for generating decision signals within one logical time unit.

3,553,447
STRUCTURE FOR AND METHOD OF LINEAR APPROXIMATION OF AN ARC
Robert L. Zimmerman, Royal Oak, and David W. Sallberg, Farmington, Mich., assignors to Pegasus Laboratories, Inc., Berkley, Mich., a corporation of Michigan
Filed May 28, 1968, Ser. No. 732,585
Int. Cl. G06g 7/28
U.S. Cl. 235—197 **18 Claims**



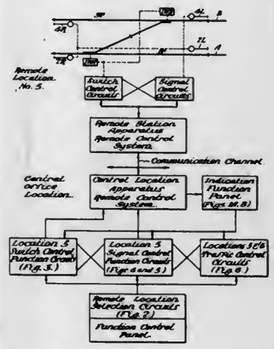
Structure for providing a multiple linear segment approximation of an arcuate segment and the method of such approximation for use in pattern tracer servocontrols or the like is disclosed.

3,553,448
CAR TRUNK SWITCH AND LAMP ASSEMBLY
Joseph W. Davis and Arthur J. Little, Springfield, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed Dec. 30, 1968, Ser. No. 787,822
Int. Cl. B60q 1/00
U.S. Cl. 240—7.1 **10 Claims**



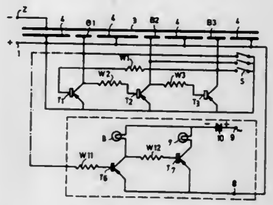
The following specification describes a hinge-operated, auto-trunk lamp and switch assembly having a scroll-shaped spring blade accommodating variations in travel of the switch-operating lever. The lever and switch are adjustably positioned relative the trunk lid hinge.

3,553,449
CENTRAL OFFICE CONTROL CIRCUITS FOR REMOTE CONTROL SYSTEMS
Homer L. Hathaway, Penn Hills Township, Allegheny County, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania
Filed July 1, 1968, Ser. No. 741,729
Int. Cl. B61l 27/00
U.S. Cl. 246—3 **10 Claims**



Remote control system machine circuits incorporating solid state circuitry based on NOR logic. Each control function request is processed through a NOR circuit network which performs suitability checks and conditions a flip-flop element to register, actuate transmission of, and store the requested function. Stored control functions provide within the machine circuits a continuous check of the existing function request for each controlled apparatus at each remote location. A remote location selection network associates the single typical set of control devices with the machine circuits for the location to which selected controls are to be transmitted. Indications of the condition of each item of apparatus at remote stations are received, registered, and displayed by the machine circuits.

3,553,450
DEVICE FOR ELECTRIC TOY AND MODEL RAILROAD INSTALLATION FOR CONTROLLING THE OPERATION OF VEHICLES THEREON
Max Ernst, 14 Lohengrinstrasse, 85 Nuernberg, Germany
Filed July 23, 1968, Ser. No. 746,966
Claims priority, application Germany, July 25, 1967, E 34,456
Int. Cl. B61l 21/10
U.S. Cl. 246—32 **8 Claims**

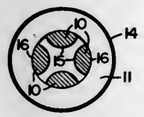


A block signal system for controlling the automatic operation of two locomotives in electric toy and model installations wherein the head of each block section, preferably provided with a signaling post, has an insulated track portion which is long enough so that a train with a locomotive arriving on the track portion at full speed is stopped ahead of the signaling post. The insulated track portions are connected to contact free electronic switches, particularly transistors which are placed under voltage while the control electrodes are connected through resistors to the rail portions of the respective preceding block section. If more than three block sections are provided they are connected to the insulated track portions associated with the block sections located farther back by two steps. The resistors preceding the control electrodes are selected so that the control current passing through a locomotive motor winding opens the corresponding electronic switches but does not put the locomotive motor into motion.

ERRATUM

For Class 246—63 see:
Patent No. 3,552,692

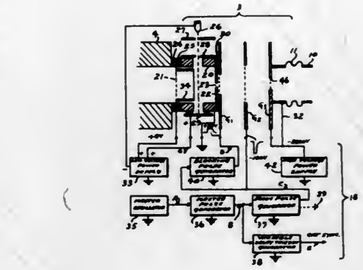
3,553,451
QUADRUPOLE IN WHICH THE POLE ELECTRODES COMPRISE METALLIC RODS WHOSE MOUNTING SURFACES COINCIDE WITH THOSE OF THE MOUNTING MEANS
Paul Michael Uthe, Livermore, Calif., assignor to UTI, Mountain View, Calif., a corporation of California
Filed Jan. 30, 1968, Ser. No. 701,745
Int. Cl. H01j 39/36
U.S. Cl. 250—41.9 **7 Claims**



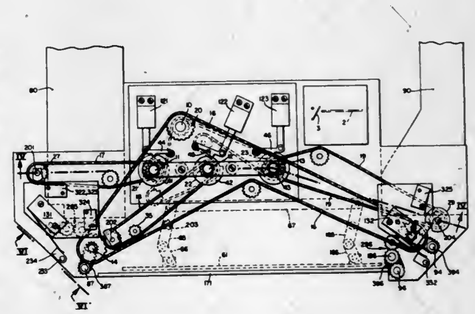
A quadrupole mass spectrometer is disclosed wherein the outwardly facing surfaces of elongated rods arranged in a rectangular array about a common space are of circular curvature in cross section having a radius of curvature conforming to the curvature of the inner surface of a plurality of ceramic cylinders having circular inner surface cross sections, axially enclosing and positioning the quadrupole rods.

3,553,452
TIME-OF-FLIGHT MASS SPECTROMETER OPERATIVE AT ELEVATED ION SOURCE PRESSURES
Thomas O. Tiernan, Centerville, and Carrol D. Miller, Dayton, Ohio, Jean H. Futrell, Salt Lake City, Utah, and Fred P. Abramson, Arcadia, Calif., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Feb. 17, 1969, Ser. No. 799,849
Int. Cl. H01j 39/34
U.S. Cl. 250—41.9 **5 Claims**

A time-of-flight mass spectrometer for the investigation of ion-molecule reactions at ion source pressures up to about 1 Torr. The ion source is operated with a continuous electron beam and a constant repeller voltage of the minimum value necessary to extract ions from the source. A shaped repeller and low electron trap potential are used to provide an uniform field in the source, resulting in a minimum kinetic energy range for the extracted ions. Focusing takes place in the low-pressure region outside the source bounded by the first and second grids between which the focusing pulse is applied. A concurrent blocking pulse is applied to the first grid to prevent ions entering the focusing region during the focusing operation.

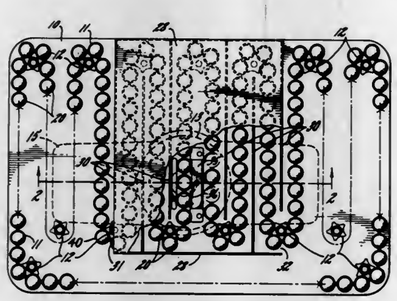


3,553,453
AUTOMATIC FILM LOADER FOR X-RAY MACHINE
William J. Hogan, Philadelphia, Pa., assignor to Sybron Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 16, 1968, Ser. No. 721,735
Int. Cl. H05g 1/02
U.S. Cl. 250—66 **6 Claims**



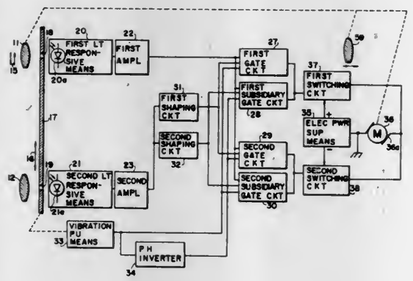
An automatic film loader for a chest X-ray machine is disclosed comprising a film supply magazine, automatic means for taking a film sheet from the supply magazine and moving it into position at the exposure station, and (following exposure) automatic means for moving the exposed film from the exposure station into a film-receiving magazine.

3,553,454
LABYRINTH LIGHT SEAL SYSTEM FOR A LIQUID SCINTILLATION COUNTING APPARATUS SAMPLE CHANGING MECHANISM
Robert E. Olson, Glen Ellyn, and Roy E. Smith, Villa Park, Ill., assignors to Packard Instrument Company, Inc., Downers Grove, Ill., a corporation of Delaware
Filed Nov. 7, 1967, Ser. No. 681,451
Int. Cl. G01j *39/18*; **G01t** *1/20*
U.S. Cl. 250—71.5 **5 Claims**



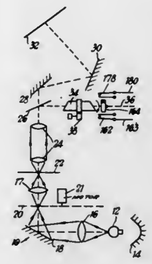
A light seal for a liquid scintillation counting apparatus sample changing mechanism is described in which a continuous sample conveyor feeding the counting chamber of the apparatus is disposed in a serpentine path within a light-tight tunnel enclosing a load-unload station.

3,553,455
AUTOMATIC FOCUSING APPARATUS BY MEANS OF PHASE DISCRIMINATION
Takayoshi Sato; Makoto Ohtake, Tokyo, and Isao Saruyama, Kawaguchi, Japan, assignors to Kabushiki Kaisha Koparu
Filed Feb. 26, 1969, Ser. No. 802,340
Claims priority, application Japan, Mar. 1, 1968, May 4, 1968, 43/13391;43/29704
Int. Cl. G01d *5/36*, **H01j** *39/12*
U.S. Cl. 250—201 **4 Claims**



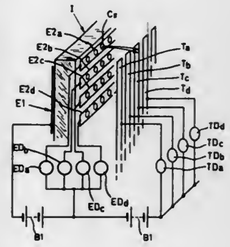
By arranging the optical system so as to perform the comparison of two types of rectangular waves so converted from two kinds of pattern of the object scanned after passing through a movable lens system and a fixed lens system, and to thereby control so as to reduce to nil amount of difference existing between the phases of these two rectangular waves, the distance between the object and the focal plane can be measured with greatly enhanced precision and speed.

3,553,456
READING OF PROJECTED TRACE ERRORS
John Ronald Parks and Ralph Eric Rengger, Teddington, England, assignors to National Research Development Corporation, London, England, a corporation of Great Britain
Filed May 31, 1968, Ser. No. 733,558
Claims priority, application Great Britain, May 31, 1967, 25,183/67
Int. Cl. G01n *21/30*; **G01b** *1/00*
U.S. Cl. 250—202 **16 Claims**



A method and apparatus are disclosed in which a trace is optically projected on photocells incorporated in electrical circuitry providing a signal indicating the nearest photocell to a reference point on which the trace image is incident. The photocells can be positioned in line from the reference point and the image rotated around the point. The trace can be related to a standard profile, the distance of its image from the reference point representing divergences of workpiece profile from the standard. Provision can be made for providing a further signal indicating the direction of any such divergence. Provision can also be made for suppression of the signals except when they result from incidence on a photocell of light intensity greater than ambient intensity. In an alternative arrangement, the photocells comprise rings concentric on the reference point. The photocells may instead form a semicircular array, the image being doubled about the edge diameter thereof, or a pair of such arrays, the image being duplicated for projection on each array.

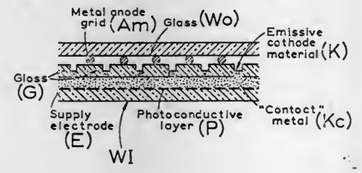
3,553,457
IMAGE INTENSIFIER INCLUDING MATRIX OF ELONGATED ELECTRODES FOR LOCATING OUTPUT SIGNALS GEOMETRICALLY
Brian William Manley, Burgess Hill, Sussex, England, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware. by mesne assignments
Filed July 10, 1968, Ser. No. 743,764
Claims priority, application Great Britain, July 12, 1967, 32016/67
Int. Cl. H01j *39/12*
U.S. Cl. 250—209 **5 Claims**



A particle detector system comprising a channel image intensifier having a planar output electrode subdivided into an array of parallel electrode conductors with each conductor

connected to a separate terminal, an array of parallel target conductors lying in a plane parallel to the electrode conductors on the output side of the device and orientated perpendicular to the electrode conductors, and a second set of terminals each of which is associated with one of the target conductors. The target conductors may be associated with luminescent elements to generate a two-dimensional visual display.

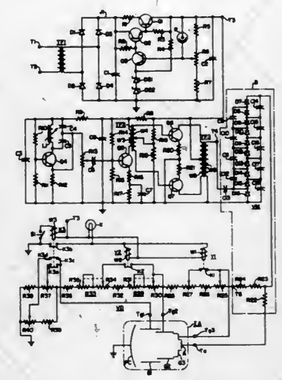
3,553,458
ELECTRICAL NEGATIVE-GLOW DISCHARGE DISPLAY DEVICES
Pieter Schagen, Surrey, England, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware. by mesne assignments
Filed Jan. 19, 1968, Ser. No. 699,267
Claims priority, application Great Britain, Oct. 26, 1967, 2,702/67
Int. Cl. H01l *17/00*
U.S. Cl. 250—213 **9 Claims**



An electrical display device employing a two-dimensional array of glow discharge cells formed by an insulating plate having a plurality of apertures therein defining a plurality of hollow cathodes. Each of these hollow cathodes is formed by a cathode pin on which a layer of emissive material is provided in each of the apertures spaced from one surface of the plate. The walls of each aperture are also covered with material sputtered thereon and thus forming a cathode recess, or hollow cathode in the plate. An anode common to all the cathodes and spaced from the edge of each recess to prevent cathode-anode tracking of sputtered cathode material is provided. The cathode recesses are viewable through this anode which may be in the form of a grid or transparent plate spaced from the cathode recesses. Each of the cathodes is connected to a common negative electrode through an element of photoconductive material and allows passage of input radiation to each of those elements to provide controlled feedback to each of the cells.

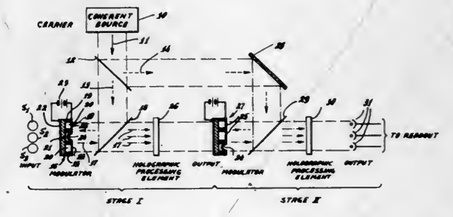
3,553,459
SOLID STATE POWER SUPPLY FOR AN IMAGE AMPLIFIER
Melvin P. Siedband, Baltimore, and Robert A. Boenning, Timonium, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 11, 1968, Ser. No. 736,226
Int. Cl. H01j *31/30*; **H02m** *3/32*; **H05b** *41/38*
U.S. Cl. 250—205 **9 Claims**

A power supply for use with a high voltage device, such as an image amplifier tube, is disclosed wherein the frequency of a tunable oscillator is adjusted so that there is optimum power translation through the transformer of the power supply to a voltage multiplier network, which may include a plurality of voltage doublers connected in series. The multiplied voltage is used for supplying the high voltage electrode of the device utilized such as the anode screen element of an image amplifier tube. A voltage divider network is provided to receive a portion of the multiplied voltage and includes a plurality of potentiometers for selecting various operating voltages which may be applied to various electrodes of a high voltage device, such as electronic lens elements of an image amplifier tube. A plurality of low voltage switches are utilized with the voltage divider network for



changing the operating levels of the device such as the magnification of an image amplifier tube.

3,553,460
REALIZATION OF COMBINATORIAL FUNCTIONS BY UTILIZING OPTICAL HOLOGRAPHY AND PHASE MODULATION BY INPUT INFORMATION
Kendall Preston, Jr., New Haven, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed June 12, 1968, Ser. No. 736,505
Int. Cl. G02f *3/00*; **H03k** *19/14*
U.S. Cl. 250—217 **28 Claims**

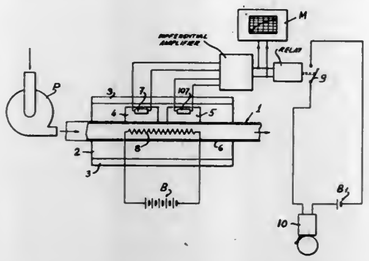


A method of processing information by combining regions of a radiant energy beam which have been modulated according to the information. The combination is performed according to a pattern of phase relationships which produces the desired function of the information. A preferred apparatus for performing this method includes a source of coherent radiation, means for phase modulating regions of the beam and a holographic processing element which corresponds to an array of points having the selected pattern of phase relationships. The output may be determined by a second modulating means associated with a subsequent processing stage or by a readout means.

3,553,461
METHOD AND APPARATUS FOR DETECTING THE PRESENCE OF DANGEROUS CONCENTRATIONS OF COMBUSTIBLE GASES OR VAPORS IN THE AIR
Matteo Siano, 2, Via del Cestello, and Guidi Guido Guidelli, 412B, Via Massarenti, both of Bologna, Italy
Filed Nov. 3, 1967, Ser. No. 680,558
Int. Cl. G01n *21/26*
U.S. Cl. 250—218 **8 Claims**

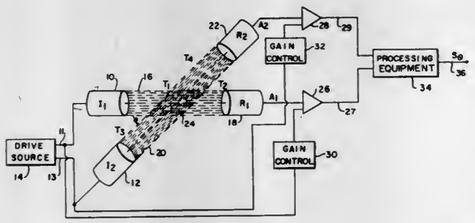
Method and apparatus for the continuous detection of relative amounts of combustible gases and vapors in ambient air and wherein the ambient air flows through a reaction

chamber in contact with an oxidation catalyst in the presence of a plurality of detecting means sensitive to the varying radi-



ant energy emitted along said catalyst in the direction of flow of the ambient air and means for receiving and comparing these different detected values.

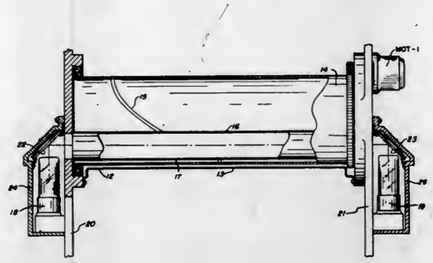
3,553,462
APPARATUS FOR DETERMINING THE RADIATION SCATTERING PROPERTIES OF A FLUID(AND BY EX.)
Dennis F. Johnson, Rockville, Md., assignor to Exotech Incorporated, Rockville, Md., a corporation of Delaware
Filed Dec. 31, 1969, Ser. No. 889,159
Int. Cl. G01n *21/26*
U.S. Cl. 250—218 **6 Claims**



Self-calibrating apparatus for determining the radiation scattering properties of a fluid. Radiation from a first source passes through the fluid in a first straight line path to a first radiation detector. Radiation from a second source passes through the fluid to a second radiation detector in a second straight line path intersecting the first path at the scattering angle of interest. The radiation detector outputs are combined to give the scattering coefficient.

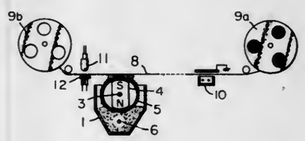
3,553,463
RADIATION SENSITIVE DOCUMENT SCANNING APPARATUS USING HELICAL SCANNER
Partap C. Dhir, Penfield, and Elliot H. Woodhull, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Nov. 24, 1967, Ser. No. 685,591
Int. Cl. G06k *9/00*
U.S. Cl. 250—219 **3 Claims**

Apparatus for scanning a document in which a document is supported on a support member and flood illuminated at a scanning station as it is advanced in relation thereto. The illuminated image of the document is directed at the scanning apparatus by a lens system and cut into a line of light by an aperture in an opaque plate. Increments of the line of light thus generated are metered to within an opaque tubular light collection member by an opaque rotating Cylinder having a transparent helical aperture therein. The opaque tubular collection member is mounted within the rotating cylinder and includes a transparent aperture therein which is optically aligned with the line cutting aperture. Light thus metered to within the collection member is reflected to photomultipliers located at either end thereof by the interior reflecting surface of the collection member. The photomultiplier tubes are



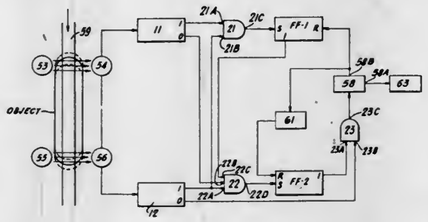
spaced from either end of the transparent aperture and operatively connected to provide an additive uniform output signal generated thereby.

3,553,464
DEVICE FOR DETECTING THE DENSITY OF DEVELOPER IN AN ELECTROSTATOGRAPHIC DUPLICATOR
Takeshi Abe, Tokyo, Japan, assignor to Kabushiki Kaisha Ricoh, Tokyo, Japan
Filed Mar. 19, 1968, Ser. No. 714,230
Claims priority, application Japan, Mar. 27, 1967, 42/18,674
Int. Cl. G01n *5/02*
U.S. Cl. 250—219 **2 Claims**



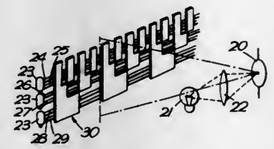
A device for automatically detecting the density of a developer made of a mixture of iron filings and developing colored powder or toner, that is, strictly speaking, detecting the quantity of the toner per unit volume of iron filings.

3,553,465
ELECTRONIC COUNTER FOR COUNTING SERIALLY ADVANCING OSCILLATING OBJECTS
Merle E. Martin, Dallas, Tex., assignor to Koppers Company, Inc., a corporation of Delaware
Filed Aug. 30, 1968, Ser. No. 756,548
Int. Cl. G06m *7/00;* **H01j** *39/12*
U.S. Cl. 250—223 **4 Claims**



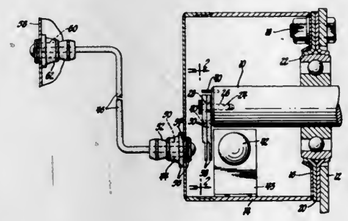
Objects which tend to oscillate about their centers of gravity are counted as the objects move in a line of travel past a zone comprised of a pair of transmitters on one side of the line of travel and a pair of receivers on the other side. A signal memory and processing circuit connects the receivers to registers for indicating the count. The circuit responds only to the simultaneous blocking of the transmission to the receivers and not to the blocking of a single receiver.

3,553,466
PLURALITY OF LONGITUDINALLY SCANNED FLUORESCENT LIGHT-CONDUCTIVE FIBERS DIFFERENTIALLY MASKED FOR BEAM POSITION DETECTION
James Stewart Johnston, Bognor Regis, England, assignor to Rosemount Engineering Company Limited, Bognor Regis, England
Filed Jan. 11, 1967, Ser. No. 608,568
Claims priority, application Great Britain, Jan. 13, 1966, 1,730/66
Int. Cl. G02b *5/16;* **G01d** *5/34*
U.S. Cl. 250—227 **10 Claims**



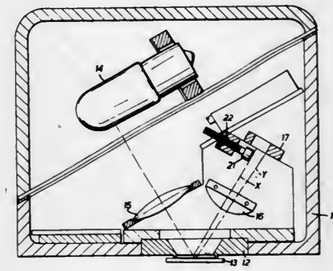
For detecting the position of a beam of radiation, e.g. a light beam from a mirror galvanometer or radioactive radiation from a radioactive source on a float in a liquid level detector, or for detecting the position of a movable element, a fiber of glass or other material is used which fluoresces under the radiation and a photocell is provided at the end of the fiber for detecting the fluorescent light transmitted along the fiber. In one arrangement a rotating mask is arranged around the fiber with apertures so that different parts of the length are exposed and thus the position of the radiation along the length of the fiber is fed out in serial digital form by the photocell output. In another construction a plurality of fibers with separate masks are used so that the various photocells give a parallel digital representation of the beam position.

3,553,467
ROTATABLE SHUTTER MEANS HAVING LIGHT-BLOCKING PORTION WHEN STATIONARY
Charles W. Ramsey, Niles, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 23, 1968, Ser. No. 769,965
Int. Cl. G01d *5/32;* **G02f** *1/30;* **G03k** *9/10*
U.S. Cl. 250—233 **5 Claims**



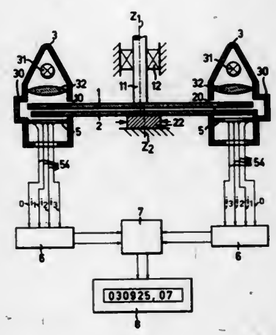
A shaft rotation sensor includes a pair of shutters pivotally mounted on the end of a rotatable shaft each carrying colored light filters. A pair of pins on the shaft each engage a shutter to cause shutter rotation during shaft rotation. When the shaft is stationary one or both of the shutters swings down to intercept and filter the light beam. The light beam is picked up by a fiber optic light conductor which presents a colored illumination at a display station when the shaft is stationary.

3,553,468
READING HEAD FOR DETECTING A MODULATED IMAGE
Michael John Dench, Bedford, England, assignor to George Richards & Company Limited
Filed Mar. 15, 1968, Ser. No. 713,342
Claims priority, application Great Britain, Mar. 15, 1967, 12093/67
Int. Cl. G01d *5/30;* **H01j** *3/16, 5/16*
U.S. Cl. 250—230 **9 Claims**



This invention is a reading head having a number of photo cells for cooperating with an optical grating to give a position signal. Light for illuminating the grating is also used to illuminate a part of the cells displaced from the part where the grating image appears for setting up the cells in the position of minimum illumination.

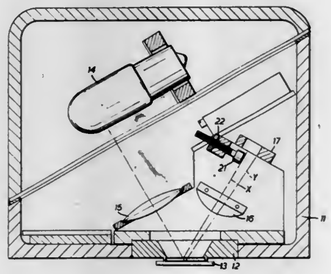
3,553,469
ARRANGEMENT FOR MEASURING ANGULAR ROTATION USING TWO MOIREE PATTERNS
Theo Stutz, Bassersdorf, and Peter Glauser, Glattbrugg, Switzerland, assignors to Contraves AG, Zurich, Switzerland
Filed Feb. 23, 1968, Ser. No. 707,739
Claims priority, application Switzerland, Feb. 23, 1967, 2689/67
Int. Cl. H01j *39/12;* **G01b** *11/26*
U.S. Cl. 250—237 **8 Claims**



For measuring the angular rotation between a first and second member a disc having a ringlike grating is mounted on each member. The gratings are identical, but the centers are displaced from each other. Light shining through the su-

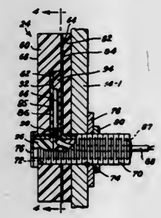
perimposed gratings generates Moirée patterns which are received by two groups of photocells situated diametrically opposite one another. Each group generates polyphase currents whose magnitude varies in synchronism with the motion between the gratings. The two groups of currents are evaluated to yield an angle.

3,553,470
APPARATUS FOR GENERATING AN APPROXIMATION TO A SINE WAVE INCLUDING A READING HEAD WITH TWO SPACED AREAS FOR SCANNING AN OPTICAL GRATING
Michael J. Dench, and Rowland Clive Robbins, Bedford, England, assignors to George Richards & Company Limited
Filed Mar. 15, 1968, Ser. No. 713,507
Claims priority, application Great Britain, Mar. 16, 1967, 12496/67
Int. Cl. H01j *5/16*
U.S. Cl. 250—237 **12 Claims**



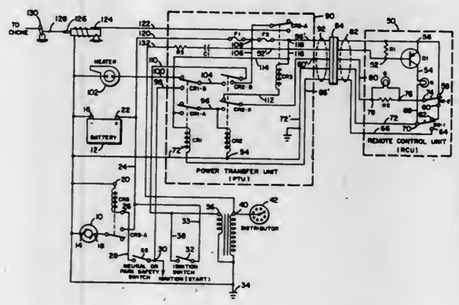
The invention is concerned with a reading head for moving in relation to an optical grating for giving a position signal. The position signal may be made very nearly the true sine wave by appropriate choice of the spacing between apertures in the head in relation to the pitch of the grating and/or by appropriate shape of the apertures.

3,553,471
AMBIENT-LIGHT-OPERATED BIN-LEVEL CONTROL SYSTEM HAVING TRANSPARENT PHOTOCELL HOUSING
Robert J. Maigret, Warwick, R.I., assignor to George Pesce, Warwick, R.I., a part interest
Filed Sept. 3, 1968, Ser. No. 756,881
Int. Cl. G06m *7/00*
U.S. Cl. 250—239 **7 Claims**



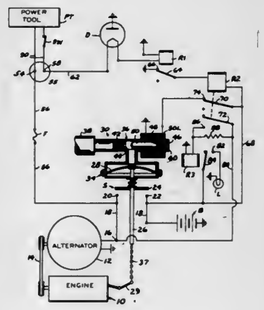
A storage bin-level sensor device for sensing the level of material in the storage bin between certain upper and lower limits and for controlling flow of material into the bin for maintaining a predetermined level therein. Maintaining the level of material in the storage bin is attained by upper and lower bin level sensors of the photoelectric type, which operate in response to the presence or absence of ambient light. Each sensor comprises a transparent housing that has a recess formed therein, a photoresponsive device being mounted within the recess. Striations are formed on the surface of the recess and act as a light-diffusing means. The housing is secured to the interior wall of the bin, and electrical leads emerge from the bin for connection to exteriorly located bin level response and control apparatus.

3,553,472
ENGINE STARTING SYSTEM
John S. Arlandson, 10417 Thomas Ave. South, Bloomington, Minn., and George J. Selin, 2757 Webster Ave., Saint Louis Park, Minn.
Filed Nov. 13, 1967, Ser. No. 682,407
Int. Cl. F02n *11/08*
U.S. Cl. 290—38 **10 Claims**



An engine starting system for starting internal combustion engines from a remote point is described. One system utilizes a control unit connected by a cable of electrical conductors to a power transfer unit located in the vicinity of the engine to be controlled. An alternative system illustrated includes a radio controlled system for controlling the power transfer unit. The remote control unit includes signal lights for visually indicating the operating condition of the engine being controlled.

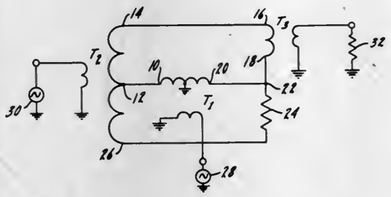
3,553,473
ALTERNATOR POWER SOURCE
Emett O. Meeks, P.O. Box 10493, Midwest City, Okla. 73110
Filed Nov. 12, 1968, Ser. No. 775,006
Int. Cl. H02p *9/04*
U.S. Cl. 290—40 **2 Claims**



A direct current power supply is obtained from a battery equipped vehicle engine driven alternator by a circuit and a

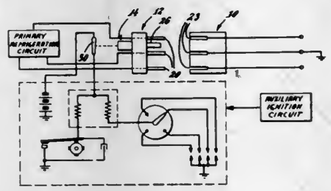
solenoid actuated vacuum operated battery disconnect switch. The solenoid is energized by a relay in response to closing the starting switch of a power tool connected to the alternator output wiring by the circuit.

3,553,474
BALUN ISOLATOR
Roger L. Kramer, Madison, Wis., and James Beyer, Salzgitter-Thiede, Germany, assignors to Oak Electro/Netics Corporation, Crystal Lake, Ill., a corporation of Delaware
Filed Apr. 17, 1969, Ser. No. 817,089
Int. Cl. H02j *3/00*
U.S. Cl. 307—17 **5 Claims**



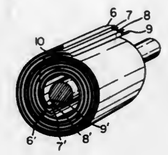
An electrical circuit which can be arranged to provide both isolation and power splitting. Three transformers are interconnected with the secondary of a first transformer being connected to the center tap of the secondary of a second transformer and to one side of the secondary of a third transformer. The other side of the secondary of the third transformer is connected to one side of the secondary of the second transformer with the first side of the secondary of the third transformer being connected to the other side of the secondary of the second transformer. When used as a power splitter, there is a signal generator in the primary of the third transformer and loads in the primaries of the first and second transformers. When used as a power isolator, there are signal input means in the primaries of the first and second transformers and a load in the primary circuit of the third transformer.

3,553,475
ELECTRICAL CIRCUIT WITH POWER INLET CONTROL
Richard A. Fee, Stratford, Conn., assignor to Harvey Hubbell Incorporated, Bridgeport, Conn., a corporation of Connecticut
Original application Nov. 25, 1966, Ser. No. 597,160, now Patent No. 3,452,167. Divided and this application Nov. 27, 1968, Ser. No. 800,302
Int. Cl. H02j *1/10*
U.S. Cl. 307—18 **2 Claims**



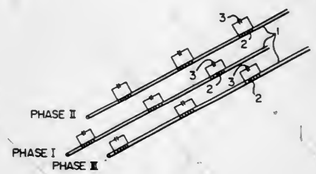
This disclosure relates to a primary circuit supplied with electrical power by a power inlet and an auxiliary circuit controlled by the power inlet. The power inlet carries an auxiliary circuit controlling switch which is actuated by the connecting and disconnecting of the power inlet with a mating electrical connector device to complete the primary circuit.

3,553,476
OSICLLATING ELEMENTS IN PARAMETRON DEVICES
Yu Hata and Hiroki Fujishima, Tokyo, Japan, assignors to TDK Electronics Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Aug. 3, 1967, Ser. No. 658,188
Claims priority, application Japan, Aug. 13, 1966, 41/53,069; 41/53,070; 41/53,071
Int. Cl. H03k *19/162, 19/168*
U.S. Cl. 307—88 **1 Claim**



This invention is an oscillating element in a parametron device characterized by winding an oscillating coil on a ferromagnetic film formed on the surface of a core and oscillating the coil by utilizing the stray capacity or stray inductance of said oscillating coil.

3,553,477
PARAMETRON DELAY LINE
Yu Hata, Tokyo, Japan, assignor to TDK Electronics Company Limited, Tokyo, Japan, a corporation of Japan
Filed Jan. 2, 1968, Ser. No. 694,988
Int. Cl. G11c *11/20;* **H03k** *19/162*
U.S. Cl. 307—88 **4 Claims**

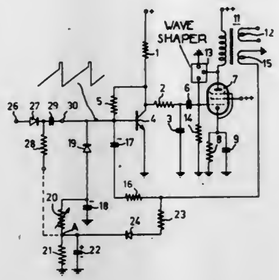


A parametron delay line characterized in that oscillating elements each having a plurality of oscillating windings arranged at proper intervals in the axial direction of a bar-shaped magnetic body are arranged polygonally so that the same parametron oscillating elements may be excited by the same beats.

3,553,478
PULSE GENERATOR
Heinz-Dieter Steinbacher, and Wilhelm Graffenberger, Hamburg, Germany, assignors to U. S. Philips Corporation, New York, N.Y., a corporation of Delaware by mesne assignments
Filed Jan. 31, 1968, Ser. No. 702,050
Claims priority, application Germany, Feb. 4, 1967, P41346
Int. Cl. H01j *29/70*
U.S. Cl. 307—108 **6 Claims**

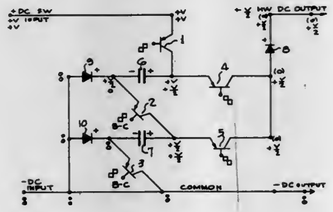
A sweep generator in which the forward conduction of an intermittently operated positive feedback path including a transistor and a pentode is maintained by the discharge of a grounded capacitor connected in the base circuit of the

transistor. A biased diode is connected between this capacitor and the base terminal of the transistor to block current



from flowing through the capacitor in response to an external synchronization signal applied to the base of the transistor.

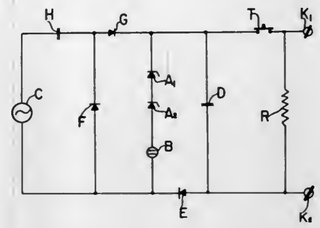
3,553,479
ELECTRICAL ENERGY CONVERSION BY SWITCHING OF STATIC STORAGE DEVICES
Dale H. Nelson, Box 395, Purchase, N.Y.
Filed Sept. 9, 1968, Ser. No. 758,511
Int. Cl. H02m *3/18*; **H03k** *17/66*
U.S. Cl. 307—110 **10 Claims**



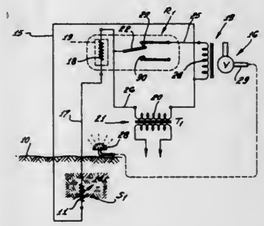
In electrical conversion systems, storage devices are selectively switched between charging and discharging states. Transistor switches are connected between the storage devices and cyclicly connect them in series. Other transistor switches and rectifiers connect the storage devices in parallel, alternating with the series connection. There is a common connection between either polarity of the input and either polarity of the output. The basic circuit is adaptable for use in various combinations to provide conversions of a complex nature and to provide a capability of a variety of types of conversion with the basic circuit.

3,553,480
CONDENSER-IGNITION DEVICE WITH A VACUUM DISCHARGE TUBE JOINED IN PARALLEL TO THE IGNITION CONDENSER
Kurt Lehmann, Sythen, and Guenther Kaminski, Haltern, Germany, **assignors to Wasag-Chemie Aktiengesellschaft, Essen, Germany, a corporation of Germany**
Filed Oct. 21, 1968, Ser. No. 769,160
Claims priority, application Germany, Nov. 14, 1967, 1,613,967
Int. Cl. H02m *3/18*
U.S. Cl. 307—110 **3 Claims**

The invention relates to a condenser-ignition device with a vacuum discharge tube which is joined in parallel to the ignition condenser together with, in series, an electrical valve, e.g. a Zener diode or the like, which becomes current conductive the moment the ignition voltage reaches the condenser. The ignition device is provided with a mechanical contact for the firing of shots.

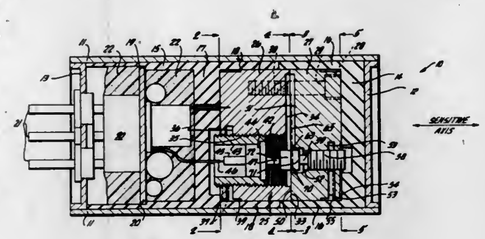


3,553,481
AUTOMATIC SOIL WATERING SYSTEM
Harold W. Hasenbeck, 1524 Almeda St., Pomona, Calif.
Filed July 24, 1968, Ser. No. 747,154
Int. Cl. A01g *25/00*
U.S. Cl. 307—118 **12 Claims**



The disclosure concerns automatic soil moisture control wherein irrigation is controlled in response to changes in resistance variation of a subsurface sensor or sensors, which changes are due to heat transfer as a function of soil moisture variation.

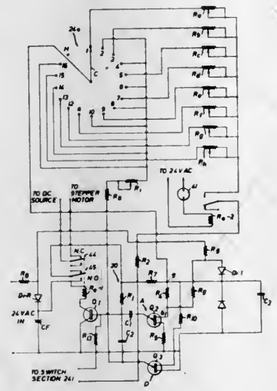
3,553,482
ACCELERATION SWITCH
John R. Tavis, Mariposa, Calif., assignor to Tavis Corporation, Mariposa, Calif., a corporation of California. by mesne assignments
Filed July 10, 1968, Ser. No. 743,856
Int. Cl. H01h *35/02*
U.S. Cl. 307—121 **9 Claims**



An acceleration switch having a pair of contacts arranged to open or close when subjected to a predetermined acceleration. One contact serves as a seismic mass and is mounted on a cantilevered beam which preferably is a tapered constant-stress leaf spring. The spring is pre-stressed

and is substantially flat and normal to a sensitive axis of the switch to minimize response to cross-axis forces. The contacts are coupled to a low-voltage low-current electrical circuit which provides a current output when the contacts are opened or closed at the set-point acceleration. The circuit is arranged to suppress switch response to vibratory forces which may be present with the static acceleration to be sensed.

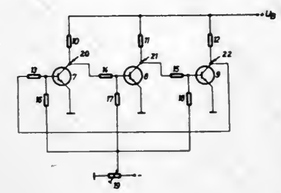
3,553,483
PROGRAMING MECHANISM
John R. Jarvis, Dallas, Tex., assignor to Cook Machinery Co., Inc., Dallas, Tex.
Filed Dec. 9, 1968, Ser. No. 782,178
Int. Cl. H03k *17/28*
U.S. Cl. 307—141 **13 Claims**



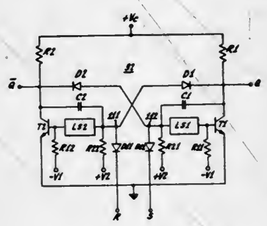
A programing mechanism is disclosed for controlling the application of power to apparatus performing successive steps in a process. The mechanism includes an electronic timer for controlling the time period of each step. The timer includes an R-C timing circuit, the R-C constant of which may be adjusted to any suitable value for each different step of the process by connecting into the circuit a different R-C circuit element, such as a variable resistor for each step in the process that the circuit controls. For this purpose, a multisection, multiposition stepping switch is connected to the RC timing circuit and a different variable resistor is connected to one or more of the terminals of the stepping switch so that as the switch is stepped to the next position a different R-C timing constant may be provided to control the time period of the electronic timer.

3,553,484
PULSE GENERATOR WITH TIME DELAY
Gerhard Guenter Gassmann, Berkheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 6, 1968, Ser. No. 710,940
Claims priority, application Germany, Mar. 15, 1967, ST26624
Int. Cl. H03k *17/28*
U.S. Cl. 307—141 **7 Claims**

A multistage transistor time-delay pulse generator in which the delay between stages conventionally produced by R-C networks is achieved by using the storage time phenomenon of transistors, and the capacitors are eliminated. In one embodiment a chain of three transistors stages are coupled solely by resistors with the last transistor feeding back to the base of the first transistor. Other embodiments use diodes or transistors instead of the resistors and in one such other embodiment instead of single transistors between successive stages a pair of transistors in tandem is employed.

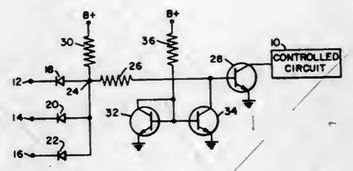


3,553,485
RFI-PROTECTED FLIP-FLOP
Frank C. Hassett, Chelmsford, Mass., assignor to RCA Corporation, a corporation of Delaware
Filed July 17, 1967, Ser. No. 653,919
Int. Cl. H03k *7/20*
U.S. Cl. 307—202 **9 Claims**



A radio frequency interference (RFI) protected flip-flop is described in an RFI environment of a computer controlled test area for mass produced articles. The RFI protected flip-flop includes an integrating feedback capacitor for each inverter device of the flip-flop.

3,553,486
HIGH NOISE IMMUNITY SYSTEM FOR INTEGRATED CIRCUITS
Bruce R. Dow, Murrysville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 6, 1968, Ser. No. 710,853
Int. Cl. H03k *17/00*
U.S. Cl. 307—213 **8 Claims**

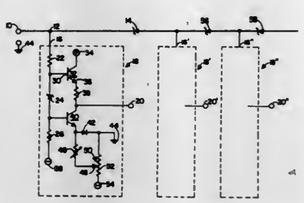


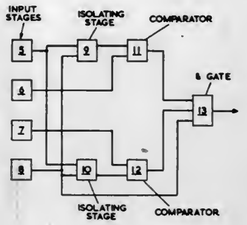
An input logic circuit for integrated circuits, particularly integrated circuits utilized in digital or pulse systems, prevents spurious signals (i.e., noise) from causing false triggering of the integrated circuit components.

3,553,487
CIRCUIT FOR GENERATING DISCONTINUOUS FUNCTIONS

John C. Freeborn, West Covina, Calif., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Oct. 12, 1967, Ser. No. 674,928
Int. Cl. G06g 7/12; H03k 5/20
U.S. Cl. 307—229 7 Claims



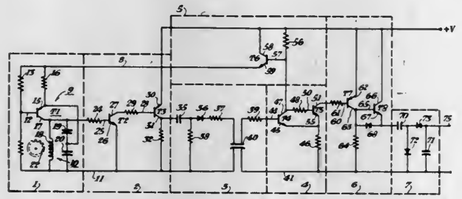


A multiple output voltage selective circuit wherein an individual output will follow a predetermined curve with respect to a continuously changing input voltage and wherein each of the output voltages may vary completely independently of the remaining output voltages.

3,553,488
FAIL-SAFE CIRCUIT ARRANGEMENT

John O. G. Darrow, Murrysville, and Raymond C. Franke, Allison Park, Pa., assignors to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania

Filed Feb. 6, 1968, Ser. No. 707,363
Int. Cl. G08b 21/00
U.S. Cl. 307—231 19 Claims



A fail-safe signal absence detection circuit conditioned by the presence of input signals for establishing one of two conductive states of a trigger and a switching circuit for maintaining an oscillating circuit in a nonoscillating condition wherein an output signal is not produced and conditioned by the absence of input signals for alternately establishing the two conductive states of the trigger and the switching circuit for permitting the oscillating circuit to assume an oscillating and a nonoscillating condition wherein an output signal is produced.

3,553,489
PHASE SEQUENCE COMPARATOR

Derek John Spencer and Eric Paddison, Stafford, England, assignors to The English Electric Company Limited, London, England, a British company

Filed Dec. 18, 1967, Ser. No. 691,474
Claims priority, application Great Britain, Dec. 16, 1966, 56,442/66
Int. Cl. H03k 23/30, 19/22
U.S. Cl. 307—232 6 Claims

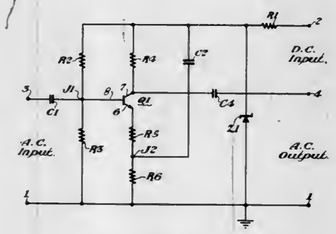
This invention relates to a comparator for sensing the sequence of four input signals A,B,C,D applied thereto in succession. In its basic concept the comparator comprises two bistable devices each having a first input connected in common to receive the signal A from one input stage and the signal D from another input stage. One of the devices has a second input for receiving the signal B and the other device has a second input for receiving the signal C.

With this circuit arrangement a coincident change of state occurs in both of the devices upon the occurrence of the signal D provided that the inputs to the one device are in the sequence A,B,D, and the inputs to the other device are in the sequence ACD. The outputs from these two devices are applied to an AND gate together with the pulse D whereby a coincidence of all three inputs to this gate is indicative of the input signals occurring in the sequence ABCD or ACBD.

3,553,490
LEVEL DETECTOR AMPLIFIER WITH CONTROLLABLE DEGENERATIVE FEEDBACK

John O. G. Darrow, Murrysville, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania

Filed Feb. 20, 1968, Ser. No. 706,915
Int. Cl. H03k 5/20
U.S. Cl. 307—235 16 Claims



A fail-safe level detector comprising an AC amplifier circuit and a voltage breakdown device for controlling the amount of degenerative feedback so that sufficient gain for producing an AC output signal only occurs when a predetermined level of DC voltage causes the breakdown device to conduct and to assume its low dynamic impedance condition.

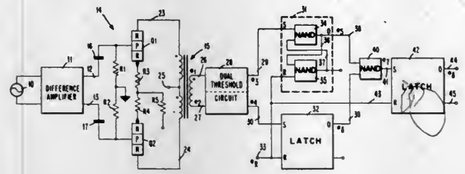
3,553,491
CIRCUIT FOR SENSING BINARY SIGNALS FROM A HIGH-SPEED MEMORY DEVICE

Raymond A. Schulz, Owego, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 10, 1969, Ser. No. 790,356
Int. Cl. H03k 5/20
U.S. Cl. 307—235 7 Claims

A high-speed memory device sensing circuit comprises a difference amplifier having outputs connected to threshold circuit means which detects positive going voltage signals. Outputs from the threshold circuits are connected to set a pair of latches when positive going signals are detected by the threshold circuits. Means for detecting the order in which the latches are set comprises a NAND gate and a third latch

connected to the output thereof which is set to produce an output signal when a binary one is read out of memory and

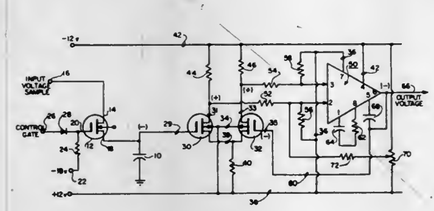


which remains in the reset condition when a binary zero signal is read out of memory.

3,553,492
VOLTAGE SAMPLING AND FOLLOWER AMPLIFIER

Alfred Bugay, Niagara Falls, N.Y., assignor to Sierra Research Corporation, a corporation of New York

Filed Sept. 5, 1967, Ser. No. 665,566
Int. Cl. H03k 5/20
U.S. Cl. 307—235 1 Claim



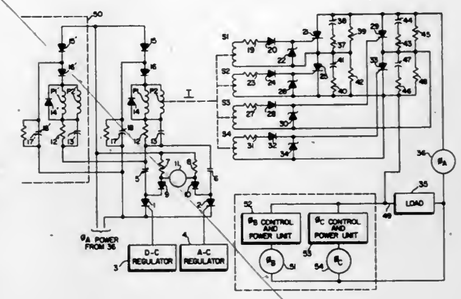
A semiconductor circuit for sampling and holding a voltage level appearing across a device which cannot be loaded without disturbing the voltage to be sampled, the illustrative circuit employing two field-effect transistors (F.E.T.), and taking advantage of their virtually-infinite input impedance characteristics to avoid loading. The first F.E.T. is connected to serve as the sampling voltage-level input, and the second F.E.T. is connected to sample the output of the circuit and to compensate for nonlinearity and temperature-sensitivity characteristics by driving, together with the first F.E.T., a differential amplifier having a high gain and a high degree of inverse feedback, the output of the differential amplifier following precisely the voltage level being sampled, but having a lower impedance characteristic which enables it to drive utilization circuits which may draw considerable currents. The charge on the storage capacitor which serves as the input device is updated by another F.E.T. serving as a switch.

3,553,493
APPARATUS FOR SIMULTANEOUSLY FIRING ARRAYS OF CONTROLLED SEMICONDUCTOR DEVICES

De Witt H. Miller, Waynesboro, Va., assignor to General Electric Company, a corporation of New York

Filed Apr. 4, 1967, Ser. No. 628,378
Int. Cl. H03k 17/00
U.S. Cl. 307—252 7 Claims

In order to simultaneously fire SCR's comprising a series/parallel array, a pulse transformer is utilized which has one or more primary windings and a plurality of secondary windings equally coupled to the primary magnetic circuit. The primary windings are energized by a selected master control gating SCR controlled in turn by a suitable regulator. The secondary windings simultaneously pulse control electrodes of power SCR's in the series/parallel array. A single master control gating SCR may energize a plurality of pulse transformers to control larger or separate arrays. Smooth transition from one master control gating SCR/regulator

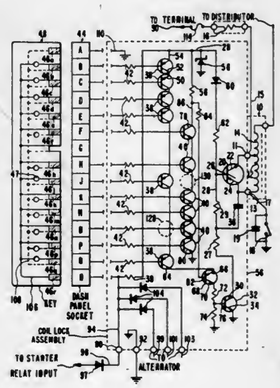


combination to another is achieved by nulling the anode voltages of the respective SCR's prior to the change.

3,553,494
ELECTRONIC CONTROL APPARATUS

Raymond L. Fuess, P. O. Box 9, Mountain View, Calif.

Filed Oct. 23, 1968, Ser. No. 769,890
Int. Cl. F02p 3/00
U.S. Cl. 307—252 7 Claims

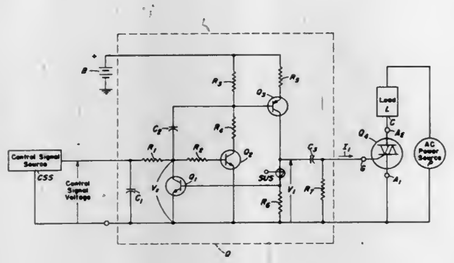


An electronic control apparatus applicable to a number of different actuatable structures of the type requiring a predetermined voltage level or current flow wherein the apparatus utilizes a decoding means having a plurality of current-carrying elements which are arranged in a manner so as to require simultaneous actuation in order to provide a desired enabling voltage or current flow for the structure with which the apparatus is connected. The apparatus is especially adapted for use as a lock for a system having an ignition coil for energy transfer between the windings of the coil can be effected only if the elements of the decoding means are simultaneously actuated.

3,553,495
FAIL-SAFE DRIVER CIRCUIT

William J. Shaugnessy, Basking Ridge, N.J., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware

Filed Apr. 14, 1967, Ser. No. 630,888
Int. Cl. H03k *3/26*
U.S. Cl. 307—284 10 Claims

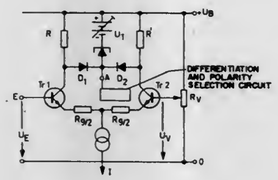


This invention employs a circuit serving as a high reliability driver for controlling a solid state bidirectional switch of, for example, the thyristor type. The driver circuit converts a low-energy DC control signal into a sufficiently large pulse repeated at a rapid rate so as to maintain the thyristor switch in continuous conduction when connected in series with an AC power source and a load.

3,553,496
SWITCHING ARRANGEMENT COMPRISING A TUNNEL DIODE

Werner Gustav Wilhelm Weiss, Gleboldehausen, Germany, assignor to Felten & Guilleaume Fernmeldeanlagen G.m.b.H., Nurnberg, Germany, a company of Germany

Filed Apr. 11, 1968, Ser. No. 720,519
Int. Cl. H03k *3/315*
U.S. Cl. 307—286 5 Claims

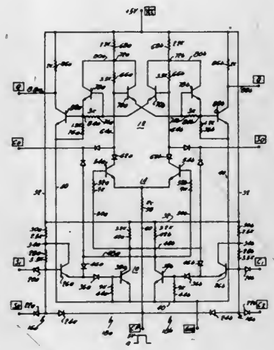


A switching arrangement comprising a tunnel diode, for the monitoring or control of a voltage range, having a differential amplifier with two outlets, one input of which is connected to a reference voltage, a series circuit of two diodes of opposite polarity being situated between its two outlets, at which the potential varies inversely, and wherein a series circuit of a tunnel diode and an adjustable source of direct voltage is arranged between the point of connection of these diodes and the nonearthed terminal of the source of supply voltage, in such a manner that the terminals of identical polarity of the two sources of voltage are interconnected, the direction of passage of the diodes being orientated towards the point of connection between the diodes and the tunnel diode, at which the output voltage is also tapped off.

3,553,497
BISTABLE FLIP-FLOP CIRCUIT WITH IMPROVED CONTROL OF CLOCK THRESHOLD

William C. Smith, Los Gatos, Calif., assignor to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Filed Mar. 1, 1968, Ser. No. 709,675
Int. Cl. H03k *3/12*
U.S. Cl. 307—291 1 Claim

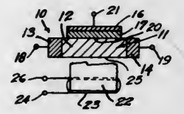


A bistable flip-flop circuit for use preferably in monolithic semiconductor integrated circuits having a master flip-flop at the circuit input and a slave output at the circuit output with coupling transistors between the two master and slave flip-flops. The emitters of the transistors coupled through a resistor to the clock pulse input so that the master flip-flop changes state responsive to the rise time of the clock pulse and the slave flip-flop changes state during the fall time of the clock pulse throughout an extended temperature range.

3,553,498
MAGNETORESISTANCE ELEMENT

Toshiyuki Yamada, Yokohama-shi, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan

Continuation-in-part of application Ser. No. 673,658, Oct. 9, 1967, now Patent No. 3,519,899. This application Feb. 12, 1968, Ser. No. 704,825
Int. Cl. H01l *11/00*
U.S. Cl. 307—299 9 Claims

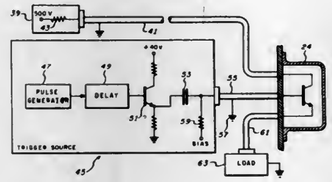


A magnetoresistance element with a control electrode which allows a control voltage to vary the electrical characteristics is disclosed. A semiconductor material of intrinsic property is provided with p- and n-regions spaced from each other and a control electrode is attached to the area between the p- and n-regions and an electric field is applied to vary the electrical characteristics. A magnetic field may also be applied to control the response of the element or alternatively the device may be utilized to detect the strength and direction of a magnetic field.

3,553,499
FAST-ACTING AVALANCHE MODE TRANSISTOR SWITCH

Hugh C. Maguire, Acton, Mass., assignor to Sperry Rand Corporation, a corporation of Delaware

Filed July 17, 1968, Ser. No. 745,487
Int. Cl. H01l *1/14*
U.S. Cl. 307—302 4 Claims

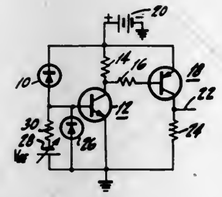


A transistor suitable for operation in the avalanche mode is connected in a switching circuit through coaxial lines. The outer conductors of the coaxial lines are electrically bonded to a base member and the center conductors of the coaxial lines are bored out to receive the ends of the transistor leads directly.

3,553,500
MICROSENSING NETWORK

Finnis C. Easter, Canoga Park, Calif., assignor to RCA Corporation, a corporation of Delaware

Filed Mar. 6, 1968, Ser. No. 711,113
Int. Cl. H03k *3/42*
U.S. Cl. 307—311 6 Claims

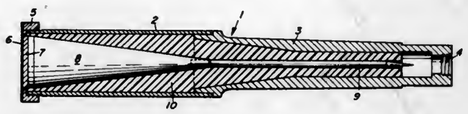


Disclosed herein is an amplifier circuit arrangement for sensing very small currents (in the microampere region) whose accuracy is unaffected by variations of the input characteristics of the amplifying device. A current generating signal means is directly coupled to the input of the amplifying device, whose input parameters may vary with temperature and from unit-to-unit. A second current generating means, also directly coupled to the amplifying device input, is used to bias the input and to set a current threshold level which the current generating signal means must overcome, before the amplifying device can traverse from one region of operation to another. The use of current generating means with their high impedances renders the current threshold level insensitive to the variations of the amplifying device input.

3,553,501
ULTRASONIC PIEZOELECTRIC TRANSDUCER CARTRIDGE

Richard E. Thill, St. Paul, Minn., assignor to the United States of America as represented by the Secretary of the Interior

Filed Feb. 16, 1968, Ser. No. 706,080
Int. Cl. H04r *17/00*
U.S. Cl. 310—8.2 6 Claims



A transducer cartridge assembly providing means to readily interchange transducer crystals and to match crystal impedance with that of the backing member.

3,553,502
GENERATOR DUCT FOR MAGNETOHYDRODYNAMIC GENERATORS

Tatsuo Kasahara; Yoshiaki Kazawa; Isao Kurita; Eiichi Ishibashi, and Hiroshi Hashimoto, Hitachi, Japan, assignors to Hitachi, Ltd., Tokyo-to, Japan

Filed May 24, 1968, Ser. No. 731,772
Int. Cl. H02n *4/02*
U.S. Cl. 310—11 12 Claims

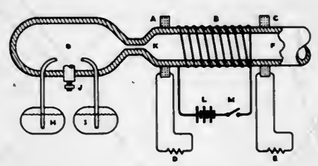


A generator duct for a magnetohydrodynamic generator constituted of an electrically and thermally conductive cooling jacket and thin insulating layers formed thereon at the side of the path of the fluid flowing through the cooling jacket, and providing means for generating a layer of insulating fluid over the surface of the conductive cooling jacket which may be additionally coated with an insulating material.

3,553,503
GENERATION OF ELECTRICITY

Louis R. O'Hare, 2700 Indiana Ave. NE., Albuquerque, N. Mex.

Filed June 5, 1968, Ser. No. 735,504
Int. Cl. H02n *4/02*
U.S. Cl. 310—11 2 Claims

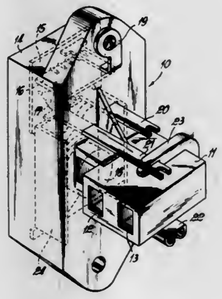


An MHD generator having a linear duct is provided with coaxial coils about the duct, comprising an exciting coil connected to a source of pulsating direct current and a relatively narrow output-load coil at each end of said exciting coil, one of the output coils being located relatively close to the exciting coil.

3,553,504
ENCAPSULATED BRUSH HOLDER AND SEMICONDUCTOR VOLTAGE REGULATOR UNIT FOR AUTOMOTIVE-TYPE ALTERNATOR

Gerhard Balcke, Neustadt, and Hans Reichelt, Stuttgart, Germany, assignors to Robert Bosch GmbH, Stuttgart, Germany, a Limited Liability company of Germany

Filed Dec. 26, 1968, Ser. No. 786,933
Claims priority, application Germany, Feb. 10, 1968, 1,613,982
Int. Cl. H02k 11/00
U.S. Cl. 310—68 3 Claims

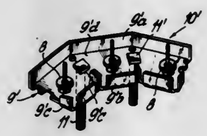


A brush holder section and voltage regulator section are combined as a single molding of plastic or the like, the voltage regulator section including an encapsulated semiconductor voltage regulator circuit, backed against the molding forming the brush holder, to form a single unitary integral assembly, for incorporation as a unit adjacent the slip rings of an alternator.

3,553,505
RECTIFIER DEVICE FOR ALTERNATING CURRENT LIGHTING GENERATOR

Suguru Sato, Shataku, Japan, assignor to Nippon Denso Kabushiki Kaisha, Aichi Ken, Kariya Shi, Showa Cho chome, Banchi, Japan

Filed Mar. 28, 1969, Ser. No. 811,323
Int. Cl. H02k 11/00
U.S. Cl. 310—68 6 Claims

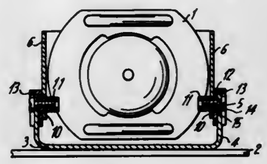


A rectifier device for an alternating current lighting generator for motor vehicles in which a carrier for carrying and cooling diodes of the device are arranged in a bearing shield of the generator and in which the carrier is formed from sheet metal strips provided with a plurality of cutouts extending uniformly spaced from each other and transversely to the longitudinal direction of the strip and then bent into a fan-shaped polygonal configuration, whereby the carrier may be produced with a minimum of scrap while having improved rigidity and heat dissipation.

3,553,506
MOUNT FOR PIVOTALLY SUPPORTING AN ELECTRIC MOTOR

Marcel Fresard, Petit-Lancy, Geneva, Switzerland, assignor to Mefina S.A., Fribourg, Switzerland, a company of Switzerland

Filed Oct. 31, 1968, Ser. No. 772,201
Claims priority, application Switzerland, Nov. 28, 1967, 16701/67
Int. Cl. H02k 5/00
U.S. Cl. 310—91 9 Claims

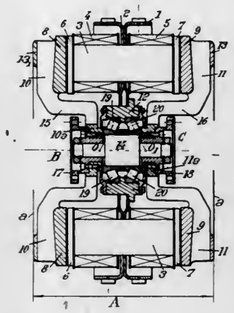


Two internally threaded electrically insulating sleeves are mounted in respective holes in the motor housing. Screws, passing through respective holes in respective feet of a bracket rigid with the sewing machine casing, are threaded into a respective sleeve. Each sleeve includes a flange and lip to ensure electrical insulation between the housing and bracket and to prevent the sleeve from turning with the motor as the latter is swung about the axle composed of the screws and sleeves.

3,553,507
RETARDERS

Pierre Etienne Bessiere, Golf-De-Saint-Nom-La-Breteche, France, assignor to Labavia-S.G.E., Paris, France

Filed Feb. 12, 1969, Ser. No. 798,732
Claims priority, application France, Feb. 29, 1968, May 2, 1968, 141866;150329
Int. Cl. H02k 49/12
U.S. Cl. 310—93 15 Claims

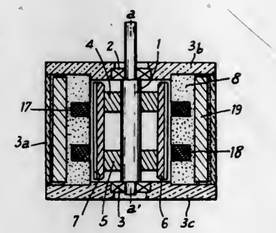


The retarder is self-contained and comprises a stator including an annular portion interposed between two rotor elements of a rotor fixed to a shaft rotatably mounted within a bore in a central portion of the stator by taper roller bearings adjacent opposite ends of the bore. The central portion of the stator is recessed with respect to the annular portion. Transmission coupling means lie in this recess and are connected to the adjacent rotor element by one or more members bent into the recess in the stator to define a corresponding recess in the rotor to accommodate part of a transmission connected to these coupling means.

3,553,508
ELECTRIC MOTOR WITH A PLURALITY OF RADIALLY ARRANGED BRIDGE-TYPE MAGNETIC CIRCUITS

Georges Stcherbatcheff, Paris, France, assignor to Societe Civile de Recherches en Matiere de micro-moteurs Electriques (S.O.C.R. & M.)

Filed Mar. 12, 1969, Ser. No. 806,579
Claims priority, application France, Mar. 22, 1968, 144,881
Int. Cl. H02k 21/00
U.S. Cl. 310—152 8 Claims

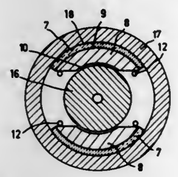


A plurality of pairs of radially disposed magnetically permeable plates with included permanent magnets disposed therebetween with the plates including cutout portions providing an annular volume for housing at least one electrical coil and which cutout portions also divide each pair of plates into at least first and second sets of tooth-shaped stator or field poles for bridge-type magnetic circuits in an electric motor. A concentrically disposed rotor is also provided with at least first and second sets of tooth-shaped rotor poles angularly phased to cooperate and magnetically couple with the sets of stator poles thus completing bridge-type magnetic circuits within the motor.

3,553,509
DIRECT-CURRENT MOTOR ENERGIZED BY PERMANENT MAGNETS

Jean Frantz Felix Camille Ceasar Schellekens, Grote Markt, Belgium, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware. by mesne assignments

Filed Jan. 21, 1969, Ser. No. 792,706
Claims priority, application Netherlands, Jan. 26, 1968, 6801183
Int. Cl. H02k 21/26
U.S. Cl. 310—154 2 Claims

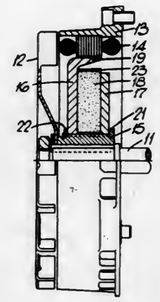


DC motor including a tubular stator housing having a pair of curved permanent magnets mounted on the inner surface thereof. A pair of magnetic pole pieces each comprising a segment of a cylinder are concentrically mounted in contact with the inner surface of the magnets. The outer circumference of the pole piece is at least 1½ times its inner surface thereby concentrating the magnetic flux and reducing the stray flux.

3,553,510
ROTOR FOR PERMANENT MAGNET ALTERNATOR

Kenneth Clayton Howey, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company

Filed July 8, 1968, Ser. No. 743,183
Claims priority, application Great Britain, July 7, 1967, 31445/67
Int. Cl. H02k 21/12
U.S. Cl. 310—156 9 Claims

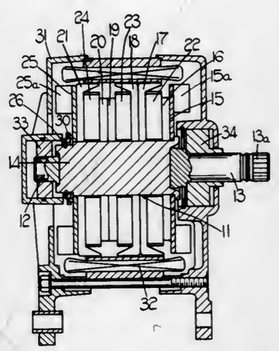


A rotor for a permanent magnet alternator includes a pair of spaced magnetic claws, the claws having interdigitated fingers. A ferrite or other sintered magnet is supported between the claws with the fingers of the claws overlying the periphery of the magnet, and the magnet is formed in at least two parts which can move radially relative to the claws. A nonmagnetic band engages the periphery of the magnet to limit movement of the parts of the magnet.

3,553,511
PERMANENT MAGNET ROTOR ASSEMBLY DIRECTLY SECURED ON NON-MAGNETIC SHAFT

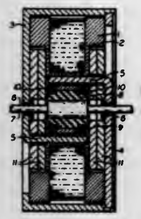
Robert Hemmings, Halesowen, and John William Archibald Hunt, Birmingham, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England, a British company

Filed Feb. 17, 1969, Ser. No. 799,584
Claims priority, application Great Britain, Feb. 23, 1968, 8817/68
Int. Cl. H02k 21/12
U.S. Cl. 310—156 4 Claims



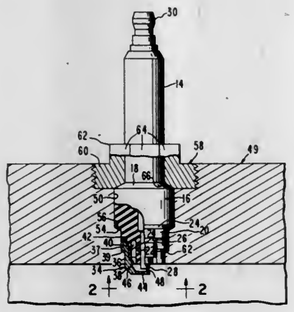
In a dynamoelectric machine in which a rotor shaft carries a permanent magnet rotor assembly, the rotor shaft has a pair of bearing portions which are spaced-apart by a central portion of nonmagnetic material. The bearing portions are secured to the central portion, which carries the permanent magnet rotor assembly.

3,553,512
SINGLE PHASE MOTOR
Wolfgang Vettermann, and Roland Sudler, Frankfurt am Main, Germany, assignors to Udo Tachometer Werke Adolf Schindling G.m.b.H., Frankfurt am Main, Germany, a corporation of Germany
Filed May 26, 1969, Ser. No. 827,728
Claims priority, application Austria, May 31, 1968, A5244/68
Int. Cl. H02k 27/04
U.S. Cl. 310—174 5 Claims



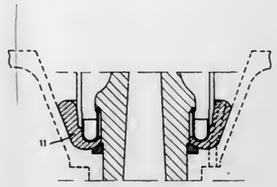
A single-phase motor with variable speed proportional to the frequency of the supply voltage, which comprises a split pole-hysteresis motor including split stator poles. The split stator poles include each a main pole and a auxiliary pole set off for a predetermined angle in peripheral direction and carrying a short-circuiting winding. The motor includes a rotor comprising radially magnetized, disc-or ring-shaped permanent magnets, for creation of the main portion of the synchronous torque, and a disc-or ring-shaped element, serving the creation of an asynchronous moment of a magnetizable material with distinct hysteresis. The cross section of the short-circuiting winding, disposed on the auxiliary poles, is dimensioned such, that the maximum of the asynchronous moment is created in the lower portion of the frequency range of the supply voltage.

3,553,513
GROUND ELECTRODE WITH A HIGH HEAT TRANSFER
Gilbert F. Wright, 511 Carlyn Court, Sunnyvale, Calif. 94086
Filed May 1, 1969, Ser. No. 820,962
Int. Cl. F23q 3/64, 3/66; H01t 13/20
U.S. Cl. 313—11.5 13 Claims



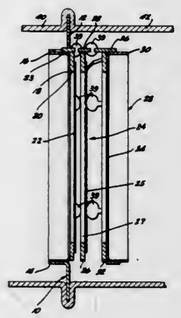
A spark plug having a core or main body of insulating material, a central electrode extending through the core member, a second electrode forming a spark gap with the first electrode; and a member for mounting the second electrode in place and to provide a heat transfer path between the body and an adjacent engine block when the spark plug is operatively coupled thereto. The mounting member is preferably cup-shaped to permit it to be press fitted on one end of the body so that it can be carried thereby.

3,553,514
A COOLING GASKET FOR OIL FILLED X-RAY TUBES
Werner Berends, Hamburg, Hermany, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed May 21, 1968, Ser. No. 730,788
Claims priority, application Germany, May 26, 1967, M74107
Int. Cl. H01j 35/02
U.S. Cl. 313—55 2 Claims



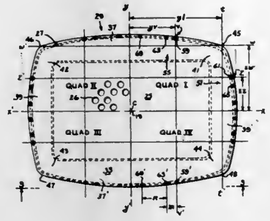
An X-ray tube in an oil-filled envelope has a stationary anode projecting beyond a glass envelope and is connected to the glass envelope by a metal alloy ring having a coefficient of expansion matching that of the glass. In order to prevent heat conduction between the metal ring and the oil filling, the ring is surrounded by a narrowly fitting foam layer covering the metal ring and glass envelope.

3,553,515
TARGET MOUNTING FOR SCAN CONVERTER TUBES
Katsuyoshi Fujimoto, Carlsbad, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Nov. 12, 1968, Ser. No. 775,073
Int. Cl. H01j 31/58, 1/96
U.S. Cl. 313—68 1 Claim



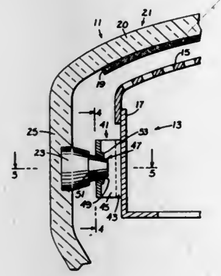
A target mounting arrangement for double-ended scan converter tubes is disclosed. A target assembly is provided having internal structure to support a storage mesh assembly centrally of the arrangement with read and write collector and collimator assemblies on opposed sides thereof. A support is secured to the assembly and comprises an annular radially outwardly directed flange which is interposed between two segments of the tube and is sealingly secured thereto. The support flange is preferably of a Kovar Material which can be readily sealed to the abutting glass tube ends. Strength, rigidity, and improved manufacturing economies result.

3,553,516
WELD DISTRIBUTION FOR SHADOW MASK TO FRAME ASSEMBLY
George R. Kautz, Seneca Falls, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Feb. 3, 1969, Ser. No. 795,861
Int. Cl. H01j 29/02
U.S. Cl. 313—85 2 Claims



An aperture mask-frame assembly for use in a color cathode ray tube wherein the foraminous portion is affixed to its supporting frame in a manner to provide the mask with floating corner sectors which are structurally strengthened by a pair of cooperating supporting welds discretely spaced on either side thereof to enhance thermal equilibrium between the mask and the frame and markedly improve the structural strength of each corner sector by inhibiting pivotal movement of the sector mask material about the terminal points of affixation.

3,553,517
SUPPORT MEANS FOR A COLOR CATHODE RAY TUBE SHADOW MASK MEMBER HAVING SMOOTH CIRCUMFERENTIAL SEATING CONTACT
Joseph Nazzareno DeBernardis, Seneca Falls, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Apr. 21, 1969, Ser. No. 817,936
Int. Cl. H01j 29/46, 1/88
U.S. Cl. 313—85 5 Claims



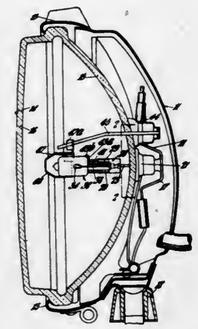
Means for supporting an electrode member in a cathode ray tube, in the region adjacent the screen area, are delineated as substantially resilient supporting members having discrete apertures formed therein to receive compatible positioning means protruding from the panel sidewall. The material portion of each supporting member, wherein the aperture is defined, has a funnel shaping imparted thereto to facilitate facile and positive mating of the supporting member with the positioning means.

3,553,518
IMAGE INTENSIFIERS FOR NIGHT VISION
Pieter Schagen, Lisseren, Surrey, England, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware, by mesne assignments
Filed Aug. 9, 1968, Ser. No. 751,544
Claims priority, application Great Britain, Aug. 10, 1967, 36,717/67
Int. Cl. H01j 39/00
U.S. Cl. 313—94 2 Claims



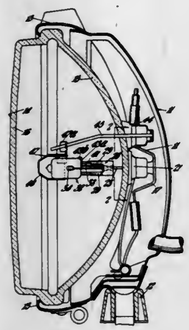
An image intensifier suitable for night vision which employs a channel intensifier, i.e., a plate-shaped resistive matrix provided with conductive coatings on opposite major faces which constitute input and output electrodes respectively connected by elongated passageways in the matrix which constitute secondary emissive channels. A photocathode responsive to infrared and near infrared radiation is positioned opposite the input electrode while a luminescent screen is positioned opposite the output electrode and luminesces under electron impact in the visible spectrum adjoining the infrared portion of the spectrum, i.e., in the red wavelengths.

3,553,519
HIGH INTENSITY VEHICLE LAMP WITH SHIELD PREVENTING UNWANTED REFLECTION
Harris Vernon Hicks, Lichfield, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Aug. 5, 1968, Ser. No. 750,165
Claims priority, application Great Britain, Aug. 16, 1967, 37696/67
Int. Cl. F21v 7/00; H01j 5/02
U.S. Cl. 313—113 2 Claims



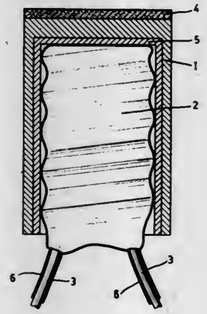
A lamp, for a road vehicle, of the kind including a reflector supporting a quartz iodine or equivalent high intensity bulb, and having a first light shield positioned with respect to the bulb so as to prevent light issuing from the lamp without first being reflected from the reflector, further includes a second light shield. The second light shield is positioned with respect to the bulb so as to prevent those light rays which have been refracted by the deformed portion of the envelope of the bulb, at the base of the bulb, and which would be reflected by the reflector so as to issue from the lamp upwardly relative to the axis of the reflector in use, from striking the reflector.

3,553,520
HIGH INTENSITY DRIVING LAMPS PARTICULARLY FOR ROAD VEHICLES
Harris Vernon Hicks, Lichfield, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Aug. 5, 1968, Ser. No. 750,166
Claims priority, application Great Britain, Aug. 16, 1967, 37695/67
Int. Cl. F21v 7/00; H01j 5/02
U.S. Cl. 313—113 **8 Claims**



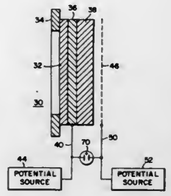
A sealed beam lamp includes a reflector, having a lens secured thereto and defining therewith a sealed enclosure. A quartz iodine or equivalent high intensity bulb is located within said enclosure, and is carried by the reflector, and a light shield for preventing light from the bulb issuing from the lamp, without first being reflected from the reflector, is associated with the bulb.

3,553,521
INDIRECTLY HEATED CATHODE FOR AN ELECTRON DISCHARGE TUBE WITH AN INSULATED HEATING ELEMENT
Marinus Antonius Maria Bakker and Johannes Christiaan Duran, Emmasingel, Eindhoven, Netherlands, assignors to U. S. Philips Corporation, New York, N.Y., a corporation of Delaware, by mesne assignments
Filed Jan. 29, 1968, Ser. No. 701,204
Claims priority, application Netherlands, Feb. 17, 1967, 6702376
Int. Cl. H01j 1/20, 19/14
U.S. Cl. 313—337 **2 Claims**



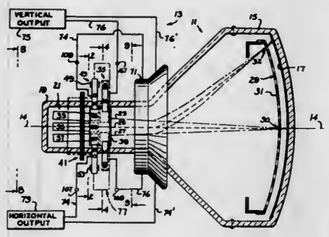
An indirectly heated cathode for electron discharge tube having a refractory metal support, e.g. molybdenum or tungsten, the inner surface of which is coated with a thin layer of a metal of the platinum group to minimize oxidation of the refractory metal. The cathode is insulated from a heating element by a layer of alumina which surrounds the heating element.

3,553,522
ELECTRONIC IMAGE DEVICE WITH PROTECTIVE CIRCUIT
Gene R. Feaster, Horseheads, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 30, 1968, Ser. No. 771,705
Int. Cl. H01j 31/48
U.S. Cl. 315—11 **1 Claim**



An electronic image system including a tube incorporating relatively thin electrode members is subject to damage by acquiring a high potential by friction induced static electricity with respect to other electronic tube elements. A permanent protective circuit is provided for such a damage susceptible electrode to protect the electrode from possible ambient contact with high voltages while still permitting the tube to function under normal operating voltages.

3,553,523
CONVERGENCE MEANS FOR PLURAL IN-LINE BEAM CATHODE RAY TUBE
Raymond A. Budd, Seneca Falls, N.Y., assignor to Sylvania Electric Products, Inc., a corporation of Delaware
Filed June 12, 1969, Ser. No. 832,557
Int. Cl. H01j 29/50
U.S. Cl. 315—13 **24 Claims**

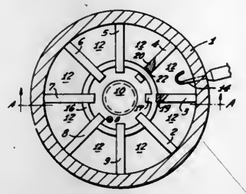


Horizontal convergence means for a plural in-line beam cathode ray tube wherein the horizontal static and dynamic convergences are accomplished by independently adjustable flux densities in two sets of common stationary core elements on either side of the gun assembly, and wherein vertical static convergence is effected by adjustable substantially symmetrical magnetic fields developed within the region of beam influence on each side of the gun assembly to move the side and center beams in a converging vertical manner. A combined convergence device is provided in a common support medium wherein the adjustments of all magnetic fields are accomplished at fixed and easily accessible locations.

3,553,524
MAGNETRON WITH IMPROVED VANE AND STRAP STRUCTURE
Donald G. Hill, Montoursville, Pa., assignor to Litton Precision Products, Inc., San Carlos, Calif., a corporation of Delaware
Filed Jan. 6, 1969, Ser. No. 789,131
Int. Cl. H01j 25/50, 23/22
U.S. Cl. 315—39.69 **9 Claims**

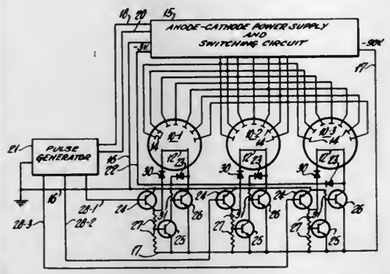
A vane and strap type magnetron is presented which includes a unique slot arrangement for receiving a thin strap. A

first relatively large opening is located proximate but spaced from the vane tip. A second opening in the form of a slot-like passage is located in the vane between the first opening and vane tip to form a passage therebetween. The strap is, broadly speaking, of a relatively flat washer-like geometry and fits through the slot-like opening into a position in the



large opening and in that position avoids contacting the vane. A second slot-like opening is vertically spaced from the above mentioned openings and provides a snug fit for a second horizontally spaced vane strap. The method of the invention includes an assembly procedure in which the vanes are pushed onto the straps.

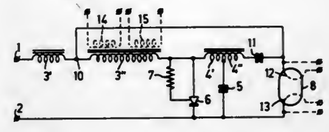
3,553,525
CATHODE HEATER ARRANGEMENT FOR VACUUM TYPE DISPLAY DEVICES
Francis A. McGuirk, Jr., Chatham, N.J., assignor to Wagner Electric Corporation, a corporation of Delaware
Filed May 28, 1969, Ser. No. 828,558
Int. Cl. H01j 1/72, 31/06
U.S. Cl. 315—95 **6 Claims**



A control circuit for controlling the symbols displayed by a plurality of lamp indicators, each having a cathode and a plurality of phosphor-coated anodes. The control circuit is adapted to control the showing of symbols when similar anodes in all the display devices are connected to a common supply conductor. During the showing of any symbol, the electron-emitting cathode is temporarily disconnected from its power supply by a series transistor. This type of control circuit is particularly adapted to the showing of digital information provided by a computer circuit. The circuit does not employ resistors which produce excessive heat and power consumption.

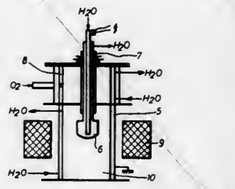
3,553,526
HIGH FREQUENCY GENERATOR FOR THE IGNITION OF A DISCHARGE LAMP
Jozef Cornelis Moerkens, and Antonius Johannes Van Den Bogaart, Emmasingel, Eindhoven, Netherlands, assignors to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware. by mesne assignments
Continuation of application Ser. No. 603,384, Dec. 20, 1966, now abandoned. This application Dec. 3, 1969, Ser. No. 876,171
Int. Cl. H05b 39/00, 41/14
U.S. Cl. 315—98 **5 Claims**

An ignition circuit for a gas discharge tube operated from an alternating current source which provides a high voltage and frequency starting signal to the tube as the source is reaching the peak output voltage. The control terminal of a voltage controlled switch is connected to the charging circuit



for a high frequency oscillator energized by the alternating current source to switch on the oscillator in response to a source voltage near the peak output of the source.

3,553,527
PROCESS AND APPARATUS FOR HEATING OXYGEN TO HIGH TEMPERATURE
Walter Gutsche, Krefeld, and Hans Zirngibl, Duisburg, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Nov. 28, 1967, Ser. No. 686,247
Claims priority, application Germany, Dec. 1, 1966, F50816
Int. Cl. H01j 7/24
U.S. Cl. 315—111 **8 Claims**

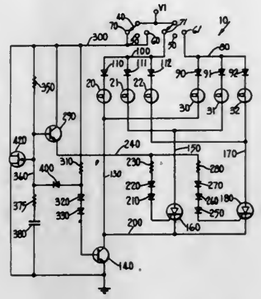


Electrode for producing electric arcs for heating oxygen-containing gas, composed of an electrode material such as a noble metal (e.g. silver, gold, etc.), a noble metal alloy or a composite substance constituting such nobel metal or alloy substantially uniformly distributed in compact carbon or graphite (the latter being formed e.g. by impregnation of the carbon or graphite with the liquid metal or alloy or by compression-molding and sintering, e.g. below 1000° C., of a powder mixture of the constituents) and e.g. forming a protective cohesive layer of metal over the surface of such carbon or graphite, said electrode material having a thermal conductivity, as measured at 29° C., which is greater than 0.33 cal/cm.s.° C. and the corresponding metal oxide thereof being unstable at a temperature above about 500° C; and process for heating oxygen or oxygen/inert gas mixture to above 1000° K. (e.g. 1000—4000° K) by means of an electric arc discharge produced by electrodes composed of said electrode material situated in the oxygen or oxygen/inert gas mixture to be heated, optionally with preheating of the gas medium to at most about 800° C., preferably with cooling of the electrodes (e.g. by water at 5—25°C.), using direct or alternating or three-phase current, and preferably with adjustment of the arc discharge resistance in dependence upon the flow velocity rate of the gas medium or by applying a magnetic field whereby to cause rapid movement of the focal point of the arc over the electrodes to minimize electrode wear.

3,553,528
LIGHT FLASHING CIRCUIT

Arpad Somlyody, Raritan, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Aug. 14, 1968, Ser. No. 752,557
Int. Cl. H05b *37/02*
U.S. Cl. 315—209 9 Claims

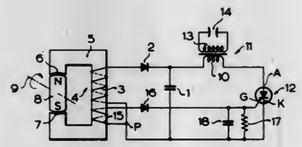


A light flashing circuit comprising a plurality of lamps to be turned on sequentially, each lamp being adapted to turn on at a different potential, with the various potentials being provided sequentially and repetitively in the circuit so that the sequence of flashing lights can be repeated as desired.

3,553,529
CONDENSER DISCHARGE TYPE IGNITION SYSTEM WITH A MAGNETO POWER SUPPLY

Gert Strelow, Stuttgart-Stammheim, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed May 1, 1968, Ser. No. 725,615
Claims priority, application Germany, May 9, 1967, B92,424
Int. Cl. F02p *1/02, 3/08*
U.S. Cl. 315—218 10 Claims

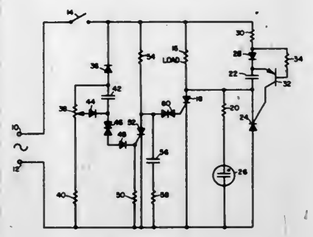


An ignition arrangement for firing spark plugs in internal combustion engine without the aid of a battery or electrical power supply. The energy required for firing the spark plugs is derived from the rotating crank shaft on the engine to which a permanent magnetic member is coupled. The magnetic member moves within the path of a ferromagnetic core upon which a charging winding and an auxiliary winding are wound. The motion of the permanent magnetic member varies the magnetic flux through the core and thereby induces voltages in the two windings wound upon the core. An ignition capacitor connected to the charging winding and the control electrode of a semiconductor control rectifier is connected to the auxiliary winding. The capacitor is charged from the voltage induced in the charging winding, and is discharged through the primary winding of an ignition transformer. The discharge of the capacitor is controlled by the semiconductor control rectifier, by the voltage applied to its control electrode. The spark plug to be fired is connected across the secondary winding of the ignition transformer, and the firing electrical impulse is induced in the secondary winding upon the discharge of the capacitor through the primary winding.

3,553,530
AUTOMATICALLY RESETTING OVERVOLTAGE PROTECTION MEANS FOR AN ALTERNATING CURRENT CIRCUIT

Robert Ernest Gregson, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed July 3, 1969, Ser. No. 838,829
Int. Cl. H02h *3/04, 3/20*
U.S. Cl. 317—16 7 Claims

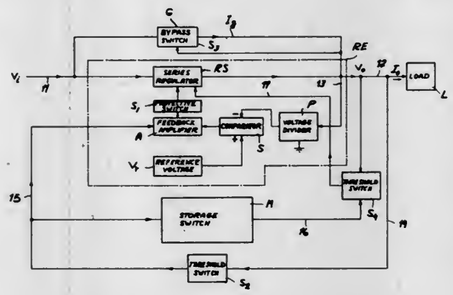


An overvoltage protection circuit is disclosed in which the voltage across the line that is applied to the load is sampled during an early portion of a half-cycle. If this voltage is too high, during the next half-cycle, the circuit supplying the load is broken and the supply circuit remains broken for one complete cycle after the half-cycle during which the sampled overvoltage is taken. Since the voltage is sampled during alternate half-cycles, and the circuit is broken during the next half-cycles, the overvoltage protective circuit operates within one cycle and also automatically resets result when the overvoltage disappears.

3,553,531
VOLTAGE STABILIZER WITH OVERLOAD PROTECTION AND AUTOMATIC RESTORATION

Augusto Rimondini and Primo Foresti, Milan, Italy, assignors to Societa Italiana Telecomunicazioni Siemens S.p.A., a corporation of Italy

Filed May 8, 1969, Ser. No. 823,049
Claims priority, application Italy, Jan. 15, 1969, 16266A/68
Int. Cl. H02h *5/00*; G05f *1/58*
U.S. Cl. 317—23 10 Claims

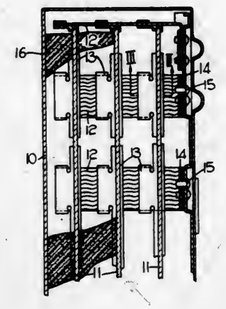


The voltage developed across a partly capacitive load L is stabilized by a transistor Ts_1, connected in series with the load, which has a feedback loop including an amplifier A receiving the output of a comparator S matching the load voltage against a fixed reference voltage. Upon cut-in, the feedback amplifier and the series transistor are blocked and a bypass G supplies a trickle current I_g which, as the load voltage V_u builds up to a relatively low first level V_4, unblocks the series transistor via a threshold network S_4 whereupon normal load current begins to flow and, as the load voltage reaches a higher second level V_2, the feedback amplifier is activated through another threshold network S_2 to initiate voltage regulation. If, on overload or short circuit, the load voltage temporarily drops below its normal level V_1, a current-limiting network S_1 blocks the series transistor; a sustained voltage reduction below the second level V_2 deactivates the feedback amplifier, resumption of normal operation with removal of the overload being delayed by a storage circuit M having a time constant greater than that of the load. A further threshold network S_3 disconnects the bypass under normal operating conditions.

3,553,532
HOUSINGS CONTAINING TILES CARRYING ELECTRICAL PRINTED CIRCUITS WITH THERMAL AND ELECTRICAL CONNECTING STRAPS MADE FROM BRAIDED METAL

Anthony Ernest Cheshire, Sparkbrook, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Nov. 22, 1968, Ser. No. 778,143
Claims priority, application Great Britain, Nov. 23, 1967, 53,356/67
Int. Cl. H05k *7/20, 1/06*
U.S. Cl. 317—100 2 Claims

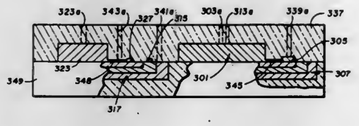


An assembly comprising at least one tile mounted in a housing, foamed plastics material for supporting the tile in the housing, and at least one flexible metallic strap connected through a metal shoe to a metallized edge portion of the tile, at least one end of the strap being secured to the housing.

3,553,533
DIELECTRIC BODIES WITH SELECTIVELY FORMED CONDUCTIVE OR METALLIC PORTIONS, COMPOSITES THEREOF WITH SEMICONDUCTOR MATERIAL AND METHODS OF MAKING SAID BODIES AND COMPOSITES

Rolf R. Haberecht, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Continuation-in-part of application Ser. No. 367,462, May 14, 1964. Division of application Sept. 18, 1964, Ser. No. 398,480, now Patent No. 3,390,012, dated June 25, 1968. This application Feb. 2, 1968, Ser. No. 720,009
Int. Cl. H01h 1/16; H01l 5/00
U.S. Cl. 317—101 29 Claims

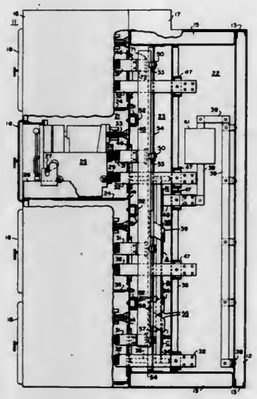


11. A circuit board comprising a dielectric substrate of yttrium iron garnet having an autogeneously formed conductive portion defining a conductive path thereon, said conductive portion comprising a part that has a comparatively high conductivity and a part contiguous with said comparatively conductive part that is less conductive, whereby said latter part effectively defines a resistor on said conductive path.

3,553,534
METAL-ENCLOSED SWITCHGEAR WITH IMPROVED BUS BAR CONNECTION MEANS

Fred Bould and John H. Taylor, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Dec. 31, 1968, Ser. No. 788,176
Int. Cl. H02b 11/04, 11/06
U.S. Cl. 317—103 17 Claims

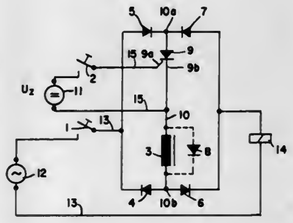


Each section or cell of a three-phase metal-enclosed switchgear unit, which may include a plurality of cells, has a breaker compartment at the front, a cable compartment at the rear, and a bus or conductor compartment between the cable compartment and the breaker compartment. The bus compartment contains horizontally extending main phase bus bars and vertically extending riser conductors for connecting the bus bars to the circuit breakers, or other circuit controlling devices, by means of stab conductors at different elevations in the breaker compartment. Feeder conductors extend horizontally from the circuit breakers through the bus compartment and terminate in the cable compartment.

3,553,535
SWITCHING CIRCUIT

Paul A. Weber, Freiburg, Breisgau, Germany, assignor to Fritz Hellige & Co. G.m.b.H., Freiburg im Breisgau, Germany

Filed Feb. 19, 1968, Ser. No. 706,440
Claims priority, application Germany, Feb. 19, 1968, H 61,906
Int. Cl. H01h 47/32
U.S. Cl. 317—148.5 3 Claims

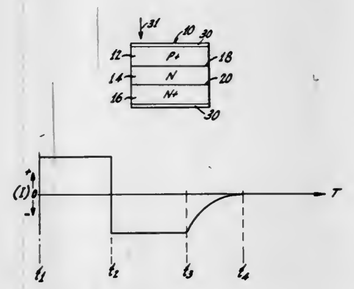


A switching circuit for controlling alternating current relays or direct current relays utilizing a controlled current-rectifier in series with a parallel arrangement of a holding choke and a diode. A pulsating direct current source is utilized to ignite the controlled current-rectifier and a parallel circuit of the holding choke and diode cooperates with the controlled current-rectifier to ensure that the rectifier is conductive during certain short term intervals, such as interruptions of the ignition voltage or when the current would tend to fall below the threshold value.

3,553,536
SEMICONDUCTOR RECTIFIERS HAVING CONTROLLED STORAGE AND RECOVERY CHARACTERISTICS

John M. S. Neilson, Mountaintop, Pa., assignor to RCA Corporation, a corporation of Delaware

Filed Nov. 19, 1968, Ser. No. 776,991
Int. Cl. H01l 3/00
U.S. Cl. 317—235 8 Claims



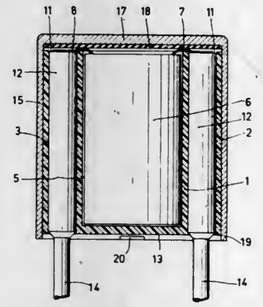
In semiconductor rectifiers comprising two heavily doped regions of N and P conductivity contiguous to and separated by a base region, different rectifiers having various combinations of storage time and switching recovery rate are obtained by various combinations of certain ones

of the physical parameters of the devices, such as the doping concentrations at the junctions of the device, the type and resistivity of the base region, and the use of carrier lifetime reducing doping materials.

3,553,537
ELECTRIC COMPONENT FOR USE WITH PRINTED WIRING

Hendrik Voeten, Centuurbaan, Zwolle, Netherlands, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 4, 1969, Ser. No. 796,421
Claims priority, application Netherlands, Feb. 9, 1968, 6801827
Int. Cl. H01g 1/02
U.S. Cl. 317—230 9 Claims

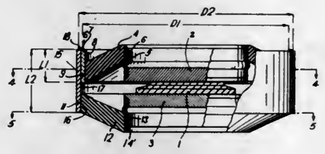


Electric component suitable for being mounted to printed wiring, in which a circuit element, particularly an electrolytic capacitor is accommodated in a unilaterally open recess of a synthetic resin body, covered by the bottom of a box slipped on the body and clamping around it. The body includes, parallel to its sidewall, current supply pins, one end of solderable metal of which projected outwardly, whereas the other end of film-forming metal is connected to the electrolytic capacitor.

3,553,538
PRESSURE CONTACT SEMICONDUCTOR DEVICE

Vlastimil Bezouska, Pruhonice, and Jan Pivrnec, Jiri Hrdlicka, Evzen Krasa, and Zdenek Smekal, Prague, Czechoslovakia, assignors to CKD Praha, oborovy podnik, Prague, Czechoslovakia

Filed Nov. 12, 1968, Ser. No. 776,003
Claims priority, application Czechoslovakia, Nov. 9, 1967, 7,950/67; Dec. 4, 1967, 8,569/67; May 18, 1968, 3,649/68
Int. Cl. H01l 3/00, 5/00
U.S. Cl. 317—234 11 Claims

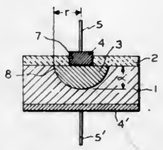


In the semiconductor assemblies, a plate shaped semiconductor element interposed between the contact faces of two electrodes, a first and second frame member fixed to the outer surface of each of the electrodes respectively, the frame members each being provided with circumferential cylindrical members adapted to telescopingly fit, one within the other, to retain the assembly therein.

3,553,539
MICROWAVE-OSCILLATING DEVICE AND THE METHOD OF MAKING SAME

Shinichi Nakashima, Suita, Masumi Takeshima, Takatsuki, and Yukio Miyai, Osaka, Japan, assignors to Matsushita Electronics Corporation, Kadoma, Osaka Prefecture, Japan

Filed Nov. 15, 1968, Ser. No. 776,214
Claims priority, application Japan, Nov. 22, 1967, 42/75,584
Int. Cl. H01l 5/02
U.S. Cl. 317—234 4 Claims

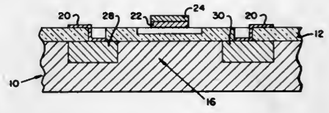


A planar type microwave-oscillating semiconductor diode having a PN junction in a semiconductor substrate. The PN junction has the shape of a spherical surface extending into the substrate at its center to a depth *d* which is at least one fourth of the radius *r* at the surface of said substrate. Such a semiconductor diode has increased oscillation frequency and output power. The diode can be made by forming a diffusion preventing mask on a germanium substrate of a certain type of electric conductivity having an impurity concentration ranging from 1×10^{14} to 1×10^{18} atoms/cm.^{3}, and by deeply diffusing through a small diffusion hole in said mask an impurity which will make the conductivity opposite to that of said substrate.

3,553,540
MAGNETIC-FIELD-SENSING FIELD-EFFECT TRANSISTOR

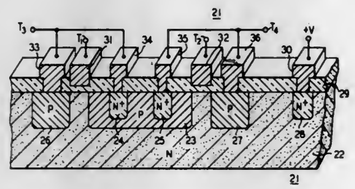
William H. Puterbaugh, Jr., Sunnyvale, Calif., assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

Continuation of application Ser. No. 622,742, Mar. 13, 1967. This application Jan. 8, 1969, Ser. No. 789,756
Int. Cl. H01l 11/14
U.S. Cl. 317—235 9 Claims



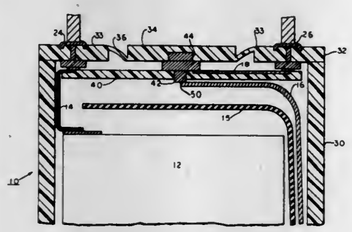
A megnetic-field-sensing device is constructed by suspending an electrically conductive bar, that has at least one magnetic region, above the channel between the source and the drain of a metal-oxide-semiconductor field-effect transistor (MOS). The suspended bar acts as the gate electrode and is connected to a D.C. bias voltage supply. The suspended bar can be made by overlaying magnetic material on a suitable electrical conductor, or it can be constructed entirely of an electrically conductive magnetic material, which may be a high-resistance material if desired. A magnetic field in the vicinity of the suspended bar causes mechanical displacement of the suspended bar, thereby altering the electrostatic field in the vicinity of the channel region. The altered electrostatic field affects the inversion layer within the channel, causing a change in conductivity, thus producing a change in the source-to-drain current as a function of the magnetic field.

3,553,541
BILATERAL SWITCH USING COMBINATION OF FIELD EFFECT TRANSISTORS AND BIPOLAR TRANSISTORS
Ernam F. King, Allentown, Pa., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Apr. 17, 1969, Ser. No. 817,028
Int. Cl. H01l *19/00*
U.S. Cl. 317—235 6 Claims



The functions of a plurality of insulated gate field effect transistors and bipolar transistors are combined in a compound device which is electrically symmetrical (bilateral) and which has very high input impedance, low output impedance, and high current gain. The device is advantageously employed as a bilateral coupling element in digital integrated circuits, e.g., semiconductor memories, DC shift registers, and dynamic shift registers.

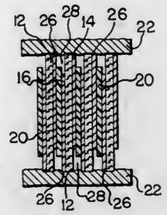
3,553,542
CAPACITOR DISCONNECT DEVICE
Paul H. Netherwood, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Aug. 21, 1969, Ser. No. 851,823
Int. Cl. H01g *1/11*
U.S. Cl. 317—247 4 Claims



A capacitor disconnect device in which a plactic cover for the capacitor casing has a entral part joined by flexible portions or hinges to the rest of the over and which is expandably distorted and causes an open in the current flow of the capacitor upon an unsafe accumulation of pressure within the capacitor housing.

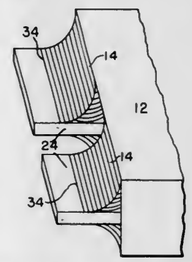
3,553,543
CONVOLUTELY WOUND CAPACITOR
Paul H. Netherwood, Williamstown, Mass., assignor to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed May 7, 1969, Ser. No. 822,510
Int. Cl. H01g *3/17*
U.S. Cl. 317—258 10 Claims

A convolutely wound capacitor has a comparatively nonmeltable dielectric film having a metallization layer in extended electrode fashion on opposite surfaces thereof. A comparatively meltable dielectric film is positioned against at least one metallization layer. The films are convolutely wound so that said comparatively meltable film separates the metallization layers. Applied-while-molten metal terminals are in contact with at least part



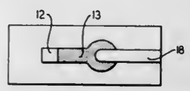
of the extended region of each metallization layer. The comparatively nonmeltable dielectric is nonmeltable at temperatures which melt the meltable dielectric.

3,553,544
STACKED CAPACITOR
Henry F. Puppolo, North Adams, and Mark Markarian, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Filed Sept. 16, 1969, Ser. No. 858,487
Int. Cl. H01g *1/01, 1/08*
U.S. Cl. 317—258 4 Claims



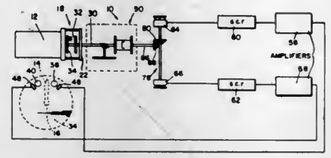
T-shaped planar electrodes are stacked in a capacitor unit with interposed dielectric spacers. Alternate electrodes are reversed and oppositely disposed in the stack such that their T-wings are laterally spaced and longitudinally extended at the ends of the unit, permitting direct connection to a heavy feed-thru terminal located mid-way in the stack within each of the T-wings and running its length.

3,553,545
CAPACITOR WITH HAFNIUM DIOXIDE DIELECTRIC
Dieter Gerstenberg, Allentown, Pa., and Frank T. J. Smith, Bedford, Mass., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Original application Feb. 26, 1968, Ser. No. 708,339. Divided and this application Sept. 29, 1969, Ser. No. 861,906
Int. Cl. H01g *1/01*
U.S. Cl. 317—258 2 Claims



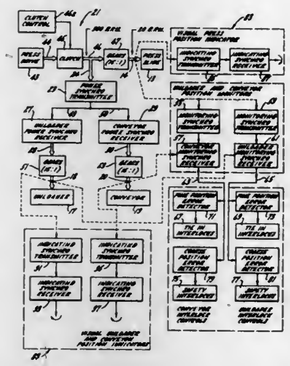
Hafnium film capacitors are prepared by reactively sputtering hafnium dioxide upon an aluminum electrode, subjecting the resultant assembly to electrolytic anodization and depositing a counterelectrode thereon.

3,553,546
PULSE CONTROL NEUTRALIZATION SYSTEM
Earl W. Springer, Box 220, Fairland, Ind. 46126
Filed Jan. 6, 1969, Ser. No. 789,243
Int. Cl. H02p *7/68*
U.S. Cl. 318—48 9 Claims



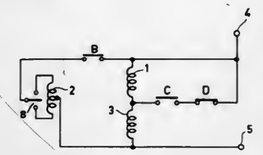
A system comprising output means and first means for driving the output means in one direction and second means for driving the output means in the opposite direction. A first network for energizing the first drive means and a second network for energizing the second drive means are provided. Further, first means is provided for disabling the first network when the second drive means is energized and second means is provided for disabling the second network when the first drive means is energized, each network including a silicon controlled rectifier through which its associated drive means is energized. In one embodiment, the disabling means, respectively, include relay means for disconnecting the gate control electrodes of their respective associated silicon controlled rectifiers. In another embodiment, the disabling means, respectively, include means for desensitizing the amplifiers connected to the gate control electrodes of their respective associated silicon controlled rectifiers.

3,553,547
SYSTEM FOR ALIGNING AND SYNCHRONOUSLY DRIVING UNITS OF A PRESS WITHOUT MECHANICALLY INTERLINKING THEM
Francis E. Heiberger, Elmhurst, Ill., assignor to Danly Machine Corporation, Chicago, Ill., a corporation of Illinois
Filed Aug. 7, 1967, Ser. No. 658,693
Int. Cl. H02p *7/36*
U.S. Cl. 318—85 4 Claims



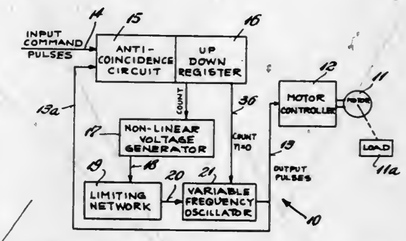
A drive system for operating the loader, unloader, and conveyor of a power press in synchronism with its slide. The rotor of a polyphase induction motor is coupled through a gear train to the press slide. The rotors of second and third polyphase induction motors are similarly coupled to the unloader and conveyor of the press. By connecting the stator windings of all of the motors to a common polyphase power source and by interconnecting their rotor windings when the rotors are in a desired position relative to one another, the unloader and the conveyor are made to move in synchronism with the press slide by their respective induction motors. Also disclosed are interlocks for each of the electrically driven motors to insure that their rotor windings are connected to that of the mechanically driven motor only when their rotors are in the same angular position, a second series of interlocks for disconnecting the electrically driven motors from the polyphase power source when their rotors fall out of step with that of the mechanically driven motor, and indicating equipment showing the angular positions of all of the rotors at all times.

3,553,548
PLURAL MOTOR SYSTEM FOR WASHING MACHINE
Yves Thibaut, Amiens, France, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed June 27, 1966, Ser. No. 560,565
Claims priority, application France, July 1, 1965, 23,141
Int. Cl. H02p *1/58*
U.S. Cl. 318—102 7 Claims



An electric control device for a washing machine that includes first, second and third motors. The direction of rotation of the first motor is controlled by a reversing switch. The second motor rotates in one direction only. The third motor controls the reversing switch. The second and third motors are directly connected in series across the terminals of the supply voltage. A first switch is connected in series with the first motor across the series combination of the second and third motors. A second switch is connected in shunt with the third motor. The first and second switches are closed in mutually exclusive time intervals so that the first and second motors cannot be energized simultaneously.

3,553,549
DIGITAL MOTOR CONTROL CIRCUIT
Albert C. Leenhouts, Granby, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed Sept. 11, 1968, Ser. No. 759,004
Int. Cl. H02k *37/00*
U.S. Cl. 318—138 8 Claims



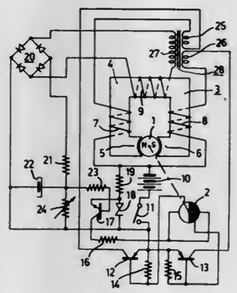
A circuit for translating each input command pulse into an incremental step of a stepping motor in which the input pulses may be introduced into the circuit at one

frequency and the motor stepped at another rate with the variation between the frequency and rate being in accordance with the difference between the number of input pulses and the number of steps and in which the stepping rate is controlled to be within the capability of the motor to move its load without loss or translation of each input pulse into a step.

3,553,550
DEVICE FOR DERIVING A MEASURING VOLTAGE INDUCED BY THE ROTOR OF AN ELECTRIC MOTOR

Hugo Schemmann, Schaesberg, Netherlands, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 17, 1969, Ser. No. 816,914
Claims priority, application Germany, Apr. 30, 1968, 1,763,294
Int. Cl. H02k *29/00*
U.S. Cl. 318—138 **2 Claims**

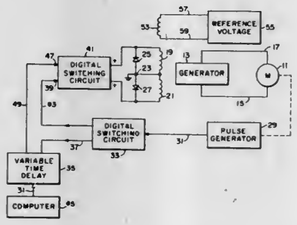


A permanent magnet synchronous motor is provided with energizing and feedback or measuring windings situated on the stator core and magnetically coupled. A transformer, having a primary winding connected in series with the energizing winding and a secondary winding connected in series with the measuring winding provides compensation for load dependent voltage variations induced in the measuring winding.

3,553,551
DIGITAL SPEED CONTROL APPARATUS

Wayne E. Arnold, Murrysville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 28, 1969, Ser. No. 828,624
Int. Cl. H02p *5/24*
U.S. Cl. 318—146 **8 Claims**

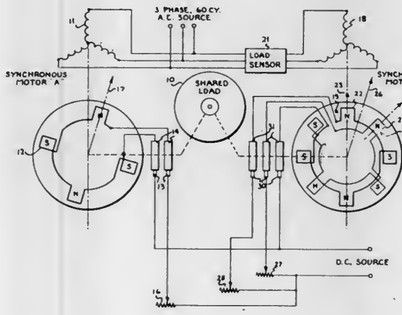


This disclosure describes a digital control apparatus for motor speed regulation, wherein pulses proportional to the speed of the motor to be controlled are alternately sent to a variable time delay element and to an output switching circuit, and after a controlled time delay, the pulses from the variable time delay element are also sent to the output switching circuit; depending upon which pulses first reach the output switching circuit, a signal will be provided to either speed up or slow down the motor, with the desired speed of the motor being determined by a computer which controls the variable time delay.

3,553,552
FIELD WINDING FOR SYNCHRONOUS MOTORS

Gordon William Herzog, Peterborough, Ontario, Canada, assignor to Canadian General Electric Company, Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed Sept. 19, 1969, Ser. No. 859,329
Claims priority, application Canada, July 17, 1969, 57,313
Int. Cl. H02p *1/50*
U.S. Cl. 318—183 **13 Claims**



A synchronous motor comprises a stator and a rotor, one of which has an armature core and the other a field core; an armature winding on the armature core for producing a rotating magnetic field winding on the field core for producing a multi-polar steady state magnetic field when energized with direct current; an auxiliary winding on said field core displaced with respect to said main winding such that when energized with direct current it produces a second multi-polar steady state magnetic field having polar axes displaced with respect to the polar axes of said main field and when connected to resistor means it provides secondary winding turns for the armature winding. The auxiliary winding is connected to a direct current source of the resistor means. The relative values of the direct current applied to said main and auxiliary windings are varied.

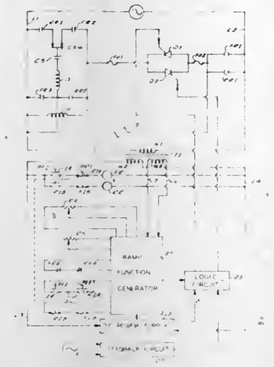
3,553,553
HOIST CONTROL SYSTEM UTILIZING REVERSIBLE, VARIABLE SPEED INDUCTION MOTOR

John P. Truemper, West Helena, Ark., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

Filed Apr. 28, 1969, Ser. No. 819,672
Int. Cl. H02p *1/42*
U.S. Cl. 318—202 **19 Claims**

Apparatus for controlling the movement of a hoist in a lateral direction by means of a reversible A.C. induction motor. A circuit supplies A.C. power to the motor, the circuit including a triggerable semiconductor current switching device for varying the average power supply to the motor in response to variations in the phase of triggering. A controller includes manually operated

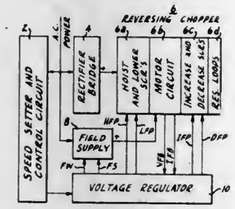
switch means and means for generating a D.C. reference signal, the amplitude of which changes linearly in response to operation of the switch means. Means is provided which is responsive to the relative amplitudes of this D.C. reference signal and a D.C. feedback signal varying with the speed of the motor, for varying the phase of triggering of the switching device to change the motor speed linearly, providing substantially constant lateral acceleration of the hoist.



3,553,554
STATIC SHUNT MOTOR CRANE HOIST CONTROL SYSTEM WITH CONTROLLED DECELERATE TORQUE CONTROL

Robert L. Risberg, Milwaukee, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed June 17, 1968, Ser. No. 737,570
Int. Cl. H02p *3/12*
U.S. Cl. 318—257 **10 Claims**

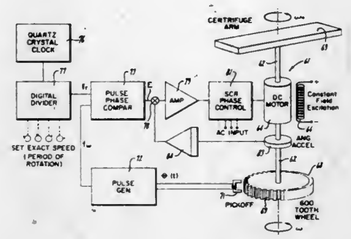


A static control system for the shunt field motor of a crane hoist control having a static field supply and a solid state reversing chopper supplied from a constant potential bus for armature control with a first SCR controlled resistor loop for 75 percent second quadrant retarding torque and a second SCR controlled resistor loop usable with the first one for 150 percent fourth quadrant retarding torque. Bootstrap circuits minimize the firing circuit power supply requirements for the resistor loops. Solid state anti-plugging control is incorporated in the direction and speed control circuit. Limit stop backout at reduced torque and speed is provided from the constant potential bus. A unidirectional diode circuit affords automatic field energization from the armature in the event of power failure. Commutating inductor energy decaying resistors are relocated in the chopper circuit to protect the chopper and directional SCR's from induced voltages during commutation and to protect the bus from a short circuit if both SCR's fail as added functions. Field weakening and field strengthening controls are incorporated in the direction and speed control circuit.

3,553,555
ELECTRIC MOTOR SPEED CONTROL APPARATUS, SYSTEM AND METHOD

Harold D. Morris, Orinda, and Philip G. Leigh, Oakland, Calif., assignors to Systron-Donner Corp., Concord, Calif., a corporation of California

Filed June 27, 1967, Ser. No. 649,182
Int. Cl. H02p *5/16*
U.S. Cl. 318—314 **5 Claims**

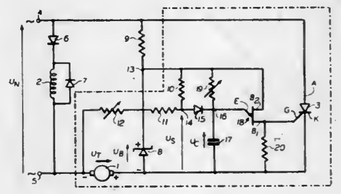


Speed control apparatus consisting of a motor in which the rotor rotates precisely in synchronism with a predetermined or commanded frequency by automatic synchronization of shaft rotation through use of a digital phase-locked speed control. A pulse signal generated by the motor is compared with a reference pulse signal to produce an error signal which controls power to the motor. For stabilization, the error signal may be modified by the integral of an angular acceleration feedback signal.

3,553,556
CIRCUIT FOR CONTROLLING THE SPEED OF A MOTOR

Peter Dosch, Rankstrasse 15, Jona, and Manfred Oehmann, Rosenbuel, Ebnat-Kappel, both of St. Gall, Switzerland

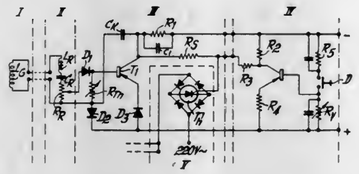
Filed Oct. 11, 1967, Ser. No. 674,580
Claims priority, application Switzerland, Nov. 1, 1966, 15,778/66; Mar. 20, 1967, 3,980/67
Int. Cl. H02p *5/16*
U.S. Cl. 318—327 **10 Claims**



The thyristor for controlling the speed of an A.C. or D.C. motor has its firing current supplied by a phase timing circuit in which a tachometric D.C. voltage proportional to motor speed is combined with a fixed reference voltage and applied to a timing condenser through a voltage divider network such that the "leap" voltage applied

to the condenser is a function of the difference between predetermined fractions of said reference voltage and said tachometric D.C. voltage. Auxiliary circuitry limits the starting current and the maximum operating current.

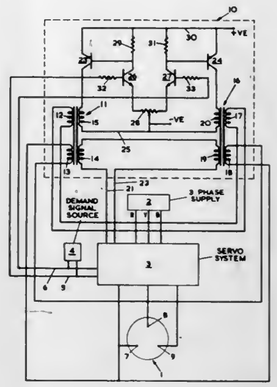
3,553,557
ELECTRIC MOTOR WITH OVERLOAD CUT-OUT
Helmut Korthaus, Fernblick 3, Wuppertal-Barmen, Germany, and Richard Wilke, Schwelmestrasse 51, Schwelm, Germany
Filed June 18, 1968, Ser. No. 738,058
Claims priority, application Germany, Oct. 5, 1967, 1,588,376
Int. Cl. H02h *7/085*
U.S. Cl. 318—463 **10 Claims**



An electric motor with pre-selectable number of revolutions and switchable in two directions of rotation, which comprises a stator including a stator-winding, a motor shaft, a rotor formed as a slider and mounted on the motor shaft, as well as including an overload cut-out means, and a motor housing receiving the stator and the rotor. The overload cut-out means comprises an overload coupling operatively connected with the rotor and the motor shaft, respectively, so that the overload coupling transmits the motor torque from the rotor to the motor shaft. The motor shaft comprises two shafts disposed coaxially relative to each other and one of said two shafts is hollow and receives the other of the two shafts, to constitute the output shaft and carrying the rotor. The hollow one of said shafts and the other of said shafts are formed for a part of their length as a threaded spindle and a threaded spindle nut, respectively, engaging each other. The overload coupling comprises a disk-shaped body sitting rigidly on the hollow one of the shafts and has about its periphery a plurality of equally divided axial bores.

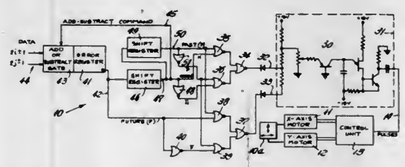
3,553,558
MONITORING CIRCUITS
Brian Killoran, Bradford, England, assignor to The English Electric Company Limited, London, England, a British company
Filed Nov. 29, 1968, Ser. No. 779,848
Claims priority, application Great Britain, Dec. 1, 1967, 54,779/67
Int. Cl. G05f *7/00*
U.S. Cl. 318—565 **8 Claims**

This invention relates to a monitoring circuit which produces a fault indicating signal if the phase sequence of supply lines to a three-phase motor is not as required by a demand signal. Two reference phases (R and Y) are fed to a winding on each of two transformers. Two motor phases, which should be either R and Y, respectively, or Y and R, respectively, or zero (depending upon the demand signal) are connected to another winding on each transformer such that fluxes due to the reference and motor phases cancel in one transformer but add in the other to induce a fault indicating signal in a third winding. If the motor phase sequence is correct, the demand signal causes saturation of the transformer to inhibit the induced signal. If the motor supply is correctly zero, signals are induced in both transformers and cancel, but if



it is zero due to a fault, one of the induced signals is inhibited whilst the other remains to indicate the fault.

3,553,559
DIGITAL CONTOUR SYSTEM WITH RELATIVELY CONSTANT PATH SPEED
Albert C. Leenhouts, Granby, Conn., assignor to The Superior Electric Company, Bristol, Conn., a corporation of Connecticut
Filed Oct. 10, 1968, Ser. No. 766,530
Int. Cl. G05b *19/24*
U.S. Cl. 318—18 **7 Claims**

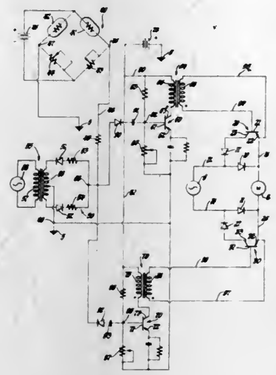


A numerical control system for causing relative movement along a path determined by coded commands by the movement consisting of constant length steps on X and Y axes with only one step occurring at a time and in which the speed of each step is selected from one of a plurality of speeds so as to maintain the speed along the path substantially constant irrespective of the direction by determining the relationship between the immediately preceding step, the present or now step and possibly the future or next step for every step that is to occur.

3,553,560
DIRECT CURRENT PERMANENT MAGNET MOTOR SERVOMOTOR SYSTEM
William T. Lemen, Frankfort, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 15, 1969, Ser. No. 850,484
Int. Cl. G05f *1/04*
U.S. Cl. 318—681 **4 Claims**

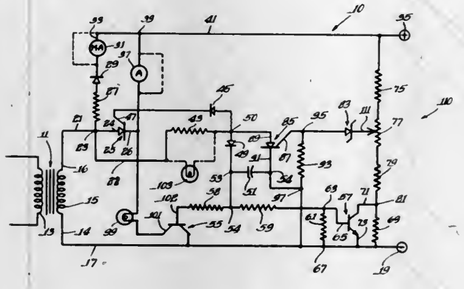
A direct current permanent magnet motor servomotor system wherein the armature of the motor is connected across an alternating current potential source through two series connected and oppositely poled diodes, each of which is shunted by the current carrying electrodes of

a transistor. A detector circuit responsive to an external influence produces a direct current potential reference signal which changes polarity in response to the direction of change of the external influence and in magnitude in response to the degree of change. This reference signal is impressed across a modulator circuit which produces alternating current half-wave form output control signals of a polarity the same as and a magnitude proportional to the polarity and magnitude of the reference signals.



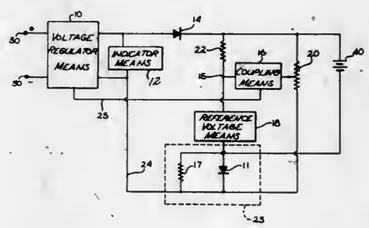
Circuitry responsive to the control signals produces a separate switching signal for each control signal polarity and applies the respective separate switching signals across the base-emitter electrodes of a respective one of the shunting transistors in a polarity relationship to produce collector-emitter current flow through that transistor to establish respective circuits which energize the permanent magnet motor armature for rotation in first and second directions.

3,553,561
AUTOMATIC VARYING RATE BATTERY CHARGER UTILIZING TRANSISTOR LATCHING MEANS IN VOLTAGE SENSING CIRCUIT
John C. Lesher, Erie, Pa., assignor to Penn-Western Electric, Erie, Pa., a corporation of Pennsylvania
Filed Nov. 13, 1967, Ser. No. 682,091
Int. Cl. H02j *7/10*
U.S. Cl. 320—22 **4 Claims**



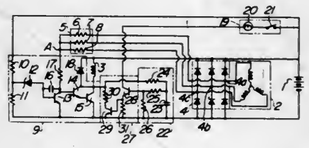
An automatic varying rate battery charging circuit including a silicon-controlled rectifier, the conduction of which is effectively determined by the voltage level of the battery. The circuitry comprises a voltage dividing network and a transistor having its emitter and collector electrode shunted across a resistor of the voltage dividing network to insure the conduction of the controlled rectifier. A Zener diode connected at its cathode to the voltage dividing network is used to insure, through a second controlled rectifier, the tapering of a high charge current applied by the circuit to the battery when the battery reaches a point of gassing. At a maximum charge voltage level of the battery, the full conduction of the Zener diode causes, through the second controlled rectifier, the complete cut-off of the high charge current. A low or trickle charge current is supplied to the battery through a series connected resistor diode when the high charge current has been cut off.

3,553,562
BATTERY CHARGING CIRCUIT
Leroy R. Woods, Granada Hills, Calif., assignor to Woodbro Corporation, Van Nuys, Calif., a corporation of California
Filed Dec. 12, 1968, Ser. No. 783,300
Int. Cl. H02j *7/04*
U.S. Cl. 320—39 **15 Claims**



A circuit for charging a battery is disclosed which provides an indication of the capacity of the battery, the state of the charge of the battery, the loss of the battery from the circuit, and the presence of charging power. The circuit recharges the battery when the battery terminal voltage reaches a predetermined level. There is no continuous trickle charge required or necessarily applied to the battery.

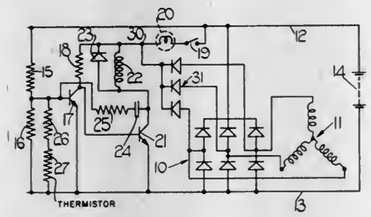
3,553,563
WARNING LAMP RESPONSIVE TO ALTERNATOR OUTPUT FREQUENCY FOR BATTERY CHARGING SYSTEM
Yoshichi Kawashima, Gifu-shi, Japan, assignor to Nippon Denso Company Limited, Kariya-shi, Japan, a corporation of Japan
Filed Feb. 24, 1969, Ser. No. 801,555
Claims priority, application Japan, Mar. 6, 1968, 43/14,559
Int. Cl. H02j *7/14*
U.S. Cl. 320—48 **2 Claims**



A voltage regulator for a storage battery charging means having a three-phase A.C. generator and a three phase full-wave rectifying circuit connected to the output end of the generator, in which resistors are connected to the respective half-wave rectifying ends of the three-phase

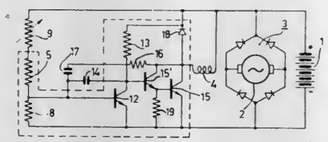
full-wave rectifying circuit, a field current control transistor circuit for the three-phase A.C. generator is constructed so as to be powered from the resistors, a low-pass filter circuit is connected to the output end of the transistor circuit to detect the oscillation frequency of the transistor circuit, a transistor circuit for flashing a charge indication lamp activated by the output of said filter circuit is connected in parallel with said field current control transistor circuit in association with the field winding of the three-phase A.C. generator, and a charge indication lamp circuit is connected between said transistor circuit for flashing a charge indication lamp and the battery.

3,553,564
VOLTAGE REGULATORS WITHOUT A ZENER DIODE FOR BATTERY CHARGING SYSTEMS
Roger William Nolan, Redditch, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Filed Mar. 20, 1967, Ser. No. 624,441
Claims priority, application Great Britain, Apr. 5, 1966, 15,020/66
Int. Cl. H02j *7/14*
U.S. Cl. 320—61 **3 Claims**



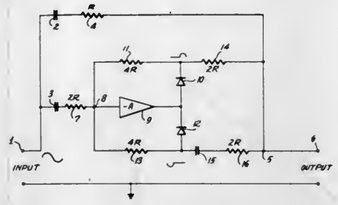
A known voltage regulator for a battery charging system in a road vehicle has a Zener diode sensing the battery voltage and providing base current to a control transistor which in turn regulates the generator output voltage. The invention eliminates the Zener diode by making use of the base-emitter diode of the control transistor as the voltage-sensing device.

3,553,565
DIFFERENCE AMPLIFIER HAVING A REFERENCE VOLTAGE SOURCE
Willem Ebbinge and Johannes Gerardus Wouterus Bom, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 27, 1967, Ser. No. 693,824
Claims priority, application Netherlands, Jan. 5, 1967, 6700143
Int. Cl. H02j *7/14*
U.S. Cl. 320—64 **3 Claims**



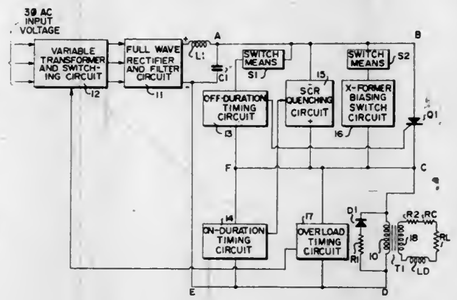
A regulating circuit for controlling the output voltage of a generator in accordance with the ambient temperature of a load. The negative temperature coefficient of the base-emitter threshold voltage is used as a voltage comparison standard in a difference amplifier controlling the flow of current to the field winding of the generator.

3,553,566
RECTIFIER UTILIZING PLURAL CHANNELS FOR ELIMINATING RIPPLE
John Nagy, Jr., Union, N.J., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware
Filed Mar. 12, 1968, Ser. No. 712,538
Int. Cl. H02m *7/00;* **G01r** *19/22;* **H03f** *1/34*
U.S. Cl. 321—8 **4 Claims**



An operational rectifier or converter including a series RC circuit to conduct an AC signal to a summing junction and a second circuit parallel to the series RC circuit for developing a DC component and an inverted AC component to cancel the AC conducted by the series circuit. The second circuit includes an operational amplifier having two identical diode-resistance feedback circuits. The DC component and one half of the AC component is taken from one feedback circuit through a resistor, and the other half of the AC component is coupled from the other feedback circuit through a capacitor, to the output terminal. A second embodiment shows suppression and compensation circuits to refine circuit operation.

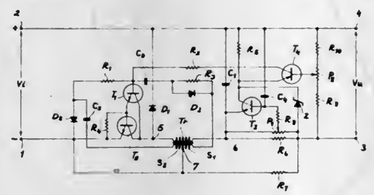
3,553,567
HIGH CURRENT SQUARE WAVE POWER SOURCE
Carl A. Pesce and Ernest M. Gore, Chicago, and James P. Tatham, Wheaton, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Continuation of application Ser. No. 568,042, July 26, 1966. This application Dec. 20, 1968, Ser. No. 785,726
Int. Cl. H02h *7/14;* **B02k** *11/26;* **H02i**
U.S. Cl. 321—14 **24 Claims**



A square wave power supply used in pressure seam welding of can bodies. Photoelectric cells detect the presence and location of can bodies passing between pressure roller electrodes to actuate solid state switches. A three phase A.C. source is rectified and filtered to produce a source of direct current. An output transformer and a first SCR are connected in series across the direct current source. Connection of the output transformer with the direct current source is controlled by two timing circuits, one of which controls the conduction duration of the first SCR and the second of which controls the blocking

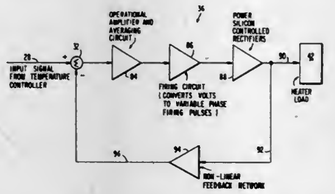
duration of the SCR. Conduction of the SCR is terminated by a positive quenching thereof through the application of a voltage across the SCR greater than and in opposition to the voltage output from the direct current source. A substantially well defined and consistent square wave output is provided by pulse-shaping circuit elements in cooperation with the output transformer and SCR and by establishment of a preliminary flux level in the output transformer prior to the initiation of and upon termination of a train of square wave output current signals. An overload timing circuit protects the supply by terminating the input thereto.

3,553,568
D-C VOLTAGE REGULATOR INCLUDING BLOCKING OSCILLATOR
Manlio Saba, Milan, Italy, assignor to Societa Italiana Telecomunicazioni Siemens S.p.A., Milan, Italy, an Italian corporation
Filed Aug. 23, 1968, Ser. No. 754,796
Claims priority, application Italy, Aug. 24, 1967, 19,749/67
Int. Cl. G05f *1/56, 1/58*
U.S. Cl. 323—9 **8 Claims**



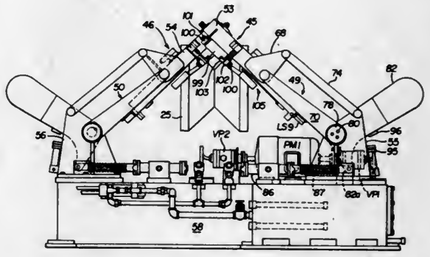
Voltage regulator wherein a transistor in series with the primary of a feedback transformer is driven to intermittent saturation by a capacitive coupling between its input circuit and the secondary of the transformer, the coupling capacitor being connected in series with that secondary across an input resistor of the transistor while a portion of this secondary lies in series with this resistor between the emitter and the base to generate a reverse bias. The input resistor is traversed by current from a control amplifier which responds to a voltage sensor connected across the regulator output and which is blocked by a protective circuit upon the flow of excessive output current.

3,553,569
LINEAR POWER TRANSDUCER WITH NON-LINEAR FEEDBACK NETWORK
Dudley D. Nye, Jr., and Arley L. Keith, Jr., Fort Lauderdale, Fla., assignors to Airpax Electronics Incorporated, Fort Lauderdale, Fla., a corporation of Maryland
Filed Dec. 9, 1968, Ser. No. 782,243
Int. Cl. G05f *1/44*
U.S. Cl. 323—22 **17 Claims**



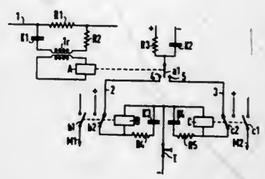
Disclosed is an electrical transducer for controlling high energy electrical power from a low level D.C. source, and a temperature regulating system incorporating the transducer. A nonlinear negative feedback network is incorporated in the transducer and feeds back to the input a signal directly proportional to the instantaneous square of the current through the load. The feedback signal is averaged so that output power is linearly related to the low level control input.

3,553,570
AUTOMATIC BILLET INSPECTOR
John J. Skubiak, Madison Heights, Mich., and John A. Toth, Highland Heights, Ohio, assignors to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey
Original application Nov. 1, 1965, Ser. No. 505,940. Divided and this application Jan. 22, 1969, Ser. No. 792,968
Int. Cl. G01r *33/12*
U.S. Cl. 324—37 **13 Claims**



Metal billets are conveyed past a defect scanning unit that reciprocates search coils across a billet surface. The scanning unit is movable to a position adjacent the billet surface and the search coils are independently positioned on the billet surface. Scanning unit movement across the billet is reversed in response to sensing of billet edges.

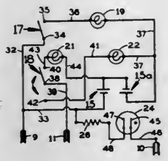
3,553,571
DEVICE INCLUDING DIRECTION RESPONSIVE SWITCHING MEANS FOR INDICATING AND PROTECTING AGAINST SHORT-CIRCUITS IN A DC VOLTAGE NETWORK
Alfons Fendt, Erlangen, and Michael Becker, Uttenreuth, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Dec. 10, 1968, Ser. No. 782,642
Claims priority, application Germany, Dec. 12, 1967, 1,588,805
Int. Cl. G01r *31/02, 31/08*
U.S. Cl. 324—52 **9 Claims**



A direction-responsive switch is coupled to a control system for selectively actuating controls in reponse to the occurrence and direction of a short-circuit in a DC voltage network. The switch is coupled to a voltage component connected in the network for providing a voltage in

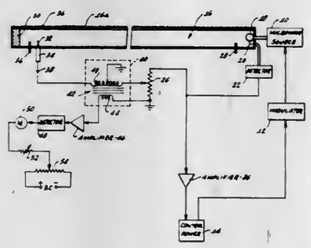
proportion to the current in the network to actuate the switch upon the voltage provided by the voltage component exceeding a predetermined magnitude thereby indicating the occurrence of a short-circuit in the network.

3,553,572
PORTABLE ELECTRIC CIRCUIT TESTER HAVING A PAIR OF RESISTANCE INDICATING LAMPS
James R. Harmon, Miami, Fla., assignor to Lumidor Products Corp., Hialeah, Fla., a corporation of Florida
Filed July 25, 1968, Ser. No. 747,577
Int. Cl. G01r *31/02*
U.S. Cl. 324—53 1 Claim



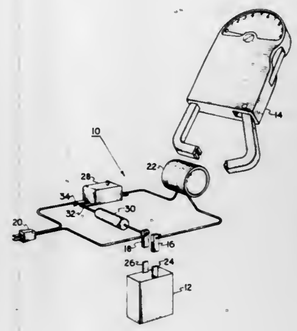
A portable electric tester energized by a pair of self-contained batteries including switch means and a pair of electric lamps for determining four approximate ranges of external circuit resistance dependent upon the visual interpretation of the luminosity of each of the lamps.

3,553,573
SYSTEM FOR MOISTURE MEASUREMENT AT MICROWAVE FREQUENCIES
John W. Lundstrom, 603 N. Crestview Drive, Glendora, Calif. 91740, and Marston D. Mosteller, 25084 5th St., San Bernardino, Calif. 92410
Filed Sept. 7, 1967, Ser. No. 666,146
Int. Cl. G01r *27/04*
U.S. Cl. 324—58.5 8 Claims



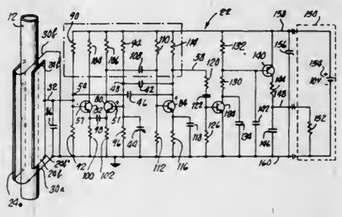
Apparatus for determining the moisture content of granular materials such as wet wood chips or other low dielectric, cellulose based substances. The sample material under test is closely coupled through a slot in a waveguide to the electric field of the standing wave in the guide. The waveguide is driven by a modulated microwave source, and differences between energy input and energy output are measured to determine moisture content in the sample as a combined function of sample dielectric constant and dielectric power loss in the sample, the particular coupling arrangement between the sample and the field through the slotted waveguide providing a calibration output measurement of moisture content which is substantially linear over a range of at least 20–70% on a wet weight basis, the variation in output readings as a function of sample fill factor being substantially logarithmic and, hence, substantially independent of sample bulk density.

3,553,574
CAPACITANCE CURRENT-FLUX MEASURING DEVICE
Livingston L. Rice and Richard L. Rollins, Williamstown, Mass., assignors to Sprague Electric Company, North Adams, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 550,260, May 16, 1966. This application Feb. 3, 1969, Ser. No. 801,917
Int. Cl. G01n *11/52*
U.S. Cl. 324—60 4 Claims



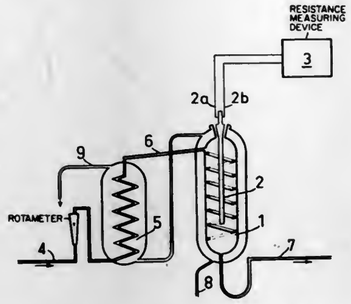
The device includes means for energizing a capacitor with voltage from an alternating current source so as to provide a capacitor current, and means for multiplying said current in inverse proportion to the magnitude and frequency of said voltage so as to provide a current response which in standard units of current is numerically equal to the capacitance of said capacitor in standard units of capacitance.

3,553,575
CAPACITIVE SENSING DEVICE HAVING A SLIDABLE PROBE
James E. Shea, Wilton, Conn., assignor to Sonic Engineering Corporation, Norwalk, Conn., a corporation of Connecticut
Filed Nov. 27, 1967, Ser. No. 685,866
Int. Cl. G01n *27/26*
U.S. Cl. 324—61 8 Claims



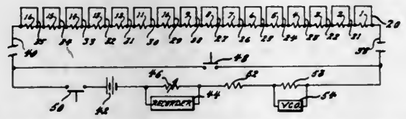
A sensing device for detecting the position of an object, typically the presence of a medium, such as a fluid in a sight glass. A pair of capacitor plates is mounted adjacent to a reference position, and the capacitance is affected by the presence of the object. The capacitor plates are included as circuit elements in an oscillator circuit in which oscillation is controlled by capacitance, typically so that oscillation occurs when the object is present adjacent to the capacitor plates.

3,553,576
HYGROSCOPIC PROBE APPARATUS FOR DETECTING THE WATER VAPOR CONTENT OF ORGANIC LIQUIDS
José Petitjean, Koningsloo, and Arthur Van Hove, Brussels, Belgium, assignors to Solvay & Cie, Brussels, Belgium
Filed Nov. 28, 1967, Ser. No. 686,224
Claims priority, application France, Dec. 6, 1966, 86,334
Int. Cl. G01n *27/02*
U.S. Cl. 324—65 6 Claims



Apparatus for continuously detecting the presence of water in organic liquids including a resistance probe placed within a thermostatically controlled enclosure into which the liquid to be analyzed penetrates by running down along the walls and is placed in equilibrium with its vapor, one of the conductive wires of the probe being heated so as to prevent condensation of the saturated vapor.

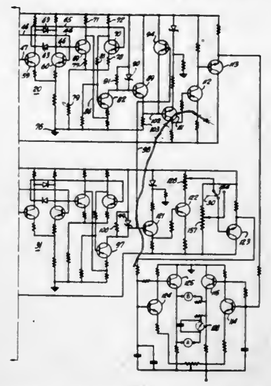
3,553,577
ACTIVE PROPELLANT GRAIN REGRESSION RATE MONITOR FOR ROCKET ENGINES
Gale F. Stromberg and John F. Easton, San Jose, Calif., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 23, 1968, Ser. No. 699,851
Int. Cl. G01n *27/02*
U.S. Cl. 324—65 1 Claim



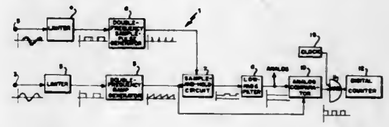
A propellant grain regression rate monitor for rocket engines including a plurality of shunted resistors serially connected and located in the rocket fuel and further connected in a circuit with a power source and a recorder. Consumable fuze wires shunting the resistors whereby the current in the circuit is changed each time the flame front consumes one of the wires.

3,553,578
PHASE ANGLE MEASURING CIRCUIT OF A TYPE DEVELOPING SQUARE WAVE D.C. PULSES REPRESENTING THE PHASE ANGLE WITH IMPROVEMENTS THEREIN
Cloy N. Causey, Houston, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 28, 1966, Ser. No. 605,358
Int. Cl. G01r *25/00*
U.S. Cl. 324—83 6 Claims

A phase angle measuring circuit employing two channels one for each of two signals having the same frequency but varying in relative phase. The channels each have direct coupled transistor stages with differential input and single ended output circuits. Each channel provides high gain clipped amplification causing square wave outputs. Both channels feed into a comparison circuit that provides square wave output which depends upon phase coincidence so that the average value of the output is proportional to the phase angle from zero to maximum.

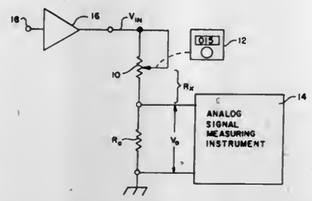


3,553,579
APPARATUS FOR MEASURING THE DIFFERENCE IN PHASE BETWEEN TWO SIGNALS OF THE SAME FREQUENCY, ONE HAVING NOISE ASSOCIATED THEREWITH
James F. Teixeira, Hudson, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 20, 1968, Ser. No. 738,703
Int. Cl. G01r *25/00*
U.S. Cl. 324—83 12 Claims



Apparatus for measuring the difference in phase, from 0° to 180°, between a noise-free sinusoidal reference signal of a predetermined frequency and an unknown sinusoidal signal of the same frequency but having noise associated therewith. The unknown and reference signals are applied to respective limiters and converted to square-wave pulse trains which trigger, respectively, a sample-pulse generator and a ramp generator. Sampling pulses are produced by the pulse generator and used to sample a train of ramp voltage signals applied to a sample-and-hold circuit by the ramp generator. The sampled signal portions are converted in the sample-and-hold circuit to a continuous voltage signal of varying amplitude representative of the phase displacement between the unknown and reference signals. The noise content of the continuous voltage signal is reduced by a low-pass filter to provide an analog signal representative of the phase displacement between the reference and unknown signals. To provide a digital representation, the analog signal is applied to an analog comparator together with the train of ramp voltage signals. The comparator compares the signals and produces a square-wave pulse train representing the phase displacement between the unknown signal and the reference signal, which pulse train is used to gate clock signals to a digital counter which provides a digital indication of the amount of phase displacement.

3,553,580
SCALING CIRCUIT FOR ANALOG VOLTAGE SIGNAL MEASURING INSTRUMENTS
Kenneth V. Matthews, Garden Grove, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Feb. 28, 1968, Ser. No. 709,083
Int. Cl. G01r *15/08*
U.S. Cl. 324—115 **3 Claims**

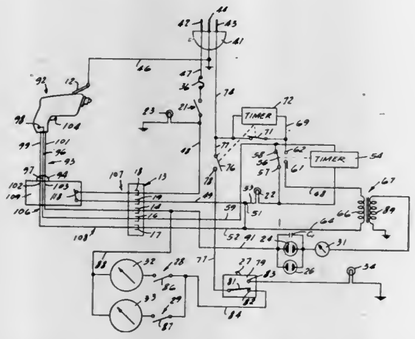


A scale circuit for use with an analog voltage signal measuring instrument is disclosed which provides a continuously variable scaling factor. The circuit includes a linearly variable impedance R_x and a second impedance R_0 connected as a potential divider for receiving the signal to be measured. A linear indicating device is connected to the variable impedance such that it indicates the function

$$\frac{R_x}{R_o}+1$$

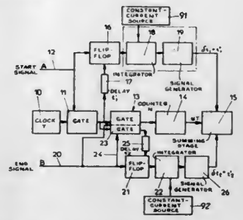
If the signal developed across the impedance R_0 is connected to the measuring instrument the indication on the indicating device is the scaling factor.

3,553,581
TESTER FOR APPLYING A PLURALITY OF TESTS TO AN ELECTRICAL APPLIANCE
Athanase N. Tsergas, Des Plaines, and Wallace T. Procik, Harwood Heights, Ill., assignors to Ram Tool Corporation, Chicago, Ill., a corporation of Illinois
Filed Jan. 31, 1968, Ser. No. 701,986
Int. Cl. G01r *31/28, 31/02*
U.S. Cl. 324—158 **1 Claim**



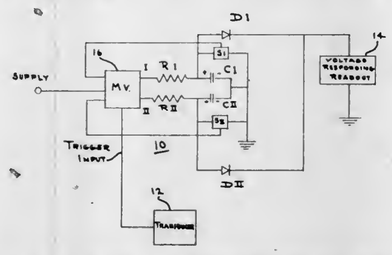
A tester capable of testing electric motors or other electrical devices so as to assure that a grounded contact exists in the device and also to assure that the rotor and stator of the motor are not grounded or shorted to the case. The tester automatically operates in a time sequential manner so as to operate the appliance and subject it to the various tests so as to allow a large number of appliances to be processed in an efficient manner.

3,553,582
METHOD AND APPARATUS FOR MEASURING A TIME INTERVAL
Roger L. Gouillou, Draveil, France, assignor to Office National d'Etudes et de Recherches Aerospatiales, Chatillon-sous-Bagneux, France
Filed Jan. 19, 1968, Ser. No. 699,101
Claims priority, application France, Jan. 24, 1967, 92,276
Int. Cl. G04f *9/00*
U.S. Cl. 324—186 **11 Claims**



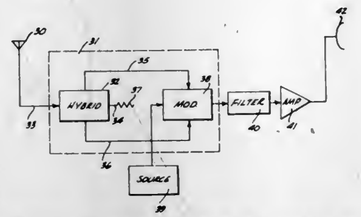
To measure the time elapsed between a start signal and an end signal, periodically recurrent clock pulses are counted, beginning with a first pulse immediately following an initial clock cycle bracketing the end signal. The residual fractions of the initial and final clock cycles are measured by a pair of integrating chronometers, or by a differential integrator, in which a current flow is triggered on by the occurrence of either signal and is cut off a predetermined period after the next-following clock pulse, the length of this period being greater than the period of instability at the beginning of the current flow.

3,553,583
CIRCUIT FOR MEASURING THE RATE OF A SERIES OF EVENTS BY EVENT INTERVAL RESPONSE
Lawrence Grebe Wiley, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Continuation of application Ser. No. 543,246, Apr. 18, 1966. This application May 29, 1969, Ser. No. 831,264
Int. Cl. G01r *23/02;* **G04f** *9/00*
U.S. Cl. 324—189 **7 Claims**



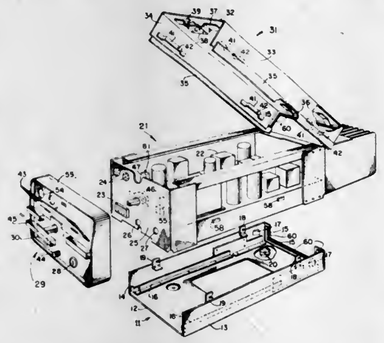
A circuit is disclosed for measuring relatively slow rates of events by measuring the interval between pulses representative of events. A transducer is made to provide a pulse for each event of a series which pulses are utilized to drive a switch which is connected to alternately charge and discharge a pair of capacitors from a voltage supply. The voltage level on a given capacitor is proportional to the interval between pulses and thus events and this level is maintained on a given capacitor to provide a rate output indication while the other capacitor is being charged with switching between capacitors timed by pulses defining the immediately next interval to occur to assure an immediate response. The RC time constant controlling the charging rate of each capacitor is made to be greater than the interval between pulses for the slowest rate of events to be measured by the circuit.

3,553,584
WIDEBAND FREQUENCY TRANSLATING CIRCUIT USING BALANCED MODULATOR
Bernard L. Walsh, Jr., Northridge, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Continuation of application Ser. No. 523,727, Jan. 28, 1966. This application May 31, 1968, Ser. No. 736,544
Int. Cl. H03c *3/22;* **H04b** *7/16*
U.S. Cl. 325—9 **18 Claims**



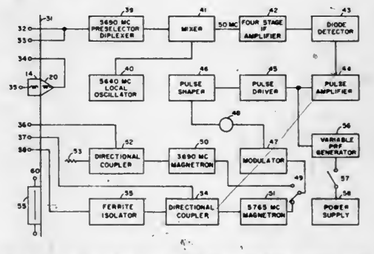
A wideband frequency translating circuit especially suited for converting, en masse, television and FM signals in a given frequency range to a higher frequency range for transmission over a microwave link. Briefly, the frequency translating circuit utilizes a modulator comprising one or two varactor diodes coupled to a first pair of conjugate arms of a biconjugate hybrid network. Microwave energy is applied to a third arm and the modulated microwave energy is coupled out of the fourth arm. The wave energy corresponding to the television and FM signals to be translated is divided in a power-dividing network and applied to the diodes in opposite arms in anti-phase relationship. This modulating signal causes the effective impedance of the diodes to vary, thereby modulating the microwave energy propagating in the diode-containing conjugate arms. Appropriate filtering means can be provided at the modulator output for eliminating the carrier and lower sideband modulation components.

3,553,585
LOCKING AND LATCHING MECHANISM FOR MEMBERS OF COMMUNICATION EQUIPMENT CHASSIS
Roy C. A. Robertson, Forest Park, and Frank Panzica, Chicago, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Dec. 5, 1968, Ser. No. 781,451
Int. Cl. H04b *1/08*
U.S. Cl. 325—15 **15 Claims**



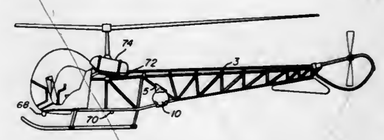
A communication unit housing, and mounting structure including a base member, a movable top member, and a front panel secured to the chassis of the unit. Parts of the housing assembly cooperate with one another and a latching mechanism to hold the parts in assembled relation. A keyed locking device cooperates with the latching mechanism which has a handle to release the latching mechanism, to aid in the disassembly of the parts, and to facilitate carrying the unit. Connectors provide interconnection with external control and signal sources and test equipment.

3,553,586
VALIDATION DEVICE FOR SPACECRAFT CHECKOUT EQUIPMENT
Herbert E. Cribb, Satellite Beach, Fla., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Apr. 9, 1968, Ser. No. 719,870
Int. Cl. H04b *7/18*
U.S. Cl. 325—67 **7 Claims**



A device for validating the equipment used for checking out the C-band equipment on a spacecraft prior to flight. The device simulates the C-band equipment on the spacecraft. Hence, when the checkout equipment is connected to the device, it can be determined whether or not the checkout equipment is in proper working condition. Also the device provides means for making VSWR and attenuation measurements.

3,553,587
HELICOPTER CRASH POSITION INDICATOR
Haakon Aass, Manotick, Ontario, Canada, assignor to Leigh Instruments Limited, Ontario, Canada
Filed Apr. 17, 1967, Ser. No. 631,385
Claims priority, application Canada, Mar. 23, 1967, 986,096
Int. Cl. H04b *1/02*
U.S. Cl. 325—114 **9 Claims**

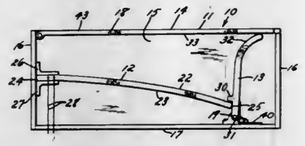


A helicopter crash position indicator in a biscuit-shaped shock-resistant capsule, releasable from its mounting in response to inertial forces upon impact, having a self-contained radio transmitter rendered operative by release of the capsule from the helicopter, upon impact or by rupture of one or more frangible crash switches upon impact.

3,553,588
TRANSMITTER PIEZOELECTRIC POWER SUPPLY
William Honig, New York, N.Y., assignor to Loral Corporation, Scarsdale, N.Y., a corporation of Delaware
Filed Sept. 28, 1967, Ser. No. 671,468
Int. Cl. H01v *7/00;* **H04b** *1/04*
U.S. Cl. 325—119 **4 Claims**

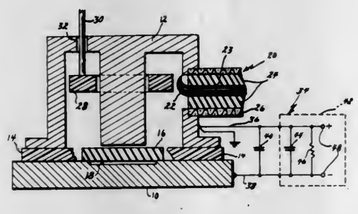
A piezoelectric power supply for generating short duration direct current pulses including a flexible piezoelectric

ceramic cartridge, and releasable means for maintaining said cartridge in stressed condition, release of said means



permitting said cartridge to return to unstressed condition, thereby generating an electrical pulse.

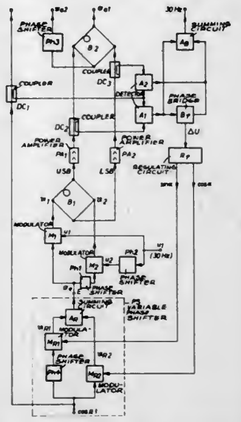
3,553,589
METHOD OF MICROWAVE RECTIFICATION AND MIXING USING PIEZOELECTRIC MEDIA
Paul H. Carr, Bedford, and Andrew J. Slobodnik, Jr., Lowell, Mass., assignors to the United States of America as represented by the Secretary of the Air Force
Original application Oct. 12, 1967, Ser. No. 674,993, now Patent No. 3,513,390, dated May 19, 1970. Divided and this application Nov. 26, 1969, Ser. No. 880,003
Int. Cl. H03d *7/00*
U.S. Cl. 325—445 **1 Claim**



A method of mixing microwave signals by introducing a number of microwave signals of different frequency into a low Q reentrant microwave cavity. The cavity has a tunable variable inductance to provide maximum coupling between the cavity and a preamplifier and a piezoelectric crystal to obtain a voltage from the microwave energy which is then sent to the preamplifier in the form of a voltage that varies sinusoidally at the difference frequency between the microwave signals. The output of the preamplifier is subsequently detected or utilized as practicable.

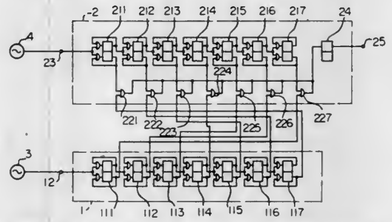
3,553,590
ELECTRONIC GONIOMETER
Günter Höfgen, Kornwestheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 19, 1968, Ser. No. 777,055
Claims priority, application Germany, Dec. 29, 1967, 1,591,628
Int. Cl. H03b *3/04*
U.S. Cl. 328—24 **8 Claims**

In a high power electronic goniometer, a carrier frequency signal and a modulating signal are directly connected to a first low power balanced modulator and indirectly connected, via separate 90° phase shifters, to a second low power balanced modulator. The output signals of said modulators are added and subtracted in a hybrid ring and subsequently separately amplified. The amplified signals are recombined in a second hybrid ring, which has a 90° phase shifter in one of its output arms, to provide properly phased output signals. In another embodiment, a feedback arrangement is provided to main-



tain an amplitude modulated type relationship between the carrier frequency signal and the goniometer outputs.

3,553,591
METHOD FOR CONTROLLING MODULUS OF BINARY MODULUS MULTIPLYING CIRCUIT BY BINARY COUNTER CIRCUIT
Iwao Nogami, Tokyo, Japan, assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Aug. 30, 1968, Ser. No. 756,623
Claims priority, application Japan, Sept. 11, 1967, 42/57,881
Int. Cl. H03k *21/00*
U.S. Cl. 328—46 **1 Claim**

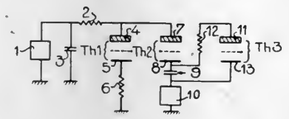


A series of binary *n*-digit counter circuit and a series of binary *n*-digit modulus multiplying circuit are connected by means of a series of gate circiuts. An output of the *m*th digit of the binary *n*-digit counter circuit is supplied to the gate circuit with an output of the $(n-m+1)$ the digit of the binary *n*-digit modulus multiplying circuit. The input signals of the binary *n*-digit modulus multiplying circuit can be controlled by the input signals of the binary *n*-digit counter circuit to obtain a controlled modulus.

3,553,592
GENERATOR FOR RECTANGULAR ELECTRICAL PULSES
Michel Ahrweiller, Palaiseau, France, assignor to Commissariat a l'Energie Atomique, Paris, France
Filed Nov. 8, 1967, Ser. No. 681,350
Claims priority, application France, Nov. 23, 1966, 84,712
Int. Cl. H03k *1/00*
U.S. Cl. 328—67 **7 Claims**

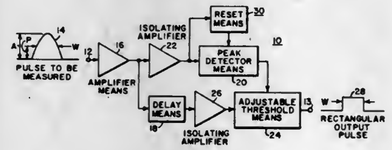
A rectangular pulse generator having a direct current source, a load mounted in series with a first gas-filled or

semi-conducting thyratron and connected across the source, a reblocking circuit for the first thyratron connected in parallel with the first thyratron and the load,



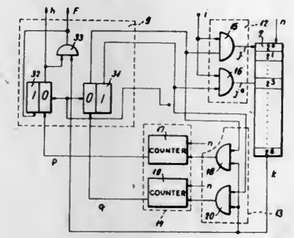
and a second thyratron connected in series with a transient response element connected in the reblocking circuit of the first thyratron.

3,553,593
PULSE WIDTH MEASURING CIRCUIT
Alan R. Gedance, Severna Park, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 10, 1968, Ser. No. 696,830
Int. Cl. H03k *5/20*
U.S. Cl. 328—112 **11 Claims**



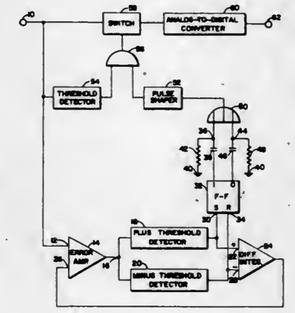
A pulse width measuring circuit which provides a rectangular output pulse having a width equal to the width of the pulse to be measured at a pre-selected level below its peak amplitude.

3,553,594
DIGITAL DELAY SYSTEM FOR DIGITAL MEMORIES
Miklos Blasovszky, Budapest, Hungary, assignor to Kozponti Fizikai Kutato Intezet, Budapest, Hungary
Continuation-in-part of application Ser. No. 527,244, Feb. 14, 1966. This application Aug. 6, 1968, Ser. No. 756,341
Claims priority, application Hungary, Feb. 18, 1965, MA–1,446
Int. Cl. H03k *5/153, 17/28*
U.S. Cl. 328—129 **4 Claims**



A digital multichannel analyzer for investigating selected intervals in the time spectrum of electrical pulses is provided with facilities for generating a delay interval of arbitrary length before the start of each selected interval. The delay interval is defined by the duration of two independent, discrete-length chains of identical timing pulses which are applied in sequence to binary elements of diminishing order in a suitable register. Switchover between the pulse chains occurs when a first predetermined number of the pulses have been applied to the higher order element and the delay interval concludes when a second predetermined number of the pulses have been applied to the lower order element.

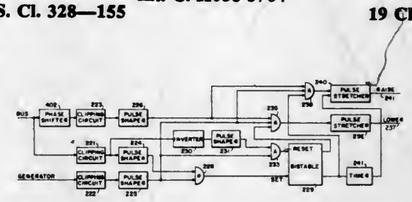
3,553,595
CONTROL APPARATUS
Dale M. Walsh, Clearwater, Fla., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 28, 1967, Ser. No. 656,844
Int. Cl. H03k *17/00*
U.S. Cl. 328—151 **6 Claims**



A circuit for detecting maximum and minimum points of an input signal is shown.

The input signal is tracked by a tracking loop which provides output pulses of a polarity or sense which indicates whether the input signal is increasing or decreasing. A bistable circuit is triggered by the output pulses which reverse the state of the bistable circuit when the output pulses indicate a reversal of the slope of the input signal.

3,553,596
GENERATOR SPEED MATCHER USING DIRECT SAMPLING
Francis T. Thompson, Murrysville, and Tibor Rubner, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 2, 1968, Ser. No. 695,021
Int. C. H03b *3/04*
U.S. Cl. 328—155 **19 Claims**

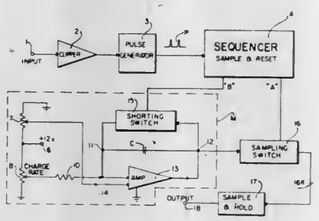


Squared bus and squared generator voltages are applied to two AND gates respectively. Bus and generator sampling pulses are produced whenever the square waves undergo a positive to zero transition, the bus sampling pulses being applied to the AND gate which has the generator square wave applied thereto and the generator sampling pulses being applied to the AND gate which has

the bus square wave applied thereto, so that the bus samples the generator and the generator samples the bus or energized line. When the generator voltage is lagging the bus voltage, the output of one AND gate is a series of positive pulses while the output of the other AND gate remains at ground level. If the generator voltage is leading the bus voltage, the output of the other AND gate is a series of positive pulses while the output of the first named AND gate remains at ground. The outputs of the two AND gates are fed to opposite inputs of a bistable circuit. Setting and resetting of the bistable are accomplished by the first positive pulses from the respective AND gates. A phase difference waveform is fed to a level detector and a pulse shaper or generator which produces a sampling pulse when the phase difference between the bus and the generator is 50°. This last named pulse is used in two NOR circuits to sample both outputs of the bistable. If the bistable is in the set state when this sampling pulse occurs the output of a first NOR gate is a logical one and a "raise" pulse stretcher is actuated for producing a signal which is utilized to increase speed. If the bistable is in the reset state when the 50° sampling pulse occurs the output of a second NOR gate is a logical one, and a "lower" pulse stretcher will be actuated, and a signal produced to reduce the speed of the generator. If the bus and generator are too closely matched and the time interval between two successive 50° phase difference points is too long the "raise" pulse producer is actuated.

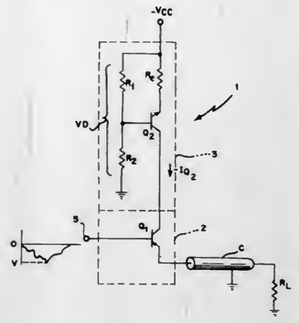
In another embodiment, squared generator and bus waveforms plus a third squared waveform representing the bus after phase shifting are obtained, and applied to four AND circuits which together with a bistable circuit and pulse stretchers provide "raise" and "lower" pulses or chains of pulses depending on the relationships of the generator and bus frequencies and phase.

3,553,597
F.M. TO P.A.M. CONVERTER
Alfred Bugay, Niagara Falls, N.Y., assignor to Sierra Research Corporation, a corporation of New York
Filed Feb. 12, 1968, Ser. No. 704,759
Int. Cl. H03d *3/20*
U.S. Cl. 329—110 **2 Claims**



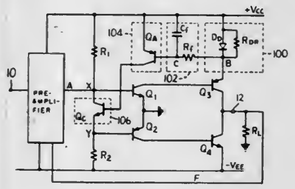
A circuit for accepting frequency modulated (F.M.) input wherein the information resides in the spacings between zero-axis crossings of the cycles, and converting this information into pulse amplitude modulation P.A.M. output having flat step levels, each of which represents the spacing between one pair of adjacent zero-axis crossings, the circuit having the advantage of providing an accurate output level for each half cycle of the F.M. input. The step levels are obtained by linearly charging a capacitor from a D.C. source, each charge accumulating substantially for the duration of the half-cycle in question, and the circuit then sampling and holding the level of the capacitor while the next F.M. half-cycle is being used to recharge the capacitor to accumulate a new level representing its duration.

3,553,598
TRANSISTORIZED DRIVER CIRCUIT
Robert H. Reif, Groton, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed July 3, 1968, Ser. No. 742,425
Int. Cl. H03f *3/42, 3/50*
U.S. Cl. 330—11 **6 Claims**



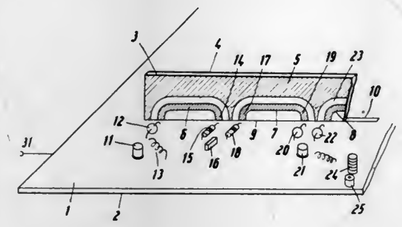
A transistorized driver circuit providing short circuit protection including a pnp transistor arranged as an emitter follower for driving a cable, and a current control circuit in the collector circuit of the pnp transistor for limiting the current flow through the pnp transistor to the cable to a safe value in the event the cable becomes short circuited. The current control circuit comprises an npn transistor having its collector connected to the collector of the pnp transistor, its emitter connected through an emitter resistor to a negative power supply, and its base connected to the junction of a first resistor and a second resistor forming a voltage divider, the voltage divider being connected between the power supply and ground.

3,553,599
BIAS CONTROL CIRCUIT FOR SEMICONDUCTOR AMPLIFIER
Kou-ichi Hayamizu, Itami, Hyogo Prefecture, Japan, assignor to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan
Filed Feb. 17, 1969, Ser. No. 799,671
Claims priority, application Japan, Feb. 20, 1968, 43/10,640, 43/10,641
Int. Cl. H03g *3/50*
U.S. Cl. 330—29 **8 Claims**



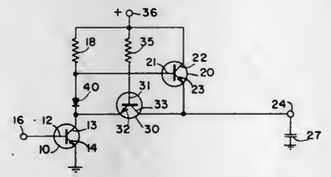
An OTL type amplifier of complementary or quasi-complementary transistor structure has connected between a voltage source and an output of one of the output transistor a parallel arrangement of diode and resistor to detect a current flowing through the transistor. The detected current passes through a low-pass filter and after amplification it is applied to a base of a control transistor. A voltage across its emitter and collector controls the amplifier to be put in the class B or AB operation.

3,553,600
ELECTRICAL CIRCUIT
Werner Bachnick, Bredenbeck, Hannover, and Rolf Wegener, Hannover, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed Nov. 27, 1967, Ser. No. 685,778
Claims priority, application Germany, Dec. 2, 1966, T 32,655
Int. Cl. H03f *3/00, 3/60*
U.S. Cl. 330—66 **9 Claims**



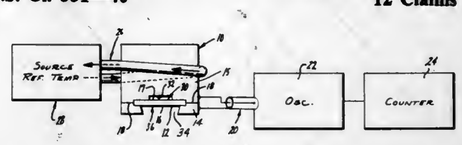
The present invention relates to a high frequency amplifier arrangement with several resonant-line circuits (e.g. television tuner) where the inner conductors and the outer conductors of the resonant-line circuits are arranged on a metal coated carrier plate, the inner conductors being arranged one behind the other and resting with its ends on a side edge of said carrier plate, which is inserted in an amplifier base plate. The base plate, which carries the relevant circuit elements and if necessary other amplifier stages, is dip soldered with the inserted carrier plate. Two ends of two inner conductors facing one another may be grounded by a common inductance consisting of two conductors coupled with one another, whereas the other ends of the two inner conductors are grounded across a tuning capacitance.

3,553,601
TRANSISTOR DRIVER CIRCUIT
James R. Glasser, Naperville, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Feb. 10, 1969, Ser. No. 798,023
Int. Cl. H03f *3/04*
U.S. Cl. 330—24 **2 Claims**



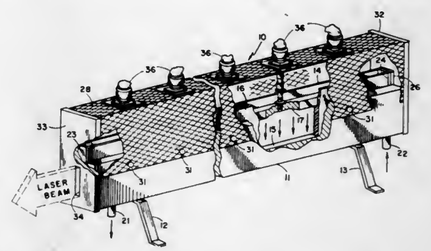
A transistor amplifier circuit is provided for operation as a class B amplifier and which has a voltage swing capability which is as close as possible to the supply voltage. The transistors used are all of the same polarity type so that the circuit may be easily manufactured as an integrated circuit. The circuit provides an emitter follower output amplifier having a transistor coupled in the reverse direction between its emitter and base and biased to saturation to provide a path for current flow when the emitter follower transistor is cutoff.

3,553,602
TEMPERATURE STABILIZED PIEZOELECTRIC CRYSTAL TRANSDUCER AND OSCILLATOR
Charles F. Brothers, Menlo Park, Thomas R. Parkhill, Redwood City, and Norman E. Rosinski, Cupertino, Calif., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed June 27, 1968, Ser. No. 740,691
Int. Cl. G01k *7/04;* **H01v** *7/00;* **H03b** *5/32*
U.S. Cl. 331—40 **12 Claims**



A crystal transducer and an oscillator circuit is disclosed in which a temperature gradient is applied between the crystal faces. One face is held at a predetermined reference temperature while the temperature of the other face varies with the environment to which it is exposed. For this arrangement a linear relationship exists between the temperature gradient and the natural resonance of the crystal. Applications as temperature sensor, microbalances and particular modes of operating the transducer are disclosed.

3,553,603
LASER DEVICE UTILIZING AN ELECTRIC FIELD ACROSS A NONRESONANT OPTICAL CAVITY
Donald A. Leonard, Stoneham, Mass., assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Mar. 21, 1966, Ser. No. 536,094
Int. Cl. H01s *3/00*
U.S. Cl. 331—94.5 **16 Claims**

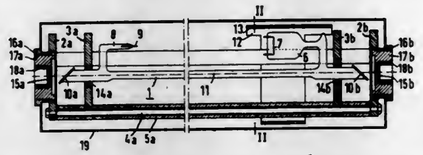


A laser type device wherein a driving electric field is periodically applied in a cross field geometry across a cavity. An optically resonant cavity is not necessary to produce an output beam, the longitudinal axis of which is perpendicular to the driving electric field. The driving electric field is provided with a fast-rise current pulse, the inductance of current paths in the discharge region being substantially uniform and as small as possible.

3,553,604
THERMALLY STABLE APPARATUS FOR LASER DEVICE
Bernhard Andress, Hubert Köhler, and Fritz Schmidt, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Aug. 14, 1968, Ser. No. 752,708
Claims priority, application Germany, Aug. 19, 1967, 1,614,585
Int. Cl. H01s *3/02*
U.S. Cl. 331—94.5 **10 Claims**

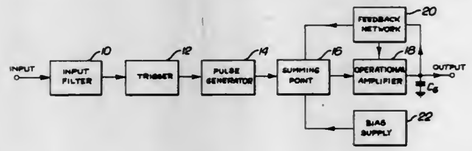
Heat insulating material is utilized to cover at least part of the holding structure of good heat conductivity which supports a laser device in a housing of good heat

conductivity. An annular diaphragm around part of the laser device directs heat produced in the laser device to the



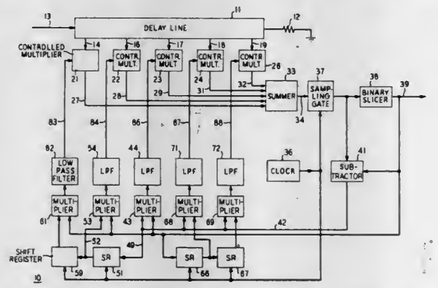
housing in at least approximately isotropic rotational symmetry relative to the laser axis.

3,553,605
PULSE RATE TO VOLTAGE ANALOG CONVERTER CIRCUIT FOR TRANSMISSION OF INTELLIGENCE MEASURED BY VOLTAGE
Gordon L. Brock and Charles H. Armstrong, Huntington Beach, Calif., assignors to Hersey-Sparling Meter Company, El Monte, Calif., a corporation of Massachusetts
Filed Apr. 17, 1968, Ser. No. 722,100
Int. Cl. H03k 7/06
U.S. Cl. 332—9 **14 Claims**



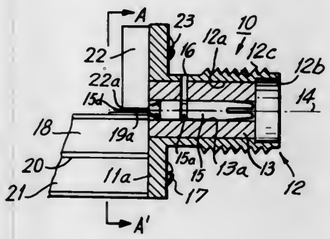
A circuit for developing a direct-current voltage analog of the repetition rate of an input pulse signal which may have a waveshape of irregular height and duration. Trigger pulses are generated in response to each input pulse and the trigger pulse in turn triggers a pulse generator which generates substantially uniform pulses of substantially constant height, duration and waveshape. The generated pulses are summed and averaged with respect to time to produce an output of the circuit that is a voltage analog of the repetition rate of the input pulse signal and may be indicated by any conventional means.

3,553,606
SYSTEM FOR PROVIDING ADJUSTING SIGNALS TO A TRANSVERSAL FILTER EQUALIZER
Erich Port, Zurich, Switzerland, assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Apr. 21, 1969, Ser. No. 817,704
Int. Cl. H04b 3/04; H03h 5/00, 7/10
U.S. Cl. 333—18 **4 Claims**



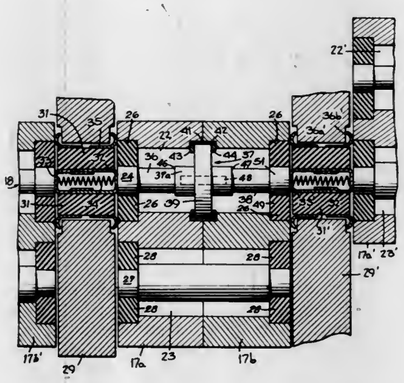
A system is disclosed in which differential adjusting signals for a transversal filter equalizer are generated by delaying an error polarity signal with a first shift register and a signal polarity signal with a second shift register. The error polarity signal is correlated with the output of each stage of the second shift register while the signal polarity signal is correlated with the output of each stage of the first shift register.

3,553,607
CONNECTOR FOR COUPLING A MICROWAVE COAXIAL CIRCUIT TO A MICROSTRIP PRINTED CIRCUIT
Sanford S. Lehrfeld, Heightstown, N.J., assignor to Tek-Wave, Inc., Princeton, N.J., a corporation of New Jersey
Filed Feb. 29, 1968, Ser. No. 709,264
Int. Cl. H01p 3/08, 5/08
U.S. Cl. 333—34 **10 Claims**



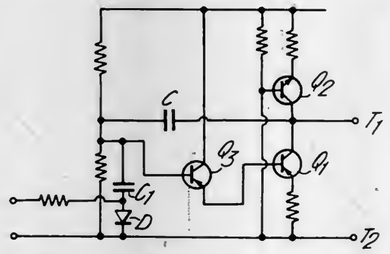
A coupling apparatus for connecting a coaxial line to a flat line configuration by means of a coaxial coupling including a tapered pin of a particular configuration providing colinear alignment of the coaxial line and the flat line configuration; optimal impedance matching and extremely broad band performance.

3,553,608
SELECTIVE ATTENUATOR COMPRISING A PLURALITY OF SLIDABLE ATTENUATION UNITS
Richard M. Mison, Wayne, N.J., assignor to Ohmega Laboratories, Pine Brook, N.J., a partnership
Filed May 27, 1968, Ser. No. 732,405
Int. Cl. H01p 1/22
U.S. Cl. 333—81 **1 Claim**



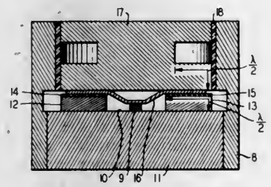
A sliding attenuator including input and output terminals and a sliding member therebetween supporting a high attenuation section and a second section having little or no attenuation. The member can be moved to two positions, one bringing the second section between the input and output terminals and the other bringing the high-attenuation section between these terminals. Several such movable members can be placed side by side and moved separately to form a path having many different attenuation levels between the input and output terminals. Individual movable members can be separated by conductive barriers, each having a short transmission coupling line to allow passage of the signal. The barriers may be free to move slightly to accommodate the movable members.

3,553,609
ACTIVE CAPACITANCE REACTANCE CIRCUIT
Gordon Malcolm Edge, Cambridge, England, assignor to Cambridge Consultants Limited, Cambridge, England, a British company
Filed Apr. 15, 1968, Ser. No. 721,414
Claims priority, application Great Britain, Apr. 21, 1967, 18,435/67
Int. Cl. H03h 11/00
U.S. Cl. 333—80 **4 Claims**



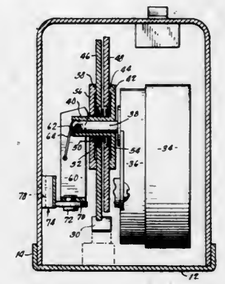
A variable impedance circuit including a constant current generator connected in series with an active circuit element having feedback provided by a reactive element, and means to vary the gain of the active element.

3,553,610
DIODE MOUNT HAVING INTEGRAL RESONANT CIRCUIT
Helmut E. Brenner, Middletown, Roger Edwards, Gillette, and Adolf J. Giger, Holmdel, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed May 23, 1969, Ser. No. 827,431
Int. Cl. H01p 7/06; H01l 5/02; H03b 7/14
U.S. Cl. 333—83 **9 Claims**



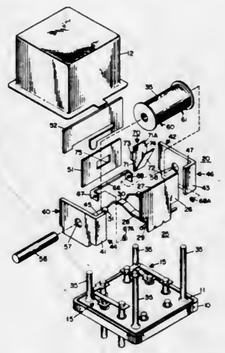
A semiconductor mounting package incorporating its own resonant circuit is disclosed for millimeter waveguide use. The apparatus comprises a metal stud having two spaced metal projections formed on its end surface, a two-terminal semiconductor device mounted on the surface between the projections, and a metal ribbon connecting the upper device terminal to a source of bias energy. The ribbon, the projections, the stud surface, and means providing a low impedance path for millimeter wave energy across the gaps between the ribbon and the projections form a resonating lumped inductance cavity around the device. The impedance of this packaged circuit is of relatively simple form, approximately that of a parallel resonant circuit comprising the device and the lumped cavity inductance. With its use oscillators have been built having good modulation sensitivity and fundamental frequencies in the range of 60 gHz.

3,553,611
ROTARY ELECTRIC CIRCUIT INTERRUPTER
Joseph Briechle, Redding, Conn., assignor to Frank R. Hormann, West Islip, N.Y.
Filed July 7, 1969, Ser. No. 839,371
Int. Cl. H01h 3/26, 3/42
U.S. Cl. 335—68 **6 Claims**



A device for providing electrical impulses of various lengths at various time intervals and for varying the length and intervals of said impulses by having a plurality of disc cams with random circumferentially spaced lobes loosely mounted on a rotatable shaft and adapted to be frictionally driven one by the other, means for intermittently varying angularly in an unpredictable manner, the relationship of the lobes on the cams to one another and an electrical instrumentality operable by said cams.

3,553,612
MINIATURE RELAY WITH DOUBLE AIR GAP MAGNETIC CIRCUIT
John S. Zimmer, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed May 21, 1969, Ser. No. 826,572
Int. Cl. H01h 50/16
U.S. Cl. 335—128 **32 Claims**



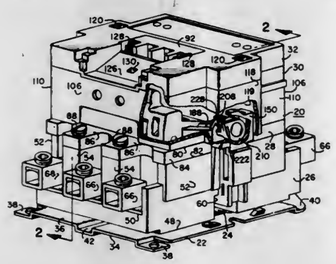
A miniature relay is provided including a sturdy, box-like electromagnet unit mounted in spaced relation to a base. One side of the box-like structure includes first and second pole pieces magnetically connected to the source

of electromagnetic energy. An armature unit which comprises an armature and a contact actuating lever arm is mounted for rotation about an axis exterior to the dimensions of the armature. The armature is free of engagement with the pole faces when the electromagnetic energy source is deenergized. When the source is energized, the armature moves through the air gaps between itself and the first and second pole pieces respectively. One face of the armature contacts both pole pieces, closing the magnetic circuit between them. In one form, the pole pieces have surfaces in a common plane.

3,553,613
MAGNET AND MOVABLE CONTACT SUPPORT STRUCTURE FOR A MULTIPLE CONTACT ELECTROMAGNETICALLY ACTUATED SWITCH

Merlin Y. Turnbull, Brookfield, and Harold E. Whiting, Milwaukee, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed July 23, 1969, Ser. No. 844,100
Int. Cl. H01h *50/16*
U.S. Cl. 335—132 **10 Claims**



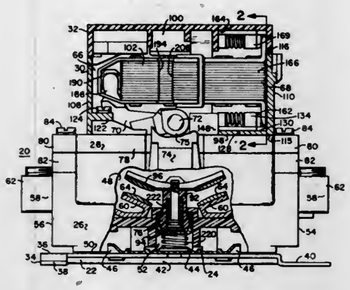
A multiple contact electromagnetically actuated contactor having a bell crank connection between a magnet armature and a movable contact carrier. The contactor includes an arrangement whereby the electromagnet and the contacts are enclosed in separate housings. The housing for the contacts includes an insulating base and a barrier which acts as a cover for the base and cooperates with the base to provide a row of compartments. Each of the compartments has a pair of stationary contacts and a movable contact therein and the walls of the compartments provide a high degree of interphase isolation between the contacts in adjacent compartments. The movable contacts are operated by a U-shaped contact carrier that is movable in a slot in a rear wall of the base and has portions extending through openings in the rear wall into the compartments. The connection between the bell crank and contact carrier is arranged so that the barrier can be removed when the contacts are securely welded together and will cause the movable contacts to separate from the stationary contacts during light welds between the contacts.

3,553,614
MAGNET STRUCTURE AND MAGNET SUPPORT STRUCTURE IN AN ELECTROMAGNETICALLY OPERATED SWITCH

Harold E. Whiting, Milwaukee, and Merlin Y. Turnbull, Brookfield, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed July 23, 1969, Ser. No. 844,029
Int. Cl. H01h *50/16*
U.S. Cl. 335—132 **10 Claims**

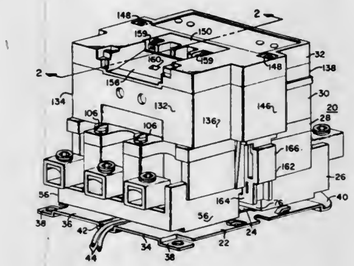
A multiple contact electromagnetically operated switch having a housing that provides an enclosure for the electromagnet operator of the switch. The housing includes at least one metal part that has a high coefficient of thermal conductivity so the housing acts as a heat sink and a radiator for heat generated within the electromagnet when a magnet coil of the electromagnet is energized. The heat sinking capability is accomplished by resiliently supporting a portion of a magnet core for the electromagnet on the metal housing part in a manner which will permit the magnet core to move toward the armature portion of the electromagnet while the armature is moving toward the magnet core to reduce the impact shock which occurs when the armature engages the magnet core.



3,553,615
MAGNET AND MOVABLE CONTACT SUPPORT STRUCTURE FOR A MULTIPLE CONTACT ELECTROMAGNETICALLY ACTUATED SWITCH

Merlin Y. Turnbull, Brookfield, Wis., assignor to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed July 23, 1969, Ser. No. 844,148
Int. Cl. H01h *50/16*
U.S. Cl. 335—132 **10 Claims**

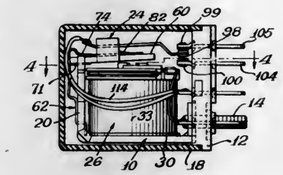


The constructional details and the arrangement of the components of a multiple contact electromagnetically actuated switch that has a contact carrying portion of a U-shaped movable contact carrier movable in an externally exposed slot in a rear wall of a base which carries the stationary contacts. The contact carrier is actuated by an electromagnet structure that has the stationary magnet part resiliently supported on a metal housing in a manner so the stationary magnet moves toward the armature to minimize the shock and the bounce between the contacts of the switch and permit the metal housing to act as a heat sink for the heat energy generated within the magnet when the electromagnet is energized. The components of the switch are arranged so that the switch can be readily assembled and the contacts or the electromagnet can be individually serviced with the contacts being readily accessible in event the movable contacts are welded to the stationary contacts.

3,553,616
ELECTRICAL RELAY

John J. Rowell, Glenview, and William W. Wright, Wheaton, Ill., assignors to Guardian Electric Manufacturing Company, Chicago, Ill., a corporation of Illinois

Filed Jan. 27, 1969, Ser. No. 794,136
Int. Cl. H01h *3/54*
U.S. Cl. 335—187 **1 Claim**

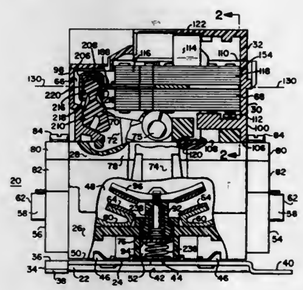


An electrical relay having a field piece with a coil assembly and an armature mounted thereon includes a flat return spring which biases the armature about its pivotal mounting on the field piece and simultaneously holds the armature in position on the field piece. Also an improved spool construction for the coil assembly includes a flange adapted to receive the lead wires of the coil winding.

3,553,617
MAGNET STRUCTURE AND MAGNET SUPPORT STRUCTURE IN AN ELECTROMAGNETICALLY OPERATED SWITCH

Merlin Y. Turnbull, Brookfield, and Harold E. Whiting, Milwaukee, Wis., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan

Filed July 23, 1969, Ser. No. 844,034
Int. Cl. H01h *45/04*
U.S. Cl. 335—202 **10 Claims**

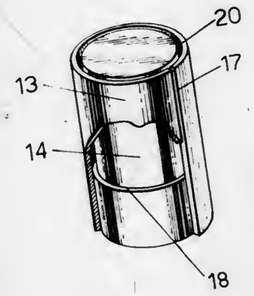


A multiple contact electromagnetically operated switch having a housing that provides an enclosure for the electromagnet operator of the switch. The housing includes at least one metal part that has a high coefficient of thermal conductivity so the housing acts as a heat sink and a radiator for heat generated within the electromagnet when a magnet coil of the electromagnet is energized. The heat sinking capability is accomplished by supporting a portion of a magnet core for the electromagnet of the metal housing by a pair of ears that are located adjacent the pole faces of the magnet core to maximize the transfer of heat between the magnet core and the housing. The ears extend from a member that is centrally located in the stack of laminated pieces of magnetic iron forming the magnet core. A member providing the connection between the armature and a bell crank lever extends centrally in the stack of laminated pieces of magnetic iron forming the armature so the support for the magnet core and the output of the armature are coplanar with resilient members carried by the member providing the connection between the amature and bell crank absorbing the shock when the electromagnet is de-energized.

3,553,618
PHASE SPLITTING CORE FOR ELECTROMAGNETIC DEVICES

Gregor L. Lang, 295 East St., Suffield, Conn. 06078

Filed Dec. 11, 1968, Ser. No. 783,035
Int. Cl. H01f *7/13*
U.S. Cl. 335—244 **17 Claims**

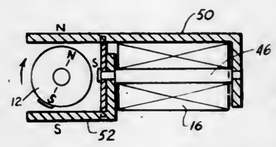


A magnetic core construction in which the phase retardant effects of eddy-currents and hysteresis in a flux carrying core portion are employed to generate an alternating flux, lagging in phase behind the flux wave flowing in a non-retardant core portion.

3,553,619
ELECTRICALLY CONTROLLED MAGNETIC MOVEMENT

Alfred Skrobisch, Huntington Station, N.Y., assignor to Allard Instrument Corporation, Westbury, N.Y., a corporation of New York

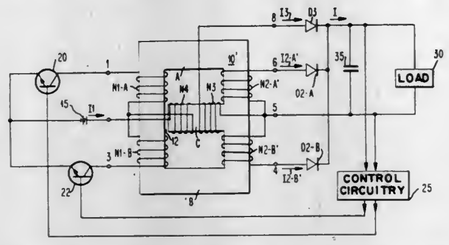
Filed Aug. 23, 1968, Ser. No. 754,873
Int. Cl. G08b *5/30;* **H01f** *7/08, 7/14*
U.S. Cl. 335—272 **14 Claims**



The electrically controlled magnetic movement comprises a permanent magnet acting as a rotor, and a stationary electromagnet or stator having three poles spaced around the rotor. Two poles of the opposite polarity are about 180° apart, and a third pole having the same polarity as one of the two poles is disposed about 90° from the first two poles. The rotor assumes a rest position between first two poles. When the electromagnet is energized the rotor turns abruptly with a snap action to a

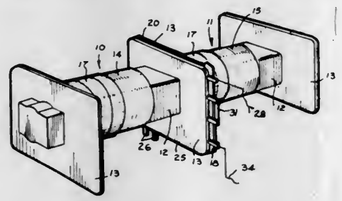
new position generally transverse to its rest position. This is done with greatly increased torque compared to previously known movements of the same general type. When the stator is again deenergized the rotor turns abruptly back to its original rest position, without need for a restoring spring. Stop means are effective to limit the rotation of the rotor to somewhat less than 90°.

3,553,620
COMBINED TRANSFORMER AND INDICATOR DEVICE
John R. Cielo, Kingston, and Harry S. Hoffman, Jr., Saugerties, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 20, 1967, Ser. No. 691,996
Int. Cl. H01f 21/08
U.S. Cl. 336—165 **7 Claims**



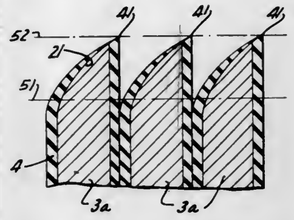
A DC-to-DC power converter incorporating a combined transformer and inductor device comprised of a three-legged magnetic structure having an air gap in the center leg and primary and secondary windings arranged on the three legs to provide combined cooperative transformer and inductor action. The primary and secondary windings are each of push pull configuration, and in one form the cooperating primary and secondary winding push are poled and located to provide MMF-bucking action applying the entire primary MMF across the inductor leg, while in another form only the core magnetizing MMF is seen across the inductor leg, and an additional primary winding is provided to boost the flux in that leg. In each case the inductor leg has an air gap to provide it with significantly higher reluctance than that of the remainder of the magnetic circuit.

3,553,621
INDUCTOR WITH TERMINAL CARRIER
Norman Lane, Halesowen, Worcester, England, assignor to BSR Limited, Cradley Heath, Warley, England, a British company
Filed Mar. 4, 1969, Ser. No. 804,119
Claims priority, application Great Britain, Mar. 9, 1968, 11,619/68
Int. Cl. H01f 15/10
U.S. Cl. 336—192 **10 Claims**



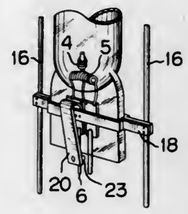
A coil winding assembly comprising a bobbin with a number of turns of wire to form a coil, the ends of the wire being connected to main supply leads by means of terminal tags provided on a terminal carrier in the form of a plate separate from the bobbin and mounted on the core adjacent one end flange of the bobbin. Two similar bobbins are provided in end to end relationship on the core, with the terminal carrier sandwiched therebetween.

3,553,622
LAMINATED MAGNETIC CORE
Vadim Subovici, Bucharest, Rumania, assignor to Ministerul Industries Constructilor de Masini, Galea Victoriei, Bucharest, Rumania
Continuation-in-part of application Ser. No. 485,481, Sept. 7, 1965. This application May 9, 1969, Ser. No. 823,462
Claims priority, application Rumania, Sept. 10, 1964, 48,504
Int. Cl. H01f 27/24
U.S. Cl. 336—219 **6 Claims**



In making a laminated magnetic core, a steel sheet coated on one or both sides with a dielectric layer is scored by a blunt tool which, acting through the dielectric layer, deforms the metallic substrate together with that layer whereby, upon complete penetration of the substrate, two sheet sections with confronting sloping edges at least partly covered by insulation are obtained. A strip so cut from a coated sheet may be coiled into a core body having end faces with serrated profiles formed by the sloping edges of the strip; by flattening these edges, the end faces are smoothed while remaining covered over a substantial part of their area by the insulation overlying the flanks of the serrations.

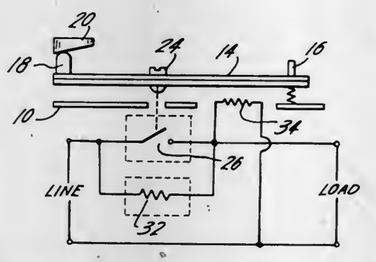
3,553,623
THERMOSTATIC SWITCH FOR ELECTRIC DISCHARGE LAMP
Yoshio Ohtagaki, Okegawa-machi, and Hajime Kitano, Fukiage-machi, Japan, assignors to Iwasaki Denki Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Dec. 20, 1967, Ser. No. 667,159
Int. Cl. H01j 1/02, 7/24, 61/52
U.S. Cl. 337—18 **3 Claims**



A thermostatic switch for the electric discharge lamp of such a type as having a heating filament provided adjacent to one of main electrodes and a mounting structure for an arc discharge tube consisting of a vertically

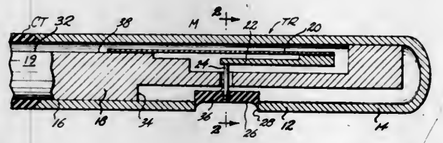
extending metallic bar to serve also as lead-in wire to the other main electrode and at least one transversely extending metallic band mechanically and electrically connected to said vertical bar, said thermostatic switch consisting substantially of a bimetallic element of which one end is fixed to said transverse band so that the other end of said bimetallic element may contact with an extension conductor leading from one end of said heating filament which extends out of said arc discharge tube, the other end of said heating filament being connected to the other main electrode, whereby discharge strating characteristics may be stabilized substantially independent of the ambient temperature and the lamp position.

3,553,624
ANTI-DROOP THERMOSTAT
James W. Dalzell, Herbert T. Hazleton, and John B. Thorsteinsson, Brandon, Manitoba, Canada, assignors to Pioneer Electric Brandon Limited, Brandon, Manitoba, Canada, a Canadian corporation
Continuation-in-part of application Ser. No. 530,485, Feb. 28, 1966. This application Mar. 28, 1969, Ser. No. 811,393
Int. Cl. H01h 37/14, 37/52
U.S. Cl. 337—377 **5 Claims**



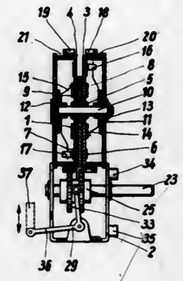
Thermostats having a temperature responsive bimetal mechanically coupled to a switch are affected variably by heat from the switch reaching the temperature sensing bimetal. A heating element is provided which is turned on during the times when the switch is turned off so that a consistent amount of heat from the combined switch and heating element reaches the bimetal and can be taken into account in adjusting the thermostat. The heating element has a thermal inertia that approximates the thermal inertia of the switch.

3,553,625
SIDE SENSITIVE MINIATURIZED PRESSURE TRANSDUCER
Cecil K. Stedman, Enumclaw, Wash., assignor to Statham Instruments, Inc., Los Angeles, Calif., a corporation of California
Filed Dec. 29, 1967, Ser. No. 694,488
Int. Cl. G01l 1/22
U.S. Cl. 338—4 **11 Claims**



Miniaturized pressure transducers for intracardiac and like applications employing a cylindrical housing having a side placed rubber diaphragm, and a beam type flexure member mounting film type electroconductive strain sensing elements, placed on a single surface of the beam and subject to both tensive and compressive strain upon deflection of the beam. A plurality of leads connect the strain sensitive elements into a conventional Wheatstone bridge circuit. A lever arm or "paddle" is fixed to the loaded end of the beam and extends generally parallel to the beam and a linkage pin interconnects the diaphragm and the lever arm below the midpoint of the flexural beam.

3,553,626
DUPLEX ROTARY TUNING VOLTAGE DIVIDER
Josef Köhler, Bad Neustadt, Saale, Germany, assignor to PREH Elektro-Feinmechanische Werke, Jakob Preh Nachf., Postfach, Bad Neustadt, Saale, Germany
Filed Dec. 10, 1968, Ser. No. 782,661
Claims priority, application Germany, Dec. 16, 1967, 1,591,391
Int. Cl. H01c 5/00
U.S. Cl. 338—128 **7 Claims**



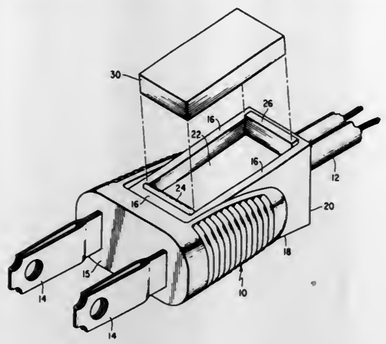
In a duplex rotary tuning voltage divider, two voltage dividers adapted to be adjustable indepenently of each other, each individual voltage divider having a resistance layer secured to opposite surfaces of a stationary support, each individual divider having a wiper secured to a carrier, said carriers of both said wipers being rotatably supported about a common axis but arranged on opposite sides of said support for said resistance layers, each of said wiper carriers being provided with an outer gear, and pinion means being adapted to selectively engage the gear of one of said wiper carriers to thereby rotate such carrier relative to its wiper and adjust the voltage division on the resistance layer engaged by such wiper.

The engagement of said pinion means with said gear of one said wiper carriers being effected either by means for shifting the pinion means along an axis of rotation parallelling the axis of rotation of said wiper carriers, or alternatively by pinions permanently engaging the gears of said wiper carriers and clutch means adapted to selectively couple one of said pinions at a time to an adjustment device.

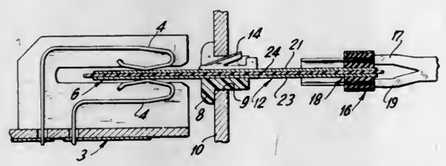
3,553,627
MOLDED ELECTRIC PLUG WITH FLEXIBLE HOLDING MAGNET
John M. Gerber, St. Charles, Ill., assignor to Essex International, Inc., Fort Wayne, Ind., a corporation of Michigan
Filed July 8, 1968, Ser. No. 743,122
Int. Cl. H01r 13/60
U.S. Cl. 339—12 **6 Claims**

An electric plug is molded with connected blades and cord, and with a rectangular flexible magnet in one of two opposite grasping surfaces of the plug so that the plug can be magnetically held on a surface of magnetic

material. The plug may be molded with the blades and cord and with a rectangular recess in the grasping surface. Subsequently, the flexible magnet is inserted into the recess and held by friction.



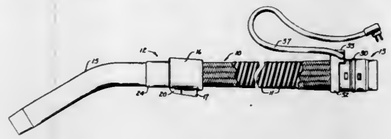
3,553,628
CONNECTOR SYSTEM
David J. Crimmins, Stockton, N.J., assignor to Thomas & Betts Corporation, Elizabeth, N.J., a corporation of New Jersey
Filed Sept. 13, 1968, Ser. No. 759,733
Int. Cl. H01r *3/06*
U.S. Cl. 339—14 **7 Claims**



This disclosure relates generally to multi-conductor electrical wiring and more particularly to an electrical connector for mechanically connecting electrical conductors to terminal boards, chassis, electrical conductors, transmission lines and other components. The connector comprises a male blade terminal of two conducting blades, the flat sides of which are mounted parallel to one another and facing one another, with a thin film of insulation material between the surfaces of the blades. The terminal is adapted to be inserted into a female connector, which may have two curved resilient blades each adapted to engage one of the two blades of the pin so as to form two separate paths of conduction from the blade terminal to the female connector. Terminal fittings are provided to terminate electrical conductors to the blade terminal.

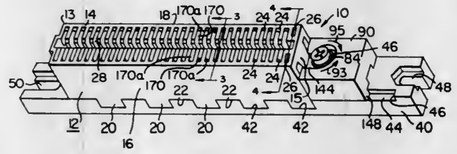
3,553,629
ELECTRIC HOSE WITH END FITTINGS FOR A VACUUM CLEANER
Robert J. Brown, South Salem, N.Y., and John J. Kowalewski, Riverside, and John J. Moughty, Old Greenwich, Conn., assignors to Consolidated Foods Corporation, Old Greenwich, Conn., a corporation of Maryland
Filed Sept. 9, 1968, Ser. No. 758,493
Int. Cl. H01b *7/04;* **H01r** *3/04*
U.S. Cl. 339—15 **10 Claims**

End fittings for a vacuum cleaner hose having integral conductors in which an electric terminal or plug is incorporated in the hose handle fitting at one end of the hose and another complementary plug or terminal is incorporated in the push connector fitting at the other end of the hose. Each fitting is removably connected at the end of the hose and the hose conductors are provided with a plug sleeve or blade which is placed in a receptacle housing member attached to the associated fitting by a conventional snap ring. The receptacle housing of the handle



fitting is provided with a removable cover member which is held in place by the snap ring also. The receptacle housing member for the push connector end of the hose is provided with a terminal block which fits in a recess in the housing and incorporates a strain relief member for a short length of cord carrying a plug which extends from the terminal block.

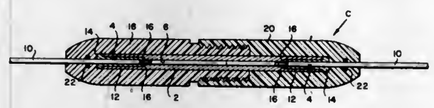
3,553,630
LOW INSERTION FORCE CONNECTOR
William S. Scheingold, Trevose, Geza P. Bottlik, Rydal, Gerald J. Selvin, Oreland, and Alan S. Krum, Philadelphia, Pa., assignors to Elco Corporation, Willow Grove, Pa., a corporation of Delaware
Filed Jan. 29, 1968, Ser. No. 701,391
Int. Cl. H01r *13/62*
U.S. Cl. 339—74 **6 Claims**



An electrical connector has a circuit board receiving area therein for receiving an edge of a circuit board. A plurality of contacts are disposed partially in the circuit board receiving area and each contact has a nose section with a wiping surface thereon which is adapted to make electrical contact with a respective conductive element on the circuit board. An actuating assembly is associated with the electrical connector for applying a force outwardly of the circuit board receiving area to move the nose section and respective wiping surface of each contact out of the region of said area to facilitate the insertion of the circuit board into the electrical connector and the withdrawal of the circuit board from the electrical connector.

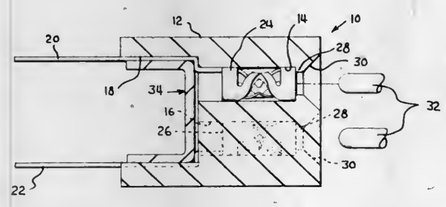
3,553,631
NONSTRIP CONNECTION
Bernard Edward Shlesinger, Jr., 3906 Bruce Lane, Annandale, Va. 22003
Filed Nov. 27, 1968, Ser. No. 779,548
Int. Cl. H01r *11/20*
U.S. Cl. 339—97 **32 Claims**

A nonstrip connector for insulated conductors comprising a conductor receptacle, including means for supporting an insulated conductor therein; the receptacle, including cam means on the inside surface thereof; a conductive insert cooperating with and insertable into the receptacle; the insert including at least one disposable insulation penetrating means; the receptacle having its maximum internal width approximating the maximum clearance width of the insert prior to depression of the insulation penetrating means; whereby after the conductor has been positioned in the receptacle, the cam means cooperates with the penetrating means when the insert



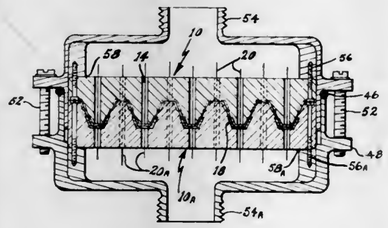
is inserted into the receptacle to deflect the penetrating means inwardly to penetrate the insulation on the conductor and thus make an electrical connection.

3,553,632
ELECTRICAL CONNECTOR
James Ross Hildebrand and Linn Stephen Lightner, Camp Hill, and John Edward Watson, York, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Oct. 21, 1968, Ser. No. 769,328
Int. Cl. H01r *9/04, 13/50*
U.S. Cl. 339—176 **4 Claims**



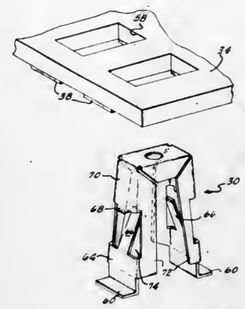
An electrical connector for a board or other panel member having wire conductors or printed circuitry associated therewith and comprising a housing formed of a dielectric material having a plurality of electrical contacts mounted therein. The contacts are retained within the housing by means of a fiber mat impregnated with a heat-responsive plastic resin.

3,553,633
MULTI-CONTACT SEPARABLE ELECTRICAL CONNECTOR
Albert A. Ondrejka, 3200 Glenvalley Drive, Midwest City, Okla. 73110
Filed Feb. 28, 1966, Ser. No. 532,538
Int. Cl. H01r *13/22, 13/64*
U.S. Cl. 339—186 **1 Claim**



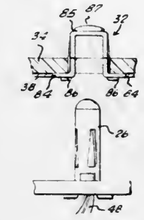
Mateable multiple contact connector parts each have contact blocks with ridge and groove structure of frustum of pyramid shape, between each of which, and on each of which electrical contacts are secured for engagement with similar contacts on a mating part.

3,553,634
ELECTRICAL INTERCONNECTING SYSTEM AND PARTS
Robert Graham Lundergan and Charles Edward Reynolds, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Original application Sept. 27, 1967, Ser. No. 671,061, now Patent No. 3,488,628, dated Jan. 6, 1970. Divided and this application Sept. 5, 1969, Ser. No. 855,511
Int. Cl. H01r *13/12, 13/42*
U.S. Cl. 339—258 **3 Claims**



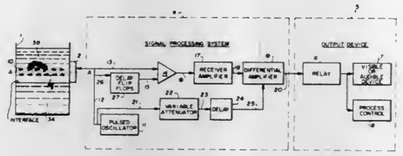
An interconnection system is disclosed with various connector designs for electrically connecting conductors to printed circuit boards or the like. In one form, the connector receives wire conductors and is pluggable into a receptacle mounted on a printed circuit board. In another form, the connector receives wire conductors and end wise receives a printed circuit board to function as an edge connector for the board.

3,553,635
ELECTRICAL INTERCONNECTING SYSTEM AND PARTS
Robert Graham Lundergan and Charles Edward Reynolds, Camp Hill, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Original application Sept. 27, 1967, Ser. No. 671,061, now Patent No. 3,488,628, dated Jan. 6, 1970. Divided and this application Sept. 5, 1969, Ser. No. 855,512
Int. Cl. H01r *13/12, 13/42*
U.S. Cl. 339—258 **1 Claim**



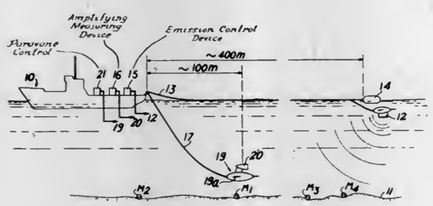
An interconnection system is disclosed with various connector designs for electrically connecting conductors to printed circuit boards or the like. In one form, the connector receives wire conductors and is pluggable into a receptacle mounted on a printed circuit board. In another form, the connector receives wire conductors and endwise receives a printed circuit board to function as an edge connector for the board.

3,553,636
NONCONTACT ULTRASONIC INTERFACE VISCOSITY AND PERCENT SOLID DETECTING DEVICE
James D. Baird, Hauppauge, N.Y., assignor, by mesne assignments, to The Bin-Dicator Company, Detroit, Mich., a corporation of Michigan
Filed Jan. 27, 1969, Ser. No. 794,105
Int. Cl. G01s 9/66
U.S. Cl. 340—1 **9 Claims**



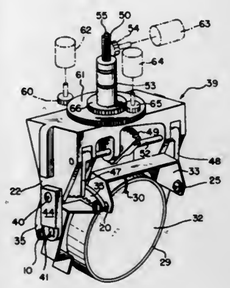
An interface, viscosity and percent suspended solid ultrasonic detecting system comprising a transducer adapted to be affixed to the outside of a container wall, means for energizing the transducer so that an ultrasonic pulse is transmitted through the container wall, across the container contents, and reflected off the opposite container wall back to the transducer, and means responsive to the reflected pulse, and dependent on the extent of attenuation of the reflected pulse, for indicating the location of an interface between two stratified immiscible liquids in the container and/or for indicating the viscosity and/or the percent solids of a suspension in a container.

3,553,637
METHOD AND APPARATUS FOR MEASURING AND CONTROLLING THE RANGE OF ACOUSTIC EMITTERS
Michel Hanff, Fontenay-le-Fleuri, and Pierre Juhel, Soyaux, France, assignors to Compagnie des Compteurs, Paris, France
Filed Feb. 27, 1969, Ser. No. 802,964
Claims priority, application France, Mar. 5, 1968, 142,398
Int. Cl. B63g 7/08
U.S. Cl. 340—5 **14 Claims**



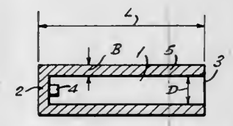
A method for measuring and controlling the range of an underwater acoustic emitter for sweeping acoustic influence mines and consisting in towing a sound signal emitter at a substantial distance astern of a minesweeper and in towing at least one sound signal receiver at a shorter distance astern which defines a safety zone with respect to the minesweeper and also at a short and constant distance from the sea floor. Essentially, the signal collected by the receiver is utilized for the purpose of modifying at least one of the sweep parameters so that said signal should have a value equal at a maximum to a predetermined value but insufficient to influence a mine which is assumed to be located at the same point as the receiver.

3,553,638
SONAR SCANNING MECHANISM
Kenneth L. Sublett, Seattle, Wash., assignor to Western Marine Electronics Company, Seattle, Wash., a corporation of Washington
Filed June 19, 1969, Ser. No. 841,188
Int. Cl. B63b 45/08; G01s 9/70
U.S. Cl. 340—3 **14 Claims**



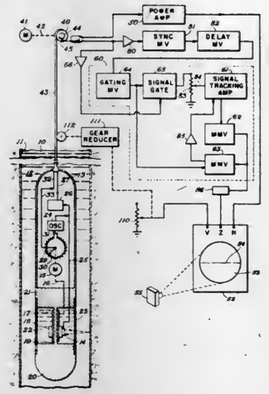
A marine sonar system is disclosed employing a support mechanism for an acoustic transducer capable of stabilizing the transducer from the pitch and roll motion of a ship. The transducer is freely suspended from a frame. A drive mechanism for varying the angle of the transducer includes two ring gears meshed with pinion gears journaled in the frame. The ring gears are free to rotate about the pinion gears to align with the gravity vector. Additionally, rotation of the pinion gears rotates the transducer without disturbing its alignment with the gravity vector. The transducer can be aimed to varying water depths by rotation of the pinion gears. The pinion gears are driven by an intermediate gear mechanism meshed with vertical rack gears. The rack gears are split into halves so that one-half can remain in mesh with a drive motor while the entire frame on which the transducer is mounted is rotated to aim the transducer at various angles. The sonar system further includes means for raising and lowering the transducer relative to the hull of the ship between scanning and rest position.

3,553,639
EXPENDABLE SONAR SOURCE
Daniel Schiff, Framingham, and Hoyt Clarke Hottel, Jr., Marion, Mass., assignors to Buzzards Corp., Marion, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 635,141, May 1, 1967. This application Aug. 9, 1968, Ser. No. 751,591
Int. Cl. H04r 23/00
U.S. Cl. 340—12 **7 Claims**



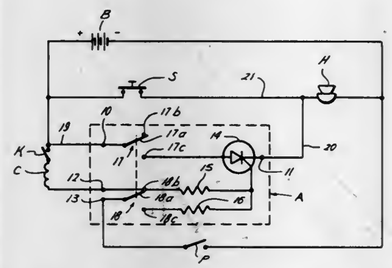
The present invention includes a hollow pipe of predetermined length extending between an open and a closed end, and a frangible rupture disc assembly secured to the open end.

3,553,640
SYSTEM FOR OBTAINING UNIFORM PRESENTATION OF ACOUSTIC WELL LOGGING DATA
Joseph Zemanek, Jr., Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Continuation of application Ser. No. 732,598, May 28, 1968. This application Sept. 11, 1969, Ser. No. 871,465
Int. Cl. G01v 1/40
U.S. Cl. 340—15.5 **17 Claims**



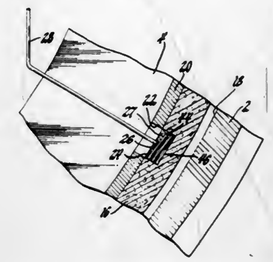
The specification discloses a directional acoustic transducer supported for rotation in a borehole and operated periodically to transmit acoustic pulses to the borehole wall and to detect reflected acoustic energy. Circuitry is employed to produce output signals of the same amplitude and width in response to the reflected acoustic energy detected. Only one output signal is produced during each period of operation of the transducer and which is representative of the primary reflection of acoustic energy from the borehole wall. The output signals produced are applied to an oscilloscope to modulate the intensity of its electron beam which is swept across the screen of the scope once for each rotation of the transducer.

3,553,641
VEHICLE THEFT ALARM AND CONTROL DEVICE
Edward L. Moragne, 4723 Nenana, Houston, Tex. 77035
Filed Nov. 15, 1967, Ser. No. 683,278
Int. Cl. B60r 25/04
U.S. Cl. 340—64 **10 Claims**



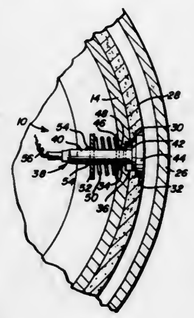
The trigger circuit of a silicon-controlled rectifier is manually introduced into the electrical system of an internal combustion engine by the first position of a two position switch so that closing of the ignition circuit provides a triggering pulse which biases the silicon-controlled rectifier into conduction to supply current to a horn. The resistance of the trigger circuit also prevents fuel ignition and the switch must be moved into its second position to permit ignition and to deenergize the horn.

3,553,642
ELECTRICAL BRAKE LINING WEAR INDICATOR
Richard C. Rike, Dayton, and Burlin B. Brombaugh, Germantown, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 19, 1968, Ser. No. 746,128
Int. Cl. B60q 1/44
U.S. Cl. 340—52 **3 Claims**



A brake lining wear indicating apparatus of the type including an electrical conductor embedded in a brake lining whereby sufficient brake lining wear completes a circuit to energize a signal when the conductor engages the electrically conductive brake drum. The conductor is embedded in the lining in an angular relationship such that the terminal end of the conductor must move with the lining as the lining and the conductor expand in response to heat generated during application of the brakes. This arrangement assures contact between the conductor and the brake drum surface regardless of the amount of expansion of the brake lining and the conductor or the differences in the coefficients of expansion between the conductor and the brake lining material.

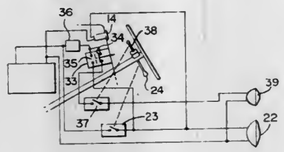
3,553,643
BRAKE LINING WEAR INDICATOR
Edward M. Maras, 14 Alys Drive E., Depew, N.Y. 14043
Filed Sept. 4, 1968, Ser. No. 757,417
Int. Cl. B60q 1/00
U.S. Cl. 340—52 **7 Claims**



A lining wear and contact indicator for multi-wheeled vehicles operative to render a signal during the period the brake linings of a vehicle contact the associated brake drums and to also render a signal whenever the brake linings are worn beyond a predetermined amount, even when the brakes are not applied. The indicator of the

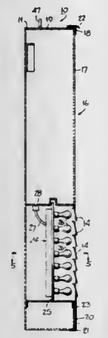
instant invention may be utilized in conjunction with substantially all drum type brakes and it is preferred that the indicator be operatively associated with each wheel of a vehicle provided with a drum brake.

3,553,644
VEHICLE REARWARD FLASHING LIGHT WHEN VISIBILITY POOR
William B. Elmer, 113 Pinckney St., Thornton, N.H. 02114
Filed Aug. 23, 1967, Ser. No. 662,710
Int. Cl. B60q *1/22, 1/46*
U.S. Cl. 340—55 **2 Claims**



The backup light of an automobile is flashed intermittently during periods of low visibility while this condition is also indicated by a flashing signal visible to the driver.

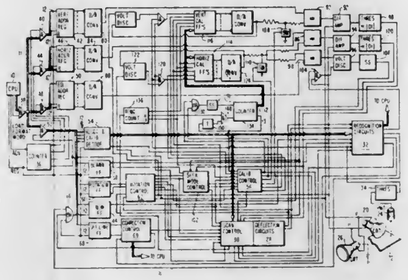
3,553,645
VARIABLE MESSAGE TRAFFIC SIGN
William P. Finkel, 1005 Louisa St., Elizabeth, N.J. 07021
Filed Apr. 4, 1968, Ser. No. 718,682
Int. Cl. B60q *1/00; 1/26*
U.S. Cl. 340—84 **12 Claims**



The face of the sign is provided with louvers on which a permanent black-on-white message is imposed. Upon opening of the louvers a light bulb matrix is exposed to view so as to display a temporary message. The temporary message can be changed by changing the lighted array of the light bulbs.

3,553,646
FORMAT CONTROL IN A CHARACTER RECOGNITION SYSTEM
William W. Hardin, Stewartville, and Patrick J. Traglia, Rochester, Minn., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 3, 1967, Ser. No. 672,551
Int. Cl. G06k *7/015*
U.S. Cl. 340—146.3 **16 Claims**

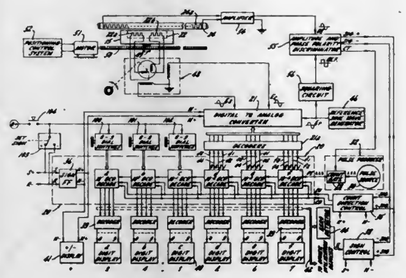
A character recognition system is completely controlled by a digital control word from a computer. The control word contains start and end of field addresses plus recognition method codes, a calibration command, a character field orientation command, a correction command, a numeric or alphabetic recognition command and a blank area command. All of this information in the control word from the computer permits great versatility in operation of a character recognition system. The versatility is achieved by the fact that the format of scanning in the character recognition system can be completely altered as to area of scan and type of recognition by a digital control word from the computer. By changing the computer program, the format of the character recognition system is changed.



In operation, the start and end of field addresses in the control ward from the computer are converted to analog signals by digital to analog converters for use in the scanning circuitry of the character recognition system. The recognition mode as coded in the control word is decoded by logic. The logic then signals the scanning system and the recognition logic the type of scan pattern and recognition to be used in analyzing the character field to be scanned. Another part of the control word is decoded to signal the recognition circuits whether to look for alphabetic or numeric characters. Still another part of the control word is decoded to signal the recognition circuits to look for large blank areas between characters scanned. Another portion of the control word is used to indicate to the scanning circuits the orientation of the character field to be scanned. Finally, a last portion of the control word is used to tell the recognition system whether to select on-line or off-line correction when reject characters are indicated.

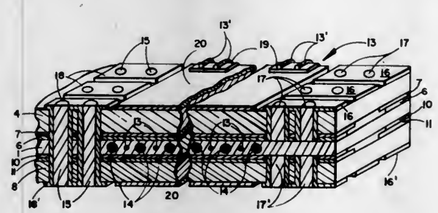
3,553,647
APPARATUS FOR NUMERICAL SIGNALING OF POSITIONS, INCLUDING DIGITAL-TO-ANALOG CONVERTER
Thomas B. Bullock, Fond du Lac, Wis., assignor to Giddings & Lewis Inc., a corporation of Wisconsin
Filed Apr. 21, 1967, Ser. No. 632,591
Int. Cl. G08c *9/04;* **H03k** *13/00*
U.S. Cl. 340—147 **24 Claims**

Apparatus for producing digital signals which numerically represent at all times the position of a movable element as it moves to different positions along its path of travel. The digital signals in the form of bi-level voltages are produced in a multidecade reversible counter to represent the position numerically in binary coded decimal notation. These signals are supplied to a digital-to-analog converter whose analog output, corresponding to the represented position, is supplied to a resolver type transducer mechanically coupled to the element. The transducer produces a discrepancy signal representing the sense and extent of any difference between the numerically represented position and the actual position of the element. So long as the discrepancy signal exists, pulse producing means are enabled to supply pulses to the counter so as to correctively change the number signaled by the counter until the difference and the discrepancy signal are reduced substantially to zero. The closed loop correction is very rapid, so for practical purposes the number digitally signaled by the counter always represents the actual position of the movable element.



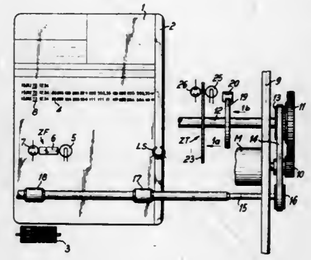
The digital-to-analog converter here disclosed is the type which produces sine and cosine function signals for excitation of a resolver type transducer. This converter is characterized by cross-coupling of the outputs and inputs of two algebraic combining devices such as operational amplifiers, by static switching means responsive to input signals digitally representing a changeable number, and by simple resistors selectively rendered effective to produce A.C. signals proportional to sine and cosine functions of the sums of angles corresponding to higher and lower order portions of the changeable number.

3,553,648
PROCESS FOR PRODUCING A PLATED WIRE MEMORY
Howard C. Gorman, Tustin, John Simone, Garden Grove, Joseph M. Shaheen, La Habra, Melvin J. Van Zanten, Garden Grove, and Darl F. Bowman and Gerald J. Moser, Yorba Linda, Calif., assignors to North American Rockwell Corporation
Filed July 14, 1969, Ser. No. 841,632
Int. Cl. G11c *5/12, 11/14, 7/02*
U.S. Cl. 340—174 **1 Claim**



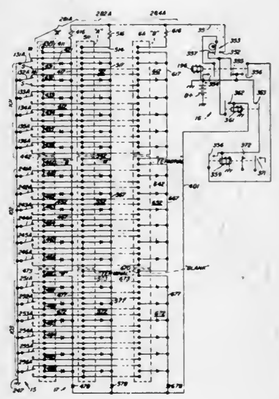
The process of producing a plated wire memory includes etching wordstraps and overhanging keepers which are placed in intimate contact for controlling the density of bits of information represented by the plated wires of the memory. The process also includes producing interstitial connections from unremoved dummy wires located between plated memory wires to conductive pads.

3,553,649
SYSTEM AND METHOD FOR INTAKE AND EJECTION OF FORMS IN A DATA PROCESSING MACHINE
Werner Mädge and Joachim Hilgendorf, Villingen, Germany, assignors to Kienzle Apparate G.m.b.H., Villingen, Germany
Filed Sept. 22, 1967, Ser. No. 669,837
Claims priority, application Germany, Sept. 28, 1966, K 60,338
Int. Cl. G06f *3/00*
U.S. Cl. 340—172.5 **14 Claims**



Account card has magnetic strip along side. Simultaneous intake and reading, and ejection and recording. Intake movement limited to (1) first line without print or (2) end of magnetic symbols followed by return to empty line. Ejection movement limited to: (1) immediate ejection and recording or (2) movement in intake direction until enough room available on strip to record all data, followed by eject and record.

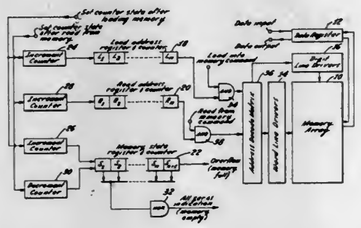
3,553,650
PROGRAM UNIT FOR DATA EDITING SYSTEM
Walter J. Zenner, Des Plaines, Ill., assignor to Extel Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 4, 1967, Ser. No. 687,898
Int. Cl. G06f *9/02*
U.S. Cl. 340—172.5 **8 Claims**



An interchangeable program unit for a data editing system using a conventional multi-level data code, including a predetermined number of parallel energizing circuits for energizing an output control device. In each

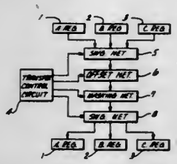
energizing circuit there are a plurality of electrical connector members each provided with three individual electrical connector elements for each code level with two of the connector elements individually connected to a switch and the remaining electrical connector element connected to a conductor that is in series with the energizing circuit. Each connector unit holds a removable printed circuit program card that encodes the connector unit in accordance with the code for a particular identifying character by selectively connecting the individual electrical connector elements to the switch. The program member also includes a simple series connection for two extra connector elements used to prevent completion of the energizing circuit when there is no program card present.

3,553,651
MEMORY STORAGE SYSTEM
Richard M. Bird, Glendale, and Ju C. Tu, Sylmar, Calif., assignors to Singer-General Precision, Inc., a corporation of Delaware
Filed Dec. 6, 1967, Ser. No. 688,443
Int. Cl. G11c *7/00*
U.S. Cl. 340—172.5 **6 Claims**



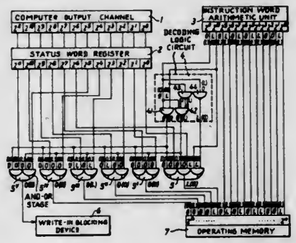
A memory storage system is described in the following specification which is capable of storing a series of multi-bit binary data words, and of subsequently outputting the stored words on a first-in-first-out basis, or on a last-in-first-out basis.

3,553,652
DATA FIELD TRANSFER APPARATUS
Lawrence G. Hanson, Temple City, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 29, 1968, Ser. No. 717,291
Int. Cl. G06f *7/00*
U.S. Cl. 340—172.5 **13 Claims**



A field of digital data is transferred in parallel from one position in a source storage register to a different position in a destination storage register. An output line is provided for each digit place of the source register. The output lines are offset a number of digit places equal to the lateral displacement between the source and destination positions. The offset lines on both sides of the destination position are masked off and the remaining lines, which transmit the transferred data field, are coupled to the destination register. A specific application of this apparatus is disclosed in which a field of data in a computer memory transversing one or more cell boundaries is transferred in a high speed operation. One word at a time of the source field is read from the computer memory into the source register. A portion of the word at one boundary of the source field is transferred to the position of a portion of the cell in the destination field. Similarly, the portions of the source field from each word are in turn transferred to the cells of the destination field.

3,553,653
ADDRESSING AN OPERATING MEMORY OF A DIGITAL COMPUTER SYSTEM
Alwin Kröck, Zellhausen, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany
Filed June 10, 1968, Ser. No. 735,905
Claims priority, application Germany, June 9, 1967, L 56,702
Int. Cl. G11c *7/00*
U.S. Cl. 340—172.5 **6 Claims**

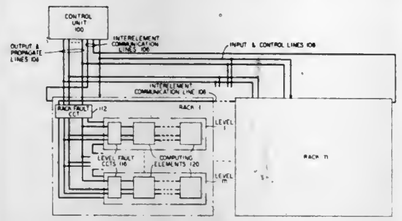


In a digital data processing system arranged to operate with instruction words having an address portion consisting of a given number of bits, which system includes an operating memory having a number of address locations which is greater than the number of locations which can be addressed by an instruction word address portion, a method and apparatus for permitting any group of operating memory address locations to be addressed by the instruction word address portion by dividing the operating memory into a plurality of sections all of the address locations of which can be addressed by a number of bits which is less than that contained in the instruction word address portion, delivering that number of bits of the instruction word address portion directly to the operating memory, logically combining the remaining bits of the instruction word address portion with a predetermined status word to form a status address portion, and delivering such status address portion to the operating memory for determining which partial section of the memory is being addressed by the instruction word.

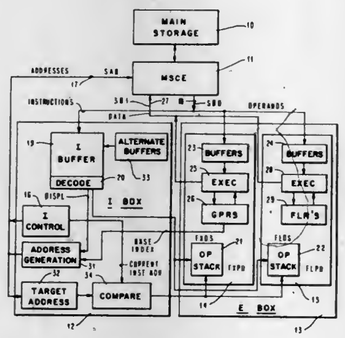
3,553,654
FAULT ISOLATION ARRANGEMENT FOR DISTRIBUTED LOGIC MEMORIES
Bently A. Crane, Chester, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Mar. 28, 1969, Ser. No. 811,378
Int. Cl. G06f *11/00*
U.S. Cl. 340—172.5 **19 Claims**

To provide fault detection and isolation, a distributed logic memory (DLM) system is hierarchically organized in a tree-like structure including a number of racks, each of which includes a number of levels, each of which, in turn, includes a number of computing elements. Each element which is interconnected to two adjacent elements shares common output and propagate circuitry respectively with the other elements of the same level. Likewise, each level shares common output and propagate circuitry respectively with the other levels of the same rack. Finally, each

rack shares common output and propagate circuitry respectively in connecting to a control unit. Fault detection and isolation circuits are situated in the level and rack output and propagate circuits. The fault detection circuits on each level, upon receipt of faulty signals from the elements of that level, disconnect the output and propagate circuits of that level from the rest of the system and interconnect the two levels adjacent to the disconnected level. If the fault circuit of any level malfunctions, then the fault circuit of the corresponding rack detects faulty signals from any failed element and/or failed level fault circuit and accordingly disconnects the output and propagate circuits of the rack in which the failure appears from the rest of the system and interconnects the two adjacent racks.

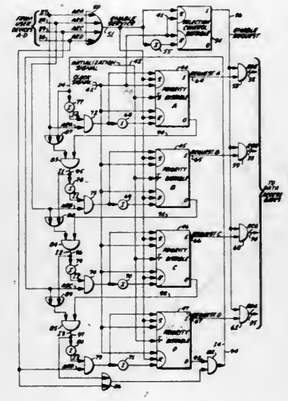


3,553,655
SHORT FORWARD CONDITIONAL SKIP HARDWARE
David W. Anderson and Francis J. Sparacio, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Mar. 28, 1969, Ser. No. 811,467
Int. Cl. G06f *9/00*
U.S. Cl. 340—172.5 **4 Claims**



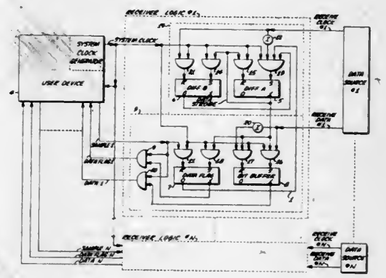
A data processing system has an instruction unit and an execution unit. In processing a program, when a conditional branch instruction is encountered and the status of the condition is not yet resolved, the system operates in a conditional mode. In such mode, a limited number of instructions are issued by the instruction unit to the execution unit. Should the target instruction be within the limited number, and thus be considered to involve a short forward jump or skip, it is issued on a noncancellable basis while instructions between the branch instruction and the target instruction are issued subject to cancellation or execution in the event the branch is taken or is not taken, respectively.

3,553,656
SELECTOR FOR THE DYNAMIC ASSIGNMENT OF PRIORITY ON A PERIODIC BASIS
Donn E. Bernhardt, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York
Filed June 3, 1969, Ser. No. 829,925
Int. Cl. G06f *3/04*
U.S. Cl. 340—172.5 **10 Claims**



A data transfer system for transferring information from a plurality of user devices to a common apparatus includes means for selectively granting access to the devices on a priority basis in response to requests from the devices for transfer of the information from the user devices to the common apparatus.

3,553,657
DATA TRANSFER SYSTEM
Perry Wayne Penton and Richard Thomas Flynn, Phoenix, Ariz., assignors to General Electric Company, a corporation of New York
Filed July 31, 1969, Ser. No. 846,321
Int. Cl. G06f *3/00*; H04l *1/00*
U.S. Cl. 340—172.5 **14 Claims**

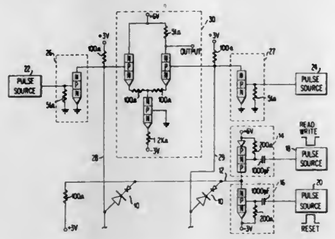


A data transfer system for preventing the loss of data items tranferred from a plurality of data sources to a user device due to non-stable clock signal. The system includes a buffer store for receiving the data items and a clock signal level detector for selectively transferring the data items into and out of the buffer store in response to the level detector and to a request signal from the user device.

3,553,658
ACTIVE STORAGE ARRAY HAVING DIODES FOR STORAGE ELEMENTS

Wilbur D. Pricer, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Apr. 15, 1968, Ser. No. 721,324
Int. Cl. G11c *11/36*
U.S. Cl. 340—173 **11 Claims**

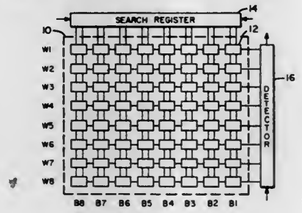


In data processing systems, a volatile storage array including diode pairs as storage elements, for storing digital signals. Information is written into the storage array by charging or discharging storage elements. Information is sensed by detecting the amount of charge in a storage element, since the junction capacitance varies with the amount of charge. The entire array may be block-reset by a source of light.

3,553,659
BIEMITTER TRANSISTOR SEARCH MEMORY ARRAY

Robert M. Englund, Golden Valley, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 11, 1968, Ser. No. 782,842
Int. Cl. G11c *11/40;* **G06f** *3/00*
U.S. Cl. 340—173 **1 Claim**



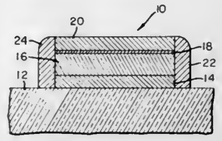
A Search memory utilizing two cross-coupled biemitter transistors as the storage elements storing the true and the complement of each bit of the multibit designator words held in the Search memory. The storage elements are arranged at the intersections of orthogonal sets of parallel bit line pairs and sets of parallel word-sense lines with the two emitters of each transistor coupled to the intersecting bit and word-sense lines, respectively. Interrogation of the designator words is along the bit lines producing match/mismatch output signals along the word-sense lines.

3,553,660
THIN FILM CLOSED FLUX STORAGE ELEMENT

Irving W. Wolf, Palo Alto, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed May 25, 1967, Ser. No. 641,293
Int. Cl. G11c *11/14*
U.S. Cl. 340—174 **4 Claims**

A closed flux storage element having two magnetic thin films which are fully connected together along the entire thickness of their lateral edges with magnetic material and having an electrical conductor sandwiched between the films, thus providing an element cross section which defines a completely closed flux structure, wherein

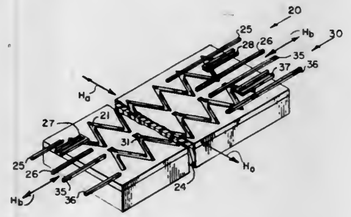


the absolute closure of the flux path as well as the quality of the magnetic thin film disposed on the electrical conductor, is preserved by utilizing a thin film of smoothing material between the film and conductor.

3,553,661
FIRST-IN, FIRST-OUT MEMORY

David R. Hadden, Jr., Eatontown, N.J., assignor to the United States of America as represented by the Secretary of the Army

Filed June 27, 1967, Ser. No. 649,364
Int. Cl. G11c *11/14, 7/00, 19/00*
U.S. Cl. 340—174 **13 Claims**

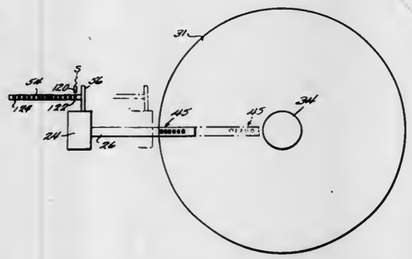


A first-in, first-out storage device in which the first-in, first-out function is performed by writing information in the form of a magnetic domain into an unknown location in a data register of the magnetic film type under the influence of a marker magnetic domain disposed in a contiguous register.

3,553,662
POSITION SENSING AND CONTROL APPARATUS

Lloyd C. Goss, Bloomington, Minn., assignor to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota

Filed Sept. 8, 1967, Ser. No. 666,337
Int. Cl. G11b *5/48, 21/08;* **H01f** *21/06*
U.S. Cl. 340—174.1 **9 Claims**



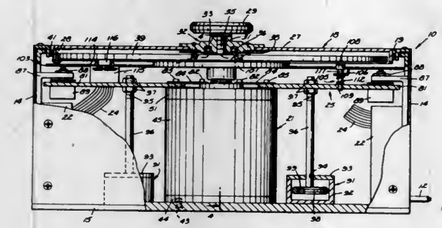
The following specification discloses apparatus for accurately positioning a member at any one of a plurality

of discrete major locations as well as a plurality of minor locations associated with each of the major locations. The apparatus comprises a stationary differential transformer, a position feedback transducer rod which constitutes the core of the differential transformer, an error signal generating circuit responsive to the output of the differential transformer and a servo positioning mechanism for maintaining the error signal at null. The feedback transducer rod comprises a non-magnetic rod having a plurality of transverse grooves machined therein at points corresponding to the major locations, these grooves being plated with a magnetic material. The error signal generating means is adapted to selectively generate a bogus error signal to cause the servo positioning mechanism to shift the member an amount proportional to the sense and magnitude of the bogus error signal.

3,553,663
SINGLE DISC FILE MEMORY SYSTEM

Max Scholz, Detroit, Mich., assignor to Ex-Cell-O Corporation, Detroit, Mich.

Filed July 5, 1968, Ser. No. 742,889
Int. Cl. G11b *1/02, 5/54*
U.S. Cl. 340—174.1 **13 Claims**



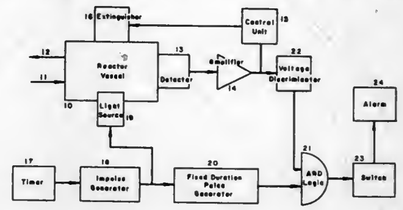
A single disc file memory system which can be utilized by interchanging magnetic disc members carried in a cover assembly and having stationary magnetic head assemblies to act on the recording disc surface when the system is operating. The magnetic recording disc is driven by a motor assembly which provides for most of the dimension changes in the motor's rotary shaft to take place at the end of the rotary shaft away from the recording disc so that the magnetic head assembly will act on the disc's magnetic surface which is positioned at substantially the same position in all recording, reading or erasing operations. The disc file memory system provides for a head mounting plate which retracts the heads during non-operation and moves the heads to operating position in a controlled manner when the motor is started. A flow control plate is mounted on the head mounting plate and is positioned between the head mounting plate and the magnetic recording disc to protect the magnetic head assembly when the cover assembly including the recording disc is removed from the disc file memory system.

3,553,664
MONITORING APPARATUS

Huel C. Tucker, Texas City, Tex., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed July 15, 1968, Ser. No. 744,897
Int. Cl. G08b *29/00*
U.S. Cl. 340—227 **10 Claims**

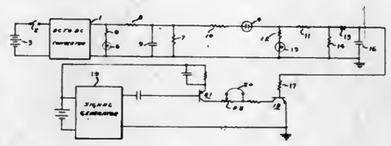
An apparatus for monitoring the duration of pulses of variable voltage derived from a system used for the detection and suppression of explosions in closed vessels comprising a source of energy and a detector responsive thereto, a means for activating said source of energy and generating a reference pulse, a voltage discriminator for detecting the level of voltage derived from said detector and for generating a signal pulse, logic circuitry for comparing the duration of said reference pulse with said signal pulse and a utilization means responsive to the output from said logic circuitry.



3,553,665
PORTABLE HYDROGEN FLAME DETECTOR

Terry M. Trumble, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force

Filed Mar. 3, 1967, Ser. No. 621,398
Int. Cl. G08b *17/12*
U.S. Cl. 340—228 **1 Claim**

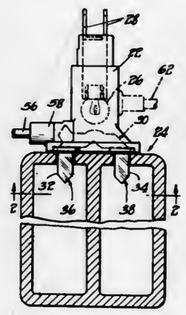


A portable hydrogen flame detector for use in a hydrogen storage area to detect small hydrogen flames. The detector utilizes an ultraviolet tube which becomes ionized in the presence of ultraviolet radiation emitted from a hydrogen flame. A charging circuit operates in conjunction with the tube to provide a series of pulses during each period that the ultraviolet tube is ionized. These pulses are fed into a visual readout circuit that cause a neon indicator to blink on and off, and into an audio readout circuit that cause a series of tone busts in a set of head phones.

3,553,666
REMOTE SENSING INDICATOR DEVICE

Robert R. Melone, Des Plaines, Ill., assignor to Illinois Tool Works Inc., Chicago, Ill., a corporation of Delaware

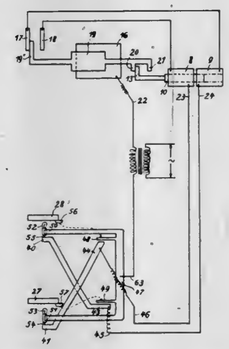
Filed Apr. 15, 1969, Ser. No. 816,330
Int. Cl. G08b *21/00*
U.S. Cl. 340—244 **11 Claims**



A remote sensing liquid level indicator system in which an indicator member having a plurality of connected

indicator arms is inserted in a reservoir and light from a selectively energizable light source is directed through reflective surface means in the member to a prismatic surface means located at the extremity of the member and from the extremity of this member light is thereafter reflected into a light receiving and transmitting means thereby enabling a viewer to ascertain the level of liquid in the reservoir from a remote position.

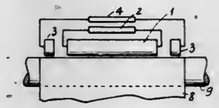
3,553,667
ELECTRIC REMOTE CONTROL DEVICE FOR SETTING SWITCHES AND SIGNALS OF TOY-MODEL-RAILROAD TRACK MEANS
Walter Münzberg, Muhlhausen-Sulz, Germany, assignor to Max Ernst, Nuremberg, Germany
Filed Apr. 8, 1968, Ser. No. 719,345
Claims priority, application Germany, Apr. 11, 1967, E 33,777
Int. Cl. B61l *5/12*
U.S. Cl. 340—248 **6 Claims**



Control arrangement, especially for the remote control of switches and the like for model railrods in which an armature is connected to the element to be moved and has two actuating coils associated therewith while a remote unit connected to the coils has a manual switch connected to each coil.

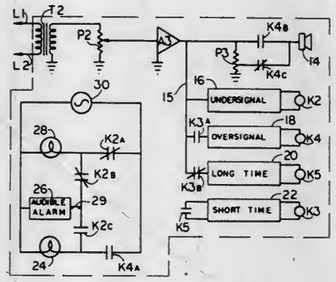
A further switch in series with each coil is operated into open position when the armature moves into the end position pertaining to the respective coil while an indicating lamp in series with each coil and the last mentioned switch is arranged adjacent the manual switch pertaining to the other coil.

3,553,668
METHOD OF AND DEVICE FOR DETECTING SURFACE ELEVATIONS
Laszlo Urmenyi, 18 Ernie Road, Wimbledon, London, SW. 20, England
Filed May 2, 1966, Ser. No. 547,142
Claims priority, application Great Britain, May 24, 1965, 21,897/65; July 15, 1965, 30,089/65, 30,090/65
Int. Cl. G08b *21/00*
U.S. Cl. 340—259 **14 Claims**



Method and apparatus are disclosed for the detection of irregularities of small area in the thickness of a moving web. Electrical means are used to detect differential movement between two feeler means—a first of which is in constant contact with the surface of the web, and a second of which is supported by the first at some small distance from the web and is contacted only by localized surface irregularities to thereby produce differential feeler movement. The electrical means are disclosed as capacitive, inductive, and switch operated.

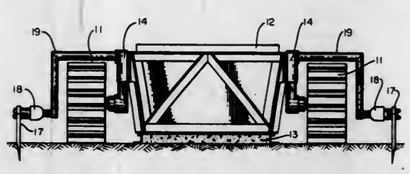
3,553,669
GAIN INCREASING ALARM SYSTEM
James K. Merchant, 206 S. Grand Ave., and Robert Obenour, 269 Madison Ave., both of Marion, Ohio 43302
Filed Nov. 16, 1967, Ser. No. 683,695
Int. Cl. G08b *13/00*
U.S. Cl. 340—261 **4 Claims**



An audio sensitive alarm is disclosed by which an alarm is activated if the audio level in a room being monitored either falls below a selected level or rises above another selected level, and subsequently continues for more than two seconds or again rises above the selected level more than two seconds after the first rise and less than thirty seconds after the first rise.

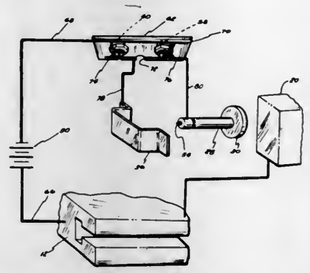
Controlled rectifier and triode transistor circuits are provided to detect the selected rise or fall of audio level and to control several relays. Time delays are provided by capacitor discharge circuits.

3,553,670
INDICATOR FOR CONSTRUCTION MACHINES
Frank R. Toles, Highland, Calif., assignor to Gordon H. Ball, Inc., Danville, Calif., a corporation of Nevada
Filed Feb. 13, 1967, Ser. No. 615,430
Int. Cl. G08b *21/00*
U.S. Cl. 340—267 **3 Claims**



A system for indicating when automatically controlled construction machinery, such as paving machinery, is not returned to its desired operating condition for a predetermined period of time following a deviation from the desired condition, such as path of travel or thickness of pavement.

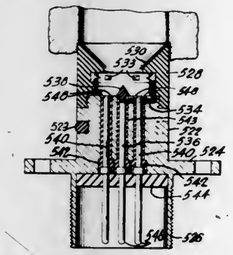
3,553,671
INDICATING MEANS
William J. Hopkins, Detroit, Mich., assignor, by mesne assignments, to Randcar Corporation
Filed Feb. 20, 1968, Ser. No. 706,984
Int. Cl. G08b *23/00*
U. S. Cl. 340—267 **13 Claims**



A battery operated device having a pair of indicating lamps and adapted for mounting on a machine to indicate the movement of a movable machine member past a pair of reference points.

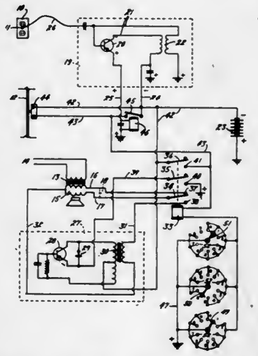
In a metal cutting machine, one point could correspond with the termination of the rough feed of the cutting tool, the second point with the termination of the finish feed.

3,553,672
ELECTRICALLY-CONDUCTIVE PARTICLE DETECTOR
John N. Smith, 90 Sweetbriar Drive, Beaconsfield, Quebec, Canada
Continuation-in-part of application Ser. No. 604,880, Dec. 27, 1966. This application June 3, 1968, Ser. No. 733,979
Int. Cl. G08b *21/00*
U.S. Cl. 340—270 **33 Claims**



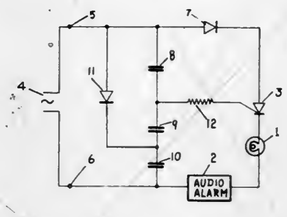
A particle detector system for use in detecting wear of a part consisting of electrically-conductive material in contact with a fluid in a fluid circulating system, wherein there is provided a first electrically-conductive element and a plurality of second electrically-conductive elements spaced and electrically insulated from each other and from the first element to form gaps. Particle collecting surfaces are provided in the gaps, and means are provided for promoting the deposition of the particles between the electrically-conductive part on the surfaces to form an accumulated deposit of electrically-conductive particles or chips in the gap, whereby the deposit may increase to the extent that the gap will be bridged by the deposits. In one embodiment, the means includes a magnet exposed at the surface in the gap. In other embodiments, a well sump may be provided for enhancing the deposition of chips or particles on the surfaces instead of the magnet. Further, a cylindrical screen filter can be provided between the inlet and outlet of the oil sump for enhancing the deposition of particles in the surfaces of the gaps. Still further, these means can comprise baffles critically located for enhancing the deposition of the particles from the oil onto the detector. An electrical circuit is provided for individually detecting the bridging of preselected gaps by the particles. A plurality of detectors can be used in a system wherein a master detector is located in a common fluid duct, while subsidiary detectors are located in branch ducts, whereby the master detector can activate the detectors in the branch ducts, once a preselected number of gaps in the master detector have been bridged.

3,553,673
THEFT ALARMS FOR TELEVISION SETS
David N. Fistell, 1001 Bannock St., Denver, Colo. 80204
Filed Aug. 22, 1967, Ser. No. 662,455
Int. Cl. G08b *13/14*
U.S. Cl. 340—280 **2 Claims**



An R-F oscillator supplies R-F current to an A-F oscillator which is coupled to the voice coil of a television receiver set to produce an audible signal. The R-F oscillator is maintained inoperative by connecting a ground lead to additional capacitance at the receiver location. The A-F oscillator is maintained inoperative by a microswitch which is normally held open by physical contact with the back panel of the set. The current supply from a self-contained battery can be shut off by authorized personnel by actuation of a combination of rotary switches.

3,553,674
THEFT ALARM SYSTEM UTILIZING A BRIDGE HAVING A CAPACITIVE VOLTAGE DIVIDER
William John Head, West Hill, Ontario, Canada, assignor to Electro Tech Appliance Service Limited, Toronto, Ontario, Canada, a company of Canada
Filed Oct. 31, 1968, Ser. No. 772,176
Int. Cl. G08b *13/14, 13/22*
U.S. Cl. 340—280 **13 Claims**



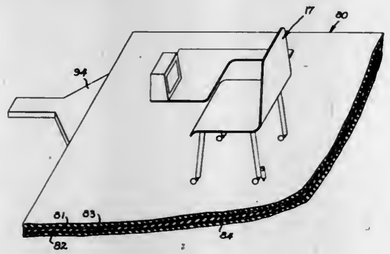
An alarm system for indicating an alarm condition at any of a number of remote points, comprises a plurality of alarm circuits each including a solid-state switching

device which is triggered by a control current applied to its control electrode in accordance with an alarm condition. Each control electrode is connected to a respective capacitor chain including a capacitor located at the respective remote point; any tampering with the said capacitor will affect the chain so that the control electrode receives either direct current or alternating current to trigger the switching device.

3,553,675
FLOOR COVERING FOR TRANSMITTING ELECTROMAGNETIC ENERGY

John A. Shaver, 405 E. Park Lane, Salina, Kans. 67401; Edwin K. Dole, 3505 Kersey Lane, Sacramento, Calif. 95825; Robert S. Osmond, 909 E. Minneapolis, St., Salina, Kans. 67401; and Thomas G. Morrissey, 5700 W. 28th Ave., Denver, Colo. 80214

Continuation-in-part of application Ser. No. 549,758, Apr. 21, 1966. This application Aug. 8, 1968, Ser. No. 751,211
Int. Cl. H02g *3/26*
U.S. Cl. 340—310 **15 Claims**



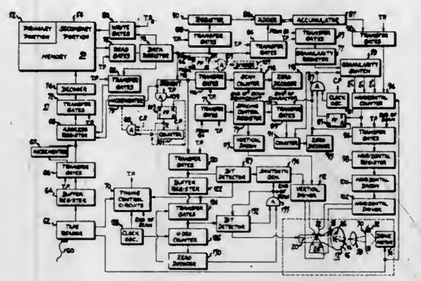
A floor covering for transmitting electromagnetic energy in the form of signal energy or electrical power or both, the energy being received at one input location on the floor covering and transmitted throughout so that it can be supplied through a coupler that engages the floor covering which is connected to a receiving unit placed anywhere on its surface. In one embodiment, the energy is carried throughout the floor covering by a grid system of a predetermined pattern. In another embodiment, the floor covering comprises a series of laminations including an upper layer of conventional carpet-like fabric, spaced apart sub-layers of electrically conductive material separated by a dielectric layer which may serve as a propagation media for energy at microwave frequency. Electrical power transmission is increased in another embodiment by spaced apart wires embedded between certain of the laminated materials.

3,553,676
ELECTRO-OPTICAL COMPOSITION SYSTEM

Salvatore A. Raciti, Hopewell, N.J., assignor to RCA Corporation, a corporation of Delaware

Filed Jan. 30, 1968, Ser. No. 701,769
Int. Cl. G08b *5/36*
U.S. Cl. 340—324 **11 Claims**

An electro-optical composition system includes an electro-optical imaging device, such as a cathode ray tube, that forms patterns, such as characters of given point sizes, by a plurality of successive scanlines that create character slices. Characters of a high graphic quality are created by utilizing a predetermined number of scanlines at predetermined spacings from each other. Proof copies of text material are printed by reducing the number of scanlines utilized to form the individual proofing characters so as to increase the speed at which such proof copies are formed. To insure that characters of a proofing quality occupy the same areas as corresponding characters of a high graphic quality of the same point size, the

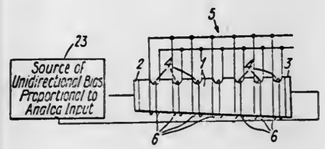


spacing between adjacent scanlines in the proofing characters is increased.

3,553,677
ANALOG TO DIGITAL CONVERTER

Kenneth William Cattermole, Harlow, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 13, 1967, Ser. No. 675,234
Claims priority, application Great Britain, Oct. 17, 1966, 46,295/66
Int. Cl. H03k *13/02*
U.S. Cl. 340—347 **10 Claims**



The passage of a high field domain of the Gunn effect through a suitably grooved semiconductor, or a semiconductor provided with additional contact areas on a major surface thereof generates a series of pulses. In a tapered, or suitably doped semiconductor, the domain propagates for distance dependent on the magnitude of applied bias which is proportional to the analog signal. The number of grooves or additional contact areas are arranged in the sequence of a chain code of *n*-digits. The code character corresponding to the analog signal then appears serially in the last *n*-time slots before the domain is extinguished.

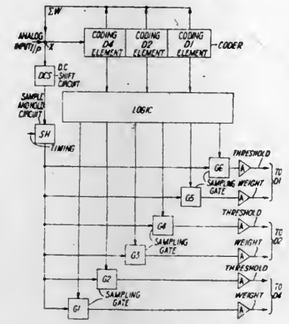
3,553,678
CODER

Alec Harley Reeves and Paul Barton, Harlow, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Apr. 10, 1967, Ser. No. 629,765
Claims priority, application Great Britain, Apr. 18, 1966, 16,816/66
Int. Cl. H03k *13/02*
U.S. Cl. 340—347 **10 Claims**

Differently weighted coding elements produce an output signal after each coding operation proportional to the sum of their weighted output signals which is subtracted from the analog input signal to provide a difference signal for application to the coding elements. After each coding operation the difference signal is sampled and logic circuitry

is activated by the binary condition of the coding elements to produce, from each sample, threshold and weight feed-

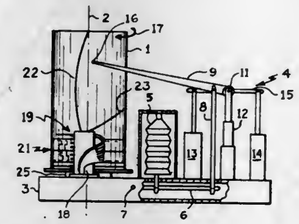


back signals for application to each of the coding elements to stabilize their weight and threshold values.

3,553,679
DIGITAL TRANSDUCER

Harry E. Adams, Needham, Mass., assignor to Control Equipment Corporation, Needham Heights, Mass.

Filed Dec. 14, 1965, Ser. No. 513,689
Int. Cl. H03k *13/00*
U.S. Cl. 340—347 **7 Claims**



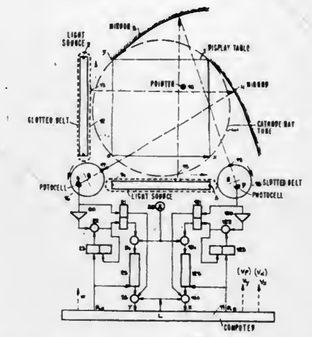
A transducer is provided for producing a counted number in a counting device, which represents the position of a body relative to a moveable surface, which is preferably the surface of a drum, which rotates on its axis with the drum axis parallel to the line of different positions of the body. Indices are provided on the drum and an index detector is provided on the body for producing in the detector signals defining an interval of time which is representative of the position of the body. Other indices in the drum are detected as the drum rotates to produce pulses at a rate directly proportional to the rate of rotation of the drum and these pulses are counted in the counting device during the interval to produce the number which represent the position of the body.

3,553,680
ELECTRONIC COMPUTER INPUT EQUIPMENT

Charles Remy Cooreman, Colombes, France, assignor, by mesne assignments, to Compagnie Internationale pour l'Informatique, Louveciennes, France, a corporation of France

Filed Apr. 7, 1966, Ser. No. 540,996
Claims priority, application France, Apr. 26, 1965, 14,638; Mar. 30, 1966, 55,660
Int. Cl. G08c *9/06;* **H03k** *13/20*
U.S. Cl. 340—347 **17 Claims**

Electronic computer input equipment of the type employing the principles of man to machine communication systems wherein a man operates an opaque pointer in a light field extending across a visualization table and apparatus is provided for determining the co-ordinate position of the pointer within the field such that electrical signals of such position are provided as inputs to the computer. Specifically a plurality of light beams corresponding in number to the coordinate axes are directed across the table to a like number of photo-

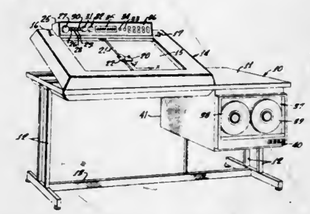


electric receivers. Apparatus is provided to produce or simulate cyclic scanning of the area covered by the light beams, and additional means are provided to derive from the output of the receivers electrical signals encoding the coordinate values of any position man gives to the opaque pointer within the field.

3,553,681
VARIABLE INCREMENT DIGITIZER

Ronald D. Cone, Saratoga, Calif., assignor to Calma Company

Filed Dec. 15, 1966, Ser. No. 601,968
The portion of the term of the patent subsequent to Apr. 7, 1987, has been disclaimed
Int. Cl. G06f *3/05;* **H03k** *13/02*
U.S. Cl. 340—347 **25 Claims**



A graphical data digitizer translating movement of a stylus into X and Y digital data, and X and Y reversible counters for accumulating this digital data for a predetermined interval of time. This data—representing size of the sampling increment—is recorded as a binary encoded character on magnetic tape. This increment size automatically varies proportionally with the speed at which the stylus is traced over the data. A minimum increment size selector is also provided for inhibiting recording of the data until a predetermined value is recorded in the reversible counters.

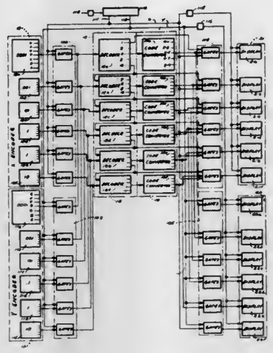
3,553,682
NUMERICAL INDICATING SYSTEM

Edward V. Cordes, Jr., Bentleyville, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio

Filed June 9, 1967, Ser. No. 644,976
Int. Cl. G08c *9/00;* **H03k** *13/24*
U.S. Cl. 340—347 **10 Claims**

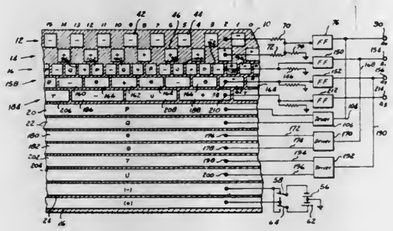
A system for displaying a digit value in response to a digit value signal or signals applied to input terminals

connected to digit indicating control devices by digit value signal transmitting means. The digit value signal transmitting means is controlled by erase-write circuit means which in response to an erase-write signal renders the digit indicating control devices incapable of indicating a digit to erase any setting therein and thereafter renders the signal transmitting means effective to apply a digit signal to the proper control device to indicate the proper digit value. The input terminals for the display have two digit values appearing thereon, one odd and one even, and the digit transmitting means



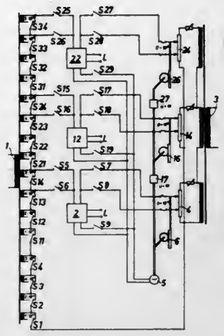
is controlled by an odd or even signal to distribute the digit value signal on a terminal to the proper one of the digit control devices. The erase-write circuit renders the digit transmitting means effective for a momentary period following the termination of the erase-write signal to set the proper control device and thereafter renders the digit signal transmitting means ineffective to transmit a signal applied thereto. A plurality of displays are connected periodically, in turn, to a corresponding encoder for setting the display by code converting circuitry which is connected in turn between each of the encoders and the corresponding display.

3,553,683
BIPOLAR PATTERN SENSING SHAFT ENCODER
Earl P. Simoneau, Trumbull, and George Manos, Norwalk, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed July 27, 1967, Ser. No. 656,378
Int. Cl. G08c *9/08*
U.S. Cl. 340—347 **24 Claims**



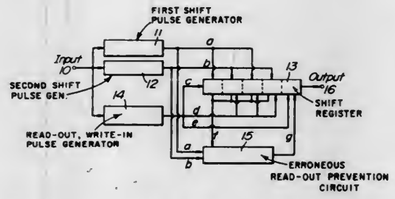
A bipolar pattern sensing shaft encoder in which the least significant output controls the polarity of switching segments located at transfer points in rows of greater significance to synchronize the more significant outputs with the least significant output.

3,553,684
DIGITAL ANALOG CONVERTERS
Gerhard Jehne, Jena, and Ewald Klier, Oberweimar, Germany, assignors to VEB Carl Zeiss Jena, Jena, Gera, Germany
Filed Dec. 6, 1967, Ser. No. 688,627
Int. Cl. H03k *13/04*
U.S. Cl. 340—347 **6 Claims**



In a digital analog converter for positioning machines and measuring instruments, the desired value obtained from an information carrier is transformed into an analog electric magnitude by selectively connecting in series the output windings of a digital transformer. The electric magnitude analogous to the desired value is compared with the real value that corresponds to the momentary position of the machine, the real value being the voltages at the wipers of a plurality of potentiometers. The comparison, in temporal sequence from the highest digit to the lowest, is made at each of the potentiometers by causing a balancing circuit so to influence the real value at each digit as to reduce the difference between desired value and real value to zero. Balancing takes place in such a manner that each step compares the residual quntity of the step preceding it.

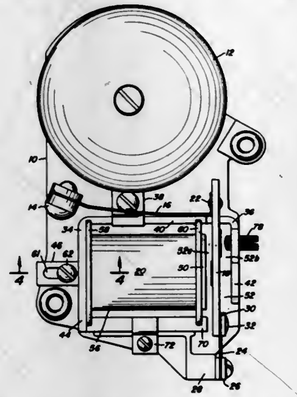
3,553,685
DECODERS
Yoshinobu Tatsuzawa, Daito-shi, and Kosaku Uchida, Osaka, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Continuation-in-part of application Ser. No. 333,143, Dec. 24, 1963. This application Feb. 13, 1968, Ser. No. 705,114
Claims priority, application Japan, Dec. 28, 1962, 37/59,698
Int. Cl. G08c *19/28*
U.S. Cl. 340—347 **3 Claims**



A decoder comprising a shift register having a plurality of stages and means operative in response to a read-out and write-in pulse for shaping and transmitting the pulse into the shift register for writing "1" into a first stage thereof. Means are also provided to be operative in response to two types of pulses succeeding the read-out and write-in pulse for separating the pulses from each other and shaping the separated pulses to produce two

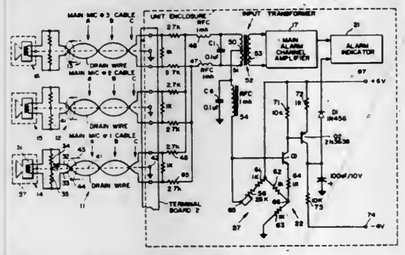
systems of shift pulses. Further means are provided for selectively applying the shift pulse of either system to respective stages of the shift register in accordance with the predetermined code whereby "1" written in the first stage can be successively shifted to the second and third stages of the shift register.

3,553,686
UNIVERSAL TELEPHONE RINGER HAVING BIASED STRIKER
Charles W. Carter, Charlottesville, Va., assignor to Stromberg-Carlson Corporation, a corporation of Delaware
Filed Oct. 9, 1968, Ser. No. 766,090
Int. Cl. G08b *3/10*
U.S. Cl. 340—402 **14 Claims**



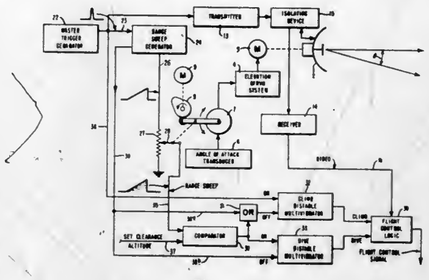
A telephone ringer which is adaptable for use as a frequency selector ringer over a wide range of audible frequencies is described. The ringer has a gong, a tapper for striking the gong and an electromechanical actuator for driving the tapper into contact with the gong. The magnetic structure of the actuator includes a core having a flanged pole tip and a U-shaped pole piece which cooperates with the core to define an air gap with the proper flux distribution to permit ringing currents at various frequencies to properly actuate the ringer. An adjustable nylon stop screw in the pole piece also limits and controls the motion of the tapper to provide efficient ringing action.

3,553,687
ALARM SYSTEM SENSITIVE TO CUT CABLES AND INSENSITIVE TO R-F INTERFERENCE
Martin H. Reiss, Newton, Mass., assignor to Alarmtronics Engineering, Inc., Newton, Mass., a corporation of Massachusetts
Filed June 3, 1968, Ser. No. 734,059
Int. Cl. G08f *29/00*
U.S. Cl. 340—409 **11 Claims**



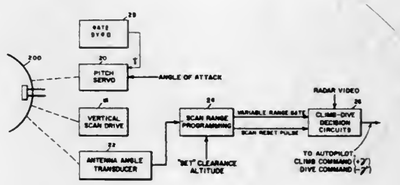
In an alarm system with a balanced shielded microphone cable a bare drain wire is tied to the cable shield at the end of the microphone cable, the end microphone being terminated with resistors so that a cable cut bridge circuit detects an unbalance when any microphone cable is cut to provide an alarm signal and reduce R-F interference.

3,553,688
TERRAIN AVOIDANCE RADAR SYSTEM
Bartow Bechtel, Mountain View, Calif., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Sept. 5, 1961, Ser. No. 137,437
Int. Cl. G01s *9/02*
U.S. Cl. 343—7 **15 Claims**



1. A terrain avoidance system for an airborne vehicle comprising means for investigating a predetermined region in front of said airborne vehicle in order to detect and continuously monitor the presence of an obstacle in said predetermined region, the profile of said predetermined region in a vertical plane passing through the flight vector of said airborne vehicle being divided into an upper sector and a lower sector, the line dividing said sectors from one another being a preselected distance below the flight vector of said airborne vehicle, means for continuously obtaining signals indicative of whether obstacles exist in said upper and lower sectors, and means for automatically controlling the flight path of said airborne vehicle in accordance with said signals to avoid the detected obstacles.

3,553,689
TERRAIN AVOIDANCE SYSTEM
Bartow Bechtel, Mountain View, Calif., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Dec. 29, 1961, Ser. No. 163,360
Int. Cl. G01s *9/02*
U.S. Cl. 343—7 **18 Claims**



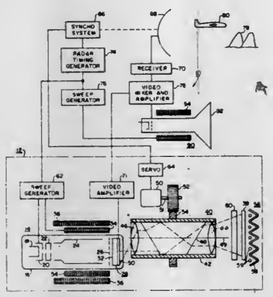
1. A terrain avoidance radar system for aircraft, comprising an antenna for transmitting at a predetermined repetition rate pulses of electromagnetic energy to be reflected from bodies in the path of the transmitted pulse energy and for receiving the reflected pulses, means for cyclically moving said antenna through a predetermined vertical angle with respect to the flight vector of the aircraft and at a rate considerably less than the repetition

rate of said pulses, means to generate a signal indicative of the vertical scan angle of the antenna, means responsive to said signal indicative of the vertical scan angle to divide the vertical scan profile of said antenna into at least an upper sector, a lower sector and a middle sector, said middle sector being contiguous with said upper and lower sector, means for producing a first electrical signal of a predetermined character when a reflected pulse signal is received by said antenna from at least one object at any point in said upper sector, means for producing a second electrical signal of a different predetermined character when no reflected pulse signals are received by said antenna from objects in said upper sector and said middle sector and a reflected pulse signal is received by said antenna from at least one object at any point in said lower sector, and means for producing a third electrical signal of a third predetermined character when a reflected pulse signal is received by said antenna from at least one object at any point in said middle sector and no reflected pulse signal is received by said antenna from an object in said upper sector.

3,553,690
RADIATION SENSITIVE SYSTEM

Murry J. Spangler, Ellicott City, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 19, 1968, Ser. No. 738,296
Int. Cl. G01s *7/12, 7/22*
U.S. Cl. 343—11 **13 Claims**



This invention relates to a system for operating a radiation sensitive device such as a television camera tube to derive an output signal in a ρ, θ scanning (PPI) format. In one illustrative embodiment, this invention includes a Dove prism for optically rotating an image which is focused onto the photosensitive portion of the television camera tube. The television camera device is operated to sense a single line of the image focused thereon. As the image is rotated past the radiation sensitive portion of the television camera tube, an electrical signal is derived therefrom in a ρ, θ format. This system has an important application in use with radar systems where it is desired to superimpose the image of a map onto the display screen of the radar system.

3,553,691
LONG RANGE POSITION DETERMINATION SYSTEM

James W. Lassiter, 3415 Greentree Drive, Falls Church, Va. 22041

Filed Aug. 14, 1969, Ser. No. 849,953
Int. Cl. G01s *9/06*
U.S. Cl. 343—15 **3 Claims**

A system for performing radio energy triangulation relative to two known points to maintain an accurate position of a third point or surface body which may be located at varying transhorizon distances from the first and second points. The system may utilize electromagnetic radiation in the mid-VHF range with transmission

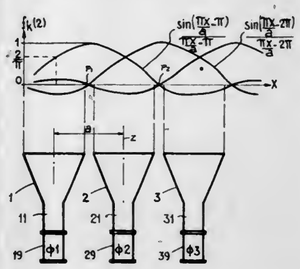


and reception over distances which are several times greater than the usual line of sight radio energy ranges, such capability being enabled due to the discovery of a unique electromagnetic wave propagation phenomena.

3,553,692
ANTENNA ARRAYS HAVING PHASE AND AMPLITUDE CONTROL

Serge V. Drabowitch, Chatenay Malabry, France, assignor to Compagnie Francaise Thomson Houston-Hotchkiss Brandt, Paris, France, a corporation of France

Filed Oct. 3, 1966, Ser. No. 583,552
Claims priority, application France, Oct. 15, 1965, 35,192
Int. Cl. H01g *13/00*
U.S. Cl. 343—778 **10 Claims**



This invention provides improved antenna arrays having characteristics that are matched with the geometric configuration of the electromagnetic waves that are to be radiated (i.e. transmitted from or received) by the array, for optimal performance. Such arrays have a greatly increased angular range of directivity. According to the invention, the spacing of the individual radiators of the array, the field-strength-distribution pattern of the energy fed to or from the individual radiators, and the phase-distribution pattern of said feed energy across the array are so predetermined and correlated that the behavior of the array as a whole is made to be substantially identical with that of an imaginary, coherently radiating aperture having the same overall configuration as the array, in respect to waves of the prescribed geometric configuration.

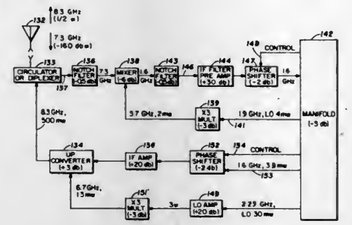
3,553,693
MODULAR ELECTRONICS COMMUNICATION SYSTEM

Robert M. Lockerd and Mark W. Smith, Dallas, and Ray E. Cooper and George E. Goode, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 14, 1967, Ser. No. 690,638
Int. Cl. H01q *3/26;* **H04b** *7/00*
U.S. Cl. 343—100 **14 Claims**

A communication system including a plurality of radiating elements formed into an antenna array for transmitting and receiving communication frequency signals and

employing a central processor to generate the transmitted signals and process the received frequencies through a manifold arrangement. Each radiating element connects to the manifold through a module made up of integrated

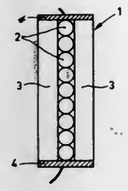


microwave circuitry including a mixer coupled to a local oscillator and a phase shifter coupled to a beam steering computer. By means of the beam steering computer the antenna can be made to scan various preselected areas.

3,553,694
WAVE GENERATOR

Terence Daniel Clark, Lewes, Sussex, England, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 24, 1969, Ser. No. 801,366
Int. Cl. H01q *3/22;* **H03b** *15/00*
U.S. Cl. 343—100 **7 Claims**



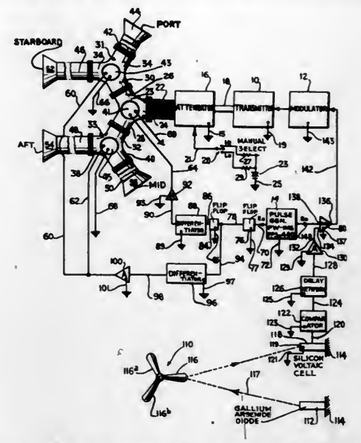
A superconductive Josephson junction wave generator comprising a plurality of superconductor ball elements arranged in a two dimensional array between a pair of electrical contacts with a layer of non-superconductor material between the balls to form the junction. A DC voltage applied to the contacts will produce electromagnetic radiation at very high frequencies.

3,553,695
HELICOPTER AIRBORNE BEACON SYSTEM FOR USE IN FORMATION FLYING

Arthur Simon, Fairlawn, N.J., and William Charles Troll, Royal Oak, Mich., assignors to The Bendix Corporation, a corporation of Delaware

Filed Sept. 29, 1967, Ser. No. 671,765
Int. Cl. G01s *1/02*
U.S. Cl. 343—101 **13 Claims**

A formation flying helicopter transmitting apparatus to sequentially transmit electromagnetic energy from four physically separated antennas positioned on a helicopter and outlining points thereof and to synchronize the energy transmission in accordance with predetermined positions of the helicopter rotor blades so as to minimize rotor modulation interference. The transmitter is provided with an optical rotor synchronization circuit to effect the energy transmission at the predetermined rotor blade posi-

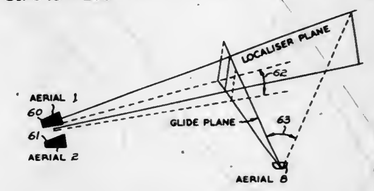


tions and a circular assembly to automatically sequence the energy transmission from the respective antennas.

3,553,696
AERIAL SYSTEM FOR APPLICATION TO RADIO PROPAGATION AND NAVIGATION

Eric O. Willoughby, Adelaide, South Australia, Australia, assignor of one-half interest to The University of Adelaide, Adelaide, South Australia, Australia

Continuation-in-part of application Ser. No. 628,645, Apr. 5, 1967. This application June 10, 1969, Ser. No. 831,978
Claims priority, application Australia, Apr. 6, 1966, 3,918/66
Int. Cl. G01s *1/18*
U.S. Cl. 343—108 **3 Claims**



An aircraft landing approach system utilising pairs of aerials arranged to give a localiser plane to bring the aircraft in line with the aerodrome and further aerials to project a glide plane across the localiser plane to give aircraft height. The aerials are located on opposite sides of a runway and are switched on and off at a frequency which will not interfere with navigational modulation frequencies.

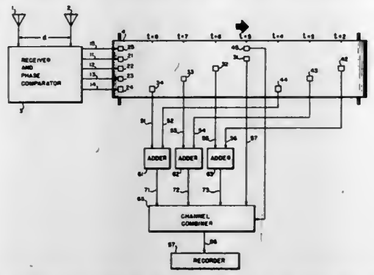
3,553,697
CHANNEL COMBINER SYSTEM FOR SEQUENTIALLY RECEIVED PHASE SIGNALS

Maxime G. Kaufman, Huntingtown, Md., and Kenneth E. Jacobs, Washington, D.C., assignors to the United States of America as represented by the Secretary of the Navy

Filed Apr. 30, 1968, Ser. No. 725,476
Int. Cl. G01s *5/02;* **G11b** *5/00*
U.S. Cl. 343—113 **7 Claims**

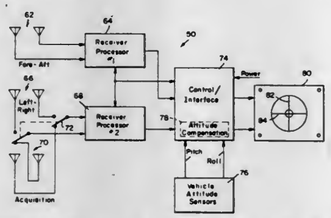
A radio interferometer system for detecting and combining phase differences of sequential signals arriving from a moving target. The signals of various frequencies are received by a pair of spaced antennas and temporarily stored. Phase errors in these signals, due to the changing

location of the target, are compensated for by weightedly adding plural A.C. signals received at different times to



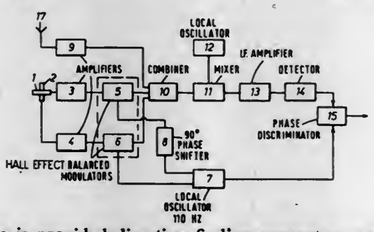
obtain resultant signals whose phases correspond to that of signals starting simultaneously from the target.

3,553,698
ELECTRONIC LOCATING AND FINDING APPARATUS
Richard W. H. Keller, La Mesa, Calif., assignor to Cubic Corporation, San Diego, Calif.
Filed Dec. 23, 1968, Ser. No. 785,885
Int. Cl. G01s *3/48*
U.S. Cl. 343—113 **12 Claims**



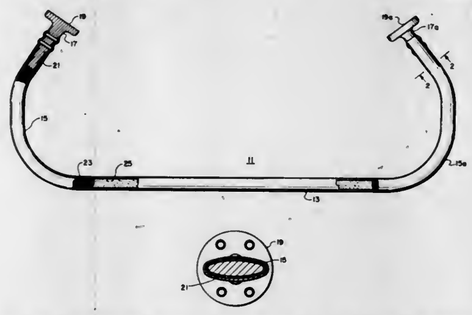
Apparatus for enabling a vehicle to locate and "home" upon a remote radiation source. Two pairs of antennas on the vehicle provide a unique signal when the vehicle is on a vector to the source. A third antenna pair can be used, in combination with on-board navigational equipment, to signal when the vehicle is vertically aligned with the source.

3,553,699
DIRECTION FINDING APPARATUS
Bertrand Julian Starkey, Dartmouth, Nova Scotia, and John Osborne, Boutiliers Point, Nova Scotia, Canada, assignors to E.M.I. Electronics Canada Limited, Ottawa, Ontario, Canada
Filed June 14, 1968, Ser. No. 737,101
Claims priority, application Great Britain, June 20, 1967, 28,494/67
Int. Cl. G01s *3/30*
U.S. Cl. 343—121 **4 Claims**



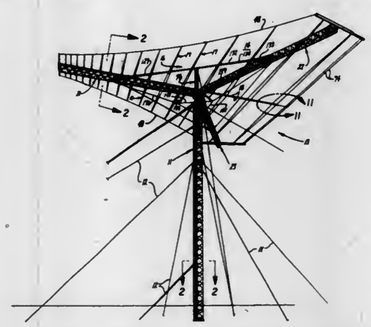
There is provided direction finding apparatus comprising a plurality of antennae for deriving signals from a source, the bearing angle of which is to be determined, means for producing a local oscillation the frequency of which is relatively low compared with that of the derived signals, Hall effect modulating means for producing output signals proportional to the derived signals multiplied by functions of the local oscillation and means for producing an indication of the bearing of the source in response to the outputs of the modulating means. In two forms of the invention Hall effect elements are incorporated in either a rotating field resolver or a goniometer, whereby the elements operate as balanced modulators for producing output signals proportional to the current therein multiplied by functions of the local oscillation and of the resolver angle or the goniometer angle respectively.

3,553,700
AIRCRAFT ANTENNA WITH VIBRATION DAMPING
John A. Miller, Morganville, and Powell J. Pocsi, Plainfield, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Mar. 6, 1969, Ser. No. 804,883
Int. Cl. H01g *1/28*
U.S. Cl. 343—705 **4 Claims**



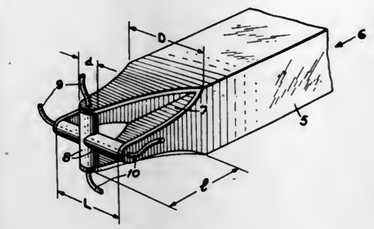
The invention herein relates to a half-loop antenna such as installed on aircraft bodies. The antenna described is made of tubular conductive metal having an elongated base relative to short arms which are secured to the aircraft body, and wherein the tubular body is filled with an acceleration damper contained in the region of greatest flexure to provide the most advantageous damping characteristics.

3,553,701
LOG PERIODIC ROTATING ANTENNA
Maxime J. Thomas, Oakland, Calif., assignor to Granger Associates, Palo Alto, Calif., a corporation of California
Filed May 27, 1968, Ser. No. 732,116
Int. Cl. H01q *3/00, 11/10, 1/12*
U.S. Cl. 343—766 **4 Claims**



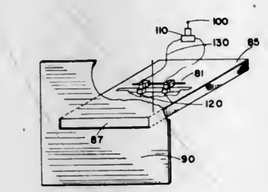
A rotatable antenna structure includes a radiating array supported in a plane above a support construction comprising booms and cables.

3,553,702
WAVEGUIDE RADIATOR WITH PERPENDICULAR SCATTERING POSTS AT APERTURE
William M. Spanos, Wayne, N.J., assignor to International Telephone and Telegraph Corporation, Nutley, N.J., a corporation of Delaware
Filed Aug. 7, 1968, Ser. No. 750,784
Int. Cl. H01q *13/00*
U.S. Cl. 343—756 **8 Claims**



A waveguide radiator is provided having perpendicular scattering posts placed within a shaped aperture end of the waveguide to produce a circularly polarized microwave radiator as a result of spherically scattering of the waves by the posts.

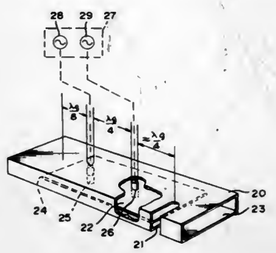
3,553,703
DUAL-MODE SUPER-DIRECTIVE SLOT ANTENNA
Carlton H. Walter, Columbus, Ohio, and Anthony G. Jennetti, Lebanon, Pa., assignors to The Ohio State University Research Foundation, Columbus, Ohio
Filed Mar. 14, 1968, Ser. No. 713,032
Int. Cl. H01q *3/76, 13/10*
U.S. Cl. 343—767 **5 Claims**



The invention is for super-directive narrow-band slot antennas, with increased directivity accomplished by the excitation and proper combination of multiple modes in dielectric-loaded waveguides.

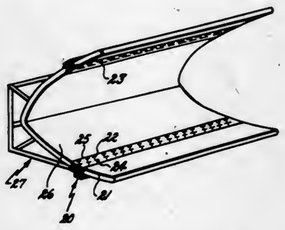
3,553,704
PHASE MULTIPLYING ELECTRONIC SCANNING SYSTEM
T. O. Paine, Administrator of the National Aeronautics and Space Administration, with respect to an invention of Arthur F. Seaton, Palos Verdes Estates, Calif.
Filed Aug. 11, 1969, Ser. No. 848,811
Int. Cl. H01p *5/12;* **H01q** *13/10;* **H03h** *7/36*
U.S. Cl. 343—768 **13 Claims**

A hybrid T waveguide junction is disclosed comprising a septum bifurcating a waveguide with variable susceptance in the two resulting branches for controlling the phase and amplitude of radiant energy through each. The difference in radiation through the two branches is then radiated out of an arm comprising an edge (narrow wall) slot and the remaining energy is transmitted through another arm comprising a waveguide continuation beyond the septum and edge slot. The variable susceptance in a given branch comprises voltage variable



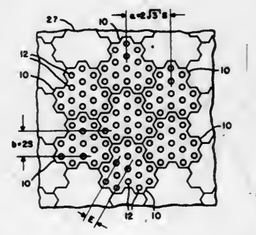
capacitances in the form of adjustable stubs. The control for the stubs may be in accordance with sine and cosine functions.

3,553,705
PARABOLIC REFLECTOR ANTENNA
Albert A. Ondrejka, 3200 Glenvalley Drive, Midwest City, Okla. 73110
Filed Aug. 12, 1968, Ser. No. 751,977
Int. Cl. H01q *19/12*
U.S. Cl. 343—771 **5 Claims**



A parabolic reflector antenna having a feed system which is an integral part of the reflector contour with the focal lines or focal circles being coincident with the locus of points that comprise the reflector contour.

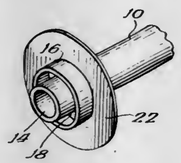
3,553,706
ARRAY ANTENNAS UTILIZING GROUPED RADIATING ELEMENTS
Gregory G. Charlton, Calabasas, Calif., assignor to Hazeltine Research, Inc., a corporation of Illinois
Filed July 25, 1968, Ser. No. 747,703
Int. Cl. H01q *13/00*
U.S. Cl. 343—777 **3 Claims**



An array antenna wherein the radiating elements are quantized into groups of elements. Each group consists

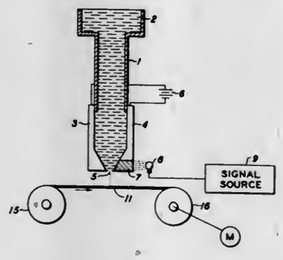
of sixteen elements in five adjacent columns of a triangular grid, having four elements in each of the three inner columns and two elements in each of the outer columns. In each group the elements are arranged to be symmetrical about three axes having a common intersection and separated by sixty degrees. The elements that comprise each group are commonly excited and each group of elements is excited by a diffeernt basic excitation signal. This arrangement substantially reduces the number of basic excitation signals required and provides efficient excitation of each element with low quantization sidelobes.

3,553,707
WIDE-BEAM HORN FEED FOR PARABOLIC ANTENNAS
Richard F. H. Yang, Orland Park, and Laurence H. Hansen, Oak Lawn, Ill., assignors to Andrew Corporation, Orland Park, Cook County, Ill., a corporation of Illinois
Filed May 25, 1967, Ser. No. 641,348
Int. Cl. H01q *13/00*
U.S. Cl. 343—781 **12 Claims**



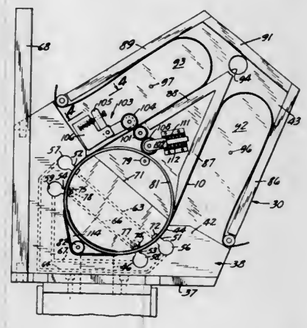
Current-flow is suppressed on the outer surface of the horn except in a small endmost region. A reflector surrounds the horn, spaced rearwardly from the mouth. A choke used for the suppression blocks current-flow between the horn and the reflector. A high degree of uniformity of the radiation pattern over a wide forward angle is achieved.

3,553,708
RECORDING APPARATUS AND METHOD EMPLOYING PHOTOELECTROVISCOUS INK
Leonard M. Carreira, Webster, and Vsevolod S. Mihajlov, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Continuation of application Ser. No. 523,189, Jan. 26, 1966. This application Feb. 21, 1968, Ser. No. 707,331
Int. Cl. G01d *5/26, 5/16*
U.S. Cl. 346—1 **10 Claims**



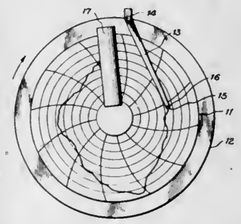
A method and apparatus for image recording by the use of a photoelectroviscous fluid formed of a select dielectric liquid containing organic photoconductive pigments is disclosed. The fluid is maintained under pressure at an electrode aperture to which a constant field is applied and the flow of the fluid through the aperture onto a recording surface is controlled in response to a light signal applied thereto.

3,553,709
METHOD AND APPARATUS FOR TREATING WIDE WEBS IN THE PRESENCE OF A HIGH VACUUM
Derrick A. Jones, Woodbury Township, Ramsey County, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Continuation-in-part of application Ser. No. 613,215, Feb. 1, 1967. This application June 13, 1968, Ser. No. 736,818
Int. Cl. G01d *15/14*
U.S. Cl. 346—1 **16 Claims**



A method of carrying a web from atmospheric conditions into a high-vacuum chamber for treating one surface of the web and for returning the treated web to an area at atmospheric conditions, and a compact apparatus for sealing a high-vacuum chamber while permitting the free and rapid movement of a web from the atmosphere into the high vacuum chamber for treatment as by a corpuscular beam and the return of the web to an area at atmospheric pressure.

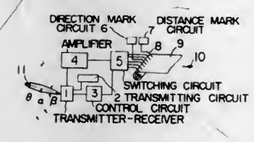
3,553,710
ERASABLE TRACE RECORDER
Edward C. Lloyd, Potomac, Md.
(446 Santa Cecelia St., Solana Beach, Calif. 92075)
Filed Mar. 14, 1969, Ser. No. 807,179
Int. Cl. G01d *9/02*
U.S. Cl. 346—21 **4 Claims**



A source of ultraviolet radiation illuminates the stylus-drawn ink trace on the recording surface of a chart-type recorder. The ink is compounded of a dye that is faded to extinction by the ultraviolet radiation, thereby automatically expunging the trace. Alternatively, the ink may

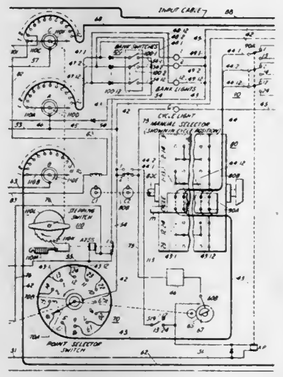
be compounded of a dye that is faded to a modified appearance by the ultraviolet radiation, thereby providing identification of older parts of the trace from newer parts, and an extended trace.

3,553,711
ECHO MEASURING AND RECORDING
Shizuo Kurimura and Kazuya Machida, Tokyo-to, and Tomio Hotta, Kawaguchi-shi, Japan, assignors to Kabushiki Kaisha Koden Seisakusho, Tokyo-to, Japan
Filed Apr. 12, 1968, Ser. No. 720,874
Claims priority, application Japan, Apr. 14, 1967, 42/23,389
Int. Cl. G01s *7/60*
U.S. Cl. 346—33 **7 Claims**



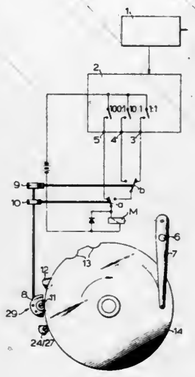
Echo reception signals resulting from the transmission of detection signals are received by a sector-scanning receiver and switched and applied by a sequential switching device directly as analog signals successively and time-divisionally to several recording markers in parallel arrangement transversely across a moving recording paper, the switching device being activated by switching signals generated interrelatedly with the detection signals.

3,553,712
MULTIPOINT-MULTIBANK RECORDING SYSTEM
Samuel J. MacMullan, Flourtown, Kenneth B. Parker, Jr., Norristown, and Albert E. Paschkis, Gwynedd Valley, Pa., assignors to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Sept. 30, 1968, Ser. No. 763,671
Int. Cl. G01d *5/252, 9/34*
U.S. Cl. 346—34 **12 Claims**



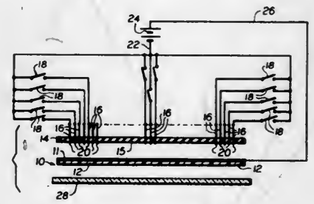
A recording system whereby a multipoint recorder having a recording capability of a fixed number of points is utilized with bank relays for indicating and/or recording many times the number of points the recorder is designed to record. The system employs a single bank-selector switch controlling the bank relays and providing for production of any of several types of records each characteristic of a selected mode of system operation.

3,553,713
EVENT RECORDER WITH RECORDING RATIO-IDENTIFYING MEANS
Werner Roth, Buchenberg, Germany, assignor to Kienzle Apparate GmbH, Villingen, Black Forest, Germany
Filed Mar. 24, 1969, Ser. No. 809,787
Claims priority, application Switzerland, Mar. 22, 1968, 4,273/68
Int. Cl. G01d *9/04*
U.S. Cl. 346—65 **10 Claims**



Repeated events, such as the production of finished workpieces, can be recorded on a record carrier at different reduction ratios so that the recordings are space sufficiently and suitably for automatic counting. The record carrier also receives punched cutouts identifying the reduction ratio, or the ratio 1:1, at which the events were recorded. By manual operation of a knob, the ratio and corresponding identifying cutouts are simultaneously selected. The punching of the identifying cutout is also effected by a manual operation, preferably by closing the lid of the housing.

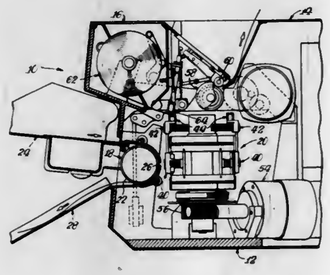
3,553,714
DIGITAL RECORDER WITH APPARATUS FOR VIEWING DURING THE RECORDING PROCESS
Karl Birken, 610 E. 20th St., New York, N.Y. 10009
Filed May 22, 1967, Ser. No. 639,991
Int. Cl. G01d *15/06, 15/08*
U.S. Cl. 346—74 **12 Claims**



A recording medium comprising a thin conductive layer is placed in contact on one side thereof with a plurality of individually energizable conductive markers disposed in a two-dimensional matrix array which effect marks at

the points of contact therebetween. Selective energization of the markers in accordance with an information pattern effects a series of marks representative of the information pattern. The invention is particularly characterized in that the markers are in a two-dimensional matrix array and that the recording medium is arranged so that the marks may be viewed while they are being produced from the side of the recording medium opposite the side in contact with the markers.

3,553,715
FACSIMILE PRINTER CONTACT ASSEMBLY
Frans Brouwer, Glencoe, and Frank L. Sobchak, Chicago, Ill., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia
Filed July 17, 1967, Ser. No. 653,723
Int. Cl. G01d *15/06*
U.S. Cl. 346—74 **2 Claims**

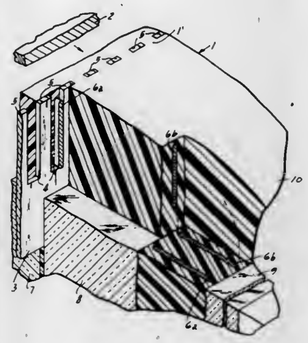


A printer contact assembly comprised of an elongated strip with a contact element secured thereon, and wherein the strip is formed with an aperture adjacent the contact element to prevent fibers of paper from accumulating on the assembly as the contact element is moved across recording paper during print-out of graphic data in facsimile apparatus.

3,553,716
MICROCOMB-TYPE MAGNETIC RECORDING HEAD
Marvin E. Anderson, South Holland, James N. Van Scoyoc, Oak Park, Donald B. Owen, Chicago, and Anthony P. van den Heuvel, Homewood, Ill., assignors to IIT Research Institute Chicago, Ill., a not-for-profit corporation of Illinois
Filed Mar. 28, 1968, Ser. No. 716,719
Int. Cl. G11b *5/16, 5/20, 5/28*
U.S. Cl. 346—74 **24 Claims**

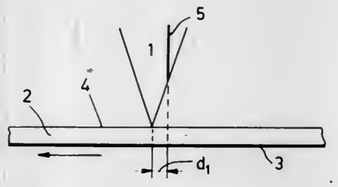
A magnetic digital recording head of comb type, capable of packing densities, for example, on the order of one million bits per square inch of recording medium, in which a core structure is constructed to extend across a cooperable magnetizable recording medium, movable relative thereto, and receives a plurality of conductors each of which is provided with a portion extending in the direction of movement of the recording medium, transversely across the core structure in spaced relation, with portions of the core structure intermediate adjacent conductors forming pole elements cooperable with such conductors for effecting magnetic recording on such a recording medium, the pole elements having flux directing areas, arranged for cooperation with such a recording medium, which have a thickness in the direction of said movement less than .5 mil, and a width transverse to such direction of movement of less than 2 mils, the spacing between adjacent pole elements being less than 2 mils.

The invention also includes a novel method of producing such a head, in which a core structure of paramagnetic material is formed with an elongated portion having an effective width corresponding to the desired effective thickness of such pole elements, the conductors being arranged with the portions thereof, to extend across the core structure, in aligned laterally spaced parallel relation, at the



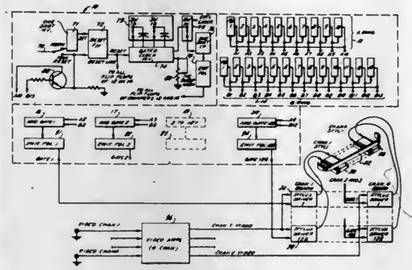
same pitch distance as that of the pole elements, with the conductor portions extending across the elongated portion of the core structure in cooperable relation, the crossing portions of the conductors being secured, in insulated relation relative to one another, to the elongated portion of the core structure with the respective conductor portions adjacent to the crossing portions secured in rigid relation with respect to the elongated portion of the core structure.

3,553,717
METHOD AND DEVICE FOR ELECTROSTATICALLY RECORDING SIGNALS
Jan Roos, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 15, 1968, Ser. No. 721,488
Claims priority, application Netherlands, May 6, 1967, 6706387
Int. Cl. G01d *15/06;* **B01k** *1/00*
U.S. Cl. 346—74 **4 Claims**



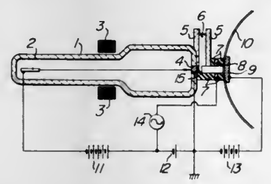
A device for electrostatically recording and erasing signals on a record carrier of insulating material moving in a given direction which uses a conductive layer on one side of the carrier and an insulated stylus on the other side of the carrier. A conductive electrode is inserted into the stylus and protrudes therefrom at a distance d_1 from a sharp edge of the stylus. The distance d_1 is slightly less than a critical distance within which charge density varies linearly with signal voltage.

3,553,718
MULTIPLE STYLUS ELECTROLYTIC RECORDER
Albert E. Schierhorst, Beltsville, and Edward H. Niemeyer, Cheverly, Md., assignors, by mesne assignments, to International Telephone and Telegraph Corporation, a corporation of Delaware
Continuation of application Ser. No. 474,585, July 26, 1965. This application June 20, 1969, Ser. No. 836,221
Int. Cl. G01d *15/06;* **H04r** *1/24*
U.S. Cl. 346—74 **9 Claims**



An electrolytic signal recorder having a plurality of recording heads, each head having multiple styli, and a cable connector having a plurality of contacts positioned to register with and engage all the styli individually. A recording medium is drawn between said styli and a consumable electrode, including a gating circuit for activating successive styli sequentially and a stylus driver circuit associated with each stylus for providing a constant amplitude current pulse, the duration of which is proportional to the amplitude of the signal to be recorded, whereby the shading of the recording represents the amplitude of the signal.

3,553,719
PRINTING DEVICE OF MODULATION ON FACEPLATE OF CATHODE-RAY TUBE
Eiichi Miyazaki, Tokyo, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Dec. 12, 1968, Ser. No. 783,210
Claims priority, application Japan, Dec. 18, 1967, 42/82,482; Dec. 28, 1967, 43/87, 43/132
Int. Cl. G01d *15/16*
U.S. Cl. 346—140 **4 Claims**

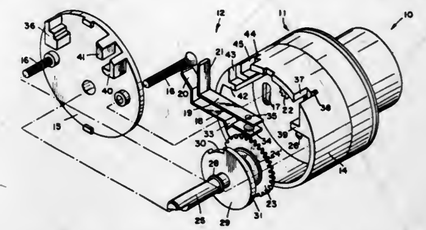


An electronic printing device in which a cathode ray tube is utilized as an electron source for electrifying the printing ink but the modulation of ink deposition by the information signal is performed outside of the cathode ray tube and at a low potential level and the printing is done directly on a sheet of ordinary paper.

ERRATA

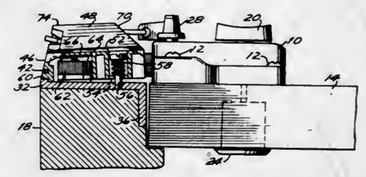
For Classes 200—38 thru 343—854 see:
Patent Nos. 3,553,720 thru 3,553,733

3,553,720
VARIABLE CIRCUIT TIMER WITH IMPROVED CONTACT SECURING MEANS
William Ray Brown, Indianapolis, Ind., assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Continuation of application Ser. No. 672,879, Oct. 4, 1967, now Patent No. 3,500,005, dated Mar. 4, 1970. This application Dec. 22, 1969, Ser. No. 886,962
The portion of the term of the patent subsequent to Mar. 10, 1987, has been disclaimed
Int. Cl. H01h *43/10*
U.S. Cl. 200—38 **18 Claims**



Electrical contact blade retaining means are formed as integral parts of the timer housing. The retaining means in conjunction with the timer cam programming means permits different switching circuits to be readily obtained.

3,553,721
DOOR LOCKING SYSTEM
Paul Maddison Hawkins, Brookville, N.Y., assignor to General Alarm Corporation, New York, N.Y., a corporation of Delaware
Continuation-in-part of applications Ser. No. 492,455, Oct. 4, 1965, and Ser. No. 596,841, Nov. 25, 1966. This application Mar. 15, 1967, Ser. No. 623,419
The portion of the term of the patent subsequent to Oct. 15, 1985, has been disclaimed
Int. Cl. H01h *27/06;* **E05b** *65/00*
U.S. Cl. 200—61.64 **14 Claims**

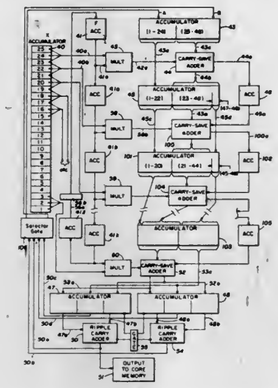


Door lock arrangements including strike housing which is resiliently mounted to pivot in response to forcing pressures, applied via a bolt or locking chain, to actuate an enclosed alarm switch; and an adjustable chain anchor comprising a wall with a cross shaped opening and a recess in the surface of the wall for accommodating a chain link lying flatwise therein adjacent the opening.

3,553,722
MULTIPLE OUTPUT CONVOLUTION MULTIPLIER
Granville E. Ott, Houston, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Feb. 15, 1967, Ser. No. 616,259
Int. Cl. G06f *7/38*
U.S. Cl. 235—156 **10 Claims**

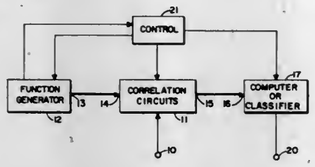
A physical representation of the convolution of two digitally coded electrical time series is formed by concurrently forming digital electrical signals representative of the respective partial products of (i) each of a plurality of words in the first of the two series, and (ii) a

like plurality of sets of bits in a sequence of words in the second of the two series where each of the sets of bits has at least one bit common to at least one other set. Thereafter digital signals are formed which are rep-



resentative of the sums of the partial product digital signals while each digital signal representative of one of the sums is altered in dependence upon the next partial product signal.

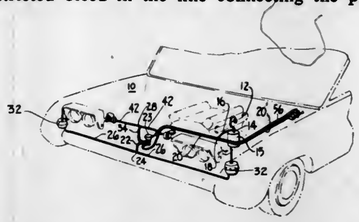
3,553,723
SIGNAL PROCESSOR FOR GENERATING AND ANALYZING SPECTRAL INFORMATION
Ferdinand R. Ohmsorg, St. Paul, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 26, 1967, Ser. No. 678,282
Int. Cl. G06g 7/00; G01j 3/00
U.S. Cl. 235—181 **14 Claims**



A signal processor using square waves or Walsh functions to extract spectral information from an input signal is shown. The spectral information or spectral components are used to classify the input signal in one of a number of classes.

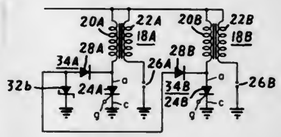
3,553,724
PNEUMATIC ACTUATOR FOR RETRACTABLE HEADLAMP SYSTEM
Raymond A. Deibel, Cheektowaga, and William C. Riester, Williamsville, N.Y., assignors to Trico Products Corporation, Buffalo, N.Y.
Original application June 18, 1968, Ser. No. 739,914, now Patent No. 3,439,580, dated Apr. 22, 1969. Divided and this application Nov. 15, 1968, Ser. No. 795,760
The portion of the term of the patent subsequent to Sept. 17, 1985, has been disclaimed
Int. Cl. B60q 1/06
U.S. Cl. 240—61.1 **3 Claims**

A fluid pressure system utilizing vacuum pressure to actuate retractable headlamps in a motor vehicle which includes a single acting fluid pressure differential operated power unit for moving the headlamps to and from their operative position. A pressure differential operated servo-valve cotrols the application of fluid pressure from a source to the power unit as well as from the power unit to a fluid pressure differential operated latching mechanism. The latching mechanism diaphragm chamber is placed in communication with the power unit for unlatching a restricted bleed in the line connecting the power



unit and the latch vents the system to permit return of the diaphragms in both the latch unit and the power unit. A manually operated controller selectively ports vacuum to the servo-valve and also serves as a switch for the headlamp electrical circuit.

3,553,725
IGNITION DEVICE FOR INTERNAL COMBUSTION ENGINE
Takao Miki, Himeji, Japan, assignor to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan
Filed Nov. 27, 1968, Ser. No. 779,518
Claims priority, application Japan, Dec. 8, 1967, 42/103,233; Dec. 14, 1967, 42/105,623
Int. Cl. H05b 41/36
U.S. Cl. 315—209 **5 Claims**

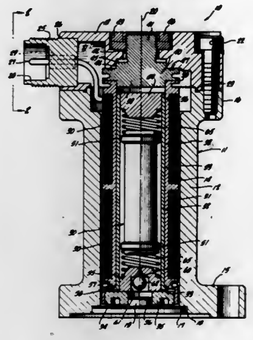


A change of predetermined polarity accumulated on a capacitor by a DC source discharges in oscillatory mode into an ignition coil through a thyristor gated at each ignition time of the associated engine for ignition purpose. In the discharge, a voltage succeedingly appearing across the capacitor of a lower magnitude with opposite polarity causes a voltage drop across a diode and a voltage dropper such as an inductance or a Zener diode serially connected across the thyristor to render it nonconducting. The thyristor is now ready for the succeeding ignition operation and the capacitor is again charged by the source. For a multiple-cylinder engine, each ignition plug involved is associated with the individual ignition coil, thyristor and diode while the capacitor and the voltage dropper are used in common with all the plugs.

3,553,726
VIBROMETER WITH SEALED MAGNET CAPSULE
Michael T. Zimmerman, West Covina, Calif., assignor to Bell & Howell Company, Pasadena, Calif., a corporation of Illinois
Continuation-in-part of application Ser. No. 714,502, Mar. 20, 1968. This application July 30, 1969, Ser. No. 846,209
The portion of the term of the patent subsequent to Aug. 26, 1986, has been disclaimed
Int. Cl. H02k 33/16, 35/02
U.S. Cl. 310—15 **3 Claims**

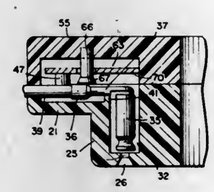
An instrument vibrometer in which a magnet is mounted for reciprocation within a sealed capsule, the capsule being removably held within a coil, both the coil

and the direction of movement of the magnet being aligned with a sensitive axis of the vibrometer within a vibrometer housing. The seal of the magnet capsule as-



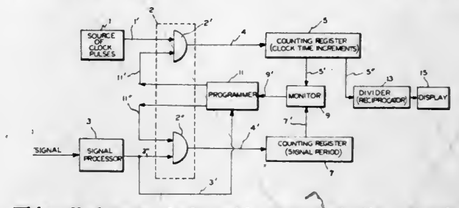
sures that the bearings which mount the magnet within the capsule for movement relative to the coil cannot become clogged by foreign matter entering the housing.

3,553,727
KINESCOPE SOCKET WITH SPARK GAP
Bruno J. Lelmontas, Morton Grove, and Edson M. Paradise, Highland Park, Ill., assignors to Connector Corporation, Chicago, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 748,433, July 29, 1968. This application Dec. 16, 1969, Ser. No. 885,603
The portion of the term of the patent subsequent to Mar. 24, 1987, has been disclaimed
Int. Cl. H01j 5/60
U.S. Cl. 313—325 **15 Claims**



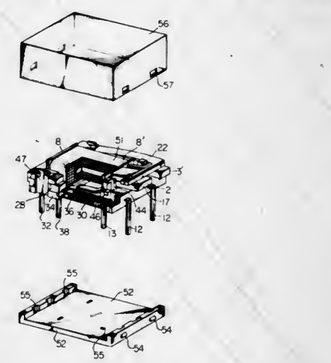
A spark gap kinescope socket wherein the spacing of the spark gap is maintained constant. The socket includes a socket body which is provided with a plurality of openings for receiving the terminal pins of a television picture tube. A generally L-shaped metal contact is positioned within the socket body in alignment with each of the pin-receiving openings, and a lead wire is connected to each metal contact and extends outwardly from the socket body. A back plate is secured to the socket body in covering relationship with the metal contacts, and a metal conducting plate is interposed between the metal contacts and the back plate. The conducting plate is provided with a plurality of openings aligned with the metal contacts, and a plurality of conducting pins extends from the back plate through the openings in the conducting plate into electrical engagement with the metal contacts. Each pin is secured against transverse movement by the back plate, and the periphery of each conducting pin is spaced from the periphery of the associated conducting plate opening to provide a spark gap.

3,553,728
FREQUENCY MEASURING APPARATUS WITH AUTOMATIC ADJUSTMENT OF MEASUREMENT INTERVAL FOR ENHANCED SPEED AND ACCURACY
Richard W. Frank, Stow, Robert G. Fulks, West Concord, and James K. Skilling, Harvard, Mass., assignors to General Radio Company, West Concord, Mass., a corporation of Massachusetts
Filed May 20, 1968, Ser. No. 730,430
Int. Cl. G01r 23/02
U.S. Cl. 324—78 **8 Claims**



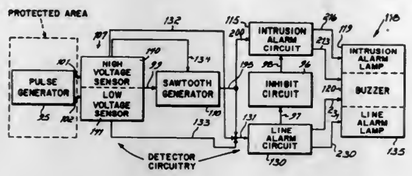
This disclosure deals with automatically adaptive counter apparatus, as for frequency measurements, in which an arithmetic reciprocator is employed such that with the counter clock limited in frequency only by the maximum counting decade resolution, the clock will fill the counting registers at the maximum possible speed to any desired number of significant figures, with the answer preferably always presented as frequency.

3,553,729
ELECTROMAGNETIC RELAY HAVING ADJUSTABLE BIASING MEANS TO PREVENT CHATTERING OF THE SWITCH CONTACTS
Tetsuo Mori, Makoto Iwabuchi, Hideoki Yoshioka, and Kenji Ono, Kadoma-shi, Japan, assignors to Matsushita Denko Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed Sept. 25, 1969, Ser. No. 860,859
Claims priority, application Japan, Sept. 27, 1968, 43/70,449; Sept. 30, 1968 (utility model), 43/85,097; Jan. 13, 1969, 44/2,547; Mar. 10 1969 (utility model), 44/21,499; Mar. 19, 1969 (utility model), 44/24,540
Int. Cl. H01h 3/60
U.S. Cl. 335—192 **6 Claims**



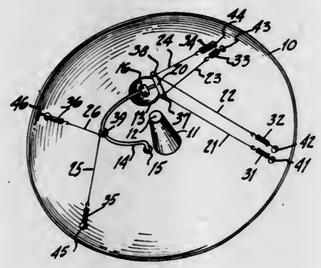
A chattering-less electric relay, of which movable contacts are switched over in accordance with downward attraction and upward deattraction of an armature to a yoke through a card normally biased upwardly. The armature includes an adjustable biasing means to urge the card downwardly when the armature is being attracted and to urge the armature itself upwardly at both last stage of the attraction and initial stage of the deattraction. There is provided a small gap between the card and the biasing means during deattraction of the armature.

3,553,730
SECURITY ALARM SYSTEM
Martin Kaplan, Westport, Donald E. Hansen, Brookfield Center, and Eric G. Quist, Roxbury, Conn., assignors to Mosler Research Products, Inc., Danbury, Conn., a corporation of Delaware
Filed Sept. 21, 1966, Ser. No. 580,992
Int. Cl. G08b *13/00, 13/08;* H03k *3/26*
U.S. Cl. 340—276 14 Claims



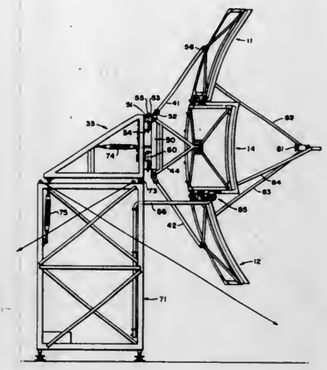
A system for providing a central station with an indication of unauthorized activity at a remote protected area which includes a pulse generator at the remote area. The pulse generator transmits to the central station during nonalarm conditions pulses having pre-determined peak and base amplitudes falling within an acceptance band and having a specified pulse width to pulse spacing ratio. Should an intrusion occur the pulse width to spacing ratio of the generator output changes. A detector at the central station interconnecting the pulse generator and an alarm indicator monitors the pulse peak and base amplitudes to ascertain whether the pulses fall within the acceptance band and to thereby detect tampering, as well as monitors the average direct current level of the pulses to ascertain the existence of an intrusion.

3,553,731
ANTENNA COMPRISING RESTRAINING MEANS FOR RESILIENT SUPPORT MEMBERS
Thomas Szirtes, Montreal, Quebec, Canada, assignor to RCA Corporation, a corporation of Delaware
Filed May 15, 1967, Ser. No. 638,522
Int. Cl. H01q *19/14*
U.S. Cl. 343—781 7 Claims



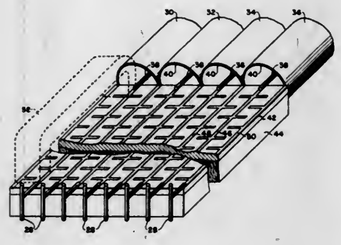
The subreflector of a Cassegrainian or Gregorian antenna system is mounted by positioning a single laterally bent leg support member between the main reflector dish and the subreflector. Guying wires are used to position the subreflector in front of the feed source and to preload the leg support member to provide minimum deflection of the support member and consequently minimum movement of the subreflector with respect to the main reflector upon the application of external forces to the subreflector.

3,553,732
PORTABLE PARABOLIC REFLECTOR FOR MICROWAVE ENERGY
James J. Glynn, Norwood, Mass., assignor to Diamond Antenna Microwave Corporation, Winchester, Mass., a corporation of Massachusetts
Filed May 29, 1968, Ser. No. 735,496
Int. Cl. H01q *15/20, 19/12*
U.S. Cl. 343—840 5 Claims



A portable parabolic microwave reflector generally in the form of a cross comprises a series of male and female aluminum castings joined together by means including an alignment pin and spring-loaded balls. Assembled reflector sections are supported by welded, tubular A-frames that become attached to the reflector by means of a series of male and female aluminum castings in conjunction with an alignment pin, locked in place by spring-loaded balls. The A-frames attach to whatever support structure is required to support the antenna.

3,553,733
TRANSVERSE ELECTROMAGNETIC DEVICES FOR FERRITE LOADED PLANAR CIRCUITS
Daniel C. Buck, Hanover, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 26, 1969, Ser. No. 802,353
Int. Cl. H01g *3/26;* H03h *7/36*
U.S. Cl. 343—854 8 Claims



Described is an interdigital wave circuit deposited on a ferrite film and having a direct current magnetic field applied in the plane of the interdigital circuit to provide a microwave device employing gyromagnetic media for phase shift, frequency translation, circulation and the like.

DESIGNS

JANUARY 5, 1971

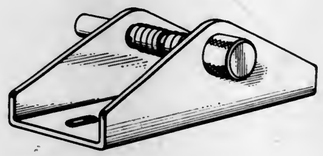
219,637
EXPANDED CEREAL FOOD PRODUCT
William E. Holtz, Jr., Chicago, and Raleigh J. Wilkinson, Arlington Heights, Ill., assignors to The Quaker Oats Company, a corporation of New Jersey
Filed Apr. 27, 1970, Ser. No. 22,678
Term of patent 14 years
Int. Cl. D1—*01*
U.S. Cl. D1—13



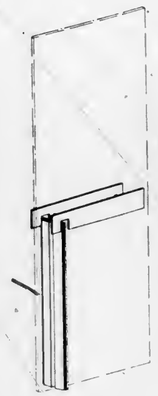
219,638
COMBINATION DISPOSABLE TOOTHBRUSH AND RECEPTACLE THEREFOR
Ted R. Puskarcik, Campbell, Ohio, assignor of fifty percent to William P. Gale, Hubbard, Ohio
Filed June 18, 1969, Ser. No. 17,758
Term of patent 14 years
Int. Cl. D4—*02;* D9—*04*
U.S. Cl. D4—18



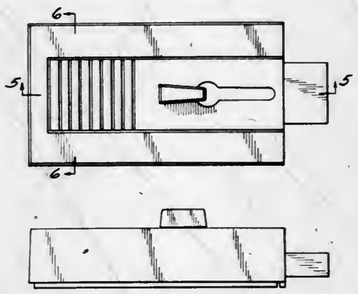
219,639
VENT LOCK FOR SLIDING DOORS
Donald B. Hawkins, Danville, Calif.
(2233A Washington Ave., San Leandro, Calif. 94526)
Filed May 19, 1969, Ser. No. 17,216
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—109



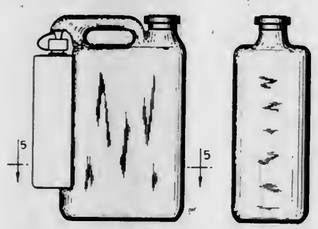
219,640
COMBINED DOOR HANDLE AND LOCK HOUSING SET
William J. Horgan, Jr., Pittsburgh, Pa., assignor to Blumcraft of Pittsburgh, Pittsburgh, Pa., a firm of Pennsylvania
Filed Oct. 8, 1969, Ser. No. 19,458
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—138



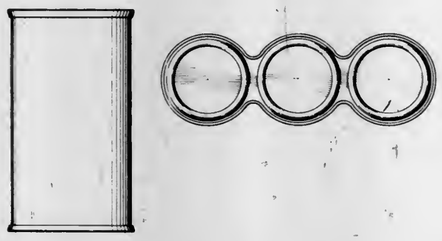
219,641
ALARM LATCH
Logan W. Johnson, Minnetonka, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Original design application Oct. 9, 1968, Ser. No. 13,905, now Patent No. 216,669. Divided and this application Nov. 25, 1969, Ser. No. 20,276
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—131



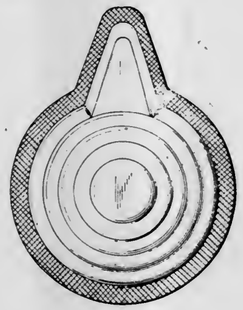
219,642
COMBINED JUG AND BOTTLE
Harald Prahs, Wentorf, Bad Homburg, Germany, assignor to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Aug. 12, 1969, Ser. No. 18,648
Claims priority, application Germany Feb. 14, 1969
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—18



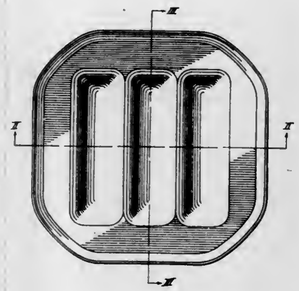
219,643
PLURAL COMPARTMENT CONTAINER FOR LIQUIDS
Anna H. Garbus, 209 W. Cypress St., Glendale, Calif. 91204
Filed Sept. 23, 1969, Ser. No. 19,256
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—18



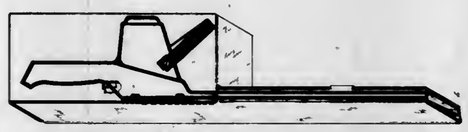
219,644
POWDER PACKAGE
Joseph L. Arcudi, Elizabeth, N.J., assignor to Becton, Dickinson and Company, Newark, N.J., a corporation of New Jersey
Filed Nov. 14, 1969, Ser. No. 20,081
Term of patent 14 years
Int. Cl. D9—*99*
U.S. Cl. D9—182



219,645
NESTING TACOS DISH
Florence L. Rabe, 816 NE. 46th St., Kansas City, Mo. 64116
Filed Aug. 15, 1969, Ser. No. 18,697
Term of patent 7 years
Int. Cl. D9—*04*
U.S. Cl. D9—189



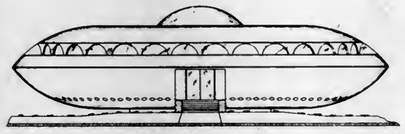
219,646
HEDGE TRIMMER CARTON
Arthur L. Shreve III, Butler, Lyell Bayne Norris, Jr., Phoenix, and Clarence L. Beebe, Jr., Baltimore, Md., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland
Continuation-in-part of design application Ser. No. 18,364, July 24, 1969. This application Apr. 23, 1970, Ser. No. 22,587
Term of patent 14 years
Int. Cl. D9—*04*
U.S. Cl. D9—229



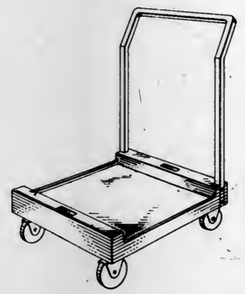
219,647
UNDERGROUND SERVICE WIRE ENCLOSURE
Harold E. Handley, Vandercook Lake, and Frank J. Perry and Richard L. Bunnell, Jackson, Mich., assignors to Handley Industries, Inc., Jackson, Mich., a corporation of Michigan
Filed Dec. 11, 1968, Ser. No. 14,887
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



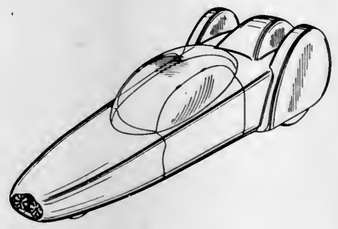
219,648
BUILDING
Lawrence W. Weaver, Fullerton, Calif., assignor of thirty-three and one-third percent each to Lavelle D. Barber, Anaheim, and George C. Faith, Costa Mesa, Calif.
Filed Nov. 26, 1969, Ser. No. 20,281
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



219,649
SERVICE CART
Arthur Salcman, Old Saybrook, and Gary Arthur Gerber, Westport, Conn., assignors to American Machine & Foundry Company, a corporation of New Jersey
Filed Aug. 8, 1969, Ser. No. 18,604
Term of patent 14 years
Int. Cl. D12—*02*
U.S. Cl. D14—3



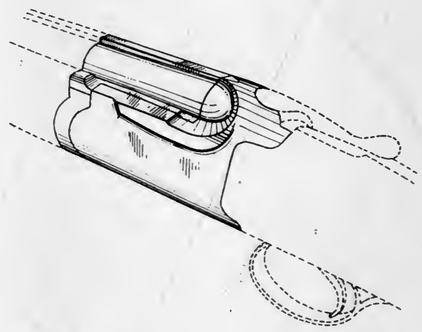
219,650
AUTOMOBILE
Duane C. Balch, 1415 Park Glen Court, Concord, Calif. 94521
Filed Apr. 9, 1970, Ser. No. 22,352
Term of patent 14 years
Int. Cl. D12—*08*
U.S. Cl. D14—3



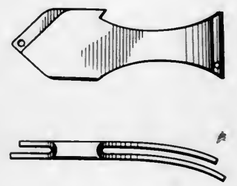
219,651
CHAIR
Morris F. Fisher, 9820 Deerfield Circle, Carmel, Ind. 46032
Filed Oct. 27, 1969, Ser. No. 19,722
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—1



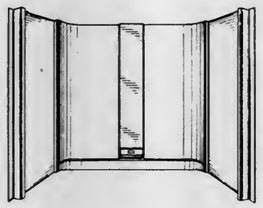
219,652
COMBINED BARREL HOUSING AND FRAME FOR A FIREARM
William B. Ruger, Southport, and Lawrence L. Larson, Bethany, Conn., assignors to Sturm, Ruger & Co., Inc., Southport, Conn., a corporation of Connecticut
Filed Aug. 11, 1969, Ser. No. 18,643
Term of patent 14 years
Int. Cl. D22—*02*
U.S. Cl. D22—7



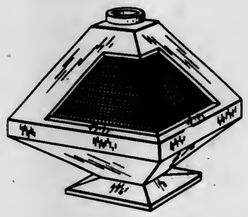
219,653
FISHING LURE
Mary E. Hanna, Norco, Calif. (8178 Galena St., Riverside, Calif. 92509)
Filed Dec. 22, 1969, Ser. No. 20,583
Term of patent 14 years
Int. Cl. D22—*07*
U.S. Cl. D22—27



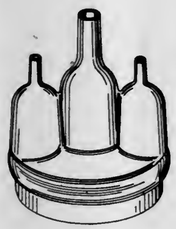
219,654
WALL FOR A BATHTUB
Raymond W. Young, Louisville, Ky., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 6, 1969, Ser. No. 18,556
Term of patent 14 years
Int. Cl. D23—*02*
U.S. Cl. D23—49



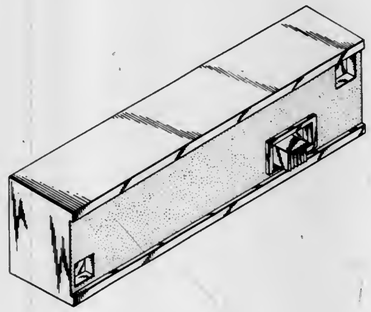
219,655
FIREPLACE
Silvano E. Salvador, 24634 Five Mile Road, Detroit, Mich. 48239
Filed Nov. 7, 1969, Ser. No. 19,983
Term of patent 14 years
Int. Cl. D23—*03*
U.S. Cl. D23—97



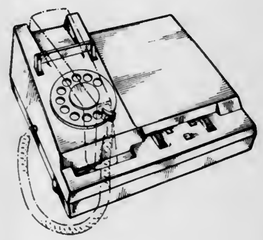
219,656
COIL CAP COVER
Stanley E. Estes, 543 W. 184th St., Gardena, Calif. 90247
Filed Feb. 5, 1970, Ser. No. 21,274
Term of patent 14 years
Int. Cl. D13—*02*
U.S. Cl. D26—5



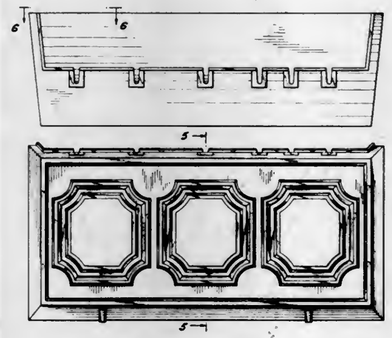
219,657
IGNITION GUARD SWITCH
Robert D. Kahn, Rockville Centre, N.Y., assignor to Fedtro, Inc., Rockville Centre, N.Y., a corporation of New York
Filed Dec. 8, 1969, Ser. No. 20,415
Term of patent 14 years
Int. Cl. D13—*03*
U.S. Cl. D26—13



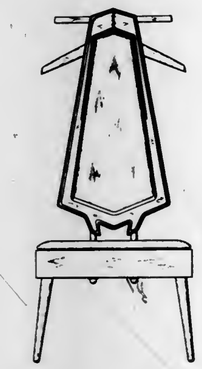
219,658
HOUSING FOR A TELEPHONE ANSWERING DEVICE
Joseph B. Federico, Rochester, N.Y., assignor to Ford Industries, Inc., Portland, Oreg., a corporation of Washington
Filed Oct. 20, 1969, Ser. No. 19,627
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D26—14



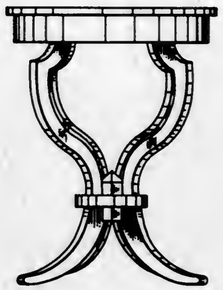
219,659
RACK FOR HOLDING KITCHEN UTENSILS OR SIMILAR ARTICLES
Monte Levin, New York, N.Y., assignor to Empire Brushes, Inc., Port Chester, N.Y., a corporation of New York
Filed Oct. 29, 1969, Ser. No. 19,830
Term of patent 14 years
Int. Cl. D6—*99*
U.S. Cl. D33—3



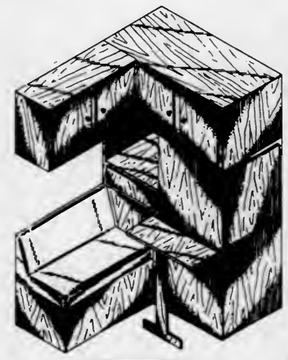
219,660
COMBINED VALET STAND AND SEAT
David Eccles, New York, N.Y., assignor to Pearl-Wick Corporation, Long Island City, N.Y., a corporation of New York
Filed Oct. 31, 1969, Ser. No. 19,866
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—8



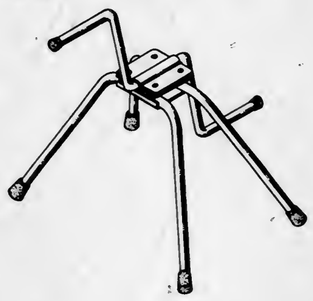
219,661
TABLE
Frank W. Leidig, 280 Orange St., Galion, Ohio 44833
Filed Nov. 20, 1969, Ser. No. 20,187
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—14



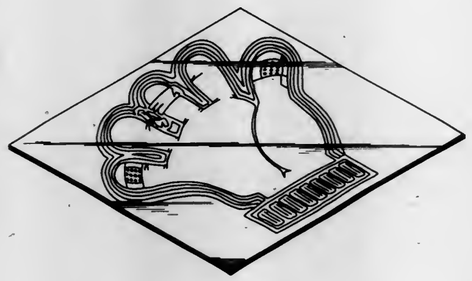
219,662
COMBINED BENCH, EXTENSION TABLE AND CABINET UNIT
Raymond W. Hannah and Kathryn B. Hannah, both of 7200 16th Lane, St. Paul Park, Minn. 55071
Filed Dec. 17, 1969, Ser. No. 20,540
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—19



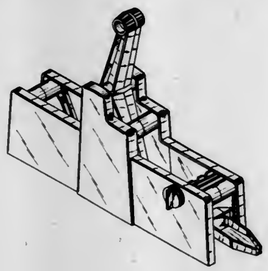
219,663
EXERCISING DEVICE
John H. Thompson, 344 N. Maryland, Glendale, Calif. 91206
Filed Aug. 7, 1969, Ser. No. 18,570
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



219,664
GAME BOARD
Janet L. Mills, Middlesex, N.J., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of Delaware
Filed Feb. 26, 1970, Ser. No. 21,653
Term of patent 14 years
Int. Cl. D21—*01*
U.S. Cl. D34—5



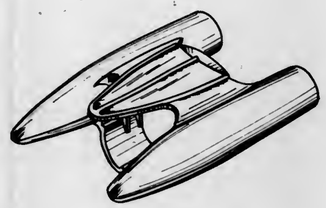
219,665
TOY VEHICLE PROJECTOR
Harvey W. La Branche, Palos Verdes Peninsula, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of Delaware
Filed Jan. 20, 1970, Ser. No. 20,998
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



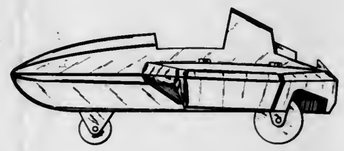
219,666
TOY TRUCK
Ira B. Gilford, Thousand Oaks, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of Delaware
Filed Feb. 2, 1970, Ser. No. 21,179
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



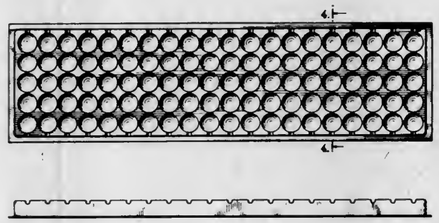
219,667
TOY AQUATIC SLED OR THE LIKE
Jack M. King, Huntington Beach, Calif., and William D. Stout, Provo, Utah, assignors to Mattel, Inc., Hawthorne, Calif., a corporation of Delaware
Filed Feb. 19, 1970, Ser. No. 21,521
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



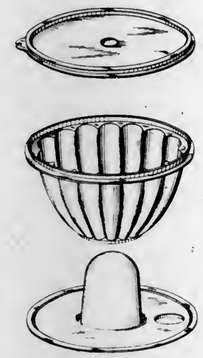
219,668
AQUATIC TOY VEHICLE
Jack M. King, Huntington Beach, Calif., and William D. Stout, Provo, Utah, assignors to Mattel, Inc., Hawthorne, Calif., a corporation of Delaware
Filed Feb. 19, 1970, Ser. No. 21,525
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



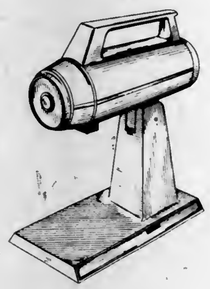
219,669
SEED GERMINATING TRAY
Arthur Hasselbach, P.O. Box 336, Cranbury, N.J. 08512
Filed Oct. 29, 1969, Ser. No. 19,837
Term of patent 14 years
Int. Cl. D31
U.S. Cl. D35—3



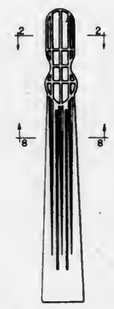
219,670
FOOD MOLD OR THE LIKE
James B. Swett, Barrington, and Harold P. Ashton, Providence, R.I., assignors to Dart Industries, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Aug. 13, 1969, Ser. No. 18,664
Term of patent 14 years
Int. Cl. D7—*02*
U.S. Cl. D44—1



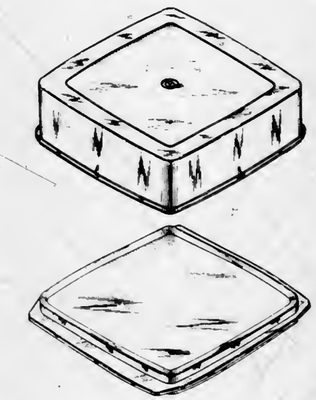
219,671
FOOD MIXER
Monte L. Levin, New York, N.Y., assignor to Scovill Manufacturing Company, Waterbury, Conn., a corporation of Connecticut
Filed Nov. 4, 1969, Ser. No. 19,928
Term of patent 14 years
Int. Cl. D7—*05*
U.S. Cl. D44—1



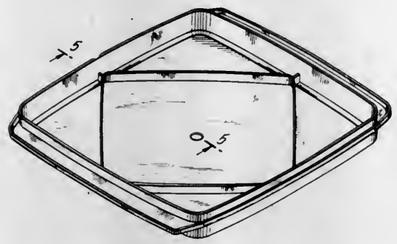
219,672
STIRRING PADDLE
Wesley S. Seapy, 151 Carmel Ave., El Cerrito, Calif. 94530
Filed Nov. 26, 1969, Ser. No. 20,288
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D44—1



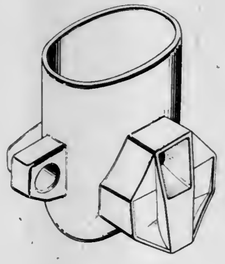
219,673
FOOD CONTAINER
Robert Daenen, Beukenlaan, Belgium, assignor to Dart Industries, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Feb. 25, 1970, Ser. No. 21,625
Term of patent 14 years
Int. Cl. D7—*99*
U.S. Cl. D44—1



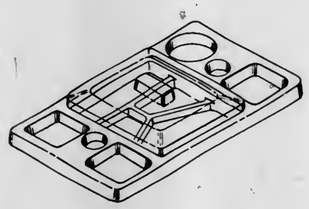
219,674
FOOD TRAY
Robert Daenen, Brembodegem, Belgium, assignor to Dart Industries, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Feb. 25, 1970, Ser. No. 21,617
Term of patent 14 years
Int. Cl. D7—*99*
U.S. Cl. D44—10



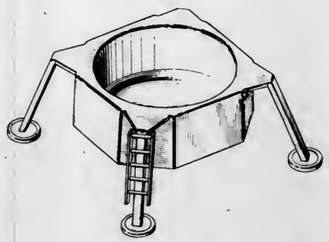
219,675
CUP
Claude M. Davis, 307 Hillwood Court, Toledo, Ohio 43608
Filed Nov. 10, 1969, Ser. No. 20,021
Term of patent 7 years
Int. Cl. D7—*01*
U.S. Cl. D44—9



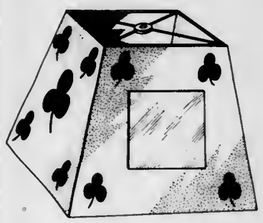
219,676
COMBINED FOOD SERVICE TRAY AND COVER THEREFOR
Harford E. Goings, 5428 Center Drive, Camp Springs, Md. 20031
Filed Oct. 10, 1969, Ser. No. 19,503
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D44—10



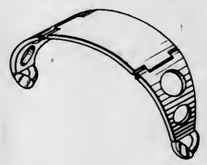
219,677
BOWL
Claude M. Davis, 307 Hillwood Court, Toledo, Ohio 43608
Filed Nov. 10, 1969, Ser. No. 20,022
Term of patent 7 years
Int. Cl. D7—*01*
U.S. Cl. D44—15



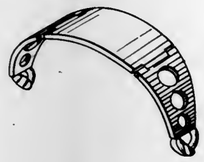
219,678
COMBINED LAMP SHADE AND MIRROR
Aime Trudeau, 227 NE. 26th St., Miami, Fla. 33137
Filed Jan. 14, 1970, Ser. No. 20,920
Term of patent 14 years
Int. Cl. D26—*06*
U.S. Cl. D48—16



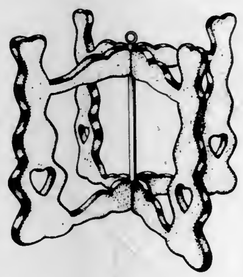
219,679
LINKAGE FOR AN IDENTIFICATION BRACELET OR SIMILAR ARTICLE
Raymond C. Fontaine, Greenville, R.I., assignor to Textron Inc., Providence, R.I., a corporation of Delaware
Filed Oct. 13, 1969, Ser. No. 19,537
Term of patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—4



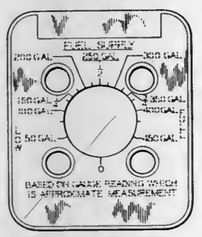
219,680
LINKAGE FOR AN IDENTIFICATION BRACELET OR SIMILAR ARTICLE
Raymond C. Fontaine, Greenville, R.I., assignor to Textron Inc., Providence, R.I., a corporation of Delaware
Filed Oct. 13, 1969, Ser. No. 19,538
Term of patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—4



219,681
BODY FOR HANGING LAMP
Herbert E. Spencer, Grandville, Mich., assignor of one-half to Judith Helen Spencer
Filed July 24, 1969, Ser. No. 18,370
Term of patent 14 years
Int. Cl. D26—*99, 02*
U.S. Cl. D48—7



219,682
FACE PLATE FOR A LIQUID GAGE
John D. Stacey, 1326 S. Devon Road, Springfield, Mo. 65804
Filed June 18, 1969, Ser. No. 17,756
Term of patent 14 years
Int. Cl. D10—*99*
U.S. Cl. D52—6



219,683
SPOON OR SIMILAR ARTICLE
Ellen B. Manderfield, Syracuse, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Feb. 17, 1970, Ser. No. 21,469
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



219,684
SPOON OR SIMILAR ARTICLE
Frank R. Perry, Oneida, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Mar. 2, 1970, Ser. No. 21,683
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



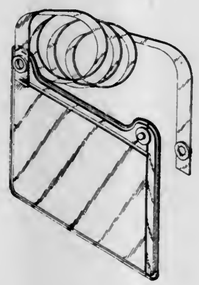
219,685
SPOON OR SIMILAR ARTICLE
Frank R. Perry, Oneida, N.Y., assignor to Oneida Ltd., Oneida, N.Y., a corporation of New York
Filed Mar. 2, 1970, Ser. No. 21,684
Term of patent 14 years
Int. Cl. D7—*03*
U.S. Cl. D54—12



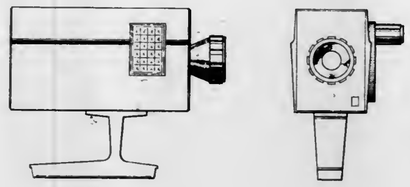
219,686
PAIR OF SPECTACLES
Atherton R. Mitchell, Dillon Beach, Calif., assignor to Renauld International, Ltd., Fitchburg, Mass., a corporation of Delaware
Filed Nov. 19, 1969, Ser. No. 20,176
Term of patent 14 years
Int. Cl. D16—*08*
U.S. Cl. D57—1



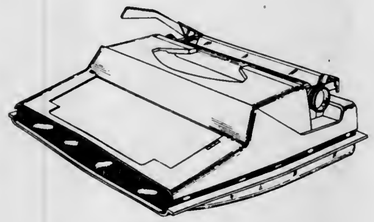
219,687
BADGE HOLDER
Gabriel G. Tauber, 7600 Georgia Ave., Washington, D.C. 20017
Filed Nov. 27, 1968, Ser. No. 14,830
Term of patent 14 years
Int. Cl. D20—*99*
U.S. Cl. D59—2



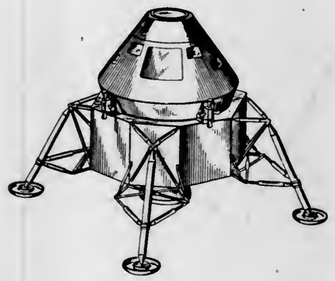
219,688
MOTION PICTURE VIEWER
James R. Skinner, Cupertini, Mark O. Uitz, Mountain View, and Paul W. Hait, Saratoga, Calif., assignors to FJL Corporation, Palo Alto, Calif., a corporation of California
Filed Oct. 17, 1969, Ser. No. 19,599
Term of patent 14 years
Int. Cl. D16—*99*
U.S. Cl. D61—1



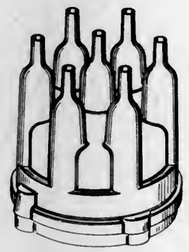
219,689
TYPEWRITER FRAME
Danforth Cardozo, Jr., Weston, Conn., and Geoffrey E. Grieb, New York, N.Y., assignors to Litton Business Systems, Inc., New York, N.Y., a corporation of New York
Field Oct. 2, 1969, Ser. No. 19,393
Term of patent 14 years
Int. Cl. D18—*01*
U.S. Cl. D64—11



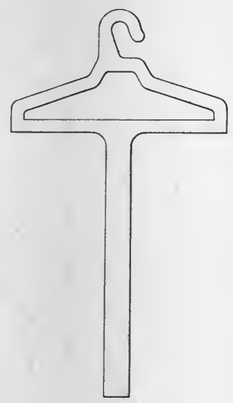
219,690
COMBINED SHELTER AND VEHICLE
James O. Matzenauer, Woodland Hills, Calif., assignor to North American Rockwell Corporation
Filed Jan. 2, 1969, Ser. No. 15,233
Term of patent 14 years
Int. Cl. D12—*07*
U.S. Cl. D71—1



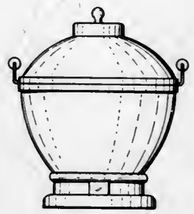
219,691
DISTRIBUTOR CAP COVER
Stanley E. Estes, 543 W. 18th St., Gardena, Calif. 90247
Filed Feb. 5, 1970, Ser. No. 21,285
Term of patent 14 years
Int. Cl. D15—*01*
U.S. Cl. D77—1



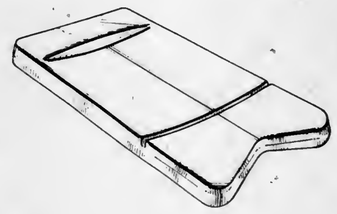
219,692
CHILD'S COAT HANGER
Thomas J. Kufchock, 8662 Edna, Warren, Mich. 48093
Filed Aug. 14, 1969, Ser. No. 18,684
Term of patent 14 years
Int. Cl. D6—*07*
U.S. Cl. D80—8



219,693
CERAMIC BARBECUE COOKER OR THE LIKE
Sangduck Hahn, 3–2 Eungamdong, Seodaemunku, Seoul, Korea
Filed Aug. 15, 1969, Ser. No. 18,713
Claims priority, application Korea June 9, 1969
Term of patent 14 years
Int. Cl. D7—*04*
U.S. Cl. D81—10



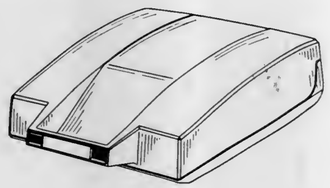
219,694
PHYSICIAN'S EXAMINING TABLE TOP
Joseph J. Lelugas, Two Rivers, Wis., assignor to American Hospital Supply Corporation, Evanston, Ill., a corporation of Illinois
Filed Aug. 29, 1969, Ser. No. 18,912
Term of patent 14 years
Int. Cl. D24—*02*; D6—*02*
U.S. Cl. D83—1



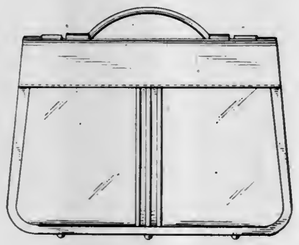
219,695
TAMPING TOOL FOR PREPARING TISSUE BLOCKS FOR HYSTOLOGY AND THE LIKE
Ruth M. Dole, 19791 Kingswood Lane, Huntington Beach, Calif. 92646
Filed Apr. 14, 1969, Ser. No. 16,734
Term of patent 14 years
Int. Cl. D24—*03*; D8—*02*
U.S. Cl. D83—12



219,696
PORTABLE TYPEWRITER CARRYING CASE
John Cuccio, Westport, Conn., assignor to Ing. C. Olivetti & C., S.p.A., Ivrea, Italy, a corporation of Italy
Filed Feb. 20, 1970, Ser. No. 21,562
Term of patent 14 years
Int. Cl. D3—*01*
U.S. Cl. D87—1



219,697
LUGGAGE CASE
Josef A. Ross, 24 Sergent Court, Bergenfield, N.J. 07621
Filed Mar. 2, 1970, Ser. No. 21,697
Term of patent 14 years
Int. Cl. D3—*01*
U.S. Cl. D87—5



219,698
COMBINED WALLET AND KEY CASE
Nathan Fenster, Brooklyn, and Theodore H. Schiffman, Lawrence, N.Y., assignors to Progress Heat Sealing Co., Inc., New York, N.Y., a corporation of New York
Filed Mar. 2, 1970, Ser. No. 21,685
Term of patent 14 years
Int. Cl. D3—*02*
U.S. Cl. D87—8.4



219,699
SAFETY RAZOR
Norman D. Poisson, Marblehead, Mass., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Dec. 24, 1969, Ser. No. 20,642
Term of patent 14 years
Int. Cl. D28—*03*
U.S. Cl. D95—3



LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 5TH DAY OF JANUARY, 1971

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

11.67% interest of Schiff, Michael J.,: *See—*
Severino, James; and Burk, Evans S., 3,552,734.
AAI Corporation: *See—*
Zachmeier, August A., 3,552,590.
Aas, Haakon, to Leigh Instruments Limited. Helicopter crash position indicator. 3,553,587, Cl. 325-114.
AB Byggforbattring: *See—*
Svensson, Sven-Erik Vilhelm, 3,552,709.
AB Industrifjadrar: *See—*
Nygren, Harry Mauritz, 3,551,961.
Svensson, Lars Erik; and Wahlstrom, Nils Lennart, 3,552,168.
AB Tetra Pak: *See—*
Fuchs, Alfred, 3,552,631.
Rausin, Hans Anders; and Lindh, Thorsten Lennartsson, 3,553,073.
Abe, Takeshi, to Kabushiki Kaisha Ricoh. Device for detecting the density of developer in an electrostatographic duplicator. 3,553,464, Cl. 250-219.
Abex Corporation: *See—*
Nitz, Jacob; and Graham, Glenn R., 3,552,533.
Abramson, Fred P.: *See—*
Tiernan, Thomas O.; Miller, Carroll D.; Futrell, Jean H.; and Abramson, Fred P.,3,553,452.
Abushanab, Eli, to Pfizer, Chas., & Co., Inc. Process for making quinoxaline-di-n-oxides. 3,553,208, Cl. 260-250.
Ace Pump Corporation: *See—*
Bond, William J., Jr., 3,552,875.
ACF Industries, Incorporated: *See—*
Oliver, Alton D., 3,552,717.
Adamovske strojirny, narodni podnik: *See—*
Jurny, Josef, 3,552,745.
Adams, Harry E., to Control Equipment Corporation. Digital transducer. 3,553,679, Cl. 340-347.
Addmaster Corporation: *See—*
Clary, John G., 3,552,310.
Addor, Roger Williams, to American Cyanamid Company. Novel carbamates of dichloroformaldehyde oxime and methods of preparing and using same. 3,553,264, Cl. 260-566.
Addor, Roger Williams, to American Cyanamid Company. Method for controlling insects with imino-1,3- dithietanes. 3,553,319, Cl. 424-202.
Ader, Martin Marcel Marie, to Centre Stephanois de Recherches Mecaniques Hydromecanique et Frottement. Method for formation of a titanium carbide surface layer on titanium and titanium alloy parts. 3,553,038, Cl. 148-20.3
Adler, Imre, to Hewitt-Robins Incorporated. Clean up mechanism. 3,552,585, Cl. 214-14.
Adolph, Horst G.; and Kamlet, Mortimer J., to United States of America, Navy. Bis(fluorodinitromethyl)alkylene diols. 3,553,273, Cl. 260-633.
Aerosol Techniques Incorporated: *See—*
Mace, Harry W., 3,553,138.
AGA Aktiebolag: *See—*
Granqvist, Carl-Erik, 3,552,860.
Agarwala, Bhaskar Kumar, to Revell, Incorporated. Method of making slot car race tracks. 3,552,003, Cl. 29-625.
Agfa-Gevaert Aktiengesellschaft: *See—*
Kuhn, Gerhard; Graf, Albin; Moll, Franz; and Otto, Rigobert, 3,552,966.
Meyer, Karl-Otto; Schiffmann, Richard; and Himmelmann, Wolfgang, 3,552,972.
Agway Inc.: *See—*
Whitman, John C., 3,552,458.
Ahlberg, Carl S.: *See—*
Simon, Peter A.; Paletz, Leonard M.; Fiterman, Benjamin; Johnson, Marlyn D.; and Ahlberg, Carl S.,3,552,579.
Ahlert, Robert C.; Silverman, Jacob; Greene, Stanley A.; and Young, Richard K., to North American Rockwell Corporation. Hypergolic hydrazine and amine propellant and rocket propulsion method. 3,552,126, Cl. 60-212.
Ahrweiller, Michel, to Commissariat a l'Energie Atomique. Generator for rectangular electrical pulses. 3,553,592, Cl. 328-67.
Aiba, Hiroshi: *See—*
Okamura, Akira; Kosaka, Tomoaki; and Aiba, Hiroshi,3,553,375.
Aidner, Sam; and Russo, Anthony J., said Russo assor. to said Aidner. Vehicle anti-theft device utilizing the parking brake. 3,552,518; Cl. 180-114.
Air Products and Chemicals, Inc.: *See—*
Mc Coy, George H., 3,553,422.
Air Reduction Company, Incorporated: *See—*
Valenta, James D., 3,552,141.
Airpax Electronics Incorporated: *See—*
Nye, Dudley D., Jr.; and Keith, Arley L., Jr., 3,553,569.
Aishima, Itsuho: *See—*
Fujisaki, Yoshisato; Aishima, Itsuho; Sakurai, Hisaya; Kitaoka, Atsushi; Kawasaki, Hironobu; and Oshima, Minoru,3,553,176.
Aktiebolaget Aero-Shaft: *See—*
Grettve, Karl Einar Lage, 3,552,672.
Aktiebolaget Grythyttans Stalmobler: *See—*
Sjoblom, Ake E., 3,552,761.
Aktiebolaget Hagglund & Soner: *See—*
Edlund, Gunnar Elisson, 3,552,586.
Aktiebolaget Svenska Precisionsverktyg: *See—*
Eriksson, Alf Anders Anselm, 3,552,888.
Aktieselskabet Grindstedvaerket: *See—*
Nedenskov, Poul, 3,553,205.
Akustische V. Kino-Gerate Gesellschaft m.b.H.: *See—*
Gorike, Rudolf, 3,553,393.
Alarmtronics Engineering, Inc.: *See—*
Reiss, Martin H., 3,553,687.
Albanese, Richard P.; and McIntyre, Glenn H., Jr., to Tizon Chemical Corporation. Process for polishing crystalline silicon. 3,552,071, Cl. 51-281.
Albarda, Scato, to U.S. Philips Corporation, mesne. Device for determining the displacement of a component of a machine tool with the aid of a grating mechanically connected to the component. 3,552,861, Cl. 356-169.
Albert, James R.; and Kodama, Jiro K., to Shell Oil Company. Use of 2-(cyanoalkyl)-4-amino-6-substituted-s- triazines for inducing depressant effects in animals. 3,553,326, Cl. 424-249.
Alburn, Harvey E.: *See—*
Clark, Donald E.; Grant, Norman H.; and Alburn, Harvey E.,3,553,201.
Alco Standard Corporation: *See—*
Sproul, Hugh R., 3,552,186.
Aldrich Chemical Company, Inc.: *See—*
Li, Jorge P.; Jules, Ramona H.; and Biel, John H., 3,553,217.
Alfa Romeo S.p.A.: *See—*
Bassi, Aldo, 3,552,715.
Allard Instrument Corporation: *See—*
Skrobisch, Alfred, 3,553,619.
Allen, Cecil G. Picture frame. 3,552,052, Cl. 40-156.
Allen, Earle E., Jr.: *See—*
Parmerter, Stanley M.; and Allen, Earle E., Jr.,3,553,191.
Allen, Jim E.: *See—*
Martinet, Jacques R.; and Allen, Jim E.,3,552,984.
Allen, John W., to Stanray Corporation. Sandwich structural panel of cellular core type. 3,552,086, Cl. 52-618.
Allen Organ Company: *See—*
Markowitz, Jerome; and Griffith, Errol R., 3,553,336.
Alley, Raymond L. Smoke control damper or the like. 3,552,901, Cl. 160-1.
Allied Chemical Corporation: *See—*
Figiel, Francis J.; and Nesbitt, Raymond A., 3,553,142.
Sweeney, Richard F.; and Price, Alson K., 3,553,250.
Alpers, James R. Reticular shield for vehicles. 3,552,514, Cl. 180-5.
Alpert, Abraham. Garment hanger. 3,552,609, Cl. 223-93.
Alter, Soloman; Goodfellow, John A.; and Kane, Robert F., to Dialscan Systems, Inc. Information retrieval apparatus via telephone lines providing simultaneous accessing of same information source. 3,553,378, Cl. 179-6.
Altman, Gerald. Rear projection screen and episcopic projection system useful therewith. 3,552,822, Cl. 350-126.
Altson, George R.: *See—*
Altson, Ralph,3,552,814.
Altson, John A.: *See—*
Altson, Ralph,3,552,814.
Altson, Ralph, deceased0 (by Altson, John A.0Altson, George R.; legal representatives), to General Motors Corporation. Cage for roller bearing. 3,552,814, Cl. 308-217.
Aluminum Company of America: *See—*
Knepp, James E., 3,553,074.
Rawlins, Charles B., 3,553,350.
Amagi, Yasuo; and Bannai, Nobuo, to Kureha Kagaku Kogyo Kabushiki Kaisha. Process for producing polyvinylidene fluorides having high heat stability. 3,553,185, Cl. 260-92.1
American Air Filter Company, Inc.: *See—*
Cochran, Thomas L., 3,552,098.
Heh, George J., 3,553,045.
Ortgies, Raymond C., 3,552,727.
Pond, Robert W., 3,552,704.
Wood, Walter Bruce, 3,552,104.

American Air Filters Company, Inc.: *See—*
Peavler, James E., 3,552,135.
American Can Company: *See—*
Cassai, Eugene; and Hirn, Hans, 3,551,993.
Church, John Armistead, 3,553,306.
Hornbostel, Lloyd, Jr., 3,553,079.
American Coldset Corporation: *See—*
Thompson, Charles T.; Kidd, Frank B.; and Henry, William R., 3,552,505.
American Cyanamid Company: *See—*
Addor, Roger Williams, 3,553,264.
Addor, Roger Williams, 3,553,319.
Halmos, Imre Aurel; and Ricketts, Thomas Emory, 3,553,257.
Hein, Delton William; Wehner, Donald Clifford; and Welcher, Richard Parke, 3,553,243.
Miller, Bernard; and Margulies, Howard, 3,553,320.
American Filtrona Corporation: *See—*
Berger, Richard M.; and Sproull, Reavis C., 3,552,400.
American Home Products Corporation: *See—*
Bruce, William F., 3,553,266.
Clark, Donald E.; Grant, Norman H.; and Alburn, Harvey E., 3,553,201.
Oliver, Donald W.; and Wendt, Gerhard R., 3,553,213.
Poole, John W., 3,553,324.
Santilli, Arthur A.; Osdene, Thomas S.; and Childress, Scott J., 3,553,198.
Wolf, Milton, 3,553,231.
American Hospital Supply Corporation: *See—*
Pierie, Will R.; Raible, Donald A.; and Swendson, David L., 3,552,384.
American Metal Climax, Inc.: *See—*
Hemminger, James W., 3,552,077.
American Optical Corporation: *See—*
Shoemaker, Arthur H., 3,552,830.
Shoemaker, Arthur H., 3,552,831.
American Standard Inc.: *See—*
Fiero, John Robert, 3,552,495.
Forbes, Norman Arthur, 3,551,919.
Shaugnessy, William J., 3,553,495.
American Wire Cloth Company: *See—*
Schmiege, Lester C.; and Zeluff, Wendell C., 3,553,416.
AmForge, Inc.: *See—*
Mac Donald, Thomas J., 3,552,253.
Amicon Corporation: *See—*
Hausslein, Robert W.; Walitt, Arthur L.; and Molvar, Henry E., Jr., 3,553,174.
Ammco Tools, Inc.: *See—*
Mitchell, Wallace F., 3,552,700.
Amos, Lynn G., to Corning Glass Works. Wall attachment fluidic device. 3,552,416, Cl. 137-81.5
AMP Incorporated: *See—*
Hildebrand, James Ross; Lightner, Linn Stephen; and Watson, John Edward, 3,553,632.
Lundergan, Robert Graham; Gombar, Eugene Leonard; and Maltais, Frederick Jean, 3,552,784.
Lundergan, Robert Graham; and Reynolds, Charles Edward, 3,553,634.
Lundergan, Robert Graham; and Reynolds, Charles Edward, 3,553,635.
Wiley, Lawrence Grebe, 3,553,583.
Ampex Corporation: *See—*
Baba, Paul D.; and Banerjee, Subir K., 3,553,135.
Englund, Robert M.; Wolf, Irving W.; and Hamaker, John D., 3,553,659.
Wolf, Irving W., 3,553,660.
Amtsberg, Lester A., to Chicago Pneumatic Tool Company. Centrifugal governor having a spring adjusting ring and valve cleaning means. 3,552,410, Cl. 137-56.
Ananiev, Pavel Pavlovich: *See—*
Ivanov, Ivan Petrovich; Bespalov, Alexandr Vasilievich; and Ananiev, Pavel Pavlovich, 3,551,985.
Andersen, H. W., Products, Inc.: *See—*
Andersen, Harold Willids; Andersen, Harold W.; and Harrison, Charles H., 3,552,083.
Andersen, Harold W.: *See—*
Andersen, Harold Willids; Andersen, Harold W.; and Harrison, Charles H., 3,552,083.
Andersen, Harold Willids; Andersen, Harold W.; and Harrison, Charles H., to Andersen, H. W., Products, Inc. Apparatus and method for storing and releasing a volatile substance. 3,552,083, Cl. 53-37.
Anderson, Arthur E., to Westinghouse Electric Corporation. Power supply for camera system including image intensifier. 3,553,363, Cl. 178-7.2
Anderson Bros. Mfg., Co.: *See—*
Stohlquist, Roger H., 3,553,059.
Anderson, Carl C.; Chang, Wen-Hsuan; and Dowbenko, Rostyslaw, to PPG Industries, Inc. Mixtures of imidazole complexes and nitrogenous compound as curing agents for epoxy resins. 3,553,166, Cl. 260-47.
Anderson, David W.; and Sparacio, Francis J., to International Business Machines Corporation. Short forward conditional skip hardware. 3,553,655, Cl. 340-172.5
Anderson, Elmer L., to Corning Glass Works. Method of bonding selected edges of glass. 3,553,043, Cl. 156-107.
Anderson, James: *See—*
Gaudry, Paul E.; Gaudry, Edouard; Descarries, Raymond; and Anderson, James, 3,551,935.
Anderson, John W., Jr.: *See—*
Kinnavy, Martin G., 3,552,175.
Anderson, Marvin E.; Van Scoyoc, James N.; Owen, Donald B.; and Van Den Heuvel, Anthony P., to IIT Research Institute. Microcomb-type magnetic recording head. 3,553,716, Cl. 346-74.
Anderson, Robert Craig; Burns, Ernest Bingham; and Cross, Graham Westwood, to Imperial Chemical Industries Limited. Spermicidal organosilicon lubricant composition. 3,553,318, Cl. 424-184.
Andersson, Craig R.; and Olenzak, Albert Thomas, to Sun Oil Company. Filling arrangement for subterranean storage tanks. 3,552,435, Cl. 137-592.
Anderton, Catherine Margaret; Fishwick, Brian Ribbons; and Lawson, John, to Imperial Chemical Industries Limited. Phenyl-azo-phenyl dyestuffs. 3,553,190, Cl. 260-207.
Ando, Masao, to Chisso Corporation. Method for heating articles having complicated forms. 3,552,482, Cl. 165-1.
Andress, Bernhard; Kohler, Hubert; and Schmidt, Fritz, to Siemens Aktiengesellschaft. Thermally stable apparatus for laser device. 3,553,604, Cl. 331-94.5
Andrew & Suter Limited: *See—*
Turner, Arthur George, 3,552,279.
Andrew Corporation: *See—*
Yang, Richard F. H.; and Hansen, Laurence H., 3,553,707.
Andrews, Thomas I., to Seefore Corporation. Insulated pipe assembly. 3,552,445, Cl. 138-144.
Androck Incorporated: *See—*
Smith, Mahlon J., 3,552,611.
Androsov, Pavel: *See—*
Astafiev, Georgy Vasilievich; Ozhgikhin, Anatoly Nikolaevich; Babkin, Svetoslav Ivanovich; Androsov, Pavel; and Ivanova, Tatiana Lukianovna, 3,552,626.
Anetsberger Brothers, Inc.: *See—*
Meyer, Alfred L., 3,552,327.
Angliker, Hans-Joerg: *See—*
Ramanathan, Visvanathan; Peter, Richard; and Angliker, Hans-Joerg, 3,552,906.
Anolick, Colin; and Goffinet, Edward Peter, Jr., to Du Pont de Nemours, E. I., and Company. Separation of ethylene copolymer elastomers from their solvent solutions. 3,553,156, Cl. 260-33.6
Anschutz, Donald E.; and Linebrink, Kail L., to United Aircraft Corporation. Sequential fuel control. 3,552,123, Cl. 60-39.28
Ansul Company, The: *See—*
Warnock, William R.; Flatt, Donald V.; and Eastman, John R., 3,553,127.
Anthony, Russell W.: *See—*
Bregi, Benjamin F.; Bassoff, Arthur B.; and Anthony, Russell W., 3,552,167.
Aoki, Yoshikazu; Kamei, Teruji; Hayami, Akira; and Kitano, Masahiro, to Tachikawa Research Institute. Process for manufacture of non-woven fabrics or paper by wet sieving of viscose fibers. 3,553,078, Cl. 162-157.
Apel, Fred B. Apparatus for cleaning or treating articles. 3,552,405, Cl. 134-65.
Appleton Wire Works Corporation: *See—*
Haller, Herbert C., 3,552,691.
Aqua Tec Corporation: *See—*
Monroe, Wayne W.; Deines, Siegmund; Jeffers, Homer A., Jr.; and Trenary, John M., 3,551,931.
Araki, Takashi, to Kabushiki Kaisha Komatsu Seisakusho (Komatsu Mfg. Co., Ltd.). Directional-change air cleaning device. 3,552,102, Cl. 55-449.
Arbesko Aktiebolag: *See—*
Edberg, Rune, 3,552,038.
Archer, Giles A.; and Sternbach, Leo Henryk, to Hoffmann-La Roche Inc. Reaction of 2-aminobenzophenone amines and benzhydryl amines with di-leaving group- substituted ethane. 3,553,199, Cl. 260-239.
Ardee Corporation: *See—*
Short, Laurel J.; and Parra, Pedro S., 3,552,364.
Arenson, Edwin M., to Black, Sivalls & Bryson, Inc. Process and apparatus for vaporizing liquefied natural gas. 3,552,134, Cl. 62-53.
Argabright, Perry A.; Phillips, Brian L.; and Sinkey, Vernon J., to Marathon Oil Company. Ester modified urethane drying oils. 3,553,121, Cl. 260-22.
Arganbright, Donald J.: *See—*
Cole, Robert E.; and Arganbright, Donald J., 3,553,056.
Argus Chemical Corporation: *See—*
Friedman, Ronald L.; and Lewis, Roger N., 3,553,291.
Arkla Industries, Inc.: *See—*
Lyon, Chester C., 3,553,136.
Arlandson, John S.; and Selin, George J. Engine strating system. 3,553,472, Cl. 290-38.
Armbruster, Ronald H. D.; and Nelsen, Roger J., to Bliss, E. W., Company. Method and machine for forming lap welded aluminum can bodies. 3,552,629, Cl. 228-1.
Armco Steel Corporation: *See—*
Schnedler, Paul E., 3,553,004.
Armour Pharmaceutical Company: *See—*
Rubino, Andrew M., 3,553,316.
Armstrong, Charles H.: *See—*
Brock, Gordon L.; and Armstrong, Charles H., 3,553,605.

Armstrong Cork Company: *See—*
Gard, George E.; and Boak, William K., 3,551,955.
Armstrong Patents Co. Limited: *See—*
Dickinson, Ronald S., 3,552,429.
Armstrong, William A., to General Motors Corporation. Air conditioner grill having pivoting horizontal and vertical louvers. 3,552,295, Cl. 98-110.
Arn. Kiekert Sohne: *See—*
Watermann, Hans Dieter, 3,552,791.
Arndt, Friedrich-Karl, to Fried. Krupp Gesellschaft mit beschrankter Haftung. Hydraulically operable linear motor. 3,552,269, Cl. 91-277.
Arnold, Wayne E., to Westinghouse Electric Corporation. Digital speed control apparatus. 3,553,551, Cl. 318-146.
Arp, George F. Skimmer protector. 3,552,567, Cl. 210-169.
A/S Thomas Ths. Sabroe & Co.: *See—*
Christensen, Hans P.; and Froslev, Alfred, 3,552,137.
A/S V. Jeppesens Savvaerk: *See—*
Mortensen, Aage, 3,552,079.
Asahi Kasei Kogyo Kabushiki Kaisha: *See—*
Fujisaki, Yoshisato; Aishima, Itsuho; Sakurai, Hisaya; Kitaoka, Atsushi; Kawasaki, Hironobu; and Oshima, Minoru, 3,553,176.
Kominami, Naoya; Nakajima, Hitoshi; Kimura, Takeo; and Sakurai, Tokio, 3,553,246.
Wakita, Eiichi; and Tokumitsu, Kunio, 3,553,248.
Asakawa, Motozumi: *See—*
Hara, Hikoharu; Yamamuro, Yoshio; and Asakawa, Motozumi, 3,552,967.
Asami, Yukiharu: *See—*
Shima, Takeo; Asami, Yukiharu; Ishizaki, Shunzo; Kawase, Shoji; and Yoshimura, Masao, 3,552,999.
Asbestos Grading Equipment Company, (South Africa) (Proprietary) Limited, The: *See—*
Bourne, Ronald Frederick, 3,552,661.
Aschan, Harry R.: *See—*
Dowdican, Franklin W.; and Aschan, Harry R., 3,552,408.
Ashurst, Colin D.: *See—*
Harris, James D.; and Ashurst, Colin D., 3,553,050.
Aspden, Robert G.: *See—*
Colling, David A.; and Aspden, Robert G., 3,553,035.
Asper, Jean-Jacques; and Breitling, Gunter, to Pates Alimentaires Rivoire & Carret. Installation for processing grains with a liquid, in particular cereal grains. 3,552,465, Cl. 146-256.
Astafiev, Georgy Vasilievich; Ozhgikhin, Anatoly Nikolaevich; Babkin, Svetoslav Ivanovich; Androsov, Pavel; and Ivanova, Tatiana Lukianovna. Instrument for circular suturing of hollow body organs. 3,552,626, Cl. 227-76.
Astro Tool Co., Inc.: *See—*
Jacobsen, Delbert W., 3,552,027.
Athey, Stuart E., to Hobart Manufacturing Company, The. Tester for timer controlled device. 3,552,215, Cl. 73-432.
Atkin, Roy: *See—*
Howard, Ronald W.; Atkin, Roy; and Bishop, Geoffrey S., 3,552,687.
Atlas-Rand Corporation: *See—*
Kaess, Gary; and Palmer, Robert G., 3,552,843.
Au, Tin Yam. Melt spinning process. 3,553,305, Cl. 264-210.
Aubel, Leo J.: *See—*
Lewis, David W.; and Falkenhagen, George L., 3,552,594.
Aubrey, Raymond H. Panel assembly. 3,552,472, Cl. 160-130.
Auchapt, Pierre; and Brun, Andre, to Commissariat a l'Energie Atomique. Liquid metering wheel. 3,552,213, Cl. 73-424.
Aus Der Funten, Helmut; and Richtzenhain, Hermann, to Dynamit Nobel AG. Process for the manufacture of β,β-dialkyl-γ- cyanobutyric acids. 3,553,247, Cl. 260-465.4
Automated Building Components, Inc.: *See—*
Ballantyne, Louis J., 3,553,346.
Automotive Products Company Limited: *See—*
Packer, Mervyn B.; and Jesty, James, 3,552,802.
Parsons, David, 3,552,272.
Avco Corporation: *See—*
Breese, Charles F.; Leach, J. R.; and Roberts, Carroll R., 3,552,184.
Leonard, Donald A., 3,553,603.
Motta, Salvatore, 3,552,001.
Avital, David. Construction element with helically wound anchor lattice. 3,552,277, Cl. 94-15.
Axelsson, Per Axel Torbjorn. Apparatus for cleaning or polishing of teeth. 3,552,022, Cl. 32-58.
Azote et Produits Chimiques S.A.: *See—*
Bouvet, Jean; and Lhoste, Pierre L., 3,552,907.
Baba, Hideo; Gando, Masayoshi; and Yamashita, Yoshio, to Sony Corporation. Method of making a fuel cell electrode by thermal decomposition of silver carbonate. 3,553,032, Cl. 136-120.
Baba, Paul D.; and Banerjee, Subir K., to Ampex Corporation. Lithium-titanium-manganese copper-microwave ferrite. 3,553,135, Cl. 252-62.59
Babb, Burton A.; Erst, Stephen J.; and Cook, Wendell A., to International Telephone and Telegraph Corporation. Detection and ranging system using electro- optical means. 3,552,854, Cl. 356-4.
Babcock, David Lockman; and Nerwin, Hubert, to Eastman Kodak Company. Ground plane indicia means. 3,552,283, Cl. 95-1.1
Babkin, Svetoslav Ivanovich: *See—*
Astafiev, Georgy Vasilievich; Ozhgikhin, Anatoly Nikolaevich; Babkin, Svetoslav Ivanovich; Androsov, Pavel; and Ivanova, Tatiana Lukianovna, 3,552,626.
Baboz, Pierre. Machine for feeding pieces of linen onto a conveyor. 3,552,743, Cl. 271-54.
Babunovic, Momir; and Gender, James R., to Barry-Wehmiller Company. Container ejection system and apparatus therefor. 3,552,560, Cl. 209-73.
Bachnick, Werner; and Wegener, Rolf, to Telefunken Patentverwertungsgesellschaft m.b.H. Electrical circuit. 3,553,600, Cl. 330-66.
Backer, Leo E.; and Long, Daniel G., to Wah Chang Albany Corporation. Method and apparatus for compacting isostatically metal particles into solid form. 3,551,946, Cl. 18-5.
Badger Meter Manufacturing Company: *See—*
Destache, Richard W.; and Kullmann, Donald J., 3,552,208.
Badham, John Wilkinson, to Imperial Chemical Industries of Australia and New Zealand Limited. Adiponitrile apparatus. 3,552,932, Cl. 23-285.
Badoz, Jacques; Billardon, Michel; Virloget, Jean; and Debrie, Marcel, to Centre National de la Recherche Scientifique, and Societe Francaise d'Instruments de Controle et d'Analyses. Polarizer. 3,552,823, Cl. 350-157.
Baekken, Asbjorn, to Fairey Canada Ltd. Helicopter landing means. 3,552,688, Cl. 244-115.
Baekken, Asbjorn, to Fairey Canada Ltd. Helicopter landing securing device. 3,552,689, Cl. 244-115.
Bailey, Herbert S.: *See—*
Johnston, Andrew L., III; and Bailey, Herbert S., 3,552,091.
Baird, James D., to Bin-Dicator Company, The, mesne. Non-contact ultrasonic interface viscosity and percent solid detecting device. 3,553,636, Cl. 340-1.
Bakardjiev, Stefan Todorov: *See—*
Stantchev, Ivan Tenev; and Bakardjiev, Stefan Todorov, 3,552,309.
Baker, Harry J., to Ronford Limited. Mounting heads for cameras or like devices. 3,552,699, Cl. 248-183.
Baker Perkins Limited: *See—*
Skinner, Charles Henry; and Hart, Michael Leonard, 3,552,314.
Bakker, Marinus Antonius Maria; and Duran, Johannes Christiaan, to U.S. Philips Corporation, mesne. Indirectly heated cathode for an electron discharge tube with an insulated heating element. 3,553,521, Cl. 313-337.
Balcke, Gerhard; and Reichelt, Hans, to Bosch, Robert, GmbH. Encapsulated brush holder and semi-conductor voltage regulator unit for automotive-type alternator. 3,553,504, Cl. 310-68.
Baldwin, D. H., Company: *See—*
Bunger, David A., 3,553,335.
Ball, Robert R.; and Creed, Sherman H., to FMC Corporation. Method and apparatus for filling containers. 3,552,453, Cl. 141-7.
Ballantyne, Louis J., to Automated Building Components, Inc. Cable protector. 3,553,346, Cl. 174-48.
Ballard, Reginald Leonard; and Steer, Ensor William Harold, to Phillips Engineering Limited. Mechanism for cutting a moving web of sheet material. 3,552,249, Cl. 83-152.
Balm Paints Limited: *See—*
Kershaw, Robert W.; Lubbock, Frederick J.; and Polgar, Livia, 3,553,152.
Baltes, Josef; Weghorst, Friedrich; and Markus, Zdzislaw, to Harburger Fettchemie Brinckman & Mergell, G.m.b.H. Preparation of plastics from polyhydric araliphatic alcohols. 3,553,120, Cl. 260-18.
Baltimore Forms, Inc.: *See—*
Wilson, Paul O., 3,552,282.
Banerjee, Subir K.: *See—*
Baba, Paul D.; and Banerjee, Subir K., 3,553,135.
Bange, Joseph B. Continuous centrifugal apparatus and method for producing shipping sugar. 3,553,014, Cl. 127-19.
Banks, Bruce A.; and Kaufman, Harold R., to United States of America, National Aeronautics and Space Administration. Ion beam deflector. 3,552,125, Cl. 60-202.
Banks, Bruce A.; and Nakanishi, Shigeo, to United States of America, National Aeronautics and Space Administration. Ion thrustor accelerator system. 3,552,124, Cl. 60-202.
Bannai, Nobuo: *See—*
Amagi, Yasuo; and Bannai, Nobuo, 3,553,185.
Banner Metals, Inc.: *See—*
Wilson, James D., 3,552,598.
Barber-Colman Company: *See—*
Livingston, Richard D., 3,552,110.
Barchietto, Giacomo: *See—*
Hoegl, Helmut; and Barchietto, Giacomo, 3,553,009.
Barclay, Ralph G.: *See—*
Warren, Raymond W.; Barclay, Ralph G.; and Moorhead, John Gerald, 3,552,413.
Barger Corporation: *See—*
Barger, Thodore W., 3,553,389.
Barger, Thodore W., to Barger Corporation. Magnetic transducer with a low reluctance massive back gap. 3,553,389, Cl. 179-100.2
Barker, Layle B.: *See—*
Scott, Irvin C., Jr.; and Barker, Layle B., 3,553,094.
Barns, William W., Jr.: *See—*
Giras, Theodore C.; and Barns, William W., Jr., 3,552,872.
Barouh, Victor. Correction material having metallic additive. 3,552,990, Cl. 117-36.1

Barroil, Aime; and Teytu, Andre, to Commissariat a l'Energie Atomique. Device for equalizing differential expansions in a U-shaped pipe. 3,552,446, Cl. 138-178.
Barron, William J., to Graphic Electronics, Inc. Method of producing printed circuit boards. 3,552,002, Cl. 29-625.
Barry-Wehmiller Company: *See—*
Babunovic, Momir; and Gender, James R., 3,552,560.
Vamvakas, Michael, 3,552,537.
Bartholomew, Robert K.: *See—*
Clampitt, Bert H.; Kochhar, Rajindar K.; Bartholomew, Robert K.; and Burrus, Harold L.,3,553,178.
Bartholomew, Roger F.; and Garfinkel, Harmon M., to Corning Glass Works. Method of removing sulfur dioxide, nitrogen dioxide and carbon dioxide from gases. 3,552,912, Cl. 23-2.
Bartlett, Philip Lee, to Du Pont de Nemours, E. I., and Company. Acrylate-type esters of perfluoropolyoxa- alkaneamidoalkyl alcohols and their polymers. 3,553,179, Cl. 260-80.72
Barton, Forrest A.; and Belezos, Stratis George, to North American Rockwell Corporation. Flexible shaft coupling. 3,552,145, Cl. 64-14.
Barton, Paul: *See—*
Reeves, Alec Harley; and Barton, Paul,3,553,678.
Bassan, Benjamin, to Norton Company. Vacuum apparatus. 3,552,885, Cl. 417-156.
Bassemir, Robert W.; Dennis, Richard; and Nass, Gerald I., to Sun Chemical Corporation. Printing and coating untreated polyolefins. 3,552,986, Cl. 117-12.
Bassi, Aldo, to Alfa Romeo S.p.A. Solenoid valve. 3,552,715, Cl. 251-139.
Bassoff, Arthur B.: *See—*
Bregi, Benjamin F.; Bassoff, Arthur B.; and Anthony, Russell W.,3,552,167.
Batchelder, Charles F.; and Rubico, Jerome A., to Batchelder-Rubico, Inc. Cross-linked rand insole and shoe. 3,552,041, Cl. 36-43.
Batchelder-Rubico, Inc.: *See—*
Batchelder, Charles F.; and Rubico, Jerome A., 3,552,041.
Batson, William A., to Singer Company, The. Blade guards for hedge trimmers. 3,552,015, Cl. 30-216.
Battelle Development Corporation, The: *See—*
Carlton, Herbert E.; and Rose, Erlan E., 3,553,003.
Haines, Kenneth A.; and Hildebrand, Bernard P., 3,552,858.
Maykuth, Daniel J.; and Ogden, Horace R., 3,551,992.
Battelle Memorial Institute: *See—*
Hoegl, Helmut; and Barchietto, Giacomo, 3,553,009.
Batzer, Hans: *See—*
Curchod, Jean; Cheritat, Roland; Widmer, Franz Rudolf; Widmer, Gustav; Renner, Alfred; and Batzer, Hans,3,553,115.
Bauer, Henry, to Purex Corporation. Ammonium hydroxide containing wax stripper. 3,553,143, Cl. 252-152.
Baumann, Kurt; Lorenz, Horst; Borgmann, Michael; and Maass, Rudolf, to Krups, Robert. Power operated shaver and hair trimmer. 3,552,006, Cl. 30-34.1
Bausch & Lomb Incorporated: *See—*
Chisholm, James J.; and Emmel, Henry J., 3,552,657.
Bawa, Mohendra S., to Texas Instruments, Incorporated. Method of producing ethylene. 3,553,279, Cl. 260-683.
Baxter, James R. Fruit picking apparatus. 3,552,106, Cl. 56-328.
Bayley, Eugene S., to Lear Siegler, Inc. Dry rotary vane pump. 3,552,895, Cl. 418-178.
Beale, William T. Stirling cycle type thermal device. 3,552,120, Cl. 60-24.
Beam, Norman A.: *See—*
Bufkin, Dale E.; Murphy, Willard G.; and Beam, Norman A.,3,552,298.
Bean, Arthur R., Jr.; Fraga, Donald W.; and Mann, Roger H., to Shell Oil Company. Polymerization monitor. 3,553,295, Cl. 260-879.
Beard, Lawrence Ray; and Davis, Lewis Kie, to Deere & Company. Mechanical transmission and hydrostatic four- wheel drive control interlock. 3,552,516, Cl. 180-66.
Beatrice Foods Co.: *See—*
Luksas, Anthony J., 3,552,981.
Beau, Patrick; and Buzano, Michel, to Societe Rhodiaceta. Process for treating moving yarns or strips with a liquid. 3,553,006, Cl. 117-120.
Bechtel, Bartow, to Texas Instruments, Incorporated. Terrain avoidance radar system. 3,553,688, Cl. 343-7.
Bechtel, Bartow, to Texas Instruments, Incorporated. Terrain avoidance system. 3,553,689, Cl. 343-7.
Becker, Michael: *See—*
Fendt, Alfons; and Becker, Michael,3,553,571.
Beckett, R. W., Corporation: *See—*
Delancey, Warren H., 3,552,904.
Beckman Instruments, Inc.: *See—*
Holybee, Leslie D., 3,552,623.
Kupferschmidt, Albert, 3,552,621.
Leung, Arthur T.; and Vaughan, James W., 3,552,865.
Matthews, Kenneth V., 3,553,580.
Smith, Douglas H., 3,552,863.
Bedetti, Gianfranco, to Montecatini Edison S.p.A. Process for the combustion of titanium tetrachloride with oxygen for the production of titanium dioxide. 3,552,920, Cl. 23-202.
Beecham Group Limied: *See—*
Hatt, Brian William; and Smith, Harry, 3,553,202.
Behnke, John M., to Bristol-Myers Company. One-step clean and polish composition. 3,553,123, Cl. 260-23.
Belezos, Stratis George: *See—*
Barton, Forrest A.; and Belezos, Stratis George,3,552,145.
Bell & Howell Company: *See—*
Davidson, Richard M., 3,552,686.
Taillon, John Kellner, 3,552,842.
Bell Aerospace Corporation: *See—*
Mason, Richard K., 3,552,433.
Bell, Harvey W., III, to Stewart-Warner Corporation. Gas diffusion method for fabricating semiconductor devices. 3,553,037, Cl. 148-189.
Bell, Leslie J.: *See—*
Rush, Kenneth E.; and Bell, Leslie J.,3,552,641.
Bell Telephone Company, The: *See—*
Leyburn, Derek, 3,553,381.
Bell Telephone Laboratories, Incorporated: *See—*
Brenner, Helmut E.; Edwards Roger; and Giger, Adolf J., 3,553,610.
Burns, Gordon K.; and Courtney-Pratt, Jeofry S., 3,552,381.
Cocco, Eugene R., 3,553,042.
Crane, Bently A., 3,553,654.
Gerstenberg, Dieter; and Smith, Frank T. J., 3,553,545.
Golembeski, John J., 3,553,386.
Hagelbarger, David W.; and Kubik, Peter S., 3,552,004.
King, Ernam F., 3,553,541.
Mounts, Frank W., 3,553,361.
Mounts, Frank W., 3,553,362.
Port, Erich, 3,553,606.
Bell, Walter, to Star Expansion Industries Corporation. Method for surface treatment of blind rivets. 3,553,040, Cl. 156-3.
Beller, Hans: *See—*
Beuchle, Friedrich; Hahm, Heinz; Klein, Hans Christof; and Beller, Hans,3,552,526.
Bellhow Jackets Inc.: *See—*
Dorman, Isidore, 3,553,439.
Belliveau, Robert J., to Instron Corporation. Material tester with mode indicator. 3,552,193, Cl. 73-93.
Bellofatto,Oreste: *See—*
Parmegiani, Mario; and Bellofatto,Oreste,3,552,122.
Belter, Ronan J. Instrument for drafting board table. 3,551,958, Cl. 24-67.5
Beltx Corporation: *See—*
Jenkins, Murgatroyd H., 3,552,092.
Beman, Earl Roy: *See—*
Hunkeler, Ernst J.; Beman, Earl Roy; and Whalley, Frank M.,3,552,262.
Benda, David, to Sylvania Electric Products, Inc. Method for processing a cathode ray tube having improved life. 3,552,818, Cl. 316-11.
Bendix Corporation, The: *See—*
Simon, Arthur; and Troll, William Charles, 3,553,695.
Bengelsdorf, Irving S.: *See—*
Woods, William G.; Bengelsdorf, Irving S.; and Hunter, Don L.,3,553,170.
Benjamin, Sidney Howard; and Krauer, Otto Albert, to Otis Elevator Company. Speed dictation apparatus for elevator motor control system. 3,552,524, Cl. 187-29.
Bennett, Moreland P., to General Electric Company. Metallurgical bonding of dissimilar metals. 3,551,998, Cl. 29-498.
Benzies, George Y., to British Aircraft Corporation Limited, formerly British Aircraft Corporation. Retaining strip and channel for stretched reflector. 3,552,835, Cl. 350-288.
Berbel, Daniel A.; and Keller, Leon J. Automotive tool. 3,551,988, Cl. 29-259.
Berends, Werner, to U.S. Philips Corporation, mesne. Device comprising an X-ray tube in an oil filled envelope. 3,553,514, Cl. 313-55.
Berg, Josef, to Klockner-Humboldt-Deutz Aktiengesellschaft. Fuel injection pump for internal combustion engines having a plurality of combustion chambers. 3,552,219, Cl. 74-55.
Berger, Bryce, Limited: *See—*
Curran, John Patrick Stewart; and Ireland, John Richard, 3,552,889.
Berger, Charles V.; and Brearley, Charles S., to Universal Oil Products Company. C_9-Alkylaromatic isomerization process. 3,553,276, Cl. 260-668.
Berger, Richard M.; and Sproull, Reavis C., to American Filtrona Corporation. Filter plug of staple fiber filter elements and the like. 3,552,400, Cl. 131-261.
Bergere, Emric W. Self-locking fastener and method of making same. 3,552,467, Cl. 151-14.
Bergmark, Nils Randolf. Shower cabinet base. 3,551,918, Cl. 4-146.
Berkley, Riley Jackson. Ladder scaffold. 3,552,523, Cl. 182-121.
Berlin, Samuel D. Ornamental relief plaque incorporating applique material and method of making the same. 3,553,062, Cl. 161-18.
Bernhardt, Donn E., to General Electric Company. Selector for the dynamic assignment of priority on a periodic basis. 3,553,656, Cl. 340-172.5
Berry, Robert W., Jr., to Fansteel Inc. Rotary end mill cutter. 3,551,978, Cl. 29-105.
Berry, Robert W., Jr., to Fansteel Inc. Rotary cutting device with adjustable blades. 3,551,979, Cl. 29-105.
Berryman, Charles O., to Eaton Yale & Towne, Inc. Safety device. 3,552,770, Cl. 280-150.
Berryman, William O., to Schlumberger Technology Corporation. Well packer apparatus. 3,552,489, Cl. 166-120.
Bert, Stephen F., to Textron Inc. End connector. 3,551,966, Cl. 24-265.

Berthold, H., Messinglinienfabrik und Schriftgiesserei A.G.: *See—*
Linde, Hans, 3,552,827.
Bertrossa, Guiseppe: *See—*
Gehring, Albert; Bertrossa, Guiseppe; and Schultze, Hans-Joachim,3,553,204.
Bespalov, Alexandr Vasilievich: *See—*
Ivanov, Ivan Petrovich; Bespalov, Alexandr Vasilievich; and Ananiev, Pavel Pavlovich,3,551,985.
Bessiere, Pierre Etienne, to Labavia-S.G.E. Retarders. 3,553,507, Cl. 310-93.
Beteiligungs-und Patentverwaltungsgesellschaft mit beschrankter Haftung: *See—*
Hirschfeld, Dieter; and Hillnhagen, Emil, 3,552,000.
Bethlehem Steel Corporation: *See—*
Gingher, Geroge C., Jr.; and Hubert, Lawrence J., 3,552,162.
Kapustin, Alexander T., 3,552,179.
Rice, Kendal Wesley, 3,552,732.
Betts, Joseph E., to General Electric Company. Polymeric blends for insulation composition. 3,553,348, Cl. 174-110.
Beuchle, Friedrich; Hahm, Heinz; Klein, Hans Christof; and Beller, Hans, to Teves, Alfred, G.m.b.H. Brakeshoe construction for disk brakes. 3,552,526, Cl. 188-73.1
Beverage-Air Company: *See—*
Kraft, Russell E.; and Kallas, William E., 3,552,606.
Beyer, James: *See—*
Kramer, Roger L.; and Beyer, James,3,553,474.
Bezdel, Wincenty: *See—*
Wright, Esmond Philip Goodwin; and Bezdel, Wincenty,3,553,372.
Bezemer, Cornelis, to Shell Oil Company. Method for treating a part of a permeable formation. 3,552,493, Cl. 166-295.
Bezouska, Vlastimil; Pivrnec, Jan; Hrdlicka, Jiri; Krasa, Evzen; and Smekal, Zdenek, to CKD Praha, oborovy podnik. Pressure contact semiconductor device. 3,553,538, Cl. 317-234.
Bhatia, Kamlesh Kumar, to Procter & Gamble Company, The. Solvent extraction process for extracting long chain alkyl monohalides from long chain alkanes. 3,553,275, Cl. 260-652.
Bieber, Dianne: *See—*
Hepplewhite, Herbert L.; and Bieber, Henry E.,3,553,131.
Bieber, Henry E.: *See—*
Hepplewhite, Herbert L.; and Bieber, Henry E.,3,553,131.
Biel, John H.: *See—*
Li, Jorge P.; Jules, Ramona H.; and Biel, John H.,3,553,217.
Bienick, Fritz: *See—*
Springer, Helmut; and Bienick, Fritz,3,552,334.
Biginelli, Oreste. Arrangement for the extrusion of tubular elements fabricated by means of a press and also the presses used to obtain these elements. 3,552,173, Cl. 72-257.
Billardon, Michel: *See—*
Badoz, Jacques; Billardon, Michel; Virloget, Jean; and Debrie, Marcel,3,552,823.
Biller, Horst: *See—*
Pfeiffer, Gerd; Biller, Horst; and Schrey, Claus,3,552,170.
Bilstein, August: *See—*
Willich, Herbert Jean, 3,552,766.
Bin-Dicator Company, The: *See—*
Baird, James D., 3,553,636.
Binder, Berthold: *See—*
Purrer, Josef; Binder, Berthold; and Maier, Martin,3,552,773.
Biondolillo, Jack J.: *See—*
Welco, Leon B.; Biondolillo, Jack J.; and Van Arnam, Philip,3,552,040.
Bird, Jack Raymond; Hall, Douglas Wilson; and Bye, Peter William John, to Rolls Royce Limited. Method of joining metal parts. 3,552,898, Cl. 29-494.
Bird, Richard M.; and Tu, Ju C., to Singer-General Precision, Inc. Memory storage system. 3,553,651, Cl. 340-172.5
Birken, Karl. Digital recorder with apparatus for viewing during the recording process. 3,553,714, Cl. 346-74.
Bishop, Geoffrey S.: *See—*
Howard, Ronald W.; Atkin, Roy; and Bishop, Geoffrey S.,3,552,687.
Black Clawson Company, The: *See—*
Herbert, William; and Riedel, James H., 3,552,664.
Maxey, Carl W.; Montague, Grant R.; Leyde, Warren L.; and Bryan, Eugene L., 3,552,252.
Black, Sivalls & Bryson, Inc.: *See—*
Arenson, Edwin M., 3,552,134.
Blackie, James William Forrest: *See—*
Vogel, Charles A.; and Blackie, James William Forrest,3,552,681.
Blackman, Robert J., to Eastman Kodak Company. Film clamping and retaining device. 3,553,057, Cl. 156-505.
Blair Manufacturing Co., Inc.: *See—*
Stauber, Robert M., 3,552,498.
Blake, Donald E. Method of cutting reaming and threading a rotating pipe. 3,551,928, Cl. 10-87.
Blake, Donald E. Method of threading a rotating pipe. 3,551,929, Cl. 10-89.
Blasovszky, Miklos, to Kozponti Fizikai Kutato Intezet. Digital delay system for digital memories. 3,553,594, Cl. 328-129.
Bliss, E. W., Company: *See—*
Armbruster, Ronald H. D.; and Nelsen, Roger J., 3,552,629.
Blitz, Melvin H.; and Pick, George G., to Sylvania Electric Products, Inc. Mark sensing system. 3,553,438, Cl. 235-61.11
Blosser, Robert L., Jr.; and Woehler, Gary B., to Sperry Rand Corporation. Electro-fluidic interface device. 3,552,437, Cl. 137-625.4
Blount, Eric Albert, to Marconi Company Limited, The. Bearings. 3,552,807, Cl. 308-9.
Blueberry Equipment, Inc.: *See—*
Kattan, Ahmed A.; and Nelson, Glenn S., 3,552,108.
Bluestein, Bernard R.: *See—*
Solomon, Jack M.; and Bluestein, Bernard R.,3,553,268.
Blumenthal, Jack H.: *See—*
Mitchell, Peter W. D.; and Blumenthal, Jack H.,3,553,110.
Blytas, George C., to Shell Oil Company. Removing sulfur dioxide from hot gas. 3,552,921, Cl. 23-167.
Boak, William K.: *See—*
Gard, George E.; and Boak, William K.,3,551,955.
Bobo, Wilson H. Portable scaffold. 3,552,522, Cl. 182-82.
Bockmann, August: *See—*
Hermann, Karl Heinz; Bockmann, August; and Rudolph, Hans,3,553,161.
Bockris, Bernard Patrick John; Sepa, Darko; and Damjanovic, Aleksandar, to Research Corporation, mesne. Fuel cell with an electrode comprising barium tantalum bronze or strontium niobium bronze. 3,553,025, Cl. 136-86.
Boeing Company, The: *See—*
Chaney, Harold K.; and Strandrud, Halvor T., 3,552,275.
Schwallie, Cletus R., 3,552,856.
Boenning, Robert A.: *See—*
Siedband, Melvin P.; and Boenning, Robert A.,3,553,459.
Boer, Elmer J.: *See—*
Comber, William R.; and Boer, Elmer J.,3,552,542.
Boersma, Rintje, to N.V. COQ. Circuit-breaker operable by extinguishing gas pressure differential. 3,553,406, Cl. 200-148.
Bogaart, Peter; and Rowe, Kenneth D. Remote meter reading method and apparatus. 3,553,376, Cl. 179-2.
Boiardi, Mario J. Method of making terrazzo floor coverings. 3,552,988, Cl. 117-27.
Bojan, Paul W.; and Wolfberg, Robert L., to Signode Corporation. Pneumatic piston return system for impact tools. 3,552,274, Cl. 91-416.
Bollert, Volker: *See—*
Schnell, Hermann; Bollert, Volker; and Fritz, Gerhard,3,553,167.
Bolster, Keith D.: *See—*
Osen, Ralph T.; and Bolster, Keith D.,3,553,399.
Bolt Beranek and Newman Inc.: *See—*
Karnopp, Dean C.; and Heine, John C., 3,553,391.
Bom, Johannes Gerardus Wouterus: *See—*
Ebbinge, Willem; and Bom, Johannes Gerardus Wouterus,3,553,565.
Bond, William J., Jr., to Ace Pump Corporation. Centrifugal liquid pump means. 3,552,875, Cl. 415-175.
Boomgaard, Dirk J., to Westinghouse Electric Corporation. Signal seeking FM stereo system. 3,553,379, Cl. 179-15.
Booth Newspapers, Inc.: *See—*
Fasse, Gerald A.; and Mychalowych, Eugene A., 3,552,547.
Boothroyd, Wilson P., to Sylvania Electric Products, Inc. Optical label reading system and apparatus. 3,553,437, Cl. 235-61.11
Borgmann, Michael: *See—*
Baumann, Kurt; Lorenz, Horst; Borgmann, Michael; and Maass, Rudolf,3,552,006.
Borkenstein, Robert F. Breath sampling and analyzing apparatus. 3,552,930, Cl. 23-254.
Borre, Earl A.: *See—*
Zievers, James F.; and Borre, Earl A.,3,553,012.
Bos, Arie; and Greenough, Ronald L., to MacMillan Bloedel Limited. Log break-down method and apparatus. 3,552,457, Cl. 144-312.
Bosch, Robert, GmbH: *See—*
Balcke, Gerhard; and Reichelt, Hans, 3,553,504.
Strelow, Gert, 3,553,529.
Bossers, Chris F., to Sylvania Electric Products, Inc. Method and apparatus for fabricating a cathode ray tube having an annular shaped rear window. 3,551,973, Cl. 29-25.13
Boswell, W. H.: *See—*
Van Hecke, Jerome M., 3,552,373.
Bottenbruch, Ludwig: *See—*
Reese, Eckart; Rohm, Wilhelm; Hofmeier, Hermann; Bottenbruch, Ludwig; and Schnell, Hermann,3,553,304.
Vernaleken, Hugo; Malamet, Georg; Bottenbruch, Ludwig; Krimm, Heinrich; and Schnell, Hermann,3,553,285.
Bottlik, Geza P.: *See—*
Scheingold, William S.; Bottlik, Geza P.; Selvin, Gerald J.; and Krum, Alan S.,3,553,630.
Bouchard, Edward F.; and Hetzel, Carl P., to Pfizer, Chas., & Co., Inc. Microcrystalline stearyl fumaric compounds as bread softeners and dough improvers. 3,552,977, Cl. 99-91.
Bould, Fred; and Taylor, John H., to Westinghouse Electric Corporation. Metal-enclosed switchgear with improved bus bar connection means. 3,553,534, Cl. 317-103.
Bourland, Emile Louis Eugene. Method of making a calcium gel and the product of this method. 3,553,148, Cl. 252-316.
Bourne, Ronald Frederick, to Asbestos Grading Equipment Company, (South Africa) (Proprietary) Limited, The. Mill with rotating air stream. 3,552,661, Cl. 241-39.
Bouvet, Jean; and Lhoste, Pierre L., to Azote et Produits Chimiques S.A., mesne. Industrial process for bleaching Liberian fibres by applying chlorinated derivatives of cyanuric acid. 3,552,907, Cl. 8-108.

Bow, William J., to United States of America, Interior, mesne. Tube plate seal. 3,552,754, Cl. 277-178.

Bowman, Darl F.: *See—*
Gorman, Howard C.; Simone, John; Shaheen, Joseph M.; van Zanten, Melvin J.; Bowman, Darl F. and Moser, Gerald J.,3,553,648.

Boyd, Shelton F., to Faustel, Inc. Control system for web heat treating apparatus. 3,552,645, Cl. 236-15.

Boyer, Warren N.: *See—*
Harlander, Leslie A.; Boyer, Warren N.; and Jordan, Michael A.,3,552,345.

Boyle, Frank J., to Selas Corporation of America. Metal melting process. 3,552,949, Cl. 75-65.

Boyle, Patrick Timothy. Doors. 3,552,060, Cl. 49-202.

BP Chemicals (U.K.) Limited: *See—*
Claydon, David Anthony; and Ellis, Julius Ernest, 3,552,934.
Jones, Eric Lloyd; Claydon, David Anthony; and Ellis, Julius Ernest, 3,552,933.

Bracco Industria Chimica, Societa per Azioni: *See—*
Felder, Ernst; and Pitre, David, 3,553,259.
Felder, Ernst; and Pitre, Davide, 3,553,260.

Brachvogel, Heinz. Panoramic view objective using an aspherical lens. 3,552,820, Cl. 350-21.

Bracken, Joseph W., Jr., to General Motors Corporation. Damped shaft assembly. 3,552,804, Cl. 308-1.

Bradford, Benjamin W.: *See—*
Warren, Frederick A., 3,552,780.

Braget, Lorna R. Eyeglass frame construction for removable lenses. 3,552,840, Cl. 351-154.

Brandriff, Robert C.; and Chapman, Walter F., to Singer Company, The. Automatic setting and sewing of pocket pieces to garments. 3,552,336, Cl. 112-121.15

Branitzky, Abraham. Freeze protector. 3,552,411, Cl. 137-60.

Bratton, Jerry L. Plumbing prefabrication fixture. 3,551,982, Cl. 29-200.

Braun Aktiengesellschaft: *See—*
Fischer, Richard, 3,552,005.

Brearley, Charles S.: *See—*
Berger, Charles V.; and Brearley, Charles S.,3,553,276.

Brechtel, Frederick Charles. Scale map of golf course holes and method of producing same. 3,552,290, Cl. 95-85.

Breese, Charles F.; Leach, J. R.; and Roberts, Carroll R., to Avco Corporation. Post shock control system. 3,552,184, Cl. 73-12.

Breeze Corporation, Inc.: *See—*
Walsh, Ralph E., 3,552,682.

Bregi, Benjamin F.; Bassoff, Arthur B.; and Anthony, Russell W., to Lear Siegler, Inc. Gear rolling equipment. 3,552,167, Cl. 72-94.

Breitling, Gunter: *See—*
Asper, Jean-Jacques; and Breitling, Gunter,3,552,465.

Brendel, Gottfried J., to Ethyl Corporation. Preparation of aluminum powder. 3,552,946, Cl. 75-0.5

Brenner, Helmut E.; Edwards Roger; and Giger, Adolf J., to Bell Telephone Laboratories, Incorporated. Diode mount having integral resonant circuit. 3,553,610, Cl. 333-83.

Brescia, Michael, Jr.; and Brescia, Peter. Removable free wheeling hub. 3,552,813, Cl. 308-191.

Brescia, Peter: *See—*
Brescia, Michael, Jr.; and Brescia, Peter,3,552,813.

Brickson, William L.: *See—*
Gerner, George Loyd; and Brickson, William L.,3,552,595.

Briechle, Joseph, to Hormann, Frank R. Rotary electric circuit interrupter. 3,553,611, Cl. 335-68.

Briggs, George S., to United States of America, Navy. Ordnance fuze. 3,552,318, Cl. 102-81.2

Briggs, Southwick W. Internal combustion engine. 3,552,370, Cl. 123-191.

Bright Star Industries, Inc.: *See—*
Page, Maurice, 3,553,033.

Bristol-Myers Company: *See—*
Behnke, John M., 3,553,123.

British Aircraft Corporation: *See—*
Benzies, George Y., 3,552,835.

British Aircraft Corporation Limited: *See—*
Benzies, George Y., 3,552,835.

British Insulated Callender's Cables Limited:*See—*
Papadopulos, Michael Savvas, 3,553,342.

British Oxygen Company Limited, The: *See—*
Doxey, Brian C., 3,553,423.

British Petroleum Company Limited, The: *See—*
Burbidge, Bernard Whiting; and Keen, Ian Montgomery, 3,553,103.
Goble, Anthony George; and Haresnape, John Norman, 3,553,281.

British Titan Products Company Limited: *See—*
Powell, Stanley, 3,552,995.

Brizgys, Bernardas, to Wyandotte Chemicals Corporation. Diimine compounds as catalysts for the polyurethane reaction. 3,553,118, Cl. 260-18.

Brock, Gordon L.; and Armstrong, Charles H., to Hersey-Sparling Meter Company. Pulse rate to voltage analog converter circuit for transmission of intelligence measured by voltage. 3,553,605, Cl. 332-9.

Brockmann, Christian: *See—*
Hepp, Gunter; Brockmann, Christian; and Pohl, Hans Christoph,3,552,729.

Brombaugh, Burlin B.: *See—*
Rike, Richard C.; and Brombaugh, Burlin B.,3,553,642.

Brooks, Ray G., to Shepherd, C. E. Mop-applicator. 3,552,870, Cl. 401-206.

Brothers, Charles F.; Parkhill, Thomas R.; and Rosinski, Norman E., to Perkin-Elmer Corporation, The. Temperature stabilized piezoelectric crystal transducer and oscillator. 3,553,602, Cl. 331-40.

Brotherton, Thomas K.; Lynn, John W.; and Knopf, Robert J., to Union Carbide Corporation. Novel cyclic unsaturated isocyanates. 3,553,249, Cl. 260-468.

Brouwer, Frans; and Sobchak, Frank L., to Stewart-Warner Corporation. Facsimile printer contact assembly. 3,553,715, Cl. 346-74.

Brown & Sharpe Manufacturing Company: *See—*
Levesque, George Napoleon, 3,552,444.

Brown & Sharpe Mfg., Co.: *See—*
Knuff, William J., 3,552,374.

Brown, Boveri & Cie Aktiengesellschaft: *See—*
Schmitz, Wolfgang, 3,553,397.

Brown, Cicero C. System for rotary drilling of wells using casing as the drill string. 3,552,507, Cl. 175-258.

Brown, Cicero C. Apparatus for rotary drilling of wells using casing as the drill pipe. 3,552,508, Cl. 175-258.

Brown, Cicero C. Apparatus for rotary drilling of wells using casing as drill pipe. 3,552,509, Cl. 175-258.

Brown, Cicero C. Apparatus for rotary drilling of wells using casing as the drill pipe. 3,552,510, Cl. 175-261.

Brown, Ithamer M. Apparatus for supplying parts. 3,552,062, Cl. 51-215.

Brown, Omar L., to Fraze, Ermal C., mesne. Easy-opening closure. 3,552,342, Cl. 113-121.

Brown, Robert J.; Kowalewski, John J.; and Moughty, John J., to Consolidated Foods Corporation. Electric hose with end fittings for a vacuum cleaner. 3,553,629, Cl. 339-15.

Bruce, William F., to American Home Products Corporation. Diaralkylamine derivatives. 3,553,266, Cl. 260-570.6

Bruers, Robert, to Etablissements L. Devillez & Camion Societe Anonyme. Pivot for pivoting window. 3,551,941, Cl. 16-163.

Brugger, Wilhelm: *See—*
Greinacher, Ekkehard; and Brugger, Wilhelm,3,552,914.

Brun, Andre: *See—*
Auchapt, Pierre; and Brun, Andre,3,552,213.

Brundell Och Jonsson AB: *See—*
Johansson, Nils Olof, 3,552,456.

Brunie, Jean-Claude: *See—*
Crenne, Noel; and Brunie, Jean-Claude,3,553,271.

Brunswick Corporation: *See—*
Miller, Carl B.; Clark, Richard A.; Retford, David T.; and Lundgren, Carl W., 3,553,159.

Bryan, Eugene L.: *See—*
Maxey, Carl W.; Montague, Grant R.; Leyde, Warren L.; and Bryan, Eugene L.,3,552,252.

Bryson, Robert A.; Kennicott, Thomas C.; and Sarring, Ernest J., to Sheridan, T.W., & C.B., Company. Book trimming machine. 3,552,246, Cl. 83-23.

BSR Limited: *See—*
Lane, Norman, 3,553,621.

Buchanan, Harry W., to Virginia Chemicals Inc. Process for rinsing chromium plated parts. 3,552,993, Cl. 117-62.

Buchler Instrument, Inc.: *See—*
Buchler, Joseph, 3,553,097.

Buchler, Joseph, to Buchler Instrument, Inc. Fractional electrophoresis separator. 3,553,097, Cl. 204-299.

Buck, Daniel C., to Westinghouse Electric Corporation. Transverse electromagentic devices for ferrite loaded planar circuits. 3,553,733, Cl. 343-854.

Budd, Raymond A., to Sylvania Electric Products, Inc. Convergence means for plural in-line beam cathode ray. 3,553,523, Cl. 315-13.

Buehl, Russell C.: *See—*
Petersen, Vincent C.; and Buehl, Russell C.,3,552,947.

Buff, Fred, to Tenneco Chemicals, Inc. Process for controlling the upper surface contour of foamable polyurethane during expansion in an open top mold. 3,553,300, Cl. 264-41.

Bufkin, Dale E.; Murphy, Willard G.; and Beam, Norman A., to McGraw-Edison Company. Drip type coffee maker. 3,552,298, Cl. 99-281.

Bugay, Alfred, to Sierra Research Corporation. Voltage sampling and follower amplifier. 3,553,492, Cl. 307-235.

Bugay, Alfred, to Sierra Research Corporation. F.M to P.A.M. converter. 3,553,597, Cl. 329-110.

Bullard, E. D., Company: *See—*
Raschke, Herbert A., 3,551,910.

Bullock, Thomas B., to Giddings & Lewis Inc. Apparatus for numerical signaling of positions, including digital-to-analog converter. 3,553,647, Cl. 340-147.

Bulman, E. O., Manufacturing Company, Inc., The: *See—*
Waltz, Edward, 3,553,060.

Bundschuh, John J.; and Roman, Robert J., to Eastman Kodak Company. Cinematographic projectors or the like and cartridges for use therewith. 3,552,683, Cl. 242-192.

Bunger, David A., to Baldwin, D. H., Company. Electronic organ having plural tone sources and loudspeakers with alternate reiterative gating, cross gating, and method. 3,553,335, Cl. 84-1.03

Burbidge, Bernard Whiting; and Keen, Ian Montgomery, to British Petroleum Company Limited, The. Preparation of zeolite catalysts. 3,553,103, Cl. 208-111.

Burgener, John Ernest; and Mladenovich, Peter, to Burgener Technical Enterprises Limited. Ferromagnetic ore concentrator and method of processing ores therewith. 3,552,564, Cl. 209-214.

Burgener Technical Enterprises Limited: *See—*
Burgener, John Ernest; and Mladenovich, Peter, 3,552,564.

Burgess, Reginald Robert: *See—*
Harding, John Patrick; and Burgess, Reginald Robert,3,553,347.

Burk, Evans S.: *See—*
Severino, James; and Burk, Evans S.,3,552,734.

Burkhardt & Weber K.G.: *See—*
Goebel, Hellmut; and Raiser, Ernst, 3,551,984.

Burlington Industries, Inc.: *See—*
Cavalier, Stanley J.; Raper, Larry B.; and Walker, Harold B., 3,553,066.

Burns, Ernest Bingham: *See—*
Anderson, Robert Craig; Burns, Ernest Bingham; and Cross, Graham Westwood,3,553,318.

Burns, Erwin; and Jones, Leslie M. Valve controlled fluid conducting well tool. 3,552,486, Cl. 166-147.

Burns, Gordon K.; and Courtney-Pratt, Jeofry S., to Bell Telephone Laboratories, Incorporated. Sphygmonanometric method and apparatus. 3,552,381, Cl. 128-2.05

Burroughs Corporation: *See—*
Coir, Donald W., 3,553,096.
Crain, Donald R.; and Haase, Charles A., 3,552,643.
Hanson, Lawrence G., 3,553,652.
Skiba, Raymond A., 3,552,619.
Somlyody, Arpad, 3,553,528.

Burrus, Harold L.: *See—*
Clampitt, Bert H.; Kochhar, Rajindar K.; Bartholomew, Robert K.; and Burrus, Harold L.,3,553,178.

Burt, Patrick Vivian, to Monsanto Chemicals Limited. Method of coating a deliquescent substance onto the surface of foamable beads and foaming the beads; the foamable and foamed products obtained therefrom. 3,553,114, Cl. 260-2.5

Burwell, Garwood N., to Rails Company, The. Railroad bridge tie anchor. 3,552,649, Cl. 238-310.

Busch, Arthur W., to Wastech, Inc. Liquid treating apparatus. 3,552,570, Cl. 210-197.

Buschman, E. W., Company, Inc., The: *See—*
Todd, William E., 3,552,588.

Bushnell, Sherman W., Jr. Multi-stage telescopic hoist. 3,552,267, Cl. 91-168.

Bushnell, Thomas W., to Clement, J. W., Company. Packaging machine. 3,552,089, Cl. 53-61.

Bushrod, Charles J.; and McKellen, Patrick Ewart, to Electric Power Storage Limited. Multicell electric storage battery having electrodes formed by spines projecting from the partitions between cells. 3,553,019, Cl. 136-6.

Buss Aktiengesellschaft: *See—*
Sutter, Fritz, 3,552,722.

Butke, Charles John; and Gates, Lawrence William, to Drackett Company, The. Liquid drain cleaner. 3,553,145, Cl. 252-170.

Butke, Charles John; and Gates, Lawrence William, to Drackett Company, The. Liquid drain cleaner. 3,553,146, Cl. 252-170.

Butler, Joseph L., to National Automatic Tool Company, Inc. Floating seat structure for honing machines and the like. 3,552,069, Cl. 51-165.

Buzano, Michel: *See—*
Beau, Patrick; and Buzano, Michel,3,553,006.

Buzzards Corporation: *See—*
Francis, Samuel A., 3,552,205.
Schiff, Daniel; and Hottel, Hoyt Clarke, Jr., 3,553,639.

Bye, Peter William John: *See—*
Bird, Jack Raymond; Hall, Douglas Wilson; and Bye, Peter William John,3,552,898.

Byrne, Joseph J.; and Williams, David L., to Monsanto Research Corporation. Electrochemical cells. 3,553,031, Cl. 136-100.

Bytrex, Inc.: *See—*
Pugnaire, Jean-Pierre A.; and Erichsen, Herman W., 3,552,199.

Cado Etablissement: *See—*
Levoin, Francis, 3,552,868.

Calano, Giuseppe: *See—*
Cortona, Alessandro; and Calano, Giuseppe,3,552,530.

Calgon Corporation: *See—*
Rivers, Hubert M., 3,553,075.

Cambridge Consultants Limited: *See—*
Edge, Gordon Malcolm, 3,553,609.

Cameron, Donald I.: *See—*
Harvey, Grahame J.; and Cameron, Donald I.,3,553,034.

Canadian General Electric Company, Limited: *See—*
Herzog, Gordon William, 3,553,552.

Canadian Patents and Development Limited: *See—*
Hanes, Garnet R.; Dobrowolski, Jerzy A.; and Van der Hoeven, Cornelis J., 3,552,826.
Quayle, Daniel B.; and Clark, Trevor P., 3,552,357.

Capehart, Lonnie R. High voltage ignition wire. 3,553,344, Cl. 174-36.

Carlton, Herbert E.; and Rose, Erlan E., to Battelle Development Corporation, The. Fiber reinforcement. 3,553,003, Cl. 117-106.

Carnt, Peter Swift, to RCA Corporation. Switching mode control circuits. 3,553,357, Cl. 178-5.4

Carpenter, William George David; Johnson, William; Lloyd, Thomas; McMullen, Patrick; and Watt, William. Production of carbon fibres. 3,552,923, Cl. 23-209.1

Carr, Albert H., Jr.; and Ratkiewicz, Albert W., to Norton Company. Rotary truing attachment for wheel truing devices. 3,552,375, Cl. 125-11.

Carr, Paul H.; and Slobodnik, Andrew J., Jr., to United States of America, Air Force. Method of microwave rectification and mixing using piezoelectric media. 3,553,589, Cl. 325-445.

Carreira, Leonard M.; and Mihajlov, Vsevolod S., to Xerox Corporation. Apparatus and method employing photoelectroviscous. 3,553,708, Cl. 346-1.

Carroll Container Corporation: *See—*
Carroll, Hazen J., 3,552,550.

Carroll, Frederick C., to Reliance Electric and Engineering Company, The. Optical weighing scale. 3,552,844, Cl. 353-41.

Carroll, Hazen J., to Carroll Container Corporation. Interior package. 3,552,550, Cl. 206-46.

Carter, Charles W., to Stromberg-Carlson Corporation. Universal telephone ringer having biased striker. 3,553,686, Cl. 340-402.

Carter, Rodney Richard: *See—*
Portas, John Richard; and Carter, Rodney Richard,3,552,940.

Carter's Ink Company, The:*See—*
Daniels, George R. E., 3,552,991.

Cascade Corporation: *See—*
Olson, Harlan D., 3,552,425.

Case, J. I., Company: *See—*
Venable, Phillip G., 3,552,307.

Cass, Michael, to Imperial Chemical Industries Limited. Method of coating 4-methyl pentene-1 polymers. 3,552,996, Cl. 117-71.

Cassai, Eugene; and Hirn, Hans, to American Can Company. Machine and method for handling workpieces. 3,551,993, Cl. 29-429.

Caster, Eldred E. Magnetic means for holding a bar of soap and attaching the soap-holder to a wall. 3,552,705, Cl. 248-206.

Castle & Cooke, Inc.: *See—*
Vadas, Leslie, 3,552,459.

Caterpillar Tractor Company: *See—*
Cole, Carroll R.; and Sieving, Alfred W., 3,552,798.
Harris, George V., 3,552,480.

Cattermole, Kenneth William, to International Standard Electric Corporation. Analog to digital converter. 3,553,677, Cl. 340-347.

Causey, Cloy N., to Texaco Inc. Phase angle measuring circuit of a type developing square wave D.C. pulses representing the phase angle with improvements therein. 3,553,578, Cl. 324-83.

C.A.V. Limited: *See—*
Kemp, Kenneth Albert Walters, 3,552,366.

Cavalier, Stanley J.; Raper, Larry B.; and Walker, Harold B., said Raper, Larry B., and Walker, Harold B., assor to Burlington Industries, Inc.Filled cushion matelasse' fabric and method. 3,553,066, Cl. 161-73.

Cecere, Andrew P.: *See—*
Cohn, Eugene; and Cecere, Andrew P.,3,551,969.
Cohn, Eugene; Cecere, Andrew P.; and Frezza, Robert,3,551,970.

Celanese Coatings Company: *See—*
McDermott, John W., 3,553,044.

Celanese Corporation: *See—*
Dunay, Michael; and Jamison, Saunders E., 3,553,132.

Cenker, Moses, to Wyandotte Chemicals Corporation. Purification of carboxylic acid esters with anhydrous ammonia. 3,553,238, Cl. 260-410.6

Centre National de la Recherche Scientifique: *See—*
Badoz, Jacques; Billardon, Michel; Virloget, Jean; and Debrie, Marcel, 3,552,823.
Garcia, Henri, 3,553,147.

Centre Stephanois de Recherches Mecaniques Hydromecanique et Frottement: *See—*
Ader, Martin Marcel Marie, 3,553,038.

Certain-Teed Products Corporation: *See—*
Hawkins, Frederick E., 3,552,985.

Ceskoslovenska akademie ved: *See—*
Veprek-Siska, Josef; Ettel, Viktor; and Eckschlager, Karel, 3,552,935.

Chabot, Leo L., to Electrospin Corporation, mesne. Thread forming gripper. 3,552,112, Cl. 57-77.4

Chain Lakes Research Associates, Inc.: *See—*
Sanders, Harold A.; and Trytten, Grover W., 3,552,853.

Champlain, Bobst, Inc.: *See—*
Neff, Herbert E.; and Chesnut, William R., 3,552,251.

Chan, Lin Tak; and Tobias, Stephen Albert, to National Research Development Corporation. Impulse-forming and like machines. 3,552,181, Cl. 72-430.

Chaney, Harold K.; and Strandrud, Halvor T., to Boeing Company, The. Electric fluid actuator. 3,552,275, Cl. 91-418.

Chang, Wen-Hsuan: *See—*
Anderson, Carl C.; Chang, Wen-Hsuan; and Dowbenko, Rostyslaw,3,553,166.

Chapman, Walter F.: *See—*
Brandriff, Robert C.; and Chapman, Walter F.,3,552,336.

Chappuis, Louis Laurent, to Societe d'Etude et de Construction de Machines Pour Toutes Industries Secoma. Drill slide. 3,552,504, Cl. 175-52.
Charlton, Gregory G., to Hazeltine Research, Inc. Array antennas utilizing grouped radiating elements. 3,553,706, Cl. 343-777.
Chaveneaud, Roger; and Janoska, Georges, to Societe a Responsabilite Limitee: Societe Lamy d'Etudes et de Recherches. Automatic switching device. 3,553,411, Cl. 200-176.
Chemische Werke Huels, A.G.: *See—*
Riemhofer, Franz; Dittmann, Walter; and Schutze, Ernst Christian, 3,553,284.
Cheney, Harry A.: *See—*
Savage, William E.; and Cheney, Harry A.,3,553,099.
Cheritat, Roland: *See—*
Curchod, Jean; Cheritat, Roland; Widmer, Franz Rudolf; Widmer, Gustav; Renner, Alfred; and Batzer, Hans,3,553,115.
Cheshire, Anthony Ernest, to Lucas, Joseph, (Industries) Limited. Housings containing tiles carrying electrical printed circuits with thermal and electrical connecting straps made from braided metal. 3,553,532, Cl. 317-100.
Chesnut, William R.: *See—*
Neff, Herbert E.; and Chesnut, William R.,3,552,251.
Chevron Research Company: *See—*
Koundakjian, Theodore H., 3,553,328.
Chicago Musical Instrument Co.: *See—*
Freeman, Alfred B., 3,553,334.
Chicago Pneumatic Tool Company: *See—*
Amtsberg, Lester A., 3,552,410.
Chicago Rawhide Manufacturing Company: *See—*
Leonard, Jimmie D., 3,552,755.
Chidester, Robert Leroy: *See—*
Hansen, Harold Valentine; Wolf, Lester Carl; McCumber, Virgil Robert; and Chidester, Robert Leroy,3,552,601.
Childress, Scott J.: *See—*
Santilli, Arthur A.; Osdene, Thomas S.; and Childress, Scott J.,3,553,198.
Chisholm, James J.; and Emmel, Henry J., to Bausch & Lomb Incorporated. Aspirator assembly for a premix burner. 3,552,657, Cl. 239-424.
Chisso Corporation: *See—*
Ando, Masao, 3,552,482.
Chiyoda Kako Kensetsu Kabushiki Kaisha: *See—*
Kiryu, Tomoo, 3,553,165.
Christ, Alfred; Schreiber, Viktor; and Tomica, Erhard, to Wyss, Escher, Limited. Outlet housing for an axial-flow turbomachine. 3,552,877, Cl. 415-209.
Christe, Karl O.; Guertin, Jacques P.; and Pavlath, Attila E., to Stauffer Chemical Company. Certain alkali metal and nitrosyl difluorochlorates and their preparation. 3,552,936, Cl. 23-367.
Christensen, Alan F. Radially adjustable tool holder. 3,552,756, Cl. 279-6.
Christensen, Carl. Trunk seat. 3,552,788, Cl. 296-64.
Christensen, Hans P.; and Froslev, Alfred, to A/S Thomas Ths. Sabroe & Co. Refrigeration compressor capacity control system. 3,552,137, Cl. 62-196.
Church, John Armistead, to American Can Company. Films and filaments having ion-exchange properties and process for making same. 3,553,306, Cl. 264-218.
Chute, Richard: *See—*
Kemmerer, Robert M.; and Chute, Richard,3,552,769.
Ciba Limited: *See—*
Curchod, Jean; Cheritat, Roland; Widmer, Franz Rudolf; Widmer, Gustav; Renner, Alfred; and Batzer, Hans, 3,553,115.
Ramanathan, Visvanathan; Peter, Richard; and Angliker, Hans-Joerg, 3,552,906.
Cielo, John R.; and Hoffman, Harry S., Jr., to International Business Machines Corporation. Combined transformer and indicator device. 3,553,620, Cl. 336-165.
Citroen, Andre, Societe Anonyme: *See—*
Grosseau, Albert, 3,552,531.
CKD Praha, oborovy podnik: *See—*
Bezouska, Vlastimil; Pivrnec, Jan; Hrdlicka, Jiri; Krasa, Evzen; and Smekal, Zdenek, 3,553,538.
Clairol Incorporated: *See—*
Levy, Judith, 3,552,402.
Clampitt, Bert H.; Kochhar, Rajindar K.; Bartholomew, Robert K.; and Burrus, Harold L., to Gulf Research & Development Company. Carbon dioxide as an ethylene polymer coagulant. 3,553,178, Cl. 260-80.72
Claridge, Elmond Lowell; Edwards, George; and Smith, John Treanor, to Shell Oil Company. Recovery of tar from tar sands. 3,553,098, Cl. 208-11.
Clark, Donald E.; Grant, Norman H.; and Alburn, Harvey E., to American Home Products Corporation. Dehydrated crystalline 6-(1-aminocycloalkyl- carboxamido) penicillanic acids. 3,553,201, Cl. 260-239.1
Clark, Richard A.: *See—*
Miller, Carl B.; Clark, Richard A.; Retford, David T.; and Lundgren, Carl W.,3,553,159.
Clark, Terence Daniel, to U.S. Phillips Corporation. Wave generator. 3,553,694, Cl. 343-100.
Clark, Trevor P.: *See—*
Quayle, Daniel B.; and Clark, Trevor P.,3,552,357.
Clarke, Robert E. Food package and heater therefor. 3,552,379, Cl. 126-262.
Clary, John G., to Addmaster Corporation. Ribbon inker means in zero print suppressing means. 3,552,310, Cl. 101-102.
Classe, Willy: *See—*
Schnoring, Hildegard; Classe, Willy; Heine, Diez; Nordt, Herbert; and Kreutzer, Karl-Heinz,3,553,186.
Claydon, David Anthony: *See—*
Jones, Eric Lloyd; Claydon, David Anthony; and Ellis, Julius Ernest,3,552,933.
Claydon, David Anthony; and Ellis, Julius Ernest, to BP Chemicals (U.K.) Limited. Reaction vessel having internal recycle means. 3,552,934, Cl. 23-285.
Clayson-Kaas, Niels: *See—*
Petersen, John Valdemar Brammer; and Clayson-Kaas, Niels,3,553,224.
Cleary, James W., to Phillips Petroleum Company. Polymers of vinylpyridines and polyvinyl aromatic compounds. 3,553,180, Cl. 260-80.72
Clement, J. W., Company: *See—*
Bushnell, Thomas W., 3,552,089.
Clifford, Cecil Frank: *See—*
Sidell, Philip Alden; and Clifford, Cecil Frank,3,552,116.
Clowes, Garth A., to Eldon Industries, Inc. Toy in which an object is moved on a surface. 3,552,322, Cl. 104-172.
C. M. Windows & Stained Glass Ltd.: *See—*
Draca, Cedo, 3,552,938.
Coale, Harold D., to Phillips Petroleum Company. Foamed cushioning material. 3,553,068, Cl. 161-125.
Cocco, Eugene R., to Bell Telephone Laboratories, Incorporated. Tinsel ribbon conductor with tubed polymer insulation and method for making same. 3,553,042, Cl. 156-50.
Cochran, Thomas L., to American Air Filter Company, Inc. Air filter control arrangement. 3,552,098, Cl. 55-274.
Cohen, Charles H.: *See—*
Goldberg, Norman P.; Cohen, Charles H.; Goalstone, Eugene D.; and Goldberg, Seymour,3,552,551.
Cohn, Eugene; and Cecere, Andrew P., to Samcoe Holding Corporation. Apparatus for slitting, opening and processing tubular knitted fabric. 3,551,969, Cl. 26-1.
Cohn, Eugene; Cecere, Andrew P.; and Frezza, Robert, to Samcoe Holding Corporation. Apparatus for handling and processing open width fabric. 3,551,970, Cl. 26-59.
Coir, Donald W., to Burroughs Corporation. Article holder for electrodepositing coatings on articles. 3,553,096, Cl. 204-297.
Cole, Carroll R.; and Sieving, Alfred W., to Caterpillar Tractor Company. Dump truck body supporting means. 3,552,798, Cl. 298-22.
Cole, Donald Q.: *See—*
Sumner, Edwin V.; Cole, Donald Q.; and Davis, Le Roy W.,3,551,996.
Cole, Robert E.; and Arganbright, Donald J., to Eastman Kodak Company. Strip splicing device. 3,553,056, Cl. 156-505.
Coleman, Ann G.: *See—*
Coleman, Lloyd A.; and Coleman, Ann G.,3,552,610.
Coleman, Lloyd A.; and Coleman, Ann G. Carrier for ammunition and accesories for small-bore rifles. 3,552,610, Cl. 224-17.
Colgate-Palmolive Company: *See—*
Freedman, Jules, 3,553,228.
Freedman, Jules, 3,553,229.
Freedman, Jules, 3,553,230.
Suh, John T.; and Judd, Claude I., 3,553,241.
Collectron Corporation: *See—*
Friedland, Samuel J., 3,552,198.
Colling, David A.; and Aspden, Robert G., to Westinghouse Electric Corporation. Process for making high initial permeability iron-nickel alloys. 3,553,035, Cl. 148-120.
Collins, William J. Device for sampling molten metal. 3,552,214, Cl. 73-425.4
Colorado Instruments, Inc.: *See—*
Webb, Richard C.; and Heath, Robert T., 3,553,436.
Comber, William R.; and Boer, Elmer J., to U.S. Industries, Inc., mesne. Pit cleaner and elevator for animal houses. 3,552,542, Cl. 198-174.
Combustion Engineering, Inc.: *See—*
Mail, Isaac Paul, 3,552,573.
Commerican Solvents Corporation: *See—*
Griffith, George L., 3,552,259.
Commissariat a l'Energie Atomique:*See—*
Ahrweiller, Michel, 3,553,592.
Auchapt, Pierre; and Brun, Andre, 3,552,213.
Barroil, Aime; and Teytu, Andre, 3,552,446.
Courvoisier, Pierre; Muratore, Emile; Roche, Andre; and Vignet, Paul, 3,552,189.
Le Jannou, Jean-Pierre; and Lions, Noel, 3,552,485.
Compagnie des Compteurs: *See—*
Hanff, Michel; and Juhel, Pierre, 3,553,637.
Rolland, Jean-Noel Gaston Andre, 3,552,188.
Compagnie Francaise de Television: *See—*
Melchior, Gerard, 3,553,353.
Compagnie Francaise Thomson Houston-Hotchkiss Brandt: *See—*
Drabowitch, Serge V., 3,553,692.
Compagnie Internationale pour l'Informatique:*See—*
Cooreman, Charles Remy, 3,553,680.

Comstock, Alfred E.; and Wilcox, Burdsal Gardner, to Safeway Stores, Incorporated. Apparatus for handling block-like articles. 3,552,462, Cl. 146-78.
Concast Incorporated: *See—*
Gricol, Joseph D., 3,552,481.
Cone, Ronald D. Variable increment digitizer. 3,553,681, Cl. 340-347.
Conger, Robert P.: *See—*
Powell, William H.; Palmer, Leon B.; and Conger, Robert P.,3,552,997.
Congoleum Industries, Inc.: *See—*
Powell, William H.; Palmer, Leon B.; and Conger, Robert P., 3,552,997.
Connector Corporation: *See—*
Leimontas, Bruno J.; and Paradise, Edson M., 3,553,727.
Consolidated Foods Corporation: *See—*
Brown, Robert J.; Kowalewski, John J.; and Moughty, John J., 3,553,629.
Gaudry, Paul E.; Gaudry, Edouard; Descarries, Raymond; and Anderson, James, 3,551,935.
Continental Can Company, Inc.: *See—*
Moller, Jens L., 3,552,597.
Pesce, Carl A.; Gore, Ernest M.; and Tatham, James P., 3,553,567.
Continental Gummi-Werke Aktiengesellschaft: *See—*
Leymann, Werner, 3,552,776.
Continental Transport Appliances Limited: *See—*
Dorey, George B., 3,552,323.
Contraves AG: *See—*
Stutz, Theo; and Glauser, Peter, 3,553,469.
Control Building Systems, Inc.: *See—*
Jennings, Roger G., 3,551,947.
Control Data Corporation: *See—*
Goss, Lloyd C., 3,553,662.
Hadden, David R., Jr.; Goss, Lloyd C.; Grob, Konrad; and Hadden, David R., Jr., 3,553,661.
Control Equipment Corporation: *See—*
Adams, Harry E., 3,553,679.
Control Molding Corporation: *See—*
Greis, Howard A., 3,552,612.
Controlex Corporation: *See—*
Gregory, Walter V., Jr., 3,552,218.
Cook, Edward H., Jr.: *See—*
Grotheer, Morris P.; Currey, John E.; and Cook, Edward H., Jr.,3,553,088.
Cook Machinery Co., Inc.: *See—*
Jarvis, John R., 3,553,483.
Cook Paint & Varnish Company: *See—*
Wright, Howard J.; and Scherer, Joseph H., 3,553,119.
Cook, Russell E., to Ranco Incorporated. Safety control for water chillers. 3,552,136, Cl. 62-139.
Cook, Wendell A.: *See—*
Babb, Burton A.; Erst, Stephen J.; and Cook, Wendell A.,3,552,854.
Coombs, Garth: *See—*
Zilli, Robert; and Coombs, Garth,3,553,321.
Cooney, Leighton H. Apparatus for cutting block of chocolate or the like. 3,552,460, Cl. 146-60.
Cooper, Irwin; Sexton, Edwin Leon; Melnick, Daniel; and Wegner, Marcus I., to CPC International Inc. Packaged food product and process for making same. 3,552,980, Cl. 99-128.
Cooper, Ralph F.: *See—*
Hermanns, Otto E.; and Cooper, Ralph F.,3,552,200.
Cooper, Ray E.: *See—*
Lockered, Robert M.; Smith, Mark W.; Cooper, Ray E.; and Goode, George E.,3,553,693.
Cooreman, Charles Remy, to Compagnie Internationale pour l'Informatique, mesne. Electronic computer input equipment. 3,553,680, Cl. 340-347.
Cope, Geoffrey W., to Dresser Industries, Inc. Automatic train line connector. 3,552,580, Cl. 213-1.3
Corbin, Otis D.: *See—*
Yeaman, Roy L.; and Corbin, Otis D.,3,552,239.
Corbin, Ralph L.; and Jones, Richard A., to General Motors Corporation. Spill proof battery. 3,553,020, Cl. 136-6.
Cordes, Edward V., Jr., to Warner & Swasey Company, The. Numerical indicating system. 3,553,682, Cl. 340-347.
Corella, Arthur P.: *See—*
Schneider, William S.; and Corella, Arthur P.,3,552,087.
Corless, Lee M. Tire bead seater. 3,552,469, Cl. 157-1.1
Corley, Ferrand David Ernest. Grey-scale test slide. 3,552,288, Cl. 95-12.2
Cormier, Joseph A. Device for adjusting the size of a ring. 3,552,144, Cl. 63-15.6
Cormier, Louis A. Stair tread. 3,552,084, Cl. 52-181.
Corning Glass Works: *See—*
Amos, Lynn G., 3,552,416.
Anderson, Elmer L., 3,553,043.
Bartholomew, Roger F.; and Garfinkel, Harmon M., 3,552,912.
Giffen, James W., 3,552,941.
Megles, John E., 3,553,063.
Rostoker, David, 3,552,915.
Small, Donald A., 3,552,415.
Corran, John Anthony, to Imperial Chemical Industries Limited. Manufacture of pyridine and substituted pyridines. 3,553,219, Cl. 260-290.
Cortona, Alessandro; and Calano, Giuseppe, to Olivetti, Ing., C., & C., S.p.A. Dog clutch. 3,552,530, Cl. 192-28.
Cosetta, Harold J., to North American Rockwell Corporation. Loom let-off. 3,552,447, Cl. 139-100.
Cotton, John J.: *See—*
O'Neal, John E., 3,552,782.
Courtney-Pratt, Jeofry S.: *See—*
Burns, Gordon K.; and Courtney-Pratt, Jeofry S.,3,552,381.
Courvoisier, Pierre; Muratore, Emile; Roche, Andre; and Vignet, Paul, to Commissariat a l'Energie Atomique. Apparatus for detecting scale formation. 3,552,189, Cl. 73-61.2
Covini, Romano; Pieroni, Marcello; and Herzenberg, Jean, to Montecatini Edison S.p.A. Process for the production of pyridine and alkyl- derivatives of pyridine by means of thermal hydro- dealkylation of higher alkyl and alkenyl pyridenes. 3,553,222, Cl. 260-290.
Cox Manufacturing Co., Inc.: *See—*
Cox, Paul D., 3,552,897.
Cox, Paul D., to Cox Manufacturing Co., Inc. Igniter. 3,552,897, Cl. 431-273.
CPC International Inc.: *See—*
Cooper, Irwin; Sexton, Edwin Leon; Melnick, Daniel; and Wegner, Marcus I., 3,552,980.
Kruse, Norman F., 3,552,979.
Le Roy, David H.; and Parmerter, Stanley M., 3,553,193.
Parmerter, Stanley M.; and Allen, Earle E., Jr., 3,553,191.
Craig, Clark E. Magnetic key and lock. 3,552,159, Cl. 70-276.
Craig, David: *See—*
Murray, Patrick Anthony Molteno; and Craig, David,3,552,109.
Crain, Donald R.; and Haase, Charles A., to Burroughs Corporation. Easy depression control mechanism for a calculating machine. 3,552,643, Cl. 235-60.
Crall, Hugh C.: *See—*
Weinstein, Jerry L.; Niechwiadowicz, Michal; and Crall, Hugh C.,3,553,112.
Crane, Bently A., to Bell Telephone Laboratories, Incorporated. Fault isolation arrangement for distributed logic memories. 3,553,654, Cl. 340-172.5
Crane, Edward J., to International Agri-Systems, Inc. Drive mechanism for poultry picking apparatus. 3,551,942, Cl. 17-11.1
Crapanzano, Russell S. Sub-bracket for dental attachments. 3,552,019, Cl. 32-22.
Crawford, Thomas G.; and Kearse, William E., to Westinghouse Electric Corporation. Impact resistant laminated spin bobbin. 3,553,046, Cl. 156-184.
Creed, Sherman H.: *See—*
Ball, Robert R.; and Creed, Sherman H.,3,552,453.
Creese, Bertram T.; Lieberman, Edgar M.; and Maslan, David, to Mercantile Stores Company, Inc. Wig container. 3,552,549, Cl. 206-8.
Crenne, Noel; and Brunie, Jean-Claude, to Rhone-Poulenc S.A. Process for the prepararion of phenolic compounds. 3,553,271, Cl. 260-613.
Creskoff, Jacob J., to Vacuum Concrete Corporation of America. Vacuum distillation process and apparatus with direct air contact condensing for desalination of water. 3,553,084, Cl. 203-2.
Cribb, Herbert E., to United States of America, National Aeronautics and Space Administration. Validation device for spacecraft checkout equipment. 3,553,586, Cl. 325-67.
Crimmins, David J., to Thomas & Betts Corporation. Connector system. 3,553,628, Cl. 339-14.
Criswell, Angie F.: *See—*
Michaelson, Joseph B.; and Criswell, Angie F.,3,552,401.
Cross, Graham Westwood: *See—*
Anderson, Robert Craig; Burns, Ernest Bingham; and Cross, Graham Westwood,3,553,318.
Cross, Newbold O., to Esso Research and Engineering Company. Borescope for use at high temperatures and pressures. 3,552,821, Cl. 350-63.
Crosswy, Frank L.; Lennert, Andrew E.; and Kalb, Henry T., to United States of America, Air Force. Laser velocimeter utilizing fiber optics. 3,552,855, Cl. 356-28.
Crown Zellerbach Canada Limited: *See—*
Janik, Stanley Adolf, 3,553,055.
Crucible Inc.: *See—*
Petersen, Vincent C.; and Buehl, Russell C., 3,552,947.
Crucible Steel Company of America: *See—*
Fein, Samuel; and Vey, Regis A., 3,552,169.
Crump, Robert F. Dwelling unit of the fixed floor-plan type. 3,552,075, Cl. 52-236.
Cryogenic Technology, Inc.: *See—*
Latham, Allen, Jr., 3,552,577.
Csizmas, Louis L.; Patel, Virendra; and Davis, Raymond Vincent, to Miles Laboratories, Inc. Immunologically reactive particles. 3,553,310, Cl. 424-2.
Cubic Corporation: *See—*
Keller, Richard W. H., 3,553,698.
Cummins, James M.; and Smith, Robert J., to Hall, C. M., Lamp Company. Remote control mirror and method of manufacture thereof. 3,552,229, Cl. 74-501.
Curchod, Jean; Cheritat, Roland; Widmer, Franz Rudolf; Widmer, Gustav; Renner, Alfred; and Batzer, Hans, to Ciba Limited. Rubber mixtures. 3,553,115, Cl. 260-3.

Curran, John Patrick Stewart; and Ireland, John Richard, to Berger, Bryce, Limited. Liquid fuel injection pumps. 3,552,889, Cl. 417-494.
Currey, John E.: *See—*
Grotheer, Morris P.; Currey, John E.; and Cook, Edward H., Jr.,3,553,088.
Curry, James William, to Texas Instruments, Incorporated. Organosilicon resin compositions. 3,553,164, Cl. 260-46.5
Curtis Dyna-Products Corporation: *See—*
Wren, Cedric Hewer, 3,552,519.
Cuthbert, William L., to Eastman Kodak Company. Web processing device. 3,552,293, Cl. 95-94.
Cutler-Hammer, Inc.: *See—*
Risberg, Robert L., 3,553,554.
D-S Industries, Inc.: *See—*
Good, Paul J., 3,553,058.
Dahl, John: *See—*
Hall, Richard N.; Dahl, John; and Hall, Gerald O.,3,552,180.
Daily, William C.; and Rece, Wesley J., Jr., to Jones, R. A., & Co., Inc. Closing apparatus for cartoner. 3,552,094, Cl. 53-376.
Dale, John I., III: *See—*
Weaver, Max A.; Dale, John I., III; and Straley, James M.,3,553,245.
Dale, Robert C., to Dennison Manufacturing Company. Control ticket. 3,553,440, Cl. 235-61.12
Dalzell, James W.; Hazleton, Herbert T.; and Thorsteinsson, John B., to Pioneer Electric Brandon Limited. Anti-droop thermostat. 3,553,624, Cl. 337-377.
Dalziel, Rowena R. Mobile indicial device. 3,552,047, Cl. 40-23.
Damjanovic, Aleksandar: *See—*
Bockris, Bernard Patrick John; Sepa, Darko; and Damjanovic, Aleksandar,3,553,025.
Dana Corporation: *See—*
Kayser, John A., 3,552,811.
Dane, Ernest B., Jr., to United States of America, Air Force. Bearing race groove grinder. 3,552,065, Cl. 51-5.
Daniel, David W., to Lear Siegler, Inc., mesne. Method and apparatus for ECM gear finishing. 3,553,095, Cl. 204-212.
Daniels, Earl L., Jr.; and Strohlein, Elmer M., to ESB Incorporated. Pressure equalized deep submergence battery having gas bubble-electrolyte scrubbing means beneath the cover. 3,553,018, Cl. 136-6.
Daniels, George R. E., to Carter's Ink Company, The. Transfer paper. 3,552,991, Cl. 117-36.1
Daniels, John F., Jr.: *See—*
Locke, David R.; and Daniels, John F., Jr.,3,552,010.
Danly Machine Corporation: *See—*
Heiberger, Francis E., 3,553,547.
Darland, William G., Jr.: *See—*
Kordesch, Karl V.; and Darland, William G., Jr.,3,553,029.
Darnell, James R.; and Tarver, Donald A., to Texas Instruments, Incorporated. Metal carbide coatings on metal substrates. 3,552,939, Cl. 29-195.
Darrow, John O. G.; and Franke, Raymond C., to Westinghouse Air Brake Company. Fail-safe circuit arrangement. 3,553,488, Cl. 307-231.
Darrow, John O.G., to Westinghouse Air Brake Company. Level detector amplifier with controllable degenerative feedback. 3,553,490, Cl. 307-235.
Darsie, Burns: *See—*
Dixon, Paul H.; Darsie, Burns; and Zilka, Jerry M.,3,553,359.
Dashaveyor Company, The: *See—*
Horeczky, Geza, 3,552,692.
Data Pathing Incorporated: *See—*
Pike, James L., 3,553,435.
Datel Corporation: *See—*
Larsen, Raymond B., 3,552,685.
Davidson, Richard M., to Bell & Howell Company. Web reeling device with radially compressible members. 3,552,686, Cl. 242-201.
Davis, Bob K., to Pillsbury Company, The. Refrigerated display unit. 3,552,138, Cl. 62-249.
Davis, George H., to Houdaille Industries, Inc. Method for assembling vane and abutment seals in rotary actuators and the like. 3,551,980, Cl. 29-148.3
Davis, Joseph W.; and Little, Arthur J., to Stewart-Warner Corporation. Car trunk switch and lamp assembly. 3,553,448, Cl. 240-7.1
Davis, Le Roy W.: *See—*
Sumner, Edwin V.; Cole, Donald Q.; and Davis, Le Roy W.,3,551,996.
Davis, Lewis Kie: *See—*
Beard, Lawrence Ray; and Davis, Lewis Kie,3,552,516.
Davis, Raymond Vincent: *See—*
Csizmas, Louis L.; Patel, Virendra; and Davis, Raymond Vincent,3,553,310.
Dayson, Philip, to Pall Corporation. Apparatus for drying air or other gas. 3,552,096, Cl. 55-163.
Dean, John A., to United States of America, Air Force. Heat sink and holding device. 3,552,630, Cl. 228-46.
De Bernardis, Joseph Nazzareno, to Sylvania Electric Products, Inc. Support means for a color cathode ray tube shadow mask member having smooth circumferential seating contact. 3,553,517, Cl. 313-85.
Debrie, Marcel: *See—*
Badoz, Jacques; Billardon, Michel; Virloget, Jean; and Debrie, Marcel,3,552,823.
Decatur Foundry & Machine Co., Inc.: *See—*
Johnston, Douglas, 3,552,552.
Deem, William C., to Eli Bridge Company. Portable folding ferris wheel. 3,552,747, Cl. 272-29.
Deere & Company: *See—*
Beard, Lawrence Ray; and Davis, Lewis Kie, 3,552,516.
Graham, Karl Irvine, 3,552,105.
Hansen, Harold Valentine; Wolf, Lester Carl; McCumber, Virgil Robert; and Chidester, Robert Leroy, 3,552,601.
Kress, James Henry, 3,552,232.
Deering Milliken Research Corporation: *See—*
Drum, David L., 3,552,908.
Habib, Emile E., 3,552,911.
Lesley, Bascum G., 3,552,154.
Piazza, Carlo, 3,553,000.
Smith, Philip N., 3,552,563.
Dees, John R.: *See—*
Leybourne, Allen E., III; and Dees, John R.,3,551,949.
Defibrator Aktiebolag: *See—*
Reinhall, Rolf Bertil, 3,552,306.
De Haas, Gerrit G.; and Lang, Charles J., to Weyerhaeuser Company. Non-catalytic process for the production of cellulose from lignocellulosic materials using acetic acid. 3,553,076, Cl. 162-76.
Deibel, Raymond A.; and Riester, William C., to Trico Products Corporation. Pneumatic actuator for retractable headlamp system. 3,553,724, Cl. 240-61.1
Deines, Siegmund: *See—*
Monroe, Wayne W.; Deines, Siegmund; Jeffers, Homer A., Jr.; and Trenary, John M.,3,551,931.
Delancey, Warren H., to Beckett, R. W., Corporation. Centrifugal clutch. 3,552,904, Cl. 192-105.
De Laney, George E.; and Greenberg, Allen A., to Rainbow Crafts, Inc. Molding device. 3,552,711, Cl. 249-170.
De Langhe, Joseph E.: *See—*
Kleinstra, Harm; and De Langhe, Joseph E.,3,552,847.
Delbouille, Andre; and Deroitte, Jean-Louis, to Solvay & Cie. Process for the polymerization and copolymerization of olefins. 3,553,181, Cl. 260-80.78
Delbouille, Andre; and Henrioulle, Paul, to Sobray & Cie. Polymerization of polyolefins with macromolecular compounds reacted with organo aluminum compounds. 3,553,287, Cl. 260-857.
Delgado, Sergio N., to Flow Laboratories Inc. Process for producing rubella-virus hemagglutinating antigen. 3,553,312, Cl. 424-12.
Demaine, David Barnet, to Rank Organisation Limited, The. Optical profile projection systems. 3,552,832, Cl. 350-212.
Deming, William A., Sr. Can filler. 3,552,454, Cl. 141-71.
Dench, Michael J.; and Robbins, Rowland Clive, to Richards, George, & Company Limited. Apparatus for generating an approximation to a sine wave including a reading head with two spaced areas for scanning an optical grating. 3,553,470, Cl. 250-237.
Dench, Michael John, to Richards, George, & Company Limited. Reading head for detecting a modulated image. 3,553,468, Cl. 250-230.
Dennis, Richard: *See—*
Bassemir, Robert W.; Dennis, Richard; and Nass, Gerald I.,3,552,986.
Dennison Manufacturing Company: *See—*
Dale, Robert C., 3,553,440.
dePerthuis deLaillevault, Yolande Marie Antoinette. Figure toy. 3,552,057, Cl. 46-151.
Deroitte, Jean-Louis: *See—*
Delbouille, Andre; and Deroitte, Jean-Louis,3,553,181.
Descarries, Raymond: *See—*
Gaudry, Paul E.; Gaudry, Edouard; Descarries, Raymond; and Anderson, James,3,551,935.
Design and Manufacturing Corporation: *See—*
Yake, William H., 3,552,443.
Design-A-Phone, Inc.: *See—*
Mirrer, Raymond, 3,553,388.
Destache, Richard W.; and Kullmann, Donald J., to Badger Meter Manufacturing Company. Impeller-type flowmeter. 3,552,208, Cl. 73-230.
Deutsche Gold- und Silber-Scheideanstalt vormals Roessler: *See—*
Kuhn, Rudolf, 3,552,404.
de Winter, Max Salomon, to Organon Inc.Process for the preparation of $\Delta^{4,7}$-3-keto- steroids. 3,553,237, Cl. 260-397.3
Dhir, Partap C.; and Woodhull, Elliot H., to Xerox Corporation. Radiation sensitive document scanning apparatus using helical scanner. 3,553,463, Cl. 250-219.
D'Houdain, Olivier Marie Andre, to Societe Industrielle de Fabrication et de Transformation. Armchairs for dental treatment. 3,552,797, Cl. 297-355.
Dialscan Systems, Inc.: *See—*
Alter, Soloman; Goodfellow, John A.; and Kane, Robert F., 3,553,378.
Diamond Antenna Microwave Corporation: *See—*
Glynn, James J., 3,553,732.
Diaz-Compain, Jeronimo E. Apparatus for diffusion and lixiviation of sugar cane, beet-sugar or sweet sorghum. 3,553,013, Cl. 127-5.
Dick, A. B., Company: *See—*
Ormsbee, Mary K., 3,552,970.
Dick, A.B., Company: *See—*
Ormsbee, Mary K., 3,552,315.
Ormsbee, Mary K., 3,552,316.

Dickerson, Burl D. Panel template maker. 3,552,245, Cl. 83-11.
Dickinson, Ronald S., to Armstrong Patents Co. Limited. Hydraulic pistons. 3,552,429, Cl. 137-493.8
Dictaphone International AG: *See—*
Guettinger, Kurt Konrad, 3,553,405.
Diehl, Floyd William: *See—*
McGoogan, George David; Noble, Paul Douglas; Shultz, Joseph Leonard; and Diehl, Floyd William,3,552,174.
Digitronics Corporation: *See—*
Wolf, Edgar; and Marino, Francis C., 3,553,374.
Dijksterhuis, Popko Reinder, deceased0 (by Mulkens, Casper Antonius Hendricus; administrator), to U.S. Philips Corporation, mesne. Circuit arrangement for imitating the touch of musical instruments with percussion. 3,553,337, Cl. 84-1.13
Dijkstra, Albert Jan; Goodman, Isaac; and Reid, James Angus Wilson, to Imperial Chemical Industries Limited. Polyester compositions and shaping process. 3,553,157, Cl. 260-40.
Dimitrov, Gueorgui Stanoev: *See—*
Gretchenliev, Hristo Ivanov; and Dimitrov, Gueorgui Stanoev,3,552,080.
Dipner, Charles D., to Johnson & Johnson. Pressure sensitive adhesive sheet. 3,552,994, Cl. 117-68.5
Dissen, Israel J., to Velsicol Chemical Corporation. Halogen containing maleates and fumarates. 3,553,256, Cl. 260-485.
Dittmann, Walter: *See—*
Riemhofer, Franz; Dittmann, Walter; and Schutze, Ernst Christian,3,553,284.
Dixon, Paul H.; Darsie, Burns; and Zilka, Jerry M.. 3,553,359, Cl.
Dixson Automatic Tool, Inc.: *See—*
Rutter, Donald E., 3,552,539.
Dmitriev, Gennady Pavlovich: *See—*
Korzhaev, Sergei Antonovich; Dobrovolsky, Vladimir Vasilievich; Kodolov, Oleg Mikhailovich; and Dmitriev, Gennady Pavlovich,3,552,887.
Dobrauz, John W., to Stewart-Warner Corporation. Laterally shiftable gear box assembly with preload adjustment. 3,552,224, Cl. 74-405.
Dobrovolsky, Vladimir Vasilievich: *See—*
Korzhaev, Sergei Antonovich; Dobrovolsky, Vladimir Vasilievich; Kodolov, Oleg Mikhailovich; and Dmitriev, Gennady Pavlovich,3,552,887.
Dobrowolski, Jerzy A.: *See—*
Hanes, Garnet R.; Dobrowolski, Jerzy A.; and Van der Hoeven, Cornelis J.,3,552,826.
Dodson, Marion Luther, M.D.: *See—*
Johnson, David Lee, 3,552,143.
Doherty, Paul R.; and Hosmer, Thomas P., to Little, Arthur D., Inc. Apparatus for imparting translational and rotational motion. 3,552,931, Cl. 23-273.
Dohogne, Charles L., to Purex Corporation, Ltd. Alkaline bath removal of scale from titanium workpieces. 3,553,015, Cl. 134-2.
Dole, Edwin K.: *See—*
Shaver, John A.; Dole, Edwin K.; Osmond, Robert S.; and Morrissey, Thomas G.,3,553,675.
Dollinger, Robert E.; Kallenberger, Robert H.; and Frazier, Arthur E., to Phillips Petroleum Company. Mixed phase sampling system. 3,552,211, Cl. 73-421.5
Dollison, William W., to Otis Engineering Corporation. Pressure regulator for well flow conductors. 3,552,490, Cl. 166-224.
Dominguez, Richard L.; and Peake, Samuel G.H. drum-like musical instruments with electrical pickups and circuitry. 3,553,339, Cl. 84-1.15
Donaldson, Robert E.; Murphy, Harry C., Jr.; and Stauffer, Harry C., to Gulf Research & Development Company. Production of white oils from hydrotreated and acid contacted oil stocks. 3,553,107, Cl. 208-271.
Donatello, James M.; and Walus, Aloysius N., to Du Pont de Nemours, E. I., and Company. Coating compositions comprising acrylic polymers containing an oxazoline drying oil constituent. 3,553,124, Cl. 260-23.
Dore', John L., Co.:*See—*
Hester, Clarence H.; and Weeden, Frank G., 3,552,426.
Dorey, George B., to Continental Transport Appliances Limited. Sliding hopper gate actuating mechanism. 3,552,323, Cl. 105-282.
Dorman, Isidore, to Bellhow Jackets Inc., mesne. Microfiche master having magnetic tracks. 3,553,439, Cl. 235-61.12
Dorney, John; and Robinson, Colin, to Power Industries Limited. Tensioning apparatus. 3,552,305, Cl. 100-4.
Dorr-Oliver Incorporated: *See—*
Fitch, Elliot B.; Roberts, Elliott J.; and Weber, William C., 3,552,918.
Roberts, Elliott J., 3,552,919.
Steever, Andrew B.; and Svencer, Richard E., 3;552,033.
Dosch, Peter; and Oehmann, Manfred. Circuit for controlling the speed of a motor. 3,553,556, Cl. 318-327.
Doss, Richard C., to Phillips Petroleum Company. Epoxy resin cured with polymercaptan ester as olefin polymer coating. 3,553,283, Cl. 260-830.
Doub, Leonard; and Krolls, Uldis, to Parke, Davis & Company. Process for the production of cytosine compounds and intermediates for use therein. 3,553,216, Cl. 260-256.4
Dow, Bruce R., to Westinghouse Electric Corporation. High noise immunity system for integrated circuits. 3,553,486, Cl. 307-213.
Dow Chemical Company, The: *See—*
Goode, John V., Jr.; and Moore, Zack J., 3,552,185.
Heinert, Dietrich H., 3,553,113.
Smith, Harry A., 3,553,162.
Smith, Harry A., 3,553,168.
Woods, Conrad D., 3,553,137.
Dowbenko, Rostyslaw: *See—*
Anderson, Carl C.; Chang, Wen-Hsuan; and Dowbenko, Rostyslaw,3,553,166.
Dowdican, Franklin W.; and Aschan, Harry R. Waste lift system. 3,552,408, Cl. 137-13.
Dowler, Robert L.: *See—*
Schroeder, Ronald C.; and Dowler, Robert L.,3,552,227.
Doxey, Brian C., to British Oxygen Company Limited, The. Wire feeding. 3,553,423, Cl. 219-130.
Doyle, Timothy, to United Aircraft Corporation. Fuel cell gas reversal method and system. 3,553,023, Cl. 136-86.
Drabowitch, Serge V., to Compagnie Francaise Thomson Houston-Hotchkiss Brandt. Antenna arrays having phase and amplitude control. 3,553,692, Cl. 343-778.
Draca, Cedo, to C. M. Windows & Stained Glass Ltd. Security steel members with carbide inserts. 3,552,938, Cl. 29-191.6
Drackett Company, The: *See—*
Butke, Charles John; and Gates, Lawrence William, 3,553,145.
Butke, Charles John; and Gates, Lawrence William, 3,553,146.
Dresser Industries, Inc.: *See—*
Cope, Geoffrey W., 3,552,580.
Evans, Ted C., 3,552,789.
Wilson, William Paul, Sr., 3,552,502.
Drum, David L., to Deering Milliken Research Corporation. Dimensionally stabilized elastic fabrics. 3,552,908, Cl. 8-115.6
Dunay, Michael; and Jamison, Saunders E., to Celanese Corporation. Heat and flame resistant pyrolyzed cellular material and process of making same. 3,553,132, Cl. 252-62.
Duncan, David C., II. Article transfer device. 3,552,602, Cl. 221-235.
Dunlap, Laurel E. Roller mounting mechanism for template guided tool. 3,552,805, Cl. 308-6.
du Pont de Nemours and Company: *See—*
Paulshock, Marvin, 3,553,331.
Du Pont de Nemours, E. I., and Company: *See—*
Anolick, Colin; and Goffinet, Edward Peter, Jr., 3,553,156.
Bartlett, Philip Lee, 3,553,179.
Donatello, James M.; and Walus, Aloysius N., 3,553,124.
Fishman, David Henry, 3,552,973.
Hoffman, Lewis C., 3,553,109.
Hunt, Oliver Larry, 3,553,290.
Kaplan, Charles A.; and Ripley, Robert A., 3,553,116.
Mc Connell, Ronald Frank, 3,552,352.
McGhee, John D., 3,553,428.
Sartori, Mario Francesco, 3,552,905.
Self, James M.; and Yates, Paul C., 3,552,992.
Duran, Johannes Christiaan: *See—*
Bakker, Marinus Antonius Maria; and Duran, Johannes Christiaan,3,553,521.
Durkee, Everett L.: *See—*
Lowe, Edison; and Durkee, Everett L.,3,552,566.
Lowe, Edison; and Durkee, Everett L.,3,552,574.
Du Ross, Robert M., to Singer Company, The. Thread guide for sewing machines. 3,552,678, Cl. 242-157.
Duve, Gunther: *See—*
Oberst, Hermann; Ebigt, Joachim; Duve, Gunther; and Schommer, Alfred,3,553,072.
Duxbury, Frederick Keith; Mountfield, Brian Arthur; and Oldham, Joseph, to Imperial Chemical Industries Limied. Polyoxamides from 3-aminomethyl-3,5,5-trimethyl cyclohexylamine. 3,553,289, Cl. 260-857.
Dvirka, Miro, to Hagan Industries, Incorporated. Refuse disposal system. 3,552,335, Cl. 110-8.
Dwyer, James L.; Paine, Richard A.; and Souza, Charles W., to Millipore Corporation. Laminated sheet for evaluating diffusive reactions. 3,553,067, Cl. 161-113.
Dykeman, Edgar G. M., deceased0 (by Dykeman, Kathaleen M.; administratrix), to FMC Corporatlon. Assembly jig for the nailing of wood frame members. 3,552,624, Cl. 227-3.
Dykeman, Kathaleen M.: *See—*
Dykeman, Edgar G. M.,3,552,624.
Dynamit Nobel AG: *See—*
Aus Der Funten, Helmut; and Richtzenhain, Hermann, 3,553,247.
Earnest, Phillip A. Plural tissure roll support. 3,552,669, Cl. 242-55.3
Easter, Finis C., to RCA Corporation. Microsensing network. 3,553,500, Cl. 307-311.
Eastman, John R.: *See—*
Warnock, William R.; Flatt, Donald V.; and Eastman, John R.,3,553,127.
Eastman Kodak Company: *See—*
Babcock, David Lockman; and Nerwin, Hubert, 3,552,283.
Blackman, Robert J., 3,553,057.
Bundschuh, John J.; and Roman, Robert J., 3,552,683.
Cole, Robert E.; and Arganbright, Donald J., 3,553,056.
Cuthbert, William L., 3,552,293.
Fink, William C.; and Shaffer, John W., 3,552,287.
Goodhue, Charles T.; and Schaeffer, James R., 3,553,081.
Hansen, David E., 3,552,846.
Henn, Richard W.; King, Nancy H.; and Surash, John J., 3,552,969.
Hodges, Howard T., 3,552,957.
Horton, William H.; and Palmer, Allan M., 3,552,286.
Jeffreys, Roy Arthur, 3,552,974.

Nelson, Raymond L., 3,553,429.
Olson, James R., 3,553,133.
Seus, Edward J.; and Reynolds, George A., 3,552,958.
Weaver, Max A.; Dale, John I., III; and Straley, James M., 3,553,245.

Easton, John F.: *See—*
Stromberg, Gale F.; and Easton, John F.,3,553,577.

Eaton Yale & Towne, Inc.: *See—*
Berryman, Charles O., 3,552,770.
Kaiser, Hermann, 3,552,768.
Kemmerer, Robert M.; and Chute, Richard, 3,552,769.
Kraft, Elroy J., 3,552,726.
Thomas, Vernon H.; and McGuire, Richard M., 3,552,532.
Truemper, John P., 3,553,553.

Ebbinge, Willem; and Bom, Johannes Gerardus Wouterus, to U.S. Philips Corporation, mesne. Difference amplifier having a reference voltage source. 3,553,565, Cl. 320-64.

Eberle, William J. Charge bar connection for battery plates. 3,553,021, Cl. 136-82.

Ebigt, Joachim: *See—*
Oberst, Hermann; Ebigt, Joachim; Duve, Gunther; and Schommer, Alfred,3,553,072.

E.B.V. Systems, Inc.: *See—*
Kleeberg, Gunther K. E., 3,552,713.

Eck, Francis B. Power transfer device. 3,552,222, Cl. 74-216.3

Eckschlager, Karel: *See—*
Veprek-Siska, Josef; Ettel, Viktor; and Eckschlager, Karel,3,552,935.

Economics Laboratory, Inc.: *See—*
Kress, James D., 3,552,418.

Edberg, Rune, to Arbesko Aktiebolag. Sterilized footwear. 3,552,038, Cl. 36-2.5

Edelberg, Edward, R.: *See—*
Knox, Sidney G.; and Reynen, Richard N., 3,553,382.

Edelberg, Louis: *See—*
Knox, Sidney G.; and Reynen, Richard N., 3,553,382.

Edge, Gordon Malcolm, to Cambridge Consultants Limited. Active capacitance reactance circuit. 3,553,609, Cl. 333-80.

Edison, Jack Roger, to Lilly, Eli, and Company. Box hinge. 3,551,940, Cl. 16-150.

Edlund, Gunnar Elisson, to Aktiebolaget Hagglund & Soner. Shuttle train. 3,552,586, Cl. 214-38.

Edwards, Aubrey T., to Slater, N., Company. Vibration dampers. 3,553,345, Cl. 174-42.

Edwards, Edgar Burley; and Kreidel, Rudolf Karl Andrew, to Techs Incorporated. Pour-spout closure for plastic container. 3,552,607, Cl. 222-566.

Edwards, George: *See—*
Claridge, Elmond Lowell; Edwards, George; and Smith, John Treanor,3,553,098.

Edwards Roger: *See—*
Brenner, Helmut E.; Edwards Roger; and Giger, Adolf J.,3,553,610.

Efficient Instruments Corporation: *See—*
Weisbart, Emanuel S., 3,553,442.

Eggert, Noel B., to Owens-Illinois, Inc. Adjustable core pin mechanism. 3,551,948, Cl. 18-5.

Eichler, Elfriede: *See—*
Lindner, Kurt; and Eichler, Elfriede,3,553,140.

Ekenberg, Ture, to Svenska Innovationskonsortiet. Vacuum cleaner. 3,552,100, Cl. 55-337.

Elco Corporation: *See—*
Gallina, Harold, 3,552,234.
Scheingold, William S.; Bottlik, Geza P.; Selvin, Gerald J.; and Krum, Alan S., 3,553,630.

Elder, Clifton L.; Fitch, Lawrence H.; Kornblum, Ronald I.; and Wehner, William C., to Moog Industries, Inc. Elastic joint assembly for automobile suspension street rods. 3,552,785, Cl. 287-85.

Eldon Industries, Inc.: *See—*
Clowes, Garth A., 3,552,322.

Electric Power Storage Limited: *See—*
Bushrod, Charles J.; and McKellen, Patrick Ewart, 3,553,019.

Electro Tech Appliance Service Limited: *See—*
Head, William John, 3,553,674.

Electronics Inc. of Pennsylvania: *See—*
Liebscher, Arthur; and Ljungman, Nils Harry, 3,553,392.

Electrospin Corporation: *See—*
Chabot, Leo L., 3,552,112.

Elftmann, Joel A.: *See—*
Wallestad, Victor C.; and Elftmann, Joel A.,3,552,548.

Eli Bridge Company: *See—*
Deem, William C., 3,552,747.

Elliott Brothers (London) Limited: *See—*
Howard, Ronald W.; Atkin, Roy; and Bishop, Geoffrey S., 3,552,687.
Lawrence, Ernest G.; and Hughes, Thomas H. K., 3,552,828.

Ellis, David J.; and Rammler, David H., to Syntex Corporation. Quaternary ammonium steroids. 3,553,211, Cl. 260-239.5

Ellis, Julius Ernest: *See—*
Claydon, David Anthony; and Ellis, Julius Ernest,3,552,934.
Jones, Eric Lloyd; Claydon, David Anthony; and Ellis, Julius Ernest,3,552,933.

ELMEG Elektro-Mechanik G.m.b.H.: *See—*
Zielke, Alfred, 3,552,644.

Elmer, William B. Vehicle rearward flashing light when visibility poor. 3,553,644, Cl. 340-55.

Eltec, Inc.: *See—*
Kerr, Charles E., Jr., 3,553,412.

Emary, Robert J., to Gifford Instrument Laboratories Inc. Test sample carrier transport apparatus. 3,552,536, Cl. 198-19.

Emdeko Distributing, Inc.: *See—*
Ranney, Richard D.; and Smiley, Eldridge H., 3,552,350.

Emerald, Robert L.: *See—*
Royka, Stephen F.; and Emerald, Robert L.,3,552,850.

Emerson Electric Co.: *See—*
Love, John J., 3,552,430.

E.M.I. Electronics Canada Limited: *See—*
Starkey, Bertrand Julian; and Osborne, John, 3,553,699.

Emmel, Henry J.: *See—*
Chisholm, James J.; and Emmel, Henry J.,3,552,657.

Empire Stove Company: *See—*
Hodges, Ralph R., 3,552,377.

Engel, Walter, to Oerlikon-Buhrle Holding Ltd. Method of manufacturing a sabot. 3,551,972, Cl. 29-1.23

English Electric Company Limited, The: *See—*
Killoran, Brian, 3,553,558.
Spencer, Derek John; and Paddison, Eric, 3,553,489.

Englund, Robert M.; Wolf, Irving W.; and Hamaker, John D., to Sperry Rand Corporation Ampex Corporation. Biemitter transistor search memory array Thin film closed flux storage element Method and apparatus for the autogenous crushing of stone and the like. 3,553,659, Cl. 241-18.

Enochian, Samuel H., to General American Transportation Corporation. Freight transportation system and components thereof. 3,552,325, Cl. 105-366.

Envirotech Corporation: *See—*
Mc Cay, Frank V., Jr., 3,552,268.

Erichsen, Herman W.: *See—*
Pugnaire, Jean-Pierre A.; and Erichsen, Herman W.,3,552,199.

Eriksbergs Mek. Verkstads Aktiebolag: *See—*
Johansson, Ture A.; and Wikholm, Ior Allan, 3,552,147.

Eriksson, Alf Anders Anselm, to Aktiebolaget Svenska Precisionsverktyg. Arrangement in pumps. 3,552,888, Cl. 417-423.

Ernst, Max: *See—*
Munzberg, Walter, 3,553,667.

Ernst, Max. Device for electric toy and model railroad installation for controlling the operation of vehicle thereon. 3,553,450, Cl. 246-32.

Erpenbach, Heinz: *See—*
Sennewald, Kurt; Gehrmann, Klaus; Handte, Heinz; Erpenbach, Heinz; and Reis, Helmut,3,553,261.

Erst, Stephen J.: *See—*
Babb, Burton A.; Erst, Stephen J.; and Cook, Wendell A.,3,552,854.

ESB Incorporated: *See—*
Daniels, Earl L., Jr.; and Strohlein, Elmer M., 3,553,018.

Essex International, Inc.: *See—*
Gerber, John M., 3,553,627.
Preston, Jerome A.; and Otis, Harold R., 3,553,154.

Esso Production Research Company: *See—*
Kiel, Othar M., 3,552,494.

Esso Research and Engineering Company: *See—*
Cross, Newbold O., 3,552,821.
Foroulis, Zisis Andrew, 3,553,101.
Staton, John C.; Keller, James P.; Kowalski, Ronald C.; and Harrison, John W., 3,551,943.

Etablissements L. Devillez & Camion Societe Anonyme: *See—*
Bruers, Robert, 3,551,941.

Etherington, Robert W., Jr.; and Liauw, Koei-Liang, to Mobil Oil Corporation. Catalytic oxidative dehydrogenation of alkylpyridines. 3,553,220, Cl. 260-290.

Ethyl Corporation: *See—*
Brendel, Gottfried J., 3,552,946.
Plonsker, Larry; and Wright, Norman R., 3,552,945.
Stephens, Ruth E., 3,552,913.
Wollensak, John C.; and Meltsner, Bernard R., 3,553,270.

Ettel, Viktor: *See—*
Veprek-Siska, Josef; Ettel, Viktor; and Eckschlager, Karel,3,552,935.

Etter, Robert W., to RCA Corporation. Methods for electroless plating and for brazing. 3,551,997, Cl. 29-473.1

Evans, David Gordon; and Siemon, Stanley Robert, to University of Melbourne, The. Separation of water from solid organic materials. 3,552,031, Cl. 34-9.

Evans, Ted C., to Dresser Industries, Inc. Pressure vessel head retainer. 3,552,789, Cl. 292-256.6

Evers, William J. Expanding chuck. 3,552,673, Cl. 242-72.1

Eversharp, Inc.: *See—*
Ferraro, Frank A., 3,552,008.

Ex-Cell-O Corporation: *See—*
Scholz, Max, 3,553,663.

Exotech Incorporated: *See—*
Johnson, Dennis F., 3,553,462.

Extel Corporation: *See—*
Zenner, Walter J., 3,553,650.

Eyberg, Willy; Fulber, Josef; and Habig, Helmut, to Papierfabrik G.m.b.H. Apparatus for producing hot and cold insulating sheet. 3,551,945, Cl. 18-4.

Ezekiel, Edison R.: *See—*
Mott, George E.; and Ezekiel, Edison R.,3,552,131.

Fa. Lumoprint Zindler KG: *See—*
Limberger, Walter, 3,552,849.

Fairbanks Morse Inc.: *See—*
Marcheso, Robert L.; and Lukaschewsky, Bohdan, 3,552,511.

Fairchild Camera & Instrument Corporation: *See—*
McCall, John M., 3,552,285.

Fairchilds, Bert S., to Hoover Aircraft Products Co. Inflatable freight container. 3,552,466, Cl. 150-0.5

Fairey Canada Ltd.: *See—*
Baekken, Asbjorn, 3,552,688.
Baekken, Asbjorn, 3,552,689.

Faldi, Giovanni. Fluid pumping station working on the compressed air principle with partial recovery and re-cycling of the air. 3,552,884, Cl. 417-122.

Falkenhagen, George L.: *See—*
Lewis, David W.; and Falkenhagen, George L.,3,552,594.

Falkenrich, Heinrich: *See—*
Reiter, Hans; Hannig, Heinrich; and Falkenrich, Heinrich,3,552,118.

Fanner Manufacturing Company, The: *See—*
Little, Jess C., 3,551,960.
Mastalski, Henry N., 3,551,959.

Fansteel Inc.: *See—*
Berry, Robert W., Jr., 3,551,978.
Berry, Robert W., Jr., 3,551,979.

Fantoni, Giuseppe, to Olivetti, Ing. C., & C., S.p.A. Tool clamping device for tool storage magazine of machine tool. 3,551,974, Cl. 29-26.

Farbenfabriken Bayer Aktiengesellschaft: *See—*
Grigat, Ernst; and Putter, Rolf, 3,553,244.
Gutsche, Walter; and Zirngibl, Hans, 3,553,527.
Hermann, Karl Heinz; Bockmann, August; and Rudolph, Hans, 3,553,161.
Reese, Eckart; Rohm, Wilhelm; Hofmeier, Hermann; Bottenbruch, Ludwig; and Schnell, Hermann, 3,553,304.
Reischl, Arthur; Traubel, Harro; and Zorn, Bruno, 3,553,008.
Schnell, Hermann; Bollert, Volker; and Fritz, Gerhard, 3,553,167.
Schnoring, Hildegard; Classe, Willy; Heine, Diez; Nordt, Herbert; and Kreutzer, Karl-Heinz, 3,553,186.
Thoma, Wilhelm; and Rinke, Heinrich, 3,553,172.
Vernaleken, Hugo; Malamet, Georg; Bottenbruch, Ludwig; Krimm, Heinrich; and Schnell, Hermann, 3,553,285.
Wieden, Horst; Rellensmann, Wolfgang; Holtschmidt, Hans; Roos, Ernst; and Nischk, Gunther, 3,553,173.

Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See—*
Gutweiler, Klemens, 3,553,117.
Lederer, Michael; Koch, Heinrich; and Harreus, Albrecht, 3,553,184.
Oberst, Hermann; Ebigt, Joachim; Duve, Gunther; and Schommer, Alfred, 3,553,072.

Fasco Industries, Inc.: *See—*
Hire, Charles John, 3,553,402.

Fasse, Gerald A.; and Mychalowych, Eugene A., to Booth Newspapers, Inc. Automatic mold disc control system for a linecasting machine. 3,552,547, Cl. 199-55.

Faustel, Inc.: *See—*
Boyd, Shelton F., 3,552,645.

Fauth, Mae I.; and Richardson, Annie C., to United States of America, Navy. Process for continuous analysis of nitroglycerin and related nitrate esters. 3,552,926, Cl. 23-230.

Feaster, Gene R., to Westinghouse Electric Corporation. Electronic image device with protective circuit. 3,553,522, Cl. 315-11.

Fedoroff, Leo N. Precise angle measuring device. 3,552,026, Cl. 33-174.

Fee, Richard A., to Hubbell, Harvey, Incorporated. Electrical circuit with power inlet control. 3,553,475, Cl. 307-18.

Feeney, Thomas F. Adjustable sprinkler. 3,552,655, Cl. 239-281.

Fehr, Engelbert. Folding door. 3,552,475, Cl. 160-207.

Feick, Paul A., to Harris-Intertype Corporation. Cutter and creaser. 3,552,281, Cl. 93-58.2

Fein, Samuel; and Vey, Regis A., to Crucible Steel Company of America. Spring end finishing. 3,552,169, Cl. 72-129.

Felder, Ernst; and Pitre, David, to Bracco Industria Chimica, Societa per Azioni. Contrast media for cholecystrography. 3,553,259, Cl. 260-519.

Felder, Ernst; and Pitre, Davide, to Bracco Industria Chimica, Societa per Azioni. Radiopaque derivatives of α-phenoxyphenyl- acetic acid. 3,553,260, Cl. 260-519.

Felgar, Robert P., Jr., to TRW Inc. Method of prestressing parts subject to thermal shock. 3,552,178, Cl. 72-342.

Felstehausen, Eugene F., to FMC Corporation. Food molding machine having variable length feed of separator web. 3,552,735, Cl. 270-58.

Felten & Guilleaume Fernmeldeanlagen G.m.b.H.: *See—*
Weiss, Werner Gustav Wilhelm, 3,553,496.

Fendt, Alfons; and Becker, Michael, to Siemens Aktiengesellschaft. Device including direction responsive switching means for indicating and protecting against short-circuits in a DC voltage network. 3,553,571, Cl. 324-52.

Fernseh GmbH: *See—*
Forster, Hubert, 3,553,355.
Groll, Hans-Robert, 3,553,356.
Jauernik, Edmund, 3,553,365.
Krause, Gerhard, 3,553,390.

Ferraro, Frank A., to Eversharp, Inc. Adjustable ribbon-type razor. 3,552,008, Cl. 30-40.1

Ferre, Amadeo. Apparatus for the cold-stamping of screws, rivets and the like. 3,551,926, Cl. 10-13.

Fetter, Marion Cook, to Miles Laboratories, Inc. Whole blood separation method and test using same. 3,552,925, Cl. 23-230.

Fetter, Marion Cook, to Miles Laboratories, Inc. Whole blood separation means and test system using same. 3,552,928, Cl. 23-253.

Fichtel & Sachs AG: *See—*
Keller, Josef, 3,552,815.
Schwerdhofer, Hans Joachim, 3,552,233.

Fici, James C. Planter with reservoir. 3,552,058, Cl. 47-38.

Fieber, Walter F., to FMC Corporation. Discharge chute for snow caster. 3,552,045, Cl. 37-43.

Field, Nathan D.; and Lorenz, Donald H., to GAF Corporation. Interpolymeric anti-clumping additives. 3,553,183, Cl. 260-78.5

Fields, Richard P.; and Neumayer, John J., to Minnesota Mining and Manufacturing Company. Diagnosis means. 3,552,929, Cl. 23-253.

Fiero, John Robert, to American Standard Inc. Fire extinguisher. 3,552,495, Cl. 169-28.

Figiel, Francis J.; and Nesbitt, Raymond A., to Allied Chemical Corporation. Azeotrope and solvent compositions based on 1,1,2-trichloro-1,2,2-trifluoroethane and acetonitrile. 3,553,142, Cl. 252-141.

Filipak, Edmund H., to Westinghouse Electric Corporation. Cooking apparatus. 3,553,427, Cl. 219-463.

Fink, Aaron J. Temperature control apparatus. 3,553,426, Cl. 219-406.

Fink, Walter, to Monsanto Company. Process for preparing 1,3-disilyl-1,3,2,4- diazadisiletidines. 3,553,242, Cl. 260-448.2

Fink, William C.; and Shaffer, John W., to Eastman Kodak Company, mesne. Photoflash lamp firing mechanism. 3,552,287, Cl. 95-11.5

Finkel, William P. Variable message traffic sign. 3,553,645, Cl. 340-84.

Finkelstone, Douglas A.: *See—*
Hooper, George H., 3,552,129.

Finn, Bernard J.: *See—*
Yew, Ming-Chih; and Finn, Bernard J.,3,552,767.

Finnegan, John E. Diamond roller. 3,552,474, Cl. 160-201.

Fischer, Christoph, to Vereinigte Flugtechnische Werke Gesellschaft mit beschrankter Haftung fruher 'Weser' Flugzeugbau/ Focke-Wulf/Heinkel-Flugzeugbau. Blade connection for helicopters. 3,552,880, Cl. 416-104.

Fischer, Richard, to Braun Aktiengesellschaft. Dryshaver. 3,552,005, Cl. 30-34.

Fishman, David Henry, to Du Pont de Nemours, E. I., and Company. Light sensitive hexaarylbiimidazole/P-aminophenyl ketone compositions. 3,552,973, Cl. 96-90.

Fishman, Jerry Haskel, to Leesona Corporation. Electrochemical device utilizing an electrode comprising a continuous PTFE film which is gas permeable and free from liquid electrolyte seepage. 3,553,024, Cl. 136-86.

Fishwick, Brian Ribbons: *See—*
Anderton, Catherine Margaret; Fishwick, Brian Ribbons; and Lawson, John,3,553,190.

Fistell, David N. Theft alarms for television sets. 3,553,673, Cl. 340-280.

Fitch, Elliot B.; Roberts, Elliott J.; and Weber, William C., to Dorr-Oliver Incorporated. Process for the production of phosphoric acid. 3,552,918, Cl. 23-165.

Fitch, Lawrence H.: *See—*
Elder, Clifton L.; Fitch, Lawrence H.; Kornblum, Ronald I.; and Wehner, William C.,3,552,785.

Fiterman, Benjamin: *See—*
Simon, Peter A.; Paletz, Leonard M.; Fiterman, Benjamin; Johnson, Marlyn D.; and Ahlberg, Carl S.,3,552,579.

Flannelly, William G., to Kaman Corporation. Three-dimensional vibration isolator. 3,552,694, Cl. 248-20.

Flatt, Donald V.: *See—*
Warnock, William R.; Flatt, Donald V.; and Eastman, John R.,3,553,127.

Fleck, Friedrich: *See—*
Hettich, Bernhard; Kammerer, Heinrich; and Fleck, Friedrich,3,552,738.

Fleischmann, Charles W.: *See—*
Oswin, Harry G.; Oxley, James E.; and Fleischmann, Charles W.,3,553,027.

Fleming, Robert W.: *See—*
Johnson, Robert G.; Fleming, Robert W.; Wenstrup, David L.; and Kariya, Takashi,3,553,234.

Flessner, Hermann. Device for punching recording media. 3,552,642, Cl. 234-100.

Flint, Thomas J., to Xerox Corporation. Development apparatus. 3,552,355, Cl. 118-627.

Flittie, William J., 1/10 interest to Goldwire, Henry C. Means for ensilaging. 3,552,296, Cl. 99-235.

Flohrer, Walter, to Siemens Aktiengesellschaft. Supervision circuit for synchronization transmitters. 3,553,369, Cl. 178-69.

Flow Laboratories Inc.: *See—*
Delgado, Sergio N., 3,553,312.

Floyd, Frederich, to Ozonair Engineering Company Limited. Gas filters. 3,552,099, Cl. 55-354.

Fluoroware, Inc.: *See—*
Wallestad, Victor C.; and Elftmann, Joel A., 3,552,548.

Flynn, Richard Thomas: *See—*
Penton, Perry Wayne; and Flynn, Richard Thomas,3,553,657.

FMC Corporation: *See—*
Ball, Robert R.; and Creed, Sherman H., 3,552,453.
Dykeman, Edgar G. M., 3,552,624.
Felstehausen, Eugene F., 3,552,735.
Fieber, Walter F., 3,552,045.
Greenwood, Leon D., 3,552,652.
Haver, William B.; and Reimers, James L., 3,552,464.
Naslund, Erik I., 3,552,561.
Neuspiel, Peter J.; and Spiegel, Milton, 3,552,571.
Youmans, Donald W., 3,552,330.

Foelsch, Henry W., to Lithcote Corporation. Method and composition for treating stainless steel. 3,553,016, Cl. 134-3.

Foote, Allen M., 50% to Somerville, Ted L. Travelling belt display. 3,552,049, Cl. 40-32.

Forbes, Norman Arthur, to American Standard Inc. Antenna stem for proximity control. 3,551,919, Cl. 4-166.

Foresti, Primo: *See—*
Rimondini, Augusto; and Foresti, Primo,3,553,531.

Forite Enterprises, Inc.: *See—*
Reading, James E., 3,552,553.

Foroulis, Zisis Andrew, to Esso Research and Engineering Company. Prevention of corrosion using heterocyclic nitrogen compounds. 3,553,101, Cl. 208-47.

Forster, Hubert, to Fernseh GmbH. Method of storing composite color signals. 3,553,355, Cl. 178-5.4

Fosse, Navarro T.; and Peninger, Harvey N., to Hydrotile Machinery Company. Feeding device for concrete pipe machine. 3,551,968, Cl. 25-36.

Foster Grant Co., Inc.: *See—*
Weinstein, Jerry L.; Niechwiadowicz, Michal; and Crall, Hugh C., 3,553,112.

Fourdraine, John D.: *See—*
Soanes, Randolph Spencer; Fourdraine, John D.; and Manthey, Egon S.,3,552,256.

Fox, John H., Jr.: *See—*
Wilson, Calvin L.; and Fox, John H., Jr.,3,552,614.

Fox, William R.; and Rowe, Edgar R., to Sajar Plastics Inc., mesne. Mechanical control for liquid drain stopper. 3,551,921, Cl. 4-199.

Fraga, Donald W.: *See—*
Bean, Arthur R., Jr.; Fraga, Donald W.; and Mann, Roger H.,3,553,295.

Francis, Arthur W., to Selas Corporation of America. Tube heater. 3,552,362, Cl. 122-510.

Francis, Marion D., to Procter & Gamble Company, The. Oral compositions for calculus retardation. 3,553,314, Cl. 424-49.

Francis, Marion D., to Procter & Gamble Company, The. Oral compositions for calculus retardation. 3,553,315, Cl. 424-49.

Francis, Samuel A., to Buzzards Corporation. Apparatus for measuring properties of a fluid body from an airborne vehicle. 3,552,205, Cl. 73-170.

Franco-Indian Pharmaceuticals Private Limited: *See—*
Hascher, Antoine, 3,553,236.

Frank, Richard W.; Fulks, Robert G.; and Skilling, James K., to General Radio Company. Frequency measuring apparatus with automatic adjustment of measurement interval for enhanced speed and accuracy. 3,553,728, Cl. 324-78.

Franke, Raymond C.: *See—*
Darrow, John O. G.; and Franke, Raymond C.,3,553,488.

Frankel, Milton B.; and Rowley, Gerald L., to North American Rockwell Corporation. Energetic polynitro-halogenated aromatic esters. 3,553,253, Cl. 260-475.

Franklin, George M.; Kunkel, Lorenz V.; and Lewis, Willard A., to Pan American Petroleum Corporation. Sulfur recovery apparatus. 3,552,927, Cl. 23-252.

Franklin, J. G., & Sons, Ltd.: *See—*
Muller, Robert Hans, 3,552,778.

Franklin, Marshall. Mattress construction. 3,551,923, Cl. 5-345.

Fransen, Theodorus, to N.V. Maschinefabriek L. Te Strake. Device for drawing a thread for a thread package. 3,552,622, Cl. 226-178.

Franzen, Gustav: *See—*
Stenmans, Heinz; Franzen, Gustav; and Lossa, Ulrich,3,552,666.

Franzreb, Thomas G., to Purex Corporation, Ltd. Aircraft skin cleaning maintenance. 3,551,934, Cl. 15-97.

Fraze, Ermal C.: *See—*
Brown, Omar L., 3,552,342.

Frazier, Arthur E.: *See—*
Dollinger, Robert E.; Kallenberger, Robert H.; and Frazier, Arthur E.,3,552,211.

Freeborn, John C., to Honeywell Inc. Circuit for generating discontinuous functions. 3,553,487, Cl. 307-229.

Freedman, Jules, to Colgate-Palmolive Company. 3-Substututed-4H[1]benzopyrano[3,4-d]isoxazoles. 3,553,228, Cl. 260-307.

Freedman, Jules, to Colgate-Palmolive Company. 3-Alkanol derivatives of 4H[1] benzopyrano[3,4-d]isoxazoles. 3,553,229, Cl. 260-307.

Freedman, Jules, to Colgate-Palmolive Company. 3-Aminoalkyl and 3-amino derivatives of 4H[1] benzopyrano[3,4-d]isoxazoles. 3,553,230, Cl. 260-307.

Freeh, Edward J., to Industrial Nucleonics Corporation. System for and method of measuring sheet properties. 3,552,203, Cl. 73-159.

Freeman, Alfred B., to Chicago Musical Instrument Co. Automatic musical rhythm system with optional player control. 3,553,334, Cl. 84-1.03

French, Alfred W.; and Starrett, Forest J., Jr., to French Oil Mill Machinery Company, The. Process and apparatus for treating sucrose bearing materials. 3,552,304, Cl. 100-37.

French Oil Mill Machinery Company, The: *See—*
French, Alfred W.; and Starrett, Forest J., Jr., 3,552,304.

Frerichs, Kenneth E.: *See—*
Heiser, Kenneth PR.; and Frerichs, Kenneth E.,3,552,093.

Fresard, Marcel, to Mefina S.A. Sewing machine. 3,552,340, Cl. 112-258.

Fresard, Marcel, to Mefina S.A. Mount for pivotally supporting an electric motor. 3,553,506, Cl. 310-91.

Frey, David A.: *See—*
Weyna, Philip L.; and Frey, David A.,3,552,998.

Frezza, Robert: *See—*
Cohn, Eugene; Cecere, Andrew P.; and Frezza, Robert,3,551,970.

Frick, Richard H.; and Weber, Terry M., to Kimberly-Clark Corporation. Method and apparatus for folding disposable diapers. 3,552,736, Cl. 270-61.

Fried. Krupp Gesellschaft mit beschrankter Haftung: *See—*
Arndt, Friedrich-Karl, 3,552,269.

Friedland, Samuel J., to Collectron Corporation. Torque measuring device. 3,552,198, Cl. 73-134.

Friedman, Ronald L.; and Lewis, Roger N., to Argus Chemical Corporation. Process of curing unsaturated polyester resins using acetylenic diperesters. 3,553,291, Cl. 260-861.

Friedmann & Maier: *See—*
Pischinger, Anton; and Haubenhofer, Max, 3,552,146.

Frisch, Maurice. Auxiliary cold-starting carburetors for internal combustion engines and feeder tanks thereof. 3,552,369, Cl. 123-180.

Fritz, Gerhard: *See—*
Schnell, Hermann; Bollert, Volker; and Fritz, Gerhard,3,553,167.

Fritz, Lothar. Magnetic separator. 3,552,565, Cl. 209-219.

Froslev, Alfred: *See—*
Christensen, Hans P.; and Froslev, Alfred,3,552,137.

Frost, George, Company: *See—*
Holden, David J., 3,551,911.

Fruehauf Corporation: *See—*
Mathers, Robert V.; and Trampus, William, 3,552,808.

Fry, Millard E., to General Motors Corporation. Door mounted catalyst exhaust arrangement for a self-cleaning oven. 3,553,425, Cl. 219-393.

Fry, William Lawrence, to Lucas, Joseph, (Industries) Limited. Contact breaker assemblies. 3,553,408, Cl. 200-166.

Frye, James R., Sr. Variable firmness sleep unit. 3,551,924, Cl. 5-345.

Fryer, Rodney Ian: *See—*
Wehrli, Pius Anton; Fryer, Rodney Ian; and Sternbach, Leo Henryk,3,553,206.

Fuchs, Alfred, to AB Tetra Pak. Packaging material having a strip on one side and covering tapes on the other side. 3,552,631, Cl. 229-7.

Fuess, Raymond L. Electronic control apparatus. 3,553,494, Cl. 307-252.

Fuji Photo Film Co., Ltd.: *See—*
Kondo, Hideo; and Watanabe, Shigeru, 3,552,960.
Takenaka, Haruo; Shiozawa, Akiyasu; and Fujiwara, Tadahiro, 3,552,971.

Fuji Shashin Film Kabushiki Kaisha: *See—*
Hara, Hikoharu; Yamamuro, Yoshio; and Asakawa, Motozumi, 3,552,967.
Sadamatsu, Shigeru; and Honjo, Satoru, 3,552,956.

Fujimoto, Katsuyoshi, to Hughes Aircraft Company. Target mounting for scan converter tubes. 3,553,515, Cl. 313-68.

Fujimoto, Keimei: *See—*
Hirai, Hajime; Fujimoto, Keimei; Okuno, Yositosi; Ogawa, Taizo; and Yoshioka, Hirosuke,3,553,233.

Fujimoto, Sakae, to Kabushiki Kaisha Ricoh. Iris mechanism in body of interchangeable-lens camera. 3,552,289, Cl. 95-64.

Fujinami, Akira: *See—*
Mine, Akihiko; Hino, Naganori; Fujinami, Akira; Nodera, Katsuji; Horiuchi, Fukashi; and Nishizawa, Yoshihiko,3,553,252.

Fujisaki, Yoshisato; Aishima, Itsuho; Sakurai, Hisaya; Kitaoka, Atsushi; Kawasaki, Hironobu; and Oshima, Minoru, to Asahi Kasei Kogyo Kabushiki Kaisha. Process for modifying polyolefins. 3,553,176, Cl. 260-78.4

Fujishima, Hiroki: *See—*
Hata, Yu; and Fujishima, Hiroki,3,553,476.

Fujitsu Limited: *See—*
Muramatsu, Akio, 3,553,087.

Fujiwara, Tadahiro: *See—*
Takenaka, Haruo; Shiozawa, Akiyasu; and Fujiwara, Tadahiro,3,552,971.

Fukuhara, Mototada; Ueno, Akira; Nihei, Isao; and Sano, Chikara, to Toray Industries, Inc. Potentially crimpable composite filament yarn made of thermoplastic highpolymers and usable for a crepe fabric. 3,552,114, Cl. 57-140.

Fukuoka, Tatsuo. Sandal. 3,552,039, Cl. 36-11.5

Fulber, Josef: *See—*
Eyberg, Willy; Fulber, Josef; and Habig, Helmut,3,551,945.

Fulks, Robert G.: *See—*
Frank, Richard W.; Fulks, Robert G.; and Skilling, James K.,3,553,728.

Funakoshi, Eisule. Rotary engine. 3,552,363, Cl. 123-8.47

Futrell, Jean H.: *See—*
Tiernan, Thomas O.; Miller, Carroll D.; Futrell, Jean H.; and Abramson, Fred P.,3,553,452.

Future Products Development Corporation: *See—*
Ray, Bartow, 3,552,725.

FWI, Inc.: *See—*
Haenky, Norman H., 3,552,434.

G & G Engineering Corporation: *See—*
Grasseler, George John, 3,552,097.

G & H Mechanical Laboratory, INc.: *See—*
Hoffman, Howard S., 3,552,600.

Gaeckel, Bruno Lothar. Odor retaining polyolefin composition and process for repairing the same. 3,553,296, Cl. 260-897.

GAF Corporation: *See—*
Field, Nathan D.; and Lorenz, Donald H., 3,553,183.
Smith, Edward A., 3,552,103.

Gagnon, Pierre; and La Forest, Pierre, to Paco Corporation. Unit turnover system. 3,552,581, Cl. 214-1.

Gallagher, William C., to Goodyear Tire & Rubber Company, The. Pneumatic tire with reduced susceptibility to defects. 3,552,468, Cl. 152-359.

Gallaher Limited: *See—*
Heldt, Wolfgang Karl Joachim, 3,552,380.

Gallaro, Anthony V.; and Van Noy, Bryce W., to Sylvania Electric Products, Inc. Cathode ray tube screen forming process. 3,552,989, Cl. 117-33.5

Gallina, Harold, to Elco Corporation. Film drive mechanism. 3,552,234, Cl. 74-820.

Gando, Masayoshi: *See—*
Baba, Hideo; Gando, Masayoshi; and Yamashita, Yoshio,3,553,032.

Ganzler, Wolfgang Philipp: *See—*
Schroder, Gunter; and Ganzler, Wolfgang Philipp,3,553,160.

Garbe, Howard W.; and Moss, Harold S., to Western Electric Company, Incorporated. Mill protecting device. 3,552,161, Cl. 72-4.

Garber, Roy W., to Jackson Manufacturing Co. Wheelbarrow leg assembly. 3,552,762, Cl. 280-47.33

Garcia, Henri, to Centre National de la Recherche Scientifique. Methods using hydrazine, in particular in the methods of preparation of cycloheptasulfinide. 3,553,147, Cl. 252-188.

Gard, George E.; and Boak, William K., to Armstrong Cork Company. Blending apparatus. 3,551,955, Cl. 18-30.

Garden, Kenneth S. Sand bagging attachment for dump trucks. 3,552,346, Cl. 141-72.

Gardner-Denver Company: *See—*
Mayer, James R., 3,552,506.

Garfinkel, Harmon M.: *See—*
Bartholomew, Roger F.; and Garfinkel, Harmon M.,3,552,912.

Garlington, Frank E., to Sprague Electric Company. Ventilation aperture for shielded enclosures. 3,553,343, Cl. 174-35.

Garrett Corporation, The: *See—*
Sutton, Trevor G., 3,552,414.

Garrett, Kenneth Malcolm. Vinyl chloride polymers plasticized with mixed phenyl alkylphenyl phosphates. 3,553,155, Cl. 260-30.6

Garrison, Harry F. Combined faucet and drinking fountain. 3,552,651, Cl. 239-25.

Garver, Oscar W.; Ullman, Frederick E.; Stettler, Christian H.; and Kopp, Hans W., to Grotnes Machine Works, Inc. Welding machine and procedure for welding attachments to base members and having provision for checking for the presence of a welded attachment and the adequacy of the weld. 3,553,418, Cl. 219-79.

Garver, Oscar W.; Ullman, Frederick E.; Stettler, Christian H.; and Kopp, Hans W., to Grotnes Machine Works, Inc. Welding machine having provision for precise positioning of two or more workpieces relative to one another during high speed welding operations. 3,553,419, Cl. 219-80.

Gassmann, Gerhard Gunter, to International Standard Electric Corporation. Pulse generator with time delay. 3,553,484, Cl. 307-141.

Gates, Lawrence William: *See—*
Butke, Charles John; and Gates, Lawrence William,3,553,145.
Butke, Charles John; and Gates, Lawrence William,3,553,146.

Gaudry, Edouard: *See—*
Gaudry, Paul E.; Gaudry, Edouard; Descarries, Raymond; and Anderson, James,3,551,935.

Gaudry, Paul E.; Gaudry, Edouard; Descarries, Raymond; and Anderson, James, to Consolidated Foods Corporation, mesne. Foam generator for a floor care machine. 3,551,935, Cl. 15-180.

Gauri, Kailash Kumar, to Robugen G.m.b.H.Substituted (2'-deoxyribosyl) uracil compounds, compositions containing same and process of making and using same. 3,553,192, Cl. 260-211.5

Geary, Joseph E., to Knee Lox Manufacturing Company. Box for typewriter carbon paper. 3,552,636, Cl. 229-51.

Gebruder Netzsch, Maschinenfabrik: *See—*
Hanft, Klaus-E., 3,552,582.

Gedance, Alan R., to Westinghouse Electric Corporation. Pulse width measuring circuit. 3,553,593, Cl. 328-112.

Gehring, Albert; Bertrossa, Guiseppe; and Schultze, Hans-Joachim, to Inventa A.G. fur Forschung und Patentverwertung. Process for the continuous manufacture of lactams. 3,553,204, Cl. 260-239.3

Gehrmann, Klaus: *See—*
Sennewald, Kurt; Gehrmann, Klaus; Handte, Heinz; Erpenbach, Heinz; and Reis, Helmut,3,553,261.

Geigy Chemical Corporation: *See—*
Petersen, John Valdemar Brammer; and Clayson-Kaas, Niels, 3,553,224.

Gender, James R.: *See—*
Babunovic, Momir; and Gender, James R.,3,552,560.

General Alarm Corporation: *See—*
Hawkins, Paul Maddison, 3,553,721.

General American Transportation Corporation: *See—*
Enochian, Samuel H., 3,552,325.

General Electric Company: *See—*
Bennett, Moreland P., 3,551,998.
Bernhardt, Donn E., 3,553,656.
Betts, Joseph E., 3,553,348.
Holub, Fred F., 3,553,282.
Losert, Gerhard K., 3,552,115.
Miller, De Witt H., 3,553,493.
Penton, Perry Wayne; and Flynn, Richard Thomas, 3,553,657.
Reich, William A.; and Hale, Thomas E., 3,551,991.
Zimmer, John S., 3,553,612.

General Motors Corporation: *See—*
Altson, Ralph, 3,552,814.
Armstrong, William A., 3,552,295.
Bracken, Joseph W., Jr., 3,552,804.
Corbin, Ralph L.; and Jones, Richard A., 3,553,020.
Fry, Millard E., 3,553,425.
Hunter, James R.; Ruff, Donald O.; and Huntzinger, Gerald O., 3,552,368.
Kern, Luther N., 3,552,534.
Lemen, William T., 3,553,560.
Martyniuk, Ernest T., 3,552,955.
Michnay, Raymond P.; and Johnson, Ivan R., 3,552,409.
Nordeen, Donald L., 3,552,517.
North, Reginald Harry; and Taylor, Peter Norman, 3,552,483.
Perkins, Donald C.; and Silk, Leonard P., 3,552,795.
Ramsey, Charles W., 3,553,467.
Reardon, Robert J.; and Robbins, William E., 3,553,301.
Redding, Harry L., 3,552,599.
Rike, Richard C.; and Brombaugh, Burlin B., 3,553,642.
Shearer, Thomas W., Jr.; Peters, Charles M.; and Tincher, Jon D., 3,553,420.
Tanaka, Akira, 3,552,707.
Yasin, Thomas P., 3,552,763.
Yew, Ming-Chih; and Finn, Bernard J., 3,552,767.
Yonke, Steve, 3,551,938.

General Radio Company: *See—*
Frank, Richard W.; Fulks, Robert G.; and Skilling, James K., 3,553,728.

General Time Corporation: *See—*
Jarvis, Kenneth W., 3,552,053.

General Utility Bag Corporation: *See—*
Marshall, Louis, 3,552,529.

Generale Alimentaire: *See—*
Hureau, Jacques, 3,553,341.

Georgii, Hans Christer. Oil terminal and method for fabricating the same. 3,552,132, Cl. 61-46.

Gerber, John M., to Essex International, Inc. Molded electric plug with flexible holding magnet. 3,553,627, Cl. 339-12.

Gerner, George Loyd; and Brickson, William L. One-piece foldable protective container for articles. 3,552,595, Cl. 220-16.

Gerstenberg, Dieter; and Smith, Frank T. J., to Bell Telephone Laboratories, Incorporated. Capacitor with hafnium dioxide dielectric. 3,553,545, Cl. 317-258.

Getchell, Douglas E.: *See—*
Vail, Edwin G.; and Getchell, Douglas E.,3,551,909.

Getrost, Helmut: *See—*
Kohlschutter, Hanswolfgang; Getrost, Helmut; Reich, Walter; Rossler, Hubert; and Horl, Walter,3,553,001.

Gevaert-Agfa N.V.: *See—*
Willems, Jozef Frans, 3,552,968.

Ghougasian, John N. Supersonic jet engine. 3,552,873, Cl. 415-49.

Giannetti, Joseph P.; Henke, Alfred M.; and Sebulsky, Raynor T., to Gulf Research & Development Company. Isomerization catalyst and method for preparing and using same. 3,553,151, Cl. 252-442.

Gibson, Roger L.: *See—*
Sperry, Charles R.; and Gibson, Roger L.,3,552,608.

Giddings & Lewis Inc.: *See—*
Bullock, Thomas B., 3,553,647.

Giffen, James W., to Corning Glass Works. Forming handled vitreous articles. 3,552,941, Cl. 65-67.

Gifford Instrument Laboratories Inc.: *See—*
Emary, Robert J., 3,552,536.

Giger, Adolf J.: *See—*
Brenner, Helmut E.; Edwards Roger; and Giger, Adolf J.,3,553,610.

Gilberg, Samuel L. Barbecue grill. 3,552,302, Cl. 99-444.

Gilbreth, Eual W., to Phillips Petroleum Company. Staple fiber feeder for baling press. 3,552,801, Cl. 302-61.

Giletta, Dario: *See—*
Pacciarini, Antonio; and Giletta, Dario,3,553,309.

Gilfillan, Evelyn G., to Shell Oil Company. Polymer compositions containing talc filler, polar organic compound and antioxidant. 3,553,158, Cl. 260-41.

Gingher, Geroge C., Jr.; and Hubert, Lawrence J., to Bethlehem Steel Corporation. Rolling mill control system. 3,552,162, Cl. 72-8.

Ginilewicz, Wlodek L.; and Tesoro, Guiliano C., to Millmaster Onyx Corporation. Compositions for rendering synthetic hydrophobic material antistatic. 3,553,111, Cl. 260-2.

Girard, Dean C., 1/2 to La Force, Jean. Electric discharge machining employing gas dispersed in a liquid dielectric. 3,553,415, Cl. 219-69.

Giras, Theodore C.; and Barns, William W., Jr., to Westinghouse Electric Corporation. Computer positioning control system with manual backup control especially adapted for operating steam turbine valves. 3,552,872, Cl. 415-17.
Gits Bros. Mfg. Co.: *See—*
Lojkutz, Bruno V., 3,552,752.
G.K.N. Steel Company Limited: *See—*
Lloyd, Henry B., 3,552,163.
Gladstone, Robert, to Wiggins Teape Research & Development Limited. Grinding machines. 3,552,066, Cl. 51-49.
Glasser, James R., to Motorola, Inc. Transistor driver circuit. 3,553,601, Cl. 330-24.
Glasson, Woodrow R.; Malcom, Glen A.; Lambert, George M.; and Shumaker, Jackie W., to Reliance Electric and Engineering Company, The. Liquid-lubricated expansible V-pulley system. 3,552,223, Cl. 74-230.17
Glauser, Peter: *See—*
Stutz, Theo; and Glauser, Peter,3,553,469.
Gleason Works, The: *See—*
Hunkeler, Ernst J.; Remmeli, Charles E.; and Waasdorp. Robert A., 3,552,260.
Hunkeler, Ernst J.; and Wrubleski, Felix P., 3,552,261.
Hunkeler, Ernst J.; Beman, Earl Roy; and Whalley, Frank M., 3,552,262.
Hunkeler, Ernst J.; Smith, Frank A.; and Walrath, Frederick C., 3,552,263.
Globe-Union Inc.: *See—*
Zidlicky, Aldrich John, 3,553,394.
Glynn, James J., to Diamond Antenna Microwave Corporation. Portable parabolic reflector for microwave energy. 3,553,732, Cl. 343-840.
Goalstone, Eugene D.: *See—*
Goldberg, Norman P.; Cohen, Charles H.; Goalstone, Eugene D.; and Goldberg, Seymour,3,552,551.
Goble, Anthony George; and Haresnape, John Norman, to British Petroleum Company Limited, The. Isomerization process and catalyst therefor. 3,553,281, Cl. 260-683.68
Godden, George Frederick, to Revertex Limited. Process for treating textiles. 3,553,047, Cl. 156-209.
Goebel, Hellmut; and Raiser, Ernst, to Burkhardt & Weber K.G. Tool-changing mechanism for a machine tool. 3,551,984, Cl. 29-200.
Goeller, Leonhard A.: *See—*
Rosenwald, Robert H.; and Goeller, Leonhard A.,3,553,150.
Goff, Casper M. Pump construction. 3,552,417, Cl. 137-98.
Goffinet, Edward Peter, Jr.: *See—*
Anolick, Colin; and Goffinet, Edward Peter, Jr.,3,553,156.
Gold, Nicholas, to Polaroid Corporation. Photographic processing apparatus. 3,552,292, Cl. 95-89.
Goldberg Brothers, Inc.: *See—*
Goldberg, Norman P.; Cohen, Charles H.; Goalstone, Eugene D.; and Goldberg, Seymour, 3,552,551.
Goldberg, Norman P.; Cohen, Charles H.; Goalstone, Eugene D.; and Goldberg, Seymour, to Goldberg Brothers, Inc. Film reel shipping case. 3,552,551, Cl. 206-52.
Goldberg, Sam. Air conditioning distribution system. 3,552,294, Cl. 98-39.
Goldberg, Seymour: *See—*
Goldberg, Norman P.; Cohen, Charles H.; Goalstone, Eugene D.; and Goldberg, Seymour,3,552,551.
Golde, H. T., G.m.b.H., Firma: *See—*
Hermann, Friedrich, 3,552,061.
Goldwire, Henry C.: *See—*
Flittie, William J., 3,552,296.
Golembeski, John J., to Bell Telephone Laboratories, Incorporated. Telephone subscriber paging arrangement. 3,553,386, Cl. 179-84.
Gombar, Eugene Leonard: *See—*
Lundergan, Robert Graham; Gombar, Eugene Leonard; and Maltais, Frederick Jean,3,552,784.
Good, Paul J., to D-S Industries, Inc. Laminated film guide mechanism. 3,553,058, Cl. 156-510.
Goode, George E.: *See—*
Lockered, Robert M.; Smith, Mark W.; Cooper, Ray E.; and Goode, George E.,3,553,693.
Goode, John V., Jr.; and Moore, Zack J., to Dow Chemical Company, The. Thermal conductivity apparatus. 3,552,185, Cl. 73-15.
Goodfellow, John A.: *See—*
Alter, Soloman; Goodfellow, John A.; and Kane, Robert F.,3,553,378.
Goodhue, Charles T.; and Schaeffer, James R., to Eastman Kodak Company. Process of microbiological oxidation. 3,553,081, Cl. 195-30.
Goodman, Isaac: *See—*
Dijkstra, Albert Jan; Goodman, Isaac; and Reid, James Angus Wilson,3,553,157.
Goodrich, B. F., Company, The: *See—*
Hermanns, Otto E.; and Cooper, Ralph F., 3,552,200.
Goodyear Tire & Rubber Company, The: *See—*
Gallagher, William C., 3,552,468.
Kovac, Frederick J.; and Rye, Grover W., 3,553,307.
Spacht, Ronald B., 3,553,163.
Gordon, Richard A. Container with elastic memory towards squeezed position. 3,552,604, Cl. 222-95.
Gordon, Stanley H., to United-Carr Incorporated. Clip. 3,551,965, Cl. 24-248.
Gore, Ernest M.: *See—*
Pesce, Carl A.; Gore, Ernest M.; and Tatham, James P.,3,553,567.
Gorike, Rudolf, to Akustische V. Kino-Gerate Gesellschaft m.b.H. Electro-acoustic transducer housing for dampening vibrations. 3,553,393, Cl. 179-180.
Gorman, Howard C.; Simone, John; Shaheen, Joseph M.; van Zanten, Melvin J.; Bowman, Darl F.; and Moser, Gerald J., to North American Rockwell Corporation. Process for producing a plated wire memory. 3,553,648, Cl. 340-174.
Goss, Lloyd C., to Control Data Corporation. Position sensing and control apparatus. 3,553,662, Cl. 340-174.1
Goss, Lloyd C.: *See—*
Hadden, David R., Jr.; Goss, Lloyd C.; Grob, Konrad; and Hadden, David R., Jr.,3,553,661.
Gottler, Horst, to Johann Rockinger Spezialfabrik fur Anhanger- Kupplungen. Fifth wheel unit. 3,552,774, Cl. 280-425.
Gouillou, Roger L., to Office National d'Etudes et de Recherches Aerospatiales. Method and apparatus for measuring a time interval. 3,553,582, Cl. 324-186.
Gould-National Batteries, Inc.: *See—*
Nordvik, Donald T., 3,552,250.
Grace, W. R., & Co.: *See—*
Ketley, Arthur D., 3,553,280.
Marans, Nelson S., 3,553,255.
Roberts, John T.; and Wing, Ralph L., 3,552,090.
Stahly, Eldon E.; and Lard, Edwin W., 3,553,292.
Stahly, Eldon E.; and Lard, Edwin W., 3,553,293.
Willett, John A., 3,553,071.
Graceffo, Helida R.: *See—*
Graceffo, Joseph A.; and Graceffo, Helida R.,3,552,021.
Graceffo, Joseph A.; and Graceffo, Helida R. Compacting device for dental amalgam. 3,552,021, Cl. 32-55.
Graf, Albin: *See—*
Kuhn, Gerhard; Graf, Albin; Moll, Franz; and Otto, Rigobert,3,552,966.
Graffenberger, Wilhelm: *See—*
Steinbacher, Heinz-Dieter; and Graffenberger, Wilhelm,3,553,478.
Graham, Glenn R.: *See—*
Nitz, Jacob; and Graham, Glenn R.,3,552,533.
Graham, Karl Irvine, to Deere & Company. Cotton harvester. 3,552,105, Cl. 56-12.
Graham, Thomas G., to Singer Company, The. Means for elimination of end play in a sewing machine. 3,552,338, Cl. 112-218.
Granat, Adele: *See—*
Granat, Jules; and Granat, Adele,3,552,792.
Granat, Jules; and Granat, Adele. Coffee basket handling implement. 3,552,792, Cl. 294-28.
Granger Associates: *See—*
Thomas, Maxime J., 3,553,701.
Granqvist, Carl-Erik, to AGA Aktiebolag. Refraction measuring apparatus. 3,552,860, Cl. 356-128.
Grant, Norman H.: *See—*
Clark, Donald E.; Grant, Norman H.; and Alburn, Harvey E.,3,553,201.
Graphic Electronics, Inc.: *See—*
Barron, William J., 3,552,002.
Grasseler, George John, to G & G Engineering Corporation. Air processing unit. 3,552,097, Cl. 55-230.
Graves, Jewel; and Voran, Willis R., to U.S. Industries, Inc., mesne. Animal cage suspension system. 3,552,359, Cl. 119-48.
Green, Alan William, to Lancer Boss Limited. Lifting apparatus. 3,552,557, Cl. 214-620.
Greenberg, Allen A.: *See—*
De Laney, George E.; and Greenberg, Allen A.,3,552,711.
Greene, Samuel. Pool stabilizer and shock absorber. 3,551,920, Cl. 4-172.19
Greene, Stanley A.: *See—*
Ahlert, Robert C.; Silverman, Jacob; Greene, Stanley A.; and Young, Richard K.,3,552,126.
Greenhut, Joseph. Zero-lag electrical switching element for motors. 3,553,400, Cl. 200-80.
Greenough, Ronald L.: *See—*
Bos, Arie; and Greenough, Ronald L.,3,552,457.
Greenwald, Charles, to International Telephone and Telegraph Corporation. Multiplexing system. 3,553,380, Cl. 179-15.
Greenwood, Leon D., to FMC Corporation. Atomizing nozzle. 3,552,652, Cl. 239-77.
Gregori, Werner K. H., to Roher-Bohm Limited. Concrete form. 3,552,076, Cl. 52-309.
Gregory, Derek P., to Leesona Corporation, mesne. Electrochemical cell. 3,553,022, Cl. 136-86.
Gregory, Walter V., Jr., to Controlex Corporation. Tubular flexible remote multiple control. 3,552,218, Cl. 74-501.
Gregson, Robert Ernest, to Motorola, Inc. Automatically resetting over-voltage protection means for an alternating current circuit. 3,553,530, Cl. 317-16.
Greinacher, Ekkehard; and Brugger, Wilhelm, to Th. A.-G. Goldschmidt. Process of refining baddeleyite. 3,552,914, Cl. 23-19.
Greis, Howard A., to Control Molding Corporation. Rack structure. 3,552,612, Cl. 224-45.
Grenda, Victor J., to Merck & Co., Inc.3-(3',4'-Disubstituted phenyl)-2- methylaziridine-2-carboxylic acid or esters. 3,553,197, Cl. 260-239.

Gretchenliev, Hristo Ivanov; and Dimitrov, Gueorgui Stanoev, to NISI. Method for erecting multistory buildings. 3,552,080, Cl. 52-745.
Grettve, Karl Einar Lage, to Aktiebolaget Aero-Shaft, mesne. Roll spindle. 3,552,672, Cl. 242-72.
Gricol, Joseph D., to Concast Incorporated, mesne. Apparatus for removing gas from molten metal during continuous casting. 3,552,481, Cl. 164-260.
Griffith, Errol R.: *See—*
Markowitz, Jerome; and Griffith, Errol R.,3,553,336.
Griffith, George L., to Commerican Solvents Corporation. Process and apparatus for preparing detonating and deflagrating fuse and product. 3,552,259, Cl. 86-20.
Grigat, Ernst; and Putter, Rolf, to Farbenfabriken Bayer Aktiengesellschaft. Esters of cyanic acid. 3,553,244, Cl. 260-453.
Grill, Bernard; and Lee, Donald M., to Pall Corporation. Plate-fin heat exchanger. 3,552,488, Cl. 165-166.
Grob, Konrad, to Gutmann, Alfred, Gesellschaft fur Maschinenbau. Device for regaining components of knocked-out mold and core sand pieces. 3,552,662, Cl. 241-41.
Grob, Konrad: *See—*
Hadden, David R., Jr.; Goss, Lloyd C.; Grob, Konrad; and Hadden, David R., Jr.,3,553,661.
Groll, Hans-Robert, to Fernseh G.m.b.H. Method and system for generating color television signals without loss of vertical resolution. 3,553,356, Cl. 178-5.4
Gronemeyer, Erich W.: *See—*
Kutik, Louis F.; and Gronemeyer, Erich W.,3,551,936.
Groninger, Kurd G., to Sina AG. Device for measuring the relative moisture content of gases. 3,552,187, Cl. 73-29.
Gross, Arthur C. Photographing, developing and projecting apparatus and method. 3,552,851, Cl. 355-27.
Grosseau, Albert, to Citroen, Andre, Societe Anonyme. Synchronised gear box. 3,552,531, Cl. 192-53.
Grosser, William E., to Lockheed Aircraft Corporation. Rotary excitation device. 3,552,192, Cl. 73-71.5
Grosshans, Georges, Frederic: *See—*
Ollier, Jacques Honore Gaspard; Grosshans, Georges, Frederic; and Masson, Robert Gaston,3,552,634.
Grossman, Sidney. Electric toothbrush. 3,551,932, Cl. 15-23.
Grotheer, Morris P.; Currey, John E.; and Cook, Edward H., Jr., to Hooker Chemical Corporation. Method of producing alkali metal chlorate. 3,553,088, Cl. 204-95.
Grotnes Machine Works, Inc.: *See—*
Garver, Oscar W.; Ullman, Frederick E.; Stettler, Christian H.; and Kopp, Hans W., 3,553,418.
Garver, Oscar W.; Ullman, Frederick E.; Stettler, Christian H.; and Kopp, Hans W., 3,553,419.
Grunberg, Emanuel, to Hoffmann-La Roche Inc. Anti-tubercular benzophenone derivatives. 3,553,332, Cl. 424-330.
Guardian Electric Manufacturing Company: *See—*
Rowell, John J.; and Wright, William W., 3,553,616.
Guenther, William, to Lion Packaging Products Company, Inc. Method and apparatus for making interconnected bags having closure flaps and bottom gussets. 3,552,278, Cl. 93-8.
Guerrieri, Salvatore A., to Lummus Company, The. Reduction of metal sulfides. 3,552,948, Cl. 75-34.
Guertin, Jacques P.: *See—*
Christe, Karl O.; Guertin, Jacques P.; and Pavlath, Attila E.,3,552,936.
Guettinger, Kurt Konrad, to Dictaphone International AG. Foot switch for dictating machine. 3,553,405, Cl. 200-86.5
Guidelli Guidi, Guido: *See—*
Siano, Matteo; and Guidelli Guidi, Guido,3,553,461.
Gulf Research & Development Company: *See—*
Clampitt, Bert H.; Kochhar, Rajindar K.; Bartholomew, Robert K.; and Burrus, Harold L., 3,553,178.
Donaldson, Robert E.; Murphy, Harry C., Jr.; and Stauffer, Harry C., 3,553,107.
Giannetti, Joseph P.; Henke, Alfred M.; and Sebulsky, Raynor T., 3,553,151.
Hagar, Donald K., 3,551,981.
Hagar, Donald K.; and Pekarek, Joseph L., 3,552,412.
Hamilton, Harry A.; McIlvried, Howard G.; and Sebulsky, Raynor T., 3,553,106.
Haze, Stanley M.; and Heilman, William J., 3,553,177.
Hazen, Stanley M.; and Heilman, William J., 3,553,153.
Gunji, Harunobu; Ohkura, Noriyoshi; and Naganuma, Takashi, to Hitachi Cable, Ltd., and Hanashima Electric Wire Co., Ltd. Coil-forming insulated electric wires and method for shaping said wires into coils. 3,553,011, Cl. 117-218.
Gupta, Shanti S.; and Stamatis, Sam P., to Wells-gardner Electronics Corporation. Synchronous AM demodulator. 3,553,354, Cl. 178-5.4
Gutbrod, Hans: *See—*
Treus, Aloys; and Gutbrod, Hans,3,552,111.
Gutmann, Alfred, Gesellschaft fur Maschinenbau: *See—*
Grob, Konrad, 3,552,662.
Gutmann, Siegfried. Butt-joining of steel bars. 3,551,999, Cl. 29-517.
Gutsche, Walter; and Zirngibl, Hans, to Farbenfabriken Bayer Aktiengesellschaft. Process and apparatus for heating oxygen to high temperature. 3,553,527, Cl. 315-111.
Gutweiler, Klemens, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Ternary system for polyacetal stabilization. 3,553,117, Cl. 260-18.
Gutzwiller, Juerg Albert Walter; and Uskokovic, Milan Radoje, to Hoffmann-La Roche Inc.Certain intermediates for the production of β- collidine. 3,553,221, Cl. 260-290.
Haase, Charles A.: *See—*
Crain, Donald R.; and Haase, Charles A.,3,552,643.
Habegger, Harold. Guiding sleeve for automatic lathes with a sliding headstock. 3,552,243, Cl. 82-38.
Haberecht, Rolf R., to Texas Instruments, Incorporated. Dielectric bodies with selectively formed conductive or metallic portions, composites thereof with semiconductor material and methods of making said bodies and composites. 3,553,533, Cl. 317-101.
Habib, Emile E., to Deering Milliken Research Corporation. Continuous uniform grafting process for keratin fibers. 3,552,911, Cl. 8-128.
Habig, Helmut: *See—*
Eyberg, Willy; Fulber, Josef; and Habig, Helmut,3,551,945.
Hach Chemical Company: *See—*
Hach, Clifford C., 3,553,082.
Hach, Clifford C., to Hach Chemical Company. Method and means for detecting coliform bacteria in water. 3,553,082, Cl. 195-127.
Hacker, Hugh H., to Plastics, Inc. Knockdown spool. 3,552,677, Cl. 242-118.61
Hadden, David R., Jr.; Goss, Lloyd C.; Grob, Konrad; and Hadden, David R., Jr., to United States of America, Army Control Data Corporation United States of America, Army. First-in, first-out memory Position sensing and control apparatus Device for regaining components of knocked-out mold and core sand pieces First-in, first-out memory. 3,553,661, Cl. 340-174.
Hadden, David R., Jr.: *See—*
Hadden, David R., Jr.; Goss, Lloyd C.; Grob, Konrad; and Hadden, David R., Jr.,3,553,661.
Haenky, Norman H., to FWI, Inc. Cammed plug valve. 3,552,434, Cl. 137-556.
Hagan Industries, Incorporated: *See—*
Dvirka, Miro, 3,552,335.
Hagar, Donald K., to Gulf Research & Development Company. Method of sealingly seating an elongated object in an opening. 3,551,981, Cl. 29-157.
Hagar, Donald K.; and Pekarek, Joseph L., to Gulf Research & Development Company. Drill string dump valve. 3,552,412, Cl. 137-70.
Hagelbarger, David W.; and Kubik, Peter S., to Bell Telephone Laboratories, Incorporated. Batch fabrication of component boards. 3,552,004, Cl. 29-625.
Hahm, Heinz: *See—*
Beuchle, Friedrich; Hahm, Heinz; Klein, Hans Christof; and Beller, Hans,3,552,526.
Haines, Kenneth A.; and Hildebrand, Bernard P., to Battelle Development Corporation, The, mesne. Contour generation by wavefront reconstruction. 3,552,858, Cl. 356-109.
Hale, Thomas E.: *See—*
Reich, William A.; and Hale, Thomas E.,3,551,991.
Hall, C. M., Lamp Company: *See—*
Cummins, James M.; and Smith, Robert J., 3,552,229.
Shrode, Wilford B., 3,552,228.
Hall, Douglas Wilson: *See—*
Bird, Jack Raymond; Hall, Douglas Wilson; and Bye, Peter William John,3,552,898.
Hall, Gerald O.: *See—*
Hall, Richard N.; Dahl, John; and Hall, Gerald O.,3,552,180.
Hall, Gordon H., Inc.: *See—*
Toles, Frank R., 3,553,670.
Hall, Lewis E.; and Metz, Leonard. Photocomposing matrix. 3,552,291, Cl. 95-85.
Hall, Richard N.; Dahl, John; and Hall, Gerald O., to Hall Tool & Engineering, Inc. Automatic air operated feed unit. 3,552,180, Cl. 72-419.
Hall Tool & Engineering, Inc.: *See—*
Hall, Richard N.; Dahl, John; and Hall, Gerald O., 3,552,180.
Hall, Vriel A. Apparatus for transporting and lifting loads. 3,552,556, Cl. 214-512.
Haller, Herbert C., to Appleton Wire Works Corporation. Seam for woven papermaking fabrics. 3,552,691, Cl. 245-10.
Hallmark Cards, Incorporated: *See—*
Otto, Stanley W.; and Warrell, Seth W., 3,552,237.
Halmos, Imre Aurel; and Ricketts, Thomas Emory, to American Cyanamid Company. Preparation of d-2-amino-1-butanol salts. 3,553,257, Cl. 260-501.17
Hamacher, Paul, to Verwaltungsgellschaft Moeller und Neumann Offene Handelsgesellschaft. Plate trueing or flattening machine. 3,552,172, Cl. 72-249.
Hamaker, John D. Method and apparatus for the autogenous crushing of stone and the like. 3,552,660, Cl. 241-18.
Hamaker, John D.: *See—*
Englund, Robert M.; Wolf, Irving W.; and Hamaker, John D.,3,553,659.
Hamco Machine and Electronics Corporation: *See—*
Heinrich, Robert G., 3,552,584.
Hamel G.m.b.H. Zwirnerei-u. Spinnereimaschinen: *See—*
Scherf, Siegfried, 3,552,693.
Hamel G.m.b.H. Zwirnerei-und Spinnereimaschinen: *See—*
Treus, Aloys; and Gutbrod, Hans, 3,552,111.
Hamilton, Harry A.; McIlvried, Howard G.; and Sebulsky, Raynor T., to Gulf Research & Development Company. Catalytic removal of vanadium and nickel from oils. 3,553,106, Cl. 208-251.

Hammond, Robert J., to V-M Corporation. Circuitry for recording and reproducing video signal information as multiple limited bandwidth signals. 3,553,080, Cl. 178-6.

Hanashima Electric Wire Co., Ltd.: *See—*
Gunji, Harunobu; Ohkura, Noriyoshi; and Naganuma, Takashi, 3,553,011.

Handler, Kenneth J., to Wisconsin Machine Corporation. Press brake with hydraulic ram adjustment. 3,552,182, Cl. 72-432.

Handte, Heinz: *See—*
Sennewald, Kurt; Gehrmann, Klaus; Handte, Heinz; Erpenbach, Heinz; and Reis, Helmut,3,553,261.

Handy & Harman: *See—*
Mc Donald, Allen S., Jr., 3,552,954.

Hanes, Garnet R.; Dobrowolski, Jerzy A.; and Van der Hoeven, Cornelis J., to Canadian Patents and Development Limited. Variable interference reflector. 3,552,826, Cl. 350-166.

Hanff, Michel; and Juhel, Pierre, to Compagnie des Compteurs. Method and apparatus for measuring and controlling the range of acoustic emitters. 3,553,637, Cl. 340-5.

Hanft, Klaus-E., to Gebruder Netzsch, Maschinenfabrik. Apparatus for inverting fragile articles. 3,552,582, Cl. 214-1.

Hannig, Heinrich: *See—*
Reiter, Hans; Hannig, Heinrich; and Falkenrich, Heinrich,3,552,118.

Hansen, David E., to Eastman Kodak Company. Slide stack handling system for projectors. 3,552,846, Cl. 353-103.

Hansen, Donald E.: *See—*
Kaplan, Martin; Hansen, Donald E.; and Quist, Eric G.,3,553,730.

Hansen, Edward Norman. Fish trap. 3,552,054, Cl. 43-6.5

Hansen, Harold Valentine; Wolf, Lester Carl; McCumber, Virgil Robert; and Chidester, Robert Leroy, to Deere & Company. Seed selecting mechanism. 3,552,601, Cl. 221-219.

Hansen, Laurence H.: *See—*
Yang, Richard F. H.; and Hansen, Laurence H.,3,553,707.

Hanson, Lawrence G., to Burroughs Corporation. Data field transfer apparatus. 3,553,652, Cl. 340-172.5

Hanyu, Susumu; and Kasuga, Noboru, to Janome Sewing Machine Co., Ltd. Needle plate device for zigzag sewing machine. 3,552,337, Cl. 112-159.

Hara, Hikoharu; Yamamuro, Yoshio; and Asakawa, Motozumi, to Fuji Shashin Film Kabushiki Kaisha. Color developer composition. 3,552,967, Cl. 96-55.

Haraway, William M., Jr.; and Magee, Robert T., to United States of America, National Aeronautics and Space Administration. Thermal protection ablation spray system. 3,553,002, Cl. 117-104.

Harburger Fettchemie Brinckman & Mergell, G.m.b.H.: *See—*
Baltes, Josef; Weghorst, Friedrich; and Markus, Zdzislaw, 3,553,120.

Hardin, William W.; and Traglia, Patrick J., to International Business Machines Corporation. Format control in a character recognition system. 3,553,646, Cl. 340-146.3

Harding, John Patrick; and Burgess, Reginald Robert, to Her Majesty's Postmaster General. Wire connectors. 3,553,347, Cl. 174-84.

Hardman & Holden Limited: *See—*
Harris, James D.; and Ashurst, Colin D., 3,553,050.

Haresnape, John Norman: *See—*
Goble, Anthony George; and Haresnape, John Norman,3,553,281.

Harlander, Leslie A.; Boyer, Warren N.; and Jordan, Michael A., to Matson Navigation Company. Flexible hold structure in containership. 3,552,345, Cl. 114-72.

Harmon, James R., to Lumidor Products Corporation. Portable electric circuit tester having a pair of resistance indicating lamps. 3,553,572, Cl. 324-53.

Harreus, Albrecht: *See—*
Lederer, Michael; Koch, Heinrich; and Harreus, Albrecht,3,553,184.

Harris, George V., to Caterpillar Tractor Company, mesne. Pattern for making a sand mold with a back draft. 3,552,480, Cl. 164-245.

Harris, James D.; and Ashurst, Colin D., to Hardman & Holden Limited. Promoting the adhesion of halogen- containing resins to textiles. 3,553,050, Cl. 156-306.

Harris-Intertype Corporation: *See—*
Feick, Paul A., 3,552,281.
Staines, Alfred J., 3,552,741.

Harrison, Charles H.: *See—*
Andersen, Harold Willids; Andersen, Harold W.; and Harrison, Charles H.,3,552,083.

Harrison, John W.: *See—*
Staton, John C.; Keller, James P.; Kowalski, Ronald C.; and Harrison, John W.,3,551,943.

Hart, Michael Leonard: *See—*
Skinner, Charles Henry; and Hart, Michael Leonard,3,552,314.

Hartman, Byron King. Vibratory hopper and trough coupled as a two mass tuned vibratory system. 3,552,545, Cl. 198-220.

Hartman, Larry R., to Lear Siegler, Inc. Material handling tray. 3,552,592, Cl. 220-1.

Hartung, Hans, to Penn Elastic Company. Warp knit fabric and method. 3,552,155, Cl. 66-192.

Harvey Aluminum, (Incorporated): *See—*
Sumner, Edwin V.; Cole, Donald Q.; and Davis, Le Roy W., 3,551,996.

Harvey, Grahame J.; and Cameron, Donald I., to Lysaght, John, (Australia) Limited. Composition and process for inhibiting corrosion of zinc surfaces. 3,553,034, Cl. 148-6.2

Hascher, Antoine, to Franco-Indian Pharmaceuticals Private Limited. Psoralene and isopsoralene, process for their isolation and separation. 3,553,236, Cl. 260-343.2

Hasenbeck, Harold W. Automatic soil watering system. 3,553,481, Cl. 307-118.

Hashimoto, Hiroshi: *See—*
Kasahara, Tatsuo; Kazawa, Yoshiaki; Kurita, Isao; Ishibashi, Eiichi; and Hashimoto, Hiroshi,3,553,502.

Hass, Duane K.; Morales, Juan G.; and Whetstone, Richard R., to Shell Oil Company. Helminth control. 3,553,322, Cl. 424-219.

Hassett, Frank C., to RCA Corporation. RFI-protected flip-flop. 3,553,485, Cl. 307-202.

Hastings, Caryl C. B. Gas powered swimming aid. 3,552,347, Cl. 115-6.1

Hata, Yu, to TDK Electronics Company Limited. Parametron delay line. 3,553,477, Cl. 307-88.

Hata, Yu; and Fujishima, Hiroki, to TDK Electronics Company, Limited. Oscillating elements in parametron devices. 3,553,476, Cl. 307-88.

Hathaway, Homer L., to Westinghouse Air Brake Company. Central office control circuits for remote control systems. 3,553,449, Cl. 246-3.

Hatt, Brian William; and Smith, Harry, to Beecham Group Limied. Production of aminoacylpenicillins. 3,553,202, Cl. 260-239.1

Haubenhofer, Max: *See—*
Pischinger, Anton; and Haubenhofer, Max,3,552,146.

Haufe, Ted B.; and Uitti, Kenneth D., to Universal Oil Products Company. Separation method. 3,553,239, Cl. 260-412.8

Hauschild, Ulrich; Massonne, Joachim; and Schmidt, Hans Werner, to Kali-Chemie Aktiengesellschaft. Production of phosphate fertilizers. 3,552,944, Cl. 71-33.

Hauser, Richard, to Westinghouse Electric Corporation. Disconnecting contact assembly. 3,553,407, Cl. 200-166.

Hausslein, Robert W.; Walitt, Arthur L.; and Molvar, Henry E., Jr., to Amicon Corporation. Reaction product of a hydroxyacrylate and an aliphatic isocyanate and transparent article made therefrom. 3,553,174, Cl. 260-77.5

Hauth, Hartmut; and Stauffacher, Dietrich, to Sandoz Ltd., a/k/a Sandoz AG. Alicyclic compounds. 3,553,251, Cl. 260-468.5

Havens, Arthur B., to Owens-Corning Fiberglas Corporation. Movable wall construction for glass fiber forming hoods and the like. 3,553,053, Cl. 156-371.

Haver, William B.; and Reimers, James L., to FMC Corporation. Method of pitting split-pit peaches. 3,552,464, Cl. 146-237.

Hawes, Edward M. Soil penetration and shear measuring instrument. 3,552,194, Cl. 73-84.

Hawkins, Frederick E., to Certain-Teed Products Corporation. Method for making asbestos-cement shapes. 3,552,985, Cl. 106-99.

Hawkins, Paul Maddison, to General Alarm Corporation. Door locking system. 3,553,721, Cl. 200-61.64

Hawks, Thomas R. Bridge adjustment for bifocal eyeglasses. 3,552,838, Cl. 351-55.

Hayakawa, Shigeru: *See—*
Ikushima, Hiroshi; and Hayakawa, Shigeru,3,553,134.

Hayami, Akira: *See—*
Aoki, Yoshikazu; Kamei, Teruji; Hayami, Akira; and Kitano, Masahiro,3,553,078.

Hayamizu, Kou-Ichi, to Mitsubishi Denki Kabushiki Kaisha. Bias control circuit for semiconductor amplifier. 3,553,599, Cl. 330-29.

Hayes, Albert Thomas: *See—*
Woodward, Thomas George; Wright, Eric John; and Hayes, Albert Thomas,3,552,449.

Hayes, Edward J., to Kelsey-Hays Company. Disk brake caliper and mounting structure. 3,552,527, Cl. 188-73.3

Hayes, Thomas E., to Penn Controls, Inc. Boiler control using rod and tube type temperature sensor. 3,552,646, Cl. 236-20.

Haze, Stanley M.; and Heilman, William J., to Gulf Research & Development Company. Processing of forming copolymers of maleic anhydride and an aliphatic olefin having at least 30 carbon atoms. 3,553,177, Cl. 260-78.5

Hazeltine Research, Inc.: *See—*
Charlton, Gregory G., 3,553,706.

Hazen, Stanley M.; and Heilman, William J., to Gulf Research & Development Company. Curable resin composition containing a saturated monooxirane compound, a solid polyanhydride, water and a soluble tertiary amine; and method of production and article. 3,553,153, Cl. 260-29.6

Hazleton, Herbert T.: *See—*
Dalzell, James W.; Hazleton, Herbert T.; and Thorsteinsson, John B.,3,553,624.

Head, William John, to Electro Tech Appliance Service Limited. Theft alarm system utilizing a bridge having a capacitive voltage divider. 3,553,674, Cl. 340-280.

Heath, Robert T.: *See—*
Webb, Richard C.; and Heath, Robert T.,3,553,436.

Heckmaier, Joseph; and Kunstle, Gerhard, to Wacker-Chemie G.m.b.H. Process for producing saturated carboxylic acids. 3,553,188, Cl. 260-413.

Heh, George J., to American Air Filter Company, Inc. Method for forming two-layered expanded filamentous mat in which one layer is compressed to form a skin-back layer. 3,553,045, Cl. 156-174.

Heiberger, Francis E., to Danly Machine Corporation. System for aligning and synchronously driving units of a press without mechanically interlinking them. 3,553,547, Cl. 318-85.

Heidelberger Druckmaschinen Aktiengesellschaft: *See—*
Jeschke, Willi, 3,552,313.

Heilman, William J.: *See—*
Haze, Stanley M.; and Heilman, William J.,3,553,177.
Hazen, Stanley M.; and Heilman, William J.,3,553,153.

Hein, Delton William; Wehner, Donald Clifford; and Welcher, Richard Parke, to American Cyanamid Company. Method of inhibiting evolution of hydrogen cyanide from organic thiocyanate compositions. 3,553,243, Cl. 260-454.

Hein, Gary L., to Lincoln Laboratories, Inc. Drop dispenser with vent. 3,552,605, Cl. 222-207.

Heine, Diez: *See—*
Schnoring, Hildegard; Classe, Willy; Heine, Diez; Nordt, Herbert; and Kreutzer, Karl-Heinz,3,553,186.

Heine, John C.: *See—*
Karnopp, Dean C.; and Heine, John C.,3,553,391.

Heinert, Dietrich H., to Dow Chemical Company, The. Process for making foamed resins. 3,553,113, Cl. 260-2.5

Heinrich, Lawrence O.; and Wilcox, Joseph E., to United Air Lines, Inc. Self-locking device for couplings. 3,552,777, Cl. 285-81.

Heinrich, Robert G., to Hamco Machine and Electronics Corporation. Work handling device. 3,552,584, Cl. 214-8.5

Heinz, Karl Heinrich. Trigger swing protract-retract mechanism for ball point pens having different colored ink reservoirs. 3,552,867, Cl. 401-110.

Heinzmann, Werner; and Pfahl, Siegfried, to Messerschmitt-Bolkow Gesellschaft mit beschrankter Haftung. Flexible signal transmission cable. 3,553,349, Cl. 174-113.

Heiser, Kenneth PR.; and Frerichs, Kenneth E., to International Inpak Incorporated. Packaging machines. 3,552,093, Cl. 53-373.

Heitmann, Robert. Hydraulically operated power press. 3,552,183, Cl. 72-450.

Heldt, Wolfgang Karl Joachim, to Gallaher Limited. Apparatus for inhalation tests with rodents. 3,552,380, Cl. 128-2.

Helland, Arvid Frimann, to Raufoss Ammunisjonsfabrikker. Pipe or hose coupling. 3,552,781, Cl. 285-322.

Hellige, Fritz, & Co. G.m.b.H.: *See—*
Weber, Paul A., 3,553,535.

Helpio, Pentti Kalervo, to Uudenkaupungin Telakka Oy. Central heating boiler. 3,552,361, Cl. 122-22.

Heltsley, Fred L.: *See—*
Kroeger, Richard A.; Heltsley, Fred L.; and Smith, Morris R.,3,552,202.

Hemminger, James W., to American Metal Climax, Inc. Spacer in a mullion wall construction. 3,552,077, Cl. 52-393.

Hemmings, Robert; and Hunt, John William Archibald, to Lucas, Joseph, (Industries) Limited. Permanent magnet rotor assembly directly secured on now-magnetic shaft. 3,553,511, Cl. 310-156.

Henderson, Homer I. Dual-conduit drill pipe for earth boring. 3,552,779, Cl. 285-133.

Hendricks, Grover E. Load distributing trailer hitch. 3,552,771, Cl. 280-406.

Henke, Alfred M.: *See—*
Giannetti, Joseph P.; Henke, Alfred M.; and Sebulsky, Raynor T.,3,553,151.

Henkel & Cie GmbH: *See—*
Lindner, Kurt; and Eichler, Elfriede, 3,553,140.

Henn, Richard W.; King, Nancy H.; and Surash, John J., to Eastman Kodak Company. Photographic compositions and processes. 3,552,969, Cl. 96-66.

Hennig, Erich, to Teves, Alfred, G.m.b.H. Method of treating brake disks. 3,553,007, Cl. 117-120.

Henrioulle, Paul: *See—*
Delbouille, Andre; and Henrioulle, Paul,3,553,287.

Henry, William R.: *See—*
Thompson, Charles T.; Kidd, Frank B.; and Henry, William R.,3,552,505.

Hepp, Gunter; Brockmann, Christian; and Pohl, Hans Christoph, to Koppers-Wistra-Ofenbau Gesellschaft mit beschrankter Haftung. Slideway construction. 3,552,729, Cl. 263-6.

Hepp, Harold J., to Phillips Petroleum Company. Hydrogen manufacture. 3,552,924, Cl. 23-212.

Hepp, Rudolf. Apparatus for the destacking of sheets especially folded sheets adapted to receive an insert. 3,552,740, Cl. 271-12.

Hepplewhite, Herbert L.; and Bieber, Henry E., deceased0 (by Bieber, Dianne; executrix), to Mobil Oil Corporation. Lubricant containing an amine-phosphonate combined additive. 3,553,131, Cl. 252-46.7

Her Majesty's Postmaster General: *See—*
Harding, John Patrick; and Burgess, Reginald Robert, 3,553,347.

Herbert, William; and Riedel, James H., to Black Clawson Company, The. Disk type refiners. 3,552,664, Cl. 241-260.

Hercules Concrete Pumps, Inc.: *See—*
Smith, Thomas H., 3,552,440.

Herman, Walter H., to Scott Paper Company. Web winding apparatus. 3,552,670, Cl. 242-56.

Hermann, Friedrich, to Golde, H. T., G.m.b.H., Firma. Device for opening and closing a window. 3,552,061, Cl. 307-235.

Hermann, Karl Heinz; Bockmann, August; and Rudolph, Hans, to Farbenfabriken Bayer Aktiengesellschaft. Polyamides stabilized against degradation with copper salts and phosphine halides. 3,553,161, Cl. 260-45.75

Hermanns, Otto E.; and Cooper, Ralph F., to Goodrich, B. F., Company, The. Tire uniformity machine. 3,552,200, Cl. 73-146.

Hernandez, Jorge, to SCM Corporation. Multi-cipher entry. 3,553,445, Cl. 235-156.

Herr Equipment Corporation, The: *See—*
Kinnavy, Martin G., 3,552,175.

Herr, Jean L.,: *See—*
Kinnavy, Martin G., 3,552,175.

Herr, Richard W.: *See—*
Kinnavy, Martin G., 3,552,175.

Hersey-Sparling Meter Company: *See—*
Brock, Gordon L.; and Armstrong, Charles H., 3,553,605.

Herzenberg, Jean: *See—*
Covini, Romano; Pieroni, Marcello; and Herzenberg, Jean,3,553,222.

Herzog, Gordon William, to Canadian General Electric Company, Limited. Field winding for synchronous motors. 3,553,552, Cl. 318-183.

Heseding, Josef, to Ruhrgas Aktiengesellschaft. Method of testing work pieces by means of ultra- sound waves according to the impulse echo method. 3,552,191, Cl. 73-67.7

Hester, Clarence H.; and Weeden, Frank G., to Dore', John L., Co. Vacuum breaker device. 3,552,426, Cl. 137-375.

Hester, Jackson B., Jr., to Upjohn Company, The. 4-(1,4,5,6-Tetrahydroazepine(4,5-b)indole-3(2H)- butyrophenones. 3,553,232, Cl. 260-326.5

Hettich, Bernhard; Kammerer, Heinrich; and Fleck, Friedrich, to Kienzle Apparate G.m.b.H. Apparatus for processing cards having printed and recorded data. 3,552,738, Cl. 271-3.

Hetzel, Carl P.: *See—*
Bouchard, Edward F.; and Hetzel, Carl P.,3,552,977.

Hewett, Colin Leslie; and Savage, David Samuel, to Organon Inc.2β, 16β-Diamino-androstanes. 3,553,212, Cl. 260-239.5

Hewitt-Robins Incorporated: *See—*
Adler, Imre, 3,552,585.

Hewlett-Packard Company: *See—*
Horth, Thomas C., 3,552,386.

Hexcel Corporation: *See—*
Schudel, Conrad R., 3,552,525.

Heyer Inc.: *See—*
Springer, Edward M., 3,552,702.

Heymann, Kurt, to Schering AG. Method of preparing surfaces of plastic for electro-deposition. 3,553,085, Cl. 204-30.

Hicks, Harris Vernon, to Lucas, Joseph, (Industries) Limited. High intensity vehicle lamp with shield preventing unwanted reflection. 3,553,519, Cl. 313-113.

Hicks, Harris Vernon, to Lucas, Joseph, (Industries) Limited. High intensity driving lamps particularly for road vehicles. 3,553,520, Cl. 313-113.

Hildebrand, Bernard P.: *See—*
Haines, Kenneth A.; and Hildebrand, Bernard P.,3,552,858.

Hildebrand, James Ross; Lightner, Linn Stephen; and Watson, John Edward, to AMP Incorporated. Electrical connector. 3,553,632, Cl. 339-176.

Hilgendorf, Joachim: *See—*
Madge, Werner; and Hilgendorf, Joachim,3,553,649.

Hill, Donald G., to Litton Precision Products, Inc. Magnetron with improved vane and strap structure. 3,553,524, Cl. 315-39.59

Hillnhagen, Emil: *See—*
Hirschfeld, Dieter; and Hillnhagen, Emil,3,552,000.

Hillstrom, David U., to Marketing/Displays, inc. Display frame having adjustable hanging clip. 3,552,708, Cl. 248-498.

Hilti Aktiengesellschaft: *See—*
Udert, Karl-Ernst, 3,552,625.

Himmelmann, Wolfgang: *See—*
Meyer, Karl-Otto; Schiffmann, Richard; and Himmelmann, Wolfgang,3,552,972.

Hino, Naganori: *See—*
Mine, Akihiko; Hino, Naganori; Fujinami, Akira; Nodera, Katsuji; Horiuchi, Fukashi; and Nishizawa, Yoshihiko,3,553,252.

Hirai, Hajime; Fujimoto, Keimei; Okuno, Yositosi; Ogawa, Taizo; and Yoshioka, Hirosuke, to Sumitomo Chemical Company, Ltd. O-Alkyl-O-p-substituted phenyl 2-thienyl phosphonothioates. 3,553,233, Cl. 260-329.

Hirano, Itsuro. Method of adjusting a butterfly valve seal. 3,552,407, Cl. 137-15.

Hire, Charles John, to Fasco Industries, Inc. Pressure switch with improved diaphragm and snap action disc structure. 3,553,402, Cl. 200-83.

Hirn, Hans: *See—*
Cassai, Eugene; and Hirn, Hans,3,551,993.

Hirschfeld, Dieter; and Hillnhagen, Emil, to Beteiligungs-und Patentverwaltungsgesellschaft mit beschrankter Haftung. Method of manufacturing dispersion-hardened workpieces. 3,552,000, Cl. 29-527.2

Hitachi Cable, Ltd.: *See—*
Gunji, Harunobu; Ohkura, Noriyoshi; and Naganuma, Takashi, 3,553,011.

Hitachi, Ltd.: *See—*
Kasahara, Tatsuo; Kazawa, Yoshiaki; Kurita, Isao; Ishibashi, Eiichi; and Hashimoto, Hiroshi, 3,553,502.

Hitachi Maxell, Ltd.: *See—*
Omori, Mineharu; Terayama, Kozo; Matsubara, Shozo; Shigematsu, Tatsuo; and Kido, Gen, 3,552,011.

Hittepole, Lester P. Cutting apparatus for sheet material. 3,552,016, Cl. 30-283.

Hobart Manufacturing Company, The: *See—*
Athey, Stuart E., 3,552,215.

Hock, Fromund; Lang, Karl; and Lussem, Heribert, to Leitz, Ernst, G.m.b.H., Fa. Optical device for the determination of the spacing of an object and its angular deviation relative to an initial position. 3,552,857, Cl. 356-73.

Hockin, John, to Martin Metals Company, mesne. Casting process involving cooling of a shell mold prior to casting metal therein. 3,552,479, Cl. 164-65.

Hodan, James J.; and Schall, William L., to Hooker Chemical Corporation. Hydrolytic stabilized of phosphite esters. 3,553,298, Cl. 260-967.

Hodges, Howard T., to Eastman Kodak Company. Clamped photoconductive unit for electrophotography. 3,552,957, Cl. 96-1.5

Hodges, Ralph R., to Empire Stove Company. Conduit assembly. 3,552,377, Cl. 126-85.

Hoegl, Helmut; and Barchietto, Giacomo, to Battelle Memorial Institute. Process of preparing an electrophotographic material. 3,553,009, Cl. 117-201.

Hoffman, Harry S., Jr.: *See—*
Cielo, John R.; and Hoffman, Harry S., Jr.,3,553,620.

Hoffman, Howard S., to G & H Mechanical Laboratory, INc. Dispenser for like-sized balls. 3,552,600, Cl. 221-1.

Hoffman, Lewis C., to Du Pont de Nemours, E. I., and Company. Resistor compositions containing pyrochlore- related oxides and noble metal. 3,553,109, Cl. 252-514.

Hoffmann-La Roche Inc.: *See—*
Archer, Giles A.; and Sternbach, Leo Henryk, 3,553,199.
Grunberg, Emanuel, 3,553,332.
Gutzwiller, Juerg Albert Walter; and Uskokovic, Milan Radoje, 3,553,221.
Kaiser, Ado; and Langemann, Albert, 3,553,258.
Leimgruber, Willy; and Mohacsi, Ernest, 3,553,223.
Mount, Bruce Elson, 3,552,382.
Wehrli, Pius Anton; Fryer, Rodney Ian; and Sternbach, Leo Henryk, 3,553,206.

Hofgen, Gunter, to International Standard Electric Corporation. Electronic goniometer. 3,553,590, Cl. 328-24.

Hofmeier, Hermann: *See—*
Reese, Eckart; Rohm, Wilhelm; Hofmeier, Hermann; Bottenbruch, Ludwig; and Schnell, Hermann,3,553,304.

Hogan, William J., to Sybron Corporation. Automatic film loader for X-ray machine. 3,553,453, Cl. 250-66.

Hogstrom, Bo: *See—*
Vogl, Georg; and Hogstrom, Bo,3,552,834.

Holden, David J., to Frost, George, Company. Protective helmet and method of making same. 3,551,911, Cl. 2-3.

Holley Carburetor Company: *See—*
Slitti, Ralph L., Jr.; Noble, Donald G.; and Shunn, William F., 3,552,367.

Holman, Howard E., to Kaman Corporation. Music amplifier with tone modifying stage. 3,553,338, Cl. 84-1.14

Holtschmidt, Hans: *See—*
Wieden, Horst; Rellensmann, Wolfgang; Holtschmidt, Hans; Roos, Ernst; and Nischk, Gunther,3,553,173.

Holub, Fred F., to General Electric Company. Siloxane containing polyamide acid blends. 3,553,282, Cl. 260-824.

Holybee, Leslie D., to Beckman Instruments, Inc. Multiple sample applicator. 3,552,623, Cl. 222-276.

Homura, Rikichi: *See—*
Kitagawa, Kenichi; Kadono, Akira; Homura, Rikichi; and Ohta, Mitsuhiro,3,552,121.

Honeyell Inc.: *See—*
Ohnsorg, Ferdinand R., 3,553,723.

Honeywell Inc.: *See—*
Freeborn, John C., 3,553,487.
Kruy, Joseph F., 3,553,446.
Nogami, Iwao, 3,553,591.
Osen, Ralph T.; and Bolster, Keith D., 3,553,399.
Sands, Timothy B., 3,552,217.
Walsh, Dale M., 3,553,595.

Honig, William, to Loral Corporation. Transmitter piezoelectric power supply. 3,553,588, Cl. 325-119.

Honjo, Satoru: *See—*
Sadamatsu, Shigeru; and Honjo, Satoru,3,552,956.

Hooker Chemical Corporation: *See—*
Grotheer, Morris P.; Currey, John E.; and Cook, Edward H., Jr., 3,553,088.
Hodan, James J.; and Schall, William L., 3,553,298.
Murphy, Donald P., 3,553,144.
Vullo, William J., 3,552,909.
Wagner, George M.; and Vullo, William J., 3,552,910.

Hooper, George H., 1/2 to Finkelstone, Douglas A. High pressure resistant cofferdam. 3,552,129, Cl. 61-34.

Hoos, Pieter F., to Walworth Company. Plug valve with a flexible port plate. 3,552,716, Cl. 251-184.

Hoover Aircraft Products Co.: *See—*
Fairchilds, Bert S., 3,552,466.

Hopkins, William J., to Randcar Corporation, mesne. Indicating means. 3,553,671, Cl. 340-267.

Horanoff, Eugene V., to United States of America, Navy. Windtunnel roll-moment balance. 3,552,201, Cl. 73-147.

Horeczky, Geza, to Dashaveyor Company, The. Railway control system. 3,552,692, Cl. 246-63.

Horiuchi, Fukashi: *See—*
Mine, Akihiko; Hino, Naganori; Fujinami, Akira; Nodera, Katsuji; Horiuchi, Fukashi; and Nishizawa, Yoshihiko,3,553,252.

Horizons Unlimited Problems Solved by Ideas Corporation (HUPSI): *See—*
Launder, James M., 3,552,358.

Horizons Unlimited-Problems Solved by Ideas Corporation: *See—*
Launder, Mark, 3,553,441.

Horl, Walter: *See—*
Kohlschutter, Hanswolfgang; Getrost, Helmut; Reich, Walter; Rossler, Hubert; and Horl, Walter,3,553,001.

Hormann, Frank R.: *See—*
Briechle, Joseph, 3,553,611.

Hornbostel, Lloyd, Jr., to American Can Company. Molding apparatus. 3,553,079, Cl. 162-383.

Horth, Thomas C., to Hewlett-Packard Company. Arrhythmia detecting apparatus and method. 3,552,386, Cl. 128-2.06

Horton, William H.; and Palmer, Allan M., to Eastman Kodak Company. Flash camera. 3,552,286, Cl. 95-11.

Hoshi, Hiroshi: *See—*
Susuki, Rinosuke; Hoshi, Hiroshi; Saito, Jiro; and Ito, Humio,3,553,302.

Hosmer, Thomas P.: *See—*
Doherty, Paul R.; and Hosmer, Thomas P.,3,552,931.

Hotchkiss, Thomas W.; and Markus, Richard L., to Rayrivet, Inc., mesne. Fluid actuated riveting apparatus. 3,552,628, Cl. 227-51.

Hotta, Tomio: *See—*
Kurimura, Shizuo; Machida, Kazuya; and Hotta, Tomio,3,553,711.

Hottel, Hoyt Clarke, Jr.: *See—*
Schiff, Daniel; and Hottel, Hoyt Clarke, Jr.,3,553,639.

Houdaille Industries, Inc.: *See—*
Davis, George H., 3,551,980.
McLean, Ronald L., 3,552,230.

Howard, Ronald W.; Atkin, Roy; and Bishop, Geoffrey S., to Elliott Brothers (London) Limited. Aircraft alignment systems. 3,552,687, Cl. 244-77.

Howard, Sam B., to Mead Corporation, The. Method for displaying an assembly of like articles. 3,552,082, Cl. 53-32.

Howe, Ralph S., Jr., to Textron Inc. Angular-contact bearing construction. 3,552,812, Cl. 308-189.

Howe, William J. Low aerial burst detonating device. 3,552,326, Cl. 102-7.2

Howey, Kenneth Clayton, to Lucas, Joseph, (Industries) Limited. Rotor for permanent magnet alternator. 3,553,510, Cl. 310-156.

Hrdlicka, Jiri: *See—*
Bezouska, Vlastimil; Pivrnec, Jan; Hrdlicka, Jiri; Krasa, Evzen; and Smekal, Zdenek,3,553,538.

Hrivnak, Pavol; Ondrejmiska, Koloman; Pechar, Amadeus; and Koren, Jan, to Vyskumny ustav chemickych vlakon. Device for the feeding of mixtures into melted masses of synthetic polymers. 3,552,603, Cl. 222-1.

Hubbell, Harvey, Incorporated: *See—*
Fee, Richard A., 3,553,475.

Hubert, Lawrence J.: *See—*
Gingher, Geroge C., Jr.; and Hubert, Lawrence J.,3,552,162.

Hughes Aircraft Company: *See—*
Fujimoto, Katsuyoshi, 3,553,515.
Walsh, Bernard L., Jr., 3,553,584.

Hughes, Thomas H. K.: *See—*
Lawrence, Ernest G.; and Hughes, Thomas H. K.,3,552,828.

Hull, R. Dell. Spinning reel. 3,552,674, Cl. 242-84.2

Hultsch, Gunther, to Krauss-Maffei Aktiengesellschaft. Centrifuge. 3,552,575, Cl. 210-369.

Hunkeler, Ernst J.; Beman, Earl Roy; and Whalley, Frank M., to Gleason Works, The. Workhead assembly and mounting therefor, in bevel gear making machines. 3,552,262, Cl. 90-5.

Hunkeler, Ernst J.; Remmeli, Charles E.; and Waasdorp. Robert A., to Gleason Works, The. Means for balancing cradle of gear cutting machine. 3,552,260, Cl. 90-1.

Hunkeler, Ernst J.; Smith, Frank A.; and Walrath, Frederick C., to Gleason Works, The. Cradle assembly for gear cutting machine and means for moving cradle axially. 3,552,263, Cl. 90-5.

Hunkeler, Ernst J.; and Wrubleski, Felix P., to Gleason Works, The. Bevel gear making. 3,552,261, Cl. 90-5.

Hunt, John William Archibald: *See—*
Hemmings, Robert; and Hunt, John William Archibald,3,553,511.

Hunt, Oliver Larry, to Du Pont de Nemours, E. I., and Company. Spandex fibers stabilized with condensates of substituted phenols and divinyl benzene. 3,553,290, Cl. 260-859.

Hunter, Don L.: *See—*
Woods, William G.; Bengelsdorf, Irving S.; and Hunter, Don L.,3,553,170.

Hunter, James R.; Ruff, Donald O.; and Huntzinger, Gerald O., to General Motors Corporation. Current responsive converter circuit. 3,552,368, Cl. 123-148.

Hunter, Lee. Vehicle wheel alignment diagnosis center and alignment apparatus therefor. 3,552,024, Cl. 33-46.

Huntzinger, Gerald O.: *See—*
Hunter, James R.; Ruff, Donald O.; and Huntzinger, Gerald O.,3,552,368.

Hureau, Jacques, to Generale Alimentaire. Electric cable with grounding means. 3,553,341, Cl. 174-6.

Hurst, Raymond M.: *See—*
Hurst, Richard M.; and Hurst, Raymond M.,3,552,471.

Hurst, Richard M.; and Hurst, Raymond M. Window and screen assembly. 3,552,471, Cl. 160-27.

Huther, Gerhard, to VEB Carl Zeiss Jena. Automatic leveling telescope including a reversible two-sided pendulum mirror. 3,552,866, Cl. 356-250.

Hwang, Seong Tae: *See—*
Layng, Edwin T.; Stotler, Harold H.; and Hwang, Seong Tae,3,553,105.

Hydro Cycle Inc.: *See—*
Snow, Harvey L., 3,552,349.

Hydrocarbon Research, Inc.: *See—*
Layng, Edwin T.; Stotler, Harold H.; and Hwang, Seong Tae, 3,553,105.

Hydrotile Machinery Company: *See—*
Fosse, Navarro T.; and Peninger, Harvey N., 3,551,968.

Idemitsu Petrochemical Co., Ltd.: *See—*
Tokumitsu, Ichiro; and Okamura, Mitsumaro, 3,552,487.

IIT Research Institute: *See—*
Anderson, Marvin E.; Van Scoyoc, James N.; Owen, Donald B.; and Van Den Heuvel, Anthony P., 3,553,716.

Ikushima, Hiroshi; and Hayakawa, Shigeru, to Matsushita Electric Industrial Co., Ltd. Semiconductor piezoelectric ceramics and method for making the same. 3,553,134, Cl. 252-62.9

Illinois Tool Works Inc.: *See—*
Melone, Robert R., 3,553,666.

Iltis, Rumult, to McGraw-Edison Company. Two switch control system for measuring minimum size articles moving in closely following succession. 3,552,737, Cl. 270-84.

Immega, Guy. Latrine closure mechanism. 3,551,917, Cl. 4-144.

Imperial Chemical Industries Limied: *See—*
Duxbury, Frederick Keith; Mountfield, Brian Arthur; and Oldham, Joseph, 3,553,289.

Imperial Chemical Industries Limited: *See—*
Anderson, Robert Craig; Burns, Ernest Bingham; and Cross, Graham Westwood, 3,553,318.
Anderton, Catherine Margaret; Fishwick, Brian Ribbons; and Lawson, John, 3,553,190.
Cass, Michael, 3,552,996.
Corran, John Anthony, 3,553,219.
Dijkstra, Albert Jan; Goodman, Isaac; and Reid, James Angus Wilson, 3,553,157.
Rollason, Christopher John; and Tinsley, Gerald Henry Sutcliffe, 3,552,679.

Imperial Chemical Industries of Australia and New Zealand Limited: *See—*
Badham, John Wilkinson, 3,552,932.

Inamoto, Yoshiaki: *See—*
Oda, Tomikazu; Inamoto, Yoshiaki; Morikawa, Takeshi; Oo, Kogen; and Nakatani, Umewaka,3,553,288.

Industrial Filter & Pump Mfg. Co.: *See—*
Zievers, James F.; Rietesel, Russell W.; and Schmidt, Henry, Jr., 3,552,569.
Zievers, James F.; and Borre, Earl A., 3,553,012.

Industrial Nucleonics Corporation: *See—*
Freeh, Edward J., 3,552,203.

Industriewerk Schauenstein: *See—*
Schuler, George; Schmidt, Walter; and Vogel, Karl, 3,552,151.

Ingersoll-Rand Company: *See—*
Peterson, Carl R., 3,552,500.

Ingraham Company, The: *See—*
Sidell, Philip Alden; and Clifford, Cecil Frank, 3,552,116.

Inklaar, Petrus Adam, to Vasco Industries Corporation. Method for improving the quality of meat- containing foods. 3,552,978, Cl. 99-107.

Inland Container Corporation: *See—*
Ketler, Lester K., 3,552,633.

Inman, Harry E., to Lilly, Eli, and Company. Manual capsule filling apparatus. 3,552,095, Cl. 53-390.

Inoue, Kiyoshi. Impact deposition of particulate materials. 3,552,653, Cl. 239-81.

Institut de Recherche Scientifique (I.R.S.): *See—*
Sarbach, Raymond Francois Jacques; and Yavordios, Dimitri, 3,553,262.

Instron Corporation: *See—*
Belliveau, Robert J., 3,552,193.

Interlake Steel Corporation: *See—*
McNeff, George A., 3,552,301.
Thompson, Harry W., 3,552,648.

International Agri-Systems, Inc.: *See—*
Crane, Edward J., 3,551,942.

International Business Machines Corporation: *See—*
Anderson, David W.; and Sparacio, Francis J., 3,553,655.
Cielo, John R.; and Hoffman, Harry S., Jr., 3,553,620.
Hardin, William W.; and Traglia, Patrick J., 3,553,646.
Krueger, Dean T. E.; and Sheppard, Louis C., 3,552,383.
Lima, Joseph H.; Marquis, Donald A.; and Sternberg, Herwig, 3,551,986.
Orlando, Anthony W.; and Pantusco, Anthony A., 3,552,177.
Pricer, Wilbur D., 3,553,658.
Schulz, Raymond A., 3,553,491.
Wellbrock, Anton G., 3,552,825.

International Flavors & Fragrances, Inc.: *See—*
Mitchell, Peter W. D.; and Blumenthal, Jack H., 3,553,110.

International Harvester Company: *See—*
Schroeder, Ronald C.; and Dowler, Robert L., 3,552,227.

International Inpak Incorporated: *See—*
Heiser, Kenneth PR.; and Frerichs, Kenneth E., 3,552,093.

International Lead Zinc Research Organization, Inc.: *See—*
Willemsens, Louis C., 3,553,240.

International Nickel Company, Inc., The: *See—*
Schelleng, Robert D., 3,552,951.
Shaw, Stuart Walter Ker, 3,552,952.

International Standard Electric Corporation: *See—*
Cattermole, Kenneth William, 3,553,677.
Gassmann, Gerhard Gunter, 3,553,484.
Hofgen, Gunter, 3,553,590.
Reeves, Alec Harley; and Barton, Paul, 3,553,678.
Rochtus, Gustaaf, 3,553,383.
Wells, George William, 3,553,387.
Wright, Esmond Philip Goodwin; and Bezdel, Wincenty, 3,553,372.

International Telephone and Telegraph Corporation: *See—*
Babb, Burton A.; Erst, Stephen J.; and Cook, Wendell A., 3,552,854.
Greenwald, Charles, 3,553,380.
Schierhorst, Albert E.; and Niemeyer, Edward H., 3,553,718.
Spanos, William M., 3,553,702.

Inventa A.G. fur Forschung und Patentverwertung: *See—*
Gehring, Albert; Bertrossa, Guiseppe; and Schultze, Hans-Joachim, 3,553,204.

Ireland, John Richard: *See—*
Curran, John Patrick Stewart; and Ireland, John Richard,3,552,889.

Ishibashi, Eiichi: *See—*
Kasahara, Tatsuo; Kazawa, Yoshiaki; Kurita, Isao; Ishibashi, Eiichi; and Hashimoto, Hiroshi,3,553,502.

Ishikawa, Toshikatsu; and Morishita, Masutaka, to Nippon Carbon Company, Limited. Method for the manufacture of carbon fiber. 3,552,922, Cl. 23-209.1

Ishizaki, Shunzo: *See—*
Shima, Takeo; Asami, Yukiharu; Ishizaki, Shunzo; Kawase, Shoji; and Yoshimura, Masao,3,552,999.

Ito, Akihiko: *See—*
Yamashina, Hisao; Ito, Akihiko; Iwai, Tadashi; Yayashi, Koichiro; and Okamura, Seizo,3,553,090.

Ito, Humio: *See—*
Susuki, Rinosuke; Hoshi, Hiroshi; Saito, Jiro; and Ito, Humio,3,553,302.

Ivanov, Ivan Petrovich; Bespalov, Alexandr Vasilievich; and Ananiev, Pavel Pavlovich, to Leningradskoe Proizvodstvennol Obiedinenie Radiodetal. Machine for assembling metallized resistors. 3,551,985, Cl. 29-203.

Ivanova, Tatiana Lukianovna: *See—*
Astafiev, Georgy Vasilievich; Ozhgikhin, Anatoly Nikolaevich; Babkin, Svetoslav Ivanovich; Androsov, Pavel; and Ivanova, Tatiana Lukianovna,3,552,626.

Iwabuchi, Makoto: *See—*
Mori, Tetsuo; Iwabuchi, Makoto; Yoshioka, Hideoki; and Ono, Kenji,3,553,729.

Iwai, Tadashi: *See—*
Yamashina, Hisao; Ito, Akihiko; Iwai, Tadashi; Yayashi, Koichiro; and Okamura, Seizo,3,553,090.

Iwasaki Denki Kabushiki Kaisha: *See—*
Ohtagaki, Yoshio; and Kitano, Hajime, 3,553,623.

Jacks, Thomas J.: *See—*
Kircher, Henry W.; and Jacks, Thomas J.,3,553,235.

Jackson Manufacturing Co.: *See—*
Garber, Roy W., 3,552,762.

Jacobs, Kenneth E.: *See—*
Kaufman, Maxime G.; and Jacobs, Kenneth E.,3,553,697.

Jacobsen, Delbert W., to Astro Tool Co., Inc. Target for numerically controlled machine tools. 3,552,027, Cl. 33-185.

Jacobsen, Paul W.; and Klaeser, Richard N., to Weber, H. G., and Company, Inc. Fluid sensing and amplifying nozzle and control. 3,552,617, Cl. 226-22.

Jacobson, Irvin D., to Perfection Corporation. Valve cap. 3,552,427, Cl. 137-382.

Jaeger, Wilbert J., to Medevco. Automatic shoe shine machine. 3,551,933, Cl. 15-31.

Jamison, Saunders E.: *See—*
Dunay, Michael; and Jamison, Saunders E.,3,553,132.

Janecke, Werner, to U.S. Philips Corporation, mesne. Salt-supply container for a softening device including microswitch structure. 3,553,401, Cl. 200-81.

Janik, Stanley Adolf, to Crown Zellerbach Canada Limited. Apparatus for adhering an outer tail portion of a wound roll to an underlying convolution. 3,553,055, Cl. 156-450.

Janome Sewing Machine Co., Ltd.: *See—*
Hanyu, Susumu; and Kasuga, Noboru, 3,552,337.

Janoska, Georges: *See—*
Chaveneaud, Roger; and Janoska, Georges,3,553,411.

Janssen, Frits Jacques, to U.S. Philips Corporation, mesne. Device for measuring blood pressure. 3,552,385, Cl. 128-2.05

Japan Atomic Energy Research Institute: *See—*
Takehisa, Masaaki; Yamada, Tadao; Takasaka, Yoshio; and Miyanaga, Kazukiyo, 3,553,187.
Yamashina, Hisao; Ito, Akihiko; Iwai, Tadashi; Yayashi, Koichiro; and Okamura, Seizo, 3,553,090.

Japan Gas Chemical Company, Inc.: *See—*
Miyakawa, Kozi; and Yoshida, Shimpei, 3,551,950.

Jaroch, Eugene P., to Kliklok Corporation. Devices for squaring tubular folding box blanks. 3,552,280, Cl. 93-53.

Jarowenko, Wadym, to National Starch and Chemical Corporation. Process for the inhibition of granular starch bases. 3,553,195, Cl. 260-233.5

Jarvis, John R., to Cook Machinery Co., Inc. Programing mechanism. 3,553,483, Cl. 307-141.

Jarvis, Kenneth W., to General Time Corporation. Means for counting shots fired from a gun. 3,552,053, Cl. 42-1.

Jason, Alfred Charles; MacKenzie, Angus Roy; and Mitchell, Terence George, to National Research Development Corporation. Isothermal drying apparatus and method. 3,552,030, Cl. 34-5.

Jauernik, Edmund, to Fernseh G.m.b.H. Arrangement for deriving noise-free synchronizing information from the sync signal of a television signal. 3,553,365, Cl. 178-7.3

Jaworski, Ernest G.; and Marco, Gino J., to Monsanto Company. Animal feed compositions and methods employing certain 2-haloacetamides. 3,553,330, Cl. 424-324.

Jeffers, Homer A., Jr.: *See—*
Monroe, Wayne W.; Deines, Siegmund; Jeffers, Homer A., Jr.; and Trenary, John M.,3,551,931.

Jeffreys, Roy Arthur, to Eastman Kodak Company. Photographic silver halide emulsions containing styryl sensitizing dyes. 3,552,974, Cl. 96-129.

Jehne, Gerhard; and Klier, Ewald, to VEB Carl Zeiss Jena. Digital analog converters. 3,553,684, Cl. 340-347.

Jenkins, Murgatroyd H., to Beltx Corporation. Packaging machines. 3,552,092, Cl. 53-183.

Jennetti, Anthony G.: *See—*
Walter, Carlton H.; and Jennetti, Anthony G.,3,553,703.

Jennings, Roger G., to Control Building Systems, Inc., mesne. Apparatus for filling molds with polyurethane. 3,551,947, Cl. 18-5.

Jenny, Rudolf, to Maschinenfabrik Schweiter AG. Apparatus for charging a textile machine with creel bobbins or the like. 3,552,555, Cl. 214-307.

Jeschke, Willi, to Heidelberger Druckmaschinen Aktiengesellschaft. Cylinder controlling and interrupter structure for printing presses. 3,552,313, Cl. 101-218.

Jesty, James: *See—*
Packer, Mervyn B.; and Jesty, James,3,552,802.

Johann Rockinger Spezialfabrik fur Anhanger- Kupplungen: *See—*
Gottler, Horst, 3,552,774.

Johansson, Nils Olof, to Brundell Och Jonsson AB. Debarking machine of the hollow rotor type. 3,552,456, Cl. 144-208.

Johansson, Ture A.; and Wikholm, Ior Allan, to Eriksbergs Mek. Verkstads Aktiebolag. Combined overload clutch and chuck. 3,552,147, Cl. 64-29.

Johns-Manville Corporation: *See—*
Quint, Stephen Mark, 3,553,077.
Zilli, Robert; and Coombs, Garth, 3,553,321.

Johnson & Johnson: *See—*
Dipner, Charles D., 3,552,994.

Johnson, David Lee, 50% to Dodson, Marion Luther, M.D. Fish cooling and preserving system. 3,552,143, Cl. 62-514.

Johnson, Dennis F., to Exotech Incorporated. Apparatus for determining the radiation scattering properties of a fluid. 3,553,462, Cl. 250-218.

Johnson, Ivan R.: *See—*
Michnay, Raymond P.; and Johnson, Ivan R.,3,552,409.

Johnson, Marlyn D.: *See—*
Simon, Peter A.; Paletz, Leonard M.; Fiterman, Benjamin; Johnson, Marlyn D.; and Ahlberg, Carl S.,3,552,579.

Johnson, Robert G.; Fleming, Robert W.; Wenstrup, David L.; and Kariya, Takashi, to Richardson-Merrell Inc.Dibenzo[d,8] [1,3]dioxocin-6-carboxylic acids, esters and salts. 3,553,234, Cl. 260-340.3

Johnson, Stanley R. Combination writing instrument and stamp carrier. 3,552,869, Cl. 401-195.

Johnson, William: *See—*
Carpenter, William George David; Johnson, William; Lloyd, Thomas; McMullen, Patrick; and Watt, William,3,552,923.

Johnston, Andrew L., III; and Bailey, Herbert S., to Reynolds Metals Company. Apparatus for packaging articles in thermoplastic heat-shrinkable materials. 3,552,091, Cl. 53-198.

Johnston, Douglas, to Decatur Foundry & Machine Co., Inc. Rod-type screen for suspension fertilizers. 3,552,552, Cl. 210-447.

Johnston, James Stewart, to Rosemount Engineering Company Limited. Liquid level indicators. 3,552,209, Cl. 73-304.

Johnston, James Stewart, to Rosemount Engineering Company Limited. Plurality of longitudinally scanned fluorescent light-conductive fibers differentially masked for beam position detection. 3,553,466, Cl. 250-227.

Jones, Derrick A., to Minnesota Mining and Manufacturing Company. Method and apparatus for treating wide webs in the presence of a high vacuum. 3,553,709, Cl. 346-1.

Jones, Eric Lloyd; Claydon, David Anthony; and Ellis, Julius Ernest, to BP Chemicals (U.K.) Limited. Reaction vessel having internal recycle means. 3,552,933, Cl. 23-285.

Jones, Leslie M.: *See—*
Burns, Erwin; and Jones, Leslie M.,3,552,486.

Jones, R. A., & Co., Inc.: *See—*
Daily, William C.; and Rece, Wesley J., Jr., 3,552,094.

Jones, Richard A.: *See—*
Corbin, Ralph L.; and Jones, Richard A.,3,553,020.

Jones, William E. Emergency selective message sender for telephone. 3,553,377, Cl. 179-5.

Jordan, Manuel A.: *See—*
Zalewski, Edmund J.; and Jordan, Manuel A.,3,553,215.

Jordan, Michael A.: *See—*
Harlander, Leslie A.; Boyer, Warren N.; and Jordan, Michael A.,3,552,345.

Jubb, Elmer Charles, Jr., to Scholz, Louis A. Etching control device. 3,553,052, Cl. 156-345.

Judd, Claude I.: *See—*
Suh, John T.; and Judd, Claude I.,3,553,241.

Juhel, Pierre: *See—*
Hanff, Michel; and Juhel, Pierre,3,553,637.

Jules, Ramona H.: *See—*
Li, Jorge P.; Jules, Ramona H.; and Biel, John H.,3,553,217.

Julian Engineering Company: *See—*
Neubeck, William H., Jr., 3,552,620.

Jungner Instrument Aktiebolag: *See—*
Vogl, Georg; and Hogstrom, Bo, 3,552,834.

Jurny, Josef, to Adamovske strojirny, narodni podnik. Rotary transfer mechanism for printing machines. 3,552,745, Cl. 271-82.

Kabushiki Kaisha Koden Seisakusho: *See—*
Kurimura, Shizuo; Machida, Kazuya; and Hotta, Tomio, 3,553,711.

Kabushiki Kaisha Komatsu Seisakusho (Komatsu Mfg. Co., Ltd.): *See—*
Araki, Takashi, 3,552,102.

Kabushiki Kaisha Koparu: *See—*
Sato, Takayoshi; Ohtake, Makoto; and Saruyama, Isao, 3,553,455.

Kabushiki Kaisha Ricoh: *See—*
Abe, Takeshi, 3,553,464.
Fujimoto, Sakae, 3,552,289.
Kanno, Tadaaki, 3,552,668.
Yamaguchi, Nario; and Tubuko, Kazuo, 3,552,959.

Kado, Masaru; Maeda, Taizo; and Yoshinaga, Eiichi, to Kumiai Chemical Industries Co., Ltd. Method of controlling rice blast with thiolphosphiates. 3,553,323, Cl. 424-225.

Kadono, Akira: *See—*
Kitagawa, Kenichi; Kadono, Akira; Homura, Rikichi; and Ohta, Mitsuhiro,3,552,121.

Kaess, Gary; and Palmer, Robert G., to Atlas-Rand Corporation, mesne. Motion picture projector. 3,552,843, Cl. 352-191.

Kahelin, Edward W. Baseball pitching machine. 3,552,371, Cl. 124-7.

Kaiser, Ado; and Langemann, Albert, to Hoffmann-La Roche Inc. Phenylalanine compounds. 3,553,258, Cl. 260-519.

Kaiser Aluminum & Chemical Corporation: *See—*
Martinet, Jacques R.; and Allen, Jim E., 3,552,984.

Kaiser, Carl; and Zirkle, Charles L., to Smith Kline & French Laboratories. 1-(1-Hydroxy-1-phenyl-4-aminobutyl)- and 1-(1- phenyl-4-aminobutenyl)-adamantane derivatives. 3,553,225, Cl. 260-294.7

Kaiser, Carl; and Zirkle, Charles L., to Smith Kline & French Laboratories. 1-(2-Benzoylcyclopropylmethyl-4-phenyl-1,2,5,6-tetrahydropyridines. 3,553,226, Cl. 260-297.

Kaiser, Hermann, to Eaton Yale & Towne, Inc. Crash sensor. 3,552,768, Cl. 280-150.

Kalamazoo Spice Extraction Company: *See—*
Worden, Leonard R.; and Todd, Paul H., Jr., 3,552,975.

Kalb, Henry T.: *See—*
Crosswy, Frank L.; Lennert, Andrew E.; and Kalb, Henry T.,3,552,855.

Kali-Chemie Aktiengesellschaft: *See—*
Hauschild, Ulrich; Massonne, Joachim; and Schmidt, Hans Werner, 3,552,944.

Kallas, William E.: *See—*
Kraft, Russell E.; and Kallas, William E.,3,552,606.

Kallenberger, Robert H.: *See—*
Dollinger, Robert E.; Kallenberger, Robert H.; and Frazier, Arthur E.,3,552,211.

Kalvar Corporation: *See—*
Notley, Norman T.; and Senentz, Irwin M., Jr., 3,552,961.
Notley, Norman T.; and Senentz, Irwin M., Jr., 3,552,962.
Notley, Norman T.; and Senentz, Irwin M., Jr., 3,552,963.
Notley, Norman T.; and Senentz, Irwin M., Jr., 3,552,964.
Notley, Norman T.; and Senentz, Irwin M., Jr., 3,552,965.

Kaman Corporation: *See—*
Flannelly, William G., 3,552,694.
Holman, Howard E., 3,553,338.

Kamei, Teruji: *See—*
Aoki, Yoshikazu; Kamei, Teruji; Hayami, Akira; and Kitano, Masahiro,3,553,078.

Kaminski, Gunther: *See—*
Lehmann, Kurt; and Kaminski, Gunther,3,553,480.

Kamlet, Mortimer J.: *See—*
Adolph, Horst G.; and Kamlet, Mortimer J.,3,553,273.

Kammerer, Heinrich: *See—*
Hettich, Bernhard; Kammerer, Heinrich; and Fleck, Friedrich,3,552,738.

Kammerer, Manfred; and Schick, Hans, to Sauter, August, KG. Automatic price calculation scale. 3,552,512, Cl. 177-25.

Kane, Robert F.: *See—*
Alter, Soloman; Goodfellow, John A.; and Kane, Robert F.,3,553,378.

Kanno, Tadaaki, to Kabushiki Kaisha Ricoh. Rolling curl removing device for rolled photosensitive paper. 3,552,668, Cl. 242-55.

Kao Soap Co., Ltd.: *See—*
Katsumi, Mamoru; and Nishizawa, Kazunori, 3,553,141.

Kaplan, Charles A.; and Ripley, Robert A., to Du Pont de Nemours, E. I., and Company. Mechanically and freeze-thaw stable aqueous emulsions of iminated carboxylic vinyl acetate/ ethylene copolymers and process for preparing same. 3,553,116, Cl. 260-17.

Kaplan, Martin; Hansen, Donald E.; and Quist, Eric G., to Mosler Research Products, Inc. Security alarm system. 3,553,730, Cl. 340-276.

Kapustin, Alexander T., to Bethlehem Steel Corporation. Universal bending machine. 3,552,179, Cl. 72-389.

Kariya, Takashi: *See—*
Johnson, Robert G.; Fleming, Robert W.; Wenstrup, David L.; and Kariya, Takashi,3,553,234.

Karnopp, Dean C.; and Heine, John C., to Bolt Beranek and Newman Inc. Sealed magnetic tape cartridge with transducer gap embedded within a ward of the cartridge. 3,553,391, Cl. 179-100.2

Kasahara, Tatsuo; Kazawa, Yoshiaki; Kurita, Isao; Ishibashi, Eiichi; and Hashimoto, Hiroshi, to Hitachi, Ltd. Generator duct for magnetohydrodynamic generators. 3,553,502, Cl. 310-11.

Kaston, Henryk. Mute for stringed instruments. 3,552,255, Cl. 84-310.

Kasuga, Noboru: *See—*
Hanyu, Susumu; and Kasuga, Noboru,3,552,337.

Katsumi, Mamoru; and Nishizawa, Kazunori, to Kao Soap Co., Ltd. Sterilizing detergent composition. 3,553,141, Cl. 252-106.

Kattan, Ahmed A.; and Nelson, Glenn S., to Blueberry Equipment, Inc. Berry harvesting machine. 3,552,108, Cl. 56-330.

Katuda, Kozo: *See—*
Murata, Hiroshi; Katuda, Kozo; Kunitomo, Tetsunosuke; Sasaki, Shosaku; and Nishio, Minoru,3,553,286.

Kaufman, Harold R.: *See—*
Banks, Bruce A.; and Kaufman, Harold R.,3,552,125.

Kaufman, Maxime G.; and Jacobs, Kenneth E., to United States of America, Navy. Channel combinder system for sequentially received phase signals. 3,553,697, Cl. 343-113.

Kautz, George R., to Sylvania Electric Products, Inc. Weld distribution for shadow mask to frame assembly. 3,553,516, Cl. 313-85.

Kawasaki, Hironobu: *See—*
Fujisaki, Yoshisato; Aishima, Itsuho; Sakurai, Hisaya; Kitaoka, Atsushi; Kawasaki, Hironobu; and Oshima, Minoru,3,553,176.

Kawase, Shoji: *See—*
Shima, Takeo; Asami, Yukiharu; Ishizaki, Shunzo; Kawase, Shoji; and Yoshimura, Masao,3,552,999.

Kawashima, Yoshichi, to Nippon Denso Company Limited. Warning lamp responsive to alternator output frequency for battery charging system. 3,553,563, Cl. 320-48.

Kawecki, Ralph E., to Southington Manufacturing Inc. Quenching device. 3,552,730, Cl. 266-6.

Kay, Jerome Harold: *See—*
Shiley, Donald P.; and Kay, Jerome Harold,3,551,913.

Kayser, John A., to Dana Corporation. Bearing race assembly. 3,552,811, Cl. 308-176.

Kazawa, Yoshiaki: *See—*
Kasahara, Tatsuo; Kazawa, Yoshiaki; Kurita, Isao; Ishibashi, Eiichi; and Hashimoto, Hiroshi,3,553,502.

Kearse, William E.: *See—*
Crawford, Thomas G.; and Kearse, William E.,3,553,046.

Keegan, W. F., & Company, Inc.: *See –*
Kinney, Robert E., 3,552,698.

Keen, Ian Montgomery: *See—*
Burbidge, Bernard Whiting; and Keen, Ian Montgomery,3,553,103.

Keenan, Arthur G.; and Siegmund, Robert F., to Research Corporation. Ammonium perchlorate-ammonium nitrate explosive composition containing excess chloride ion. 3,553,039, Cl. 149-41.

Keith, Arley L., Jr.: *See—*
Nye, Dudley D., Jr.; and Keith, Arley L., Jr.,3,553,569.

Keller, James P.: *See—*
Staton, John C.; Keller, James P.; Kowalski, Ronald C.; and Harrison, John W.,3,551,943.

Keller, Josef, to Fichtel & Sachs AG. Lined bearing. 3,552,815, Cl. 308-238.

Keller, Leon J.: *See—*
Berbel, Daniel A.; and Keller, Leon J.,3,551,988.

Keller, Richard W. H., to Cubic Corporation. Electronic locating and finding apparatus. 3,553,698, Cl. 343-113.

Kelly, John Hill, to Thiokol Chemical Corporation. Indexing mechanism for a filament winding machine. 3,552,665, Cl. 242-7.21

Kelsey-Hays Company: *See—*
Hayes, Edward J., 3,552,527.

Kelso, James W., to Tenna Corporation. Tape cartridge system. 3,552,751, Cl. 274-4.

Kemmerer, Robert M.; and Chute, Richard, to Eaton Yale & Towne, Inc. Safety apparatus. 3,552,769, Cl. 280-150.

Kemp, Kenneth Albert Walters, to C.A.V. Limited. Liquid fuel pumping apparatus. 3,552,366, Cl. 123-139.

Kennicott, Thomas C.: *See—*
Bryson, Robert A.; Kennicott, Thomas C.; and Sarring, Ernest J.,3,552,246.

Kent, Eric George: *See—*
Warrach, Wolfgang; Swinney, Frederick Bernard; and Kent, Eric George,3,553,051.

Kern, Luther N., to General Motors Corporation. Wet clutch oil slinger. 3,552,534, Cl. 192-113.

Kerr, Charles E., Jr., to Eltec, Inc. High voltage switch assembly. 3,553,412, Cl. 200-48.

Kershaw, Robert W.; Lubbock, Frederick J.; and Polgar, Livia, to Balm Paints Limited. Aqueous coating composition. 3,553,152, Cl. 260-29.6

Kershaw, Stanley C., to Leesona Corporation. Yarn treating apparatus. 3,552,354, Cl. 118-234.

Ketler, Lester K., to Inland Container Corporation. Pallet case. 3,552,633, Cl. 229-30.

Ketley, Arthur D., to Grace, W. R., & Co. Process for dimerizing lower alpha-olefins. 3,553,280, Cl. 260-683.15

Kidd, Frank B.: *See—*
Thompson, Charles T.; Kidd, Frank B.; and Henry, William R.,3,552,505.

Kido, Gen: *See—*
Omori, Mineharu; Terayama, Kozo; Matsubara, Shozo; Shigematsu, Tatsuo; and Kido, Gen,3,552,011.

Kiel, Othar M., to Esso Production Research Company. Process of hydraulic fracturing with viscous oil- in-water emulsion. 3,552,494, Cl. 166-308.

Kienzle Apparate G.m.b.H.: *See—*
Hettich, Bernhard; Kammerer, Heinrich; and Fleck, Friedrich, 3,552,738.
Madge, Werner; and Hilgendorf, Joachim, 3,553,649.
Roth, Werner, 3,553,713.

Killoran, Brian, to English Electric Company Limited, The. Monitoring circuits. 3,553,558, Cl. 318-18.

Kimberly-Clark Corporation: *See—*
Frick, Richard H.; and Weber, Terry M., 3,552,736.
Stumpf, Robert J.; and Mowers, William L., 3,553,065.
Wideman, Ronald H., 3,553,064.

Kimura, Takeo: *See—*
Kominami, Naoya; Nakajima, Hitoshi; Kimura, Takeo; and Sakurai, Tokio,3,553,246.

King, Alan M., to Vendking Ltd. Method of brewing single cup quantities of beverage. 3,552,976, Cl. 99-71.

King, Ernam F., to Bell Telephone Laboratories, Incorporated. Bilateral switch using combination of field effect transistors and bipolar transistors. 3,553,541, Cl. 317-235.

King, Nancy H.: *See—*
Henn, Richard W.; King, Nancy H.; and Surash, John J.,3,552,969.

Kinnavy, Martin G., to Herr Equipment Corporation, The 15/90% to Salem Corporation, 35/90% jointly to Herr, Richard W., and Herr, Jean L., Union Savings & Trust Company, The, and Anderson, John W., Jr., as trustees to a trust, mesne. Methods of permanently elongating strip. 3,552,175, Cl. 72-296.

Kinney, Robert E., to Keegan, W. F., & Company, Inc. Break-away coupling for poles. 3,552,698, Cl. 248-158.

Kirby, Thomas E., Jr., to Reynolds Metals Company. Package and method of making same. 3,552,559, Cl. 206-65.

Kircher, Henry W.; and Jacks, Thomas J., to Unied States of America, Agriculture. 7-Acyloxy-4-methyl-coumarins. 3,553,235, Cl. 260-343.2

Kiryu, Tomoo, to Chiyoda Kako Kensetsu Kabushiki Kaisha. Method for the preparation of poly-epoxy condensates. 3,553,165, Cl. 260-47.

Kiss, Zoltan J., to RCA Corporation. Photochromic light valve. 3,552,824, Cl. 350-160.

Kitagawa, Kenichi; Kadono, Akira; Homura, Rikichi; and Ohta, Mitsuhiro, to Yanmar Diesel Engine Co., Ltd. Means for preventing reverse water flow through exhaust pipe of a rotary piston type marine engine. 3,552,121, Cl. 60-30.

Kitano, Hajime: *See—*
Ohtagaki, Yoshio; and Kitano, Hajime,3,553,623.

Kitano, Masahiro: *See—*
Aoki, Yoshikazu; Kamei, Teruji; Hayami, Akira; and Kitano, Masahiro,3,553,078.

Kitaoka, Atsushi: *See—*
Fujisaki, Yoshisato; Aishima, Itsuho; Sakurai, Hisaya; Kitaoka, Atsushi; Kawasaki, Hironobu; and Oshima, Minoru,3,553,176.

Klaeser, Richard N.: *See—*
Jacobsen, Paul W.; and Klaeser, Richard N.,3,552,617.

Kleebauer, Alfred A. Key ejector locks. 3,552,160, Cl. 70-388.

Kleeberg, Gunther K. E., to E.B.V. Systems, Inc. Valve operating mechanism. 3,552,713, Cl. 251-69.

Klein, Hans Christof: *See—*
Beuchle, Friedrich; Hahm, Heinz; Klein, Hans Christof; and Beller, Hans,3,552,526.

Kleinewefers Gravuren G.m.b.H.: *See—*
Roosen, Karl-Heinz, 3,552,710.

Kleinstra, Harm; and De Langhe, Joseph E., to Nederlandsche Folografische Industrie N.V. Means for conveying electrically charged photocopy paper. 3,552,847, Cl. 355-3.

Klier, Ewald: *See—*
Jehne, Gerhard; and Klier, Ewald,3,553,684.

Kliklok Corporation: *See—*
Jaroch, Eugene P., 3,552,280.

Klockner-Humboldt-Deutz Aktiengesellschaft: *See—*
Berg, Josef, 3,552,219.

Knapsack Aktiengesellschaft: *See—*
Sennewald, Kurt; Gehrmann, Klaus; Handte, Heinz; Erpenbach, Heinz; and Reis, Helmut, 3,553,261.

Knee Lox Manufacturing Company: *See—*
Geary, Joseph E., 3,552,636.

Knepp, James E., to Aluminum Company of America. Coil of sheet material wax-tissue laminate in which a lubricant in the wax migrates through the tissue to be sheet material. 3,553,074, Cl. 161-223.

Knitting Specialty Machinery Corporation: *See—*
Pernick, David, 3,552,248.

Knopf, Robert J.: *See—*
Brotherton, Thomas K.; Lynn, John W.; and Knopf, Robert J.,3,553,249.

Knowles, Edward Rolland, to Sterling Extruder Corporation. Container forming apparatus. 3,551,954, Cl. 18-19.

Knowles, John G. Sectional sleeve valve. 3,552,442, Cl. 137-625.69

Knox, Sidney G.; and Reynen, Richard N., 1/2 to Edelberg, Edward, R., and 1/2 to Edelberg, Louis. Toll call signalling and diverting system. 3,553,382, Cl. 179-18.

Knuff, William J., to Brown & Sharpe Mfg., Co. Grinding wheel dresser. 3,552,374, Cl. 125-11.

Kobayashi, Koji; and Mise, Noritoshi, to Takeda Chemical Industries, Ltd. Method for preparing polyurethane molded articles. 3,553,308, Cl. 264-305.

Koch, Heinrich: *See—*
Lederer, Michael; Koch, Heinrich; and Harreus, Albrecht,3,553,184.

Kochhar, Rajindar K.: *See—*
Clampitt, Bert H.; Kochhar, Rajindar K.; Bartholomew, Robert K.; and Burrus, Harold L.,3,553,178.

Kodama, Jiro K.: *See—*
Albert, James R.; and Kodama, Jiro K.,3,553,326.

Kodolov, Oleg Mikhailovich: *See—*
Korzhaev, Sergei Antonovich; Dobrovolsky, Vladimir Vasilievich; Kodolov, Oleg Mikhailovich; and Dmitriev, Gennady Pavlovich,3,552,887.

Koehring Company: *See—*
Witt, Wilmer E., 3,552,463.

Koenig, Robert H., to Tapeswitch Corporation of America. Normally closed pressure switch. 3,553,404, Cl. 200-85.

Kohl, Karl. Patterning mechanism for a warp knitting machine. 3,552,153, Cl. 66-154.

Kohler, Hubert: *See—*
Andress, Bernhard; Kohler, Hubert; and Schmidt, Fritz,3,553,604.

Kohler, Josef, to PREH Elektro-Feinmechanische Werke, Jakob Preh Nachf., Postfach. Duplex rotary tuning voltage divider. 3,553,626, Cl. 338-128.

Kohlschutter, Hanswolfgang; Getrost, Helmut; Reich, Walter; Rossler, Hubert; and Horl, Walter, to Merck, E., A.G. Process for coating titanium dioxide on solid materials. 3,553,001, Cl. 117-100.

Kominami, Naoya; Nakajima, Hitoshi; Kimura, Takeo; and Sakurai, Tokio, to Asahi Kasei Kogyo Kabushiki Kaisha. Process for producing unsaturated aliphatic nitriles. 3,553,246, Cl. 260-465.3

Kondo, Hideo; and Watanabe, Shigeru, to Fuji Photo Film Co., Ltd. Silver dye bleach process using bleachable nitro-aryl dyes. 3,552,960, Cl. 96-20.

Kopp, Hans W.: *See—*
Garver, Oscar W.; Ullman, Frederick E.; Stettler, Christian H.; and Kopp, Hans W.,3,553,418.
Garver, Oscar W.; Ullman, Frederick E.; Stettler, Christian H.; and Kopp, Hans W.,3,553,419.

Koppenburg, Peter. Method of knitting. 3,552,152, Cl. 66-88.

Koppers Company, Inc.: *See—*
Martin, Merle E., 3,553,465.
Tucker, Linwood G.; and Simpson, Earl W., 3,553,083.
Vietorisz, Joseph A., 3,552,423.

Koppers-Wistra-Ofenbau Gesellschaft mit beschrankter Haftung: *See—*
Hepp, Gunter; Brockmann, Christian; and Pohl, Hans Christoph, 3,552,729.

Koprowski, Thomas J., to Lockheed Aircraft Corporation. Vane shear device. 3,552,195, Cl. 73-101.

Koranda, Clarence J., to North American Car Corporation. Sparger type unloading apparatus for railroad cars. 3,552,799, Cl. 302-14.

Kordesch, Karl V.; and Darland, William G., Jr., to Union Carbide Corporation. Electrode with carbon layer and fuel cell therewith. 3,553,029, Cl. 136-86.

Koren, Jan: *See—*
Hrivnak, Pavol; Ondrejmiska, Koloman; Pechar, Amadeus; and Koren, Jan,3,552,603.

Kornblum, Ronald I.: *See—*
Elder, Clifton L.; Fitch, Lawrence H.; Kornblum, Ronald I.; and Wehner, William C.,3,552,785.

Korrenn, Heinrich. Hydrostatic bearing. 3,552,810, Cl. 308-160.

Korthaus, Helmut; and Wilke, Richard. Electric motor with overload cut-out. 3,553,557, Cl. 318-463.

Korzhaev, Sergei Antonovich; Dobrovolsky, Vladimir Vasilievich; Kodolov, Oleg Mikhailovich; and Dmitriev, Gennady Pavlovich. Pumping plant for pumping fluids carrying solid particles. 3,552,887, Cl. 417-395.

Kosaka, Tomoaki: *See—*
Okamura, Akira; Kosaka, Tomoaki; and Aiba, Hiroshi,3,553,375.

Kotoc, Stefan. Connecting rod. 3,552,231, Cl. 74-579.

Koundakjian, Theodore H., to Chevron Research Company. Stable carbamate insecticide granules. 3,553,328, Cl. 424-300.

Kovac, Frederick J.; and Rye, Grover W., to Goodyear Tire & Rubber Company, The. Treatment of polyester tire cord. 3,553,307, Cl. 264-290.

Kowalewski, John J.: *See—*
Brown, Robert J.; Kowalewski, John J.; and Moughty, John J.,3,553,629.

Kowalski, Ronald C.: *See—*
Staton, John C.; Keller, James P.; Kowalski, Ronald C.; and Harrison, John W.,3,551,943.

Kozponti Fizikai Kutato Intezet: *See—*
Blasovszky, Miklos, 3,553,594.

Kraft, Elroy J., to Eaton Yale & Towne, Inc. Motorless carbonator and method of operation. 3,552,726, Cl. 261-50.

Kraft, Russell E.; and Kallas, William E., to Beverage-Air Company. Liquid metering dispenser. 3,552,606, Cl. 222-249.

Kral, James, Jr.; Meyer, John G.; and Stoltz, James F., to Western Electric Company, Incorporated. Heat transfer apparatus with rotating drum. 3,552,484, Cl. 165-89.

Kramer, Roger L.; and Beyer, James, to Oak Electro/Netics Corporation. Balun isolator. 3,553,474, Cl. 307-17.

Krasa, Evzen: *See—*
Bezouska, Vlastimil; Pivrnec, Jan; Hrdlicka, Jiri; Krasa, Evzen; and Smekal, Zdenek,3,553,538.

Krauer, Otto Albert: *See—*
Benjamin, Sidney Howard; and Krauer, Otto Albert,3,552,524.

Krause, Gerhard, to Fernseh G.m.b.H. Circuit arrangement for suppressing switch transients in devices for the magnetic storage of video signals employing a plurality of magnetic heads. 3,553,390, Cl. 179-100.2

Krauss, Bert F.; and Rosenheck, Bernard M., to Litton Systems, Inc. Facsimile multiplex communication system. 3,553,367, Cl. 178-50.

Krauss-Maffei Aktiengesellschaft: *See—*
Hultsch, Gunther, 3,552,575.

Kreidel, Rudolf Karl Andrew: *See—*
Edwards, Edgar Burley; and Kreidel, Rudolf Karl Andrew,3,552,607.

Kress, James D., to Economics Laboratory, Inc. Proportional metering apparatus. 3,552,418, Cl. 137-101.21

Kress, James Henry, to Deere & Company. Transmission control. 3,552,232, Cl. 74-689.

Kreutzer, Karl-Heinz: *See—*
Schnoring, Hildegard; Classe, Willy; Heine, Diez; Nordt, Herbert; and Kreutzer, Karl-Heinz,3,553,186.

Krimm, Heinrich: *See—*
Vernaleken, Hugo; Malamet, Georg; Bottenbruch, Ludwig; Krimm, Heinrich; and Schnell, Hermann,3,553,285.

Krock, Alwin, to Licentia Patent-Verwaltungs-G.m.b.H. Addressing an operating memory of a digital computer system. 3,553,653, Cl. 340-172.5

Kroeger, Richard A.; Heltsley, Fred L.; and Smith, Morris R., to United States of America, Air Force. Windtunnel for VTOL and STOL aircraft models. 3,552,202, Cl. 73-147.

Krolls, Uldis: *See—*
Doub, Leonard; and Krolls, Uldis,3,553,216.

Krueger, Dean T. E.; and Sheppard, Louis C., to International Business Machines Corporation. Method and system for estimation of arterial pressure. 3,552,383, Cl. 128-2.05

Krum, Alan S.: *See—*
Scheingold, William S.; Bottlik, Geza P.; Selvin, Gerald J.; and Krum, Alan S.,3,553,630.

Krupp, Fried., Gesellschaft mit beschrankter Haftung: *See—*
Schroder, Werner Johann Hermann; Rudolf, Prescher; and Muller, Peter Klaus Jurgen, 3,552,894.
Sommer, Walter, 3,552,176.

Krups, Robert: *See—*
Baumann, Kurt; Lorenz, Horst; Borgmann, Michael; and Maass, Rudolf, 3,552,006.

Kruse, Norman F., to CPC International Inc. Process of coating and roasting nuts. 3,552,979, Cl. 99-126.

Kruy, Joseph F., to Honeywell Inc. Carry determination logic. 3,553,446, Cl. 235-175.

Kubera, Anton: *See—*
Schoffmann, Rudolf; and Kubera, Anton,3,552,902.

Kubik, Peter S.: *See—*
Hagelbarger, David W.; and Kubik, Peter S.,3,552,004.

Kudlaty, Walter J., to Marvel Engineering Company. Purged air hydraulic fluid system. 3,552,874, Cl. 415-121.

Kuhlmann, Hermann, to U.S. Philips Corporation, mesne. Flash unit. 3,552,896, Cl. 431-95.

Kuhn, Gerhard; Graf, Albin; Moll, Franz; and Otto, Rigobert, to Agfa-Gevaert Aktiengesellschaft. Color photographic development process. 3,552,966, Cl. 96-54.

Kuhn, Rudolf, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Installation for the descaling of metals. 3,552,404, Cl. 134-64.

Kuisl, Max: *See—*
Langheinrich, Werner; and Kuisl, Max,3,553,036.

Kullmann, Donald J.: *See—*
Destache, Richard W.; and Kullmann, Donald J.,3,552,208.

Kumiai Chemical Industries Co., Ltd.: *See—*
Kado, Masaru; Maeda, Taizo; and Yoshinaga, Eiichi, 3,553,323.

Kunitomo, Tetsunosuke: *See—*
Murata, Hiroshi; Katuda, Kozo; Kunitomo, Tetsunosuke; Sasaki, Shosaku; and Nishio, Minoru,3,553,286.

Kunkel, Lorenz V.: *See—*
Franklin, George M.; Kunkel, Lorenz V.; and Lewis, Willard A.,3,552,927.

Kunstle, Gerhard: *See—*
Heckmaier, Joseph; and Kunstle, Gerhard,3,553,188.

Kupferschmidt, Albert, to Beckman Instruments, Inc. Chart drive mechanism. 3,552,621, Cl. 226-174.

Kureha Kagaku Kogyo Kabushiki Kaisha: *See—*
Amagi, Yasuo; and Bannai, Nobuo, 3,553,185.

Kurimura, Shizuo; Machida, Kazuya; and Hotta, Tomio, to Kabushiki Kaisha Koden Seisakusho. Echo measuring and recording. 3,553,711, Cl. 346-33.

Kurita, Isao: *See—*
Kasahara, Tatsuo; Kazawa, Yoshiaki; Kurita, Isao; Ishibashi, Eiichi; and Hashimoto, Hiroshi,3,553,502.

Kutik, Louis F.; and Gronemeyer, Erich W. Bristled product. 3,551,936, Cl. 15-187.

Labavia-S.G.E.: *See—*
Bessiere, Pierre Etienne, 3,553,507.

Labombarde, Raymond A. Apparatus for applying high viscosity coatings. 3,552,353, Cl. 118-70.

La Force, Jean: *See—*
Girard, Dean C., 3,553,415.

La Forest, Pierre: *See—*
Gagnon, Pierre; and La Forest, Pierre,3,552,581.

Lahr, Joachim. Display unit. 3,552,576, Cl. 211-36.

Lambert, George M.: *See—*
Glasson, Woodrow R.; Malcom, Glen A.; Lambert, George M.; and Shumaker, Jackie W.,3,552,223.

Lamina, Inc.: *See—*
Richardson, Eugene, 3,552,893.

Lancer Boss Limited: *See—*
Green, Alan William, 3,552,557.
Shaw, George Neville Bowman, 3,551,964.

Land, Edwin H.; and Mc Cann, John J., to Polaroid Corporation. Method and system for image reproduction based on significant visual boundaries of original subject. 3,553,360, Cl. 178-6.8

Landau, Leo: *See—*
Schoen, William; and Landau, Leo,3,553,149.

Landau, Richard E. Method of forming a substantially liquid impervious wall in an earth formation. 3,552,130, Cl. 61-35.

Landon, James E. Gas tank. 3,552,596, Cl. 220-22.

Lane, Norman, to BSR Limited. Inductor with terminal carrier. 3,553,621, Cl. 336-192.

Lang, Charles J.: *See—*
De Haas, Gerrit G.; and Lang, Charles J.,3,553,076.

Lang, Gregor L. Phase splitting core for electromagnetic devices. 3,553,618, Cl. 335-244.

Lang, Karl: *See—*
Hock, Fromund; Lang, Karl; and Lussem, Heribert,3,552,857.

Lange, Wilfried. Pneumatic stapler device. 3,552,270, Cl. 91-291.

Langemann, Albert: *See—*
Kaiser, Ado; and Langemann, Albert,3,553,258.

Langheinrich, Werner; and Kuisl, Max, to Telefunken Patentverwertungsgesellschaft m.b.H. Production of doped zones in semiconductor bodies. 3,553,036, Cl. 148-187.

Lannin, William W., to Stanray Corporation. Method for forming a roof hatch assembly. 3,552,341, Cl. 113-116.

Lard, Edwin W.: *See—*
Stahly, Eldon E.; and Lard, Edwin W.,3,553,292.
Stahly, Eldon E.; and Lard, Edwin W.,3,553,293.

Larsen, Raymond B., to Datel Corporation. Tipe transport assembly. 3,552,685, Cl. 242-194.

Lassiter, James W. Long range position determination system. 3,553,691, Cl. 343-15.

Latham, Allen, Jr., to Cryogenic Technology, Inc. Apparatus for transporting liquids. 3,552,577, Cl. 211-74.

Lauener, Wilhelm Friedrich, to Prolizenz AG. Method for starting and maintaining the supply of metal to a downward operating continuous casting mold. 3,552,478, Cl. 164-64.

Lauer, George, to North American Rockwell Corporation. Line intensity integrating automatic data acquistion system. 3,553,358, Cl. 178-6.8

Launder, James M., to Horizons Unlimited Problems Solved by Ideas Corporation (HUPSI). Animal house air conditioning and manure disposal system. 3,552,358, Cl. 119-22.

Launder, Mark, to Horizons Unlimited-Problems Solved by Ideas Corporation. Direct computing statistical system. 3,553,441, Cl. 235-92.

Lauter, Charles A., Jr., to United States of America, Navy. Three vector wind direction integrator. 3,552,206, Cl. 73-188.

Lawrence, Ernest G.; and Hughes, Thomas H. K., to Elliott Brothers (London) Limited. Mounting arrangements for a replaceable semi-reflective member of a head up display device. 3,552,828, Cl. 350-174.

Lawson, John: *See—*
Anderton, Catherine Margaret; Fishwick, Brian Ribbons; and Lawson, John,3,553,190.

Lawton, Frank Bert: *See—*
Triggs, Henry Francis; and Lawton, Frank Bert,3,552,538.

Layng, Edwin T.; Stotler, Harold H.; and Hwang, Seong Tae, to Hydrocarbon Research, Inc. Application of certain equations in a hydrogenation process for removing sulfur from a liquid hydro- carbon feed. 3,553,105, Cl. 208-213.

Leach, J. R.: *See—*
Breese, Charles F.; Leach, J. R.; and Roberts, Carroll R.,3,552,184.

Lear Siegler, Inc.: *See—*
Bayley, Eugene S., 3,552,895.
Bregi, Benjamin F.; Bassoff, Arthur B.; and Anthony, Russell W., 3,552,167.
Daniel, David W., 3,553,095.
Hartman, Larry R., 3,552,592.

Leasure, William C., to Mira-Pak Inc. Method and apparatus for packaging with a movable mandrel and movable sealing jaws. 3,552,081, Cl. 53-28.

Lebar, Charles S. Drill and clean-out for blind holes. 3,552,503, Cl. 175-40.

Lebrun, Jean, to U.S. Philips Corporation, mesne. Radiation-sensitive semiconductor device. 3,553,030, Cl. 136-89.

Lederer, Michael; Koch, Heinrich; and Harreus, Albrecht, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the manufacture of copolymer dispersions of vinyl alkanoates/vinyl chlorides. 3,553,184, Cl. 260-87.1

Lee, Donald M.: *See—*
Grill, Bernard; and Lee, Donald M.,3,552,488.

Lee, Ray H., to Texas Instruments Incorporated. Electromechanical light valve. 3,553,364, Cl. 178-7.3

Leeds & Northrup Company: *See—*
MacMullan, Samuel J.; Parker, Kenneth B., Jr.; and Paschkis, Albert E., 3,553,712.

Leenhouts, Albert C., to Superior Electric Company, The. Digital motor control circuit. 3,553,549, Cl. 318-138.

Leenhouts, Albert C., to Superior Electric Company, The. Digital contour system with relatively constant path speed. 3,553,559, Cl. 318-18.

Leesona Corporation: *See—*
Fishman, Jerry Haskel, 3,553,024.
Gregory, Derek P., 3,553,022.
Kershaw, Stanley C., 3,552,354.
Oswin, Harry G.; Oxley, James E.; and Fleischmann, Charles W., 3,553,027.

Lefebvre, Bernard J., to Magnaflux Corporation. Acoustic testing system for elongated objects. 3,552,190, Cl. 73-67.7

Lehmann, Cleophas L. Sediment trap. 3,552,572, Cl. 210-271.

Lehmann, Kurt; and Kaminski, Gunther, to Wasag-Chemie Aktiengesellschaft. Condenser-ignition device with a vacuum discharge tube joined in parallel to the ignition condenser. 3,553,480, Cl. 307-110.

Lehmann, Otto: *See—*
Wusteney, Kurt; and Lehmann, Otto,3,552,240.

Lehner, Karl, to Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen. Apparatus for hot-stretching of synthetic filaments. 3,551,971, Cl. 28-71.3

Lehrfeld, Sanford S., to Tek-Wave, Inc. Circuit frame. 3,553,409, Cl. 200-168.

Lehrfeld, Sanford S., to Tek-Wave, Inc. Connector for coupling a microwave coaxial circuit to a microstrip printed circuit. 3,553,607, Cl. 333-34.

Lehtonen, Keijo. Automatically self-leveling gripping device suspended from the hoisting ropes of a crane. 3,552,793, Cl. 294-67.

Leigh, Anthony B. D.: *See—*
Rogers, Victor A. B.; and Leigh, Anthony B. D.,3,552,881.

Leigh Instruments Limited: *See—*
Aass, Haakon, 3,553,587.

Leigh, Philip G.: *See—*
Morris, Harold D.; and Leigh, Philip G.,3,553,555.

Leimgruber, Willy; and Mohacsi, Ernest, to Hoffmann-La Roche Inc. Acid catalyzed cyclization of tetrahydro- pyridines containing an electron with- drawing group on the nitrogen. 3,553,223, Cl. 260-294.7

Leimontas, Bruno J.; and Paradise, Edson M., to Connector Corporation. Kinescope socket with spark gap. 3,553,727, Cl. 313-325.

Leitz, Ernst, G.m.b.H.: *See—*
Mandler, Walter, 3,552,819.
Marquardt, Heinz, 3,552,829.

Leitz, Ernst, G.m.b.H., Fa: *See—*
Hock, Fromund; Lang, Karl; and Lussem, Heribert, 3,552,857.

Leitz, Ernst, G.m.b.H., Firma: *See—*
Marquardt, Heinz, 3,552,833.

Le Jannou, Jean-Pierre; and Lions, Noel, to Commissariat a l'Energie Atomique. Cold trap. 3,552,485, Cl. 165-119.

Lemen, William T., to General Motors Corporation. Direct current permanent magnet motor servomotor system. 3,553,560, Cl. 318-18.

Lemkey, Franklin D.; and Thompson, Earl R., to United Aircraft Corporation. Cobalt-chromium base alloy and articles produced therefrom. 3,552,953, Cl. 75-171.

Leningradskoe Proizvodstvennol Obiedinenie Radiodetal: *See—*
Ivanov, Ivan Petrovich; Bespalov, Alexandr Vasilievich; and Ananiev, Pavel Pavlovich, 3,551,985.

Lennert, Andrew E.: *See—*
Crosswy, Frank L.; Lennert, Andrew E.; and Kalb, Henry T.,3,552,855.

Leonard, Donald A., to Avco Corporation. Laser device utilizing an electric field across a non-resonant optical cavity. 3,553,603, Cl. 331-94.5

Leonard, Jimmie D., to Chicago Rawhide Manufacturing Company. Directionally reinforced rubber and seal unit made therefrom. 3,552,755, Cl. 277-212.

Le Roy, David H.; and Parmerter, Stanley M., to CPC International Inc. Method of oxidizing starch. 3,553,193, Cl. 260-233.3

Lesher, John C., to Penn-Western Electric. Automatic varying rate battery charger utilizing transistor latching means in voltage sensing circuit. 3,553,561, Cl. 320-22.

Lesley, Bascum G., to Deering Milliken Research Corporation. Knit fabric. 3,552,154, Cl. 66-192.

Letanosky, Louis A.: *See—*
Schilf, Harold M.; and Letanosky, Louis A.,3,552,324.

Le Tarte, Frank M. Method of screening. 3,552,476, Cl. 160-371.

Leung, Arthur T.; and Vaughan, James W., to Beckman Instruments, Inc. High pressure flow-through cuvette. 3,552,865, Cl. 356-246.

Levesque, George Napoleon, to Brown & Sharpe Manufacturing Company. Variable throttle valve for logic applications. 3,552,444, Cl. 138-43.

Levoin, Francis, to Cado Etablissement. Writing instrument especially ball-point pen. 3,552,868, Cl. 401-110.

Levy, Judith, to Clairol Incorporated. Compact disc. 3,552,402, Cl. 132-82.

Lewis, David W.; and Falkenhagen, George L., 1/3 to Aubel, Leo J. Computer card carrying box. 3,552,594, Cl. 220-8.

Lewis, Roger N.: *See—*
Friedman, Ronald L.; and Lewis, Roger N.,3,553,291.

Lewis, Sheldon N.; and Swithenbank, Colin, to Rohm & Haas Company. Process for the preparation of alkylated benzenes having halogen substituents in the 3,5- or 3,4,5- positions. 3,553,274, Cl. 260-650.

Lewis, Willard A.: *See—*
Franklin, George M.; Kunkel, Lorenz V.; and Lewis, Willard A.,3,552,927.

Leybourne, Allen E., III.; and Dees, John R., to Monsanto Company. Spinning chimney. 3,551,949, Cl. 18-8.

Leyburn, Derek, to Bell Telephone Company, The. Telephone line transfer circuit. 3,553,381, Cl. 179-18.

Leyde, Warren L.: *See—*
Maxey, Carl W.; Montague, Grant R.; Leyde, Warren L.; and Bryan, Eugene L.,3,552,252.

Leymann, Werner, to Continental Gummi-Werke Aktiengesellschaft. Deformable pipe connector. 3,552,776, Cl. 285-16.

Lhoste, Pierre L.: *See—*
Bouvet, Jean; and Lhoste, Pierre L.,3,552,907.

Li, Jorge P.; Jules, Ramona H.; and Biel, John H., to Aldrich Chemical Company, Inc. 2-(Quinolimido)glutarimide. 3,553,217, Cl. 260-281.

Liauw, Koei-Liang: *See—*
Etherington, Robert W., Jr.; and Liauw, Koei-Liang,3,553,220.

Licentia Patent-Verwaltungs-G.m.b.H.: *See—*
Krock, Alwin, 3,553,653.

Lieberman, Edgar M.: *See—*
Creese, Bertram T.; Lieberman, Edgar M.; and Maslan, David,3,552,549.

Liebscher, Arthur; and Ljungman, Nils Harry, to Electronics Inc. of Pennsylvania. Electrodynamic sound radiator. 3,553,392, Cl. 179-115.5

Liesegang, Gerhard, to Lisega Rohrleitungszubehor G.m.b.H. Elastic pipe hanger. 3,552,695, Cl. 248-54.

Lightner, Linn Stephen: *See—*
Hildebrand, James Ross; Lightner, Linn Stephen; and Watson, John Edward,3,553,632.

Lilly, Eli, and Company: *See—*
Edison, Jack Roger, 3,551,940.
Inman, Harry E., 3,552,095.

Lima, Joseph H.; Marquis, Donald A.; and Sternberg, Herwig, to International Business Machines Corporation. Third wire feeder apparatus employing vacuum capture. 3,551,986, Cl. 29-203.

Limberger, Walter, to Fa. Lumoprint Zindler KG. Apparatus for transporting sheets of copying paper in a copying device. 3,552,849, Cl. 355-14.

Lincoln Laboratories, Inc.: *See—*
Hein, Gary L., 3,552,605.

Linde Aktiengesellschaft: *See—*
Schreiber, Bernhard, 3,552,878.

Linde, Hans, to Berthold, H., Messinglinienfabrik und Schriftgiesserei A.G. Device for optical selection of image areas. 3,552,827, Cl. 350-171.

Lindh, Thorsten Lennartsson: *See—*
Rausin, Hans Anders; and Lindh, Thorsten Lennartsson,3,553,073.

Lindner, Kurt; and Eichler, Elfriede, to Henkel & Cie GmbH. Perborate containing concentrates. 3,553,140, Cl. 252-99.

Lindsey, L. E. Bundle conductor clamp. 3,553,351, Cl. 174-169.

Linebrink, Kail L.: *See—*
Anschutz, Donald E.; and Linebrink, Kail L.,3,552,123.

Lion Fat & Oil Co., Ltd.: *See—*
Susuki, Rinosuke; Hoshi, Hiroshi; Saito, Jiro; and Ito, Humio, 3,553,302.

Lion Packaging Products Company, Inc.: *See—*
Guenther, William, 3,552,278.

Lions, Noel: *See—*
Le Jannou, Jean-Pierre; and Lions, Noel,3,552,485.

Lisega Rohrleitungszubehor G.m.b.H.: *See—*
Liesegang, Gerhard, 3,552,695.

L'Italien, Yvon J.; and Nordin, Ivan C., to Parke, Davis & Company. 3-Methyl-8-(2-thienyl)pyrazolo[4,3-e][1,4]diazepin- 5(1H)-one compounds. 3,553,209, Cl. 260-239.3

Lithcote Corporation: *See—*
Foelsch, Henry W., 3,553,016.

Little, Arthur D., Inc.: *See—*
Doherty, Paul R.; and Hosmer, Thomas P., 3,552,931.
Simon, Ivan, 3,552,028.

Little, Arthur J.: *See—*
Davis, Joseph W.; and Little, Arthur J.,3,553,448.

Little, Jess C., to Fanner Manufacturing Company, The. Dead ending device. 3,551,960, Cl. 24-123.

Litton Precision Products, Inc.: *See—*
Hill, Donald G., 3,553,524.

Litton Systems, Inc.: *See—*
Krauss, Bert F.; and Rosenheck, Bernard M., 3,553,367.
Rosenheck, Bernard M., 3,553,370.
Spaulding, Carl P., 3,553,424.

Littwin, Burkhard, to Siemens Aktiengesellschaft. Method for increasing the coercive field strength of storage elements employing thin magnetic layers. 3,553,086, Cl. 204-37.

Livingston, David N.; Smith, Max R.; and Newmyer, Charles T., to United States of America, Navy. Heated dome window. 3,553,432, Cl. 219-522.

Livingston, Richard D., to Barber-Colman Company. Machine and method for automatically doffing and donning. 3,552,110, Cl. 57-53.

Ljungman, Nils Harry: *See—*
Liebscher, Arthur; and Ljungman, Nils Harry,3,553,392.

LKB-Produkter AB: *See—*
Monk, Paul Robin; and Wadso, Bertil Ingemar, 3,552,207.

Lloyd, Edward C. Erasable trace recorder. 3,553,710, Cl. 346-21.

Lloyd, Edward C. Erasable trace recorder. 3,553,720, Cl. 346-21.

Lloyd, Henry B., to G.K.N. Steel Company Limited. Method and apparatus for cutting metal billets and the like into lengths. 3,552,163, Cl. 72-14.

Lloyd, Thomas: *See—*
Carpenter, William George David; Johnson, William; Lloyd, Thomas; McMullen, Patrick; and Watt, William,3,552,923.

Locke, David R.; and Daniels, John F., Jr., to Sperry Rand Corporation. Auxiliary cutter means for an electric dry shaver. 3,552,010, Cl. 30-43.92

Lockered, Robert M.; Smith, Mark W.; Cooper, Ray E.; and Goode, George E., to Texas Instruments, Incorporated. Modular electronics communication system. 3,553,693, Cl. 343-100.

Lockheed Aircraft Corporation: *See—*
Grosser, William E., 3,552,192.
Koprowski, Thomas J., 3,552,195.
Schwartz, Daniel M., 3,552,764.

Loffler, Tilo. Apparatus for forcing leather uppers against a shoe last in the toe region thereof. 3,551,927, Cl. 12-14.4

Lojkutz, Bruno V., to Gits Bros. Mfg. Co. Shaft seal. 3,552,752, Cl. 277-40.

Lomberk, Edward; and Rosston, Edgar C. Spiral surface. 3,552,750, Cl. 273-112.

Lonati, Francesco. Thread displacement device for use with cutting and gripping units of double cylinder knitting machines. 3,552,149, Cl. 66-14.

Long, Daniel G.: *See—*
Backer, Leo E.; and Long, Daniel G.,3,551,946.

Long, Donald A.: *See—*
Mosher, Walter W., Jr.; and Long, Donald A.,3,551,963.

Loral Corporation: *See—*
Honig, William, 3,553,588.

Lorenz, Donald H.: *See—*
Field, Nathan D.; and Lorenz, Donald H.,3,553,183.

Lorenz, Horst: *See—*
Baumann, Kurt; Lorenz, Horst; Borgmann, Michael; and Maass, Rudolf,3,552,006.

Losert, Gerhard K., to General Electric Company. Interval timer for providing a fixed and locked timed cycle. 3,552,115, Cl. 58-22.9

Lossa, Ulrich: *See—*
Stenmans, Heinz; Franzen, Gustav; and Lossa, Ulrich,3,552,666.

Love, John J., to Emerson Electric Co. Stepped opening diaphragm gas valve. 3,552,430, Cl. 137-495.

Lowe, Edison; and Durkee, Everett L., to United States of America, Agriculture. Reverse osmosis system for concentrating liquid foods. 3,552,566, Cl. 210-86.

Lowe, Edison; and Durkee, Everett L., to United States of America, Agriculture. Reverse osmosis system. 3,552,574, Cl. 210-353.

Lubbock, Frederick J.: *See—*
Kershaw, Robert W.; Lubbock, Frederick J.; and Polgar, Livia,3,553,152.

Lucas, Calvin M., to Phillips Petroleum Company. Method and apparatus for facing thermoplastic pipe. 3,552,265, Cl. 90-21.

Lucas, Joseph, (Industries) Limited: *See—*
Cheshire, Anthony Ernest, 3,553,532.
Fry, William Lawrence, 3,553,408.
Hemmings, Robert; and Hunt, John William Archibald, 3,553,511.
Hicks, Harris Vernon, 3,553,519.

Hicks, Harris Vernon, 3,553,520.
Howey, Kenneth Clayton, 3,553,510.
Nolan, Roger William, 3,553,564.
Skinner, Robert Thomas John, 3,552,656.
Woodward, Thomas George; Wright, Eric John; and Hayes, Albert Thomas, 3,552,449.

Lucien, Rene, to Societe Anonyme dite: Messier. System for controlling the braking members of a vehicle on wheels. 3,552,803, Cl. 303-21.

Luhleich, Hartmut. Piercable closure diaphragm for a chamber. 3,552,441, Cl. 137-625.48

Lukaschewsky, Bohdan: *See—*
Marcheso, Robert L.; and Lukaschewsky, Bohdan,3,552,511.

Lukomsky, Sergei Meerovich. Heating and cooling unit. 3,552,133, Cl. 62-3.

Luksas, Anthony J., to Beatrice Foods Co. Fermenting whey and producing soy sauce from fermented whey. 3,552,981, Cl. 99-145.

Lumidor Products Corporation: *See—*
Harmon, James R., 3,553,572.

Lummus Company, The: *See—*
Guerrieri, Salvatore A., 3,552,948.

Lundergan, Robert Graham; Gombar, Eugene Leonard; and Maltais, Frederick Jean, to AMP Incorporated. Clips to hold knobs on shafts. 3,552,784, Cl. 287-53.

Lundergan, Robert Graham; and Reynolds, Charles Edward, to AMP Incorporated. Electrical interconnecting system and parts. 3,553,634, Cl. 339-258.

Lundergan, Robert Graham; and Reynolds, Charles Edward, to AMP Incorporated. Electrical interconnecting system and parts. 3,553,635, Cl. 339-258.

Lundgren, Carl W.: *See—*
Miller, Carl B.; Clark, Richard A.; Retford, David T.; and Lundgren, Carl W.,3,553,159.

Lundstrom, John W.; and Mosteller, Marston D. system for moisture measurement at microwave frequencies. 3,553,573, Cl. 324-58.5

Lussem, Heribert: *See—*
Hock, Fromund; Lang, Karl; and Lussem, Heribert,3,552,857.

Lutz, Lewis Wesley: *See—*
Wertz, Lawrence Dillard; and Lutz, Lewis Wesley,3,552,744.

Lynn, John W.: *See—*
Brotherton, Thomas K.; Lynn, John W.; and Knopf, Robert J.,3,553,249.

Lyon, Chester C., to Arkla Industries, Inc. Reduction of vapor pressure in absorption type refrigeration cycle. 3,553,136, Cl. 252-69.

Lysaght, John, (Australia) Limited: *See—*
Harvey, Grahame J.; and Cameron, Donald I., 3,553,034.

M & T Chemicals Inc.: *See—*
Weiss, Charles O., 3,552,917.

Maass, Rudolf: *See—*
Baumann, Kurt; Lorenz, Horst; Borgmann, Michael; and Maass, Rudolf,3,552,006.

MacDermod, Donald E., to Teradyne Components. Precision incremental stepping device. 3,552,220, Cl. 74-107.

Mac Donald, Thomas J., to AmForge, Inc. Bar shear apparatus. 3,552,253, Cl. 83-272.

Mace, Harry W., to Aerosol Techniques Incorporated. Clear aerosol soaps. 3,553,138, Cl. 252-90.

Machida, Kazuya: *See—*
Kurimura, Shizuo; Machida, Kazuya; and Hotta, Tomio,3,553,711.

MacKenzie, Angus Roy: *See—*
Jason, Alfred Charles; MacKenzie, Angus Roy; and Mitchell, Terence George,3,552,030.

MacMillan Bloedel Limited: *See—*
Bos, Arie; and Greenough, Ronald L., 3,552,457.

MacMullan, Samuel J.; Parker, Kenneth B., Jr.; and Paschkis, Albert E., to Leeds & Northrup Company. Multipoint-multibank recording system. 3,553,712, Cl. 346-34.

Madge, Werner; and Hilgendorf, Joachim, to Kienzle Apparate G.m.b.H. System and method for intake and ejection of forms in a data processing machine. 3,553,649, Cl. 340-172.5

Maeda, Taizo: *See—*
Kado, Masaru; Maeda, Taizo; and Yoshinaga, Eiichi,3,553,323.

Magee, Robert T.: *See—*
Haraway, William M., Jr.; and Magee, Robert T.,3,553,002.

Magnaflux Corporation: *See—*
Lefebvre, Bernard J., 3,552,190.

Maguire, Hugh C., to Sperry Rand Corporation. Fast-acting avalanche mode transistor switch. 3,553,499, Cl. 307-302.

Mahler, Leo M., to Statham Instruments, Inc. ECG and blood pressure signals simulator. 3,552,036, Cl. 35-17.

Maier, Ludwig. Process for preparing nitrogen-containing tertiary phosphines and phosphine oxides. 3,553,265, Cl. 260-570.5

Maier, Martin: *See—*
Purrer, Josef; Binder, Berthold; and Maier, Martin,3,552,773.

Maigret, Robert J., 1/2 to Pesce, George. Ambient-light-operated binlever controlsystem having transparent photocell housing. 3,553,471, Cl. 250-239.

Mail, Isaac Paul, to Combustion Engineering, Inc. Filtering apparatus. 3,552,573, Cl. 210-275.

Malamet, Georg: *See—*
Vernaleken, Hugo; Malamet, Georg; Bottenbruch, Ludwig; Krimm, Heinrich; and Schnell, Hermann,3,553,285.

Malcom, Glen A.: *See—*
Glasson, Woodrow R.; Malcom, Glen A.; Lambert, George M.; and Shumaker, Jackie W.,3,552,223.

Maltais, Frederick Jean: *See—*
Lundergan, Robert Graham; Gombar, Eugene Leonard; and Maltais, Frederick Jean,3,552,784.

Mandler, Walter, to Leitz, Ernst, G.m.b.H. Illuminated reticle for optical viewing instruments. 3,552,819, Cl. 350-10.

Manetta, Peter J., to Simplex Corporation. Accumulating lift and carry conveyor. 3,552,543, Cl. 198-219.

Manganelli, Raymond M.: *See—*
Mytelka, Alan I.; and Manganelli, Raymond M.,3,553,089.

Manley, Brian William, to U.S. Philips Corporation, mesne. Image intensifiers including matrix of elongated electrodes for locating output signals geometrically. 3,553,457, Cl. 250-209.

Mann, Roger H.: *See—*
Bean, Arthur R., Jr.; Fraga, Donald W.; and Mann, Roger H.,3,553,295.

Mannesmannrohren Werke G.m.b.H.: *See—*
Pfeiffer, Gerd; Biller, Horst; and Schrey, Claus, 3,552,170.

Manning, James Leslie. Spectacles with cheekbone engaging offset padded arms. 3,552,839, Cl. 351-123.

Manos, George: *See—*
Simoneau, Earl P.; and Manos, George,3,553,683.

Manthey, Egon S.: *See—*
Soanes, Randolph Spencer; Fourdraine, John D.; and Manthey, Egon S.,3,552,256.

Manville, Charles J., to Manville Manufacturing Corporation. Torque free valve assembly. 3,552,714, Cl. 251-88.

Manville Manufacturing Corporation: *See—*
Manville, Charles J., 3,552,714.

Marans, Nelson S., to Grace, W. R., & Co. Novel water soluble polymer. 3,553,255, Cl. 260-482.

Maras, Edward M. Brake lining wear indicator. 3,553,643, Cl. 340-52.

Marateck, Jack M. Knockdown frame for pictures or the like. 3,552,050, Cl. 40-155.

Marathon Oil Company: *See—*
Argabright, Perry A.; Phillips, Brian L.; and Sinkey, Vernon J., 3,553,121.

Marchenko, Georgy Sereevich: *See—*
Zavadsky, Alexandr Vasilievich; Mogilevsky, Georgy Fedorovich; Markovsky, Anatoly Vitalievich; and Marchenko, Georgy Sereevich,3,552,378.

Marcheso, Robert L.; and Lukaschewsky, Bohdan, to Fairbanks Morse Inc. Method and apparatus for calculating a piece count by weighing calculations. 3,552,511, Cl. 177-1.

Marco, Gino J.: *See—*
Jaworski, Ernest G.; and Marco, Gino J.,3,553,330.

Marcolngo, Egilo, to Terry Plastic di Guizzandi Claudio Alfio e Marcolongo Egilio, Soc. di fatto Cascine Olona di Settimo Milanese. Compartmented storage cabinet. 3,552,817, Cl. 312-107.

Marconi Company Limited, The: *See—*
Blount, Eric Albert, 3,552,807.

Marczy, Robert L. Apparatus for gauging work lengths. 3,552,254, Cl. 83-461.

Marechal, Emile, to Societe Fives Lille-Cail. Cladding headers having tubes attached thereto. 3,551,995, Cl. 29-471.3

Margulies, Howard: *See—*
Miller, Bernard; and Margulies, Howard,3,553,320.

Marino, Francis C.: *See—*
Wolf, Edgar; and Marino, Francis C.,3,553,374.

Mark, Arthur M.; and Mehltretter, Charles L., to United States of America, Agriculture. High-amylose starch acetate. 3,553,196, Cl. 260-233.5

Markarian, Mark: *See—*
Puppolo, Henry F.; and Markarian, Mark,3,553,544.

Marketing/Displays, inc.: *See—*
Hillstrom, David U., 3,552,708.

Markovsky, Anatoly Vitalievich: *See—*
Zavadsky, Alexandr Vasilievich; Mogilevsky, Georgy Fedorovich; Markovsky, Anatoly Vitalievich; and Marchenko, Georgy Sereevich,3,552,378.

Markowitz, Jerome; and Griffith, Errol R., to Allen Organ Company. Accenter touch bar for electronic musical instrument. 3,553,336, Cl. 84-1.09

Markus, Richard L.: *See—*
Hotchkiss, Thomas W.; and Markus, Richard L.,3,552,628.

Markus, Zdzislaw: *See—*
Baltes, Josef; Weghorst, Friedrich; and Markus, Zdzislaw,3,553,120.

Marquardt, Heinz, to Leitz, Ernst, G.m.b.H. Photographic Gauss type objective. 3,552,829, Cl. 350-176.

Marquardt, Heinz, to Leitz, Ernst, G.m.b.H., Firma. Photographic Gauss type objective. 3,552,833, Cl. 350-217.

Marquis, Donald A.: *See—*
Lima, Joseph H.; Marquis, Donald A.; and Sternberg, Herwig,3,551,986.

Marshall, Louis, to General Utility Bag Corporation. Foldable garment container. 3,552,529, Cl. 190-13.

Martens, Theodore P.; and Patton, James R., to Sinclair Koppers Company. Locking mechanism for egg cartons. 3,552,635, Cl. 229-44.

Martin, David G., to Upjohn Company, The. 1,4-Dihydro-3H-2,3-benzoxazine derivatives. 3,553,214, Cl. 260-244.

Martin, Merle E., to Koppers Company, Inc. Electronic counter for counting serially advancing oscillating objects. 3,553,465, Cl. 250-223.
Martin Metals Company: *See—*
Hockin, John, 3,552,479.
Martinet, Jacques R.; and Allen, Jim E., to Kaiser Aluminum & Chemical Corporation. Gunnable refractory. 3,552,984, Cl. 106-56.
Martyniuk, Ernest T., to General Motors Corporation. Method of making tools from metal particles. 3,552,955, Cl. 75-212.
Marvel Engineering Company: *See—*
Kudlaty, Walter J., 3,552,874.
Maschinenfabrik Fahr AG: *See—*
Purrer, Josef; Binder, Berthold; and Maier, Martin, 3,552,773.
Maschinenfabrik Schweiter AG: *See—*
Jenny, Rudolf, 3,552,555.
Maslan, David: *See—*
Creese, Bertram T.; Lieberman, Edgar M.; and Maslan, David,3,552,549.
Mason, Peter Alan, to Wickman Machine Tool Sales Limited. Spindle assemblies for grinding wheels. 3,552,064, Cl. 51-5.
Mason, Richard K., to Bell Aerospace Corporation. Concentric spool valve. 3,552,433, Cl. 137-553.
Mason, Vern K. Ticket dispenser. 3,552,616, Cl. 225-103.
Massey-Ferguson Services N.V.: *See—*
Scott, Walter J., 3,552,772.
Masson, Robert Gaston: *See—*
Ollier, Jacques Honore Gaspard; Grosshans, Georges, Frederic; and Masson, Robert Gaston,3,552,634.
Massonne, Joachim: *See—*
Hauschild, Ulrich; Massonne, Joachim; and Schmidt, Hans Werner,3,552,944.
Mastalski, Henry N., to Fanner Manufacturing Company, The. Detachable socketed dead end. 3,551,959, Cl. 24-123.
Mastic Corporation: *See—*
Mattes, Lee H., 3,552,078.
Math Bauerle G.m.b.H.: *See—*
Schinke, Heinz, Joachim; and Raible, Hermann, 3,552,312.
Mathers, Robert V.; and Trampus, William, to Fruehauf Corporation. Brake cam shaft bearing. 3,552,808, Cl. 308-29.
Matson Navigation Company: *See—*
Harlander, Leslie A.; Boyer, Warren N.; and Jordan, Michael A., 3,552,345.
Matsubara, Shozo: *See—*
Omori, Mineharu; Terayama, Kozo; Matsubara, Shozo; Shigematsu, Tatsuo; and Kido, Gen,3,552,011.
Matsubayashi, Hirozo: *See—*
Matsubayashi, Takashi; and Matsubayashi, Hirozo,3,552,055.
Matsubayashi, Takashi; and Matsubayashi, Hirozo, to Nintendo Playing Card Co., Ltd. Toy building blocks. 3,552,055, Cl. 46-26.
Matsuda, Seigo, to Monsanto Research Corporation. Method for generating electricity in hydrazine- oxygen fuel cell. 3,553,028, Cl. 136-86.
Matsushita Denki Kabushiki Kaisha: *See—*
Mori, Tetsuo; Iwabuchi, Makoto; Yoshioka, Hideoki; and Ono, Kenji, 3,553,729.
Matsushita Electric Industrial Co., Ltd.: *See—*
Ikushima, Hiroshi; and Hayakawa, Shigeru, 3,553,134.
Miyazaki, Eiichi, 3,553,719.
Shimotsuma, Wataru; Mizoguchi, Akira; and Shimizu, Toshio, 3,553,108.
Tatsuzawa, Yoshinobu; and Uchida, Kosaku, 3,553,685.
Matsushita Electric Works, Ltd.: *See—*
Yamada, Norio, 3,552,007.
Matsushita Electronics Corporation: *See—*
Nakashima, Shinichi; Takeshima, Masumi; and Miyai, Yukio, 3,553,539.
Mattenley, Earl A. Incinerator. 3,552,332, Cl. 110-8.
Mattes, Lee H., to Mastic Corporation. Building siding. 3,552,078, Cl. 52-520.
Matthews, Kenneth V., to Beckman Instruments, Inc. Scaling circuit for analog voltage signal measuring instruments. 3,553,580, Cl. 324-115.
Matzke, Joseph; and Zempel, Gary R. Apparatus for proofing and frying bakery goods. 3,552,300, Cl. 99-352.
Maurer, Spencer B. Rotary power tool clutch mechanism. 3,552,499, Cl. 173-93.
Maus, Louis, to North American Rockwell Corporation. Laminated structural members. 3,553,054, Cl. 156-382.
Maxey, Carl W.; Montague, Grant R.; Leyde, Warren L.; and Bryan, Eugene L., to Black Clawson Company, The. Veneer defect detector and clipper control. 3,552,252, Cl. 83-362.
May, Ernest N., Jr, to Universal Dynamics Corporation. Particle drying apparatus. 3,552,034, Cl. 34-80.
Mayer, James R., to Gardner-Denver Company. Drill rod uncoupling and storage apparatus. 3,552,506, Cl. 175-85.
Maykuth, Daniel J.; and Ogden, Horace R., to Battelle Development Corporation, The, mesne. Method of producing ductile-tungsten base sheet alloy. 3,551,992, Cl. 29-420.5
McArthur, Bruce E. Slab transfer apparatus. 3,553,414, Cl. 219-10.71
McCall, John M., to Fairchild Camera & Instrument Corporation. Turret font photocomposing machine. 3,552,285, Cl. 95-4.5
Mc Cann, John J.: *See—*
Land, Edwin H.; and Mc Cann, John J.,3,553,360.
McCarty, Charles Bruce, to Procter & Gamble Company, The. Enzyme containing detergent composition and a process for conglutination of enzymes and detergent composition. 3,553,139, Cl. 252-95.
Mc Cay, Frank V., Jr., to Envirotech Corporation. V-type fluid driven motor. 3,552,268, Cl. 91-180.
Mc Connell, Ronald Frank, to Du Pont de Nemours, E. I., and Company. Electron beam vaporization coating apparatus. 3,552,352, Cl. 118-49.5
McCormack, Roger W., to Scientism Laboratories, Inc. Alkalated humic acid-silica compositions for fertilizers and the like and methods of making same. 3,552,943, Cl. 71-23.
Mc Coy, George H., to Air Products and Chemicals, Inc. Plasma arc welding method and apparatus. 3,553,422, Cl. 219-121.
McCumber, Virgil Robert: *See—*
Hansen, Harold Valentine; Wolf, Lester Carl; McCumber, Virgil Robert; and Chidester, Robert Leroy,3,552,601.
McDermott, John W., to Celanese Coatings Company. Process for transferring a design to a surface. 3,553,044, Cl. 156-155.
Mc Donald, Allen S., Jr., to Handy & Harman. Method of making internally oxidized dispersion hardened copper product. 3,552,954, Cl. 75-206.
McDonnell Douglas Corporation: *See—*
Newcomer, Robert E., 3,551,994.
Warren, Robert A., 3,552,587.
McGary, Charles W., Jr.; and Smith, Percy L., to Union Carbide Corporation. Polyesters containing bicyclo[2.2.1] hept-2-Yl acrylate and methacrylate. 3,553,294, Cl. 260-871.
McGhee, John D., to Du Pont de Nemours, E. I., and Company. Apparatus and method for controlling the power supplied to a load. 3,553,428, Cl. 219-494.
McGoogan, George David; Noble, Paul Douglas; Shultz, Joseph Leonard; and Diehl, Floyd William, to McKay Machine Company, The. Stock pushing apparatus and method. 3,552,174, Cl. 72-284.
McGraw-Edison Company: *See—*
Bufkin, Dale E.; Murphy, Willard G.; and Beam, Norman A., 3,552,298.
Iltis, Rumult, 3,552,737.
McGuire, Richard M.: *See—*
Thomas, Vernon H.; and McGuire, Richard M.,3,552,532.
McGuirk, Francis A., Jr., to Wagner Electric Corporation. Cathode heater arrangement for vacuum type display devices. 3,553,525, Cl. 315-95.
McIlvried, Howard G.: *See—*
Hamilton, Harry A.; McIlvried, Howard G.; and Sebulsky, Raynor T.,3,553,106.
McIntyre, Glenn H., Jr.: *See—*
Albanese, Richard P.; and McIntyre, Glenn H., Jr.,3,552,071.
McKay Machine Company, The: *See—*
McGoogan, George David; Noble, Paul Douglas; Shultz, Joseph Leonard; and Diehl, Floyd William, 3,552,174.
McKellen, Patrick Ewart: *See—*
Bushrod, Charles J.; and McKellen, Patrick Ewart,3,553,019.
McKendrick, Lorne J. Balancing apparatus for hoists. 3,552,720, Cl. 254-135.
McLean, Ronald L., to Houdaille Industries, Inc. Optimumly tuned and efficient viscous dampers. 3,552,230, Cl. 74-574.
McLoughlin, James Joseph. Musical instrument. 3,553,340, Cl. 84-1.28
McMullen, Patrick: *See—*
Carpenter, William George David; Johnson, William; Lloyd, Thomas; McMullen, Patrick; and Watt, William,3,552,923.
McNeff, George A., to Interlake Steel Corporation. Cooking-grill construction. 3,552,301, Cl. 99-445.
Mc Veigh, Harry A.: *See—*
Stover, William A.; and Mc Veigh, Harry A.,3,553,104
Mead Corporation, The: *See—*
Howard, Sam B., 3,552,082.
Meates, Kevin F. Connecting element for connecting slotted structural elements in toy construction kits. 3,552,056, Cl. 46-29.
Medevco: *See—*
Jaeger, Wilbert J., 3,551,933.
Meeks, Emett O. Alternator power source. 3,553,473, Cl. 290-40.
Mefina S.A.: *See—*
Fresard, Marcel, 3,552,340.
Fresard, Marcel, 3,553,506.
Megles, John E., to Corning Glass Works. Strengthening ceramic articles. 3,553,063, Cl. 161-43.
Mehltretter, Charles L.: *See—*
Mark, Arthur M.; and Mehltretter, Charles L.,3,553,196.
Meinke, Wilbur E., to New Britain Machine Company, The. Machine tool. 3,552,264, Cl. 90-11.
Melchior, Gerard, to Compagnie Francaise de Television. Receiver for PAL color television system. 3,553,353, Cl. 178-5.4
Melnick, Daniel: *See—*
Cooper, Irwin; Sexton, Edwin Leon; Melnick, Daniel; and Wegner, Marcus I.,3,552,980.
Melone, Robert R., to Illinois Tool Works Inc. Remote sensing indicator device. 3,553,666, Cl. 340-244.
Meltsner, Bernard R.: *See—*
Wollensak, John C.; and Meltsner, Bernard R.,3,553,270.
Mercantile Stores Company, Inc.: *See—*
Creese, Bertram T.; Lieberman, Edgar M.; and Maslan, David, 3,552,549.

Merchant, James K.; and Obenour, Robert. Gain increasing alarm system. 3,553,669, Cl. 340-261.
Merck & Co., Inc.: *See—*
Grenda, Victor J., 3,553,197.
Merck, E., A.G.: *See—*
Kohlschutter, Hanswolfgang; Getrost, Helmut; Reich, Walter; Rossler, Hubert; and Horl, Walter, 3,553,001.
Unger, Richard; and Muller-Calgan, Helmut, 3,553,218.
Messerschmitt-Bolkow Gesellschaft mit beschrankter Haftung: *See—*
Heinzmann, Werner; and Pfahl, Siegfried, 3,553,349.
Meszaros, Jozsef, to Pratt & Whitney Inc. Z-axis control system. 3,552,236, Cl. 77-4.
Metacon AG: *See—*
Tinnes, Bernhard, 3,551,989.
Metcalfe, Frederick S., to Westinghouse Electric Corporation. Room air conditioner mounting arrangement. 3,552,470, Cl. 160-26.
Metz, Leonard: *See—*
Hall, Lewis E.; and Metz, Leonard,3,552,291.
Meyer, Alfons. Bag. 3,552,639, Cl. 229-63.
Meyer, Alfred L., to Anetsberger Brothers, Inc. Alligator pastry former. 3,552,327, Cl. 107-8.
Meyer, Edward T., to Meyer Products, Inc. Spreader hopper for dump truck. 3,552,659, Cl. 239-657.
Meyer, John G.: *See—*
Kral, James, Jr.; Meyer, John G.; and Stoltz, James F.,3,552,484.
Meyer, Karl-Otto; Schiffmann, Richard; and Himmelmann, Wolfgang, to Agfa-Gevaert Aktiengesellschaft. Antistatic layer for photographic materials. 3,552,972, Cl. 96-87.
Meyer Products, Inc.: *See—*
Meyer, Edward T., 3,552,659.
Michaelson, Joseph B.; and Criswell, Angie F., said Michaelson assor. to said Criswell. Synthetic nail structure. 3,552,401, Cl. 132-73.
Michaelson, Joseph B.; and Short, John W. IgA antibody from lacteal fluids. 3,553,317, Cl. 424-87.
Michelson, Charles, to Teverama S.A. Device for automatically controlling the running of a cinematographic projector. 3,552,841, Cl. 352-92.
Michelson, Fredrick E.; and Runton, Leslie A. Valve system. 3,552,422, Cl. 137-329.1
Michigan Oven Company: *See—*
Porwancher, Samuel R., 3,553,403.
Michnay, Raymond P.; and Johnson, Ivan R., to General Motors Corporation. Governor. 3,552,409, Cl. 137-54.
Mierley, Goerge M., Sr., to Westinghouse Electric Corporation. High efficiency static seal assembly. 3,552,753, Cl. 277-137.
Mihajlov, Vsevolod S.: *See—*
Carreira, Leonard M.; and Mihajlov, Vsevolod S.,3,553,708.
Miki, Takao, to Mitsubishi Denki Kabushiki Kaisha. Ignition device for internal combustion engine. 3,553,725, Cl. 315-209.
Miles Laboratories, Inc.: *See—*
Csizmas, Louis L.; Patel, Virendra; and Davis, Raymond Vincent, 3,553,310.
Fetter, Marion Cook, 3,552,925.
Fetter, Marion Cook, 3,552,928.
Ward, Frederick Edmund, 3,553,267.
Miller, Bernard; and Margulies, Howard, to American Cyanamid Company. Novel insecticidal β-phosphonylvinyl phosphates and method for preparing same. 3,553,320, Cl. 424-204.
Miller, Carl B.; Clark, Richard A.; Retford, David T.; and Lundgren, Carl W., to Brunswick Corporation. Molded article and moldable composition. 3,553,159, Cl. 260-41.5
Miller, Carroll D.: *See—*
Tiernan, Thomas O.; Miller, Carroll D.; Futrell, Jean H.; and Abramson, Fred P.,3,553,452.
Miller, De Witt H., to General Electric Company. Apparatus for simultaneously firing arrays of controlled semiconductor devices. 3,553,493, Cl. 307-252.
Miller, John A.; and Pocsi, Powell J., to United States of America, Army. Aircraft antenna with vibration damping. 3,553,700, Cl. 343-705.
Millerbernd, Paul A. Breakaway lighting standard. 3,552,073, Cl. 52-98.
Millipore Corporation: *See—*
Dwyer, James L.; Paine, Richard A.; and Souza, Charles W., 3,553,067.
Millmaster Onyx Corporation: *See—*
Ginilewicz, Wlodek L.; and Tesoro, Guiliano C., 3,553,111.
Mine, Akihiko; Hino, Naganori; Fujinami, Akira; Nodera, Katsuji; Horiuchi, Fukashi; and Nishizawa, Yoshihiko, to Sumitomo Chemical Company, Ltd. Esters of aryloxyacrylic acid. 3,553,252, Cl. 260-473.
Minehart, Robert F., to Western Electric Company, Incorporated. Synchronizing the movement of first and second articles and printing markings on one of the articles. 3,552,308, Cl. 101-37.
Ministerul Industriei Constructilor de Masini: *See—*
Subovici, Vadim, 3,553,622.
Minnesota Mining and Manufacturing Company: *See—*
Fields, Richard P.; and Neumayer, John J., 3,552,929.
Jones, Derrick A., 3,553,709.
Mira-Pak Inc.: *See—*
Leasure, William C., 3,552,081.
Mirrer, Raymond, to Design-A-Phone, Inc. Modularized decorative telephone ensemble. 3,553,388, Cl. 179-100.
Mise, Noritoshi: *See—*
Kobayashi, Koji; and Mise, Noritoshi,3,553,308.
Mison, Richard M., to Ohmega Laboratories. Selective attenuator comprising a plurality of slidable attenuation units. 3,553,608, Cl. 333-81.
Mitchell, John E., Company: *See—*
Olson, John W., Jr., 3,552,886.
Mitchell, Peter W. D.; and Blumenthal, Jack H., to International Flavors & Fragrances, Inc. Perfume compositions containing unconjugated octanitriles. 3,553,110, Cl. 252-522.
Mitchell, Terence George: *See—*
Jason, Alfred Charles; MacKenzie, Angus Roy; and Mitchell, Terence George,3,552,030.
Mitchell, Wallace F., to Ammco Tools, Inc. Wheel gauge adapter. 3,552,700, Cl. 248-205.
Mito, Satoru; Suzuki, Kazuo; Murata, Shinichi; and Yoshida, Hiroshi, to Tokyo Shibaura Electric Co., Ltd. Sintered alloys of a chromium carbide-tungsten carbide-nickel system. 3,552,937, Cl. 29-182.7
Mitsubishi Denki Kabushiki Kaisha: *See—*
Hayamizu, Kou-Ichi, 3,553,599.
Miki, Takao, 3,553,725.
Miyai, Yukio: *See—*
Nakashima, Shinichi; Takeshima, Masumi; and Miyai, Yukio,3,553,539.
Miyakawa, Kozi; and Yoshida, Shimpei, to Japan Gas Chemical Company, Inc. Pellet mill for wet powdery materials. 3,551,950, Cl. 18-12.
Miyanaga, Kazukiyo: *See—*
Takehisa, Masaaki; Yamada, Tadao; Takasaka, Yoshio; and Miyanaga, Kazukiyo,3,553,187.
Miyazaki, Eiichi, to Matsushita Electric Industrial Co., Ltd. Printing device of modulation on faceplate of cathode-ray tube. 3,553,719, Cl. 346-140.
Mizoguchi, Akira: *See—*
Shimotsuma, Wataru; Mizoguchi, Akira; and Shimizu, Toshio,3,553,108.
Mladenovich, Peter: *See—*
Burgener, John Ernest; and Mladenovich, Peter,3,552,564.
Mobil Oil Corporation: *See—*
Etherington, Robert W., Jr.; and Liauw, Koei-Liang, 3,553,220.
Hepplewhite, Herbert L.; and Bieber, Henry E., 3,553,131.
Rosinski, Edward J.; and Plank, Charles J., 3,553,102.
Sparks, Arnold F., 3,553,070.
Stover, William A.; and Mc Veigh, Harry A., 3,553,104.
Townsend, Robert D., Jr., 3,552,903.
Zemanek, Joseph, Jr., 3,553,640.
Moerkens, Jozef Cornelis; and Van Den Bogaart, Antonius Johannes, to U.S. Philips Corporation, mesne. High frequency generator for the ignition of a discharge lamp. 3,553,526, Cl. 315-98.
Moffa, Louis J. Wear resisting spikes for shoes. 3,552,043, Cl. 36-67.
Moffett, Robert Bruce, to Upjohn Company, The. Azabicycloalkylpropiophenones. 3,553,200, Cl. 260-239.
Mogilevsky, Georgy Fedorovich: *See—*
Zavadsky, Alexandr Vasilievich; Mogilevsky, Georgy Fedorovich; Markovsky, Anatoly Vitalievich; and Marchenko, Georgy Sereevich,3,552,378.
Mohacsi, Ernest: *See—*
Leimgruber, Willy; and Mohacsi, Ernest,3,553,223.
Moll, Franz: *See—*
Kuhn, Gerhard; Graf, Albin; Moll, Franz; and Otto, Rigobert,3,552,966.
Moller, Jens L., to Continental Can Company, Inc. Easy opening container. 3,552,597, Cl. 220-53.
Molnar, John A., to Wiltek, Inc. Tape handling and storage apparatus. 3,552,618, Cl. 226-25.
Molvar, Henry E., Jr.: *See—*
Hausslein, Robert W.; Walitt, Arthur L.; and Molvar, Henry E., Jr.,3,553,174.
Monk, Paul Robin; and Wadso, Bertil Ingemar, to LKB-Produkter AB. Methods and apparatus for continuously analysing liquids by micro calorimetric measurement of the thermal flow of the liquid. 3,552,207, Cl. 73-190.
Monroe, Wayne W.; Deines, Siegmund; Jeffers, Homer A., Jr.; and Trenary, John M., to Aqua Tec Corporation. Hydraulic motor driven toothbrush. 3,551,931, Cl. 15-22.
Monsanto Chemicals Limited: *See—*
Burt, Patrick Vivian, 3,553,114.
Monsanto Company: *See—*
Fink, Walter, 3,553,242.
Jaworski, Ernest G.; and Marco, Gino J., 3,553,330.
Leybourne, Allen E., III.; and Dees, John R., 3,551,949.
Tucker, Huel C., 3,553,664.
Wisdom, Francis A., 3,552,728.
Monsanto Research Corporation: *See—*
Byrne, Joseph J.; and Williams, David L., 3,553,031.
Matsuda, Seigo, 3,553,028.
Montagano, Anthony. Interior auto mirror support for sunglasses or the like. 3,552,701, Cl. 248-309.
Montague, Grant R.: *See—*
Maxey, Carl W.; Montague, Grant R.; Leyde, Warren L.; and Bryan, Eugene L.,3,552,252.
Montanus, Richard C.: *See—*
Morgan, Guy E., Jr.; and Montanus, Richard C.,3,552,242.

Montecatini Edison S.p.A.: *See—*
Bedetti, Gianfranco, 3,552,920.
Covini, Romano; Pieroni, Marcello; and Herzenberg, Jean, 3,553,222.

Montreal Locomotive Works, Limited: *See—*
Williams, Joseph E., 3,552,365.

Moog Industries, Inc.: *See—*
Elder, Clifton L.; Fitch, Lawrence H.; Kornblum, Ronald I.; and Wehner, William C., 3,552,785.
Wehner, William C., 3,551,990.

Moore, Burt D., to Moore Paper Boxes, Incorporated. Cut flower package. 3,552,059, Cl. 47-41.12

Moore, Donald R.: *See—*
Tesoro, Giuliana C.; and Moore, Donald R.,3,553,254.

Moore Paper Boxes, Incorporated: *See—*
Moore, Burt D., 3,552,059.

Moore, Zack J.: *See—*
Goode, John V., Jr.; and Moore, Zack J.,3,552,185.

Moorhead, John Gerald: *See—*
Warren, Raymond W.; Barclay, Ralph G.; and Moorhead, John Gerald,3,552,413.

Moragne, Edward L. Method for producing a plastic impregnated article. 3,553,005, Cl. 117-119.

Moragne, Edward L. Vehicle theft alarm and control device. 3,553,641, Cl. 340-64.

Morales, Juan G.: *See—*
Hass, Duane K.; Morales, Juan G.; and Whetstone, Richard R.,3,553,322.

Moreno, Angel. Electrical gun hammer and nail driver. 3,552,627, Cl. 227-121.

Morgan, Dennis J.; and Nielson, Carl C., to United States of America, Atomic Energy Commission. Queuing and automatic retry arrangements for communication systems. 3,553,385, Cl. 179-18.

Morgan, Guy E., Jr.; and Montanus, Richard C., to Springfield Machine Tool Company, The. Power operated indexing turret. 3,552,242, Cl. 82-36.

Mori, Tetsuo; Iwabuchi, Makoto; Yoshioka, Hideoki; and Ono, Kenji, to Matsushita Denki Kabushiki Kaisha. Electromagnetic relay having adjustable biasing means to prevent chattering of the switch contacts. 3,553,729, Cl. 335-192.

Morikawa, Takeshi: *See—*
Oda, Tomikazu; Inamoto, Yoshiaki; Morikawa, Takeshi; Oo, Kogen; and Nakatani, Umewaka,3,553,288.

Morishita, Masutaka: *See—*
Ishikawa, Toshikatsu; and Morishita, Masutaka,3,552,922.

Morrell, Jacque C. Composite high energy rocket propellants and process for same. 3,552,127, Cl. 60-215.

Morrill, Joseph B. Storage battery constituting a closed system. 3,553,017, Cl. 136-6.

Morris, Harold D.; and Leigh, Philip G., to Systron-Donner Corporation. Electric motor speed control apparatus, system and method. 3,553,555, Cl. 318-314.

Morris, William W.: *See—*
Stemke, Henry F.; and Morris, William W.,3,552,852.

Morrissey, Thomas G.: *See—*
Shaver, John A.; Dole, Edwin K.; Osmond, Robert S.; and Morrissey, Thomas G.,3,553,675.

Morritt, K. P., Limited: *See—*
Morritt, Kenneth Patrick, 3,552,675.

Morritt, Kenneth Patrick, to Morritt, K. P., Limited. Closed face fishing reel. 3,552,675, Cl. 242-84.21

Morrow, Joseph H. Expandable cylindrical piston. 3,552,276, Cl. 92-193.

Morse, Milton. Heat shielded press. 3,551,952, Cl. 18-17.

Mortensen, Aage, to A/S V. Jeppesens Savvaerk. Laminated tongue and groove building element. 3,552,079, Cl. 52-593.

Morton International, Inc.: *See—*
Weyna, Philip L.; and Frey, David A., 3,552,998.

Morva, Tibor, to Sprecher & Schuh AG. High voltage switchgear housing with sticky viscouse coating for catching metal particles and, thereby protecting the insulators. 3,553,410, Cl. 200-168.

Moser, Gerald J.: *See—*
Gorman, Howard C.; Simone, John; Shaheen, Joseph M.; van Zanten, Melvin J.; Bowman, Darl F.; and Moser, Gerald J.,3,553,648.

Moser, Kenneth B.: *See—*
Verbanac, Frank; and Moser, Kenneth B.,3,553,194.

Mosher, Walter W., Jr.; and Long, Donald A. Self-locking snap fastener. 3,551,963, Cl. 24-216.

Mosler Research Products, Inc.: *See—*
Kaplan, Martin; Hansen, Donald E.; and Quist, Eric G., 3,553,730.

Moss, Harold S.: *See—*
Garbe, Howard W.; and Moss, Harold S.,3,552,161.

Mosteller, Marston D.: *See—*
Lundstrom, John W.; and Mosteller, Marston D.,3,553,573.

Motorola, Inc.: *See—*
Glasser, James R., 3,553,601.
Gregson, Robert Ernest, 3,553,530.
Robertson, Roy C. A.; and Panzica, Frank, 3,553,585.

Mott, George E.; and Ezekiel, Edison R., to Texaco Inc. Offshore installation. 3,552,131, Cl. 61-46.

Motta, Salvatore, to Avco Corporation. Method for manufacturing a band brake. 3,552,001, Cl. 29-558.

Moughty, John J.: *See—*
Brown, Robert J.; Kowalewski, John J.; and Moughty, John J.,3,553,629.

Mount, Bruce Elson, to Hoffmann-La Roche Inc. Ultrasonic transducer assembly for biological inspections. 3,552,382, Cl. 128-2.05

Mountfield, Brian Arthur: *See—*
Duxbury, Frederick Keith; Mountfield, Brian Arthur; and Oldham, Joseph,3,553,289.

Mounts, Frank W., to Bell Telephone Laboratories, Incorporated. Conditional replenishment video system with sample grouping. 3,553,361, Cl. 178-7.1

Mounts, Frank W., to Bell Telephone Laboratories, Incorporated. Conditional replenishment video system with run length coding of position. 3,553,362, Cl. 178-7.1

Mowers, William L.: *See—*
Stumpf, Robert J.; and Mowers, William L.,3,553,065.

Mueller, Francis X., Jr., to Phillips Petroleum Company. Alkene oxide polymerization catalyzed by organoaluminum-organophosphine mixtures. 3,553,182, Cl. 260-88.3

Mulkens, Casper Antonius Hendricus: *See—*
Dijksterhuis, Popko Reinder,3,553,337.

Muller, Karl, to Siempelkamp, G., & Co. Plant for the production of pressed sheets. 3,551,944, Cl. 18-4.

Muller, Peter Klaus Jurgen: *See—*
Schroder, Werner Johann Hermann; Rudolf, Prescher; and Muller, Peter Klaus Jurgen,3,552,894.

Muller, Robert Hans, to Franklin, J. G., & Sons, Ltd. Swivel couplings for use in breathing or anaesthetic or other medical apparatus. 3,552,778, Cl. 285-94.

Muller-Calgan, Helmut: *See—*
Unger, Richard; and Muller-Calgan, Helmut,3,553,218.

Mullins, Albert A., to Schlumberger Technology Corporation. Well tool safety joint. 3,552,492, Cl. 166-237.

Mund, Konrad; Wendtland, Ralf; and Winsel, August. Electrodialysis process and cell. 3,553,092, Cl. 204-180.

Munzberg, Walter, to Ernst, Max. Electric remote control device for setting switches and signals of toy-model-railroad track means. 3,553,667, Cl. 340-248.

Muramatsu, Akio, to Fujitsu Limited. Method of manufacturing solid electrolytic capacitors. 3,553,087, Cl. 204-38.

Murata, Hiroshi; Katuda, Kozo; Kunitomo, Tetsunosuke; Sasaki, Shosaku; and Nishio, Minoru, to Toyo Rayon Kabushiki Kaisha. Polyamides and sulfonic acid group containing vinyl polymers. 3,553,286, Cl. 260-857.

Murata, Shinichi: *See—*
Mito, Satoru; Suzuki, Kazuo; Murata, Shinichi; and Yoshida, Hiroshi,3,552,937.

Muratore, Emile: *See—*
Courvoisier, Pierre; Muratore, Emile; Roche, Andre; and Vignet, Paul,3,552,189.

Murauskas, Donald J., to Snap-Yite, Inc., mesne. Rotary valve. 3,552,719, Cl. 251-297.

Murphy, Donald P., to Hooker Chemical Corporation. Paint stripping composition and method. 3,553,144, Cl. 252-158.

Murphy, Harry C., Jr.: *See—*
Donaldson, Robert E.; Murphy, Harry C., Jr.; and Stauffer, Harry C.,3,553,107.

Murphy, Willard G.: *See—*
Bufkin, Dale E.; Murphy, Willard G.; and Beam, Norman A.,3,552,298.

Murray, Patrick Anthony Molteno; and Craig, David. Balers. 3,552,109, Cl. 56-343.

Murray, Robert A., to SCM Corporation. Arrangement for reading, recording and storing information. 3,553,434, Cl. 235-61.11

Murray, Robert H. Scoring device for punching and removing chips from computer punch cards. 3,552,615, Cl. 225-97.

Murray-Way Corporation: *See—*
Przygocki, Witold C., 3,552,067.

Mychalowych, Eugene A.: *See—*
Fasse, Gerald A.; and Mychalowych, Eugene A.,3,552,547.

Myers, Robert R. Swimming pool cleaner. 3,551,930, Cl. 15-1.7

Mytelka, Alan I.; and Manganelli, Raymond M. Radiation treatment of materials. 3,553,089, Cl. 204-157.1

Naganuma, Takashi: *See—*
Gunji, Harunobu; Ohkura, Noriyoshi; and Naganuma, Takashi,3,553,011.

Nagin, Harry S. Skate and skating surface. 3,552,746, Cl. 272-3.

Nagy, John, Jr., to Weston Instruments, Inc. Rectifier utilizing plural channels for eliminating ripple. 3,553,566, Cl. 321-8.

Nakajima, Hitoshi: *See—*
Kominami, Naoya; Nakajima, Hitoshi; Kimura, Takeo; and Sakurai, Tokio,3,553,246.

Nakanishi, Shigeo: *See—*
Banks, Bruce A.; and Nakanishi, Shigeo,3,552,124.

Nakao, Keiji: *See—*
Nishikawa, Fumio; Yasuda, Ryoichi; and Nakao, Keiji,3,553,091.

Nakashima, Shinichi; Takeshima, Masumi; and Miyai, Yukio, to Matsushita Electronics Corporation. Microwave-oscillating device and the method of making same. 3,553,539, Cl. 317-234.

Nakatani, Umewaka: *See—*
Oda, Tomikazu; Inamoto, Yoshiaki; Morikawa, Takeshi; Oo, Kogen; and Nakatani, Umewaka,3,553,288.

Naslund, Erik I., to FMC Corporation. Automatic scullery apparatus. 3,552,561, Cl. 209-73.

Nass, Gerald I.: *See—*
Bassemir, Robert W.; Dennis, Richard; and Nass, Gerald I.,3,552,986.

National Automatic Tool Company, Inc.: *See—*
Butler, Joseph L., 3,552,069.

National Cash Register Company, The: *See—*
Puterbaugh, William H., Jr., 3,553,540.

National Distillers and Chemical Corporation: *See—*
Quackenbush, John J., 3,552,638.

National Lead Company: *See—*
White, Edward L.; and Pitrot, Adrian R., 3,552,916.

National Research Development Corporation: *See—*
Chan, Lin Tak; and Tobias, Stephen Albert, 3,552,181.
Jason, Alfred Charles; MacKenzie, Angus Roy; and Mitchell, Terence George, 3,552,030.
Parks, John Ronald; and Rengger, Ralph Eric, 3,553,456.
Percival, Alan Lawrence, 3,552,166.

National Starch and Chemical Corporation: *See—*
Jarowenko, Wadym, 3,553,195.

Naubereit, Henry, to United States of America, Navy. Detecting and transmitting system with interval timing means. 3,552,520, Cl. 181-0.5

Neal, Charles Bailey; Schuster, William Daniel; and Scott, Benton Boyd, to Sylvania Electric Products, Inc. Photographic film and television signal reproduction apparatus. 3,553,352, Cl. 178-5.2

Nedenskov, Poul, to Aktieselskabet Grindstedvaerket. Method of producing 7-nitrosubstituted 1,4- benzodiazepines. 3,553,205, Cl. 260-239.3

Nederlandsche Folografische Industrie N.V.: *See—*
Kleinstra, Harm; and De Langhe, Joseph E., 3,552,847.

Neff, Herbert E.; and Chesnut, William R., to Champlain, Bobst, Inc. Rotary slit cutter. 3,552,251, Cl. 83-299.

Nehrenberg, Alvin E.: *See—*
Rundell, Gene R.; and Nehrenberg, Alvin E.,3,552,950.

Neil, Hugh G. Hybrid function generator for optical sensing systems. 3,553,443, Cl. 235-150.53

Neilson, John M. S., to RCA Corporation. Semiconductor rectifiers having controlled storage and recovery characteristics. 3,553,536, Cl. 317-235.

Nelsen, Roger J.: *See—*
Armbruster, Ronald H. D.; and Nelsen, Roger J.,3,552,629.

Nelson, Arley A. Can top cleaner. 3,551,937, Cl. 15-236.

Nelson, Dale H. Electrical energy conversion by switching of static storage devices. 3,553,479, Cl. 307-110.

Nelson, Floyd O. Animal feeder. 3,552,360, Cl. 119-53.5

Nelson, Glenn S.: *See—*
Kattan, Ahmed A.; and Nelson, Glenn S.,3,552,108.

Nelson, Norman A.; and Vanden Berg, Gary E., to Upjohn Company, The. Lipid-normalizing N-(phenoxyphenyl)-sulfamides. 3,553,329, Cl. 424-321.

Nelson, Raymond L., to Eastman Kodak Company. Temperature control circuit. 3,553,429, Cl. 219-497.

Nerwin, Hubert: *See—*
Babcock, David Lockman; and Nerwin, Hubert,3,552,283.

Nesbitt, Raymond A.: *See—*
Figiel, Francis J.; and Nesbitt, Raymond A.,3,553,142.

Netherwood, Paul H., to Sprague Electric Company. Capacitor disconnect device. 3,553,542, Cl. 317-247.

Netherwood, Paul H., to Sprague Electric Company. Convolutely wound capacitor. 3,553,543, Cl. 317-258.

Neubeck, William H., Jr., to Julian Engineering Company. Hanger loading apparatus. 3,552,620, Cl. 226-105.

Neumayer, John J.: *See—*
Fields, Richard P.; and Neumayer, John J.,3,552,929.

Neuspiel, Peter J.; and Spiegel, Milton, to FMC Corporation. Electroflotation apparatus. 3,552,571, Cl. 210-221.

New Britain Machine Company, The: *See—*
Meinke, Wilbur E., 3,552,264.

New Jersey Machine Corporation: *See—*
von Hofe, George W., 3,553,041.
Wolff, Edwin K., 3,553,049.

Newbury, Bryan J. Pipe guide with fixed position rollers. 3,551,983, Cl. 29-200.

Newcomer, Robert E., to McDonnell Douglas Corporation. Method for producing structural members. 3,551,994, Cl. 29-471.1

Newell, Chester W., to Newell Industries, Inc. Tape transport apparatus. 3,552,680, Cl. 242-192.

Newell Industries, Inc.: *See—*
Newell, Chester W., 3,552,680.
Vogel, Charles A.; and Blackie, James William Forrest, 3,552,681.

Newill, Geoffrey Frederick. Centrifugal trap-shooting device. 3,552,900, Cl. 124-6.

Newman, Douglas George; and Newman, John Frederick. Means for securing pieces of jewellery to one another. 3,552,119, Cl. 59-85.

Newman, John Frederick: *See—*
Newman, Douglas George; and Newman, John Frederick,3,552,119.

Newmyer, Charles T.: *See—*
Livingston, David N.; Smith, Max R.; and Newmyer, Charles T.,3,553,432.

Niechwiadowicz, Michal: *See—*
Weinstein, Jerry L.; Niechwiadowicz, Michal; and Crall, Hugh C.,3,553,112.

Nielsen, Earl A.: *See—*
Rosenwald, Robert H.; and Nielsen, Earl A.,3,553,263.

Nielson, Carl C.: *See—*
Morgan, Dennis J.; and Nielson, Carl C.,3,553,385.

Niemeyer, Edward H.: *See—*
Schierhorst, Albert E.; and Niemeyer, Edward H.,3,553,718.

Nihei, Isao: *See—*
Fukuhara, Mototada; Ueno, Akira; Nihei, Isao; and Sano, Chikara,3,552,114.

Nintendo Playing Card Co., Ltd.: *See—*
Matsubayashi, Takashi; and Matsubayashi, Hirozo, 3,552,055.

Nippon Carbon Company, Limited: *See—*
Ishikawa, Toshikatsu; and Morishita, Masutaka, 3,552,922.

Nippon Denso Company Limited: *See—*
Kawashima, Yoshichi, 3,553,563.

Nippon Denso Kabushiki Kaisha: *See—*
Sato, Suguru, 3,553,505.

Nippon Enlarging Color Inc.: *See—*
Suenaga, Taro, 3,553,371.

Nischk, Gunther: *See—*
Wieden, Horst; Rellensmann, Wolfgang; Holtschmidt, Hans; Roos, Ernst; and Nischk, Gunther,3,553,173.

Nishikawa, Fumio; Yasuda, Ryoichi; and Nakao, Keiji. Method of photonitrosation of cycloalkanes. 3,553,091, Cl. 204-162.

Nishimura Mfg. Co., Ltd.: *See—*
Niwa, Akira, 3,552,088.

Nishio, Minoru: *See—*
Murata, Hiroshi; Katuda, Kozo; Kunitomo, Tetsunosuke; Sasaki, Shosaku; and Nishio, Minoru,3,553,286.

Nishizawa, Kazunori: *See—*
Katsumi, Mamoru; and Nishizawa, Kazunori,3,553,141.

Nishizawa, Yoshihiko: *See—*
Mine, Akihiko; Hino, Naganori; Fujinami, Akira; Nodera, Katsuji; Horiuchi, Fukashi; and Nishizawa, Yoshihiko,3,553,252.

NISI: *See—*
Gretchenliev, Hristo Ivanov; and Dimitrov, Gueorgui Stanoev, 3,552,080.

Nitz, Jacob; and Graham, Glenn R., to Abex Corporation. Carbonized friction article. 3,552,533, Cl. 192-107.

Niwa, Akira, to Nishimura Mfg. Co., Ltd. Method of and apparatus for packing articles. 3,552,088, Cl. 53-28.

Noble, Arless B. Phototypesetting apparatus for display tyography. 3,552,284, Cl. 95-4.5

Noble, Donald G.: *See—*
Slitti, Ralph L., Jr.; Noble, Donald G.; and Shunn, William F.,3,552,367.

Noble, Paul Douglas: *See—*
McGoogan, George David; Noble, Paul Douglas; Shultz, Joseph Leonard; and Diehl, Floyd William,3,552,174.

Nodera, Katsuji: *See—*
Mine, Akihiko; Hino, Naganori; Fujinami, Akira; Nodera, Katsuji; Horiuchi, Fukashi; and Nishizawa, Yoshihiko,3,553,252.

Nogami, Iwao, to Honeywell Inc. Method for controlling modulus of binary modulus multiplying circuit by binary counter circuit. 3,553,591, Cl. 328-46.

Nolan, Roger William, to Lucas, Joseph, (Industries) Limited. Voltage regulators without a Zener diode for battery charging systems. 3,553,564, Cl. 320-61.

Nordberg Manufacturing Company: *See—*
Traupmann, Robert R., 3,552,320.

Nordeen, Donald L., to General Motors Corporation. Vehicle power steering gear with lateral acceleration feedback means. 3,552,517, Cl. 180-79.2

Nordin, Ivan C., to Parke, Davis & Company. Phenylpyrazolodiazepinone compounds. 3,553,207, Cl. 260-239.3

Nordin, Ivan C., to Parke, Davis & Company. 3-Methyl-8-phenylpyrazolo[4,3-e][1,4]diazepin-5 (1H)-one, 7-oxide compounds. 3,553,210, Cl. 260-239.3

Nordin, Ivan C.: *See—*
L'Italien, Yvon J.; and Nordin, Ivan C.,3,553,209.

Nordt, Herbert: *See—*
Schnoring, Hildegard; Classe, Willy; Heine, Diez; Nordt, Herbert; and Kreutzer, Karl-Heinz,3,553,186.

Nordvik, Donald T., to Gould-National Batteries, Inc. Container hole punching mechanisms. 3,552,250, Cl. 83-162.

Normalms Industrier Aktiebolag: *See—*
Olin, Gosta Robert, 3,552,035.

North American Car Corporation: *See—*
Koranda, Clarence J., 3,552,799.

North American Rockwell Corporation: *See—*
Ahlert, Robert C.; Silverman, Jacob; Greene, Stanley A.; and Young, Richard K., 3,552,126.
Barton, Forrest A.; and Belezos, Stratis George, 3,552,145.
Cosetta, Harold J., 3,552,447.
Frankel, Milton B.; and Rowley, Gerald L., 3,553,253.
Gorman, Howard C.; Simone, John; Shaheen, Joseph M.; van Zanten, Melvin J.; Bowman, Darl F.; and Moser, Gerald J., 3,553,648.
Lauer, George, 3,553,358.
Maus, Louis, 3,553,054.
Papp, Louis S., 3,552,101.
Wiesinger, Frederick C., 3,552,148.

North, Reginald Harry; and Taylor, Peter Norman, to General Motors Corporation. Motor vehicle cooler systems. 3,552,483, Cl. 165-11.

Norton Company: *See—*
Bassan, Benjamin, 3,552,885.
Carr, Albert H., Jr.; and Ratkiewicz, Albert W., 3,552,375.

Notley, Norman T.; and Senentz, Irwin M., Jr., to Kalvar Corporation. Photographic vesicular materials and imaging process therefore. 3,552,961, Cl. 96-48.
Notley, Norman T.; and Senentz, Irwin M., Jr., to Kalvar Corporation. Photographic vesicular materials and imaging process therefore. 3,552,962, Cl. 96-48.
Notley, Norman T.; and Senentz, Irwin M., Jr., to Kalvar Corporation. Photographic vesicular materials and imaging process therefor. 3,552,963, Cl. 96-48.
Notley, Norman T.; and Senentz, Irwin M., Jr., to Kalvar Corporation. Photographic vesicular materials and imaging process therefore. 3,552,964, Cl. 96-48.
Notley, Norman T.; and Senentz, Irwin M., Jr., to Kalvar Corporation. Photographic vesicular materials and imaging process therefore. 3,552,965, Cl. 96-48.
Novkov, Raymond E., to Warner & Swasey Company, The. Insert bit for cut-off tools having aligning means between tip and shank. 3,551,975, Cl. 29-95.
Novkov, Raymond E., to Warner & Swasey Company, The. Blade-like cutoff tool. 3,551,977, Cl. 29-96.
N.V. COQ: *See—*
Boersma, Rintje, 3,553,406.
N.V. Maschinefabriek L. Te Strake: *See—*
Fransen, Theodorus, 3,552,622.
Nye, Dudley D., Jr.; and Keith, Arley L., Jr., to Airpax Electronics Incorporated. Linear power transducer with non-linear feedback network. 3,553,569, Cl. 323-22.
Nye, Walter A.Sportman's cargo net. 3,552,613, Cl. 224-42.46
Nygren, Harry Mauritz, to AB Industrifjadrar. Devices for locking a strap cooperating with a retracting mechanism. 3,551,961, Cl. 24-196.
Oak Electro/Netics Corporation: *See—*
Kramer, Roger L.; and Beyer, James, 3,553,474.
Obenour, Robert: *See—*
Merchant, James K.; and Obenour, Robert,3,553,669.
Oberhofer, Alfred W. Method of removal of molybdate ions from water. 3,553,126, Cl. 210-37.
Oberst, Hermann; Ebigt, Joachim; Duve, Gunther; and Schommer, Alfred, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Vibration damped sandwich systems. 3,553,072, Cl. 161-165.
Ocker, Herbert, to Werner & Pfleiderer. Process for production of directly spinnable poly (ethylene terephthalate). 3,553,171, Cl. 260-75.
O'Connell, James P. Method and apparatus for housing an enclosed area with aero-trussed structures. 3,552,072, Cl. 52-2.
Oda, Tomikazu; Inamoto, Yoshiaki; Morikawa, Takeshi; Oo, Kogen; and Nakatani, Umewaka, to Teijin Limited. Polyamide polyester composition of improved physical properties. 3,553,288, Cl. 260-857.
Oehmann, Manfred: *See—*
Dosch, Peter; and Oehmann, Manfred,3,553,556.
Oerlikon-Buhrle Holding Ltd.: *See—*
Engel, Walter, 3,551,972.
Office National d'Etudes et de Recherches Aerospatiales:*See—*
Gouillou, Roger L., 3,553,582.
Ogawa, Taizo: *See—*
Hirai, Hajime; Fujimoto, Keimei; Okuno, Yositosi; Ogawa, Taizo; and Yoshioka, Hirosuke,3,553,233.
Ogden, Horace R.: *See—*
Maykuth, Daniel J.; and Ogden, Horace R.,3,551,992.
O'Hare, Louis R. Generation of electricity. 3,553,503, Cl. 310-11.
Ohio State University Research Foundation, The: *See—*
Walter, Carlton H.; and Jennetti, Anthony G., 3,553,703.
Ohkura, Noriyoshi: *See—*
Gunji, Harunobu; Ohkura, Noriyoshi; and Naganuma, Takashi,3,553,011.
Ohlin, Lars Erik. Device for cleaning the exterior of an elongated body. 3,552,212, Cl. 73-423.
Ohmega Laboratories: *See—*
Mison, Richard M., 3,553,608.
Ohnsorg, Ferdinand R., to Honeyell Inc. Signal processor for generating and analyzing spectral information. 3,553,723, Cl. 235-181.
Ohta, Mitsuhiro: *See—*
Kitagawa, Kenichi; Kadono, Akira; Homura, Rikichi; and Ohta, Mitsuhiro,3,552,121.
Ohtagaki, Yoshio; and Kitano, Hajime, to Iwasaki Denki Kabushiki Kaisha. Thermostatic switch for electric discharge lamp. 3,553,623, Cl. 337-18.
Ohtake, Makoto: *See—*
Sato, Takayoshi; Ohtake, Makoto; and Saruyama, Isao,3,553,455.
Okamura, Akira; Kosaka, Tomoaki; and Aiba, Hiroshi. Automatic telephone answering apparatus. 3,553,375, Cl. 179-2.
Okamura, Mitsumaro: *See—*
Tokumitsu, Ichiro; and Okamura, Mitsumaro,3,552,487.
Okamura, Seizo: *See—*
Yamashina, Hisao; Ito, Akihiko; Iwai, Tadashi; Yayashi, Koichiro; and Okamura, Seizo,3,553,090.
O'Keefe, Robert F., to Pitney-Bowes, Inc. Display device. 3,552,048, Cl. 40-28.
Okuno, Yositosi: *See—*
Hirai, Hajime; Fujimoto, Keimei; Okuno, Yositosi; Ogawa, Taizo; and Yoshioka, Hirosuke,3,553,233.
Oldham, Joseph: *See—*
Duxbury, Frederick Keith; Mountfield, Brian Arthur; and Oldham, Joseph,3,553,289.
Olenzak, Albert Thomas: *See—*
Andersson, Craig R.; and Olenzak, Albert Thomas,3,552,435.
Olgard, Gunnar, to Rederiaktiebolaget Nordstjernan. Flow stabilizing through laminar separation apparatus. 3,552,554, Cl. 210-519.
Olin, Gosta Robert, to Normalms Industrier Aktiebolag. Apparatus for treating goods with a heated gaseous medium. 3,552,035, Cl. 34-191.
Oliver, Alton D., to ACF Industries, Incorporated. Ball valve having trunnion stop. 3,552,717, Cl. 251-285.
Oliver, Donald W.; and Wendt, Gerhard R., to American Home Products Corporation. 17α-Aminoalkynyl-3-chloro 19-norsteroidal 3,5-dienes. 3,553,213, Cl. 260-239.5
Olivetti, Ing., C., & C., S.p.A.: *See—*
Cortona, Alessandro; and Calano, Giuseppe, 3,552,530.
Fantoni, Giuseppe, 3,551,974.
Ollier, Jacques Honore Gaspard; Grosshans, Georges, Frederic; and Masson, Robert Gaston. Containers. 3,552,634, Cl. 229-43.
Olsen, Dale A. Orchard heater. 3,552,376, Cl. 126-59.5
Olson, Harlan D., to Cascade Corporation. Lift truck with line take-up unit. 3,552,425, Cl. 137-355.17
Olson, James R., to Eastman Kodak Company. Toner material and compositions of a polymeric organic-silicon dye, 3,553,133, Cl. 252-62.1
Olson, John W., Jr., to Mitchell, John E., Company. Compressor unit with self-contained drive means. 3,552,886, Cl. 417-269.
Olson, Robert E.; and Smith, Roy E., to Packard Instrument Company, Inc. Labyrinth light seal system for a liquid scintillation counting apparatus sample changing mechanism. 3,553,454, Cl. 250-71.5
Omori, Mineharu; Terayama, Kozo; Matsubara, Shozo; Shigematsu, Tatsuo; and Kido, Gen, to Hitachi Maxell, Ltd. Electric dry shaver. 3,552,011, Cl. 30-43.92
Ondrejka, Albert A. Multi-contact separable electrical connector. 3,553,633, Cl. 339-186.
Ondrejka, Albert A. Parabolic reflector antenna. 3,553,705, Cl. 343-771.
Ondrejmiska, Koloman: *See—*
Hrivnak, Pavol; Ondrejmiska, Koloman; Pechar, Amadeus; and Koren, Jan,3,552,603.
O'Neal , John E.,60% to Cotton, John J. Duct connector system. 3,552,782, Cl. 285-398.
Ono, Kenji: *See—*
Mori, Tetsuo; Iwabuchi, Makoto; Yoshioka, Hideoki; and Ono, Kenji,3,553,729.
Oo, Kogen: *See—*
Oda, Tomikazu; Inamoto, Yoshiaki; Morikawa, Takeshi; Oo, Kogen; and Nakatani, Umewaka,3,553,288.
Orenick, Emil H.; and Orenick, Emil J. Cable retainer. 3,552,696, Cl. 248-68.
Orenick, Emil J.: *See—*
Orenick, Emil H.; and Orenick, Emil J.,3,552,696.
Organon Inc.: *See—*
de Winter, Max Salomon, 3,553,237.
Hewett, Colin Leslie; and Savage, David Samuel, 3,553,212.
Orlando, Anthony W.; and Pantusco, Anthony A., to International Business Machines Corporation. Strap former and placement apparatus. 3,552,177, Cl. 72-338.
Ormsbee, Mary K., to Dick, A.B., Company. Offset master for imaging by diffusion transfer with nucleating agent, cadium salt and a salt of zirconium, thorium or titanium. 3,552,315, Cl. 101-459.
Ormsbee, Mary K., to Dick, A.B., Company. DTR offset master and composition for preparation of same. 3,552,316, Cl. 101-453.
Ormsbee, Mary K., to Dick, A. B., Company. Single sheet master for diffusion transfer. 3,552,970, Cl. 96-76.
Ortgies, Raymond C., to American Air Filter Company, Inc. Gas scrubbing apparatus. 3,552,727, Cl. 261-109.
Osbeck, Gunnar Ingemar Sigvard. Dental instrument. 3,552,023, Cl. 32-60.
Osborne, John: *See—*
Starkey, Bertrand Julian; and Osborne, John,3,553,699.
Osdene, Thomas S.: *See—*
Santilli, Arthur A.; Osdene, Thomas S.; and Childress, Scott J.,3,553,198.
Osen, Ralph T.; and Bolster, Keith D., to Honeywell Inc. Antidisturbance switch with conductive housing top and bottom and printed circuit grid. 3,553,399, Cl. 200-61.45
Oshima, Minoru: *See—*
Fujisaki, Yoshisato; Aishima, Itsuho; Sakurai, Hisaya; Kitaoka, Atsushi; Kawasaki, Hironobu; and Oshima, Minoru,3,553,176.
Oskam, Aane Adriaan, to Technische Industrie A.G. Electric adjusting means for azimuth and elevation adjustment. 3,552,836, Cl. 350-289.
Osmond, Robert S.: *See—*
Shaver, John A.; Dole, Edwin K.; Osmond, Robert S.; and Morrissey, Thomas G.,3,553,675.
Ostwald, Fritz, to Teves, Alfred, G.m.b.H. Hydrodynamic-brake system with heat dissipation from the chassis. 3,552,765, Cl. 280-106.
Oswin, Harry G.; Oxley, James E.; and Fleischmann, Charles W., to Leesona Corporation. Electrochemical cell with lead-containing electrolyte and method of generating electricity. 3,553,027, Cl. 136-86.

Otaka, Kiyoshi. Method and equipment for relax setting. 3,552,032, Cl. 34-9.
Otani, Seiya: *See—*
Sato, Masaki; and Otani, Seiya,3,553,277.
Sato, Masaki; and Otani, Seiya,3,553,278.
Otis Elevator Company: *See—*
Benjamin, Sidney Howard; and Krauer, Otto Albert, 3,552,524.
Otis Engineering Corporation: *See—*
Dollison, William W., 3,552,490.
Schwegman, Harry E., 3,552,718.
Otis, Harold R.: *See—*
Preston, Jerome A.; and Otis, Harold R.,3,553,154.
Otsuka, Hideo: *See—*
Sugiyama, Hiroshi; Otsuka, Hideo; and Yamamoto, Masakazu,3,553,189.
Ott, Granville E., to Texas Instruments, Incorporated. Multiple output convolution multiplier. 3,553,722, Cl. 235-156.
Otto, Rigobert: *See—*
Kuhn, Gerhard; Graf, Albin; Moll, Franz; and Otto, Rigobert,3,552,966.
Otto, Stanley W.; and Warrell, Seth W., to Hallmark Cards, Incorporated. Counters for flat and rotary embossing dies. 3,552,237, Cl. 76-107.
Owen, Donald B.: *See—*
Anderson, Marvin E.; Van Scoyoc, James N.; Owen, Donald B.; and Van Den Heuvel, Anthony P.,3,553,716.
Owens, Billy E., to Owens Manufacturing Inc., mesne. Lubricant and dust seal configuration. 3,552,809, Cl. 308-36.4
Owens Manufacturing Inc.: *See—*
Owens, Billy E., 3,552,809.
Owens-Corning Fiberglas Corporation: *See—*
Havens, Arthur B., 3,553,053.
Smith, Roy E., 3,552,667.
Owens-Illinois, Inc.: *See—*
Eggert, Noel B., 3,551,948.
Riggs, Darius O., 3,552,541.
Trudeau, Urban P., 3,552,942.
Oxley, James E.: *See—*
Oswin, Harry G.; Oxley, James E.; and Fleischmann, Charles W.,3,553,027.
Ozhgikhin, Anatoly Nikolaevich: *See—*
Astafiev, Georgy Vasilievich; Ozhgikhin, Anatoly Nikolaevich; Babkin, Svetoslav Ivanovich; Androsov, Pavel; and Ivanova, Tatiana Lukianovna,3,552,626.
Ozonair Engineering Company Limited: *See—*
Floyd, Frederich, 3,552,099.
Oztec Industries, Inc.: *See—*
Reiss, Peter F., 3,552,070.
Pacciarini, Antonio; and Giletta, Dario, to Pirelli S.p.A. Method for producing the tread band of flexible tread rings while in a plastic state. 3,553,309, Cl. 264-313.
Pacific Coast Engineering Company: *See—*
Wright, Lawrence A., 3,552,794.
Packaging Corporation of America: *See—*
Wertz, Lawrence Dillard; and Lutz, Lewis Wesley, 3,552,744.
Packard Instrument Company, Inc.: *See—*
Olson, Robert E.; and Smith, Roy E., 3,553,454.
Packer, Mervyn B.; and Jesty, James, to Automotive Products Company Limited. Means for preventing skidding of vehicle wheels. 3,552,802, Cl. 303-21.
Paco Corporation: *See—*
Gagnon, Pierre; and La Forest, Pierre, 3,552,581.
Paddison, Eric: *See—*
Spencer, Derek John; and Paddison, Eric,3,553,489.
Page, Maurice, to Bright Star Industries, Inc. Printed circuit lantern battery construction. 3,553,033, Cl. 136-132.
Paine, Richard A.: *See—*
Dwyer, James L.; Paine, Richard A.; and Souza, Charles W.,3,553,067.
Paletz, Leonard M.: *See—*
Simon, Peter A.; Paletz, Leonard M.; Fiterman, Benjamin; Johnson, Marlyn D.; and Ahlberg, Carl S.,3,552,579.
Palitex Project-Company G.m.b.H.: *See—*
Stenmans, Heinz; Franzen, Gustav; and Lossa, Ulrich, 3,552,666.
Pall Corporation: *See—*
Dayson, Philip, 3,552,096.
Grill, Bernard; and Lee, Donald M., 3,552,488.
Palmer, Allan M.: *See—*
Horton, William H.; and Palmer, Allan M.,3,552,286.
Palmer, Leon B.: *See—*
Powell, William H.; Palmer, Leon B.; and Conger, Robert P.,3,552,997.
Palmer, Robert G.: *See—*
Kaess, Gary; and Palmer, Robert G.,3,552,843.
Palmer, Robert T., to Westinghouse Electric Corporation. Refrigeration system with accumulator. 3,552,140, Cl. 62-324.
Pan American Petroleum Corporation: *See—*
Franklin, George M.; Kunkel, Lorenz V.; and Lewis, Willard A., 3,552,927.
Scott, Gordon R., 3,552,343.
Pantusco, Anthony A.: *See—*
Orlando, Anthony W.; and Pantusco, Anthony A.,3,552,177.
Panzica, Frank: *See—*
Robertson, Roy C. A.; and Panzica, Frank,3,553,585.
Paoli, Stephen A. Separator machine for boneless comminuted meat and other food products. 3,552,461, Cl. 146-76.
Papadopulos, Michael Savvas, to British Insulated Callender's Cables Limited. Electric cable installations and joints therefor. 3,553,342, Cl. 174-15.
Papierfabrik G.m.b.H.: *See—*
Eyberg, Willy; Fulber, Josef; and Habig, Helmut, 3,551,945.
Papp, Louis S., to North American Rockwell Corporation. Filter apparatus. 3,552,101, Cl. 55-354.
Paradise, Edson M.: *See—*
Leimontas, Bruno J.; and Paradise, Edson M.,3,553,727.
Parke, Davis & Company: *See—*
Doub, Leonard; and Krolls, Uldis, 3,553,216.
L'Italien, Yvon J.; and Nordin, Ivan C., 3,553,209.
Nordin, Ivan C., 3,553,207.
Nordin, Ivan C., 3,553,210.
Westland, Roger D., 3,553,227.
Parker, Kenneth B., Jr.: *See—*
MacMullan, Samuel J.; Parker, Kenneth B., Jr.; and Paschkis, Albert E.,3,553,712.
Parkhill, Thomas R.: *See—*
Brothers, Charles F.; Parkhill, Thomas R.; and Rosinski, Norman E.,3,553,602.
Parks, John Ronald; and Rengger, Ralph Eric, to National Research Development Corporation. Reading of projected trace errors. 3,553,456, Cl. 250-202.
Parmegiani, Mario; and Bellofatto, Oreste, to Snam Progetti S.p.A. Process for the utilization of the exhausted gases from an ethylene oxide synthesis reactor. 3,552,122, Cl. 60-39.18
Parmerter, Stanley M.: *See—*
Le Roy, David H.; and Parmerter, Stanley M.,3,553,193.
Parmerter, Stanley M.; and Allen, Earle E., Jr., to CPC International Inc. Aminoethyl cyclodextrin and method of making same. 3,553,191, Cl. 260-209.
Parra, Pedro S.: *See—*
Short, Laurel J.; and Parra, Pedro S.,3,552,364.
Parris, Horace T. Wrist watch jacket. 3,552,117, Cl. 58-105.
Parris, Peter P., to Tridair Industries, mesne. Panel construction and method. 3,552,329, Cl. 108-51.
Parrish, Douglas R. Cake pan assembly. 3,552,303, Cl. 99-447.
Parsons, David, to Automotive Products Company Limited. Fluid pressure operated servo-devices. 3,552,272, Cl. 91-369.
Parsons, Howard Grubb, Sir, & Company Limited: *See—*
Shields, John, 3,552,864.
Paschkis, Albert E.: *See—*
MacMullan, Samuel J.; Parker, Kenneth B., Jr.; and Paschkis, Albert E.,3,553,712.
Pasquet, Marcel, to Societe d'Applications Generales d'Electricite et de Mecanique SAGEM. Aiming apparatus including gyroscopic reference system. 3,552,216, Cl. 74-5.34
Patel, Virendra: *See—*
Csizmas, Louis L.; Patel, Virendra; and Davis, Raymond Vincent,3,553,310.
Pates Alimentaires Rivoire & Carret: *See—*
Asper, Jean-Jacques; and Breitling, Gunter, 3,552,465.
Patin, Pierre. Variable speed conveyor. 3,552,544, Cl. 198-219.
Patoka, Martin A., to Tru-Broil Corporation. Rotary oven. 3,552,299, Cl. 99-339.
Patrick, Keith Hilton, to Ring Around Products, Inc. Liquid diffusion spraying mechanism. 3,552,650, Cl. 239-8.
Patton, James R.: *See—*
Martens, Theodore P.; and Patton, James R.,3,552,635.
Paulshock, Marvin, du Pont de Nemours and Company. Pharmaceutical compositions and methods utilizing 4-alkyl-1,4-dimethylcyclohexylamines and 4-alkyl-1, 4-dimethylcyclohexanemethylamines. 3,553,331, Cl. 424-325.
Pavlath, Attila E.: *See—*
Christe, Karl O.; Guertin, Jacques P.; and Pavlath, Attila E.,3,552,936.
Pavone, Carlo; and Ziebarth, Hans Karl, to United States of America, Air Force. Force resolver for inflight thrust determination. 3,552,197, Cl. 73-117.4
Pawloski, James A. Power tool. 3,552,451, Cl. 140-123.
Peake, Samuel G.H.: *See—*
Dominguez, Richard L.; and Peake, Samuel G.H.,3,553,339.
Peavler, James E., to American Air Filters Company, Inc. Fluid cooling arrangement employing liquified gas. 3,552,135, Cl. 62-91.
Pechar, Amadeus: *See—*
Hrivnak, Pavol; Ondrejmiska, Koloman; Pechar, Amadeus; and Koren, Jan,3,552,603.
Pegasus Laboratories, Inc.: *See—*
Zimmerman, Robert L.; and Sallberg, David W., 3,553,447.
Pekarek, Joseph L.: *See—*
Hagar, Donald K.; and Pekarek, Joseph L.,3,552,412.
Pemberton, Troy J., to Phillips Petroleum Company. Automatically tuned process controller. 3,552,428, Cl. 137-486.
Peninger, Harvey N.: *See—*
Fosse, Navarro T.; and Peninger, Harvey N.,3,551,968.
Penn Controls, Inc.: *See—*
Hayes, Thomas E., 3,552,646.
Penn Elastic Company: *See—*
Hartung, Hans, 3,552,155.
Penn-Western Electric: *See—*
Lesher, John C., 3,553,561.

Penton, Perry Wayne; and Flynn, Richard Thomas, to General Electric Company. Data transfer system. 3,553,657, Cl. 340-172.5

Percival, Alan Lawrence, to National Research Development Corporation. Forming of annular workpieces. 3,552,166, Cl. 72-58.

Perfection Corporation: *See—*
Jacobson, Irvin D., 3,552,427.

Perkin-Elmer Corporation, The: *See—*
Brothers, Charles F.; Parkhill, Thomas R.; and Rosinski, Norman E., 3,553,602.
Preston, Kendall, Jr., 3,553,460.

Perkins, Donald C.; and Silk, Leonard P., to General Motors Corporation. Energy absorbing seat support. 3,552,795, Cl. 297-216.

Pernick, David, to Knitting Specialty Machinery Corporation, mesne. Tenter means for fabrics and the like. 3,552,248, Cl. 83-151.

Persson, Bo Sven Olof. Venetian blind. 3,552,473, Cl. 160-166.

Persson, Henry. Edge deburring tool. 3,552,014, Cl. 30-169.

Pesce, Carl A.; Gore, Ernest M.; and Tatham, James P., to Continental Can Company, Inc. High current square wave power source. 3,553,567, Cl. 321-14.

Pesce, George: *See—*
Maigret, Robert J., 3,553,471.

Peter, Richard: *See—*
Ramanathan, Visvanathan; Peter, Richard; and Angliker, Hans-Joerg, 3,552,906.

Peters, Charles M.: *See—*
Shearer, Thomas W., Jr.; Peters, Charles M.; and Tincher, Jon D., 3,553,420.

Petersen, Christian C., to Polaroid Corporation. Control system for a heating station. 3,553,431, Cl. 219-505.

Petersen, John Valdemar Brammer; and Clayson-Kaas, Niels, to Geigy Chemical Corporation. 1 (2H)-Pyridine-sulfonates. 3,553,224, Cl. 260-294.8

Petersen, Vincent C.; and Buehl, Russell C., to Crucible Inc. Method for melting titanium-base alloys. 3,552,947, Cl. 75-10.

Peterson, Carl R., to Ingersoll-Rand Company. Hydraulic drill. 3,552,500, Cl. 173-105.

Peterson Enterprises, Incorporated: *See—*
Stemke, Henry F.; and Morris, William W., 3,552,852.

Petitjean, Jose; and vanHove, Arthur, to Solvay & Cie. Hygroscopic probe apparatus for detecting the water vapor content of organic liquids. 3,553,576, Cl. 324-65.

Petri, Nello J. Dampening system for a lithographic press. 3,552,311, Cl. 101-148.

Pettibone Corporation: *See—*
Rath, James D., 3,552,546.

Pfahl, Siegfried: *See—*
Heinzmann, Werner; and Pfahl, Siegfried, 3,553,349.

Pfeiffer, Gerd; Biller, Horst; and Schrey, Claus, to Mannesmannrohren Werke G.m.b.H., mesne. Method of treating hollow blooms in rolling mills. 3,552,170, Cl. 72-209.

Pfizer, Chas., & Co., Inc.: *See—*
Abushanab, Eli, 3,553,208.
Bouchard, Edward F.; and Hetzel, Carl P., 3,552,977.

Phifer, Clarence G., to Westinghouse Electric Corporation. Spray mechanism for irons. 3,552,046, Cl. 38-77.5

Phillips, Brian L.: *See—*
Argabright, Perry A.; Phillips, Brian L.; and Sinkey, Vernon J., 3,553,121.

Phillips, Charles E. Particulate material mixing machine. 3,552,721, Cl. 259-3.

Phillips Engineering Limited: *See—*
Ballard, Reginald Leonard; and Steer, Ensor William Harold, 3,552,249.

Phillips, John V. Foundry sand compositions. 3,552,983, Cl. 106-38.35

Phillips Petroleum Company: *See—*
Cleary, James W., 3,553,180.
Coale, Harold D., 3,553,068.
Dollinger, Robert E.; Kallenberger, Robert H.; and Frazier, Arthur E., 3,552,211.
Doss, Richard C., 3,553,283.
Gilbreth, Eual W., 3,552,801.
Hepp, Harold J., 3,552,924.
Lucas, Calvin M., 3,552,265.
Mueller, Francis X., Jr., 3,553,182.
Pemberton, Troy J., 3,552,428.
Remke, Marvin A., 3,552,871.
Stratton, Charles A., 3,553,130.
Zavasnik, Frederick J., 3,553,303.

Piazza, Carlo, to Deering Milliken Research Corporation. Process for durably setting a desired configuration in a cellulosic material. 3,553,000, Cl. 117-93.1

Picas Tort, Luis. Manufacture of granulate feed. 3,553,313, Cl. 424-33.

Pick, George G.: *See—*
Blitz, Melvin H.; and Pick, George G., 3,553,438.

Pickett, John E. P. Apparatus and method for direct mounting of microtome tissue specimens. 3,552,247, Cl. 83-24.

Pickett, John E. P. Microtome chuck adapter for histologic tissue receptacle. 3,552,733, Cl. 269-216.

Pierie, Will R.; Raible, Donald A.; and Swendson, David L., to American Hospital Supply Corporation, mesne. Controllable tip guide body and catheter. 3,552,384, Cl. 128-2.05

Pieroni, Marcello: *See—*
Covini, Romano; Pieroni, Marcello; and Herzenberg, Jean, 3,553,222.

Piggotte, Joe M. Basketball practicing aid. 3,552,749, Cl. 273-1.5

Pike, James L., to Data Pathing Incorporated. Photoelectric punched card and document reader. 3,553,435, Cl. 235-61.11

Pillsbury Company, The: *See—*
Davis, Bob K., 3,552,138.

Pinat, Gaston. Bandmills mounting and feed roll assembly. 3,552,455, Cl. 143-22.

Pineda, Cesar L. Coaxial reel mount. 3,552,684, Cl. 242-194.

Pinto, Patrick J., to Young, William E. Bag support stand. 3,552,697, Cl. 248-97.

Pioneer Electric Brandon Limited: *See—*
Dalzell, James W.; Hazleton, Herbert T.; and Thorsteinsson, John B., 3,553,624.

Piper, Robert J., to Stearns Manufacturing Co., Inc. Conveyor system for articles. 3,552,540, Cl. 198-102.

Pirelli S.p.A.: *See—*
Pacciarini, Antonio; and Giletta, Dario, 3,553,309.

Pischinger, Anton; and Haubenhofer, Max, to Friedmann & Maier. Device for adjusting the beginning of fuel injection of an injection pump. 3,552,146, Cl. 64-25.

Pitney-Bowes, Inc.: *See—*
O'Keefe, Robert F., 3,552,048.

Pitre, Davide: *See—*
Felder, Ernst; and Pitre, Davide, 3,553,260.
Felder, Ernst; and Pitre, David, 3,553,259.

Pitrot, Adrian R.: *See—*
White, Edward L.; and Pitrot, Adrian R., 3,552,916.

Pivrnec, Jan: *See—*
Bezouska, Vlastimil; Pivrnec, Jan; Hrdlicka, Jiri; Krasa, Evzen; and Smekal, Zdenek, 3,553,538.

Planetariums Unlimited, Inc.: *See—*
Stern, Philip, 3,552,037.

Plank, Charles J.: *See—*
Rosinski, Edward J.; and Plank, Charles J., 3,553,102.

Plasser, Franz; and Theurer, Josef. Track lining. 3,552,319, Cl. 104-8.

Plasser, Franz; and Theurer, Josef. Temporary rail joint. 3,552,647, Cl. 238-243.

Plastics, Inc.: *See—*
Hacker, Hugh H., 3,552,677.

Plonsker, Larry; and Wright, Norman R., to Ethyl Corporation. Herbitoxic organotin compounds and method using same. 3,552,945, Cl. 71-97.

Plunkett, Larry D., to Signode Corporation. Pneumatic seal-crimping tool for tensioned strapping loops. 3,552,450, Cl. 140-93.4

Pocsi, Powell J.: *See—*
Miller, John A.; and Pocsi, Powell J., 3,553,700.

Pohl, Hans Christoph: *See—*
Hepp, Gunter; Brockmann, Christian; and Pohl, Hans Christoph, 3,552,729.

Polaroid Corporation: *See—*
Gold, Nicholas, 3,552,292.
Land, Edwin H.; and Mc Cann, John J., 3,553,360.
Petersen, Christian C., 3,553,431.
Ting, Lawrence K. M., 3,553,430.

Polgar, Livia: *See—*
Kershaw, Robert W.; Lubbock, Frederick J.; and Polgar, Livia, 3,553,152.

Polymer Corporation Limited: *See—*
Warrach, Wolfgang; Swinney, Frederick Bernard; and Kent, Eric George, 3,553,051.

Poncy, George W. Sterile package for clinical thermometers and the like and method of making it. 3,552,558, Cl. 206-63.2

Pond, Robert W., to American Air Filter Company, Inc. Clamping device for simultaneously securing two panels to a support. 3,552,704, Cl. 248-342.

Poole, John W., to American Home Products Corporation. Dissolution improving ambutonium or protriptyline additives in capsule and tablet dosage forms of a benzodiazepine, such as oxazepam. 3,553,324, Cl. 424-244.

Porsche, Dr.-Ing. h.c.F., KG, Firma: *See—*
Szodfridt, Imre, 3,552,235.

Port, Erich, to Bell Telephone Laboratories, Incorporated. System for providing adjusting signals to a transversal filter equalizer. 3,553,606, Cl. 333-18.

Portas, John Richard; and Carter, Rodney Richard, to Taylor Woodrown Construction Limited. Circumferential stressing of concrete pressure vessels. 3,552,940, Cl. 29-452.

Porwancher, Samuel R., to Michigan Oven Company. Air-flow safety switch. 3,553,403, Cl. 200-83.

Powell, Stanley, to British Titan Products Company Limited. Production of coated titanium dioxide particles. 3,552,995, Cl. 117-69.

Powell, William H.; Palmer, Leon B.; and Conger, Robert P., to Congoleum Industries, Inc., mesne. Process of preparing cellular laminates having a non-cellular surface stratum. 3,552,997, Cl. 117-72.

Power Industries Limited: *See—*
Dorney, John; and Robinson, Colin, 3,552,305.

PPG Industries, Inc.: *See—*
Anderson, Carl C.; Chang, Wen-Hsuan; and Dowbenko, Rostyslaw, 3,553,166.

Pratt & Whitney Inc.: *See—*
Meszaros, Jozsef, 3,552,236.

PREH Elektro-Feinmechanische Werke, Jakob Preh Nachf., Postfach: *See—*
Kohler, Josef, 3,553,626.

Preston, Jerome A.; and Otis, Harold R., to Essex International, Inc. Polytrimellitamide solutions for wire coating. 3,553,154, Cl. 260-30.2

Preston, Kendall, Jr., to Perkin-Elmer Corporation, The. Realization of combinatorial functions by utilizing optical holography and phase modulation by input information. 3,553,460, Cl. 250-217.

Price, Alson K.: *See—*
Sweeney, Richard F.; and Price, Alson K., 3,553,250.

Pricer, Wilbur D., to International Business Machines Corporation. Active storage array having diodes for storage elements. 3,553,658, Cl. 340-173.

Priebe, Paul D. Combined local feeder and nonstop express train. 3,552,321, Cl. 104-18.

Procik, Wallace T.: *See—*
Tsergas, Athanase N.; and Procik, Wallace T., 3,553,581.

Procter & Gamble Company, The: *See—*
Bhatia, Kamlesh Kumar, 3,553,275.
Francis, Marion D., 3,553,314.
Francis, Marion D., 3,553,315.
McCarty, Charles Bruce, 3,553,139.
Rave, Terence William, 3,553,129.

Prolizenz AG: *See—*
Lauener, Wilhelm Friedrich, 3,552,478.

Pronina, Elena Vasilievna: *See—*
Richmond, Henry Hugh; and Pronina, Elena Vasilievna, 3,553,269.

Properzi, Ilario. Rolling mill. 3,552,164, Cl. 72-45.

Przygocki, Witold C., to Murray-Way Corporation. Abrasive belt detector. 3,552,067, Cl. 51-135.

Pugnaire, Jean-Pierre A.; and Erichsen, Herman W., to Bytrex, Inc. Moment transducer. 3,552,199, Cl. 73-141.

Pullman Incorporated: *See—*
Schilf, Harold M.; and Letanosky, Louis A., 3,552,324.

Puppolo, Henry F.; and Markarian, Mark, to Sprague Electric Company. Stacked capacitor. 3,553,544, Cl. 317-258.

Purex Corporation: *See—*
Bauer, Henry, 3,553,143.
Wade, Charles F., 3,552,568.

Purex Corporation, Ltd.: *See—*
Dohogne, Charles L., 3,553,015.
Franzreb, Thomas G., 3,551,934.

Purrer, Josef; Binder, Berthold; and Maier, Martin, to Maschinenfabrik Fahr AG. Rotary-rake haymaking machine with pivotal arms. 3,552,773, Cl. 280-413.

Puterbaugh, William H., Jr., to National Cash Register Company, The. Magnetic-field-sensing field-effect transistor. 3,553,540, Cl. 317-235.

Putnam, Robert C., to Xerox Corporation. Color photoelectrophoretic imaging process. 3,553,093, Cl. 204-181.

Putter, Rolf: *See—*
Grigat, Ernst; and Putter, Rolf, 3,553,244.

Quackenbush, Arthur B.: *See—*
Quackenbush, Robert C., 3,552,238.

Quackenbush, John J., to National Distillers and Chemical Corporation. Peel-open thermoplastic package for sterilized articles. 3,552,638, Cl. 229-66.

Quackenbush, Robert C., 1/2 to Quackenbush, Arthur B. Structure for positively feeding tools such as drills and the like. 3,552,238, Cl. 77-32.8

Quayle, Daniel B.; and Clark, Trevor P., to Canadian Patents and Development Limited. Artificial oyster cultch and method of producing same. 3,552,357, Cl. 119-4.

Quentin, Jean-Pierre; and Ruaud, Michel, to Rhone-Poulenc S.A. Dialdehyde-ketone polycondensates. 3,553,169, Cl. 260-64.

Quint, Stephen Mark, to Johns-Manville Corporation. Asbestos-portland cement pipes with monoethanola- mines, diethanolamines, and triethanolamines as quick-setting agents. 3,553,077, Cl. 162-154.

Quist, Eric G.: *See—*
Kaplan, Martin; Hansen, Donald E.; and Quist, Eric G., 3,553,730.

Rabineau, Eli. Equipment unit. 3,552,042, Cl. 35-60.

Rabinovich, Benedikt Veniaminovich; and Rozinskikh, Fedor Filippovich. Method of making foundry moulds. 3,552,477, Cl. 164-44.

Raciti, Salvatoe A., to RCA Corporation. Electo-optical composition system. 3,553,676, Cl. 340-324.

Rager, Keith E., 49% to Wickline, Larry G. Stair carpet fastener. 3,551,939, Cl. 16-10.

Raible, Donald A.: *See—*
Pierie, Will R.; Raible, Donald A.; and Swendson, David L., 3,552,384.

Raible, Hermann: *See—*
Schinke, Heinz, Joachim; and Raible, Hermann, 3,552,312.

Rails Company, The: *See—*
Burwell, Garwood N., 3,552,649.

Rainbow Crafts, Inc.: *See—*
De Laney, George E.; and Greenberg, Allen A., 3,552,711.

Raiser, Ernst: *See—*
Goebel, Hellmut; and Raiser, Ernst, 3,551,984.

Rajchman, Leon. Prestressed concrete members and method of prestressing the same. 3,552,074, Cl. 52-223.

Ralli Bondite Limited: *See—*
Watters, Alan, 3,553,125.

Ram Tool Corporation: *See—*
Tsergas, Athanase N.; and Procik, Wallace T., 3,553,581.

Ramanathan, Visvanathan; Peter, Richard; and Angliker, Hans-Joerg, to Ciba Limited. Process for dyeing and printing linear polyester fibers and said dyed fibers. 3,552,906, Cl. 8-41.

Ramey, David E., to Shell Oil Company. Preparation of 2-chloro-1-(2,4,5-trichlorophenyl) vinyl dimethyl phosphate. 3,553,297, Cl. 260-969.

Ramm, Horst, to Stubbe, Friedrich. Method and apparatus for molding ice skates. 3,551,957, Cl. 18-36.

Rammler, David H.: *See—*
Ellis, David J.; and Rammler, David H., 3,553,211.

Ramsey, Charles W., to General Motors Corporation. Rotatable shutter means having light-blocking portion when stationary. 3,553,467, Cl. 250-233.

Ranco Incorporated: *See—*
Cook, Russell E., 3,552,136.

Randcar Corporation: *See—*
Hopkins, William J., 3,553,671.

Rank Organisation Limited, The: *See—*
Demaine, David Barnet, 3,552,832.

Ranney, Richard D.; and Smiley, Eldridge H., to Emdeko Distributing, Inc. Visual signal means for a fire detection alarm. 3,552,350, Cl. 116-106.

Raper, Larry B.: *See—*
Cavalier, Stanley J.; Raper, Larry B.; and Walker, Harold B., 3,553,066.

Raschke, Herbert A., to Bullard, E. D., Company. Neck and head protector for mounting on safety helmets. 3,551,910, Cl. 2-3.

Rasmussen, Ole-Bendt. Synthetic polymer sheet. 3,553,069, Cl. 161-143.

Rath, James D., to Pettibone Corporation. Portable belt conveyor with radius movement and hydraulic telescoping and raising. 3,552,546, Cl. 198-233.

Ratkiewicz, Albert W.: *See—*
Carr, Albert H., Jr.; and Ratkiewicz, Albert W., 3,552,375.

Raufoss Ammunisjonsfabrikker: *See—*
Helland, Arvid Frimann, 3,552,781.

Rausin, Hans Anders; and Lindh, Thorsten Lennartsson, to AB Tetra Pak. Packaging material including at least three lamination layers of materials having different viscosities, and a package produced therefrom. 3,553,073, Cl. 161-166.

Rave, Terence William, to Procter & Gamble Company, The. Emulsifying and textile softening phosphonium compounds, process for preparing the same and other compounds, reactive intermediates. 3,553,129, Cl. 252-8.8

Rawlins, Charles B., to Aluminum Company of America. Self-damping cable. 3,553,350, Cl. 174-130.

Ray, Bartow, to Future Products Development Corporation. Acceleration units, 3,552,725, Cl. 261-24.

Rayrivet, Inc.: *See—*
Hotchkiss, Thomas W.; and Markus, Richard L., 3,552,628.

RCA Corporation: *See—*
Carnt, Peter Swift, 3,553,357.
Easter, Finis C., 3,553,500.
Etter, Robert W., 3,551,997.
Hassett, Frank C., 3,553,485.
Kiss, Zoltan J., 3,552,824.
Neilson, John M. S., 3,553,536.
Raciti, Salvatoe A., 3,553,676.
Szirtes, Thomas, 3,553,731.

Reading, James E., to Forite Enterprises, Inc. Dual media filtration cartridge. 3,552,553, Cl. 210-484.

Reak, Bennett B.: *See—*
Weasler, Anthony V.; and Reak, Bennett B., 3,552,806.

Reardon, Robert J.; and Robbins, William E., to General Motors Corporation. Method of joining hollow elastomeric strips by molding a partially foamable elastomer therebetween. 3,553,301, Cl. 264-46.

Rece, Wesley J., Jr.: *See—*
Daily, William C.; and Rece, Wesley J., Jr., 3,552,094.

Red Devil Incorporated: *See—*
Stefany, William W., 3,552,723.

Redding, Harry L., to General Motors Corporation. Blow molded fuel tank. 3,552,599, Cl. 220-72.

Rederiaktiebolaget Nordstjernan: *See—*
Olgard, Gunnar, 3,552,554.

Reese, Eckart; Rohm, Wilhelm; Hofmeier, Hermann; Bottenbruch, Ludwig; and Schnell, Hermann, to Farbenfabriken Bayer Aktiengesellschaft. Method of solvent casting poly-1,3-benzoxazine-2,4-dione electric insulating films. 3,553,304, Cl. 264-210.

Reeves, Alec Harley; and Barton, Paul, to International Standard Electric Corporation. Coder. 3,553,678, Cl. 340-347.

Reich, Walter: *See—*
Kohlschutter, Hanswolfgang; Getrost, Helmut; Reich, Walter; Rossler, Hubert; and Horl, Walter, 3,553,001.

Reich, William A.; and Hale, Thomas E., to General Electric Company. Infiltrated cemented carbides. 3,551,991, Cl. 29-420.5

Reichelt, Hans: *See—*
Balcke, Gerhard; and Reichelt, Hans, 3,553,504.

Reid, James Angus Wilson: *See—*
Dijkstra, Albert Jan; Goodman, Isaac; and Reid, James Angus Wilson, 3,553,157.

Reid, James S., to Standard Products Company, The. Septic tank vent for boats. 3,551,916, Cl. 4-83.

Reid, John R. Self-stabilizing davit. 3,551,925, Cl. 9-39.

Reif, Robert H., to Sylvania Electric Products, Inc. Transistorized driver circuit. 3,553,598, Cl. 330-11.

Reimers, James L.: *See—*
Haver, William B.; and Reimers, James L.,3,552,464.

Reinhall, Rolf Bertil, to Defibrator Aktiebolag. Multilayer press for production of sheets or boards of fibrous material. 3,552,306, Cl. 100-93.

Reininghaus & Co.: *See—*
Seelbach, Heinz, 3,553,398.

Reis, Helmut: *See—*
Sennewald, Kurt; Gehrmann, Klaus; Handte, Heinz; Erpenbach, Heinz; and Reis, Helmut,3,553,261.

Reischl, Arthur; Traubel, Harro; and Zorn, Bruno, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of microporous sheet- form products permeable to water vapour. 3,553,008, Cl. 117-161.

Reiss, Martin H., to Alarmtronics Engineering, Inc. Alarm system sensitive to cut cables and insensitive to R-F interference. 3,553,687, Cl. 340-409.

Reiss, Peter F., to Oztec Industries, Inc. Torque limiter. 3,552,070, Cl. 51-177.

Reiter, Hans; Hannig, Heinrich; and Falkenrich, Heinrich. Chain making. 3,552,118, Cl. 59-29.

Reliance Electric and Engineering Company, The: *See—*
Carroll, Frederick C., 3,552,844.
Glasson, Woodrow R.; Malcom, Glen A.; Lambert, George M.; and Shumaker, Jackie W., 3,552,223.

Rellensmann, Wolfgang: *See—*
Wieden, Horst; Rellensmann, Wolfgang; Holtschmidt, Hans; Roos, Ernst; and Nischk, Gunther,3,553,173.

Remke, Marvin A., to Phillips Petroleum Company. Method and apparatus for a gas supply control system. 3,552,871, Cl. 415-1.

Remmeli, Charles E.: *See—*
Hunkeler, Ernst J.; Remmeli, Charles E.; and Waasdorp. Robert A.,3,552,260.

Rengger, Ralph Eric: *See—*
Parks, John Ronald; and Rengger, Ralph Eric,3,553,456.

Renner, Alfred: *See—*
Curchod, Jean; Cheritat, Roland; Widmer, Franz Rudolf; Widmer, Gustav; Renner, Alfred; and Batzer, Hans,3,553,115.

Repetto, Silvio, to S.p.A. Luigi Rizzi & Co. Machine for the continuous processing of skins. 3,552,157, Cl. 69-42.

Republic Corporation: *See—*
Rooklyn, Jack, 3,552,742.

Republic Steel Corporation: *See—*
Skubiak, John J.; and Toth, John A., 3,553,570.
Wheeler, Stephen W., 3,552,589.

Research Corporation: *See—*
Bockris, Bernard Patrick John; Sepa, Darko; and Damjanovic, Aleksandar, 3,553,025.
Keenan, Arthur G.; and Siegmund, Robert F., 3,553,039.

Resuggan, Harold Frederick, to Webley & Scott Limited. Piston and cylinder unit having stroke limiting means. 3,552,273, Cl. 91-401.

Retford, David T.: *See—*
Miller, Carl B.; Clark, Richard A.; Retford, David T.; and Lundgren, Carl W.,3,553,159.

Revell, Incorporated: *See—*
Agarwala, Bhaskar Kumar, 3,552,003.

Revertex Limited: *See—*
Godden, George Frederick, 3,553,047.

Reynen, Richard N.: *See—*
Knox, Sidney G.; and Reynen, Richard N.,3,553,382.

Reynolds, Charles Edward: *See—*
Lundergan, Robert Graham; and Reynolds, Charles Edward,3,553,634.
Lundergan, Robert Graham; and Reynolds, Charles Edward,3,553,635.

Reynolds, George A.: *See—*
Seus, Edward J.; and Reynolds, George A.,3,552,958.

Reynolds Metals Company: *See—*
Johnston, Andrew L., III; and Bailey, Herbert S., 3,552,091.
Kirby, Thomas E., Jr., 3,552,559.
Scott, Irvin C., Jr.; and Barker, Layle B., 3,553,094.
Wilson, Calvin L.; and Fox, John H., Jr., 3,552,614.

Rezinskikh, Fedor Filippovich: *See—*
Rabinovich, Benedikt Veniaminovich; and Rezinskikh, Fedor Filippovich,3,552,477.

Rhone-Poulenc S.A.: *See—*
Crenne, Noel; and Brunie, Jean-Claude, 3,553,271.
Quentin, Jean-Pierre; and Ruaud, Michel, 3,553,169.

Rice Honeywell: *See—*
Soanes, Randolph Spencer; Fourdraine, John D.; and Manthey, Egon S., 3,552,256.

Rice, Kendal Wesley, to Bethlehem Steel Corporation. Refractory lined ladle having means to facilitate removal of the lining. 3,552,732, Cl. 266-43.

Rice, Livingston L.; and Rollins, Richard L., to Sprague Electric Company. Capacitance current-flux measuring device. 3,553,574, Cl. 324-60.

Richards, George, & Company Limited: *See—*
Dench, Michael J.; and Robbins, Rowland Clive, 3,553,470.
Dench, Michael John, 3,553,468.

Richardson, Annie C.: *See—*
Fauth, Mae I.; and Richardson, Annie C.,3,552,926.

Richardson, Eugene, to Lamina, Inc. Rotary casing orbital gear-rotor motor. 3,552,893, Cl. 418-61.

Richardson-Merrell Inc.: *See—*
Johnson, Robert G.; Fleming, Robert W.; Wenstrup, David L.; and Kariya, Takashi, 3,553,234.

Richmond, Henry Hugh; and Pronina, Elena Vasilievna. Method for the preparation of phenolsulfide stabilizers. 3,553,269, Cl. 260-609.

Richtzenhain, Hermann: *See—*
Aus Der Funten, Helmut; and Richtzenhain, Hermann,3,553,247.

Ricketts, Thomas Emory: *See—*
Halmos, Imre Aurel; and Ricketts, Thomas Emory,3,553,257.

Riedel, James H.: *See—*
Herbert, William; and Riedel, James H.,3,552,664.

Riemhofer, Franz; Dittmann, Walter; and Schutze, Ernst Christian, to Chemische Werke Huels, A.G. Coating compositions comprising a mixture of an aminoplast and a polyester from hexahydroterephthalic acid. 3,553,284, Cl. 260-850.

Riester, William C.: *See—*
Deibel, Raymond A.; and Riester, William C.,3,553,724.

Rietesel, Russell W.: *See—*
Zievers, James F.; Rietesel, Russell W.; and Schmidt, Henry, Jr.,3,552,569.

Riggs, Darius O., to Owens-Illinois, Inc. Article handling apparatus. 3,552,541, Cl. 198-127.

Rike, Richard C.; and Brombaugh, Burlin B., to General Motors Corporation. Electrical brake lining wear indicator. 3,553,642, Cl. 340-52.

Riley, Charles P., Jr. Compositions for and methods of inhibiting the discoloration of alkylated phenols. 3,553,272, Cl. 260-624.

Rimondini, Augusto; and Foresti, Primo, to Societa Italiana Telecommunicazioni Siemens S.p.A. Voltage stabilizer with overload protection and automatic restoration. 3,553,531, Cl. 317-23.

Ring Around Products, Inc.: *See—*
Patrick, Keith Hilton, 3,552,650.

Rinke, Heinrich: *See—*
Thoma, Wilhelm; and Rinke, Heinrich,3,553,172.

Ripley, Robert A.: *See—*
Kaplan, Charles A.; and Ripley, Robert A.,3,553,116.

Risberg, Robert L., to Cutler-Hammer, Inc. Static shunt motor crane hoist control system with controlled decelerate torque control. 3,553,956, Cl. 318-257.

Ritchey, Eugene B. Ear tag. 3,552,051, Cl. 40-301.

Ritzerfeld, Gerhard. Method of actuating a master and printing therefrom while on a printing drum. 3,552,317, Cl. 101-471.

Rivers, Hubert M., to Calgon Corporation. Method for controlling the hydroxide ion concentration in pulp digestion liquor. 3,553,075, Cl. 162-49.

Robbins, Rowland Clive: *See—*
Dench, Michael J.; and Robbins, Rowland Clive,3,553,470.

Robbins, William E.: *See—*
Reardon, Robert J.; and Robbins, William E.,3,553,301.

Roberts, Carroll R.: *See—*
Breese, Charles F.; Leach, J. R.; and Roberts, Carroll R.,3,552,184.

Roberts, Elliott J.: *See—*
Fitch, Elliot B.; Roberts, Elliott J.; and Weber, William C.,3,552,918.

Roberts, Elliott J., to Dorr-Oliver Incorporated. Process for the manufacture of phosphoric acid. 3,552,919, Cl. 23-165.

Roberts, John T.; and Wing, Ralph L., to Grace, W. R., & Co. Bag feeding, opening and filling apparatus. 3,552,090, Cl. 53-71.

Roberts, Russell R.; and Smith, James D., to Xerox Corporation. Sheet handling apparatus. 3,552,739, Cl. 271-4.

Robertson, David M. Demand regulator. 3,552,420, Cl. 137-315.

Robertson, Roy C. A.; and Panzica, Frank, to Motorola, Inc. Locking and latching mechanism for members of communication equipment chassis. 3,553,585, Cl. 325-15.

Robinson, Colin: *See—*
Dorney, John; and Robinson, Colin,3,552,305.

Robugen G.m.b.H.: *See—*
Gauri, Kailash Kumar, 3,553,192.

Roche, Andre: *See—*
Courvoisier, Pierre; Muratore, Emile; Roche, Andre; and Vignet, Paul,3,552,189.

Rochtus, Gustaaf, to International Standard Electric Corporation. Hospital communication system having provision for connecting patient with nearest nurse- occupied station. 3,553,383, Cl. 179-18.

Rodgers, Wayne V.: *See—*
Schneider, William S.; and Corella, Arthur P., 3,552,087.

Rogers, Victor A. B.; and Leigh, Anthony B. D., to Westland Aircraft Limited. Construction of rotor blades for rotary wing aircraft. 3,552,881, Cl. 416-145.

Roher-Bohm Limited: *See—*
Gregori, Werner K. H., 3,552,076.

Rohm & Haas Company: *See—*
Lewis, Sheldon N.; and Swithenbank, Colin, 3,553,274.

Rohm & Haas G.m.b.H.: *See—*
Schroder, Gunter; and Ganzler, Wolfgang Philipp, 3,553,160.

Rohm, Wilhelm: *See—*
Reese, Eckart; Rohm, Wilhelm; Hofmeier, Hermann; Bottenbruch, Ludwig; and Schnell, Hermann,3,553,304.

Rolland, Jean-Noel Gaston Andre, to Compagnie des Compteurs. Pneumatic gap detector for a force micrometer balance and similar device. 3,552,188, Cl. 73-37.5

Rollason, Christopher John; and Tinsley, Gerald Henry Sutcliffe, to Imperial Chemical Industries Limited. Yarn package. 3,552,679, Cl. 242-159.

Rollins, Richard L.: *See—*
Rice, Livingston L.; and Rollins, Richard L.,3,553,574.

Rolls Royce Limited: *See—*
Bird, Jack Raymond; Hall, Douglas Wilson; and Bye, Peter William John, 3,552,898.

Roman, Robert J.: *See—*
Bundschuh, John J.; and Roman, Robert J.,3,552,683.

Ronellenfitch, Bernard M. Meat hook. 3,552,703, Cl. 248-339.

Ronford Limited: *See—*
Baker, Harry J., 3,552,699.

Rooklyn, Jack, to Republic Corporation. Magnetically engaged rollers for card transport. 3,552,742, Cl. 271-51.

Roos, Ernst: *See—*
Wieden, Horst; Rellensmann, Wolfgang; Holtschmidt, Hans; Roos, Ernst; and Nischk, Gunther,3,553,173.

Roos, Jan, to U.S. Philips Corporation, mesne. Method and device for electrostatically recording signals. 3,553,717, Cl. 346-74.

Roosen, Karl-Heinz, to Kleinewefers Gravuren G.m.b.H. Apparatus for making engraving rolls. 3,552,710, Cl. 249-83.

Rose, Erlan E.: *See—*
Carlton, Herbert E.; and Rose, Erlan E.,3,553,003.

Roseman, Richard J. Hand manipulatable power operated cutter. 3,552,012, Cl. 30-124.

Rosemount Engineering Company Limited: *See—*
Johnston, James Stewart, 3,552,209.
Johnston, James Stewart, 3,553,466.

Rosenheck, Bernard M.: *See—*
Krauss, Bert F.; and Rosenheck, Bernard M.,3,553,367.

Rosenheck, Bernard M., to Litton Systems, Inc. Phasing system for facsimile transmitter and receiver utilizing pulse generating and counting devices. 3,553,370, Cl. 178-69.5

Rosenthal, Dolores. Pet amusement device. 3,552,356, Cl. 119-1.

Rosenwald, Robert H.; and Goeller, Leonhard A., to Universal Oil Products Company. Tertiary alkyl amine and alkyl acid phosphate corrosion inhibitor composition. 3,553,150, Cl. 252-389.

Rosenwald, Robert H.; and Nielsen, Earl A., to Universal Oil Products Company. N,N'-dialkyl-phenylenediamine-biguanide and use as additive in non-aqueous substrates. 3,553,263, Cl. 260-565.

Rosier, Jean-Jacques. Injection mold having preform securing means. 3,551,956, Cl. 318-257.

Rosinski, Edward J.; and Plank, Charles J., to Mobil Oil Corporation. Hydrocracking catalyst and method of preparation. 3,553,102, Cl. 208-111.

Rosinski, Norman E.: *See—*
Brothers, Charles F.; Parkhill, Thomas R.; and Rosinski, Norman E.,3,553,602.

Rossler, Hubert: *See—*
Kohlschutter, Hanswolfgang; Getrost, Helmut; Reich, Walter; Rossler, Hubert; and Horl, Walter,3,553,001.

Rosston, Edgar C.: *See—*
Lomberk, Edward; and Rosston, Edgar C.,3,552,750.

Rostoker, David, to Corning Glass Works. Sintered wollastonite. 3,552,915, Cl. 23-110.

Roth, Karlheinz. Gear with involute teeth. 3,552,226, Cl. 74-457.

Roth, Werner, to Kienzle Apparate G.m.b.H. Event recorder with recording ratio-identifying means. 3,553,713, Cl. 346-65.

Rowe, Edgar R.: *See—*
Fox, William R.; and Rowe, Edgar R.,3,551,921.

Rowe, Kenneth D.: *See—*
Bogaart, Peter; and Rowe, Kenneth D.,3,553,376.

Rowell, John J.; and Wright, William W., to Guardian Electric Manufacturing Company. Electrical relay. 3,553,616, Cl. 335-187.

Rowley, Gerald L.: *See—*
Frankel, Milton B.; and Rowley, Gerald L.,3,553,253.

Royals, John. Ice shaving machine. 3,552,663, Cl. 241-92.

Royka, Stephen F.; and Emerald, Robert L., to Xerox Corporation. Lubricated blade cleaning of imaging photoconductive members. 3,552,850, Cl. 355-15.

Ruaud, Michel: *See—*
Quentin, Jean-Pierre; and Ruaud, Michel,3,553,169.

Rubico, Jerome A.: *See—*
Batchelder, Charles F.; and Rubico, Jerome A.,3,552,041.

Rubino, Andrew M., to Armour Pharmaceutical Company. Antiperspirant compositions containing aluminum chelates of hydroxy carboxylic acids. 3,553,316, Cl. 424-68.

Rubisch, Ottmar, to Sigri Elektragraphit Gesellschaft mit Beschrankter Haftung. Carbon or graphite formed body. 3,553,010, Cl. 117-217.

Rubner, Tibor: *See—*
Thompson, Francis T.; and Rubner, Tibor,3,553,596.

Rudolf, Prescher: *See—*
Schroder, Werner Johann Hermann; Rudolf, Prescher; and Muller, Peter Klaus Jurgen,3,552,894.

Rudolph, Hans: *See—*
Hermann, Karl Heinz; Bockmann, August; and Rudolph, Hans,3,553,161.

Rudolph, Hans, to Siemens & Halske Aktiengesellschaft. Phase shift keyed transmission of debits encoded to eliminate receiver phase uncertainty. 3,553,368, Cl. 178-67.

Ruff, Donald O.: *See—*
Hunter, James R.; Ruff, Donald O.; and Huntzinger, Gerald O.,3,552,368.

Ruhrgas Aktiengesellschaft: *See—*
Heseding, Josef, 3,552,191.

Rundell, Gene R.; and Nehrenberg, Alvin E., to Simonds Saw and Steel Company. High temperature corrosion resistant Fe-G-Ni-Mn alloy. 3,552,950, Cl. 75-122.

Runton, Leslie A.: *See—*
Michelson, Fredrick E.; and Runton, Leslie A.,3,552,422.

Rush, Kenneth E.; and Bell, Leslie J. Envelope assembly. 3,552,641, Cl. 229-69.

Russo, Anthony J.: *See—*
Aidner, Sam; and Russo, Anthony J.,3,552,518.

Rutter, Donald E., to Dixson Automatic Tool, Inc. Machine for feeding workpieces. 3,552,539, Cl. 198-33.

Ruyter, Klaas, to Shell Oil Company. Beta lactone-polyisocyanate casting compositions. 3,553,175, Cl. 260-77.5

Ryan, Arthur S., to Weyerhaeuser Company. Method of making a surface overlay product. 3,553,048, Cl. 156-216.

Rye, Grover W.: *See—*
Kovac, Frederick J.; and Rye, Grover W.,3,553,307.

Ryemor Engineering Limited: *See—*
Triggs, Henry Francis; and Lawton, Frank Bert, 3,552,538.

Saba, Manlio, to Societa, Italiana Telecomunicazioni Siemens S.p.A. D-C voltage regulator including blocking oscillator. 3,553,568, Cl. 323-9.

Sadamatsu, Shigeru; and Honjo, Satoru, to Fuji Shashin Film Kabushiki Kaisha. Method for treating electrophotographic recording materials with protective overcoatings. 3,552,956, Cl. 96-1.

Safco Products Co.: *See—*
Simon, Peter A.; Paletz, Leonard M.; Fiterman, Benjamin; Johnson, Marlya D.; and Ahlberg, Carl S., 3,552,579.

Safeway Stores, Incorporated: *See—*
Comstock, Alfred E.; and Wilcox, Burdsal Gardner, 3,552,462.

Saito, Jiro: *See—*
Susuki, Rinosuke; Hoshi, Hiroshi; Saito, Jiro; and Ito, Humio,3,553,302.

Sajar Plastics Inc.: *See—*
Fox, William R.; and Rowe, Edgar R., 3,551,921.

Sakurai, Hisaya: *See—*
Fujisaki, Yoshisato; Aishima, Itsuho; Sakurai, Hisaya; Kitaoka, Atsushi; Kawasaki, Hironobu; and Oshima, Minoru,3,553,176.

Sakurai, Tokio: *See—*
Kominami, Naoya; Nakajima, Hitoshi; Kimura, Takeo; and Sakurai, Tokio,3,553,246.

Salamon, Otto, to Von Roll AG. Process for the concomitant incineration of solid refuse and of aqueous sewage sludge. 3,552,333, Cl. 110-7.

Salem Corporation,: *See—*
Kinnavy, Martin G., 3,552,175.

Sallberg, David W.: *See—*
Zimmerman, Robert L.; and Sallberg, David W.,3,553,447.

Salters, Martinus J., to Staatsbedrijf Artillerie-Inrichtingen. Holder for tool or workpiece. 3,552,757, Cl. 279-6.

Samcoe Holding Corporation: *See—*
Cohn, Eugene; and Cecere, Andrew P., 3,551,969.
Cohn, Eugene; Cecere, Andrew P.; and Frezza, Robert, 3,551,970.

Sanders, Harold A.; and Trytten, Grover W., to Chain Lakes Research Associates, Inc. Hologramic identification system. 3,552,853, Cl. 355-133.

Sandoz AG: *See—*
Hauth, Hartmut; and Stauffacher, Dietrich, 3,553,251.

Sandoz Ltd.: *See—*
Hauth, Hartmut; and Stauffacher, Dietrich, 3,553,251.

Sands, Timothy B., to Honeywell Inc. Control apparatus. 3,552,217, Cl. 74-18.

Sano, Chikara: *See—*
Fukuhara, Mototada; Ueno, Akira; Nihei, Isao; and Sano, Chikara,3,552,114.

Santilli, Arthur A.; Osdene, Thomas S.; and Childress, Scott J., to American Home Products Corporation. 2,4,6-Substituted-5-arysulfonylprimidines. 3,553,198, Cl. 260-239.75

Sarbach, Raymond Francois Jacques; and Yavordios, Dimitri, to Institut de Recherche Scientifique (I.R.S.). Tetracyclin adamantoates. 3,553,262, Cl. 260-559.

Sarring, Ernest J.: *See—*
Bryson, Robert A.; Kennicott, Thomas C.; and Sarring, Ernest J.,3,552,246.

Sartori, Mario Francesco, to Du Pont de Nemours, E. I., and Company. Method for producing permanent press, dyed, polyester-cellulosic blended fabrics. 3,552,905, Cl. 8-17.

Saruyama, Isao: *See—*
Sato, Takayoshi; Ohtake, Makoto; and Saruyama, Isao,3,553,455.

Sasaki, Shosaku: *See—*
Murata, Hiroshi; Katuda, Kozo; Kunitomo, Tetsunosuke; Sasaki, Shosaku; and Nishio, Minoru,3,553,286.

Sato, Masaki; and Otani, Seiya, to Toyo Rayon Kabushiki Kaisha. Method of the disproportionation of toluene. 3,553,277, Cl. 260-672.

Sato, Masaki; and Otani, Seiya, to Toyo Rayon Kabushiki Kaisha. Process for the disproportionation of toluene. 3,553,278, Cl. 260-672.

Sato, Suguru, to Nippon Denso Kabushiki Kaisha. Rectifier device for alternating current lighting generator. 3,553,505, Cl. 310-68.

Sato, Takayoshi; Ohtake, Makoto; and Saruyama, Isao, to Kabushiki Kaisha Koparu. Automatic focusing apparatus by means of phase discrimination. 3,553,455, Cl. 250-201.

Sauter, August, KG: *See—*
Kammerer, Manfred; and Schick, Hans, 3,552,512.

Savage, David Samuel: *See—*
Hewett, Colin Leslie; and Savage, David Samuel, 3,553,212.

Savage, William E.; and Cheney, Harry A., to Shell Oil Company. Process for extracting tar from tar sand. 3,553,099, Cl. 208-11.

Savidge, Thomas A. Apparatus and method for packaging foods. 3,552,982, Cl. 99-214.

Sawyer, James T. Counting and computing scales. 3,552,513, Cl. 177-25.

Scans Associates, Inc.: *See—*
Schrom, Andrew F., 3,552,196.

Schaeffer, James R.: *See—*
Goodhue, Charles T.; and Schaeffer, James R., 3,553,081.

Schagen, Pieter, to U.S. Philips Corporation, mesne. Electrical negative-glow discharge display devices. 3,553,458, Cl. 250-213.

Schagen, Pieter, to U.S. Philips Corporation. Image intensifiers for night vision. 3,553,518, Cl. 313-94.

Schall, William L.: *See—*
Hodan, James J.; and Schall, William L., 3,553,298.

Schawlow, Arthur L. Method of and apparatus for erasing. 3,553,421, Cl. 219-121.

Scheingold, William S.; Bottlik, Geza P.; Selvin, Gerald J.; and Krum, Alan S., to Elco Corporation. Low insertion force connector. 3,553,630, Cl. 339-74.

Schellekens, Jean Frantz Felix Camille Ceasar, to U.S. Philips Corporation, mesne. Direct-current motor energized by permanent magnets. 3,553,509, Cl. 310-154.

Schelleng, Robert D., to International Nickel Company, Inc., The. Smokeless manufacture of nickel-magnesium alloys. 3,552,951, Cl. 75-170.

Schemmann, Hugo, to U.S. Philips Corporation. Device for deriving a measuring voltage induced by the rotor of an electric motor. 3,553,550, Cl. 318-138.

Schenectady Chemicals, Inc.: *See—*
Zalewski, Edmund J.; and Jordan, Manuel A., 3,553,215.

Scherer, Joseph H.: *See—*
Wright, Howard J.; and Scherer, Joseph H., 3,553,119.

Scherf, Siegfried, to Hamel G.m.b.H. Zwirnerei-u. Spinnereimaschinen. Twin-spool holder for twining and spinning machinery. 3,552,693, Cl. 242-131.

Schering AG: *See—*
Heymann, Kurt, 3,553,085.

Schick Electric Inc.: *See—*
Walter, Henry J., 3,552,009.

Schick, Hans: *See—*
Kammerer, Manfred; and Schick, Hans, 3,552,512.

Schierhorst, Albert E.; and Niemeyer, Edward H., to International Telephone and Telegraph Corporation, mesne. Multiple stylus electrolytic recorder. 3,553,718, Cl. 346-74.

Schiesser, Walter Hugo. Multiple extruder head for extruders. 3,551,951, Cl. 18-12.

Schiesser, Walter Hugo. Transfer press. 3,551,953, Cl. 18-17.

Schiff, Daniel; and Hottel, Hoyt Clarke, Jr., to Buzzards Corporation. Expendable sonar source. 3,553,639, Cl. 340-12.

Schiffmann, Richard: *See—*
Meyer, Karl-Otto; Schiffmann, Richard; and Himmelmann, Wolfgang, 3,552,972.

Schilf, Harold M.; and Letanosky, Louis A., to Pullman Incorporated. Hopper car hatch and cover assembly with spring loaded seal pin locking arrangement. 3,552,324, Cl. 105-377.

Schinke, Heinz, Joachim; and Raible, Hermann, to Math Bauerle G.m.b.H. Apparatus for controlling the supply of ink and dampening fluid in an offset printing machine. 3,552,312, Cl. 101-148.

Schlichtig, Ralph C. Absorption refrigeration system with multiple absorption stages. 3,552,142, Cl. 62-485.

Schlumberger Technology Corporation: *See—*
Berryman, William O., 3,552,489.
Mullins, Albert A., 3,552,492.
Whitfill, William A., 3,552,025.

Schmid, Rainer K. Mechanical joint assembly. 3,552,786, Cl. 287-100.

Schmidlin, Albertus E., to Singer-General Precision, Inc. Fluidic pressure regulator. 3,552,431, Cl. 137-505.42

Schmidt, Fritz: *See—*
Andress, Bernhard; Kohler, Hubert; and Schmidt, Fritz, 3,553,604.

Schmidt, Hans Werner: *See—*
Hauschild, Ulrich; Massonne, Joachim; and Schmidt, Hans Werner, 3,552,944.

Schmidt, Henry, Jr.: *See—*
Zievers, James F.; Rietesel, Russell W.; and Schmidt, Henry, Jr., 3,552,569.

Schmidt, Walter: *See—*
Schuler, George; Schmidt, Walter; and Vogel, Karl, 3,552,151.

Schmiege, Lester C.; and Zeluff, Wendell C., to American Wire Cloth Company. Welding equipment. 3,553,416, Cl. 219-78.

Schmitz, Wolfgang, to Brown, Boveri & Cie Aktiengesellschaft. Disconnecting device for fully insulated high-voltage electrical switchgear. 3,553,397, Cl. 200-48.

Schnedler, Paul E., to Armco Steel Corporation. Method of galvanizing employing rolls of an air hardening die steel. 3,553,004, Cl. 117-114.

Schneider, Carl: *See—*
Schneider, William S.; and Corella, Arthur P., 3,552,087.

Schneider, William S.; and Corella, Arthur P., 11.25% to Rodgers, Wayne V., and 10% to Schneider, Carl. Method of making dispensing containers. 3,552,087, Cl. 53-28.

Schnell, Hermann; Bollert, Volker; and Fritz, Gerhard, to Farbenfabriken Bayer Aktiengesellschaft. Polyester. 3,553,167, Cl. 260-47.

Schnell, Hermann: *See—*
Reese, Eckart; Rohm, Wilhelm; Hofmeier, Hermann; Bottenbruch, Ludwig; and Schnell, Hermann, 3,553,304.
Vernaleken, Hugo; Malamet, Georg; Bottenbruch, Ludwig; Krimm, Heinrich; and Schnell, Hermann, 3,553,285.

Schnoring, Hildegard; Classe, Willy; Heine, Diez; Nordt, Herbert; and Kreutzer, Karl-Heinz, to Farbenfabriken Bayer Aktiengesellschaft. Recovery or polymer from dispersion in water. 3,553,186, Cl. 260-94.7

Schoen, William; and Landau, Lee, to Texaco Inc. Demulsifier for water-petroleum emulsions. 3,553,149, Cl. 252-340.

Schoffmann, Rudolf; and Kubera, Anton, to Vereinigte Osterreichische Eisen-und Stahlwerke Aktiengesellschaft. Continuous casting apparatus with movable ladles and tundishes. 3,552,902, Cl. 164-281.

Scholz, Louis A.: *See—*
Jubb, Elmer Charles, Jr., 3,553,052.

Scholz, Max, to Ex-Cell-O Corporation. Single disc file memory system. 3,553,663, Cl. 340-174.1

Schommer, Alfred: *See—*
Oberst, Hermann; Ebigt, Joachim; Duve, Gunther; and Schommer, Alfred, 3,553,072.

Schreiber, Bernhard, to Linde Aktiengesellschaft. Nozzle-ring assembly for an expansion turbine. 3,552,878, Cl. 415-217.

Schreiber, Philip M.: *See—*
Severino, James; and Burk, Evans S., 3,552,734.

Schreiber, Viktor: *See—*
Christ, Alfred; Schreiber, Viktor; and Tomica, Erhard, 3,552,877.

Schrey, Claus: *See—*
Pfeiffer, Gerd; Biller, Horst; and Schrey, Claus, 3,552,170.

Schroder, Gunter; and Ganzler, Wolfgang Philipp, to Rohm & Haas G.m.b.H. Heat stable methacrylonitrile- methacrylic acid copolymers. 3,553,160, Cl. 260-45.75

Schroder, Werner Johann Hermann; Rudolf, Prescher; and Muller, Peter Klaus Jurgen, to Krupp, Fried., Gesellschaft mit beschrankter Haftung. Sealing strip. 3,552,894, Cl. 418-139.

Schroeder, Ronald C.; and Dowler, Robert L., to International Harvester Company. Shift control mechanism for dual rail transmission. 3,552,227, Cl. 74-477.

Schrom, Andrew F., to Scans Associates, Inc. Test stand for vehicle engines. 3,552,196, Cl. 73-117.2

Schudel, Conrad R., to Hexcel Corporation. Energy absorber. 3,552,525, Cl. 188-1.

Schuler, George; Schmidt, Walter; and Vogel, Karl, to Industriewerk Schauenstein. Knitting machine with a weft thread laying device. 3,552,151, Cl. 66-86.

Schultze, Hans-Joachim: *See—*
Gehring, Albert; Bertrossa, Guiseppe; and Schultze, Hans-Joachim, 3,553,204.

Schulz, Raymond A., to International Business Machines Corporation. Circuit for sensing binary signals from a high speed memory device. 3,553,491, Cl. 307-235.

Schuster, William Daniel: *See—*
Neal, Charles Bailey; Schuster, William Daniel; and Scott, Benton Boyd, 3,553,352.

Schutze, Ernst Christian: *See—*
Riemhofer, Franz; Dittmann, Walter; and Schutze, Ernst Christian, 3,553,284.

Schwallie, Cletus R., to Boeing Company, The. Technique for analyzing deformation in a test specimen. 3,552,856, Cl. 356-32.

Schwartz, Daniel M., to Lockheed Aircraft Corporation. Material handling machine. 3,552,764, Cl. 280-104.5

Schwarz, J. S.; and Sheehan, John T., to Squibb, E. R., & Sons., Inc. 3-Substituted picolinyl penicillins and cephalosporins. 3,553,203, Cl. 260-239.1

Schwegman, Harry E., to Otis Engineering Corporation. Well tools. 3,552,718, Cl. 251-291.

Schwerdhofer, Hans Joachim, to Fichtel & Sachs A.G. Automatically shifting multiple-speed hub. 3,552,233, Cl. 74-752.

Scientism Laboratories, Inc.: *See—*
McCormack, Roger W., 3,552,943.

SCM Corporation: *See—*
Hernandez, Jorge, 3,553,445.
Murray, Robert A., 3,553,434.

Scott, Benton Boyd: *See—*
Neal, Charles Bailey; Schuster, William Daniel; and Scott, Benton Boyd, 3,553,352.

Scott, Gordon R., to Pan American Petroleum Corporation. Drilling ship mooring system. 3,552,343, Cl. 114-0.5

Scott, Irvin C., Jr.; and Barker, Layle B., to Reynolds Metals Company. Device for cathodically protecting a metal pipe. 3,553,094, Cl. 204-197.

Scott Paper Company: *See—*
Herman, Walter H., 3,552,670.

Scott, Walter J., to Massey-Ferguson Services N.V. Weight transfer hitch. 3,552,772, Cl. 280-405.

Seaman, Edward L. Alternating presser foot atachment. 3,552,339, Cl. 112-212.

Seaton, Arthur F.: *See—*
United States of America, National Aeronautics and Space Administration, Administrator, 3,553,704.

Sebulsky, Raynor T.: *See—*
Giannetti, Joseph P.; Henke, Alfred M.; and Sebulsky, Raynor T., 3,553,151.
Hamilton, Harry A.; McIlvried, Howard G.; and Sebulsky, Raynor T., 3,553,106.

Seefore Corporation: *See—*
Andrews, Thomas I., 3,552,445.

Seelbach, Heinz, to Reininghaus & Co. Connecting boxes including switching means for illuminating devices. 3,553,398, Cl. 200-51.

Seip, Hermann, to Teves, Alfred, G.m.b.H. Adjustment device for a drum brake. 3,552,528, Cl. 188-79.5

Selas Corporation of America: *See—*
Boyle, Frank J., 3,552,949.
Francis, Arthur W., 3,552,362.

Self, James M.; and Yates, Paul C., to Du Pont de Nemours, E. I., and Company. Frosted coatings for glass. 3,552,992, Cl. 117-54.

Selin, George J.: *See—*
Arlandson, John S.; and Selin, George J., 3,553,472.

Selkirk, Lawrence R., to Sinclair Research, Inc. Apparatus. 3,552,731, Cl. 266-23.

Selvin, Gerald J.: *See—*
Scheingold, William S.; Bottlik, Geza P.; Selvin, Gerald J.; and Krum, Alan S., 3,553,630.

Senentz, Irwin M., Jr.: *See—*
Notley, Norman T.; and Senentz, Irwin M., Jr., 3,552,961.
Notley, Norman T.; and Senentz, Irwin M., Jr., 3,552,962.
Notley, Norman T.; and Senentz, Irwin M., Jr., 3,552,963.
Notley, Norman T.; and Senentz, Irwin M., Jr., 3,552,964.
Notley, Norman T.; and Senentz, Irwin M., Jr., 3,552,965.

Sennewald, Kurt; Gehrmann, Klaus; Handte, Heinz; Erpenbach, Heinz; and Reis, Helmut, to Knapsack Aktiengesellschaft. Process for isolating acrylic acid from aqueous crude acid by extraction with an ester, water washing and azeotropic distillation of the washed extract. 3,553,261, Cl. 260-526.

Sepa, Darko: *See—*
Bockris, Bernard Patrick John; Sepa, Darko; and Damjanovic, Aleksandar, 3,553,025.

Sestito, Joseph T. Hair-coloring method and apparatus therefor. 3,552,403, Cl. 132-150.

Seus, Edward J.; and Reynolds, George A., to Eastman Kodak Company. Electrophotographic composition and element. 3,552,958, Cl. 96-1.5

Severino, James; and Burk, Evans S., 11.67% interest of Schiff, Michael J., 11.60% to Victor, David H., and 11.66 to Schreiber, Philip M. Anchor bolt setter. 3,552,734, Cl. 269-287.

Sexton, Edwin Leon: *See—*
Cooper, Irwin; Sexton, Edwin Leon; Melnick, Daniel; and Wegner, Marcus I., 3,552,980.

Shaffer, John W.: *See—*
Fink, William C.; and Shaffer, John W., 3,552,287.

Shaheen, Joseph M.: *See—*
Gorman, Howard C.; Simone, John; Shaheen, Joseph M.; van Zanten, Melvin J.; Bowman, Darl F.; and Moser, Gerald J., 3,553,648.

Shaugnessy, William J., to American Standard Inc. Fail safe driver circuit. 3,553,495, Cl. 307-284.

Shaver, John A.; Dole, Edwin K.; Osmond, Robert S.; and Morrissey, Thomas G. Floor covering for transmitting electromagnetic energy. 3,553,675, Cl. 340-310.

Shaw, Andrew N. Electronic organs with plural stops, channels, and loudspeakers. 3,553,333, Cl. 84-1.01

Shaw, George Neville Bowman, to Lancer Boss Limited. Twist lock units. 3,551,964, Cl. 24-221.

Shaw, Stuart Walter Ker, to International Nickel Company, Inc., The. Nickel-chromium alloys adapted for use in contact with molten glass. 3,552,952, Cl. 75-171.

Shaw, Walter H. Manual rerouter system for telephone subscriber station with combined conference call feature. 3,553,373, Cl. 179-1.

Shea, James E., to Sonic Engineering Corporation. Capacitive sensing device having a slidable probe. 3,553,575, Cl. 324-61.

Shearer, Thomas W., Jr.; Peters, Charles M.; and Tincher, Jon D., to General Motors Corporation. Method and apparatus for control of resistance welding. 3,553,420, Cl. 219-110.

Sheehan, John T.: *See—*
Schwarz, J. S.; and Sheehan, John T., 3,553,203.

Shell Oil Company: *See—*
Albert, James R.; and Kodama, Jiro K., 3,553,326.
Bean, Arthur R., Jr.; Fraga, Donald W.; and Mann, Roger H., 3,553,295.
Bezemer, Cornelis, 3,552,493.
Blytas, George C., 3,552,921.
Claridge, Elmond Lowell; Edwards, George; and Smith, John Trenor, 3,553,098.
Gilfillan, Evelyn G., 3,553,158.
Hass, Duane K.; Morales, Juan G.; and Whetstone, Richard R., 3,553,322.
Ramey, David E., 3,553,297.
Ruyter, Klaas, 3,553,175.
Savage, William E.; and Cheney, Harry A., 3,553,099.

Shepherd, C. E.: *See—*
Brooks, Ray G., 3,552,870.

Sheppard, Louis C.: *See—*
Krueger, Dean T. E.; and Sheppard, Louis C., 3,552,383.

Sheridan, T.W., & C.B., Company: *See—*
Bryson, Robert A.; Kennicott, Thomas C.; and Sarring, Ernest J., 3,552,246.

Shields, John, to Parsons, Howard Grubb, Sir, & Company Limited. Liquid receiving cells for analytical instruments. 3,552,864, Cl. 356-246.

Shigematsu, Tatsuo: *See—*
Omori, Mineharu; Terayama, Kozo; Matsubara, Shozo; Shigematsu, Tatsuo; and Kido, Gen, 3,552,011.

Shiley, Donald P.; and Kay, Jerome Harold. Heart valve prosthesis with guard structure. 3,551,913, Cl. 3-1.

Shima, Kiyoshi. Marine propulsion drive. 3,552,348, Cl. 115-35.

Shima, Takeo; Asami, Yukiharu; Ishizaki, Shunzo; Kawase, Shoji; and Yoshimura, Masao, to Teijin Limited. Adhesive composition and rubber-polyester composition bonded therewith, comprising polyester- polyurethane with ethylenic unsaturation. 3,552,999, Cl. 117-76.

Shimizu, Toshio: *See—*
Shimotsuma, Wataru; Mizoguchi, Akira; and Shimizu, Toshio, 3,553,108.

Shimotsuma, Wataru; Mizoguchi, Akira; and Shimizu, Toshio, to Matsushita Electric Industrial Co., Ltd. Heat sensitive high molecular weight resistor. 3,553,108, Cl. 252-500.

Shingler, Roy, to Stewart-Warner Limited. Chair control. 3,552,706, Cl. 248-373.

Shiozawa, Akiyasu: *See—*
Takenaka, Haruo; Shiozawa, Akiyasu; and Fujiwara, Tadahiro, 3,552,971.

Shlesinger, Bernard Edward, Jr. Non strip connection. 3,553,631, Cl. 339-97.

Shoemaker, Arthur H., to American Optical Corporation. Three member microscope objective having a magnification of 20X. 3,552,830, Cl. 350-176.

Shoemaker, Arthur H., to American Optical Corporation. Three member microscope objective having a magnification of 40X. 3,552,831, Cl. 350-176.

Shook, Austen M., to Texaco Inc. Underground cavern for storage of hydrocarbons. 3,552,128, Cl. 61-0.5

Short, John W.: *See—*
Michaelson, Joseph B.; and Short, John W., 3,553,317.

Short, Laurel J.; and Parra, Pedro S., to Ardee Corporation. Water vapor injector. 3,552,364, Cl. 123-25.

Shrode, Wilford B., to Hall, C. M., Lamp Company. Remote control mirror. 3,552,228, Cl. 74-501.

Shultz, Joseph Leonard: *See—*
McGoogan, George David; Noble, Paul Douglas; Shultz, Joseph Leonard; and Diehl, Floyd William, 3,552,174.

Shumaker, Charles Storer, to United Engineering and Foundry Company. Roll changing device for rolling mills. 3,552,171, Cl. 72-239.

Shumaker, Jackie W.: *See—*
Glasson, Woodrow R.; Malcom, Glen A.; Lambert, George M.; and Shumaker, Jackie W., 3,552,223.

Shunn, William F.: *See—*
Slitti, Ralph L., Jr.; Noble, Donald G.; and Shunn, William F., 3,552,367.

Siano, Matteo; and Guidelli Guidi, Guido. Method and apparatus for detecting the presence of dangerous concentrations of combustible gases or vapors in the air. 3,553,461, Cl. 250-218.

Sidell, Philip Alden; and Clifford, Cecil Frank, to Ingraham Company, The. Timepiece having vibration isolation means. 3,552,116, Cl. 58-23.

Siedband, Melvin P.; and Boenning, Robert A., to Westinghouse Electric Corporation. Solid state power supply for an image amplifier. 3,553,459, Cl. 250-205.

Siegler, Gustav. Device for automatically coupling an insert member to a driving member. 3,552,758, Cl. 279-75.

Siegmund, Robert F.: *See—*
Keenan, Arthur G.; and Siegmund, Robert F., 3,553,039.

Siemens & Halske Aktiengesellschaft: *See—*
Rudolph, Hans, 3,553,368.

Siemens Aktiengesellschaft: *See—*
Andress, Bernhard; Kohler, Hubert; and Schmidt, Fritz, 3,553,604.
Fendt, Alfons; and Becker, Michael, 3,553,571.
Flohrer, Walter, 3,553,369.
Littwin, Burkhard, 3,553,086.

Siemon, Stanley Robert: *See—*
Evans, David Gordon; and Siemon, Stanley Robert, 3,552,031.

Siempelkamp, G., & Co.: *See—*
Muller, Karl, 3,551,944.

Sierra Research Corporation: *See—*
Bugay, Alfred, 3,553,492.
Bugay, Alfred, 3,553,597.

Sieving, Alfred W.: *See—*
Cole, Carroll R.; and Sieving, Alfred W., 3,552,798.

Sigle, C. C.: *See—*
Van Hecke, Jerome M., 3,552,373.

Signode Corporation: *See—*
Bojan, Paul W.; and Wolfberg, Robert L., 3,552,274.
Plunkett, Larry D., 3,552,450.

Sigri Elektragraphit Gesellschaft mit Beschrankter Haftung: *See—*
Rubisch, Ottmar, 3,553,010.
Silk, Leonard P.: *See—*
Perkins, Donald C.; and Silk, Leonard P.,3,552,795.
Silverberg, Morton, to Xerox Corporation. Random access retrieval system. 3,552,562, Cl. 209-80.5
Silverman, Jacob: *See—*
Ahlert, Robert C.; Silverman, Jacob; Greene, Stanley A.; and Young, Richard K.,3,552,126.
Simon, Arthur; and Troll, William Charles, to Bendix Corporation, The. Helicopter airborne beacon system for use in formation flying. 3,553,695, Cl. 343-101.
Simon, Ivan, to Little, Arthur D., Inc. Apparatus for measuring small deviations from a true horizontal plane. 3,552,028, Cl. 33-206.
Simon, Peter A.; Paletz, Leonard M.; Fiterman, Benjamin; Johnson, Marlyn D.; and Ahlberg, Carl S., to Safco Products Co. File case assembly and stacking clip therefor. 3,552,579, Cl. 211-126.
Simonds Saw and Steel Company: *See—*
Rundell, Gene R.; and Nehrenberg, Alvin E., 3,552,950.
Simone, John: *See—*
Gorman, Howard C.; Simone, John; Shaheen, Joseph M.; van Zanten, Melvin J.; Bowman, Darl F.; and Moser, Gerald J.,3,553,648.
Simoneau, Earl P.; and Manos, George, to United Aircraft Corporation. Bipolar pattern sensing shaft encoder. 3,553,683, Cl. 340-347.
Simplex Corporation: *See—*
Manetta, Peter J., 3,552,543.
Simpson, Earl W.: *See—*
Tucker, Linwood G.; and Simpson, Earl W.,3,553,083.
Sina AG: *See—*
Groninger, Kurd G., 3,552,187.
Sinclair Koppers Company: *See—*
Martens, Theodore P.; and Patton, James R., 3,552,635.
Sinclair Research, Inc.: *See—*
Selkirk, Lawrence R., 3,552,731.
Sine, Richard. Folding wheelbarrow. 3,552,760, Cl. 280-36.
Singer Company, The: *See—*
Batson, William A., 3,552,015.
Brandriff, Robert C.; and Chapman, Walter F., 3,552,336.
Du Ross, Robert M., 3,552,678.
Graham, Thomas G., 3,552,338.
Singer-General Precision, Inc.: *See—*
Bird, Richard M.; and Tu, Ju C., 3,553,651.
Schmidlin, Albertus E., 3,552,431.
Sinkey, Vernon J.: *See—*
Argabright, Perry A.; Phillips, Brian L.; and Sinkey, Vernon J.,3,553,121.
Siver, Chester A. Plug valve with resilient seal. 3,552,439, Cl. 137-625.47
Sjoblom, Ake E., to Aktiebolaget Grythyttans Stalmobler. Collapsible load pallet. 3,552,761, Cl. 280-42.
Skiba, Raymond A., to Burroughs Corporation. Line spacing selector with slidable tape reader. 3,552,619, Cl. 226-76.
Skilling, James K.: *See—*
Frank, Richard W.; Fulks, Robert G.; and Skilling, James K.,3,553,728.
Skinner, Charles Henry; and Hart, Michael Leonard, to Baker Perkins Limited. Printing plate lock up devices. 3,552,314, Cl. 101-378.
Skinner, Robert Thomas John, to Lucas, Joseph, (Industries) Limited. Sprayers. 3,552,656, Cl. 239-419.3
Skrobisch, Alfred, to Allard Instrument Corporation. Electrically controlled magnetic movement. 3,553,619, Cl. 335-272.
Skubiak, John J.; and Toth, John A., to Republic Steel Corporation. Automatic billet inspector. 3,553,570, Cl. 324-37.
Slater, N., Company: *See—*
Edwards, Aubrey T., 3,553,345.
Slitti, Ralph L., Jr.; Noble, Donald G.; and Shunn, William F., to Holley Carburetor Company. Structure for and method of electronic signal switching. 3,552,367, Cl. 123-146.5
Slobodnik, Andrew J., Jr.: *See—*
Carr, Paul H.; and Slobodnik, Andrew J., Jr.,3,553,589.
Small, Donald A., to Corning Glass Works. Jet entrainment control for a fluidic device. 3,552,415, Cl. 137-81.5
Smekal, Zdenek: *See—*
Bezouska, Vlastimil; Pivrnec, Jan; Hrdlicka, Jiri; Krasa, Evzen; and Smekal, Zdenek,3,553,538.
Smiley, Eldridge H.: *See—*
Ranney, Richard D.; and Smiley, Eldridge H.,3,552,350.
Smith, Anthony William. Method of producing biological stains and reagents for biochemical determinations using ultrasonic energy. 3,553,311, Cl. 424-3.
Smith, Douglas H., to Beckman Instruments, Inc. Method and apparatus for comparing the transmittance of a sample and a standard. 3,552,863, Cl. 356-206.
Smith, Edward A., to GAF Corporation. Internal combustion engine air filter. 3,552,103, Cl. 55-486.
Smith, Frank A.: *See—*
Hunkeler, Ernst J.; Smith, Frank A.; and Walrath, Frederick C.,3,552,263.
Smith, Frank T. J.: *See—*
Gerstenberg, Dieter; and Smith, Frank T. J.,3,553,545.
Smith, Harry A., to Dow Chemical Company, The. Curable copolymers of perhaloacetone and epoxides. 3,553,162, Cl. 260-47.
Smith, Harry A., to Dow Chemical Company, The. Polymer compositions. 3,553,168, Cl. 260-63.
Smith, Harry: *See—*
Hatt, Brian William; and Smith, Harry,3,553,202.
Smith, James D.: *See—*
Roberts, Russell R.; and Smith, James D.,3,552,739.
Smith, John N. Electrically-conductive particle detector. 3,553,672, Cl. 340-270.
Smith, John Treanor: *See—*
Claridge, Elmond Lowell; Edwards, George; and Smith, John Treanor,3,553,098.
Smith, Kilby P., Jr. Rotary die stripping. 3,552,244, Cl. 83-9.
Smith Kline & French Laboratories: *See—*
Kaiser, Carl; and Zirkle, Charles L., 3,553,225.
Kaiser, Carl; and Zirkle, Charles L., 3,553,226.
Smith, Mahlon J., to Androck Incorporated. Bicycle saddle baskets. 3,552,611, Cl. 224-32.
Smith, Mark W.: *See—*
Lockered, Robert M.; Smith, Mark W.; Cooper, Ray E.; and Goode, George E.,3,553,693.
Smith, Max R.: *See—*
Livingston, David N.; Smith, Max R.; and Newmyer, Charles T.,3,553,432.
Smith, Morris R.: *See—*
Kroeger, Richard A.; Heltsley, Fred L.; and Smith, Morris R.,3,552,202.
Smith, Norman F.; and Stocker, Edward T., to Western Electric Company, Incorporated. Wire bonding and severing apparatus. 3,553,417, Cl. 219-78.
Smith, Percy L.: *See—*
McGary, Charles W., Jr.; and Smith, Percy L.,3,553,294.
Smith, Philip N., to Deering Milliken Research Corporation. Method to sort currency. 3,552,563, Cl. 209-115.
Smith, Robert J.: *See—*
Cummins, James M.; and Smith, Robert J.,3,552,229.
Smith, Roy E., to Owens-Corning Fiberglas Corporation. Apparatus for packaging linear material. 3,552,667, Cl. 242-43.
Smith, Roy E.: *See—*
Olson, Robert E.; and Smith, Roy E.,3,553,454.
Smith, Sam E. Method for fabricating a seamless plastic surface having an embossed, multicolored, textured, and patterned appearance. 3,552,987, Cl. 117-25.
Smith, Thomas H., to Hercules Concrete Pumps, Inc. Valve for controlling flow of concrete. 3,552,440, Cl. 137-625.47
Smith, William C., to Stewart-Warner Corporation. Bistable flip-flop circuit with improved control of clock threshold. 3,553,497, Cl. 307-291.
Smoothslide Corporation: *See—*
Welco, Leon B.; Biondolillo, Jack J.; and Van Arnam, Philip, 3,552,040.
Smuts, Israel Robert, 39% to Szabo, Anthony W., and 10% to Taylor, Andrew E. Rotating culinary devices, particularly rotating spaghetti forks. 3,552,017, Cl. 30-322.
Snam Progetti S.p.A.: *See—*
Parmegiani, Mario; and Bellofatto, Oreste, 3,552,122.
Snap-Yite, Inc.: *See—*
Murauskas, Donald J., 3,552,719.
Snow, Harvey L., to Hydro Cycle Inc. Watercraft and method of fabricating the same. 3,552,349, Cl. 115-70.
Snyder, John L., III, to Texas Instruments, Incorporated. Optical instrument for determining the parallelism or non-parallelism of two reflecting surfaces. 3,552,859, Cl. 356-114.
Snyder, Richard L.: *See—*
Zentgraf, John A.; and Snyder, Richard L.,3,551,976.
Soanes, Randolph Spencer; Fourdraine, John D.; and Manthey, Egon S., to Rice Honeywell. Teaching device for musical instruments. 3,552,256, Cl. 84-478.
Sobchak, Frank L.: *See—*
Brouwer, Frans; and Sobchak, Frank L.,3,553,715.
Sobray & Cie: *See—*
Delbouille, Andre; and Henrioulle, Paul, 3,553,287.
Societa Italiana Telecommunicazioni Siemens S.p.A.: *See—*
Rimondini, Augusto; and Foresti, Primo, 3,553,531.
Societa, Italiana Telecomunicazioni Siemens S.p.A.: *See—*
Saba, Manlio, 3,553,568.
Societe a Responsabilite Limitee: Societe Lamy d'Etudes et de Recherches: *See—*
Chaveneaud, Roger; and Janoska, Georges, 3,553,411.
Societe Anonyme dite: Messier: *See—*
Lucien, Rene, 3,552,803.
Societe Civile de Recherches en Matiere de Micro-Moteurs Electriques (S.O.C.R.E.M.): *See—*
Stcherbatcheff, Georges, 3,553,508.
Societe d'Applications Generales d'Electricite et de Mecanique SAGEM: *See—*
Pasquet, Marcel, 3,552,216.
Societe des Lunetiers: *See—*
Tagnon, Luc, 3,552,899.
Societe d'Etude et de Construction de Machines Pour Toutes Industries Secoma: *See—*
Chappuis, Louis Laurent, 3,552,504.
Societe Europeene d'Isolateurs en Verre (Sediver): *See—*
Willem, Michel H., 3,552,351.
Societe Fives Lille-Cail: *See—*
Marechal, Emile, 3,551,995.

Societe Francaise d'Instruments de Controle et d'Analyses: *See—*
Badoz, Jacques; Billardon, Michel; Virloget, Jean; and Debrie, Marcel, 3,552,823.
Societe Grenobloise d'Etudes et d'Applications Hydrauliques, (SOGREAH): *See—*
Tourmen, Louis, 3,552,204.
Societe Industrielle de Fabrication et de Transformation: *See—*
D'Houdain, Olivier Marie Andre, 3,552,797.
Societe Rhodiaceta: *See—*
Beau, Patrick; and Buzano, Michel, 3,553,006.
Soehnges, Wilhelm P.: *See—*
Thiele, Heinrich; and Soehnges, Wilhelm P.,3,553,299.
Solomon, Jack M.; and Bluestein, Bernard R., to Witco Chemical Company, Inc. Process for preparing aniline. 3,553,268, Cl. 260-581.
Solvay & Cie: *See—*
Delbouille, Andre; and Deroitte, Jean-Louis, 3,553,181.
Petitjean, Jose; and vanHove, Arthur, 3,553,576.
Somerville, Ted L.: *See—*
Foote, Allen M., 3,552,049.
Somlyody, Arpad, to Burroughs Corporation. Light flashing circuit. 3,553,528, Cl. 315-209.
Sommer, Walter, to Krupp, Fried. Gesellschaft mit beschrankter Haftung. Device for rounding cutout pieces of very thin sheet metal. 3,552,176, Cl. 72-312.
Sonic Engineering Corporation: *See—*
Shea, James E., 3,553,575.
Sons, Mack D., to W & W Steel Company. Spray valve assembly. 3,552,658, Cl. 239-456.
Sony Corporation: *See—*
Baba, Hideo; Gando, Masayoshi; and Yamashita, Yoshio, 3,553,032.
Yamada, Toshiyuki, 3,553,498.
Sorli, Gordon B., to Sylvania Electric Products, Inc. Data storage and transfer apparatus for plural-vehicle identification systems. 3,553,433, Cl. 235-61.7
Soulier, Joel Henri Auguste. Device for heating dielectric materials coating an electricity conducting element by means of hyperfrequence waves. 3,553,413, Cl. 219-10.55
Southington Manufacturing Inc.: *See—*
Kawecki, Ralph E., 3,552,730.
Souza, Charles W.: *See—*
Dwyer, James L.; Paine, Richard A.; and Souza, Charles W.,3,553,067.
S.p.A. Luigi Rizzi & Co.: *See—*
Repetto, Silvio, 3,552,157.
Spacht, Ronald B., to Goodyear Tire & Rubber Company, The. Stabilizers for polymers. 3,553,163, Cl. 260-45.95
Spangler, Murry J., to Westinghouse Electric Corporation. Radiation sensitive system. 3,553,690, Cl. 343-11.
Spanos, William M., to International Telephone and Telegraph Corporation. Waveguide radiator with perpendicular scattering posts at aperture. 3,553,702, Cl. 343-756.
Sparacio, Francis J.: *See—*
Anderson, David W.; and Sparacio, Francis J.,3,553,655.
Sparks, Arnold F., to Mobil Oil Corporation. Open scrim-like network foam product. 3,553,070, Cl. 161-160.
Sparks, Walton E., to Westinghouse Electric Corporation. Beater storage for hand mixer. 3,552,879, Cl. 416-63.
Spaulding, Carl P., to Litton Systems, Inc. Paper stabilization heater. 3,553,424, Cl. 219-388.
Spencer, Derek John; and Paddison, Eric, to English Electric Company Limited, The. Phase sequence comparator. 3,553,489, Cl. 307-232.
Sperry, Charles R.; and Gibson, Roger L., to Synectics Development Corporation. Pressurized container food valve. 3,552,608, Cl. 222-516.
Sperry Rand Corporation: *See—*
Blosser, Robert L., Jr.; and Woehler, Gary B., 3,552,437.
Englund, Robert M.; Wolf, Irving W.; and Hamaker, John D., 3,553,659.
Locke, David R.; and Daniels, John F., Jr., 3,552,010.
Maguire, Hugh C., 3,553,499.
Spiegel, Milton: *See—*
Neuspiel, Peter J.; and Spiegel, Milton,3,552,571.
Sports Technology, Inc.: *See—*
Wiele, Robert W., 3,552,044.
Sprague Electric Company: *See—*
Garlington, Frank E., 3,553,343.
Netherwood, Paul H., 3,553,542.
Netherwood, Paul H., 3,553,543.
Puppolo, Henry F.; and Markarian, Mark, 3,553,544.
Rice, Livingston L.; and Rollins, Richard L., 3,553,574.
Sprecher & Schuh AG: *See—*
Morva, Tibor, 3,553,410.
Springer, Earl W. Pulse control neutralization system. 3,553,546, Cl. 318-48.
Springer, Edward M., to Heyer Inc. Sign holder. 3,552,702, Cl. 248-316.
Springer, Helmut; and Bienick, Fritz, said Bienick, assor. to said Springer. Incinerator. 3,552,334, Cl. 110-8.
Springfield Machine Tool Company, The: *See—*
Morgan, Guy E., Jr.; and Montanus, Richard C., 3,552,242.
Springfield, Robert L. Check strap. 3,552,448, Cl. 139-161.
Sproul, Hugh R., to Alco Standard Corporation. Apparatus for measuring the dew point temperature of a gas. 3,552,186, Cl. 73-17.
Sproull, Reavis C.: *See—*
Berger, Richard M.; and Sproull, Reavis C.,3,552,400.
Square D Company: *See—*
Turnbull, Merlin Y.; and Whiting, Harold E., 3,553,613.
Turnbull, Merlin Y., 3,553,615.
Turnbull, Merlin Y.; and Whiting, Harold E., 3,553,617.
Whiting, Harold E.; and Turnbull, Merlin Y., 3,553,614.
Squibb, E. R., & Sons., Inc.: *See—*
Schwarz, J. S.; and Sheehan, John T., 3,553,203.
Staatsbedrijf Artillerie-Inrichtingen: *See—*
Salters, Martinus J., 3,552,757.
Stahly, Eldon E.; and Lard, Edwin W., to Grace, W. R., & Co. Product and a method of improving the shelf life of uncured polyesters. 3,553,292, Cl. 260-864.
Stahly, Eldon E.; and Lard, Edwin W., to Grace, W. R., & Co. Product and a method of improving the shelf life of uncured polyester resins. 3,553,293, Cl. 260-866.
Staines, Alfred J., to Harris-Intertype Corporation. Sheet gripping means. 3,552,741, Cl. 271-26.
Stamatis, Sam P.: *See—*
Gupta, Shanti S.; and Stamatis, Sam P.,3,553,354.
Standard Fruit and Steamship Co., Inc.: *See—*
Swinford, William S., 3,552,637.
Standard Products Company, The: *See—*
Reid, James S., 3,551,916.
Stanley, A. E., Manufacturing Company: *See—*
Verbanac, Frank; and Moser, Kenneth B., 3,553,194.
Stanray Corporation: *See—*
Allen, John W., 3,552,086.
Lannin, William W., 3,552,341.
Stantchev, Ivan Tenev; and Bakardjiev, Stefan Todorov. Actuating means, resetting means and ribbon feed means in settable printing machines. 3,552,309, Cl. 101-96.
Star Expansion Industries Corporation: *See—*
Bell, Walter, 3,553,040.
Starkey, Bertrand Julian; and Osborne, John, to E.M.I. Electronics Canada Limited. Direction finding apparatus. 3,553,699, Cl. 343-121.
Starrett, Forest J., Jr.: *See—*
French, Alfred W.; and Starrett, Forest J., Jr.,3,552,304.
Statham Instruments, Inc.: *See—*
Mahler, Leo M., 3,552,036.
Stedman, Cecil K., 3,553,625.
Staton, John C.; Keller, James P.; Kowalski, Ronald C.; and Harrison, John W., to Esso Research and Engineering Company. Controlled degradation. 3,551,943, Cl. 18-2.
Stauber, Robert M., to Blair Manufacturing Co., Inc. Road grader blade mounting means. 3,552,498, Cl. 172-783.
Staufert, Helmut P., to Stuttgarter Spindelfabrik Novibra G.m.b.H. Spinning and twisting spindle. 3,552,113, Cl. 57-130.
Stauffacher, Dietrich: *See—*
Hauth, Hartmut; and Stauffacher, Dietrich,3,553,251.
Stauffer Chemical Company: *See—*
Christe, Karl O.; Guertin, Jacques P.; and Pavlath, Attila E., 3,552,936.
Stauffer, Harry C.: *See—*
Donaldson, Robert E.; Murphy, Harry C., Jr.; and Stauffer, Harry C.,3,553,107.
Stcherbatcheff, Georges, to Societe Civile de Recherches en Matiere de Micro-Moteurs Electriques (S.O.C.R.E.M.). Electric motor with a plurality of radially arranged bridge-type magnetic circuits. 3,553,508, Cl. 310-152.
Stearns Manufacturing Co., Inc.: *See—*
Piper, Robert J., 3,552,540.
Stedman, Cecil K., to Statham Instruments, Inc. Side sensitive miniaturized pressure transducer. 3,553,625, Cl. 338-4.
Steelcraft Manufacturing Company, The: *See—*
Woodrum, Harold L., 3,552,085.
Steer, Ensor William Harold: *See—*
Ballard, Reginald Leonard; and Steer, Ensor William Harold,3,552,249.
Steever, Andrew B.; and Svencer, Richard E., to Dorr-Oliver Incorporated. Diffusion nozzle for solids fluidizing apparatus. 3,552,033, Cl. 34-57.
Stefany, William W., to Red Devil Incorporated. Paint stirrer. 3,552,723, Cl. 259-56.
Steinbacher, Heinz-Dieter; and Graffenberger, Wilhelm, to U.S. Philips Corporation, mesne. Pulse generator. 3,553,478, Cl. 307-108.
Steiner, Walter. Apparatus for opening of bottles, cans, containers, casks, and the like. 3,552,241, Cl. 81-3.1
Stemke, Henry F.; and Morris, William W., to Peterson Enterprises, Incorporated. Film copying apparatus. 3,552,852, Cl. 355-35.
Stenmans, Heinz; Franzen, Gustav; and Lossa, Ulrich, to Palitex Project-Company G.m.b.H. Bobbin frame on upward twisting machines. 3,552,666, Cl. 242-35.5
Stephens, Ruth E., to Ethyl Corporation. Method of decomposing nitrogen oxides. 3,552,913, Cl. 23-2.
Sterling Extruder Corporation: *See—*
Knowles, Edward Rolland, 3,551,954.
Stern, Philip, to Planetariums Unlimited, Inc. Pre-programmed planetariums. 3,552,037, Cl. 35-42.5
Sternbach, Leo Henryk: *See—*
Archer, Giles A.; and Sternbach, Leo Henryk,3,553,199.
Wehrli, Pius Anton; Fryer, Rodney Ian; and Sternbach, Leo Henryk,3,553,206.

Sternberg, Herwig: *See—*
Lima, Joseph H.; Marquis, Donald A.; and Sternberg, Herwig,3,551,986.
Stettler, Christian H.: *See—*
Garver, Oscar W.; Ullman, Frederick E.; Stettler, Christian H.; and Kopp, Hans W.,3,553,418.
Garver, Oscar W.; Ullman, Frederick E.; Stettler, Christian H.; and Kopp, Hans W.,3,553,419.
Stevens, J. P., & Co., Inc.: *See—*
Tesoro, Giuliana C.; and Moore, Donald R., 3,553,254.
Stevens, Peter A. Combination syringe and vial. 3,552,387, Cl. 128-218.
Stewart, Weldon R. Valve controlled fluid programmer. 3,552,436, Cl. 137-608.
Stewart-Warner Corporation: *See—*
Bell, Harvey W., III, 3,553,037.
Brouwer, Frans; and Sobchak, Frank L., 3,553,715.
Davis, Joseph W.; and Little, Arthur J., 3,553,448.
Dobrauz, John W., 3,552,224.
Smith, William C., 3,553,497.
Williams, Philip J., 3,552,796.
Stewart-Warner Limited: *See—*
Shingler, Roy, 3,552,706.
Stigall, Everett E., to Western Electric Company, Incorporated. Hand wire wrapping tool with an orientation and cam feature. 3,552,452, Cl. 140-124.
Stikeleather, Larry F.: *See—*
Suggs, Charles W.; and Stikeleather, Larry F.,3,552,271.
Stocker, Edward T.: *See—*
Smith, Norman F.; and Stocker, Edward T.,3,553,417.
Stohlquist, Roger H., to Anderson Bros. Mfg., Co. Heat sealing apparatus. 3,553,059, Cl. 156-515.
Stoltz, James F.: *See—*
Kral, James, Jr.; Meyer, John G.; and Stoltz, James F.,3,552,484.
Stone, Ruth L.: *See—*
Stone, William C.,3,552,013.
Stone, William C., deceased0 (by Stone, Ruth L.; administratrix). Hedge clipper attachment. 3,552,013, Cl. 30-132.
Stotler, Harold H.: *See—*
Layng, Edwin T.; Stotler, Harold H.; and Hwang, Seong Tae,3,553,105.
Stover, William A.; and Mc Veigh, Harry A., to Mobil Oil Corporation. Catalyst matrix material, composite catalyst, and methods of preparing same. 3,553,104, Cl. 208-120.
Straley, James M.: *See—*
Weaver, Max A.; Dale, John I., III; and Straley, James M.,3,553,245.
Strandrud, Halvor T.: *See—*
Chaney, Harold K.; and Strandrud, Halvor T.,3,552,275.
Strang, Herman D. Convertible coin operated locking mechanism. 3,552,535, Cl. 194-74.
Stratton, Charles A., to Phillips Petroleum Company. Oil recovery. 3,553,130, Cl. 252-8.55
Strelow, Gert, to Bosch, Robert, GmbH. Condenser discharge type ignition system with a magneto power supply. 3,553,529, Cl. 315-218.
Strohlein, Elmer M.: *See—*
Daniels, Earl L., Jr.; and Strohlein, Elmer M.,3,553,018.
Stromberg, Gale F.; and Easton, John F., to United States of America, Air Force. Active propellant grain regression rate monitor for rocket engines. 3,553,577, Cl. 324-65.
Stromberg-Carlson Corporation: *See—*
Carter, Charles W., 3,553,686.
Stubbe, Friedrich: *See—*
Ramm, Horst, 3,551,957.
Stull Chemical Company: *See—*
Wilson, Forrest Arthur, 3,553,128.
Stumpf, Robert J.; and Mowers, William L., to Kimberly-Clark Corporation. Highly-drafted sinusoidal patterned nonwoven fabric and method of making. 3,553,065, Cl. 161-59.
Stuttgarter Spindelfabrik Novibra G.m.b.H.: *See—*
Staufert, Helmut P., 3,552,113.
Stutz, Theo; and Glauser, Peter, to Contraves AG. Arrangement for measuring angular rotation using two moiree patterns. 3,553,469, Cl. 250-237.
Sublett, Kenneth L., to Western Marine Electronics Company. Sonar scanning mechanism. 3,553,638, Cl. 340-3.
Subovici, Vadim, to Ministerul Industriei Constructilor de Masini. Laminated magnetic core. 3,553,622, Cl. 336-219.
Sudler, Roland: *See—*
Vettermann, Wolfgang; and Sudler, Roland,3,553,512.
Suenaga, Taro, to Nippon Enlarging Color Inc. Method for enlarged multicolor printing and a device therefor. 3,553,371, Cl. 178-5.2
Suggs, Charles W.; and Stikeleather, Larry F. Vibration damping device. 3,552,271, Cl. 91-360.
Sugiyama, Hiroshi; Otsuka, Hideo; and Yamamoto, Masakazu, to Sumitomo Chemical Company, Ltd. Amino-naphthol-azo-phenyl dyes. 3,553,189, Cl. 260-198.
Suh, John T.; and Judd, Claude I., to Colgate-Palmolive Company. Azacycloalkylferrocene. 3,553,241, Cl. 260-439.
Sullifoam, Inc.: *See—*
Sullivan, Matthew A., 3,552,328.
Sullivan, Matthew A., to Sullifoam, Inc. Pallet. 3,552,328, Cl. 108-51.
Sulzer Brothers Ltd.: *See—*
Zerlauth, Ferdinand, 3,552,882.
Sumitomo Chemical Company, Ltd.: *See—*
Hirai, Hajime; Fujimoto, Keimei; Okuno, Yositosi; Ogawa, Taizo; and Yoshioka, Hirosuke, 3,553,233.
Mine, Akihiko; Hino, Naganori; Fujinami, Akira; Nodera, Katsuji; Horiuchi, Fukashi; and Nishizawa, Yoshihiko, 3,553,252.
Sugiyama, Hiroshi; Otsuka, Hideo; and Yamamoto, Masakazu, 3,553,189.
Sumner, Edwin V.; Cole, Donald Q.; and Davis, Le Roy W., to Harvey Aluminum, (Incorporated). Process for the production of aluminum-steel composite. 3,551,996, Cl. 29-472.3
Sun Chemical Corporation: *See—*
Bassemir, Robert W.; Dennis, Richard; and Nass, Gerald I., 3,552,986.
Sun Oil Company: *See—*
Andersson, Craig R.; and Olenzak, Albert Thomas, 3,552,435.
Superior Electric Company, The: *See—*
Leenhouts, Albert C., 3,553,549.
Leenhouts, Albert C., 3,553,559.
Superior Valve Company: *See—*
Yocum, William C., 3,552,421.
Surash, John J.: *See—*
Henn, Richard W.; King, Nancy H.; and Surash, John J.,3,552,969.
Susuki, Rinosuke; Hoshi, Hiroshi; Saito, Jiro; and Ito, Humio, to Lion Fat & Oil Co., Ltd. Method or preparing polyolefin resin paper. 3,553,302, Cl. 264-49.
Sutter, Fritz, to Buss Aktiengesellschaft. Continuously operable mixing and kneading device. 3,552,722, Cl. 259-21.
Sutton, Trevor G., to Garrett Corporation, The. Pulsating fluid pressure frequency rectifier. 3,552,414, Cl. 137-81.5
Suzuki, Kazuo: *See—*
Mito, Satoru; Suzuki, Kazuo; Murata, Shinichi; and Yoshida, Hiroshi,3,552,937.
Svencer, Richard E.: *See—*
Steever, Andrew B.; and Svencer, Richard E.,3,552,033.
Svenska Innovationskonsortiet: *See—*
Ekenberg, Ture, 3,552,100.
Svensson, Lars Erik; and Wahlstrom, Nils Lennart, to AB Industrifjadrar. Apparatus for tempering springs in a spring spinning machine. 3,552,168, Cl. 72-128.
Svensson, Sven-Erik Vilhelm, to AB Byggforbattring. Arrangement in sliding form equipments for erecting concrete structures having at least one inclined wall surface. 3,552,709, Cl. 249-20.
Swedish Crucible Steel Company: *See—*
Watson, Robert E., 3,551,922.
Sweeney, Richard F.; and Price, Alson K., to Allied Chemical Corporation. Novel fluorinated acids and derivatives thereof. 3,553,250, Cl. 260-468.
Swendson, David L.: *See—*
Pierie, Will R.; Raible, Donald A.; and Swendson, David L.,3,552,384.
Swift, Lloyd H. Fruit picker head. 3,552,107, Cl. 56-328.
Swinford, William S., to Standard Fruit and Steamship Co., Inc. Banana bag. 3,552,637, Cl. 229-53.
Swingle, John C. Expandable retainer. 3,552,578, Cl. 211-120.
Swinney, Frederick Bernard: *See—*
Warrach, Wolfgang; Swinney, Frederick Bernard; and Kent, Eric George,3,553,051.
Swithenbank, Colin: *See—*
Lewis, Sheldon N.; and Swithenbank, Colin,3,553,274.
Sybron Corporation: *See—*
Hogan, William J.; 3,553,453.
Sycor Inc.: *See—*
Wood, Robert E., 3,552,671.
Sylvania Electric Products, Inc.: *See—*
Benda, David, 3,552,818.
Blitz, Melvin H.; and Pick, George G., 3,553,438.
Boothroyd, Wilson P., 3,553,437.
Bossers, Chris F., 3,551,973.
Budd, Raymond A., 3,553,523.
De Bernardis, Joseph Nazzareno, 3,553,517.
Gallaro, Anthony V.; and Van Noy, Bryce W., 3,552,989.
Kautz, George R., 3,553,516.
Neal, Charles Bailey; Schuster, William Daniel; and Scott, Benton Boyd, 3,553,352.
Reif, Robert H., 3,553,598.
Sorli, Gordon B., 3,553,433.
Teixeira, James F., 3,553,579.
Synectics Development Corporation: *See—*
Spefry, Charles R.; and Gibson, Roger L., 3,552,608.
Syntex Corporation: *See—*
Ellis, David J.; and Rammler, David H., 3,553,211.
Systron-Donner Corporation: *See—*
Morris, Harold D.; and Leigh, Philip G., 3,553,555.
Szabo, Anthony W.: *See—*
Smuts, Israel Robert, 3,552,017.
Szirtes, Thomas, to RCA Corporation. Antenna comprising restraining means for resilient support members. 3,553,731, Cl. 343-781.
Szodfridt, Imre, to Porsche, Dr.-Ing. h.c.F., KG, Firma. Hydraulic control for change speed gear transmission. 3,552,235, Cl. 74-865.
Szopo, Alexander. Nestable container. 3,552,593, Cl. 220-4.
T & T Technology, Inc.: *See—*
Tong, Peter P., 3,553,444.

Tachikawa Research Institute: *See—*
Aoki, Yoshikazu; Kamei, Teruji; Hayami, Akira; and Kitano, Masahiro, 3,553,078.
Tagnon, Luc, to Societe des Lunetiers. Lens surfacing machine. 3,552,899, Cl. 51-160.
Taillon, John Kellner, to Bell & Howell Company. Motion picture projector control system. 3,552,842, Cl. 352-125.
Takasaka, Yoshio: *See—*
Takehisa, Masaaki; Yamada, Tadao; Takasaka, Yoshio; and Miyanaga, Kazukiyo,3,553,187.
Takeda Chemical Industries, Ltd.: *See—*
Kobayashi, Koji; and Mise, Noritoshi, 3,553,308.
Takehisa, Masaaki; Yamada, Tadao; Takasaka, Yoshio; and Miyanaga, Kazukiyo, to Japan Atomic Energy Research Institute. Continuous process for producing powder polyethylene. 3,553,187, Cl. 260-94.9
Takenaka, Haruo; Shiozawa, Akiyasu; and Fujiwara, Tadahiro, to Fuji Photo Film Co., Ltd. Positive sheet for diffusion transfer. 3,552,971, Cl. 96-76.
Takeshima, Masumi: *See—*
Nakashima, Shinichi; Takeshima, Masumi; and Miyai, Yukio,3,553,539.
Tanabe, Atsushi. Fastener adapted for wire cage. 3,552,257, Cl. 85-1.
Tanaka, Akira, to General Motors Corporation. Manually operable seat adjuster mechanism. 3,552,707, Cl. 248-394.
Tanenblatt, Walter. Fluid pressure control system. 3,552,266, Cl. 91-35.
Tapeswitch Corporation of America: *See—*
Koenig, Robert H., 3,553,404.
Tarver, Donald A.: *See—*
Darnell, James R.; and Tarver, Donald A.,3,552,939.
Tasset, Everett J. Rod weeder. 3,552,496, Cl. 172-44.
Tate, Ruben R. Apparatus for washing large vehicles. 3,552,521, Cl. 182-17.
Tates, Donald W., to Xerox Corporation. Speed converting mechanism. 3,552,221, Cl. 74-142.
Tatham, James P.: *See—*
Pesce, Carl A.; Gore, Ernest M.; and Tatham, James P.,3,553,567.
Tatsuzawa, Yoshinobu; and Uchida, Kosaku, to Matsushita Electric Industrial Co., Ltd. Decorders. 3,553,685, Cl. 340-347.
Tavano, John B. Support bracket. 3,552,783, Cl. 287-20.
Tavis Corporation: *See—*
Tavis, John R., 3,553,482.
Tavis, John R., to Tavis Corporation, mesne. Acceleration switch. 3,553,482, Cl. 307-121.
Taylor, Andrew E.: *See—*
Smuts, Israel Robert, 3,552,017.
Taylor, John H.: *See—*
Bould, Fred; and Taylor, John H.,3,553,534.
Taylor, John H. Domestic-pan-forming device. 3,552,165, Cl. 72-57.
Taylor, Peter Norman: *See—*
North, Reginald Harry; and Taylor, Peter Norman,3,552,483.
Taylor, Philip H. Method for treating burns with methenamine mandelate. 3,553,325, Cl. 424-249.
Taylor Woodrown Construction Limited: *See—*
Portas, John Richard; and Carter, Rodney Richard, 3,552,940.
TDK Electronics Company, Limited: *See—*
Hata, Yu; and Fujishima, Hiroki, 3,553,476.
Hata, Yu, 3,553,477.
Technische Industrie A.G.: *See—*
Oskam, Aane Adriaan, 3,552,836.
Techs Incorporated: *See—*
Edwards, Edgar Burley; and Kreidel, Rudolf Karl Andrew, 3,552,607.
Teijin Limited: *See—*
Oda, Tomikazu; Inamoto, Yoshiaki; Morikawa, Takeshi; Oo, Kogen; and Nakatani, Umewaka, 3,553,288.
Shima, Takeo; Asami, Yukiharu; Ishizaki, Shunzo; Kawase, Shoji; and Yoshimura, Masao, 3,552,999.
Teixeira, James F., to Sylvania Electric Products, Inc. Apparatus for measuring the difference in phase between two signals of the same frequency one having noise associated therewith. 3,553,579, Cl. 324-83.
Tek-Wave, Inc.: *See—*
Lehrfeld, Sanford S., 3,553,409.
Lehrfeld, Sanford S., 3,553,607.
Telefunken Patentverwertungsgesellschaft m.b.H.: *See—*
Bachnick, Werner; and Wegener, Rolf, 3,553,600.
Langheinrich, Werner; and Kuisl, Max, 3,553,036.
Tenna Corporation: *See—*
Kelso, James W., 3,552,751.
Tenneco Chemicals, Inc.: *See—*
Buff, Fred, 3,553,300.
Teradyne Components: *See—*
MacDermod, Donald E., 3,552,220.
Terayama, Kozo: *See—*
Omori, Mineharu; Terayama, Kozo; Matsubara, Shozo; Shigematsu, Tatsuo; and Kido, Gen,3,552,011.
Terry Plastic di Guizzandi Claudio Alfio e Marcolongo Egilio, Soc. di fatto Cascine Olona di Settimo Milanese: *See—*
Marcolngo, Egilo, 3,552,817.
Tesoro, Giuliana C.; and Moore, Donald R., to Stevens, J. P., & Co., Inc. Tris(N,N-bis(hydroxymethyl)carbamic acid esters. 3,553,254, Cl. 260-482.
Tesoro, Guiliano C.: *See—*
Ginilewicz, Wlodek L.; and Tesoro, Guiliano C.,3,553,111.
Teverama S.A.: *See—*
Michelson, Charles, 3,552,841.
Teves, Alfred, G.m.b.H.: *See—*
Beuchle, Friedrich; Hahm, Heinz; Klein, Hans Christof; and Beller, Hans, 3,552,526.
Hennig, Erich, 3,553,007.
Ostwald, Fritz, 3,552,765.
Seip, Hermann, 3,552,528.
Texaco Inc.: *See—*
Causey, Cloy N., 3,553,578.
Mott, George E.; and Ezekiel, Edison R., 3,552,131.
Schoen, William; and Landau, Leo, 3,553,149.
Shook, Austen M., 3,552,128.
Texas Instruments, Incorporated: *See—*
Bawa, Mohendra S., 3,553,279.
Bechtel, Bartow, 3,553,688.
Bechtel, Bartow, 3,553,689.
Curry, James William, 3,553,164.
Darnell, James R.; and Tarver, Donald A., 3,552,939.
Haberecht, Rolf R., 3,553,533.
Lee, Ray H., 3,553,364.
Lockered, Robert M.; Smith, Mark W.; Cooper, Ray E.; and Goode, George E., 3,553,693.
Ott, Granville E., 3,553,722.
Snyder, John L., III, 3,552,859.
Textron Inc.: *See—*
Bert, Stephen F., 3,551,966.
Howe, Ralph S., Jr., 3,552,812.
Teytu, Andre: *See—*
Barroil, Aime; and Teytu, Andre,3,552,446.
Th. A.-G. Goldschmidt: *See—*
Greinacher, Ekkehard; and Brugger, Wilhelm, 3,552,914.
Theurer, Josef: *See—*
Plasser, Franz; and Theurer, Josef,3,552,319.
Plasser, Franz; and Theurer, Josef,3,552,647.
Thibaut, Yves Albert Daniel: *See—*
Toulemonde, Dominique; and Thibaut, Yves Albert Daniel,3,552,156.
Thibaut, Yves, to U.S. Philips Corporation, mesne. Plural motor system for washing machine. 3,553,548, Cl. 318-102.
Thiele, Heinrich; and Soehnges, Wilhelm P. Process of producing shaped optical bodies useful as aids to vision. 3,553,299, Cl. 264-1.
Thielenhaus, Ernst, Maschinenfabrik: *See—*
Thielenhaus, Ernst, 3,552,063.
Thielenhaus, Ernst, to Thielenhaus, Ernst, Maschinenfabrik. Apparatus for the grinding and honing of annular bodies. 3,552,063, Cl. 51-3.
Thill, Richard E., to United States of America, Interior. Ultrasonic piezoelectric transducer cartridge. 3,553,501, Cl. 310-8.2
Thiokol Chemical Corporation: *See—*
Kelly, John Hill, 3,552,665.
Thoma, Wilhelm; and Rinke, Heinrich, to Farbenfabriken Bayer Aktiengesellschaft. Elastic polyurethane polymers from isocyanate terminated prepolymers and aromatic polyesters. 3,553,172, Cl. 260-75.
Thomas & Betts Corporation: *See—*
Crimmins, David J., 3,553,628.
Thomas, Lewis C. Irrigation conduit and composition and method for producing such. 3,552,654, Cl. 239-145.
Thomas, Maxime J., to Granger Associates. Log periodic rotating antenna. 3,553,701, Cl. 343-766.
Thomas, Thomas. Apparatus for holding a pole vaulting bar. 3,552,748, Cl. 272-59.
Thomas, Vernon H.; and McGuire, Richard M., to Eaton Yale & Towne, Inc. Fluid coupling device. 3,552,532, Cl. 192-58.
Thompson, Charles T.; Kidd, Frank B.; and Henry, William R., to American Coldset Corporation. Core bit and core crusher apparatus. 3,552,505, Cl. 175-57.
Thompson, Earl R.: *See—*
Lemkey, Franklin D.; and Thompson, Earl R.,3,552,953.
Thompson, Francis T.; and Rubner, Tibor, to Westinghouse Electric Corporation. Generator speed matcher using direct sampling. 3,553,596, Cl. 328-155.
Thompson, Harry W., to Interlake Steel Corporation. Rail mounting arrangement. 3,552,648, Cl. 238-287.
Thompson, Kenneth L., to Ye Dock Master, Inc. Floating lift station. 3,552,424, Cl. 137-343.
Thompson, Roy E. Communicating valve assembly for multiple well formations. 3,552,491, Cl. 166-224.
Thomsen, Gail J. Power blender. 3,552,724, Cl. 259-81.
Thorsteinsson, John B.: *See—*
Dalzell, James W.; Hazleton, Herbert T.; and Thorsteinsson, John B.,3,553,624.
Tiernan, Thomas O.; Miller, Carroll D.; Futrell, Jean H.; and Abramson, Fred P., to United States of America, Air Force. Time-of-flight mass spectrometer operative at elevated ion source pressures. 3,553,452, Cl. 250-41.9
Tincher, Jon D.: *See—*
Shearer, Thomas W., Jr.; Peters, Charles M.; and Tincher, Jon D.,3,553,420.
Ting, Lawrence K. M., to Polaroid Corporation. Control system and apparatus for a heating station. 3,553,430, Cl. 219-501.

Tinnes, Bernhard, to Metacon AG. Mounting apparatus for the wearing blocks of casting vessels equipped with a slide closure mechanism. 3,551,989, Cl. 29-252.

Tinsley, Gerald Henry Sutcliffe: *See—*
Rollason, Christopher John; and Tinsley, Gerald Henry Sutcliffe,3,552,679.

Tizon Chemical Corporation: *See—*
Albanese, Richard P.; and McIntyre, Glenn H., Jr., 3,552,071.

Tobias, Stephen Albert: *See—*
Chan, Lin Tak; and Tobias, Stephen Albert,3,552,181.

Todd, Paul H., Jr.: *See—*
Worden, Leonard R.; and Todd, Paul H., Jr.,3,552,975.

Todd, William E., to Buschman, E. W., Company, Inc., The. Transfer mechanism for block handling apparatus. 3,552,588, Cl. 214-89.

Toffolon, Norman R. Panel erection apparatus. 3,552,583, Cl. 214-1.

Tokumitsu, Ichiro; and Okamura, Mitsumaro, to Idemitsu Petrochemical Co., Ltd. Quenching apparatus for use with thermal cracking system. 3,552,487, Cl. 165-174.

Tokumitsu, Kunio: *See—*
Wakita, Eiichi; and Tokumitsu, Kunio,3,553,248.

Tokyo Shibaura Electric Co., Ltd.: *See—*
Mito, Satoru; Suzuki, Kazuo; Murata, Shinichi; and Yoshida, Hiroshi, 3,552,937.

Toles, Frank R., to Hall, Gordon H., Inc. Indicator for construction machines. 3,553,670, Cl. 340-267.

Tomica, Erhard: *See—*
Christ, Alfred; Schreiber, Viktor; and Tomica, Erhard,3,552,877.

Tomita, Fujihiko, to Yamaha Hatsudoki Kabushiki Kaisha. Front wheel device for snowmobiles. 3,552,515, Cl. 180-5.

Tong, Peter P., to T & T Technology, Inc. Absorbance and concentration computer. 3,553,444, Cl. 235-151.35

Toray Industries, Inc.: *See—*
Fukuhara, Mototada; Ueno, Akira; Nihei, Isao; and Sano, Chikara, 3,552,114.

Toth, John A.: *See—*
Skubiak, John J.; and Toth, John A.,3,553,570.

Toulemonde, Dominique; and Thibaut, Yves Albert Daniel, to U.S. Philips Corporation, mesne. Washing and spin-drying machine. 3,552,156, Cl. 68-12.

Tourmen, Louis, to Societe Grenobloise d'Etudes et d'Applications Hydrauliques, (SOGREAH). Means for detecting and recording water wave direction. 3,552,204, Cl. 73-170.

Townsend, Robert D., Jr., to Mobil Oil Corporation. Subsea production satellite. 3,552,903, Cl. 166-0.5

Toyo Rayon Kabushiki Kaisha: *See—*
Murata, Hiroshi; Katuda, Kozo; Kunitomo, Tetsunosuke; Sasaki, Shosaku; and Nishio, Minoru, 3,553,286.
Sato, Masaki; and Otani, Seiya, 3,553,277.
Sato, Masaki; and Otani, Seiya, 3,553,278.

Traglia, Patrick J.: *See—*
Hardin, William W.; and Traglia, Patrick J.,3,553,646.

Trampus, William: *See—*
Mathers, Robert V.; and Trampus, William,3,552,808.

Traubel, Harro: *See—*
Reischl, Arthur; Traubel, Harro; and Zorn, Bruno,3,553,008.

Traupmann, Robert R., to Nordberg Manufacturing Company. Rail gaging and renewing device. 3,552,320, Cl. 104-17.

Trenary, John M.: *See—*
Monroe, Wayne W.; Deines, Siegmund; Jeffers, Homer A., Jr.; and Trenary, John M.,3,551,931.

Treus, Aloys; and Gutbrod, Hans, to Hamel G.m.b.H. Zwirnerei-und Spinnereimaschinen. Threading arrangement for spinning and twisting machines. 3,552,111, Cl. 57-58.49

Trico Products Corporation: *See—*
Deibel, Raymond A.; and Riester, William C.,3,553,724.

Tridair Industries: *See—*
Parris, Peter P., 3,552,329.

Triggs, Henry Francis; and Lawton, Frank Bert, to Ryemor Engineering Limited. Turn-over mechanisms. 3,552,538, Cl. 198-33.

Troll, William Charles: *See—*
Simon, Arthur; and Troll, William Charles,3,553,695.

Tru-Broil Corporation: *See—*
Patoka, Martin A., 3,552,299.

Trudeau, Urban P., to Owens-Illinois, Inc. Multiple mold charge handling apparatus. 3,552,942, Cl. 65-304.

Truemper, John P., to Eaton Yale & Towne, Inc. Hoist control system utilizing reversible, variable speed induction motor. 3,553,553, Cl. 318-202.

Truetzschler & Co.: *See—*
Truetzschler, Hermann, 3,552,800.

Truetzschler, Hermann, to Truetzschler & Co. Apparatus for the pneumatic feeding of fiber tufts to spinning mill machinery. 3,552,800, Cl. 302-40.

Trumble, Terry M., to United States of America, Air Force. Portable hydrogen flame detector. 3,553,665, Cl. 340-228.

TRW Inc.: *See—*
Felgar, Robert P., Jr., 3,552,178.
Updike, Stanley H., 3,552,876.

Trytten, Grover W.: *See—*
Sanders, Harold A.; and Trytten, Grover W.,3,552,853.

Tsergas, Athanase N.; and Procik, Wallace T., to Ram Tool Corporation. Tester for applying a plurality of tests to an electrical appliance. 3,553,581, Cl. 324-158.

Tu, Ju C.: *See—*
Bird, Richard M.; and Tu, Ju C.,3,553,651.

Tubuko, Kazuo: *See—*
Yamaguchi, Nario; and Tubuko, Kazuo,3,552,959.

Tucker, Huel C., to Monsanto Company. Monitoring apparatus. 3,553,664, Cl. 340-227.

Tucker, Linwood G.; and Simpson, Earl W., to Koppers Company, Inc. Door jamb structure for coke oven battery. 3,553,083, Cl. 202-223.

Turnbull, Merlin Y.: *See—*
Whiting, Harold E.; and Turnbull, Merlin Y.,3,553,614.

Turnbull, Merlin Y., to Square D Company. Magnet and movable contact support structure for a multiple contact electromagnetically actuated switch. 3,553,615, Cl. 335-132.

Turnbull, Merlin Y.; and Whiting, Harold E., to Square D Company. Magnet and movable contact support structure for a multiple contact electromagnetically actuated switch. 3,553,613, Cl. 335-132.

Turnbull, Merlin Y.; and Whiting, Harold E., to Square D Company. Magnet structure and magnet support structure in an electromagnetically operated switch. 3,553,617, Cl. 335-202.

Turner, Arthur George, to Andrew & Suter Limited. Box-staying unit. 3,552,279, Cl. 93-41.

Turner, Lloyd S. Kite control device. 3,552,690, Cl. 244-155.

Uchida, Kosaku: *See—*
Tatsuzawa, Yoshinobu; and Uchida, Kosaku,3,553,685.

Udert, Karl-Ernst, to Hilti Aktiengesellschaft. Explosive charge operated setting tool or gun. 3,552,625, Cl. 227-10.

Ueno, Akira: *See—*
Fukuhara, Mototada; Ueno, Akira; Nihei, Isao; and Sano, Chikara,3,552,114.

Uhrig, Wilhelm. Slide fastener. 3,551,962, Cl. 24-205.1

Uitti, Kenneth D.: *See—*
Haufe, Ted B.; and Uitti, Kenneth D.,3,553,239.

Ulich, Michael D., to Westinghouse Electric Corporation. Air conditioner duct section. 3,552,139, Cl. 62-262.

Ullman, Frederick E.: *See—*
Garver, Oscar W.; Ullman, Frederick E.; Stettler, Christian H.; and Kopp, Hans W.,3,553,418.
Garver, Oscar W.; Ullman, Frederick E.; Stettler, Christian H.; and Kopp, Hans W.,3,553,419.

Unger, Paul. Heel retainer for ski binding. 3,552,759, Cl. 280-11.35

Unger, Richard; and Muller-Calgan, Helmut, to Merck, E., A.G.2-Oxo-7-phenyl-1,2,3,4,6,7-hexahydro-11bH- benzo[a]quinolizines. 3,553,218, Cl. 260-286.

Unied States of America, Agriculture: *See—*
Kircher, Henry W.; and Jacks, Thomas J., 3,553,235.

Union Carbide Corporation: *See—*
Brotherton, Thomas K.; Lynn, John W.; and Knopf, Robert J., 3,553,249.
Kordesch, Karl V.; and Darland, William G., Jr., 3,553,029.
McGary, Charles W., Jr.; and Smith, Percy L., 3,553,294.

Union Savings & Trust Company, The: *See—*
Kinnavy, Martin G., 3,552,175.

United Air Lines, Inc.: *See—*
Heinrich, Lawrence O.; and Wilcox, Joseph E., 3,552,777.

United Aircraft Corporation: *See—*
Anschutz, Donald E.; and Linebrink, Kail L., 3,552,123.
Doyle, Timothy, 3,553,023.
Lemkey, Franklin D.; and Thompson, Earl R., 3,552,953.
Simoneau, Earl P.; and Manos, George, 3,553,683.
Vail, Edwin G.; and Getchell, Douglas E., 3,551,909.
Weatherbee, Roger D., 3,552,883.

United Engineering and Foundry Company: *See—*
Shumaker, Charles Storer, 3,552,171.

United States Borax & Chemical Corporation: *See—*
Woods, William G.; Bengelsdorf, Irving S.; and Hunter, Don L., 3,553,170.

United States of America
Agriculture: *See—*
Lowe, Edison; and Durkee, Everett L., 3,552,566.
Lowe, Edison; and Durkee, Everett L., 3,552,574.
Mark, Arthur M.; and Mehltretter, Charles L., 3,553,196.
Air Force: *See—*
Carr, Paul H.; and Slobodnik, Andrew J., Jr., 3,553,589.
Crosswy, Frank L.; Lennert, Andrew E.; and Kalb, Henry T., 3,552,855.
Dane, Ernest B., Jr., 3,552,065.
Dean, John A., 3,552,630.
Kroeger, Richard A.; Heltsley, Fred L.; and Smith, Morris R., 3,552,202.
Pavone, Carlo; and Ziebarth, Hans Karl, 3,552,197.
Stromberg, Gale F.; and Easton, John F., 3,553,577.
Tiernan, Thomas O.; Miller, Carroll D.; Futrell, Jean H.; and Abramson, Fred P., 3,553,452.
Trumble, Terry M., 3,553,665.
Army: *See—*
Hadden, David R., Jr.; Goss, Lloyd C.; Grob, Konrad; and Hadden, David R., Jr., 3,553,661.
Hadden, David R., Jr.; Goss, Lloyd C.; Grob, Konrad; and Hadden, David R., Jr., 3,553,661.
Miller, John A.; and Pocsi, Powell J., 3,553,700.
Warren, Raymond W.; Barclay, Ralph G.; and Moorhead, John Gerald, 3,552,413.
Atomic Energy Commission: *See—*
Morgan, Dennis J.; and Nielson, Carl C., 3,553,385.
Interior: *See—*
Bow, William J., 3,552,754.
Thill, Richard E., 3,553,501.

National Aeronautics and Space Administration, Administrator, with respect to an invention of:
Seaton, Arthur F. Phase multiplying electronic scanning system. 3,553,704, Cl. 343-768.

National Aeronautics and Space Administration: *See—*
Banks, Bruce A.; and Nakanishi, Shigeo, 3,552,124.
Banks, Bruce A.; and Kaufman, Harold R., 3,552,125.
Cribb, Herbert E., 3,553,586.
Haraway, William M., Jr.; and Magee, Robert T., 3,553,002.

Navy: *See—*
Adolph, Horst G.; and Kamlet, Mortimer J., 3,553,273.
Briggs, George S., 3,552,318.
Fauth, Mae I.; and Richardson, Annie C., 3,552,926.
Horanoff, Eugene V., 3,552,201.
Kaufman, Maxime G.; and Jacobs, Kenneth E., 3,553,697.
Lauter, Charles A., Jr., 3,552,206.
Livingston, David N.; Smith, Max R.; and Newmyer, Charles T., 3,553,432.
Naubereit, Henry, 3,552,520.

United-Carr Incorporated: *See—*
Gordon, Stanley H., 3,551,965.

Universal Dynamics Corporation: *See—*
May, Ernest N., Jr, 3,552,034.

Universal Oil Products Company: *See—*
Berger, Charles V.; and Brearley, Charles S., 3,553,276.
Haufe, Ted B.; and Uitti, Kenneth D., 3,553,239.
Rosenwald, Robert H.; and Goeller, Leonhard A., 3,553,150.
Rosenwald, Robert H.; and Nielsen, Earl A., 3,553,263.

University of Adelaide, The: *See—*
Willoughby, Eric O., 3,553,696.

University of Melbourne, The: *See—*
Evans, David Gordon; and Siemon, Stanley Robert, 3,552,031.

Updike, Stanley H., to TRW Inc. Pulse sensitive turbine nozzle. 3,552,876, Cl. 415-205.

Upjohn Company, The: *See—*
Hester, Jackson B., Jr., 3,553,232.
Martin, David G., 3,553,214.
Moffett, Robert Bruce, 3,553,200.
Nelson, Norman A.; and Vanden Berg, Gary E., 3,553,329.
Veldkamp, William, 3,553,327.

Urmenyi, Laszlo. method of and device for detecting surface elevations. 3,553,668, Cl. 340-259.

U.S. Industries, Inc.: *See—*
Comber, William R.; and Boer, Elmer J., 3,552,542.
Graves, Jewel; and Voran, Willis R., 3,552,359.

U.S. Philips Corporation: *See—*
Albarda, Scato, 3,552,861.
Bakker, Marinus Antonius Maria; and Duran, Johannes Christiaan, 3,553,521.
Berends, Werner, 3,553,514.
Dijksterhuis, Popko Reinder, 3,553,337.
Ebbinge, Willem; and Bom, Johannes Gerardus Wouterus, 3,553,565.
Janecke, Werner, 3,553,401.
Janssen, Frits Jacques, 3,552,385.
Kuhlmann, Hermann, 3,552,896.
Lebrun, Jean, 3,553,030.
Manley, Brian William, 3,553,457.
Moerkens, Jozef Cornelis; and Van Den Bogaart, Antonius Johannes, 3,553,526.
Roos, Jan, 3,553,717.
Schagen, Pieter, 3,553,458.
Schagen, Pieter, 3,553,518.
Schellekens, Jean Frantz Felix Camille Ceasar, 3,553,509.
Schemmann, Hugo, 3,553,550.
Steinbacher, Heinz-Dieter; and Graffenberger, Wilhelm, 3,553,478.
Thibaut, Yves, 3,553,548.
Toulemonde, Dominique; and Thibaut, Yves Albert Daniel, 3,552,156.
Voeten, Hendrik, 3,553,537.

U.S. Phillips Corporation: *See—*
Clark, Terence Daniel, 3,553,694.

Uskokovic, Milan Radoje: *See—*
Gutzwiller, Juerg Albert Walter; and Uskokovic, Milan Radoje,3,553,221.

Uthe, Paul Michael, to UTI. Quadrupole in which the pole electrodes comprise metallic rods whose mounting surfaces coincide with those of the mounting means. 3,553,451, Cl. 250-41.9

UTI: *See—*
Uthe, Paul Michael, 3,553,451.

Uudenkaupungin Telakka Oy: *See—*
Helpio, Pentti Kalervo, 3,552,361.

V-M Corporation: *See—*
Hammond, Robert J., 3,553,080.
Wolanin, Gerald L., 3,552,816.

Vacuum Concrete Corporation of America: *See—*
Creskoff, Jacob J., 3,553,084.

Vadas, Leslie, to Castle & Cooke, Inc., mesne. Damped rotary peeling head. 3,552,459, Cl. 146-6.

Vail, Edwin G.; and Getchell, Douglas E., to United Aircraft Corporation. Universal cable restrained waist joint for pressurized suit. 3,551,909, Cl. 2-2.1

Valenta, James D., to Air Reduction Company, Incorporated. Controlled environment tent. 3,552,141, Cl. 62-407.

Vamvakas, Michael, to Barry-Wehmiller Company. Container flow control conveyer system. 3,552,537, Cl. 198-31.

Van Arnam, Philip: *See—*
Welco, Leon B.; Biondolillo, Jack J.; and Van Arnam, Philip,3,552,040.

Vanden Berg, Gary E.: *See—*
Nelson, Norman A.; and Vanden Berg, Gary E.,3,553,329.

Van Den Bogaart, Antonius Johannes: *See—*
Moerkens, Jozef Cornelis; and Van Den Bogaart, Antonius Johannes,3,553,526.

Van Den Heuvel, Anthony P.: *See—*
Anderson, Marvin E.; Van Scoyoc, James N.; Owen, Donald B.; and Van Den Heuvel, Anthony P.,3,553,716.

Van der Hoeven, Cornelis J.: *See—*
Hanes, Garnet R.; Dobrowolski, Jerzy A.; and Van der Hoeven, Cornelis J.,3,552,826.

Van Fossen, Harvey G., to Wheelabrator Corporation, The. Vibrator construction for the surface treatment of articles. 3,552,068, Cl. 51-163.

Van Hecke, Jerome M., 1/3 to Boswell, W. H., and 1/3 to Sigle, C. C. Archery bow with variable strength adjusting means. 3,552,373, Cl. 124-24.

vanHove, Arthur: *See—*
Petitjean, Jose; and vanHove, Arthur,3,553,576.

Van Lengen, Johan. Flush latch. 3,552,158, Cl. 70-146.

Van Noy, Bryce W.: *See—*
Gallaro, Anthony V.; and Van Noy, Bryce W.,3,552,989.

Van Scoyoc, James N.: *See—*
Anderson, Marvin E.; Van Scoyoc, James N.; Owen, Donald B.; and Van Den Heuvel, Anthony P.,3,553,716.

Van Voorhis, Donald M. Internal worm and speed reducer using an internal worm. 3,552,225, Cl. 74-425.

Van Wagner, Edward M., to Xerox Corporation. Xerographic plate. 3,552,848, Cl. 355-3.

van Zanten, Melvin J.: *See—*
Gorman, Howard C.; Simone, John; Shaheen, Joseph M.; van Zanten, Melvin J.; Bowman, Darl F.; and Moser, Gerald J.,3,553,648.

Varta Aktiengesellschaft: *See—*
Winsel, August, 3,553,026.

Vasco Industries Corporation: *See—*
Inklaar, Petrus Adam, 3,552,978.

Vaughan, James W.: *See—*
Leung, Arthur T.; and Vaughan, James W.,3,552,865.

Vdo Tachometer Werke Adolf Schindling GmbH: *See—*
Vettermann, Wolfgang; and Sudler, Roland, 3,553,512.

VEB Carl Zeiss Jena: *See—*
Huther, Gerhard, 3,552,866.
Jehne, Gerhard; and Klier, Ewald, 3,553,684.

Veldkamp, William, to Upjohn Company, The. 3,6-diamino thioxanthene-10,10-dioxide in the treatment of epilepsy. 3,553,327, Cl. 424-275.

Velsicol Chemical Corporation: *See—*
Dissen, Israel J., 3,553,256.

Venable, Phillip G., to Case, J. I., Company. Baler having a self-locating plunger. 3,552,307, Cl. 100-98.

Vendking Ltd.: *See—*
King, Alan M., 3,552,976.

Veprek-Siska, Josef; Ettel, Viktor; and Eckschlager, Karel, to Ceskoslovenska akademie ved. Purifying alkali metal hydroxide by zone-free melting. 3,552,935, Cl. 23-301.

Verbanac, Frank; and Moser, Kenneth B., to Stanley, A. E., Manufacturing Company. Starch phosphonates. 3,553,194, Cl. 260-233.5

Vereinigte Flugtechnische Werke Gesellschaft mit beschrankter Haftung fruher 'Weser' Flugzeugbau/ Focke-Wulf/Heinkel-Flugzeugbau: *See—*
Fischer, Christoph, 3,552,880.

Vereinigte Osterreichische Eisen-und Stahlwerke Aktiengesellschaft: *See—*
Schoffmann, Rudolf; and Kubera, Anton, 3,552,902.

Vernaleken, Hugo; Malamet, Georg; Bottenbruch, Ludwig; Krimm, Heinrich; and Schnell, Hermann, to Farbenfabriken Bayer Aktiengesellschaft. Vinylocopolymers with polyamide graft. 3,553,285, Cl. 260-857.

Verwaltungsgellschaft Moeller und Neumann Offene Handelsgesellschaft: *See—*
Hamacher, Paul, 3,552,172.

Vettermann, Wolfgang; and Sudler, Roland, to Vdo Tachometer Werke Adolf Schindling GmbH. Single phase motor. 3,553,512, Cl. 310-174.

Vey, Regis A.: *See—*
Fein, Samuel; and Vey, Regis A.,3,552,169.

Vickers-Zimmer Aktiengesellschaft Planung und Bau von Industrieanlagen: *See—*
Lehner, Karl, 3,551,971.

Victor, David H.: *See—*
Severino, James; and Burk, Evans S., 3,552,734.

Video Ads Inc.: *See—*
Yates, Challie, Jr., 3,552,845.

Vietorisz, Joseph A., to Koppers Company, Inc. Burner shut-off valve for hot blast stove. 3,552,423, Cl. 137-340.

Viglione, Joseph P. Protective device. 3,551,912, Cl. 2-24.

Vignet, Paul: *See—*
Courvoisier, Pierre; Muratore, Emile; Roche, Andre; and Vignet, Paul,3,552,189.

Virginia Chemicals Inc.: *See—*
Buchanan, Harry W., 3,552,993.
Virloget, Jean: *See—*
Badoz, Jacques; Billardon, Michel; Virloget, Jean; and Debrie, Marcel,3,552,823.
Voeten, Hendrik, to U.S. Philips Corporation. Electric component for use with printed wiring. 3,553,537, Cl. 317-230.
Vogel, Charles A.; and Blackie, James William Forrest, to Newell Industries, Inc. Tape transport apparatus. 3,552,681, Cl. 242-192.
Vogel, Karl: *See—*
Schuler, George; Schmidt, Walter; and Vogel, Karl,3,552,151.
Vogl, Georg; and Hogstrom, Bo, to Jungner Instrument Aktiebolag, mesne. Optical instrument for measuring or controlling angular positions. 3,552,834, Cl. 350-285.
Volk, David. Hand-held apparatus for determining the eccentricity of a cornea. 3,552,837, Cl. 351-13.
von Hofe, George W., to New Jersey Machine Corporation. Method of and means for detecting conditions in the label areas of labeled articles. 3,553,041, Cl. 156-378.
Von Roll AG: *See—*
Salamon, Otto, 3,552,333.
Voran, Willis R.: *See—*
Graves, Jewel; and Voran, Willis R.,3,552,359.
Vullo, William J., to Hooker Chemical Corporation. Treatment of cellulosic materials with hydroxyalkyl phosphonium salts. 3,552,909, Cl. 8-120.
Vullo, William J.: *See—*
Wagner, George M.; and Vullo, William J.,3,552,910.
Vyskumny ustav chemickych vlakon: *See—*
Hrivnak, Pavol; Ondrejmiska, Koloman; Pechar, Amadeus; and Koren, Jan, 3,552,603.
W & W Steel Company: *See—*
Sons, Mack D., 3,552,658.
Waasdorp. Robert A.: *See—*
Hunkeler, Ernst J.; Remmeli, Charles E.; and Waasdorp. Robert A.,3,552,260.
Wacker-Chemie G.m.b.H.: *See—*
Heckmaier, Joseph; and Kunstle, Gerhard, 3,553,188.
Wade, Charles F., to Purex Corporation. Pool chlorination. 3,552,568, Cl. 210-169.
Wadso, Bertil Ingemar: *See—*
Monk, Paul Robin; and Wadso, Bertil Ingemar,3,552,207.
Wagner Electric Corporation: *See—*
McGuirk, Francis A., Jr., 3,553,525.
Wagner, George M.; and Vullo, William J., to Hooker Chemical Corporation. Method of shrinkproofing a proteinaceous textile material and product thereof. 3,552,910, Cl. 8-127.6
Wagner, William. Anti-refill safety valve. 3,552,432, Cl. 137-523.
Wah Chang Albany Corporation: *See—*
Backer, Leo E.; and Long, Daniel G., 3,551,946.
Wahlstrom, Nils Lennart: *See—*
Svensson, Lars Erik; and Wahlstrom, Nils Lennart,3,552,168.
Wakabayashi, Chika. Switch device for an electric clock. 3,553,396, Cl. 200-35.
Wakita, Eiichi; and Tokumitsu, Kunio, to Asahi Kasei Kogyo Kabushiki Kaisha. Method of recovering acrylonitrile monomer in the production of a polymer. 3,553,248, Cl. 260-465.9
Walitt, Arthur L.: *See—*
Hausslein, Robert W.; Walitt, Arthur L.; and Molvar, Henry E., Jr.,3,553,174.
Walker, Harold B.: *See—*
Cavalier, Stanley J.; Raper, Larry B.; and Walker, Harold B.,3,553,066.
Wallestad, Victor C.; and Elftmann, Joel A., to Fluoroware, Inc. Wafer storage and shipping container. 3,552,548, Cl. 206-1.
Walrath, Frederick C.: *See—*
Hunkeler, Ernst J.; Smith, Frank A.; and Walrath, Frederick C.,3,552,263.
Walsh, Bernard L., Jr., to Hughes Aircraft Company. Wideband frequency translating circuit using balanced modulator. 3,553,584, Cl. 325-9.
Walsh, Dale M., to Honeywell Inc. Control apparatus. 3,553,595, Cl. 328-151.
Walsh, Ralph E., to Breeze Corporation, Inc. Level wind device. 3,552,682, Cl. 242-158.3
Walter, Carlton H.; and Jennetti, Anthony G., to Ohio State University Research Foundation, The. Dual-mode super-directive slot antenna. 3,553,703, Cl. 343-767.
Walter, Henry J., to Schick Electric Inc. Angular adjustable shaver head assembly for electric razor. 3,552,009, Cl. 30-43.1
Waltz, Edward, to Bulman, E. O., Manufacturing Company, Inc., The. Tubular apron taper. 3,553,060, Cl. 156-516.
Walus, Aloysius N.: *See—*
Donatello, James M.; and Walus, Aloysius N.,3,553,124.
Walworth Company: *See—*
Hoos, Pieter F., 3,552,716.
Ward, Frederick Edmund, to Miles Laboratories, Inc. 3-Dimethylamino-1,2,3,4-tetrahydro-fluorenes. 3,553,267, Cl. 260-576.
Warner & Swasey Company, The: *See—*
Cordes, Edward V., Jr., 3,553,682.
Novkov, Raymond E., 3,551,975.
Novkov, Raymond E., 3,551,977.
Warner, Clifford C. Bolt anchors. 3,552,258, Cl. 85-66.
Warner, Richard E. Trailer hitch coupling. 3,552,775, Cl. 280-492.
Warnock, William R.; Flatt, Donald V.; and Eastman, John R., to Ansul Company, The. Anti-reflash dry chemical agent. 3,553,127, Cl. 252-5.
Warrach, Wolfgang; Swinney, Frederick Bernard; and Kent, Eric George, to Polymer Corporation Limited. Self-supporting adhesive tape comprising synthetic trans-1,4 polyisoprene and method of using said tape. 3,553,051, Cl. 156-309.
Warrell, Seth W.: *See—*
Otto, Stanley W.; and Warrell, Seth W.,3,552,237.
Warren, Frederick A., to Bradford, Benjamin W. Connector for joining rectangular and circular conduits. 3,552,780, Cl. 285-176.
Warren, Raymond W.; Barclay, Ralph G.; and Moorhead, John Gerald, said Warren assor to United States of America, Army. Feedback divider for fluid amplifier. 3,552,413, Cl. 137-81.5
Warren, Robert A., to McDonnell Douglas Corporation. Powered hoist-baggage container handling system. 3,552,587, Cl. 214-75.
Wasag-Chemie Aktiengesellschaft: *See—*
Lehmann, Kurt; and Kaminski, Gunther, 3,553,480.
Wastech, Inc.: *See—*
Busch, Arthur W., 3,552,570.
Watanabe, Shigeru: *See—*
Kondo, Hideo; and Watanabe, Shigeru,3,552,960.
Watermann, Hans Dieter, to Arn. Kiekert Sohne. Vehicular door latch. 3,552,791, Cl. 292-340.
Watson, John Edward: *See—*
Hildebrand, James Ross; Lightner, Linn Stephen; and Watson, John Edward,3,553,632.
Watson, Robert E., to Swedish Crucible Steel Company. Fastner-concealing toilet seat hinge post. 3,551,922, Cl. 4-240.
Watt, William: *See—*
Carpenter, William George David; Johnson, William; Lloyd, Thomas; McMullen, Patrick; and Watt, William,3,552,923.
Watters, Alan, to Ralli Bondite Limited. Sealant composition comprising a mixture of a cross- linking elastomer and a gelled oil. 3,553,125, Cl. 260-23.7
Wayne, Mark. Compass. 3,552,029, Cl. 33-222.
Weasler, Anthony V.; and Reak, Bennett B., to Weasler Engineering & Mfg. Co. Full recirculating linear ball bearings with shaft telescoping while transmitting torque. 3,552,806, Cl. 308-6.
Weasler Engineering & Mfg. Co.: *See—*
Weasler, Anthony V.; and Reak, Bennett B., 3,552,806.
Weatherbee, Roger D., to United Aircraft Corporation. Ejector control system. 3,552,883, Cl. 417-76.
Weaver, Max A.; Dale, John I., III; and Straley, James M., to Eastman Kodak Company. Cyanomethylidene aniline compounds. 3,553,245, Cl. 260-465.
Webb, Richard C.; and Heath, Robert T., to Colorado Instruments, Inc. Data collection station and static card reader therefor. 3,553,436, Cl. 235-61.11
Weber, Georges Robert. Emergency locking retractor for safety belt. 3,552,676, Cl. 242-107.4
Weber, H. G., and Company, Inc.: *See—*
Jacobsen, Paul W.; and Klaeser, Richard N., 3,552,617.
Weber, Paul A., to Hellige, Fritz, & Co. G.m.b.H. Switching circuit. 3,553,535, Cl. 317-148.5
Weber, Roland. Device comprising a measuring instrument for recording the individual chewing motion of a person and a hinge mechanism for grinding in the mastication contour of artificial teeth. 3,552,020, Cl. 32-32.
Weber, Terry M.: *See—*
Frick, Richard H.; and Weber, Terry M.,3,552,736.
Weber, William C.: *See—*
Fitch, Elliot B.; Roberts, Elliott J.; and Weber, William C.,3,552,918.
Webley & Scott Limited: *See—*
Resuggan, Harold Frederick, 3,552,273.
Webster, Desmond E. C. Windows and means for opening and closing same. 3,552,790, Cl. 292-268.
Weeden, Frank G.: *See—*
Hester, Clarence H.; and Weeden, Frank G.,3,552,426.
Wegener, Rolf: *See—*
Bachnick, Werner; and Wegener, Rolf,3,553,600.
Weghorst, Friedrich: *See—*
Baltes, Josef; Weghorst, Friedrich; and Markus, Zdzislaw,3,553,120.
Wegner, Marcus I.: *See—*
Cooper, Irwin; Sexton, Edwin Leon; Melnick, Daniel; and Wegner, Marcus I.,3,552,980.
Wehner, Donald Clifford: *See—*
Hein, Delton William; Wehner, Donald Clifford; and Welcher, Richard Parke,3,553,243.
Wehner, William C., to Moog Industries, Inc. Bearing assembly and method of eliminating bearing squeaks in an elastomeric bearing assembly. 3,551,990, Cl. 29-401.
Wehner, William C.: *See—*
Elder, Clifton L.; Fitch, Lawrence H.; Kornblum, Ronald I.; and Wehner, William C.,3,552,785.
Wehrli, Pius Anton; Fryer, Rodney Ian; and Sternbach, Leo Henryk, to Hoffmann-La Roche Inc. 7-Lower alkanoyl benzodiazepines. 3,553,206, Cl. 260-239.
Weinberg, Stanley. Photographic flash meter. 3,552,862, Cl. 356-215.
Weinstein, Jerry L.; Niechwiadowicz, Michal; and Crall, Hugh C., to Foster Grant Co., Inc. Expandable alkenyl aromatic polymers containing incorporated expandable alkenyl aromatic polymers. 3,553,112, Cl. 260-2.5

Weisbart, Emanuel S., to Efficient Instruments Corporation. Taxi passenger detection arrangement. 3,553,442, Cl. 235-92.
Weiss, Charles O., to M & T Chemicals Inc. Reclamation of the chromium content from waste sludges containing solid barium chromate. 3,552,917, Cl. 23-145.
Weiss, John B. Device for breaking pavement and the like. 3,552,501, Cl. 173-119.
Weiss, Werner Gustav Wilhelm, to Felten & Guilleaume Fernmeldeanlagen G.m.b.H. Switching arrangement comprising a tunnel diode. 3,553,496, Cl. 307-286.
Welcher, Richard Parke: *See—*
Hein, Delton William; Wehner, Donald Clifford; and Welcher, Richard Parke,3,553,243.
Welco, Leon B.; Biondolillo, Jack J.; and Van Arnam, Philip, to Smoothslide Corporation. Bowling shoe. 3,552,040, Cl. 36-30.
Wellbrock, Anton G., to International Business Machines Corporation. Variable digital light deflector. 3,552,825, Cl. 350-160.
Wells, George William, to International Standard Electric Corporation. Dialling apparatus. 3,553,387, Cl. 179-90.
Wells-gardner Electronics Corporation: *See—*
Gupta, Shanti S.; and Stamatis, Sam P., 3,553,354.
Wendt, Gerhard R.: *See—*
Oliver, Donald W.; and Wendt, Gerhard R.,3,553,213.
Wendtland, Ralf: *See—*
Mund, Konrad; Wendtland, Ralf; and Winsel, August,3,553,092.
Wenstrup, David L.: *See—*
Johnson, Robert G.; Fleming, Robert W.; Wenstrup, David L.; and Kariya, Takashi,3,553,234.
Werkzeugmaschinenfabrik Gildemeister & Comp. Akt.-Ges.: *See—*
Wustenay, Kurt; and Lehmann, Otto, 3,552,240.
Werner & Pfleiderer: *See—*
Ocker, Herbert, 3,553,171.
Wertz, Lawrence Dillard; and Lutz, Lewis Wesley, to Packaging Corporation of America. Device for separating multiple out sheets. 3,552,744, Cl. 271-80.
West Company, The: *See—*
Wimmer, Hans, 3,552,591.
West, Inc.: *See—*
West, William S., 3,553,061.
West, William S., to West, Inc. Decorative products with ribbon loops. 3,553,061, Cl. 161-10.
Western Electric Company, Incorporated: *See—*
Garbe, Howard W.; and Moss, Harold S., 3,552,161.
Kral, James, Jr.; Meyer, John G.; and Stoltz, James F., 3,552,484.
Minehart, Robert F., 3,552,308.
Smith, Norman F.; and Stocker, Edward T., 3,553,417.
Stigall, Everett E., 3,552,452.
Western Marine Electronics Company: *See—*
Sublett, Kenneth L., 3,553,638.
Westinghouse Air Brake Company: *See—*
Darrow, John O. G.; and Franke, Raymond C., 3,553,488.
Darrow, John O.G., 3,553,490.
Hathaway, Homer L., 3,553,449.
Westinghouse Electric Corporation: *See—*
Anderson, Arthur E., 3,553,363.
Arnold, Wayne E., 3,553,551.
Boomgaard, Dirk J., 3,553,379.
Bould, Fred; and Taylor, John H., 3,553,534.
Buck, Daniel C., 3,553,733.
Colling, David A.; and Aspden, Robert G., 3,553,035.
Crawford, Thomas G.; and Kearse, William E., 3,553,046.
Dow, Bruce R., 3,553,486.
Feaster, Gene R., 3,553,522.
Filipak, Edmund H., 3,553,427.
Gedance, Alan R., 3,553,593.
Giras, Theodore C.; and Barns, William W., Jr., 3,552,872.
Hauser, Richard, 3,553,407.
Metcalfe, Frederick S., 3,552,470.
Mierley, George M., Sr., 3,552,753.
Palmer, Robert T., 3,552,140.
Phifer, Clarence G., 3,552,046.
Siedband, Melvin P.; and Boenning, Robert A., 3,553,459.
Spangler, Murry J., 3,553,690.
Sparks, Walton E., 3,552,879.
Thompson, Francis T.; and Rubner, Tibor, 3,553,596.
Ulich, Michael D., 3,552,139.
White, Dale, 3,553,395.
Westland Aircraft Limited: *See—*
Rogers, Victor A. B.; and Leigh, Anthony B. D., 3,552,881.
Westland, Roger D., to Parke, Davis & Company. S-2-[2-(2-Thiazolylcarbamoyl)ethyl]amino ethyl thiosulfate, salts thereof, and methods for their production. 3,553,227, Cl. 260-306.8
Weston, Clement Walker, Jr. Deep submersible power assembly. 3,552,419, Cl. 137-236.
Weston Instruments, Inc.: *See—*
Nagy, John, Jr., 3,553,566.
Weyerhaeuser Company: *See—*
De Haas, Gerrit G.; and Lang, Charles J., 3,553,076.
Ryan, Arthur S., 3,553,048.
Weyna, Philip L.; and Frey, David A., to Morton International, Inc. Process for coating a nonporous substrate with polyvinylidene chloride using a polyurethane precoat and products thereof. 3,552,998, Cl. 117-76.
Whaley, Ernest E. Bearing and fitting device and method. 3,552,406, Cl. 134-167.
Whalley, Frank M.: *See—*
Hunkeler, Ernst J.; Beman, Earl Roy; and Whalley, Frank M.,3,552,262.
Wheelabrator Corporation, The: *See—*
Van Fossen, Harvey G., 3,552,068.
Wheeler, Stephen W., to Republic Steel Corporation. Process for maintaining pressure tight seal on blast furnace bells. 3,552,589, Cl. 214-152.
Whetstone, Richard R.: *See—*
Hass, Duane K.; Morales, Juan G.; and Whetstone, Richard R.,3,553,322.
White, Dale, to Westinghouse Electric Corporation. Vacuum switch operating mechanism with plural dashpot controller means. 3,553,395, Cl. 200-18.
White, Edward L.; and Pitrot, Adrian R., to National Lead Company. Acicular anhydrous tribasic lead sulfate and its method of preparation. 3,552,916, Cl. 23-127.
Whitfill, William A., to Schlumberger Technology Corporation, mesne. Apparatus for determining depth of a well tool in a borehole by measurement of tension. 3,552,025, Cl. 33-133.
Whiting, Harold E.; and Turnbull, Merlin Y., to Square D Company. Magnet structure and magnet support structure in an electromagnetically operated switch. 3,553,614, Cl. 335-132.
Whiting, Harold E.: *See—*
Turnbull, Merlin Y.; and Whiting, Harold E.,3,553,613.
Turnbull, Merlin Y.; and Whiting, Harold E.,3,553,617.
Whitlock, Carl H., to Whitlock, Inc. Collapsible tube valve. 3,552,712, Cl. 251-5.
Whitlock, Inc.: *See—*
Whitlock, Carl H., 3,552,712.
Whitman, John C., to Agway Inc. Apparatus for de-shelling hard-cooked eggs. 3,552,458, Cl. 146-2.
Wickline, Larry G.: *See—*
Rager, Keith E., 3,551,939.
Wickman Machine Tool Sales Limited: *See—*
Mason, Peter Alan, 3,552,064.
Widdig, Peter. Device for burning of materials especially of waste oils, oils sludges and chemical waste products difficult to burn. 3,552,331, Cl. 110-7.
Wideman, Ronald H., to Kimberly-Clark Corporation. Highly-drafted, sinusoidal patterned nonwoven fabric laminates and method of making same. 3,553,064, Cl. 161-59.
Widmer, Franz Rudolf: *See—*
Curchod, Jean; Cheritat, Roland; Widmer, Franz Rudolf; Widmer, Gustav; Renner, Alfred; and Batzer, Hans,3,553,115.
Widmer, Gustav: *See—*
Curchod, Jean; Cheritat, Roland; Widmer, Franz Rudolf; Widmer, Gustav; Renner, Alfred; and Batzer, Hans,3,553,115.
Wieden, Horst; Rellensmann, Wolfgang; Holtschmidt, Hans; Roos, Ernst; and Nischk, Gunther, to Farbenfabriken Bayer Aktiengesellschaft. Elastomeric filaments and fibers with an improved affinity for dyes. 3,553,173, Cl. 260-77.5
Wiele, Robert W., to Sports Technology, Inc., mesne. Conformable pad filled with elastomeric particles. 3,552,044, Cl. 36-71.
Wiesinger, Frederick C., to North American Rockwell Corporation, mesne. Cam arrangement for knitting patterned fabrics. 3,552,148, Cl. 66-14.
Wiggins Teape Research & Development Limited: *See—*
Gladstone, Robert, 3,552,066.
Wikholm, Ior Allan: *See—*
Johansson, Ture A.; and Wikholm, Ior Allan,3,552,147.
Wilcox, Burdsal Gardner: *See—*
Comstock, Alfred E.; and Wilcox, Burdsal Gardner,3,552,462.
Wilcox, Joseph E.: *See—*
Heinrich, Lawrence O.; and Wilcox, Joseph E.,3,552,777.
Wiley, Lawrence Grebe, to AMP Incorporated. Circuit for measuring the rate of a series of events by event interval response. 3,553,583, Cl. 324-189.
Wilke, Richard: *See—*
Korthaus, Helmut; and Wilke, Richard,3,553,557.
Wilkerson, James W. Toy air rifle with ejection of spent casing. 3,552,372, Cl. 124-15.
Wilkinson, Jack E. Stapling clamp for gastro-intestinal surgery. 3,551,987, Cl. 29-212.
Willem, Michel H., to Societe Europeene d'Isolateurs en Verre(Sediver). Coating apparatus. 3,552,351, Cl. 118-6.
Willems, Jozef Frans, to Gevaert-Agfa N.V. Photographic development process. 3,552,968, Cl. 96-66.3
Willemsens, Louis C., to International Lead Zinc Research Organization, Inc. Process for the preparation of monoarylleadtri- acylates and diarylleaddiacylates. 3,553,240, Cl. 260-436.
Willett, John A., to Grace, W. R., & Co. Novel printing material. 3,553,071, Cl. 161-162.
Williams, Beverly E., 1/2 to Williams, Kathryn I. Apparatus for aging and flavoring meat. 3,552,297, Cl. 99-271.
Williams, David L.: *See—*
Byrne, Joseph J.; and Williams, David L.,3,553,031.
Williams, Frank M. Concrete pipe molding apparatus. 3,551,967, Cl. 25-30.
Williams, Joseph E., to Montreal Locomotive Works, Limited. Power control apparatus for an engine. 3,552,365, Cl. 123-103.
Williams, Kathryn I.: *See—*
Williams, Beverly E., 3,552,297.
Williams, Philip J., to Stewart-Warner Corporation. Torsion bar chair control. 3,552,796, Cl. 297-304.

Williams, William J. Pump. 3,552,890, Cl. 417-529.
Willich, Herbert Jean, to Bilstein, August. Hydraulic suspension system for automotive vehicles. 3,552,766, Cl. 280-124.
Willoughby, Eric O., 1/2 interest to University of Adelaide, The. Aerial system for application to radio propagation and navigation. 3,553,696, Cl. 343-108.
Wilson, Calvin L.; and Fox, John H., Jr., to Reynolds Metals Company. Protective shield for sheet material cutter. 3,552,614, Cl. 225-20.
Wilson, Forrest Arthur, to Stull Chemical Company. Fire fighting method and compositions. 3,553,128, Cl. 252-8.1
Wilson, James D., to Banner Metals, Inc. Carrier container and insert combination. 3,552,598, Cl. 220-23.83
Wilson, John Hart. Apparatus for stabilizing a barge within a transfer well of a catamaran type vessel for loading the barge onto or removing it from the vessel. 3,552,344, Cl. 114-43.5
Wilson, Norman E. Air-freshener dispenser. 3,552,632, Cl. 229-30.
Wilson, Paul O., 1/2 to Baltimore Forms, Inc. Continuous forms envelope converter system. 3,552,282, Cl. 93-61.
Wilson, William Paul, Sr., to Dresser Industries, Inc. Apparatus for automatically controlling the killing of oil and gas wells. 3,552,502, Cl. 175-25.
Wiltek, Inc.: *See—*
Molnar, John A., 3,552,618.
Wimmer, Hans, to West Company, The. Pierceable closure for medicine bottles. 3,552,591, Cl. 215-37.
Wing, Ralph L.: *See—*
Roberts, John T.; and Wing, Ralph L.,3,552,090.
Winsel, August: *See—*
Mund, Konrad; Wendtland, Ralf; and Winsel, August,3,553,092.
Winsel, August, to Varta Aktiengesellschaft. Method of removing water of reaction during fuel cell operation. 3,553,026, Cl. 136-86.
Wisconsin Machine Corporation: *See—*
Handler, Kenneth J., 3,552,182.
Wisdom, Francis A., to Monsanto Company. Gas scrubbing apparatus. 3,552,728, Cl. 261-112.
Witco Chemical Company, Inc.: *See—*
Solomon, Jack M.; and Bluestein, Bernard R., 3,553,268.
Witt, Wilmer E., to Koehring Company. Ear corn adapter for forage harvesters. 3,552,463, Cl. 146-120.
Woehler, Gary B.: *See—*
Blosser, Robert L., Jr.; and Woehler, Gary B.,3,552,437.
Wolanin, Gerald L., to V-M Corporation. Portable phonograph record player. 3,552,816, Cl. 312-8.
Wolf, Edgar; and Marino, Francis C., to Digitronics Corporation. Acoustic coupler. 3,553,374, Cl. 179-84.
Wolf, Irving W.: *See—*
Englund, Robert M.; Wolf, Irving W.; and Hamaker, John D.,3,553,659.
Wolf, Irving W., to Ampex Corporation. Thin film closed flux storage element. 3,553,660, Cl. 340-174.
Wolf, Lester Carl: *See—*
Hansen, Harold Valentine; Wolf, Lester Carl; McCumber, Virgil Robert; and Chidester, Robert Leroy,3,552,601.
Wolf, Milton, to American Home Products Corporation. Bicyclo[2.2.2]oct-5-ene-bis(2,3-dicarboximide) compounds. 3,553,231, Cl. 260-326.
Wolfberg, Robert L.: *See—*
Bojan, Paul W.; and Wolfberg, Robert L.,3,552,274.
Wolff, Edwin K., to New Jersey Machine Corporation. Method of and apparatus for applying labels to bottles. 3,553,049, Cl. 156-250.
Wollensak, John C.; and Meltsner, Bernard R., to Ethyl Corporation. Preparation of phenolic thioethers. 3,553,270, Cl. 260-609.
Wood, Robert E., to Sycor Inc. Drive spindle for tape reels. 3,552,671, Cl. 242-68.3
Wood, Walter Bruce, to American Air Filter Company, Inc., mesne. Two-staged compression of a sealing gasket. 3,552,104, Cl. 55-502.
Woodall, Carl. Natural action toe lift artificial foot. 3,551,914, Cl. 3-6.
Woodall, Carl. Artificial limb having adjustable parts. 3,551,915, Cl. 3-21.
Woodbro Corporation: *See—*
Woods, Leroy R., 3,553,562.
Woodhull, Elliot H.: *See—*
Dhir, Partap C.; and Woodhull, Elliot H.,3,553,463.
Woodling, George V. Axial fixation means for rotary valve. 3,552,438, Cl. 137-625.21
Woodling, George V. Rotational drive means for rotary valve in fluid pressure device. 3,552,892, Cl. 418-61.
Woodling, Geroge V. Valve means for fluid pressure operating means. 3,552,891, Cl. 418-54.
Woodrum, Harold L., to Steelcraft Manufacturing Company, The. Mounting arrangement for metal door frames. 3,552,085, Cl. 52-211.
Woods, Conrad D., to Dow Chemical Company, The. Corrosion inhibitors for methoxypropanol. 3,553,137, Cl. 252-75.
Woods, Leroy R., to Woodbro Corporation. Battery charging circuit. 3,553,562, Cl. 320-39.
Woods, William G.; Bengelsdorf, Irving S.; and Hunter, Don L., to United States Borax & Chemical Corporation. Copolymers of vinylboron compounds. 3,553,170, Cl. 260-66.
Woodward, Thomas George; Wright, Eric John; and Hayes, Albert Thomas, to Lucas, Joseph, (Industries) Limited. Machine for securing and electrically connecting an electrical cable to an electrical connector. 3,552,449, Cl. 140-1.
Worden, Leonard R.; and Todd, Paul H., Jr., to Kalamazoo Spice Extraction Company. Hop flavors for malt beverages and the like. 3,552,975, Cl. 99-50.5
Wren, Cedric Hewer, to Curtis Dyna-Products Corporation. Air-cushion vehicles. 3,552,519, Cl. 180-124.
Wright, Eric John: *See—*
Woodward, Thomas George; Wright, Eric John; and Hayes, Albert Thomas,3,552,449.
Wright, Esmond Philip Goodwin; and Bezdel, Wincenty, to International Standard Electric Corporation. Speech recognition apparatus. 3,553,372, Cl. 179-1.
Wright, Gilbert F. Ground electrode with a high heat transfer. 3,553,513, Cl. 313-11.5
Wright, Howard J.; and Scherer, Joseph H., to Cook Paint & Varnish Company. Epoxy resin ester production. 3,553,119, Cl. 260-18.
Wright, Lawrence A., to Pacific Coast Engineering Company. Crane coupling. 3,552,794, Cl. 294-81.
Wright, Norman R.: *See—*
Plonsker, Larry; and Wright, Norman R.,3,552,945.
Wright, Robert C., Jr. Temperature indicating utensil. 3,552,210, Cl. 73-352.
Wright, William W.: *See—*
Rowell, John J.; and Wright, William W.,3,553,616.
Wrubleski, Felix P.: *See—*
Hunkeler, Ernst J.; and Wrubleski, Felix P.,3,552,261.
Wusteney, Kurt; and Lehmann, Otto, to Werkzeugmaschinenfabrik Gildemeister & Comp. Akt.-Ges. Work support for multi-station machine tools. 3,552,240, Cl. 77-64.
Wyandotte Chemicals Corporation: *See—*
Brizgys, Bernardas, 3,553,118.
Cenker, Moses, 3,553,238.
Wyss, Escher, Limited: *See—*
Christ, Alfred; Schreiber, Viktor; and Tomica, Erhard, 3,552,877.
Xerox Corporation: *See—*
Carreira, Leonard M.; and Mihajlov, Vsevolod S., 3,553,708.
Dhir, Partap C.; and Woodhull, Elliot H., 3,553,463.
Flint, Thomas J., 3,552,355.
Putnam, Robert C., 3,553,093.
Roberts, Russell R.; and Smith, James D., 3,552,739.
Royka, Stephen F.; and Emerald, Robert L., 3,552,850.
Silverberg, Morton, 3,552,562.
Tates, Donald W., 3,552,221.
Van Wagner, Edward M., 3,552,848.
Yake, William H., to Design and Manufacturing Corporation. One-piece duct and method of making it. 3,552,443, Cl. 138-37.
Yamada, Norio, to Matsushita Electric Works, Ltd. Battery powered dry shaver having rotary shaving head and retractible trimmer. 3,552,007, Cl. 30-34.1
Yamada, Tadao: *See—*
Takehisa, Masaaki; Yamada, Tadao; Takasaka, Yoshio; and Miyanaga, Kazukiyo,3,553,187.
Yamada, Toshiyuki, to Sony Corporation. Magnetoresistance element. 3,553,498, Cl. 307-299.
Yamaguchi, Nario; and Tubuko, Kazuo, to Kabushiki Kaisha Ricoh. Electrophotographic copying paper. 3,552,959, Cl. 96-1.6
Yamaha Hatsudoki Kabushiki Kaisha: *See—*
Tomita, Fujihiko, 3,552,515.
Yamamoto, Masakazu: *See—*
Sugiyama, Hiroshi; Otsuka, Hideo; and Yamamoto, Masakazu,3,553,189.
Yamamuro, Yoshio: *See—*
Hara, Hikoharu; Yamamuro, Yoshio; and Asakawa, Motozumi,3,552,967.
Yamashina, Hisao; Ito, Akihiko; Iwai, Tadashi; Yayashi, Koichiro; and Okamura, Seizo, to Japan Atomic Energy Research Institute. Method for the stabilizing of polyoxymethylene using high energy radiation and acetic anhydride. 3,553,090, Cl. 204-159.21
Yamashita, Yoshio: *See—*
Baba, Hideo; Gando, Masayoshi; and Yamashita, Yoshio,3,553,032.
Yang, Richard F. H.; and Hansen, Laurence H., to Andrew Corporation. Wide-beam horn feed for parabolic antennas. 3,553,707, Cl. 343-781.
Yanmar Diesel Engine Co., Ltd.: *See—*
Kitagawa, Kenichi; Kadono, Akira; Homura, Rikichi; and Ohta, Mitsuhiro, 3,552,121.
Yasin, Thomas P., to General Motors Corporation. Interconnected vehicle suspension with pitch displacement and level control system. 3,552,763, Cl. 280-104.
Yasuda, Ryoichi: *See—*
Nishikawa, Fumio; Yasuda, Ryoichi; and Nakao, Keiji,3,553,091.
Yates, Challie, Jr., to Video Ads Inc. Display device. 3,552,845, Cl. 353-74.
Yates, Paul C.: *See—*
Self, James M.; and Yates, Paul C.,3,552,992.
Yavordios, Dimitri: *See—*
Sarbach, Raymond Francois Jacques; and Yavordios, Dimitri,3,553,262.
Yayashi, Koichiro: *See—*
Yamashina, Hisao; Ito, Akihiko; Iwai, Tadashi; Yayashi, Koichiro; and Okamura, Seizo,3,553,090.
Ye Dock Master, Inc.: *See—*
Thompson, Kenneth L., 3,552,424.

Yeaman, Roy L.; and Corbin, Otis D. Portable drill press. 3,552,239, Cl. 77o55.
Yee, Alfred A. Wire cage type splice sleeve for reinforcing bars. 3,552,787, Cl. 287-108.
Yew, Ming-Chih; and Finn, Bernard J., to General Motors Corporation. Vehicle suspension having a dual mode composite spring. 3,552,767, Cl. 280-124.
Yocum, William C., to Superior Valve Company. Single trip valve apparatus. 3,552,421, Cl. 137-321.
Yonke, Steve, to General Motors Corporation. Articulated windshield wiper for flat front vehicles. 3,551,938, Cl. 15-250.23
Yoshida, Hiroshi: *See—*
Mito, Satoru; Suzuki, Kazuo; Murata, Shinichi; and Yoshida, Hiroshi,3,552,937.
Yoshida, Shimpei: *See—*
Miyakawa, Kozi; and Yoshida, Shimpei,3,551,950.
Yoshimura, Masao: *See—*
Shima, Takeo; Asami, Yukiharu; Ishizaki, Shunzo; Kawase, Shoji; and Yoshimura, Masao,3,552,999.
Yoshinaga, Eiichi: *See—*
Kado, Masaru; Maeda, Taizo; and Yoshinaga, Eiichi,3,553,323.
Yoshioka, Hideoki: *See—*
Mori, Tetsuo; Iwabuchi, Makoto; Yoshioka, Hideoki; and Ono, Kenji,3,553,729.
Yoshioka, Hirosuke: *See—*
Hirai, Hajime; Fujimoto, Keimei; Okuno, Yositosi; Ogawa, Taizo; and Yoshioka, Hirosuke,3,553,233.
Youmans, Donald W., to FMC Corporation. Armored closure for an aircraft hangar. 3,552,330, Cl. 109-1.
Young, Frank L. Expansible gusset envelope with side flap seams. 3,552,640, Cl. 229-68.
Young, Richard K.: *See—*
Ahlert, Robert C.; Silverman, Jacob; Greene, Stanley A.; and Young, Richard K.,3,552,126.
Young, William E.: *See—*
Pinto, Patrick J., 3,552,697.
Zachmeier, August A., to AAI Corporation. Magazine for use with an integrated circuit test apparatus. 3,552,590, Cl. 214-301.
Zahn, Eric H. Dowel orienting apparatus useful in dentistry. 3,552,018, Cl. 32-11.
Zalewski, Edmund J.; and Jordan, Manuel A., to Schenectady Chemicals, Inc. Tetrahydric isocyanurate. 3,553,215, Cl. 260-248.
Zavadsky, Alexandr Vasilievich; Mogilevsky, Georgy Fedorovich; Markovsky, Anatoly Vitalievich; and Marchenko, Georgy Sereevich. Gas panel of infrared radiation. 3,552,378, Cl. 126-92.
Zavasnik, Frederick J., to Phillips Petroleum Company. Extruding thermoplastic tubing. 3,553,303, Cl. 264-150.
Zelenka, Thomas V. Baby patting machine. 3,552,388, Cl. 128-55.
Zeluff, Wendell C.: *See—*
Schmiege, Lester C.; and Zeluff, Wendell C.,3,553,416.
Zemanek, Joseph, Jr., to Mobil Oil Corporation. System for obtaining uniform presentation of acoustic well logging data. 3,553,640, Cl. 340-15.5
Zempel, Gary R.: *See—*
Matzke, Joseph; and Zempel, Gary R.,3,552,300.
Zenner, Walter J., to Extel Corporation. Program unit for data editing system. 3,553,650, Cl. 340-172.5
Zentgraf, John A.; and Snyder, Richard L., said Zentgraf assor. to said Snyder. Wire finishing machine. 3,551,976, Cl. 29-90.
Zerlauth, Ferdinand, to Sulzer Brothers Ltd. Blade construction for a vane ring for turbo- engines. 3,552,882, Cl. 416-241.
Zidlicky, Aldrich John, to Globe-Union Inc. Electric switch ceramic contact supporting member. 3,553,394, Cl. 200-11.
Ziebarth, Hans Karl: *See—*
Pavone, Carlo; and Ziebarth, Hans Karl,3,552,197.
Zielke, Alfred, to ELMEG Elektro-Mechanik G.m.b.H. Resetting apparatus. 3,552,644, Cl. 235-144.
Zievers, James F.; and Borre, Earl A., to Industrial Filter & Pump Mfg. Co. Method and apparatus for processing agricultural products. 3,553,012, Cl. 127-5.
Zievers, James F.; Rietesel, Russell W.; and Schmidt, Henry, Jr., to Industrial Filter & Pump Mfg. Co. Apparatus for processing materials. 3,552,569, Cl. 210-189.
Zilka, Jerry M.: *See—*
Dixon, Paul H.; Darsie, Burns; and Zilka, Jerry M.,3,553,359.
Zilli, Robert; and Coombs, Garth, to Johns-Manville Corporation. Stabilized carrier for pesticidal formulations. 3,553,321, Cl. 424-213.
Zimmer, John S., to General Electric Company. Miniature relay with double air gap magnetic circuit. 3,553,612, Cl. 335-128.
Zimmerman, Robert L.; and Sallberg, David W., to Pegasus Laboratories, Inc. Structure for and method of linear approximation of an arc. 3,553,447, Cl. 235-197.
Zirkle, Charles L.: *See—*
Kaiser, Carl; and Zirkle, Charles L.,3,553,225.
Kaiser, Carl; and Zirkle, Charles L.,3,553,226.
Zirngibl, Hans: *See—*
Gutsche, Walter; and Zirngibl, Hans,3,553,527.
Zorn, Bruno: *See—*
Reischl, Arthur; Traubel, Harro; and Zorn, Bruno,3,553,008.

LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 5TH DAY OF JANUARY, 1971

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Beatrice Foods Co.: *See*—
Harker, Charles B. Re. 27,019.

Bolkcom, Wilbur T., and Knapp. Silicon carbide furnaces and plants. Re. 27,018, 1–5–71, Cl. 13—20.

Dresser Industries, Inc.: *See*—
Hauth, Charles R., and Sheatsley. Re. 27,020.

Francis Associates Co.: *See*—
Sustrich, William H., Salida, and Francis. Re. 27,023.

Francis, Gus: *See*—
Sustrich, William H., Salida, and Francis. Re. 27,023.

Fuglsang-Madsen, Erik, to Sebec S.A. Casing with appertaining refill shell for lipsticks and other pomade sticks. Re. 27,022, 1–5–71, Cl. 401—78.

Harker, Charles B., to Beatrice Foods Co. Freezing condition control. Re. 27,019, 1–5–71, Cl. 62—136.

Hauth, Charles R., and Larry L. Sheatsley, to Dresser Industries, Inc. Checkerbrick and checkerwork construction for regenerators. Re. 27,020, 1–5–71, Cl. 263—51.

Knapp, William E.: *See*—
Bolkcom, Wilbur T., and Knapp. Re. 27,018.

Lear Siegler, Inc.: *See*—
Ott, Ernst G. Re. 27,021.

Ott, Ernst G., to Lear Siegler, Inc. Wire bending apparatus. Re. 27,021, 1–5–71, Cl. 140—71.

Sebec S.A.: *See*—
Fuglsang-Madsen, Erik. Re. 27,022.

Sheatsley, Larry L.: *See*—
Hauth, Charles R., and Sheatsley. Re. 27,020.

Sustrich, William H., and Gus Francis, to Francis Associates Co. Method and appartus for safe volding of tanks filled with inflammable liquids or vapors. Re. 27,023, 1–5–71, Cl. 222—81.

LIST OF PLANT PATENTEES

Kriloff, Michel. Rose plant. 3,011, 1–5–71. Cl. 18.

Poyner, Claude R., to Selected Glads, Inc. Gladiolus plant. 3,013, 1–5–71. Cl. 85.

Selected Glads, Inc.: *See*—
Poyner, Claude R. 3,013.

Ulery, Dale W., to Ulery Greenhouse Co. Begonia plant. 3,012, 1–5–71, Cl. 68.

Ulery Greenhouse Co.: *See*—
Ulery, Dale W. 3,012.

LIST OF DESIGN PATENTEES

American Hospital Supply Corp.: *See*—
Leiugas, Joseph J. 219,694.

American Machine & Foundry Co.: *See*—
Salcman, Arthur, and Gerber. 219,649.

American Standard Inc.: *See*—
Young, Raymond W. 219,654.

Arcudi, Joseph L., to Becton, Dickinson and Co. Powder package. 219,644, 1–5–71, Cl. D9—182.

Ashton, Harold P.: *See*—
Swett, James B., and Ashton. 219,670.

Balch, Duane C. Automobile. 219,650, 1–5–71, Cl. D14—3.

Barber, Lavelle D., and Faith: *See*—
Weaver, Lawrence W. 219,648.

Beebe, Clarence L., Jr.: *See*—
Shreve, Arthur L., III, Norris, and Beebe. 219,646.

Becton, Dickinson and Co.: *See*—
Arcudi, Joseph L. 219,644.

Black and Decker Mfg. Co., The: *See*—
Shreve, Arthur L., III, Norris, and Beebe. 219,646.

Blumcraft of Pittsburgh: *See*—
Horgan, William J., Jr. 219,640.

Bunnell, Richard L.: *See*—
Handley, Harold E., Perry, and Bunnell. 219,647.

Cardozo, Danforth, Jr., and Geoffrey E. Grieb, to Litton Business Systems, Inc. Typewriter frame. 219,689, 1–5–71, Cl. D64—11.

Colgate-Palmolive Co.: *See*—
Prahs, Harald. 219,642.

Cuccio, John, to Olivetti, Ing., C., & C., S.p.A. Portable typewriter carrying case. 219,696, 1–5–71, Cl. D87—1.

Daenen, Robert, to Dart Industries, Inc. Food container. 219,673. 1–5–71. Cl. D44—1.

Daenen, Robert, to Dart Industries, Inc. Food tray. 219,674, 1–5–71, Cl. D44—10.

Dart Industries, Inc.: *See*—
Daenen, Robert. 219,673.

Dart Industries, Inc.: *See*—
Daenen, Robert. 219,674.

Dart Industries, Inc.: *See*—
Swett, James B., and Ashton. 219,670.

Davis, Claude M. Cup. 219,675, 1–5–71. Cl. D44—9.

Davis, Claude M. Bowl. 219,677, 1–5–71. Cl. D44—15.

Dole, Ruth M. Tamping tool for preparing tissue blocks for hystology and the like. 219,695, 1–5–71, Cl. D83—12.

Eccles, David, to Pearl-Wick Corp. Combined valet stand and seat. 219,660, 1–5–71, Cl. D33—8.

Empire Brushes, Inc.: *See*—
Levin, Monte. 219,659.

Estes, Stanley E. Coil cap cover. 219,656, 1–5–71, Cl. D26—5.

Estes, Stanley E. Distributor cap cover. 219,691, 1–5–71, Cl. D77—1.

FJL Corp.: *See*—
Skinner, James R., Uitz, and Hait. 219,688.

Federico, Joseph B., to Ford Industries, Inc. Housing for a telephone answering device. 219,658, 1–5–71, Cl. D26—14.

Fedtro, Inc.: *See*—
Kahn, Robert D. 219,657.

Fenster, Nathan, and Theodore H. Schiffman, to Progress Heat Sealing Co., Inc. Combined wallet and key case. 219,698, 1–5–71, Cl. D87—8.4.

Fisher, Morris F. Chair. 219,651, 1–5–71, Cl. D15—1.

Fontaine, Raymond C., to Textron Inc. Linkage for an identification bracelet or similar article. 219,679, 1–5–71. Cl. D45—4.

Fontaine, Raymond C., to Textron Inc. Linkage for an identification bracelet or similar article. 219,679, 1–5–71. Cl. D45—4.

Fontaine, Raymond C., to Textron Inc. Linkage for an identification bracelet or similar article. 219,680, 1–5–71. Cl. D45—4.

Ford Industries, Inc.: *See*—
Federico, Joseph B. 219,658.

Gale, William P.: *See*—
Puskarcik, Ted R. 219,638.

Garbus, Anna H. Plural compartment container for liquids. 219,643, 1–5–71, Cl. D9—18.

Gerber, Gary Arthur: *See*—
Salcman, Arthur, and Gerber. 219,649.

Gilford, Ira B., to Mattel, Inc. Toy truck. 219,666, 1–5–71. Cl. D34—15.

Gillette Co., The: *See*—
Poisson, Norman D. 219,699.

Goings, Harford E. Combined food service tray and cover therefor. 219,676, 1–5–71, Cl. D44—10.

Grieb, Geoffrey E.: *See*—
Cardozo, Danforth, Jr., and Grieb. 219,689.

Hait, Paul W.: *See*—
Skinner, James R., Uitz, and Hait. 219,688.

Hahn, Sangduck. Ceramic barbecue cooker or the like. 219,693, 1–5–71, Cl. D81—10.

Handley Industries, Inc.: *See*—
Handley, Harold E., Perry, and Bunnell. 219,647.

Handley, Harold E., Frank J. Perry, and Richard L. Bunnell, to Handley Industries, Inc. Underground service wire enclosure. 219,647, 1–5–71, Cl. D13—1.

Hanna, Mary E. Fishing lure. 219,653, 1–5–71, Cl. D22—27.

Hannih, Kathryn B.: *See*—
Hannah, Raymond W., and Hannih. 219,662.

Hannah, Raymond W., and Kathryn B. Hannih. Combined bench, extension table and cabinet unit. 219,662, 1–5–71. Cl. D33—19.

Hasselbach, Arthur. Seed germinating tray. 219,669, 1–5–71, Cl. D35—3.

Hawkins, Donald B. Vent lock for sliding doors. 219,639, 1–5–71, Cl. D8—109.

Holtz, William E., Jr., and R. J. Wilkinson, to The Quaker Oats Co. Expanded cereal food product. 219,637, 1–5–71. Cl. D1—13.

Horgan, William J., Jr., to Blumcraft of Pittsburgh. Combined door handle and lock housing set. 219,640, 1–5–71, Cl. D8—138.

Johnson, Logan W., to Minnesota Mining and Mfg. Co. Alarm latch. 219,641, 1–5–71, Cl. D8—131.

Kahn, Robert D., to Fedtro, Inc. Ignition guard switch. 219,657, 1–5–71, Cl. D26—13.

King, Jack M., and W. D. Stout, to Mattel, Inc. Toy aquatic sled or the like. 219,667, 1–5–71, Cl. D34—15.

King, Jack M., and W. D. Stout, to Mattel, Inc. An aquatic toy vehicle. 219,668, 1–5–71, Cl. D34—15.

Kufchock, Thomas J. Child's coat hanger. 219,692, 1–5–71, Cl. D80—8.

La Branche, Harvey W., to Mattel, Inc. Toy vehicle projector. 219,665, 1–5–71, Cl. D34—15.

Larson, Lawrence L.: *See*—
Ruger, William B., and Larson. 219,652.

Leidig, Frank W. Table. 219,661, 1–5–71, Cl. D33—14.

Leiugas, Joseph J., to American Hospital Supply Corp. Physician's examining table top. 219,694, 1–5–71. Cl. D83—1.

Levin, Monte, to Empire Brushes, Inc. Rack for holding kitchen utensils or similar articles. 219,659, 1–5–71, Cl. D33—3.

Levin, Monte L., to Scovill Mfg. Co. Food mixer. 219,671, 1–5–71, Cl. D44—1.

Litton Business Systems, Inc.: *See*—
Cardozo, Danforth, Jr., and Greib. 219,689.

Manderfield, Ellen B., to Oneida Ltd. Spoon or similar article. 219,683, 1–5–71, Cl. D54—12.

Mattel, Inc.: *See*—
Gilford, Ira B. 219,666.
King, Jack M., and Stout. 219,667.
King, Jack M., and Stout. 219,668.
La Branche, Harvey W. 219,665.
Mills, Janet L. 219,664.

Matzenauer, James O., to North American Rockwell Corp. Combined shelter and vehicle. 219,690, 1–5–71. Cl. D71—1.

Mills, Janet L., to Mattel, Inc. Game board. 219,664, 1–5–71, Cl. D34—5.

Minnesota Mining and Mfg. Co.: *See*—
Johnson, Logan W. 219,641.

Mitchell, Atherton R., to Renauld International, Ltd. Pair of spectacles. 219,686, 1–5–71, Cl. D57—1.

Norris, Lyell Bayne, Jr.: *See*—
Shreve, Arthur L., III, Norris, and Beebe. 219,646.

North American Rockwell Corp.: *See*—
Matzenauer, James O. 219,690.

Olivetti, Ing., C. & C., S.p.A.: *See*—
Cuccio, John. 219,696.

Oneida Ltd.: *See*—
Manderfield, Ellen B. 219,683.

Pearl-Wick Corp.: *See*—
Eccles, David. 219,660.

Perry, Frank J.: *See*—
Handley, Harold E., Perry, and Bunnell. 219,647.

Oneida Ltd.: *See*—
Perry, Frank R. 219,684.
Perry, Frank R. 219,685.

Perry, Frank R., to Oneida Ltd. Spoon or similar article. 219,684, 1–5–71, Cl. D54—12.

Perry, Frank R., to Oneida Ltd. Spoon or similar article. 219,685, 1–5–71, Cl. D54—12.

Poisson, Norman D., to The Gillette Co. Safety razor. 219,699, 1–5–71, Cl. D95—3.

Prah, Harald, to Colgate-Palmolive Co. Combined jug and bottle. 219,642, 1–5–71, Cl. 9—18.

Progress Heat Sealing Co., Inc.: *See*—
Fenster, Nathan, and Schiffman. 219,698.

Puskarcik, Ted. R., 50% to William P. Gale. Combination disposable toothbrush and receptacle therefor. 219,638, 1–5–71, Cl. D4—18.

Quaker Oats Co., The: *See*—
Holtz, William E., Jr., and Wilkinson. 219,637.

Rabe, Florence L. Nesting tacos dish. 219,645, 1–5–71, Cl. D9—189.

Renauld International, Ltd.: *See*—
Mitchell, Atherton R. 219,686.

Ross, Josef A. Luggage case. 219,697, 1–5–71, Cl. D87—5.

Ruger, William B., and L. L. Larson, to Sturm, Ruger & Co., Inc. Combined barrel housing and frame for a firearm. 219,652, 1–5–71, Cl. D22—7.

Salcman, Arthur, and G. A. Gerber, to American Machine & Foundry Co. Service cart. 219,649, 1–5–71, Cl. D14—3.

Salvador, Silvano E. Fireplace. 219,655, 1–5–71, Cl. D28—97.

Schiffman, Theodore H.: *See*—
Fenster, Nathan, and Schiffman. 219,698.

Seapy, Wesley S. Stirring paddle. 219,672, 1–5–71, Cl. D44—1.

Scovill Mfg. Co.: *See*—
Levin, Monte L. 219,671.

Shreve, Arthur L., III, L. B. Norris, Jr., and C. L. Beebe, Jr., to The Black and Decker Mfg. Co. Hedge trimmer carton. 219,646, 1–5–71, Cl. D9—229.

Skinner, James R., M. O. Uitz, and P. W. Hait, to FJL Corp. Motion picture viewer. 219,688, 1–5–71, Cl. D61—1.

Spencer, Harbert E. ½ to Judith Helen Spencer. Body for hanging lamp. 219,681, 1–5–71, Cl. D48—7.

Spencer, Judith H.: *See*—
Spencer, Harbert E. 219,681.

Stacey, John D. Face plate for a liquid gage. 219,682, 1–5–71, Cl. D52—6.

Stout, William D.: *See*—
King, Jack M., and Stout. 219,667.
King, Jack M., and Stout. 219,668.

Sturm, Ruger & Co., Inc.: *See*—
Ruger, William B., and Larson. 219,652.

Swett, James B., and H. P. Ashton, to Dart Industries, Inc. Food mold or the like. 219,670, 1–5–71, Cl. D44—1.

Tauber, Gabriel G. Badge holder. 219,687, 1–5–71, Cl. D59—2.

Textron Inc.: *See*—
Fontaine, Raymond C. 219,679.
Fontaine, Raymond C. 219,680.

Thompson, John H. Exercising device. 219,663, 1–5–71, Cl. D34—5.

Trudeau, Aime. Combined lamp shade and mirror. 219,678, 1–5–71, Cl. D48—16.

Uitz, Mark O.: *See*—
Skinner, James R., Uitz, and Hait. 219,688.

Weaver, Lawrence W., 33⅓% to Lavelle D. Barber and 33⅓% to George Faith. Building. 219,648, 1–5–71, Cl. D13—1.

Wilkinson, Raleigh J.: *See*—
Holtz, William E., Jr., and Wilkinson. 219,637.

Young, Raymond W., to American Standard Inc. Wall for a bath tub. 219,654, 1–5–71, Cl. D23—49.

CLASSIFICATION OF PATENTS

ISSUED JANUARY 5, 1971

NOTE.—First number, class; second number, subclass; third number, patent number

2— 2.1 : 3,551,909
3 : 3,551,910
3,551,911
24 : 3,551,912
3— 1 : 3,551,913
6 : 3,551,914
21 : 3,551,915
4— 83 : 3,551,916
144 : 3,551,917
146 : 3,551,918
166 : 3,551,919
172.19: 3,551,920
199 : 3,551,921
240 : 3,551,922
5—345 : 3,551,923
3,551,924
8— 17 : 3,552,905
41 : 3,552,906
108 : 3,552,907
115.6 : 3,552,908
120 : 3,552,909
127.6 : 3,552,910
128 : 3,552,911
9— 39 : 3,551,925
10— 13 : 3,551,926
87 : 3,551,928
89 : 3,551,929
12— 14.4 : 3,551,927
13— 20 : RE.27,018
15— 1.7 : 3,551,930
22 : 3,551,931
23 : 3,551,932
31 : 3,551,933
97 : 3,551,934
180 : 3,551,935
187 : 3,551,936
236 : 3,551,937
250.23: 3,551,938
16— 10 : 3,551,939
150 : 3,551,940
163 : 3,551,941
17— 11.1 : 3,551,942
18— 2 : 3,551,943
4 : 3,551,944
3,551,945
5 : 3,551,946
3,551,947
3,551,948
8 : 3,551,949
12 : 3,551,950
3,551,951
17 : 3,551,952
3,551,953
19 : 3,551,954
30 : 3,551,955
36 : 3,551,956
3,551,957
23— 2 : 3,552,912
3,552,913
19 : 3,552,914
110 : 3,552,915
127 : 3,552,916
145 : 3,552,917
165 : 3,552,918
3,552,919
167 : 3,552,921
202 : 3,552,920
209.1 : 3,552,922
3,552,923
212 : 3,552,924
230 : 3,552,925
3,552,926
252 : 3,552,927
253 : 3,552,928
3,552,929
254 : 3,552,930
273 : 3,552,931
285 : 3,552,932
3,552,933
3,552,934
301 : 3,552,935
367 : 3,552,936
24— 67.5 : 3,551,958
123 : 3,551,959
3,551,960
196 : 3,551,961
205.1 : 3,551,962
216 : 3,551,963
221 : 3,551,964
248 : 3,551,965

24—265 : 3,551,966
25— 30 : 3,551,967
36 : 3,551,968
26— 1 : 3,551,969
59 : 3,551,970
28— 71.3 : 3,551,971
29— 1.23: 3,551,972
25.13: 3,551,973
26 : 3,551,974
90 : 3,551,976
95 : 3,551,975
96 : 3,551,977
105 : 3,551,978
3,551,979
148.3 : 3,551,980
157 : 3,551,981
182.7 : 3,552,937
191.6 : 3,552,938
195 : 3,552,939
200 : 3,551,982
3,551,983
3,551,984
203 : 3,551,985
3,551,986
212 : 3,551,987
252 : 3,551,989
259 : 3,551,988
401 : 3,551,990
420.5 : 3,551,991
3,551,992
429 : 3,551,993
452 : 3,552,940
471.1 : 3,551,994
.3 : 3,551,995
472.3 : 3,551,996
473.1 : 3,551,997
494 : 3,552,898
498 : 3,551,998
517 : 3,551,999
527.2 : 3,552,000
558 : 3,552,001
625 : 3,552,002
3,552,003
3,552,004
30— 34 : 3,552,005
.1 : 3,552,006
3,552,007
40.1 : 3,552,008
43.1 : 3,552,009
.92: 3,552,010
3,552,011
124 : 3,552,012
132 : 3,552,013
169 : 3,552,014
216 : 3,552,015
283 : 3,552,016
322 : 3,552,017
32— 11 : 3,552,018
22 : 3,552,019
32 : 3,552,020
55 : 3,552,021
58 : 3,552,022
60 : 3,552,023
33— 46 : 3,552,024
133 : 3,552,025
174 : 3,552,026
185 : 3,552,027
206 : 3,552,028
222 : 3,552,029
34— 5 : 3,552,030
9 : 3,552,031
3,552,032
57 : 3,552,033
80 : 3,552,034
191 : 3,552,035
35— 17 : 3,552,036
42.5 : 3,552,037
60 : 3,552,042
36— 2.5 : 3,552,038
11.5 : 3,552,039
30 : 3,552,040
43 : 3,552,041
67 : 3,552,043
71 : 3,552,044
37— 43 : 3,552,045
38— 77.5 : 3,552,046
40— 23 : 3,552,047
28 : 3,552,048
32 : 3,552,049
155 : 3,552,050

40—156 : 3,552,052
301 : 3,552,051
42— 1 : 3,552,053
43— 6.5 : 3,552,054
46— 26 : 3,552,055
29 : 3,552,056
151 : 3,552,057
47— 38 : 3,552,058
41.12: 3,552,059
49—202 : 3,552,060
351 : 3,552,061
51— 3 : 3,552,063
5 : 3,552,064
3,552,065
49 : 3,552,066
135 : 3,552,067
160 : 3,552,899
163 : 3,552,068
165 : 3,552,069
177 : 3,552,070
215 : 3,552,062
281 : 3,552,071
52— 2 : 3,552,072
98 : 3,552,073
181 : 3,552,084
211 : 3,552,085
223 : 3,552,074
236 : 3,552,075
309 : 3,552,076
393 : 3,552,077
520 : 3,552,078
593 : 3,552,079
618 : 3,552,086
745 : 3,552,080
53— 28 : 3,552,081
3,552,087
3,552,088
32 : 3,552,082
37 : 3,552,083
61 : 3,552,089
71 : 3,552,090
183 : 3,552,092
198 : 3,552,091
373 : 3,552,093
376 : 3,552,094
390 : 3,552,095
55—163 : 3,552,096
230 : 3,552,097
274 : 3,552,098
337 : 3,552,100
354 : 3,552,099
3,552,101
449 : 3,552,102
486 : 3,552,103
502 : 3,552,104
56— 12 : 3,552,105
328 : 3,552,106
3,552,107
330 : 3,552,108
343 : 3,552,109
57— 53 : 3,552,110
58.49: 3,552,111
77.4 : 3,552,112
130 : 3,552,113
140 : 3,552,114
58— 22.9 : 3,552,115
23 : 3,552,116
105 : 3,552,117
59— 29 : 3,552,118
85 : 3,552,119
60— 24 : 3,552,120
30 : 3,552,121
39.18: 3,552,122
.28: 3,552,123
202 : 3,552,124
3,552,125
212 : 3,552,126
215 : 3,552,127
61— .5 : 3,552,128
34 : 3,552,129
35 : 3,552,130
46 : 3,552,131
3,552,132
62— 3 : 3,552,133
53 : 3,552,134
91 : 3,552,135
136 : RE.27,019
139 : 3,552,136
196 : 3,552,137
249 : 3,552,138

62—262 : 3,552,139
324 : 3,552,140
407 : 3,552,141
485 : 3,552,142
514 : 3,552,143
3,552,144
63— 15.6 : 3,552,144
64— 14 : 3,552,145
25 : 3,552,146
29 : 3,552,147
65— 67 : 3,552,941
304 : 3,552,942
66— 14 : 3,552,148
3,552,149
25 : 3,552,150
86 : 3,552,151
88 : 3,552,152
154 : 3,552,153
192 : 3,552,154
3,552,155
68— 12 : 3,552,156
69— 42 : 3,552,157
70—146 : 3,552,158
276 : 3,552,159
388 : 3,552,160
71— 23 : 3,552,943
33 : 3,552,944
97 : 3,552,945
72— 4 : 3,552,161
8 : 3,552,162
14 : 3,552,163
45 : 3,552,164
57 : 3,552,165
58 : 3,552,166
94 : 3,552,167
128 : 3,552,168
129 : 3,552,169
209 : 3,552,170
239 : 3,552,171
249 : 3,552,172
257 : 3,552,173
284 : 3,552,174
296 : 3,552,175
312 : 3,552,176
338 : 3,552,177
342 : 3,552,178
389 : 3,552,179
419 : 3,552,180
430 : 3,552,181
432 : 3,552,182
450 : 3,552,183
73— 12 : 3,552,184
15 : 3,552,185
17 : 3,552,186
29 : 3,552,187
37.5 : 3,552,188
61.2 : 3,552,189
67.7 : 3,552,190
3,552,191
71.5 : 3,552,192
84 : 3,552,194
93 : 3,552,193
101 : 3,552,195
117.2 : 3,552,196
.4 : 3,552,197
134 : 3,552,198
141 : 3,552,199
146 : 3,552,200
147 : 3,552,201
3,552,202
159 : 3,552,203
170 : 3,552,204
3,552,205
188 : 3,552,206
190 : 3,552,207
230 : 3,552,208
304 : 3,552,209
352 : 3,552,210
421.5 : 3,552,211
423 : 3,552,212
424 : 3,552,213
425.4 : 3,552,214
432 : 3,552,215
74— 5.34: 3,552,216
18 : 3,552,217
55 : 3,552,219
107 : 3,552,220
142 : 3,552,221
216.3 : 3,552,222
230.17: 3,552,223
405 : 3,552,224

74—425 : 3,552,225
457 : 3,552,226
477 : 3,552,227
501 : 3,552,218
3,552,228
3,552,229
574 : 3,552,230
579 : 3,552,231
689 : 3,552,232
752 : 3,552,233
820 : 3,552,234
865 : 3,552,235
75— .5 : 3,552,946
10 : 3,552,947
34 : 3,552,948
65 : 3,552,949
122 : 3,552,950
170 : 3,552,951
171 : 3,552,952
3,552,953
206 : 3,552,954
212 : 3,552,955
76—107 : 3,552,237
77— 4 : 3,552,236
32.8 : 3,552,238
55 : 3,552,239
64 : 3,552,240
81— 3.1 : 3,552,241
82— 36 : 3,552,242
38 : 3,552,243
83— 9 : 3,552,244
11 : 3,552,245
23 : 3,552,246
24 : 3,552,247
151 : 3,552,248
152 : 3,552,249
162 : 3,552,250
299 : 3,552,251
362 : 3,552,252
372 : 3,552,253
461 : 3,552,254
84— 1.01: 3,553,333
.03: 3,553,334
3,553,335
.09: 3,553,336
.13: 3,553,337
.14: 3,553,338
.15: 3,553,339
.28: 3,553,340
310 : 3,552,255
478 : 3,552,256
85— 1 : 3,552,257
66 : 3,552,258
86— 20 : 3,552,259
90— 1 : 3,552,260
5 : 3,552,261
3,552,262
3,552,263
11 : 3,552,264
21 : 3,552,265
91— 35 : 3,552,266
168 : 3,552,267
180 : 3,552,268
277 : 3,552,269
3,552,270
360 : 3,552,271
369 : 3,552,272
401 : 3,552,273
416 : 3,552,274
418 : 3,552,275
92—193 : 3,552,276
93— 8 : 3,552,278
41 : 3,552,279
53 : 3,552,280
58.2 : 3,552,281
61 : 3,552,282
94— 15 : 3,552,277
95— 1.1 : 3,552,283
4.5 : 3,552,284
3,552,285
11 : 3,552,286
.5 : 3,552,287
12.2 : 3,552,288
64 : 3,552,289
85 : 3,552,290
3,552,291
89 : 3,552,292
94 : 3,552,293
96— 1 : 3,552,956
.5 : 3,552,957

96— 1.5 : 3,552,958
.6 : 3,552,959
.20 : 3,552,960
48 : 3,552,961
3,552,962
3,552,963
3,552,964
3,552,965
54 : 3,552,966
55 : 3,552,967
66 : 3,552,969
.3 : 3,552,968
76 : 3,552,970
3,552,971
87 : 3,552,972
90 : 3,552,973
129 : 3,552,974
98— 39 : 3,552,294
110 : 3,552,295
99— 50.5 : 3,552,975
71 : 3,552,976
91 : 3,552,977
107 : 3,552,978
126 : 3,552,979
128 : 3,552,980
145 : 3,552,981
214 : 3,552,982
235 : 3,552,296
271 : 3,552,297
281 : 3,552,298
339 : 3,552,299
352 : 3,552,300
444 : 3,552,302
445 : 3,552,301
447 : 3,552,303
100— 4 : 3,552,305
37 : 3,552,304
93 : 3,552,306
98 : 3,552,307
101— 37 : 3,552,308
96 : 3,552,309
102 : 3,552,310
148 : 3,552,311
3,552,312
218 : 3,552,313
378 : 3,552,314
459 : 3,552,315
3,552,316
471 : 3,552,317
102— 7.2 : 3,552,326
81.2 : 3,552,318
104— 8 : 3,552,319
17 : 3,552,320
18 : 3,552,321
172 : 3,552,322
105—282 : 3,552,323
366 : 3,552,325
377 : 3,552,324
106— 38.35: 3,552,983
56 : 3,552,984
99 : 3,552,985
107— 8 : 3,552,327
108— 51 : 3,552,328
3,552,329
109— 1 : 3,552,330
110— 7 : 3,552,331
8 : 3,552,332
3,552,333
3,552,334
3,552,335
112—121.15: 3,552,336
158 : 3,552,337
212 : 3,552,339
218 : 3,552,338
258 : 3,552,340
113—116 : 3,552,341
121 : 3,552,342
114— .5 : 3,552,343
43.5 : 3,552,344
72 : 3,552,345
115— 6.1 : 3,552,347
35 : 3,552,348
70 : 3,552,349
116—106 : 3,552,350
117— 12 : 3,552,986
25 : 3,552,987
27 : 3,552,988
33.5 : 3,552,989
36.1 : 3,552,990
3,552,991

117— 54 : 3,552,992
62 : 3,552,993
68.5 : 3,552,994
69 : 3,552,995
71 : 3,552,996
72 : 3,552,997
76 : 3,552,998
3,552,999
93.1 : 3,553,000
100 : 3,553,001
104 : 3,553,002
106 : 3,553,003
114 : 3,553,004
119 : 3,553,005
120 : 3,553,006
3,553,007
161 : 3,553,008
201 : 3,553,009
217 : 3,553,010
218 : 3,553,011
118— 6 : 3,552,351
49.5 : 3,552,352
70 : 3,552,353
234 : 3,552,354
627 : 3,552,355
119— 1 : 3,552,356
4 : 3,552,357
22 : 3,552,358
48 : 3,552,359
53.5 : 3,552,360
122— 22 : 3,552,361
510 : 3,552,362
123— 8.47: 3,552,363
25 : 3,552,364
103 : 3,552,365
139 : 3,552,366
146.5 : 3,552,367
148 : 3,552,368
180 : 3,552,369
191 : 3,552,370
124— 6 : 3,552,900
7 : 3,552,371
15 : 3,552,372
24 : 3,552,373
125— 11 : 3,552,374
3,552,375
126— 59.5 : 3,552,376
85 : 3,552,377
92 : 3,552,378
262 : 3,552,379
127— 5 : 3,553,012
3,553,013
19 : 3,553,014
128— 2 : 3,552,380
.05: 3,552,381
3,552,382
3,552,383
3,552,384
3,552,385
.06: 3,552,386
55 : 3,552,388
92 : 3,552,389
145.6 : 3,552,390
203 : 3,552,391
204 : 3,552,392
214.2 : 3,552,393
218 : 3,552,387
3,552,394
276 : 3,552,395
130— 27 : 3,552,396
30 : 3,552,397
3,552,398
131— 10.5 : 3,552,399
261 : 3,552,400
132— 73 : 3,552,401
82 : 3,552,402
150 : 3,552,403
134— 2 : 3,553,015
3 : 3,553,016
64 : 3,552,404
65 : 3,552,405
167 : 3,552,406
136— 6 : 3,553,017
3,553,018
3,553,019
3,553,020
82 : 3,553,021
86 : 3,553,022
3,553,023
3,553,024
3,553,025
3,553,026
3,553,027
3,553,028
3,553,029
89 : 3,553,030
100 : 3,553,031
120 : 3,553,032
132 : 3,553,033
137— 13 : 3,552,408
15 : 3,552,407
54 : 3,552,409
56 : 3,552,410
60 : 3,552,411
70 : 3,552,412
81.5 : 3,552,413

137— 81.5 : 3,552,414
3,552,415
3,552,416
98 : 3,552,417
101.21: 3,552,418
236 : 3,552,419
315 : 3,552,420
321 : 3,552,421
329.1 : 3,552,422
340 : 3,552,423
343 : 3,552,424
355.17: 3,552,425
375 : 3,552,426
382 : 3,552,427
486 : 3,552,428
493.8 : 3,552,429
495 : 3,552,430
505.42: 3,552,431
523 : 3,552,432
553 : 3,552,433
556 : 3,552,434
592 : 3,552,435
608 : 3,552,436
625.21: 3,552,438
.4 : 3,552,437
.47: 3,552,439
3,552,440
.48: 3,552,441
.69: 3,552,442
138— 37 : 3,552,443
43 : 3,552,444
144 : 3,552,445
178 : 3,552,446
139— 100 : 3,552,447
161 : 3,552,448
140— 1 : 3,552,449
71 : RE.27,021
93.4 : 3,552,450
123 : 3,552,451
124 : 3,552,452
141— 7 : 3,552,453
71 : 3,552,454
72 : 3,552,346
143— 22 : 3,552,455
144— 208 : 3,552,456
312 : 3,552,457
146— 2 : 3,552,458
6 : 3,552,459
60 : 3,552,460
76 : 3,552,461
78 : 3,552,462
120 : 3,552,463
237 : 3,552,464
256 : 3,552,465
148— 6.2 : 3,553,034
20.3 : 3,553,038
120 : 3,553,035
187 : 3,553,036
189 : 3,553,037
149— 41 : 3,553,039
150— .5 : 3,552,466
151— 14 : 3,552,467
152— 359 : 3,552,468
156— 3 : 3,553,040
50 : 3,553,042
107 : 3,553,043
155 : 3,553,044
174 : 3,553,045
184 : 3,553,046
209 : 3,553,047
216 : 3,553,048
250 : 3,553,049
306 : 3,553,050
309 : 3,553,051
345 : 3,553,052
371 : 3,553,053
378 : 3,553,041
382 : 3,553,054
450 : 3,553,055
505 : 3,553,056
3,553,057
510 : 3,553,058
515 : 3,553,059
516 : 3,553,060
157— 1.1 : 3,552,469
160— 1 : 3,552,901
26 : 3,552,470
27 : 3,552,471
130 : 3,552,472
166 : 3,552,473
201 : 3,552,474
207 : 3,552,475
371 : 3,552,476
161— 10 : 3,553,061
18 : 3,553,062
43 : 3,553,063
59 : 3,553,064
3,553,065
73 : 3,553,066
113 : 3,553,067
125 : 3,553,068
143 : 3,553,069
160 : 3,553,070
162 : 3,553,071
165 : 3,553,072
166 : 3,553,073

161— 223 : 3,553,074
162— 49 : 3,553,075
76 : 3,553,076
154 : 3,553,077
157 : 3,553,078
383 : 3,553,079
164— 44 : 3,552,477
64 : 3,552,478
65 : 3,552,479
245 : 3,552,480
260 : 3,552,481
281 : 3,552,902
165— 1 : 3,552,482
11 : 3,552,483
89 : 3,552,484
119 : 3,552,485
166 : 3,552,488
174 : 3,552,487
166— .5 : 3,552,903
120 : 3,552,489
147 : 3,552,486
224 : 3,552,490
3,552,491
237 : 3,552,492
295 : 3,552,493
308 : 3,552,494
169— 28 : 3,552,495
172— 44 : 3,552,496
292 : 3,552,497
783 : 3,552,498
173— 93 : 3,552,499
105 : 3,552,500
119 : 3,552,501
174— 6 : 3,553,341
15 : 3,553,342
35 : 3,553,343
36 : 3,553,344
42 : 3,553,345
48 : 3,553,346
84 : 3,553,347
110 : 3,553,348
113 : 3,553,349
130 : 3,553,350
169 : 3,553,351
175— 25 : 3,552,502
40 : 3,552,503
52 : 3,552,504
57 : 3,552,505
85 : 3,552,506
258 : 3,552,507
3,552,508
3,552,509
261 : 3,552,510
177— 1 : 3,552,511
25 : 3,552,512
38 : 3,552,513
178— 5.2 : 3,553,352
3,553,371
.4 : 3,553,353
3,553,354
3,553,355
3,553,356
3,553,357
3,553,358
6 : 3,553,040
.8 : 3,553,358
3,553,360
7.1 : 3,553,359
3,553,361
3,553,362
.2 : 3,553,363
.3 : 3,553,364
3,553,365
.6 : 3,553,366
50 : 3,553,367
67 : 3,553,368
69 : 3,553,369
.5 : 3,553,370
179— 1 : 3,553,372
3,553,373
3,553,374
2 : 3,553,375
3,553,376
5 : 3,553,377
6 : 3,553,378
15 : 3,553,379
3,553,380
18 : 3,553,381
3,553,382
3,553,383
3,553,384
3,553,385
3,553,386
84 : 3,553,387
90 : 3,553,388
100 : 3,553,388
.2 : 3,553,389
3,553,390
3,553,391
115.5 : 3,553,392
180 : 3,553,393
180— 5 : 3,552,514
3,552,515
66 : 3,552,516
79.2 : 3,552,517
114 : 3,552,518
124 : 3,552,519
181— .5 : 3,552,520

182— 17 : 3,552,521
82 : 3,552,522
121 : 3,552,523
187— 29 : 3,552,524
188— 1 : 3,552,525
73.1 : 3,552,526
.3 : 3,552,527
79.5 : 3,552,528
190— 13 : 3,552,529
192— 28 : 3,552,530
53 : 3,552,531
58 : 3,552,532
105 : 3,552,904
107 : 3,552,533
113 : 3,552,534
194— 74 : 3,552,535
195— 30 : 3,553,081
127 : 3,553,082
198— 19 : 3,552,536
31 : 3,552,537
33 : 3,552,538
3,552,539
102 : 3,552,540
127 : 3,552,541
174 : 3,552,542
219 : 3,552,543
3,552,544
220 : 3,552,545
233 : 3,552,546
199— 55 : 3,552,547
200— 11 : 3,553,394
18 : 3,553,395
35 : 3,553,396
38 : 3,553,720
48 : 3,553,397
3,553,412
51 : 3,553,398
61.45: 3,553,399
.64: 3,553,721
80 : 3,553,400
81 : 3,553,401
83 : 3,553,402
3,553,403
85 : 3,553,404
86.5 : 3,553,405
148 : 3,553,406
166 : 3,553,407
3,553,408
168 : 3,553,409
3,553,410
176 : 3,553,411
202— 223 : 3,553,083
203— 2 : 3,553,084
204— 30 : 3,553,085
37 : 3,553,086
38 : 3,553,087
95 : 3,553,088
157.1 : 3,553,089
159.21: 3,553,090
162 : 3,553,091
180 : 3,553,092
181 : 3,553,093
197 : 3,553,094
212 : 3,553,095
297 : 3,553,096
299 : 3,553,097
206— 1 : 3,552,548
8 : 3,552,549
46 : 3,552,550
52 : 3,552,551
63.2 : 3,552,558
65 : 3,552,559
208— 11 : 3,553,098
3,553,099
3,553,100
47 : 3,553,101
111 : 3,553,102
3,553,103
120 : 3,553,104
213 : 3,553,105
251 : 3,553,106
271 : 3,553,107
209— 73 : 3,552,560
3,552,561
80.5 : 3,552,562
115 : 3,552,563
214 : 3,552,564
219 : 3,552,565
86 : 3,552,566
169 : 3,552,567
3,552,568
189 : 3,552,569
197 : 3,552,570
221 : 3,552,571
271 : 3,552,572
275 : 3,552,573
353 : 3,552,574
369 : 3,552,575
447 : 3,552,552
484 : 3,552,553
519 : 3,552,554
211— 36 : 3,552,576
74 : 3,552,577
120 : 3,552,578
126 : 3,552,579

213— 1.3 : 3,552,580
214— 1 : 3,552,581
3,552,582
3,552,583
8.5 : 3,552,584
14 : 3,552,585
38 : 3,552,586
75 : 3,552,587
89 : 3,552,588
152 : 3,552,589
301 : 3,552,590
307 : 3,552,555
512 : 3,552,556
620 : 3,552,557
215— 37 : 3,552,591
219— 10.55: 3,553,413
.71: 3,553,414
69 : 3,553,415
78 : 3,553,416
3,553,417
79 : 3,553,418
80 : 3,553,419
110 : 3,553,420
121 : 3,553,421
3,553,422
130 : 3,553,423
388 : 3,553,424
393 : 3,553,425
406 : 3,553,426
463 : 3,553,427
494 : 3,553,428
497 : 3,553,429
501 : 3,553,430
505 : 3,553,431
522 : 3,553,432
220— 1 : 3,552,592
4 : 3,552,593
8 : 3,552,594
16 : 3,552,595
22 : 3,552,596
23.83: 3,552,598
53 : 3,552,597
72 : 3,552,599
221— 1 : 3,552,600
219 : 3,552,601
235 : 3,552,602
222— 1 : 3,552,603
81 : RE.27,023
95 : 3,552,604
207 : 3,552,605
249 : 3,552,606
276 : 3,552,623
516 : 3,552,608
566 : 3,552,607
223— 93 : 3,552,609
224— 17 : 3,552,610
32 : 3,552,611
42.46: 3,552,613
45 : 3,552,612
205 : 3,552,614
97 : 3,552,615
103 : 3,552,616
226— 22 : 3,552,617
25 : 3,552,618
76 : 3,552,619
105 : 3,552,620
174 : 3,552,621
178 : 3,552,622
227— 3 : 3,552,624
10 : 3,552,625
51 : 3,552,628
76 : 3,552,626
121 : 3,552,627
228— 1 : 3,552,629
46 : 3,552,630
229— 7 : 3,552,631
30 : 3,552,632
3,552,633
43 : 3,552,634
44 : 3,552,635
51 : 3,552,636
53 : 3,552,637
63 : 3,552,639
66 : 3,552,638
68 : 3,552,640
69 : 3,552,641
234— 100 : 3,552,642
235— 60 : 3,552,643
61.11: 3,553,434
3,553,435
3,553,436
3,553,437
3,553,438
.12: 3,553,439
3,553,440
.7 : 3,553,433
92 : 3,553,441
3,553,442
144 : 3,552,644
150.53: 3,553,443
151.35: 3,553,444
156 : 3,553,445
3,553,722
175 : 3,553,446
181 : 3,553,723
197 : 3,553,447

236— 15 : 3,552,645
20 : 3,552,646
238— 243 : 3,552,647
287 : 3,552,648
310 : 3,552,649
239— 8 : 3,552,650
25 : 3,552,651
77 : 3,552,652
81 : 3,552,653
145 : 3,552,654
281 : 3,552,655
419.3 : 3,552,656
424 : 3,552,657
456 : 3,552,658
657 : 3,552,659
240— 7.1 : 3,553,448
61.1 : 3,553,724
241— 18 : 3,552,660
39 : 3,552,661
41 : 3,552,662
92 : 3,552,663
260 : 3,552,664
242— 7.21: 3,552,665
35.5 : 3,552,666
43 : 3,552,667
55 : 3,552,668
.3 : 3,552,669
56 : 3,552,670
68.3 : 3,552,671
72 : 3,552,672
.1 : 3,552,673
84.2 : 3,552,674
.21: 3,552,675
107.4 : 3,552,676
118.61: 3,552,677
131 : 3,552,693
157 : 3,552,678
158.3 : 3,552,682
159 : 3,552,679
192 : 3,552,680
3,552,681
3,552,683
194 : 3,552,684
3,552,685
201 : 3,552,686
244— 77 : 3,552,687
115 : 3,552,688
3,552,689
155 : 3,552,690
245— 10 : 3,552,691
246— 3 : 3,553,449
32 : 3,553,450
63 : 3,552,692
248— 20 : 3,552,694
54 : 3,552,695
68 : 3,552,696
97 : 3,552,697
158 : 3,552,698
183 : 3,552,699
205 : 3,552,700
206 : 3,552,705
309 : 3,552,701
316 : 3,552,702
339 : 3,552,703
342 : 3,552,704
373 : 3,552,706
394 : 3,552,707
498 : 3,552,708
249— 20 : 3,552,709
83 : 3,552,710
170 : 3,552,711
250— 41.9 : 3,553,451
3,553,452
66 : 3,553,453
71.5 : 3,553,454
201 : 3,553,455
202 : 3,553,456
205 : 3,553,459
209 : 3,553,457
213 : 3,553,458
217 : 3,553,460
218 : 3,553,461
3,553,462
219 : 3,553,463
3,553,464
223 : 3,553,465
227 : 3,553,466
230 : 3,553,468
233 : 3,553,467
237 : 3,553,469
3,553,470
239 : 3,553,471
251— 5 : 3,552,712
69 : 3,552,713
88 : 3,552,714
139 : 3,552,715
184 : 3,552,716
285 : 3,552,717
291 : 3,552,718
297 : 3,552,719
252— 5 : 3,553,127
8.1 : 3,553,128
.55: 3,553,130
.8 : 3,553,129
46.7 : 3,553,131
62 : 3,553,132

252— 62.1 : 3,553,133
.59: 3,553,135
.9 : 3,553,134
69 : 3,553,136
75 : 3,553,137
90 : 3,553,138
95 : 3,553,139
99 : 3,553,140
106 : 3,553,141
141 : 3,553,142
152 : 3,553,143
158 : 3,553,144
170 : 3,553,145
3,553,146
188 : 3,553,147
316 : 3,553,148
340 : 3,553,149
389 : 3,553,150
442 : 3,553,151
500 : 3,553,108
514 : 3,553,109
522 : 3,553,110
254— 135 : 3,552,720
259— 3 : 3,552,721
21 : 3,552,722
56 : 3,552,723
81 : 3,552,724
260— 2 : 3,553,111
.5 : 3,553,112
3,553,113
3,553,114
3 : 3,553,115
17 : 3,553,116
18 : 3,553,117
3,553,118
3,553,119
3,553,120
22 : 3,553,121
3,553,122
23 : 3,553,123
3,553,124
.7 : 3,553,125
29.6 : 3,553,152
3,553,153
30.2 : 3,553,154
.6 : 3,553,155
33.6 : 3,553,156
40 : 3,553,157
41 : 3,553,158
.5 : 3,553,159
45.75: 3,553,160
3,553,161
.95: 3,553,163
46.5 : 3,553,164
47 : 3,553,162
3,553,165
3,553,166
3,553,167
63 : 3,553,168
64 : 3,553,169
66 : 3,553,170
75 : 3,553,171
3,553,172
77.5 : 3,553,173
3,553,174
3,553,175
78.4 : 3,553,176
.5 : 3,553,177
3,553,183
80.72: 3,553,178
3,553,179
3,553,180
.78: 3,553,181
87.1 : 3,553,184
88.3 : 3,553,182
92.1 : 3,553,185
94.7 : 3,553,186
.9 : 3,553,187
198 : 3,553,189
207 : 3,553,190
209 : 3,553,191
211.5 : 3,553,192
233.3 : 3,553,193
.5 : 3,553,194
3,553,195
3,553,196
239 : 3,553,197
3,553,199
3,553,200
3,553,206
.1 : 3,553,201
3,553,202
3,553,203
.3 : 3,553,204
3,553,205
3,553,207
3,553,209
3,553,210
.5 : 3,553,211
3,553,212
3,553,213
.75: 3,553,198
244 : 3,553,214
248 : 3,553,215
250 : 3,553,208
256.4 : 3,553,216

260— 281 : 3,553,217
286 : 3,553,218
290 : 3,553,219
3,553,220
3,553,221
3,553,222
294.7 : 3,553,223
3,553,224
297 : 3,553,226
306.8 : 3,553,227
307 : 3,553,228
3,553,229
3,553,230
326 : 3,553,231
.5 : 3,553,232
329 : 3,553,233
340.3 : 3,553,234
343.2 : 3,553,235
3,553,236
397.3 : 3,553,237
410.6 : 3,553,238
412.8 : 3,553,239
413 : 3,553,188
436 : 3,553,240
439 : 3,553,241
448.2 : 3,553,242
453 : 3,553,244
454 : 3,553,243
465 : 3,553,245
.3 : 3,553,246
.4 : 3,553,247
.9 : 3,553,248
468 : 3,553,249
3,553,250
.5 : 3,553,251
473 : 3,553,252
475 : 3,553,253
482 : 3,553,254
3,553,255
485 : 3,553,256
501.17: 3,553,257
519 : 3,553,258
3,553,259
3,553,260
526 : 3,553,261
559 : 3,553,262
565 : 3,553,263
566 : 3,553,264
570.5 : 3,553,265
.6 : 3,553,266
576 : 3,553,267
581 : 3,553,268
609 : 3,553,269
3,553,270
613 : 3,553,271
624 : 3,553,272
633 : 3,553,273
650 : 3,553,274
652 : 3,553,275
668 : 3,553,276
672 : 3,553,277
3,553,278
683 : 3,553,279
.15: 3,553,280
.68: 3,553,281
824 : 3,553,282
830 : 3,553,283
850 : 3,553,284
857 : 3,553,285
3,553,286
3,553,287
3,553,288
3,553,289
859 : 3,553,290
861 : 3,553,291
864 : 3,553,292
866 : 3,553,293
871 : 3,553,294
879 : 3,553,295
897 : 3,553,296
967 : 3,553,298
969 : 3,553,297
261— 24 : 3,552,725
50 : 3,552,726
109 : 3,552,727
112 : 3,552,728
263— 6 : 3,552,729
51 : RE.27,020
264— 1 : 3,553,299
41 : 3,553,300
46 : 3,553,301
49 : 3,553,302
150 : 3,553,303
210 : 3,553,304
3,553,305
218 : 3,553,306
290 : 3,553,307
305 : 3,553,308
313 : 3,553,309
266— 6 : 3,552,730
23 : 3,552,731
43 : 3,552,732
269— 216 : 3,552,733
287 : 3,552,734
270— 58 : 3,552,735

270— 61 : 3,552,736
84 : 3,552,737
271— 3 : 3,552,738
4 : 3,552,739
12 : 3,552,740
26 : 3,552,741
51 : 3,552,742
54 : 3,552,743
80 : 3,552,744
82 : 3,552,745
93 : 3,552,746
29 : 3,552,747
59 : 3,552,748
273— 1.5 : 3,552,749
112 : 3,552,750
274— 4 : 3,552,751
277— 40 : 3,552,752
137 : 3,552,753
178 : 3,552,754
212 : 3,552,755
279— 6 : 3,552,756
3,552,757
75 : 3,552,758
280— 11.35: 3,552,759
36 : 3,552,760
42 : 3,552,761
47.33: 3,552,762
104 : 3,552,763
.5 : 3,552,764
106 : 3,552,765
124 : 3,552,766
3,552,767
150 : 3,552,768
3,552,769
3,552,770
405 : 3,552,772
406 : 3,552,771
413 : 3,552,773
425 : 3,552,774
492 : 3,552,775
285— 16 : 3,552,776
81 : 3,552,777
94 : 3,552,778
133 : 3,552,779
176 : 3,552,780
322 : 3,552,781
398 : 3,552,782
287— 20 : 3,552,783
53 : 3,552,784
85 : 3,552,785
100 : 3,552,786
108 : 3,552,787
290— 38 : 3,553,472
40 : 3,553,473
292— 256.6 : 3,552,789
268 : 3,552,790
340 : 3,552,791
294— 28 : 3,552,792
67 : 3,552,793
81 : 3,552,794
296— 64 : 3,552,788
297— 216 : 3,552,795
304 : 3,552,796
355 : 3,552,797
298— 22 : 3,552,798
302— 14 : 3,552,799
40 : 3,552,800
61 : 3,552,801
303— 21 : 3,552,802
3,552,803
307— 17 : 3,553,474
18 : 3,553,475
88 : 3,553,476
3,553,477
108 : 3,553,478
110 : 3,553,479
3,553,480
118 : 3,553,481
121 : 3,553,482
141 : 3,553,483
3,553,484
202 : 3,553,485
213 : 3,553,486
229 : 3,553,487
231 : 3,553,488
232 : 3,553,489
235 : 3,553,490
3,553,491
3,553,492
252 : 3,553,493
3,553,494
284 : 3,553,495
286 : 3,553,496
291 : 3,553,497
299 : 3,553,498
302 : 3,553,499
311 : 3,553,500
308— 1 : 3,552,804
6 : 3,552,805
9 : 3,552,807
29 : 3,552,808
36.4 : 3,552,809
160 : 3,552,810
176 : 3,552,811
189 : 3,552,812

308— 191 : 3,552,813
217 : 3,552,814
238 : 3,552,815
310— 8.2 : 3,553,501
11 : 3,553,502
3,553,503
15 : 3,553,726
68 : 3,553,504
3,553,505
91 : 3,553,506
93 : 3,553,507
152 : 3,553,508
154 : 3,553,509
156 : 3,553,510
3,553,511
112 : 3,553,750
174 : 3,553,512
312— 8 : 3,552,816
107 : 3,552,817
313— 11.5 : 3,553,513
55 : 3,553,514
68 : 3,553,515
85 : 3,553,516
3,553,517
94 : 3,553,518
113 : 3,553,519
3,553,520
325 : 3,553,727
337 : 3,553,521
315— 11 : 3,553,522
13 : 3,553,523
39.69: 3,553,524
95 : 3,553,525
98 : 3,553,526
111 : 3,553,527
209 : 3,553,528
3,553,725
176 : 3,553,529
186 : 3,553,633
258 : 3,553,634
3,553,635
100 : 3,553,532
101 : 3,553,533
103 : 3,553,534
148.5 : 3,553,535
230 : 3,553,537
234 : 3,553,538
3,553,539
235 : 3,553,536
3,553,540
3,553,541
247 : 3,553,542
258 : 3,553,543
3,553,544
3,553,545
318— 48 : 3,553,546
85 : 3,553,547
102 : 3,553,548
138 : 3,553,549
146 : 3,553,551
183 : 3,553,552
202 : 3,553,553
257 : 3,553,554
314 : 3,553,555
327 : 3,553,556
463 : 3,553,557
565 : 3,553,558
571 : 3,553,559
681 : 3,553,560
320— 22 : 3,553,561
39 : 3,553,562
48 : 3,553,563
61 : 3,553,564
64 : 3,553,565
321— 8 : 3,553,566
14 : 3,553,567
22 : 3,553,568
323— 9 : 3,553,568
22 : 3,553,569
324— 37 : 3,553,570
52 : 3,553,571
53 : 3,553,572
58.5 : 3,553,573
60 : 3,553,574
61 : 3,553,575
65 : 3,553,576
3,553,577
3,553,728
83 : 3,553,578
3,553,579
3,553,492
115 : 3,553,580
158 : 3,553,581
186 : 3,553,582
189 : 3,553,583
291 : 3,553,497
325— 9 : 3,553,584
15 : 3,553,585
67 : 3,553,586
114 : 3,553,587
119 : 3,553,588
445 : 3,553,589
328— 24 : 3,553,590
46 : 3,553,591
67 : 3,553,592
112 : 3,553,593
129 : 3,553,594
151 : 3,553,595
155 : 3,553,596

329— 110 : 3,553,597
330— 11 : 3,553,598
24 : 3,553,601
29 : 3,553,599
66 : 3,553,600
94.5 : 3,553,603
3,553,604
3,553,605
333— 18 : 3,553,606
34 : 3,553,607
80 : 3,553,609
81 : 3,553,608
83 : 3,553,610
335— 68 : 3,553,611
128 : 3,553,612
132 : 3,553,613
3,553,614
3,553,615
3,553,616
192 : 3,553,729
202 : 3,553,617
244 : 3,553,618
272 : 3,553,619
336— 165 : 3,553,620
192 : 3,553,621
219 : 3,553,622
337— 18 : 3,553,623
377 : 3,553,624
338— 4 : 3,553,625
128 : 3,553,626
339— 12 : 3,553,627
14 : 3,553,628
15 : 3,553,629
74 : 3,553,630
97 : 3,553,631
176 : 3,553,632
186 : 3,553,633
258 : 3,553,634
3,553,635
340— 1 : 3,553,636
3 : 3,553,638
5 : 3,553,637
12 : 3,553,639
15.5 : 3,553,640
52 : 3,553,642
3,553,643
55 : 3,553,644
64 : 3,553,641
84 : 3,553,645
146.3 : 3,553,646
147 : 3,553,647
172 : 3,553,644
.5 : 3,553,649
3,553,650
3,553,651
3,553,652
3,553,653
3,553,654
3,553,655
3,553,656
3,553,657
3,553,658
3,553,659
3,553,660
3,553,661
3,553,662
3,553,665
227 : 3,553,664
228 : 3,553,666
248 : 3,553,667
259 : 3,553,668
261 : 3,553,669
267 : 3,553,670
3,553,671
270 : 3,553,672
276 : 3,553,730
280 : 3,553,673
3,553,674
310 : 3,553,675
324 : 3,553,676
347 : 3,553,677
3,553,678
3,553,679
3,553,680
3,553,681
3,553,682
3,553,683
3,553,684
3,553,685
402 : 3,553,686
409 : 3,553,687
3,553,688
3,553,689
11 : 3,553,690
15 : 3,553,691
100 : 3,553,693
3,553,694
101 : 3,553,695
108 : 3,553,696
113 : 3,553,697
3,553,698
3,553,699
121 : 3,553,699
705 : 3,553,700
756 : 3,553,702

343— 766 : 3,553,701
767 : 3,553,703
768 : 3,553,704
771 : 3,553,705
777 : 3,553,706
778 : 3,553,692
781 : 3,553,707
3,553,731
840 : 3,553,732
854 : 3,553,733
346— 1 : 3,553,708
3,553,709
21 : 3,553,710
33 : 3,553,711
34 : 3,553,712
65 : 3,553,713
74 : 3,553,714
3,553,715
3,553,716
3,553,717
3,553,718
3,553,719
350— 10 : 3,552,819
21 : 3,552,820
63 : 3,552,821
126 : 3,552,822
157 : 3,552,823
160 : 3,552,824
3,552,825
166 : 3,552,826
171 : 3,552,827
174 : 3,552,828
176 : 3,552,829
3,552,830
3,552,831
212 : 3,552,832
217 : 3,552,833
285 : 3,552,834
288 : 3,552,835
289 : 3,552,836
351— 13 : 3,552,837
55 : 3,552,838
123 : 3,552,839
154 : 3,552,840
352— 92 : 3,552,841
125 : 3,552,842
191 : 3,552,843
353— 41 : 3,552,844
74 : 3,552,845
103 : 3,552,846
355— 3 : 3,552,847
3,552,848
14 : 3,552,849
15 : 3,552,850
27 : 3,552,851
35 : 3,552,852
133 : 3,552,853
356— 4 : 3,552,854
28 : 3,552,855
32 : 3,552,856
73 : 3,552,857
109 : 3,552,858
114 : 3,552,859
128 : 3,552,860
169 : 3,552,861
206 : 3,552,863
215 : 3,552,862
246 : 3,552,864
3,552,865
250 : 3,552,866
401— 78 : RE.27,022
110 : 3,552,867
3,552,868
195 : 3,552,869
206 : 3,552,870
415— 1 : 3,552,871
17 : 3,552,872
49 : 3,552,873
121 : 3,552,874
175 : 3,552,875
205 : 3,552,876
209 : 3,552,877
217 : 3,552,878
416— 63 : 3,552,879
104 : 3,552,880
145 : 3,552,881
241 : 3,552,882
417— 76 : 3,552,883
122 : 3,552,884
152 : 3,552,885
269 : 3,552,886
395 : 3,552,887
423 : 3,552,888
494 : 3,552,889
529 : 3,552,890
418— 54 : 3,552,891
61 : 3,552,892
3,552,893
139 : 3,552,894
178 : 3,552,895
424— 2 : 3,553,310
3 : 3,553,311
12 : 3,553,312
33 : 3,553,313
49 : 3,553,314
3,553,315

424– 68	3,553,316	424–204	3,553,320	424–225	3,553,323	424–249	3,553,326	424–321	3,553,329	424–330	3,553,332
87	3,553,317	213	3,553,321	244	3,553,324	275	3,553,327	324	3,553,330	431– 95	3,552,896
184	3,553,318	219	3,553,322	249	3,553,325	300	3,553,328	325	3,553,331	273	3,552,897
202	3,553,319										

CLASSIFICATION OF DESIGNS

D 1– 13	219,637	D13– 1	219,648	D33– 8	219,659	D44– 1	219,670	D48– 7	219,681	D71– 1	219,690
D 4– 18	219,638	D14– 3	219,649		219,660		219,671	16	219,678	D77– 1	219,691
D 8–109	219,639		219,650	14	219,661		219,672	D52– 6	219,682	D80– 8	219,692
131	219,641	D15– 1	219,651	19	219,662		219,673	D54– 12	219,683	D81– 10	219,693
138	219,640	D22– 7	219,652	D34– 5	219,663	9	219,675		219,684	D83– 1	219,694
D 9– 18	219,642	27	219,653		219,664	10	219,674		219,685	12	219,695
	219,643	D23– 49	219,654	15	219,665		219,676	D57– 1	219,686	D87– 1	219,696
182	219,644	97	219,655		219,666	15	219,677	D59– 2	219,687	5	219,697
189	219,645	D26– 5	219,656		219,667	D45– 4	219,679	D61– 1	219,688	8.4	219,698
229	219,646	13	219,657		219,668		219,680	D64– 11	219,689	D95– 3	219,699
D13– 1	219,647	14	219,658	D35– 3	219,669						

CLASSIFICATION OF PLANTS

P. – 18	3,011	P. – 68	3,012	P. – 85	3,013

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1	3,551,949	6	3,552,303	6	3,552,805	6	3,553,494	9	3,552,236	12	3,551,936
	3,552,324		3,552,310		3,552,838		3,553,497		3,552,281		3,551,976
	3,552,394		3,552,311		3,552,842		3,553,500		3,552,387		3,552,106
	3,552,513		3,552,322		3,552,851		3,553,513		3,552,439		3,552,150
	3,552,552		3,552,326		3,552,862		3,553,515		3,552,451		3,552,432
	3,552,650		3,552,329		3,552,863		3,553,540		3,552,583		3,552,440
	3,552,665		3,552,330		3,552,865		3,553,555		3,552,618		3,552,466
2	3,552,522		3,552,345		3,552,873		3,553,562		3,552,628		3,552,523
	3,552,613		3,552,349		3,552,921		3,553,573		3,552,638		3,552,606
	3,553,553		3,552,350		3,552,936		3,553,577		3,552,694		3,552,712
4	3,552,203		3,552,356		3,552,961		3,553,580		3,552,730		3,552,714
	3,552,308		3,552,371		3,552,962		3,553,584		3,552,783		3,552,749
	3,552,414		3,552,384		3,552,963		3,553,602		3,552,796		3,553,039
	3,552,596		3,552,388		3,552,964		3,553,605		3,552,812		3,553,275
	3,553,235		3,552,401		3,552,965		3,553,648		3,552,883		3,553,346
	3,553,339		3,552,424		3,552,984		3,553,651		3,552,918		3,553,373
	3,553,530		3,552,433		3,553,015		3,553,652		3,552,919		3,553,569
	3,553,657		3,552,445		3,553,037		3,553,660		3,552,948		3,553,572
5	3,552,108		3,552,453		3,553,061		3,553,670		3,552,954		3,553,586
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Design Patents

6 : 219,639
219,643
219,648
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21 : 219,654
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42 : 219,640
44 : 219,670
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55 : 219,694

Plant Patents

19 : 3,013

39 : 3,012

A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

U.S. DEPARTMENT OF COMMERCE

Official Gazette of the United States Patent Office

January 5, 1971 Volume 882 Number 1

TRADEMARKS
NOTICES

Service by Publication

A petition to cancel each of the registrations identified below having been filed, and the notice of such proceedings sent by registered mail to each registrant at the last known address having been returned by the Post Office as undeliverable, notice is hereby given that unless the registrants listed herein, their assigns or legal representatives, shall enter an appearance within thirty days from the date of this publication, the cancelation will be proceeded with as in the case of default.

Roamer-Medana Watch Corporation, assignee, by mesne assignment and change of name, of Woronock and Ansen, New York, N.Y., Reg. No. 394,715, Canc. No. 9,682.

Godofredo Lorenzana, San Jose, Calif., Reg. No. 783,424, Canc. No. 9,688.

Revive Products, Inc., New York, N.Y., Reg. No. 805,321, Canc. No. 9,689.

The Indian Company, assignee, by mesne assignment and change of name, of George M. Hendee (Reg. No. 39,008), The Hendee Manufacturing Co. (Reg. No. 97,053), and Hendee Manufacturing Company (Reg. No. 98,282), Springfield, Mass., Canc. No. 9,695.

Joan Doug Undergarment Co. Inc., New York, N.Y., Reg. No. 614,466, Canc. No. 9,699.

Timely Packaging Associates, assignee, by mesne assignment, of Roto-Wrap, Ltd., New York, N.Y., Reg. No. 561,268, Canc. No. 9,700.

Malingson Pharmaceuticals, Inc., Fairfax, Va., Reg. No. 819,794, Canc. No. 9,701.

JOHN H. SCHNEIDER,
Examiner-in-Chief.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 22,406 (COCA-COLA), The Coca Cola Company, Tonic syrup or beverage; **Reg. No. 47,189,** same, Non-alcoholic maltless beverages and the syrups for making such beverages; **Reg. No. 238,145,** same, Beverages and syrups for the manufacture of such beverages; **Reg. No. 238,146,** same; **Reg. No. 415,755** (COKE), same, Non-alcoholic maltless beverages and the syrups for making such beverages, **filed** Oct. 12, 1970, D.C., Colo. (Denver), Doc. C-2627, *The Coca-Cola Company v. Ideal Food Store & Market, Inc., doing business as Black Canyon Restaurant.* **Same, filed** Oct. 13, 1970, D.C., Nebr. (Omaha), Doc. C-03663, *The Coca-Cola Company v. George R. Ruff and Mary (Mrs. G. R.) Ruff.* **Same, filed** Oct. 20, 1970, D.C., E.D. Wash. (Yakima), Doc. C-2658, *The Coca-Cola Company v. William J. O'Neil and Evelyn O'Neil, doing business as Clover Leaf Lunch, also known as Clover Leaf Cafe.*

Reg. No. 47,189. (See Reg. No. 22,406.)

Reg.No.70,961 (MAXIM), Louis Ender, Inc., Sardines, **filed** July 16, 1970, D.C., S.D.N.Y., Doc. 70-3050, *Louis Ender, Inc. v. General Foods Corp.*

Reg. No. 238,145. (See Reg. No. 22,406.)

Reg. No. 238,146. (See Reg. No. 22,406.)

Reg. No. 415,755. (See Reg. No. 22,406.)

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1970

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]--------- 23,607
Date of oldest new application---------- September 17, 1969
Date of oldest amended application (filing date)---------- March 31, 1967

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISION, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 8, 9, 10, 11, 17, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	12-24-69	3-31-67
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	12-16-69	12-11-67
(III) C. R. FOWLER, Classes 12, 16, 19, 21, 23, 26, 31, 34, 35, 36, 44	2-26-70	10-30-67
(IV) M. E. ABRAMSON, Classes 13, 14, 20, 22, 24, 25, 29; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	9-17-69	1-26-68
Renewals (All Classes)	9-21-70	----------
Sec. 12(c) Publications (All Classes)	10-8-70	----------

Applications filed during the month of October 1970—2,802

Registrations Issued ---------- 377—No. 905,319 to No. 905,695
Renewals Issued ---------- 120

THE TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

Reg. No. 617,131 (VOLKSWAGEN), Volkswagenwerk, GmbH, Vehicles—namely, automobiles and trucks, aircraft, boats, and parts of accessories for automobiles—namely, radiators, direction indicators, windshield defrosters, anti-dazzle appliances, windshield wipers, shock absorbers, brakes, and baggage racks; **Reg. No. 631,649** (VW IN CIRCLE), same; **Reg. No. 653,694**, (VW), same; **Reg. No. 790,621** (WOLKSWAGEN), same, Automobiles and trucks, aircraft, and boats; and parts of and accessories for automobiles—namely, radiators, direction indicators, windshield defrosters, anti-dazzle appliances, windshield wipers, shock absorbers, brakes and baggage racks; **Reg. No. 790,959** (VW AND DESIGN), same; **Reg. No. 791,311** (VW), same; **Reg. No. 804,869** (VW AND DESIGN), same, Repair and reconditioning of motor vehicles, aircraft and boats; **Reg. No. 808,381** (VOLKSWAGEN), same, Vehicles—namely, automobiles and trucks, aircraft, and boats; and parts and accessories for automobiles and trucks, aircraft and boats—namely, radiators, direction indicators, windshield wipers, shock absorbers, brakes and baggage racks; **Reg. No. 815,632** (VW), same, Repair, reconditioning and replacement of motors and accessories and parts thereof, and repair and reconditioning of motor vehicles, aircraft, and boats; **Reg. No. 819,297** (VOLKSWAGEN), same, filed Jan. 5, 1970, D.C., S.D. Fla. (Miami), Doc. 70–10–C–CF, *Volkswagenwerk Aktiengesellschaft* v. *International Motors Corp. et al.* Final judgment, defendants enjoined and restrained, Sept. 21, 1970. Same, filed Oct. 14, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–2332–IH, *Volkswagenwerk* v. *Franz J. Heusler, doing business as Westminster Volkswagen Service and Westminster Independent Volkswagen Service.*

Reg. No. 631,629. (See Reg. No. 617,131.)

Reg. No. 653,695. (See Reg. No. 617,131.)

Reg. No. 790,621. (See Reg. No. 617,131.)

Reg. No. 790,959. (See Reg. No. 617,131.)

Reg. No. 791,311. (See Reg. No. 617,131.)

Reg. No. 794,600 (CLUB INTERNATIONALE AND DESIGN), Club Internationale, Assn., Indicating membership in applicant's vacation club; **Reg. No. 891,406** (CLUB INTERNATIONALE), Club International Management Corp., Organizing and making arrangements for foreign group tours and vacations, filed Sept. 1, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c2166, *Club Internationale Management Corp.* v. *The Discovery Club International, Inc.* Same, filed Mar. 9, 1970, D.C., N.D. Tex. (Dallas), Doc. 3–3700–C, *Club Internationale Management Corp., C.I., Inc., doing business as Club Internationale and Jo-Ly Holidays, Inc.* v. *Club Internationale, Inc., doing business as "Club Internationale," Top Four, Incorporated, B. J. Angers, R. M. Cady, and F. C. Mathey.* Judgment, Club Internationale Management Corp. owner of said registration numbers; defendants permanently enjoined, Oct. 7, 1970.

Reg. No. 804,869. (See Reg. No. 617,131.)

Reg. No. 808,381. (See Reg. No. 617,131.)

Reg. No. 815,632. (See Reg. No. 617,131.)

Reg. No. 819,297. (See Reg. No. 617,131.)

Reg. No. 846,663 (MASTER), Andis Clipper Co., Hair Clippers, filed Oct. 12, 1970, D.C., E.D. Wis. (Milwaukee), Doc. 70–C–571, *Andis Clipper Co.* v. *Master Appliance Corp.*

Reg. No. 885,995 (AFRO-SHEEN), Johnson Products Co., Inc. Hair conditioner, hair spray and hair dressing, filed Feb. 17, 1970, D.C.N.J. (Newark), Doc. C–199–70, *Johnson Products Co., Inc.* v. *All-American Brush Mfg. Corp.* Stipulation and order of dismissal, Aug. 19, 1970.

Reg. No. 891,406. (See Reg. No. 794,600.)

MARKS PUBLISHED FOR OPPOSITION

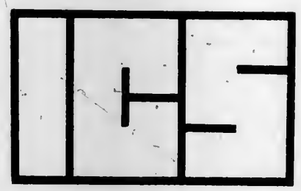
SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 299,025. Information Control Systems, Incorporated, Ann Arbor, Mich. Filed May 24, 1968.



Class 26—Measuring and Scientific Appliances

For Special Purpose Digital Electronic Devices Including Interface Equipment for Use With General Purpose Computers and Input-Output Devices and Magnetic Tape (Int. Cl. 9).

Class 101—Advertising and Business

For Computer Programming Services (Int. Cl. 35).

First use Dec. 1, 1966.

SN 313,220. E. Edelmann & Co., Chicago, Ill. Filed Nov. 29, 1968.



Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Automotive Brass Fittings, Tubular Steel Brake Lines, Braided Metal Flexible Lines, Battery Fillers, and Battery Acid Dispensers (Int. Cls. 6 and 8).

Class 19—Vehicles

For Automotive Push-Pull Controls and Automobile Power Steering Repair Kits (Int. Cl. 12).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Flaring Tools, Tube Cutters, and Rocker Arm Oil Line Kits (Int. Cls. 8 and 12).

Class 26—Measuring and Scientific Appliances

For Battery Hydrometers, Cooling System Analyzers, Anti-Freeze Solution Testers, Ignition Timing Lights, and Battery Service Kits Comprised of Hydrometer, Battery Filler and Case (Int. Cl. 9).

Class 35—Belting, Hose, Machinery Packing, and Non-metallic Tires

For Hose Lines and Automotive Power Steering Hoses (Int. Cl. 17).

First use 1958; 1909 as to "Edelmann" and 1946 as to "Precisioneered."

SN 313,303. International Chemical & Cosmetic Company, Milan, Italy. Filed Nov. 29, 1968.

AMOHA

Owner of Italian Reg. No. 174,218, dated Dec. 18, 1965.

Class 51—Cosmetics and Toilet Preparations

For Perfumery, Personal Deodorant, Talcum Powder, Dentifrices, Lipstick, Hair Lotions, Bubble Bath, Skin Creams, and Shaving Soaps (Int. Cls. 3 and 5).

Class 52—Detergents and Soaps

For Hair Shampoos and Toilet Soaps (Int. Cl. 3).

SN 314,854. Kimco Laboratories, Inc., Brooklyn, N.Y. Filed Dec. 19, 1968.



Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Wireless Burglar Alarms (Int. Cl. 9).

Class 26—Measuring and Scientific Appliances

For Portable Electrical Wireless Thermostat Control Devices (Int. Cl. 9).

First use Oct. 1, 1968.

SN 323,619. Pearl Equipment Co., Inc., Nashville, Tenn. Filed Apr. 4, 1969.



Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For New and Used Machines—Namely, Horizontal and Vertical Boring Machines, Tube Bending and Cut-Off Machines, Wire Straightener and Cut-Off Machines, Die Casting Machines, Polishing and Buffing Machines, Deburring Machines, Milling Machines, Contour Profiling Machines, Straightener-Feeder and Shearing Machines, Metal Stamping Presses, Surface Grinding Machines and Cylindrical Grinding Machines, Large Metal Radial Drill Machines and Pedestal Drilling Machines, Plastic Molding Machines, Gear Manufacturing Machines, Engine and Turret Lathes, Tube Manufacturing Machines, Threading Machines, Automatic Screw and Chucker Machines, Coil Reel Machines, Automatic Coil Cradle Machines, Roll Forming Machines, Cranes, Shearing Machines (Int. Cl. 7).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Spot Welding Machines and Butt Welding Machines (Int. Cl. 7).

First use Jan. 1, 1967.

SN 337,476. Rosell Bacteriological Dairy Institute Inc., Montreal, Quebec, Canada. Filed Sept. 10, 1969.

ROSELL

Class 46—Foods and Ingredients of Foods

For Kefir Culture, Yogurt Culture, and Yogurt Tablets (Int. Cl. 29).
First use 1934; in commerce 1944.

Class 51—Cosmetics and Toilet Preparations

For Cosmetic Face Cream (Int. Cl. 3).
First use Mar. 18, 1968; in commerce Sept. 16, 1968.

SN 348,176. Parliament Equipment Corporation, New York, N.Y. Filed Jan. 9, 1970.

GUILLOTINE

Class 5—Adhesives

For Motion Picture Film Splicing Tape (Int. Cl. 1).
First use Feb. 9, 1965.

Class 26—Measuring and Scientific Appliances

For Motion Picture Film Splicers (Int. Cl. 9).
First use Oct. 19, 1964.

SN 352,008. Goerlich's, Inc., Toledo, Ohio. Filed Feb. 24, 1970.

DELTA

Class 19—Vehicles

For Automotive Shock Absorbers (Int. Cl. 12).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Automotive Exhaust Pipes, Tail Pipes, and Mufflers (Int. Cl. 12).

First use at least as early as Jan. 1, 1967.

SN 357,802. Broan Mfg. Co., Inc., Hartford, Wis. Filed Apr. 24, 1970.

DIALAIR

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Motor Speed Controls for Fans and Blowers (Int. Cl. 9).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Range Hoods (Int. Cl. 11).

First use Feb. 26, 1970.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 329,177. J. C. Penney Company, Inc., New York, N.Y. Filed June 3, 1969.

FIELD FRESH

For Plants, Trees, Shrubs, Bulbs (Nursery Stock) (Int. Cl. 31).
First use Nov. 4, 1968.

SN 349,348. Golden State Sheep Tanning Co., Brooklyn, N.Y. Filed Jan. 22, 1970.

MAJA LAMB

The word "Lamb" is disclaimed apart from the mark as shown.
For Sheared Process Lamb Skins (Int. Cl. 18).
First use Dec. 17, 1969.

SN 351,794. Dlorah Products Company, Inc., Memphis, Tenn. Filed Feb. 19, 1970.

FRESH-NEST

For Ground and Aggregate Clay Comprising Animal Bedding Material (Int. Cl. 31).
First use Jan. 16, 1970.

SN 352,686. Trenton Experimental Laboratory Animal Company, Bar Harbor, Maine. Filed Feb. 27, 1970.

TELACO

For Live Hamsters (Int. Cl. 31).
First use Jan. 10, 1970.

Class 4—Abrasives and Polishing Materials

SN 359,373. Lien Chemical Company, Franklin Park, Ill. Filed May 11, 1970.



The drawing is lined for the colors red and blue. Owner of Reg. Nos. 585,575, 615,466, and others.
For Metal, Floor, and Furniture Polishes (Int. Cl. 3).
First use Apr. 11, 1953.

Class 6—Chemicals and Chemical Compositions

SN 286,388. Sumitomo Chemical Co., Ltd., Higashi-ku, Osaka, Japan. Filed Dec. 6, 1967.

SUMISOIL

Priority claimed under Sec. 44(d) on Japanese application filed Oct. 17, 1967; Reg. No. 817,775, dated May 22, 1969.
For Chemicals Used in the Manufacture of Grout—Namely, Acrylamide and Its Cross Linking Agents (Int. Cl. 1).

SN 346,944. Nobel-Bozel, Puteaux (Hauts-de-Seine), France. Filed Dec. 22, 1969.

BOZEFLOC

Priority claimed under Sec. 44(d) on French Reg. No. 772,546, dated June 20, 1969.
For Polyacrylamides, Mainly Used in the Treatment of Liquids and Particularly Water (Int. Cl. 1).

SN 346,945. Nobel-Bozel, Puteaux (Hauts-de-Seine), France. Filed Dec. 22, 1969.

BOZECHLOR

Owner of French Reg. No. 772,547, dated June 20, 1969.
For Halogenated Organic Chemicals for Use in Industry (Chlorine Doners) (Int. Cl. 1).

SN 347,862. Neumann-Buslee & Wolfe, Inc., Des Plaines, Ill. Filed Jan. 7, 1970.

DRI-SEAL

For Essential Oils and Aromatic Chemicals for Use in the Manufacture of Perfumes, Flavors, Fragrances, Colors, and Cosmetics (Int. Cl. 3).
First use Feb. 15, 1955, on essential oils.

SN 356,017. Avon Products, Inc., New York, N.Y. Filed Apr. 6, 1970.

TROPICAL BERRY

For Room Freshener (Int. Cl. 5).
First use Feb. 13, 1970.

SN 356,251. The Ansul Company, Marinette, Wis. Filed Apr. 8, 1970.

MAD

For Chemicals and Chemical Compositions—Namely, Herbicides (Int. Cl. 5).
First use Mar. 31, 1970.

SN 356,439. A. E. Staley Manufacturing Company, Decatur, Ill. Filed Apr. 9, 1970.

KOOL IRON

For Spray Starch and Fabric Sizing (Int. Cls. 1 and 3).
First use Mar. 30, 1970.

SN 357,594. The Clorox Company, Oakland, Calif. Filed Apr. 22, 1970.

CLOROX 2

Owner of Reg. Nos. 102,650, 829,250, and others.
For Bleaching Powder (Int. Cl. 3).
First use Sept. 29, 1969.

SN 358,530. Abchem, Inc., Midland, Pa. Filed May 1, 1970.

COLDFLEX

For Liquid Plasticizer for Synthetic Rubber and Vinyl Plastics (Int. Cl. 1).
First use Sept. 10, 1963.

SN 367,689. Colgate-Palmolive Company, New York, N.Y. Filed Aug. 11, 1970.

DRYER AIDS

For Fabric Softener (Int. Cl. 3).
First use July 2, 1970.

SN 367,690. Colgate-Palmolive Company, New York, N.Y. Filed Aug. 11, 1970.

DREAM DRY

For Fabric Softener (Int. Cl. 3).
First use July 2, 1970.

Class 12—Construction Materials

SN 359,763. American Precast Concrete, Inc., Indianapolis, Ind. Filed May 15, 1970.

MOD-U-CAST

For Custom Designed Steel Reinforced Columns, Beams, Slabs and Double T's (Int. Cl. 6).
First use Apr. 1, 1970.

SN 361,423. The J. G. Wilson Corporation, Norfolk, Va. Filed June 1, 1970.

VANGUARD

For Fire Doors (Int. Cl. 19).
First use on or about Jan. 21, 1970.

SN 361,480. Georgia-Pacific Corporation, Portland, Oreg. Filed June 2, 1970.

RIO GRANDE

For Prefinished Plywood Paneling (Int. Cl. 19).
First use Apr. 22, 1970.

SN 361,667. Abco Industries, Inc., Rahway, N.J. Filed June 4, 1970.

AQUA-MATE

For Swimming Pools, Components Thereof and Accessories Therefor Sold Together as a Complete Unit (Int. Cl. 19).
First use on or before Jan. 1, 1969.

SN 361,682. The Bostwick Steel Lath Company, Niles, Ohio. Filed June 4, 1970.

GalvaTrack

For Stud Track for Use in Building Construction (Int. Cl. 6).
First use Apr. 24, 1970.

SN 361,683. The Bostwick Steel Lath Company, Niles, Ohio. Filed June 4, 1970.

GalvaStud

For Steel Studs for Use in Building Construction (Int. Cl. 6).
First use Apr. 24, 1970.

SN 361,874. Peachtree Doors, Inc., Atlanta, Ga. Filed June 5, 1970.

CITADEL

For Sliding Glass Doors (Int. Cl. 19).
First use May 7, 1970.

SN 361,899. United States Gypsum Company, Chicago, Ill. Filed June 5, 1970.

BLENDTEX

For Gypsum Panels (Int. Cl. 19).
First use prior to Aug. 13, 1969.

Class 15—Oils and Greases

SN 354,948. Candle-Lite, Inc., Cincinnati, Ohio. Filed Mar. 24, 1970.

JEWELS OF LIGHT

No claim is made to the exclusive right to the use of the word "Light" separate and apart from the mark as shown.
For Candles (Int. Cl. 4).
First use August 1938.

SN 356,889. Metkem Inc., Rochester, N.Y. Filed Apr. 14, 1970.

CHIPEEL

For Canned Metal Cutting Lubricant (Int. Cl. 4).
First use Feb. 22, 1970.

Class 16—Protective and Decorative Coatings

SN 353,577. The Sherwin-Williams Company, Cleveland, Ohio. Filed Mar. 9, 1970.

SHERWIN WILLIAMS

Owner of Reg. Nos. 438,555 and 519,400.
For Clear and Pigmented Coatings in the Nature of a Paint (Int. Cl. 2).
First use Dec. 31, 1940.

SN 356,185. Arvon Products Co., Inc., d.b.a. Arvon Products Co., Inc. and Arvon Products Company, Inc., Philadelphia, Pa. Filed Apr. 7, 1970.

WATER BOND

For Ready-Mixed Paint, Masonry Paint (Exterior and Interior), Basement Paint, and Waterproofing Paint (Int. Cl. 2).
First use on or about Mar. 5, 1970.

SN 358,470. Pratt & Lambert-Inc., Buffalo, N.Y. Filed Apr. 30, 1970.

UNILUX

For Interior and Exterior Paints (Int. Cl. 2).
First use Mar. 25, 1970.

SN 358,604. Hazel Pearson Handicrafts Inc., Rosemead, Calif. Filed May 1, 1970.

GLO-FLO

For Fluorescent Acrylic Paints (Int. Cl. 2).
First use Jan. 15, 1970.

SN 358,848. Celanese Coating Company, New York, N.Y. Filed May 5, 1970.

DEVTOX

For Marine Anti-Fouling Paints (Int. Cl. 2).
First use Apr. 6, 1970.

Class 17—Tobacco Products

SN 368,408. Havatampa Cigar Corporation, Tampa, Fla. Filed Aug. 19, 1970.

MODERN

For Cigars (Int. Cl. 34).
First use on or before July 1, 1939.

Class 18—Medicines and Pharmaceutical Preparations

SN 338,809. Pitman-Moore, Inc., Fort Washington, Pa. Filed Sept. 24, 1969.

PITMAN·MOORE

For Veterinary Pharmaceuticals (Int. Cl. 5).
First use Aug. 6, 1969.

SN 340,628. USV Pharmaceutical Corporation, New York, N.Y. Filed Oct. 13, 1969.

NEUROSPAN

For Preparation for Cerebral Vasodilator (Int. Cl. 5).
First use Sept. 10, 1969.

SN 340,630. USV Pharmaceutical Corporation, New York, N.Y. Filed Oct. 13, 1969.

PERVASPAN

For Preparation for Peripheral Vasodilator (Int. Cl. 5).
First use Sept. 10, 1969.

SN 341,624. Burton, Parsons Chemicals, Inc., Washington, D.C. Filed Oct. 24, 1969.

ADAPT

For Contact Lens Treating Solution Which Facilitates Insertion of the Lens and Makes the Wearing of the Lens More Comfortable (Int. Cl. 5).
First use at least as early as Oct. 13, 1969.

SN 341,806. Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. Filed Oct. 27, 1969.

ROMPUN

Owner of German Reg. No. 769,479, dated Feb. 10, 1962.
For Combination Sedative, Analgesic, Anaesthetic and Muscle Relaxant, for Veterinary Use (Int. Cl. 5).

SN 356,470. Astra-Ewos Aktiebolag, Sodertalje, Sweden. Filed Apr. 10, 1970.

IRONPIGG

For Mineral Enriched Livestock Feed and Mineral Feed Supplements (Int. Cl. 31).
First use Oct. 20, 1969; in commerce Oct. 20, 1969.

SN 371,031. The Upjohn Company, Kalamazoo, Mich. Filed Sept. 18, 1970.

PROSTENE

For Oxytocic Agent (Int. Cl. 5).
First use June 30, 1970.

SN 371,032. The Upjohn Company, Kalamazoo, Mich. Filed Sept. 18, 1970.

PROSDENE

For Oxytocic Agent (Int. Cl. 5).
First use June 30, 1970.

Class 19—Vehicles

SN 337,982. C. O. Smith, Jr. Industries, Inc., Moultrie, Ga. Filed Sept. 15, 1969.

PEACHTREE HOUSING

Applicant disclaims the word "Housing" apart from the mark as shown.
For Mobile Homes (Int. Cl. 12).
First use Aug. 20, 1969.

SN 339,621. Hydro-Ski International Corporation, Fort Lauderdale, Fla. Filed Oct. 2, 1969.

AQUARIUS

For Boats (Int. Cl. 12).
First use Mar. 21, 1969.

SN 340,099. Suzuki Motor Co., Ltd., Hamamatsu, Japan. Filed Oct. 8, 1969.

SUZUKI

Owner of U.S. Reg. No. 821,488.
For Motorcycles (Int. Cl. 12).
First use on or about Oct. 15, 1963; in commerce Apr. 29, 1964.

SN 357,263. Appliance Plating Co., Inc., d.b.a. Appliance Industries, Harbor City, Calif. Filed Apr. 20, 1970.



For Automobile Wheels (Int. Cl. 12).
First use Feb. 27, 1970.

SN 359,976. Protecto-Guard, Inc., Madison, Wis. Filed May 18, 1970.

PGI

For Resilient Bumper Guards for Use on Motor Vehicles, and Also for Use on Docks and Loading Platforms for Cushioning Vehicle Impact (Int. Cl. 12).
First use Apr. 7, 1970.

SN 359,977. Protecto-Guard, Inc., Madison, Wis. Filed May 18, 1970.

PROTECTO-GUARD

For Resilient Bumper Guards for Use on Motor Vehicles, and Also for Use on Docks and Loading Platforms for Cushioning Vehicle Impact (Int. Cl. 12).
First use Apr. 7, 1970.

SN 363,849. Textron Inc., Providence, R.I. Filed June 29, 1970.



The stippling in the drawing is for shading purposes only.
For Snowmobiles (Int. Cl. 12).
First use May 27, 1970.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 306,468. Electro-Nite Co., Philadelphia, Pa. Filed Sept. 3, 1968.

THE MAYDAY

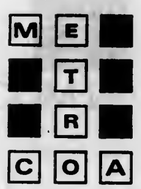
For Electro-Mechanical Alarm System Adapted for Connection to Telephone Lines in Homes and Other Buildings for Requesting Emergency Assistance From a Preselected Source by Way of a Prerecorded Message (Int. Cl. 9).
First use March 1968.

SN 321,778. Custom Candles, Inc., Fresno, Calif. Filed Mar. 14, 1969.



Applicant disclaims, apart from the mark shown the representation of the candle, and the term "Candle."
For Miniature Electrical Lamps and Electrical Storage Battery Charging Units (Int. Cls. 9 and 11).
First use June 1967.

SN 323,346. Metroprocessing Corporation of America, White Plains, N.Y. Filed Apr. 1, 1969.



For Portable Pushbutton Apparatus for the Generation of Multi-Frequency Tones for Transmission of Data Over Telephone Lines, the Tones Being Converted Into Intelligible Signals at a remote point To Actuate a Data-Processing Device (Int. Cl. 9).
First use Feb. 18, 1969.

SN 324,544. Texas Metals, Inc., Dallas, Tex., assignee of United Chemical Company, Dallas, Tex. Filed Apr. 14, 1969.

AGION

For Apparatus for Treating Silver Bearing Liquid Solutions for Electrical Extraction of Silver From Such Solutions (Int. Cl. 9).
First use on or about Mar. 24, 1969.

SN 327,039. Fibra-Sonics, Inc., Chicago, Ill., assignee of Musi-Cloud, Inc., Palos Park, Ill. Filed May 12, 1969.

FIBRA-SONICS

For Ultra-Sonic Energy Transmission System Utilizing a Sonic Motor or Generator, and a Fine Wire for Distribution or Transmission (Int. Cl. 9).
First use Apr. 30, 1969.

SN 327,216. Alsig Electronics, Inc., Van Nuys, Calif. Filed May 14, 1969.

MASTER ALERT

The word "Alert" is disclaimed apart from the mark as a whole.
For Airplane Audio Warning Device To Warn That the Master Power Switch Is on When the Engine Is Off (Int. Cl. 9).
First use Nov. 25, 1968.

SN 333,003. Technic, Inc., Cranston, R.I. Filed July 18, 1969.

TECHNIC-LAB

For Apparatus for Electroplating Precious Metals Comprising a Rectifier, Thermostats, Heaters, Plating Apparatus and Tanks for Holding Solutions Capable of Depositing Metal (Int. Cl. 9).
First use June 4, 1969.

SN 336,119. Intercontinental Industries, Inc., Chicago, Ill. Filed Aug. 25, 1969.

L-C-Q

For Capacitors (Int. Cl. 9).
First use February 1969.

SN 336,658. AB Almhults Eltex, Almhult, Sweden. Filed Aug. 29, 1969.

ELTEX

For Electronic Control Apparatus Comprising Electronic Switches, Signal Units and Transmitters Used in the Production of Fabrics and Cloths (Int. Cl. 9).
First use Jan. 16, 1967; in commerce Apr. 15, 1967.

SN 340,261. Electronic Navigation Industries, Inc., Rochester, N.Y. Filed Oct. 9, 1969.



For RF Power Amplifiers (Int. Cl. 9).
First use at least as early as Aug. 6, 1969.

SN 342,662. Olson Electronic Corp., Akron, Ohio. Filed Nov. 4, 1969.

CELESTION

For High Fidelity Loudspeakers (Int. Cl. 9).
First use Sept. 15, 1969.

SN 342,762. Rival Manufacturing Company, Kansas City, Mo. Filed Nov. 5, 1969.

TOUCH·BLEND

For Domestic Electric Food Mixers and Blenders (Int. Cl. 7).
First use Sept. 30, 1969.

SN 348,269. Consumer Technology Corporation, Palo Alto, Calif. Filed Jan. 12, 1970.

SLIP'N CLIP

For Outdoor Electric Light Holders (Int. Cl. 11).
First use July 21, 1969.

SN 348,741. Sealectro Corporation, Mamaroneck, N.Y. Filed Jan. 16, 1970.

RIVET-LOC

For Certain Electronic Components—Namely, Assembled and Partially Assembled Connectors, Standoff and Feed-Through Terminals and Insulators (Int. Cls. 9 and 17).
First use Dec. 24, 1969.

SN 349,655. S. S. Kresge Company, Detroit, Mich. Filed Jan. 26, 1970.



Owner of Reg. Nos. 861,316, 893,197, and others.
For Spark Plugs, Ignition Coils, Distributor Caps and Ignition Tune-Up Kits, Including Rotor, Condenser and Electrical Contact Set (Int. Cls. 7 and 9).
First use on or before Nov. 14, 1969.

SN 351,179. Abco Quality Products Co., Philadelphia, Pa. Filed Feb. 12, 1970.

petite lancia

For Decorative Light Bulbs (Int. Cl. 11).
First use on or about June 1, 1966.

SN 353,208. Master Specialties Company, Costa Mesa, Calif. Filed Mar. 5, 1970.

TWIN-TELLITE

Owner of Reg. Nos. 563,352 and 650,818.
For Indicator Light for Such Uses as on Aircraft or Computer Panels (Int. Cl. 11).
First use during October 1969.

SN 353,911. Relaytron, Inc., Mount Vernon, N.Y. Filed Mar. 12, 1970.



No claim is made to the word "Control" apart from the mark as shown; without waiving any common law rights therein.
For Transmitters and Receivers for Remote Control of Garage Doors (Int. Cl. 9).
First use Sept. 15, 1969.

SN 358,918. RCA Corporation, New York, N.Y. Filed May 6, 1970.

SelectaVision

For Television Sets (Int. Cl. 9).
First use Apr. 29, 1970.

SN 361,178. Sternco Industries, Inc., Harrison, N.J. Filed May 28, 1970.

TRU-GLO

For Electric Light Bulbs for Home Aquariums (Int. Cl. 11).
First use Mar. 2, 1970.

SN 361,925. Fedtro, Inc., Rockville, Centre, N.Y. Filed June 8, 1970.

LIFE-O-MATIC

For Rechargeable Flashlights (Int. Cl. 11).
First use Nov. 7, 1969.

SN 362,327. Synchhro-Start Products, Inc., Skokie, Ill. Filed June 11, 1970.

Synchro-Start PRODUCTS, INC.

Applicant disclaims any right in the words "Products, Inc." apart from the mark, except applicant does not give up any common law rights that it has in said words. Owner of Reg. No. 685,480.
For Automatic Engine Controls—Namely, Overspeed Governors, Underspeed Governors, Engine Start Up and Alarm Systems, Speed Control Switches, and Solenoids (Int. Cls. 7 and 9).
First use at least as early as March 1970.

SN 364,849. KDI Navcor Inc., Norristown, Pa. Filed July 10, 1970.

MICRO-FILTER

For Electronic Radio Frequency Attenuators (Int. Cl. 9).
First use June 19, 1970.

SN 370,289. Thomas H. Doss, d.b.a. Relco Industries, Houston, Tex. Filed Sept. 10, 1970.

Pacesetter

For Electronic Metal or Mineral Detector (Int. Cl. 9).
First use Aug. 18, 1970.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 285,466. Solbern Manufacturing Corporation, Fairfield, N.J. Filed Nov. 22, 1967.

TUMBLE FILLER

The word "Filler" is disclaimed except in connection with the mark.
For Apparatus Used To Pack Food in Containers (Int. Cl. 7).
First use December 1955.

SN 297,561. Grover Manufacturing, Inc., Luckey, Ohio. Filed May 7, 1968.

HAROGATOR

For Farm Implements—Namely, Harrows (Int. Cl. 7).
First use Apr. 21, 1950.

SN 300,968. Sanders Associates, Inc., Nashua, N.H. Filed June 20, 1968.

SA

Owner of Reg. Nos. 610,301, 621,611, 885,046, and others.
For Hydraulic Power Supply Units Which Circulate and Regulate the Flow of Fluids in a Hydraulic System; and Hydraulic Control Systems Comprised of Hydraulic Servo Valves, Servo Actuators, and Other Circuit Components With the Combination Thereof Producing a Resulting Force, a Force That May Interact With an Input or Reference Function (Int. Cl. 7).
First use Dec. 27, 1967.

SN 324,699. Dana Corporation, Toledo, Ohio. Filed Apr. 16, 1969.

ANGLE SPRING

Applicant disclaims the word "Spring" apart from the mark as shown. Owner of Reg. No. 888,212.
For Clutches (Int. Cl. 7).
First use June 27, 1968.

SN 339,052. Voorhees Rubber Manufacturing Co., Inc., Berlin, Md. Filed Sept. 26, 1969.

VOORHEES

For Rubber Candy Molds (Int. Cl. 21).
First use March 1910.

SN 339,489. Motor and Industrial Tool Company (Proprietary) Limited, Vereeniging, Transvaal, Republic of South Africa. Filed July 14, 1969.

MITCO

Owner of South African Reg. No. 66/2,799, dated July 7, 1966.
For Twist Drills (Int. Cl. 7).
First use October 1966; in commerce August 1968.

SN 341,101. American Monarch Machine Company, Inc., Peoria, Ill. Filed Oct. 20, 1969.

PUL-THRU

For Coil Stock Straightener (Int. Cl. 7).
First use Sept. 23, 1969.

SN 342,706. BTR Industries Limited, London, England. Filed Nov. 5, 1969.

Owner of British Reg. No. 889,597, dated Jan. 21, 1966.
For Machine Mountings, Engine Mountings, Anti-Vibration Mountings, and Exhaust Mountings (Int. Cl. 7).

SN 343,759. S.R.L. Officina Meccanica T.A.T.R.Y., Perugia, Ellera, Italy. Filed Nov. 17, 1969.

TATRY

Owner of Italian Reg. No. 101,968, dated Apr. 28, 1951.
For Woodworking Machines—Namely, Radial Arm Saws, Band Saws, and Bench Saws (Int. Cl. 7).

SN 346,338. Andeck Industries, Inc., Temple City, Calif. Filed July 17, 1969.

BRUTE BY ANDECK

For Dune Buggy Accessories—Namely, Exhaust Manifolds and Muffler Systems Consisting of Exhaust Manifolds, Mufflers, Exhaust Pipes, Tail Pipes, Exhaust Tips and Extensions (Int. Cl. 12).
First use Feb. 20, 1969.

SN 347,576. Ambac Industries, Inc., Pittsburgh, Pa. Filed Jan. 2, 1970.

ServiPump

Applicant disclaims the word "Pump."
For Vacuum Pump (Int. Cl. 7).
First use on or about May 1, 1967.

SN 350,260. Gorton Machine Corporation, Racine, Wis. Filed Feb. 2, 1970.

GORTON

Owner of Reg. Nos. 522,498, 610,352, and 763,425.
For Machining Centers; Milling, Drilling, Tapping and Boring Machines; and Milling Machines (Int. Cl. 7).
First use Oct. 15, 1969.

SN 351,557. Tamm-Vogt Co., Inc., St. Louis, Mo. Filed Feb. 16, 1970.

Bridalane

For Knives—Namely, Stainless Steel Table Knives, and Cake Knives (Int. Cl. 8).
First use Aug. 1, 1964.

SN 351,897. Broussard Harvester Co., St. Martinville, La. Filed Feb. 20, 1970.

Hydro Cutter

The drawing is lined for the colors red and green. The word "Cutter" is disclaimed.
For Sugar Cane Harvesters and Pilers (Int. Cl. 7).
First use Sept. 15, 1969.

SN 353,648. Eco Pump Corporation, South Plainfield, N.J. Filed Mar. 10, 1970.

ECOSEALD

For Gear Pumps (Int. Cl. 7).
First use Sept. 15, 1961.

SN 354,748. Plastics Development Corporation of America, Philadelphia, Pa. Filed Mar. 20, 1970.

PDC

For Plastic Treating Equipment—Namely, Mixers, Dispensers, Foamers, and Related Equipment for Manufacturing Plastic Products (Int. Cl. 7).
First use Nov. 1, 1969.

SN 358,687. American Equipment Corporation, Sioux City, Iowa. Filed May 4, 1970.

TRUCKMASTER

For Apparatus for Incorporation Into a Truck Structure To Enable the Body To Be Hydraulically Dumped (Int. Cl. 7).
First use 1958.

SN 358,866. Ferguson Supply Alberta Limited, Calgary, Alberta, Canada. Filed May 5, 1970.

HELP-MATE

Owner of Canadian Reg. No. 165,173, dated Sept. 12, 1969.
For Hitches for Tractors (Int. Cl. 12).

SN 359,033. Truckomatic Corporation, Walcott, Iowa. Filed May 6, 1970.

TRUCKOMATIC

For Truck Wash Machine (Int. Cl. 7).
First use as early as Oct. 15, 1969.

SN 359,248. Nutron Corporation, Hingham, Mass. Filed May 8, 1970.

nutron FLUID MOTOR

The term "Fluid Motor" is disclaimed apart from the mark as a whole.
For Fluid Motors (Int. Cl. 7).
First use Apr. 10, 1970.

SN 359,295. Kennametal Inc., Latrobe, Pa. Filed May 11, 1970.

KENNAMETAL

Owner of Reg. Nos. 569,164, 602,676, and 870,441.
For Wear-Resisting Pieces Consisting of Cemented Hard Metallic Compositions—Namely, Tools and Inserts for Tools To Be Used for Working, Cutting or Shaping Metal and Other Materials, in Dies, in Centers for Lathes and Grinding Machines, in Bearings, in Pump Valves and Parts Thereof, in Teeth for Saws, in Files, in Guides, and in Glass-Handling Tongs; in Wearing Surface Parts—Namely, Pins, Rollers, Cam Followers, Bushings, Hammers, Dies, Rams, Mortars, Pestles, Cylinder Liners, Contact Points, Gauge Blocks and Tips, Balls, Grip Plates, Work Rests and Parts Thereof (Int. Cls. 7 and 8).
First use May 26, 1938.

SN 359,358. Hesston Corporation, Hesston, Kans. Filed May 11, 1970.

HEADHUNTER

For Agricultural Implements—Namely, Row Crop Harvesting Attachments for Combines (Int. Cl. 7).
First use Mar. 31, 1970.

SN 359,544. Avnet, Inc., Plainview, N.Y. Filed May 13, 1970.
Owner of Reg. Nos. 866,060 and 879,259.



For Die Casting Machines, Slurry Mixers, and Injection Molding Machines (Int. Cl. 7).
First use as early as December 1966.

SN 361,533. Benati S.p.A., Imola, Italy. Filed June 3, 1970.
The lining in the drawing is not to indicate a particular color, but is for shading purposes only. Owner of Italian Reg. No. 177,269, dated Apr. 18, 1966.



For Tracked and Wheeled Hydraulic Excavators, Tracked and Wheeled Tractor Shovels, Rippers, Angledozers, Bulldozers, Hydraulic Overhead Excavators, Tractor Graders, and Earth Movers (Int. Cl. 7).

SN 368,037. Mobile Drilling Company, Inc., Indianapolis, Ind. Filed Aug. 14, 1970.

MINUTEMAN

For Portable Rotary Earth Drilling Apparatus (Int. Cl. 7).
First use at least as early as July 27, 1970.

Class 26—Measuring and Scientific Appliances

SN 310,484. Lockheed Aircraft Corporation, Burbank, Calif. Filed Oct. 24, 1968.

LOCKHEED

Owner of Reg. Nos. 320,151, 843,601, and 843,670.
For Space Research and Surveillance Satellites, Computer Memory Devices and Memory Systems, Gauges, Testers and Test Harnesses for Fuel, Hydraulic, Oxygen and Electrical Systems, Strain Gauges and Deflection Gauges, Radar Systems, Gun Fire Control Systems, Nuclear Reactors and Isotope Power Units and Parts and Accessories Therefor (Int. Cl. 9).
First use at least as early as 1960.

SN 318,028. Butler National Corporation, Minneapolis, Minn. Filed Jan. 31, 1969.



For Aircraft Radios (Int. Cl. 9).
First use Apr. 1, 1968.

SN 319,285. Copy-Rite Corporation, Chicago, Ill. Filed Feb. 17, 1969.

COPY-RITE

Owner of Reg. No. 893,633.
For Thermal Copying Machines and Electrostatic Copying Machines (Int. Cl. 16).
First use at least as early as March 1966.

SN 327,685. Savant Instruments, Inc., Hicksville, N.Y. Filed May 19, 1969.

UNIFRAC

For Chemical Apparatus—Namely, a Means for Collecting Samples and Depositing Them in Containers—Namely, a Motorized Collector and Dispenser Moving on a Rail Mounted on a Tray Containing the Material, Said Dispenser Being Adapted To Fill Containers on a Rack Located Below Said Tray (Int. Cl. 9).
First use May 6, 1968.

SN 328,364. Tokyo Seimitsu Co., Ltd., Mitaka-shi, Tokyo, Japan. Filed May 26, 1969.

PULCOM

For Automatic Electronic Measuring and Control Devices for Measuring the Work Product of Cylindrical and Centerless Grinding Machines and Automatic Profiling Lathes and Automatically Controlling the Same (Int. Cl. 9).
First use 1957; in commerce 1965.

SN 328,856. Jetronic Industries, Inc., Philadelphia, Pa. Filed June 2, 1969.

460 SOUNDER

The word "Sounder" is disclaimed apart from the mark as a whole.
For Marine Depthmeters (Int. Cl. 9).
First use May 2, 1969.

SN 332,348. Heath Company, Benton Harbor, Mich. Filed July 11, 1969.

THUMB

For Tachometers (Int. Cl. 9).
First use at least as early as June 10, 1969.

SN 339,595. The Photo-Marker Corporation, New York, N.Y. Filed Oct. 2, 1969.



For Sensitized Copy Paper (Int. Cl. 1).
First use September 1959.

SN 340,618. Sperry Rand Corporation, Philadelphia, Pa. Filed Oct. 13, 1969.

UNISCOPE

For Computer Data Communication and Display Terminals and Control Units Therefor (Int. Cl. 9).
First use June 27, 1968.

SN 344,985. Information Magnetics Corporation, Goleta, Calif. Filed Dec. 1, 1969.

INFOMAG

For Computer Peripheral Equipment—Namely, Magnetic Recording Heads for Rotatable Metal Disks (Int. Cl. 9).
First use Oct. 10, 1969.

SN 346,728. The Cincinnati Milling Machine Company, Cincinnati, Ohio. Filed Dec. 19, 1969.

MILACRON

For Equipment To Convert Numerical Input Data Into Signals for Actuation of Mechanisms and To Measure Performance of Machine Tool Operation (Int. Cl. 9).
First use Dec. 2, 1969.

SN 351,928. Gevaert-Agfa N.V., Mortsel, Belgium. Filed Feb. 20, 1970.

DELCOPEX

Owner of Belgian Reg. No. 20,460, dated Sept. 1, 1969.
For Light-Sensitive Photographic Material for Photography, Cinematography and Radiography—Namely, Paper, Plates and Film (Int. Cl. 1).

SN 353,165. Computer Industries, Inc., Van Nuys, Calif. Filed Mar. 5, 1970.

DELTA

For Incremental Plotters (Int. Cl. 9).
First use Apr. 26, 1966.

SN 355,855. Applied Radiation Corporation, Walnut Creek, Calif. Filed Apr. 3, 1970.

MEVARAY

For Linear Accelerator for Use in Radiography (Int. Cl. 9).
First use in about October 1967.

SN 355,864. Drafting Equipment & Supply Co., Canton, Ohio. Filed Apr. 3, 1970.

MINI-DRAFT

For Portable Drafting Machine Including Protractor and Rules Mounted on a Board (Int. Cl. 9).
First use Jan. 27, 1970.

SN 355,991. Selectrons, Ltd., New York, N.Y. Filed Apr. 6, 1970.

ChemAdd

For Control Unit for Regulating the Feed of Liquid Chemicals to a Bath in Response to Elapsed Ampere-Hours (Int. Cl. 9).
First use September 1969.

SN 356,541. Autotrol Corporation, Milwaukee, Wis. Filed Apr. 13, 1970.

Autotrol

For Time or Condition Sensing Apparatus for Initiating and Controlling Regeneration or Backwash Cycles for Water Treatment Equipment (Int. Cl. 9).
First use July 8, 1964.

SN 356,542. Autotrol Corporation, Milwaukee, Wis. Filed Apr. 13, 1970.



For Time or Condition Sensing Apparatus for Initiating and Controlling Regeneration or Backwash Cycles for Water Treatment Equipment (Int. Cl. 9).
First use July 8, 1964.

SN 362,192. Eli Lilly and Company, Indianapolis, Ind. Filed June 10, 1970.

AUTOTURB

For Microbiological Assayer for Making Turbidimetric Microbiological Analysis (Int. Cl. 9).
First use May 15, 1970.

SN 364,329. Bruce D. Greenshields, Ann Arbor, Mich. Filed July 6, 1970.

DRIVOMETER

For Electronic Apparatus—Namely, a Data Accumulator and Indicator and Components Thereof for Measuring, Recording, and/or Print-Out of Desired Data From a Series of Predetermined Conditions (Int. Cl. 9).
First use at least as early as 1964.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 344,679. Charo-O Corporation, Houston, Tex. Filed Nov. 26, 1969.

CHAR-O

For Outdoor Grilles for Outdoor Cooking Such as Barbecuing (Int. Cl. 11).
First use February 1967.

SN 364,990. Irex Corporation, Riverdale, N.J. Filed July 13, 1970.



For Ovens, Infrared Heaters, and Modular Infrared Ovens and Panels for Heating, Curing, Drying, or Baking Applications (Int. Cl. 11).
First use June 1, 1970.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 362,908. Huhn Seal Company Limited, Montreal, Quebec, Canada. Filed June 17, 1970.

CARBOPLAN

For Mechanical Seals and Packings for Use in Moving Machine Elements (Int. Cl. 17).
First use in 1961; in commerce in 1961.

SN 362,936. Uniroyal, Inc., New York, N.Y. Filed June 17, 1970.

GOLDEN BEAR

For Tires (Int. Cl. 12).
First use at least as early as 1968.

SN 363,043. Huhn Seal Company Limited, Montreal, Quebec, Canada. Filed June 18, 1970.

HARMONICA

For Mechanical Seals and Packings for Use in Moving Machine Elements (Int. Cl. 17).
First use Oct. 21, 1969; in commerce Oct. 21, 1969.

SN 364,407. The Firestone Tire & Rubber Company, Akron, Ohio. Filed July 6, 1970.

DYNA-DRIVE

For Resilient Vehicle Tires (Int. Cl. 12).
First use June 18, 1970.

Class 36 — Musical Instruments and Supplies

SN 345,235. Capitol Records, Inc. (Delaware corporation), Los Angeles, Calif., by merger and change of name from Capitol Records, Inc. (California corporation), Los Angeles, Calif. Filed Dec. 4, 1969.



Applicant disclaims the term "Latino" apart from the mark as shown. Owner of Reg. Nos. 426,557, 668,983, and others.
For Phonograph Records (Int. Cl. 9).
First use Apr. 19, 1969.

SN 363,990. Sussex Records, Inc., Hollywood, Calif. Filed June 29, 1970.

SUSSEX

For Phonograph Records and Magnetic Tape (Int. Cl. 9).
First use approximately Apr. 15, 1970.

Class 44 — Dental, Medical, and Surgical Appliances

SN 347,707. Bax-S-Port Products, Inc., Chicago, Ill. Filed Jan. 5, 1970.

BAX-S-PORT

For Orthopedic Seat Back for Automobiles, Trucks, Tractors, and Other Motor Vehicles (Int. Cl. 12).
First use on or about Oct. 23, 1969.

SN 354,415. Extracorporeal Medical Specialties, Inc., Bridgeport, Pa. Filed Mar. 18, 1970.

RICKHAM

For Equipment for the Control of Hydrocephalus, and More Particularly Standard Profile Ventriculostomy Reservoirs (Int. Cl. 10).
First use on or about Nov. 2, 1964.

Class 45 — Soft Drinks and Carbonated Waters

SN 342,738. Feigenson, Incorporated, d.b.a. Faygo Beverages, Inc., Detroit, Mich. Filed Nov. 5, 1969.



No claim is made to the words "Red Pop Cola" apart from the mark. The drawing is lined for the colors red and blue. Owner of Reg. No. 779,118.
For Cola-Flavored Soft Drink (Int. Cl. 32).
First use Oct. 24, 1969.

SN 343,208. The Coca-Cola Company, Atlanta, Ga. Filed Nov. 12, 1969.

SANTIBA

Owner of Reg. No. 875,708.
For Ginger Ale (Int. Cl. 32).
First use Sept. 24, 1969.

SN 343,210. The Coca-Cola Company, Atlanta, Ga. Filed Nov. 12, 1969.

SANTIBA

Owner of Reg. No. 875,708.
For Quinine Water (Int. Cl. 32).
First use Sept. 24, 1969.

SN 343,211. The Coca-Cola Company, Atlanta, Ga. Filed Nov. 12, 1969.

SANTIBA

Owner of Reg. No. 875,708.
For Citrus Flavored Carbonated Soft Drink and Cocktail Mixer (Int. Cl. 32).
First use Sept. 24, 1969.

SN 351,903. A. B. Cernelle, Vegeholm, Sweden. Filed Feb. 20, 1970.

flower power

No claim is made to the word "Flower" apart from the mark.
For Syrups and Concentrates Used in Making Soft Drinks (Int. Cl. 32).
First use July 10, 1969; in commerce July 10, 1969.

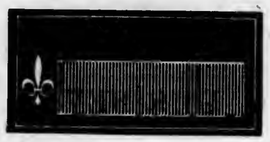
Class 46 — Foods and Ingredients of Foods

SN 282,630. The Shack, Inc., Little Rock, Ark. Filed Oct. 16, 1967.



For Barbecue Sauce (Int. Cl. 30).
First use May 23, 1967.

SN 339,012. Green Giant Company, Le Sueur, Minn. Filed Sept. 26, 1969.



The drawing is lined for the color red, but no claim is made to color. Owner of Reg. No. 846,365.
For Frozen Peas (Int. Cl. 29).
First use May 26, 1964.

SN 343,589. SCM Corporation, Cleveland, Ohio. Filed Nov. 14, 1969.

DARIPLUS

For Vegetable Shortening (Int. Cl. 29).
First use June 14, 1968.

SN 352,871. Sea Harvest Corporation (Proprietary) Limited, Saldanha, Cape Province, Republic of South Africa. Filed Mar. 2, 1970.



Owner of South African Reg. No. 69/1,149, dated Mar. 21, 1969.
For Fresh, Frozen, Smoked and Canned Fish, and Canned Shell Fish (Int. Cl. 29).

SN 357,552. Avoset Food Corporation, Oakland, Calif. Filed Apr. 22, 1970.



The mark consists of the representation of a stylized "A."
For Dairy and Non-Dairy Products—Namely, Cream and Vegetable-Based Toppings Which May Also Be Used as Creamers (Int. Cl. 29).
First use Dec. 29, 1969.

SN 359,925. United Fruit Company, Boston, Mass. Filed May 15, 1970.

AMIGO

Owner of Reg. No. 761,454.
For Fresh Vegetables and Bananas (Int. Cl. 31).
First use Dec. 17, 1957.

SN 360,125. Precision Foods Corporation, Minneapolis, Minn. Filed May 18, 1970.

MERIBEV

For Non-Fat Dry Milk Substitute in Powder Form (Int. Cl. 29).
First use Apr. 30, 1970.

SN 366,278. Waples-Platter Company, Fort Worth, Tex. Filed July 27, 1970.

RANCH STYLE

Owner of Reg. No. 726,319.
For Canned Pinto Beans, Canned Beans, Canned Spaghetti, Canned Spanish Rice, Canned Blackeyed Peas, Canned Chili, Canned Navy Beans With Bacon, and Canned Red Kidney Beans (Int. Cls. 29 and 30).
First use 1934.

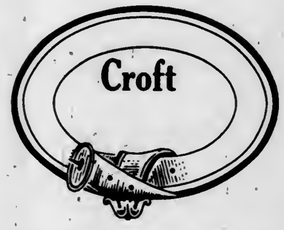
Class 47 — Wines

SN 345,715. Chandon Champagne Corporation, New York, N.Y. Filed Dec. 9, 1969.

WHITE STAR

For Champagne Wine (Int. Cl. 33).
First use Dec. 1, 1969.

SN 352,819. International Distillers and Vintners Limited, London, England. Filed Mar. 2, 1970.



Owner of British Reg. No. 911,643, dated July 6, 1967; and U.S. Reg. Nos. 307,320 and 307,321.
For Sherry Wine (Int. Cl. 33).

SN 361,752. Robin Fils & Cie, Ltd., Batavia, N.Y. Filed June 4, 1970.

ORANGE DUCK

The word "Orange" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 850,721 and 885,146.
For Sparkling Wine (Int. Cl. 33).
First use May 20, 1970.

Class 51 — Cosmetics and Toilet Preparations

SN 308,802. Neotis S.p.A., Villaguardina (Como), Italy. Filed Oct. 3, 1968.

MAGISKIN NEOTIS

Priority claimed under Sec. 44(d) on Italian application filed June 15, 1968; Reg. No. 234,281, dated Dec. 16, 1968. Owner of U.S. Reg. No. 877,614.
For Cosmetic and Toilet Preparations—Namely, Cosmetic Skin Creams and Lotions (Int. Cl. 3).

SN 309,865. Helene Curtis Industries, Inc., Chicago, Ill. Filed Oct. 17, 1968.

FORMULITE

For Hair Bleaching Preparation (Int. Cl. 3).
First use on or about Sept. 30, 1968.

SN 316,109. The Mennen Company, Morristown, N.J. Filed Jan. 8, 1969.

GOOD N' DRY

For Personal Deodorant (Int. Cl. 5).
First use Dec. 3, 1968.

SN 319,822. Laboratoire Garnier, S.A., Paris, France. Filed Mar. 5, 1969.

FLEXANE

Owner of French Reg. No. 706,792, dated Mar. 22, 1966.
For Hair Spray (Int. Cl. 3).

SN 325,708. Blecker Beauty Shops, Inc., Chicago, Ill. Filed Apr. 28, 1969.

MIRACTIN

For Protein Conditioner for Use on Hair and Skin (Int. Cl. 3).
First use in or about October 1961.

SN 333,402. Charles B. Hackney and Peter Hiland, Terminal Island, Calif., assignee of Charles B. Hackney, Terminal Island, Calif. Filed July 24, 1969.



For Perfumes (Int. Cl. 3).
First use Aug. 16, 1968.

SN 334,055. C & J De Carlo, Inc., Madison, N.J. Filed July 31, 1969.

INSTANT YOUTH

Owner of Reg. No. 750,686.
For Kits Containing Cosmetic Facial Cream Together With Head Band for Use in Application of Same (Int. Cl. 3).
First use May 29, 1969.

SN 334,148. Yardley of London, Inc., New York, N.Y. Filed July 31, 1969.

ENGLISH EYELIGHTER

Applicant disclaims the word "Eyelighter" apart from the mark as shown.
For Eye Makeup (Int. Cl. 3).
First use May 27, 1969.

SN 335,501. Chesebrough-Pond's Inc., New York, N.Y. Filed Aug. 18, 1969.

TIME BALM

Applicant disclaims the term "Balm" apart from the mark as shown.
For Facial Cream (Int. Cl. 3).
First use Aug. 6, 1969.

SN 339,210. Samuel Mitchell, d.b.a. Mitchell Chemical Co. and Mitchell Laboratories, University Heights, Ohio. Filed Sept. 29, 1969.

MITCHELL 6R6

For Sun Tan Lotion (Int. Cl. 3).
First use September 1967.

SN 339,449. Noxell Corporation, Baltimore, Md. Filed Oct. 1, 1969.

COVER GIRL SUPERSHEER

No registration rights are claimed herein for the word "Supersheer" apart from the mark as shown in the drawing but the applicant waives none of its common law rights in said mark. Owner of Reg. Nos. 404,783, 825,071, and others.
For Moisturizing Foundation Makeup (Int. Cl. 3).
First use Aug. 11, 1969.

SN 340,240. John H. Breck, Inc., Wayne, N.J. Filed Oct. 9, 1969.

BRECK BALANCE

Applicant disclaims any exclusive right to the word "Balance" apart from the mark as shown. Owner of Reg. Nos. 831,589, 874,405, and others.
For Cosmetic Skin Cleanser (Int. Cl. 3).
First use Sept. 30, 1969.

SN 340,966. Wilfred-Nelmoore, Inc., Chicago, Ill. Filed Oct. 16, 1969.



For Body Lotion (Int. Cl. 3).
First use Aug. 12, 1969.

SN 341,042. Koscot Interplanetary, Inc., Winter Park, Fla. Filed Oct. 17, 1969.

SOPHISTIK

For Perfume, Cologne, Bath Oil, Bath Pearls, and Body Talc (Int. Cl. 3).
First use at least as early as Oct. 3, 1969.

SN 342,420. Helene Curtis Industries, Inc., Chicago, Ill. Filed Nov. 3, 1969.

WIG NUTRIENT

Applicant claims exclusive right to the word "Wig" only in combination with the word "Nutrient."
For Wig Conditioner Spray (Int. Cl. 3).
First use on or about Aug. 25, 1969.

SN 346,906. Innoxa, Societe a Responsabilite Limitee, Paris, France. Filed Dec. 22, 1969.

INNOXA ONE & ALL

Owner of French Reg. No. 757,333, dated Feb. 20, 1969; and U.S. Reg. No. 175,655.
For Cosmetic Cream for the Hands and Nails (Int. Cl. 3).

SN 347,393. Chemical Associates, Inc., Houston, Tex. Filed Dec. 30, 1969.

SWIPE-A-SHAVE

Owner of Reg. Nos. 547,377, 891,067, and others.
For Razor Blade Lubricant Used in Place of Shaving Cream (Int. Cl. 3).
First use Oct. 30, 1969.

SN 347,417. The House of Harley, Inc., New York, N.Y. Filed Dec. 30, 1969.

BUCCANEER

For Perfumes (Int. Cl. 3).
First use July 1, 1969.

SN 348,794. Owen Laboratories, Inc., Dallas, Tex. Filed Jan. 16, 1970.

MEDI-SIL

For Hand Lotion (Int. Cl. 3).
First use Dec. 23, 1969.

SN 348,887. John H. Breck, Inc., Wayne, N.J. Filed Jan. 19, 1970.

ORIGINAL SKIN

Applicant disclaims any exclusive right to the term "Skin" apart from the mark as shown.
For Cosmetic Cleansing Cream (Int. Cl. 3).
First use Jan. 9, 1970.

SN 348,888. John H. Breck, Inc., Wayne, N.J. Filed Jan. 19, 1970.

CREME TOPPING

Applicant disclaims any exclusive right to the term "Creme" apart from the mark as shown.
For Hair Coloring Preparation (Int. Cl. 3).
First use Dec. 30, 1969.

SN 348,966. Mem Company, Inc., Northvale, N.J. Filed Jan. 19, 1970.

GAME PLAN

For Toilet Preparations—Namely, Eau de Cologne, and After-Shave Lotion (Int. Cl. 3).
First use Jan. 12, 1970.

SN 349,845. Frances Denney, Inc., Philadelphia, Pa. Filed Jan. 28, 1970.

FUTURA FIVE

For Make-Up Cosmetics Bronzing Gel, Cheek Gel or Rouge, and Moisturizing Skin Creams (Int. Cl. 3).
First use Dec. 29, 1969.

SN 362,661. Chesebrough-Pond's Inc., New York, N.Y. Filed June 15, 1970.

THERABEAUTICS

For Skin Toner, Facial Mask and Eye Wrinkle Cream (Int. Cl. 3).
First use May 26, 1970.

SN 364,104. Century Creations, Inc., d.b.a. Dairimetics Ltd., Venice, Calif. Filed July 1, 1970.

dari mint

Applicant disclaims the word "Mint" apart from the mark as shown, without waiving any common-law rights it may now have or may hereafter acquire therein.
For Toothpaste (Int. Cl. 3).
First use June 9, 1970.

Class 52 — Detergents and Soaps

SN 323,337. Madison Chemical Division of Chemtrust Industries Corp., Maywood, Ill. Filed Apr. 1, 1969.

CLARIFY

For Concentrate for Cleaning Glass Surfaces (Int. Cl. 3).
First use Nov. 15, 1968.

SN 339,708. Curley Company, Inc., Camden, N.J. Filed Oct. 3, 1969.

BLITZ

For Dishwashing Detergent (Int. Cl. 3).
First use September 1917.

SN 347,234. Cooper Laboratories, Inc., d.b.a. The Packer Company, Harrison, N.J. Filed Dec. 29, 1969.

PACKER'S

Owner of Reg. Nos. 162,571, 727,803, and others.
For Hair Shampooing Preparation (Int. Cl. 3).
First use November 1957.

SN 362,316. Columbian Rope Company, Auburn, N.Y. Filed June 11, 1970.

N-VIRO-PURE

For Detergents for General Household, Automotive, Industrial, and Marine Cleaning and Washing (Int. Cl. 3).
First use at least as early as June 8, 1970.

SERVICE MARKS

Class 101 — Advertising and Business

SN 332,781. Multiprint Company, Inc., Chicago, Ill. Filed July 17, 1969.

MULTIPRINT

Owner of Reg. No. 567,159.
For Printing for Others Using Offset and Photographic Processes (Int. Cl. 35).
First use 1931.

SN 333,505. Shutter Bug, Inc., Cincinnati, Ohio. Filed July 25, 1969.

SHUTTER bug

For Rendering of Technical Assistance in the Establishing and Operating of Film Processing Service Centers (Int. Cl. 35).
First use Mar. 10, 1969.
Subj. to Intf. with SN 334,913.

SN 333,506. Shutter Bug, Inc., Cincinnati, Ohio. Filed July 25, 1969.



For Rendering of Technical Assistance in the Establishing and Operating of Film Processing Service Centers (Int. Cl. 35).
First use Mar. 10, 1969.
Subj. to Intf. with SN 334,913.

SN 333,887. Aid, Portland, Maine. Filed July 30, 1969.

AID

For Retail Drug Store Services (Int. Cl. 35).
First use at least as early as June 26, 1969.

SN 352,264. Touche Ross & Co., Chicago, Ill. Filed Feb. 24, 1970.

STRATA

For Computer Programing Services (Int. Cl. 35).
First use Jan. 23, 1970.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 2 — Receptacles

905,319. RALLY. Simonsen Metal Products Corporation. MULTIPLE CLASS (Classes 2 and 32). SN 316,686. Pub. 3-31-70. Filed 1-15-69.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

905,320. GFC DESIGN. George Frost Company. MULTIPLE CLASS (Classes 3, 22, 39, 40, and 44). SN 340,453. Pub. 10-20-70. Filed 10-13-69.

Class 5 — Adhesives

905,321. ORBIBOND. AMF Incorporated, by change of name from American Machine & Foundry Company. SN 336,532. Pub. 10-20-70. Filed 8-28-69.

Class 6 — Chemicals and Chemical Compositions

905,322. DICOBLITZ. Bergische Metallwarenfabrik Dillenberg & Company KG. SN 310,059. Pub. 10-20-70. Filed 10-21-68.

905,323. GLOWON. Key Chemicals, Inc. SN 323,321. Pub. 10-20-70. Filed 4-1-69.

905,324. HOLIDAY. The Drackett Company. SN 323,436. Pub. 10-20-70. Filed 4-2-69.

905,325. NVP. GAF Corporation. SN 323,552. Pub. 10-20-70. Filed 4-3-69.

905,326. NARCODAL. Dal-Chem Products. SN 326,355. Pub. 10-20-70. Filed 5-5-69.

905,327. DURAGUARD. Duraclean Company. SN 326,638. Pub. 10-20-70. Filed 5-7-69.

905,328. ANTIPOL. Continental Products of Texas. SN 326,855. Pub. 10-20-70. Filed 5-9-69.

905,329. AUTO-MATIC. Marlenn Products Company, Inc. SN 336,705. Pub. 10-20-70. Filed 8-29-69.

905,330. REVIVIT. Camp Laboratories, Inc. SN 338,709. Pub. 10-20-70. Filed 9-24-69.

905,331. RED SNAPPER. Roberts-Boze, Inc. SN 343,002. Pub. 10-20-70. Filed 11-7-69.

905,332. OXY AND DESIGN. Occidental Petroleum Corporation. SN 344,413. Pub. 10-20-70. Filed 11-24-69.

905,333. OXY. Occidental Petroleum Corporation. SN 344,414. Pub. 10-20-70. Filed 11-24-69.

905,334. THISTROL. Amchem Products, Inc. SN 354,567. Pub. 10-20-70. Filed 3-19-70.

905,335. IRGAZYME. Geigy Chemical Corporation. SN 356,336. Pub. 10-20-70. Filed 4-9-70.

905,336. SPRAYTEC. Summit Chemical Company. SN 357,902. Pub. 10-20-70. Filed 4-27-70.

905,337. ACTI-AID. The Upjohn Company. SN 358,396. Pub. 10-20-70. Filed 4-30-70.

905,338. C DESIGN. Continental Carbon Company. SN 360,631. Pub. 10-20-70. Filed 5-25-70.

905,339. VALLEY DEW. Fremont Industries, Inc. SN 364,328. Pub. 10-20-70. Filed 7-6-70.

Class 10 — Fertilizers

905,340. NITROMITE AND DESIGN. Diamond Shamrock Corporation. SN 320,678. Pub. 10-7-69. Filed 3-4-69.

Class 11 — Inks and Inking Materials

905,341. AQUATONE. Sun Chemical Corporation. SN 349,401. Pub. 10-20-70. Filed 1-22-70.

905,342. ACRYLAM. Sun Chemical Corporation. SN 349,402. Pub. 10-20-70. Filed 1-22-70.

Class 12 — Construction Materials

905,343. SCHOOLMATES. The E. F. Hauserman Company. SN 321,219. Pub. 10-20-70. Filed 3-10-69.

905,344. SIMPLICITY COMPOUND AND MALE DESIGN. Louis A. Bergeron. SN 327,579. Pub. 10-20-70. Filed 5-19-69.

905,345. SUN/FUN AND DESIGN. Ickes-Braun Glasshouses, Inc. SN 338,570. Pub. 10-20-70. Filed 9-22-69.

905,346. MODORETARD. Mo och Domsjo Aktiebolag. SN 339,738. Pub. 10-20-70. Filed 10-3-69.

905,347. CC DESIGN. Conwed Corporation. SN 345,603. Pub. 10-20-70. Filed 12-8-69.

905,348. CONWED. Conwed Corporation. SN 345,604. Pub. 10-20-70. Filed 12-8-69.

905,349. AQUACLAD. Michigan Birch Door Manufacturers, Inc. SN 348,046. Pub. 7-14-70. Filed 1-8-70.

905,350. AIRLOCKE. O'Neil Tarpaulin and Awning Co., Inc. SN 354,094. Pub. 10-20-70. Filed 3-16-70.

905,351. BARTIKI. Amos-Thompson Corporation. SN 357,697. Pub. 10-20-70. Filed 4-23-70.

905,352. VINYLUMINUM. Alcan Aluminum Corporation. SN 357,934. Pub. 10-20-70. Filed 4-27-70.

905,353. MOZAMBIQUE-MB AND DESIGN. Jimmy Mitchell, Inc. SN 358,053. Pub. 10-20-70. Filed 4-27-70.

905,354. TUSCANY. American Olean Tile Company, Inc. SN 358,266. Pub. 10-20-70. Filed 4-29-70.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

905,355. DECORET. Dorfile Manufacturing Company. SN 232,453. Pub. 9-6-66. Filed 11-10-65.

905,356. E-LOK. Microdot Inc., assignee, by mesne assignment, of Republic Industrial Corporation. SN 281,118. Pub. 8-13-68. Filed 9-25-67.

905,357. AO SMITH INLAND AND DIAMOND DESIGN. A. O. Smith-Inland Inc. SN 338,441. Pub. 10-20-70. Filed 9-19-69.

905,358. MISCELLANEOUS DESIGN. Nuts Incorporated. SN 345,007. Pub. 10-20-70. Filed 12-1-69.

905,359. KROME-TITE STAINLESS. Tubotron, Inc. SN 345,732. Pub. 10-20-70. Filed 12-9-69.

905,360. HOLEY SMOKER. Elizabeth Emmett Plumley. SN 345,856. Pub. 10-20-70. Filed 12-10-69.

905,361. SPEED SLEEVE. Erico Products, Inc. SN 346,375. Pub. 10-20-70. Filed 12-16-69.

905,362. CALORSPA AND DESIGN. Home Steam Bath Company. SN 353,495. Pub. 10-20-70. Filed 3-9-70.

905,363. PERMA CHAIN. Florida Fishermens Supply Co., Inc. SN 356,065. Pub. 10-20-70. Filed 4-6-70.

905,364. THERMO-MATIC AND DESIGN. Sarco Company, Inc. SN 357,125. Pub. 10-20-70. Filed 4-16-70.

905,365. BOUTIQUE. Stanadyne, Inc., by change of name from Standard Screw Company. SN 357,434. Pub. 10-20-70. Filed 4-20-70.

Class 14 — Metals and Metal Castings and Forgings

905,366. DURALINOX AND DESIGN. Cegedur GP, Societe Anonyme. SN 337,432. Pub. 10-20-70. Filed 9-9-69.

905,367. VERTOHOLD. Edo Western Corporation. SN 337,908. Pub. 10-20-70. Filed 9-15-69.

905,368. ERMALLOY. Erie Malleable Iron Co. SN 338,140. Pub. 10-20-70. Filed 9-17-69.

905,369. ERMAG. Erie Malleable Iron Co. SN 338,142. Pub. 10-20-70. Filed 9-17-69.

905,370. EQUALLOY. International Harvester Company. SN 357,035. Pub. 10-20-70. Filed 4-16-70.

905,371. SMASHIES AND DESIGN. Southwest Factories, Inc. SN 357,860. Pub. 10-20-70. Filed 4-24-70.

Class 15 — Oils and Greases

905,372. HESS 101. Amerada Hess Corporation. SN 341,519. Pub. 10-20-70. Filed 10-23-69.

Class 16 — Protective and Decorative Coatings

905,373. HENCO AND DESIGN. H. A. Henderson Company. SN 318,783. Pub. 10-20-70. Filed 2-10-69.

Class 17 — Tobacco Products

905,374. TROUBADOR. Bayuk Cigars Incorporated. SN 322,141. Pub. 10-20-70. Filed 3-19-69.

905,375. HOMBRE. Alfred Dunhill of London, Inc. SN 322,571. Pub. 10-20-70. Filed 3-24-69.

905,376. THE MARK VII. Philip Morris Incorporated. SN 325,772. Pub. 10-20-70. Filed 4-28-69.

905,377. ARENA. Douwe Egberts Koninklijke Tabaksfabriek-Koffiebranderijen - Theehandel N.V. SN 364,747. Pub. 10-20-70. Filed 7-9-70.

Class 18 — Medicines and Pharmaceutical Preparations

905,378. PHYTO PHA. Seperic, Societe Anonyme. SN 281,494. Pub. 4-8-69. Filed 9-29-67.

905,379. PRE-FIL. The Emko Company. MULTIPLE CLASS (Classes 18 and 51). SN 316,361. Pub. 10-20-70. Filed 1-13-69.

905,380. DOGMATIL. Societe d'Etudes Scientifiques et Industrielles de l'Ile-de-France. SN 321,543. Pub. 10-20-70. Filed 3-12-69.

905,381. ENDLESS SUMMER. Bruce A. Brown, assignee of Clairol Incorporated. SN 326,998. Pub. 10-20-70. Filed 5-12-69.

905,382. ACTRON-DAY. Miles Laboratories, Inc. SN 333,635. Pub. 10-20-70. Filed 7-28-69.

905,383. FOCUS-DAY. Miles Laboratories, Inc. SN 333,636. Pub. 10-20-70. Filed 7-28-69.

905,384. GNC AND DESIGN. General Nutrition Corporation. SN 338,048. Pub. 10-20-70. Filed 9-16-69.

905,385. GRISOWEN. Owen Laboratories, Inc. SN 341,940. Pub. 10-20-70. Filed 10-28-69.

905,386. NEO-DRY. Ralston Purina Company. SN 359,684. Pub. 10-20-70. Filed 5-14-70.

905,387. THERMO CAINE. Carter-Wallace, Inc. SN 364,980. Pub. 10-20-70. Filed 7-13-70.

905,388. HELP IN A CAN. Carter-Wallace, Inc. SN 364,981. Pub. 10-20-70. Filed 7-13-70.

Class 19 — Vehicles

905,389. CARAVAN. The United Manufacturing Co. SN 304,997. Pub. 9-2-69. Filed 8-12-68.

905,390. PERMA-PLATE. The Firestone Tire & Rubber Company. SN 318,040. Pub. 10-20-70. Filed 1-31-69.

905,391. CHARGER. Textron Inc. SN 329,811. Pub. 2-3-70. Filed 6-12-69.

905,392. ARLBERG. Allcock, Laight & Westwood, Limited. MULTIPLE CLASS (Classes 19 and 22). SN 330,656. Pub. 10-20-70. Filed 6-23-69.

905,393. REDY-STEADY. Howard J. Baldwin. SN 334,960. Pub. 10-20-70. Filed 8-11-69.

905,394. EMERALD PARK. Gem Homes, Inc. SN 341,459. Pub. 10-20-70. Filed 10-20-69.

905,395. BIKE-MATE AND DESIGN. Wheel Mate Corporation. SN 348,468. Pub. 10-20-70. Filed 1-13-70.

Class 20 — Linoleum and Oiled Cloth

905,396. MONTAGE. The Flintkote Company, assignee of Johns-Manville Corporation. SN 329,622. Pub. 10-20-70. Filed 6-10-69.

Class 21 — Electrical Apparatus, Machines, and Supplies

905,397. AEROCOM. Aeronautical Communications Equipment, Inc. SN 288,998. Pub. 10-20-70. Filed 1-17-68.

905,398. MOBILITE. Walter Kidde & Company, Inc., assignee of Carpenter Mfg. Co. SN 307,004. Pub. 5-6-69. Filed 9-10-68.

905,399. PYRO TECH. Ultra Carbon Corporation. SN 307,770. Pub. 10-20-70. Filed 9-19-68.

905,400. LA MARCHE. Austin W. La Marche. SN 314,091. Pub. 10-20-70. Filed 12-10-68.

905,401. CHEX-IT. Sargent & Greenleaf, Inc. SN 317,973. Pub. 10-20-70. Filed 1-30-69.

905,402. CASSEIVER. H. H. Scott, Inc. SN 323,732. Pub. 10-20-70. Filed 4-4-69.

905,403. HELI-PASS. Espey Mfg. & Electronics Corp. SN 325,259. Pub. 2-17-70. Filed 4-3-69.

905,404. MISCELLANEOUS DESIGN. Lansdale Microelectronics, Inc. SN 327,029. Pub. 10-20-70. Filed 5-12-69.

905,405. BAG GUARD. National Union Electric Corporation. SN 330,003. Pub. 10–20–70. Filed 6–13–69.

905,406. ELECTRONIC MAIL BOX. Stewart-Warner Corporation. SN 330,426. Pub. 10–20–70. Filed 6–18–69.

905,407. SPEED-O-FAX AND DESIGN. Electronic Transmission Systems, Inc. SN 331,175. Pub. 10–20–70. Filed 6–27–69.

905,408. SURE MAKE. General Electric Company. SN 335,972. Pub. 10–20–70. Filed 8–22–69.

905,409. CRYOHARDWARE. Thomson-CSF. SN 336,191. Pub. 10–20–70. Filed 8–25–69.

905,410. AKOTRON. Societe de Fabrication d'Instruments de Mesure S.F.I.M. SN 337,983. Pub. 10–20–70. Filed 9–15–69.

905,411. SURGISEL. General Instrument Corporation. SN 338,563. Pub. 10–20–70. Filed 9–22–69.

905,412. HOL-GAR. Whittaker Corporation. SN 339,761. Pub. 10–20–70. Filed 10–3–69.

905,413. RECTILINEAR AND DESIGN. Rectilinear Research Corp. SN 357,291. Pub. 11–3–70. Filed 4–20–70.

905,414. SENSITRON. Motorola, Inc. SN 341,180. Pub. 10–20–70. Filed 10–20–69.

905,415. FANCIFUL CHECK DESIGN. Leslie Laszlo Vizsalyi, d.b.a. Sheen Engineering. SN 341,297. Pub. 10–20–70. Filed 10–21–69.

905,416. ARCHEROTOR. Tandy Corporation, d.b.a. Radio Shack. SN 342,377. Pub. 10–20–70. Filed 11–3–69.

905,417. SORTDOC. Allied Computer Systems, Inc. SN 344,652. Pub. 10–20–70. Filed 11–26–69.

905,418. CLASSIC. The Scott & Fetzer Company. SN 344,891. Pub. 10–20–70. Filed 11–28–69.

905,419. KA10. Digital Equipment Corporation. SN 344,954. Pub. 10–20–70. Filed 12–1–69.

905,420. MILL MASTER. McGraw-Edison Company. SN 345,191. Pub. 5–19–70. Filed 12–3–69.

905,421. CORDINATOR. Weltron Company, Inc. SN 345,275. Pub. 10–20–70. Filed 12–4–69.

905,422. ELFIN. Okaya Electric Industries Co. Ltd. SN 346,644. Pub. 10–20–70. Filed 12–18–69.

905,423. ESP. United States Research Corporation. SN 346,987. Pub. 10–20–70. Filed 12–22–69.

905,424. V/I VAPOR IMPERVIOUS AND DESIGN. General Cable Corporation. SN 347,505. Pub. 10–20–70. Filed 12–31–69.

905,425. GEL/CELL. Globe-Union Inc. SN 349,622. Pub. 10–20–70. Filed 1–26–70.

905,426. ADJUST-A-COUSTIC. Jerome Tanner. SN 350,009. Pub. 10–20–70. Filed 1–29–70.

905,427. HMC. American Electronic Laboratories, Inc. SN 351,256. Pub. 10–20–70. Filed 2–13–70.

905,428. GRAN PINCH. Abco Quality Products Co. SN 353,012. Pub. 10–20–70. Filed 3–4–70.

905,429. MEDITROL. Meditrol Automated Medication Systems. SN 356,917. Pub. 10–20–70. Filed 4–15–70.

905,430. PLUG-O-MATIC. Fedtro, Inc. SN 365,265. Pub. 10–20–70. Filed 7–15–70.

Class 22 — Games, Toys, and Sporting Goods

905,320. (See Class 3 for this trademark.)

905,392. (See Class 19 for this trademark.)

905,431. BABY SWEETUMS. Uneeda Doll Co., Inc. SN 301,788. Pub. 10–20–70. Filed 7–1–68.

905,432. LANGE. The Lange Co. SN 306,385. Pub. 10–20–70. Filed 8–30–68.

905,433. BOBSNOW. Kabushiki Kaisha Tokyo Gurafikku Dezainazu. SN 312,780. Pub. 10–20–70. Filed 11–21–68.

905,434. SNAKES IN THE GRASS. Kohner Bros., Inc. SN 320,625. Pub. 10–20–70. Filed 3–3–69.

905,435. LEGO SYSTEM AND DESIGN. A/S Lego System, Billund. SN 327,337. Pub. 10–20–70. Filed 5–15–69.

905,436. RING-A-BELL. Logan Electric Specialty Manufacturing Company. SN 327,642. Pub. 10–20–70. Filed 5–19–69.

905,437. HEEWEES. Uneeda Doll Co., Inc. SN 330,965. Pub. 10–20–70. Filed 6–25–69.

905,438. LANCELOT. Cayuga Concrete Pipe Company. SN 332,600. Pub. 10–20–70. Filed 7–15–69.

905,439. PLAYSKOOL VILLAGE. Playskool, Inc. SN 334,614. Pub. 10–20–70. Filed 8–6–69.

905,440. TYKE PLANE. Playskool, Inc. SN 334,615. Pub. 10–20–70. Filed 8–6–69.

905,441. VOYAGEUR. Sevenstrand Tackle Manufacturing Company. SN 334,622. Pub. 10–20–70. Filed 8–6–69.

905,442. "KNOWLEDGE HAMMER." Michael L. Corvin, d.b.a. Student Rescue Committee. SN 336,093. Pub. 10–20–70. Filed 8–25–69.

905,443. GURU. E. S. Lowe Company, Inc. SN 336,129. Pub. 10–20–70. Filed 8–25–69.

905,444. FLASHBACK. Aurora Plastics Corporation. SN 336,402. Pub. 10–20–70. Filed 8–27–69.

905,445. DYNO RACER. Model Products Corporation. SN 337,408. Pub. 10–20–70. Filed 9–9–69.

905,446. SOLO BALL. Olos Corporation. SN 338,059. Pub. 10–20–70. Filed 9–16–69.

905,447. INSTANT ARCHERY. Victor Comptometer Corporation. SN 338,069. Pub. 10–20–70. Filed 9–16–69.

905,448. GO-GETTER. Mattel, Inc. SN 338,849. Pub. 10–20–70. Filed 9–25–69.

905,449. FRANKLIN. Franklin Sports Industries, Inc. SN 341,921. Pub. 10–20–70. Filed 10–28–69.

905,450. CLUTCH HITTER. Amerola Products Corporation. SN 352,058. Pub. 10–20–70. Filed 2–24–70.

905,451. TWIRLIN' TWOSOME. Mattel, Inc. SN 353,628. Pub. 10–20–70. Filed 3–10–70.

905,452. HAIRY HAULER. Mattel, Inc. SN 354,081. Pub. 10–20–70. Filed 3–16–70.

905,453. WINDY. Mattel, Inc. SN 354,082. Pub. 10–20–70. Filed 3–16–70.

905,454. COSMIC CATAPAULT. Mattel, Inc. SN 354,087. Pub. 10–20–70. Filed 3–16–70.

905,455. TIN PAN PUZZLES. Parker Brothers, Inc. SN 358,512. Pub. 10–20–70. Filed 5–1–70.

905,456. CALIFORNIA 500. Mattel, Inc. SN 363,832. Pub. 9–22–70. Filed 6–29–70.

905,457. FAIRWAY II. Uniroyal, Inc. SN 364,113. Pub. 10–20–70. Filed 7–1–70.

905,458. DRAG TOONS. Mattel, Inc. SN 364,997. Pub. 10–20–70. Filed 7–13–70.

905,459. STRIP TEASER. Mattel, Inc. SN 364,998. Pub. 10–20–70. Filed 7–13–70.

905,460. SPARKSHOOTER. Mattel, Inc. SN 364,999. Pub. 10–20–70. Filed 7–13–70.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

905,461. B. Bata Shoe Company of Canada Limited. SN 276,087. Pub. 2–18–69. Filed 7–17–67.

905,462. STV. Vibratechniques S.A. SN 292,644. Pub. 10–20–70. Filed 3–6–68.

905,463. INTER-LOK. Day/Ton Progress Corp. SN 294,265. Pub. 10–20–70. Filed 3–27–68.

905,464. LONE STAR AND DESIGN. Globemaster, Inc. SN 305,043. Pub. 10–20–70. Filed 8–13–68.

905,465. AB. The Warner & Swasey Company. SN 313,041. Pub. 10–20–70. Filed 11–25–68.

905,466. AC. The Warner & Swasey Company. SN 313,042. Pub. 10–20–70. Filed 11–25–68.

905,467. SC. The Warner & Swasey Company. SN 313,043. Pub. 10–20–70. Filed 11–25–68.

905,468. CUPMASTER. Crown Molding Co., assignee of Crown Machine & Tool Co. SN 321,777. Pub. 5–12–70. Filed 3–14–69.

905,469. HISPADRAFTER. Hispano Suiza (Suisse) S.A. SN 328,984. Pub. 10–20–70. Filed 6–3–69.

905,470. HISPAMATIC. Hispano Suiza (Suisse) S.A. SN 328,985. Pub. 10–20–70. Filed 6–3–69.

905,471. HISPACOMB. Hispano Suiza (Suisse) S.A. SN 328,986. Pub. 10–20–70. Filed 6–3–69.

905,472. HISPADOFFER. Hispano Suiza (Suisse) S.A. SN 328,987. Pub. 10–20–70. Filed 6–3–69.

905,473. BACHI AND OVAL DESIGN. Bachi, Inc. SN 335,496. Pub. 10–20–70. Filed 8–18–69.

905,474. FACTOTUM. Reinhardt Friesz. SN 336,016. Pub. 10–20–70. Filed 8–22–69.

905,475. HOOKER HEADERS. Hooker Headers, Inc. SN 336,697. Pub. 10–20–70. Filed 8–29–69.

905,476. WEDGELOCK. The Basic Aluminum Castings Co. SN 336,997. Pub. 10–20–70. Filed 9–4–69.

905,477. HYDRO-SKIM. Coleco Industries, Inc. SN 340,125. Pub. 10–20–70. Filed 10–8–69.

905,478. DEFIANCE. GF Industries, Inc., d.b.a. "Swift Ohio Company." SN 340,542. Pub. 10–20–70. Filed 10–13–69.

905,479. TOBACCO COUNTER. The Seeburg Corporation of Delaware. SN 344,936. Pub. 10–20–70. Filed 12–1–69.

905,480. CERT. Pesek Engineering & Mfg. Company. SN 350,187. Pub. 10–20–70. Filed 2–2–70.

905,481. SPANISH COURT. Oneida Ltd. SN 352,194. Pub. 10–20–70. Filed 2–24–70.

905,482. AUTUMN MEMORY. Oneida Ltd. SN 352,196. Pub. 10–20–70. Filed 2–24–70.

905,483. POWER VENT. The Tappan Company. SN 353,708. Pub. 10–20–70. Filed 3–11–70.

905,484. ROTO-FLO. Gerber Sheet Metal, Inc. SN 353,749. Pub. 10–20–70. Filed 3–11–70.

905,485. DYNAMECH CORP. AND DESIGN. Dynamech Corporation. SN 354,952. Pub. 10–20–70. Filed 3–24–70.

905,486. TSK. Tokyo Seimitsu Co., Ltd. SN 355,546. Pub. 10–20–70. Filed 3–31–70.

905,487. MICRO-ROND. Wotan Werke GmbH. SN 355,696. Pub. 10–20–70. Filed 4–1–70.

905,488. SLIP "O" MATIC. Horstman Manufacturing Co., Inc. SN 355,763. Pub. 10–20–70. Filed 4–2–70.

905,489. DELROSE. Imperial Knife Associated Companies, Inc. SN 355,766. Pub. 10–20–70. Filed 4–2–70.

905,490. CHESAPEAKE. Towle Manufacturing Company, d.b.a. Carvel Hall. SN 363,404. Pub. 10–20–70. Filed 6–23–70.

Class 25 — Locks and Safes

905,491. GALAXIE. Keystone Consolidated Industries, Inc. SN 357,095. Pub. 10–20–70. Filed 4–16–70.

Class 26 — Measuring and Scientific Appliances

905,492. MULTIMEDIA. A.V. Electronics, Inc. SN 280,776. Pub. 4–22–69. Filed 9–20–67.

905,493. GSE AND DESIGN. GSE, Inc. SN 310,558. Pub. 10–20–70. Filed 10–25–68.

905,494. SPERISTAR DESIGN. Sperry Rand Corporation. SN 319,376. Pub. 11–25–69. Filed 2–17–69.

905,495. SPERRY RAND (LOGO) AND SPERISTAR DESIGN. Sperry Rand Corporation. SN 319,382. Pub. 11–25–69. Filed 2–17–69.

905,496. ROLL-O-MATIC. American Photocopy Equipment Company (Delaware corporation), assignee of American Photocopy Equipment Company (Illinois corporation). SN 325,451. Pub. 4–28–70. Filed 4–24–69.

905,497. INTERMED. Intermed Corporation. SN 332,831. Pub. 10–20–70. Filed 7–17–69.

905,498. TYPAGRAPH AND DESIGN. Typagraph Corporation. SN 335,080. Pub. 3–31–70. Filed 8–11–69.

905,499. WAT-A-MAT AND DESIGN. The Fred D. Pfening Company. SN 336,947. Pub. 10–20–70. Filed 9–3–69.

905,500. DUAL X RETICLE AND DESIGN. W. R. Weaver Company. SN 336,991. Pub. 6–23–70. Filed 9–4–69.

905,501. TELEX AND DESIGN. The Telex Corporation. SN 342,188. Pub. 10–20–70. Filed 10–30–69.

905,502. EIP AND DESIGN. EIP, Inc. SN 344,355. Pub. 10–20–70. Filed 11–24–69.

905,503. SEMEL EREM AND DESIGN. R. Marchand et Cie S.A. SN 353,069. Pub. 10–13–70. Filed 3–4–70.

Class 27 — Horological Instruments

905,504. MOSABA. Ebauches S.A. SN 338,763. Pub. 10–20–70. Filed 9–24–69.

Class 28 — Jewelry and Precious-Metal Ware

905,505. CORSAGE. The Stieff Company. SN 323,148. Pub. 10–20–70. Filed 3–28–69.

905,506. MISCELLANEOUS DESIGN. Alfred M. Ross, d.b.a. Sonarco. SN 357,636. Pub. 10–20–70. Filed 4–22–70.

Class 29 — Brooms, Brushes, and Dusters

905,507. PLASTEKO. Plastek Company. SN 350,944. Pub. 10–20–70. Filed 2–9–70.

Class 31 — Filters and Refrigerators

905,508. AQUAPLATE. Aquarium Systems, Inc. SN 343,250. Pub. 10–20–70. Filed 11–12–69.

905,509. CONNOISSEUR. Whirlpool Corporation. SN 354,929. Pub. 10–20–70. Filed 3–23–70.

Class 32 — Furniture and Upholstery

905,319. (See Class 2 for this trademark.)

905,510. OLD CAPITOL II. Keller Manufacturing Company, Inc. SN 324,294. Pub. 10–20–70. Filed 4–11–69.

905,511. DUCOR. Ducor, Inc. SN 329,407. Pub. 10–20–70. Filed 6–9–69.

905,512. LORD ALBERT. A. C. Weber & Co., Inc. SN 334,889. Pub. 10–20–70. Filed 8–8–69.

905,513. LAWNLITE AND DESIGN. Lawnlite Co:, Inc. SN 335,043. Pub. 10–20–70. Filed 8–11–69.

905,514. SLUMBERLAND. Slumberland Products Company. SN 337,870. Pub. 10–20–70. Filed 9–15–69.

905,515. TRUFLEX. Sleepmaster Products Company, Inc. SN 344,442. Pub. 10–20–70. Filed 11–24–69.

905,516. COMSTAC. Tartan Corporation, assignee of Brunswick Corporation. SN 348,109. Pub. 10–20–70. Filed 1–9–70.

905,517. CAMDEN. Thomas P. Beals Furniture Company. SN 362,474. Pub. 10–20–70. Filed 6–12–70.

905,518. DUAL PEDIC. Knight of Rest Products. SN 363,315. Pub. 10–20–70. Filed 6–22–70.

905,519. CONVERT-A-BUNK. Di Giorgio Leisure Products, Inc. SN 363,639. Pub. 10–20–70. Filed 6–25–70.

905,520. CONVOLAIRE, The B. F. Goodrich Company. SN 363,653. Pub. 10–20–70. Filed 6–25–70.

Class 34 — Heating, Lighting, and Ventilating Apparatus

905,521. GAS-PAK. Eclipse Fuel Engineering Co. SN 290,834. Pub. 6–2–70. Filed 2–12–68.

905,522. CARNES. Wehr Croporation. SN 334,651. Pub. 10–20–70. Filed 8–6–69.

905,523. BU-T-LITE AND DESIGN. Ronson Corporation. SN 345,374. Pub. 10–20–70. Filed 12–4–69.

905,524. PROFI-TIER. Jos. M. Linsey Corp. SN 347,997. Pub. 10–20–70. Filed 1–8–70.

905,525. GARLAND. Welbilt Corporation. SN 364,019. Pub. 10–20–70. Filed 6–30–70.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

905,526. WHISPERJET AND DESIGN. White Stores, Inc. SN 359,164. Pub. 10–20–70. Filed 5–7–70.

905,527. CALIBRATED. The General Tire & Rubber Company. SN 359,350. Pub. 10–20–70. Filed 5–11–70.

Class 36 — Musical Instruments and Supplies

905,528. PARAMOUNT AND DESIGN. Paramount Pictures Corporation. SN 320,733. Pub. 10–20–70. Filed 3–4–69.

905,529. PARAMOUNT. Paramount Pictures Corporation. SN 321,976. Pub. 10–20–70. Filed 3–17–69.

905,530. DISCOS VENTURA. Certron Corporation. SN 332,917. Pub. 10–20–70. Filed 7–18–69.

905,531. MAVERICK. Hammond Corporation. SN 346,246. Pub. 5–5–70. Filed 12–15–69.

905,532. ACC-U-TUNE. Lyman Metal Products Corp. SN 348,478. Pub. 10–20–70. Filed 1–14–70.

905,533. MEDEQUIP. Medequip Corporation. SN 355,186. Pub. 10–20–70. Filed 3–27–70.

905,534. MISCELLANEOUS DESIGN. Grolier Incorporated. SN 358,744. Pub. 10–20–70. Filed 5–4–70.

905,535. THE CLASSITRON. Grolier Incorporated. SN 358,745. Pub. 10–20–70. Filed 5–4–70.

905,536. 200. Minnesota Mining and Manufacturing Company. SN 365,399. Pub. 10–20–70. Filed 7–16–70.

905,537. 201. Minnesota Mining and Manufacturing Company. SN 365,400. Pub. 10–20–70. Filed 7–16–70.

905,538. 202. Minnesota Mining and Manufacturing Company. SN 365,401. Pub. 10–20–70. Filed 7–16–70.

905,539. 203. Minnesota Mining and Manufacturing Company. SN 365,402. Pub. 10–20–70. Filed 7–16–70.

905,540. 290. Minnesota Mining and Manufacturing Company. SN 365,403. Pub. 10–20–70. Filed 7–16–70.

Class 37 — Paper and Stationery

905,541. SOVEREIGN. All-States Business Products Corp. of New Jersey. SN 304,851. Pub. 10–20–70. Filed 8–12–68.

905,542. FIDDLE STICKS. Sanford Ink Company. SN 352,865. Pub. 10–20–70. Filed 3–2–70.

Class 38 — Prints and Publications

905,543. THE BEAM. Bristol-Myers Company. SN 330,349. Pub. 10–20–70. Filed 6–18–69.

905,544. PHOTO WEEKLY. Billboard Publications, Inc. SN 332,443. Pub. 10–20–70. Filed 7–14–69.

905,545. MACHINE GUN CAMERA PICTURES. Des Moines Register and Tribune Company. SN 332,609. Pub. 10–20–70. Filed 7–15–69.

905,546. BEAUTIFUL PEOPLE. Mod-Elles, Inc. SN 332,960. Pub. 10–20–70. Filed 7–18–69.

905,547. ISLANDER. Hilton Head Island Chamber of Commerce. SN 335,022. Pub. 10–20–70. Filed 8–11–69.

905,548. CANDID PRESS. Novel Books, Inc. SN 335,368. Pub. 10–20–70. Filed 8–14–69.

905,549. C.O.B. AND DESIGN. Thomas J. Tupper, Jr. SN 336,622. Pub. 10–20–70. Filed 8–28–69.

905,550. THE NATIONAL LOCKSMITH. National Publishing Company. SN 339,447. Pub. 10–20–70. Filed 10–1–69.

905,551. SIGNAL WORLD. Signal Oil and Gas Company. SN 350,619. Pub. 10–20–70. Filed 2–5–70.

905,552. QUIZ-ME AND DESIGN. Western Publishing Company, Inc. SN 350,988. Pub. 10–20–70. Filed 2–9–70.

905,553. THOUGHTS OF GOLD. Hallmark Cards, Incorporated. SN 354,171. Pub. 10–20–70. Filed 3–16–70.

905,554. MADHOUSE GLADS. Archie Enterprises, Inc. SN 356,600. Pub. 10–20–70. Filed 4–13–70.

905,555. LAKE FOREST PRESS. Robert I. Jones, d.b.a. Lake Forest Press. SN 357,374. Pub. 10–20–70. Filed 4–20–70.

905,556. INVITATION TO FLYING. Ziff-Davis Publishing Company. SN 357,460. Pub. 10–20–70. Filed 4–20–70.

905,557. PERCEIVER. The American Academy of Ophthalmology and Otolaryngology. SN 359,484. Pub. 10–20–70. Filed 5–12–70.

905,558. BASE LINES. Dixie Youth Baseball, Inc. SN 359,829. Pub. 10–20–70. Filed 5–15–70.

905,559. VOTRE PLANIFICATEUR DE SUCCES PERSONNEL AND DESIGN. Success Motivation Institute, Inc. SN 363,396. Pub. 10–20–70. Filed 6–23–70.

905,560. WEBCO. The Holes-Webway Co. SN 363,613. Pub. 10–20–70. Filed 6–25–70.

Class 39 — Clothing

905,320. (See Class 3 for this trademark.)

905,561. IMPERIAL LANDROW. Federated Department Stores, Inc., d.b.a. Burdine's. SN 340,785. Pub. 10–20–70. Filed 10–15–69.

905,562. LANDROW CLOTHES. Federated Department Stores, Inc., d.b.a. Burdine's. SN 340,786. Pub. 10–20–70. Filed 10–15–69.

905,563. ARRIVO. The Williams Manufacturing Company. SN 341,236. Pub. 10–20–70. Filed 10–20–69.

905,564. THE CLOTHING ORCHARD. Evansham Corporation. SN 347,687. Pub. 10–20–70. Filed 1–5–70.

905,565. LUSTERENE. Cluett, Peabody & Co., Inc. SN 348,759. Pub. 10–20–70. Filed 1–16–70.

905,566. BENSKY. Bensky Furriers, Incorporated. SN 348,881. Pub. 10–20–70. Filed 1–19–70.

905,567. THE WAY TO GO AND DESIGN. H. Daroff & Sons, Inc. SN 349,335. Pub. 10–20–70. Filed 1–22–70.

905,568. OUR L'EGGS FIT YOUR LEGS. Hanes Corporation. SN 349,350. Pub. 10–20–70. Filed 1–22–70.

905,569. DOMINIC D'BRUZZI. Grodins of California, Inc. SN 349,632. Pub. 10–20–70. Filed 1–26–70.

905,570. A LORETTA FASHION. Frayne Sportswear Manufacturer Inc. SN 349,763. Pub. 10–20–70. Filed 1–27–70.

905,571. WONDERCORD. David Crystal, Inc. SN 351,686. Pub. 10–20–70. Filed 2–18–70.

905,572. SPRINGCREST. Topco Associates, Inc. SN 355,505. Pub. 10–20–70. Filed 3–31–70.

905,573. CHECKABERRY. Levin & Co., Inc. SN 356,712. Pub. 10–20–70. Filed 4–13–70.

905,574. WONDERCORD. David Crystal, Inc. SN 356,864. Pub. 10–20–70. Filed 4–14–70.

905,575. EKTOR. Interektor Societe Anonyme. SN 356,976. Pub. 10–20–70. Filed 4–15–70.

905,576. TRICO-SHAPE. Sarong, Inc. SN 357,568. Pub. 10–20–70. Filed 4–22–70.

905,577. SASSAFRAS AND CLOVER. Wembley Industries, Inc. SN 358,491. Pub. 10–20–70. Filed 4–30–70.

905,578. HIGH RIDER. Dexter Shoe Company. SN 358,710. Pub. 10–20–70. Filed 5–4–70.

905,579. GUNSTON. Gunston, Inc. SN 358,746. Pub. 10–20–70. Filed 5–4–70.

Class 40 — Fancy Goods, Furnishings, and Notions

905,320. (See Class 3 for this trademark.)

905,580. HAZEL BISHOP. Bishop Industries Inc. MULTIPLE CLASS (Classes 40 and 51). SN 308,357. Pub. 10–20–70. Filed 9–27–68.

905,581. LOOM TREASURES. Loom Treasures, Inc. SN 345,545. Pub. 10–20–70. Filed 12–8–69.

Class 41 — Canes, Parasols, and Umbrellas

905,582. ZODIAC. Horsman Dolls Inc. SN 342,643. Pub. 10–20–70. Filed 11–4–69.

905,583. HOROSCOPE. Horsman Dolls Inc. SN 342,644. Pub. 10–20–70. Filed 11–4–69.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

905,584. WHIPPERSNAPPER. Klopman Mills, Inc. SN 342,292. Pub. 10–20–70. Filed 10–31–69.

905,585. SYNVAR. Ludlow Corporation. SN 342,293. Pub. 10–20–70. Filed 10–31–69.

905,586. NYLA-Q. A-Q Mills, Inc. SN 342,381. Pub. 10–20–70. Filed 11–3–69.

905,587. BITEXA. NINO Gesellschaft mit beschrankter Haftung & Co. SN 343,152. Pub. 10–20–70. Filed 11–10–69.

905,588. POLYCRINKLE. United Merchants and Manufacturers, Inc. SN 343,193. Pub. 10–20–70. Filed 11–10–69.

905,589. ASTROGLASS. J. P. Stevens & Co., Inc. SN 343,338. Pub. 10–20–70. Filed 11–12–69.

905,590. LASTO-FLEX. Glamorise Foundations, Inc. SN 344,111. Pub. 10–20–70. Filed 11–20–69.

905,591. JEY-NES. Mitsui & Co. (U.S.A.) Inc. SN 344,124. Pub. 10–13–70. Filed 11–20–69.

905,592. BAINBRIDGE AND BOAT DESIGN. Howe & Bainbridge, Inc. SN 344,236. Pub. 10–20–70. Filed 11–21–69.

905,593. ROYALTEE AND DESIGN. California Weavers, Inc. SN 345,302. Pub. 10–20–70. Filed 12–4–69.

905,594. CONSOL. Consolidated Enterprises, Inc. SN 345,921. Pub. 10–20–70. Filed 12–11–69.

905,595. CONSOL CEI AND DESIGN. Consolidated Enterprises, Inc. SN 345,922. Pub. 10–20–70. Filed 12–11–69.

905,596. CEI DESIGN. Consolidated Enterprises, Inc. SN 345,923. Pub. 10–20–70. Filed 12–11–69.

Class 44 — Dental, Medical, and Surgical Appliances

905,320. (See Class 3 for this trademark.)

905,597. LUMA-CORD. Fiber Photics, Inc. SN 320,137. Pub. 10–20–70. Filed 2–26–69.

Class 45 — Soft Drinks and Carbonated Waters

905,598. LARGE CHARGE. M & J Sales Co., Inc. SN 305,559. Pub. 10–20–70. Filed 8–20–68.

905,599. CO-LOW. Franklin Beverage Company. SN 307,018. Pub. 10–20–70. Filed 9–10–68.

905,600. LE GOUT. Fearn International Inc. SN 342,431. Pub. 10–20–70. Filed 11–3–69.

905,601. BRRR AND DESIGN. General Foods Corporation. SN 345,458. Pub. 10–20–70. Filed 12–5–69.

905,602. DEACON JONES. Deacon Jones, Inc. SN 348,412. Pub. 10–20–70. Filed 1–13–70.

905,603. SWEEP. Nicholas V. Caruano, d.b.a. Sweep Beverage Company. SN 354,949. Pub. 10–20–70. Filed 3–24–70.

905,604. ALERT. Theonett & Co. SN 358,486. Pub. 10–20–70. Filed 4–30–70.

Class 46 — Foods and Ingredients of Foods

905,605. ZERO. Cumberland Packing Corp. SN 294,171. Pub. 8–13–68. Filed 3–26–68.

905,606. PECO SWEET. Pecos Cantaloupe Co., Inc. SN 319,069. Pub. 10–20–70. Filed 2–13–69.

905,607. KING-LO-GURT. American Whipped Products, Inc. SN 322,398. Pub. 10–20–70. Filed 3–21–69.

905,608. BROWN & HALEY ALMOND ROCA. Brown & Haley. SN 322,959. Pub. 10–20–70. Filed 3–27–69.

905,609. MISCELLANEOUS DESIGN. Beluga Caviar Corp. SN 326,016. Pub. 10–20–70. Filed 4–30–69.

905,610. FRESH AS TOMORROW. Bud Antle, Incorporated. SN 331,849. Pub. 10–20–70. Filed 7–7–69.

905,611. WALDORF. Keebler Company. SN 333,141. Pub. 10–20–70. Filed 7–22–69.

905,612. LI'L SNACKERS. Crowley's Milk Company, Inc. SN 340,376. Pub. 10–20–70. Filed 10–10–69.

905,613. SHMOINK AND DESIGN. Worthington Foods, Inc. SN 342,688. Pub. 10–20–70. Filed 11–4–69.

905,614. BLUESTEM. Sam Wylde Flour Company, Inc., d.b.a. Sam Wylde Flour Co. SN 344,489. Pub. 10–20–70. Filed 11–24–69.

905,615. HYDE PARK AND DESIGN. Malone & Hyde, Inc. SN 344,722. Pub. 10–20–70. Filed 11–26–69.

905,616. LAND HO. Proteus Foods & Industries, Inc. SN 344,730. Pub. 10–20–70. Filed 11–26–69.

905,617. PUDDING CUP. Del Monte Corporation. SN 346,372. Pub. 10–20–70. Filed 12–16–69.

905,618. LITTLE PUP. Armour-Dial, Inc. SN 348,632. Pub. 10–20–70. Filed 1–15–70.

905,619. CAT BLANCHE. Armour-Dial, Inc. SN 348,637. Pub. 10–20–70. Filed 1–15–70.

905,620. BACON COMIN' UP. Armour-Dial, Inc. SN 348,639. Pub. 10–20–70. Filed 1–15–70.

905,621. FAIR SEAS. Ocean Garden Products, Inc. SN 353,704. Pub. 10–20–70. Filed 3–11–70.

905,622. WHARF-INN. Seeman Brothers, Inc. SN 353,921. Pub. 10–6–70. Filed 3–12–70.

905,623. BEER BUDDY'S. KCH International, Inc. SN 354,635. Pub. 10–20–70. Filed 3–19–70.

905,624. YORK COUNTY DUTCH. Hungerford Packing Co., Inc. SN 355,036. Pub. 10–20–70. Filed 3–25–70.

905,625. BURGER BUDS. Ralston Purina Company. SN 355,583. Pub. 10–20–70. Filed 4–1–70.

905,626. MIDGET. Meyer Tomatoes. SN 365,397. Pub. 10–20–70. Filed 7–16–70.

Class 47 — Wines

905,627. SMOKY MOUNTAIN. Monarch Wine Company of Georgia. SN 356,209. Pub. 10–20–70. Filed 4–7–70.

905,628. SANGROLE. United Vintners, Inc., d.b.a. Italian Swiss Colony. SN 365,874. Pub. 10–20–70. Filed 7–22–70.

Class 48 — Malt Beverages and Liquors

905,629. KELLER BEER AND DESIGN. N.V. Bierbrouwerij "De Drie Hoefijzers." SN 336,666. Pub. 10–20–70. Filed 8–29–69.

905,630. GETTELMAN. Miller Brewing Company. SN 345,484. Pub. 10–20–70. Filed 12–5–69.

905,631. STAG. Carling Brewing Company, Incorporated, d.b.a. Carling Brewing Company. SN 353,728. Pub. 10–20–70. Filed 3–11–70.

Class 49 — Distilled Alcoholic Liquors

905,632. SOUTHERN MANSION. Blanchard Importing & Distributing Co., Inc. SN 351,639. Pub. 10–20–70. Filed 2–17–70.

Class 50 — Merchandise Not Otherwise Classified

905,633. MISCELLANEOUS DESIGN. Kalliroscope Corporation. SN 331,213. Pub. 10–20–70. Filed 6–27–69.

905,634. CHIMES FOR CHANGE. Greensboro Sheltered Workshop-Adult Activities. SN 335,567. Pub. 10–20–70. Filed 8–18–69.

905,635. CC DESIGN. Conwed Corporation. SN 345,605. Pub. 10–20–70. Filed 12–8–69.

905,636. CONWED. Conwed Corporation. SN 345,606. Pub. 10–20–70. Filed 12–8–69.

905,637. BENCO. Benco Plastics, Inc. SN 345,789. Pub. 10–20–70. Filed 12–10–69.

905,638. SENTINEL. Valley Forge Flag Company, Inc. SN 348,459. Pub. 10–20–70. Filed 1–13–70.

905,639. MISCELLANEOUS DESIGN. Diamond Crystal Salt Company. SN 349,600. Pub. 10–20–70. Filed 1–26–70.

Class 51 — Cosmetics and Toilet Preparations

905,379. (See Class 18 for this trademark.)

905,580. (See Class 40 for this trademark.)

905,640. PRANK. Richard Hudnut. SN 304,224. Pub. 10–20–70. Filed 8–2–68.

905,641. VIVE LE BAIN. Shulton, Inc. SN 308,750. Pub. 4–22–69. Filed 10–3–68.

905,642. SHEER TONE. Jaquet, Inc., d.b.a. Jaquet. SN 336,575. Pub. 10–20–70. Filed 8–28–69.

905,643. SHEER DRY. Tussy Cosmetics, Inc. SN 337,144. Pub. 10–20–70. Filed 9–5–69.

905,644. AMARANTHE. Pfizer Inc., by change of name from Chas. Pfizer & Co., Inc. SN 337,193. Pub. 10–20–70. Filed 9–5–69.

905,645. YANKEE CHEEK. Carter-Wallace, Inc. SN 340,473. Pub. 10–20–70. Filed 10–13–69.

905,646. NULACO FASHION. Nu-Living, Inc. SN 341,541. Pub. 10–20–70. Filed 10–23–69.

905,647. LISA ROGERS. A. H. Robins Company, Incorporated. SN 343,332. Pub. 10–20–70. Filed 11–12–69.

905,648. FORMULA 405. Doak Pharmacal Co., Inc. SN 344,700. Pub. 10–20–70. Filed 11–26–69.

905,649. JORDANO'S AND DESIGN. William J. Jordan, d.b.a. Jordano's. SN 345,079. Pub. 10–20–70. Filed 12–2–69.

905,650. FASET. Waverly Beauty Products Inc. SN 345,401. Pub. 10–20–70. Filed 12–4–69.

905,651. POTIONS OF THE ZODIAC. Cosmet, Inc., assignee of Zodiance, Inc. SN 349,415. Pub. 10–20–70. Filed 1–22–70.

905,652. SUCCES BY DAY. Pfizer Inc., by change of name from Chas. Pfizer & Co., Inc. SN 357,791. Pub. 10–20–70. Filed 4–24–70.

905,653. CLOSE-UP TOOTH-PASTE FOR THE CLOSE-UP SMILE. Lever Brothers Company. SN 360,278. Pub. 10–20–70. Filed 5–20–70.

905,654. YOUNG BODY. Lever Brothers Company. SN 360,284. Pub. 10–20–70. Filed 5–20–70.

Class 52 — Detergents and Soaps

905,655. SPARKLE-BRIGHT. The Reiling Manufacturing Co. SN 332,255. Pub. 10–20–70. Filed 7–10–69.

905,656. PHYLISAN. Pettibone Laboratories, Inc. SN 354,939. Pub. 10–20–70. Filed 3–24–70.

905,657. SERCO SER AND DESIGN. S. E. Rykoff & Co. SN 359,308. Pub. 10–20–70. Filed 5–11–70.

Service Marks

Class 100 — Miscellaneous

905,658. REGINE. Regine Zylberberg. SN 294,989. Pub. 10–20–70. Filed 4–4–68.

905,659. U-RENT FURNITURE U AND DESIGN. U-Rent Furniture, Inc. SN 313,748. Pub. 10–20–70. Filed 12–5–68.

905,660. ALA AND MAP AND CIRCLE DESIGN. American Leaser's Association, Inc. SN 321,884. Pub. 10–20–70. Filed 3–17–69.

905,661. CCMCO. Commercial Cam & Machine Co. SN 336,260. Pub. 10–20–70. Filed 8–14–69.

905,662. SIR MAC AND DESIGN. McCrory Corporation. SN 336,590. Pub. 10–20–70. Filed 8–28–69.

905,663. AIR LA CARTE AND AIRPLANE DESIGN. ARA Services, Inc. SN 338,339. Pub. 10–20–70. Filed 9–19–69.

905,664. AIR LA CARTE. ARA Services, Inc. SN 338,340. Pub. 10–20–70. Filed 9–19–69.

905,665. COMBINE DESIGN. Automated Lawn Builders of the Midwest, Inc. SN 358,897. Pub. 10–20–70. Filed 5–6–70.

905,666. PATHFINDER TRAVEL PARK SYSTEM AND DESIGN. Computerized Pathfinder Travel Parks, Inc. SN 359,052. Pub. 10–20–70. Filed 5–7–70.

905,667. THE MAGIC PAN. Magic Pan, Inc. SN 361,935. Pub. 10–20–70. Filed 6–8–70.

905,668. SHERATON HOUSE. ITT Sheraton Corporation of America. SN 364,191. Pub. 10–20–70. Filed 7–2–70.

905,669. CONVATEL. ITT Sheraton Corporation of America. SN 364,192. Pub. 10–20–70. Filed 7–2–70.

905,670. THE MAGIC PAN AND DESIGN. Magic Pan, Inc. SN 364,616. Pub. 10–20–70. Filed 7–8–70.

Class 101 — Advertising and Business

905,671. SCHAWKGRAPHICS. Schawk Graphics, Inc. SN 313,733. Pub. 10–20–70. Filed 12–5–68.

905,672. MARVIN'S SPORT CITY. Stuart Distributing Company, Inc. SN 324,527. Pub. 10–20–70. Filed 4–14–69.

905,673. COMPUTER CONTROLS AND DESIGN. Computer Controls Corp. SN 326,824. Pub. 10–20–70. Filed 5–9–69.

905,674. READY-MEN. Ready-Men, Inc. SN 331,540. Pub. 10–20–70. Filed 7–1–69.

905,675. MISCELLANEOUS DESIGN. Integrated Analysis Corporation. SN 335,983. Pub. 10–20–70. Filed 8–22–69.

905,676. DYNATAX. Consolidated Computing Sciences, Inc. SN 336,772. Pub. 10–20–70. Filed 9–2–69.

905,677. LABORTEMP. AGS Services Corporation. SN 336,902. Pub. 10–20–70. Filed 9–3–69.

905,678. INFO-DIAL. McGraw-Hill, Inc. SN 337,821. Pub. 10–20–70. Filed 9–12–69.

905,679. ROOSTER DESIGN. Frederick B. Nichols, d.b.a. The Fred Nichols Company. SN 338,802. Pub. 10–20–70. Filed 9–24–69.

905,680. PARTYCARD. J. C. Penney Company, Inc. SN 340,818. Pub. 10–20–70. Filed 10–15–69.

905,681. INTEGON CORPORATION AND DESIGN. Integon Corporation. SN 352,726. Pub. 10–20–70. Filed 3–2–70.

Class 102 — Insurance and Financial

905,682. CONVESTO. Convesto. SN 320,440. Pub. 10–20–70. Filed 3–3–69.

905,683. INTERBANK. Interbank Card Association. SN 320,608. Pub. 10–20–70. Filed 3–3–69.

905,684. IN DESIGN. Industrial National Bank of Rhode Island. SN 325,607. Pub. 10–20–70. Filed 4–25–69.

905,685. CFC. Civic Finance Corporation. SN 341,011. Pub. 10–20–70. Filed 10–17–69.

Class 103 — Construction and Repair

905,686. DIAMOND ETC. AND DESIGN. Diamond Quality Transmission Centers of America Inc. SN 291,846. Pub. 10–20–70. Filed 2–26–68.

905,687. SF AND DESIGN. Santa Fe International Corporation. SN 320,742. Pub. 10–20–70. Filed 3–4–69.

905,688. MISCELLANEOUS DESIGN. Mr. Transmission, Inc. SN 346,099. Pub. 10–20–70. Filed 12–12–69.

Class 104 — Communication

905,689. 7 AND DESIGN. American Broadcasting Companies, Inc. SN 358,231. Pub. 10–20–70. Filed 4–29–70.

Class 105 — Transportation and Storage

905,690. CASPARY-WENDELL AND DESIGN. Santa Fe International Corporation. SN 318,987. Pub. 10–20–70. Filed 2–12–69.

Class 107 — Education and Entertainment

905,691. THE CHICAGO STRUGGLERS. Hillstrom Enterprises, Inc. SN 350,487. Pub. 10–20–70. Filed 2–4–70.

905,692. EDUPUTER. Programming Sciences Corporation. SN 351,388. Pub. 10–20–70. Filed 2–16–70.

SUPPLEMENTAL REGISTER

Theso registrations are not subject to opposition.

Class 6 — Chemicals and Chemical Compositions

905,693. Pettibone Laboratories, Inc., New York, N.Y. SN 337,685. Filed P.R. 9–11–69; Am. S.R. 10–5–70.

PETTIBONE

For Chemical Deodorant for Commercial, Industrial and Household Use (Int. Cl. 5).
First use Sept. 2, 1969.

Class 46 — Foods and Ingredients of Foods

905,694. Long Island Salt Water Taffy Co., East Hampton, N.Y. SN 353,770. Filed 3–11–70.



Long Island

For Salt Water Taffy (Int. Cl. 30).
First use on or about June 24, 1968.

905,695. Domain Industries, Inc., New Richmond, Wis., by change of name from Doughboy Industries, Inc., New Richmond, Wis. SN 360,198. Filed P.R. 5-19-70; Am. S.R. 10-1-70.

WHOLE HOG

For Concentrate Feeds for Swine (Int. Cl. 31).
First use Aug. 7, 1968.

TRADEMARK REGISTRATIONS RENEWED

36,221. CAMEO AND DESIGN. Cl. 46 (Int. Cl. 30). 4-9-01.
272,999. MY PREFERENCE. Cl. 46 (Int. Cls. 29, 30, and 31). 7-15-30.
274,476. MENTHO-LYPTUS. Cl. 18 (Int. Cl. 5). 8-26-30.
274,556. PETROFLEX. Cl. 35 (Int. Cl. 17). 9-2-30.
276,273. DENTLETS. Cl. 46 (Int. Cl. 30). 10-14-30.
277,482. "FROMAGE DE LA TRAPPE" ETC. AND DESIGN. Cl. 46 (Int. Cl. 29). 11-11-30.
277,565. ALACTA. Cl. 46 (Int. Cl. 29). 11-18-30.
277,837. REPRESENTATION OF FLAMINGO. Cl. 12 (Int. Cl. 19). 11-25-30.
277,983. PICKUPS. Cl. 46 (Int. Cl. 30). 12-2-30.
278,289. VITALITE. Cl. 22 (Int. Cl. 28). 12-16-30.
278,382. BUZABEL. Cl. 21 (Int. Cl. 9). 12-16-30.
278,665. LT 1 CONTROL. Cl. 21 (Int. Cl. 9). 12-23-30.
278,762. RAMET. Cl. 14 (Int. Cl. 6). 12-30-30.
278,993. PENGUIN. Cl. 46 (Int. Cl. 31). 1-6-31.
279,868. X "BLUE-X" AND DESIGN. Cl. 46 (Int. Cl. 31). 2-3-31.
280,850. BLONDIE. Cl. 38 (Int. Cl. 16). 3-3-31.
280,978. SAMSON. Cl. 50 (Int. Cl. 24). 3-3-31.
280,982. HUMIDIGUIDE. Cl. 26 (Int. Cl. 9). 3-3-31.
281,095. ALKANOL. Cl. 6 (Int. Cl. 1). 3-10-31.
281,291. MIXMASTER. Cl. 21 (Int. Cl. 7). 3-17-31.
281,322. "ARROWCRAFT" AND REPRESENTATION OF ARROW. Cl. 42 (Int. Cls. 24 and 27). 3-17-31.
281,330. "DU PONT" WITHIN OVAL DESIGN. Cls. 6, 16, and 51 (Int. Cls. 1 and 2). 3-17-31.
281,683. CONTROLENS. Cl. 34 (Int. Cl. 11). 3-24-31.
281,851. OKA. Cl. 46 (Int. Cl. 29). 3-31-31.
282,041. SAMSON. Cl. 42 (Int. Cl. 24). 4-7-31.
282,149. FEATURE. Cl. 37 (Int. Cl. 16). 4-14-31.
444,250. LEVEL-REST. Cl. 32 (Int. Cl. 20). 9-26-50.
444,416. INDIAN DEER. Cl. 46 (Int. Cl. 31). 2-20-51.
444,449. BODIFORM. Cl. 32 (Int. Cl. 20). 3-27-51.
522,165. SIL-VAR. Cl. 16 (Int. Cl. 2). 2-6-51.
527,693. PIN-O-SOL. Cl. 52 (Int. Cl. 3). 7-18-50.
527,935. STYLE-A-FOLD. Cl. 36 (Int. Cl. 20). 7-18-50.
528,081. ENTHRALL. Cl. 39 (Int. Cl. 25). 7-25-50.
528,213. "ELKHART" AND DESIGN. Cl. 13 (Int. Cl. 9). 8-1-50.
528,379. TELE-VISION. Cl. 27 (Int. Cl. 14). 8-1-50.
528,562. PERMA-GRIP. Cl. 51 (Int. Cl. 5). 8-8-50.
528,607. CELOTEX. Cl. 12 (Int. Cl. 19). 8-8-50.
528,948. FIT-RITE. Cl. 39 (Int. Cl. 25). 8-15-50.
529,059. EL MOROCCO. Cl. 51 (Int. Cl. 3). 8-15-50.
529,121. PARKER PROCESSES AND DESIGN. Cl. 6 (Int. Cls. 1 and 2). 8-15-50.
530,311. SOUTHERN ROYAL. Cl. 46 (Int. Cl. 29). 9-5-50.
531,064. METASAP AND DESIGN. Cl. 6 (Int. Cl. 1). 9-19-50.
531,511. PARKER PROCESS AND DESIGN. Cl. 6 (Int. Cls. 1 and 2). 10-3-50.
531,785. OLGA. Cl. 39 (Int. Cl. 25). 10-10-50.
531,953. BABEEZ. Cl. 44 (Int. Cl. 10). 10-17-50.
532,101. COM-BANDO. Cl. 40 (Int. Cl. 25). 10-17-50.
532,183. RIASORB AND DESIGN. Cl. 18 (Int. Cl. 5). 10-17-50.
532,301. CAPE COD AND DESIGN. Cl. 39 (Int. Cl. 5). 10-24-50.
532,364. KUROLITE. Cl. 46 (Int. Cl. 1). 10-24-50.
532,652. MECCO SAFETY. Cl. 23 (Int. Cl. 8). 10-31-50.
533,308. PIONEER. Cl. 46 (Int. Cl. 31). 11-14-50.
533,414. RANDOLPH FIELD. Cl. 42 (Int. Cl. 24). 11-14-50.
533,455. MISCELLANEOUS DESIGN. Cl. 13 (Int. Cl. 6). 11-14-50.
533,456. ROLLY BASSICK. Cl. 13 (Int. Cl. 6). 11-14-50.
533,478. STURDYWEAR. Cl. 42 (Int. Cl. 24). 11-14-50.
533,483. GOLD CUP. Cl. 42 (Int. Cl. 24). 11-14-50.
534,119. PV AND DESIGN. Cl. 105 (Int. Cl. 39). 11-28-50.
534,235. SWEET'S FILE. Cl. 38 (Int. Cl. 16). 12-5-50.
534,276. BLANK SHIELD (DESIGN). Cl. 39 (Int. Cl. 25). 12-5-50.
534,305. BULL'S HEAD (DESIGN). Cl. 43 (Int. Cl. 23). 12-5-50.
534,339. PICTOCLINIC. Cl. 38 (Int. Cl. 16). 12-5-50.
534,341. SUNFLEX. Cl. 40 (Int. Cl. 26). 12-5-50.
534,346. ZIP-A-BABE. Cl. 40 (Int. Cl. 25). 12-5-50.
534,559. DESERT FRAGRANCE. Cl. 46 (Int. Cl. 31). 12-12-50.
534,587. VARIETY. Cl. 46 (Int. Cl. 30). 12-12-50.
534,902. COUNTESS MARA. Cl. 39 (Int. Cl. 25). 12-19-50.
534,905. NORRIS EXQUISITE. Cl. 46 (Int. Cl. 30). 12-19-50.
534,929. SEALKING. Cl. 23 (Int. Cl. 7). 12-19-50.
535,179. RAMSAY. Cl. 46 (Int. Cl. 30). 12-26-50.
535,222. MASSO. Cl. 46 (Int. Cl. 29). 12-26-50.
535,340. KWIKSET. Cl. 25 (Int. Cl. 6). 12-26-50.
535,532. OWL AND DESIGN. Cl. 46 (Int. Cl. 31). 1-2-51.
537,070. MATCH-O-MATIC. Cl. 32 (Int. Cl. 20). 1-30-51.
537,159. DANTWEED. Cl. 42 (Int. Cl. 24). 1-30-51.
537,280. DURO-BLEND. Cl. 44. (Int. Cl. 10). 2-6-51.
537,313. ARMCO AND DESIGN. Cl. 14 (Int. Cl. 6). 2-6-51.
537,371. Y. Cl. 12 (Int. Cl. 19). 2-6-51.
537,372. Y IN OCTAGON. Cl. 12 (Int. Cl. 19). 2-6-51.
537,408. HES-GO-TEX. Cl. 21 (Int. Cl. 17). 2-6-51.
537,462. MISCELLANEOUS DESIGN. Cl. 14 (Int. Cl. 6). 2-6-51.
537,471. AARS AND DESIGN. Cl. 1 (Int. Cl. 31). 2-6-51.
537,519. LONDON'S. Cl. 49 (Int. Cl. 33). 2-13-51.
537,895. DEOCIDE. Cl. 6 (Int. Cl. 5). 2-13-51.
537,963. OLD ENGLISH. Cl. 46 (Int. Cl. 29). 2-20-51.
538,030. LEXATOL. Cl. 18 (Int. Cl. 5). 2-20-51.
538,052. L-BLOW. Cl. 34 (Int. Cl. 11). 2-20-51.
538,165. LIPCO AND DESIGN. Cl. 46 (Int. Cl. 31). 2-20-51.
538,173. KATHRYN KING'S. Cl. 46 (Int. Cl. 30). 2-2-50.
538,423. NAN DORSEY. Cl. 39 (Int. Cl. 25). 2-27-51.
538,476. EVERHARD. Cl. 12 (Int. Cl. 19). 2-27-51.
538,481. VIKING. Cl. 32 (Int. Cl. 20). 2-27-51.
538,617. PALM TROPIC. Cl. 42 (Int. Cl. 24). 2-27-51.
538,759. AMERING. Cl. 13 (Int. Cl. 6). 2-27-51.
538,878. CONTINENTAL HEATHER SHEEN AND DESIGN. Cl. 42 (Int. Cl. 24). 3-6-51.
539,066. NISSEN. Cl. 11 (Int. Cl. 2). 3-6-51.
539,147. STYROFOAM. Cl. 12 (Int. Cl. 19). 3-13-51.
539,184. WEAR PROOF. Cl. 23 (Int. Cl. 7). 3-13-51.
539,252. FUSAREX. Cl. 6 (Int. Cl. 5). 3-13-51.
539,308. LYNNHAVEN. Cl. 46 (Int. Cls. 29 and 30). 3-13-51.
539,425. SUNBEAM. Cl. 21 (Int. Cl. 11). 3-13-51.
539,472. SCENT SAMPLER. Cl. 51 (Int. Cl. 3). 3-13-51.
539,528. SCIENCO. Cl. 23. (Int. Cl. 7). 3-20-51.
539,608. P/D. Cl. 46 (Int. Cl. 31). 3-20-51.
539,624. CLIPPER. Cl. 39 (Int. Cl. 25). 3-20-51.
539,636. NOTES & QUOTES. Cl. 38 (Int. Cl. 16). 3-20-51.
539,649. SUNKIST. Cl. 23 (Int. Cl. 8). 3-20-51.
539,780. NARROLINE. Cl. 39 (Int. Cl. 25). 3-20-51.
539,816. ABSORBED. Cl. 15 (Int. Cl. 4). 3-27-51.

539,817. BLUE PLATE. Cl. 46 (Int. Cls. 29 and 30). 3-27-51.
539,853. SOUTHWORTH MACHINE CO. AND DESIGN. Cl. 23 (Int. Cl. 7). 3-27-51.
539,931. DURA PLASTIC. Cl. 35 (Int. Cl. 17). 3-27-51.
540,151. CARBONAIRE. Cl. 21 (Int. Cl. 9). 3-27-51.
540,153. HARDWICK. Cl. 34 (Int. Cl. 11). 3-27-51.
540,174. FRONTIER. Cl. 39 (Int. Cl. 25). 3-27-51.
540,757. BARBER COLMAN. Cl. 26 (Int. Cl. 9). 4-10-51.
540,966. PERMATEX AND DESIGN. Cl. 16. (Int. Cl. 2). 4-17-51.
540,983. GOOSE HEAD (DESIGN). Cl. 46 (Int. Cl. 29). 4-17-51.
541,002. HOCUS FOCUS. Cl. 46 (Int. Cl. 30). 4-17-51.
541,111. MORAINE. Cl. 1 (Int. Cl. 31). 4-17-51.
541,409. INDIAN HEAD AND DESIGN. Cl. 6 (Int. Cls. 1 and 17). 4-24-51.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

815,642. WWP AND DESIGN. Cl. 200. 9-20-66.
822,565. WWP. Cl. 100. 1-17-67.
837,133. DUPLEX-CURE. Cl. 35. 10-17-67.
891,500. PREMIOMYCINA. Cl. 18. 5-26-70.

Section 8

778,919. JAY JRC LET JAY DO IT AND DESIGN. Cl. 4. 10-27-64.
780,068. DUALOUVRE. Cl. 34. 11-10-64.

The following registrations issued Nov. 17, 1964

780,095. INTRIGUE. Cl. 1.
780,098. ZESTERS. Cl. 2.
780,107. LUCKIE-MACK. Cl. 6.
780,108. KORATRON. Cl. 6.
780,109. C-58. Cl. 6.
780,112. CELESTAPRINT. Cl. 6.
780,117. V-C AND DESIGN. Cls. 6, 10, and 52.
780,118. MARICHROME. Cl. 7.
780,119. WALJOHN'S. Cl. 12.
780,125. COPPERCRAFT. Cl. 13.
780,126. ROYAL SOVEREIGN. Cl. 13.
780,129. TEAR-DROP. Cl. 13.
780,132. ASTROMATIC. Cl. 13.
780,137. C8. Cl. 13.
780,145. PAINT-PEP. Cl. 16.
780,147. VALUMA. Cl. 16.
780,150. SNO-FALL AND DESIGN. Cl. 16.
780,151. VANAU. Cl. 16.
780,152. SPACE-COTE. Cl. 16.
780,157. TYCOON. Cl. 17.
780,162. KEL-GARD. Cl. 18.
780,168. CELLUCARPINE. Cl. 18.
780,175. ZODYS AND DESIGN. Cl. 18.
780,179. AMERON. Cl. 19.
780,180. AMERON. Cl. 19.
780,184. ARTICOVER. Cl. 19.
780,186. CONSUL-AIR. Cl. 21.
780,188. DYNAMICON. Cl. 21.
780,189. LITE-A-LAMP. Cl. 21.
780,190. ME LITER AND DESIGN. Cl. 21.
780,191. STREET-LITER. Cl. 21.
780,196. DYNAD. Cls. 21 and 50.
780,197. MIDGI-TRIM. Cl. 21.
780,200. HV AND DESIGN. Cl. 21.
780,204. PRETZEL. Cl. 22.
780,205. BLIND DATE. Cl. 22.
780,206. IT'S A CINCH. Cl. 22.
780,209. TYPHOON. Cl. 23.
780,213. AMBA. Cl. 23.
780,215. ROOD AND DESIGN. Cl. 23.
780,217. SHAFTALIGN ETC. AND DESIGN. Cl. 23.
780,218. SANG BRAND. Cl. 23.
780,220. MISCELLANEOUS DESIGN. Cl. 23.
780,233. STING RAY. Cl. 23.
780,234. H-H AND DESIGN. Cl. 23.
780,239. PO-STIK. Cl. 23.
780,249. WILDON KEY-CRAFT AND DESIGN. Cl. 23.
780,250. BB AND DESIGN. Cl. 23.
780,258. GOLDEN SHIELD. Cl. 23.
780,264. MINIT-MASTER. Cl. 23.
780,270. SCORE-AWL. Cl. 23.
780,271. LAFANA. Cl. 23.
780,272. REV JET. Cl. 23.
780,274. VARI-TORQ. Cl. 23.
780,278. DRYNAMIC. Cl. 24.
780,280. BYRUM. Cl. 26.
780,282. TEMPLE SNUGGERS. Cl. 26.
780,283. LUMOFAX. Cl. 26.
780,287. REBIC. Cl. 26.
780,288. TRABIC. Cl. 26.
780,294. SSL AND DESIGN. Cl. 26.
780,296. BIFIX. Cl. 27.
780,299. FIFTH AVENUE JEWELS. Cl. 28.
780,301. EUROWED ETC. AND DESIGN. Cl. 28.
780,302. MONOCROWN. Cl. 28.
780,305. HAPPY HOME. Cl. 32.
780,307. PORTA-FILE AND DESIGN. Cl. 32.
780,311. VENTEX. Cl. 32.
780,313. LAD & LASSIE. Cl. 32.
780,314. KINSLEY. Cl. 34.
780,317. THE FIRE PLACE DOCTOR "HEARTH TO CHIMNEY TOP" AND DESIGN. Cl. 34.
780,318. "WALJOHN'S." Cl. 34.
780,320. UTICA AQUA-FIN. Cl. 34.
780,325. ALITA. Cl. 34.
780,330. SUPER SAFETY 800-XP. Cl. 35.
780,331. PROTECTO-SEAL. Cl. 35.
780,332. DISC-WHISK. Cl. 36.
780,333. FONE RITE AND DESIGN. Cl. 37.
780,338. CLIP UP AND DESIGN. Cl. 37.
780,339. POCKETEACHER. Cl. 37.
780,341. THRIFT SNAP AND DESIGN. Cl. 37.
780,351. RETROSPECT. Cl. 38.
780,353. THE ROPE MAKER. Cl. 38.
780,355. DIRECTION AND DESIGN. Cl. 38.
780,362. SWIVELASTIC. Cl. 39.
780,370. SYBURNE. Cl. 39.
780,378. XCENTRIX. Cl. 39.
780,379. CHEVRON-ETTES AND DESIGN. Cl. 39.
780,381. CUSTOM MADE BY MINI RHEA. Cl. 39.
780,382. LILLI PICHELLE. Cl. 39.
780,386. GAITERS. Cl. 39.
780,387. DAVINO. Cl. 39.
780,393. BANDBOX TRAVELER. Cl. 39.
780,395. ROUTE 66. Cl. 39.
780,398. WHOOPEETITES. Cl. 39.
780,406. TOPSALL. Cl. 39.
780,388. ROMALMA. Cl. 39.
780,407. VOOMERANG. Cl. 39.
780,415. Q-TEST. Cl. 42.
780,416. SCOTTALIA. Cl. 42.
780,421. BEAUTY LOFT. Cl. 42.
780,422. SENTEENA. Cl. 42.
780,423. VIBRONIC. Cl. 42.
780,424. MONTEREAU. Cl. 42.
780,433. C. C. SCOPE. Cl. 44.
780,434. PLASTISCOPE. Cl. 44.
780,435. DISPOSOSCOPE. Cl. 44.
780,436. MEDISCOPE. Cl. 44.
780,438. PETITIJEAN. Cl. 46.
780,441. OPTILAC. Cl. 46.
780,443. GRO-FRESH. Cl. 46.
780,448. CHAM-PIN-YONN. Cl. 46.
780,459. FLEET TRACTOR STORE AND DESIGN. Cl. 101.
780,463. CAPS. Cl. 102.
780,465. GLOBAL GOLF. Cl. 107.
780,467. FLAVORIZED RAT KAKES. Cl. 6.
780,477. ASH BURNE'S. Cl. 49.

TRADEMARK REGISTRATIONS AMENDED, DISCLAIMED, CORRECTED, ETC.

512,818. CRESCO ETC. AND DESIGN. Cl. 6. 7–26–49. Stauffer Chemical Company, New York, N.Y. Amended: In the statement, column 1, lines 17 and 18 are deleted, and the drawing is amended to appear:

CRESCO

537,660. MACNISH'S. Cl. 49. 2–13–51. Robert McNish & Company Limited, Dunbartonshire, Scotland. Amended to appear:

Macnish

591,381. AMBASSADOR AND DESIGN. Cl. 49. 6–15–54. Bloch Bros. (Distillers) Limited, Taylor & Ferguson Limited, Dunbartonshire, Scotland. Amended to appear:



Ambassador

640,759. COACH'N FOUR. Cl. 45. 1–29–57. Sheffield Bottling Co., doing business as Coach'n Four Products Co. Coach and Four Products Company, Philadelphia, Pa. Amended to appear:

COACH AND FOUR

678,193. REPRESENTATION OF MALE HEAD IN DESIGN AND CROWN. Cl. 49. 5–5–59. Taylor & Ferguson Limited, Glasgow, Scotland. Amended to appear:



690,369. HIDEAWAY. Cl. 2. 12–29–59. Jeffrey Allan Industries Inc., Chicago, Ill. Amended: In the statement, column 1, after line 3, *, now located at 2100 Greenleaf St., P.O. Box 391, Evanston, Ill. 60204* is inserted.

761,943. REALISTIC AND DESIGN. Cl. 26. 12–24–63. Radio Shack Corporation. Tandy Corporation, doing business as Radio Shack Division, Boston, Mass. Amended to appear:

REALISTIC

775,729. TRANSITANK. Cl. 23. 8–25–64. Chemetron Corporation, Chicago, Ill. Corrected: In the statement, column 1, line 1, "Illinois" should be deleted and *Delaware* should be inserted.

789,372. CRACKY AND DESIGN. Cl. 38. 5–11–65. Golden Press, Inc. Western Publishing Company, Inc., Racine, Wis. Amended: In the statement, column 2, line 1, "monthly" is deleted.

816,323. DESIGN OF A CHEF. Cl. 100. 10–4–66. Church's Fried Chicken, Inc., San Antonio, Tex. Corrected: In the statement, column 2, line 3, "1962" should be deleted and *1952* should be inserted.

895,243. SERVING YOUR WORLD OF COMMUNICATION NEEDS. Cl. 21. 7–21–70. Superior Continental Corporation, Hickory, N.C. Amended to appear:

SERVING YOUR WORLD OF COMMUNICATIONS NEEDS

896,142. WINDRIFT. Cl. 51. 8–4–70. MEM Company, Inc., Northvale, N.J. Corrected to appear:

WIND DRIFT

896,902. CARNES. Cl. 34. 8–18–70. Wehr Corporation, Milwaukee, Wis. Corrected: In the statement, column 2, line 9, "Nos. 334,651 and" should be deleted and *No.* should be inserted.

899,443. CORCEL. Cl. 1. 9–29–70. Interpace Corporation, Parsippany, N.J. Corrected: In the statement, column 1, line 1, "Interspace" should be deleted and *Interpace* should be inserted.

899,471. HYLON. Cls. 4, 6, 15, 51, and 52. 9–29–70. Gem, Incorporated, Byhalia, Miss. Corrected: In the heading,

"Ser. No. 334,034" should be deleted and *Ser. No. 343,034* should be inserted.

899,897. RP DESIGN. Cl. 100. 9–29–70. Sonesta International Hotels Corporation by change of name from Hotel Corporation of America, Boston, Mass. Corrected: In the statement, column 1, before line 1, *Sonesta International Hotels Corporation by change of name from* should be inserted.

901,760. BRIDGES AND TUNNELS. Cl. 22. 11–3–70. Murray Eskenazi, East Rockaway, N.Y. Corrected: In the statement, column 2, line 1, before "Unit" *equipment sold as a* should be inserted.

901,789. VISOLUX-ELEKTRONIK. Cl. 26. 11–3–70. Visolux-Elektronik Richard Siering, G.m.b.H., Berlin, Germany. Corrected: In the statement, column 1, line 1, "Stering" should be deleted and *Siering* should be inserted.

REGISTRATIONS PUBLISHED UNDER SEC. 12(c)

The following marks registered under the act of 1905, or the act of 1881, are published under the provisions of section 12(c) of the Trademark Act of 1946. These registrations are not subject to opposition but are subject to cancellation under section 14 of the act of 1946.

Class 1—Raw or Partly Prepared Materials

363,166. Dec. 13, 1938. I. G. Farbenindustrie Aktiengesellschaft, Frankfurt-on-the-Main, Germany. Pub. by Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany.

ALKYDAL

For Artificial Resins in the Form of Solids, Solutions, or Emulsions Suitable for Various Uses in the Industrial Arts.

Class 14—Metals and Metal Castings and Forgings

278,461. Dec. 16, 1930. The Dow Chemical Company, Midland, Mich. Pub. by registrant.

DOW

For Magnesium and Magnesium-Alloy Castings and Forgings (Int. Cl. 6).

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

207,685. Jan. 5, 1926. Armstrong-Blum Manufacturing Company, Chicago, Ill. Pub. by registrant.

MARVEL

For Hack Sawing Machines, Band Sawing Machines, Hack-Saw Blades, and Band Saw Blades.

Class 38—Prints and Publications

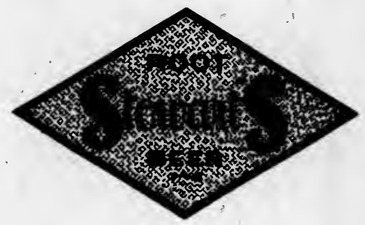
340,115. Nov. 3, 1936. Brides House, Inc., New York, N.Y. Pub. by The Conde Nast Publications Inc., New York, N.Y.

the BRIDE'S magazine

For Periodical Published Seasonally.

Class 45—Soft Drinks and Carbonated Waters

274,949. Sept. 9, 1930. Stewart's Root Beer, Inc., Mansfield, Ohio. Pub. by registrant.



For Root Beer and Root Beer Concentrate (Int. Cl. 32).

Class 46—Foods and Ingredients of Foods

276,841. Oct. 28, 1930. West Texas Products Company, Inc., Abilene, Tex. Pub. by Mrs. Dalton's Best Maid Products, Inc., d.b.a. Wes Tex Products, Fort Worth, Tex.

WES TEX

For Table Syrup (Int. Cl. 30).

411,080. Jan. 2, 1945. Superior Feed Mills, Oklahoma City, Okla. Pub. by Anderson, Clayton & Co., Houston, Tex.

Class 51—Cosmetics and Toilet Preparations

76,479. Jan. 18, 1910. Joseph Palazzolo, New York, N.Y. Pub. by J. Palazzolo Son, Inc., New Hyde Park, N.Y.

ALL IN ONE

For Compounded Feeds for Poultry Consisting of Cereals, Grains, and Other Suitable Ingredients.

OTELLO

For Perfumery and Hair-Tonic (Int. Cl. 3).

INDEX OF REGISTRANTS

JANUARY 5, 1971

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

AGS Services Corp., New York, N.Y. 905,677, pub. 10–20–70. Cl. 101.
AMF Inc., from American Machine & Foundry Co., New York, N.Y. 905,321, pub. 10–20–70. Cl. 5.
ARA Services, Inc., Philadelphia, Pa. 905,663–4, pub. 10–20–70. Cl. 100.
A-Q Mills, Inc., Timmonsville, S.C. 905,586, pub. 10–20–70. Cl. 42.
A/S Lego System Billund, Billund, Jutland, Denmark. 905,435, pub. 10–20–70. Cl. 22.
A.V. Electronics, Inc., Fresno, Calif. 905,492, pub. 4–22–69. Cl. 26.
A & W Root Beer Co., Santa Monica, Calif. 780,465, canc. Cl. 107.
Abbaye Cistercienne Notre-Dame DuLac, Oka, Quebec, Canada. 277,482, ren. 1–5–71. Cl. 46.
Abbaye Cistercienne Notre-Dame DuLac, Oka, Quebec, Canada. 281,851, ren. 1–5–71. Cl. 46.
Abco Quality Products Co., Philadelphia, Pa. 905,428, pub. 10–20–70. Cl. 21.
Ace Books, Inc., New York, N.Y. 780,351, canc. Cl. 38.
Acme Boot Co., Inc., Clarksville, Tenn. 780,379, canc. Cl. 39.
Aeronautical Communications Equipment, Inc., Miami, Fla. 905,397, pub. 10–20–70. Cl. 21.
Agway, Inc., De Witt, N.Y. 538,165, ren. 1–5–71. Cl. 46.
Albany International Corp., Albany, N.Y. 278,289, ren. 1–5–71. Cl. 22.
Alcan Aluminum Corp., Cleveland, Ohio. 534,341, ren. 1–5–71. Cl. 40.
Alcan Aluminum Corp., Cleveland, Ohio. 905,352, pub. 10–20–70. Cl. 12.
All-America Rose Selections Inc., Shenandoah, Iowa. 537,471, ren. 1–5–71. Cl. 1.
Allan, Jeffrey, Industries Inc., Chicago, Ill. 690,369. Am. 7(d). Cl. 2.
Allcock, Laight & Westwood, Ltd., Bramalea, Ontario, Canada. 905,392, pub. 10–20–70. Multiple Class (Classes 19 and 22).
Allied Computer Systems, Inc., Madison, Conn. 905,417, pub. 10–20–70. Cl. 21.
All-States Business Products Corp. of New Jersey, Dover, N.J. 905,541, pub. 10–20–70. Cl. 37.
Amchem Products, Inc., Ambler, Pa. 905,334, pub. 10–20–70. Cl. 6.
Amerada Hess Corp., Woodbidge, N.J. 905,372, pub. 10–20–70. Cl. 15.
American Academy of Ophthalmology & Otolaryngology, Rochester, Minn. 905,557, pub. 10–20–70. Cl. 38.
American Broadcasting Co., Inc., New York, N.Y. 905,689, pub. 10–20–70. Cl. 104.
American Cyanamid Co., Wayne, N.J. 527,693, ren. 1–5–71. Cl. 52.
American Electronic Laboratories, Inc., Colmar, Pa. 905,427, pub. 10–20–70. Cl. 21.
American Home Products Corp., New York, N.Y. 780,168, canc. Cl. 18.
American International Tool Corp., Miami, Fla. 780,137, canc. Cl. 13.
American Leaser's Association, Inc., Woodstock, Ill. 905,660, pub. 10–20–70. Cl. 100.
American Machine & Foundry Co. : *See*—
AMF Inc.
American Olean Tile Co., Inc., Lansdale, Pa. 905,354, pub. 10–20–70. Cl. 12.
American Photocopy Equipment Co. : *See*—
American Photocopy Equipment Co.
American Photocopy Equipment Co., from American Photocopy Equipment Co., Evanston, Ill. 905,496, pub. 4–28–70. Cl. 26.
American Seating Co., Grand Rapids, Mich. 444,449, ren. 1–5–71. Cl. 32.
American Whipped Products, Inc., Mount Vernon, N.Y. 905,607, pub. 10–20–70. Cl. 46.
Amerola Products Corp., Pittsburgh, Pa. 905,450, pub. 10–20–70. Cl. 22.
Amos-Thompson Corp., Edinburg, Ind. 905,351, pub. 10–20–70. Cl. 12.
Anderson, Clayton & Co., Houston, Tex. 411,080, 12(c) pub. 1–5–71. Cl. 46.
Antics, Inc., New York, N.Y. 780,378, canc. Cl. 39.
Antle, Bud, Inc., Salinas, Calif. 905,610, pub. 10–20–70. Cl. 46.
Aquarium Systems, Inc., Wickliffe, Ohio. 905,508, pub. 10–20–70. Cl. 31.
Archie Enterprises, Inc., New York, N.Y. 905,554, pub. 10–20–70. Cl. 38.
Arkwright, Inc., New York, N.Y. 533,478, ren. 1–5–71. Cl. 42.
Armco Steel Corp., Middletown, Ohio. 537,313, ren. 1–5–71. Cl. 14.
Armour-Dial, Inc., Chicago, Ill. 905,618–20, pub. 10–20–70. Cl. 46.
Armstrong-Blum Mfg. Co., Chicago, Ill. 207,685, 12(c) pub. 1–5–71. Cl. 23.
Astroweld Corp., Linden, N.J. 780,132, canc. Cl. 13.
Aurora Plastics Corp., West Hempstead, N.Y. 905,444, pub. 10–20–70. Cl. 22.
Auto-Heat Corp., Montreal, Quebec, Canada. 780,325, canc. Cl. 34.
Automated Lawn Builders of the Midwest, Inc., Columbia, Mo. 905,665, pub. 10–20–70. Cl. 100.
Avon Frosted Foods, Inc., Avon, N.Y. 780,443, canc. Cl. 46.
Bachi, Inc., Itasca, Ill. 905,473, pub. 10–20–70. Cl. 23.
Bait, O. D., Specialties, Topeka, Kans. 780,206, canc. Cl. 22.
Baldwin, Howard J., Sparks, Nev. 905,393, pub. 10–20–70. Cl. 19.
Bandbox Sportswear, Inc., New York, N.Y. 780,393, canc. Cl. 39.
Barber-Colman, Co., Rockford, Ill. 540,757, ren. 1–5–71. Cl. 26.
Barbizon Corp., The, New York, N.Y. 528,081, ren. 1–5–71. Cl. 39.
Bardes Mfg. Co., Cincinnati, Ohio. 780,125, canc. Cl. 13.
Basic Aluminum Castings Co., The, Cleveland, Ohio. 905,476, pub. 10–20–70. Cl. 23.
Bata Shoe Co. of Canada Ltd., Batawa, Ontario, Canada. 905,461, pub. 2–18–69. Cl. 23.
Bayuk Cigars Inc., Philadelphia, Pa. 905,374, pub. 10–20–70. Cl. 17.
Beacon Mfg. Co., Swannanoa, N.C. 780,421, canc. Cl. 42.
Beals, Thomas P., Furniture Co., Portland, Maine. 905,517, pub. 10–20–70. Cl. 32.
Beecham Inc., Clifton, N.J. 891,500, canc. Cl. 18.
Beluga Caviar Corp., New York, N.Y. 905,609, pub. 10–20–70. Cl. 46.
Benco Plastics, Inc., Knoxville, Tenn. 905,637, pub. 10–20–70. Cl. 50.
Bensky Furriers, Inc., Little Rock, Ark. 905,566, pub. 10–20–70. Cl. 39.
Berg Mfg. & Sales Co., Des Plaines, Ill. 780,331, canc. Cl. 35.
Bergeron, Louis A., Tonawanda, N.Y. 905,344, pub. 10–20–70. Cl. 12.
Bergische Metallwarenfabrik Dillenberg & Co. KG, Gruiten, Germany. 905,322, pub. 10–20–70. Cl. 6.
Billboard Publications, Inc., Cincinnati, Ohio. 905,544, pub. 10–20–70. Cl. 38.
Bishop Industries Inc., Union, N.J. 905,580, pub. 10–20–70. Multiple Class (Classes 40 and 51).
Bissonnette & Co., Chicago, Ill. 780,333, canc. Cl. 37.
Blanchard Importing & Distributing Co., Inc., Boston, Mass. 905,632, pub. 10–20–70. Cl. 49.
Bloch Bros. (Distillers) Ltd., Taylor & Ferguson Ltd., Dunbartonshire, Great Britain. 591,381. Am. 7(d). Cl. 49.
Blue Anchor, Inc., Sacramento, Calif. 278,993, ren. 1–5–71. Cl. 46.
Blue Anchor, Inc., Sacramento, Calif. 279,868, ren. 1–5–71. Cl. 46.
Blue Anchor, Inc., Sacramento, Calif. 535,532, ren. 1–5–71. Cl. 46.
Bonis Bros. Fur Machinery Corp., New York, N.Y. 780,250, canc. Cl. 23.
Borden, Inc., New York, N.Y. 277,983, ren. 1–5–71. Cl. 46.
Bristol-Myers Co., New York, N.Y. 905,543, pub. 10–20–70. Cl. 38.
Brody, Williams & Son Inc., New York, N.Y. 780,301, canc. Cl. 28.
Brown, Bruce A., Dana Point, Calif., from Clairol Inc., New York, N.Y. 905,381, pub. 10–20–70. Cl. 18.
Brown & Haley, Tacoma, Wash. 905,608, pub. 10–20–70. Cl. 46.
Brunswick Corp. : *See*—
Tartan Corp.
Burgess Vibrocrafters, Inc., Grayslake, Ill. 780,338, canc. Cl. 37.
Burlington Industries, Inc., Greensboro, N.C. 537,408, ren. 1–5–71. Cl. 21.
Bychrome Co., Columbus, Ohio. 780,280, canc. Cl. 26.
California Weavers, Inc., Los Angeles, Calif. 905,593, pub. 10–20–70. Cl. 42.
Callaway Mills Co., Lagrange, Ga. 780,423, canc. Cl. 42.
Camp Laboratories, Inc., Brooklyn, N.Y. 905,330, pub. 10–20–70. Cl. 6.
Campbell, Henry L., Co. Ltd., Belfast, Northern Ireland, 534,305, ren. 1–5–71. Cl. 43.
Caps, Inc., Silver Spring, Md. 780,463, canc. Cl. 102.
Carling Brewing Co., Inc., d.b.a. Carling Brewing Co., Cleveland, Ohio. 905,631, pub. 10–20–70. Cl. 48.
Carnation Co., Los Angeles, Calif. 780,441, canc. Cl. 46.
Carpenter Mfg. Co. : *See*—
Kidde, Walter & Co., Inc.
Carter-Wallace, Inc., New York, N.Y. 905,387–8, pub. 10–20–70. Cl. 18.
Carter-Wallace, Inc., New York, N.Y. 905,645, pub. 10–20–70. Cl. 51.
Caruano, Nicholas V., d.b.a. Sweep Beverage Co., Norristown, Pa. 905,603, pub. 10–20–70. Cl. 45.
Cayuga Concrete Pipe Co., New Britain, Pa. 905,438, pub. 10–20–70. Cl. 22.
Cegedur GP, Societe Anonyme, Paris, France. 905,366, pub. 10–20–70. Cl. 14.
Celotex Corp., The, Tampa, Fla. 528,607, ren. 1–5–71. Cl. 12.
Cenco Medical/Health Supply Corp., Chicago, Ill. 444,250, ren. 1–5–71. Cl. 32.
Central Citrus Co., Tempe, Ariz. 534,559, ren. 1–5–71. Cl. 46.
Certron Corp., Anaheim, Calif. 905,530, pub. 10–20–70. Cl. 36.

Challenge-Cook Bros., Inc., Los Angeles, Calif. 780,278, canc. Cl. 24.
Chemetron Corp., Chicago, Ill. 775,729, cor. 1–5–71. Cl. 23.
Church's Fried Chicken, Inc., San Antonio, Tex. 816,323, cor. 1–5–71. Cl. 100.
Civic Finance Corp., Milwaukee, Wis. 905,685, pub. 10–20–70. Cl. 102.
Clairol Inc.: *See*—
Bruce A. Brown.
Clark, Ray Lewis, Dayton, Ohio. 780,339, canc. Cl. 37.
Cluett, Peabody & Co., Inc., New York, N.Y. 905,565, pub. 10–20–70. Cl. 29.
Coleco Industries, Inc., Hartford, Conn. 905,477, pub. 10–20–70. Cl. 23.
Collegeville Flag & Mfg. Co., Collegeville, Pa. 280,978, ren. 1–5–71. Cl. 50.
Collegeville Flag & Mfg. Co., Collegeville, Pa. 282,041, ren. 1–5–71. Cl. 42.
Commercial Cam & Machine Co., Chicago, Ill. 905,661, pub. 10–20–70. Cl. 100.
Computer Controls Corp., Miami, Fla. 905,673, pub. 10–20–70. Cl. 101.
Computerized Pathfinder Travel Parks, Inc., Allandale, Fla. 905,666, pub. 10–20–70. Cl. 100.
Conde Nast Publications Inc., The, New York, N.Y. 340,115, 12(c) pub. 1–5–71. Cl. 38.
Connecticut General Life Insurance Co., Bloomfield, Conn. 539,636, ren. 1–5–71. Cl. 38.
Cono Christian School, Dept. of Bible Presbyterian Church of Cono Center, Walker, Iowa. 780,239, canc. Cl. 23.
Consolidated Computing Sciences, Inc., Wichita, Kans. 905,676, pub. 10–20–70. Cl. 101.
Consolidated Enterprises, Inc., Houston, Tex. 905,594–6, pub. 10–20–70. Cl. 42.
Continental Carbon Co., Houston, Tex. 905,338, pub. 10–20–70. Cl. 6.
Continental Marketing Corp., Houston, Tex. 780,098, canc. Cl. 2.
Continental Products of Texas, Odessa, Tex. 905,328, pub. 10–20–71. Cl. 6.
Convesto, Seattle, Wash. 905,682, pub. 10–20–70. Cl. 102.
Conwed Corp., St. Paul, Minn. 905,347–8, pub. 10–20–70. Cl. 12.
Conwed Corp., St. Paul, Minn. 905,635–6, pub. 10–20–70. Cl. 50.
Corvin, Michael L., d.b.a. Student Rescue Committee, Feeding Hills, Mass. 905,442, pub. 10–20–70. Cl. 22.
Cosmet, Inc., from Zodiance, Inc., Akron, Ohio. 905,651, pub. 10–20–70. Cl. 51.
Countess Mara, Inc., New York, N.Y. 534,902, ren. 1–5–71. Cl. 39.
Crompton & Knowles Corp., Worcester, Mass. 780,112, canc. Cl. 6.
Crowley's Milk Co., Inc., Binghamton, N.Y. 905,612, pub. 10–20–70. Cl. 46.
Crown Molding Co., from Crown Machine & Tool Co., Dallas, Tex. 905,468, pub. 5–12–70. Cl. 23.
Crystal, David, Inc., New York, N.Y. 905,571, pub. 10–20–70. Cl. 39.
Crystal, David, Inc., New York, N.Y. 905,574, pub. 10–20–70. Cl. 39.
Cumberland Packing Corp., Brooklyn, N.Y. 905,605, pub. 8–13–68. Cl. 46.
Cunningham, M. E., Co., Pittsburgh, Pa. 532,652, ren. 1–5–71. Cl. 23.
Cutler-Hammer, Inc., Milwaukee, Wis. 278,665, ren. 1–5–71. Cl. 21.
Dal-Chem Products, Lafayette, Calif. 905,326, pub. 10–20–71. Cl. 6.
Dan River Inc., Danville, Va. 537,159, ren. 1–5–71. Cl. 42.
Daroff, H., & Sons, Inc., Philadelphia, Pa. 905,567, pub. 10–20–70. Cl. 39.
Day/Ton Progress Corp., Dayton, Ohio. 905,463, pub. 10–20–70. Cl. 23.
Deacon Jones, Inc., San Francisco, Calif. 905,602, pub. 10–20–70. Cl. 45.
Deerfield Groves Co., Wabasso, Fla. 444,416, ren. 1–5–71. Cl. 46.
Del Monte Corp., San Francisco, Calif. 905,617, pub. 10–20–70. Cl. 46.
Des Moines Register & Tribune Co., De Moines, Iowa. 905,545, pub. 10–20–70. Cl. 38.
Dexter Shoe Co., Boston, Mass. 905,578, pub. 10–20–70. Cl. 39.
Diamond Crystal Salt Co., St. Clair, Mich. 905,639, pub. 10–20–70. Cl. 50.
Diamond Shamrock Corp., Cleveland, Ohio. 531,064, ren. 1–5–71. Cl. 6.
Diamond Shamrock Corp., Cleveland, Ohio. 905,340, pub. 10–7–69. Cl. 10.
Diamond Quality Transmission Centers of America Inc., Philadelphia, Pa. 905,686, pub. 10–20–70. Cl. 103.
Di Giorgio Leisure Products, Inc., San Francisco, Calif. 905,519, pub. 10–20–70. Cl. 32.
Digital Equipment Corp., Maynard, Mass. 905,419, pub. 10–20–70. Cl. 21.
Dixie Youth Baseball, Inc., Lookout Mountain, Tenn. 905,558, pub. 10–20–70. Cl. 38.
Doak Pharmacal Co., Inc., Westbury, N.Y. 905,648, pub. 10–20–70. Cl. 51.
Domain Industries, Inc., from Doughboy Industries, Inc., New Richmond, Wis. 905,695. Cl. 46.
Dorfile Mfg. Co., Portland, Oreg. 905,355, pub. 9–6–66. Cl. 13.
Doughboy Industries, Inc.: *See*—
Domain Industries, Inc.
Douwe Egberts Koninklijke Tabaksfabriek-Koffiebranderijen-Theehandel N.V., Joure, Netherlands. 905,377, pub. 10–20–70. Cl. 17.
Dow Chemical Co., The, Midland, Mich. 278,461, 12(c) pub. 1–5–71. Cl. 14.
Dow Chemical Co., The, Midland, Mich. 539,147, ren. 1–5–71. Cl. 12.
Drackett Co., The, Cincinnati, Ohio. 905,324, pub. 10–20–70. Cl. 6.
Ducor, Inc., Hialeah, Fla. 905,511, pub. 10–20–70. Cl. 32.
Dunhill, Alfred, of London, Inc., New York, N.Y. 905,375, pub. 10–20–70. Cl. 17.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 281,095, ren. 1–5–71. Cl. 6.
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 281,330, ren. 1–5–71. Multiple Class (Classes 6, 16, and 51).
Duraclean Co., Deerfield, Ill. 905,327, pub. 10–20–27. Cl. 6.
Durametallic Corp., Kalamazoo, Mich. 539,931, ren. 1–5–71. Cl. 35.
Dursin, M., & Sons Inc., Woonsocket, R.I., 780,118, canc. Cl. 7.
Dynamech Corp., Baltimore, Md. 905,485, pub. 10–20–70. Cl. 23.
EIP, Inc., Santa Clara, Calif. 905,502, pub. 10–20–70. Cl. 26.
Eagle Druggists Supply Co., Inc., New York, N.Y. 531,953, ren. 1–5–71. Cl. 44.
Eaton Mfg. Co., Cleveland, Ohio. 780,274, canc. Cl. 23.
Ebauches S.A., Neuchatel, Switzerland. 905,504, pub. 10–20–70. Cl. 27.
Ebert Electronics Corp., Floral Park, N.Y. 780,189–91, canc. Cl. 21.
Eclipse Fuel Engineering Co., Rockford, Ill. 905,521, pub. 6–2–70. Cl. 34.
Edcliff Instruments, San Bernardino, Calif. 780,197, canc. Cl. 21.
Edo Western Corp., Salt Lake City, Utah. 905,367, pub. 10–20–70. Cl. 14.
Edwards Co., Inc., Norwalk, Conn. 278,382, ren. 1–5–71. Cl. 21.
Electronic Transmission Systems, Inc., New York, N.Y. 905,407, pub. 10–20–70. Cl. 21.
Elkhart Brass Mfg. Co., Inc., Elkhart, Ind. 528,213, ren. 1–5–71. Cl. 13.
El Morocco International Ltd., New York, N.Y. 529,059, ren. 1–5–71. Cl. 51.
Emhart Corp., Hartford, Conn. 535,340, ren. 1–5–71. Cl. 25.
Emko Co., The, St. Louis, Mo. 905,379, pub. 10–20–70. Multiple Class (Classes 18 and 51).
Erico Products, Inc., Cleveland, Ohio. 905,361, pub. 10–20–70. Cl. 13.
Erie Malleable Iron Co., Erie, Pa. 905,368–9, pub. 10–20–70. Cl. 14.
Erismann-Schinz S.A., La Neuveville, Berne, Switzerland, 780,296, canc. Cl. 27.
Eskenazi, Murray, East Rockaway, N.Y. 901,760, cor. 1–5–71. Cl. 22.
Espey Mfg. & Electronics Corp., Saratoga Springs, N.Y. 905,403, pub. 2–17–70. Cl. 21.
Essex Wire Corp., Fort Wayne, Ind. 780,129, canc. Cl. 13.
Evansham Corp., Wytheville, Va. 905,564, pub. 10–20–70. Cl. 39.
Evansville Paint & Varnish Co., Evansville, Ind. 780,152, canc. Cl. 16.
Fabrique Nationale de Lames de Rasoirs, Poissy, Seine-et-Oise, France. 780,271, canc. Cl. 23.
Fansteel Inc., North Chicago, Ill. 278,762, ren. 1–5–71. Cl. 14.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 363,166, 12(c) pub. 1–5–71. Cl. 1.
Fearn International Inc., Franklin Park, Ill. 905,600, pub. 10–20–70. Cl. 45.
Federated Department Stores, Inc., d.b.a. Burdin's, Miami, Fla. 905,561–2, pub. 10–20–70. Cl. 39.
Fedtro, Inc., Rockville Centre, N.Y. 905,430, pub. 10–20–70. Cl. 21.
Fiber Photics, Inc., Santa Cruz, Calif. 905,597, pub. 10–20–70. Cl. 44.
Fieldcrest Mills, Inc., Spray, N.C. 780,424, canc. Cl. 42.
Firestone Tire & Rubber Co., The, Akron, Ohio. 837,133, canc. Cl. 35.
Firestone Tire & Rubber Co., The, Akron, Ohio. 905,390, pub. 10–20–70. Cl. 19.
Florida Fishermens Supply Co., Inc., Tampa, Fla. 905,363, pub. 10–20–70. Cl. 13.
Fleet Tractor Stores, Inc., St. Cloud, Minn. 780,459, canc. Cl. 101.
Flintkote Co., The, White Plaines, N.Y., from Johns-Manville Corp., New York, N.Y. 905,396, pub. 10–20–70. Cl. 20.
Forsythe Woolen Co., Inc., New York, N.Y. 780,416, canc. Cl. 42.
Franklin Beverage Co., Elizabeth, N.J. 905,599, pub. 10–20–70. Cl. 45.
Franklin Sports Industries, Inc., Brockton, Mass. 905,449, pub. 10–20–70. Cl. 22.
Frayne Sportswear Mfg. Inc., Tampa, Fla. 905,570, pub. 10–20–70. Cl. 39.
Fremont Industries, Inc., Shakopee, Minn. 905,339, pub. 10–20–70. Cl. 6.
Friesz, Reinhardt, Houston, Tex. 905,474, pub. 10–20–70. Cl. 23.
Frost, George, Co., Shirley, Mass. 905,320, pub. 10–20–70. Multiple Class (Classes 3, 22, 39, 40, and 44).
GAF Corp., New York, N.Y. 905,325, pub. 10–20–70. Cl. 6.
GF Industries, Inc., d.b.a. Swift Ohio Co., Dallas, Tex. 905,478, pub. 10–20–70. Cl. 23.
GSE, Inc., Farmington, Mich. 905,493, pub. 10–20–70. Cl. 26.
Gaddie, Thomas L., d.b.a. The Fireplace Doctors, Dallas, Tex. 780,317, canc. Cl. 34.
Gambin S.A., Viuz en Sallaz, Haute-Savoie, France. 780,220, canc. Cl. 23.

Garland Sales Co., Phoenix, Ariz. 780,215, canc. Cl. 23.
Geigy Chemical Corp., Ardsley, N.Y. 905,335, pub. 10–20–70. Cl. 6.
Gelco Mfg. Inc., Van Nuys, Calif. 780,233, canc. Cl. 23.
Gem Homes, Inc., Abingdon, Va. 905,394, pub. 10–20–70. Cl. 19.
Gem, Inc., Byhalia, Miss. 899,471, cor. 1–5–71. Multiple Class (Classes 4, 6, 15, 51, and 52).
General Cable Corp., New York, N.Y. 905,424, pub. 10–20–70. Cl. 21.
General Consolidated Ltd., New York, N.Y. 780,186, canc. Cl. 21.
General Electric Co., Pittsfield, Mass. 905,408, pub. 10–20–70. Cl. 21.
General Foods Corp., White Plains, N.Y. 905,601, pub. 10–20–70. Cl. 45.
General Instrument Corp., Newark, N.J. 905,411, pub. 10–20–70. Cl. 21.
General Nutrition Corp., Pittsburgh, Pa. 905,384, pub. 10–20–70. Cl. 18.
General Refractories Co., Philadelphia, Pa. 538,476, ren. 1–5–71. Cl. 12.
General Tire & Rubber Co., The, Akron, Ohio. 905,527, pub. 10–20–70. Cl. 35.
Gerber Sheet Metal, Inc., Minneapolis, Minn. 905,484, pub. 10–20–70. Cl. 23.
Glamorise Foundations, Inc., New York, N.Y. 905,590, pub. 10–20–70. Cl. 42.
Globemaster, Inc., Houston, Tex. 905,464, pub. 10–20–70. Cl. 23.
Globe-Union Inc., Milywaukee, Wis. 780,200, canc. Cl. 21.
Globe-Union Inc., Milwaukee, Wis. 905,425, pub. 10–20–70. Cl. 21.
Gloversville-Continental Mills, Inc., Gloversville, N.Y. 538,878, ren. 1–5–71. Cl. 42.
Goldblatt, Philip, St. Petersburg, Fla. 780,213, canc. Cl. 23.
Golden Press, Inc., Western Publishing Co., Inc., Racine, Wis. 789,372. m. 7(d). Cl. 38.
Golden Shield Corp., Great Neck, N.Y. 780,258, canc. Cl. 23.
Goodall Sanford Inc., Wilmington, Del. 538,617, ren. 1–5–71. Cl. 42.
Goodrich, B. F., Co., The, Akron, Ohio. 905,520, pub. 10–20–70. Cl. 32.
Gossard, H. W., Co., The, Chicago, Ill. 539,780, ren. 1–5–71. Cl. 39.
Gould's 'Dell' Products, Williamsport, Pa. 780,467, canc. Cl. 6.
Great Neck Saw Manufacturers, Inc., Mineola, N.Y. 780,209, canc. Cl. 23.
Greensboro Sheltered Workshop-Adult Activities, Greensboro, N.C. 905,634, pub. 10–20–70. Cl. 50.
Grodins of Calif., Inc., Oakland, Calif. 905,569, pub. 10–20–70. Cl. 39.
Grolier Inc., New York, N.Y. 905,534–5, pub. 10–20–70. Cl. 36.
Gunston, Inc., Richmond, Va. 905,579, pub. 10–20–70. Cl. 39.
H. H. Products Co., Inc., Milwaukee, Wis. 780,234, canc. Cl. 23.
Hales & Hunter Co., Minneapolis, Minn. 533,308, ren. 1–5–71. Cl. 46
Hall Brothers (Whitefield) Ltd., Manchester, England. 274,476, ren. 1–5–71. Cl. 18.
Hallmark Cards, Inc., Kansas City, Mo. 905,553, pub. 10–20–70. Cl. 38.
Hamilton-Skotch Corp., Hamilton, Ohio. 780,307, canc. Cl. 32.
Hammond Corp., Deerfield, Ill. 905,531, pub. 5–5–70. Cl. 36.
Hanes Corp., Winston-Salem, N.C. 905,568, pub. 10–20–70. Cl. 39.
Hardwick Stove Co., Cleveland, Tenn. 540,153, ren. 1–5–71. Cl. 34.
Hartfield Stores, Inc., Los Angeles, Calif. 780,175, canc. Cl. 18.
Hauserman, E. F., Co., The, Cleveland, Ohio. 905,343, pub. 10–20–70. Cl. 12.
Hearst Corp., The, New York, N.Y. 280,850, ren. 1–5–71. Cl. 38.
Hefling, Eugene, West Palm Beach, Fla. 780,282, canc. Cl. 26.
Henderson, H. A., Co., Los Angeles, Calif. 905,373, pub. 10–20–70. Cl. 16.
Hillstrom Enterprises, Inc., Chicago, Ill. 905,691, pub. 10–20–70. Cl. 107.
Hilton Head Island Chamber of Commerce, Hilton Head Island, S.C. 905,547, pub. 10–20–70. Cl. 38.
Hispano Suiza (Suisse) S.A., Geneva, Switzerland. 905,469–72, pub. 10–20–70. Cl. 23.
Hodges Research & Development Co., Inc., New York, N.Y. 780,448, canc. Cl. 46.
Holes-Webway Co., The, St. Cloud, Minn. 905,560, pub. 10–20–70. Cl. 38.
Holophane Co., Inc., New York, N.Y. 281,683, ren. 1–5–71. Cl. 34.
Home Steam Bath Co., Houston, Tex. 905,362, pub. 10–20–70. Cl. 13.
Hooker Chemical Corp., Niagara Falls, N.Y. 529,121, ren. 1–5–71. Cl. 6.
Hooker Chemical Corp., Niagara Falls, N.Y. 531,511, ren. 1–5–71. Cl. 6.
Hooker Chemical Corp., Niagara Falls, N.Y. 780,109, canc. Cl. 6.
Hooker Headers, Inc., Ontario, Calif. 905,475, pub. 10–20–70. Cl. 23.
Horsman Dolls Inc., New York, N.Y. 905,582–3, pub. 10–20–70. Cl. 41.
Horstman Mfg. Co., Inc., Monrovia, Calif. 905,488, pub. 10–20–70. Cl. 23.
Houghton, E. F., & Co., Philadelphia, Pa. 539,816, ren. 1–5–71. Cl. 15.
House of Ideas, Inc., The, Spencer, Ohio. 780,205, canc. Cl. 22.
Howe & Bainbridge, Inc., Boston, Mass. 905,592, pub. 10–20–70. Cl. 42.
Hudnut, Richard, Morris Plains, N.J. 905,640, pub. 10–20–70. Cl. 51.
Humes & Berg Mfg. Co., Chicago, Ill. 527,935, ren. 1–5–71. Cl. 36.
Hungerford Packing Co., Inc., Shrewsbury, Pa. 905,624, pub. 10–20–70. Cl. 46.
Hunt-Wesson Foods, Inc., Fullerton, Califf. 539,817, ren. 1–5–71. Cl. 46.
ITT Bell & Gossett Inc., Morton Grove, Ill. 780,145, canc. Cl. 16.
ITT Sheraton Corp. of America, Boston, Mass. 905,668–9, pub. 10–20–70. Cl. 100.
Ickes-Braun Glasshouses, Inc., Aptakisic, Ill. 905,345, pub. 10–20–70. Cl. 12.
Imperial Knife Associated Companies, Inc., Providence, R.I. 905,489, pub. 10–20–70. Cl. 23.
Industrial National Bank of Rhode Island, Providence, R.I. 905,684, pub. 10–20–70. Cl. 102.
Institutional Industries, Inc., Cincinnati, Ohio. 780,311, canc. Cl. 32.
Integon Corp., Winston-Salem, N.C. 905,681, pub. 10–20–70. Cl. 101.
Integrated Analysis Corp., Plainview, N.Y. 905,675, pub. 10–20–70. Cl. 101.
Interbank Card Association, Buffalo, N.Y. 905,683, pub. 10–20–70. Cl. 102.
Interchemical Corp., New York, N.Y. 780,095, canc. Cl. 1.
Interektor Societe Anonyme, Fribourg, Switzerland. 905,575, pub. 10–20–70. Cl. 39.
Intermed Corp., Dallas, Tex. 905,497, pub. 10–20–70. Cl. 26.
International Harvester Co., Chicago, Ill. 905,370, pub. 10–20–70. Cl. 14.
Interpace Corp., Parsippany, N.J. 899,443, cor. Cl. 1.
Jaquet, Inc., d.b.a. Jaquet, New York, N.Y. 905,642, pub. 10–20–70. Cl. 51.
Johns-Manville Corp.: *See*—
Flintkote Co., The.
Joint Council on Economic Education, New York, N.Y. 780,355, canc. Cl. 38.
Jones, Robert I., d.b.a. Lake Forest Press, Lake Forest, Ill. 905,555, pub. 10–20–70. Cl. 38.
Jordan, William J., d.b.a. Jordano's, Fremont, Calif. 905,649, pub. 10–20–70. Cl. 51.
KCH International, Inc., Minneapolis, Minn. 905,623, pub. 10–20–70. Cl. 46.
Kabushiki Kaisha Tokyo Gurafikku Dezainazu, Tokyo, Japan. 905,433, pub. 10–20–70. Cl. 22.
Kaiser Cement & Gypsum Corp., Oakland, Calif. 537,371–2, ren. 1–5–71. Cl. 12.
Kalliroscope Corp., Cambridge, Mass. 905,633, pub. 10–20–70. Cl. 50.
Kaufman Knitting Co., Minneapolis, Minn. 538,423, ren. 1–5–71. Cl. 39.
Keebler Co., Elmhurst, Ill. 905,611, pub. 10–20–70. Cl. 46.
Keller Mfg. Co., Inc., Corydon, Ind. 905,510, pub. 10–20–70. Cl. 32.
Kellogg Co., Battle Creek, Mich. 780,162, canc. Cl. 18.
Kelly-Springfield Tire Co., The, Cumberland, Md. 780,179–80, canc. Cl. 19.
Kendall Co., The, Walpole, Mass. 533,483, ren. 1–5–71. Cl. 42.
Key Chemicals, Inc., Anacortes, Wash. 905,323, pub. 10–20–70. Cl. 6.
Keystone Consolidated Industries, Inc., Peoria, Ill. 905,491, pub. 10–20–70. Cl. 25.
Kidde, Walter & Co., Inc., Clifton, N.J., from Carpenter Mfg. Co., Somerville, Mass. 905,398, pub. 5–6–69. Cl. 21.
King Candy Co., Fort Worth, Tex. 538,173, ren. 1–5–71. Cl. 46.
Klopman Mills, Inc., Rockleigh, N.J. 905,584, pub. 10–20–70. Cl. 42.
Knight of Rest Products, Newark, N.J. 905,518, pub. 10–20–70. Cl. 32.
Kohner Bros., Inc., East Paterson, N.J. 905,434, pub. 10–20–70. Cl. 22.
Koratron Co., Inc., San Francisco, Calif. 780,108, canc. Cl. 6.
Kraftco Corp., Chicago, Ill. 537,963, ren. 1–5–71. Cl. 46.
Kramer, Philip, d.b.a. Murd Co., Philadelphia, Pa. 780,150, canc. Cl. 16.
La Marche, Austin W., Des Plaines, Ill. 905,400, pub. 10–20–70. Cl. 21.
Lange Co., The, Dubuque, Iowa. 905,432, pub. 10–20–70. Cl. 22.
Lansdale Microelectronics, Inc., Colmar, Pa. 905,404, pub. 10–20–70. Cl. 21.
Lawnlite Co., Inc., Miami, Fla. 905,513, pub. 10–20–70. Cl. 32.
Lenel Perfumes, Inc., Dallas, Tex. 539,472, ren. 1–5–71. Cl. 51.
Lever Brothers Co., New York, N.Y. 905,653–4, pub. 10–20–70. Cl. 51.
Levin & Co., Inc., New York, N.Y. 905,573, pub. 10–20–70. Cl. 29.
Levine, Henry Co., Inc., Boston, Mass. 780,387, canc. Cl. 39.
Llen Chemical Co., Franklin Park, Ill. 537,895, ren. 1–5–71. Cl. 6.
Life Mfg. Co., Inc., East Boston, Mass. 534,346, ren. 1–5–71. Cl. 40.
Linsey, Jos. M., Corp., Somerville, Mass. 905,524, pub. 10–20–70. Cl. 34.
Lobaugh, Rollin J., Inc., South San Francisco, Calif. 780,332, canc. Cl. 36.
Logan Electric Specialty Mfg. Co., Chicago, Ill. 905,436, pub. 10–20–70. Cl. 22.
London & Co., Inc., Elizabeth, N.J. 537,519, ren. 1–5–71. Cl. 49.
Long Island Salt Water Taffy Co., East Hampton, N.Y. 905,694, pub. 10–20–70. Cl. 46.

Loom Treasures, Inc., Garland, Tex. 905,681, pub. 10–20–70. Cl. 40.
Lowe, E. S., Co., Inc., Long Island City, N.Y. 905,443, pub. 10–20–70. Cl. 22.
Lucky Stride Shoes, Inc., Maysville, Ky. 780,395, canc. Cl. 39.
Ludlow Corp., Needham Heights, Mass. 905,585, pub. 10–20–70. Cl. 42.
Lumoprint Zindler, K.G., Hamburg, Germany. 780,283, canc. Cl. 26.
Lyman Metal Products Corp., South Norwalk, Conn. 905,532, pub. 10–20–70. Cl. 30.
M & J Sales Co., Inc., Buffalo, N.Y. 905,598, pub. 10–20–70. Cl. 45.
MEM Co., Inc., Northvale, N.J. 896,142, cor. 1–5–71. Cl. 51.
Macblett Laboratories, Inc., The, Springdale, Conn. 780,188, canc. Cl. 21.
Magic Pan, Inc., Chicago, Ill. 905,667, pub. 10–20–70. Cl. 100.
Magic Pan, Inc., Chicago, Ill. 905,670, pub. 10–20–70. Cl. 100.
Malone & Hyde, Inc., Memphis, Tenn. 905,615, pub. 10–20–70. Cl. 46.
Marlenn Products Co., Inc., Baltimore, Md. 905,329, pub. 10–20–70. Cl. 6.
Masso Hermanos, S.A., Vigo, Spain. 535,222, ren. 1–5–71. Cl. 46.
Mattel, Inc., Hawthorne, Calif. 905,458–60, pub. 10–20–70.
Mattel, Inc., Hawthorne, Calif. 905,451–4, pub. 10–20–70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 905,456, pub. 9–22–70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 905,458–60, pub. 10–20–70. Cl. 22.
May Department Stores Co., The, St. Louis, Mo. 528,948, ren. 1–5–71. Cl. 39.
McCall Mfg. Co., Inc., Jasper, Fla. 780,107, canc. Cl. 6.
McCrory Corp., New York, N.Y. 905,662, pub. 10–20–70. Cl. 100.
McGraw-Edison Co., West Orange, N.J. 540,151, ren. 1–5–71. Cl. 21.
McGraw-Edison Co., Elgin, Ill. 905,420, pub. 5–19–70. Cl. 21.
McGraw-Hill, Inc., New York, N.Y. 534,235, ren. 1–5–71. Cl. 38.
McGraw-Hill, Inc., New York, N.Y. 905,678, pub. 10–20–70. Cl. 101.
McNish, Robert, & Co., Ltd., Dumbartonshire, Scotland. 537,660. Am. 7(d). Cl. 49.
Mead Johnson & Co., Evansville, Ind. 277,565, ren. 1–5–71. Cl. 46.
Medequip Corp., Park Ridge, Ill. 905,533, pub. 10–20–70. Cl. 36.
Mediplastics Corp., Troy, N.Y. 780,433–6, canc. Cl. 44.
Meditrol-Automated Medication Systems, Rapid City, S. Dak. 905,429, pub. 10–20–70. Cl. 21.
Melville Shoe Corp., New York, N.Y. 780,407, canc. Cl. 39.
Metal Bellows Corp., Sharon, Mass. 780,217, canc. Cl. 23.
Meyer Tomatoes, King City, Calif. 905,626, pub. 10–20–70. Cl. 46.
Michigan Birch Door, Mfg., Inc., Mt. Clemens, Mich. 905,349, pub. 7–14–70. Cl. 12.
Microdot Inc., from Republic Industrial Corp., New York, N.Y. 905,356, pub. 8–13–68. Cl. 13.
Miles Laboratories, Inc., Elkhart, Ind. 534,339, ren. 1–5–71. Cl. 38.
Miles Laboratories, Inc., Elkhart, Ind. 905,382–3, pub. 10–20–70. Cl. 18.
Miller Brewing Co., Milwaukee, Wis. 905,630, pub. 10–20–70. Cl. 48.
Mini Rhea, Bensenville, Ill. 780,381, canc. Cl. 39.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 905,536–40, pub. 10–20–70. Cl. 36.
Mrs. Dalton's Best Maid Products, Inc., d.b.a. Wes Tex Products, Fort Worth, Tex. 276,841, 12(c) pub. 1–5–71. Cl. 46.
Mr. Transmission, Inc., Nashville, Tenn. 905,682, pub. 10–20–70. Cl. 103.
Mitchell, Jimmy, Inc., High Point, N.C. 905,353, pub. 10–20–70. Cl. 12.
Mitsui & Co. (U.S.A.) Inc., New York, N.Y. 905,591, pub. 10–13–70. Cl. 42.
Mo och Domsjo Aktiebolag, Ornskoldsvik, Sweden. 905,346, pub. 10–20–70. Ch 12.
Model Products Corp., Mt. Clemens, Mich. 905,445, pub. 10–20–70. Cl. 22.
Mod-Elles, Inc., New York, N.Y. 905,546, pub. 10–20–70. Cl. 38.
Monarch Wine Co. of Georgia, Atlanta, Ga. 905,627, pub. 10–20–70. Cl. 47.
Monocrown, Newark, N.J. 780,302, canc. Cl. 28.
Morris, Philip, Inc., New York, N.Y. 905,376, pub. 10–20–70. Cl. 17.
Morton International, Inc., Chicago, Ill. 539,528, ren. 1–5–71–Cl. 23.
Motorola, Inc., Franklin Park, Ill. 780,287–8, canc. Cl. 26.
Motorola, Inc., Franklin Park, Ill. 905,414, pub. 10–20–70. Cl. 21.
Myerson Tooth Corp., Cambridge, Mass. 537,280, ren. 1–5–71. Cl. 44.
N. V. Bierbrouwerij "De Drie Hoefijzers", Breda, Netherlands. 905,629, pub. 10–20–70. Cl. 48.
National Biscuit Co., New York, N.Y. 36,221, ren. 1–5–71. Cl. 46.
National Publishing Co., Milwaukee, Wis. 905,550, pub. 10–20–70. Cl. 38.
National Union Electric Corp., Bloomington, Ill. 905,405, pub. 10–20–70. Cl. 21.
New England Confectionery Co., Cambridge, Mass. 534,587, ren. 1–5–71. Cl. 46.
New England Confectionery Co., Cambridge, Mass. 534,905, ren. 1–5–71. Cl. 46.
New Jersey Zinc Co., The, Bethelehem, Pa. 537,462, ren. 1–5–71. Cl. 14.
Nichols, Frederick B., d.b.a. The Fred Nichols Co., Kansas City, Mo. 905,679, pub. 10–20–70. Cl. 101.
Nino Gesellschaft mit beschrankter Haftung & Co., Nordhorn, Germany. 905,587, pub. 10–20–70. Cl. 42.
Nissen, John P., Jr., Co., Glenside, Pa. 539,066, ren. 1–5–71. Cl. 11.
Noerdlinger, Victor S., Inc., New York, N.Y. 780,415, canc. Cl. 42.
Novel Books, Inc., Chicago, Ill. 905,548, pub. 10–20–70. Cl. 38.
Nu-Living, Inc., North Royalton, Ohio. 905,646, pub. 10–20–70. Cl. 51.
Nuts Inc., Westlake, Ohio. 905,358, pub. 10–20–70. Cl. 13.
Occidental Petroleum Corp., Los Angeles, Calif. 905,332–3, pub. 10–20–70. Cl. 6.
Ocean Garden Products, Inc., San Diego, Calif. 905,621, pub. 10–20–70. Cl. 46.
Okaya Electric Industries Co. Ltd., Tokyo, Japan. 905,422, pub. 10–20–70. Cl. 21.
Olga Co., Van Nuys, Calif. 531,785, ren. 1–5–71. Cl. 39.
Olos Corp., Monroeville, Pa. 905,446, pub. 10–20–70. Cl. 22.
Oneida Ltd., Oneida, N.Y. 905,481–2, pub. 10–20–70. Cl. 23.
O'Neil Tarpaulin & Awning Co., Inc., Youngstown, Ohio. 905,350, pub. 10–20–70. Cl. 12.
Owen Laboratories, Inc., Dallas, Tex. 905,385, pub. 10–20–70. Cl. 18.
Palazzolo, J., Son, Inc., New Hyde Park, N.Y. 76,479, 12(c) pub. 1–5–71. Cl. 51.
Paramount Pictures Corp., New York, N.Y. 905,528–9, pub. 10–20–70. Cl. 36.
Parker Brothers, Inc., Salem, Mass. 905,455, pub. 10–20–70. Cl. 22.
Pearson Pharmacal Co., Inc., Miami, Fla. 538,030, ren. 1–5–71. Cl. 18.
Peavey Co., Minneapolis, Minn. 534,119, ren. 1–5–71. Cl. 105.
Peavey Co., Minneapolis, Minn. 535,179, ren. 1–5–71. Cl. 46.
Peck & Peck, New York, N.Y. 539,624, ren. 1–5–71. Cl. 39.
Pecos Cantaloupe Co., Inc., Pecos, Tex. 905,606, pub. 10–20–70. Cl. 46.
Peninsular Distributing Co., Detroit, Mich. 778,919, canc. Cl. 4.
Penney, J. C., Co., Inc., New York, N.Y. 905,680, pub. 10–20–70. Cl. 101.
Pennwood Numechron Co., Pittsburgh, Pa. 528,379, ren. 1–5–71. Cl. 27.
Permatex Co., Inc., West Palm Beach, Fla. 540,966, ren. 1–5–71. Cl. 16.
Permatex Co., Inc., West Palm Beach, Fla. 541,409, ren. 1–5–71. Cl. 6.
Pesek Engineering & Mfg. Co., Minneapolis, Minn. 905,480, pub. 10–20–70. Cl. 23.
Petitjean, Gay & Cie, Le-Pre-Saint-Gervais, Seine, France. 780,438, canc. Cl. 46.
Pettibone Laboratories, Inc., New York, N.Y. 905,656, pub. 10–20–70. Cl. 52.
Pettibone Laboratories, Inc., New York, N.Y. 905,693. Cl. 6.
Pfening, Fred D., Co., The, Columbus, Ohio. 905,499, pub. 10–20–70. Cl. 26.
Pfizer, Chas., & Co., Inc.: *See*— Pfizer Inc.
Pfizer Inc., from Chas. Pfizer & Co., Inc., New York, N.Y. 905,644, pub. 10–20–70. Cl. 51.
Pfizer Inc., from Chas. Pfizer & Co., Inc., New York, N.Y. 905,652, pub. 10–20–70. Cl. 51.
Philadelphia Pad & Binding Co., Inc., d.b.a. Philadelphia Pad & Binding Co., Philadelphia, Pa. 532,101, ren. 1–5–71. Cl. 40.
Philadelphia Sign Co., Philadelphia, Pa. 780,196, canc. Multiple Class (Classes 21 and 50).
Phillips Petroleum Co., Bartlesville, Okla. 534,276, ren. 1–5–71. Cl. 39.
Phillips Petroleum Co., Bartlesville, Okla. 534,929, ren. 1–5–71. Cl. 23.
Pi Beta Phi, St. Louis, Mo. 281,322, ren. 1–5–71. Cl. 42.
Pincus, Bernard S., Co., Philadelphia, Pa. 540,983, ren. 1–5–71. Cl. 46.
Plastek Co., Sturgis, Mich. 905,507, pub. 10–20–70. Cl. 29.
Playskool, Inc., Chicago, Ill. 905,439–40, pub. 10–20–70. Cl. 22.
Plumley, Elizabeth Emmett, Richmond, Va. 905,360, pub. 10–20–70. Cl. 13.
Programming Sciences Corp., New York, N.Y. 905,692, pub. 10–20–70. Cl. 107.
Proteus Foods & Industries, Inc., New York, N.Y. 905,616, pub. 10–20–70. Cl. 46.
R. Marchand et Cie S.A., Geneva, Switzerland. 905,503, pub. 10–13–70. Cl. 26.
Radio Shack Corp. Tandy Corp., d.b.a. Radio Shack Division, Boston Mass. 761,943. Am. 7(d). 1–5–71. Cl 26.
Ralston Purina Co., St. Louis, Mo. 905,386, pub. 10–20–70. Cl. 18.
Ralston Purina Co., St. Louis, Mo. 905,625, pub. 10–20–70. Cl. 46.
Randall, C. Ray, Mfg. Co., North Attleboro, Mass. 780,299, canc. Cl. 28.
Rayflex Exploration Co., Richardson, Tex. 780,294, canc. Cl. 26.
Ready-Men, Inc., Chicago, Ill. 905,674, pub. 10–20–70. Cl. 101.
Rectilinear Research Corp., Bronx, N.Y. 905,413, pub. 11–3–70. Cl. 21.
Regine Zylberberg, Paris, France. 905,658, pub. 10–20–70. Cl. 100.
Reiling Mfg. Co., The, Battle Creek, Mich. 905,655, pub. 10–20–70. Cl. 52.
Renwick, Frank William, Toronto, Ontario, Canada. 780,184, canc. Cl. 19.

Republic Industrial Corp.: *See*— Microdot Inc.
Research Products Co., Salina, Kans. 532,364, ren. 1–5–71. Cl. 46.
Riverton Lime & Stone Co., Inc., Riverton, Va. 277,837, ren. 1–5–71. Cl. 12.
Riviana Foods Inc., Houston, Tex. 539,608, ren. 1–5–71. Cl. 46.
Revley Corp., Meadville, Pa. 780,272, canc. Cl. 23.
Roberts-Boze, Inc., New Orleans, La. 905,331, pub. 10–20–70. Cl. 6.
Robins, A. H., Co., Inc., Richmond, Va. 905,647, pub. 10–20–70. Cl. 51.
Rochester Ropes, Inc., Culpeper, Va. 780,353, canc. Cl. 38.
Rockwell-Barnes Co., Elk Grove Village, Ill. 282,149, ren. 1–5–71. Cl. 37.
Romalma Knitwear of Italy, d.b.a. Gregg, Inc., Los Angeles, Calif. 780,388, canc. Cl. 39.
Romla Co., Inc., Gardena, Calif. 538,052, ren. 1–5–71. Cl. 34.
Ronson Corp., Woobridge, N.J. 905,523, pub. 10–20–70. Cl. 34.
Ross, Alfred M., d.b.a. Sonarco, Cheltenham, Pa. 905,506, pub. 10–20–70. Cl. 28.
Rykoff, S. E., & Co., Los Angeles, Calif. 905,657, pub. 10–20–70. Cl. 52.
Salvage Shoe Co., Inc., Boston, Mass. 780,382, canc. Cl. 39.
Sanford Ink Co., Bellwood, Ill. 905,542, pub. 10–20–70. Cl. 37.
Santa Fe International Corp., Los Angeles, Calif. 905,687, pub. 10–20–70. Cl. 103.
Santa Fe International Corp., Los Angeles, Calif. 905,690, pub. 10–20–70. Cl. 105.
Sarco Co., Inc., Allentown, Pa. 905,364, pub. 10–20–70. Cl. 13.
Sargent & Greenleaf, Inc., Rochester, N.Y. 905,401, pub. 10–20–70. Cl. 21.
Sarong, Inc., New York, N.Y. 905,576, pub. 10–20–70. Cl. 39.
Schawk Graphics, Inc., Chicago, Ill. 905,671, pub. 10–20–70. Cl. 101.
Schenley Distillers, Inc., New York, N.Y. 780,477, canc. Cl. 49.
Schneible, Claude B., Co., Detroit, Mich. 539,184, ren. 1–5–71. Cl. 23.
Schreiber, A. H., Co., Inc., New York, N.Y. 780,398, canc. Cl. 39.
Schreiber & Goldberg, Inc., New York, N.Y. 780,218, canc. Cl. 23.
Schwab, H. W., Textile Corp., New York, N.Y. 533,414, ren. 1–5–71. Cl. 42.
Score-Awl Tool Co., Salisbury, N.C. 780,270, canc. Cl. 23.
Scott & Fetzer Co., The, Lakewood, Ohio. 905,418, pub. 10–20–70. Cl. 21.
Scott, H. H., Inc., Maynard, Mass. 905,402, pub. 10–20–70. Cl. 21.
Seeburg Corp. of Delaware, The, Chicago, Ill. 905,479, pub. 10–20–70. Cl. 23.
Seeman Brothers, Inc., Great Neck, N.Y. 905,622, pub. 10–6–70. Cl. 46.
Seperic, Societe Anonyme, Morat, Switzerland. 905,378, pub. 4–8–69. Cl. 18.
Service Industries, Philadelphia, Pa. 522,165, ren. 1–5–71. Cl. 10.
Sevenstrand Tackle Mfg. Co., Westminster, Calif. 905,441, pub. 10–20–70. Cl. 22.
Shamrock-Neatway Products, Inc., Minneapolis, Minn. 780,313, canc. Cl. 32.
Sheffield Bottling Co., d.b.a. Coach'n Four Products Co., to Coach and Four Products Co., Philadelphia, Pa. 640,759. Am. 7(d). Cl. 45.
Shield Laboratories, Inc., New York, N.Y. 532,183, ren. 1–5–71. Cl. 18.
Shored Singer, Inc., Boston, Mass. 532,301, ren. 1–5–71. Cl. 39.
Shulton, Inc., Clifton, N.J. 905,641, pub. 4–22–69. Cl. 51.
Siebenthaler Co., The, Dayton, Ohio. 541,111, ren. 1–5–71. Cl. 1.
Signal Oil & Gas Co., Los Angeles, Calif. 905,551, pub. 10–20–70. Cl. 38.
Simonsen Metal Products Corp., Chicago, Ill. 905,319, pub. 3–31–70. Multiple Class (Classes 2 and 32).
Sims Corp., Providence, R.I. 780,314, canc. Cl. 34.
Sleepmaster Products Co., Inc., Newark, N.J. 905,515, pub. 10–20–70. Cl. 32.
Slumberland Products Co., Woburn, Mass. 905,514, pub. 10–20–70. Cl. 32.
Smith, A. O., Inland Inc., Milwaukee, Wis. 905,357, pub. 10–20–70. Cl. 13.
Smiths Industries Ltd., London, England. 274,556, ren. 1–5–71. Cl. 35.
Societe de Fabrication d'Instruments de Mesure S.F.I.M., Massy (Essonne), France. 905,410, pub. 10–20–70. Cl. 21.
Societe d'etudes Scientifiques et Industrielles de l'Ile-de-France, Longjumeau, France. 905,380, pub. 10–20–70. Cl. 18.
Socony Mobil Oil Co., Inc., New York, N.Y. 780,117, canc. Multiple Classes (Classes 6, 10, and 52).
Sonesta International Hotels Corp., by change of name from Hotel Corp. of America, Boston, Mass. 899,897, cor. Cl. 100.
Southgate Foods, Inc., Norfolk, Va. 539,308, ren. 1–5–71. Cl. 46.
Southwest Factories, Inc., Oklahoma City, Okla. 905,371, pub. 10–20–70. Cl. 14.
Southworth Machine Co., Portland, Maine. 539,853, ren. 1–5–71. Cl. 23.
Sperry Rand Corp., New York, N.Y. 905,494–5, pub. 11–25–69. Cl. 26.
Stanadyne, Inc., from Standard Screw Co., Hartford, Conn. 905,365, pub. 10–20–70. Cl. 13.
Standard Screw Co.: *See*— Stanadyne, Inc.
Stauffer Chemical Co., New York, N.Y. 512,818. Am. 7(d). Cl. 6.
Stephano Bros., Philadelphia, Pa. 780,157, canc. Cl. 17.
Sterling Drug Inc., New York, N.Y. 539,252, ren. 1–5–71. Cl. 6.
Stevens, J. P., & Co., Inc., New York, N.Y. 905,589, pub. 10–20–70. Cl. 42.
Stewart's Root Beer, Inc., Mansfield, Ohio. 274,949, 12(c) pub. 1–5–71. Cl. 45.
Stewart-Warner Corp., Chicago, Ill. 533,455–6, ren. 1–5–71. Cl. 13.
Stewart-Warner Corp., Chicago, Ill. 905,406, pub. 10–20–70. Cl. 21.
Stieff Co., The, Baltimore, Md. 905,505, pub. 10–20–70. Cl. 28.
Stuart Distributing Co., Inc., Baltimore, Md. 905,672, pub. 10–20–70. Cl. 101.
Success Motivation Institute, Inc., Waco, Tex. 905,559, pub. 10–20–70. Cl. 38.
Summit Chemical Co., Baltimore, Md. 905,336, pub. 10–20–70. Cl. 6.
Sun Chemical Corp., New York, N.Y. 905,341–2, pub. 10–20–70. Cl. 11.
Sunbeam Corp., Chicago, Ill. 281,291, ren. 1–5–71. Cl. 21.
Sunbeam Corp., Chicago, Ill. 539,425, ren. 1–5–71. Cl. 21.
Sunkist Growers, Inc., Sherman Oaks, Calif. 539,649, ren. 1–5–71. Cl. 23.
Sunstate Sportswear, Inc., Tampa, Fla. 780,362, canc. Cl. 39.
Superior Continental Corp., Hickory, N.C. 895,243. Am. 7(d). Cl. 21.
Superior Sleeprite Corp., Batesville, Ind. 538,481, ren. 1–5–71. Cl. 32.
Sweet-Orr & Co., Inc., New York, N.Y. 780,386, canc. Cl. 39.
Sybron Corp., Rochester, N.Y. 280,982, ren. 1–5–71. Cl. 26.
Systematic Business Forms, Inc., Paramus, N.J. 780,341, canc. Cl. 37.
Tandy Corp., d.b.a. Radio Shack, Boston, Mass. 905,416, pub. 10–20–70. Cl. 21.
Tanner, Jerome, Birmingham, Ala. 905,426, pub. 10–20–70. Cl. 21.
Tappan Co., The, Mansfield, Ohio. 905,483, pub. 10–20–70. Cl. 23.
Tartan Corp., Kalamazoo, Mich., from Brunswick Corp., Chicago, Ill. 905,516, pub. 10–20–70. Cl. 32.
Taylor & Ferguson Ltd., Glasgow, Great Britain. 678,193. Am. 7(d) 1–5–71. Cl. 49.
Telex Corp., The, Tulsa, Okla. 905,501, pub. 10–20–70. Cl. 26.
Textron Inc., Providence, R.I. 905,391, pub. 2–3–70. Cl. 19.
Theonett & Co., Chicago, Ill. 905,604, pub. 10–20–70. Cl. 45.
Thomson-CSF, Paris, France. 905,409, pub. 10–20–70. Cl. 21.
Tokyo Seimitsu Co., Ltd., Tokyo, Japan. 905,486, pub. 10–20–70. Cl. 23.
Topco Associates, Inc., Skokie, Ill. 905,572, pub. 10–20–70. Cl. 39.
Topps Chewing Gum, Inc., Brooklyn, N.Y. 541,002, ren. 1–5–71. Cl. 46.
Towle Mfg. Co., d.b.a. Carvel Hall, Crisfield, Md. 905,490, pub. 10–20–70. Cl. 23.
Transogram Co., Inc., New York, N.Y. 780,204, canc. Cl. 22.
True Form Foundations, Inc., Darby, Pa. 540,174, ren. 1–5–71. Cl. 39.
Tubotron, Inc., Somerset, N.J. 905,359, pub. 10–20–70. Cl. 13.
Tupper, Thomas J., Jr., Kansas City, Mo. 905,549, pub. 10–20–70. Cl. 38.
Tussy Cosmetics, Inc., New York, N.Y. 905,643, pub. 10–20–70. Cl. 51.
Typagraph Corp. San Diego, Calif. 905,498, pub. 3–31–70. Cl. 26.
UMC Industries, Inc., St. Louis, Mo. 537,070, ren. 1–5–71. Cl. 32.
Ultra Carbon Corp., Bay City, Mich. 905,399, pub. 10–20–70. Cl. 21.
Uneeda Doll Co., Inc., Brooklyn, N.Y. 905,431, pub. 10–20–70. Cl. 22.
Uneeda Doll Co., Inc., Brooklyn, N.Y. 905,437, pub. 10–20–70. Cl. 22.
Unimpart, Inc., Los Angeles, Calif. 780,370, canc. Cl. 39.
Uniroyal, Inc., New York, N.Y. 905,457, pub. 10–20–70. Cl. 22.
United Mfg. Co., The, Cleveland, Ohio. 905,389, pub. 9–2–69. Cl. 19.
United Merchants & Mfg., Inc., New York, N.Y. 780,422, canc. Cl. 42.
United Merchants & Mfg., Inc., New York; N.Y. 905,588, pub. 10–20–70. Cl. 42.
United States Research Corp., Washington, D.C. 905,423, pub. 10–20–70. Cl. 21.
United States Rubber Co., New York, N.Y. 780,330, canc. Cl. 35.
United States Steel Corp., Pittsburgh, Pa. 538,759, ren. 1–5–71. Cl. 13.
United Vintners, Inc., d.b.a. Italian Swiss Colony, San Francisco, Calif. 905,628, pub. 10–20–70. Cl. 47.
Upjohn Co., The, Kalamazoo, Mich. 905,337, pub. 10–20–70. Cl. 6.
U-Rent Furniture, Inc., Van Nuys, Calif. 905,659, pub. 10–20–70. Cl. 100.
Utica Radiator Corp., Utica, N.Y. 780,320, canc. Cl. 34.
Valley Forge Flag Co., Inc., New York, N.Y. 905,638, pub. 10–20–70. Cl. 50.
Valspar Corp., The, Rockford, Ill. 780,147, canc. Cl. 16.
Vanderbilt, R. T., Co., Inc., New York, N.Y. 780,151, canc. Cl. 16.
Vibratechniques S.A., Paris, France. 905,462, pub. 10–20–70. Cl. 23.
Victor Comptometer Corp., Chicago, Ill. 905,447, pub. 10–20–70. Cl. 22.
Visolux-Elektronik Richard Siering, G.m.b.H., Berlin, Germany. 901,789, cor. 1–5–71. Cl. 26.
Vizsalyi, Leslie Laszlo, d.b.a. Sheen Engineering, Los Angeles Calif. 905,415, pub. 10–20–70. Cl. 21.

Wehr Corp., Milwaukee, Wis. 896,902, cor. 1–5–71. Cl. 34.
Waljohn Plastics, Inc., Brooklyn, N.Y. 780,119, canc. Cl. 12.
Waljohn Plastics, Inc., Brooklyn, N.Y. 780,318, canc. Cl. 34.
Warner & Swasey Co., The, Cleveland, Ohio. 905,465–7, pub. 10–20–70. Cl. 23.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 276,273, ren. 1–5–71. Cl. 46.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 528,562, ren. 1–5–71. Cl. 51.
Waverly Beauty Products, Inc., Brooklyn, N.Y. 905,650, pub. 10–20–70. Cl. 51.
Weaver, W. R., Co., El Paso, Tex. 905,500, pub. 6–23–70. Cl. 26.
Weber, A. C., & Co., Inc., Chicago, Ill. 905,512, pub. 10–20–70. Cl. 32.
Wehr Corp., Verona, Wis. 905,522, pub. 10–20–70. Cl. 34.
Welbilt Corp., Maspeth, N.Y. 905,525, pub. 10–20–70. Cl. 34.
Welding, Leslie, Co., Inc., Franklin Park, Ill. 780,068, canc. Cl. 34.
Weltron Co., Inc., Durham, N.C. 905,421, pub. 10–20–70. Cl. 21.
Wembley Industries, Inc., New Orleans, La. 905,577, pub. 10–20–70. Cl. 39.
West Bend Co., The, West Bend, Wis 780126 canc Cl 13
Western Publishing Co Inc., Racine, Wis. 905,552, pub. 10–20–70. Cl. 38.
Western Wood Products Association, Portland, Oreg. 815,642, canc. Cl. 200.
Western Wood Products Association, Portland, Oreg. 822,565, canc. Cl. 100.
Wheel Mate Corp., East Petersburg, Pa. 905,395, pub. 10–20–70. Cl. 19.
Whirlpool Corp., Benton Harbor, Mich. 905,509, pub. 10–20–70. Cl. 31.
White Stores, Inc., Wichita Falls, Tex. 905,526, pub 10–20–70. Cl. 35.
Whittaker Corp., Los Angeles, Calif. 905,412, pub. 10–20–70. Cl. 21.
Wilbur-Ellis Co., San Francisco, Calif. 530,311, ren. 1–5–71. Cl. 46.
Williams Mfg. Co., The, Portsmouth, Ohio. 905,563, pub. 10–20–70. Cl. 39.
Wilson, Donald J., d.b.a. Wilson Key-Craft, Chicago, Ill. 780,249, canc. Cl. 23.
Woolworth, F. W., Co., New York, N.Y. 780,305, canc. Cl. 32.
Woolworth, F. W., Co., New York, N.Y. 780,406, canc. Cl. 39.
Worthington Foods, Inc., Worthington, Ohio. 905,613, pub. 10–20–70. Cl. 46.
Wotan Werke GmbH, Dusseldorf-Holthausen, Germany. 905,487, pub. 10–20–70. Cl. 23.
Wurm Brothers Co., Chicago, Ill. 272,999, ren. 1–5–71. Cl. 46.
Wylde, Sam, Flour Co., Inc., d.b.a. Sam Wylde Flour Co., Seattle, Wash. 905,614, pub. 10–20–70. Cl. 46.
York Label Corp., York, Pa. 780,264, canc. Cl. 23.
Ziff-Davis Publishing Co., New York, N.Y. 905,556, pub. 10–20–70. Cl. 38.
Zodiance, Inc.: *See*— Cosmet, Inc.

U.S. GOVERNMENT PRINTING OFFICE: 0—1971

A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

U.S. DEPARTMENT OF COMMERCE

Official Gazette of the United States Patent Office

January 12, 1971 Volume 882 Number 2

PATENTS
NOTICES

Board of Appeals Decisions Rendered in the Month of November 1970

Examiner affirmed	140
Examiner affirmed in part	13
Examiner reversed	33
Total	186

Certificates of Correction for the Week of Jan. 12, 1971

D. 216,919	3,500,707	3,513,252	3,523,117
3,380,851	3,502,049	3,513,551	3,523,737
3,412,249	3,505,571	3,513,878	3,524,182
3,417,578	3,505,939	3,513,916	3,524,247
3,427,230	3,506,084	3,514,114	3,524,915
3,442,501	3,506,742	3,514,288	3,527,618
3,445,821	3,507,124	3,514,357	3,527,815
3,453,281	3,508,037	3,514,719	3,529,084
3,457,070	3,508,653	3,515,773	3,530,555
3,459,275	3,510,138	3,515,796	3,531,484
3,463,647	3,510,584	3,515,859	3,531,504
3,473,419	3,511,124	3,516,040	3,533,881
3,485,832	3,511,763	3,518,209	3,533,999
3,496,052	3,511,777	3,519,321	3,535,614
3,497,320	3,512,217	3,519,378	3,535,914
3,499,580	3,513,156	3,520,398	3,536,776
3,500,116			

Changes In Front Page of Patents

Changes in the front page of patents proposed in the notice published in the OFFICIAL GAZETTE, August 25, 1970 (877 O.G. 730), have been deferred for about six months.

Dec. 14, 1970. WILLIAM E. SCHUYLER, JR., *Commissioner of Patents.*

Dedication

3,518,316.—*Charles Carmen Cumbo,* Wilmington, Del. BROMINATION PROCESS. Patent dated June 30, 1970. Dedication filed Nov. 12, 1970, by the assignee, *E. I. du Pont de Nemours and Company.*

Hereby dedicates the remaining term of the patent to the Public.

Disclaimers

3,356,154.—*Robert L. Cassidy,* Westland, Mich. FLEXIBLE BLADE ENGINE COOLING FAN. Patent dated Dec. 5, 1967. Disclaimer filed Sept. 17, 1970, by the assignee, *Ford Motor Company.*

Hereby enters this disclaimer to claims 1, 2 and 3 of said patent.

3,532,249.—*Peter P. Gach,* Evansville, Ind. TAMPERPROOF REPLACEABLE CAP. Patent dated Oct. 6, 1970. Disclaimer filed Apr. 13, 1970, by the assignee, *Sunbeam Plastics Corporation.*

Hereby disclaims the terminal portion of the term of said patent subsequent to June 2, 1987.

Disclosure Document Program

This notice consolidates and supersedes the notices of March 26, 1969 (862 O.G. 1) and August 11, 1970 (878 O.G. 1) relating to the Patent Office Disclosure Document Program.

Under this program the Patent Office accepts and preserves, for a period of two years, papers referred to as "Disclosure Documents." These papers may be used as evidence of the dates of conception of inventions.

The Program

A paper disclosing an invention and signed by the inventor or inventors may be forwarded to the Patent Office by the inventor (or by any one of the inventors when there are joint inventors), by the owner of the invention, or by the attorney or agent of the inventor(s) or owner. It will be retained for two years and then be destroyed unless it is referred to in a separate letter in a related patent application within said two years.

A Disclosure Document is not a patent application and the date of its receipt in the Patent Office will not become the effective filing date of any patent application subsequently filed. However, like patent applications, these documents will be kept in confidence by the Patent Office. If patent protection is desired, a patent application should be filed as soon as possible.

This program does not diminish the value of conventional witnessed and notarized records as evidence of conception of an invention, but it should provide a more credible form of evidence than that provided by the popular practice of mailing a disclosure to oneself or another person by registered mail. The program is made available as a service to those persons desiring to use it.

New Applications Received During September 1970

Patents	8413
Designs	494
Plant Patents	4
Reissues	41
Total	8952

Issue—January 12, 1971

Patents	1825	No. 3,553,734 to No.	3,555,558, incl.
Designs	25	No. 219,700 to No.	219,724, incl.
Plant Patents	4	No. 3,014 to No.	3,017, incl.
Reissues	8	No. 27,024 to No.	27,031, incl.
Total	1862		

Content of Disclosure Document

Although there are no restrictions as to content and claims are not necessary, the benefits afforded by a Disclosure Document will depend directly upon the adequacy of the disclosure. Therefore, it is strongly urged that the document contain a clear and complete explanation of the manner and process of making and using the invention in sufficient detail to enable a person having ordinary knowledge in the field of the invention to make and use the invention. When the nature of the invention permits, a drawing or sketch should be included. The use or utility of the invention should be described, especially in chemical inventions.

The Disclosure Document must be limited to written matter or drawings on paper or other thin, flexible material, such as linen or plastic drafting material, having dimensions or being folded to dimensions not to exceed 8½ by 13 inches. Photographs also are acceptable. Each page should be numbered. Text and drawings should be sufficiently dark to permit reproduction with commonly used office copying machines.

A $10 fee is charged for filing a Disclosure Document. Payment must accompany the Disclosure Document when it is submitted to the Patent Office.

In addition to the $10 fee, the Disclosure Document must be accompanied by a stamped, self-addressed envelope and a separate paper in duplicate, signed by the inventor, stating that he is the inventor and requesting that the material be received for processing under the Disclosure Document Program. The papers will be stamped by the Patent Office with an identifying number and date of receipt, and the duplicate request will be returned in the self-addressed envelope together with a warning notice indicating that the Disclosure Document may be relied upon only as evidence and that a patent application should be diligently filed if patent protection is desired. The inventor's request may take the following form:

"The undersigned, being the inventor of the disclosed invention, requests that the enclosed papers be accepted under the Disclosure Document Program, and that they be preserved for a period of two years."

Retention

The Disclosure Document will be preserved in the Patent Office for two years after its receipt and will then be destroyed unless it is referred to in a separate letter in a related patent application filed within the two-year period. The Disclosure Document must be referred to in the separate letter by title, number, and date of receipt. Acknowledgement of receipt of such letters will be made in the next official communication or in separate letter from the Patent Office. Unless it is desired to have the Patent Office retain the Disclosure Document beyond the two-year period, it is not required that it be referred to in a patent application.

Warning as to Limitations

The two-year retention period should not be considered to be a "grace period" during which the inventor can wait to file his patent application without possible loss of benefits. It should be recognized that in establishing priority of invention an affidavit or testimony referring to a Disclosure Document must usually also establish diligence in completing the invention or in filing the patent application since the filing of the Disclosure Document.

Inventors are also reminded that any public use or sale in the United States, or publication of the invention anywhere in the world, more than one year prior to the filing of a patent application on that invention will prohibit the granting of a patent on that invention.

If the inventor is not familiar with what is considered to be "diligence in completing the invention" or "reduction to practice" under the patent law, or if he has other questions about patent matters, the Patent Office advises him to consult an attorney or agent registered to practice before the Patent Office. *A Directory of Attorneys and Agents Registered to Practice Before the U.S. Patent Office* is available for $1 from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Patent attorneys and agents may be found in the telephone directories of most major cities. Also, many large cities have associations of patent attorneys which may be consulted.

RICHARD A. WAHL,
Assistant Commissioner.

Dec. 11, 1970.

Separation of the Patent and Trademark Sections of the Official Gazette

Effective February 2, 1971, the OFFICIAL GAZETTE will be separated into two parts to be known as the *Patent Official Gazette* and the *Trademark Official Gazette*. The subscription prices for these publications are as follows:

Patent Official Gazette:
$89.00 per year
22.25 additional for foreign mailing
2.00 per single copy
Trademark Official Gazette:
$17.00 per year
4.25 additional for foreign mailing
.40 per single copy

Also effective February 2, 1971, the OFFICIAL GAZETTE will no longer contain "Decisions in Patent and Trademark Cases." Decisions of the type heretofore found in the "Decisions in Patent and Trademark Cases" are published by non-Federal organizations such as, for example, the Bureau of National Affairs, Inc., 1231 25th St. NW., Washington, D.C. 20037, and West Publishing Co., 50 Kellogg Blvd., St. Paul, Minn. 55102.

Finally, the "Decisions Leaflet" of the OFFICIAL GAZETTE will no longer be supplied as a separate subscription item after January 26, 1971. According to present plans, however, both the PATENT OFFICIAL GAZETTE and the TRADEMARK OFFICIAL GAZETTE will have identical "Patent Office Notices" sections containing notices of the various types heretofore published in the Gazette decision leaflet and Trademark Section. Those notices of particular interest to Patent Office employees will be accumulated and published approximately every fourth week, and distributed separately to employees.

WILLIAM E. SCHUYLER, JR.,
Commissioner of Patents.

Dec. 29, 1970.

Registration to Practice

The following list contains the names of all applicants for registration to practice before the United States Patent Office who attained passing grades in the examination of September 15, 1970. Information tending to affect the eligibility of any of said applicants on moral or ethical grounds should be furnished the Commissioner of Patents on or before February 5, 1971.

ROBERT GOTTSCHALK,
Chairman, Committee on Enrollment.

Dec. 15, 1970.

List of Applicants Who Passed the Examination for Registration to Practice Before the Patent Office Held September 15, 1970

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Patent Suits

Notices under 35 U.S.C. 290; Patent Act of 1952

2,835,586, D. D. Peebles, DRIED MILK PRODUCT AND METHOD OF MAKING SAME; **2,850,388**, Peebles and Clary, POWDERED CHOCOLATE PRODUCT AND PROCESS OF MANUFACTURE; **3,085,492**, D. D. Peebles, APPARATUS FOR THE TREATMENT OF DRY POWDERED MATERIALS, filed Oct. 22, 1970, D.C., E.D. Wis. (Milwaukee), Doc. 70-C-554, *Dairy Foods Incorporated* v. *The Great Atlantic & Pacific Tea Company, Inc.*

2,850,388. (See 2,835,586.)

2,898,786. (See Re. 24,924.)

2,967,119, R. P. Gutterman, ULTRASONIC PROCESS AND APPARATUS, filed Feb. 13, 1970, D.C., S.D.N.Y., Doc. 70-C-624, *Lipsner-Smith Corp.* v. *Rejuvertron Film Service.* Stipulation and order of discontinuance, June 25, 1970.

3,044,247, R. G. Hilbert, HIGH SPEED FALSE TWISTER SPINDLE AND MACHINE, filed Oct. 22, 1970, D.C., M.D.N.C. (Greensboro), Doc. C-236-G-70, *Leesona Corporation* v. *Custom Industries, Inc. and W. Conway Owings & Associates, Inc.*

3,085,492. (See 2,835,586.)

3,091,361, P. F. Gawron, CONTAINERS; **3,139,213**, B. Edwards, NESTABLE CUP, filed Oct. 14, 1970, U.S. Ct. of App., 1st Cir. Mass. (Boston), Doc. 7731, *Sweetheart Plastics, Inc.* v. *Illinois Tool Works, Inc.*

3,139,213. (See 3,091,361.)

3,144,085, M. M. Hasha, POWER SPINNER UNIT FOR WELL SWIVELS, filed Oct. 16, 1970, D.C., W.D. La. (Shreveport), Doc. 16129-L, *International Tool Co., Inc.* v. *The A.C. Co. of South La., Inc., Joseph T. Gibson and Frank L. Cox.*

3,145,786, O'Neill and Homanick, PORTABLE DRILL RIG; **Re. 26,284**, same, PORTABLE DRILL RIG METHODS AND APPARATUS; **3,158,213**, same, DRILL STRING SUSPENSION ARRANGEMENT, filed Aug. 26, 1970, D.C., N.D. Tex. (Dallas), Doc. CA-3-4122, *Leyman Corp., Automatic Drilling Machines, Inc.* v. *Walker-Neer Manufacturing Co., Inc.*

3,146,319, W. O. Stanton, MAGNETIC PHONOGRAPH PICKUP WITH COMPENSATING POLE PIECE ARRANGEMENT; **3,297,831**, same, MAGNETIC STEREOPHONIC PHONOGRAPH PICKUP, filed Oct. 8, 1970, D.C., S.D.N.Y., Doc. 70-C-4372, *Pickering & Company Inc.* v. *Qualitone Industries, Inc.*

3,158,213. (See 3,145,786.)

3,240,472, R. S. Jones, WHEEL ALIGNMENT TOOL, filed Oct. 19, 1970, D.C., S.D. Tex. (Houston), Doc. 70-H-1135, *Customized Data Systems, Inc. and Jimmie L. Holman* v. *Victor Comptometer Corp.*

3,264,882, K. Nichols, GYROSCOPE, filed Oct. 12, 1970, D.C. Kans. (Wichita), Doc. W-4457, *Koytt Nichols* v. *Standard Precision Tools, Inc., a division of Electronic Communications, Inc. (an NCR subsidiary), National Cash Register Corp., Electronic Communication Inc., Corp. (an NCR subsidiary).*

3,269,751. (See 3,400,949.)

3,270,897, H. Lingl, APPARATUS FOR STACKING BRICKS, filed Oct. 9, 1970, D.C., M.D.N.C. (Greensboro), Doc. C-225-G-70, *Hans Lingl* v. *Forrest Paschal Machinery Co., Inc.*

3,297,831. (See 3,146,319.)

3,345,900, B. V. Berkovitz, HEART-BEAT PACING APPARATUS, filed Sept. 29, 1970, D.C. Mass. (Boston), Doc. CA 70-1307-W, *American Optical Corporation* v. *Vitatron Medical N.V. and Vitatron Medical, Inc.*

3,375,800, Cole and Buller, SEISMIC CABLE DEPTH CONTROL APPARATUS, filed Feb. 6, 1970, D.C., S.D. Tex. (Houston), Doc. 70-H-102, *Continental Oil Co.* v. *Double D. Mfg. Co. Inc., & Double D. Machine & Engineering Co. and Jimmie K. Dyer.* Consent judgment entered Sept. 25, 1970.

3,400,949, R. E. Kendall, TRAILER HITCH WITH VERTICALLY ADJUSTABLE BALL; **3,269,751**, V. J. Whattoff, ADJUSTABLE HITCH, filed May 22, 1970, D.C., S.D. Iowa (Des Moines), Doc. 10-20-C-2, *Ray E. Kendall and Arthur L. Hosek* v. *Vernard J. Whattoff and Whattoff Motor Company.*

Decree, Pat. No. 3,269,751 valid and infringed. Injunction entered against plaintiffs, Oct. 20, 1970.

3,417,587, G. L. Campbell, SPIRAL PIPE MACHINE, filed Sept. 17, 1970, D.C., M.D. Fla. (Tampa), Doc. 70-418-C-T, *Garland Steel Company* v. *Florida Steel Corporation.*

3,425,841, Handwerk and Allen, PINEAPPLE-GRAPEFRUIT FRUIT JUICE BLEND, filed Oct. 16, 1970, D.C., N.D. Calif. (San Francisco), Doc. 70-2244-ACW, *Castle & Cooke, Inc.* v. *Del Monte Corporation.*

Re. 24,760. (See Re. 24,924.)

Re. 24,924, J. R. Willingham, GUN DRILLING TOOL; **2,898,786**, same, BLIND HOLE DRILL; **Re. 24,760**, same, HOLE ENLARGING AND FINISHING TOOL, filed Sept. 1, 1970, D.C., E.D. Mich. (Detroit), Doc. 35397, *John R. Willingham and Star Cutter Co.* v. *Ford Motor Co. and Star Cutter Co.* Same, filed Oct. 1, 1970, D.C., S.D. Ohio (Cincinnati), Doc. 7689, *John R. Willingham and Star Cutter Company (Party plaintiff)* v. *Ford Motor Company and Carr Tool Co., Inc. and Star Cutter Co. (Party defendant).*

Re. 26,284. (See 3,145,786.)

D. 200,160. (See D. 206,486.)

D. 206,486, W. D. Storm, FISHING LURE; **D. 200,160**, G. D. Pinnell, same, filed Aug. 2, 1968, D.C., W.D. Okla. (Oklahoma City), Doc. 68-309-C, *Storm Manufacturing Company* v. *Looboyle, Inc.* Consent decree; plaintiffs owner and exclusive licensee re Letters Patent. Defendants enjoined, Oct. 8, 1970.

D. 207,500, L. P. Mellyn, LIGHT DIFFUSER, filed Oct. 24, 1969, D.C., S.D.N.Y., Doc. 69-4673, *General Electric Co.* v. *International Telephone and Telegraph Corp.* Stipulation and order of discontinuance without prejudice, Oct. 5, 1970.

D. 213,614, S. K. Gorman, FIREPLACE MANTEL, filed Oct. 20, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c2615, *Dalton-Gorman Industries, Inc.* v. *Stand-Built Upholstery Corp.*

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner
F. H. BRONAUGH, Deputy Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF DECEMBER 15, 1970

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	3-27-69
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	1-09-69
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	9-09-69
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	5-20-69
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	2-07-69
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—N. ANSHER, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	2-02-70
SECURITY, GROUP 220—R. L. CAMPBELL, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	6-04-69
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	9-15-69
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	12-01-69
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	8-12-69
DESIGNS, GROUP 290—R. L. CAMPBELL, Director. Industrial Arts; Household, Personal and Fine Arts.	3-04-70
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	9-08-69
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—D. J. STOCKING, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	6-27-69
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	6-24-69
HEAT, POWER AND FLUID ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission; Fluid Handling; Lubrication; Joint Packing.	12-29-69
CONSTRUCTIONS, SUPPORTS, TEXTILES, CLEANING, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures; Centrifugal Separations; Cleaning; Coating; Pressing; Agitating; Foods: Textiles; Apparel and Shoes; Sewing Machines; Winding and Reeling.	11-03-69

Total number of pending applications (excluding Designs)	183,354
Total number of Design applications pending	2,740

Expiration of patents: The patents within the range of numbers indicated below expire during November 1970, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,660,723 to 2,664,561, inclusive
Plant Patents	Numbers 1,232 to 1,237, inclusive

CONSOLIDATED LISTING OF RECENT OFFICIAL GAZETTE NOTICES RE PATENT OFFICE PRACTICES AND PROCEDURES

The following is a compilation of the more important notices and rules changes which have been published in the OFFICIAL GAZETTE *from July 1, 1964 through December 31, 1970. These notices and rules changes are currently in effect and are published as a part of our "Better Service to the Public" program.*

CONTENTS

	Items
Information and Correspondence	1– 24
Records and Files	25– 29
Fees and Payment of Money	30– 40
Powers of Attorney	41– 42
Application Content	43– 51
Priority Applications	52– 62
Drawings	63– 65
Examination of Applications	66– 95
Amendments	96– 98
Interviews	99–100
Joinder	101–108
Time for Response	109–112
Appeals	113–124
Interferences	125–127
Correction of Errors	128–130
Abstracts	131–135
References	136–142
Trademarks	143–144
Postal Service Emergency	145–148
Miscellaneous	149–170

INFORMATION AND CORRESPONDENCE

(1) INFORMATION RE APPLICATION STATUS

In view of the relatively long pendency of patent applications at the present time, the final disposition of which may, in some cases, be of substantial importance to the public in general or, at least, to persons other than the applicants, it has been decided effective immediately to advise any person who makes written request for information as to the status of a United States application referred to by number in a foreign patent, which patent is identified in the request, whether the application is pending, abandoned or patented and, if patented, what the patent number is. The former practice of giving similar information with respect to an application referred to by number in a United States patent (Manual of Patent Examining Procedure, section 102) will be continued.

EDWARD J. BRENNER,
Dec. 11, 1964. *Commissioner of Patents.*

[809 O.G. 1298]

(2) TELEPHONE NUMBERS ON OFFICE ACTIONS

Effective immediately, the full surname of the Examiner who prepares the Office action will, in all cases, be typed below the action on the left side. The Examiner's telephone number will be typed below his name. This number should be called if the case is to be discussed or an interview arranged.

The Notice of December 10, 1964, 810 O.G. 808, and Change Notice 2–15 are rescinded.

RICHARD A. WAHL,
Apr. 5, 1965. *Superintendent, Patent Examining Corps.*

[813 O.G. 1099]

(3) EXPEDITING PAPERS RELATING TO APPEALS

In order to expedite the handling and processing of all papers relating to appeals, it is essential that all such documents include the Group Number to which the application is assigned, as well as the Appeal Number and Serial Number.

EDWIN L. REYNOLDS,
May 8, 1965. *First Assistant Commissioner.*

[815 O.G. 417]

(4) STATUS INQUIRIES

Telephone inquiries regarding the status of applications should be directed to the group clerical personnel and not to the examiners. Inasmuch as the official records and applications are located in the clerical section of the Examining Groups, the clerical personnel can readily provide status information without contacting the examiners.

RICHARD A. WAHL,
Sept. 22, 1965. *Assistant Commissioner.*

[819 O.G. 444]

(5) TELEPHONE NUMBERS ON AMENDMENTS AND OTHER PAPERS

In view of the increased use of telephone interviews regarding matter which can be readily cleared up by a telephone call to applicant or his representative, it is again recommended that amendments and other papers, such as letters of transmittal, include the complete telephone number with area code and extension, preferably near the signature of the writer.

RICHARD A. WAHL,
Mar. 11, 1966. *Assistant Commissioner.*

[825 O.G. 1]

(6) ZIP CODE REMINDER

By Executive Memorandum of June 18, 1965, President Johnson directed all Federal Agencies to take the lead in adopting the ZIP Code system and instructed the Postmaster General to issue regulations governing the use of ZIP Codes by such agencies.

Pursuant to this directive, Section 137.26 has been added to the Postal Manual requiring compliance by Federal Agencies as follows:

1. Effective January 1, 1966, official mailings containing typed or handwritten addresses must include the ZIP Code.
2. Effective January 1, 1967, all Federal Agencies must use the ZIP Code in the addresses on *all* official mail and are required to presort quantity mailings by ZIP code.

TO THIS END, ALL FUTURE LETTERS, COUPONS, AND OTHER PAPERS BEARING THE SENDER'S ADDRESS WHICH ARE MAILED TO THE PATENT OFFICE MUST SHOW THE ZIP CODE DESIGNATION OF BOTH THE SENDER AND THE PATENT OFFICE.

The Patent Office ZIP Code is 20231. This designation should be used when writing to the Patent Office for any matter. In addition, the sender's own ZIP Code designation should be given. The benefits to be gained by the immediate use of ZIP Code are many: positive identification of areas; faster delivery of mail by reducing the number of handlings from point of origin to destination; and easier identification of post office address.

C. A. KALK,
Mar. 22, 1966. *Director of Administration.*

[825 O.G. 428]

(7) HAND DELIVERY OF DUPLICATE COPY OF PAPERS BY ATTORNEY

The Notice appearing in 823 O.G. 1 is hereby superseded. The practice set out in the above notice is extended as follows:

In further implementation of the Notice in 829 O.G. 1755 concerning discontinuation of the practice of hand delivery by attorneys or others of officially date stamped papers, it is directed that prompt consideration and appropriate action be taken on the hand-delivered duplicate copy of such papers, which may include amendments, powers to inspect, requests for extension of time, etc.

The effect of such consideration and action should be communicated to applicant or his representative at the earliest practicable time to clarify the status of the case.

If requested, at the conclusion of an interview, it would be appropriate to indicate on the attorney's copy and the Office duplicate copy any agreement reached and to initial and date both copies.

Actual clerical entry of amendatory matter usually will require the presence in the file of the original paper; however, pending receipt of the original, examiner and clerical processing of the application should proceed, based on the duplicate copy, as far as practicable in the circumstances of each case.

RICHARD A. WAHL,
Dec. 21, 1966. *Assistant Commissioner.*

[834 O.G. 829 (See Item 68)]

(8) ATTACHMENTS TO OFFICE ACTIONS

To expedite the preparation and mailing of certain Office actions, the following changes in practice are effective July 1, 1967:

Where references are furnished, applicant's copies of the Office action will be camera reproductions of the ribbon copy instead of the usual carbon copies. The list of reference citations, heretofore typed directly on the action, will be on a separate form, Notice of References Cited, PO–892, attached to applicant's copies of the action.

The manner of furnishing copies of the references remains unchanged.

About Aug. 1, 1967, the use of attachments to the Office action will be extended to include notification of informalities in the application and drawings. Where applicable, Notice of Informal Patent Drawings, PO–948, and Notice of Informal Patent Applications, PO–152 (rev.) will be attached to the first action.

The attachments will bear the same paper number and are to be considered as part of the action.

Replies to Office actions should include the 3-digit Art Unit number to expedite handling within the Office.

RICHARD A. WAHL,
June 29, 1967. *Assistant Commissioner.*

[840 O.G. 711]

APPENDIX A

(9) PUBLIC INFORMATION APPENDIX—PATENT OFFICE

A. *Purpose.*

The purpose of this Appendix is to describe, in general, the public information services of the Patent Office, to describe the places at which and the methods whereby the public may obtain information, make submissions or requests or obtain decisions, to inform the public as to the sources or availability of rules, regulations, procedures, forms, instructions, or other requirements of the Patent Office, which affect the public, and otherwise to comply with the requirements of Section 552 of Title 5, U.S.C. as amended by Public Law 90–23, June 5, 1967 (81 Stat. 54).

B. *Public Information Services.*

(1) The Patent Office provides the public with a wide range of information relating to the organization, structure, description, and functions of the Patent Office. This includes material published regularly on a weekly basis, such as the OFFICIAL GAZETTE, and copies of the patents and trademark registrations identified therein. General information concerning the procedures for obtaining patents or registering trademarks, and for utilizing the search rooms and Scientific Library of the Patent Office is readily available.

(2) Publications of the Patent Office are listed in the catalog of publications sold by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. They are also listed in the Introduction of the "Rules of Practice of the United States Patent Office in Patent Cases," and in the pamphlet "General Information Concerning Patents." The Patent Office also publishes a circular "Patent Office Publications," which lists the available publications, and provides information as to price and source. These publications include:

a. Annual Index of Patents.
b. Decisions of the Commissioner of Patents.
c. Manual of Patent Classification, and Classification bulletins.
d. Patent Laws (pamphlet edition).
e. Directory of Registered Patent Attorneys and Agents Arranged by States and Cities.
f. Guide for Patent Draftsmen.

(3) The Patent Office has an Office of Information Services where the public may obtain a list of current publications and general information concerning the functions and services of the Patent Office. Information relating to patents may be obtained from the Patent Reference Branch of the Office of Patent Services, and information relating to trademarks may be obtained from the search room of the Trademark Examining Operation.

C. *Guide to Published Rules and Regulations.*

(1) Patent Office rules of procedure, descriptions of forms, substantive rules of general applicability, and statements of general policy are published in the Federal Register. Rules are currently codified in Title 37, Chapter I, Code of Federal Regulations, and are also available in pamphlet form entitled "Rules of Practice of the United States Patent Office in Patent Cases" and "Trademark Rules of Practice of the Patent Office with Forms and Statutes," each of which is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402.

(2) The Patent Office maintains also an administrative staff manual, entitled "Manual of Patent Examining Procedure," and an index thereto, for the general guidance of its staff and the public. The manual, with its index, as amended, changed, and supplemented from time to time, is available in the Patent Office (the Public Search Room and Library) for inspection and copying, and copies are for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402.

D. *Submission of Requests and Applications.*

The established places at which and the methods whereby the public may make requests concerning Patent Office functions, operations, and procedures are listed in Sections B and C of this Appendix.

E. (*Reserved*).

F. *Inspection and Copying of Opinions and Orders.*

(1) Final opinions and orders in the adjudication of patent cases, statements of policy and interpretations, and other material required to be made available for public inspection and copying under 5 U.S.C. 552(a)(2) are made available for such purposes in the search room of the Patent Reference Branch in the Main Commerce Building, 14th Street between Pennsylvania Avenue and Constitution Avenue, NW., Washington, D.C., 20231, readily accessible from the entrance on E Street near 14th Street. Instructions concerning the use of this facility are contained in the introductory portion to the pamphlet edition of the Rules of Practice in Patent Cases, and the pamphlet "General Information Concerning Patents."

(2) Final opinions and orders in the adjudication of trademark cases, statements of policy and interpretations, and other material required to be made available for public inspection and copying under 5 U.S.C. 552(a)(2) are made available for such purposes in the search room of the Trademark Examining operation in the Longfellow Building, 1741 Rhode Island Avenue, NW., Washington, D.C., 20231, from 8:00 a.m. to 6:00 p.m. on workdays only. Instructions concerning trademark operations are contained in the pamphlet "General Information Concerning Trademarks."

G. *Inspection of Bureau Records.*

(1) Applications for patents are required by law to be kept in confidence by the Patent Office and no information concerning such applications may be divulged by the Patent office without authority of the applicant or owner, unless necessary to carry out the provisions of any Act of Congress or in such special circumstances as may be determined by the Commissioner (35 U.S.C. 122).

(2) Special situations are recognized by the regulations (37 C.F.R. 1.11 and 1.14; Manual of Patent Examining Procedure, section 103), which prescribe the procedures to be followed in the opening of certain patent applications to inspection.

(3) Assignment records, digests, and indexes (37 C.F.R. 1.12) relating to patent applications are not available to the public.

(4) Pending trademark applications are not open to general inspection (37 C.F.R. 2.27).

(5) The procedures for requesting records not disclosed to the public as part of the regular informational activities of the Patent Office, or not included in the material described in Section F, supra, or whose disclosure is not provided for or precluded by the regulations cited in paragraphs (1), (2), (3) and (4) of this section, are prescribed in 37 C.F.R. 1.15.

EDWARD J. BRENNER,
Date: Sept. 12, 1967. *Commissioner of Patents.*

Published in 32 F.R. 13830, Oct. 4, 1967

[848 O.G. 1567]

(10) APPLICATION CORRESPONDENCE

The office is experiencing increasing difficulty in matching incoming papers with the application file to which they pertain. This applies especially to amendments, powers of attorney, changes of address, status letters, and requests for extension of time.

Frequently, there are errors in the serial number or in the Group Art Unit number, or the incoming paper uses the old Group Art Unit number where an application has been transferred and acted on by a different Examining Group.

It would be of great assistance to the Office if *all* incoming papers pertaining to a filed application carried the following items:

1. Serial number (checked for accuracy).
2. Group Art Unit number (copied from most recent Office Action).
3. Name of the Examiner who prepared the most recent Office Action.
4. Title of Invention.

It is further requested that at least 60 days be permitted to elapse before filing any additional papers relating to a newly filed application. If this is done, the original application papers may be completely processed and more easily located when the additional papers are received.

RICHARD A. WAHL,
Oct. 18, 1968. *Assistant Commissioner.*

[856 O.G. 833]

(11) POST CARD RECEIPT REMINDER

Applicants and their attorneys or agents are reminded of the provision in Section 717.01(a) of the Manual of Patent Examining Procedure relating to the use of post cards as "receipts" of papers filed in the Patent Office.

If a receipt for any paper filed in the Patent Office is desired, it may be had by enclosing with the paper a self-addressed post card identifying the paper. The Patent Office will stamp the receipt date on the card and place it in the outgoing mail.

The identifying data on the card should be so complete as to match the paper with the application or other document to which it is to be associated. For example, the document should be identified by the applicant's name(s), Serial No., filing date, appeal number, interference number, etc., and the paper should be identified by specifying the type thereof, viz, affidavit, amendment, appeal, application papers, brief, drawings, fees, motions, supplemental oath or declaration, petition, etc.

When papers for more than one document are filed under a single cover a return post card should be attached to the paper for *each* document for which a receipt is desired.

RICHARD A. WAHL,
Nov. 21, 1968. *Assistant Commissioner.*

[857 O.G. 667]

(12) OFFICE ACTION—FIRST PAGE FORM

The printed form POL–326 formerly used as the first page of the first Office action, 845 O.G. 1205, has been revised.

The new form is now being attached to all Office actions up to and including final rejections.

RICHARD A. WAHL,
Jan. 22, 1969. *Assistant Commissioner.*

[859 O.G. 677]

(13) OFFICIAL PATENT OFFICE MAILING ADDRESS REMAINS WASHINGTON, D.C.

The official mailing address for all communications sent to the Patent Office remains:

Commissioner of Patents
Washington, D.C. 20231

Any telegrams sent to the Patent Office must also bear the above identical address.

The physical location of the Patent Office is 2021 Jefferson Davis Highway, Arlington, Virginia. This address must not be used when addressing mail to the Patent Office.

No reference to Crystal Plaza, Virginia, should be made in the address of *any* communication intended for delivery to the Patent Office by the Post Office Department or Western Union.

Compliance with this instruction will help prevent any unnecessary delay in the delivery of mail, telegrams, etc.

C. A. KALK,
Feb. 20, 1969. *Director of Administration.*

[860 O.G. 662]

(14) LIST OF PATENTEES

Beginning with this issue, first inventor entries in the utility patents section of the weekly List of Patentees will no longer carry the issue date. This information is redundant in the weekly issues of the OFFICIAL GAZETTE and is dropped for that reason. The issue dates for all patents will appear, however, in the usual places in the 1969 Annual Index of Patents, Part I, List of Patentees.

[864 O.G. 653, (July 15, 1969)]

(15) DIRECTORY OF REGISTERED PATENT ATTORNEYS AND AGENTS

The Patent Office has recently published a new edition of the Directory of Registered Patent Attorneys and Agents Arranged by States and Countries. The new edition shows the addresses furnished to the Committee on Enrollment as of December 1968, of all attorneys, agents, and firms registered to practice before the Patent Office in patent cases. An added feature in the present edition is the use of a symbol to denote those registrants who are registered as patent agents.

The publication is on sale by the Superintendent of Documents, United States Government Printing Office, Washington, D.C., 20402, for $1.50.

EDWIN L. REYNOLDS,
July 25, 1969. *Chairman, Committee on Enrollment.*

[865 O.G. 663]

(16) ORDERS FOR COPIES OF FOREIGN PATENTS AND/OR PUBLISHED APPLICATIONS

Some foreign countries are not publishing their patents and/or applications in numerical order. Since the U.S. Patent Office will begin supplying orders for copies of these foreign documents from master microfilm reels made up on weekly or other periodic publishing sequences, effective immediately all orders must include the country, patent or application number, and the publication date (if known) of the ordered document. Reference should be made to Section 901.05(a) of the Manual of Patent Examining Procedure to assist in determining the publication date of the commonly encountered foreign patents and applications.

W. R. ARMSTRONG,
Aug. 21, 1969. *Director, Office of Patent Services.*

[866 O.G. 685]

(17) GROUP NUMBER SHOULD APPEAR ON COMMUNICATIONS RELATING TO PENDING APPLICATIONS

It is again requested that the Group number be typed on amendments and other communications relating to pending applications in order to expedite the handling of mail and to conserve manpower. The number of the Group should be placed on the right-hand side, opposite the Serial Number or

name of applicant. In view of the vast amount of mail, continued careful attention to these details will do much toward avoiding delay in handling of mail.

C. A. KALK,
Nov. 6, 1969. *Director of Administration.*

[869 O.G. 345]

(18) DUTY OF INQUIRY BY APPLICANT

Status letters have been used by applicants to check operations of docketing systems, particularly to establish diligence if needed in support of petitions to revive abandoned applications. Previous announcements in the OFFICIAL GAZETTE (at 826 O.G. 372 and 844 O.G. 764) have sought to mitigate the burden on both the applicant and the Office.

The duty of repeatedly checking the OFFICIAL GAZETTE for the oldest date for new cases has proved burdensome for applicants, attorneys, and agents; the inflow of status queries on new cases has not appreciably decreased. Until further notice, in new applications, the applicant will be considered to have exercised diligence in connection with a petition to revive an application abandoned for failure to respond to the initial Office action if inquiry as to the status of the application is received by the Patent Office within either one of the two following periods, whichever expires later:

a. Twenty-one (21) months from the filing date of the application, or
b. A reasonable period after the OFFICIAL GAZETTE indicates that the filing date of the oldest new case awaiting action in the group to which the application is assigned, is more recent than the filing date of the application.

For amended cases, the applicant will be considered to have exercised diligence in connection with a petition to revive an application abandoned for failure to respond to a second or subsequent action if inquiry as to the status of the application is received by the Patent Office within six (6) months after the filing of a response to which no reply from the Patent Office has been received.

The Notices at 826 O.G. 372 and 844 O.G. 764 are hereby superseded.

When an application has been abandoned for an excessive period before the filing of a petition to revive, an appropriate terminal disclaimer may be required.

Replies to inquiries regarding the status of both new and amended applications may be more expeditiously processed by the Patent Office if each inquiry is accompanied by a stamped return-addressed envelope.

WILLIAM E. SCHUYLER, Jr.,
Dec. 5, 1969. *Commissioner of Patents.*

[869 O.G. 1031]

(19) TRANSMITTAL FORMS

As a convenience to attorneys and to standardize processing, forms have been developed for use in transmitting (1) new applications (PO–1082) and (2) amendments adding claims (PO–1083). These forms were approved by a Notice appearing in the Federal Register, November 26, 1969, and are designated 37 CFR 3.51 and 3.52 (869 OG 1033). Attorneys who desire to use these forms may obtain them without charge from the Correspondence and Mail Branch or the Receptionist in Building 3 in Crystal Plaza.

RICHARD A. WAHL,
Jan. 2, 1970. *Assistant Commissioner.*

[870 O.G. 1040]

(20) MICROFILM: PATENT NUMBER SEQUENCE CLASSIFICATION RECORD

The Patent Office announces a new microfilm publication entitled Patent Number Sequence Classification Record. This official record lists the original and cross-reference classifications together for each patent number, in patent number order. This sequence contrasts with that of the previously announced Cumulative Index to the Classification of Patents which lists patent numbers by classification, in separate files for original and cross-reference classifications.

The Patent Number Sequence Classification Record comprises all patents issued through April 29, 1969. The classification includes all reclassifications made effective through January 1, 1969. This publication, which is available only in microfilm form, includes patents, design patents, reissue design patents, reissue patents, plant patents, defensive publications, and patents issued from 1790 to 1836. Updates to this record will be announced periodically, as circumstances warrant.

The Patent Number Sequence Classification Record comprises 16 reels of 16 mm. roll microfilm which are offered for sale in three different ways. The complete record is catalogued as PB–188600 and sells for $70.00. The 7 reels comprising patents issued from numbers 2,225,518 (issued in 1940) to the end of the file are offered together for those who desire only more recent patents. This set is catalogued as PB–188617 and sells for $35.00. Reels ordered individually or in sets other than the two mentioned above, sell for $6.00 apiece and should be ordered using the catalogue number for each reel desired, as shown below:

Cat. No.	Patent Nos. Included
PB–188601	1– 276,927
PB–188602	276,928– 539,569
PB–188603	539,570– 797,464
PB–188604	797,465–1,054,425
PB–188605	1,054,426–1,311,703
PB–188606	1,311,704–1,568,108
PB–188607	1,568,109–1,811,776
PB–188608	1,811,777–2,015,447
PB–188609	2,015,448–2,225,517
PB–188610	2,225,518–2,431,496
PB–188611	2,431,497–2,628,945
PB–188612	2,628,946–2,819,182
PB–188613	2,819,183–3,011,059
PB–188614	3,011,060–3,196,127
PB–188615	3,196,128–3,377,086
PB–188616	3,377,087–3,441,959

and Reissue Patents 1–26,557, Design Patents 1–214,007, Plant Patents 1–2,881 and all other categories mentioned in text above.

Orders may be addressed to:

CFSTI
5285 Port Royal Road
Springfield, Virginia 22151

Payment should be made in the form of a check or money order payable to the National Bureau of Standards—CFSTI.

Inquiries, comments or suggestions concerning this record may be directed to the U.S. Patent Office, Office of Organization and Systems Analysis, Washington, D.C. 20231.

E. A. HURD,
Director, Office of Organization and Systems Analysis.
Jan. 15, 1970.

[871 O.G. 2]

(21) EARLY NOTIFICATION OF SERIAL NUMBER

Application Branch procedures are being revised in an effort to reduce the time of processing newly filed applications. The first step in the implementation of these procedures is the early assignment of Serial Numbers.

Therefore, effective immediately, if a self-addressed post card is transmitted with the application papers, it will be returned within one week from receipt, stamped with the Serial Number and the date received by the Patent Office. The submitted post card should adequately identify the documents as application papers and include the applicant's name and title of the invention.

It should be recognized that the identification of an application by Serial Number does not necessarily signify that the Patent Office has accepted the application as complete. After the application has been reviewed for statutory compliance and given an official filing date, the usual filing receipt will be mailed.

WILLIAM E. SCHUYLER, Jr.,
Feb. 2, 1970. *Commissioner of Patents.*

[872 O.G. 1]

(22) NEW SYSTEM FOR ADDRESSING OFFICE ACTIONS

A new system was initiated February 1970 for addressing and identifying Office actions. Instead of the present practice of having the address and other identifying data typed on each Office action, an embossed address card will be used to imprint substantially the same information. This plastic card is a by-product of a mechanized system which produces the filing receipt from a machine readable medium generated as the application jacket is being typed. It contains the name and address of the person authorized to receive the correspondence and identifies the application by serial number, filing date, and first-named inventor (plus "et al." where more than one inventor). Due to size limitations of the card the name(s) of more than one inventor and the title of the invention are not embossed and will accordingly be omitted from the heading of Office actions. The format on Office letter forms for the heading and the address is being revised to correspond with the spacing on the embossed cards.

Provisions have also been made for preparing substitute cards during the prosecution when changes to the card are necessary.

The file jacket, Notice of Allowance, and issue fee receipts are not affected by this system and continue to include the full information as usual.

Pending the phase-in of a computerized system currently under development, the field designated for the name of the inventor on the card is limited to 27 characters; in the few instances where the name of the inventor exceeds this limitation, it will not appear in full either on the address card or on the filing receipt. However, where there are joint inventors, the full name(s) of other inventor(s) will continue to appear on the filing receipt.

RICHARD A. WAHL,
Sept. 4, 1970. *Assistant Commissioner.*

[879 O.G. 667]

(23) HAND DELIVERY OF PAPERS

The notice of November 10, 1969 (869 O.G. 345), regarding Hand Delivery of Papers is modified as indicated below.

The privilege of personal delivery of papers by applicants, their attorneys or agents to the Examining Groups is hereby extended to include any paper which relates to a pending application file. Under this procedure the paper will be date stamped with the Group stamp and made an official paper in the file, thereby avoiding the necessity of processing and forwarding to the Examining Group via the Mail Room. The approval and initials of the examiner will no longer be necessary for delivering papers directly to the Group. In those instances where an additional fee is required, the paper will be date stamped by the clerk, hand carried, together with the check or letter of authorization to charge a Deposit Account, to the Finance Branch for processing and then made an official paper in the file.

This procedure will be re-evaluated after it has been in effect for a period of six months.

RICHARD A. WAHL,
Sept. 8, 1970. *Assistant Commissioner.*

[879 O.G. 667]

(24) OFFICE ACTIONS

Effective December 1, 1970, applicants or their attorney or agent will be provided with one carbon copy of all Office actions, and the provision of additional or other reproductions of the ribbon copy will be discontinued.

Heretofore, the Office has provided one or two copies of the examiner's action, depending upon the nature of the action. The practice of furnishing more than one copy will be discontinued and, effective with the above change, the applicant will be furnished one copy of all examiner actions.

RICHARD A. WAHL,
Oct. 21. 1970. *Assistant Commissioner.*

[880 O.G. 740]

RECORDS AND FILES

(25) ACCESSIBILITY OF ASSIGNMENT RECORDS

In view of a number of inquires as to the manner in which Rule 1.12 of the Patent Office Rules of Practice, as amended August 23, 1965 (819 O.G. 443) is to be applied, the procedure which it is planned to follow in certain types of cases is set forth below.

1. Assignments relating to applications for registration of trademarks will be open to public inspection as heretofore.

2. The Office will not open certain parts only of an assignment document to public inspection. If such a document contains two or more items, any one of which, if alone, would be open to such inspection, then the entire document will be open. Thus, if an assignment covers either a trademark or a patent in addition to one or more patent applications, it will be available to the public ab initio; and if it covers a number of patent applications, it will be so available as soon as any one of them is patented. Assignments relating only to one or more pending applications for patent will not be open to public inspection.

3. If the application on which a patent was granted is a division or continuation of an earlier case, the assignment records of that case will be open to public inspection; similar situations involving continuation in part applications will be considered on their individual merits.

4. Assignment records relating to reissue applications will be open to public inspection.

EDWARD J. BRENNER,
Dec. 15, 1965. *Commissioner.*

[822 O.G. 769]

(26) NOTIFICATION RE: CONFLICT IN ASSIGNMENT IN CERTAIN APPLICATIONS

Effective September 12, 1966, Assignment Branch will discontinue mailing notification in cases where there is a conflict in assignment between an original application and its divisional, continuation, substitute, or continuation-in-part application.

Assignments from original applications are applied without charge ONLY to divisional, continuation, or substitute applications where the date of the assignment is prior to the filing date of the later-filed application. (Continuation-in-part applications require separate assignments if they are to be issued to the assignee.)

Practitioners are reminded of the provisions of Rule 334. Unless an assignment is filed at or prior to the date of payment of the issue fee, the patent will normally be issued in the name of the inventor.

Section 306 of the Manual of Patent Examining Procedures will be amended appropriately.

W. R. ARMSTRONG,
Director, Office of Patent Services.

Concurred:
(signed) R. A. WAHL,
Assistant Commissioner.

[880 O.G. 442, (Sept. 12, 1966)]

(27) RECORDING OF INSTRUMENTS

Effective April 1, 1967, the Patent Office will accept and record legible certified copies of original assignments or other instruments.

The certified copy, if not in the English language, will not be recorded unless accompanied by a translation signed by the translator.

Certification shall be to the fact that the instrument submitted is a true copy of the original and shall be made by a notary public or, if in a foreign country, by a consular officer of the United States or an officer authorized to administer oaths and authenticated by a consular officer of the United States.

RICHARD A. WAHL,
Mar. 3, 1967. *Assistant Commissioner.*

[836 O.G. 1111]

(28) PUBLIC SEARCH ROOM

Due to budget and personnel limitations which took effect on July 1, 1968, it has become necessary to adopt measures that are consistent with these limitations and that will permit continuance of Patent Office activities and facilities without curtailing their use to the public. Among these measures is the service of returning to the files those patent bundles used by the attorneys and the general public in the Public Search Room.

Beginning August 19, 1968, in order that free access to the stacks may be maintained, persons drawing patent bundles from the search files will be expected to return them to the file slots from which they were withdrawn.

This will enable the personnel in the Public Search Room to concentrate their time and efforts on the necessary updating and storage maintenance for improvement of the integrity of the search files.

RICHARD A. WAHL,
Aug. 12, 1968. *Assistant Commissioner.*

[854 O.G. 287]

(29) ASSIGNMENT INFORMATION FOR ISSUE FEE TRANSMITTAL FORM

Rule 334, revised November 4, 1969, requires . . . "At the time of payment of the issue fee, a statement must be furnished indicating whether or not an assignment has been filed with the Patent Office. In the event an assignment has been filed, such statement must include the name of the assignee and indicate whether or not an acknowledgment of a recorded assignment has been received from the Patent Office."

The Issue Fee Transmittal Form POL-85b revised December 1969, provides space (Item 2) for Assignment Data which should be completed to comply with the Rule. Unless an assignee's name and address are identified in Item 2 of the Issue Fee Transmittal Form POL–85b, the patent will issue to the applicant. Assignment data printed on the patent will be based on information so supplied.

A request for correction of error arising from failure to correctly provide this Assignment Data in Item 2 will be considered only under the provisions of Rule 323 for a certificate of correction of applicant's mistake.

The recording of instruments in the Assignment Branch is not affected by this notice.

WILLIAM E. SCHUYLER, Jr.,
Sept. 28, 1970. *Commissioner of Patents.*

[879 O.G. 988]

FEES AND PAYMENT OF MONEY

(30) REVISION OF "DISCONTINUANCE OF DEPOSIT ACCOUNT SERVICE FOR SALE OF PATENT COPIES"

In view of the difficulties experienced by many of its customers, the Patent Office is revising the Notice appearing in the December 1, 1964, issue of the *Official Gazette of the U.S. Patent Office*. This Notice—Discontinuance of Deposit Account Service for Sale of Patent Copies—is revised to except certain types of patent copy orders.

The Patent Office will now accept lists of fifty (50) or more numbers arranged in numerical sequence to be charged to Deposit Accounts. Service charges, such as Special Handling and Air Mail postage for these orders, may also be charged to Deposit Accounts.

C. A. KALK,
July 15, 1965. *Director of Administration.*

[818 O.G. 1207]

(31) FEES IN CONNECTION WITH AMENDMENTS TO PATENT APPLICATIONS

This notice supplements the Notice of September 10, 1965, 818 O.G. 1207, September 28, 1965, relating to the administration of the act of July 24, 1965, Public Law 89–83, increasing certain fees payable to the United States Patent Office.

That act provides for the payment of additional fees on presentation of certain claims during the prosecution of applications. This provision applies in the case of applications filed on or after October 25, 1965, the effective date of the act. In such cases, when any amendment is filed which presents additional claims over the total number covered by fees previously paid, it should be accompanied by any additional fees due.

As in the case of claims presented after an application is filed and before first action, described in the Notice of September 10, 1965, when independent claims are subsequently presented so that the number of uncanceled independent claims in the application as amended exceeds the number of such claims paid for, an additional fee of $10 is due for each such additional claim. Similarly, an additional fee of $2 is due for each claim added in excess of the number of uncanceled claims, independent or dependent, already paid for.

Treatment of Amendments Unaccompanied by Fees Due

Amendments filed during and after the prosecution of an application and not accompanied by the entire fee due upon such filing will be treated as follows:

If such an amendment is filed in reply to an Office action it will be regarded as not being fully responsive thereto and the practice set forth in section 714.03 of the Manual of Patent Examining Procedure will be followed, care being taken to avoid any abuse of this practice by attorneys as, for example, by habitual submission of such amendments without fees or with insufficient fees.

If an amendment which is not filed in response to an Office action is of such a nature as to require a fee and is not accompanied by the full fee required, it will not be entered and the applicant will be so advised.

Amendment During Interference

An amendment filed in connection with a motion to add counts to an interference (Rule 233) must be accompanied by the claim or claims to be added and with the appropriate fees, if any, which would be due if the amendments were to be entered. It may be that the amendments will never be entered. Only upon the granting of the motion is it necessary for the other party or parties to present the claims, but the fees must be paid whenever presented.

Claims which have been submitted in response to a suggestion by the Office for inclusion in an application must be accompanied by the fee due, if any.

Amendment After Requirement for Restriction

After a requirement for restriction or election of species, nonelected claims will be included in determining the fees due in connection with a subsequent amendment unless such claims are canceled.

Refunds

Money paid in excess or by mistake in connection with an amendment will be refunded in the usual manner.

Amendments affecting the claims cannot serve as the basis for granting any refund.

Money paid in connection with the filing of a proposed amendment will not be refunded by reason of the nonentry of the amendment.

EDWARD J. BRENNER,
Jan. 13, 1966. *Commissioner of Patents.*

[823 O.G. 814]

(32) DEPOSIT ACCOUNTS—STATUTORY FEE CHARGES

Beginning on May 1, 1966, and until further notice, statutory fees, including filing fees for patent, design, and trademark applications, issue fees, appeal fees and opposition, cancellation and petition fees may be charged against the deposit accounts provided for by Rule 25(a) of the Rules of Practice in patent cases. During this period the prohibition of Rule 25(b) against such charges will be suspended.

In view of the facts that these fees are indispensable parts of the actions to which they relate and that the charging of a fee against an account which does not contain sufficient funds to cover it cannot be regarded as a payment of the fee, it is evident that the overdrawing of a deposit account may result in the loss of a vital date and may also impose a substantial burden on the Patent Office in making appropriate

correction of its records. It is, therefore, necessary that effective steps be taken to avoid such overdrafts, as follows:

Checks of all accounts will be made periodically, and if any account is found to have been overdrawn, it will be immediately removed from the active accounts and no further drafts on it will be honored. Prompt payment of the outstanding balance will be required and the depositor or his attorney may be called on for an itemized statement identifying all statutory fees charged against the account during the period in question in order that it may be ascertained whether any previously granted date should be withdrawn.

It is emphasized that the success of the procedure outlined above depends upon the maintenance of a sufficient balance in deposit accounts at all times to meet any charges made against them. The Office must, therefore, strictly refuse to permit any depositor who has once overdrawn his account to maintain such an account in the future and in the event that any substantial number of overdrafts occurs it may be necessary to reestablish the prohibition of Rule 25(b) against charging statutory fees against deposit accounts.

Accordingly, effective May 1, 1966, the requirement of Rule 25(a) that an amount sufficient to cover all charges made against an account must always be on deposit will be strictly enforced, regardless of whether any fee is included in such charges and where this requirement is not complied with the account involved will be removed from the active accounts.

EDWARD J. BRENNER,
Feb. 23, 1966. *Commissioner.*

[824 O.G. 1200]

(33) PRACTICE IN THE USE OF ACCOUNTS FOR PAYMENT OF STATUTORY FEES

In the OFFICIAL GAZETTES of March 15, 22, and 29, there appeared copies of an announcement by the Commissioner providing for a trial use of accounts established under Rule 25 for the payment of statutory fees. A number of questions have come up in connection with the use of accounts in the payment of these fees prescribed by Public Law 89–83 and, in the interest of uniform practice, publication of a statement is warranted.

A general direction by an applicant or attorney to charge to an account these fees as they arise in any application prosecuted by the applicant, the attorney, or the firm will not be effective for such a purpose. Authority to make charges will be limited to a particular application.

A separate direction to charge shall be filed for each fee. Each such direction to charge a fee shall be transmitted on a separate sheet of paper and, in the case of fees based on modification of claims shall include the best estimate of the fee due. Failure to include such an estimate provides the basis for a refusal to enter any amendment transmitted therewith, as an incomplete response. Where variable fees are involved inclusion of a direction to charge or credit a deficiency or overpayment would appear appropriate.

An issue fee will not be charged to an account until a notice of allowance has been forwarded and a reply to that notice received.

For the purposes of determining the fee due the Patent Office, a claim will be treated as dependent if it contains reference to one other claim in the application. A claim determined to be dependent by this test will be entered if the fee paid reflects this determination. This does not, however, prevent the rejection of such a claim as improper, if, in fact, it is not a dependent claim.

EDWARD J. BRENNER,
Apr. 12, 1966. *Commissioner of Patents.*

[825 O.G. 1183]

(34) DEPENDENT CLAIMS

Although the notice published on October 5, 1965, in 819 O.G. 3, explained that for the purposes of the present fee bill, Public Law 89–83, approved July 24, 1965, the Patent Office will consider a proper dependent claim as being one which incorporates by reference a single preceding claim, whether independent or dependent, and includes all the limitations of the claim so incorporated, there appears to be still some uncertainty on this matter and it is therefore thought to be desirable to elaborate it.

Since the initial determination, for fee purposes, as to whether a claim is dependent must be made by persons other than examiners, it is necessary, at that time, to accept as dependent virtually every claim which refers to another claim, without determining whether there is actually a true dependent relationship. Such acceptance does not, however, preclude a subsequent holding by the examiner that a claim is not a proper dependent claim.

An essential characteristic of a proper dependent claim is that it shall include every limitation of the claim from which it depends (35 U.S.C. 112) or in other words that it shall not conceivably be infringed by anything which would not also infringe the basic claim. Thus, for example, if claim 1 recites the combination of elements *a*, *b*, *c* and *d*, a claim reciting the structure of claim 1 in which *d* was omitted or replaced by *e* would not be a proper dependent claim, even though it placed further limitations on the remaining elements or added still other elements.

The fact that a dependent claim which is otherwise proper might require a separate search or be separately classified from the claim on which it depends would not render it an improper dependent claim, although it might result in a requirement for restriction.

The fact that the independent and dependent claims are in different statutory classes does not, in itself, render the latter improper. Thus, if claim 1 recites a specific product a claim for the method of making the product of claim 1 in a particular manner would be a proper dependent claim since it could not be infringed without infringing claim 1. Similarly, if claim 1 recites a method of making a product, a claim for a product made by the method of claim 1 could be a proper dependent claim. On the other hand, if claim 1 recites a method of making a specified product, a claim to the product set forth in claim 1 would not be a proper dependent claim if the product might be made in other ways.

Any claim which is in dependent form but which is so worded that it does not, in fact, include every limitation of the claim on which it depends, will be required to be cancelled as not being a proper dependent claim; and cancellation of any further claim depending on such a dependent claim will be similarly required. The applicant may thereupon amend the claims to place them in proper dependent form, or may redraft them as independent claims upon payment of any necessary additional fee.

The basis for the difference in fees between independent and dependent claims is the fact that the examination of a dependent claim is normally a comparatively simple matter after the claim on which it depends has been examined. This relationship, however, obtains only when the independent claim represents a bona fide attempt to define the invention and to distinguish it from the known prior art. Accordingly, the presentation of a claim which on its face is obviously unpatentable or indefinite, as basis on which other claims are dependent, is not considered to be proper practice. One example of such a practice involves the use of a claim drawn to "all the features of novelty herein disclosed," with other claims, which actually recite the features thought to be novel, being dependent on the first. A similarly objectionable arrangement would involve the use, as a basic independent claim, of a claim merely reciting "a wheeled vehicle," "an amino acid" or "an internal combustion engine."

Such a practice as that just described involves not only an attempt to evade the free provisions of Public Law 89–83, but also the presentation of a claim known by the attorney or agent presenting it to be unpatentable. Any registered patent attorney or agent who makes a practice of presenting claims of this character may be called on to explain his actions.

(signed) EDWARD J. BRENNER,
June 8, 1966. *Commissioner.*

[828 O.G. 1]

(35) DEPOSIT ACCOUNTS

The practice instituted on May 1, 1966, pursuant to the notice of February 23, 1966 (824 O.G. 1200), whereby statutory fees may be charged against deposit accounts, and such accounts are closed if overdrawn, has resulted in certain difficulties for the Patent Office and deposit account holders. It has been decided therefore to modify that practice as indicated below.

As was pointed out in that notice, the charging of a fee against an overdrawn account cannot be considered as payment of the fee until a proper balance is restored or payment is made in some other way. Accordingly, deposit account holders who charge such fees must assume the risk of losing vital dates if they do not maintain a proper balance in their accounts at all times.

Apart from this, however, the overdrawing of an account places a burden on the Patent Office, particularly where a number of items are charged after the overdraft occurs, and it is appropriate that those who are responsible for causing such a condition should bear the cost of correcting it. In view of this fact, and of the hardship frequently caused if an account is permanently closed, the practice of closing deposit accounts merely because they are overdrawn will be discontinued, effective August 1, 1966. In lieu thereof an overdrawn account will be immediately suspended and no charges will be accepted against it until a proper balance is restored, together with a payment of ten dollars to cover the work done by the Patent Office incident to suspending and reinstating the account and dealing with charges which may have been made in the meantime. It is expected, however, that reasonable precautions will be taken in all cases to avoid overdrafts, and if an account is suspended repeatedly it will be necessary to close it.

Similarly, because of the burden placed on the Patent Office incident to the operation of deposit accounts, a charge of ten dollars will be made for opening each new account.

EDWARD J. BRENNER,
June 23, 1966. *Commissioner.*

[828 O.G. 377]

(36) PRACTICE RE: FILING FEES

It is suggested that attorneys review the notices pertaining to filing fees under the new Fee Act of 1965 appearing at 818 O.G. 1207, September 28, 1965, and 823 O.G. 814, February 15, 1966.

The filing fee includes the basic $65 fee plus an additional fee corresponding to the number and type of claims presented. For filing fee purposes the Patent Office considers any claim that specifically refers back to another claim to be a dependent claim, regardless of statutory class.

It appears that some attorneys are submitting filing fees in excess of their computations, apparently to insure against loss of a filing date should their computations be in error. This is neither necessary nor desirable. The Application Branch has been authorized to accept all applications, otherwise acceptable, if the basic fee of $65 is submitted, and if the deficiency is no more than $25 of the required filing fee, and to require payment of the deficiency within a stated period upon notification of the deficiency. Practitioners are urged to discontinue submitting excessive fees, since processing such fees has proved costly to the Office, and since applicants are believed to be adequately protected against loss of filing date by the practice outlined above.

There appears to be an erroneous impression that a Rule 147 divisional case requires a filing fee based on the claims in the parent case. The 818 O.G. 1207 notice specifically states that an amendment filed with a Rule 147 case will be effective to reduce the number of claims upon which the fee is based.

RICHARD A. WAHL,
June 30, 1966. *Assistant Commissioner.*

[828 O.G. 1085]

(37) ISSUE FEES

Effective March 31, 1969, the Patent Office will discontinue the practice of estimating the number of printed pages of specification in advance of printing.

Instead, a Minimum Issue Fee will be due three months from the date of the Notice of Allowance. This minimum fee, which consists of $100 plus $10 for the first page of printed specification plus $2 for each sheet of drawing, will be shown on the Notice of Allowance which has been revised to reflect the new practice.

After the patent is printed and the number of pages of specification is found to exceed the one already paid for, a Notice of Balance of Issue Fee Due will be attached to the Grant. Failure to pay this balance within THREE MONTHS FROM THE DATE OF THE PATENT will result in lapse of the patent.

Practitioners are urged to use the special fee transmittal forms provided with the Notice of Allowance and the Notice of Balance of Issue Fee Due.

The above fees will not be accepted from anyone other than the applicant, his assignee, attorney, or a party in interest as shown by the records of the Patent Office.

ATTENTION is also directed to the space designated on the Notice of Allowance Transmittal form PO–85a wherein the name of the assignee is required *if it is desired to have the patent issued to an assignee or assignees.*

RICHARD A. WAHL,
Jan. 31, 1969. *Assistant Commissioner.*

[860 O.G. 2]

(38) CALCULATION OF ISSUE FEES

This notice is to clairfy the manner in which the balance of issue fee due is calculated for the printed pages of specification (including claims) in excess of the one page already paid for by payment of the Minimum Issue Fee (see the notice of January 31, 1969, 860 O.G. 2).

Under the authority of 35 U.S.C. 151, the charge is disregarded WHERE ONLY ONE ADDITIONAL PAGE OR LESS is involved. Thus, if the patent consists of two pages or less, no balance fee is due. However, if the patent consists of three pages, a Notice of Balance of Issue Fee Due for $20 is mailed together with the original patent grant. (A page consists of one side of a printed sheet containing two columns or less.)

CLARENCE A. KALK,
Acting Assistant Commissioner for Administration.
Feb. 4, 1970.

[872 O.G. 1]

(39) FEES IN CONNECTION WITH AMENDMENTS TO PATENT APPLICATIONS

An increasing number of amendments are being received with improper fees. Because of the problems occasioned thereby, it is suggested that attorneys review the notices pertaining to fees and the Office practice related thereto (823 O.G. 814, Feb. 15, 1966; 828 O.G. 1, July 5, 1966; 828 O.G. 1085, July 26, 1966). Attention is invited to the new form 3.52, Amendment transmittal letter, for additional guidance in computing fees (869 O.G. 1036, Dec. 23, 1969). This form may be obtained from the Receptionist in Building 3 of Crystal Plaza. The new loose-leaf rule book, which will soon be available, includes a sample form (No. 52) also. When submitting the new amendment transmittal letter please include the Art Unit and Examiner's name.

The above notices and new form may also be found as items 24, 25, 29 and 147 in the consolidated listing of notices in the OFFICIAL GAZETTE of Jan. 13, 1970.

RICHARD A. WAHL,
Mar. 13, 1970. *Assistant Commissioner.*

[873 O.G. 1]

(40) EXAMINER AMENDMENTS—CHARGE AGAINST DEPOSIT ACCOUNTS

The Examiner's Amendment practice is hereby extended to include charges against deposit accounts under special conditions. Charges under this practice shall not exceed $50.00 for each patent application.

In order to expedite the issuance of a patent on an application otherwise ready for allowance, an Examiner's Amendment will be acceptable to make a charge against a deposit account provided prior approval is obtained from the attorney or agent. When such an Examiner's Amendment is prepared, the prior approval will be indicated by identification of the name of the authorizing party, the date and type (personal or telephone) of authorization, the purpose for which the charge is made (drawing correction, additional claims, etc.), and the deposit account number. Further identifying data, if deemed necessary and requested by the attorney, should also be included in the Examiner's Amendment.

RICHARD A. WAHL,
Mar. 17, 1970. *Acting Commissioner of Patents.*

[873 O.G. 667]

POWERS OF ATTORNEY

(41) WITHDRAWAL OF ATTORNEY

To expedite the handling of requests for permission to withdraw as attorney, under Rule 36, the request should be submitted in triplicate (original and two copies) and indicate thereon the present mailing address of the attorney who is withdrawing.

JOSEPH SCHIMMEL,
Apr. 18, 1967. *Solicitor.*

[837 O.G. 667]

(42) RULE 34—APPEARANCES BEFORE BOARD OF APPEALS

Applicants and their attorneys are reminded that Rule 34 provides that *before* any attorney or agent will be allowed to "take action of *any kind* in any application or proceeding, a written power of attorney or authorization . . . must be filed in the particular application or proceeding." [Italics added.]

Henceforth this rule will be strictly enforced. This applies to attorneys appearing at oral hearings before the Board of Appeals.

EDWIN L. REYNOLDS,
July 26, 1967. *First Assistant Commissioner.*

[841 O.G. 669]

APPLICATION CONTENT

(43) DECLARATION IN LIEU OF OATH—RIBBONING OF PAPERS UNNECESSARY

Recent legislation, 35 U.S.C. 25, and Rule 68 based thereon permit applicants to make a written declaration in lieu of the customary oath or affirmation which accompanies a patent application.

Such a declaration, even if signed in a country foreign to the United States, need not be ribboned to the other papers. The declaration, like the oath, is an integral part of the application and must be maintained together therewith. When a declaration is used, it is unnecessary to appear before any official in connection with the making of the declaration.

Further details are given in 29 F.R. 18502, Dec. 29, 1964, 811 O.G. 2.

RICHARD A. WAHL,
Mar. 2, 1965. *Superintendent, Patent Examining Corps.*

[813 O.G. 2]

(44) GUIDELINES FOR DRAFTING A MODEL PATENT APPLICATION UNDER THE REVISED RULES

The following guidelines illustrate the preferred layout and content for patent applications. They have been prepared to supplement the amendments to the rules which are effective January 1, 1967. These guidelines are suggested for the applicant's use.

Arrangement and Contents of the Specification

The following order of arrangement is preferable in framing the specification and, except for the title of the invention, each of the lettered items should be preceded by the headings indicated.

(a) Title of the Invention.
(b) Abstract of the Disclosure.
(c) Cross-References to Related Applications (if any).
(d) Background of the Invention.
1. Field of the Invention.
2. Description of the Prior Art.
(e) Summary of the Invention.
(f) Brief Description of the Drawing.
(g) Description of the Preferred Embodiment(s).
(h) Claim(s).

(a) *Title of the Invention:* (See Rule 72(a).) The title of the invention should be placed at the top of the first page of the specification. It should be brief but technically accurate and descriptive.

(b) *Abstract of the Disclosure:* (See Rule 72(b), MPEP 608.01(a), and 831 O.G. 1328, October 25, 1966.)

(c) *Cross-References to Related Applications:* (See Rule 78 and MPEP 201.11.)

(d) *Background of the Invention:* The specification should set forth the Background of the Invention in two parts:

(1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definities. The statement should be directed to the subject matter of the claimed invention.

(2) Description of the Prior Art: A paragraph(s) describing to the extent practical the state of the prior art known to the applicant, including references to specific prior art where appropriate. Where applicable, the problems involved in the prior art, which are solved by the applicant's invention, should be indicated.

(e) *Summary:* A brief summary or general statement of the invention as set forth in Rule 73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.

(f) *Brief Description of the Drawing:* A reference to and brief description of the drawing(s) as set forth in Rule 74.

(g) *Description of the Preferred Embodiment(s):* A description of the preferred embodiment(s) of the invention as required in Rule 71. The description should be as short and specific as is necessary to adequately and accurately describe the invention.

Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field to which the invention pertains, form a part of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

(h) *Claim(s):* (See Rule 75.) A claim may be typed with the various elements subdivided in paragraph form. There may be plural indentations to further segregate subcombinations or related steps.

Reference characters corresponding to elements recited in the detailed description and the drawings may be used in conjunction with the recitation of the same element or group of elements in the claims. The reference characters, however, should be enclosed within parentheses so as to avoid confusion with other numbers or characters which may appear in the claims. The use of reference characters is to be considered as having no effect on the scope of the claims.

Claims should preferably be arranged in order of scope so that the first claim presented is the broadest. Where separate species are claimed, the claims of like species should be grouped together where possible and physically separated by drawing a line between claims or groups of claims. (Both of these provisions may not be practical or possible where several species claims depend from the same generic claim.) Similarly, product and process claims should be separately grouped. Such arrangements are for the purpose of facilitating classification and examination.

The form of claim required in Rule 75(e) is particularly adapted for the description of improvement type inventions. It is to be considered a combination claim and should be drafted with this thought in mind.

In drafting claims in accordance with Rule 75(e), the preamble is to be considered to positively and clearly include all the elements or steps recited therein as a part of the claimed combination.

Oath

(See Rule 65.) Where one or more previously filed foreign applications are cited or mentioned in the oath, complete identifying data, including the application or serial number as well as the country and date of filing, should be provided.

EDWARD J. BRENNER,
Date: Oct. 12, 1966. *Commissioner of Patents.*

[832 O.G. 5]

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(45) PLANT PATENT APPLICATIONS—FILING DATE

Applicants and their attorneys are reminded that an application for a patent for a plant must include two copies of the specification, Rule 163(b), and two copies of the drawing when in color, Rule 165(b).

Effective immediately, applications for plant patents which fail to include two copies of the specification and two copies of the drawing when in color will be accepted for filing only. The Application Branch will notify the applicant immediately of this deficiency and require the same to be rectified within one month. Failure to do so will result in loss of filing date.

RICHARD A. WAHL,
Nov. 21, 1968. *Assistant Commissioner.*

[857 O.G. 668]

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(46) REDUCTION IN PATENT APPLICATION DISCLOSURE

Request for Comments

A joint committee comprising representatives of the Patent Office, the American Bar Association and the American Patent Law Association was established in September 1968 for purposes of investigating ways in which patent application disclosures could be improved and in particular ways in which the disclosures could be reduced. In the course of committee deliberations a number of proposals were generated. Those that appeared to be most practical and to hold most promise for early implementation have been compiled in the form of proposed "Guidelines for Preparation of Patent Application Disclosures." The guidelines are set forth below for review and comment. All persons who desire to present their views, objections, recommendations, or suggestions in connection therewith are invited to do so by forwarding the same to the Commissioner of Patents, Washington, D.C., 20231 on or before March 31, 1969. No hearing will be scheduled.

GUIDELINES FOR PREPARATION OF PATENT APPLICATION DISCLOSURES

Applications for patents frequently contain descriptive and illustrative material in excess of that required by 35 U.S.C. 112. If such material were to be excluded from the application tri-fold benefits should accrue:

1. The time and costs involved in the preparation of an application should be reduced.
2. Examination time should be less.
3. There should be a reduction in patent printing costs.

In an effort to reduce such excesses, at least in part, the following guidelines, relating to preparation of patent applications, have been promulgated.

Drawing

The illustration on the drawing should be restricted to the invention disclosed in the application. Old and known subject matter should be omitted unless essential for establishment of environment or for a clear understanding of the invention. If disclosure of the latter type is essential it should be presented in skeleton or phantom form if possible. Reference numerals for such material should be held to a minimum.

Conventional sub-assemblies should be shown in block form with appropriate legends or by means of standard drawing symbols, in instances where detailed disclosure is not essential for a proper understanding of the invention. If there is doubt as to whether or not symbolical representation is appropriate, reference should be made in the descriptive material to a patent or publication which will support the position that the item so illustrated is conventional with the understanding that the supporting document or the appropriate portion thereof will be made available upon demand.

Flow diagrams should be treated in a similar manner.

Shading should be provided on the drawing only if essential for illustrating contours or showing specific relationships between structural parts. Test—can the invention be clearly understood in the absence of shading?

Multiple Inventions, Species, etc.

Disclosures in divisional and other types of dependent applications carved from basic or parent application as well as those in the parent application should be restricted to the respective claimed inventions, or as an alternative the dependent application may be printed with the customary identifying information, an abstract, and the claims. The alternative printing should include proper reference to the parent document. The abbreviated printing should be used only if the parent precedes the dependent application in issue. (A copy of the parent or basic patent would be supplied along with the abbreviated patent in response to orders for the latter.)

Cancellation of Descriptive Material

Descriptive material deemed superfluous or unessential for a clear understanding of the disclosed invention should be omitted, however, if such material is presented in the application, the Examiner should require cancellation in the first Office action. This will provide applicant with an opportunity to traverse the requirement prior to final rejection. Cancellation may be deferred until the presence of allowable subject matter is indicated by the Examiner.

Laudatory language, exhaustive descriptions of prior art, unessential statements of objects and lengthy statements of environment should be omitted from, or reduced to bare essentials in the application descriptive material. Lengthy descriptions of items that are obvious and well known to those skilled in the art should be avoided. A mere statement that such items are known and conventional should be adequate in most instances, however, if doubt exists reference may be made to disclosures in specific documents for support. Likewise lengthy descriptions regarding use should be avoided. Procedures for testing should not ordinarily be described. Biological studies and case histories should ordinarily not be included in the descriptive material since they can be presented in affidavit form.

Objects—Abstracts—Summary

State the primary object of the invention and if essential a limited number of secondary objects—all should be brief.

The abstract and statement of object(s) appear to satisfy the requirements in Rules 73 and 77, a separate summary is deemed unnecessary.

The abstract should be limited to the technical disclosure that is *new in the art* to which the invention pertains.

Sectionalized Disclosure

Headings should be provided in patent applications to set off different portions, such as Abstract, Discussion of Prior Art, Background of Invention, Technical Disclosure of Invention, Additional Species of Invention, and the like. Cancellation of subject matter not pertinent to the claimed invention will be facilitated if the descriptive material is so organized.

In order to make the most of computer capabilities of the future, specifications should provide "indicators" which can be readily identified by the processing equipment. While this has general application it is illustrated below with regard to chemical disclosures.

Context indicators:

Set out in the specification
Reserved word paragraph
Heading such as—
Utility
Starting material
Process
Final-Products

Chemical-Compounds—Names (followed by a tabulated list)
Chemical-Compounds—Structures (followed by a tabulation of structures)
Chemical-Compounds—Notations (the tabulated list could be Wiswesser, UPAC, or Patent Office; transformation could be made later)

Miscellaneous

Words or phrases of high information content (as distinguished, for example, from the word "means") appearing in claims as well as in invention descriptions, should be given indicator symbols or printed in bold face type, or italicized, so that future manual searching by the Examiner and the public will be made easier. A capability will exist for easier keyboarding for full text analysis for computer based information.

Where an elaborate expression appears in the descriptive material or claims it should be designated, for example, as "Definition 1" and later reference to the definition should be made with the designator.

Applications that include drawings should include a list of elements and the associated reference numerals for the elements comprising the invention.

EDWARD J. BRENNER,
Commissioner of Patents.

Approved:
JOHN F. KINCAID,
Assistant Secretary for Science and Technology.

Published in 34 F.R. 524; Jan. 16, 1969

[859 O.G. 1 (Jan. 16, 1969)]

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(47) GUIDELINES FOR INCORPORATION BY REFERENCE IN PATENT APPLICATIONS

An application for a patent may incorporate essential material by reference to a United States patent, or an allowed U.S. application, subject to the conditions set out below. Essential material* is defined as that which is necessary (1) to support the claims, or (2) for adequate disclosure of the invention (35 U.S.C. 112). Material which is essential to the referencing application may not be incorporated by reference to patents issued by foreign countries or to non-patent publications. Essential material may not be incorporated by reference to a patent or application which itself incorporates essential material by reference.

The referencing application must include (1) an abstract, (2) a brief summary of the invention, (3) an identification of the referenced patent or application, (4) at least one view in the drawing in those applications admitting of a drawing, and (5) one or more claims. Where appropriate it would be advisable to direct particular attention to specific portions of the referenced patent or application.

If an application is filed with a complete disclosure, essential material may be cancelled by amendment and the *same* material substituted by reference to a patent or a pending and commonly owned allowed application in which the issue fee has been paid. The amendment must be accompanied by an affidavit executed by the applicant or his attorney or agent of record stating that the material cancelled from the application is the *same* material that has been incorporated by reference.

If an application incorporates essential material by reference to a U.S. patent or a pending and commonly owned allowed U.S. application for which the issue fee has been paid, applicant will be required prior to examination to furnish the Patent Office with a copy of the referenced material together with an affidavit executed by the applicant or his attorney or agent of record stating that the copy consists of the *same* material incorporated by reference in the referencing application.

If an application incorporates essential material by reference to a U.S. patent or a pending and commonly owned application other than one in issue with the fee paid, applicant will be required prior to examination to amend the disclosure of the referencing application to include the material incorporated by reference. The amendment must be accompanied by an affidavit executed by the applicant or his attorney or agent of record stating that the amendatory material consists of the *same* material incorporated by reference in the referencing application.

EDWARD J. BRENNER,
Commissioner.

Approved: Jan. 15, 1969.
JOHN F. KINCAID,
Assistant Secretary for Science and Technology.

Published in 34 F.R. 883; Jan. 18, 1969

[859 O.G. 346]

*Non-essential subject matter may be incorporated by reference to patents issued by the United States or foreign countries, prior filed commonly owned patent applications filed in the United States, and non-patent publications for purposes of indicating the background of the invention or illustrating the state of the art.

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(48) INCORPORATION BY REFERENCE—FILING DATE

In clarification of the Notice of December 30, 1968, appearing in the OFFICIAL GAZETTE of February 11, 1969, the following amplification is made.

The filing date of any application wherein essential material is incorporated by reference to a foreign patent or to a publication will not be affected because of the presence of such reference. In such a case, as well as any other case which improperly incorporates essential material by reference, the applicant will be required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit executed by the applicant or his attorney or agent of record stating that the amendatory material consists of the *same* material incorporated by reference in the referencing application.

ERRATUM

Attention is directed to the error in the above-mentioned notice appearing at 859 O.G. 346. Please delete the phrase, "a U.S. patent or", which was erroneously printed in the second line of the last paragraph.

RICHARD A. WAHL,
Mar. 7, 1969. *Assistant Commissioner.*

[A Notice covering this same subject, in slightly different form, has been published in 34 F.R. 5555, Mar. 22, 1969.]

[861 O.G. 680]

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(49) PHOTOCOPIES OF APPLICATIONS

Many of the patent application papers received by the Patent Office are copies of the original, ribbon copy. These are acceptable if, in the opinion of the Office, they are legible and permanent. Legibility includes ability to be photocopied and photomicrographed so that suitable reprints can be made. This requires a high contrast, with black lines and a white background. Gray lines and/or a gray background sharply reduce photo reproduction quality.

Applicants should make every effort to file patent applications in a form that is clear and reproducible. The Office may accept for filing date purposes papers of reduced quality but will require that acceptable copies be supplied for further processing.

Additionally, legibility of some application papers becomes impaired due to abrasion or aging of the printed material during examination and ordinary handling of the file. It may be necessary to require that clear, legible copies be furnished at later stages after filing, especially when preparing for issue.

RICHARD A. WAHL,
Jan. 28, 1970. *Assistant Commissioner.*

[872 O.G. 341]

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(50) DIVISIONAL APPLICATION PAPERS

In the interest of expediting the processing of newly filed divisional applications, filed as a result of a restriction requirement, applicants are requested to include the appropriate Patent Office classification on the papers submitted.

The appropriate classification for the divisional application may be found in the office communication of the parent case wherein the requirement was made. It is suggested that

this classification designation be placed in the upper right hand corner of the letter of transmittal accompanying these divisional applications.

RICHARD A. WAHL,
June 5, 1970. *Assistant Commissioner of Patents.*

[875 O.G. 702]

(51) REDUCTION IN PATENT APPLICATION DISCLOSURE

Notice of proposed Guidelines for Preparation of Patent Application Disclosure was published in the Federal Register of January 14, 1969 (34 F.R. 524), and in the OFFICIAL GAZETTE of the Patent Office of February 4, 1969 (859 O.G. 1). Comments from the general public were invited.

After consideration of comments received, new guidelines are deemed unnecessary, even though the average length of specification seems to be increasing. Applicants and their attorneys are reminded that 35 U.S.C. 112 requires inventions to be described "in such full, clear, concise, and exact terms as to enable any person skilled in the art * * * to make and use the same * * *." To satisfy the "concise" requirement, lengthy and unnecessary descriptive detail should be avoided.

WILLIAM E. SCHUYLER, JR.,
Commissioner of Patents.

Approved: July 24, 1970.

MYRON TRIBUS,
Assistant Secretary for Science and Technology.

[F.R. Doc. 70-9862; Filed, July 30, 1970; 8:45 a.m.]

35 F.R. 12296, July 31, 1970

[878 O.G. 1]

PRIORITY APPLICATIONS

(52) REISSUE APPLICATIONS—FOREIGN PRIORITY

A "claim" for the benefit of an earlier filing date in a foreign country under 35 U.S.C. 119 must be made in a reissue application even through such a claim was made in the application on which the original patent was granted. However, no additional certified copy of the foreign application is necessary. The procedure is similar to that for "Continuing Applications" in the last paragraph of MPEP 201.14(b).

The heading on printed copies will not be carried forward to the reissue from the original patent. Therefore, it is important that the file wrapper be endorsed under "Claims Foreign Priority."

RICHARD A. WAHL,
Acting Superintendent Patent Examining Corps.

[807 O.G. 579 (Oct. 20, 1964)]

(53) FILING OF PRIORITY PAPERS

In view of the shortened periods for prosecution leading to allowances, it is recommended that priority papers be filed as early as possible. Although Rule 55 permits the filing of priority papers up to and including the date for payment of the final fee, it is advisable that such papers be filed promptly after filing the application. Frequently priority papers are found to be deficient in material respects such as, for example, the failure to include the correct certified copy and there is not sufficient time to remedy the deficiency. Occasionally a new oath may be necessary where the original oath omits the reference to the foreign filing date for which the benefit is claimed. The early filing of priority papers would thus be advantageous to applicants in that it would afford time to explain any inconsistencies that exist or to supply any additional documents that may be necessary.

It is also suggested that a pencil notation of the serial number of the corresponding U.S. application be placed on the priority papers.

RICHARD A. WAHL,
Dec. 1, 1965. *Assistant Commissioner.*

[821 O.G. 1261]

(54) STREAMLINED CONTINUATION APPLICATIONS

Effective immediately, if the drawings and specification of a new application are to be identical with those of a pending application of the same applicant, and if the claims are to be directed to the same invention as that prosecuted in the pending application, the application papers of the earlier case, excepting the claims but including the drawing, may be used in the new case. A request for the use of such papers must be made and such request will be considered a waiver of the right to further prosecution of the earlier application and will terminate proceedings therein as of the filing date accorded the new application. The filing fee will be that appropriate to all the claims to be included in the new case. The entire file wrapper contents of the earlier application will be included in the file of the new one but the Office actions in the former will not be regarded as actions in the latter and the prosecution of the new application will be conducted in the same manner as if new application papers had been filed. A new serial number and filing date will be accorded but the effective filing date will be that of the earlier application.

EDWARD J. BRENNER,
Feb. 11, 1966. *Commissioner of Patents.*

[824 O.G. 1]

(55) STREAMLINED CONTINUATION APPLICATIONS—ORIGINAL APPLICATION ALLOWED

Since the streamlined continuation application procedure provided for by the Notice of February 11, 1966, published in the OFFICIAL GAZETTE of March 1, 1966, 824 O.G. 1, involved abandonment of the original application, and since the abandonment of an application after it has been allowed and the issue fee has been paid is not ordinarily permitted, the said streamlined prosecution will not be permitted when the original case has been allowed and the issue fee has been paid prior to the filing of the continuation application.

EDWARD J. BRENNER,
May 18, 1966. *Commissioner.*

[827 O.G. 2]

(56) FORMAT—REQUESTING STREAMLINED CONTINUATION APPLICATION

In response to many inquiries, the following format is suggested to transmit a new set of claims and request the use of the contents of an earlier filed application for a continuation application in compliance with 824 O.G. 1.

REQUEST FOR STREAMLINED CONTINUATION APPLICATION UNDER COMMISSIONER'S ORDER 824 O.G. 1

Earlier copending application:

Applicant(s) _____
Serial No. _____
Filed _____
Title _____

Enclosed are:

1. A new set of claims.
2. Filing Fee of $_____ (or*), to cover—
   Total Number of claims _____
   Independent Claims _____

Please use the contents (specification and drawings) of the above application in the new application since it meets all the requirements of the above Commissioner's Order dated February 11, 1966. The specification (and drawings) of the new application are identical with the earlier application, and the new claims are directed to the same invention.

EDWIN L. REYNOLDS,
May 31, 1966. *First Assistant Commissioner.*

*Authorization letter (2 copies) for use of funds in my Deposit Account No. _____ for the filing fee of $_____, to cover—
Total Number of Claims_____
Independent Claims _____

[828 O.G. 1085]

(57) EFFECTIVE DATE OF UNITED STATES PATENT

In section 706.02, delete penultimate paragraph.

Rewrite section 715.01 to read:

The effective date of a United States Patent for use as a prior art reference is not affected by the foreign filing date to which the patentee may be entitled under 35 U.S.C. 119. *In re Hilmer,* 833 O.G. 13, 149 USPQ 480 (CCPA 1966); *Lilly et al.* v. *Brenner,* 153 USPQ 95 (C.A.D.C. 1967). The reference patent is effective as of the date the application for it was filed in the United States (35 U.S.C. 102(e) and 103). *Hazeltine Research, Inc. et al.* v. *Brenner,* 824 O.G. 8 (U.S. Supreme Court 1965).

RICHARD A. WAHL,
Apr. 5, 1967. *Assistant Commissioner.*

[838 O.G. 1]

(58) PATENT HEADINGS

As a service to the public, beginning with the issue of January 16, 1968, the heading of the printed patent will include all identifying parent data of continuation-in-part applications as is now the practice in continuation, divisional, substitute, and reissue applications. It should be noted, however, that inclusion of this information in the heading does not necessarily indicate that the claims are entitled to the benefit of the earlier filing date.

The above practice will not change the procedure with regard to assignments as set forth in the first sentence of paragraph 2 of Section 306 of the M.P.E.P.

RICHARD A. WAHL,
Dec. 18, 1967. *Assistant Commissioner.*

[846 O.G. 337]

(59) CHAINS OF CONTINUING APPLICATIONS

In view of the decision of the Court of Customs and Patent Appeals in *In re Henriksen* (158 USPQ 224) the application of 35 U.S.C. 120 will no longer be limited to a chain of three successively filed continuing cases.

Accordingly, Change Notice 12-8 is rescinded.

RICHARD A. WAHL,
Aug. 9, 1968. *Assistant Commissioner of Patents.*

[854 O.G. 559]

(60) FOREIGN PRIORITY OF CONTINUING APPLICATION

If the Examiner is aware of the fact that the parent of a continuing application has fully complied with the requirements of 35 U.S.C. 119 and is therefore entitled to the benefit of the filing date of an earlier filed foreign application, he should direct it to the applicant's attention in an Office action, as in the following exemplary language:

"Applicant is reminded that in order to be entitled to priority based on papers filed in parent application Serial No. _____ under 35 U.S.C. 119, a claim for such priority must be made in this application. In making such claim, applicant may simply call attention to the fact that a certified copy of the foreign application is in the parent application (M.P.E.P. 201.14(b))."

RICHARD A. WAHL,
Aug. 30, 1968. *Assistant Commissioner.*

[855 O.G. 1]

(61) GERMANY: NEW REQUIREMENT FOR SUBMISSION OF COPY OF ORIGINAL APPLICATION IN CONVENTION CASES

Under Section 27 of the German Patent Law which came into effect October 1, 1968, all applicants submitting a claim of priority in Germany under the Paris Union will be required to submit a copy of the application upon which the claim for priority is based. The U.S. Patent Office has been advised by the German Office that the copy need *not* be certified correct by the Office in which the application was originally filed.

Accordingly, for U.S. applicants, one method of complying with the new law would be to accompany the German filing with a copy of the prior U.S. applications as filed. This copy can be produced by the applicant himself.

If the applicant does not submit the copy at the time of filing, the German Office will issue, within two months after the German filing, a request to submit the copy. Failure to submit the required copy within two months after notification results in loss of the priority claim.

With respect to application on file in Germany prior to October 1, 1968, the following applies:

Copies of the original application will not be required for those applications already on file if the serial number of the application on which the priority claim is based had been communicated to the German Patent Office prior to October 1, 1968.

With regard to applications on file prior to October 1, 1968, for which the U.S. serial number is communicated after October 1, 1968, the request for the copy of the U.S. application will be made together with the notice preceding the laying open to public inspection of the file of the German application.

GERALD D. O'BRIEN,
Jan. 13, 1968. *Assistant Commissioner.*

[839 O.G. 345]

(62) STREAMLINED CONTINUATION APPLICATION

The streamlined continuation procedure, provided for by the notice of February 11, 1966 (824 O.G. 1), may not be used when at the time of filing the continuation application: (1) the parent application has been allowed and the issue fee has been paid; (2) the parent application is, or has been, involved in court action; (3) the parent application has been abandoned; or (4) the parent application is, or has been, involved in an interference declared prior to the date of filing the continuation application.

Attenton is also directed to the fact that the streamlined procedure is limited to true continuation applications and is not available for use when filing any other type of continuing application.

Applicants are urged when filing a streamlined continuation application to file a duplicate letter of transmittal in the parent application.

RICHARD A. WAHL,
Oct. 14, 1969. *Assistant Commissioner.*

[869 O.G. 1]

DRAWINGS

(63) PHOTOPRINTS AS DRAWINGS—FILING DATE ONLY

Effective September 1, 1964 the Application Branch is authorized and directed to accept all applications in which photoprints have been submitted in lieu of formal drawings, and to forward them to the Examiner, who will notify the applicant immediately that the application has been accepted *for filing only,* and that to be entitled to examination, the applicant must file formal drawings complying with Rule 84 within 60 days, and pay the cost of comparing the photoprints with the formal drawings.

A comparison charge of $10.00 per hour, with a minimum charge of $10.00 per application is hereby established. This charge may be applied against deposit accounts and authorization to charge such accounts should be included when the formal drawings are filed. For those who have no deposit account acceptance of the formal drawings will be contingent upon payment of the comparison charge within the period set.

This notice supersedes the notice of April 24, 1964, published May 26, 1964, in 802 O.G. 871.

EDWARD J. BRENNER,
July 16, 1964. *Commissioner.*

[805 O.G. 3]

(64) NEW DRAWINGS PREPARED BY PATENT OFFICE

In Section 608.02(x) the paragraphs headed "New Drawings Prepared by Patent Office" are cancelled and the following substituted therefor:

When new drawings have been required in pending applications and have been prepared by the Office draftsman, they are not sent to the applicant for his signature but a copy (print) is sent to him for his file. The name of the inventor(s) will be printed on the drawings by the Office draftsman.

In the event that the application is in condition for allowance, the application will be sent to Issue immediately after the drawing is prepared.

RICHARD A. WAHL,
Jan. 6, 1966. *Assistant Commissioner.*

[823 O.G. 1]

(65) TRANSFER OF DRAWINGS

In view of the recent amendment of Rule 138 to permit the express abandonment of patent applications by the attorney, there is no longer any sufficient reason for delaying the formal abandonment of an application after all the drawings thereof have been transferred to another case. Accordingly, effective February 1, 1967, no request to transfer all the drawings from a pending application will be granted unless and until a formal abandonment of the application has been filed. In order to insure copendency, such as abandonment may be so worded as to become effective only after the transfer of the drawings has taken place.

EDWARD J. BRENNER,
Dec. 15, 1966. *Commissioner.*

[834 O.G. 431]

EXAMINATION OF APPLICATIONS

(66) INFORMAL APPLICATIONS OF FOREIGN APPLICATIONS

This Notice is of special interest to attorneys and agents prosecuting applications on inventions originating abroad.

Many applications filed in this Office correspond in form and substance to the requirements (regulations) of countries foreign to the United States. Since they were not originally drafted to comply with our Rules of Practice, especially those based on 35 U.S.C. 112, the first examination cannot be the full and complete one contemplated under current examining precedures. This first examination is necessarily limited, under MPEP 702.01, to pointing out the informalities and citing the results of a search, the search being based upon the invention so far as it can be understood from the foreign type of claims, often coupled with a somewhat generalized disclosure. Since U.S. Patent Office policy is to accord equal treatment to *all* cases regardless of origin, current examining procedures as explained in the address reprinted in 803 O.G. 893, subject these applications to final determination on the second action. It is obviously to applicant's advantage to *file* the application with an adequate disclosure and with claims which conform to the U.S. Patent Office usages and requirements. This should be done whenever possible. If, however, due to the pressure of a Convention deadline or other reasons, this is not possible, applicants are urged to submit *promptly, preferably within three months after filing,* a preliminary amendment which corrects the obvious informalities. The informalities should be corrected to the extent that the disclosure is readily understood and the claims to be initially examined are in proper form, particularly as to dependency, and otherwise clearly define the invention. "New matter" must be excluded from these amendments since preliminary amendments do not enjoy original disclosure status, section 608.04(b), MPEP.

EDWARD J. BRENNER,
Mar. 4, 1965. *Commissioner of Patents.*

[812 O.G. 1295]

(67) TERMINAL DISCLAIMERS FILED IN APPLICATIONS

In view of the increasing number of terminal disclaimers being filed in pending applications under 35 U.S.C. 253, it is considered advisable to point out the practice to be followed in such cases.

Since the claims of pending applications are subject to cancellation, amendment or remembering, a terminal disclaimer directed to a particular claim or claims will not be accepted; the disclaimer must be of a terminal portion of the term of the entire patent to be granted. The statute does not provide for conditional disclaimers and accordingly, a proposed disclaimer which is made contingent on the allowance of certain claims cannot be accepted. The disclaimer should identify the disclaimant and his interest in the application and should specify the date when the disclaimer is to become effective. An acceptable form for such a disclaimer is as follows:

To the Commissioner of Patents:

Your petitioner, John Doe, residing at _____ in the county of _____ and State of _____ represents that he is (here state exact interest of the disclaimant and, if he is an assignee, set out the liber and page or reel and frame where the assignment is recorded) of application No. _____, filed on the _____ day of _____ 19 __ for _____. Your petitioner hereby disclaims all that portion of the term of any patent to be issued on the said application subsequent to _____ 19__.

The disclaimer must be accompanied by the statutory fee.

EDWARD J. BRENNER,
Apr. 26, 1965. *Commissioner.*

[814 O.G. 359]

(68) PRACTICE RE: TECHNICAL REJECTIONS

In the interest of reducing the number of technical rejections and expediting the prosecution of applications the following changes will be instituted effective June 1, 1965:

1. The inclusion of a negative limitation shall not, in itself, be considered a sufficient basis for objection to or rejection of a claim. However, if such a limitation renders the claim unduly broad or indefinite or otherwise results in a failure to point out the invention in the manner contemplated by 35 U.S.C. 112, an appropriate rejection should be made.

2. When materials recited in a claim are so related as to constitute a proper Markush group, they may be recited either in the conventional manner heretofore permitted, or alternatively. For example, if ". . . wherein R is a material selected from the group consisting of A, B, C and D" is a proper limitation then ". . . wherein R is A, B, C or D" shall also be considered proper.

3. The use of Markush claims of diminishing scope shall not, in itself, be considered a sufficient basis for objection to or rejection of claims. However, if such a practice renders the claims indefinite or if it results in undue multiplicity, an appropriate rejection shall be made. This change does not in any way affect the substantive law governing the treatment of Markush claims. The foregoing practice with respect to Markush claims of diminishing scope will be effective on an experimental basis until December 1, 1965, and, if it proves satisfactory, will then be adopted permanently.

EDWARD J. BRENNER,
Apr. 30, 1965. *Commissioner.*

[814 O.G. 715]

(69) "SPECIAL" EXAMINING PROCEDURE FOR CERTAIN NEW APPLICATIONS

The trial of "Special" Examining Procedure for Certain New Applications as announced in 812 O.G. 953 and later modified by 817 O.G. 423 indicates the desirability of making such procedure available on a standard operating basis. Accordingly, an additional category is being added to the list of situations in which an application may be advanced out of turn for examination, Rule 102 and M.P.E.P. 708.01 and 708.02. The M.P.E.P. will be rewritten to incorporate this practice.

Certain further modifications have been incorporated into the conditions and procedure; most importantly, the new case

now may be a continuing or divisional application, the prohibition against an application having an earlier effective U.S. filing date has been removed. Original limits on filing date and on number in any Group have previously been deleted.

The full text of conditions and procedures now applicable appears below, and the notices in 812 O.G. 953 and 817 O.G. 423 are accordingly rendered obsolete.

REQUIREMENTS AND PROCEDURES TO EFFECT ACCELERATED EXAMINATION OF NEW APPLICATIONS

Requirements Precedent to Grant of Special Status for Accelerated Examination

A new application (one which has not received any examination by the examiner) may be granted special status provided that applicant (and this term includes applicant's attorney or agent) concurrently:

(a) Submits a written petition to make special.
(b) Agrees that the application will not include more than ten claims at any time. Should the pending application contain more than ten claims when the request for special status is filed, an amendment must be proposed at that time to reduce the number to not more than ten, which amendment will be entered only if the special status is granted. All of the claims presented for this special prosecution must obviously be directed to a single invention.
(c) Submits a statement that a pre-examination search was made, and specifying whether by the inventor, attorney, professional searchers, etc., and listing the field of search by class and subclass, publication, chemical abstracts, foreign patents, etc.
(d) Submits one copy each of the references deemed most closely related to the subject matter encompassed by the claims.
(e) Submits a detailed discussion of the references, which discussion points out, with the particularity required by Rule 111(b) and (c), how the claimed subject matter is distinguishable over the references. Where applicant indicates an intention of overcoming one of the references by affidavit under Rule 131, the affidavit must be submitted before the application is taken up for action, but in no event later than one month after request for special status.

In those instances where the request for this special status does not meet all the prerequisites set forth above, applicant will be notified and the defects in the request will be stated. The application will remain in the status of a new application awaiting action in its regular turn. In those instances where a request is defective in one or more respects, applicant will be given *one* opportunity to perfect the request. If perfected, the request will then be granted.

Once a request has been granted, prosecution will proceed according to the procedure set forth below; there is no provision for "withdrawal" from this special status.

Special Examining Procedure

1. The new application, having been granted special status as a result of compliance with the requirements set out in the section titled "Requirements Precedent to Grant of Special Status for Accelerated Examination," supra, will be taken up by the Examiner before all other categories of applications except those clearly in condition for allowance and these with set time limits, such as Examiner's Answers, Decisions on Motions, etc., and will be given a complete first action which will include *all* essential matters of merit as to all claims. The Examiner's search will be restricted to the *subject matter encompassed by the claims.* This first action will terminate with the setting of a three-month shortened period for response.

2. During the three-month period for response, applicant is encouraged to arrange for an interview with the Examiner in order to resolve, with finality, as many issues as possible. In order to afford the Examiner time for reflective consideration before the interview, applicant or his representative should cause to be placed in the hands of the Examiner at least one working day prior to the interview, a copy (clearly denoted as such) of the amendment that he proposes to file in response to the Examiner's action. Such a paper will not become a part of the file, but will form a basis for discussion at the interview.

3. Subsequent to the interview, or responsive to the Examiner's first action if no interview was had, applicant will file his "record" response. The response at this stage, to be proper, must be restricted to the rejections, objections, and requirements made. Any amendment which would require broadening the search field will be treated as not a proper response.

4. The examiner will within one month from the date of receipt of applicant's formal response, take up the application for final disposition. This disposition will constitute either a final action which terminates with the setting of a three-month period for response, or a notice of allowance. No further response will be made by the Examiner after a final action with the exceptions that (a) an Examiner's Answer may be prepared in response to an appeal brief, or (b) the application may be passed to issue.

5. A personal interview after final Office action will not be permitted unless requested by the Examiner. However, telephonic interviews will be permitted where appropriate for the purpose of correcting any minor matters which remain outstanding.

RICHARD A. WAHL,
Dec. 14, 1965. *Assistant Commissioner.*

[822 O.G. 2]

(70) PROSECUTION OF PATENT APPLICATIONS AFTER FINAL ACTION

Experience over the past several months indicates the need to re-emphasize certain areas of examining procedure outlined In Assistant Commissioner Wahl's address to the Patent Examining Corps on September 24, 1965 (819 O.G. 893). Certain paragraphs or parts thereof are quoted below, with emphasis added.

"It is planned, accordingly, that prosecution before the examiner should be essentially concluded after applicant's first response and the examiner's reply thereto. *No amendments to claims, nor new claims, should be entered after final rejection, except in rare instances, unless it is readily apparent that these place the case in condition for allowance or materially reduce or simplify the issues for appeal. Also, no amendments should be entered which raise new issues or require further search.* However, if a response to a final rejection is received and it would clearly place the case in condition for allowance except for minor matters which could be cleared up over the telephone, the examiner should telephone applicant or his attorney or agent to try to promptly clear up such matters."

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"In general, a very complete and thoroughly considered first response by applicant will be in order because it will determine the form and content of the claims, not only for the final consideration by the examiner, but also by the Board of Appeals if appeal be taken. In this connection, attention is directed to suggestions set forth in notices in the OFFICIAL GAZETTE in recent years that applicant should include in his application at the time of filing, or after the first complete action, the most detailed claim that he would be willing to accept as well as the broadest claim to which he considers himself entitled."

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"A third change in procedure is that in all cases wherein the examiner decides that a requirement for restriction to one invention or for election of species must be made, a telephone call will be made to applicant or his representative advising him of the situation and requesting a prompt election by return telephone call if the decision cannot be made immediately. When the election is made by telephone, the examiner in his action will make of record the complete requirement and will state the date of the call, the name of the applicant or his representative who made the election, and the result of the election. Such restriction or election requirements will, of course, be subject to written requests for reconsideration (traverse) in accordance with Rule 143. If

no reply is received to the examiner's telephoned requirement within a reasonable period, about three working days, he will proceed to make the requirement in a written action as heretofore."

In further implementation of these precedures, the following paragraphs add further details to take effect on the date of this notice and to apply to all Office actions taken or written, and to all communications received from applicant, on or after the effective date.

FINAL ACTION AND PRE-APPEAL

The prosecution of an application before the examiner should ordinarily be concluded with the final action. However, one personal interview and one written response by applicant may be entertained after such final action if circumstances warrant. Thus, only one request by applicant for a personal interview after final should be granted, but in exceptional circumstances, a second personal interview may be initiated by the *examiner* if in his judgment this would materially assist in placing the application in condition for *allowance*. Any amendment submitted under Rule 116(a) and Rule 116(b) *for purposes of appeal* should be presented in the first response after final action and will be considered as heretofore; if any amendments are submitted after the examiner's reply to such first response, they should be refused entry as not warranted at this stage of prosecution, even though such amendments allegedly present rejected claims in better condition for appeal. Similarly, no affidavit should be considered if presented later than with the first response after final unless a showing is made under Rule 116(b).

The practice will be continued of advising applicant by means of the recently introduced form letter (POL–303) as to the disposition of proposed amendments to the claims and as to the effect of any argument or affidavit submitted in the *first* response after final action.

If a response subsequent to the first response after final action is received before appeal and which *on its face* clearly places the application in condition for allowance, it should be entered and a notice of allowability (POL–255) promptly sent to applicant; if such subsequent response does not *on its face* place the application in condition for allowance, it should not be considered further (unless, in the examiner's judgment, there are only minor matters which could be readily cleared up in a telephone interview leading to a notice of allowance) and should be refused entry. A form letter (POL–309) will be used for notification that such subsequent responses do not place the application in condition for allowance.

Requests for extension of the shortened statutory period for reply after final action, under Rule 130(b), will be considered by the Primary Examiner and if granted will be for not more than one month; petitions for further extensions will be decided by the Commissioner or his designees in this matter. It should be noted that, under Rule 181(f), the filing of a Rule 181 petition will not stay the period for reply to an Examiner's action which may be running against an application.

APPEAL AND POST-APPEAL

The record on appeal should be essentially the record before the examiner at the time appeal is taken. Thus, no amendments, except under Rule 193(b), presented after appeal has been taken should be entered *for purposes of appeal, and no exception should be made to this*, see Rule 116(c). Amendments, arguments, or affidavits filed concurrently with or of even date with appeal notice will be construed as filed after appeal for the purpose of this procedure, even though they may be the first response to the final action. In accordance with Rule 195, affidavits or exhibits submitted after the case has been appealed should be considered for entry *only if applicant makes the necessary showing* why they were not earlier presented; Rule 195 should be strictly construed in this regard. If after appeal has been taken, a paper is presented which *on its face* clearly places the application in condition for allowance, such paper should be entered and a notice of allowability (POL–255) promptly sent to applicant. If such paper does not *on its face* place the application in condition for allowance, it should not be considered further (unless in the examiner's judgment there are only minor matters which could be readily cleared up in a telephone interview leading to a notice of allowance) and proposed amendments therein should not be entered. Notification that such papers do not place the application in condition for allowance will be made by use of a form letter (POL–309).

In accordance with the above, the Brief should be directed to the claims and to the record of the case as they appeared upon filing the appeal, but it may, of course, withdraw from consideration on appeal any claims or issues as desired by appellant.

Upon timely filing of a Brief, it will be referred to the examiner for his consideration of its propriety as to the appeal issues and for preparation of an Examiner's Answer if the Brief is proper and the application is not allowable. The Examiner's Answer will normally be of the shortened type referring to and relying on the final action; it may withdraw rejection of claims or any objection or requirement as desired by the examiner. No new ground of rejection or objection should be incorporated in the Examiner's Answer *without express approval in each case by the Group Manager.*

RESTRICTION AND ELECTION

A basic policy of the streamlined examining program is that the second action on the merits should be made final. In those applications wherein a requirement for restriction or election is accompanied by the rejection of linking or generic claims, such action will be considered to be an action on the merits and the next action by the examiner should be made final. It may thus be to applicant's advantage to make a telephone election in such cases prior to the first action.

Requirements for restriction or election will continue to be governed by existing criteria. However, in stating a requirement for restriction hereafter there should be no citation of patents to show separate status or classification or utility. The separate inventions should as heretofore be identified by a grouping of the claims with a short description of the total extent of the invention claimed in each group, specifying the type or relationship of each group as by stating the group is drawn to process, or to subcombination, or to product, etc., and should indicate the classification or separate status of each group, as for example, by class and subclass.

The period for response to a requirement for restriction or election, where there is no rejection of claims, will hereafter be set at 30 days.

MANUAL OF PATENT EXAMINING PROCEDURE

Procedures currently set forth in the Manual of Patent Examining Procedure which may be in conflict with the above are superseded by those anounced above. Change Notices and replacement pages will be issued in due course.

MANUAL OF CLERICAL PROCEDURE

This information will also be incorporated in the Manual of Clerical Procedure.

RICHARD A. WAHL.

[824 O.G. 4 (Mar. 1, 1966)]

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(71) DOUBLE PATENTING

In view of the uncertain situation which has arisen as a result of recent decisions dealing with "double patenting" it is thought to be advisable to restate the practice which should be followed in this area, particularly as regards the effect of terminal disclaimers. The term "double patenting" is properly applicable only to cases involving two or more applications and/or patents of the same inventive entity and should not be applied to situations involving commonly owned cases of different inventive entities. Sole and joint inventors cannot constitute a single entity, nor do two or more sets of joint inventors constitute a single entity if any individual is included in either set who is not also included in the other.

If two or more cases are filed by a single inventive entity, and if the expiration dates of the patents, granted or to be granted, are the same, either because of a common issue date or by reason of the filing of one or more terminal disclaimers, two or more patents may properly be granted, if the claims do not overlap, even though the subject matter to which the claims of one case are directed may be obvious in view of the subject matter claimed in the other case. *In re Robeson,* 1964 C.D. 561, 141 USPQ 485; *In re Kaye,* 1964 C.D. 630, 141 USPQ 829. Claims overlap within the meaning of this statement if it is possible for them to be infringed by the same process, machine, manufacture, or composition of matter. Cross reading is not necessary to constitute such an overlap.

Overlapping claims should not be allowed in cases filed by the same inventive entity if they are directed to identical inventive concepts, or if the concept to which one set of claims is directed would be obvious in view of that to which the other set is directed. This is true regardless of the relative filing dates of the cases or the relative scope of the claims.

In situations involving cases filed by different inventive entities, regardless of ownership, Sections 102 and 103 of 35 U.S.C. preclude the granting of two or more patents when directed to identical inventive concepts or when one of the concepts would be obvious in view of the other. A terminal disclaimer can have no effect in this situation since the basis for refusing more than one patent is not connected with any extension of monopoly.

In view of 35 U.S.C. 135, it is necessary to determine priority of invention whenever two different inventive entities are claiming a single inventive concept, and this determination should ordinarily be made before any patent is issued. This is true regardless of ownership, and the provision of Rule 201(c) that interferences will not be declared or continued between commonly owned cases unless good cause is shown therefor does not mean that two patents are to be allowed in such cases, but that the common assignee should be called on to state which of the entities involved is prior to the other in date of invention.

Accordingly, the assignee of two or more cases of different inventive entities, containing conflicting claims, should be called on to maintain a line of demarcation between them. If such a line is not maintained then, when one of the cases is in condition for allowance, claims covering the conflicting subject matter should be suggested as provided in Rule 203, care being taken to insure that such claims cover all the conflicting matter and the assignee should be called on to state which entity is the prior inventor of that subject matter and to limit the claims of the other application accordingly. If the assignee does not comply with this requirement and presents the interfering claims in both cases, an interference should be declared, attention being directed to Rule 208 if there is a common attorney. If suggested claims are not presented within the time allowed, rejection should be made on the ground of disclaimer as indicated in Rule 203(b).

In the event that a common assignee, after taking out a patent on one of two or more applications, for the first time presents claims in a pending application which are not patentably distinct from claims of the patent, the claims of the application should be rejected on the ground that the assignee, by taking out the patent at a time when the application was not claiming the patented invention, is estopped to contend that the patentee is not the prior inventor.

If a patent is inadvertently issued on one of two commonly owned applications by different inventive entities which at the time when the patent issued were claiming inventions which are not patentably distinct, the assignee should be called on to make a determination of priority as in the case of pending applications and, if no election is made, an interference should be declared. An election of the applicant as the first inventor should not be accepted without a complete (not terminal) disclaimer of the conflicting claims in the patent.

EDWARD J. BRENNER,
Commissioner.

Jan. 9, 1967.

[834 O.G. 1615]

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(72) NON-FINAL SECOND ACTION REJECTION PRACTICE

Experience since September 1, 1966, indicates that the non-final second action rejection practice announced on a trial basis at 829 O.G. 1755 (M.P.E.P. Change Notice 10—1) has worked out satisfactorily for both the Office and the applicants. Effective immediately, that practice as restated below will be followed on a regular basis.

Second actions on the merits will not be made final where the examiner introduces a new ground of rejection not necessitated by amendment of the application by the applicant. Further, in carrying out this policy, a second action on the merits in any application will not be made final if it includes a rejection of any claim not amended by applicant where that rejection relies on newly cited art. Also, amendments complying with objections or requirements as to form are to be permitted after final action in accordance with Rule 116(a).

RICHARD A. WAHL,
Assistant Commissioner.

Jan. 30, 1967.

[835 O.G. 715]

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(73) SPECIAL EXAMINING PROCEDURE FOR CERTAIN NEW APPLICATIONS

The practice of granting special status to certain new applications as set forth in the Notice of December 14, 1965, 822 O.G. 2, is modified to the extent indicated below in the case where the Office determines that all of the claims presented are not obviously directed to a single invention.

Where the claims in a case are directed to more than one invention, an election without traverse will be a prerequisite to the grant of special status.

The election may be made by applicant at the time of filing the petition for special status. Should applicant fail to include an election with the original papers or petition and the Office determines that a requirement should be made, the established telephone restriction practice will be followed.

If otherwise proper, examination on the merits will proceed on claims drawn to the elected invention.

If applicant refuses to make an election without traverse, the application will not be further examined at that time. The petition will be denied on the ground that the claims are not directed to a single invention, and the application will await action in its regular turn.

Divisional applications directed to the non-elected inventions will *not* automatically be given special status based on papers filed with the petition in the parent case. Each such application must meet on its own all requirements for the new special status.

RICHARD A. WAHL,
Assistant Commissioner.

Mar. 21, 1967.

[837 O.G. 667]

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(74) NEW FIRST ACTION PROCEDURE

Effective January 2, 1968, a new practice involving the use of a revised form for the first page of the first Office Action will be instituted. The use of this new form will introduce some new practices and procedures and will terminate the "Interview Practice Preliminary to Notice Under 35 U.S.C. 132" announced August 1, 1967, at 841 O.G. 1.

The heading of the revised form containing the address and application identification will have a completely revised format to facilitate future pre-action addressing by automatic typewriter.

Under the new precedure, the Examiner will signify on the revised form certain information including the period set for response, any attachments, and, in a "summary of action," the position taken on all claims.

The new procedure will also allow the Examiner, in the exercise of his professional judgment, to indicate that a discussion with applicant's representative may result in agreements whereby the application may be placed in condition for allowance and that the Examiner will telephone the representative within about two weeks. Under this practice the applicant's representative can be adequately prepared to conduct such a discussion. Any resulting amendment may be made either by the applicant's attorney or agent or by the Examiner in an Examiner's Amendment. It should be recognized that when extensive amendments are necessary it would be preferable if they were filed by the attorney or agent of record, thereby reducing the professional and clerical workload in the Patent Office and also providing the file wrapper with a better record, including applicant's arguments for allowability as required by Rule 111.

RICHARD A. WAHL,
Assistant Commissioner.

Dec. 11, 1967.

[845 O.G. 1205]

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(75) MODIFICATION OF NOTICE OF JANUARY 31, 1967

The practice set forth in the notice of January 31, 1967, entitled "Double Patenting" (834 O.G. 1615), is modified to

the extent that when a single inventive entity is involved a terminal disclaimer will be accepted to avoid a double patenting rejection even if the claims overlap, if the claims which would otherwise be subject to such rejection could not have been allowed in the other application or patent, and if the terminal disclaimer further provides that the patent shall expire immediately if it ceases to be commonly owned with the other application or patent.

EDWARD J. BRENNER,
Feb. 14, 1968. *Commissioner.*

[848 O.G. 1]

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(76) CONTINUATIONS—RES JUDICATA REJECTIONS

Some confusion exists in the interpretation of the established Office policy regarding the use of *res judicata* rejections. To clarify the Manual on this point the following changes are made—

The second paragraph of MPEP 201.07 is rewritten to read:

At any time before the patenting or abandonment of or termination of proceedings on his earlier application, an applicant may have recourse to filing a continuation in order to introduce into the case a new set of claims and to establish a right to further examination by the primary Examiner.

The last two sentences of MPEP 201.11 are deleted. MPEP 706.03(w) is rewritten to read:

A prior adjudication against the inventor on the same or similar claims constitutes a proper ground of rejection as *res judicata*. See *Ex parte Budde*, 150 USPQ 469; 828 O.G. 409. The rejection should be used only when the earlier decision was a decision of the Board of Appeals or any of the reviewing courts, and when the time for further court review has expired and no such review has been sought, or, if filed, the review action is terminated. The timely filing of a second application copending with an earlier application does not preclude the use of *res judicata* as a ground of rejection for the second application claims.

When making a rejection on *res judicata*, action should ordinarily be made also on the basis of prior art.

RICHARD A. WAHL,
Mar. 18, 1968. *Assistant Commissioner.*

[849 O.G. 277]

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(77) GUIDELINES FOR CONSIDERING DISCLOSURES OF UTILITY IN DRUG CASES

On December 5, 1967 the text of certain guidelines which the Patent Office proposed to adopt in the examination of applications for drugs, was published in the OFFICIAL GAZETTE (845 O.G. 1). A hearing was had on January 16, 1968, and all persons, who desired to, were invited to attend and to submit their views, objections, recommendations or suggestions. The following guidelines are being published after consideration of all the material and opinions, both written and oral, which were submitted in response to that invitation.

EDWARD J. BRENNER,
Mar. 19, 1968. *Commissioner of Patents.*

General

These guidelines are set down to provide uniform handling of applications disclosing drug or pharmaceutical utility. They are intended to guide patent examiners and patent applicants as to criteria for utility statements. They deal with fundamental questions and are subject to revision and amendment if future case law indicates this to be necessary.

The following two basic principles shall be followed in considering matters relating to the adequacy of disclosure of utility in drug cases:

(1) The same basic principles of patent law which apply in the field of chemical arts shall be applicable to drugs, and

(2) The Patent Office shall confine its examination of disclosure of utility to the application of patent law principles, recognizing that other agencies of the government have been assigned the responsibility of assuring conformance to the standards established by statute for the advertisement, use, sale or distribution of drugs.[1]

A drug is defined by 21 U.S.C. 321(g)

> The term "drug" means (A) articles recognized in the official United States Pharmacopeia, official Homeopathic Pharmacopeia of the United States, or official National Formulary, or any supplement to any of them; and (B) articles intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease in man or other animals; and (C) articles (other than food) intended to affect the structure or any function of the body of man or other animals; and (D) articles intended for use as a component of any articles specified in clause (A), (B), or (C); but does not include devices or their components, parts or accessories.

In addition, compositions adapted to be applied to or used by human beings, e.g., cosmetics, dentifrices, mouthwashes, etc., may be treated in the same manner as drugs subject to the conditions stated.

Any proof of a stated utility or safety required pursuant to these guidelines may be incorporated in the application as filed, or may be subsequently submitted by affidavit if and when required. The Patent Office, in reaching its own independent decisions on questions of utility and how to use under 35 U.S.C. 101 and 112, will continue to avail itself of assistance and information from the Secretary of Health, Education, and Welfare as authorized by 21 U.S.C. 372(b), when necessary.

In accordance with the basic principles set forth above, the following procedures shall be followed in examining patent applications in the drug field with regard to disclosures relating to utility.

35 U.S.C. 101

Utility must be definite and in currently available form,[2] not merely for further investigation or research but commercial availability is not necessary. Mere assertions such as "therapeutic agents,"[3] "for pharmaceutical purposes,"[4] "biological activity,"[5] "intermediates,"[6] and for making further unspecified preparations are regarded as insufficient.

If the asserted utility of a compound is believable on its face to persons skilled in the art in view of the contemporary knowledge in the art, then the burden is upon the examiner to give adequate support for rejections for lack of utility under this section.[7] On the other hand, incredible statements[8] or statements deemed unlikely to be correct by one skilled in the art[9] in view of the contemporary knowledge in the art will require adequate proof on the part of applicants for patents.

Proof of utility under this section may be established by clinical or *in vivo* or *in vitro* data, or combinations of these, which would be convincing to those skilled in the art.[10] More particularly, if the utility relied on is directed *solely* to the treatments of humans, evidence of utility, if required, must generally be clinical evidence.[11] Although animal tests may be adequate where the art would accept these as appropriately correlated with human utility.[12] If there is no assertion of human utility,[13] or if there is an assertion of animal utility,[14] operativeness for use on standard test animals is adequate for patent purposes.

Exceptions exist with respect to the general rule relating to the treatment of humans. For example, compositions whose properties are generally predictable from a knowledge of their components, such as laxatives, antacids and certain topical preparations, require little or no clinic proof.[15]

Although absolute safety is not necessary to meet the utility requirement under this section, a drug which is not sufficiently safe under the conditions of use for which it is said to be effective will not satisfy the utility requirement.[16] Proof of safety shall be required only in those cases were adequate reasons can be advanced by the examiner for believing that the drug is unsafe, and shall be accepted if it establishes a reasonable probability of safety.

35 U.S.C. 112

A mere statement of utility for pharmacological or chemotherapeutic purposes may raise a question of compliance with Section 112, particularly ". . . as to enable any person skilled in the art to which it pertains . . . to use the same." If the statement of utility contains within it a connotation of how to use, and/or the art recognizes that standard modes of administration are contemplated, Section 112 is satisfied.[17] If the use disclosed is of such nature that the art is unaware of successful treatments with chemically analogous compounds, a more complete statement of how to use must be supplied than if such analogy were not present.[18] It is not necessary to specify the dosage or method of use if it is obvious to one skilled in the art that such information could be obtained without undue experimentation.[17]

With respect to the adequacy of disclosure that a claimed genus possesses an asserted utility representative examples together with a statement applicable to the genus as a whole will ordinarily be sufficient if it would be deemed likely by one skilled in the art, in view of contemporary knowledge in the art, that the claimed genus would possess the asserted utility.[19] Proof of utility will be required for other members of the claimed genus only in those cases where adequate reasons can be advanced by the examiner for believing that the genus as a whole does not possess the asserted utility. Conversely, a sufficient number of representative examples, if disclosed in the prior art will constitute a disclosure of the genus to which they belong.

In the case of mixtures including a drug as an ingredient, or mixtures which are drugs, or methods of treating a specific condition with a drug, whether old or new, a specific example should ordinarily be set forth, which should include the organism treated. In appropriate cases, such an example may be inferred from the disclosure taken as a whole and/or the knowledge in the art (e.g., gargle).

Where the claimed compounds are capable of several different utilities and one use is adequately described in accordance with these guidelines, additional utilities will be investigated for compliance with Sections 101 and 112 only if not believable on their face to those ordinary skill in the art in view of the contemporary knowledge of the art. Failure to meet these standards may result in a requirement to cancel such additional utilities.[20]

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[1] *In re Krimmel*, 48 CCPA 1116, 292 F.2d 948, 130 USPQ 215; *In re Hartop et al.*, 50 CCPA 780, 311 F.2d 249, 135 USPQ 419.

[2] *Brenner* v. *Manson*, 383 U.S. 519, 148 USPQ 689.

[3] Cf. *In re Lorenz et al.* 49 CCPA 1227, 305 F.2d 875, 134 USPQ 312, cf. *Ex parte Brockmann et al.*, 127 USPQ 57.

[4] *In re Diedrich*, 50 CCPA 1355, 318 F.2d 946, 138 USPQ 128.

[5] *In re Kirk et al.*, 54 CCPA 1119, 153 USPQ 48; *Ex parte Lanham*, 135 USPQ 106.

[6] *In re Joly et al.*, 54 CCPA 1159, 153 USPQ 45; *In re Kirk et al.*, 54 CCPA 1119, 153 USPQ 48.

[7] *In re Gazave*, 54 CCPA 1524, 154 USPQ 92.

[8] *In re Citron*, 51 CCPA 852, 325 F.2d 248, 139 USPQ 516; *In re Oberweger*, 28 CCPA 749, 115 F.2d 826, 47 USPQ 455; *Ex parte Moore et al.*, 128 USPQ 8.

[9] *In re Ruskin*, 53 CCPA 872, 354 F.2d 395, 148 USPQ 221; *In re Pottier*, 54 CCPA 1293, 153 USPQ 407; *In re Novak et al.* 49 CCPA 1283, 306 F.2d 924, 134 USPQ 335. See also, *In re Irons*, 52 CCPA 938, 340 F.2d 974, 144 USPQ 351.

[10] *In re Irons*, 52 CCPA 938, 340 F.2d 924, 144 USPQ 351; *Ex parte Paschall*, 88 USPQ 131; *Ex parte Pennell et al.*, 99 USPQ 56; *Ex parte Ferguson*, 117 USPQ 229; *Ex parte Timmis*, 123 USPQ 581.

[11] *Ex parte Timmis*, 123 USPQ 581.

[12] *In re Hartop et al.*, 50 CCPA 780, 311 F.2d 249, 135 USPQ 419; *Ex parte Murphy*, 134 USPQ 134.

[13] Cf. *Blicke* v. *Treves*, 44 CCPA 753, 241 F.2d 718, 112 USPQ 472; *In re Krimmel*, 48 CCPA 1116, 292 F.2d 948, 130 USPQ 215; *In re Dodson*, 48 CCPA 1125, 292 F.2d 948, 130 USPQ 224; *In re Hitchings*, 52 CCPA 1141, 342 F. 2d 80, 144 USPQ 637.

[14] *In re Bergel et al.*, 48 CCPA 1102, 292 F.2d 955, 130 USPQ 206; *Ex parte Melvin*, 155 USPQ 47.

[15] *Ex parte Harrison et al.*, 129 USPQ 172; *Ex parte Lewin*, 140 USPQ 70.

[16] *In re Hartop et al.* 50 CCPA 780, 311 F.2d 249, 135 USPQ 419.

[17] Cf. *In re Johnson*, 48 CCPA 733, 282 F.2d 370, 127 USPQ 216; *In re Hitchings et al.*, 52 CCPA 1141, 342 F.2d 80, 144 USPQ 637.

[18] *In re Mourcu et al.*, 52 CCPA 1363, 345 F. 2d 595, 145 USPQ 452; *In re Schmidt et al.*, 54 CCPA 1577, 153 USPQ 640.

[19] *In re Oppenauer*, 31 CCPA 1248, 143 F.2d 974, 62 USPQ 297; *In re Cavallito et al.*, 48 CCPA 711, 282 F.2d 357, 127 USPQ 202; *In re Cavallito et al.*, 48 CCPA 720, 282 F.2d 363, 127 USPQ 206; *In re Schmidt*, 48 CCPA 1140, 293 F.2d 274, 130 USPQ 404; *In re Cavallito*, 49 CCPA 1335, 306 F.2d 505, 134 USPQ 370; *In re Surrey*, 54 CCPA 855, 370 F.2d 349, 151 USPQ 724; *In re Lund et al.*, 54 CCPA 1361, 153 USPQ 625.

[20] *Ex parte Lanham*, 121 USPQ 223; *Ex parte Moore et al.*, 128 USPQ 8; *In re Citron*, 51 CCPA 852, 325 F.2d 248, 139 USPQ 516; *In re Gottlieb et al.*, 51 CCPA 1114, 328 F.2d 1016, 140 USPQ 665.

[849 O.G. 567]

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(78) APPLICATIONS TO BE TAKEN UP SPECIAL

Hereafter the existence of the following facts will place the application concerned in the category of special cases, i.e., those to be advanced out of regular order for examination.

Once a case is taken up for action by an Examiner according to its effective filing date, it should be treated as special by any Examiner, Art Unit or Group to which it may subsequently be transferred. Exemplary situations includes: (1) new cases transferred as the result of a telephone election, and (2) cases transferred as the result of a timely response to any official action.

RICHARD A. WAHL,
Feb. 29, 1968. *Assistant Commissioner.*

[850 O.G. 4]

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(79) TRIAL MULTIPLE DEPENDENT CLAIM PRACTICE

For the trial period running from July 1, 1968, through December 31, 1968, all applications and amendments to applications filed in the Patent Office will be permitted to include multiple dependent claims which refer back to any of the preceding claims in the alternative whether independent or dependent. In this manner a claim may have a single number but would effectively be considered and treated as a plurality of claims. Entry into this program will require (1) the filing of a written request in which the applicant agrees to abide by the conditions of the program, and (2) the filing of appropriate fees and a showing of the fee calculation. Although the trial period terminates December 31, 1968, the prosecution of all applications placed in this program will continue under the program guidelines.

A claim dependent upon any of a plurality of preceding claims will be considered in acceptable form and entered provided it is otherwise acceptable and does not (1) cross statutory classes with any of its parent claims, or (2) depend from any other multiple dependent claim, or (3) refer back to preceding claims in the conjunctive rather than the disjunctive form (e.g., "The tool as defined in *any one* of claims 1, 2, and 4 . . ." is acceptable, but "The tool as defined in claims 1 *and* 2 . . ." is not acceptable. Likewise, "The tool as defined in claims 1, 2, *or* 4 . . ." is acceptable, whereas "The tool as defined in claims 1, 2 *and/or* 4 . . ." is not acceptable). Should any dependent claim include a claim association that violates any of the above prohibitions the claim will be rejected as indefinite for failure to comply with 35 U.S.C. 112 and will not be further treated with regard to any other claim association. Also, multiple dependent claims will not be considered for entry after final rejection. Further, during this trial period, for the applications involved in this program the total numbered claims may not exceed ten. Non-compliance with this condition will result in applicant being given one month to reduce the total numbered claims to ten. In newly filed cases, the failure to comply within the one month period will result in loss of filing date. In all other cases the entire amendment will not be entered in the absence of compliance with this requirement.

It is suggested that the claims be arranged in order of narrowing scope whereby the first claim presented is the broadest. Claims dependent upon the broad claim should come next, followed by claims which are dependent upon any of the plurality of preceding claims.

Practice and Rejections

When acting on a multiple dependent claim, the Examiner will consider the patentability of the various claim associations encompassed by said claim and apply any pertinent prior art in the usual manner. Each of these associations should be compared with the prior art, exactly as if it were presented as an independent claim. If a claim having multiple dependency should include both patentable and unpatentable claim associations, the Examiner will identify each of the patentable claim associations and identify and specifically reject each of the unpatentable claim associations. However, mere failure to reject a claim association does not give rise to a presumption of allowability.

For fee purposes every claim which refers to any of the preceding claims will be considered effectively as a dependent claim for each association of claims that it represents, thereby effectively increasing the number of claims in the case. Therefore, in these cases the additional fees required for claims in excess of ten will be two dollars ($2.00) times the total effective number of claims in excess of ten. This fee is based on the fact that such a claim is, in substance and so far as the work of examination is concerned, equivalent to a number of dependent claims each based on a single preceding claim.

In applications not under this program but having multiple dependent claims, it will be assumed that applicant intends these claims as effectively only a single claim. Accordingly, such claims will be considered alternative and therefore indefinite under 35 U.S.C. 112.

Rule 75(c) is hereby suspended for the duration of the trial period in those cases presenting multiple dependent claims under this program insofar as conflict exists between the requisites of the rule and the proposed practice.

RICHARD A. WAHL,
June 4, 1968. *Assistant Commissioner.*

[851 O.G. 893]

(80) SPECIAL EXAMINING PROCEDURE

The Special Examining Procedure whereby a new application may be granted special status and advanced for examination is hereby revised to remove the condition limiting the application to no more than ten claims. The petition for special status will be granted regardless of the number of claims pending in the application at any time provided all other remaining conditions of this program are met (see MPEP 708.02).

RICHARD A. WAHL,
June 12, 1968. *Assistant Commissioner.*

[852 O.G. 509]

(81) REJECTIONS NOT BASED ON PRIOR ART

The primary object of the examination of an application is to determine whether or not the claims define a patentable advance over the prior art. This consideration should not be relegated to a secondary position while undue emphasis is given to non-prior art or "technical" rejections. Effort in examining should be concentrated on truly essential matters, minimising or eliminating effort on matters which may have played a part in the examination process in the past but which are not really critical. Where a major technical rejection is proper (e.g., lack of proper disclosure, undue breadth, utility, etc.) such rejection should be stated with a full development of the reasons rather than by a mere conclusion coupled with some stereotyped expression.

Generally speaking, the inclusion of (1) negative limitations and (2) alternative expressions, provided that the alternatively expressed elements are basically equivalents for the purpose of the invention, are permitted if no uncertainty or ambiguity with respect to the question of scope or breadth of the claim is presented.

The examiner has the responsibility to make sure the wording of the claims is sufficiently definite to *reasonably* determine the scope. It is applicant's responsibility to select proper wording of the claim, except to the extent that the selection of words makes the claims indefinite. Under no circumstances should a claim be rejected merely because the Examiner prefers a different choice of wording.

Rejections not based on prior art are explained in 706.03(a) to 706.03(y). IF THE ITALICIZED LANGUAGE IN THESE SECTIONS IS INCORPORATED IN THE REJECTION, THERE WILL BE LESS CHANCE OF A MISUNDERSTANDING AS TO THE GROUNDS OF REJECTION.

RICHARD A. WAHL,
July 23, 1968. *Assistant Commissioner.*

[853 O.G. 608]

(82) DOUBLE PATENTING AND TERMINAL DISCLAIMER

The practice concerning double patenting and the effect of a terminal disclaimer on such a rejection is set out below. The notices of January 9, 1967, and February 14, 1968, relating to this subject are hereby superseded except with reference to the practice described involving different inventive entities.

Claims should be rejected on double patenting only in cases involving two or more applications and/or patents of the same inventive entity and not in situations involving commonly owned cases of different inventive entities. Commonly owned cases of different inventive entities are to be treated in the manner set out in MPEP 804.03.

If two or more cases are filed by a single inventive entity, and if the expiration dates of the patents, granted or to be granted, are the same, either because of a common issue date or by reason of the filing of one or more terminal disclaimers, two or more patents may properly be granted provided the claims of the different cases are not drawn to the same invention (*In re Knohl*, 155 USPQ 586; *In re Griswold*, 150 USPQ 804).

Claims that differ from each other (aside from minor differences in language, punctuation, etc.), whether or not the difference is obvious, are not considered to be drawn to the same invention. In cases where the difference is obvious, terminal disclaimers are effective to overcome rejections on double patenting. However, such terminal disclaimers should include a provision that the patent shall expire immediately if it ceases to be commonly owned with the other application or patent.

Where there is no such difference, the inventions are the same and a terminal disclaimer is ineffective.

EDWARD J. BRENNER,
Feb. 18, 1969. *Commissioner.*

[860 O.G. 661]

(83) REVISED DESIGN PATENT PRACTICE

The following changes are being instituted in order to clarify the distinction between the ornamental design for an article being claimed in a design patent and its environment. These changes are to be followed in the examination of all design applications as of the date of this notice. It is suggested that applicants initiate compliance with these changes in all pending design applications.

The ornamental design which is being claimed must be shown in solid lines in the drawing. Dotted lines for the purpose of indicating unimportant or immaterial features of the designed article are no longer permitted. There are no portions of a design which are immaterial or unimportant. In re *Blum*, 852 O.G. 1045; 153 USPQ 177.

The title of the article being claimed in a design patent must correspond to the name of the article shown in solid lines in the drawing.

RICHARD A. WAHL,
Feb. 26, 1969. *Assistant Commissioner.*

[860 O.G. 999]

(84) "MERE FUNCTION OF MACHINE"—REJECTION

In view of the decision of the Court of Customs and Patent Appeals in *In re Tarczy-Hornoch* appearing at 158 USPQ 141, process or method claims will no longer be subject to a rejection by Patent Office examiners solely on the ground that they define the inherent function of a disclosed machine or apparatus. Accordingly, the subject matter of MPEP 706.03(r) is inapplicable and hereby cancelled.

RICHARD A. WAHL,
Feb. 10, 1969. *Assistant Commissioner.*

[861 O.G. 343]

(85) FINAL REJECTION—FIRST ACTION

The claims of a new application may be finally rejected in the first Office action in those situations where (1) the new application is a continuing application of, or a substitute for, an earlier application, and (2) all claims of the new application (a) are drawn to the same invention claimed in the earlier application, and (b) would have been properly finally rejected on the art of record in the next Office action if they had been entered in the earlier application. A first action final rejection in a continuation-in-part application is not proper where any claim includes subject matter not present in the parent case.

RICHARD A. WAHL,
Mar. 20, 1969. *Assistant Commissioner.*

[861 O.G. 1011]

(86) TRIAL MULTIPLE DEPENDENT CLAIM PRACTICE—TERMINATION

In view of the limited interest as evidenced by the small degree of participation, the trial multiple dependent claim practice announced at 851 O.G. 893, June 25, 1968, and running from July 1, 1968 through December 31, 1968, will not be reinstituted as a regular procedure.

All of the applications filed and accepted under this program will continue under the provisions of the program throughout their prosecution.

RICHARD A. WAHL,
June 9, 1969. *Assistant Commissioner.*

[864 O.G. 323]

(87) RULES OF PRACTICE IN PATENT CASES

[37 CFR Part 1]

Preexamination

Notice of proposed rule making regarding an amendment of Part 1, Title 37, Code of Federal Regulations by adding thereto a new center heading reading "Preexamination" and a new § 1.98 relating to the submission of a patentability brief, was published in the Federal Register of July 31, 1969 (34 F.R. 12532). As a result of further deliberations, the Patent Office has decided under the authority contained in section 6 of the Act of July 19, 1952 (66 Stat. 793; 35 U.S.C. 6), to revise the original proposal in the manner set forth below. This revised proposal would expedite the prosecution of applications and strengthen the presumption of validity of issued patents.

Parties who desire to present their views, objections, recommendations, or suggestions in connection with this revised proposal are invited to do so by letter addressed to the Commissioner of Patents, Washington, D.C. 20231, on or before October 23, 1969. Oral comments may be presented at a hearing to be held on Thursday, October 23, 1969, at 9 a.m. d.s.t., in Room 3A-3D50, Building 3A, 2011 Jefferson Davis Highway, Arlington, Va. All persons wishing to be heard orally are requested to notify the Commissioner of Patents of their intended appearance.

PREEXAMINATION

§ 1.98 *Patentability brief.*

(a) At the time of filing an application, or at such time as may be specified in an official notice, the applicant shall submit a patentability brief. The brief shall identify a reasonable number of patents and publications that were believed to be prior art and were specifically considered most pertinent in connection with the invention claimed in the application. The brief shall further include an explanation as to why the claims in such application are deemed patentable over the identified patents and publications. Copies of the identified patents and publications, other than patents of the United States, shall be submitted with the brief. The patentability brief shall not be construed as a representation that a search has been made or that no better art exists than that identified as having been specifically considered.

(b) If no prior art was specifically considered in connection with the invention claimed in the application, the brief shall include an express statement to that effect with an explanation as to why the claims are deemed patentable.

(c) Neither matters of judgment in identifying patents, publications, or any other prior art, whether or not required by this section, nor inadvertent failure to comply with the provisions of this section shall constitute grounds for refusing to issue a patent.

WILLIAM E. SCHUYLER, JR.,
Commissioner of Patents.

Approved: September 5, 1969.
MYRON TRIBUS,
Assistant Secretary for Science and Technology.

[F.R. Doc. 69-10756; Filed, Sept. 8, 1969; 8:48 a.m.]

Published in 34 F.R. 14176, Sept. 9, 1969

[866 O.G. 1402]

(88) CLAIM INTERPRETATION

The notice of January 15, 1968, appearing in the OFFICIAL GAZETTE of February 13, 1968 (847 O.G. 331) and concerned with statements relating to the scope of the invention claimed in patent applications, is hereby rescinded.

RICHARD A. WAHL,
Sept. 12, 1969. *Assistant Commissioner.*

[867 O.G. 1]

(89) EXAMINATION OF PATENT APPLICATIONS ON COMPUTER PROGRAMS

Notice of Rescission of Guidelines

Notice regarding the adoption by the Patent Office of guidelines for the examination of patent applications on computer programs was published in the Federal Register of October 22, 1968 (33 F.R. 15600), and in the OFFICIAL GAZETTE of the Patent Office of October 22, 1968 (855 O.G. 829).

In view of the decision by the U.S. Court of Customs and Patent Appeals in "In re Prater et al.," 162 USPQ 541, 866 O.G. 1034 (1969), the adopted guidelines are hereby rescinded, effective immediately. For the time being, adoption of new guidelines for the examination of patent applications is being deferred pending further judicial interpretation of the law on a case-by-case basis.

Consideration of "In re Prater et al.," has brought into question the advisability of issuing guidelines for the examination of patent applications on computer programs. Parties who desire to present their views, recommendations, or suggestions concerning such guidelines are invited to do so, by letter addressed to the Commissioner of Patents, Washington, D.C. 20231. Those parties who recommend the issuance of such guidelines are invited to submit comments concerning the proposed language of the guidelines.

WILLIAM E. SCHUYLER, JR.,
Commissioner of Patents.

Approved: October 3, 1969.
MYRON TRIBUS,
Assistant Secretary for Science and Technology.

[F.R. Doc. 6912194; Filed, Oct. 9, 1969, 8:48 a.m.]

Published 34 F.R. 15724, October 10, 1969

[868 O.G. 349]

(90) CERTAIN CASES

Reopening After Decision, Board of Appeals

Effective with the date of this notice the Commissioner of Patents will, on a trial basis, entertain petitions under § 1.198 of Title 37, Code of Federal Regulations (Patent Office Rule 198), to reopen certain cases in which an applicant has sought review under 35 U.S.C. 141 or 145. This procedure is restricted to cases which have been decided by the Board of Appeals and which are amendable to settlement without the need for going forward with the court proceeding. Such petitions will ordinarily be granted only in the following categories of cases:

1. When the decision of the Board of Appeals asserts that the rejection of the claims is proper because the claims do not include a disclosed limitation or because they suffer from some other curable defect, and the decision reasonably is suggestive that claims including the limitation or devoid of the defect will be allowable;

2. When the decision of the Board of Appeals asserts that the rejection of the claims is proper because the record does not include evidence of a specified character, and is reasonably suggestive that if such evidence were presented, the appealed claims would be allowable, and it is demonstrated that such evidence presently exists and can be offered; or

3. When the decision of the Board of Appeals is based on a practice, rule, law, or judicial precedent which, since the Board's decision, has been rescinded, repealed, or overruled.

Any such petition must be accompanied by the proposed amendment, evidence, or argument said to justify allowance of the claims. The petition further must point out how the case falls within one of the preceding categories. Failure to do so or failure of the case to qualify as coming within one

of the categories will usually constitute bases for denying the petition. In any event, no case will be reopened unless it is for the consideration of matters not already adjudicated, and sufficient cause has been shown.

Such petitions will not be ordinarily entertained after the filing of the Commissioner's brief in cases in which review has been sought under 35 U.S.C. 141, or after trial in a 35 U.S.C. 145 case.

In the case of an appeal under 35 U.S.C. 141, if the petition is granted, steps will be taken to request the court to remand the case to the Patent Office and if so remanded the proposed amendments, evidence, and arguments will be entered of record in the application file for consideration, and further action will be taken by the Board of Appeals in the first instance or by the Examiner as may be appropriate. In the case of civil action under 35 U.S.C. 145, steps will be taken for obtaining dismissal of the action without prejudice to consideration of the proposals.

WILLIAM E. SCHUYLER, JR.,
Commissioner of Patents.

Approved: Oct. 16, 1969.
MYRON TRIBUS,
Assistant Secretary for Science and Technology.

[F.R. Doc. 69-12674; Filed Oct. 22, 1969; 8:48 a.m.]
Published in 34 F.R. 17210, Oct. 23, 1969

[868 O.G. 1058]

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(91) PROSECUTION AND DELIVERY OF AMENDMENTS

General

Many of the difficulties encountered in the prosecution of patent applications after final rejection may be alleviated if each applicant includes, at the time of filing or no later than the first response, claims varying from the broadest to which he believes he is entitled to the most detailed that he is willing to accept.

Prosecution After Final Rejection

To expedite the resolution of cases under final rejection, an amendment filed at any time after final rejection but before an appeal brief is filed, may be entered upon or after filing of an appeal provided the total effect of the amendment is to (1) remove issues for appeal, and/or (2) adopt Examiner suggestions. Of course, if the amendment necessitates a new search, raises the issue of new matter, presents additional claims without cancelling a corresponding number of finally rejected claims, or otherwise introduces new issues, it will not be entered. Examiners will continue to respond to all non-entered amendments after final rejection, and will indicate the status of each claim of record or proposed, including the designation of claims that would be entered on the filing of an appeal if filed in a separate paper. It should be noted that an amendment placing a case in condition for allowance will be enterable by the Examiner at any stage prior to forwarding the answer on appeal. Except where an amendment merely cancels claims and/or adopts Examiner suggestions, removes issues for appeal, or in some other way requires only a cursory review by the Examiner, compliance with the requirement of a showing under Rule 116(b) will be expected of all amendments after final rejection.

In accordance with prior practice, in order to prevent abandonment, a timely filed amendment after final rejection that reaches the Examiner near the end or after the expiration of the period for response, may be entered in part if this can be done to make the case allowable (e.g., a second amendment after final rejection filed on the last day of the response period, where no appeal has been filed and the amendment cancels all rejected claims and proposes to add claims, at least one of which is unpatentable, entry would be approved to the extent of cancelling the rejected claims and entering only the patentable claims).

Only one attorney-initiated personal interview will be permitted after final rejection. However, the Examiner may initiate an interview anytime he believes it would expedite the prosecution of the application.

Hand Delivery of Papers

For purposes of convenience in those cases where the attorney and the Examiner agree that a proposed amendment discussed during a *personal* interview would place the application in condition for allowance, the amendment may be left with the Examiner to become an official paper in the file without routing through the mail room, provided no additional fees are required. Where the case is under final rejection, if changes in the proposed amendment are necessary and these changes are not practical to be made by Examiner's Amendment, the attorney or a local associate will be permitted to hand deliver a corrected amendment to the Examiner, provided no additional fees are required and further that the amendment is submitted to the Examiner by the end of the next working day following the interview and within the period for response.

The Examiner who accepts these amendments will write "entry approved" in the left-hand margin of the first page of the amendment, date and initial the amendment, and then have it date stamped with the Group Stamp. For applications under final rejection acceptance of a hand delivered amendment will require the initials of a Primary Examiner.

The privilege of personal delivery of papers by attorneys to the Examining Groups is extended to requests for extensions of time in addition to amendments of the type referred to above.

RICHARD A. WAHL,
Nov. 10, 1969. *Assistant Commissioner.*

[869 O.G. 345]

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(92) PETITION TO REVIVE PRACTICE

Effective immediately, a decision on a petition to revive an abandoned application will be based solely on whether a satisfactory showing has been made that the delay was unavoidable (35 U.S.C. 133). A petition to revive will not be considered unless the petition fee and a proposed response to the last Office action have been received (Rule 137).

The granting of a petition to revive does not serve in any way as a determination that the proposed response to the Office action is completely responsive. Revived applications will be forwarded to the examiner to determine the completeness of the proposed response. Such applications must be taken up *Special*. If the examiner determines that the response is complete, he should promptly take the case up for action. If the proposed response is not a complete response to the last Office action, the examiner should write a letter to the applicant informing him of the specific defects in his response and set a one-month time limit for applicant to complete his response. If the applicant does not complete his response within the set one-month limit, the application is again abandoned.

RICHARD A. WAHL,
Dec. 11, 1969. *Assistant Commissioner.*

[869 O.G. 1362]

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(93) ENVIRONMENTAL QUALITY

In signing the National Environmental Policy Act on the first day of this decade, President Nixon declared, "The 1970's absolutely must be the years when America pays its debt to the past by reclaiming the purity of its air, its waters and our living environment." This landmark legislation declares that it is the continuing policy of the Federal Government to use all practicable means and measures to foster and promote the general welfare, create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans. The Act further directs that, to the fullest extent possible, the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this Act.

In accordance with the desires of the President and this mandate of the Congress, the Patent Office will accord "special" status to all patent applications for inventions which materially enhance the quality of the environment of mankind by contributing to the restoration or maintenance of the basic life-sustaining natural elements—air, water, and soil. In order that the Patent Office may implement this procedure, we request that all applicants desiring to participate in this program request that their applications be accorded "special" status. Such requests should be written, should identify the applications by serial number and filing date, and should be accompanied by affidavits or declarations under Rule 102 explaining how their inventions contribute to the restoration or maintenance of one of these life-sustaining elements.

WILLIAM E. SCHUYLER, JR.,
Jan. 29, 1970. *Commissioner of Patents.*

[871 O.G. 673]

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(94) PETITION TO REVIVE PRACTICE—CLARIFICATION

In clarification of the notice of Dec. 11, 1969 (869 O.G. 1362), the practice set forth in the second paragraph thereof is limited to proposed "responses" *before* final rejection. While a response to a non-final action may be either an argument or an amendment under Rule 111, a response to a final action "must include cancellation of, or appeal from the rejection of, each claim so rejected" under Rule 113.

Accordingly, in any case where a final rejection had been made, the proposed response required for consideration of a petition to revive must be either an appeal or an amendment that cancels all the rejected claims or otherwise prima facie places the application in condition for allowance.

In those situations where abandonment occurred because of the failure to file an appeal brief, the proposed response, required for consideration of a petition to revive, must include a brief accompanied by the proper fee.

RICHARD A. WAHL,
Feb. 20, 1970. *Assistant Commissioner.*

[873 O.G. 1]

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(95) TIMELY PRESENTATION OF AFFIDAVITS OR DECLARATIONS UNDER RULES 131 AND 132

All affidavits or declarations under Rule 131 or 132 must be timely presented in order to be admitted.

Affidavits and declarations submitted prior to a final rejection will be considered timely.

An affidavit or declaration presented with a first response after final rejection for the purpose of overcoming a new ground of rejection or requirement made in the final rejection will be entered and considered without a showing under Rule 116(b).

No other affidavit or declaration, under Rule 131 or 132, presented after a final rejection, will be considered unless a satisfactory showing is made under Rule 116(b) or 195.

All admitted affidavits or declarations will be acknowledged and commented upon by the Examiner in his next succeeding action.

RICHARD A. WAHL,
July 9, 1970. *Assistant Commissioner of Patents.*

[877 O.G. 243]

AMENDMENTS

(96) AMENDMENTS—BASIS IN ORIGINAL DISCLOSURE, MANUAL OF PATENT EXAMINING PROCEDURE

When an amendment is filed in response to an objection or rejection based on incomplete disclosure, a study of the entire application is often necessary to determine whether or not "new matter" is involved. In the interest of expeditious prosecution, Examiners are directed, whenever such an objection or rejection is made, to call attention to Rule 111(c). Applicant should specifically point out the support for any amendments made to the disclosure.

RICHARD A. WAHL,
Aug. 13, 1965. *Assistant Commissioner.*

[818 O.G. 4]

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(97) EXAMINER'S AMENDMENT PRACTICE

The present practice in making Examiner's Amendments when passing an application to issue is modified to permit the amendment or cancellation of claims where these have been authorized by applicant (or his representative) in a telephone or personal interview. The Examiner's Amendment should include a statement indicating that the changes were authorized, the date and type (personal or telephone) of interview, and with whom it was had.

The current policy prohibiting changes in the drawing and/or description of an application is maintained with the exceptions noted in MPEP Section 1302.04.

The new procedure resulted from an employee's suggestion.

RICHARD A. WAHL,
May 11, 1966. *Assistant Commissioner.*

[827 O.G. 2]

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(98) BRACKETS AND RULE 121—AMENDMENT OF CLAIMS

In view of the number of inquiries requesting an interpretation of the word "brackets" appearing in amended Rule 121 concerned with the amendment of claims, it is thought that clarification is desirable.

The term brackets [ ] as set forth in the amendment to Rule 121 and first announced in 843 O.G. 373 does not encompass and is to be distinguished from parentheses ( ). Therefore, any amendment using parentheses to indicate cancelled matter in a claim rewritten under Rule 121(b) may be held non-responsive in accordance with Rule 121(c).

RICHARD A. WAHL,
Jan. 15, 1968. *Assistant Commissioner.*

[847 O.G. 331]

INTERVIEWS

(99) INTERVIEW PRACTICE

To assist in early and equitable conclusion of examination of applications, the use of interviews in person or by telephone is encouraged, subject to the following guidelines.

Interviews with Examiners, whether in person or by telephone, shall be governed in general by the provisions of Rule 133. A request for an interview, whether made orally or in writing, before the first Office action is untimely and will not be acknowledged if written, or granted if oral; Rule 133(a).

If upon examination or re-examination, it is found that *minor* changes could be made to place the application in condition for allowance, the attorney or pro se inventor should be so notified by telephone. This practice should be followed whether or not there has been a specific request for interview or for such notification.

Where an interview is arranged, both the Examiner and the attorney should be familiar with the issues in the application before starting the conference. It is the responsibility of both parties to the interview to see that it is not extended beyond a reasonable time, usually not longer than thirty minutes. The Primary Examiner personally responsible for the final disposition of the application should be notified of the results of the interview at its conclusion.

Interviews in person or by telephone are to be encouraged after the first Office action on the merits. In addition to interviews initiated by applicant, the Examiner may initiate interviews where he believes it would be productive. This practice may result in the filing of a first response that will so effectively advance the prosecution to permit disposing of the case in a bare minimum number of actions. The telephone procedure set forth in part 4 of Optimum Examining Procedure Memorandum #3, 801 O.G. 267, *requiring* a call by the Examiner, if requested by applicant, before taking final action has been found not satisfactory and will no longer be followed.

An interview may be granted after final rejection; however, except in rare instances, only one such interview should be granted.

An interview should not be requested or approved, except in very unusual circumstances, after filing of a Brief on appeal or after an application has been passed to issue by the Primary Examiner.

Interviews are permissible any working day of the week except on overtime Saturdays.

RICHARD A. WAHL,
Acting Superintendent,
Sept. 16, 1964. *Patent Examining Corps.*

[807 O.G. 307]

(100) TELEPHONE INTERVIEWS

Present Office policy places great emphasis on telephone interviews initiated by the Examiner. For this reason, it is no longer deemed necessary for an attorney to request a telephone interview as specified in the old Optimum Examining Procedure memos. Examiners are no longer required to note or acknowledge requests for telephone calls or state reasons why such proposed telephone interviews would not be considered effective to advance prosecution. However, it is still desirable for an attorney to call the Examiner if the attorney feels the call will be beneficial to advance prosecution of the case.

RICHARD A. WAHL,
Oct. 11, 1967. *Assistant Commissioner.*

[846 O.G. 1022]

JOINDER

(101) PRACTICE UNDER RULE 147

In view of the frequent misunderstandings which have arisen as to the filing of applications under Rule 147, it is considered advisable to issue the following statement as to the practice under that rule.

The rule is clearly restricted by its terms to divisional applications directed to "nonelected inventions, those not elected after a requirement for restriction." It is thus more limited than 35 U.S.C 121, on which it is based, and applies only to divisional applications which are necessitated by a requirement for restriction in the parent case.

It is further to be noted that a Rule 147 application comprises (1) a copy of the original application *as filed*, prepared and certified by the Patent Office and (2) a proposed amendment canceling the irrelevant claims or other matter. The sole justification for the use of unexecuted copies in the divisional application is that their subject matter has already been executed in the parent case. Accordingly, an application under Rule 147 should not, either as filed or by a preliminary amendment prior to the time when it is accorded a filing date, contain anything whatever that was not present in the parent application *as filed*. The Patent Office cannot undertake, prior to giving a filing date, to decide whether differences between the parent and divisional case involve matters of substance or of form only. It follows that any proposed amendments to the divisional application should be withheld until it has received a filing date.

Since a Rule 147 application must be based on the parent case as filed and must be directed to nonelected inventions, the claims which it is sought to include in such an application must be original claims of the parent case and must have been present in that case *in their original form* when the restriction requirement was made; but if that condition is satisfied, it is not material that other claims were amended or new claims were added prior to the requirement so long as no such amended or added claim is to be included in the Rule 147 application.

An amendment stating that the Rule 147 application is a division of the parent case may accompany the application, but no other amendments to the specification or drawing should be requested until the application has received its serial number and filing date.

Since Rule 147 is limited by its terms to cases in which the parent application is still pending when the divisional case is filed, it is necessary that all requirements of the rule be satisfied prior to abandonment or patenting of the parent application.

EDWIN L. REYNOLDS,
Mar. 11, 1965. *First Assistant Commissioner.*

[813 O.G. 1]

(102) TELEPHONE PRACTICE IN RESTRICTION AND ELECTION OF SPECIES SITUATIONS

If an examiner determines that a requirement for restriction should be made in an application, he should formulate a draft of such restriction requirement including, if any, the grounds of rejection of linking or generic claims. Thereupon, he should telephone the attorney of record and ask if he will make an oral election, with or without traverse if desired, after the attorney has had time to consider the restriction requirement. The examiner should arrange for a second telephone call within a reasonable time, generally within three working days. If the attorney objects to making an oral election, or fails to respond, the usual restriction letter will be mailed, and this letter should NOT contain any reference to the unsuccessful telephone call.

When an oral election is made, the examiner will then proceed to incorporate into his letter a formal restriction requirement including the date of the election, the attorney's name, and a complete record of the telephone interview, followed by a complete action on the elected claims including linking or generic claims if present.

If on examination the examiner finds the elected claims to be allowable and no traverse was made, the letter should be written on POL–37 (Examiner's Amendment) and should include cancellation of the non-elected claims, a statement that the prosecution is closed and that a notice of allowance will be sent in due course. Correction of formal matters in the above-noted situation which cannot be handled by a telephone call and thus requires action by the applicant should be handled under the *Ex parte Quayle* practice, using POL–90; these would usually be drawing corrections or the like requiring payment of charges.

Should the elected claims be found allowable in the first action, and an oral traverse was noted, the examiner should include in his action a statement under Section 821.01, M.P.E.P., making the restriction final and giving applicant thirty days (Rule 136) to either cancel the non-elected claims or take other appropriate action. Failure to take action will be treated as an authorization to cancel the non-elected claims by an Examiner's Amendment and pass the case to issue. Prosecution of this application is otherwise closed.

In either situation (traverse or no traverse), caution should be exercised to determine if any of the allowed claims are linking or generic before cancelling the non-elected claims.

Where the respective inventions are located in different groups the requirement for restriction should be made only after consultation with and approval by all groups involved. If an oral election would cause the application to be examined in another group, the initiating group should transfer the application with a signed memorandum of the restriction requirement and a record of the interview. The receiving group will incorporate the substance of this memorandum in its official letter as indicated above. Differences as to restriction should be settled by the existing chain of command, e.g. Supervisory Primary Examiner or Manager.

This practice is limited to use by examiners who have at least negotiation authority. Other examiners must have the prior approval of their Supervisory Primary Examiner.

RICHARD A. WAHL,
Jan. 27, 1966. *Assistant Commissioner.*

[824 O.G. 408]

(103) RESTRICTION AND ELECTION PRACTICE

Effective April 1, the practice and procedure in cases involving a requirement for restriction or election is changed as indicated below.

Under the new practice, whenever a written or telephoned requirement is made in a case which includes claims considered by the Examiner to be generic or linking, it will not include any rejection of these claims. The Examiner should specify which claims are considered to be generic or linking.

Although no art will be cited where linking claims are present, a search should be made and art cited where generic claims are involved. In the latter situation the generic claims will not be rejected but merely indicated as not allowable in view of the cited art (Rule 146).

A 30-day shortened statutory period will be set for response to a written requirement. Such action will not be an "action on the merits" for the purpose of the second action final program. In either situation, with linking or generic claims, a response, to be complete, need only include a proper election.

The only exception to the above practice will be in the case where the Examiner gives a complete action on the merits of all the claims in addition to the requirement for restriction.

The use of the telephone to make an initial requirement will be continued and is encouraged.

RICHARD A. WAHL,
Feb. 28, 1967. *Assistant Commissioner.*

[837 O.G. 668]

(104) ELECTION OF SPECIES

Effective June 1, 1967, the following practice will be instituted on a trial basis for 6 months.

In cases involving Markush claims or generic claims of the formula type including such a number and diversity of members as to require an unduly extensive and burdensome search for the embodiments encompassed, the Examiner may require election of species without a search on the merits (Rule 105).

The election requirement may be made in the same manner as that described in the Change Notice 12–6 of Feb. 28, 1967, with a 30 day shortened statutory period which will not be an "action on the merits" for the purpose of second action final program. If a telephone requirement, made by the Examiner, is complied with the first written action will be a complete action on the merits and the usual 3 months shortened statutory period will be set.

As pointed out in Change Notice 12–6, the use of the telephone to make an initial requirement will be continued and is encouraged.

EDWARD J. BRENNER,
May 4, 1967. *Commissioner.*

[838 O.G. 1223]

(105) NON-ELECTED CLAIMS

In the interest of expediting the prosecution of pending applications, the following change in procedure is made. When preparing a final action in an application where there has been a traversal of a requirement for restriction or election of species, the Examiner should indicate in his action that a complete response must include cancellation of the non-elected claims or other appropriate action (Rule 144).

In the above situations where a response to the final action has otherwise placed the application in condition for allowance, the failure to take appropriate action with respect to the non-elected claims will be construed as authorization to cancel these claims by Examiner's Amendment and pass the case to issue after the expiration of the statutory period.

RICHARD A. WAHL,
May 24, 1968. *Assistant Commissioner.*

[851 O.G. 893]

(106) CHANGE OF INVENTORS

Where a person is added or removed as an inventor during the prosecution of an application before the Patent Office, problems may occur upon claiming U.S. priority in a foreign filed case. One such problem results from the apparent conflict between the inventor(s) named in the foreign application and the inventor(s) shown on the priority papers obtained from the U.S. Patent Office. Another problem may occur where there is no conflict between the inventors in the foreign application as filed and the priority papers but a change of inventors has been made in the U.S. application and a similar change is to be made in the foreign application.

In order to overcome the possibility of these problems arising in the future, Examiners should acknowledge any addition of inventors made in accordance with the practice under Rule 45 including the following statement in the next communication to the applicant or his attorney:

"In view of the papers filed _____, it has been found that this application, as filed, through error and without any deceptive intention, failed to include _____ as an actual joint inventor and accordingly, this application has been corrected to include him in accordance with Rule 45."

A similar statement, appropriately modified, should be made in the case where an inventor is removed from those included in the application as filed.

RICHARD A. WAHL,
June 10, 1968. *Assistant Commissioner.*

[852 O.G. 509]

(107) RESTRICTION BETWEEN INVENTIONS

Combination claims (other than genus claims linking species claims), whether allowable, allowed, or not, will no longer automatically be permitted to serve as a basis for joining claimed inventions which otherwise would be properly the subject of a restriction requirement. In other words, applicant will be required to elect one of the claimed inventions which are the subject of a proper restriction requirement. Combination claims, formerly considered linking claims should be grouped as a separate invention. Rejoinder of the divided inventions, should any combination claim be allowed, however, also will no longer automatically be permitted. The statutory criteria for distinctness will be satisfied if the subcombinations and/or combinations involved are shown to be separately classified, or to have acquired a separate status in the art, or to involve different fields of search.

RICHARD A. WAHL,
June 20, 1968. *Assistant Commissioner.*

[852 O.G. 509]

(108) ELECTION OF SPECIES

The practice set forth in the Notice of May 4, 1967 (838 O.G. 1223) is made permanent and modified to permit a requirement for election of species in cases involving multiple species whether or not generic claims are present or searched prior to the election. Also, if no claims to species are presented but the generic claim is of the burdensome type referred to in the Notice, a requirement for election of species prior to search of the generic claims should be made.

As in the original Notice, if an election is made pursuant to a telephone requirement, the action should include a full and complete action on the elected species as well as on any generic claims that might be present. If generic claims are found allowable, no change in the practice currently in effect is contemplated.

RICHARD A. WAHL,
Aug. 19, 1968. *Assistant Commissioner.*

[854 O.G. 287]

TIME FOR RESPONSE

(109) EXTENSION OF TIME

It is ordinarily desirable that notice of the action taken by the Patent Office on requests for extension of time be communicated to the persons making the requests as soon as is reasonably possible. In order to improve Patent Office service to patent and trademark applicants in this regard, the following procedure is being instituted effective immediately. If a request for extension of time is filed in duplicate and accompanied by a stamped return-addressed envelope, the Office will indicate the action taken on the duplicate and return it promptly in the envelope. Utilization of this procedure is optional on the part of applicant.

EDWARD J. BRENNER,
Aug. 3, 1966. *Commissioner of Patents.*

[829 O.G. 1307]

(110) EXTENSIONS OF TIME

Effective immediately, a new liberal policy for interpretation and application of Rule 136(b) will apply with respect to first requests for a one-month extension of time for reply to Office actions where a shortened statutory period for response has been set. Any request under Rule 136(b) for extension of time must state a reason in support thereof; under the above policy the application of the rule will entail only a limited evaluation of the stated reason.

This liberality will not apply to (1) any requests for more than a one-month extension, and (2) second and subsequent requests for extension of time.

In order to provide prompt notification of the action taken on extension requests, the request may be filed in duplicate, accompanied by a stamped return-addressed envelope (including a ZIP code), as announced in the OFFICIAL GAZETTE of, August 23, 1966 (820 O.G. 1307).

It is expected that requests for extension of time will continue to be made only when a need exists and will not become a standard operating procedure. Routine use of this practice may necessitate abandoning the new policy and a return to a less liberal interpretation of Rule 136(b).

RICHARD A. WAHL,
Jan. 26, 1967. *Assistant Commissioner.*

[835 O.G. 716]

(111) FINAL REJECTION—TIME FOR RESPONSE

Effective Sept. 1, 1967, the filing of a timely response to a final rejection having a shortened statutory period for response will operate to extend the period for appeal or filing of a containing case an additional month, but in no case to exceed six months from the date of the final action.

An object of this practice is to obviate the necessity for appeal or filing a continuing case merely to gain time to consider the Examiner's position in reply to an amendment timely filed after final rejection.

Present practice relating to the treatment of amendments after final rejection will continue to apply and failure to file a response during the three-month period will, as heretofore, result in abandonment of the application. In any case where this one-month extension applies and an amendment is officially received during this additional month, the amendment will not be entered or responded to unless it *prima facie* places the application in condition for allowance (e.g. cancels all rejected claims, fully complies with all Examiner suggestions, requirements, etc.).

Also, during this additional month no applicant-or attorney-initiated interview will be permitted.

EDWARD J. BRENNER,
Aug. 7, 1967. *Commissioner.*

[841 O.G. 1411]

(112) FINAL REJECTION—TIME FOR RESPONSE

In clarification of the Notice of August 7, 1967, published in the OFFICIAL GAZETTE of August 29, 1967 (841 O.G. 1411), the filing of a timely response after a final rejection is construed as including a request for a one month extension of the shortened statutory period.

If the response is complete but fails to place the application in condition for allowance, the request will be granted. The entry of any further amendments filed during the additional month shall be restricted to those which *prima facie* place the application in condition for allowance.

RICHARD A. WAHL,
Sept. 26, 1968. *Assistant Commissioner.*

[855 O.G. 1109]

APPEALS

(113) APPEAL BRIEFS

It appears that many appeal briefs are being filed which omit reference to the drawing in describing the appellant's invention. As a reminder that the Board of Appeals is aided in its consideration if such a reference appears, attention is directed to the following language in the first sentence of Rule 192(a):

". . . including a concise explanation of the invention which should refer to the drawing by reference characters . . ."

EDWIN L. REYNOLDS,
Aug. 3, 1965. *First Assistant Commissioner.*

[817 O.G. 1241]

(114) APPEAL BRIEFS

While Rule 192(a) requires two extra copies of appeal briefs only if an oral hearing is requested, such copies are of substantial assistance to the Board when appeals are submitted on brief and it is desirable that they be supplied in such cases also. All claims reproduced in appeal briefs should be double spaced.

EDWIN L. REYNOLDS,
Jan. 24, 1966. *First Assistant Commissioner.*

[823 O.G. 411]

(115) APPEAL BRIEFS UNDER RULES 192 AND 193(b)

Applicants are reminded that their briefs in appealed cases must be responsive to each and every ground of rejection, new or old, advanced by the Examiner, including new grounds advanced in his answer.

Lack of response by way of brief to any ground of rejection will result in dismissal of the appeal as to the claims affected. Oral argument at a hearing will not remedy such deficiency in a brief.

EDWIN L. REYNOLDS,
May 4, 1966. *First Assistant Commissioner.*

[826 O.G. 1060]

(116) PRACTICE RE: WITHDRAWAL OF FINAL REJECTION BY THE EXAMINER AFTER NOTICE OF APPEAL TO THE BOARD OF APPEALS

Where notice of Appeal to the Board of Appeals has been filed and the Examiner withdraws the final rejection for allowance or further rejection, applicants are reminded that this results in automatic removal of the appeal from the records of the Board of Appeals in that application.

Accordingly, a proper response to a subsequent final rejection requires the filing of a new Notice of Appeal [without fee] and if this appeal is carried forward, the appropriate fee on filing a brief in support of the second appeal is required.

EDWIN L. REYNOLDS,
Mar. 29, 1967. *First Assistant Commissioner.*

[837 O.G. 667]

(117) RULE 192—FILING OF APPEAL BRIEF

Attention is directed to the fact that the seasonable filing of an appeal brief is determined by Rule 192, irrespective of whether the applicant or his attorney has received the appeal acknowledgment with its *reminder* of the brief's due date.

The above should be reflected in any docketing system for filing appeal briefs.

EDWIN L. REYNOLDS,
Aug. 4, 1967. *First Assistant Commissioner.*

[841 O.G. 1412]

(118) NEW APPEAL PROCEDURE

In the interest of facilitating and expediting the handling of appeals to the Board of Appeals of the Patent Office it has been decided to institute a practice whereby the application file will ordinarily remain with the Examiner until the Examiner's answer to the appeal is filed. It is therefore necessary to modify the appeal procedure, effective immediately, as indicated below.

1. *First Extension of Time To File Appeal Brief*

To avoid delay in receiving notification of the granting of a first extension under Rule 192, appellant should file his request in duplicate. Where granted, the Board will stamp the action taken on both copies, promptly returning one copy to the addressee.

Further extensions must be sought from the Commissioner, as heretofore.

2. *Notice of Appeal*

To expedite the processing of new appeals and to ensure their prompt acknowledgment, additional information will be necessary on the Notice of Appeal. Accordingly. Form 41 suggested in the Rules of U.S. Patent Office Practice in Patent Cases, is revised as shown below.

Copies for duplication may be obtained from the receptionist in Crystal Plaza and from the Correspondence and Mail Branch in the Main Commerce Building. The use of this revised form is solicited.

All papers relating to appeals should include the post office address of the person to whom correspondence is to be directed.

EDWIN L. REYNOLDS,
First Assistant Commissioner.

REVISED FORM 41

NOTICE OF APPEAL FROM THE PRIMARY EXAMINER TO THE BOARD OF APPEALS

In re application of:
Serial No.:
For:
Filed:
Group Art Unit:
To Commissioner of Patents
Sir:

Applicant hereby appeals to the Board of Appeals from the decision dated _____ of the Primary Examiner finally rejecting claims _____.

The item(s) checked below are appropriate:

1. ☐ An extension of time to respond to the final rejection was granted on _____ for _____ month(s).
2. ☐ A timely response to the final rejection has been filed, as provided in 841 O.G. 1411.
3. ☐ Fee $50.00:
   - ☐ Enclosed
   - ☐ Not required (Fee paid in prior appeal.)
   - ☐ Charge to Deposit Account No. _____. (One additional copy of this Notice is enclosed herewith.)

_____
Signature (Rule 191(b)).

_____
_____
_____
Post Office Address (to which correspondence is to be sent).

[849 O.G. 278 (Apr. 9, 1968)]

(119) APPEAL BRIEF EXTENSIONS

In view of the substantially current condition of the work of the Board of Appeals, it is important that appeal briefs be filed whenever possible within the sixty day period allowed by Rule 192, and that extensions of that time be requested only when clearly necessary for reasons which could not reasonably have been foreseen and guarded against. Accordingly, beginning immediately, a stricter standard will be employed in considering requests for extension of the time for filing appeal briefs than that previously applied. This will be particularly true in the case of any requested extension beyond the first thirty days and no such extension should be expected except upon a convincing showing of extraordinary circumstances.

EDWIN L. REYNOLDS,
Mar. 27, 1968. *First Assistant Commissioner.*

[849 O.G. 890]

(120) ORAL HEARINGS UNDER RULE 194

Effective September 1, 1968, for a trial period of six months, new procedures will be initiated which will permit Primary Examiners to present an oral argument before the Board of Appeals in appeals where the applicant has been granted an oral hearing.

After the attorney or agent representing the appellant has made his presentation, the Examiner will be allowed fifteen minutes to reply as well as to present a statement which clearly sets forth his position with respect to the issues and rejections of record. Appellant may utilize any allotted time not used in the initial presentation for rebuttal.

RICHARD A. WAHL,
July 26, 1968. *Assistant Commissioner.*

Concur:
EDWIN L. REYNOLDS,
First Assistant Commissioner.

[855 O.G. 827]

(121) ABANDONMENT OF APPLICATIONS BEFORE BOARD OF APPEALS

There have been recent instances of the Board of Appeals rendering a decision in an application which had already been refiled as a streamlined continuation.

To avoid recurrence of this situation, applicants should promptly inform the Clerk of the Board in writing as soon as they have positively decided to refile or to abandon an application containing an appeal awaiting a decision. Failure to exercise appropriate diligence in this matter may result in the Board's refusing an otherwise proper request to vacate their decision.

EDWIN L. REYNOLDS,
First Assistant Commissioner.

[857 O.G. 1005 (Dec. 24, 1968)]

(122) APPEAL HEARINGS

The practice of permitting oral arguments by Primary Examiners in appeals, announced for a trial period in the OFFICIAL GAZETTE of Oct. 22, 1968 (855 O.G. 827), is hereby made permanent.

RICHARD A. WAHL,
Mar. 27, 1969. *Assistant Commissioner.*

Concur:
E. L. REYNOLDS,
First Assistant Commissioner.

[861 O.G. 1011]

(123) REPLY BRIEFS

Applicants should clearly and specifically indicate in their reply briefs the new points of argument "raised in the examiner's answer" to which said reply briefs are directed. Rule 193(b) does not permit general rebuttal of each statement made in the examiner's answer; Consequently a reply brief which is not restricted to answering "new points" may be refused consideration in toto.

EDWIN L. REYNOLDS,
Apr. 15, 1969. *First Assistant Commissioner.*

[862 O.G. 343]

(124) APPEALS—CONFIDENTIAL MEMORANDA

The practice of presenting confidential memoranda to the Board of Appeals is hereby terminated. All correspondence with the Board of Appeals, whether by the Examiner or the applicant will be on the record. No unpublished decisions which are unavailable to the general public by reason of 35 U.S.C. 122 will be cited by the Examiner or the applicant except that either the Examiner or the applicant has the right to cite an unpublished decision in an application having common ownership with the application on appeal.

WILLIAM E. SCHUYLER, JR.,
July 28, 1970. *Commissioner of Patents.*

[877 O.G. 733]

INTERFERENCES

(125) INTERFERENCE—DECLARATION

Effective July 1, 1964, no interference will be declared between pending applications, if there is a difference of more than three (3) months in the effective filing dates of the

applications in the case of inventions of a simple character, or a difference of more than six (6) months in other cases, except in exceptional situations, as determined and approved by the Commissioner.

EDWARD J. BRENNER,
June 26, 1964. *Commissioner.*

[804 O.G. 297]

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(126) INTERFERENCE PRACTICE—AFFIDAVITS UNDER RULE 204(c)

There has been difficulty in a number of cases due to uncertainty on the part of applicants concerning the requirements of affidavits to be filed under Rule 204(c) to secure interference contests with patentees whose filing dates antedate their own by more than three months, and it is hoped that the following explanation will be helpful.

In preparing affidavits under this rule applicants should have in mind the provisions of Rule 228, and especially the following facts:

1. That after these affidavits are forwarded by the Primary Examiner for the declaration of an interference they will be examined by a Board of Patent Interferences.

2. If the affidavits fail to establish with adequate corroboration acts and circumstances which would prima facie entitle applicant to an award of priority relative to the effective filing date of the patentee, an order will be issued concurrently with the notice of interference, requiring applicant to show cause why summary judgment should not be rendered against him.

3. Additional affidavits in response to such order will not be considered unless justified by a showing under the provisions of Rule 228, and if the applicant responds the patentee will receive from the applicant a copy of the response (Rule 247) and from the Patent Office a copy of the original showing (Rule 228), and will be entitled to present his views with respect thereto.

4. It is the position of the Board of Patent Interferences that all affidavits submitted must describe acts which the affiants performed or observed or circumstances observed, such as structure used and results of use or test, except on a proper showing as provided in Rule 204(c). Statements of conclusion, for example, that the invention of the counts was reduced to practice, are generally considered to be not acceptable. It should also be kept in mind that documentary exhibits are not self-proving and require explanation by an affiant having direct knowledge of the matters involved. However, it is not necessary that the exact date of conception or reduction to practice be revealed in the affidavits or exhibits if the affidavits aver observation of the necessary acts and facts, including documentation when available, before the patentee's effective filing date. On the other hand, where reliance is placed upon diligence, the affidavits and documentation should be precise as to dates from a date just prior to patentee's effective filing date. The showing should relate to the essential factors in the determination of the question of priority of invention as set out in 35 U.S.C. 102(g).

5. The explanation required by Rule 204(c) should be in the nature of a brief or explanatory remarks accompanying an amendment, and should set forth the manner in which the requirements of the counts are satisfied and how the requirements for conception, reduction to practice or diligence are met.

GEORGE W. BOYS,
Apr. 21, 1966. *Chairman, Board of Patent Interferences.*

[826 O.G. 712]

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(127) DESIGNATION OF INTERFERENCE RECORD RELIED UPON

During the taking of testimony in an interference it is frequently not clear just what testimony is necessary to a party's case, since the contentions to be made by the opposing party are not known, and in the case of a junior party it is frequently not known whether or not the senior party will take testimony. Therefore counsel taking testimony will normally cover all matters which might possibly have an effect on his case. Then, in preparing his briefs it may become apparent that certain portions of his record have no real significance as to issues involved. A review of these portions by the Board of Patent Interferences is thus unnecessary.

Accordingly, in order to reduce the time required by the Board of Patent Interferences to study the record, and to more effectively and efficiently decide the issues involved, counsel relying on an evidentiary record in interference cases are requested to file a statement as to the portions of their record upon which they rely. Such statement should be included in the briefs of the respective parties.

EDWIN L. REYNOLDS,
First Assistant Commissioner.

[846 O.G. 679 (Jan. 16, 1968)]

CORRECTION OF ERRORS

(128) CERTIFICATES OF CORRECTION LISTING

Certificates of Correction are issued every Tuesday. Beginning on January 7, 1969, each issue of the OFFICIAL GAZETTE will numerically list all U.S. patents having Certificates of Correction issuing that Tuesday. The list will appear under the heading "Certificates of Correction Issued (date)."

RICHARD A. WAHL,
Nov. 22, 1968. *Assistant Commissioner.*

[857 O.G. 1005]

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(129) TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

CHAPTER I—PATENT OFFICE, DEPARTMENT OF COMMERCE

PART 1.—RULES OF PRACTICES IN PATENT CASES

Issuance of Certificates of Correction

On October 11, 1968, notice of proposed rulemaking regarding the amendment of §§ 1.322 and 1.323 of Title 37, Code of Federal Regulations, dealing with the issuance of certificates of correction, was published in the Federal Register (33 F.R. 15218). Interested persons were given 40 days in which to submit written comments, suggestions, or objections regarding the proposed ammendments.

Full consideration having been given to all comments that were received in response to the public notice, the amendments originally proposed are hereby adopted without change and are set forth below.

As a result of these rule changes it will no longer be necessary for the patentee to forward his patent to the Patent Office when requesting the issuance of a certificate of correction. Upon receipt of an appropriate request, a certificate of correction will be issued and forwarded to the patentee, with an authorization permitting the patentee to physically attach same to the patent.

In connection with this change of procedure, arrangements have been made with Shepard's Citations to indicate under its listing of patents in its set entitled "Shepard's United States Citations, Patents and Trademarks" those patents for which certificates of correction have been issued. Beginning in April of this year the information will be published in that set's quarterly cumulative supplement and will appear in the bound volume thereof, when it is released.

Effective date. These amendments shall become effective upon publication in the Federal Register.

Dated: Mar. 18, 1969.

EDWARD J. BRENNER,
Commissioner of Patents.

Approved:
ALLEN V. ASTIN,
Assistant Secretary for Science and Technology.

Notice is hereby given that under the authority contained in section 6 of the Act of July 19, 1952 (66 Stat. 792; 35 U.S.C. 6), the Patent Office amends Part 1 of Title 37 of the Code of Federal Regulations as follows:

(1) By amending paragraph (a) of § 1.322 to delete from the first sentence the words "and endorsed on the patent itself". As thus amended, paragraph (a) reads as follows:

§ 1.322 *Certificate of correction of Office mistake.*

(a) A certificate of correction under 35 U.S.C. 254 may be issued at the request of the patentee or his assignee. Such certificate will not be issued at the request or suggestion of anyone not owning an interest in the patent, nor on motion of the Office, without first notifying the patentee (including any assignee of record) and affording him an opportunity to be heard.

• • • • •

(2) By amending § 1.323 to delete therefrom the words "which shall be endorsed on the patent itself,". As thus amended § 1.323 reads as follows:

§ 1.323 *Certificate of correction of applicant's mistake.*

Whenever a mistake of a clerical or typographical nature or of minor character which was not the fault of the Office, appears in a patent and a showing is made that such mistake occurred in good faith, the Commissioner may, upon payment of the required fee, issue a certificate of correction, if the correction does not involve such changes in the patent as would constitute new matter or would require re-examination.

[F.R. Doc. 69-3404; Filed, Mar. 21, 1969; 8:45 a.m.]

Published in 34 F.R. 5550, Mar. 22, 1969

[861 O.G. 680]

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(130) NEW PROCEDURE FOR HANDLING CERTIFICATES OF CORRECTION

In compliance with amended Rules 322 and 323, and to expedite the issuance of certificates and reduce printing costs, practitioners are urged to submit the text of the certificate on a special form which could serve as the final copy for use in direct process reproduction (offset printing) of the certificate of correction. The *request* for issuance of the certificate (together with the fee where the error is due to applicant's mistake) should be in a separate letter accompanied by two copies of the form and a self-addressed envelope.

Where the recommended format is used and approved, one copy of said form, duly certified, will be returned to the patentee for attachment to his copy of the patent. This will eliminate the present necessity for returning the patent when requesting a certificate. The other copy of the form will be used for direct offset printing of copies of the certificate which, as heretofore, will be attached to every printed copy of the patent subsequently sold or distributed.

Copies of the form are obtainable for reproduction purposes from Correspondence and Mail Branch and from the receptionist in Bldg. 3, Crystal Plaza. Below is a sample form illustrating a variety of corrections and the suggested manner of setting out the format. Particular attention is directed to:

a. Identification of the exact point of error by reference to column and line number of the printed patent.
b. Conservation of space on the form by *typing* single space, beginning two lines down from the printed message.
c. Starting the correction to each separate column as a sentence, and using semi-colons to separate corrections within said column, where possible.
d. Two inch space left blank at bottom for signature of attesting officer.
e. Use of quotation marks to enclose the exact subject matter to be deleted or corrected; use of double hyphens (--) to enclose subject matter to be added, except for formulas.
f. Where a formula is involved, setting out only that portion thereof which is to be corrected.

Where the recommended format is not used or where the nature of the subject matter is such that it is more expedient to print by the direct image offset technique, e.g., entire sheet(s) of drawing or page(s) of specification omitted, multiple pages of corrections, intricate chemical formulas, etc., Issue and Gazette Branch will prepare the certificate as heretofore. Patentee will receive a copy for attachment to his copy of the patent.

RICHARD A. WAHL,
Apri. 1, 1969. *Assistant Commissioner.*

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,447,999 Dated April 1, 1969

James W. Worth

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

In the drawings, Sheet 3, Fig. 3, the reference numeral 225 should be applied to the plate element attached to the support member 207. Column 1, lines 45 to 49, the left-hand formula should appear as follows:



Column 2, formula XXXV, that portion of the formula reading



should read



Formula XXXVI, that portion of the formula reading "-CH_2CH-" should read ·· -CH_2CH_2- ··. Column 2, line 68 and column 3, lines 3, 8 and 13, the claim reference numeral "2", each occurrence, should read ·· 1 ··. Column 10, line 16, cancel beginning with "12. A sensor device" to and including "tive strips." in column 11, line 8, and insert the following claim:

12. A control circuit of the character set forth in claim 1 and for an automobile having a convertible top, and including; means for moving said top between raised and lowered retracted position; and control means responsive to said sensor relay for energizing the top moving means for moving said top from retracted position to raised position.

[862 O.G. 2]

ABSTRACTS

(131) EXAMINATION REQUIREMENTS AND PROCEDURE IN RELATION TO ABSTRACTS OF THE DISCLOSURE

The newly adopted amendment to Rule 72 which requires the submission of an *Abstract of the Disclosure* is being applied to patent applications which receive a first Office action of any kind from the Examiner on or after November 1, 1966; however, on cases filed before January 1, 1967, abstracts will not be required where the application is passed to issue on the first action.

The Examiner in the first office action on and after November 1, 1966, should require the submission of a brief abstract of the technical disclosure in the specification, the abstract to appear immediately after the title of the invention and preceding the disclosure in a separate paragraph under the heading "Abstract of the Disclosure." The following form paragraph may be used to make the requirement:

"An abstract is required, see new Rule 72(b)."

Responses to such actions should be treated under Rule 111(b) practice like any other formal matter.

Upon passing the case to issue, the Examiner should see that the abstract is an adequate and clear statement of the contents of the disclosure and generally in line with the guidelines in the following paragraphs; the abstract shall be changed by Examiner's Amendment in those instances where deemed necessary.

1. The purpose of the abstract is to provide a non-legal technical statement of the contents of the disclosure. The abstract should be an objective condensation (rather than a description) of the disclosure, in clear and concise language. Statements as to the relative merits or value, or speculative applications of the invention should be omitted.

2. The abstract should be especially designed to serve as a searching-scanning tool for the scientist, engineer or researcher in the particular art, and therefore should serve to indicate whether there is a need for consulting the full specification for details.

3. The abstract should be as brief as the subject permits. A single paragraph of 50–100 words should be sufficient.

4. Especially in the chemical field, the abstract should include a statement of the utility of the subject matter of the disclosure, particularly that which is related to the invention.

5. The abstract should be separate and independent of the "Summary of the Invention." One of the purposes of the abstract is to determine quickly the nature and gist of the technical disclosure.

RICHARD A. WAHL,
Oct. 7, 1966. *Assistant Commissioner.*

[831 O.G. 1328]

(132) CHANGE IN CONTENT OF THE PATENTS SECTION OF THE OFFICIAL GAZETTE

In keeping with the Patent Office program to encourage the use of patents in the scientific, engineering and business communities, as well as the patent profession, a change in the content of the patents section of the OFFICIAL GAZETTE is being made.

Beginning with the first issue of the OFFICIAL GAZETTE in January 1968, a copy of the abstract of each patent where an abstract is available will appear, in lieu of the claim. This change in content is being made in order that patent information may be better utilized by the patent public.

In addition to the regular issue of the OFFICIAL GAZETTE an extract of the patents section, i.e., the descriptive matter relating to patents only, will be made available. The subscription rate for the patents section extract only for the first six months period beginning with the first issue in January 1968, will be twenty-seven dollars ($27.00) and one dollar and twenty-five cents ($1.25) for a single copy. The extract will be mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402, to whom all subscriptions should be made payable and all communications addressed. The title of the extract will be "Official Gazette—Patent Abstracts Section."

It is to be noted that the Government Printing Office has determined that the subscription rate for the regular issue of the OFFICIAL GAZETTE will be increased to sixty-seven dollars ($67.00) for the subscription year beginning January 1968, and the price of individual copies will be increased to one and a half dollars ($1.50). The increased rate is not related to the new program.

EDWARD J. BRENNER,
Sept. 25, 1967. *Commissioner of Patents.*

[843 O.G. 747]

(133) PARAGRAPH REQUIREMENTS FOR ABSTRACTS

In view of some difficulties experienced in determining the extent of the abstracts, the Patent Office is supplementing the Notice of October 7, 1966 (831 O.G. 1328).

An abstract should usually be limited to a single paragraph, under the heading, "Abstract of the Disclosure" as stated in Rule 72(b) and MPEP 608.01(b).

In unusual circumstances where the application disclosure does not lend itself to a single paragraph abstract, a plural paragraph abstrct may be acceptable. An example of these rare situations would be an application having claims to different statutory classes, it being recognized that an abstract of the disclosure should be written to include the advancement in the art.

To avoid errors in printing where a plural paragraph abstract is deemed necessary and appropriate, the complete abstract must be set off by suitable headings to indicate where the abstract begins and ends. Appropriate headings useable between the abstract and the subsequent description are to be found in the "Guidelines for Drafting a Model Patent Application Under the Revised Rules" (832 O.G. 5; MPEP 608.01(a)).

RICHARD A. WAHL,
Feb. 16, 1968. *Assistant Commissioner.*

[854 O.G. 287]

(134) PATENT ABSTRACTS

The provision in Rule 72(b) of the Rules of Practice in Patent Cases, relating to inclusion of a "brief abstract of the technical disclosure" in applications for patent, has now been in effect for two and one-half years.

Instructions regarding abstract preparation were published at 831 O.G. 1328, October 25, 1966, and at about the same time a pamphlet entitled "Guidelines for the Preparation of Patent Abstracts" was published and made available to personnel concerned with the preparation and review of abstracts of the type noted.

Abstracts are becoming more and more significant in the field of mechanized and computerized prior art retrieval. It is therefore important that they reach the optimum quality level at the earliest possible date.

During the past year abstracts, in a random sample of approximately 1000 allowed applications, were audited or reviewed for purposes of determining degree of compliance with the aforenoted instructions and guidelines. Steady improvement in the quality of the abstracts was noted in the course of the review. The review clearly indicated, however, a need for further improvement as well as a need for certain modifications and revisions in the earlier published guidelines. There also appeared to be a need for reemphasis of portions of the guidelines.

Accordingly, a revised set of guidelines consonant with the needs suggested by the audit have been promulgated, and are set forth below for use in the preparation and review of patent abstracts.

GUIDELINES FOR THE PREPARATION OF PATENT ABSTRACTS

Background

The Rules of Practice in Patent Cases require that each application for patent include an Abstract of the Disclosure, Rule 72(b).

The content of a patent abstract should be such as to enable the reader thereof, regardless of his degree of familiarity with patent documents, to ascertain quickly the character of the subject matter covered by the technical disclosure and should include that which is new in the art to which the invention pertains.

The abstract is not intended nor designed for use in interpreting the scope or meaning of the claims, Rule 72(b).

Content

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is *new* in the art to which the invention pertains.

If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure.

If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement.

In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or a use thereof.

If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following: (1) if a machine or apparatus, its organization and operation; (2) if an article, its method of making; (3) if a chemical compound, its identity and use; (4) if a mixture, its ingredients; (5) if a process, the steps. Extensive mechanical and design details of apparatus should not be given.

With regard particularly to chemical patents, for compounds or compositions, the general nature of the compound or composition should be given as well as the use thereof, e.g., "The compounds are of the class of alkyl benzene sulfonyl ureas, useful as oral anti-diabetics." Exemplification of a species could be illustrative of members of the class. For processes, the type reaction, reagents and process conditions should be stated, generally illustrated by a single example unless variations are necessary.

Language and Format

The abstract should be in narrative form and generally limited to a single paragraph within the range of 50 to 250 words. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should sufficiently describe the disclosure to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "This disclosure concerns," "The disclosure defined by this invention," "This disclosure describes," etc.

Responsibility

Preparation of the abstract is the responsibility of the applicant. Background knowledge of the art and an appreciation of the applicant's contribution to the art are most important in the preparation of the abstract. The review of the abstract, for compliance with these guidelines, with any necessary editing and revision on allowance of the application is the responsibility of the examiner.

Sample Abstracts

A heart valve with an annular valve body defining an orifice and having a plurality of struts forming a pair of cages on opposite sides of the orifice. A spherical closure member is captively held within the cages and is moved by blood flow between open and closed positions in check valve fashion. A slight leak or backflow is provided in the closed position by making the orifice slightly larger than the closure member. Blood flow is maximized in the open position of the valve by providing an inwardly convex contour on the orifice-defining surfaces of the body. An annular rib is formed in a channel around the periphery of the valve body to anchor a suture ring used to secure the valve within a heart.

A method for sealing, by application of heat, overlapping closure panels of a folding box made from paperboard having an extremely thin coating of moisture-proofing thermoplastic material on opposite surfaces. Heated air is directed at the surfaces to be bonded, the temperature of the air at the point of impact on the surfaces being above the char point of the board. The duration of application of heat is made so brief, by a corresponding high rate of advance of the boxes through the air stream, that the coating on the reverse side of the panels remains substantially non-tacky. The bond is formed immediately after heating within a period of time for any one surface point less than the total time of exposure to heated air of that point. Under such conditions the heat applied to soften the thermoplastic coating is dissipated after completion of the bond by absorption into the board acting as a heat sink without the need for cooling devices.

Amides are produced by reacting an ester of a carboxylic acid with an amine, using as catalyst an alkoxide of an alkali metal. The ester is first heated to at least 75° C. under a pressure of no more than 500 mm. of mercury to remove moisture and acid gases which would prevent the reaction, and then converted to an amide without heating to initiate the reaction.

RICHARD A. WAHL,
Apr. 23, 1969. *Assistant Commissioner.*

[862 O.G. 653]

(135) DISCONTINUATION OF THE PUBLICATION "PATENT ABSTRACTS SECTION OF THE OFFICIAL GAZETTE"

Effective Mar. 31, 1970, the Patent Office will no longer print the publication "Patent Abstracts Section of the Official Gazette." Reasons for this decision are the desire to incur a saving in printing costs, the same information now appears in the OFFICIAL GAZETTE, and the number of subscribers no longer warrants a separate publication.

The Superintendent of Documents, U.S. Government Printing Office, will contact subscribers to the "Patent Abstracts" for appropriate action regarding their subscriptions.

CLARENCE A. KALK,
Acting Assistant Commissioner for Administration.
Feb. 9, 1970.

[872 O.G. 1]

REFERENCES

(136) CITATION OF PUBLICATIONS AND FOREIGN PATENTS

Foreign Patents

In accordance with Rule 107, for each foreign patent cited, there should be indicated the number of sheets of drawing and pages of specification and also the sheet number(s) and page number(s) specifically relied upon if less than the entire disclosure is used. Because it is essential to conserve space in the Examiner's file of applications and to minimize the cost to applicant under the automatic supply of references cited, whenever the total number of sheets and pages in any foreign patent exceeds ten, the Examiner should keep the total relied on as near to ten as possible. Applicants who desire a copy of the complete foreign patent or of the portion not "relied on" must order it, not through the automatic supply system, but in the usual manner.

Publications

Publications such as German allowed applications and Netherlands printed specifications should be similarly handled. With other publications such as books, periodicals and catalogues, the specific pages relied upon should be cited. If the copy relied upon is located only in the Group making the action (there is no call number), the additional information, "Copy in Group —" should be given.

RICHARD A. WAHL,
Jan. 4, 1965. *Acting Superintendent, Patent Examining Corps.*

[811 O.G. 293]

(137) AUTOMATIC FURNISHING FREE COPIES OF CITED REFERENCES

Commencing November 1, 1965, one complete set of references cited by Examiners in Office Actions will be automatically supplied without charge simultaneously with the mailing of the actions.

Additional copies of references desired must be properly identified and purchased from the regular Patent Office copy supply facilities.

This supersedes the notice, "Providing Copies of Cited References to Applicants" which was published in 809 O.G. 317 on December 8, 1964.

C. A. KALK,
Oct. 1, 1965. *Director of Administration.*

[819 O.G. 1335]

(138) CITATION OF REFERENCES AT TIME OF ALLOWANCE

Commencing March 15, 1966, references cited by examiners when passing an application to issue will no longer be supplied under the automatic plan. Copies of these references, if desired, must be purchased from the regular Patent Office copy supply facilities.

Except as above indicated references cited by examiners in Office actions will continue to be automatically supplied without charge simultaneously with the mailing of the actions.

This modifies the notice, "Automatic Furnishing Free Copies of Cited References," which was published in 820 O.G. 1 on November 2, 1965.

RICHARD A. WAHL,
Feb. 24, 1966. *Assistant Commissioner of Patents.*

[824 O.G. 805]

(139) ORDERS FOR REFERENCES CITED IN SHORTHAND STATUTORY PERIOD ACTIONS

Effective immediately, the Patent Office will no longer supply copies of references cited on a "Special Handling" basis without the usual additional charge. This service was announced in the OFFICIAL GAZETTE on June 2, 1964.

The Patent Office has, since November 1, 1965, been furnishing one complete set of references cited by Examiners in Office Actions automatically, without charge, simultaneously with the mailing of the actions.

[825 O.G. 811 (Apr. 19, 1966)]

(140) POLICY RE: VOLUNTARY CITATION OF PRIOR ART BY APPLICANTS

Effective immediately, the following policy is being adopted in the hope of encouraging more frequent and meaningful

citation of prior art by applicants and their attorneys on a voluntary basis.

Prior art cited by applicants or their attorneys within thirty days of the filing of a patent application, or prior to the first Office action, whichever is later, will be fully considered by the Examiner, will be part of the official record, and will be included in the list of references cited in the patented file and in the printed patent provided the applicant:

(a) Limits the number of references cited to not more than five separate items, unless a satisfactory explanation is given as to why more than five citations are necessary, and submits one copy of each of the references; and

(b) Submits a detailed discussion of the references, which discussion points out, with the particularity required by Rule 111(b) and (c), how the claimed subject matter is distinguishable over the references.

References cited by applicants or attorneys under the "special" examining procedure announced on March 2, 1965, and published in 812 O.G. 953 will also be included in the list of references cited in the patented file and printed patent.

Prior art cited by applicants and attorneys under the practice set forth in the notices published in 797 O.G. 733; 802 O.G. 601; 804 O.G. 1 and 805 O.G. 294 will no longer be listed in the printed patent.

EDWARD J. BRENNER,
Apr. 13, 1967. *Commissioner of Patents.*

[837 O.G. 1032]

(141) REFERENCE CITATIONS IN CONTINUATION APPLICATIONS

Effective December 1, 1967, the Office will discontinue the practice of furnishing, automatically and without charge, copies of references cited in continuation applications if they had been previously cited in the parent application.

In the rare instance where no art is cited in a continuation application, all the references cited during the prosecution of the parent application will be listed at allowance for printing in the patent.

Other continuing applications, including continuation-in-part and divisional applications, are not affected by this change.

RICHARD A. WAHL,
Nov. 1, 1967. *Assistant Commissioner.*

[846 O.G. 1022]

(142) PATENT CLASSIFICATION

As a service to the public, effective with the issue of December 10, 1968, all patents will contain at the end of the specification, after the "List of References," a list of all classes and subclasses in the U.S. Classification System into which the patent was cross-referenced at the time of issue. This listing will be headed "U.S. Cl.—X.R."

Beginning with the issue of January 7, 1969, all patents will also include International Patent Classifications in the heading and identified as "Int. Cl."

RICHARD A. WAHL,
Nov. 29, 1968. *Assistant Commissioner.*

[858 O.G. 1029]

TRADEMARKS

(143) ADVANCEMENT OF TRADEMARK APPLICATIONS FOR EXAMINATION

Effective immediately, in the interest of expediting the prosecution of trademark applications in which the applicants are willing to cooperate in accelerated prosecution, any trademark application in which the applicant agrees to respond to each Office action within two months of its date will be advanced for action by the Patent Office ahead of applications in a similar stage of prosecution in which no such agreement has been made.

EDWARD J. BRENNER,
Mar. 23, 1966. *Commissioner of Patents.*

[827 O.G. TM 1]

(144) ORAL HEARINGS UNDER TRADEMARK RULE 2.142(c)

Effective January 1, 1969 for a trial period of six months, new procedures will be initiated which will permit Trademark Examiners having full signatory authority to present an oral argument before the Trademark Trial and Appeal Board in ex parte appeals where the applicant has been granted an oral hearing.

After the attorney representing the appellant has made his presentation, the Examiner will be allowed fifteen minutes to reply as well as to present a statement clearly setting forth his position with respect to the issues involved. Appellant may utilize any allotted time not used in the initial presentation for rebuttal.

EDWIN L. REYNOLDS,
Nov. 14, 1968. *First Assistant Commissioner.*

[857 O.G. TM 49]

POSTAL SERVICE EMERGENCY

(145) EMERGENCY SITUATION IN THE U.S. POSTAL SERVICE

In view of the present emergency situation in U.S. postal service, the U.S. Patent Office is taking the following actions.

In regard to pending applications, the time for taking any action or paying any fee expiring during the period beginning March 16 and ending April 15, 1970, both dates inclusive, is hereby extended for ONE MONTH. However, no extension shall exceed a maximum period for response provided for in the Statutes.

U.S. Department of Commerce Field Offices have been designated, on an emergency basis, as receiving stations for the U.S. Patent Office. All papers should be enclosed in a sealed envelope and deposited in a Field Office. Such papers will be considered as received in the U.S. Patent Office on the day of deposit. The Field Office will date stamp each envelope so deposited, and applicants or their representatives should assure the legibility of the date stamp. Field Offices will place a corresponding date stamp on receipt cards provided by the depositor, which must completely identify the papers deposited.

Field Office deposits should, if possible, be limited to such papers wherein the Patent Statutes do not provide a remedy for failure to obtain a particular date. Examples of these types of papers are: checks in payment of issue fees, new application papers wherein priority dates or statutory bars may be involved, amendments where the six month statutory period for response is about to expire, etc.

The Field Office in New York designated to receive papers for the U.S. Patent Office is located at:

41st Floor, Federal Office Bldg.
26 Federal Plaza, Foley Square
New York, N.Y.

The designated Field Office in Hartford, Connecticut is located at:

Room 610–B, Federal Office Bldg.
450 Main St.
Hartford, Conn.

The addresses of Field Offices in other cities are listed in local directories and are available upon inquiry to the Commissioner of Patents.

RICHARD A. WAHL,
Mar. 19, 1970. *Acting Commissioner of Patents.*

[872 O.G. 1383]

(146) PATENT OFFICE—POSTAL SERVICE

In view of the return to normal operations of the United States postal service, the Notice of Mar. 19, 1970 (published in the OFFICIAL GAZETTE of Mar. 24, 1970, vol. 872, No. 4) is hereby revised.

After Apr. 15, 1970, the U.S. Department of Commerce Field Offices will no longer be designated as receiving stations for the U.S. Patent Office. Accordingly, after the abovenoted date, all letters or other papers relating to patent and trademark cases will be considered as received in the U.S. Patent Office only if they are filed in accordance with Rule 6 of the Rules of Practice in Patent Cases as amended Nov. 26, 1969.

All other provisions of the Notice of Mar. 19, 1970 and the Notice of Mar. 26, 1970, relating to Trademarks, remain in effect.

WILLIAM E. SCHUYLER, JR.
Mar. 27, 1970. *Commissioner of Patents.*

[873 O.G. 319]

(147) FILE HISTORY OF APPLICATIONS AFFECTED BY POSTAL EMERGENCY

As a result of the postal emergency, the time for taking any action or paying any fee in the U.S. Patent Office expiring between the dates of March 16, 1970 and April 15, 1970, both dates inclusive, was automatically extended for one month, provided it did not exceed a maximum period for response provided in the Statutes. (See O.G. of March 24, 1970 or March 31, 1970, 872 O.G. 1383 and April 7, 1970, 873 O.G. TM 2.)

Since this extension of time was automatic there will be nothing in the individual files to indicate that a paper filed during that period was, in fact, timely though it was received later than its apparent due date.

In order to provide a complete history in the affected files and to dispel any question as to abandonment in the record of a patented file, applicants or their attorneys are requested to file a paper explaining these circumstances. A separate paper should be filed in each case so affected (identified by Serial No., filing date, title and applicant's name) and may be merely a copy of the notice which authorized the one-month extension or should specifically refer to and identify that notice.

RICHARD A. WAHL,
Apr. 27, 1970. *Assistant Commissioner of Patents.*

[874 O.G. 688]

(148) U.S. DEPARTMENT OF COMMERCE FIELD OFFICES TO SERVE AS RECEIVING STATIONS ONLY IN DECLARED EMERGENCIES

During the recent postal emergency, Field Offices of the U.S. Department of Commerce were designated as receiving stations for the U.S. Patent Office (according to the Notices of March 19, 1970, 872 O.G. 1383 and March 26, 1970, 873 O.G. TM 2). In view of the subsequent resumption of normal postal operations, that emergency arrangement was discontinued in accordance with the notice of March 27, 1970, 873 O.G. 319. After April 15, 1970, the normal practice with respect to the filing of all letters and other papers relating to patent and trademark matters in the U.S. Patent Office was resumed.

The Patent Office has received suggestions proposing that the Field Offices continue to serve as receiving stations for the U.S. Patent Office. These suggestions have received careful and sympathetic consideration. However, it has been concluded that any activities of the Field Offices in this connection must be restricted, in the future, to any emergency officially announced by the Patent Office as requiring such action.

RICHARD A. WAHL,
Apr. 27, 1970. *Acting Commissioner of Patents.*

[874 O.G. 688]

MISCELLANEOUS

(149) JOINT UNITED STATES-REPUBLIC OF THE PHILIPPINES PROGRAM

I am pleased to announce the availability of an exchange program on examination results between the United States and the Republic of the Philippines. The program involves patent applications filed in the United States which are subsequently followed by corresponding applications filed in the Republic of the Philippines and patent applications filed in the Philippines subsequently followed by corresponding applications filed in the United States.

The program would operate as follows:

The applicant would file his application in the U.S. Patent Office which would process the application in the normal manner and examine the application in the usual time sequence.

If the applicant should later file a corresponding application in the Philippines Patent Office, he may elect to use the special filing procedure. Under this special filing procedure, applicant files his application in the Philippines accompanied by a notice of election to participate in the special procedure; which notice of election contains a certification that the description (excluding references to related applications), claims and drawings are identical to those of the corresponding application originally filed in the United States. The earlier filed application must be fully identified; and, in applications without a claim of priority, a certified copy of the earlier filed U.S. application must be submitted to the Philippines Patent Office. In addition, applicant must also agree that all amendments to his U.S. application will also be made with respect to his application filed in the Philippines.

In the U.S. Patent Office, applicant will regularly file two copies of each amendment, one copy must be marked "Copy for Philippines Patent Office." Upon termination of prosecution the U.S. Patent Office shall remove all copies so marked from the U.S. file and promptly forward the same to the Philippines Patent Office.

Election forms for participation in this special program must be signed in duplicate and simultaneously accompany the application to be filed in the Philippines.

Upon receipt of properly filed notice of election, the Philippines Patent Office would notify the U.S. Patent Office of the election by forwarding one copy of the election forms to the U.S. Patent Office. The Philippines Office would defer action on the Philippines application pending receipt of information as to the disposition of the application by the U.S. Patent Office. If no such information is received by the Philippines Office within a reasonable amount of time from the date of filing in the Philippines, the Philippines Office may, either on its own initiative, or applicant's request, inquire as to the status of the U.S. application and, if desired, proceed with its own independent examination.

Upon disposal of the application by the U.S. Patent Office, appropriate information will be sent to the Philippines Patent Office which will include all necessary identifying data, whether allowed or abandoned, notice of allowance, copies of documents cited during examination, a copy of the last office action and, when necessary, any earlier actions which may be included by reference in the last action. The Philippines Office would then make their own complete office action based upon the claims as amended with the U.S. Patent Office, performing whatever checks desired and search for copending interfering applications. Alternatively, the Philippines may request applicant to show cause why the results of the U.S. examination should not be accepted in the Philippines. All avenues of appeal would remain open to the applicant.

Where copending applications are cited and applied during examination in the U.S. Patent Office, full examination would not be forwarded to the Philippines Patent Office, and the fact that a U.S. copending application was cited would be noted as a matter of information, since such references would be inapplicable in the Philippines.

Where the application originates in the Philippines Patent Office and is subsequently filed in the U.S. Patent Office, a similar procedure as outlined above consonant with U.S. Law will be followed.

It is believed that this program will facilitate the handling of U.S. origin applications filed in the Republic of the Philippines resulting in a savings in time and expense of prosecution to U.S. applicants.

Election forms for participation in this special program are now available from The Foreign Exchange Section, Office of Patent Services.

GERALD D. O'BRIEN,
Assistant Commissioner.

[847 O.G. 331 (Feb. 13, 1968)]

(150) TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

CHAPTER 1—PATENT OFFICE, DEPARTMENT OF COMMERCE

PART 1—RULES OF PRACTICE IN PATENT CASES

PART 3 FORMS FOR PATENT CASES

Amendment of Rules re New Defensive Publication Program; Additional Form

Section 1.11, 1.14, 1.101, 1.103 and 1.108 of Title 37 CFR (Patent Rules 11, 14, 101, 103 and 108) are amended or

revised and a new § 1.139 (Patent Rule 139) is added to take effect May 1, 1968, for the purpose of instituting a new defensive publication program. A new section 3.50 is added for the purpose of implementing the new program.

The general substance of the proposed revisions and additions was published in the Federal Register of February 20, 1968 (38 F.R. 3189). A hearing was held on March 27, 1968, and all persons, who desired to, were invited to attend and to submit their views, objections, recommendations or suggestions. Both oral and written comments were carefully considered. The sections are being revised substantially as published with a few additional changes.

This program is intended to provide better service to the public by making available the technical disclosure of certain applications in which the owner may prefer to publish an abstract in lieu of obtaining an examination by the Patent Office. The defensive publication would be in the form of an abstract of the technical disclosure, printed in the OFFICIAL GAZETTE and made a part of the Patent Office search files.

This program will be open to any applicant having an application awaiting action by the Patent Office and who files a written request no later than eight (8) months after the earliest U.S. effective filing date of the designated application and agrees to the conditions of the program, including waiving his patent rights based on the designated application, opening the complete application to inspection by the general public upon publication of the abstract, expressly abandoning his application, the abandonment to take effect five (5) years after the earliest U.S. effective filing date of the application unless within that period interference proceedings have been initiated, and waiving his rights to a patent on a continuing application filed after the expiration of thirty (30) months from the earliest U.S. effective filing date of the designated application. *Until November 1, 1968, this program will be open to any pending application awaiting first action by the Patent Office at the time of the request without regard to the filing date of that application.*

In accordance with existing rules and procedures interferences may be declared with applications and patents. During the period beginning with the suggestion of claims by the Patent Office or the filing of claims by the applicant copied from a patent and ending with the termination of proceedings if an interference is declared or the mailing of a decision refusing to declare the interference, abandonment by reason of the expiration of the five year period will be stayed. Since the applicant has waived his patent rights and agreed to a defensive publication, termination of interference proceedings in his favor would render the express abandonment ineffective but would not result in the issuance of an enforceable patent. Instead, a normal Notice of Allowance would be issued except that the applicant would be notified that when the issue fee is remitted a disclaimer of the entire term of the patent to be granted in accordance with the second paragraph of 35 U.S.C. 253 should be included.

No special fees will be required for entrance into this program. The applicant will be permitted to include with his request a replacement or expanded abstract of the technical disclosure of up to two hundred (200) words. Acceptance of a request to enter this program will be contingent upon screening by the Patent Office to exclude such material that may be considered advertising, frivolous, scandalous, against public policy, subject to national security controls, etc. Acceptance of a designated application in this program is not intended to preclude the examination of any continuing application filed under 35 U.S.C. 120 within thirty (30) months after the earliest effective U.S. filing date of the designated application.

Upon receipt and approval of the request the application abstract will be published in the OFFICIAL GAZETTE. Publication of the abstract in the OFFICIAL GAZETTE would be in a separate section identifying the application as being open for inspection by the general public and indicating that it is subject to the New Defensive Publication Program.

Following publication the application would be filed in the Record Section of the Patent Reference Branch where it will be available for inspection upon written request. Copies of the application will be furnished by the Patent Office upon request and payment of fee. The application abstract and suitable drawing copies would then be made a part of the official search files.

After the defensive publication has appeared in the OFFICIAL GAZETTE the abstract and suitable drawing copies will be available as prior art from the date of publication under 35 U.S.C. 102(a) or 102(b) as a printed publication. Also, at this time the application will be available as prior art under 35 U.S.C. 102(a) as evidence of prior knowledge from the actual date of filing the application in the Patent Office.

The changes follow:

1. In § 1.11, delete "Patent" from the title, Identify the one paragraph now in the section as paragraph "(a)" and follow with a new paragraph "(b)", so that the section reads as follows:

§ 1.11 *Files open to the public.*

(a) After a patent has been issued, the specification, drawings, and all papers relating to the case in the file of the patent are open to inspection by the general public, and copies may be furnished upon paying the fee therefor. The file of any terminated interference involving a patent, or an application on which a patent has subsequently issued, is similarly open to public inspection and procurement of copies. See § 2.27 for trademark files.

(b) Applications in which the Office has accepted a request filed under § 1.139 are open to inspection by the general public, and copies may be furnished upon paying the fee therefor.

2. In § 1.14, insert "Except as provided in § 1.11(b)" at the beginning of the first sentence of both paragraphs (a) and (b), so that these paragraphs read:

§ 1.14 *Patent applications preserved in secrecy.*

(a) Except as provided in § 1.11(b) pending patent applications are preserved in secrecy. No information will be given by the Office respecting the filing by any particular person of an application for a patent, the pendency of any particular case before it, or the subject matter of any particular application, nor will access be given to or copies furnished of any pending application or papers relating thereto, without written authority of the applicant, or his assignee or attorney or agent, unless it shall be necessary to the proper conduct of business before the Office or as provided by this part.

(b) Except as provided in § 1.11(b) abandoned applications are likewise not open to public inspection, except that if an application referred to in a United States patent is abandoned and is available, it may be inspected or copies obtained by any person on written request, without notice to the applicant. Abandoned applications may be destroyed after twenty years from their filing date, except those to which particular attention has been called and which have been marked for preservation. Abandoned applications will not be returned.

3. In § 1.101, add "except for those applications in which the Office has accepted a request filed under § 1.139" at the end of the last sentence of paragraph (a), so that it reads:

§ 1.101 *Order of examination.*

(a) Applications filed in the Patent Office and accepted as complete applications (§§ 1.53 and 1.55) are assigned for examination to the respective examining divisions having the classes of inventions to which the applications relate. Applications shall be taken up for examination by the examiner to whom they have been assigned in the order in which they have been filed except for those applications in which the Office has accepted a request under § 1.139.

4 In § 1.103, add a new paragraph (d) to read as follows:

§ 1.103 *Suspension of action.*

(d) Action on applications in which the Office has accepted a request filed under § 1.139 will be suspended for the entire pendency of these applications except for purposes relating to proceedings under § 1.201(b).

5. In § 1.108, delete "and forfeited" in the title and the first sentence, and add "except those which have become abandoned as a result of the filing and acceptance of a request under § 1.139" at the end of the first sentence, so that it reads as follows:

§ 1.108 *Abandoned applications not cited.*

Abandoned applications as such will not be cited as references except those which have become abandoned as a result of the filing and acceptance of a request under § 1.139.

6. A new § 1.139 is added, the full text of which reads as follows:

§ 1.139 *Waiver of patent rights.*

An applicant may waive his rights to an enforceable patent based on a pending patent application by filing in the Patent Office a written waiver of patent rights, a consent to the publication of an abstract, an authorization to open the complete application to inspection by the general public, and a declaration of abandonment signed by the applicant and the assignee of record or by the attorney or agent of record.

7. A new § 3.50 is added to read as follows:

§ 3.50 *Waiver of patent rights.*

To the Commissioner of Patents:

The undersigned having on _____ filed an application for patent, Serial No. _____ entitled _____, hereby waives his right to an enforceable patent based on said application or on any continuing application filed after the expiration of thirty (30) months from the earliest U.S. effective filing date of said application and subject to acceptance by the Commissioner, and requests that an abstract of the disclosure thereof be published in the OFFICIAL GAZETTE, that the complete application be opened to inspection by the general public upon publication of said abstract, and that the application be considered pending for the purpose of interference; and further the undersigned expressly abandons said application, the abandonment to take effect five (5) years after the earliest U.S. effective filing date of the application unless within that period interference proceedings have been initiated.

(Sec. 1, 66 Stat. 792; 35 U.S.C. 6)

EDWARD J. BRENNER,
Commissioner of Patents.

Approved: Apr. 9, 1968.
JOHN F. KINCAID,
Assistant Secretary for Science and Technology.

Published in 33 F.R. 5623; Apr. 11, 1968

[849 O.G. 1221]

(151) STUDY OF COMPUTER PROGRAM PROTECTION

Request for Comments

The President's Commission on the Patent System, established by Executive Order No. 11215 on April 8, 1965, submitted its final report to the President on November 17, 1966. Included among the recommendations of the Commission is the following regarding computer programs:

> A series of instructions which control or condition the operation of a data processing machine, generally referred to as "program," shall not be considered patentable regardless of whether the program is claimed as: (*a*) an article, (*b*) a process described in terms of the operations performed by a machine pursuant to a program, or (*c*) one or more machine configurations established by a program.

The Patent Reform Act of 1967, S. 1042 and H.R. 5924, included the Commission's recommendation and excluded computer programs from patentable subject matter. After a review of the comments submitted, the Department of Commerce withdrew its support of this provision of the Patent Reform Act for further study and evaluation of the subject.

Because of the significance of the computer programing industry to the economy and the interest evidenced by the public and private sectors in commenting on this provision of the Patent Reform Act, the Patent Office has initiated a comprehensive study of the need for the protection of computer programs. The study is intended to encompass all aspects of the question, including that as to whether there is, or is not, a need for some kind of protection for programs. The study will investigate which of various types of protection would best satisfy any need for protection, including systems based either on originality or novelty. Problems relating to the question of the protection of computer programs will be considered; for example, the nature of the disclosure and other requirements relating to applications for protection, the merits of examination and registration systems, the duration of protection, and the administration and enforcement of the various plans of protection.

The views of interested persons are solicited on the various aspects of the Patent Office study, the recommendation of the President's Commission and any related matters. These views should be submitted in writing to the Commissioner of Patents, Washington, D.C. 20231 by December 15, 1968.

EDWARD J. BRENNER,
Commissioner of Patents.

Sept. 16, 1968.
Approved:
JOHN F. KINCAID,
Assistant Secretary for Science and Technology.

[855 O.G. 555]

(152) DEFENSIVE PUBLICATION PROGRAM

The open season of the New Defensive Publication Program, originally announced in the OFFICIAL GAZETTE of May 7, 1968 (850 O.G. 1) as terminating November 1, 1968, is hereby extended. Accordingly, until January 1, 1969, this program will be open for any pending application awaiting first action by the Patent Office at the time of the request without regard to the filing date of that application.

As originally announced this program will continue to be open until further notice to any applicant having an application awaiting action by the Patent Office and who files a written request no later than eight (8) months after the earliest U.S. effective filing date of the designated application.

RICHARD A. WAHL,
Assistant Commissioner.

Oct. 1, 1968.

[855 O.G. 1109]

(153) PATENT PRINTING PRIORITY

In view of the backlog of allowed cases waiting to be printed, the applications placed in the weekly formulation of an issue set aside for printing will be selected according to the following priorities:

1. Allowed cases which were made special by the Commissioner (including those under the New Special Examining Procedure).
2. Allowed cases that are more than five years old.
3. Allowed reissue applications.
4. Allowed applications having an effective filing date earlier than that required for declaring an interference with a copending application claiming the same subject matter.
5. Allowed application of a party involved in a terminated interference.
6. Allowed applications in which the applicant has filed a request in the nature of a petition setting forth his reasons for advancing the printing date.
7. Allowed applications ready for printing and not covered by any of the six preceding categories. The selection of cases in the involved category will be by chronological sequence based on the date the issue fee was paid.

To ensure that any application falling within the scope of the categories outlined above and identified by numbers 1 to 5 receives special treatment the Examiners should staple on the file wrapper a tag entitled "Special in Issue and Gazette Branch." The special tag, PO–364, may be obtained from the Group Clerk. The Examiner shall print directly on the tag the recitation "In Issue and Gazette Branch" and the appropriate printing category outlined above. The application is then forwarded to Issue and Gazette Branch in accordance with existing procedures.

The personnel in Issue and Gazette Branch will then set the tagged cases aside and make a notation on all copies of the Notice of Allowance to be mailed that further processing of this application will be "special."

In cases falling in category No. 6, the request must be filed after the Notice of Allowance has been received and no later than the date the issue fee is paid. The request must be directed to the Head of the Issue and Gazette Branch.

RICHARD A. WAHL,
Assistant Commissioner.

Nov. 29, 1968.

[857 O.G. 1327]

(154) DEFENSIVE PUBLICATION PROGRAM

The notice of October 1, 1968 (855 O.G. 1109) which extended the open season of the New Defensive Publication

Program until January 1, 1969, is herby modified to further extend the open season indefinitely. Accordingly, until further notice any patent application which has not been given a first action may be entered in the Defensive Publication Program.

RICHARD A. WAHL,
Dec. 20, 1968. *Assistant Commissioner.*

[858 O.G. 687]

(155) SUPPLEMENTAL NOTICE REGARDING THE PATENT OFFICE STUDY OF COMPUTER PROGRAM PROTECTION

Extension of Time for Submitting Comments

The deadline set in the Federal Register notice of October 19, 1968 (33 F.R. 15562) for submitting comments in connection with the Patent Office Study on Computer Program Protection is extended from December 15, 1968, to March 15, 1969.

EDWARD J. BRENNER,
Commissioner of Patents.

Approved:
JOHN F. KINCAID,
Assistant Secretary for Science and Technology.

Published in 34 F.R. 1332; Jan. 28, 1969

[859 O.G. 345 (Jan. 28, 1969)]

(156) DISCLOSURE DOCUMENT PROGRAM

On November 28, 1968, a notice proposing a Disclosure Document Program was published in the Federal Register (33 F.R. 17370). Interested persons were given over 30 days, in which to submit written comments, suggestions, or objections regarding the proposed program. Full consideration has been given to all comments that were received in response to the public notice.

Effective immediately and until further notice, the Patent Office will accept and preserve for a period of at least 2 years "Disclosure Documents" which may be used as evidence of conception of an invention. A Disclosure Document may be any paper which discloses an invention and is signed by the inventor(s) and is forwarded to the Patent Office by any one of the inventor(s), the owner or the attorney or agent of the inventor(s) or owner. It is not a patent application, nor will its receipt date in the Patent Office in any way become the effective filing date of a later-filed application. However, like patent applications, these documents will be retained in confidence by the Patent Office.

The value of the conventional properly witnessed and notarized records as evidence of conception of an invention is not diminished. This program is being made available as a service to those persons desiring to use it. A Disclosure Document should be a more creditable form of evidence than the "self-addressed envelope" form of evidence often used by inventors.

Although there are no restrictions as to its content and claims are unnecessary, the benefits obtainable from a Disclosure Document will depend directly upon the content and adequacy of its disclosure. Therefore, it is strongly urged that the document contain a clear and complete explanation of the manner and process of making and using the invention in sufficient detail, that at least a person having ordinary knowledge in the field of the invention would be able to make and use the invention. When the nature of the invention admits, a drawing or sketch should be furnished. The use or utility of the invention should be described, especially in chemical inventions.

A Disclosure Document will be destroyed 2 years after its receipt date unless it is referred to in a separate paper filed in a related patent application within said 2-year period. In a new patent application, The Disclosure Document may be referred to in the letter of transmittal. Disclosure Documents, if accepted, will not be returned. Unless it is desired to rely upon a Disclosure Document as evident, it need not be referred to in the file of a later filed patent application. However, if the Disclosure Document is referred to, the Document will be preserved by the Patent Office similarly to patent applications.

The Disclosure Document must be limited to written matter or drawings on paper or other thin flexible material, such as linen or plastic drafting material, having dimensions, or being folded to a size, not to exceed 8½ by 13 inches. Photographs will also be acceptable. Each page should be numbered and have permanent indicia sufficiently dark to allow copying by ordinary reproducing equipment.

In addition, each Disclosure Document, when submitted, must include a fee of $10, a stamped, self-addressed envelope and a separate paper, in duplicate, signed by the inventor stating that he is the inventor and requesting that the enclosed material be received for processing under the Disclosure Document Program. The papers will be stamped by the Office with an identifying number and receipt date, and the duplicate request returned in the self-addressed envelope together with a notice. This notice will indicate that the Disclosure Document may be relied upon only as evidence and that a patent application should be diligently filed if patent protection is desired.

The request may take the following form:

The undersigned, being the inventor of the disclosed invention, requests that the enclosed papers be accepted under the Disclosure Document Program, and that they be preserved for at least a period of 2 years.

EDWARD J. BRENNER,
Commissioner of Patents.

Approved: Mar. 26, 1969.
ALLEN V. ASTIN,
Acting Assistant Secretary for Science and Technology.

[F.R. Doc. 69-3805; Filed, April 1, 1969; (8:48 a.m.)]

Published in 34 F.R. 6003, Apr. 2, 1969

[862 O.G. 1]

(157) JOINT U.S.-SWEDISH SEARCH EXCHANGE

A program for the exchange of search results between the patent offices of Sweden and the United States was initiated in February 1969. The program which is now in full operation involves patent applications filed in one country which are subsequently followed by corresponding applications filed in the other.

The program operates as follows:

The applicant files an application in the U.S. Patent Office which then processes the application in the customary manner and in the usual time sequence.

If the applicant later files an application in Sweden claiming the priority of the U.S. application, the Patent Office of Sweden notifies the U.S. Patent Office of this filing by forwarding a request for a list of the references cited by the U.S. examiner in the first office action on the merits.

Where the application originates in Sweden and is subsequently filed in the U.S. Patent Office, a similar procedure is followed whereby the U.S. office requests and the Swedish office supplies a list of references cited by the Swedish examiner.

This program, which involves only the furnishing of listings of references cited, could improve the quality of the patents granted by each office.

WILLIAM E. SCHUYLER, JR.,
Aug. 26, 1969. *Commissioner of Patents.*

[866 O.G. 1031]

(158) DEFENSIVE PUBLICATION PROGRAM

1. To resolve certain inherent publication and reference problems, and to establish and treat Defensive Publication. Applications (notices published in 33 F.R. 5623, April 11, 1968, and O.G. 1221, April 30, 1968) in the same manner as patents, the following changes are being made:

a. Publication is to be weekly beginning with 869 O.G. No. 3, December 16, 1969, and

b. Distinct numbers are to be assigned per example:

T 869 001
- 001 — Number series, 001–999 available monthly,
- 869 — O.G. volume number,
- T — Document category, T for Technical disclosure.

2. Defensive Publications will continue to be included in sub-class lists and subscription orders. The new number will be used for all official reference and document copy requirements.

RICHARD A. WAHL,
Nov. 21, 1969. *Assistant Commissioner.*

[869 O.G. 687]

(159) CHANGE IN LEGAL HOLIDAYS

Those doing business before the Patent Office are hereby reminded that by Public Law 90—363, 82 Stat. 250, effective January 1, 1971, Section 6103(a) of Title 5, United States Code, was amended to read as follows:

§ 6103. *Holidays*

(a) The following are legal public holidays:
New Year's Day, January 1.
Washington's Birthday, the third Monday in February.
Memorial Day, the last Monday in May.
Independence Day, July 4.
Labor Day, the first Monday in September.
Columbus Day, the second Monday in October.
Veterans Day, the fourth Monday in October.
Thanksgiving Day, the fourth Thursday in November.
Christmas Day, December 25.

Each of the holidays enumerated will constitute "a holiday within the District of Columbia," as referred to in Section 21, Title 35, United States Code.

WILLIAM E. SCHUYLER, JR.,
Dec. 2, 1970. *Commissioner of Patents.*

[881 O.G. 1707]

(160) TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

CHAPTER I—PATENT OFFICE, DEPARTMENT OF COMMERCE

SUBCHAPTER A—GENERAL

SUBCHAPTER B—GOVERNMENT INVENTIONS JURISDICTION

EDITORIAL NOTE: Chapter I of Title 37 of the Code of Federal Regulations is changed by designating the existing text as Subchapter A—General, and inserting a new Subchapter B—Government Inventions Jurisdiction, containing former Parts 300, 301, and 302 which are transferred from Chapter III of this title and redesignated as follows:

Part
100 Administration of a uniform patent policy with respect to the domestic rights in inventions made by Government employees.
101 Acquisition and protection of foreign rights in inventions.
102 Licensing of foreign patents acquired by the Government.

Accordingly, all references to sections in former Parts 300, 301, or 302 shall be deemed to be to sections in Parts 100, 101, and 102. Thus, a reference to former § 300.1 shall be considered a reference to § 100.1.

CHAPTER III—GOVERNMENT INVENTIONS JURISDICTION, PATENT OFFICE, DEPARTMENT OF COMMERCE

TRANSFER OF REGULATIONS

The text of Chapter III of Title 37 of the Code of Federal Regulations is transferred to Chapter I of this title as Subchapter B—Government Inventions Jurisdiction. Former Parts 300, 301, and 302 are redesignated Parts 100, 101, and 102 respectively.

Published in 34 F.R. 20383, Dec. 31, 1969

[870 O.G. 1039]

(161) TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

CHAPTER I—PATENT OFFICE, DEPARTMENT OF COMMERCE

SUBCHAPTER A—GENERAL

PART 1—RULES OF PRACTICE IN PATENT CASES

Delegation of Authority to Render Determination of Petitions

Pursuant to the authority contained in section 6 of the Act of July 19, 1952 (66 Stat. 793; 35 U.S.C. 6), paragraph (g) of § 1.181, of Title 37, Code of Federal Regulations, is hereby revised as set forth below.

The authority to render determinations on various kinds of petitions may appropriately be delegated to officials in the Patent Office other than the Group Directors, the Solicitor and the Law Examiners previously specified under paragraph (g) of § 1.181. This change is in keeping with the reassignment of responsibilities within the Patent Office organization, as set forth in Department Organization Order 30–3B (34 F.R. 19556, December 11, 1969). Since the change imposes no burden on any person, notice and public procedure thereon are deemed unnecessary.

Effective date. This revision shall become effective upon publication in the Federal Register.

Paragraph (g) of § 1.181 is revised to read as follows:

§ 1.181 *Petition to the Commissioner.*

* * * * *

(g) The Commissioner may delegate to appropriate Patent Office officials the determination of petitions under this section, with the exception of petitions under § 1.183.

RICHARD A. WAHL,
Acting Commissioner of Patents.

Approved: March 3, 1970.
MYRON TRIBUS,
Assistant Secretary for Science and Technology.

[F.R. Doc. 70-2826; Filed, Mar. 6, 1970; 8:49 a.m.]

[872 O.G. 1387]

(162) HOSTING DIPLOMATIC CONFERENCE

On May 25, 1970, a Diplomatic Conference of great significance in advancing the international economic interests of the United States business community will be convened in our Nation's Capital. This conference, which is expected to be attended by representatives from more than 100 countries, will negotiate a Patent Cooperation Treaty, the purpose of which is to facilitate and improve the procedures for obtaining patent protection abroad. Not since the Washington Conference of 1911 has the United States had the opportunity to host an international industrial property conference of such significance.

The hosting of this Conference by the United States was authorized by a joint resolution (91st Congress, S.J. Res. 90) of both Houses of Congress which was signed into law (Public Law 91–160; 83 Stat. 443) by the President of the United States on December 24, 1969. The Secretary of State and the Secretary of Commerce are authorized to act as hosts of the conference which will be held from May 25 to June 19, 1970.

To meet the costs of extending to our distinguished foreign guests the hospitality of the nation, both the Secretary of Commerce and the Secretary of State, or either of them, are authorized to receive and use contributions, including services, which, for Federal tax purposes, will be deemed to be gifts for the use of the United States. The pertinent provision of the legislation follows:

Sec. 3. The Secretary of State and the Secretary of Commerce, or either of them, are authorized to accept and use contributions of funds, property, services, and facilities for the purpose of organizing and holding such an international conference. For the purpose of Federal income, estate, and gift taxes, any gift, devise, or bequest accepted by the Secretary of State or the Secretary of Commerce under authority of the Act shall be deemed to be a gift, devise, or bequest to or for the use of the United States.

Contributions under this authorizing legislation may be made by check drawn to the order of the Secretary of Commerce "for PCT Fund" and sent to the Commissioner of Patents, Box 1970, U.S. Patent Office, Washington, D.C., 20231. Contributors responding before printing deadlines will be listed in the official program if they so desire.

Additional information or details are available either by writing to the above address or by telephoning the Office of International Patent and Trademark Affairs, U.S. Patent Office: Area Code (703) 557-3957.

WILLIAM E. SCHUYLER, Jr.,
Commissioner of Patents.

Mar. 24, 1970.

[873 O.G. 2]

(163) NEW LOOSE-LEAF RULE BOOK

A new up-dated loose-leaf edition of the "Rules of Practice in Patent Cases" dated January, 1970, will be available on or about Apr. 6, 1970, from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C., 20402. The new edition will be available on a subscription basis rather than the previous single copy basis. The subscription rate of this edition will be $2.00 domestic, plus 50 cents additional for foreign mailing. This price includes the basic manual and future revisions for an indefinite period. Binders for the new loose-leaf rule book will not be available from either the Superintendent of Documents or the Patent Office.

RICHARD A. WAHL,
Assistant Commissioner.

Mar. 12, 1970.

[873 O.G. 4]

(164) TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

CHAPTER 1—PATENT OFFICE, DEPARTMENT OF COMMERCE

Subchapter A—General

PART 5—SECRECY OF CERTAIN INVENTIONS AND LICENSES TO FILE APPLICATIONS IN FOREIGN COUNTRIES

Requirements of Other Agencies Relating to Export of Technical Data

Sections 5.18 and 5.19 of Title 37, Code of Federal Regulations, are hereby revised as set forth below.

The revised sections provide a summary and cross-reference to the recently published regulations of both the Department of State and the Bureau of International Commerce of the Department of Commerce. (See 35 F.R. 1008 and 35 F.R. 3029.)

Since the revision imposes no burden on any person, notice, and public procedure thereon are deemed unnecessary.

§ 5.18 *Arms, ammunition, and implements of war.*

(a) The exportation of technical data relating to arms, ammunition, and implements of war generally is subject to the International Traffic in Arms Regulations of the Department of State (22 CFR Parts 121–128); the articles designated as arms, ammunition, and implements of war are enumerated in the U.S. Munitions List, 22 CFR 121.01. However, if a patent applicant complies with regulations issued by the Commissioner of Patents under 35 U.S.C. 184, no separate approval from the Department of State is required unless the applicant seeks to export technical data exceeding that used to support a patent application in a foreign country. This exemption from Department of State regulations is applicable regardless of whether a license from the Commissioner is required by the provisions of §§ 5.11 and 5.15 (22 CFR 125.04(b), 125.20(b)).

(b) When a patent application containing subject matter on the Munitions List (22 CFR 121.01) is subject to a secrecy order under § 5.2 and a petition is made under § 5.5 for a modification of the secrecy order to permit filing abroad, a separate request to the Department of State for authority to export classified information is not required (22 CFR 125.05(d)).

§ 5.19 *Export of technical data.*

(a) Under regulations established by the U.S. Department of Commerce, a validated export license from the Bureau of International Commerce may be required for the foreign filing of a patent application, under certain conditions. The pertinent regulations are set forth in 15 CFR Parts 370–372 and 379.

(b) A validated export license is required for the foreign filing of patent applications:

(1) Containing certain technical data, unless such foreign filing is in accordance with the regulations of the U.S. Patent Office (15 CFR 379.4(c), (d)); or

(2) In certain designated countries or areas,[1] if the application contains any restricted technical data [2] not exportable under provisions of 15 CFR 379.3.

(c) A validated export license is not required for the foreign filing of a patent application in any case where:

(1) The data contained in the patent application is generally available to the public in any form (15 CFR 379.3(a)); or

(2) The foreign filing is in accordance with the regulations of the U.S. Patent Office and (i) the patent application has been previously filed abroad in one of the "early publication countries," [3] or (ii) the data contained in the application is the same as that in an application for which the U.S. Patent Office has issued a notice that the patent has been scheduled for printing and publication (15 CFR 379.3(c)(2)).

(d) A validated export license is not required for data contained in a patent application prepared wholly from foreign origin technical data where such application is being sent to the foregn inventor to be executed and returned to the United States for subsequent filing in the U.S. Patent Office (15 CFR 379.3(c)(1)).

(e) Inquiries concerning the export control regulations for the foreign filing of patent applications should be made to the Office of Export Control, Bureau of International Commerce, Department of Commerce, Washington, D.C. 20230.

(Sec. 1, 66 Stat. 793; 35 U.S.C. 6)

Effective date. These revisions shall become effective upon publication in the Federal Register.

WILLIAM E. SCHUYLER, JR.,
Commissioner of Patents.

Approved: April 14, 1970.

MYRON TRIBUS,
Assistant Secretary for Science and Technology.

[F.R. Doc. 70–4859; Filed, Apr. 21, 1970; 8:45 a.m.]

Published in 35 F.R. 6430, Apr. 22, 1970

[1] Albania, Bulgaria, China (Mainland) [including Inner Mongolia, the provinces of Tsinghai and Sikang, Sinkiang, Tibet, and Manchuria (includes the former Kwantung Leased Territory, the present Port Arthur Naval Base Area, and Liaoning Province), but excluding Republic of China (Taiwan) (Formosa) and Outer Mongolia], Communist-controlled area of Vietnam, Cuba, Czechoslovakia, East Germany (Soviet Zone of Germany and the Soviet Sector of Berlin), Estonia, Hungary, Latvia, Lithuania, North Korea, Outer Mongolia, Poland (including Danzig), Rumania, Southern Rhodesia, and Union of Soviet Socialist Republics (15 CFR Part 370, Supplement No. 1).

[2] 15 CFR 379.4(a), (b).

[3] Belgium, Costa Rica, Denmark, Ecuador, Finland, France, Honduras, Iceland, Jamaica, Luxembourg, Netherlands, Nicaragua, Norway, Panama, Portugal, Sweden, Trinidad, Turkey, Republic of South Africa, Uruguay, Venezuela, and West Germany (Federal Republic of Germany) (15 CFR 379.3(c)(2)).

[874 O.G. 688]

(165) UNITED STATES DELEGATION TO THE DIPLOMATIC CONFERENCE ON PATENT COOPERATION TREATY

The Departments of State and Commerce announced on May 8 the membership of the United States Delegation to the Diplomatic Conference to be held in Washington May 25–June 19 on the proposed Patent Cooperation Treaty.

Co-Chairmen of the Delegation are Eugene M. Braderman, Deputy Assistant Secretary of State for Commercial Affairs and Business Activities, and William E. Schuyler, Jr., Commissioner of Patents, Patent Office, U.S. Department of Commerce.

Alternate Co-Chairmen are George R. Clark, General Patent Counsel, Sunbeam Corporation, Chicago, Illinois, and Harvey J. Winter, Acting Chief, Business Practices Division, Department of State.

Senior Advisors are James W. Brennan, International Patent Specialist, Patent Office, U.S. Department of Commerce, and Edward F. McKie, Jr., Patent Attorney, Birch, Swindler, McKie and Beckett, Washington, D.C.

Advisors are Donald W. Banner, General Patent Counsel, Borg-Warner Corporation, Chicago, Illinois; Robert B. Benson, General Patent Attorney, Allis-Chalmers Corporation, Milwaukee, Wisconsin; Pasquale J. Federico, Examiner-in-Chief (retired), U.S. Patent Office; H. Dieter Hoinkes, International Patent Specialist, Patent Office; W. Brown Morton, Jr., Patent Attorney, McLean, Morton and Boustead, Washington, D.C.; Sylvia E. Nilsen, Deputy Assistant Legal Adviser, Department of State; and William A. Smith, III, International Patent Specialist, Patent Office.

[874 O.G. 1014]

(166) DELAY IN ISSUANCE OF PATENTS

On June 9 and June 16, 1970, only reissue patents, design patents, and trademark registrations will be issued due to circumstances involving the printing of patent specifications. Delays may occur in filling orders for newly issued patents.

WILLIAM E. SCHUYLER, JR.,
Commissioner of Patents.

May 21, 1970.

[875 O.G. 327]

(167) SECRECY OF CERTAIN INVENTIONS AND LICENSES TO FILE APPLICATIONS IN FOREIGN COUNTRIES

[37 CFR Part 5]

Defense Inspection of Patent Applications

Notice is hereby given that, pursuant to the authority contained in section 6 of the Act of July 19, 1952 (66 Stat. 793; 35 U.S.C. 6), the Patent Office proposes to revise § 5.1 of Title 37, Code of Federal Regulations, as set forth below.

Parties who desire to present their views, objections, recommendations, or suggestions in connection with this proposed revision are invited to do so by letter addressed to the Commissioner of Patents, Washington, D.C. 20231, on or before July 24, 1970. An oral hearing will not be scheduled.

Any written comments or suggestions not specifically designated as confidential may be inspected by any person upon written request a reasonable time after the closing date for submitting comments.

The proposed revision of § 5.1 would modify the procedures for administering 35 U.S.C. 181. As currently written, § 5.1 authorizes defense agencies to inspect patent applications relating to national security only at the Patent Office. Many representatives of defense agencies, however, are not located in the Washington, D.C. area. The requirement for representatives to travel to the Patent Office often results in considerable expense and delay in conducting the security review. Under the proposed revision of § 5.1, the Patent Office would send copies of these applications to the defense agencies instead of waiting for the representatives to come to the Office. Since some representatives travel to the Patent Office only two or three times per year, this procedure would enable more prompt review in many cases.

Under the proposed change, the Patent Office would send, in microfiche form, copies of applications which might be related to national security, to defense agencies under conditions insuring the confidentiality required by 35 U.S.C. 122. The copies would be sent with the requirement that they would be promptly returned to the Patent Office or destroyed if a secrecy order were not imposed. If a secrecy order were imposed, the copy would be promptly destroyed or returned when the order was rescinded. Access to the copies would be limited to responsible agency representatives who would be required to sign an acknowledgement accepting the condition that information obtained would be used for no other purpose than the administration of 35 U.S.C. 181–188. Such a procedure would provide better service to the public by enabling the defense agencies to inspect applications promptly and at less expense.

§ 5.1 *Defense inspection of certain applications.*

In accordance with the provisions of 35 U.S.C. 181, patent applications containing subject matter the disclosure of which might be detrimental to the national security are made available for inspection by defense agencies as specified in said section. Only applications obviously relating to national security, and applications within fields indicated to the Patent Office by the defense agencies as so related, are made available. The inspection will be made only by responsible representatives authorized by the agency to review applications. Such representatives are required to sign a dated acknowledgment of access accepting the condition that information obtained from the inspection will be used for no purpose other than the administration of 35 U.S.C. 181–188. Applications relating to atomic energy are made available to the Atomic Energy Commission as specified in § 1.14 of this chapter.

WILLIAM E. SCHUYLER, JR.,
Commissioner of Patents.

Approved: May 22, 1970.

MYRON TRIBUS,
Assistant Secretary for Science and Technology.

[F.R. Doc. 70–6551; Filed, May 26, 1970; 8:49 a.m.]

Published in 35 F.R. 8290, May 27, 1970

[875 O.G. 373]

(168) PATENT FRONT PAGE FORMAT

August 4, 1970 marks the inauguration of certain changes and innovations in the form and method of producing printed copies of patents. Nearly 100 patents in this issue were electrophotographically composed for printing as part of a comprehensive system for developing and utilizing a patent full-text library in computer processable form. Numbers of patents produced in this manner are scheduled to increase until *all* patents enter the machineable data base.

Patents produced by this new system are distinguishable in appearance from all others in the following respects:

(a) Front page

The first sheet of each patent presents an arrangement of the applicable bibliographic type of data elements which are itemized and discussed elsewhere; an abstract of the disclosure (or a claim when no abstract is available); and, a reduced reproduction of a representative drawing figure when the patent contains any drawings.

(b) Other changes

With identification of the patent appearing on the front page, the title of the invention and the name of the inventor will no longer be printed in the heading of drawings. The patent number, date of issuance, and sheet-of-sheets information will continue to be printed on the drawings.

All of the bibliographic type of data and the abstract which previously appeared on sheets containing text matter are removed from such pages and consolidated on the front page.

Data elements presented on the front page are accompanied by a number which appears in brackets.

The numbers are data element identifiers which have been adopted internationally for use on patents and published applications to facilitate the worldwide use of such documents as set forth below:

[11] Patent number
[21] Application number
[22] Filing date
[31] Application number (of a Convention priority application)
[32] Filing date (of Convention priority application)
[33] Country in which the Convention priority application was filed
[45] Date of Patent issue: followed by terminal disclaimer, if any
[51] International Patent Classification: basic classification in bold face type; other in light face
[52] U.S. Classification: Original class and subclass in bold face type; cross-references in light face
[54] Title of the invention: Followed by the number of claims and drawing figures
[56] References cited: List of prior art documents cited by the examiner, arranged in the following categories:
United States Patents
Foreign Patents or Applications
Other Publications

[60] Related U.S. Applications:
[62] Due to Division(s)
[63] Due to Continuation(s)
[64] Due to reissue(s)
[72] Name(s) of the Inventor(s)
[73] Assignee(s)
[•] Field of Search: Subclasses recorded on the file wrapper as searched by the examiner
[•] Primary Examiner: The person responsible for review of the patent allowance or who, in addition, examined and allowed the patent application
[•] Assistant Examiner: the person who examined and allowed the patent application, other than a primary examiner
[•] Attorney: the principal attorney of record at the time the allowed application was prepared for patent printing
[•] Abstract

Element numbers have not been assigned to the items denoted by the sign [•]

For earlier information respecting the front page format and date entries, reference is made to the notice published in the OFFICIAL GAZETTE of March 11, 1969 (860 O.G. 336–7).

WILLIAM E. SCHUYLER, JR.,
July 16, 1970. *Commissioner of Patents.*

[877 O.G. 1]

(169) DISCLOSURE DOCUMENT PRACTICE

The notice of March 26, 1969 (862 O.G. 1) establishing the Disclosure Document Program indicated that a document submitted under this program will be destroyed two years after its receipt date unless it is referred to in a related patent application within said two year period.

In order to implement the retention aspect of this program, it is necessary that reference to each Disclosure Document, referred to in a patent application, be made in a separate letter, identifying the Document by its title, number, and date of receipt. Acknowledgment of receipt of this letter will be made in the next official communication from the Patent Office.

RICHARD A. WAHL,
Aug. 11, 1970. *Assistant Commissioner.*

[878 O.G. 1]

(170) TITLE 37—PATENTS, TRADEMARKS, AND COPYRIGHTS

CHAPTER 1—PATENT OFFICE, DEPARTMENT OF COMMERCE

Subchapter A—General

PART 5—SECRECY OF CERTAIN INVENTIONS AND LICENSES TO FILE APPLICATIONS IN FOREIGN COUNTRIES

Defense Inspection of Patent Applications

Notice of proposed rule making regarding the revision of § 5.1 of Title 37, Code of Federal Regulations, dealing with defense inspection of patent applications, was published in the Federal Register of May 27, 1970 (35 F.R. 8290). Interested persons were invited to submit written views, objections, recommendations, or suggestions pertaining to the proposal.

Full consideration has been given to the comments received and changes have been made in the text of the original proposal where appropriate.

In consideration of the foregoing, and pursuant to the authority contained in section 6 of the Act of July 19, 1952 (66 Stat. 793; 35 U.S.C. 6), § 5.1 of Title 37, Code of Federal Regulations, is hereby revised as follows:

§ 5.1 *Defense inspection of certain applications.*

In accordance with the provisions of 35 U.S.C. 181, patent applications containing subject matter the disclosure of which might be detrimental to the national security are made available for inspection by defense agencies as specified in said section. Only applications obviously relating to national security, and applications within fields indicated to the Patent Office by the defense agencies as so related, are made available. The inspection will be made only by responsible representatives authorized by the agency to review applications. Such representatives are required to sign a dated acknowledgment of access accepting the condition that information obtained from the inspection will be used for no purpose other than the administration of 35 U.S.C. 181–188. Copies of applications may be made available to such representatives for inspection outside the Patent Office under conditions assuring that the confidentiality of the applications will be maintained, including the conditions that: (a) All copies will be returned to the Patent Office promptly if no secrecy order is imposed, or upon rescission of such order if one is imposed, and (b) no additional copies will be made by the defense agencies. A record of the removal and return of copies made available for defense inspection will be maintained by the Patent Office. Applications relating to atomic energy are made available to the Atomic Energy Commission as specified in § 1.14 of this chapter.

Effective date.—This revision shall become effective upon publication in the Federal Register.

Issued: September 29, 1970.

WILLIAM E. SCHUYLER, JR.,
Commissioner of Patents.

Approved:

MYRON TRIBUS,
Assistant Secretary for Science and Technology.

[F.R. Doc. 70–13720; Filed, Oct. 12, 1970, 8:47 a.m.]

Published in 35 F.R. 16043, Oct. 13, 1970

[880 O.G. 739]

INDEX

A

	Items
Abandonment:	
Application at Board of Appeals	121
Transfer of Drawings	65
Abstracts, Patent:	
Format	134
Printed in Official Gazette	132, 135
Requirements	131, 133
Actions, Office:	
Addressing System	22
Attachments to	8
Carbon Copy	24
First Page Form	12, 74
Affidavits	95, 126
Amendments:	
After Final Rejection	70, 93
Basis in Original Disclosure	96
Claims—Brackets	98
Examiners' Amendment Practice	40, 97
Fees	31, 39
Hand Delivery of	7, 23, 91
Appeals:	
Abandonment of Application on Appeal	121
Attorney Appearances Before Board	42
Briefs	113–115, 117, 119, 123
Confidential Memoranda	124
Dismissal	115
Examiner Appearances Before Board	120, 122, 144
Format of Notice	118
Group Number on Papers	3
Reopening of Prosecution After Decision by Board	90
Assignee, Issue of Patent to	29
Assignments:	
Accessibility of Records	25
Notification re Conflict	26
Recording of Certified Copies	27
Statement at Time of Issue	29

C

Certificates of Correction	128–130
Claim Interpretation	88
Claims:	
Dependent	34, 79, 86
Markush Group	68, 104
Method	84
Negative Limitations	68, 81
Non-elected	105
Classification, Patent	20, 142
Computer Programs	89, 151, 155
Continuing Applications:	
Chains of	59
Foreign Priority	60
Reference Citations in	141
Res Judicata	76
Streamline Continuations	54–56, 62
Correspondence:	
Necessary Information on Papers	3, 10, 17, 50, 53
Telephone Numbers	2, 5
ZIP Code	6
Transmittal Forms	19, 29

D

Declaration in Lieu of Oath	43
Defense Inspection	167, 170
Defensive Publication Program	150, 152, 154, 158
Delay in Issuance	166
Dependent Claims	34
Trial Multiple Dependent Claim Practice	79, 86
Deposit Accounts	30, 32, 33, 35, 40
Design Patent Practice	83
Diligence	18
Diplomatic Conference	162, 165
Directory of Registered Attorneys/Agents	15
Disclaimers, Terminal	67, 75, 82
Disclosure, Application	46, 47, 51
Disclosure Document Program	156, 169
Divisional Applications	50, 101
Double Patenting	71, 75, 82
Drawings	63–65
Drug Guidelines	77

E

Effective Date of U.S. Patent	57
Election of Species	102, 104, 108
Environmental Quality	93
Examiners' Amendment Practice	40, 97
Extensions of Time	109, 110, 118, 119, 145, 147

F

Fees	31, 35–39, 63, 116
Filing Date:	
Incorporation by Reference	48
Photoprints as Drawings	63
Plant Patent Applications	45
Final Rejection:	
First Action	85
Non-Final Second Action	72
Prosecution After Final Rejection	70, 91
Time for Response	111, 112
First Action Procedure	74
Foreign Exchange Programs:	
Philippines-U.S.	149
Swedish-U.S.	157
Foreign, Miscellaneous Matters:	
Citations for Foreign Patents	136
Informal Applications	66
Orders for Copies of Foreign Patents	16
Priority in Reissue Applications	52
Priority in Continuing Applications	60
Formats:	
Certificate of Correction	130
Front Page of Patent	168
Notice of Appeal	118
Patent Headings	58
Requesting Streamline Continuation	56
Terminal Disclaimer	67
Function of Machine—Rejection	84

G

German Requirements in Convention Cases	61
Guidelines:	
Computer Program Applications—Rescission of Guidelines	89, 151, 155
Disclosures of Utility in Drug Cases	77
Incorporation by Reference in Patent Applications	47, 48
Model Patent Application	44
Preparation of Patent Abstracts	134
Preparation of Patent Application Disclosures	46, 51

H

Headings, Patent	58
Hearings:	
Appeal	120, 122
Trademark	144
Holidays	159

I

Incorporation by Reference	47, 48
Informal Applications of Foreign Applications	66
Inquiries, Status	1, 4, 18
Interference Practice	125–127
Interviews	99, 100
Inventors, Change of	106

L

Licenses to File Applications in Foreign Countries	164

M

Mailing Address, Patent Office	13
Multiple Dependent Claim Practice—Trial	79, 86

	Items
N	
Non-Elected Claims	105
Non-Final Second Action Rejection Practice	72
O	
Orders:	
Defensive Publications	158
Foreign Patents and/or Published Applications	16
Microfilm Classification Record	20
References Cited in SSP Actions	139
P	
Patentability Brief	87
Patentees, List of	14
Petition to Revive Practice	92, 94
Photocopies of Applications	49
Photoprints as Drawings	63
Plant Patent Applications	45
Post Card Receipt	11, 21
Post Final Rejection Practice	70, 91
Postal Emergency:	
Extension of Time	145, 147
Field Offices	145, 146, 148
Pre-Examination	87
Printing Priorities	153
Prior Art:	
Voluntary Citation by Applicants	140
Rejections Not Based on Prior Art	68
Priority:	
Filing of Foreign Priority Papers	53
Foreign Priority of Continuing Applications	60
German Applications	61
Reissue Applications	52
Public Information	9, 20, 132, 135
Publications, Citation of	136
R	
Recording of Instruments	27
References:	
Automatic Furnishing	137–139, 141
Citation at Allowance	138
Classification Listed in Patent	142
Reissue Applications—Foreign Priority	52
Rejections:	
Final Rejection—Time for Response	111, 112
First Action Final	85
Mere Function of Machine	84
Non-Final Second Action	72
Rejections—*Continued*	
Not Based on Prior Art	68, 81
Prosecution After Final Rejection	70, 91
Res Judicata	76
Reopening Prosecution After Board of Appeals Decision	90
Res Judicata	76
Restriction and Election	73, 102, 103, 107
Revival	92, 94
Rule Changes:	
Certificates of Correction (Rules 332, 323)	129
Defensive Publication Program—Extension	150, 152, 154
Petitions to the Commissioner (Rule 181)	161
Secrecy Orders	164, 167, 170
Transfer of Regulations (Title 37)	160
Rules, New Looseleaf Book	163
S	
Search Exchange Programs:	
Philippines-U.S.	149
Swedish-U.S.	157
Search Room	28
Secrecy of Inventions	164, 167, 170
Special Treatment of Applications:	
Special Examining Procedure	69, 73, 80
Applications To Be Taken Up Special	78, 92, 93, 143
Species, Election of	102, 104, 108
Status:	
Inquiries	4, 18
Of Application Referred to in Patent	1
Streamline Continuation Practice	54–56, 62
T	
Technical Rejections	68, 81
Telephone Practice	100, 102
Time for Response:	
Extensions	109, 110
Final Rejection	111, 112
Trademarks	143, 144
Transmittal Forms	19, 29
U	
U.S. Patent, Effective Date of	57
W	
Withdrawal of Attorney	41
Withdrawal of Final Rejection After Notice of Appeal	116

REISSUES

JANUARY 12, 1971

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

27,024

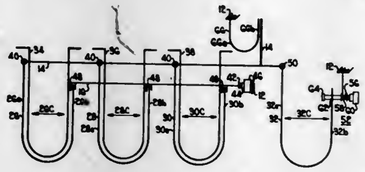
THREE-PHASE BIMETAL OVERLOAD RELAY

Harold E. Whiting, Milwaukee, and Walter C. Karch, Grafton, Wis., and David B. McFadden, Freeport, Ill., assignors to Square D Company, Park Ridge, Ill., a corporation of Michigan

Original No. 3,422,317, dated Jan. 14, 1969, Ser. No. 587,471, Oct. 18, 1966. Application for reissue Oct. 8, 1969, Ser. No. 882,759

Int. Cl. H02h *3/00, 3/28, 71/16*

U.S. Cl. 317—46 **12 Claims**



An overload relay having three identical operating bimetal elements, a snap switch, and a lever arrangement for transmitting the movements of the operating bimetal elements to the push button of the snap switch when the operating bimetals are heated. An ambient-compensating bimetal element that is identical to the operating bimetal elements has an operative connection with the lever arrangement for compensating the effect of movement of the operating bimetal elements for variations in ambient temperature. The relay also includes a means for causing the snap switch to be actuated when less than all of the operating bimetal elements are heated to a temperature lower than the temperature required to actuate the snap switch when all of the operating bimetals are heated and a means to vary the time required to actuate the snap switch in accordance with the rate at which the bimetals are heated.

27,025

PROCESS OF CONDITIONING PARTICULATE MATERIALS *WITH AN ORGANOSILICON COATING* FOR USE IN ORGANIC EXPLOSIVES

Louis McDonald, Altadena, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

No Drawing. Original No. 3,403,061, dated Sept. 24, 1968, Ser. No. 141,840, Feb. 1, 1950. Application for reissue June 25, 1969, Ser. No. 846,985

Int. Cl. C06b *19/02*

U.S. Cl. 149—7 **7 Claims**

A method of forming a protective, water resistant film on finely divided solids by contacting the solids with a silane. The silane reacts with adsorbed water forming a water resistant polymeric, substituted silicon oxide on the particle surfaces.

27,026

PREPARATION OF POROUS STRUCTURES

Turner Alfrey, Jr., Midland, Mich., and William G. Lloyd, Bowling Green, Ky., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Original No. 3,322,695, dated May 30, 1967, Ser. No. 563,634, July 1, 1966, which is a continuation-in-part of Ser. No. 253,084, Jan. 22, 1963. Application for reissue Mar. 20, 1969, Ser. No. 817,231

Int. Cl. C08f *47/08;* **C08j** *1/14*

U.S. Cl. 260—2.5 **6 Claims**

Method of preparing a porous polymer which comprises polymerizing either an alkenyl aromatic monomer, an acrylate monomer, a vinyl ester monomer, or mixtures thereof and a polymerizable cross-linking agent in a binary solvent having a certain range of solubility parameter.

27,027

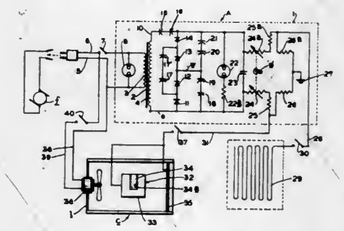
MEANS FOR ARTIFICIALLY PRODUCING AND CONTROLLING ELECTRIC POWER FIELD STRENGTHS AND FREELY SUSPENDED IONS IN THE ATMOSPHERE

Cristjo Cristofv, Evanston, Ill., and George N. Cristofv, Phoenix, Ariz.; said George N. Cristofv assignor of one-third to Jordan H. Stover III, Tucson, Ariz.

Original No. 3,311,108, dated Mar. 28, 1967, Ser. No. 175,419, Feb. 26, 1962. Application for reissue Mar. 28, 1969, Ser. No. 830,163

Int. Cl. A61n *1/44*

U.S. Cl. 128—190 **5 Claims**



A device for improving psychomotor performance of living beings including an enclosure, an anode electrode near the ceiling and a metal capsule near the floor of the enclosure, an anion generator and means for emitting negative ion particles within and from the capsule respectively, a rectifier device for an alternating current power source, and conductor means connecting the two output terminals of the rectifier device to said anode electrode and capsule respectively.

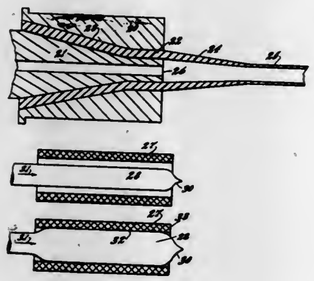
27,028
FEP-FLUOROCARBON TUBING

Berten E. Ely, Jr., Cheney, John W. Burley, Ardmore, and Ira T. Clement, Glen Mills, Pa., assignors to Penntube Plastics Company, a corporation of Delaware

Original No. 3,265,092, dated Aug. 9, 1966, Ser. No. 447,844, Apr. 13, 1965, which is a continuation-in-part of Ser. No. 372,602, June 4, 1964, now Patent No. 3,196,194. Application for reissue Nov. 12, 1969, Ser. No. 876,017

Int. Cl. F16l *11/00, 9/14;* **B44d** *1/34;* **B27j** *5/00;* **B29c** *17/06, 17/07, 23/00*

U.S. Cl. 138—118 **11 Claims**



This invention relates to heat shrinkable tubing of a copolymer of tetrafluoroethylene and hexafluoropropylene having specified ratios of expanded diameter to recovered diameter.

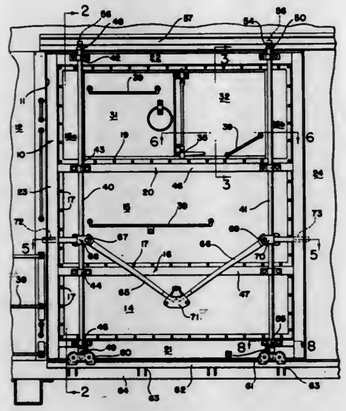
27,029
DOOR

Thomas C. Soddy, Downers Grove, and Theodore Z. Herr, Highland Park, Ill., by Youngstown Steel Door Co., Cleveland, Ohio, a corporation of Ohio, assignee

Original No. 3,341,972, dated Sept. 19, 1967, Ser. No. 528,678, Jan. 4, 1966, which is a division of Ser. No. 329,434, Dec. 10, 1963. Application for reissue Apr. 3, 1968, Ser. No. 771,680

Int. Cl. E05d *15/10*

U.S. Cl. 49—220 **4 Claims**



A plug type door for a railroad car having handle means to rotate a pair of vertical pipes with cranks secured on their upper and lower ends to open and close the door. Each of the cranks extend transversely from the longitudinal axis of the pipe to which it is secured such that the longitudinal axis of the pipe and the longitudinal axis of the crank define a plane substantially perpendicular to the plane of the door when the door is in the closed position to minimize door kick-back or flying handles when lading or gasket compression exerts a high internal load against the door and to hold the door more rigidly in closed condition against deflection under the load force.

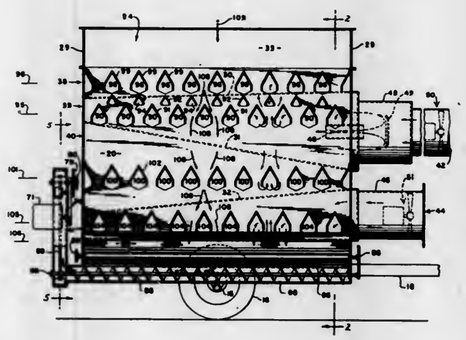
27,030
GRAIN DRYING PROCESS AND APPARATUS

Charles M. Kline, Reinholds, and Albert M. Best, New Holland, Pa., assignors to Sperry Rand Corporation, a corporation of Delaware

Original No. 3,373,503, dated Mar. 19, 1968, Ser. No. 606,968, Jan. 3, 1967. Application for reissue Feb. 11, 1970, Ser. No. 10,549

Int. Cl. F26b *3/14, 17/12*

U.S. Cl. 34—33 **9 Claims**



A continuous grain flow grain drying process and apparatus having air inlet and exhaust ducts particularly relatively located to enable the use of considerably higher drying air temperatures than those of conventional grain driers.

27,031
METHOD OF OPTICAL BRIGHTENING

Ichiro Okubo and Michihiro Tsujimoto, Tokyo, Japan, assignors to Mitsui Toatsu Chemical, Incorporated, Tokyo, Japan, a corporation of Japan

No Drawing. Original No. 3,347,694, dated Oct. 17, 1967, Ser. No. 502,414, Oct. 22, 1965, which is a division of Ser. No. 220,904, Aug. 31, 1962, now Patent No. 3,262,929, dated July 26, 1966. Application for reissue May 26, 1969, Ser. No. 851,503

Claims priority, application Japan, Sept. 12, 1961, 36/33,302, 36/33,303; July 21, 1962, 37/29,641

Int. Cl. B44d *5/06;* **C09k** *1/02*

U.S. Cl. 117—33.5 **23 Claims**

This invention relates to methods for optical brightening utilizing certain novel 2-styryloxazole compounds. The methods are particularly applicable to organic fibrous materials, especially of synthetic nature, aqueous dispersions of the compounds, together with dispersing aids being suitable. The said compounds may be either benzoxazoles or naphthoxazoles and various substituents may be present in their molecular structures. Some of the compounds are found to be especially superior and certain fibrous materials are notably benefited.

PLANT PATENTS

GRANTED JANUARY 12, 1971

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

3,014
ROSE PLANT

Reimer Kordes, Barmstedt, near Elmshorn, Germany, assignor to Jackson & Perkins Company, Newark, N.Y., a corporation of New York

Filed Feb. 10, 1969, Ser. No. 798,199

Int. Cl. A01h *5/00*

U.S. Cl. Plt.—12 **1 Claim**

1. A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of an upright, vigorous, heavily branched and disease resistant plant habit, continuous production of large, well-formed flowers throughout the growing season, an imbricated open flower form, with the center covered by incurved petals, and a distinctive, attractive and exceptionally brilliant Blood Red color of the open flowers, contrasting with the white color on the reverse of the petals.

3,015
PEACH TREE

Lewis Thornton Powell, 8016 N. Winton Way, Winton, Calif. 95388

Filed July 12, 1968, Ser. No. 744,592

Int. Cl. A01h *5/00*

U.S. Cl. Plt.—43 **1 Claim**

A variety of peach tree, of medium size, moderately spreading form, and moderately vigorous growth, which is a regular and very productive bearer of large, relatively uniform freestone fruit having firm flesh, and skin tenacious to the flesh when the fruit is firm ripe; the flesh being an apricot yellow, the pit cavity red which streaks into the flesh, and the skin yellow, partially overspread with red.

3,016
ROSE PLANT

David L. Armstrong, Upland, Calif., assignor to Armstrong Nurseries, Inc., Ontario, Calif., a corporation of California

Filed Jan. 10, 1969, Ser. No. 790,488

Int. Cl. A01h *5/00*

U.S. Cl. Plt.—22 **1 Claim**

A rose plant of the floribunda class which is moderately low growing, and has semi-glossy leaves of leathery texture comprising three to seven leaflets of moderate size; the flowers of said plant having a moderate fragrance and being unusually formal in the arrangement of their double petals, most of which are precisely-imbricated, delicately-waved and fluted, said flowers tending to deepen to a vermilion-orange color early in the flower life, thereafter paling to an unusual brick-orange color; the peduncles having a number of stipitate glands sufficiently pigmented to render them easily visible to the eye; the plant bearing its flowers sometimes on a single stem but usually in clusters of five or more, the clusters being carried upon strong stems of medium to long length; said plant further having a tendency to set hips rather freely under garden conditions, such as prevail in Ontario, Calif.

3,017
FELICIA PLANT

Paul L. Scott, Duarte, Calif., assignor to Burkard Nurseries, Inc., Pasadena, Calif., a corporation of California

Filed Sept. 11, 1968, Ser. No. 759,253

Int. Cl. A01h *5/00*

U.S. Cl. Plt.—68 **1 Claim**

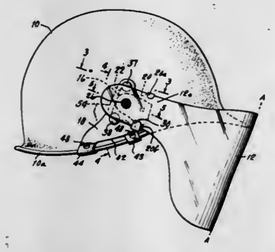
A *Felicia amelloides* characterized by its more compact shape and that the flower heads remain open at night.

PATENTS

GRANTED JANUARY 12, 1971

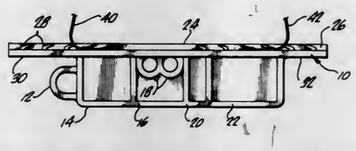
GENERAL AND MECHANICAL

3,553,734
RETRACTABLE EYE SHIELD FOR PROTECTIVE HELMET
Jackson Anthony Alleo, Carbondale, Pa., assignor to Gentex Corporation, Carbondale, Pa., a corporation of Delaware
Filed June 5, 1969, Ser. No. 830,596
Int. Cl. A61f *9/00*
U.S. Cl. 2—10 **7 Claims**



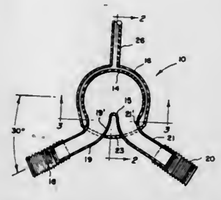
A rigid protective helmet having an eye shield with rearward extensions projecting on each side of the helmet and mounted on pivot mechanisms arranged to enable pivotal movement of the eye shield about a horizontal axis between a shielding position in front of the wearer's eyes and a retracted position above the eyes, wherein each of the pivot mechanisms is fastened to a bracket plate detachably secured to the helmet shell. Each bracket plate includes a channel portion which extends along the rim of a side portion of the helmet and defines a channel for receiving the rim, and an upstanding portion projecting above the channel portion and bearing means for fastening one of the pivot mechanisms to the bracket plate. Each bracket plate also carries one or more set screws, spaced horizontally along the rim of the helmet, and projecting inwardly through threaded sockets in the bracket plate to bear against the helmet rim and thereby to hold the bracket plate clamped in position on the helmet.

3,553,735
APRON CLOSURE AND OBJECT STORING DEVICE
Charles B. Jeffcoat, 815 Deer Path Road, Santa Barbara, Calif. 93103
Filed Jan. 27, 1969, Ser. No. 794,104
Int. Cl. A41d *13/04*
U.S. Cl. 2—52 **9 Claims**



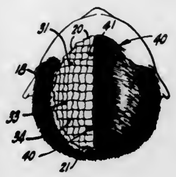
A molded, flexible plastic, closure device for aprons has a plurality of hooks extending laterally across the device's vertical centerline and facing inwardly towards the centerline. In use, the hooks cooperate with eyelets in the sides of an apron of the type used by market employees and the like to secure the sides together through the device at the small of the user's back. Receptacles, pouches and the like on the device store objects utilized by its wearer. The hooks are recessed from the inner, back abutting surface of the device to prevent the hooks from touching the user's back. Excessive hooks may readily be removed from the device after it is sized to suit a particular user's waist measurement.

3,553,736
AUXILIARY VENTRICLE
Adrian Kantrowitz and Steinar Tjønneland, Brooklyn, N.Y., assignors to the United States of America as represented by the Secretary of Health, Education, and Welfare
Filed Nov. 25, 1968, Ser. No. 778,447
Int. Cl. A61f *1/24*
U.S. Cl. 3—1 **3 Claims**



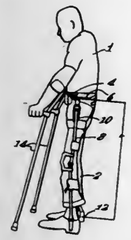
An artificial auxiliary ventricle is provided having a generally spherical shape and an internal configuration to direct or regulate the flow of blood. The unit is implanted in the ascending aorta during short-term inflow and outflow occlusion of the heart after which the circulation is reestablished and the anastomosis completed, or by direct and through side anastomosis without interrupting the circulation. The device is driven by compressed air from an outside tank via an air tube and is controlled by a solenoid valve which is triggered by the ECG or the left ventricular pressure curve.

3,553,737
METHOD OF APPLYING HAIR
Jack Bauman, 3965 J St., Sacramento, Calif. 95819
Filed Apr. 7, 1969, Ser. No. 813,991
Int. Cl. A61b *17/00*; A61f *1/00*; A41g *5/00*
U.S. Cl. 3—1 **14 Claims**



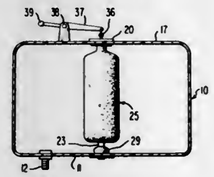
Hair is applied to a scalp area substantially devoid of hair by surgically embedding in the skin of the scalp a plurality of anchor points adjacent the margin of the bald area and thereafter covering the area with an open-mesh gridwork secured to the anchor points, the gridwork serving as a base to which hair is attached in an amount sufficient substantially to conceal the subjacent scalp area.

3,553,738
ELECTROMECHANICAL PROSTHETIC DEVICES FOR THE CONTROL OF MOVEMENTS IN HANDICAPPED INDIVIDUALS
Wladimir Theodore Liberson, P.O. Box 28, Hines, Ill. 60141
Filed June 27, 1966, Ser. No. 560,482
Int. Cl. A61f *1/08, 3/00, 5/00*
U.S. Cl. 3—1.1 **5 Claims**



An electromechanical gait rehabilitation system wherein a pressure actuated sensing device is provided for generating a signal representative of an element of the basic mechanism of normal human gait to control a motor means which is connected to a body support member for pivoting the body support member about an articulated connection with a band that is adapted to encircle the pelvic region of an individual having at least one disabled or missing leg.

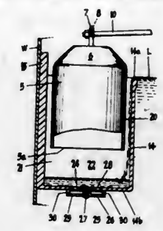
3,553,739
FLUSHING MECHANISM FOR COMMODES
Walter K. Owens, 2915 W. Brainard St., Pensacola, Fla. 32505
Filed May 15, 1968, Ser. No. 729,320
Int. Cl. E03d *3/00*
U.S. Cl. 4—26 **5 Claims**



A low cost pressure flushing mechanism for commodes which may be used as an initial installation or replacement unit in existing tanks. The mechanism may also be housed within a wall to supply one or more wall mounted commode units. The maximum effect of city water main pressure is utilized through the provision in the mechanism of a collapsible and expansible bladder which facilitates the entry of water into the tank up to a desired level.

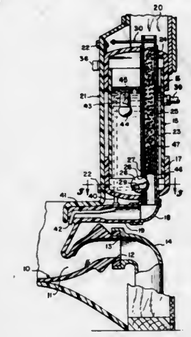
3,553,740
FLOAT CONTROLLED VALVES OF CISTERNS
Clifford Cyril Fogg, Mount Waverley, Victoria, Australia (907 High St., Armadale, Victoria, Australia)
Filed Oct. 21, 1968, Ser. No. 769,229
Int. Cl. E03d *1/32*
U.S. Cl. 4—56 **1 Claim**

This invention provides in or for a flushing cistern a substantially noiseless flush valve of the type including an open water level determining vessel in which the float member is freely suspended so as to form a pressure water chamber within said open vessel below the float member to be charged with cistern replenishing water flowing over the rim of said open vessel as the cistern approaches full capacity whereby pressure is developed in said chamber to impart a quick short lift to said float member and float arm sufficient to close said valve, the water in said



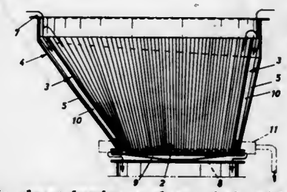
chamber being dischargeable in response to the succeeding flushing operation of the cistern.

3,553,741
COMMODE FLUSHING APPARATUS
Walter K. Owens, Pensacola, Fla. (P.O. Box 15, Beatrice, Ala. 36425)
Filed May 19, 1969, Ser. No. 825,786
Int. Cl. E03d *1/34*
U.S. Cl. 4—67 **8 Claims**



A compact sealed flush tank and flushing components are ideally suited to be formed from plastic so as to be corrosion-resistant and substantially free of wear. Full water main pressure is utilized to produce a pressure flush by trapping and compressing air within the tank and a free floatable ball valve element is unseated by a unique rotatable sleeve valve which assures that the ball will move away from its seat before flushing water begins to be discharged into the commode bowl.

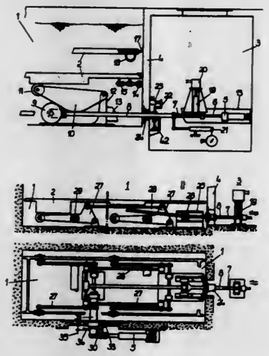
3,553,742
DEVICE AT THE CLOSET CHAIR OF AN ELECTRIC CLOSET
Hans Josef Nordstedt and Lars Folke Delin, Amal, Sweden, assignors to Aktiebolaget Hakanssons Industrier, Amal, Sweden, a corporation of Sweden
Filed Sept. 20, 1966, Ser. No. 580,657
Claims priority, application Sweden, Mar. 18, 1966, 3,591/66
Int. Cl. A47k *11/02*
U.S. Cl. 4—130 **6 Claims**



An electric closet having a closet chair with a bag inserted in said closet chair for collecting faeces. The bag

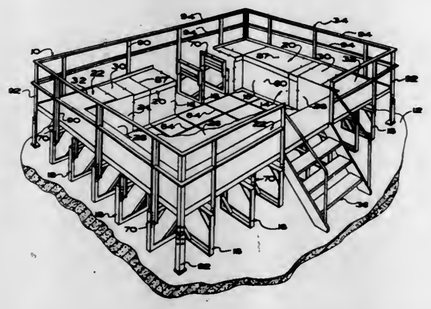
has a flat bottom and side walls diverging upwardly extending from the flat bottom.

3,553,743
DEVICE FOR ALTERING THE IMMERSION DEPTH IN FLUIDS BY MEANS OF A HEIGHT-ADJUSTABLE, IMMERSIBLE FALSE BOTTOM
Alois Lödige, Frankfurterweg 13, Padeborn, Germany
Filed Jan. 8, 1968, Ser. No. 696,225
Claims priority, application Germany, Jan. 11, 1967, L 55,472
Int. Cl. E04h *3/16*
U.S. Cl. 4—172.13 **4 Claims**



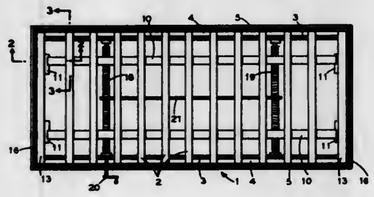
An arrangement for providing baths variable in depth by means of a false bottom actuated by separately accommodated hydraulic machinery, whereby no contamination of the fluid in the bath by oil or the like from the machinery is possible. Safety locking means precluding unforeseen lowering of the bottom is also provided.

3,553,744
ABOVEGROUND SWIMMING POOL CONSTRUCTION
Edgar T. Gillen, North Plainfield, N.J., assignor, by mesne assignments, to Playground Corporation of America, Long Island City, N.Y., a corporation of New York
Filed June 23, 1969, Ser. No. 835,380
Int. Cl. E04h *3/16*
U.S. Cl. 4—172.19 **9 Claims**



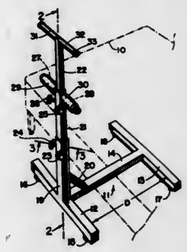
An aboveground swimming pool in which a peripheral wall structure is supported by a plurality of support frames and a peripheral rim structure including a depending skirt and an outwardly projecting deck is supported by a plurality of subframes, each subframe being affixed to a support frame by means enabling adjustment of the level of the peripheral rim structure with respect to a corresponding support frame such that the peripheral rim structure may be maintained at a constant horizontal level while the level of the support frames may vary.

3,553,745
BED FRAME ASSEMBLY
Franz Sproll, 3652 Staatsstrasse, Hilterfingen, Switzerland
Filed Nov. 8, 1968, Ser. No. 774,236
Int. Cl. A47k *13/12*
U.S. Cl. 5—236 **5 Claims**



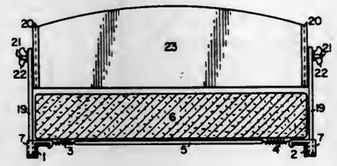
A bed frame assembly having mattress supporting slats, with means for adjusting the firmness of the slats.

3,553,746
SUPPORT DEVICE FOR HELPING A PERSON OUT OF BED
Harry W. Seiger, 520 Arizona Ave., Santa Monica, Calif. 90401
Filed Oct. 31, 1968, Ser. No. 772,190
Int. Cl. A47c *21/00;* **A61g** *7/04*
U.S. Cl. 5—317 **9 Claims**



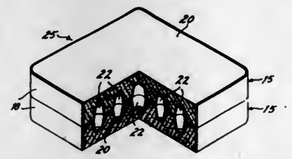
A support device for helping a person or patient with a back injury out of bed by himself includes a base frame positionable adjacent to a side of the bed with suitable foot support means extending under the bed. A vertical column structure is secured to the base frame and extends vertically upwardly past the side of the bed. Hand gripping means secured to and extending laterally from the upper portion of the column means are disposed in a position to enable a person lying on the bed to grip the hand gripping means and pull himself to an upright position and simultaneously swing himself around towards the side of the bed to facilitate his getting out of the bed. An arm support means is also provided on the column means disposed below the hand gripping means for engaging the person's forearm when raising himself thereby providing leverage to greatly assist him in raising and swinging his body.

3,553,747
BED ATTACHMENT
James W. Minton, 5125 Whitsett Ave., North Hollywood, Calif. 91607
Filed May 22, 1969, Ser. No. 826,971
Int. Cl. A47c *22/00*
U.S. Cl. 5—327 **2 Claims**



Fittings and a cross board particularly for supporting the feet of invalids while sitting up in bed. An angle bracket is fitted oppositely on each of the rails of the bed, after which an upright is inserted in a socket in each bracket. The across-bed board is inserted between channel means which are attached to the uprights. Pertinent dimensions are such that insertion of the board creates a side stress on each bracket, thereby to securely hold the whole structure in place.

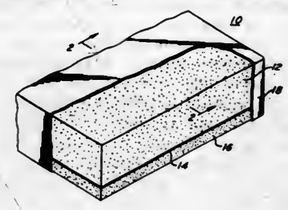
3,553,748
SEATING CONSTRUCTION AND METHOD OF MANUFACTURE
Abe D. Ross, 101 Marine Ave., Wilmington, Calif. 90744
Filed Sept. 26, 1968, Ser. No. 763,057
Int. Cl. A47c *23/00, 27/08*
U.S. Cl. 5—345 **2 Claims**



A seating construction wherein a pair of cushion members are disposed in facing relation, at least one such member having a plurality of recesses formed in its facing surface, and impermeable skins in conforming engagement with the facing surfaces of the cushion members and adhesively secured together, so that sealed chambers are defined within the recesses.

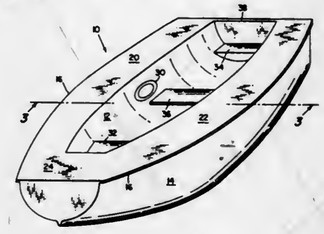
3,553,749
IMPACT CUSHION
Harry Majeske, Swarthmore, Pa. (% Woodland Upholstering Co., 6429 Woodland Ave., Philadelphia, Pa. 19142)
Filed Jan. 17, 1968, Ser. No. 698,649
Int. Cl. A47c *27/00*
U.S. Cl. 5—355 **1 Claim**

An impact receiving cushion which includes an upper or outer soft quick recovery foam element, preferably of polyurethane, superposed on and adherent to a lower or inner harder liquid proof foam element, preferably of closed cell polyethylene. The upper foam element receives the impact, partially encompasses and exerts a drag on the impacting device but transmits such part of the impact as it does not absorb to the lower harder and less resilient foam element. An outer enclosing cover of fabric



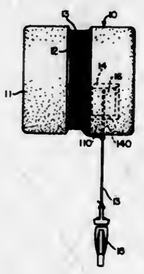
or the like may be provided to reduce the soiling of the foam elements in use.

3,553,750
SMALL BOAT WITH BUILT-IN SAFETY FEATURES
Kenneth A. Christensen, Ventura, Calif., assignor to Marion Johnston and Gladys Endicott, both of Ventura, Calif.
Filed Jan. 22, 1969, Ser. No. 793,150
Int. Cl. B63b *3/00*
U.S. Cl. 9—6 **1 Claim**



A small boat manufactured of highly-buoyant lightweight material and which possesses unusual stability due to a low center of gravity. A feature of the design is the provision of a double-hulled construction and wide deck areas which prevent water from entering when the boat is righted after being capsized.

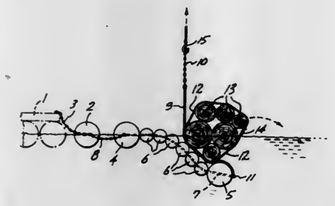
3,553,751
AUTOMATIC MARKER BUOYS
Gerald F. Lewis, 1850 Columbia, Berkley, Mich. 48072
Filed Dec. 2, 1968, Ser. No. 780,365
Int. Cl. B63b *21/52*
U.S. Cl. 9—9 **1 Claim**



An automatic marker buoy for locating and retrieving items lost overboard from boats, docks and the like consisting of a preferably cylindrical float of an exteremely

buoyant material having a retriever line storage groove therearound, a retriever line anchored at the base of said line storage groove and wound therein, said float having a thimble with a reentrant cavity therein fixed in said float adjacent said line storage groove and formed to receive and releasably engage a resilient spring clip tied to the said retriever line near the free end thereof, the free end of said retriever line being securable to an item to be retrieved that may accidentally fall into a body of water, the said spring clip on said retriever line being of such form and resiliency as to become released from said thimble responsive to the buoyancy of the said marker buoy when an item to which the free end of the retriever line of said marker buoy is secured and is lost overboard from a boat, dock or the like, the said retriever line readily unwinding from the retriever line storage groove of the float as the said item sinks in the said body of water.

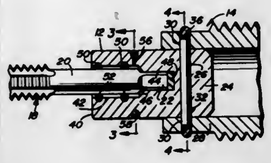
3,553,752
LOG-BUNDLING APPARATUS AND METHOD
Kenneth E. Roberts and Alvin M. Roberts, both of 705 W. McBryde, Montesano, Wash. 98563
Filed Aug. 12, 1968, Ser. No. 751,954
Int. Cl. B63b *35/58*
U.S. Cl. 9—15 **3 Claims**



A plurality of relatively small intermediate logs are connected to and held between two relatively large side logs in side-by-side relationship by flexible ties threaded through the logs to form a floating buoyant bed. Bundling bands and a parbuckle line are laid over such bed transversely of the length of the logs. A stack of logs placed on such bed will cause it to sag for embracing the logs of the stack to form them automatically into bundle relationship. The bands are then secured around the bundle and the parbuckle is pulled to roll the bundle out of the cradle formed by the sagging bed.

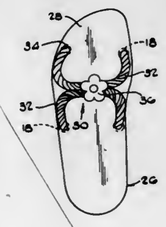
3,553,753
TAP CHUCK WITH OVERLOAD RELEASE
Floyd F. Hundley, Oswego, Ill.
(P.O. Box 503, 500 N. Randall Road, Aurora, Ill. 60507)
Filed Mar. 7, 1968, Ser. No. 711,260
Int. Cl. B23b *31/00;* **B23g** *5/00*
U.S. Cl. 10—129 **13 Claims**

A body adapted to be held and supported at one end by a rotary drive member for rotation of the body about an axis concentric with the axis of rotation of the rotary drive member, the other end of the body having a blind cylindrical endwise outwardly opening counterbore formed therein terminating at its inner end in a noncircular bore concentric with the center axis of the counterbore. The counterbore and bore of the body are adapted to receive the cylindrical shank portion and noncircular terminal end, respectively, of a conventional tap and the counterbore loosely receives the shank portion of the tap and includes axially spaced radially inwardly projecting sealing and centering resilient rings engageable with the shank portion of an associated tap. Further, the body includes a vent passage communicating the exterior of the body with the bore and counterbore inwardly of the innermost sealing and centering ring means and the inner end of the bore has a resilient body seated therein



for engagement by the terminal end of an associated tap, the vent means including one-way check valve means for preventing the movement of air therethrough into said bore and counterbore.

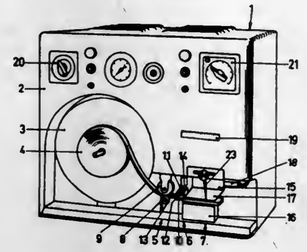
3,553,754
METHOD OF MANUFACTURING UPPERS FOR FOOTWEAR OF THE SANDAL TYPE, AND TO UPPERS PRODUCED BY SUCH METHOD
Norbert Julius Mendelsohn, Durban, Natal, Republic of South Africa, assignor to Merlin Moulded Rubber Manufacturers (Proprietary) Limited, Jacobs, Durban, Natal, Republic of South Africa
Filed Oct. 8, 1968, Ser. No. 765,789
Claims priority, application Republic of South Africa, Jan. 15, 1968, 68/297, 68/298
Int. Cl. A43d *9/00;* **A43b** *3/12*
U.S. Cl. 12—142 **8 Claims**



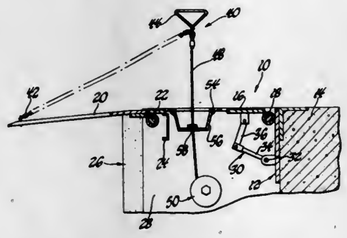
A method of making the uppers of sandals in a manner permitting variation in the choice of materials and designs to meet changes in style and fashion.

3,553,755
METHOD OF AND APPARATUS FOR THE INSERTION OF EYELESS PASSINGS OF LACES IN THE UPPERS OF SHOES
Richard Hoffmann, Hechingen, Hohenzollern, Germany, assignor to Firma Biedermann G.m.b.H., Hechingen, Hohenzollern, Germany, a corporation of Germany
Filed Apr. 25, 1968, Ser. No. 724,069
Int. Cl. A43d *00/00*
U.S. Cl. 12—146 **2 Claims**

A method of and apparatus for insertion of eyeless passings for laces in shoe uppers, comprising the steps of cutting off from a band roll of a band strip having a layer of plastic glue material of a pre-determined length, and ironing simultaneously with heat as long on the inside of the shoe uppers until the glue material has penetrated extensively into the inside of the shoe uppers, and thereafter pushing through the uppers within the range of the glued-on band strip from the outside with heated hole pipes to an extent, that a passage for laces is created and the edge parts are pulled in from the bottom side up to at least in the range passed by the ironed-in glue into the inside of the uppers.



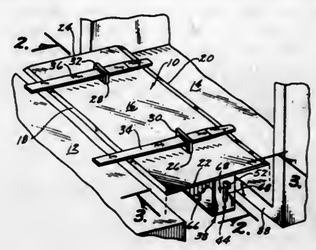
3,553,756
DOCKBOARD
Robert W. Hecker, Jr., Clare, Mich., and Robert C. Beckwith, Milwaukee, Wis., assignors to Loomis Machine Company, Clare, Mich., a corporation of Michigan
Filed Jan. 28, 1969, Ser. No. 794,712
Int. Cl. B65g *11/00*
U.S. Cl. 14—71 **12 Claims**



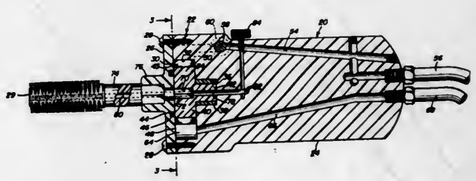
A dockboard assembly including a support means with a ramp pivotally connected to the support means and a lip pivotally connected to the ramp for movement between a pendent position and an extended position to form an extension of the ramp. A chain is connected at one end to the lip and is connected at the other end to a manually graspable handle, both of which are connected to a cable which retracts the chain and handle to a non-use position. The cable is either attached to a retriever reel or a weight.

3,553,757
AUTOMATIC LOCKING DOCK PLATE
Wayne B. Noland, Carlisle, Iowa, assignor to Woodford Manufacturing Company, Des Moines, Iowa, a corporation of Iowa
Filed June 12, 1969, Ser. No. 832,714
Int. Cl. E01d *15/12*
U.S. Cl. 14—72 **7 Claims**

An automatic locking dock plate adapted to bridge supporting structures, and having means thereon to lock the dock plate in position although the distance between the structures may vary. Three embodiments are disclosed and all employ one or more spring loaded locking fingers which pivot into locking position when the dock plate has been positioned between the supporting structures so that a locking finger abuts against one of the supporting structures if the distance between supporting structures is greater than the width of the fixed stop formed by the edges of the dock plate. The three embodiments each employ an override means which overrides the springs connected to the fingers so that the fingers will be pivoted to an unlocked position when the dock plate has been raised by a fork lift truck or the like. The fingers are provided with varying lengths to compensate for various distances between the supporting structures.

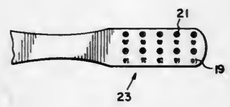


3,553,758
REVERSIBLE, ROTATABLE BRUSH
Gary James Wood, 514 24th St., San Diego, Calif. 92102
Filed June 24, 1968, Ser. No. 739,410
Int. Cl. A61c *17/02;* **A46b** *13/06*
U.S. Cl. 15—24 **9 Claims**



A reversible, rotatable brush employing a casing which functions as a handle and houses a turbine for rotating a brush. The casing is provided with two passages leading to the turbine, one being disposed for causing the turbine to rotate in one direction, and the other being disposed so as to cause the turbine to rotate in the opposite direction. A valve-controlled passage for water is connected with the brush.

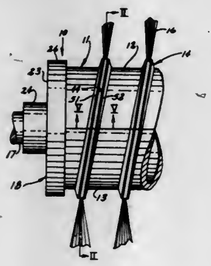
3,553,759
TOOTHBRUSH
Charles M. Kramer, 924 Patapsco Ave., Baltimore, Md. 21225, and Kenneth Sober, 3418 Garrison Farms Road, Pikesville, Md. 21208
Filed Sept. 24, 1968, Ser. No. 761,995
Int. Cl. A46b *9/06*
U.S. Cl. 15—110 **6 Claims**



A toothbrush which serves to clean the teeth and simultaneously massage the gums without damaging either the teeth or the gums is disclosed. The toothbrush comprises

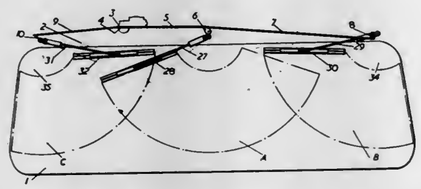
a handle with a head at one end thereof. The head includes a central bristle section and a pair of longitudinal rows of tips of a soft flexible material, preferably rubber, on either side of the central bristle section and/or alternating rows of bristles and rubber tips. In one embodiment the rubber tips are longer than the bristles, thereby affording protection of the gums from the action of the bristles. In another embodiment the rubber tips are severed into web-like sections to fan out at the outer ends thereof thereby providing a greater surface area for stimulating the gums.

3,553,760
BRUSH STRUCTURE AND METHOD OF MAKING SAME
Gaylord J. Clark, P.O. Box 216, Coloma Township, Berrien County, Mich. 49038
Continuation-in-part of application Ser. No. 693,428, Dec. 26, 1967. This application Mar. 13, 1969, Ser. No. 807,008
Int. Cl. A46b 7/10
U.S. Cl. 15—182 **15 Claims**



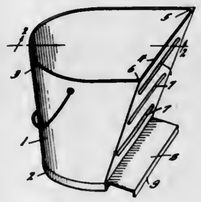
A rotary brush construction comprised of an elongated, channel-shaped member wrapped around a cylindrical core and rigidly secured thereto to form a plurality of closely spaced, spiral flights in which the brush elements are firmly seated. The method is carried out by cutting the core along a diametrical plane including the central axis of the core, either before or after the flights of the channel-shaped member are secured thereto, and mounting the channel-shaped member upon the core with the brush elements rigidly seated in said channel-shaped member.

3,553,761
WINDSCREEN WIPER SYSTEMS
Derek Norman Stevens, Dunstable, England, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 5, 1958, Ser. No. 732,890
Claims priority, application Great Britain, May 10, 1957, 14,902/57
Int. Cl. A47l 1/02
U.S. Cl. 15—250.14 **11 Claims**



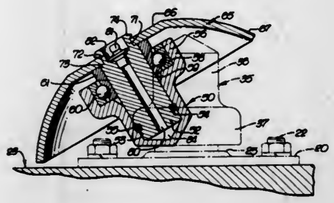
1. A wiper system for a windscreen, including, a main wiper arm and blade arranged to wipe a central portion of the windscreen, two auxiliary wiper arms and blades respectively arranged to wipe portions of the windscreen to each side of the central portions and having paths which overlap portions of the path of said main blade, and single motor means operatively connected to said arms for imparting in phase movement to said main arm and one of said auxiliary arms and movement to said other auxiliary arm in phase opposition thereto so as to preclude interference between said blades in the overlapping portions of their paths.

3,553,762
CONTAINER
Raymond D. Padgett, Jr., 2935 John Marshall Drive 22044, and George R. Padgett, 6002 Argyle Drive 22041, both of Falls Church, Va.
Continuation of application Ser. No. 651,232, July 5, 1967. This application Dec. 8, 1969, Ser. No. 878,987
Int. Cl. A47j 47/18; B44d 3/12
U.S. Cl. 15—257.06 **10 Claims**



A bucket with at least one inclined flat side wall that forms an obtuse angle with the base wall of said bucket said wall having indentations that engage a paint or adhesive roller, said bucket further having a stabilizing or bracing means at or near said base, and means to rigidly fasten said stabilizing means below said flat side wall.

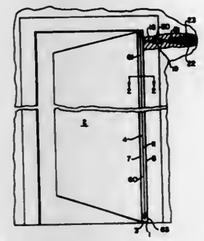
3,553,763
CASTER AND PLATFORM ASSEMBLY
Glynn H. Williams, Huntington Park, Calif., assignor to Western Gear Corporation, Lynwood, Calif., a corporation of Washington
Filed Sept. 26, 1968, Ser. No. 762,902
Int. Cl. B60b 33/00
U.S. Cl. 16—43 **3 Claims**



A caster especially adapted to heavy duty and to use in standard or inverted installation and embodying a relatively deep segment of a sphere swivally mounted on a base in a manner to afford maximum diameter of segment with minimum total vertical height, generous rolling contact area, and protection of bearings against contamination. Preferably means are incorporated to lubricate the bearings and other relatively moving parts in a single application of lubricant. The invention also contemplates

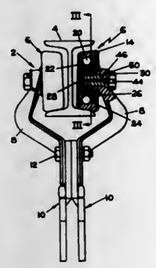
a platform assembly in which a plurality of such casters are mounted in inverted position on a supporting structure to provide a transfer and support surface. The type of caster employed enables greater spacing and therefore fewer casters in a given area; and also allows a moving object to approach at a plane below the normal rolling surface and still hit the spherical surface of the segment in such a way as not to catch or be damaged by the edge of the segment.

3,553,764
DOOR CHECK
William C. Gaines, Jr., 326 E. College, Louisville, Ky. 40203
Filed Mar. 3, 1969, Ser. No. 803,572
Int. Cl. E05f 3/00
U.S. Cl. 16—84 **16 Claims**



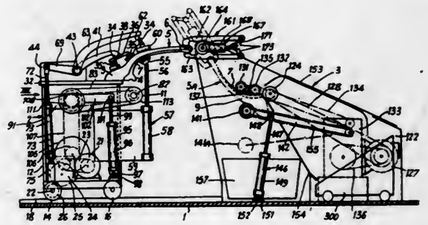
Discloses a door check including an elongated fluid chamber disposed between the pivotable edge of a door and the door jamb with its long axis lying parallel to the long axis of the pivotable edge of the door so that the fluid chamber coacts with the door and the jamb, and fluid within the elongated chamber is forced through an orifice to a fluid source. Thus, the check utilizes the principle of the resistance offered by a fluid, forced by pressure through a fixed opening. Due to the length of the elongated fluid chamber, a relatively low pressure system can be employed.

3,553,765
REPLACEABLE CARRIAGE WHEEL ASSEMBLY
Ruben E. Frost, Grand Rapids, Mich., assignor to C. L. Frost & Son, Inc., Grand Rapids, Mich., a corporation of Michigan
Filed Oct. 30, 1968, Ser. No. 771,866
Int. Cl. B61b 3/00
U.S. Cl. 16—107 **15 Claims**



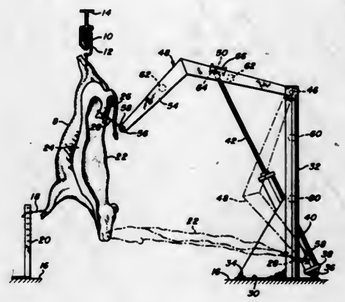
This disclosure relates to a replaceable carriage wheel for use, for example, in an overhead trolley conveyor system. The wheel has an outer race member, an inner race member and bearing means between the outer and inner race members. An arm bracket depends from the assembly and is secured thereto by a stud member. The stud member removably engages the inner race member. The arm and the inner race have co-operating locking surfaces such that the two members are in a fixed relative position when in contact with each other. Preferably a lubricating passage is provided axially of the stud member and a recessed grease fitting is provided on the end of the stud. Means are provided to lock the stud against the arm when the stud is secured to the inner race member.

3,553,766
MACHINE FOR BONING FOREQUARTERS OF MEAT
Jean-Frederic Herubel, Guebwiller, France, assignor to N. Schlumberger & Cie, Guebwiller, Haut-Rhin, France
Filed Feb. 19, 1969, Ser. No. 800,403
Int. Cl. A22c 17/04
U.S. Cl. 17—1 **8 Claims**



A machine for boning forequarters of meat, comprising a first unit with a support table whereon a quarter is laid so that the spinal column overhangs an edge of the table, and a cutter to remove the spinal column. The machine also includes a second unit in which the quarter is inserted between guide and support rollers with the ribs uppermost and moved against a cutter so that the meat is separated from the bones, and a transfer mechanism for removing the quarter from the first unit comprising a pincer which grips the quarter and inserts it into the second unit.

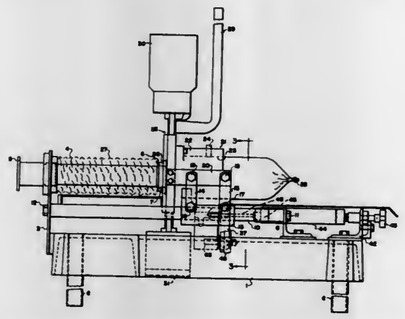
3,553,767
HIDE PEELER
Raymond A. Herzog, Cincinnati, Ohio, assignor to The Cincinnati Butchers' Supply Company, Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 6, 1968, Ser. No. 750,632
Int. Cl. A22b 5/16
U.S. Cl. 17—21 **13 Claims**



The hide peeler boom acts to pull the hide initially parallel to the backbone, with a gradual change of direction of pull occurring until the pull finally assumes

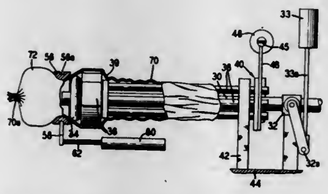
approximate perpendicularity to the backbone as the hide is stripped from the head and nose of the animal to terminate the peeling operation. The apparatus is fluid pressure actuated, and operates simply, economically, and safely to perform a superior hide peeling operation.

3,553,768
CASING SIZER
George M. Wilmsen, Danville, Ill., assignor to Tee-Pak, Inc.
Filed Jan. 2, 1968, Ser. No. 695,248
Int. Cl. A22c *11/02*
U.S. Cl. 17—35 8 Claims



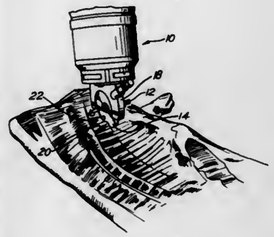
A stuffing and sizing apparatus for the production of stuffed sausage products includes a stuffing horn on which a sausage casing is placed (preferably in a shirred condition) for filling with sausage emulsion. A friction device is engageable with the casing to press it against the end of the stuffing horn while the casing is being fed from the horn and stuffed. An air motor applies a controllable force to the friction device to move it laterally and thereby control the amount of friction force applied to the casing. The air motor is operated and controlled by air pressure sensitive means responsive to the diameter of the stuffed casing product and is operable when the casing over-expands to cause the air motor to permit the friction device to move away from the stuffing horn and allow the casing to flow off the horn more freely.

3,553,769
STUFFING APPARATUS
Michael J. Myles, Downers Grove, Vytautas Kupcikevicius, Chicago, and John H. Beckman, Western Springs, Ill., assignors to Union Carbide Corporation, New York, N.Y., a corporation of New York
Original application Dec. 5, 1966, Ser. No. 599,271, now Patent No. 3,457,588, dated July 29, 1969. Divided and this application Feb. 7, 1969, Ser. No. 825,460
Int. Cl. A22c *11/00*
U.S. Cl. 17—49 3 Claims



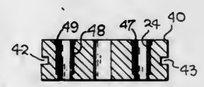
This disclosure sets forth an apparatus having means to pre-size a food casing before it is stuffed with a food emulsion, and methods for stuffing a food casing whereby said food casing is circumferentially expanded about a stuffing tube up to a predetermined peripheral dimension before it is stuffed and then progressively expanding and stuffing said casing to prepare encased food products having a substantially uniform volume and uniform dimensions from end to end.

3,553,770
LOIN SCRIBING GUIDE
Paul L. Ford, Flossmoor, Ill., assignor to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed Feb. 7, 1968, Ser. No. 703,671
Int. Cl. A22c *17/02*
U.S. Cl. 17—52 1 Claim



A method of separating the loin ribs from the spare ribs of a hog carcass with a scribe saw having specially adapted projections wherein one projection abuts against the spine to provide an accurate, stabilized scribe line.

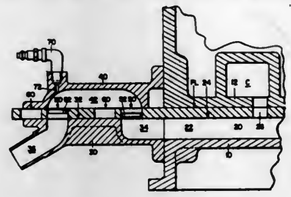
3,553,771
APPARATUS FOR COMPACTING THERMOSETTING MATERIAL
Edward L. Embler and James R. Proffitt, Jr., Erie, Pa., assignors to Owens-Illinois, Inc., a corporation of Ohio
Filed June 4, 1968, Ser. No. 734,404
Int. Cl. B30b *11/14*
U.S. Cl. 18—4 13 Claims



An apparatus for metering the precise quantities of a thermosetting resin and compacting the same while under the influence of a high-frequency heat source such as radio frequency energy. A mold cavity is filled with a plastic charge, loosely compacted and then moved to a dielectric heating zone where additional compaction is imposed upon the plastic charge. Subsequent to compaction the plastic charge is redelivered to the initial filling zone and removed from the mold for immediate use in an article producing press.

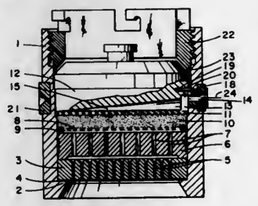
3,553,772
BEAD EXHAUST ASSEMBLY FOR A MOLDING MACHINE
Charles N. Premo, Springfield, Mass., assignor, by mesne assignments, to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 3, 1968, Ser. No. 756,747
Int. Cl. B29c *11/00*
U.S. Cl. 18—5 3 Claims

An assembly for the exhausting of the surplusage of plastic beads from a foam molding machine following the cavity-charging operation for the return thereof to the bead supply for reuse in a subsequent cavity-charging operation and adapted for interchangeable use irre-



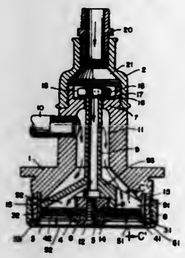
spective of whether the cooperant molding machine slide runner is located on the stationary mold half or on the movable mold half of the foam molding machine.

3,553,773
SPINNERET ASSEMBLY
James W. Ij. Heijnis, Roemer Visscherstaat 51, Arnhem, Netherlands
Filed Feb. 21, 1968, Ser. No. 707,173
Claims priority, application Netherlands, Mar. 9, 1967, 6703657
Int. Cl. D01d *1/06*
U.S. Cl. 18—8 2 Claims



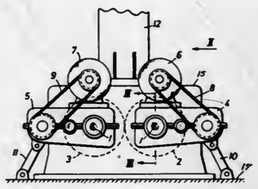
Plural channel means in a spinneret assembly cover, lid, and the like for evenly distributing molten polymer therein in order to achieve even hydraulic pressure distribution for improving sealing.

3,553,774
SPINNING HEAD FOR SPINNING BICOMPONENT FILAMENTS
Heinz Ruck and Gustav Dünweg, Wuppertal-Barmen, Germany, assignors to J. P. Bemberg Aktiengesellschaft, Wuppertal, Germany
Filed Aug. 23, 1968, Ser. No. 754,890
Claims priority, application Germany, Aug. 25, 1967, 1,660,236
Int. Cl. D01d
U.S. Cl. 18—8 15 Claims



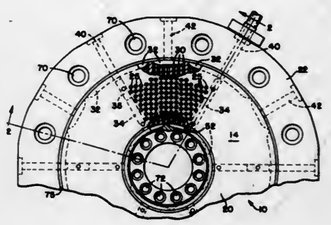
An improved construction in the distribution system of a spinning head for producing bicomponent filaments from two distinct fluid spinning compositions brought together for extrusion on either side of a thin knife edge intersecting each spinning opening of a multi-holed nozzle plate mounted on the face of the spinning head. The elements of the distribution system essentially include a slotted distributor plate with separate radial channels and a conically-shaped insert having alternate inner and outer radial slots in fluid connection with separate feed means on the inlet side and with the radial channels of the distributor plate on the outlet side.

3,553,775
ROLL PRESS
Hanns Decker, Cologne-Rath, Germany, assignor to Klockner-Humboldt-Deutz Aktiengesellschaft, Deutz-Mulheimer, Cologne-Deutz, Germany, a corporation of Germany
Filed Sept. 16, 1968, Ser. No. 759,906
Claims priority, application Germany, Sept. 23, 1967, K 63,428
Int. Cl. B29d *31/00*
U.S. Cl. 18—9 2 Claims



A roll press having two oppositely rotatable rolls on the drive pins of which are mounted pivotally supported gearings. The gearings comprise a casing which contains a gear wheel fixedly connected to its respective drive pin about the axis of which the casing of the gearing is pivoted. A motor mounted on the outside of the casing rotates by a belt drive the gear wheel and therewith the respective roll. A brace bar connects each gearing casing with the foundation for counteracting the restoring moment exerted by said gearings during the operation of the roll press.

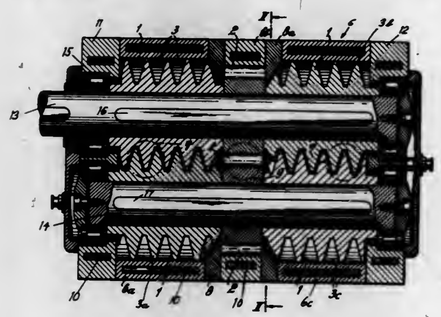
3,553,776
PELLETIZER DIE PLATE
Alfred P. Romagano, Monroe, and Arthur D. Stevens, Hamilton, Ohio, assignors to The Black Clawson Company, Hamilton, Ohio, a corporation of Ohio
Filed Sept. 23, 1968, Ser. No. 761,676
Int. Cl. B29f *3/08*
U.S. Cl. 18—12 4 Claims



A die plate for a plastic material pelletizer having concentric interfitted inner and outer body portions with an annularly arranged pattern of orifice nozzles formed in the inner body portion through which plastic material is extruded and cut into pellets, with heating passages also formed in the inner portion generally radially between rows of nozzles. The heating passages open inwardly into an annular groove formed in the face of the die plate inwardly of the nozzle pattern. An annular in-

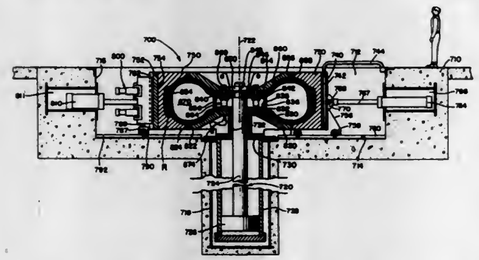
sert is received within the groove and forms turn-around cavities for connecting groups of such heating passages with adjacent groups of passages.

3,553,777
DEVICE FOR EXTRUDING PLASTIC MATERIAL
Rudolf Paul Fritsch, Stuttgart-Wellimdorf, Germany, assignor to Werner & Pfleiderer, Stuttgart-Feuerbach, Germany, a company of Germany
Filed Oct. 22, 1968, Ser. No. 769,551
Claims priority, application Germany, Oct. 24, 1967, W 45,037
Int. Cl. B29f 3/02
U.S. Cl. 18—12 **5 Claims**



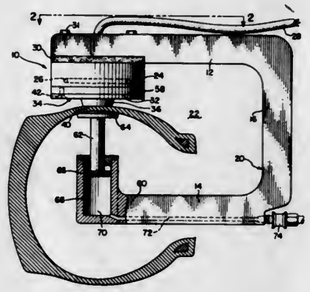
A device for extruding plastic material comprises an intermediate zone including a gear pump and two outer feeding zones disposed on opposite sides of the intermediate zone and each including conveyor screws conveying the material toward the intermediate zone. The outer zones are separated from the intermediate zone by partition walls and communication between the outer zones and the intermediate zone is effected only through a recess in each partition wall. The recesses lead into a space of the intermediate zone defined therein by teeth of the gears of the pump when approaching the meshing position. An extrusion port communicates with a further space in the intermediate zone defined therein by teeth of the pump gears when departing from the meshing zone.

3,553,778
TIRE MOLDING APPARATUS
Edwin S. Woodhall, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed July 1, 1968, Ser. No. 741,443
Int. Cl. B29h 5/02, 17/00
U.S. Cl. 18—17 **27 Claims**



Tire molding and curing apparatus including a plurality of tread molding means disposed about an axis and mounted for movement toward and away from the axis between a position wherein the tread molding means form a tire receiving cavity and a second position wherein the tread molding means are spaced apart. Clamping devices utilized to maintain the tread molding means in their inner cavity forming position so that all forces tending to separate the tread molding means are resisted within the same and the clamping means. Bead engageable means are provided to close the ends of the cavity with such bead engageable means including means to mold external surfaces of at least the bead portion of a tire. Bead engageable means are retained in position either by a center member extending coaxially of the cavity or by cooperably engageable means on the bead engageable means and tread molding means so as to provide a restraint for the bead engageable means which is entirely within the perimeter of the tread molding means. Tread molding means includes members supporting separate molding members and having means for providing heat to the molds with the heating means extending at least coextensively with the tread of the tire to be molded both in the direction circumferentially about the tire and in a direction parallel to the rotational axis of the tire.

3,553,779
TIRE REPAIR MOLD
Edwin C. Miller, La Vale, Md., assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Aug. 13, 1968, Ser. No. 752,316
Int. Cl. B27h 5/02
U.S. Cl. 18—18 **5 Claims**

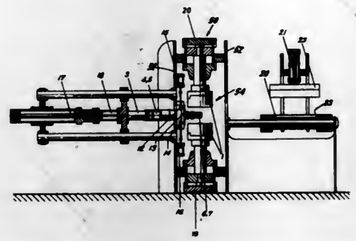


A tire repair mold for repair of small imperfections particularly in the sidewall surface of a tire as a mold element backed by an electrically heated member which is fixed on one arm of a lightweight C-frame to be held onto a spot or blemish on the tire by a presser foot urged toward the mold element by a small, valve-operated air cylinder fixed on the other arm of the C-frame.

3,553,780
APPARATUS FOR FORMING A SOCKET-SHAPED END ON PLASTIC PIPES
Karl Heinrich Kuhlemann, Rehau, Germany, assignor to Rehau-Plastiks G.m.b.H.
Filed Apr. 18, 1967, Ser. No. 631,735
Int. Cl. B29c 17/00
U.S. Cl. 18—19 **3 Claims**

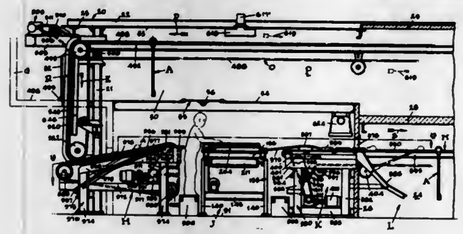
An apparatus for forming a socket on the end of a plastic pipe comprising a mold formed by a hollow outer member and a core positioned within and spaced from the outer member. The outer member is formed by two separate sections movable radially with relation to one another. The core is comprised of two pairs of separate segments. One pair of the segments is retractable axially into a hollow tubular mandrel. Situated within the mandrel is an axially movable nose key for positioning the segments in the core. A holding member feeds the

pipe under pressure into the space in the mold between the core and the outer member for forming the socket and



at the same time increasing the pipe wall thickness of the socket.

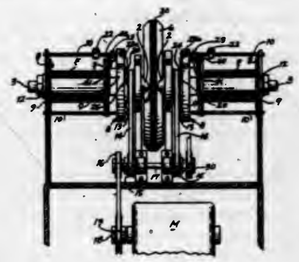
3,553,781
APPARATUS FOR SHAPING THERMOPLASTIC SHEETS
Alfred H. Miller, Glenn Perry, and Lawrence C. Wheat, Toledo, Ohio, assignors to Libbey-Owens-Ford Company, Toledo, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 705,234, July 18, 1967. This application Apr. 2, 1968, Ser. No. 718,181
Int. Cl. B29c 17/00
U.S. Cl. 18—19 **7 Claims**



Apparatus for chaping plastic sheets used as interlayers in laminated safety glass. The apparatus comprises an elongated heating oven and an elongated cooling tunnel positioned above the heating oven and having its entrance end disposed opposite the exit end of said heating oven. The plastic sheets are carried in a vertical position by supporting frames which are conveyed successively through the heating oven and cooling tunnel. Means is provided for introducing heated air into the heating oven and for circulating it around and between the plastic sheets to cause them to sag in the plane of the sheets to effect the shaping thereof, while means is provided for introducing conditioned air into the cooling tunnel adjacent the exit end thereof at a pressure sufficient to cause it to flow toward the entrance end thereof around and between the plastic sheets moving in the opposite direction to cool and control the moisture content of said sheets.

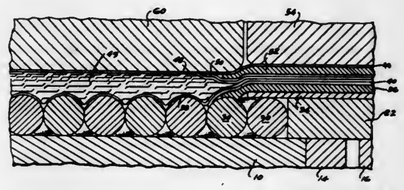
3,553,782
MACHINE FOR COILING FILAMENTARY MATERIAL
Walter V. Chery, Meadville, Pa., assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Delaware
Filed Nov. 17, 1967, Ser. No. 683,999
Int. Cl. B29c 17/00; B29f 3/00
U.S. Cl. 18—19 **12 Claims**

A machine for coiling continuous length filamentary material so as to form a pair of coiled filaments for use in slide fastener stringers comprising a pair of rotatable spools horizontally arranged in alignment with one another with each having a supply of filament wound thereon, a pair of arcuated needle-like stationary mandrels around which the filaments are wound as they pass from the rotatable spools, each of said mandrels being rigidly supported at a point offset from the axes of rotation of the rotatable spools and being rectangular shape in cross section whereby the filaments are subjected to a greater tension as they pass from the rotatable spools to



the respective mandrels through one part of a revolution than that to which the filaments are subjected during the rotation of the same through the other part of the revolution so as to deform the filaments at spaced-apart intervals therealong in cooperation with the sides of said mandrels in each of the convolutions of the coiled filaments at one side thereof, and a forming wheel having a pair of grooves arranged and around the periphery thereof in which the free ends of the needle-like mandrels are positioned and into which grooves the coiled filaments are delivered.

3,553,783
APPARATUS AND METHOD FOR FORMING A MOLD FOR LENTICULAR SHEET
Roger L. de Montebello, 165 E. 66th St., New York, N.Y. 10021
Filed Oct. 6, 1967, Ser. No. 673,451
Int. Cl. B29c 1/16; B29d 11/00
U.S. Cl. 18—19 **2 Claims**



The present invention provides an apparatus and a method for forming a mold member to form a transparent sheet which comprises a closely packed array of lenslets having convex spherical surfaces on at least one of its faces. A flat hard surface is provided with surrounding margin members which are adjustable toward and away from each other. On the surface within the margin members is arranged a closely packed array of spherical balls, usually ball bearings, one layer deep and all of the same diameter, the thickness of the margin members being substantially equal to the diameter of the balls. After the space between the margin members has been filled, the margin members are adjusted to compress the array of balls so that each of the balls is in firm contact with its

neighboring balls, or with a margin member. The single layer array of balls is then covered with a sheet of thermoplastic material and a second layer of similar material, with one or more thin spouts protruding into the space between the two layers so that a thermosetting resin may be forced into the space between the two layers thereby forming a resilient cushion. Around the edges of the ball array, there are preferably provided shim members over the margin members, the shim members overlapping at least the first row of balls on each side of the ball-filled area, thereby covering the relatively large marginal cavity formed between any two adjacent balls next to the margin member. Other marginal resilient members or gaskets may also be provided as desired.

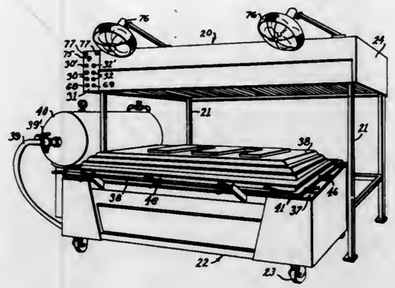
Heavy clamping bars having recesses to accommodate the spouts are provided over the marginal members, shims and gaskets and these bars are secured to make the edges of the plastic sheets fluid-tight. Long bolts or pins are provided through the plastic sheets, shims, margin members and clamping bars so as to secure the assembly and provide register points which are useful in the later use of the mold member to be formed.

A settable fluid resin, preferably a thermosetting resin, is then introduced under slight pressure into the space between the plastic sheets, through one or more of the spouts provided therebetween, after which the assembly of plastic sheets and fluid resin is subjected to heat and pressure to deform the sheet of plastic in contact with the balls as well as to set the fluid resin forming a cushion between two plastic sheets. The pressure is then continued on the assembly while the resin cools, thereby substantially eliminating shrinkage and deformation of the cushion.

When cool, a thick, rigid back-up plate is cemented over the top of the set cushion and this cemented assembly is removed from the molding assembly, and the edges may be trimmed. The set cushion assembly may be directly used as a casting cavity. For this purpose its embossed face is preferably made of a fluorohalo-carbon film such as "Aclar" film; or the cushion is sprayed with silver or vapor-plated with a thin layer of an electrically conductive metal, such as chromium, after which it is plated with a thicker layer of a solid metal such as nickel. The back of the electrodeposited metal may then be machined to provide a flat surface and/or may be reinforced with a thick rigid back-up plate, and after separation of the electrodeposited metal from the plastic cushion and if necessary after machining the periphery of the electrodeposited metal, the latter forms a durable master for pressing a new plastic cushion or for electroforming a curable mold for the production of lenticular sheets composed of convex spherical lenslets, suitable for use in integral photography according to the Lippmann process or more especially according to the process disclosed in my copending application Ser. No. 600,957 filed Dec. 12, 1966.

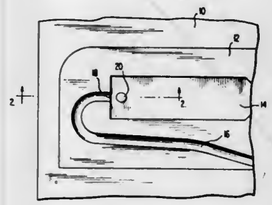
3,553,784
APPARATUS FOR FORMING PLASTIC MATERIAL
Jack N. Shuman, 126 W. Tremont Ave., Charlotte, N.C. 28203
Filed Dec. 14, 1967, Ser. No. 690,665
Int. Cl. B29c *17/00*
U.S. Cl. 18—19 **1 Claim**

Method and apparatus for forming plastic material including the provision of an elevated heating oven, a contoured forming mold, an open frame member constructed for supporting a sheet of plastic material and normally disposed at a position peripherally surrounding the lower portion of the forming mold, and a mounting and drive arrangement for the frame member that permits it to be automatically raised from its normal position to a selected intermediate position for loading the plastic sheet therein, then raised further to a predetermined upper position at which the sheet may be heated by the elevated heating oven, and then lowering the frame immediately following heating and while still under the



oven to its normal position at which the sheet of plastic material is caused to conform to the contours of the mold.

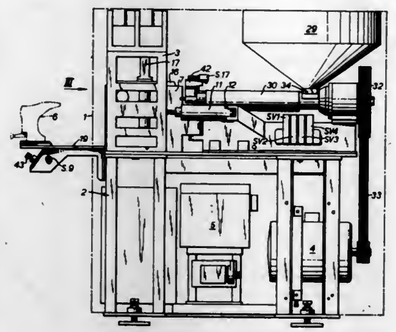
3,553,785
APPARATUS FOR PREVENTING MOLDING DEFECTS
Allan G. Serle, Clark, N.J., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 524,045, Feb. 1, 1966. This application June 30, 1967, Ser. No. 654,309
Int. Cl. B29f *1/04*
U.S. Cl. 18—30 **4 Claims**



This application discloses apparatus and methods for the injection molding of amorphous plastics and crystalline plastics. The disclosure relates particularly to methods and apparatus useful in reducing the occurance of jetting-type splay marks in the injection molding of crystalline plastics.

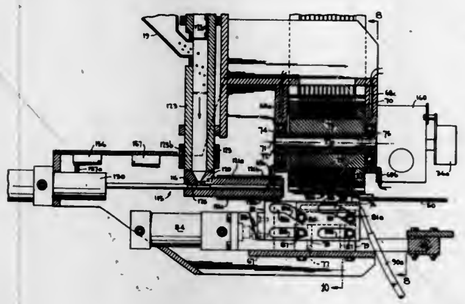
3,553,786
INJECTION MOULDING MACHINE
Eric Herbert Bentley, Bradford-on-Avon, England, assignor to C.I.C. Engineering Limited, Somerset, England
Filed June 5, 1967, Ser. No. 643,462
Claims priority, application Great Britain, June 9, 1966, 25,698/66
Int. Cl. B29f *1/00*
U.S. Cl. 18—30 **10 Claims**

The disclosure is concerned with an injection moulding machine for use in the manufacture of footwear and comprises a single mould station having means for supporting and actuating movable co-acting mould components, a power driven injection device arranged so that the co-acting mould components close thereon when moving to their closed positions and coupling means associated with at least one of the mould component supporting means; the whole assembly being disposed within a casing pro-



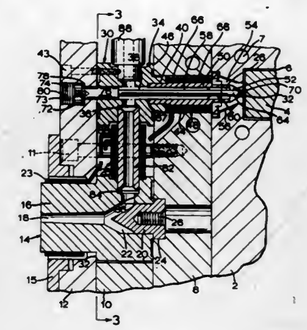
vided with manually operated means for initiating an automatic cycle of mould operations.

3,553,787
APPARATUS FOR EMBOSSING ALPHA-NUMERIC CHARACTERS
Louis M. Ballard, Arcadia, Wayne M. Beebe, Pasadena, David C. Kramer, Redondo Beach, and Waldo I. Rogers, Sierra Madre, Calif., assignors to Moore Business Forms, Inc., Niagara Falls, N.Y., a corporation of Delaware
Filed July 18, 1968, Ser. No. 745,814
Int. Cl. B29f *1/00*
U.S. Cl. 18—30 **27 Claims**



The disclosure broadly relates to methods and apparatus for serially operating upon plastic sheets to provide sprue free, solid plastic alpha-numeric embossments adherent to the sheets, as for example plastic credit cards. Cards are sequentially transported to one or more embossment stations where relatively movable multiple dies are automatically selected in predetermined combinations to present peripheral recesses in the die members to the cards and inject heated plastic through the die members onto the cards to form the numeric or alphabetical embossments which are bonded to the cards. The embossed cards are then sequentially transported to another station where the embossments are cut to sever sprues and form imprinting surfaces with less deflection than conventional hollow embossments during document imprinting.

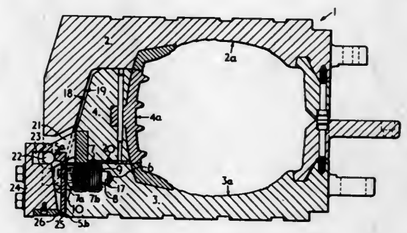
3,553,788
HOT RUNNER SYSTEM FOR PLASTIC INJECTION MOLDS
Ladislao (Wladyslaw) Putkowski, 21 Limarick Ave., Weston, Ontario, Canada
Filed Sept. 10, 1968, Ser. No. 758,811
Int. Cl. B29f *1/02*
U.S. Cl. 18—30 **19 Claims**



A hot runner system having a hot runner tube extending between a sprue bushing and a nozzle fitting which directs plastic into the mold cavity. The tube is slidable at each end in closely fitting bores in the sprue bushing and nozzle fitting, so that heat expansion of the tube will not push on and tile the nozzle fitting.

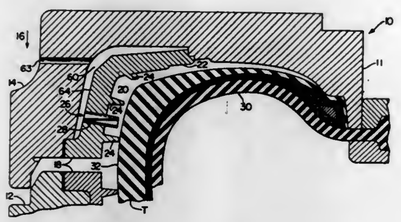
In another embodiment, the hot runner tube conducts plastic directly into a gate leading into a mold cavity. The tube has a tip extending into the gate, and the tube can be slid back and forth to control the flow area of the gate.

3,553,789
MOLDING APPARATUS
Bernard C. Allitt, Four Oaks, Sutton Coldfield, England, assignor to The Dunlop Company Limited, London, England, a British company
Filed Nov. 6, 1968, Ser. No. 773,779
Claims priority, application Great Britain, Nov. 18, 1967, 52,550/67
Int. Cl. B29h *17/00*
U.S. Cl. 18—42 **10 Claims**



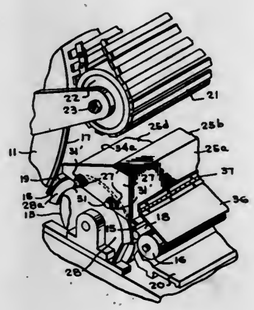
A pneumatic tire mold comprising a plurality of tread molding segments arranged between two mold halves, the segments being pivotally attached to one of the two halves and movable radially apart on opening the mold under the influence of spring members, one member for each segment. The spring members each comprise a plurality of co-axially arranged dished annuli compressible to tend to flatten the form of the annuli and to provide a comparatively large force, sufficient to break the adhesion between the tread rubber of the tire and the molding segments.

3,553,790
CONCEALED TIRE VENT MOLD
Von H. Brobeck and Mike Zulick, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Continuation of application Ser. No. 611,327, Jan. 24, 1967. This application Nov. 10, 1969, Ser. No. 871,585
Int. Cl. B29h *5/02*
U.S. Cl. 18—42 5 Claims



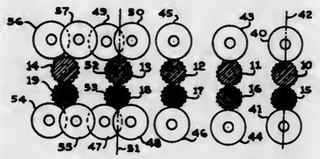
The invention relates to a tire mold having a tire-receiving cavity provided with vent passages for the escape of trapped air from the mold cavity which passages are provided between the surface of an inserted blade, or other inserted design-forming element, and the confronting surface of a recess in the mold in which the element is inserted. Passage entry dimensions allow air escape flow but preclude, or at least minimize, the admission of rubber tire material into the passages.

3,553,791
PNEUMATIC CLEANING APPARATUS FOR THE LICKERIN SECTION OF CARDING MACHINES
James F. King, Jr., Winston-Salem, N.C., assignor to The Bahnson Company, Winston-Salem, N.C., a corporation of North Carolina
Filed Oct. 24, 1968, Ser. No. 770,356
Int. Cl. D01g *15/76*
U.S. Cl. 19—107 9 Claims



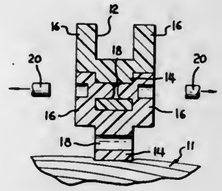
A suction manifold structure for the lickerin section of a carding machine, formed of a sheet member transversely spanning the carding machine having plural integrally connected and relatively inclined planiform panels and end walls adjustably mounted to the carding machine against the lickerin cover forming a suction chamber. The disposition of the panels relative to each other and to the lickerin cover and to other parts of the carding machine is such as to define readily adjustable elongated suction intake slots located to capture fly from junction orifices of the carding machine between opposite edges of the lickerin cover and the feed roll and back knife plate.

3,553,792
DRAFTING FRAME
Richard D. Anderson, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Continuation of application Ser. No. 621,608, Mar. 8, 1967. This application Dec. 13, 1968, Ser. No. 800,308
Int. Cl. D01h *5/74*
U.S. Cl. 19—258 4 Claims



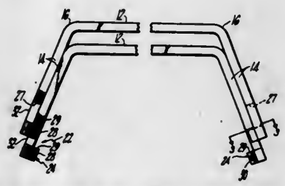
A drafting frame for fibrous material having a series of nipped pairs of drafting rolls which are driven at progressively higher speeds with a single centrally located backup roll being provided for each of the slower speed drafting rolls and with a pair of arcuately spaced backup rolls being provided for each of the higher speed drafting rolls.

3,553,793
BUNDLE TIE
Robert Alvin Long and William Roderick Over, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Filed Nov. 12, 1968, Ser. No. 774,745
Int. Cl. B65d *63/00*
U.S. Cl. 24—16 5 Claims



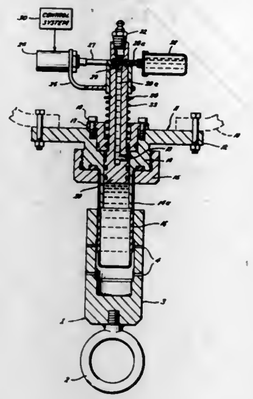
A bundle tie is disclosed and comprises an elongated flexible strap for tying a bundle of cables or the like, the strap being of generally constant external configuration and adapted to have its ends placed in overlapped position to permit material from one end of the strap to be extruded into apertures in the opposite end of the strap.

3,553,794
WIRELESS STRAPPING SEAL
Franz A. Kneidl, Milford, and Rollin M. Amsden, Jr., New Britain, Conn., assignors to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Sept. 26, 1968, Ser. No. 762,926
Int. Cl. B65d *63/06*
U.S. Cl. 24—23 9 Claims



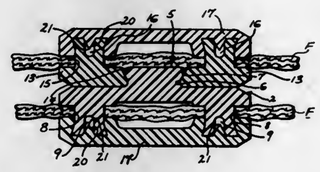
A nestable magazine seal blank includes in its flanges interlocks comprised of an aperture and an inwardly depressed boss facilitating both embraceable retention between seal blanks within a stack and endwise separation of the blanks.

3,553,795
HYDRAULIC LATCH
Donald E. McDougal, Spring, Tex., assignor to Offshore Systems Inc., Houston, Tex., a corporation of Delaware
Filed May 5, 1969, Ser. No. 821,727
Int. Cl. A44b *11/25, 17/00*
U.S. Cl. 24—201 9 Claims



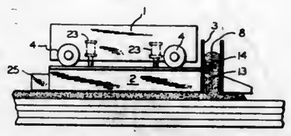
There is provided a latch which is hydraulically operated. The latch comprises a sleeve member adapted to be separable connected to an assembly having a bladder member that is expandable or contractable inside the sleeve member. A spring-biased piston is mounted adjacent the sleeve that is actuated by an electronic control means. By controlling the volume displacement of a hydraulic substance, the latch is selectively secured or released.

3,553,796
PLASTIC SNAP FASTENER
Alfred E. Carlile, Meadville, Pa., assignor, by mesne assignments, to Textron Inc., Providence, R.I., a corporation of Delaware
Filed Apr. 16, 1968, Ser. No. 721,807
Int. Cl. A44b *17/00*; B29c *19/00*
U.S. Cl. 24—216 6 Claims



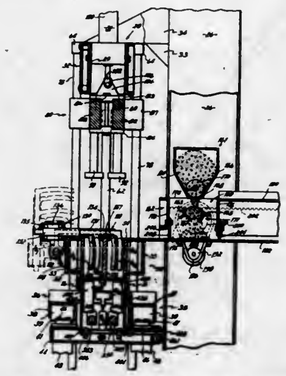
A fastening device of the snap fastener type molded from a pliable plastic material by a continuous strip method consisting of four relatively flat component parts of substantially the same contour including a socket member and a stud member which may be attached to a flexible member or article merely by mechanical pressure.

3,553,797
APPARATUS FOR CASTING STRUCTURAL UNITS FOR BUILDING CONSTRUCTION
Robert J. Horton, 3192 Palomares Ave., Lafayette, Calif. 94549
Filed Feb. 14, 1968, Ser. No. 705,339
Int. Cl. B28b *15/00*
U.S. Cl. 25—2 2 Claims



An apparatus for casting a plurality of structural units such as wall panels of predetermined cross-sectional shape comprising, a pair of spaced tracks, a die member conforming to said predetermined cross-sectional shape along its bottom surface, means mounting the die member for movement along the tracks, means conveying the die along the tracks, and means at the forward end of the die for extruding concrete therethrough and beneath the moving die member under pressure. The top surface of each previously cast unit serves as a mold for the bottom surface of a subsequently cast unit.

3,553,798
APPARATUS FOR PRODUCING PRECAST CONCRETE MEMBERS
Albert C. Reckman and Herman F. Barkiage, Cincinnati, Ohio, and George T. Shotwell, Covington, Ky., assignors to A. R. Industries, Inc., a corporation of Ohio
Filed Jan. 2, 1968, Ser. No. 694,725
Int. Cl. B28b *7/24*
U.S. Cl. 25—41 32 Claims

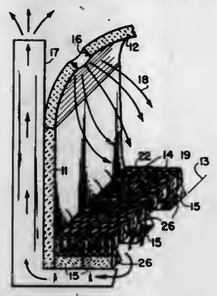


A machine for manufacturing precast reinforced concrete structures by feeding a supporting platen beneath a movable mold box, lowering the mold box onto the platen, locating reinforcing rods within the mold box, filling the mold with concrete mix, compacting and sizing the mix within the mold, removing the mold, and feeding the pallet and molded product out of the machine.

3,553,799
KILN FLOOR
Albert M. Swank, Johnstown, Pa., assignor to Hiram Swank's Sons, Johnstown, Pa.
Filed June 27, 1968, Ser. No. 740,514
Int. Cl. F27b *9/30*
U.S. Cl. 25—132 8 Claims

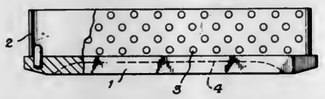
A kiln floor comprised of riddle tile supported by base brick. Each riddle tile has a plurality of holes therethrough, a plurality of channels connecting the holes, a

plurality of semicircular recesses along the sides, and chamfered edges. The base brick upon which the upper brick rests has a single groove running the length of the



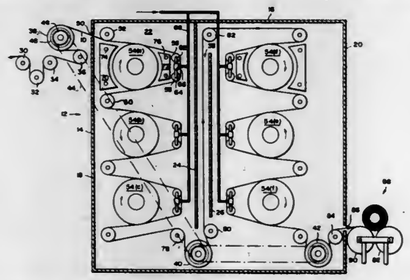
brick. The channels, recesses, and holes form a network of passageways for improved circulation of the combustion products.

3,553,800
METAL BOAT FOR SINTER FURNACE
Friedrich Plöger, Kleinostheim, Horst Roepenack, Bruchköbel, and Klaus Wegner, Hanau, Germany, assignors to NUKEM, Nuklear-Chemie und Metallurgie Gesellschaft mit beschrankter Haftung, Hanau am Main, Germany
Filed Dec. 23, 1968, Ser. No. 786,102
Claims priority, application Germany, Dec. 30, 1967, 1,583,749
Int. Cl. F27d *5/00*
U.S. Cl. 25—153 4 Claims



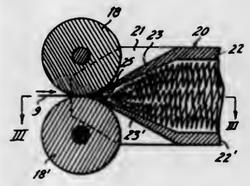
A metal boat for carrying workpieces through a high temperature sinter furnace is composed of a thick and very rigid shock-resistant bottom plate upon which a thin sheet metal frame is removably mounted, the plate and frame being composed of molybdenum or alloys thereof.

3,553,801
FABRIC TREATING APPARATUS
Wilfred N. Hadley, Springfield, Vt., assignor to Hadley Company, Inc., Springfield, Vt., a corporation of Vermont
Filed Feb. 19, 1968, Ser. No. 706,427
Int. Cl. D06c *11/00*
U.S. Cl. 26—28 1 Claim



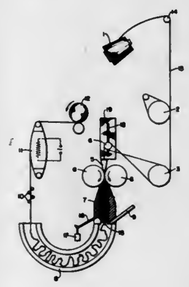
Apparatus is provided for removing nibs, slubs, pills, etc., from a running fabric web, napping or sueding the fabric or pouncing the fabric. The apparatus in a preferred mode includes a plurality of driven rotary rolls having working surfaces which may be in the form of abrasive helical ribs for some applications. The web is guided first into tangential contact with one portion of each roll and then back into tangential contact with a different portion of the roll. A pair of movable applicator rolls permits increasing or decreasing the amount of wrap between the web and each working roll.

3,553,802
STRAND CRIMPING
Robert K. Stanley, Media, Pa., assignor to Techniservice Corporation, Kennett Square, Pa., a corporation of Pennsylvania
Filed Apr. 4, 1968, Ser. No. 718,737
Int. Cl. D02g *1/12*
U.S. Cl. 28—1.6 11 Claims



Multiple-end stuffer-crimping of textile strands is improved by deflecting the sidemost strands laterally away from the walls and toward the interior of the stuffing chamber inside the entrance thereof. The deflecting means are yieldable in nature and conveniently take the form of leaf springs or balls biased by coil springs.

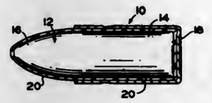
3,553,803
PROCESS AND DEVICE FOR CRIMPING AND HEAT-SETTING OF YARNS MADE FROM SYNTHETIC LINEAR HIGH POLYMERS
Gerhard Buschmann and Erich Mewes, Wilhelm Pieck Stadt Guben, Germany, assignors to VEB Chemiefaserkombinat Wilhelm-Pieck-Stadt Guben, Wilhelm Pieck Stadt Guben, Germany
Filed Jan. 3, 1969, Ser. No. 788,845
Int. Cl. D02g *1/12*
U.S. Cl. 28—1.6 6 Claims



Process and device for crimping and heat-setting of yarns made from synthetic linear heater high polymers, especially polyamides and polyesters, which comprises extending the path of the yarn between the stretching zone and the entrance to the crimping zone while reducing the heat developed in the stretching operation, thereafter subjecting the yarn to compression crimping and

heat-setting the crimped yarn released from the crimping zone in a two-stage operation in subsequent steps at controlled temperatures.

3,553,804
METHOD OF MAKING A BULLET
Paul J. Kopsch, 710 Foster Park Road W. 44053; and Daniel Turcus, Jr., 1019 W. 38th St. 44052, both of Lorain, Ohio; and Donald Francis Ward, Telegraph Road, South Amherst, Ohio 44001
Original application Oct. 31, 1967, Ser. No. 679,391. Divided and this application July 7, 1969, Ser. No. 839,598
Int. Cl. B21d *51/54;* B21k *21/04;* B23d *15/22*
U.S. Cl. 29—1.3 7 Claims

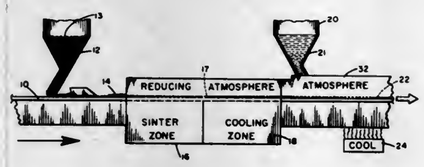


Forming a core of relatively hard metallic material having a cylindrical portion and a tapering portion near one end. Coating the core with unsintered fluorocarbon resin and mounting a closely telescoping jacket on the cylindrical portion of the core. Applying heat to the assembled elements to sinter the coating to the core and bond the core and jacket together.

3,553,805
PRODUCTION OF GRADED RELIABILITY CAPACITORS
George H. Didinger, Jr., Bay Village, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Continuation of applications Ser. No. 314,256, Oct. 7, 1963, Ser. No. 637,010, May 8, 1967, and Ser. No. 742,952, June 19, 1968, all now abandoned. This application Apr. 22, 1969, Ser. No. 818,449
Int. Cl. B23q *17/00;* H01g *13/00*
U.S. Cl. 29—25.42 11 Claims

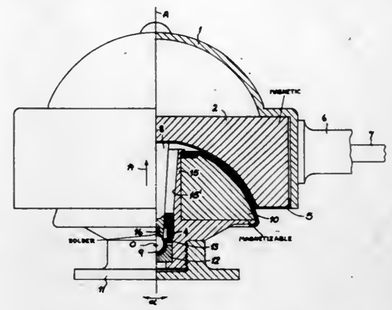
Process for obtaining selected capacitors having graded reliabilities from a lot of capacitors of unknown reliabilities by performing accelerated life tests.

3,553,806
BEARING AND METHOD OF MAKING SAME
Victor J. Turk, Euclid, and Charles H. Junge and George R. Kingsbury, Cleveland, Ohio, assignors to Clevite Corporation, a corporation of Ohio
Filed Jan. 4, 1968, Ser. No. 695,720
Int. Cl. B21d *53/10*
U.S. Cl. 29—149.5 4 Claims



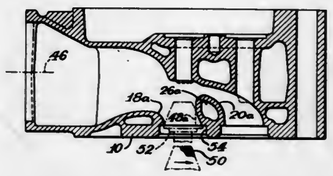
This disclosure pertains to the method of making a steel-backed sleeve bearing strip wherein copper-tin powder is sintered on the strip and is infiltrated with lead-tin babbitt at a carefully controlled relatively low temperature, which temperature is quickly reduced after infiltration to minimize migration of tin from the babbitt to the copper.

3,553,807
METHOD OF MAKING SPHERICAL BEARINGS
Nikolaus Laing, Hofener Weg 35–37, Aldingen, near Stuttgart, Germany
Filed June 24, 1968, Ser. No. 744,247
Claims priority, application Germany, June 22, 1967, 1,575,377
Int. Cl. B23p *11/00*
U.S. Cl. 29—149.5 17 Claims



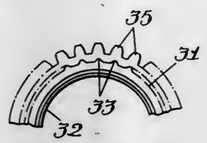
A spherically curved ball and a complementary socket form two coacting bearing members connected, respectively, with a fixed support and with a rotatable body. By angularly displacing the spin axis of this body about the center of the sphere, the less perfectly spherical bearing surface is trued and made to conform to the other surface, e.g. that of the ball. The motion of the spin axis may be maintained, in use, by forcible wobbling or by automatic precession; this insures continued sphericity and allows the bearing to operate with little or no lubrication.

3,553,808
CASTING AND MACHINING OF AN INTERNALLY PORTED AND PASSAGED CYLINDER HEAD
Robert P. Kobiara, Arlington Heights, Ill., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Mar. 21, 1969, Ser. No. 809,351
Int. Cl. B23p *15/00, 13/00*
U.S. Cl. 29—156.7 6 Claims



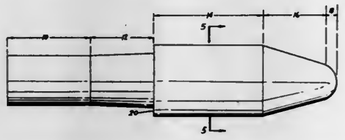
Cylinder head coring to provide internal ports and water passages therein, and a method combining the steps of casting-in metal to form the head casting, and machining of the casting thereafter. An intake or exhaust passage with dual ports is cast intentionally with at least one imperfect port only partially completed at the end. More specifically, it is by provision of no back draft on one of the legs of the port core, that it becomes possible to design an adjacent water passage which is materially enlarged in cross section yet, at the same time, the resulting cored port is imperfect because incomplete as indicated. However, the port is readily completed by enlarging it with a machining operation, insuring satisfactory porting and affording at the same time a separate water passage of appreciable size located thereadjacent.

3,553,809
FORGING METHOD FOR PRODUCING A HOLLOW BODY
Toru Yamada, Nagoya, and Senjyo Kitajima, Gifu, Japan, assignors to Kabushiki Kaisha Tokai Rika Denki Seisakusho, Nishikasugai-gun, Aichi Prefecture, Japan
Filed Jan. 5, 1968, Ser. No. 695,909
Claims priority, application Japan, Jan. 25, 1967, 42/4,907, 42/6,538
Int. Cl. B21d *53/28*; B21k *1/30*; B23p *15/14*
U.S. Cl. 29—159.2 10 Claims



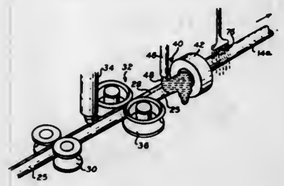
A compound annular body is produced by a forging operation. Inner and outer annular bodies are telescopically engaged one within the other, and are placed within an annular die having radially outwardly extending peripherally spaced recesses. The material of the inner annular member has a higher malleability than that of the outer annular member. Axial pressure is applied to the closely fitted annular members in the die to force the material of the outer member into the recesses to form projections, and to force the material of the inner member into recesses in the inner periphery of the outer member, these latter recesses resulting from the radially outwardly deformation of the outer member. The inner and outer members are thus interlocked against both axial and angular relative displacement. The two materials may be metallic materials or the outer member may be a metallic material and the inner member a synthetic resin material. The forging operation may be either a hot forging operation or a cold forging operation.

3,553,810
LATHE CHUCK ALIGNING AND MOUNTING BAR
George A. D'Aquin, P.O. Box 726, Galveston, Tex. 77550
Filed Jan. 14, 1969, Ser. No. 790,973
Int. Cl. B23p *19/00*
U.S. Cl. 29—200 4 Claims



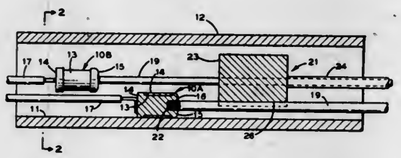
A device intended to facilitate mounting of a lathe chuck or face plate. The device is an elongated member having five sections which are integral and disposed end to end along a common axis. The first section is a cylinder extending from one end of the member to one end of the second section. The second section is a truncated cone with its small end constituting the one end of the second section and its larger end constituting the opposite end of the second section. The third section is a second cylinder of larger diameter than the larger end of the second section and forms with this larger end a right angle shoulder. The fourth section is another truncated cone with its larger end having the same diameter as the third section cylinder and integral therewith. The fifth section is a rounded head which defines the opposite end of the member and is integral with the smaller end of the fourth section cone.

3,553,811
APPARATUS FOR MAKING COAXIAL CABLE WITH WELDED METAL SHEATH
Oscar G. Garner, Riverside, Conn., assignor to General Cable Corporation, New York, N.Y., a corporation of New Jersey
Original application Dec. 30, 1965, Ser. No. 517,706, now Patent No. 3,430,330, dated Mar. 4, 1969. Divided and this application July 18, 1968, Ser. No. 745,802
Int. Cl. B21d *39/04*; B23p *19/00*
U.S. Cl. 29—202.5 7 Claims



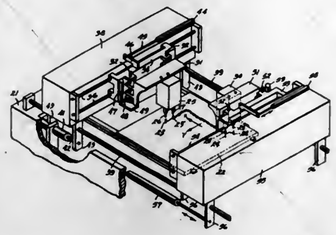
This apparatus for making coaxial cable forms a longitudinally seamed tube from flat stock progressively around a continuously travelling cable core. The tube is made larger than the cable core and after welding, the assembly is pulled through a die that reduces the diameter of the tube to make it contact with and squeeze the insulation on the core. The sizing die is close to the welding region so that there is only a short distance in which the core moves at a faster rate than the tubular sheath that encloses it. Lubricant is applied to the tube ahead of the die and is washed off beyond the die before the cable enters a friction puller that pulls the cable through the die.

3,553,812
BRAZABLE TERMINAL BODY AND APPARATUS FOR INSTALLING SAME INSIDE A TUBE
Galen K. Weaver, 2606 Ridgewood Ave.; Howard A. Shaffer, 11505 Rockhill Ave. NE.; and Stephen A. Coughlin, 875 Hartshorn Ave., all of Alliance, Ohio 44601
Filed Aug. 23, 1968, Ser. No. 754,889
Int. Cl. B23k *19/00*; H05k *13/00*
U.S. Cl. 29—203 5 Claims



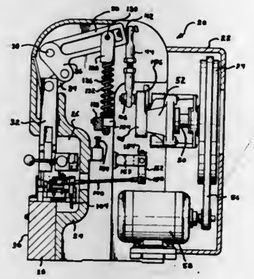
A metal terminal body provided with an external coating of brazing material and a threaded portion for connecting the terminal body to a holding rod which is used for positioning and installing the terminal body, along with one or more conductor wires attached thereto, inside a metal tube. While held by the rod, the terminal body is braced against the tube wall at a selected location by means of a block inserted into the tube by means of another rod and which permits the block to be moved in sliding contact with the holding rod and the tube wall. The tube is externally heated to melt the brazing material on the terminal body to fuse same to the tube wall after which the block is withdrawn and the holding rod is disconnected from the terminal body.

3,553,813
APPARATUS FOR CONNECTING PAIRS OF TERMINALS WITH A TWISTED PAIR OF INSULATED WIRES
Wilmot E. Brown, Jr., Graham, and Clarence C. Davis, Leesburg, N.C., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York, and Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed June 6, 1968, Ser. No. 735,044
Int. Cl. H05k *13/04*
U.S. Cl. 29—203 9 Claims



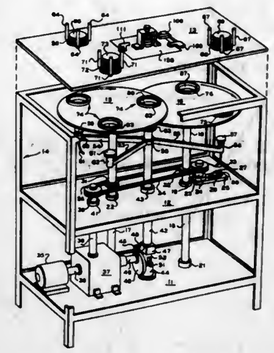
In the wiring of terminals located on a terminal board, first and second terminal groups are electrically interconnected by advancing stripped, leading ends of a set of insulated wires from a wire supply to a position adjacent one terminal group, twisting the wires together during the advancement, severing the wires at a point adjacent to the other terminal group, stripping insulation from the trailing ends of the severed wires, and connecting the leading and trailing ends of the wires to terminals located in the first and second groups, respectively.

3,553,814
TERMINAL APPLICATOR FOR TERMINALS IN STRIP FORM
George William Rider, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Filed June 19, 1968, Ser. No. 738,326
Int. Cl. H01r *43/04*; B21d *11/04, 31/02*
U.S. Cl. 29—203 7 Claims



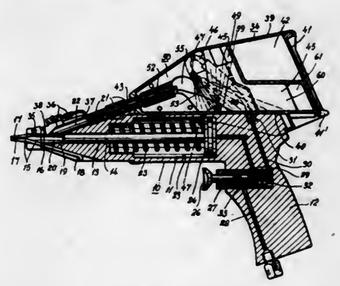
Terminal applicator for applying terminals in the form of a continuous belt has crimping die and crimping anvil movable relatively towards and away from each other. Belt of terminals is fed along feed path extending behind the dies to present the leading terminal on the belt to the dies. After crimping, the terminal feed means moves laterally of the feed path away from the dies while the terminal is held between the crimping dies so that the crimped terminal is broken away from, and thereby removed from, the belt. In one embodiment, ejector arm mounted in front of the die is moved laterally after crimping to move crimped termination from between the dies.

3,553,815
MACHINE FOR ASSEMBLING INSERT INTO LID
Howell T. McElvy, Kansas City, Mo., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 17, 1968, Ser. No. 737,460
Int. Cl. B23p *19/04, 7/10*
U.S. Cl. 29—208 10 Claims



A machine for assembling a container cover, composed of a lid and a disc insert, has two overlapping horizontal intermittently rotated wheel conveyors. A first vertically reciprocating suction cup pulls a lid from the bottom of a stack of lids and deposits it in an opening in one of the wheel conveyors while a second vertically reciprocating suction cup pulls a disc from the bottom of a stack of discs and deposits it in an opening in the other wheel conveyor. The wheel conveyors are indexed to bring the lid and disc into vertical alignment with each other and a vertically reciprocating plunger which forces the disc into the lid. After the next indexing motion of the wheel conveyor, the assembled cover is pushed upwardly into a stack.

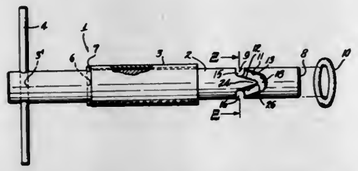
3,553,816
ARRANGEMENT IN PNEUMATIC HAND TOOLS FOR INSERTING SKID-PREVENTING STUDS INTO VEHICLE TIRES
Karl Sivert Arnshav, Stockholm, Sweden, assignor to Frank Dahlberg AB, Stockholm, Sweden
Filed Nov. 22, 1968, Ser. No. 778,239
Int. Cl. B23q *7/12*
U.S. Cl. 29—212 7 Claims



There is provided an arrangement in hand guns provided with a striker means arranged for movement in the bore of the gun between a forward and a retracted position and intended to insert into tire treads skid-preventing studs of the type which present a stem portion and a head portion, and includes a magazine divided into a number of magazine chambers of which one is

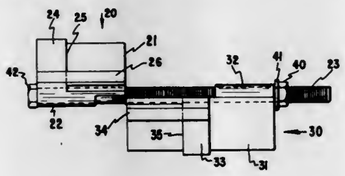
adapted to receive skid-preventing studs in no particular order of alignment or array, an outlet opening which communicates with one end of a stud feed line via a stud aligning device which presents a gate opening leading to the other end of the feed line and adapted to permit only those studs to pass which are presented to the gate head first and in a position in which their long axes form an angle with the centre axis of the gate opening, and wherein the magazine is provided with at least one air nozzle adapted to blow away all studs which reach the gate in a position different to that in which they can pass through said gate.

3,553,817
TOOL FOR INSTALLING RESILIENT SEALS
Stanley M. Lallak, 315 W. 1st St., Washington, Kans. 66968
Filed Apr. 10, 1968, Ser. No. 720,213
Int. Cl. B23p *19/00*
U.S. Cl. 29—235 **9 Claims**



An O-ring installing tool of simple construction including only a mandrel and a retaining sleeve slideable along the mandrel. A generally W-shaped groove is formed near the forward end of the mandrel to accommodate an O-ring in the groove. The O-ring is positioned in the groove by squeezing its sides diametrically in a first pair of pockets and then folding the O-ring in a direction toward the front end of the mandrel while sliding the sleeve over the O-ring positioned in the groove. Then, it is a simple matter to insert the tool into a bore and accurately align and seat the O-ring in any desired recess by merely sliding the sleeve away from the groove to allow the resiliency of the O-ring to snap itself into the recess. The tool has a handle to facilitate its manipulation, and a stop pin spaced from the handle prevents injury to the fingers of the user of the tool when the sleeve is pulled rearwardly to release the O-ring.

3,553,818
CHAIN LINK SEPARATOR
Harold D. Wenaas, Garretson, S. Dak. 57030
Filed Sept. 27, 1968, Ser. No. 763,160
Int. Cl. B23p *19/04*
U.S. Cl. 29—256 **6 Claims**



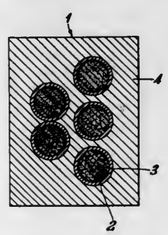
A device for separating links of a chain of the type having separable links formed of flat metal. The device has holders or jaws into which the links fit and in which they are held. Screw means is used to force the holders to move the one link relative to the other to cause separation. Re-assembly is possible by reversing the position of the links.

3,553,819
METHOD OF USING FINGER-HELD TOOLS
Gary L. Johnson and Robert M. Shryock, Monrovia, Calif., assignors to E.T.M. Corporation, Monrovia, Calif., a corporation of California
Original application May 24, 1967, Ser. No. 640,908, now Patent No. 3,399,456, dated Sept. 3, 1968. Divided and this application May 13, 1968, Ser. No. 728,640
Int. Cl. B23g *17/00;* **H05k** *13/04*
U.S. Cl. 29—407 **2 Claims**



A method for performing multiple operations on a part by serial manipulation of several finger-mounted tools. The tools are alternately brought against the thumb to perform an associated operation such as cutting, bending, postioning or gripping. In assembly of minature parts under a microscope, efficiency is improved by this technique because the operator can view the part continuously without looking away from the microscope to select and replace the several tools in use.

3,553,820
METHOD OF PRODUCING ALUMINUM-CARBON FIBER COMPOSITES
Raymond Vincent Sara, North Olmsted, Ohio, assignor to Union Carbide Corporation, New York, N.Y., a corporation of New York
Original application Feb. 21, 1967, Ser. No. 617,662, now Patent No. 3,473,900, dated Oct. 21, 1969. Divided and this application May 5, 1969, Ser. No. 821,848
Int. Cl. B23p *17/00*
U.S. Cl. 29—419 **2 Claims**

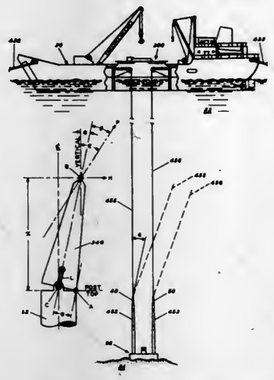


Light weight, strong composite refractory articles comprising a plurality of tantalum coated carbon fibers bonded together by an essentially aluminum matrix are provided. Such composite articles are characterized by a high modulus of elasticity and are especially suited as materials of construction for aerospace and hydrospace vehicles and systems.

3,553,821
METHOD OF REMOVING A GUIDE LINE FROM A GUIDE POST AT AN UNDERWATER WELL SITE
William R. Postlewaite, Menlo Park, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Original application May 2, 1966, Ser. No. 546,821, now Patent No. 3,451,699, dated June 24, 1969. Divided and this application Sept. 25, 1968, Ser. No. 795,749
Int. Cl. B23p *19/02*
U.S. Cl. 29—427 **1 Claim**

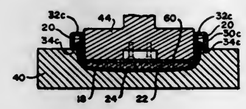
Coupling devices useful in offshore well work for connecting a guide line to a guide post, which coupling

devices incorporate means allowing for separation of the guide line from the guide post when the lateral force



applied on the guide post by the guide line exceeds a predetermined amount.

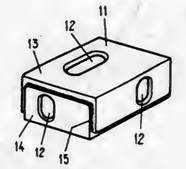
3,553,822
METHOD OF FABRICATING A COVERED BOX CONSTRUCTION
George G. Bergh and Robert G. Bergh, North Attleboro, Mass., assignors to Bergh Bro. Co., Inc., Attleboro Falls, Mass.
Original application Feb. 15, 1968, Ser. No. 705,836, now Patent No. 3,426,938, dated Feb. 11, 1969. Divided and this application Aug. 27, 1968, Ser. No. 755,617
Int. Cl. B23p *9/00*
U.S. Cl. 29—445 **2 Claims**



A method of fabricating a decoratively covered box component of the type having a bottom member with a continuous wall member extending vertically from the peripheral edge thereof. The method includes the steps of covering the bottom member and at least a portion of the wall member with a blank of cloth, paper or similar flexible sheet material. While the sheet material is held in a taut condition, a rim member is employed in cooperation with the wall member to hold the sheet material in place, the exposed surfaces of the latter thereafter remaining taut and movable relative to the box component surfaces over which it extends.

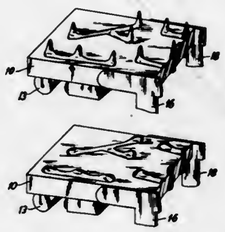
3,553,823
METHOD FOR CONSTRUCTING LIGHT-METAL FRAMEWORKS FOR TRANSPORT CONTAINERS, AND A FRAMEWORK CONSTRUCTED ACCORDING TO THE METHOD
Karl Uno Torsten Alfredsson, Skultuna, Sweden, assignor to Aktiebolaget Svenska Metallverken, Vasteras, Sweden
Filed Nov. 15, 1967, Ser. No. 683,333
Claims priority, application Sweden, Nov. 21, 1966, 15,918/66
Int. Cl. B23k *31/02*
U.S. Cl. 29—471.1 **6 Claims**

A method wherein the light-metal framework of a transport container is assembled with the assistance of corner pieces. The corner pieces are formed by assembling and welding together extruded light-metal shapes in the form of box-like structures; the resulting box-like corner



pieces then being welded to the adjacent ends of the structural bars of the framework.

3,553,824
PROCESS FOR ELIMINATING ICICLE-LIKE FORMATIONS ON SOLDERED CIRCUIT SUBSTRATES
Edward D. Kozelnicky, Center Valley, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 9, 1968, Ser. No. 727,866
Int. Cl. B23k *31/02*
U.S. Cl. 29—487 **5 Claims**

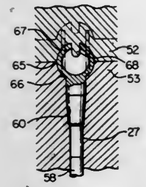


The icicle-like formations of solder which are produced in conventional soldering processes, when a circuit carried on a substrate is subjected to an underlying solder bath, are substantially reduced in size by inverting the circuit to an upwardly facing orientation, coating it with a flux (either before or after the inversion) and subjecting the fluxed soldered surface to an infra-red or other radiant heat sorce radiating sufficient heat to melt the icicles.

3,553,825
METHOD OF BONDING ALUMINUM
Kostas F. Dockus, Cicero, and John L. Zambrow, Deerfield, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
No Drawing. Continuation-in-part of application Ser. No. 751,659, July 11, 1968, which is a continuation of application Ser. No. 533,876, Mar. 14, 1966. This application Nov. 6, 1969, Ser. No. 874,689
Int. Cl. B23k *31/02*
U.S. Cl. 29—487 **6 Claims**

A method of bonding fragile aluminum parts either to themselves or to other metals by placing a clad surface of conventional alloy on the aluminum part, a bond promoting metal of iron or arsenic and placing the parts to be joined together at a sufficiently high temperature to cause melting and flowing of the clad surface to thereby bond the components to each other. The method does not require pressure and the joining of the parts is accomplished in an inert atmosphere.

3,553,826
METHOD OF MAKING BALL STUDS
Michio Abe, Kasugai-shi, Japan, assignor to Tokai Cold Forming Co., Ltd., Aichi-ken, Japan, a Japanese corporate body
Filed Mar. 22, 1968, Ser. No. 715,207
Claims priority, application Japan, Aug. 16, 1967, 42/52,199
Int. Cl. B23p *17/00;* **B21d** *53/10*
U.S. Cl. 29—527.2 **1 Claim**



The method of making ball studs in cold-pressing by a transfer press in which a blank having generally the same volume and outer diameter as a finished ball stud and its shaft portion, by first cutting and then extruding the blank forwardly to form a tapered stem and shank portion, forming a preliminary cylindrical shape for the spherical head portion by backwardly extruding the blank, and then upsetting the preliminary cylindrical shape to form the spherical head portion.

3,553,827
THERMOCOUPLES
Brian Baker, Alan Anthony Beynon, and Richard William Husselby, Weston-Super-Mare, England, assignors to Bristol Aerojet Limited, Somerset, England
Filed Jan. 9, 1968, Ser. No. 696,622
Claims priority, application Great Britain, Jan. 10, 1967, 1,361/67
Int. Cl. B01j *17/00;* **H01l** *15/00*
U.S. Cl. 29—573 **8 Claims**



Hot junctions for thermocouples for use at high temperatures are made by welding the two legs of the junction to an intermediate metal member and then melting the metal member.

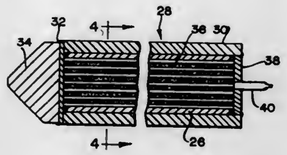
3,553,828
LEAD ASSEMBLY STRUCTURE FOR SEMICONDUCTOR DEVICES
Samuel L. Starger, Clark, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Nov. 22, 1967, Ser. No. 685,095
Int. Cl. H01l *5/00*
U.S. Cl. 29—589 **1 Claim**



A terminal assembly for mounting a semiconductor die containing a number of active regions. Conductive lands on a surface of the die are electrically connected to the active regions.

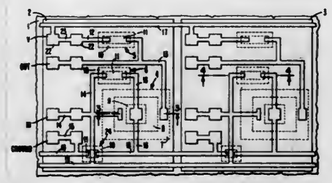
The terminal assembly consists of a number of relatively thick terminal leads extending radially outward from a common central area. Each terminal lead has a relatively thin end portion at the central area bonded directly to a corresponding land on the semiconductor die.

3,553,829
METHOD OF FORMING CHANNEL PLATES
James G. Hunt, Framingham Center, and Gerald I. Friedman, Concord, Mass., assignors to Nuclear Metals Division, Whittaker Corporation, West Concord, Mass.
Filed Oct. 31, 1968, Ser. No. 772,217
Int. Cl. B23p *17/04*
U.S. Cl. 29—592 **15 Claims**



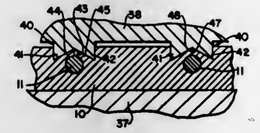
A channel plate is produced from glass powder by extruding the powder within a canister having a number of disposable rods extending parallel to each other within the powder. This forms a bar having a solid glass core in which the rods are embedded. The resultant bar is cut lengthwise into segments which are treated to remove the canister material, packed side by side into a second extrusion canister, and then re-extruded to bond the segments to each other. The final bar resulting from this extrusion is then cut into channel plates of the desired thickness, after which the disposable rods are removed from the plates. This leaves a number of channel plates having an extensive number of ordered channels extending axially through them.

3,553,830
METHOD FOR MAKING INTEGRATED CIRCUIT APPARATUS
Frederick F. Jenny, Endwell, N.Y., and Rudolf E. Thun, Carlisle, Mass., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 19, 1968, Ser. No. 699,095
Int. Cl. B01j *17/00;* **H01l** *7/00*
U.S. Cl. 29—574 **6 Claims**



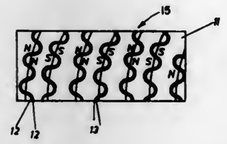
A method for making integrated circuit apparatus wherein a plurality of integrated circuits are formed on at least one substrate and arranged in groups of circuits with each of the circuits of a particular group being functionally equivalent to the other circuits of the group. Next, the circuits of the group are interconnected in a predetermined parallel operational relationship. The circuits of the group are then commenced to be tested in a sequential manner for one or more desired preselected electrical characteristics. When the first circuit or circuits, as the case might be, of the group are found which have these characteristics, no further testing of the circuits of the group is performed. Thereafter, the circuits of the group are operatively disconnected from the parallel operational relationship with the exception of those circuit or circuits tested and found to have the characteristic(s).

3,553,831
MANUFACTURE OF COMPOSITE METAL STRIPS
Earl W. Palmer, Watertown, and Roger E. Laigle and Peter J. Kabelka, Torrington, Conn., assignors to Anaconda American Brass Company, a corporation of Connecticut
Original application Jan. 5, 1966, Ser. No. 518,846, now Patent No. 3,421,866, dated Jan. 14, 1969. Divided and this application Aug. 7, 1968, Ser. No. 767,876
Int. Cl. B21d *39/00;* **B23p** *11/00, 23/04;* **B21b** *15/00*
U.S. Cl. 29—599 **12 Claims**



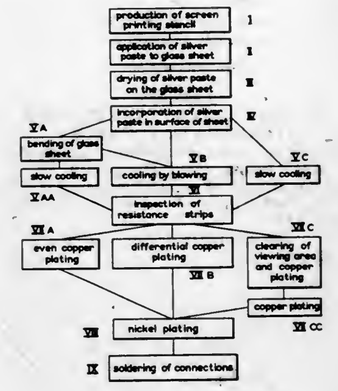
A method and apparatus for the manufacture of metal strips which have elongated wires interlocked within the body of the metal strip. This manufacture involves forming a plurality of elongated laterally spaced grooves into one broad face of the strip and then positioning in each groove a wire having a smaller diameter than the depth of the groove. Thereafter integral strip or flap portions partially cut or severed from the metal strip along opposite sides of the groove adjacent the broad face of the strip are infolded relative to each other and are clinched about the wire to interlock the wire to the strip.

3,553,832
METHOD OF MAKING A POWDER DISPENSING CYLINDER FOR AN ELECTROSTATIC POWDER FIXING DEVICE
Wilhelm Knechtel, Paulinenstrasse 18, Rodheim-Bieber, Germany
Original application Jan. 16, 1967, Ser. No. 609,386, now Patent No. 3,464,383, dated Sept. 2, 1969. Divided and this application Jan. 10, 1969, Ser. No. 833,207
Int. Cl. H01f *7/06*
U.S. Cl. 29—607 **1 Claim**



The present invention relates to an electrostatic powder image printing system, more particularly, to a magnetic cylinder for uniformly dispensing toner powder in a powder image fixing device.

3,553,833
HEATED GLASS STRUCTURES
Friedrich Jochim, Herzogenrath, Dieter Peetz, Aachen, Heinz, Karla, Herzogenrath, and Hermann Luersen, Laurensberg, Germany, assignors to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed Nov. 13, 1967, Ser. No. 682,173
Claims priority, application Germany, Nov. 14, 1966, 1,555,053
Int. Cl. H06b *3/00*
U.S. Cl. 29—611 **17 Claims**



The specification describes vehicle windows having resistance strips on their faces for heating. The strips are applied by fusing silver particles with the surface, and electroplating the silver with copper and nickel.

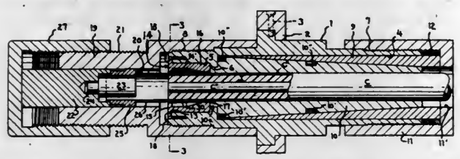
3,553,834
METHOD OF MAKING A HEATING CARPET
Franciszek Olstowski, Freeport, and John D. Watson, Sr., and Wallace T. McMichael, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Original application Mar. 22, 1965, Ser. No. 441,905, now Patent No. 3,492,197. Divided and this application Nov. 12, 1968, Ser. No. 775,163
Int. Cl. H05b *3/38*
U.S. Cl. 29—611 **2 Claims**

A method of making a heating carpet using a compressed vermicular graphite as a resistance heating element wherein a layer of compressed vermicular graphite is applied to the backing of a carpet and a second backing is added to cover the compressed graphite layer. Electrical contact is then made between the graphite layer and an electrical source to cause current to flow through the graphite layer thereby heating the carpet by electrical resistance.

3,553,835
METHOD OF PROVIDING COAXIAL CONNECTIONS
Henry William Demler, Sr., Lebanon, and George William Ziegler, Jr., Carlisle, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Original application Oct. 14, 1963, Ser. No. 315,787, now Patent. No. 3,270,392. Divided and this application May 23, 1966, Ser. No. 552,062
Int. Cl. H01r *43/00*
U.S. Cl. 29—628 **4 Claims**

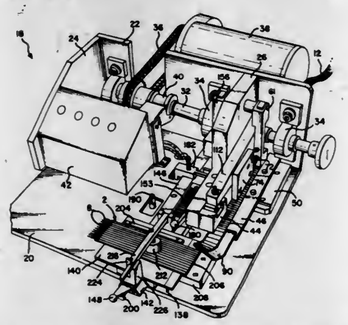
A method of connecting a coaxial connector member onto a rigid conductor of a coaxial cable which comprises holding one end of the cable while placing a loading ring

on the conductor adjacent one end thereof. The conductor is flared along at least a portion thereof into engagement with the loading ring and the connector member is then



pushed onto the conductor in a coaxial direction thereby forcing the conductor against the loading ring to provide mechanical and electrical engagement therebetween.

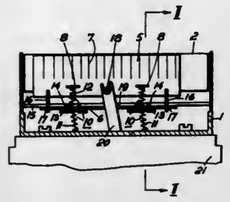
3,553,836
METHOD AND APPARATUS FOR TERMINATING CABLE
Harold Edwin Cootes, Harrisburg, Pa., assignor to AMP Incorporated, Harrisburg, Pa.
Continuation-in-part of application Ser. No. 733,620, May 31, 1968. This application May 21, 1969, Ser. No. 826,645
Int. Cl. H01r *43/00, 43/04*
U.S. Cl. 29—628 **11 Claims**



Flat electrical cable, having a plurality of parallel side-by-side conductors, is terminated by apparatus having crimping die and crimping anvil which are movable relatively towards each other to crimp a terminal onto a conductor of the cable. Apparatus has means for feeding terminals to the crimping die and anvil and also means for feeding the cable along a path extending between the die and anvil thereby to position a conductor in alignment with the die and anvil and with a previously fed terminal. Cable feeding means is arranged such that the end conductor of the cable is precisely located with respect to the die and anvil. During operation of the apparatus, cable is fed by a distance equal to the center-to-center spacing of the cable thereby to successively position the conductors of the cable in the crimping zone. A method of aligning the cable in the apparatus is also disclosed which compensates for dimensional irregularities in the cable.

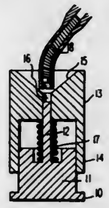
3,553,837
CUTTER HEAD FOR A DRY SHAVER
Reinhard König, Krumpendorf, Carinthia, Austria, assignor to Firma Carinthia Elektrogerate Gesellschaft m.b.H., Klagenfurt, Carinthia, Austria
Filed Jan. 8, 1969, Ser. No. 789,859
Claims priority, application Austria, Jan. 12, 1968, A 365/68
Int. Cl. B26b *19/10*
U.S. Cl. 30—34.1 **7 Claims**

A cutter head for a dry shaver with a perforated cutter foil as upper cutter and lower cutters with a trimmer and driving connections for the cutter members and a spring arrangement formed by two springs lying mechanically in series, of which one abuts with one end



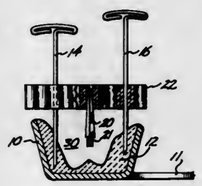
on the cutter head frame, and the other abuts with one end on the lower cutter for the razor part, while the other ends of the two springs are in operating connection with the lower cutter for the trimmer.

3,553,838
DENTAL AMALGAM CRUCIBLE AND CARRIER LOADER
Nathan P. Baker, 1311 A. Quarrier St., Charleston, W. Va. 25301
Filed June 20, 1969, Ser. No. 835,140
Int. Cl. A61c *19/00*
U.S. Cl. 32—1 **6 Claims**



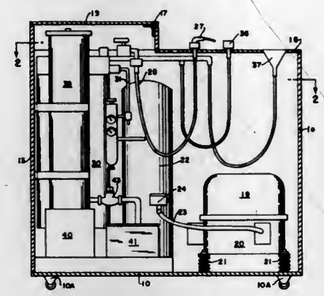
A dental amalgam crucible and carrier loader is disclosed in which a generally conical cup is provided to hold the amalgam in position for a carrier to be pushed into the same and a well in the bottom of the cup receives parts of the amalgam and a plunger in the well ejects the amalgam into the carrier when the cup is depressed against its resilient mounting.

3,553,839
METHOD AND APPARATUS FOR POSITIONING A DOWEL
Kenneth W. Gores, 1026 112th NE., Bellevue, Wash. 98004
Filed Sept. 9, 1969, Ser. No. 856,394
Int. Cl. A61c *13/00*
U.S. Cl. 32—11 **5 Claims**



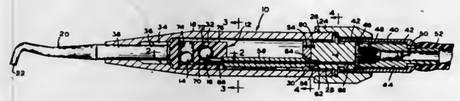
Supports are erected at opposite sides of a tooth cavity in a dental impression and a bridging member, frictionally mounted on said supports, spans the cavity and supports a dowel in selected positioning in the cavity while a cast is being poured and set.

3,553,840
MOBILE QUICK SET-UP SELF-CONTAINED ORTHODONTIC UNIT
James P. Bordelon, 1001-A E. 7th St., Thibodaux, La. 70301
Filed Oct. 2, 1968, Ser. No. 764,419
Int. Cl. A61c *19/02*
U.S. Cl. 32—22 **1 Claim**



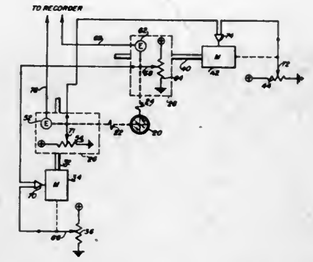
The present disclosure is directed to a self-contained mobile quick set-up orthodontic unit not requiring any external plumbing connections and which requires a single 110 v. AC conventional plug electrical lead as its only external connection. The unit has a spring mounted air compressor motor driven under pressure static control with a compressed air reservoir to maintain a volume of compressed air for a three-way syringe and to pressurize a water tank to also supply the syringe. The unit also contains a vacuum tank and means for maintaining the desired vacuum. Mobility is attained by wheel mounting the cabinet structure containing the above units.

3,553,841
AMALGAM CONDENSER
George K. Austin, Jr., 604 Holly Drive, Newberg, Oreg. 97132
Filed Oct. 23, 1967, Ser. No. 677,377
Int. Cl. A61c *3/08*
U.S. Cl. 32—56 **12 Claims**



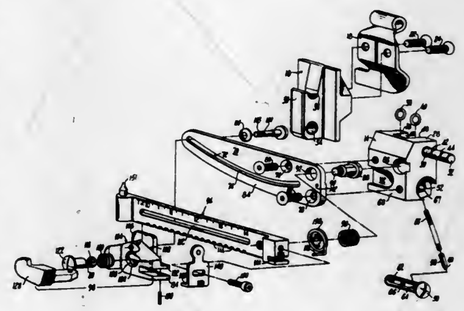
An amalgam condenser includes a dual motion vibrator which revolves balls and in planes at right angles to each other to vibrate a sleeve-like housing and a condenser point to move a working end spherically. A nut screwed onto a threaded portion presses an adapter against a disc of the vibrator to press a vibrator body and a collet forwardly of the housing to cause frusto-conical portion of the housing to cam the fingers of the collet inwardly against shank of the condenser point to grip the shank tightly. A manually adjustable valve control sleeve presses a connector against a resilient O-ring to open a valve to the extent that the O-ring is compressed. The O-ring acts both as a seal and as a spring holding the connector firmly against the shoulder. Air travels from the valve through passage in the adapter, the tube and parallel passages and to circular chambers or races. The air is exhausted to the atmosphere from the chambers and along flats on the cylindrical body, flats on the periphery of the disc and flats on circular flange of the adapter.

3,553,842
DIGITIZER WITH POWER ASSISTED INDEX MEMBER
Heinz Joseph Gerber, West Hartford, and Dale G. Blake, Vernon, Conn., assignors to The Gerber Scientific Instrument Company, South Windsor, Conn., a corporation of Connecticut
Filed Feb. 6, 1969, Ser. No. 797,155
Int. Cl. G01b *5/24*
U.S. Cl. 33—1 **10 Claims**



A digitizer for reducing a line or edge of a map, graph, drawing or the like to coordinate information includes an index member, such as a reticle, manually movable along the line or edge being digitized. The index member is attached to X and Y strings each of which is wound in part on an associated drum so as the index member is moved along the line or edge one or the other or both of the strings is unwound from or wound onto its drum. The drums are mounted on carriages movable in the X and Y directions along two edges of the digitizer and the carriages are in turn driven by drive motors which are controlled by the movement of the strings so that the carriages are automatically slaved to the movement of the strings and thereby maintained in aligned relationship with the index member. Encoders connected with the drums or the carriage drive system provide the desired output information.

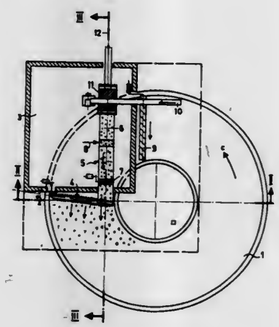
3,553,843
GRENADE LAUNCHER SIGHT
Nicholas Sophinos, Longmeadow, Mass., Robert D. Fremont, Farmington, Conn., and Edward L. Gallini, West Springfield, Mass., assignors to Colt's Inc., Hartford, Conn., a corporation of Arizona
Filed May 15, 1967, Ser. No. 638,550
Int. Cl. F41g *1/28*
U.S. Cl. 33—58 **6 Claims**



In a grenade launching firearm, an auxiliary sight assembly comprising a sight mounting subassembly removably attachable in clamping engagement to a carrying

handle of the firearm and incorporating shock absorbing stabilizing means, a plate fixed to the sight mounting subassembly and having a cam surface, a sight bar having a pivot member rotatably supported on the plate and a series of open slots laterally extending completely through the sight bar, a detenting subassembly slidably mounted on the sight bar for establishing different range settings and having a guide member, and a helical torsion spring biasing the guide member into continuous engagement with the cam surface of the plate.

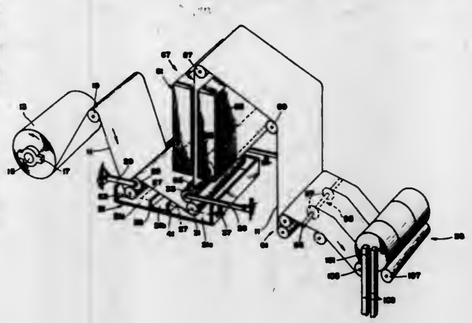
3,553,844
METHOD AND MEANS FOR CONTINUOUSLY DRYING WET ORGANIC WASTE MATTER, PARTICULARLY FRESH SLUDGE, THROUGH AEROBIC PRECOMPOSTING
Hans Gujer, Glattalstrasse 149, Rumlang, Switzerland
Filed Dec. 3, 1968, Ser. No. 780,829
Claims priority, application Switzerland, Dec. 4, 1967, 17,015/67
Int. Cl. F26b *3/00*
U.S. Cl. 34—9 **26 Claims**



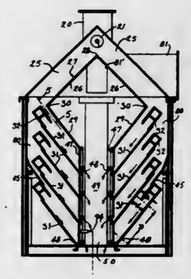
A method and means for drying wet organic waste matter, particularly fresh sludge, through aerobic precomposting is disclosed. In the method wet organic waste matter is continuously added to a bed of precomposting decaying matter in such proportions that the moisture balance is not effected to the point of halting the process. Constant recirculation of the material in the bed is conducted in order to keep the bed relatively loosely arranged so that sufficient air is available throughout the bed. The preferred apparatus includes an annular shaped receptacle with a work platform suspended above on which are mounted a circulating device, a feeding device, and a removal device. In the preferred embodiments, either the annular receptacle revolves or, alternatively, the annular receptacle remains stationary while the work platform revolves around the same.

3,553,845
METHOD AND APPARATUS FOR IMPREGNATING AND DRYING MATERIAL IN A FIBROUS WEB
Charles A. Lee and Warren R. Furbeck, Knoxville, Tenn., assignors, by mesne assignments to Southeastern Products, Inc., Knoxville, Tenn., a corporation of Tennessee
Filed June 9, 1969, Ser. No. 831,524
Int. Cl. F26b *3/00*
U.S. Cl. 34—9 **8 Claims**

A continuously traveling web is immersed in an impregnating material, and a controlled pressure is applied to the web to squeeze impregnating material therefrom to leave a desired, predetermined accretion of impregnating material per unit area of the web. The wet, impregnating web is subjected to controlled distortion as it travels in a substantially vertical plane through a drying station to provide a dry, flat, dimensionally stable and substantially uniform end product.

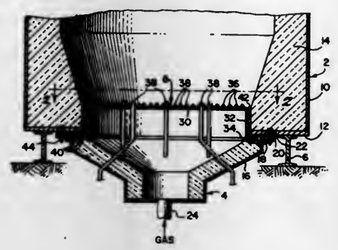


3,553,846
GRAIN DRYER
Bruce A. McKenzie, Lafayette, and Gerald L. Zachariah and Robert M. Peart, West Lafayette, Ind., and Raymond R. Ohlgren, Pewaukee, Wis., assignors to The Heil Co., Milwaukee, Wis., a corporation of Wisconsin
Filed June 25, 1969, Ser. No. 836,387
Int. Cl. F26b *13/10*
U.S. Cl. 34—56 **18 Claims**



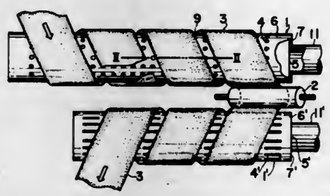
A grain dye is disclosed in which there are tiers of angularly-disposed shelves, one above the other, providing grain beds which are inclined toward common intermediate discharge columns, there being a hot air duct extending horizontally along the upper edge of each shelf from which hot air at relatively high temperature is directed downwardly at high velocity and pressure, in concurrent flow through the bed of grain supported on the shelf, and there being common means for feeding grain to the upper edges of all of the shelves to maintain the inclined beds filled. Metering means at the lower edge of each shelf provides for metering from each shelf a predetermined rate. The feed of grain into the dryer is automatically controlled to maintain a predetermined level. An optionally usable cooler is also disclosed which may be located below the drying unit and which is adapted to deliver cooling air upwardly in counterflow with respect to the falling grain.

3,553,847
FLUIDIZED BED REACTOR
Walter W. Kramer and William Koren, Allentown, Pa., assignors to Fuller Company
Filed Sept. 9, 1968, Ser. No. 758,207
Int. Cl. F26b *17/10*
U.S. Cl. 34—57 **7 Claims**



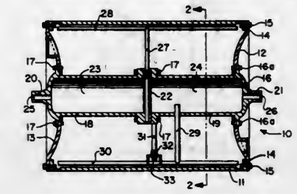
A fluid bed reactor gas distribution grid of steel plate construction having an upper plate and a lower plate spaced therefrom wherein the lower plate includes a radially outwardly extending peripheral ring portion clamped between the reactor base plate and windbox grid support ring and having a floating non-heat conductive seal between the grid ring portion and reactor base plate so as to not only provide a three-way seal between the atmosphere, reactor bed chamber and windbox, but to also allow the lower grid plate to expand, and the upper grid plate being provided with means for allowing it to expand relative to the lower grid plate and connecting grid side wall, and wherein the lower grid plate is in direct heat transfer relation with the grid support ring to provide means for transferring heat from high bed temperature to the outer windbox shell, and the exterior dimension of the grid being such as to provide a clearance between the grid side wall and adjacent reactor refractory which clearance is loosely packed with insulation material to further assist the seal and to protect the reactor base ring from the detrimental effect of high bed temperatures.

3,553,848
DRYING APPARATUS FOR FLEXIBLE SUPPORTS
Motoharu Kuroki and Akira Takagi, Kanagawa, Japan, assignors to Fuji Photo Film Co., Ltd., Kanagawa, Japan
Filed June 26, 1969, Ser. No. 836,727
Claims priority, application Japan, July 20, 1968, 43/51,448
Int. Cl. F26b *13/20*
U.S. Cl. 34—115 **5 Claims**



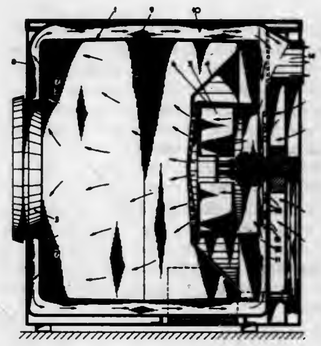
An apparatus for drying a flexible support having cylindrical air chambers with air inlets and air outlets for supporting the support as it moves in a helical path around the air chambers and a roller means arranged between the air chambers for guiding the support from one air chamber to the other.

3,553,849
ROTARY DRYER DRUM HAVING CLOSED INTERNAL CHANNELS
George O. Charrier, Cincinnati, and Gene R. Wolfe, Hamilton, Ohio, assignors to The Procter and Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 16, 1968, Ser. No. 784,043
Int. Cl. F26b *11/02*
U.S. Cl. 34—124 **8 Claims**



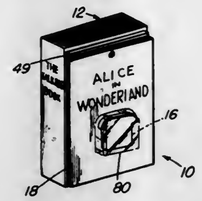
A rotary, cylindrical dryer drum with a plurality of internal, circumferential channels. The channels are provided by circumferential grooves formed in the inner surface of the shell of the dryer and include conduit-defining means disposed within the grooves. Each of the channels forms an annular conduit and includes an inlet for introducing a heat transfer fluid into the channel and an outlet for removing the heat transfer fluid from the channel.

3,553,850
DRYER
Fredrik Adolf Schuurink, 27 Fr. Rooseveltlaan, Breda, Netherlands
Filed Sept. 6, 1968, Ser. No. 757,899
Claims priority, application Netherlands, Sept. 8, 1967, 6712370
Int. Cl. F26b *11/02*
U.S. Cl. 34—133 **3 Claims**



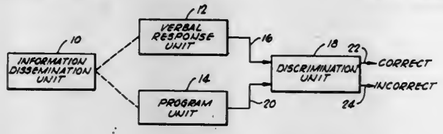
A dryer for laundries and the like having a drum rotatable about an axis in a stationary casing. Drying air is supplied through an enclosure at the central portion of the rear wall and is blown by a fan. The drum is provided with a plurality of apertures in the front wall to discharge the drying air. The casing is constructed in such a way that the drying air is returned from the front to the rear of the drum where part of the air is fed to the enclosure containing the fan through a narrow opening at the rear end of the enclosure and the rest of the air is exhausted into the atmosphere.

3,553,851
TALKING BOOK
Richard E. Paige, 215 E. 68th St., New York, N.Y. 10021
Filed Mar. 27, 1969, Ser. No. 811,148
Int. Cl. G09b *5/04*; G11b *5/78*
U.S. Cl. 35—8 7 Claims



A teaching device for simultaneously teaching the reading and pronouncing of words is described which includes the combination of a housing having the appearance of a book, a tape player within the housing, a prerecorded tape cartridge and a printed book detachably mounted on the housing, the material printed in the book corresponding to the material recorded on the tape.

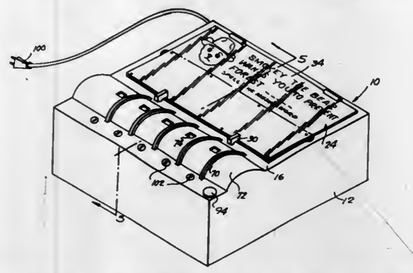
3,553,852
METHOD AND APPARATUS FOR RESPONSE DISCRIMINATION
Loyd G. Dorsett, Norman, Okla., assignor to Dorsett Industries, Inc., Norman, Okla., a corporation of Oklahoma
Continuation-in-part of application Ser. No. 673,676, Oct. 9, 1967. This application Jan. 24, 1968, Ser. No. 700,112
Int. Cl. G09b *7/02*
U.S. Cl. 35—9 16 Claims



Method and apparatus for use in attendance with teaching machines, oral lectures or such for constructing a verbal response for comparison with a known or correct response. The method utilizes unique discrimination functions wherein all correct answers are accepted as correct and a high order of incorrect answers are rejected as incorrect, the infrequent acceptance of an incorrect answer as correct being practically immaterial in a highly prompted question-answer system. The apparatus utilizes various binary selection devices of greatly reduced complexity for construction of a verbal response, either typewritten, oral or hand-printed, the constructed response then being compared with selected binary characteristics of a predetermined verbal response which represents a correct answer.

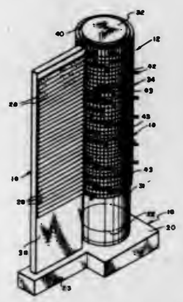
3,553,853
TEACHING MACHINE
Harold Weinstein, 1820 Ave. V 11229, and Edward Snyder III, 3323 Fillmore Ave. 11234, both of Brooklyn, N.Y.
Filed Sept. 10, 1968, Ser. No. 758,779
Int. Cl. G09b *7/02*
U.S. Cl. 35—9 11 Claims

A teaching machine for use with a programmed card containing a question to be answered or posing a problem to be solved. The card is inserted in the machine and the answer to the problem selected by rotating a plurality of indicia carrying wheels. Each wheel has a pinion fixed to it which meshes with a movable rack carrying an electrical contact element. If the answer selected is correct, the contacts will be in a predetermined relative position



corresponding to the program on the card so that an electric circuit can be established through the card to indicate that the correct answer has been selected.

3,553,854
INVENTORY CONTROL MEANS
Harry A. Biltz, Colwich, Kans. 67030
Filed Apr. 15, 1969, Ser. No. 816,359
Int. Cl. G09b *19/18*
U.S. Cl. 35—24 5 Claims

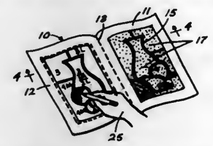


This invention is an inventory control means including an identifying control means and a cooperating inventory carriage means having the carriage means rotatable about a stationary indicator on the identifying control means so as to visually indicate stock control and necessity for ordering or manufacturing additional parts. More particularly, this invention is an inventory control means having a plurality of rotatable ring members, each identified by a given indicia on an upright identifying control means and having the ring members rotatable relative to a numerical control ring to indicate the number of parts in stock and, after a certain production period, whether or not the respective elements need to be reordered or reproduced to maintain the required inventory in stock.

3,553,855
MEANS OF PRODUCING ARTISTICALLY VARIEGATED MULTI-COLORED FLOCK PICTURES
Charles G. Oberg, 209 April Court, Rockford, Ill. 61111
Continuation-in-part of application Ser. No. 495,845, Oct. 14, 1965. This application Sept. 12, 1969, Ser. No. 857,501
Int. Cl. G09b *11/04*
U.S. Cl. 35—26 12 Claims

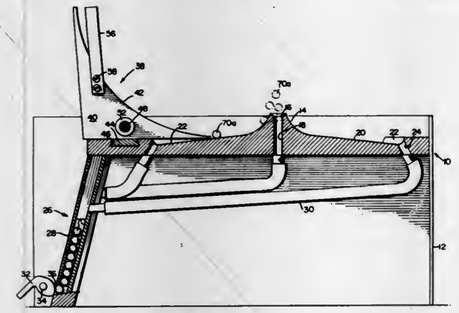
One-half of a water resistant sheet has a design or picture outlined thereon with white flocking applied to the various portions between the outlines, and the other half serves as a transfer flap and has a matching design

or picture in reverse provided thereon, the transfer half being foldable over the first half to bring the matching design or picture into register with the first mentioned design or picture. One may color portion of the matching design or picture on the transfer half using water soluble



coloring material, so that, after the flocked half is wetted and thereafter blotted to remove excess water, the first mentioned design or picture is colored by light finger pressure applied to the back of the transfer half. Spacing the flocked areas relative to one another by color separation lines avoids blurring by mixing of colors along the edges of neighboring portions of the flocked design or picture.

3,553,856
MACROSCOPIC SCATTERING ANALYZER
Gaylord T. Hageseth, Greensboro, N.C., assignor to Research Corporation, New York, N.Y., a nonprofit corporation of New York
Filed Dec. 16, 1968, Ser. No. 783,825
Int. Cl. G09b *23/20*
U.S. Cl. 35—19 8 Claims

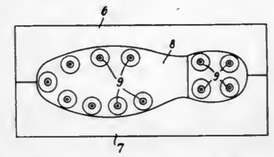


A macroscopic scattering analyzer having target represented by a surface of revolution defining an upstanding mound with a centrally disposed vertical recess therein. Radiation particles are represented by a launcher disposed adjacent the mound to deliver spheres in the direction of the recess, tangent to the base of the surface of the mound. Means are provided to vary impact parameters by laterally moving the launcher and to vary the impact energy by varying the velocity of delivery of the spheres to the mound. A series of receivers surround the mound to receive scattered spheres and record backscatter data.

3,553,857
ADHESION OF ELASTOMERIC MATERIALS
Donald Pettit, Isham, Frederick Brian Blackwell, Barton Seagrave, and Alan Reginald Carter, Kettering, England, assignors to The Shoe and Allied Trades Research Association, Kettering, England
No Drawing. Filed Aug. 18, 1969, Ser. No. 851,080
Claims priority, application Great Britain, Aug. 22, 1968, 40,166/68; Apr. 10, 1969, 18,589/69
Int. Cl. A43b *13/06*; A43d *00/00*
U.S. Cl. 36—32 9 Claims

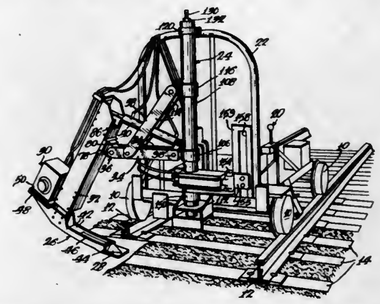
A sole unit of elastomeric soling material other than thermoplastic rubber and carrying a dried film of a solvent-based polyurethane or polychloroprene adhesive superimposed on a halogenated surface of the sole unit.

3,553,858
BOOTS AND SHOES
Clive J. Austin, Northamptonshire, England, assignor to Luther Austin and Sons Limited, Wollaston, Wellingborough, England, a corporation of Great Britain
Filed Nov. 16, 1967, Ser. No. 683,722
Int. Cl. A43c *15/00*; A43b *00/00*
U.S. Cl. 36—67 6 Claims



A sports shoe having flanged studs secured to retainers embedded in the sole of the shoe, the flanges of the studs being accommodated in domed bottom cavities in the sole of the shoe.

3,553,859
BALLAST CRIBBER
William P. McIlrath, Racine, Wis., assignor to Rex Chainbelt Inc., a corporation of Wisconsin
Filed Feb. 26, 1968, Ser. No. 708,288
Int. Cl. E01b *27/04*, *37/00*
U.S. Cl. 37—104 7 Claims

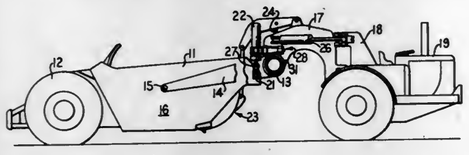


Ballast cribbing apparatus including a vehicle having wheels adapted to travel on the rails of a railroad right of way, a cribbing assembly including a generally vertical post mounted for movement relative to the vehicle and a generally horizontal arm mounted on the vertical post adjacent the lower extremity thereof for movement therewith to a position beneath the rail for clearing the ballast thereunder, power means for moving the cribbing assembly relative to the vehicle, vibrating means mounted on the cribbing assembly for imparting vibration to the horizontal arm to assist the passage of the same to ballast under the rail and vibration isolating means operatively interposed between the cribbing assembly and the vehicle for precluding vibration from being transmitted thereto.

3,553,860
GIMBAL AND UNIVERSAL COUPLING LIFT CYLINDER MOUNTING FOR SCRAPERS
George A. Fisher and Roger M. Smith, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Continuation of application Ser. No. 847,801, July 24, 1969, which is a continuation of application Ser. No. 685,508, Nov. 24, 1967, both now abandoned. This application Feb. 2, 1970, Ser. No. 7,398
Int. Cl. E02f *3/62*
U.S. Cl. 37—129 4 Claims

Hydraulic jacks for raising and lowering the bowl of a scraper are pivotally interconnected between the ends of a bowl spreader member and a transverse tube of the draft

frame to reduce stresses in those members and the goose-neck member of the scraper hitch. To further reduce

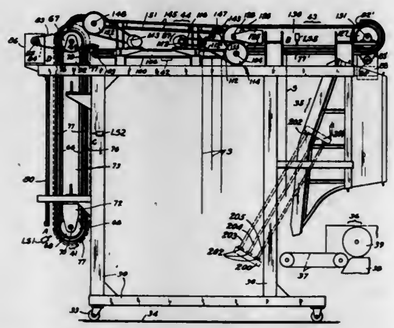


these stresses, the jacks are secured to the draft tube by means of a gimbal type connection.

3,553,861
FLATWORK IRONER FEEDING MECHANISM AND APPARATUS

James Bruce Orkney, Bellevue, Wash. (1818 Westlake Ave. N., Seattle, Wash. 98109), Joseph T. Mijich, 1610 IBM Bldg., Seattle, Wash. 98101, and Donald W. Tyler, Seattle, Wash.; said Tyler assignor to said Orkney and said Mijich

Original application Dec. 8, 1967, Ser. No. 689,062, now Patent No. 3,509,650, dated May 5, 1970. Divided and this application Aug. 4, 1969, Ser. No. 847,338
Int. Cl. D06f *61/00, 63/00*
U.S. Cl. 38—2 16 Claims



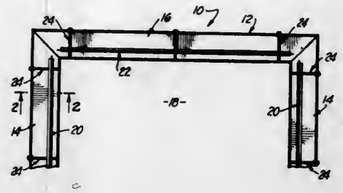
Flatwork ironer with feeder mechanism wherein flatwork such as sheets are attached edgewise to crose bars which are lifted and placed on conveyors, each bar carrying a sheet of flatwork. The suspended sheets are successively drawn by suction against downwardly moving screens which deliver them onto the infeed means of the ironer. Delivery is timed by electrical sensing means to keep the ironer operating at full capacity. The screens stretch the sheets lengthwise and crosswise to smooth them and remove wrinkles. Conveyors return the bars to a starting position.

3,553,862
ADJUSTABLE STRETCH FRAME FOR BIAXIALLY STRESSING SHEET MATERIAL

Kaino J. Hamu, 4013 N. Durfee Ave., El Monte, Calif. 91732

Filed Jan. 17, 1969, Ser. No. 792,114
Int. Cl. D06c *3/08*
U.S. Cl. 38—102.1 3 Claims

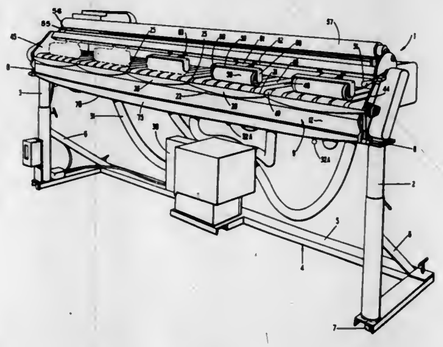
A stretch frame for biaxially stressing sheet material, such as printing screen, in mutually perpendicular edgewise directions. The frame has a rectangular frame structure mounting floating bars for attachment to the marginal edges of the sheet material to be stressed, and means for independently adjusting the floating bars relative to the frame structure to stress the sheet material in mutually perpendicular edgewise directions. The major contribution of the invention resides in the sheet gripping structure of the floating bars, whereby a sheet to be stressed may be firmly attached to the bars and yet readily released from the bars, when desired.



3,553,863
FABRIC SPREADER

Robert L. Sjostrom, Boca Raton, Fla., assignor to Sheetmaster Corporation, Boca Raton, Fla., a corporation of Florida

Filed June 16, 1969, Ser. No. 833,433
Int. Cl. D06f *67/04*
U.S. Cl. 38—143 9 Claims



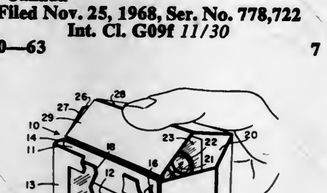
A machine for spreading textile fabrics such as sheets and pillow cases. The spreader can be converted from a single lane machine for spreading sheets to a multiple lane machine for spreading towels and pillow cases by moving a lever arm. Movement of the lever arm simultaneously interchanges a combination spreading lip having single long curvature and corresponding single long roll designed for sheets, with a combination lip having a plurality of short curved segments and correspondingly individually controlled rolls for towels and other small pieces.

3,553,864
MAP HOLDER

Albert A. Karlyn, Wethersfield, Conn., and Daniel W. Fedak, Prompton, Pa., assignors to Gentex Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 22, 1968, Ser. No. 699,408
Int. Cl. G09f *3/18*
U.S. Cl. 40—10 1 Claim

A holder for a map or the like which is an integral body of clear synthetic resin having a flat front and a flat back each of generally rectangular outline, and a connecting spring hinge of generally annular cross section extending along a side of each of the front and the back. The hinge normally biases the front to a position overlying the back so as releasably to clamp the



map or the like between the back and the front. The outer surface of the front carries a coating which includes a flatting agent to reduce glare and to permit the surface to be written upon.

3,553,865
DATA CARDHOLDER

Charles H. Jones, 1291 Michigan Ave., Cincinnati, Ohio 45208

Filed Nov. 18, 1968, Ser. No. 776,675
Int. Cl. G09f *3/18*
U.S. Cl. 40—10 11 Claims

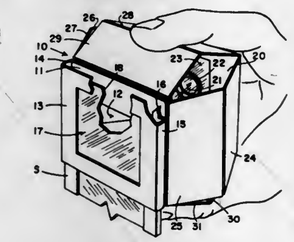


The data cardholder is formed simply and inexpensively of transparent plastic sheet material, and is constructed especially for support by the door and the lock of a glove compartment of a vehicle, so that accidental displacement or loss of the data card is rendered impossible or at least unlikely, though the card is readily visible within and removable from the solder. A notch in an edge of the data card engages the lock barrel to retain the card against accidental displacement from the holder.

3,553,866
FILMSTRIP VIEWING BOX

Cyril Fitz-James Redford, 11 Braecrest Ave., and Joseph Drewitt Brown, 151 Chapman Ave., both of Weston, Ontario, Canada

Filed Nov. 25, 1968, Ser. No. 778,722
Int. Cl. G09f *11/30*
U.S. Cl. 40—63 7 Claims

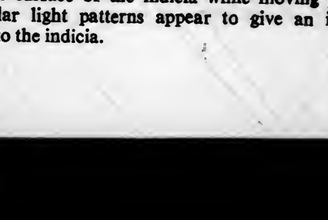


This specification discloses a collapsible flat-folding viewing box for use with film transparencies arranged in the form of a filmstrip, the filmstrip being slidably engaged at one end of the box and adapted to be moved to and fro to bring individual transparencies into registration with an illuminated viewing window, and the box is further provided with an optical viewing opening spaced from the viewing window and having a viewing lens therein, the box excluding substantially all of the ambient light which might otherwise fall on the lens, and in this way, the image of the transparency can be viewed optically at its maximum brilliance, and the strip can be moved to and fro to select different transparencies. The box is collapsible and made of relatively inexpensive material so as to enable it to be folded flat and mailed out for advertising purposes and the like.

3,553,867
WORD SELECTING DEVICE AND METHOD

Norvell E. Von Behren, Pittsford, N.Y., assignor to Vonn & Company, Incorporated, Glendale Heights, Ill., a corporation of Illinois

Filed Apr. 4, 1968, Ser. No. 718,882
Int. Cl. G09f *11/04*
U.S. Cl. 40—70 7 Claims



A naming device is disclosed which comprises a plurality of moveable plates mounted on a frame, with the moveable plates having a plurality of indicia designating male names on one side of the plate and indicia designating female names on the other side of the plates. The frame contains viewing windows through which the name indicia may be viewed in combination.

The device may be adapted for use in naming a baby. Also disclosed is a method for naming a baby.

3,553,868
ILLUMINATED SIGN

William Swartz, Highland Park, Ill. (1430 W. Wrightwood Ave., Chicago, Ill. 60614)

Filed Aug. 8, 1968, Ser. No. 751,107
Int. Cl. G09f *13/34*
U.S. Cl. 40—106.52 5 Claims



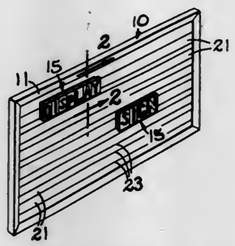
An illuminated sign has a housing, a plastic sign face with embossed indicia covering the housing, and a light source and reflector within the housing. The reflector comprises a wrinkled foil sheet that reflects light through the embossed indicia in an irregular pattern. The indicia is of variyng thickness and has surface irregularities to diffuse light in an irregular pattern. Upon viewing the surface of the indicia while moving past it, the irregular light patterns appear to give an illusion of motion to the indicia.

3,553,869
ILLUMINATED SIGN
Donald A. Dickinson, Toronto, Ontario, Canada, assignor to Gilbert & Barker Manufacturing Company, New York, N.Y., a corporation of New York
Filed June 24, 1968, Ser. No. 739,564
Int. Cl. G09f *13/06*
U.S. Cl. 40—130 **5 Claims**



An illuminated display panel wherein a transparent material sheet is faced selectively on opposite sides with opaque material so that a light positioned on one side of the sheet will illuminate a preselected design on the opposite side of the sheet that is characterized by a halo effect surrounding the periphery of the design.

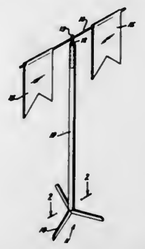
3,553,870
ILLUMINATED DISPLAY CHARACTERS
Ralph H. Rudolph, Plymouth, Wis., assignor to Snaplite Displays, Inc., Rockford, Ill., a corporation
Filed Mar. 25, 1968, Ser. No. 715,877
Claims priority, application Canada, Feb. 22, 1968, 13,115
Int. Cl. G09f *13/00*
U.S. Cl. 40—130 **4 Claims**



An illuminated display character for a sign is formed with a rectangular translucent cover detachably secured to a similarly shaped body unit and overlying an electric lamp which is housed within the body unit to illuminate the character. Part of the cover is darkened with opaque material arranged to outline an intelligible translucent letter or number located centrally of the face and illuminated by the lamp. By replacing one cover on the body unit with another of the same size and shape and formed with a different translucent letter or number, the same body unit and lamp may be used to display various letters and numbers.

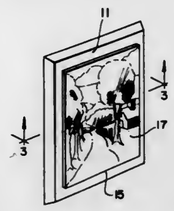
3,553,871
POLE SUPPORT BASE, AND DISPLAY INCLUDING IT
Robert Benchley, Jr., Norwton, Conn., assignor to Trans-World Display Corporation, a corporation of New York
Filed July 16, 1969, Ser. No. 842,137
Int. Cl. G09f *7/18*
U.S. Cl. 40—145 **11 Claims**

A base for supporting a hollow pole includes three L-shaped feet, each foot having a hole and a projecting tab. The vertical legs of the feet are arranged in a triangular configuration, for engaging a pole, with the tab of each foot located in the hole of another, and the horizontal legs projecting radially outwardly and arranged 120° to one another. The legs of each foot may be in-



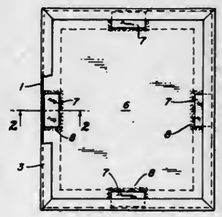
tegrally formed, or may comprise two pieces pivotally connected. In the latter case, each foot with its legs aligned can be packed within the pole it will ultimately support.

3,553,872
INTERCHANGEABLE DISPLAY
Emanuel C. Ebner, Chelmsford, Mass., assignor to Foto-Cube, Inc., Chelmsford, Mass., a corporation of Massachusetts
Filed Sept. 20, 1968, Ser. No. 761,101
Int. Cl. G09f *1/12*
U.S. Cl. 40—152 **13 Claims**



A display for the interchangeable presentation of pictures having a picture support member removably attachable to a back support member. These members may be used to attach pictures on a rigid picture support sheet to a wall or the like. The members are maintained in a predetermined orientation by a magnet and magnetic armature which may be separated by relative rotation about a locating pin.

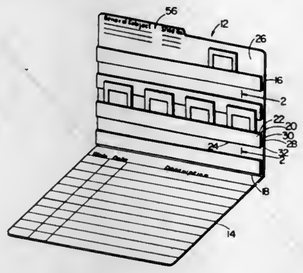
3,553,873
MAGNETIC KEEPER FOR PICTURE FRAMES
Neil Weston, Rte. 1, Box 233, Carmel, Calif. 93921
Filed Oct. 17, 1968, Ser. No. 768,373
Int. Cl. G09f *1/12*
U.S. Cl. 40—156 **2 Claims**



A picture frame of substantially U-shaped cross-section made of magnetic material at least at portions thereof,

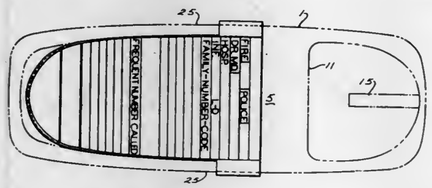
and a plurality of magnets attracted to said frame so as to keep the picture tightly against the front flange of the picture frame.

3,553,874
PHOTOGRAPHIC SLIDE FILE AND VIEWER
John L. Jarrett, U.S.A.I.D., P.O. Box 9130, Dar es Salaam, Tanzania
Filed Sept. 27, 1968, Ser. No. 763,250
Int. Cl. G09f *1/10*
U.S. Cl. 40—158 **6 Claims**



A photographic slide file and viewer in which a plurality of spaced, parallel, elongated strips are attached to the inner surface of the back flap of a manila folder, the strips defining slots for removably receiving one side of the mounts of conventional photographic slides in side-by-side relationship so that the slides may be viewed by holding the back flap of the folder to the light thus permitting arrangement of the slides. The front flap of the folder in its folded position covers the strips and the slides contained therein thus permitting filing of the slides in a file drawer.

3,553,875
CALL INDEX FOR TELEPHONES
William E. Hicks, 4250 Galt Ocean Drive, Fort Lauderdale, Fla. 33308
Filed Oct. 9, 1968, Ser. No. 766,208
Int. Cl. C09f *3/06*
U.S. Cl. 40—336 **2 Claims**



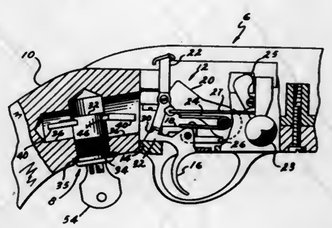
A transparent plastic window member is provided, being shaped as a sloping tongue for reception in a sloping recess in a telephone base. Spring clip means is provided at one end of the tongue for forming a quick-detachable connection with the sides of the elevated central portion of such a base. Provided also is a paper reminder slip having the same outline as the tongue to be held thereby in said recess. Outdated reminder slips may be conveniently removed and replaced by removing and replacing the windowpiece. Both the windowpiece and reminder slip are so located that, when the receiver of the telephone is removed, the slip is visible through the window member but when the receiver is in place the slip becomes substantially hidden.

3,553,876
UNDERWATER GUN
Alfred Engler, 1020 NE. 196th Terrace, North Miami Beach, Fla. 33162
Filed Feb. 20, 1969, Ser. No. 801,002
Int. Cl. F41c *3/00, 7/00*
U.S. Cl. 42—1 **14 Claims**



An elongate underwater gun capable of being cocked and held in the safety position, or in readiness for firing by pushing a handle member on one end of the gun for an appreciable travel, of the order of one to two inches, at the end of which travel, a firing pin is propelled to detonate a primer cap of a cartridge to propel a bullet through a barrel of short length at the opposite end of the gun, which is discharged therefrom at high pressure and velocity. The gun is capable of being re-loaded quickly and reliably while submerged under water to repeat the firing operation after cocking the gun for setting in the safety or firing position.

3,553,877
SAFETY LOCK FOR FIREARMS
Nicholas A. Welch, West Hartford, Conn., and Joseph R. Ferrara, Agawam, Mass., assignors to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed June 28, 1968, Ser. No. 741,098
Int. Cl. F41c *17/00, 17/02, 17/08*
U.S. Cl. 42—70 **8 Claims**

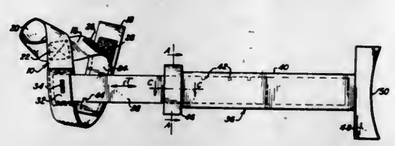


A safety lock for firearms having a safety movable to and from positions of blocking relationship relative to movement of the safety of the gun's firing mechanism, and a key lock carried within the stock of the gun and having a bolt movable in response to operation of a key for selective engagement with the safety to prevent release of the safety unless the bolt of said lock is first released by operation of the key.

3,553,878
MEANS FOR SUPPORTING AND AIMING A HAND-HELD DEVICE
Jack Y. Canon, 2194 Delmus, Opelousas, La. 70570
Filed July 23, 1968, Ser. No. 746,895
Int. Cl. F41c *27/00, 29/00*
U.S. Cl. 42—94 **15 Claims**

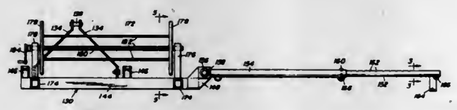
A means for supporting and aiming a hand-held device firmly in fixed position by an adjustable brace fixed by associated elements relative to the hand and body of an individual with means provided for securely attaching

the hand to the hand brace. In one embodiment, the disclosed invention is simply directed to the bracing means



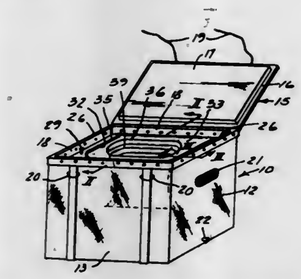
for positioning about the palm portion of the hand with connecting elements for receiving a finger or thumb of an individual.

3,553,879
SEINE TOW BAR
James E. Ellis, Ann Arbor, Mich., assignor to the United States of America as represented by the Secretary of the Interior
Filed June 18, 1969, Ser. No. 834,254
Int. Cl. A01k 73/12
U.S. Cl. 43—8 4 Claims



A pair of tow bars are used for drawing a seine behind a pair of tractors for harvesting fish in a farm fishpond. Each tow bar has a tractor mounting hitch and a pivoted arm to which a seine is attached. The pivoted arm rides upon the bottom of the pond on a skid. As the seine is drawn through the pond the arm pivots to follow the contour of the pond bottom so that the seine is maintained close to the bottom so that the seine is maintained close to the bottom and the escape of fish past the seine is prevented. One tow bar has a reel for storing the seine.

3,553,880
CONTAINER FOR FISH AND THE LIKE
Donlon E. Splickan, Rte. 2, Winslow, Ill. 61089
Filed May 7, 1969, Ser. No. 822,440
Int. Cl. A01k 97/04
U.S. Cl. 43—55 10 Claims



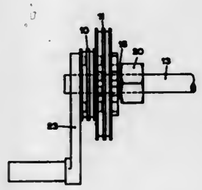
Insulated portable box to be used for freshly caught fish in place of the usual fish stringers. The box is relatively flexible and has a top wall having an ingress opening leading to an elongated neck or duct depending from the top wall into the container. The top wall and duct are made from rubber or a like material. The duct generally conforms to the form of an average fish and converges from the top of the container as it extends into the container. A series of vertically spaced ribs in the form of tooth-like serrations, pitched toward the bottom of the container extend along the wall of the duct, to grip a fish placed in the opening and progress a freshly caught live fish into the container, by movement of the fish, as it struggles to free itself. A lid covers the top wall and ingress opening. The lid and walls of the container are insulated to keep the container cool and to enable the container to be used for other purposes than fish. The top wall is hinged to a wall of the container to enable fish to be removed from the container.

3,553,881
FISHING TRAP
Walter Hasseman, Ocean City, Md., assignor, by direct and mesne assignments, to James S. Noce, Berwyn, Pa., and William F. Willey, Ocean City, Md.
Filed Feb. 14, 1969, Ser. No. 799,283
Int. Cl. A01k 69/10
U.S. Cl. 43—105 6 Claims



A hand castable fish trap including a planar bottom, opposed pivotally mounted screen or net-like sections movable between an outwardly collapsed position and an inwardly swung enclosure forming position, a control line from each section to a central guide and a handline engaged with the control line or lines for use in both closing the sections and hauling in the trap. The central guide includes, in most embodiments, a configuration which precludes any possibility of the line fouling.

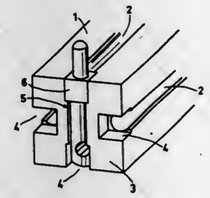
3,553,882
MEANS FOR LOCKING A WHEEL TO A SHAFT AND FOR SECURING A HANDLE TO THE WHEEL
Kevin F. Meates, 6 Clifford Ave., Christchurch 1, New Zealand
Filed Dec. 13, 1967, Ser. No. 690,326
Claims priority, application New Zealand, Oct. 19, 1967, 150,419
Int. Cl. A63h 33/08
U.S. Cl. 46—16 1 Claim



A wheel element for a toy construction kit formed on opposite faces with projections and recesses disposed parallel to the rotational axis of the wheel element, and

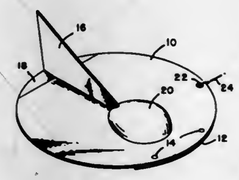
arranged so that the wheel element can be connected thereby to similar, coaxially disposed wheel elements and/or to separate means for clamping the wheel element to a shaft.

3,553,883
BUILDING BLOCK ERECTION KIT INCLUDING DETACHABLE ELECTRIC CONTACT ELEMENT
Artur Fischer, Gruenmettstetterstr. 133, D-7241 Tumlingen, Germany
Filed July 31, 1968, Ser. No. 749,101
Claims priority, application Germany, Aug. 9, 1967, F 53,178
Int. Cl. A63h 33/08
U.S. Cl. 46—16 5 Claims



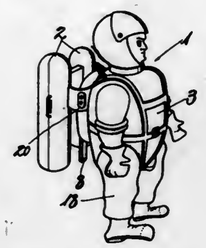
An erection kit includes a plurality of building blocks having on the respective surfaces thereof either elongated undercut open-ended grooves at least one of which is provided with a wider portion so dimensioned as to receive a coupling head, or undercut coupling heads receivable in these grooves through the open ends or through the wider portion of the respective groove. An electrically conductive contact element for conducting electrical energy between a source and a user device is provided which includes a first portion configurated so as to be receivable in the respective grooves and a section on the first portion which is receivable in the wider portion of such groove to thereby prevent the first portion from being shifted in the groove, and a connected second portion which projects from an open end of the groove when the first portion is received therein.

3,553,884
TOY AERODYNAMIC WING
Phillip E. Dunstan, 1022 S. 208th St., Seattle, Wash. 98148
Filed July 31, 1968, Ser. No. 749,066
Int. Cl. A63h 27/14
U.S. Cl. 46—81 3 Claims



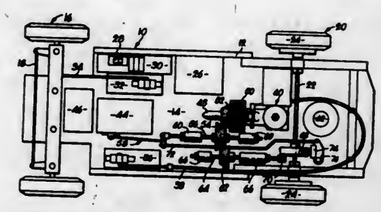
A toy aircraft comprises an aerodynamic wing member with a weighted leading edge and an upturned trailing edge, a vertical stabilizer fin, and a launching cord attached to the wing for launching the aircraft by swinging the aircraft at the end of the launching cord and releasing the cord. The wing is preferably provided in the configuration of a circular disk.

3,553,885
TOY ASSEMBLY
Kazuo Tazaki, Tokyo, Japan, assignor to Tomy Kogyo Co., Ltd., Tokyo, Japan
Filed Feb. 29, 1968, Ser. No. 709,279
Claims priority, application Japan, Nov. 17, 1967, 42/74,031
Int. Cl. A63h 33/26
U.S. Cl. 46—243 8 Claims



This invention, which provides a new toy assembly, consists essentially of a power unit and a moving unit, said power unit comprising a driving mechanism having motor means, said moving unit comprising a transmission gear and adapted to travel by drive power derived from said motor means, and characterized in that said power unit is detachably mounted on said moving unit.

3,553,886
CLUTCH AND DRIVE ASSEMBLY FOR MODEL VEHICLES
Harry M. Hamilton, 2024 Hardesty, Kansas City, Mo. 64127
Filed Apr. 3, 1968, Ser. No. 718,632
Int. Cl. A63h 33/26
U.S. Cl. 46—210 9 Claims

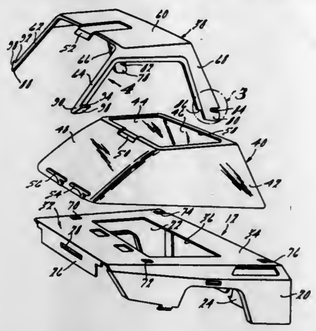


A power train for model vehicles which vehicle includes a power source, there being driving means rotatably carried by the power source, clutch means shiftably carried by the vehicle for engagement with the driving means and coupling means simultaneously engageable with the clutch means whereby the wheel and axle unit of the vehicle may be driven, there being apparatus carried by the vehicle whereby the clutch means may be shifted from a position remote from the vehicle. Various combinations of clutch and coupling means give reverse drive to the vehicle and forward drive in varying ratios.

3,553,887
TOY VEHICLE WINDOW CONSTRUCTION
Robert S. Linstead, Rockford, Ill., assignor to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Delaware
Filed Jan. 17, 1969, Ser. No. 792,086
Int. Cl. A63h 17/26
U.S. Cl. 46—223 15 Claims

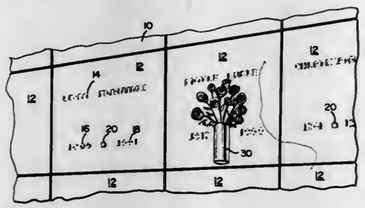
A toy vehicle comprising, a chassis member defining a relatively flat horizontally extending deck, the deck being provided with front and rear pairs of transversely spaced

and aligned slots; a one-piece window element fabricated of a relatively transparent material and including transversely spaced upright side portions providing opposed side window panes and front and rear portions providing a windshield and a rear window pane, and a top member including a roof overlying the element and having front and rear pairs of pillars depending downwardly adjacent the forward and rearward ends of the element and



arranged in general correspondence with the slots, the lower ends of one of the pair of pillars being spaced transversely outwardly from their associated pair of slots and having hook-shaped fastening means on the lower ends thereof, the window element having one transverse portion thereof of a relatively flexible compressible construction and of a greater transverse dimension than the transverse dimension that the transverse spacing between one of the pair of slots.

3,553,888
CRYPT FLOWER VASE AND MOUNTING THEREFOR
Bruce David Daly and Louise A. Daly, both of 17021 10th St. NW., Seattle, Wash. 98177
Filed Aug. 27, 1968, Ser. No. 755,758
Int. Cl. A47g *7/06*
U.S. Cl. 47—41.1 **3 Claims**



To display separate, individual floral bouquets on the crypts of a multi-crypt mausoleum, the exposed front wall of each crypt is permanently provided with an inconspicuous small tab upstanding in closely spaced relation to the wall surface to serve as a hook for removably hanging a specially designed vase element having a flat rear wall slotted for reception of the tab.

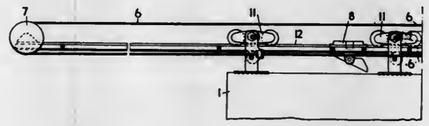
3,553,889
ARTIFICIAL STEM FOR FLOWERS
Joseph Sabeto Gallo, 58 Peach St., Walpole, Mass. 02081
Filed Oct. 29, 1968, Ser. No. 771,500
Int. Cl. A01g *5/00*
U.S. Cl. 47—55 **2 Claims**

The disclosure of the invention is an artificial stem for a flower comprising a strand of relatively small gauge stiff wire having a rough textured covering, which may be of a textile material, glued thereto along the length of the wire, the covered wire being then doubled over to form a flower entering tip, and that portion of the wire



below the flower entering tip being twisted, and covered with a sticky substance such as wax for adherence to a supporting base, or to other stems, as in a bouquet or corsage.

3,553,890
POWER-OPERATED DOOR GEAR
Henry Jackson Stretton, Stoke Poges, England, assignor to G. D. Peters & Co. (Engineering) Limited, Slough, Buckinghamshire, England, a British company
Filed Aug. 12, 1968, Ser. No. 751,774
Claims priority, application Great Britain, Aug. 11, 1967, 37,067/67
Int. Cl. E05f *11/54, 15/14*
U.S. Cl. 49—32 **8 Claims**



A power-operated door operating gear in which a door position sensor applies power to open the door or doors when the door is or doors are moved manually away from the fully closed position. The sensor may provide a "door closed" signal to a remote operator, and may be interlocked with vehicle operating gear. The preferred sensor comprises a reed switch and a magnet for changing the state of the switch when the door is fully closed.

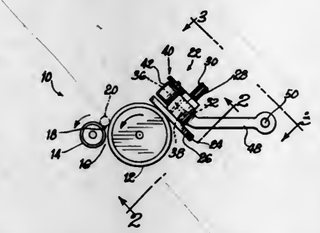
3,553,891
ADJUSTABLE DOORJAMB
Ralph T. Casebolt, Oakland, and Arnold O. Rystad, Alameda, Calif., assignors, by mesne assignments, to Sunset Industries, Inc., Los Angeles, Calif.
Filed Oct. 24, 1968, Ser. No. 770,158
Int. Cl. E06b *1/02*
U.S. Cl. 49—505 **10 Claims**

An adjustable doorjamb having a pair of elongated, relatively shiftable members Each member has a pair of spaced sides and the sides of one of the members are yieldable so that they are movable into and out of frictional engagement with the sides of the other member. Wedge means between the sides of the one member causes its sides to be forced into frictional engagement with the sides of



the other member. The wedge means includes an actuator accessible exteriorly of the members.

3,553,892
LAPPING MACHINE WITH DRESSING MECHANISM
Peter J. Sommer, Elmhurst, Ill., assignor to American Gage & Machine Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 29, 1968, Ser. No. 701,293
Int. Cl. B24b *7/00, 9/00*
U.S. Cl. 51—5 **4 Claims**



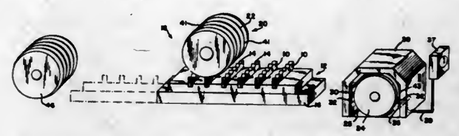
A lapping machine, comprising first and second lapping rollers, a dressing wheel having a flat radial surface for engaging said first lapping roller, a carriage for supporting said dressing wheel, a spline shaft secured to said wheel, a rotatable coupling member on said carriage for removably receiving said spline shaft, a drive motor on said carriage for rotating said coupling member and thereby rotating said wheel, an arm supporting said carriage and a shaft pivotally supporting said arm for swinging movement about an axis substantially parallel to the axis of said first lapping roller, whereby the dressing wheel is movable with said carriage into and out of engagement with said first lapping roller, said dressing wheel and said spline shaft being removable from said carriage whereby said dressing wheel can be employed to dress said second lapping roller.

3,553,893
METHOD AND APPARATUS FOR DRESSING GRINDING WHEELS
Gerhard Stade, Berlin, Germany, assignor to Herbert Lindner GmbH, Berlin, Germany
Filed Jan. 16, 1969, Ser. No. 791,622
Claims priority, application Germany, Feb. 28, 1968, 1,652,105
Int. Cl. B24b *7/00*
U.S. Cl. 51—5 **11 Claims**



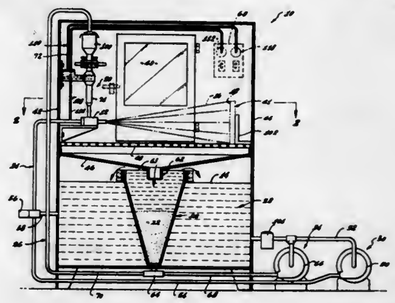
In a method for dressing grinding wheels of thread grinding machines, for forming involute worms with accurate blank profiles, and wherein the dressing movements take place along generatrices which are tangent to the circular base cylinder of the involute worm, dressing of the grinding wheel is effected while the grinding wheel is forming an involute worm. The dressing is effected along generatrices intersecting the grinding wheel at points diametrically opposite the points of intersection, with the grinding wheel, of generatrices of the involute worm. The dressing movements are effected in a plane which intersects the rotation and swivelling axes of the grinding wheel at a line of intersection with the axial plane of the involute worm, and which is mirror symmetrical with such axial plane with respect to the axis of rotation of the grinding wheel.

3,553,894
APPARATUS AND METHOD FOR GRINDING NOTCHED KNIVES
John W. Sjostrom, Salem, N.H., assignor to Bolton-Emerson, Inc., Lawrence, Mass., a corporation of Massachusetts
Filed Feb. 17, 1969, Ser. No. 799,866
Int. Cl. B24b *3/00, 9/00, 1/00*
U.S. Cl. 51—5 **8 Claims**



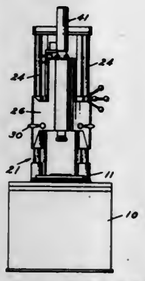
Apparatus for facilitating the proper adjustment of the cutting edges of working dressing rolls, such as hard steel, or diamond faced, rolls of the type used in dressing grinding wheels, or abrading rolls. The apparatus is a dressing roll assembly including temperature regulation means whereby modification of the dimensions of the dressing roll surfaces, such as correcting errors in roll length, is accomplished by the application of a carefully controlled amount of heat or cold thereto.

3,553,895
HYDRAULIC SURFACE CONDITIONING MACHINE
Bruce W. Power, 3271 Saturn Ave., Huntington Park, Calif. 90255
Filed Nov. 20, 1967, Ser. No. 684,273
Int. Cl. B24c *3/00*
U.S. Cl. 51—8 **13 Claims**



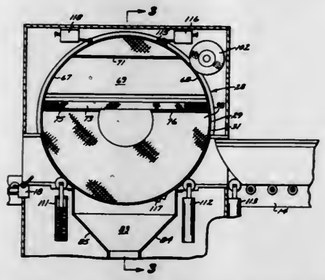
A hydraulic method of and a hydraulic machine for conditioning the surface of a work piece wherein a high velocity jet stream of working liquid, such as water, containing entrained surface conditioning media, such as metal pellets, is projected against the surface to work harden, abrade, or otherwise condition the surface, and the spent liquid and media of the jet stream are collected after impingement against the work surface and recirculated to provide a closed cycle surface conditioning action.

3,553,896
SPLINE LAPPING MACHINE
Michel P. Heldt, deceased, late of Detroit, Mich., by Odette Heldt, administratrix, Detroit, Mich., assignor to Delta Corporation, a corporation of Connecticut
Filed Jan. 26, 1968, Ser. No. 702,502
Int. Cl. B24b 7/00, 9/00
U.S. Cl. 51—34 14 Claims



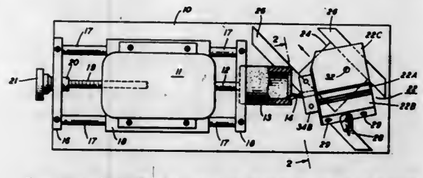
The spline lapping machine disclosed herein comprises a base having an upright portion defining a slideway upon which a slide may be moved and clamped in position. A spline lapping tool is mounted for reciprocating motion on the slide and a fluid motor reciprocates the tool. The workpiece which is to be lapped is supported on a table on the base below the tool, the table being rotatable about a vertical axis. Means are provided for controlling the length of the reciprocating stroke of the tool support. Specifically, the reciprocating means comprises a fluid operated cylinder which has a variable stroke provided by adjusting the position of one end of the cylinder with respect to the length of the cylinder.

3,553,897
BATCH PROCESSING APPARATUS
Vincent S. Bobkowski, 4719 Bellflower Blvd., Long Beach, Calif. 90808
Filed Jan. 25, 1968, Ser. No. 700,404
Int. Cl. B24c 3/26; B24b 3/02
U.S. Cl. 51—13 8 Claims



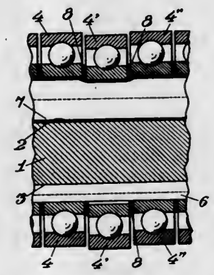
A drum rotatable about an axis through its ends has openings in its side wall which define a passageway. An inner container fits within this passageway such that its end walls are flush with the side walls of the drum. The inner container opens to the interior of the drum so that parts to be processed are spilled out when the assembly is rotated. The interior of the drum is formed so all of these parts spill back into the inner container when it is rotated to the lower position of the drum. A blast of processing material is admitted in the region of the axis of rotation of the drum and the end walls of the drum are perforated so that the processing material may be expelled from the drum. A housing enclosing the end walls of the drum collects the processing material which is then recirculated back through the drum. The drum is coupled with a control system which insures that the drum stops with the inner container positioned horizontally below the axis of rotation.

3,553,898
DRILL SHARPENING APPARATUS OR THE LIKE
Alfred Noble, 3 Ledgewood Trail, Sparta, N.J. 07871
Filed Mar. 29, 1968, Ser. No. 717,242
Int. Cl. B24b 3/26, 9/00
U.S. Cl. 51—73 8 Claims



Improved drill sharpening apparatus is disclosed comprising (1) a motor having a shaft, (2) a thin walled tubular grindstone mounted by one of its ends to the shaft, (3) and drill holding apparatus for moving a drill across the end wall of the grindstone and into its hollow portion during a sharpening operation.

3,553,899
PRESSURE ROLLER IN A SANDING DEVICE
Katsuji Hasegawa, Nagoya, Japan, assignor to Kabushiki Kaisha Meinan Seisakusho, Nagoya, Japan
Filed Sept. 3, 1968, Ser. No. 756,984
Claims priority, application Japan, Sept. 4, 1967, 42/56,668
Int. Cl. B24b 21/12
U.S. Cl. 51—141 3 Claims

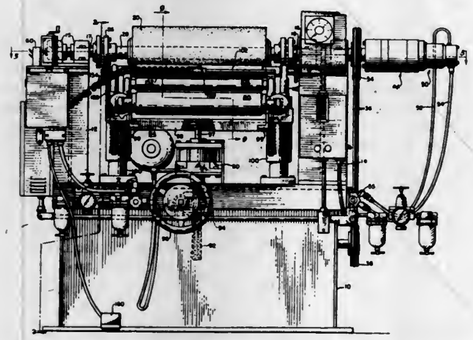


In a sanding device employing a sanding belt of comparatively wide width, a pressure roller is located in a face to face position with the material to be processed and has an air tube extending in the longitudinal direction of the stationary shaft of the pressure roller a plurality of rings mounted circumferentially thereof; and the pressure applied to the material to be processed is controllable by adjusting air pressure inside said air tube.

3,553,900
VIBRATORY FINISHING APPARATUS AND METHOD
Richard K. McKibben, La Canada, Calif., assignor to SWECO, Inc., Los Angeles, Calif., a corporation of California
Continuation-in-part of application Ser. No. 378,644, June 29, 1964. This application Feb. 23, 1965, Ser. No. 434,317
Int. Cl. B24b 1/00, 31/02
U.S. Cl. 51—163 13 Claims

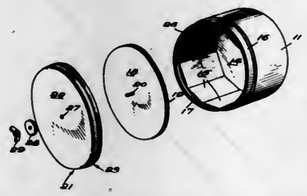
A method of and device for finishing parts using a finishing media wherein a mixture of parts and media is subjected to vibration in a lower finishing region and is moved upwardly to a region where the parts are separated from the media and the media is returned to the lower region.

3,553,901
SURFACE FINISHING MACHINE
William C. Burt, Olean, N.Y., assignor to Clair Manufacturing Co., Inc., Olean, N.Y.
Filed Apr. 29, 1969, Ser. No. 820,238
Int. Cl. B24b 21/00, 7/00
U.S. Cl. 51—142 14 Claims



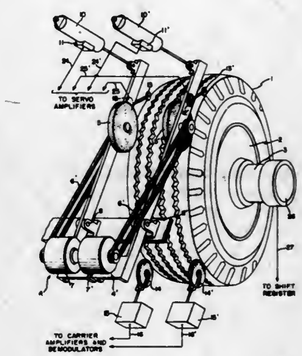
An improved machine for roughing, cleaning, brushing, delustering, polishing, satin-finishing, glazing, buffing, waxing, or otherwise surface-processing cut-to-length sheets, plates, panels, strips, continuous coil, or other type workpieces. The invention features improvements in such machines facilitating their employment with enhanced versatility and adjustability to suit a large variety of workpiece processing requirements.

3,553,902
LAPIDARY TUMBLING BARREL
Gary T. Christensen, 9515 25th NW., Seattle, Wash. 98107
Filed Dec. 27, 1968, Ser. No. 787,458
Int. Cl. E05d 15/22
U.S. Cl. 51—164 4 Claims



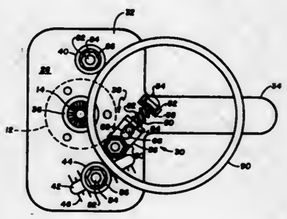
A rubber lapidary tumbling barrel having a water tight seal formed of a two-part metal cover wherein one part compresses the rubber barrel into sealing engagement with the second part.

3,553,903
CONTROL SYSTEM FOR A TIRE GRINDING MACHINE
William C. Christie, Mogadore, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed July 31, 1967, Ser. No. 657,391
Int. Cl. B24b 49/00
U.S. Cl. 51—165 18 Claims



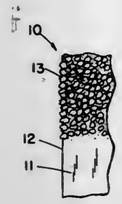
A control system for a tire grinding machine which selectively grinds off portions of the tire tread to correct variations in force around the circumference of the tire. The control system generates electrical signals proportional to force variations detected by a force transducer and stores the signals in a memory circuit for transmission through a shift register delay circuit to a servo mechanism which moves a grinding wheel to and from the tire.

3,553,904
WELD PREPARATION MACHINE
Elvis D. Wallace, Huntsville, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Apr. 30, 1968, Ser. No. 725,405
Int. Cl. B24b 23/02, 23/08; B23c 3/02
U.S. Cl. 51—170 8 Claims



A portable cutting machine for preparing the ends of piping to be welded in the field. The portable cutting machine includes a guiding table and roller assembly which provide proper location and orientation of the piping being prepared for end welding.

3,553,905
TOOL STRUCTURES
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Continuation-in-part of application Ser. No. 432,924, Jan. 8, 1965, now Patent No. 3,346,220, which is a continuation-in-part of application Ser. No. 641,101, Feb. 8, 1957, now Patent No. 3,173,195. This application Oct. 10, 1967, Ser. No. 674,330
Int. Cl. B24d *5/00*; B26d *1/12*; B28d *1/04*
U.S. Cl. 51—206 **7 Claims**



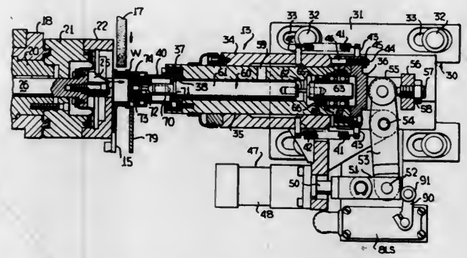
Composite cutting and grinding tool structures having a metal base and a hard surface material disposed along the cutting portion of the tool. In one form, a multitude of abrasive bits form an integral portion of the surface of the tool together with metal of the tool base interspersed between the bits. The bits may serve to provide both the actions of abrading work and resisting abrasion of the tool by the work. The bits may also serve primarily to provide a hard surface adjacent or along one or more cutting edges of the tool to resist wear during the cutting action and/or to finish or abrade the work surface machined by the cutting edge of the tool. In another form, a hard surfacing material is applied as a coating along or adjacent to the cutting edge(s) of the tool or on the abrasive bits to resist erosion and serve to lubricate the cutting surfaces during use.

3,553,906
DUAL-ACTION ABRADING TOOL
Meral W. Hinshaw, Inglewood, Calif., assignor to Diamond Tool Associates, Hawthorne, Calif., a corporation of California
Filed Nov. 29, 1968, Ser. No. 779,830
Int. Cl. B24d *7/18*
U.S. Cl. 51—209 **6 Claims**



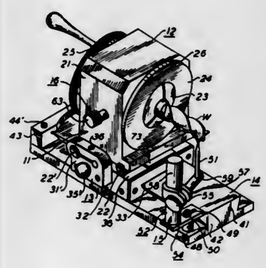
An abrading machine having a rotary head carried on a vertical spindle on a movable supporting arm, the head having a coaxial tool ring formed in sections and carrying abrading elements in the form of layers of diamond, and also having a counter-balanced and similarly formed eccentric ring disposed inside the coaxial ring and extending from one inside edge of the latter beyond the axis of rotation.

3,553,907
GRINDING MACHINE FOR RING-LIKE WORKPIECES
Ralph E. Price and Glenn M. Snyder, Waynesboro, Pa., assignors to Litton Industries, Inc., a corporation of Delaware
Filed June 7, 1967, Ser. No. 644,181
Int. Cl. B24b *47/02*
U.S. Cl. 51—215 **18 Claims**



This subject has to do with a holder for workpieces during the production machining of the external surfaces thereof. The holder is in the form of a work clamping assembly which includes a rotating faceplate and a work clamping unit which tightly clamps a workpiece against the faceplate. The improvement specifically resides in the provision of a work centering means which will assure a fixed axis for the rotation of the work during grinding and a work clamping member for holding a workpiece against said faceplate with enough force applied axially to resist radial forces tending to displace said work from said fixed axis, wherein the spindle has one or more flexible sections to permit the clamping of a workpiece in centered relation with respect to the axis of the rotation of the faceplate notwithstanding irregularities in the workpiece.

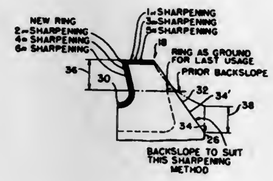
3,553,908
WORKPIECE POSITIONING APPARATUS
Eugene G. Boehm, 440 Meisel Ave., Springfield, N.J. 07081
Filed Mar. 12, 1968, Ser. No. 712,554
Int. Cl. B24b *41/06*
U.S. Cl. 51—216 **11 Claims**



In an apparatus for positioning and supporting workpieces, a movable mounting and positioning system with

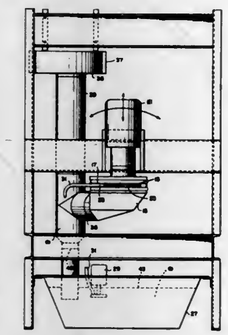
structural features, permitting easy and simplified relative positioning of the article and the grinding apparatus, enabling simplified and accurate support and positioning of the article to permit shaping as desired, and enabling simplified and accurate movement of the article to present other surfaces to the cutter or grinder.

3,553,909
METHOD OF SHARPENING POT BROACH RINGS
Richard W. Tersch, Grosse Pointe Woods, Mich., assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Aug. 19, 1969, Ser. No. 851,208
Int. Cl. B24b *1/00*
U.S. Cl. 51—323 **5 Claims**



Pot broach rings are successively reground by alternated face and I.D. grinds to increase ring usage by advancing I.D. ground rings successively forwardly in a broach assembly.

3,553,910
GRINDING APPARATUS
Victor A. Hordis, Riverton, N.J., assignor, by mesne assignments, to Hordis Bros., Inc., Pennsauken, N.J., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 540,632, Apr. 6, 1966. This application Mar. 6, 1967, Ser. No. 621,048
Int. Cl. B24b *55/02, 55/04*
U.S. Cl. 51—356 **7 Claims**

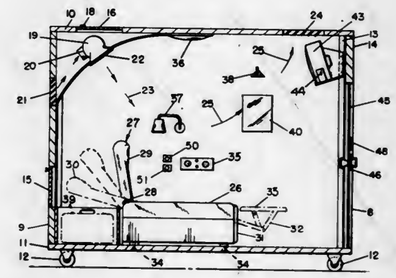


This invention relates to improvements in grinding apparatus, and more particularly concerns a method and apparatus for wet grinding the edges of a pane or sheet of glass.

The apparatus includes a grinding wheel, coolant feed means for feeding a coolant to the grinding wheel, a hood enclosing the grinding wheel and having a slot for receiving the edge of the glass sheet, and means for drawing air around, over, and beneath the sheet of glass in such a manner that substantially all of the coolant is prevented from leaving the hood with the glass sheet.

The method includes feeding a coolant to a grinding wheel enclosed in a hood, contacting the grinding wheel with the edge of the glass sheet, and drawing air around, over, and beneath the glass sheet in such a manner that substantially all of the coolant is prevented from leaving the hood.

3,553,911
COMPARTMENT FOR THE TEMPORARY USE OF TRAVELERS
Robert C. Morrow, 725 S. 21st St., Paducah, Ky. 42001, and Robert B. Seigfried, 666 Elm St., Box 544, Calvert City, Ky. 42029
Filed Oct. 17, 1968, Ser. No. 768,313
Int. Cl. E04h *1/12*; F24f *7/00*
U.S. Cl. 52—28 **1 Claim**



The invention contemplates the provision of a small, box-like room, the entry to which is to be coin and time-controlled, to be placed in airport terminals, bus stations and the like for the use of persons having short waiting periods. The compartment contains an adjustable reclining type chair, to be used for sleeping or resting. It also contains a multiplicity of other devices which provide for the comfort and entertainment of the user, these being more specifically recited in the following.

3,553,912
AIRCRAFT ANTENNA FITTINGS
William C. Rogers, Miami Springs, Fla. (P.O. Box 48–205, Miami, Fla. 33148)
Continuation of application Ser. No. 501,503, Oct. 22, 1965. This application May 16, 1968, Ser. No. 740,790
Int. Cl. H01q *1/08, 1/28*
U.S. Cl. 52—98 **10 Claims**

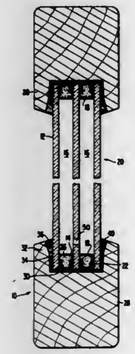


A fitting for securing one end of an elongated antenna to an aircraft in which a frangible pin may be sheared to allow limited elongation of the fitting by a predetermined increase in tensile force in the fitting over the force sufficient to fully extend a spring biased tension unit. A housing having a smooth external periphery is provided for the fitting to minimize corona discharge problems.

3,553,913
TRIPLE GLAZED INSULATING GLASS WOOD SASH

Morris M. Eisenberg, Ste. Genevieve, Mo., assignor to Biltbest Corporation, Ste. Genevieve, Mo., a corporation of Missouri

Continuation-in-part of application Ser. No. 687,748, Dec. 4, 1967. This application Sept. 10, 1969, Ser. No. 856,630
Int. Cl. E04c 2/34; E06b 3/66
U.S. Cl. 52—172 8 Claims

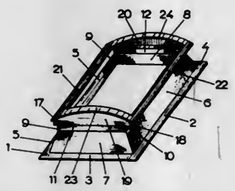


Three panes of glass are spaced, one from the other, by hollow aluminum spacers disposed about the periphery of the panes to form a glass panel, each spacer being filled with a desiccant and comprising silica gel. A polysulfide compound is applied along the edges of the triple pane panel with the compound entering between the spacers and the panes. Before the compound sets, a wooden sash is applied about the edges of the triple pane and additional like compound is applied in glazing grooves on opposite sides of the glass panel between the outermost panes and the lips of the sash. The wood sash, glass, and aluminum spacers are thus bonded together.

3,553,914
SUPPORT STRUCTURE FOR A LIGHT DOME

Hubertus Franciscus van den Boorn, Via Regia 141c, Maastricht, Netherlands

Filed Nov. 14, 1968, Ser. No. 775,787
Claims priority, application Belgium, Nov. 22, 1967, 51,171
Int. Cl. E04b 7/18
U.S. Cl. 52—200 1 Claim

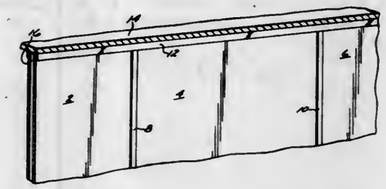


A support structure for a light dome, comprising an upper support surface, which forms a portion of a cylinder surface and on which a transparent plate member forming the light dome proper may be connected by means of a connecting frame.

3,553,915
APPARATUS AND METHOD FOR ATTACHING WALL PANELS TO STUDS, AND PARTITION CONSTRUCTION FORMED THEREBY

Alexander E. Passovoy, Orange, Calif., assignor to Modulex Inc., Orange, Calif., a corporation of California

Continuation-in-part of application Ser. No. 649,969, June 29, 1967. This application Aug. 28, 1968, Ser. No. 777,530
Int. Cl. E04b 2/78
U.S. Cl. 52—241 11 Claims

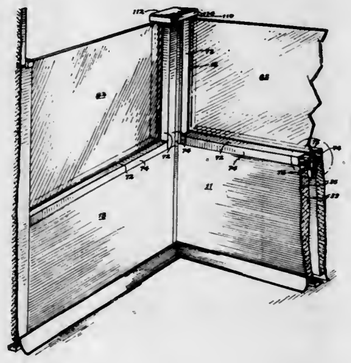


A snap-on clip is employed to attach gypsum drywall panels to metal studs without the use of screws, the method of attaching comprising starting at one end of the wall and continuing to alternately attach to the stud system a wall panel-retaining clip and then a wall panel. In accordance with another embodiment, the clip does not necessarily snap on but instead is resiliently associated with the metal stud. In accordance with an alternative method, the clips may all be mounted in position prior to mounting of any wall panels, following which the wall panels are positioned and then held in place by external head portions which are connected to the remainders of the clips by quick connect-disconnect means.

3,553,916
WALL STRUCTURE

Robert P. Lickliter and Earl Abbott, Hamburg, and John F. Reeves, Tonawanda, N.Y., assignors to Flangeklamp Corporation, Buffalo, N.Y.

Continuation-in-part of application Ser. No. 703,955, Feb. 8, 1968. This application Nov. 20, 1968, Ser. No. 777,439
Int. Cl. E04b 2/78
U.S. Cl. 52—281 12 Claims

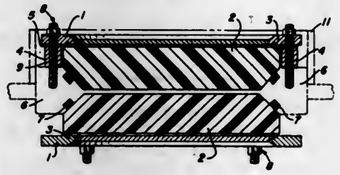


A pair of double wall rails for supporting window panes are angularly related and meet to form a corner. A pair of side-by-side panel connectors facing another pair of side-by-side panel connectors are interlocked together by means of a channel clip having extensions insertable into all four panel connectors to form a box-like rigid corner post supporting structure for the angularly related rails. A cover is provided for closing the top of the corner post construction and cover plates are used to enclose exposed portions of said corner post.

3,553,917
DUAL PRESSURE VIEWPORT ASSEMBLY INCORPORATING TRAPPED GAS SELF-RELIEVING FEATURES

Bruce Calvin Gilman, Annandale, Va., assignor to Ocean Systems, Inc., New York, N.Y., a corporation of New York

Filed May 20, 1969, Ser. No. 826,126
Int. Cl. E06b 5/12, 7/23
U.S. Cl. 52—308 1 Claim

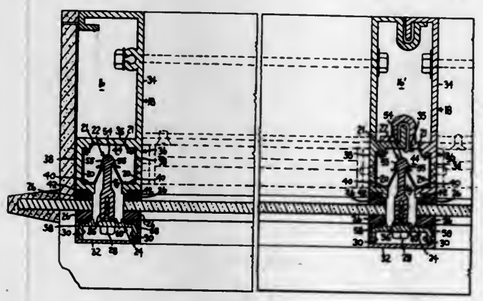


A novel viewport for use in pressure vessels characterized in that the windows are free to move in their support members so that trapped gas between the windows of the viewport can be released upon pressure reversal.

3,553,918
INSULATED CURTAIN WALL CONSTRUCTION

Samuel Dauson, Pittsburgh, Pa., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

Continuation of abandoned applications Ser. No. 671,302, Sept. 28, 1967, and Ser. No. 688,792, Dec. 7, 1967. This application July 22, 1969, Ser. No. 843,349
Int. Cl. E04b 2/88, 3/62
U.S. Cl. 52—395 22 Claims

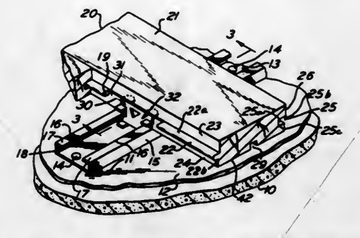


An insulated curtain wall construction comprising a metal panel-backing member adjustably joined by thermally insulated connector means to a metal panel-retaining member, a panel disposed between said backing and retaining members and insulating glazing material disposed between said panel and said backing and retaining members whereby the panel-backing member and panel-retaining member are each insulated from the other and from said panel member disposed therebetween.

3,553,919
FLOORING SYSTEMS

Ray E. Omholt, Berwyn, Pa. (% Powerlock Floors, Inc., 2028 Chancellor St., Philadelphia, Pa. 19103)

Filed Jan. 31, 1968, Ser. No. 702,005
Int. Cl. E04b 5/00; E04f 15/02
U.S. Cl. 52—483 5 Claims

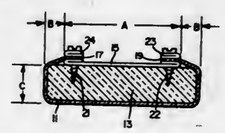


A flooring system utilizing conventional tongue and groove wood floor boards, the boards being supported on transversely disposed spaced channels, metallic holding clips securing the boards in bearing engagement with the channels, the boards being free from any special slots for clip engagement, spaced portions of the tongues above the channels being removed to accommodate clip engagement, the clips engaging the boards in a driven penetrating relation and/or a clamping action which does not interfere with the tight vertical engagement of the tongues and grooves nor cause splitting of the boards, the clips engaging the channels each having a body portion vertically disposed between the boards and having at the upper margin of the body portion a horizontally extending toothed portion driven in penetrating engagement into the board along the edge at locations above the lower margin of the tongue on the tongue side of the board, and/or a penetrating and/or clamping portion acting in the groove.

3,553,920
INSULATION MODULES FOR INSULATING WALL SURFACES

Stephen F. Cole, Jr., 26 Meadowbrook Lane, Chalfont, Pa. 18914

Filed July 10, 1967, Ser. No. 652,100
Int. Cl. E04b 1/62
U.S. Cl. 52—506 9 Claims



The present invention provides a means for fabricating a thermal insulation wall by the addition or interchanging of insulation modules. In addition, the invention teaches a method for fabricating the insulation modules.

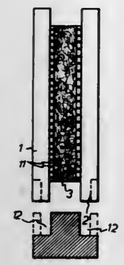
3,553,921
WALL CONSTRUCTION, PARTICULARLY FOR LOAD-BEARING WALLS

Rasmus Breistein, 120 Lommedalsveien, Gjettum, Norway

Filed June 26, 1968, Ser. No. 740,273
Claims priority, application Norway, July 4, 1967, 168,937
Int. Cl. E04c 2/24; E04b 1/90
U.S. Cl. 52—593 1 Claim

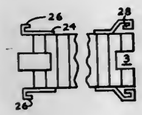
Wall construction, particularly for load-bearing walls, consisting of elements with at least three interjoined

layers, of which at least two layers are load-bearing and one is heat insulating, wherein at least two outermost layers are load-bearing and are made of wood fibre boards and/or plywood boards, and the insulation layer



or layers has a calculable compression and tensile strength, and can be worked with ordinary woodworking tools and are mechanically stable, for example expanded plastic, wherein the plastic insulation layer is through-going in at least the longitudinal direction of the wall.

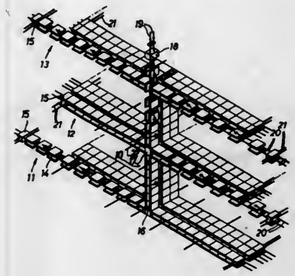
3,553,922
GLUED-LAMINAE PILE
Robert Fred Moore, 1625 3rd Ave., Picayune, Miss. 39446, and Alvin Edward Moore, 916 Beach Blvd., Waveland, Miss. 39576
Filed Apr. 22, 1968, Ser. No. 723,213
Int. Cl. E02d *5/02*; E04c *1/10*
U.S. Cl. 52—595 **2 Claims**



A sheet pile, preferably of two-inch thick lumber, made by gluing faces of the planks and clamping them in tight, unwarped face-to-face relation until the glue sets. The edges of the planks, at times uneven, are not glued to other plank edges; and the wide portions of the planks, even if previously warped, are forced by the clamping and gluing to remain in flatwise, strongly bonded arrangement. The invention also includes: ways of reinforcing the middle, tongue, and groove pile portions; means for interlocking piles together when they are in use; and a method of making the piles in a clamping fixture.

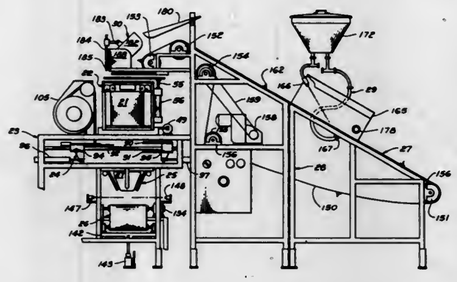
3,553,923
METHOD OF PRECOMPRESSING AND ERECTING A MODULAR STRUCTURE
Leon E. D. Dompas, 213 Jan Van Rijswijcklaan, Antwerp, Belgium
Filed Sept. 13, 1968, Ser. No. 759,597
Int. Cl. E04b *1/06, 1/348*; E04a *21/14*
U.S. Cl. 52—745 **7 Claims**

A plurality of blocks, preferably having I-shaped cross section, arranged in alignment and wires, held in tension, extend along blocks and are clamped at ends of line of blocks to form structural units. Units arranged adjacent to each other at place of installation, and additional wires, held in tension, clamp units together. Lines



of blocks in each unit are arranged at an angle to each other.

3,553,924
METHOD AND APPARATUS FOR BAGGING PRODUCT
Ernest Bonami, Western Springs, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 24, 1968, Ser. No. 723,811
Int. Cl. B65b *13/02, 55/00, 57/04*
U.S. Cl. 53—21 **15 Claims**

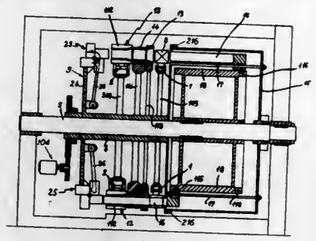


Relatively large items, such as hams and the like, are delivered to bagging material, such as stockinet, which is formed into a succession of bags to receive the items. The bagging material is contained on the exterior of a mandrel and is pulled through the interior thereof by a moving item. By training the bagging material to run through the interior of the mandrel, it may be held open sufficiently for the item to move fully into the closed end of a bag.

3,553,925
CIGARETTE PACKER
Goffredo Gianese, Bologna, Italy, assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed June 4, 1968, Ser. No. 734,372
Claims priority, application Italy, June 12, 1967, 7,068/67
Int. Cl. B65b *19/10, 19/24*
U.S. Cl. 53—26 **25 Claims**

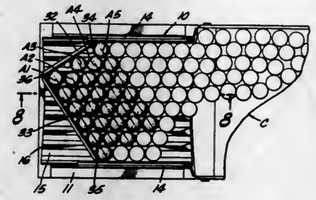
A packaging machine comprising an endless conveyor having a plurality of successive containers for receiving rod-like articles. Means for feeding a predetermined

number of rod-like articles to the container from a feeder as the conveyor moves. Means for transferring the rod-



like articles from the containers to a preformed package. Means for preforming said package.

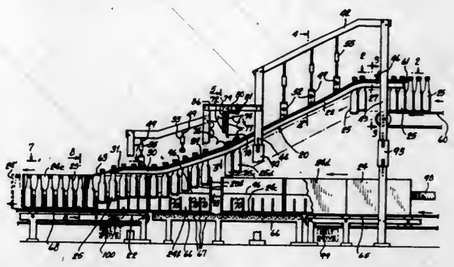
3,553,926
METHOD OF BOXING LAYERS OF ARTICLES SUCH AS FRUIT AND THE LIKE
Wayne E. Zwiacher, Ontario, Louis D. Kaser and Maurice V. Johnson, Jr., Upland, and Alfred H. Fennell and Fred W. Riddington, Ontario, Calif., assignors to Sunkist Growers, Inc., Los Angeles, Calif., a corporation of California
Original application Aug. 16, 1965, Ser. No. 480,021, now Patent No. 3,465,495, dated Sept. 9, 1969. Divided and this application Dec. 27, 1968, Ser. No. 787,345
Int. Cl. B65b *5/10, 35/32*
U.S. Cl. 53—26 **15 Claims**



Citrus fruit to be packed into a box is first formed into staggered longitudinal rows on a feed chute and then rectangular pickup means having rows of vacuum pickup cups is positioned diagonally of the chute to pick up a group to form one layer in the box, the successive groups being of staggered patterns for the successive layers to nest together.

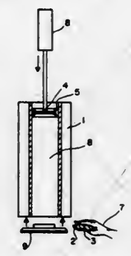
3,553,927
APPARATUS AND METHOD FOR PACKING ARTICLES IN CONTAINERS
Carlos Anglade, Jr., Apto. 5367, Caracas, Venezuela
Filed Mar. 13, 1968, Ser. No. 712,860
Int. Cl. B65b *21/06*
U.S. Cl. 53—26 **18 Claims**

For packing bottles or other articles into cases, the articles slide freely in a continuous file down an inclined track while suspended thereon, and beneath the track open cases are brought by a conveyor into a path which extends through a loading region to a second conveyor for removing filled cases. Travel of articles is intermittently arrested on the track to release successive groups of articles for further advance and proper entry into corresponding cases which may be successively retarded or stopped in the loading zone, the forward moving energy of the entering articles coacting to advance each case from such zone to the second conveyor while descent of articles into the case is completed. A plurality of parallel tracks each with article-counting arresting means serves for simultaneously filling parallel rows in each case. The



apparatus provides rapid, essentially continuous, loading operation while insuring entry of article groups into the cases and if desired, proper deposit of articles into internal pockets of each case, in a self-synchronizing manner with simple mechanism.

3,553,928
SHRINK PACKAGING WITH COMPRESSION CHAMBER
William G. Baird, Jr., Spartanburg, S.C., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
Filed Sept. 26, 1969, Ser. No. 861,353
Int. Cl. B65b *53/06*
U.S. Cl. 53—30 **8 Claims**

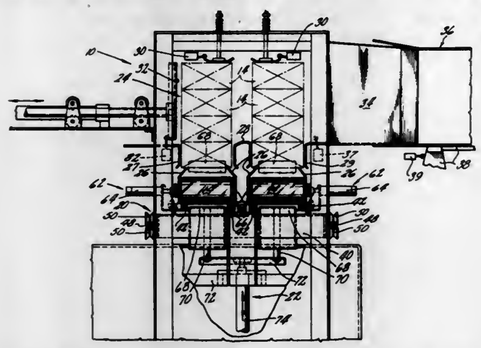


A process and apparatus for heat shrinking polymeric members. When compressible fluids are compressed, heat is generated, and oriented polymeric members in the presence of such heat undergo shrinkage. In one embodiment the polymeric member is oriented film, and the compressible fluid is air.

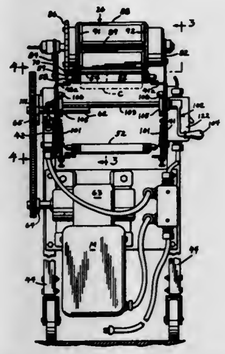
3,553,929
RETRACTING CARRIAGE MECHANISM
Albert P. Revicki, Portland, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Dec. 13, 1968, Ser. No. 783,487
Int. Cl. B65b *57/10*
U.S. Cl. 53—61 **10 Claims**

In a packing machine wherein relatively soft resilient compressible articles to be packed, such as rolls of towel paper, are intermittently advanced in line and in contact with each other, each of the articles is or may be compressed or temporarily deformed to some degree of cumulative pressure exerted by the other articles in the line. A carriage mechanism receives and separates a load-group consisting of a predetermined number of articles from the

line and permits each of the articles in the group to relax or otherwise return to its normal shape free of line pressure influence before the load-group is elevated to a collector or accumulator area.



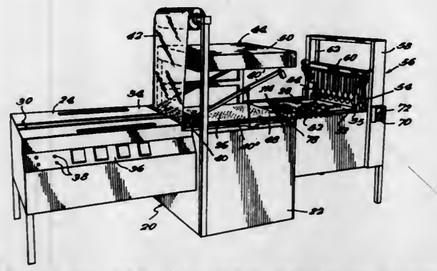
3,553,930
PACKAGING MACHINE
Ralph F. Anderson and Robert P. Sorensen, Rockford, Ill., assignors to Ralph F. Anderson, Rockford, Ill.
Filed Jan. 23, 1969, Ser. No. 793,360
Int. Cl. B65b *7/28*
U.S. Cl. 53—77 **10 Claims**



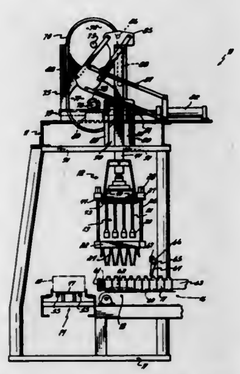
The machine includes an endless conveyor for advancing containers and a rotary sealing head for sealing a cover member to each container. A manually operated crank with cams is provided for moving the sealing head into and out of sealing position. The crank also controls actuation of the conveyor drive in correlation with moving the sealing head to provide continuous sealing through any stoppages.

3,553,931
PACKAGE-TRIMMING APPARATUS FOR A SKIN-PACKAGING MACHINE
Donald R. Rorer, Lake Bluff, Ill., assignor to Stone Container Corporation, Chicago, Ill., a corporation of Illinois
Filed June 27, 1969, Ser. No. 837,238
Int. Cl. B65b *31/00*
U.S. Cl. 53—112 **10 Claims**

A package-trimming apparatus for use with a packaging machine which encases a plurality of articles on a single base pad or substrate in a thin film of thermoplastic material to form a large composite skin package. The apparatus has a package-advancing means for moving the initially formed composite skin package through a trimming station having sectioning means to divide same into discrete or individual skin packages. The package-advancing means includes a pusher bar means coupled to a torque motor responsive to the amount of force exerted back against the pusher means so as to effect a slip or play in the pusher bar means whereby to prevent undesirable buckling of the substrate during sectioning thereof. A program bar and switch controls intermittent transverse slitting of the substrate automatically as the composite package is moved longitudinally through the said sectioning station.



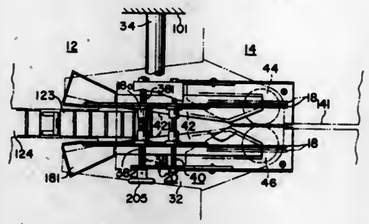
3,553,932
CASE PACKER HAVING FLOATING GUIDES
Edward F. Rowekamp, Cincinnati, Ohio, assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio
Filed Feb. 5, 1969, Ser. No. 796,703
Int. Cl. B65b *21/02*
U.S. Cl. 53—166 **4 Claims**



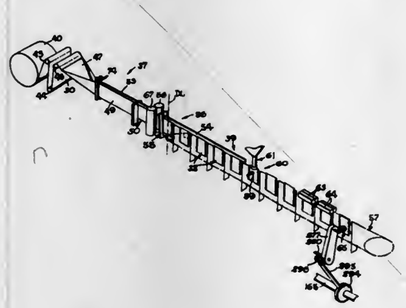
Apparatus having a bottle conveyor, a case conveyor, and means for transporting bottles between the bottle conveyor and the case conveyor, the means including a lifting head having pickup cups depending therefrom and a bottle guide carried by said lifting head for holding said bottles from swinging and banging into each other during transport between said bottle conveyor and said case conveyor and for assisting the guiding of said bottles into said case.

3,553,933
AUTOMATIC WRAPPING MACHINE
Kiyoshi Seko, Nagoya, Japan, assignor to Kabushiki Kaisha Fuji Kikai Seisakusho, Nagoya, Japan
Filed July 1, 1969, Ser. No. 838,150
Int. Cl. B65b *9/06*
U.S. Cl. 53—180 **4 Claims**

An automatic wrapping machine comprises a pair of folding guide members mounted on a threaded bolt through tapped elements, respectively. The bolt for one half its length is right-hand pitch threaded and for the other half left-hand pitch threaded, whereby the space between the folding guide members can be controlled by turning a handle secured to the bolt.



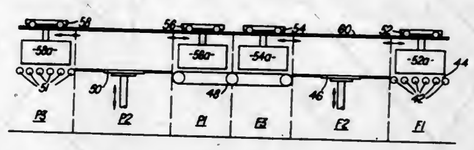
3,553,934
PACKAGING MACHINE FOR FORMING AND FILLING BAGS OF DIFFERENT LENGTHS AND WIDTHS
Kenneth R. Johnson and Robert F. Lense, Rockford, Ill., assignors to Riegel Paper Corporation, Rockford, Ill., a corporation of Delaware
Continuation-in-part of application Ser. No. 689,177, Dec. 8, 1967. This application Feb. 20, 1968, Ser. No. 706,817
Int. Cl. B65b *1/02*
U.S. Cl. 53—183 **7 Claims**



Bags which may vary in length and width within preselected ranges from one run to another are formed from a web of flexible material and are filled with a quantity of product as they are advanced in vertical planes along a horizontal path by a packaging machine. To reduce the number of adjustments necessary for changing over the machine from running bags of one length and width to running bags of a different length and width, the machine is capable of being set up to maintain the upper ends of both long and short bags moving along a common operating or datum line during the advance of the bags and, at the same time, to maintain the longitudinal center lines of both wide and narrow bags in exact coincidence with the working centers of various mechanisms spaced along the path for operating on the bags before, during and after filling.

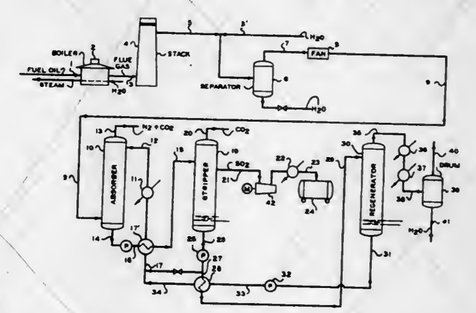
The disclosure also specifically pertains to a number of new and improved mechaisms for forming and handling the bags, to the drive mechanism of the machine, and to the ease of adaptability of the different elements of the machine to either right or left hand operation.

3,553,935
WRAPPING MACHINES
William F. C. Woods, Carshalton Beeches, England, assignor, by mesne assignments, to Flower Faraday Limited, Wimborne, Dorset, England, a British company
Filed July 22, 1968, Ser. No. 746,590
Claims priority, application Great Britain, July 20, 1967, 33,420/67
Int. Cl. B65b *11/02*
U.S. Cl. 53—209 **5 Claims**



Apparatus for wrapping blocks with plural layers of protective sheet material which includes means for conveying each block through two stations in turn, each station having a support for a roll of sheet wrapping material, a power-operated pulling device for pulling a length of wrapping material from the roll, a cutting device for severing the pulled length of wrapping material, and a system of power-operated folding and sealing means for folding about the block and sealing the portion of wrapping material severed by the cutting device.

3,553,936
REMOVAL OF SULFUR DIOXIDE AND CARBON DIOXIDE FROM STACK GASES
Donald M. Little and George R. Hettick, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 22, 1968, Ser. No. 722,996
Int. Cl. B01d *19/00*
U.S. Cl. 55—40 **7 Claims**



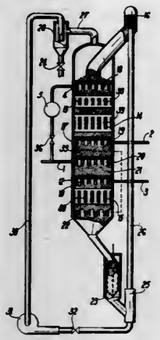
Stack gases resulting from combustion of sulfur-containing fuels are treated in combination of steps to remove SO_2 and CO_2 therefrom. The gases are cooled, as by direct water quench to a suitable treatment temperature, say 150° F., then intimately contacted with an absorbent for SO_2 and CO_2, specifically a sulfolane, unabsorbed gases are vented to atmosphere or otherwise recovered. The SO_2-rich sulfolane stream also containing CO_2 is stripped as by heating to recover a lean sulfolane bottoms, which can be recycled, a side stream of SO_2 and an overhead stream containing the CO_2. For best operation, the cooled gases are compressed to a pressure of about 1 p.s.i.g. prior to the absorption step. Gases containing as little as 0.2 or less SO_2 mole percent can be treated to recover completely therefrom the SO_2 contained therein. The operation can be continuous and can be effected in a simple apparatus.

3,553,937

METHOD OF CONTINUOUS SEPARATION BY COUNTERCURRENT ABSORPTION IN GASEOUS PHASE

Louis Agneray, Noisy-le-Sec, Arlette Clayer, Ville-d'Avray, and Maurice Bruni, Vaujours, France, assignors to Societe de Recherches Techniques et Industrielles (S.R.T.I.), Boulogne, France

Filed Jan. 26, 1968, Ser. No. 701,002
Claims priority, application France, Jan. 31, 1967, 93,276
Int. Cl. B01d *15/08, 53/08*
U.S. Cl. 55—60 7 Claims



A method of continuous separation of the constituents of a gaseous mixture whereby the constituents are absorbed by a liquid with which a granular solid is impregnated and thus serves as a support for said liquid. The impregnated solid is circulated within a chromatographic separating column countercurrent to the gaseous mixture to be analyzed which is introduced at an intermediate point of said column, said impregnated solid being passed successively through a depletion zone, an enrichment zone, a desorption zone and a purge zone. Only the gaseous mixture to be separated and the granular solid are passed through the column, the desorption of the most strongly absorbed constituents being carried out in the desorption zone by heating and completed in the purge zone by elution by a fraction of the constituents which are the least strongly absorbed. The fraction of the most strongly absorbed constituents which has been desorbed in the purge zone and the fraction of the least strongly absorbed constituents which has served to desorb the most strongly absorbed constituents in the purge zone are recycled to the inlet. The most strongly absorbed constituents are drawn-off at the top of the absorption zone and the least strongly absorbed constituents are drawn-off at the top of the depletion zone.

3,553,938

METHOD FOR SEPARATING AND RECOVERING HYDROGEN FLUORIDE

Kikuji Hirayama, Onoda, Yamaguchi, Keiji Nakano, Yoshiki-gun, Yamaguchi, and Takeshi Mitsui, Onoda, Yamaguchi, Japan, assignors to Onoda Cement Company, Limited, Onoda, Yamaguchi Prefecture, Japan

No Drawing. Filed Mar. 14, 1969, Ser. No. 807,439
Claims priority, application Japan, Mar. 21, 1968, 43/17,991
Int. Cl. B01d *19/00*
U.S. Cl. 55—71 9 Claims

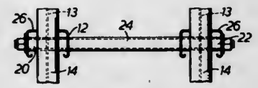
This invention relates to a method for recovering hydrogen fluoride from a gaseous mixture containing hydrogen fluoride and impurities by contacting the gaseous mixture with at least one of absorptive liquids thereby to absorb said hydrogen fluoride into said absorptive liquid and then recovering said hydrogen fluoride by heating the resultant absorptive liquid under evaporation. The hydrogen fluoride thus recovered has high purity. The absorptive liquids include phosphoric acid, poly-phosphoric acid, fluoro-phosphoric acid or mixtures thereof. Also the absorptive liquids may contain sulphuric acid and fluorosulphuric acid in addition to the phosphoric acid, polyphosphoric acid, fluoro-phosphoric acid and the mixtures thereof.

3,553,939

ELECTRO STATIC PRECIPITATOR HAVING MEANS TO SUPPORT THE COLLECTING ELECTRODES

John F. Dyla, Birmingham, England, assignor to Lodge-Cottrell Limited, Birmingham, England, a British company

Filed Mar. 28, 1969, Ser. No. 811,506
Claims priority, application Great Britain, Apr. 2, 1968, 15,903/68
Int. Cl. B03c *3/76*
U.S. Cl. 55—112 10 Claims



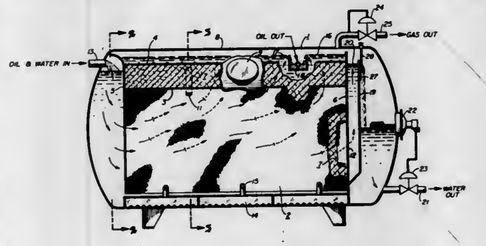
An electro-precipitator comprises a casing, a plurality of spaced collector electrode assemblies, and a plurality of discharge electrodes located in spaces between the collector electrodes of the assemblies. Each collector electrode assembly comprises two vertical generally planar parallel collector electrodes each of which is secured to a horizontally elongated tubular support member mounted in the casing and from which the collector electrode extends downwardly, and the collector electrode assembly also comprises bracing means connecting together the support members of said assembly, said bracing means comprising one or more tubular assemblies spaced apart along the support members and each of which extends between the support members at right angles thereto. Each tubular assembly comprises two horizontal tubular members one secured in each support member, said two tubular members being opposite and aligned, a further tubular member aligned with and extending between said two aligned tubular members and a fastener extending through the three aligned tubular members to secure said tubular members together.

3,553,940

PRECIPITATOR

Dick H. Piner, Jr., New Orleans, La., assignor to Combustion Engineering, Inc., New York, N.Y., a corporation of Delaware

Filed Jan. 30, 1969, Ser. No. 795,244
Int. Cl. B01d *19/00*
U.S. Cl. 55—174 6 Claims



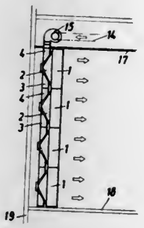
A vessel has a media pack, which functions as a coalescing and filtering body, arranged in a plane extended at an angle to the horizontal. The produced fluids of an oil well are directed to flow up through the pack for coalescence of emulsified oil and filtering of entrained solids. The lighter fluids then ascend to the top of the vessel for removal. The heavier fluids are removed from a collecting volume in the bottom of the vessel.

3,553,941

FILTERING ASSEMBLY INCLUDING A MULTIPLICITY OF INTERCONNECTED PLENUM CHAMBERS

Hans-Joachim Wittemeier and Gerhard Max Neumann, Berlin, Germany, assignors to Delbag-Luftfilter Gesellschaft mit beschrankter Haftung, Berlin, Germany, a corporation of Germany

Filed Feb. 5, 1969, Ser. No. 796,832
Claims priority, application Germany, July 15, 1968, 1,782,065
Int. Cl. B01d *46/12*
U.S. Cl. 55—473 9 Claims



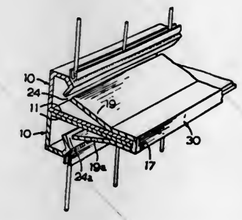
An air-filter assembly is formed from a multiplicity of interconnected identical units each having a plenum chamber with a frustoconical or frustopyramidal housing closed at its narrow end and terminating at its broad end in a filter cell, an inlet port and an outlet port for air to be filtered extending laterally from opposite sides of the housing. These units are interconnected by their inlet and outlet ports into at least one linear array whose ports are successively traversed by compressed air from a blower working into the first inlet port of each row.

3,553,942

ANCHOR FOR PLIABLE SHEET MATERIAL

Frederick G. Harrington, 24 Leith Hill Road, Willowdale, Ontario, Canada, and John E. Mullan, 9 Lothian Ave., Toronto, Ontario, Canada

Filed Feb. 26, 1968, Ser. No. 708,238
Int. Cl. B01d *50/00*
U.S. Cl. 55—483 8 Claims



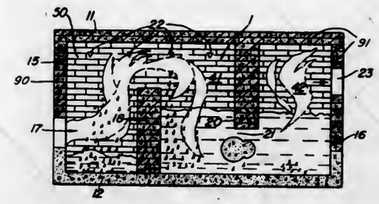
An anchoring device for pliable sheet material in which the edge of the material is releasably gripped in a frame. One strip member, forming the frame, has a convoluted base terminating in a fixed tongue and carries a resilient flange co-operating with the tongue to form a slot. The flange is movable in one direction obliquely with respect to the tongue to expand the slot for insertion of the edge of the sheet material and reduces the slot when moved in the opposite direction.

3,553,943

SMOKE AND GAS CLEANING APPARATUS

Patrick H. Sharpe, Flossmoor, Ill., assignor to Brulé C.E. & E., Inc., Blue Island, Ill., a corporation of Illinois

Filed Nov. 6, 1968, Ser. No. 773,754
Int. Cl. B01d *47/02*
U.S. Cl. 55—223 7 Claims



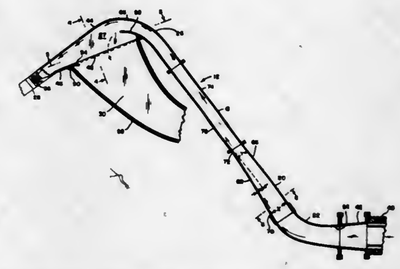
Apparatus including a chamber having partitions forming compartments some of which are provided with spray nozzles and a liquid bath whereby smoke is sprayed with water and passed through the liquid bath.

3,553,944

SEPARATING APPARATUS

Allen Hum, Minneapolis, Minn., Harold V. Perttula, San Jose, Calif., and Takuzo Tsuchiya, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware

Filed Oct. 1, 1968, Ser. No. 764,180
Int. Cl. B01d *45/12*
U.S. Cl. 55—267 10 Claims



Apparatus comprising an elongated duct provided with curved elbow end portions and a straight intermediate duct portion therebetween having means for deflecting particles to the outer wall of the downstream curved elbow and removing carrier medium from the inner wall thereof for receiving and separating particles from a carrier medium which is caused to flow in a prescribed manner at a relatively high velocity.

3,553,945

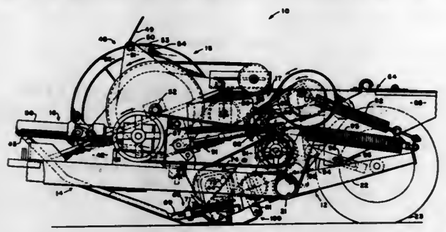
HEADER CONTROL

Joseph H. Cyr and Horace G. McCarty, New Holland, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware

Continuation of application Ser. No. 612,462, Jan. 30, 1967. This application Aug. 22, 1969, Ser. No. 852,988
Int. Cl. A01d *43/00, 55/02*
U.S. Cl. 56—23 9 Claims

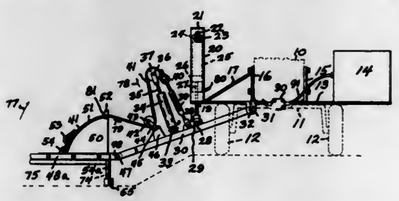
An agriculture machine for mowing, conditioning, and windrowing crop material and having a header pivotally

mounted on a vertically adjustable frame. A control system is provided to regulate the operating height of the



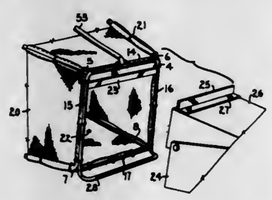
header and the inclination of the header relative to the ground.

3,553,946
TRACTOR MOUNTED ADJUSTABLE ROTARY HIGHWAY MOWER
Sam S. Taylor and Roger W. Lunstra, Sioux Falls, S. Dak., assignors to Sam Taylor Equipment, Sioux Falls, S. Dak., a corporation of South Dakota
Filed Oct. 10, 1968, Ser. No. 766,443
Int. Cl. A01d *35/26, 35/28*
U.S. Cl. 56—25.4 4 Claims



A tractor mounted adjustable rotary highway mower having extending articulated arms, with hydraulic means for adjustably varying the angle of said arms with respect to each other, and with an end arm having a rotary cutter mounted thereon.

3,553,947
GRASS CATCHER FOR LAWNMOWERS
George R. Root, Baxter Springs, Kans., assignor to Root Manufacturing Company, Inc., Baxter Springs, Kans., a corporation of Kansas
Filed Aug. 12, 1968, Ser. No. 751,790
Int. Cl. A01d *35/22*
U.S. Cl. 56—202 8 Claims



This invention relates to an apparatus for attaching one end of a grass catcher to the housing of a lawnmower by means of a bracket and a hook member on the catcher which engages underneath the spout of the housing and to the hinged door at the opposite end of the catcher and means for locking the same in place.

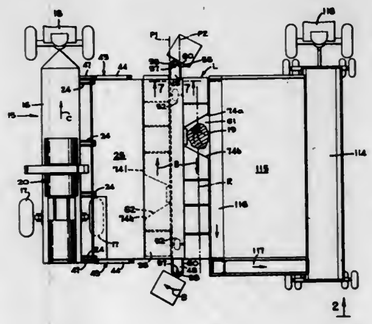
Heretofore, in catchers of this type, there has usually been bolts and nuts required or some resilient means such as springs on the forward end of the catcher to attach the same to a discharge chute or spout of a housing of a lawnmower for easy removal. Also, in catchers of screen type, there has been no easy and quick way of opening the rear end to remove the grass therefrom.

3,553,948
SICKLE GUARD
Allen A. White, Peabody, Kans., assignor to Hesston Corporation, Hesston, Kans., a corporation of Kansas
Continuation-in-part of application Ser. No. 659,361, Aug. 9, 1967. This application Jan. 12, 1970, Ser. No. 2,628
Int. Cl. A01d *55/10*
U.S. Cl. 56—307 8 Claims



A sickle guard is rendered self-cleaning and capable of withstanding virtually all forces during normal use by the provision of separable, upper and lower, complemental components both of which have a multiple of integrally interconnected elements. Spaced fingers support the reciprocable sickle and spaced straps hold the sickle down as well as prevent finger breakage. The joinders between the fingers and between the straps are shaped and disposed to permit trash and dirt buildup, to properly reinforce both components, and to effectively hold the sickle within a non-tilting, rectilinear path of travel. A simple, yet effective, strong and easily released interlock is provided between the fingers and the leading ends of the straps.

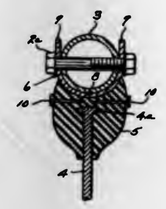
3,553,949
APPARATUS FOR GATHERING CROPS FROM TREES
Glen E. Rauth, Winter Park, Fla., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Jan. 29, 1968, Ser. No. 701,273
Int. Cl. A01g *19/06*
U.S. Cl. 56—329 11 Claims



A machine for gathering fruit from trees as it continuously moves past the trees has means to dislodge the fruit from the trees and has a resilient catch frame plate to intercept the fruit as it falls and to guide the fruit to a

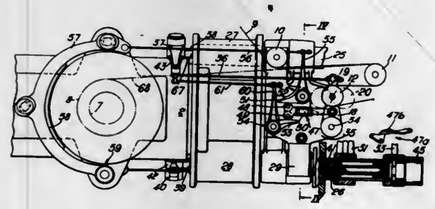
conveyor. The machine has an endless loop of segmented paneling comprising two runs extending in the direction of travel of the machine, one run underlying the catch plate and moving forwardly on the machine and the other run extending under the tree and moving rearwardly at a rate equal to the ground speed of the machine. This latter run of paneling, which has a gap to receive the tree, remains stationary with respect to the tree so that the paneling embraces the tree as the machine moves past the tree without damage to the paneling.

3,553,950
RAKE TINE ASSEMBLY
James D. Waser, Fort Wayne, Ind., assignor to Cooper Tire & Rubber Company, Findlay, Ohio, a corporation of Delaware
Filed Aug. 8, 1968, Ser. No. 751,195
Int. Cl. A01d *77/00, 7/06*
U.S. Cl. 56—400 6 Claims



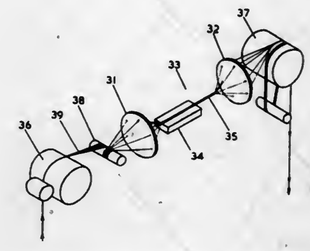
A rake tine mounted in a member formed of a resilient material such as an elastomeric rubber which is formed with voids extending into the interior and which permit displacement of the material into said voids upon stresses being applied to the rake tine.

3,553,951
TENSION REGULATED WRAPPING MACHINE
Ronald Hinds, Woolton, England, assignor to British Insulated Callender's Cables Limited, London, England
Filed Oct. 10, 1967, Ser. No. 674,291
Claims priority, application Great Britain, Sept. 30, 1966, 43,724/66; Nov. 29, 1966, 53,419/66
Int. Cl. B65h *81/06*
U.S. Cl. 57—3 11 Claims



Apparatus for controlling the tension in flexible material, for example material being unwound from a supply drum, and especially material being unwound from the supply drum of a lapping head which helically laps the material onto a moving core passing through the head. A braking force for application directly to the flexible material or to the supply drum is generated in a servomechanism incorporating a lever the ratio of which is varied by relative movement along the lever between its fulcrum and its input and/or output points under the action of sensing member responsible to the tension in the material.

3,553,952
PROCESS AND APPARATUS FOR CRIMPING YARNS AND PRODUCT MADE THEREBY
Bruce Murray McIntosh, Harrogate, Yorkshire, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Sept. 3, 1968, Ser. No. 757,077
Claims priority, application Great Britain, Sept. 4, 1967, 40,241/67
Int. Cl. D02g *1/02, 1/04, 3/00*
U.S. Cl. 57—34 8 Claims



A process and apparatus for feeding a plurality of strands at constant speed through twister means having a plurality of guide assemblies spaced apart symmetrically about a circle and wherein the strands enter and leave the guide assemblies at equal angles.

3,553,953
BULKED BONDED YARN
Lloyd J. Ponson, Gulf Breeze, Fla., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Sept. 3, 1968, Ser. No. 756,790
Int. Cl. D02g *3/00, 3/40;* D02j *1/12*
U.S. Cl. 57—140 3 Claims

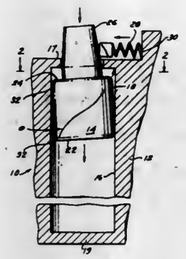


Developed bulk is imparted to a yarn composed of similar continuous filaments. Adjacent bulked filaments are then bonded at points where they contact one another. The bulked bonded yarn is particularly suitable for use as tying twine and similar applications due to its improved knot holding ability, bundle cohesion, and high strength.

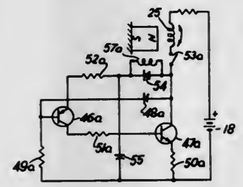
3,553,954
DASHPOT TIMER HAVING A COCKED PISTON
David S. Breed, Boonton, N.J. 07005
Original application Apr. 1, 1969, Ser. No. 811,968. Divided and this application Nov. 21, 1969, Ser. No. 878,703
Int. Cl. G04f
U.S. Cl. 58—1 7 Claims

A timing mechanism of the dashpot type wherein a cylindrical piston travels in a cylinder at a controlled rate. The axis of the piston is cocked relative to the axis of the cylinder so as to increase the time required for the

piston to travel longitudinally through the cylinder and to improve the consistency of that time. Means are provided to maintain the axis of the piston cocked relative to that of the cylinder.

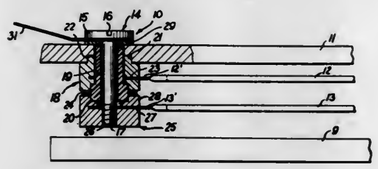


3,553,955
ELECTRONIC WATCH
Eugene R. Keeler, Suffern, and Norman C. Zatsky, Briarcliff Manor, N.Y., assignors to Timex Corporation, Waterbury, Conn., a corporation of Connecticut
Filed July 8, 1969, Ser. No. 839,855
Int. Cl. G04c *3/04*
U.S. Cl. 58—28 5 Claims



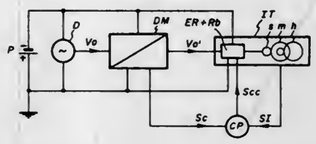
An electronic horological instrument includes a source of power, an electronic circuit, an oscillator, such as a balance wheel, carrying an electric coil and a magnet whose field cooperates with the coil. A hub on the balance wheel staff is attached to one end of a hairspring whose opposite end is connected to the frame. The oscillator carries a conductive pin which makes contact with a spring arm for predetermined periods. The electrical connections to the coil are through the hairspring and the pin and spring.

3,553,956
DOUBLE HAIRSPRING CLAMPING DEVICE
Herbert Schwartz, Wurmberg, and Rolf Weise, Pforzheim, Germany, assignors to Timex Corporation, Waterbury, Conn., a corporation of Connecticut
Filed Sept. 11, 1969, Ser. No. 857,110
Int. Cl. G04c *3/04*
U.S. Cl. 58—28 7 Claims



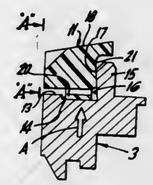
An electronic watch utilizes two hairsprings to conduct current to a coil carried on a balance wheel. The hairsprings are electrically isolated from each other. A single hairspring clamping device, using one screw, clamps both hairsprings at their outer ends. The clamping device maintains electrical isolation of the hairsprings.

3,553,957
ELECTRONIC TIMEPIECE
Peter Döme, Athenaz, Geneva, Switzerland, and Jakob Lüscher, 20b Route de Drize, Carouge, Geneva, Switzerland
Continuation-in-part of application Ser. No. 614,937, Feb. 9, 1967. This application Feb. 12, 1969, Ser. No. 798,757
Claims priority, application Switzerland, Feb. 10, 1966, 2,050/66
Int. Cl. G04c *3/00*
U.S. Cl. 58—23 4 Claims



An electronic timepiece comprises a time base delivering high frequency electric signals and electronic means for dividing this high frequency, and time-representing members, wherein a device is provided for correcting the time given by the time-representing members when the time does not correspond to that which it should actually be on the basis of a count of the signals of divided frequency issuing from the dividing means.

3,553,958
WATCH INDICATOR RING
Raymond J. Grohoski, Watertown, Conn., assignor to Timex Corporation, Waterbury, Conn., a corporation of Delaware
Filed June 9, 1969, Ser. No. 831,640
Int. Cl. G04b *37/12, 39/00*
U.S. Cl. 58—91 6 Claims



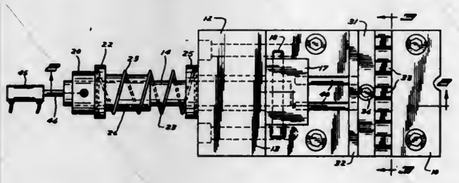
A watch includes a movement, a case, and a ring rotatably attached to the bezel portion of the case. The ring is snap-fitted on the bezel and includes at least three integral flexible spring-like portions.

3,553,959
HYDRAULIC TIMER
Virginia M. Young and Garth L. Young, Jr., both of 327 S. Medio Drive, Los Angeles, Calif. 90049
Filed Apr. 14, 1969, Ser. No. 815,675
Int. Cl. G04f *1/08*
U.S. Cl. 58—144 1 Claim

A transparent hollow tube filled with a viscous liquid includes a timing member with specific gravity significantly different from that of the liquid. Inversion of the device from a rest position allows the timing member to assume a new position in accordance with the difference in specific gravity from that of the liquid. Graduated markings on or adjacent the tube permit visual identification of the time position. A further asspect is the forming of the tube into a helical path.

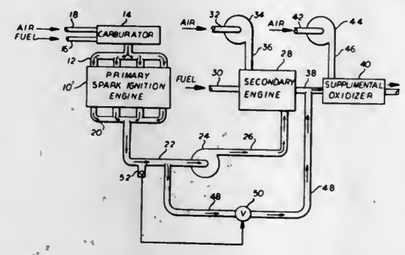


3,553,960
PIN KNOCKOUT DEVICE FOR ROLLER CHAINS
Charles C. Ellefson, Fridley, Minn. (3632 Lincoln St. NE., Minneapolis, Minn. 55418)
Continuation-in-part of application Ser. No. 608,006, Jan. 9, 1967. This application Sept. 19, 1968, Ser. No. 772,444
Int. Cl. B21l *21/00*
U.S. Cl. 59—7 12 Claims



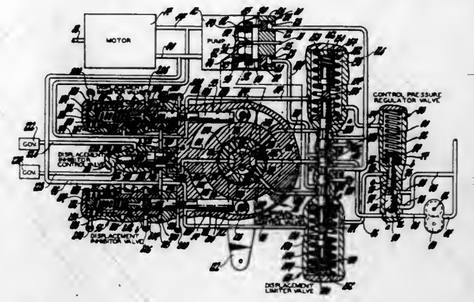
A pin knockout device having simultaneously operated plungers that force the pins of one link of a roller chain out of the bushings together with separating one plate from the pins while the remainder of the roller chain is being retained in a fixed position. The disclosure is directed to simultaneously pushing out the pins of one link of a roller chain in order to at least partially disassemble a roller chain.

3,553,961
COMBUSTION ENGINE SYSTEM
Leo A. McReynolds, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 26, 1968, Ser. No. 787,048
Int. Cl. F01k *23/02*; F01n *3/14*
U.S. Cl. 60—13 3 Claims



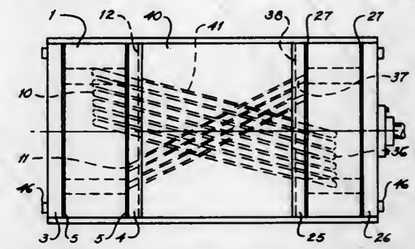
A dual engine system is provided in which the exhaust from a primary engine is passed to the combustion zone of a secondary engine to reduce the concentration of carbon monoxide, unburned hydrocarbons and nitrogen oxides in the exhaust gases discharged from the system.

3,553,962
HYDROSTATIC DISPLACEMENT CONTROL SYSTEM
Carl R. Potter and James J. Mooney, Jr., Indianapolis, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 19, 1969, Ser. No. 825,797
Int. Cl. F15b *15/18*
U.S. Cl. 60—19 8 Claims



A hydrostatic displacement control system for controlling the pump displacement in a hydrostatic unit comprises a control pressure regulator valve which provides a control pressure according to high hydrostatic system pressure. A displacement control valve using this control pressure normally provides pressure control at two displacement control motors to control the angular position of a swash plate which determines the hydrostatic pump displacement. A displacement limiter valve interrupts the control of the displacement control valve to limit hydrostatic system pressure by providing a different pressure bias to the displacement control motors. Two load feel devices having a hydrostatic system pressure bias operate on the displacement control valve to provide the operator with feel of the load. Two displacement inhibitor valves in cooperation with a displacement inhibitor control valve operate on the displacement control valve to limit pump displacement according to engine speed and output speed.

3,553,963
CLOSED BI-CYCLE TANGENTIAL FLOW TURBINE
Donald A. Kelly, 58—06 69th Place, Maspeth, New York, N.Y. 11378
Filed July 28, 1969, Ser. No. 845,321
Int. Cl. F03g *7/06*; F25b *9/00*
U.S. Cl. 60—24 7 Claims

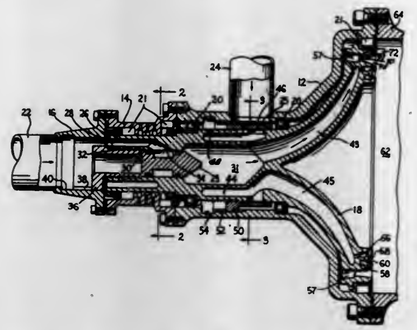


The closed bi-cycle tangential flow turbine is envisioned as a low-cost, low air polluting power source for many vehicular applications. The closed bi-cycle turbine is a Brayton cycle machine in which a fixed volume of gas is cycled twice through an axial flow loop that enters and leaves the operating bores tangentially, or nearly so. The axial coupling of the operating stages and gas loop allows direct connection of them with a single shaft seal at the output shaft.

3,553,964
PROPELLANT FEED SYSTEM FOR ROCKET POWERPLANTS

Hartmann J. Kircher III, Sparta, N.J., assignor to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

Filed Jan. 15, 1968, Ser. No. 697,968
Int. Cl. F02k 9/00; F03g 1/02; F04d 1/00
U.S. Cl. 60—39.14 13 Claims

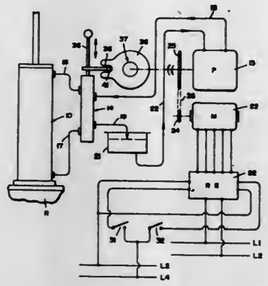


A pump for delivering one fluid or two fluids simultaneously which has a separate valve for each fluid which automatically opens upon rotation of the pump impeller without the use of exterior valve control means. Screw threads are employed on the impeller to cooperate with corresponding threads on each of the two valves, the valve sleeve in one instance and the poppet in the other instance. These valves are prevented from rotation with respect to the impeller and thus are screw threadedly retracted to open the valves as the impeller turns.

3,553,965
HYDRAULIC VALVE OPERATING SYSTEM AND APPARATUS

Francis M. Lathrop II, Houston, Tex., assignor to M & J Valve Company, a corporation of Delaware, and M & J Development Company, a partnership, both of Houston, Tex.

Filed Nov. 15, 1968, Ser. No. 776,188
Int. Cl. F15b 15/18
U.S. Cl. 60—52 5 Claims

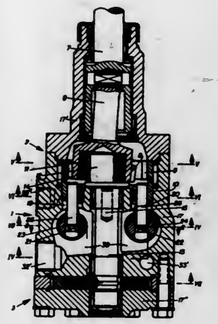


A hydraulic valve operating system making use of a hydraulic pump driven by a reversible motor. A double acting hydraulic actuator, adapted to be connected to a valve, is connected with the pump through control valve means. The control valve means is automatically set in either one of its two operating positions by torque taken from the motor when the motor is started in operation. Also a hydraulic pump which has its volumetric capacity for a given operating speed substantially reduced when the discharge pressure exceeds a predetermined level.

3,553,966
BOOSTER STEERING CONTROL DEVICE

Karl-Heinz Liebert, Schwabisch Gmund, Germany, assignor to Zahnradfabrik Friedrichshafen Aktiengesellschaft, Friedrichshafen, Germany, a corporation of Germany

Filed May 14, 1969, Ser. No. 824,657
Claims priority, application Germany, June 22, 1968, 1,755,792
Int. Cl. F15b 15/18; B62d 5/00
U.S. Cl. 60—52 14 Claims

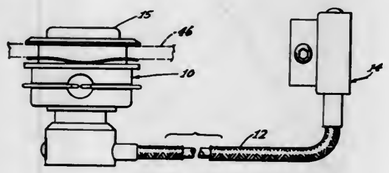


The invention comprises a valve array for hydraulic servomotor booster steering systems of the type which uses a control or a metering pump to control flow from a main pump wherein the main pump flow passes through the metering pump. In the present construction pressure flow to a double ended hydraulic cylinder, and an exhaust therefrom is controlled by a pair of coacting reciprocal piston valves which are shifted by the manual torque of rotating a vehicle steering wheel. Such shifting of the piston valves is effective within predetermined limits of movement and means are provided in conjunction with one of the piston valves for effecting road reaction, that is, a simulated steering resistance to rotation of the steering wheel which is proportional to the working pressure in the servomotor.

3,553,967
HYDRAULIC CONTROL ASSEMBLY

Clyde Robert Porter, Los Angeles, and Joseph Alexander Sember, Glendale, Calif., assignors to P. L. Porter Co., Los Angeles, Calif., a corporation of California

Filed Aug. 1, 1969, Ser. No. 846,781
Int. Cl. F15b 7/00; G12b 9/00; G05g 5/06; H01h 15/18
U.S. Cl. 60—54.5 13 Claims

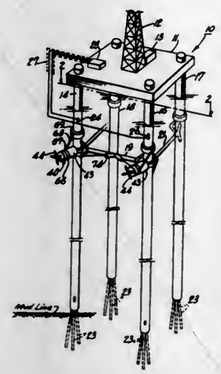


A plunger of a control unit displaces a movable wall for corresponding hydraulic displacement of a movable wall of a remote operating unit. The control unit itself is designed for assembly by snap action and is also constructed for mounting on the control panel by snap action.

3,553,968
STABILIZED OFFSHORE PLATFORM

Fontaine C. Armistead, Darien, Conn., assignor to Texaco Development Corporation, New York, N.Y., a corporation of Delaware

Filed Dec. 19, 1968, Ser. No. 785,131
Int. Cl. E02b 17/00
U.S. Cl. 61—46.5 18 Claims

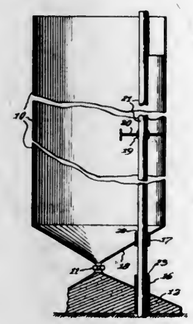


The invention relates to a dynamically stabilized, offshore platform supported by an elongated rigid structure having the lower end fastened into the floor of a body of water. The structure includes a signal generating monitor system adapted for continuously monitoring the degree and frequency of the structure's lateral displacement. The displacement is automatically counteracted by an under water reactive force periodically applied to the structure in a direction opposite to the displacing force, and at a magnitude and frequency in accordance with the generated signal whereby to avoid the creation of a harmful resonant vibration in the structure due to constant wave action.

3,553,969
SUBMERGED OIL STORAGE STRUCTURE

Robert S. Chamberlin, Western Springs, William A. Davis, Glen Ellyn, and James E. Stevens, Palos Park, Ill., assignors to Chicago Bridge & Iron Company, Oak Brook, Ill., a corporation of Illinois

Filed Dec. 23, 1968, Ser. No. 786,281
Int. Cl. E02d 27/52
U.S. Cl. 61—46 4 Claims

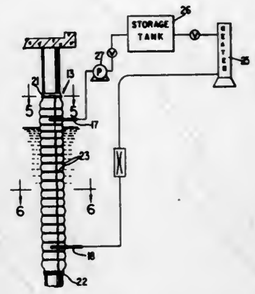


An offshore structure having an elongated shaft vertically positioned in a body of water and pivotally connected at its bottom end to a weight means on the floor of the body of water. The weight means can be a tank for storing oil.

3,553,970
INFLATABLE CLAMPING DEVICE

George C. Wiswell, Jr., 1014 Pequot Road, Southport, Conn. 06490

Filed Nov. 26, 1968, Ser. No. 779,184
Int. Cl. E02d 5/60
U.S. Cl. 61—54 8 Claims

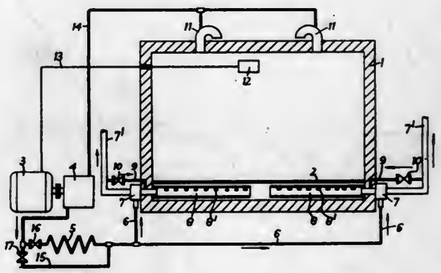


An inflatable clamping device is provided for applying pressure to a coating on a submerged pile structure as the coating is being cured. The device is formed by attaching two sheets of flexible material together to form a fluid-tight chamber therebetween with the two sheets being wrapped around the coated material and a fluid under pressure introduced to the chamber between the sheets to apply a pressure against the coating. The inner sheet is formed of sufficient material so as to conform to the configuration of the pile, such as when the pile has an H-section.

3,553,971
REFRIGERATION OF MOBILE CONTAINERS

Terence Fursdon Crang, Wootton, Isle of Wight, England, assignor to Vortair Engineering Limited, London, England

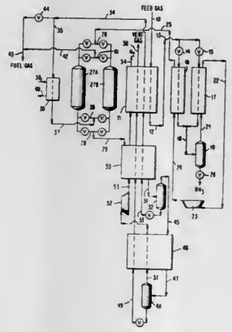
Filed Dec. 17, 1968, Ser. No. 784,303
Claims priority, application Great Britain, Dec. 19, 1967, 57,602/67
Int. Cl. F25b 9/02
U.S. Cl. 62—5 8 Claims



A transportable cargo-refrigerating apparatus in which the container of the apparatus is refrigerated with cold air produced by cold air generators of the vortex tube type. The hot air outlet pipes of the vortex tube may be connected to heat the container so that the apparatus can

be used to transport both frozen goods and goods that need to be kept at a temperature above that of the ambient atmosphere.

3,553,972
CRYOGENIC RECOVERY OF HYDROGEN FROM AMMONIA SYNTHESIS GAS
Stephen J. Markbreiter, Edison, N.J., and Irving Weiss, Brooklyn, N.Y., assignors to American Messer Corporation, New York, N.Y., a corporation of New York
Filed Nov. 19, 1968, Ser. No. 776,959
Int. Cl. F25j *3/00, 3/06*
U.S. Cl. 62—18 12 Claims



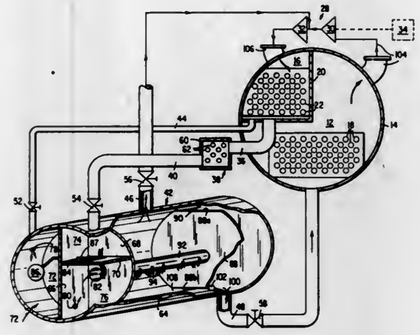
The recovery of ammonia and hydrogen-enriched gas from ammonia synthesis purge gas at high pressure may be achieved without the use of external refrigeration. The purge gas is cooled to nearly the freezing point of ammonia to condense and thus separate ammonia from the purge gas. The refrigeration for condensing ammonia is produced by work-expanding the purge gas after ammonia condensate has been removed therefrom. Thereafter, the purge gas is further cooled so that gaseous impurities such as methane and argon are condensed and separated to leave a hydrogen-enriched gas suitable for recycling to the ammonia synthesis. The refrigeration for condensing the gaseous impurities is produced by work-expanding the product hydrogen-enriched gas.

3,553,973
CONTINUOUS FREEZER
Jack K. Moran, 8571 Hollyhock Ave., Largo, Fla. 33540
Filed June 23, 1966, Ser. No. 559,923
Int. Cl. F25d *3/10*
U.S. Cl. 62—63 6 Claims



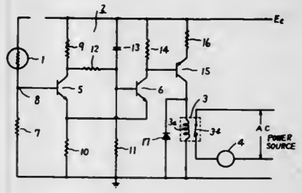
Cryogenic freezing of articles is carried out in tunnel structure in which the objects are sprayed with croyogenic liquid at a selected location and volatilized refrigerant is removed from and returned to the path of travel at selected locations, the speed of movement of the objects and the handling of the volatilized refrigerant being determined in accordance with temperature requirements.

3,553,974
REFRIGERATION SYSTEM
William T. Osborne, East Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Nov. 29, 1968, Ser. No. 779,831
Int. Cl. F25b *1/00*
U.S. Cl. 62—115 5 Claims



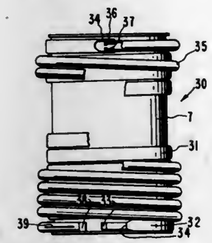
The present invention is directed to a refrigeration system comprised of a compressor, condenser, evaporator and refrigerant vessel, the vessel interiorly thereof being equipped with perforate distributor means of novel construction functioning in cooperation with a unique valving arrangement to accomplish during the flashing action a more efficient separation of refrigerant liquid and gas, thereby assuring that there will be essentially no flow of liquid to the interstage suction line of the compressor.

3,553,975
REFRIGERATOR TEMPERATURE AND DEFROSTING CONTROL
Yoshiyasu Sakamoto, Oizumi-machi, Oora-gun, Japan, assignor to Sanyo Electric Co., Ltd., Moriguchi-shi, and Tokyo Sanyo Electric Co., Ltd., Oora-gun, Japan
Filed Aug. 7, 1968, Ser. No. 750,933
Claims priority, application Japan, Aug. 7, 1967, 42/67,958; Aug. 9, 1967, 42/51,136; Aug. 19, 1967, 42/53,171
Int. Cl. F25d *21/06*
U.S. Cl. 62—156 9 Claims



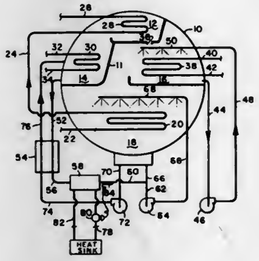
Temperature and defrosting control apparatus is described including a circuit for controlling the operation of the refrigerator compressor in response to temperature signals from one or more thermosensitive resistance elements disposed at locations within the refrigerating and freezing chambers, and a defrosting control circuit for initiating the defrosting cycle in response to a timing device and terminating the defrosting cycle in response to temperature signals from one or more of the thermosensitive resistance elements.

3,553,976
CONTAINER REFRIGERATOR
Eric Cumine, Lee Gardens, 33 Hysan Ave., Hong Kong, and Charles H. Graham, Palo Alto, Calif.; said Graham assignor to said Cumine
Filed July 29, 1968, Ser. No. 748,287
Int. Cl. F25d *3/10*
U.S. Cl. 62—294 16 Claims



A container refrigerator is described wherein a refrigerating member is attached to the outside surface of an existing container. The refrigerating member is shown as a tubular member either in the form of a C-shaped ring member that can be expanded and snapped onto a cylinder or a helically coiled tube that can be expanded and slid onto the container and released to be held in place. The refrigerating member holds a refrigerating medium which can be vented for reduction of temperature and the medium can be expanded between portions of the refrigerating member.

3,553,977
ABSORPTION REFRIGERATION APPARATUS INCLUDING MEANS COOLING STRONG ABSORPTION SOLUTION
John L. M. Holman, Onalaska, Wis., assignor to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed Nov. 5, 1968, Ser. No. 773,605
Int. Cl. F25b *15/06*
U.S. Cl. 62—489 5 Claims



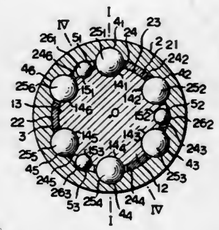
Absorption refrigeration apparatus employing a pump for circulating absorbent solution which is at a temperature and pressure near its flash point in which a heat exchanger is provided to reduce the temperature of the solution prior to its flow to the pump thus preventing flashing of the solution as the pressure is reduced at the inlet of the pump.

3,553,978
COMPOSITE PROPELLER SHAFT CONSTRUCTION AND METHOD OF MAKING
Charles W. Williams, Essexville, Mich., assignor to General Motors Corporation, a corporation of Delaware
Original application June 7, 1967, Ser. No. 644,184. Divided and this application Oct. 6, 1969, Ser. No. 871,091
Int. Cl. F16c *3/02*
U.S. Cl. 64—1 4 Claims



A vehicle propeller shaft includes a pair of spaced end members having inner ends with characterized surfaces. A light but stiff cylindrical arbor, such as of polyurethane foam, connects the end members and a tube formed of hardened thermosetting resin reinforced with fiber glass filaments is formed on the arbor and interlockingly engages the characterized surfaces of the end members. A method of forming such a shaft includes steps of forming a polyurethane foam arbor between the end members and forming the resin bonded fiber glass tube in place on the arbor and end members.

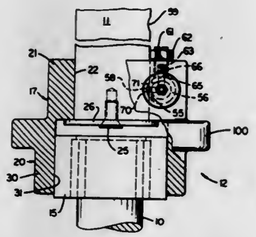
3,553,979
UNIVERSAL JOINT OF UNIFORM SPEED
Masaaki Noguchi, Nagoya-shi, Shigeru Sakakibara, Aichi-ken, and Masaharu Sumiyoshi, Toyota-shi, Japan, assignors to Toyota Jidosha Kogyo Kabushiki Kaisha, Toyota-shi, Japan, and jointly with Aishin Seiki Kabushika Kaisha, Kariya-shi, Japan, both corporations of Japan
Filed Dec. 6, 1968, Ser. No. 781,894
Claims priority, application Japan, Dec. 31, 1967, 43/277
Int. Cl. F16d *3/30*
U.S. Cl. 64—21 3 Claims



The present invention provides a universal joint of uniform speed for transmitting a torque from an input shaft to an output shaft by using balls comprising meridian form ring grooves on a spherical inner surface of a bowl shaped outer member of an input shaft and a spherical outer surface of a spherical inner member, respectively, said grooves being coaxial; a row of large diameter balls fitting with said respective ring grooves, through which the torque is transmitted; a retainer provided between said inner and outer members for determining the positions of

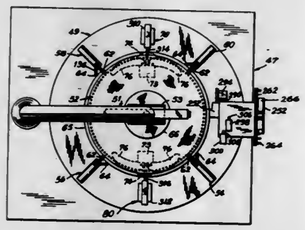
said balls; small diameter guide balls are provided intermediate said large diameter balls for determining bisecting plane of the pivoting angle.

3,553,980
KELLY BAR COUPLING
Robert E. Dickinson and William P. Henson, Indianapolis, Ind., assignors to Mobile Drilling Company, Inc., Indianapolis, Ind., a corporation of Indiana
Filed Apr. 17, 1969, Ser. No. 816,945
Int. Cl. F16d *1/10*
U.S. Cl. 64—23.5 5 Claims



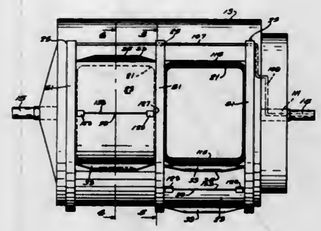
A drive assembly for an earth drilling device wherein the lower driving shaft is coupled to the upper driven shaft by a coupling which is slidably received and retained on the upper driven shaft. The assembly also includes a latch pin mounted on the coupling and rotatable to a position latching the coupling in connected position or in a position above the lower end of said upper driven shaft.

3,553,981
APPARATUS FOR THE SPOT SHAPING OF KNIT FABRIC AND RESULTANT FABRICS PRODUCED THEREBY
Samuel B. Kuney, Dover, N.J., assignor to Swiss Knitting Company, Dover, N.J., a corporation of New Jersey
Original application Feb. 19, 1965, Ser. No. 433,853, now Patent No. 3,413,824, dated Dec. 3, 1968. Divided and this application May 17, 1968, Ser. No. 758,168
Int. Cl. D04b *13/00*
U.S. Cl. 66—79 3 Claims



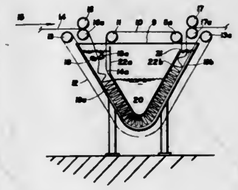
A circular spring united needle knitting machine with sinker burrs movable radially of the needle circle. Cam assemblies mounted beneath the needle circle and rotatable therewith project beyond a portion of the needle circle variable distances to position the sinker burrs through cam followers. A pattern control and associated solenoid actuated plungers, mounted exterior of the needle circle, selectively vary the distances which the cam assemblies project beyond the needle circle. The machine knits stretch fabric with convex and concave pockets at selected locations. Each pocket is of varying coursewise width along its walewise length.

3,553,982
WASHING MACHINE
Edward J. Berry and William C. Lutzen, Wauwatosa, Wis., assignors to Ludell Mfg. Co., Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 7, 1968, Ser. No. 774,096
Int. Cl. D06f *39/14*
U.S. Cl. 68—139 11 Claims



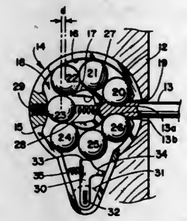
Disclosed herein is a washing machine comprising a cylindrical shell having an arcuate surface with an access opening therein, together with means on the shell for guiding door movement to and from a position in covering relation to said opening and for releasably sealing the door with the shell when the door is in the covering position. The releasable sealing means includes expansible means for urging the door into sealing engagement with the shell and a sealing member on one of the door and the shell and extends at least partially peripherally around the access opening for fluid tight engagement between the shell and the door in response to expansion of the expansible means consequent to receipt therein of a pressure fluid.

3,553,983
TEXTILE TREATING DEVICE
Alfred Korsch, Krefeld, Germany, assignor to Gerber & Co., G.m.b.H., Krefeld, Germany, a corporation of Germany
Filed Sept. 23, 1968, Ser. No. 761,542
Claims priority, application Germany, Sept. 26, 1967, 1,610,964
Int. Cl. D06f *17/00*
U.S. Cl. 68—177 3 Claims



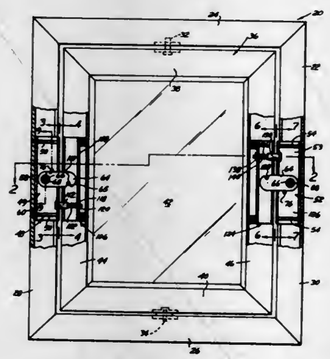
A device for pleating webs wherein a pair of longitudinally movable conveyor members having respective portions of superimposed relative to each other define a generally "U" shaped web movement path. The members are driven at a predetermined longitudinal speed while web is introduced into the path in the direction of movement of the portions at a speed greater than the predetermined longitudinal path, whereby the fabric or web folds into pleats. In a preferred embodiment, the conveyor members are formed from chain belts. Also preferred is the use of a tank and a separating wall attached thereto which permits the use of treating fluids to saturate, dye, wash or otherwise treat the web being used in the device of this invention.

3,553,984
LOCKING DEVICE
Alfred T. Grumbach, 1427 Lincoln Blvd., Santa Monica, Calif. 90401
Filed May 21, 1969, Ser. No. 826,417
Int. Cl. E05b *65/08*; E05c *5/00*
U.S. Cl. 70—99 7 Claims



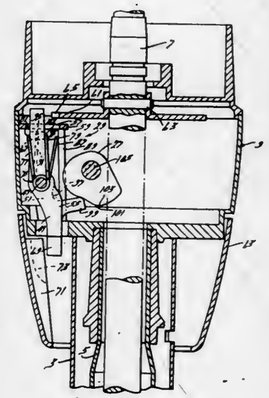
A locking device includes a catch member secured to a first structure and a clasping member secured to a second structure, the clasping member defining a circular channel having an opening in one side in a position to receive the catch member to lock the first and second structures together. A train means preferably in the form of a series of ball bearings is circumferentially disposed in the circular channel and has its ends engaging the catch member when the catch member is received in the opening to hold the catch member to the clasping member. A releasing means changes the circumferential configuration of the train means in such a manner as to move the ends of the train means out of engagement with the catch member to thereby release the catch member.

3,553,985
PIVOTAL WINDOW LATCH
Frank M. Pepp, Jr., Southfield, and Alfred J. Gordon, Adrian, Mich., assignors to Great Lakes Aluminum Fabricators, Inc., Detroit, Mich., a corporation of Michigan
Filed Oct. 18, 1968, Ser. No. 768,855
Int. Cl. E05b *63/00*
U.S. Cl. 70—102 12 Claims



A window latching mechanism for a vertical pivotal window has an elongated latching finger pivotally mounted at one end to each of the side rails of the stationary window frame. A slot is formed on the free end of each finger for engaging pins secured to the side rails of the pivoting window frame when the finger is in the latched position. Each finger is locked in the latched position by a spring loaded pin secured to each side rail of the stationary frame. The fingers are unlatched by keys, allowing the pivotal frame to be rotated about two vertical pins, one being connected between the top rails of the two frames and one between the bottom rails. A spring loaded slant pin projects from one of the side rails of the pivotal frame and allows the frame to be rotated in only one direction. A spring loaded square pin projects from the other side rail of the pivotal frame so as to lock the frame in the 180° rotated position.

3,553,986
STEERING COLUMN AND TRANSMISSION CONTROL LOCK
Jeremy T. Ball, Birmingham, and James E. MacAfee, Troy, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Aug. 21, 1968, Ser. No. 754,421
Int. Cl. E05b *65/12*
U.S. Cl. 70—252 26 Claims

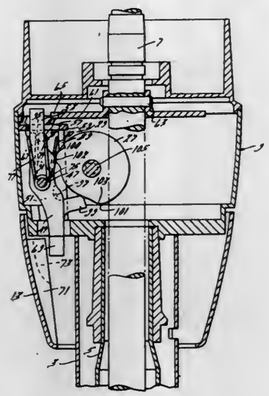


Improved steering, transmission and ignition lock apparatus for an automotive vehicle steering column including two locking pivotable members and keeper plates located, respectively, on the steering shaft and the shift tube. A single control mechanism operates the movements of both locking members as well as an ignition switch. The three locking components are all located within a housing on the steering column.

3,553,987
STEERING COLUMN AND TRANSMISSION CONTROL LOCK
Jeremy T. Ball, Birmingham, Thomas J. Wall, Southfield, and James E. MacAfee, Troy, Mich., assignors to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Aug. 21, 1968, Ser. No. 754,422
Int. Cl. E05b *65/12*
U.S. Cl. 70—252 11 Claims

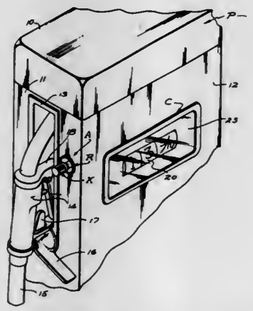
Improved steering, transmission and ignition lock apparatus for an automotive vehicle steering column including two locking pivotable members and keeper members located, respectively, on the steering shaft and

the shift tube. A single control mechanism operates the movements of both members as well as an ignition switch.



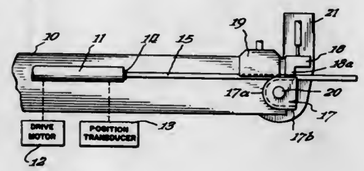
The three locking components are all located within a housing on the steering column.

3,553,988
KEY CONTROL SYSTEM
John J. Fitzgerald, 2120 Roselin Place, Los Angeles, Calif. 90039
Filed Dec. 11, 1967, Ser. No. 689,377
Int. Cl. E05b *39/04*
U.S. Cl. 70—433 **2 Claims**



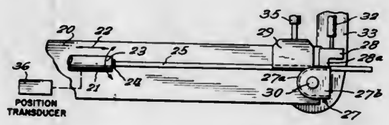
A key control means including an elongate manually operable key with front and rear ends, an elongate key receiver with front and rear ends fixed to and operatively related to a mechanism to be controlled, said key including an elongate tubular sleeve with an open front end, an elongate mechanical counter with a case, a plurality of calibrated wheels within the case, a window in said case and through which the wheels can be read and a forwardly projecting driven shaft operatively related to the wheels, said counter engaged with and closing the rear end of the sleeve with said shaft projecting forwardly into said sleeve, said receiver including an elongate forwardly opening, tubular sheath adapted to slidably receive the sleeve, operating means within the sheath projecting forwardly from the rear end thereof and having drive parts accessible at the rear end of the receiver to connect with said mechanism to be controlled, said operating means engaging said driven shaft when said sleeve is engaged in said sheath whereby operation of the control means is counted by and recorded in the key.

3,553,989
TUBE BENDER WITH INCREMENTAL TUBE MEASUREMENT
Harrison Munro, Aurora, Robert A. Suding, Boulder Hill, and Richard E. Marsh, Geneva Township, Ill., assignors to Pines Engineering Co., Inc., a corporation of California
Filed Apr. 23, 1968, Ser. No. 723,460
Int. Cl. B21b *37/12*
U.S. Cl. 72—8 **6 Claims**



A numerically controlled tube bender in which each bend is incrementally programed in terms of the distance between starting points of successive bends, the plane and the angle of the bends. The length of tube used in making each bend, which varies with tube characteristics, is subtracted from the programed dimension between the bend starting points and the distance between the end of the first bend and the start of the second bend is adjusted accordingly.

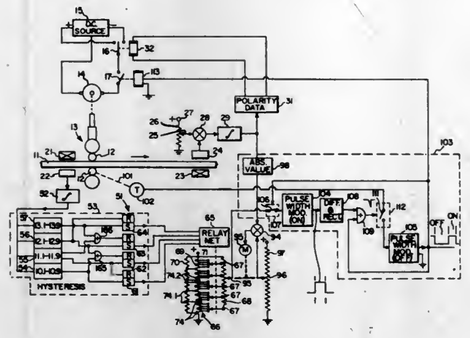
3,553,990
TUBE BENDER PRESSURE DIE INTERFERENCE CONTROL
Robert A. Suding, Boulder Hill, and Richard E. Marsh, Geneva Township, Ill., assignors to Pines Engineering Co., Inc., a corporation of California
Filed Apr. 23, 1968, Ser. No. 723,459
Int. Cl. B21b *37/12*
U.S. Cl. 72—8 **11 Claims**



A numerically controlled rotary tube bender in which a control program includes information establishing bend location, plane and angle. Movement of the tube carrier into a position of interference with the pressure die causes initiation of a special control sequence. Neither the interference condition nor the special control sequence are a part of the program for bending the tube.

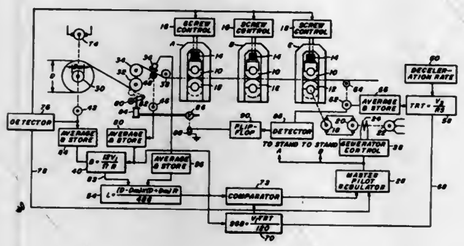
3,553,991
NONLINEAR CONTROLLER
Henry Roy Chope, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Apr. 30, 1968, Ser. No. 725,291
Int. Cl. B21b *37/12*
U.S. Cl. 72—8 **29 Claims**

A rolling mill controller is driven for variable ON times in response to the deviation from a set point value in thickness of a sheet emerging from the mill, as well as the inertia characteristics of the mill and the back force properties of the material. The back force characteristics of



the material are determined as a nonlinear function of the thickness of the material upstream of the rolling mill and the inherent material properties.

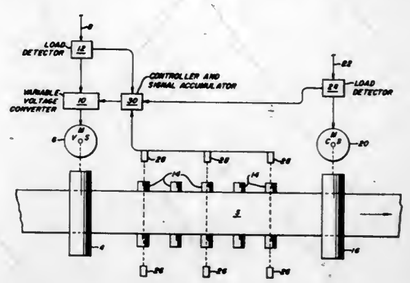
3,553,992
SYSTEM FOR AUTOMATICALLY DECELERATING ROLLING MILLS
Samuel S. Harbaugh, Natrona Heights, Pa., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
Filed Apr. 24, 1968, Ser. No. 723,813
Int. Cl. B21b *37/00*
U.S. Cl. 72—9 **7 Claims**



Described is a system for automatically decelerating a rolling mill from a high speed to a preset low speed such that the end of a coil being rolled approaches the bite of the rolling mill rolls when the preset low speed is reached. At the same time, the rolling mill screws are automatically raised when the strip speed approaches the preset low speed to permit the trailing end of the coil to pass through the mill.

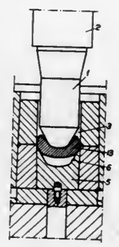
3,553,993
METHOD AND APPARATUS FOR HOT ROLLING
Harold G. Frostick, North Palos Township, Cook County, Ill., assignor to United States Steel Corporation, a corporation of Delaware
Filed Jan. 31, 1969, Ser. No. 795,650
Int. Cl. B21b *37/00*
U.S. Cl. 72—11 **6 Claims**

The method and apparatus for hot rolling strip between a final pair of reducing rolls and a penultimate pair of reducing rolls in which the final rolls are driven at a constant speed and the penultimate rolls are driven at a variable speed less than the constant speed. The speed of the penultimate rolls is increased when the strip between the penultimate and final rolls is in a substantially straight pass and decreased when the strip rises to a predetermined



distance above the straight pass, thus maintaining the strip between the rolls between zero tension and a slight compression.

3,553,994
METHOD OF COLD-FORGING A TUBULAR BODY
Eskil Mönestam, Robertsfors, Sweden, assignor to Allmänna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden
Filed Apr. 17, 1968, Ser. No. 722,089
Claims priority, application Sweden, Apr. 20, 1967, 5,516
Int. Cl. B21c *23/00*
U.S. Cl. 72—43 **1 Claim**

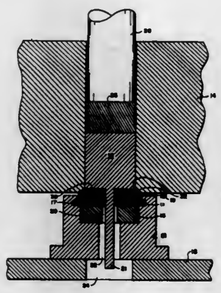


A billet of at least twice as great a diameter as its thickness is inserted into a mold having a bottom of conical or spherical shape and is pressed downward by a punch having a body end substantially corresponding in shape to the bottom of the mold and having a smaller diameter than the diameter of the surrounding mold. The top of the billet is provided with a lubricant. On pushing down the punch the center part of the billet is first bent downwardly after which the material is extruded upwardly into the space between the punch and the mold.

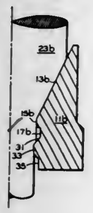
3,553,995
EXTRUSION PROCESS
Robert J. Florentino, Worthington, Ohio, John M. Cigan, Leetsdale, Pa., and Alvin M. Sabroff and Richard L. Jentgen, Columbus, Ohio, assignors to St. Joseph Lead Company, New York, N.Y., a corporation of New York
Filed Jan. 30, 1968, Ser. No. 705,880
Int. Cl. B21c *23/32*
U.S. Cl. 72—42 **11 Claims**

A workpiece is forced through a die that is formed with a flat face and an orifice of lesser dimensions than the workpiece while outward lateral movement is re-

strained, the surface of the workpiece is provided with a "thick film" lubricant coating that consists of an organic material and a granular material, and the outermost portion of the workpiece is angularly directed inwardly to flow laterally along the flat face of the die to and through the die orifice.



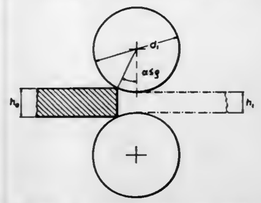
3,553,996
EXTRUSION OF BRITTLE MATERIALS
Alvin M. Sabroff, Columbus, Robert J. Florentino, Worthington, and Barry D. Richardson, Columbus, Ohio, assignors to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware
Filed Nov. 13, 1967, Ser. No. 682,316
Int. Cl. B21d *22/10*
U.S. Cl. 72—60 **5 Claims**



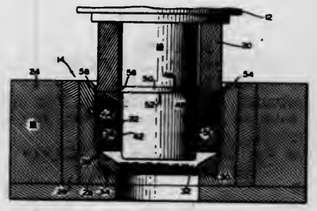
A method of extruding brittle materials which comprises forcing a billet of brittle material through a die having a relief portion at its exit end which tapers laterally outward at a very small angle to apply an abnormally high radial compressive stress on the exiting extrusion. The die may alternately be formed having awo coaxial land portions with the land portion at the exit end of the die applying a longitudinal compressive stress on the outer fibers only of the length of extrusion between land portions.

3,553,997
METHOD OF ROLLING BARS CAST IN CONTINUOUS CASTING PLANTS
Rudolf Schöffmann, Linz, Austria, assignor to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft, Linz, Austria, a company of Austria
Filed Jan. 15, 1969, Ser. No. 791,299
Claims priority, application Austria, May 29, 1968, A 5,130/68
Int. Cl. B21b *27/00*
U.S. Cl. 72—226 **1 Claim**

The present invention relates to a method of rolling bars produced in continuous casting plants and comprises the use of rolls having diameters which are smaller than necessary for fulfilling the bite condition, but as great as or greater than the minimum necessary for fulfilling the haul condition of roll and bar engagement.

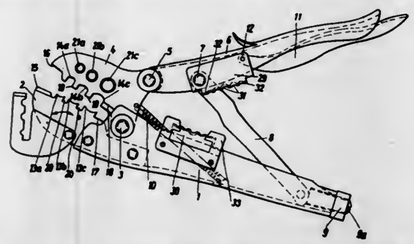


3,553,998
SELF-CENTERING DIE SYSTEM FOR PRECISION EXTRUSION OF GUN TUBES
Ralph W. Hilton, Torrance, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed Feb. 14, 1968, Ser. No. 705,389
Int. Cl. B21c *25/06*
U.S. Cl. 72—266 **3 Claims**



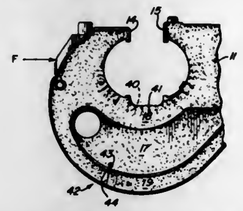
The mandrel in an extrusion system for forming tubes is centered respective to the extrusion die through the expansion of a flange of the hollow stem into joint contact with the mandrel and die while transmitting pressure to a machined hollow billet for extrusion therebetween.

3,553,999
CABLE CLAMP
Reiner Rommel, 6 Moldaustrasse, 3572 Allendorf, near Marburg, Germany
Filed Aug. 15, 1967, Ser. No. 660,639
Claims priority, application Germany, Sept. 29, 1966, R 44,228
Int. Cl. B21d *43/28, 27/06, 9/08*
U.S. Cl. 72—324 **5 Claims**



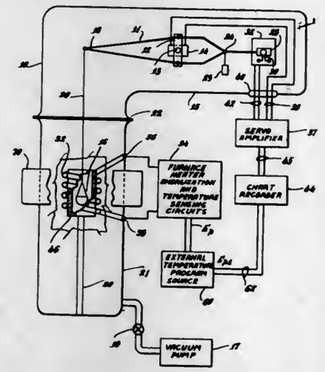
A clamp for pressing on electric conductor means as cable shoes, cable connectors and the like on to insulated wire, which comprises two jaws working toward each other. Each of the working jaws is provided on the opposite sides with a molding profile formed as a stamp and a die, respectively, corresponding to one of the electric conductor means. The working jaws include stops which lock and limit the molding profile in its closed position on the jaws. The clamp includes a fixed arm and a movable arm and one of the jaws is pivotally connected with the fixed arm. A toggle lever arrangement is provided which includes a toggle lever and the movable arm. A pivot connects the toggle lever with the movable arm and one of the jaws is movable by the toggle lever arrangement. A support is disposed at the free end of the fixed arm for one end and the toggle lever and adjustable to the required closing pressure such that, during the closing of the clamp, passing the toggle lever pressure point, the jaws are locked in the closing position.

3,554,000
REVERSE STRESSING
Charles J. Schwab, Fox River Grove, Ill., assignor to Brook Equipment Company, a corporation of Illinois
Continuation-in-part of application Ser. No. 511,607, Dec. 6, 1965. This application Feb. 5, 1968, Ser. No. 703,075
Int. Cl. B21j *9/12*; B23p *9/04, 13/04*; B30b *1/18, 1/32*
U.S. Cl. 72—453 **14 Claims**



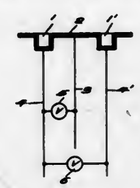
A method and means for increasing the fatigue life and loading capacity of a structural member having a first portion normally subjected to tensile loads and a second portion normally subjected to compressive loads by effectively increasing the length of the second portion and decreasing the length of the first portion. In one embodiment, an opening is formed in the second portion, and the opening is expanded by reverse loading the member so that a retention member can be placed in the expanded opening. In another embodiment, the second portion is struck by one or more members to deform the second portion thereby increasing its effective length.

3,554,001
THERMAL GRAVIMETRIC ANALYSIS APPARATUS
Stanley D. Norem, Bayside, N.Y., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Oct. 5, 1967, Ser. No. 673,098
Int. Cl. G01n *25/00*
U.S. Cl. 73—1 **9 Claims**



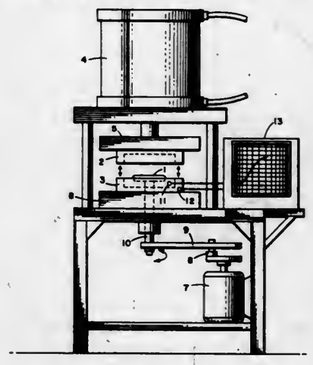
A TGA apparatus includes a gravimetric measuring means having a sample container positioned within an enclosure. Heating means, including a furnace positioned within the enclosure, are provided for heating the sample container over a predetermined range of temperatures. A magnetic field is established in the vicinity of the container and a magnetic standard material having a Curie point within the predetermined temperature range is deposited in the container. Relatively close thermal coupling between furnace and temperature sensing means and an accurate, reversible, and reproducible temperature calibration is thereby effected.

3,554,002
DIFFERENTIAL THERMAL ANALYSIS SAMPLE CELL
John Charles Harden, Wilmington, Del., and Donald Arthur Vassallo, Orange, Tex., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 457,676, May 21, 1965, which is a continuation-in-part of application Ser. No. 136,887, Sept. 8, 1961. This application Feb. 17, 1967, Ser. No. 616,974
Int. Cl. G01n *25/00*
U.S. Cl. 73—15 **13 Claims**



A micro-cell useful for conducting differential thermal analysis constructed by joining two receptacles made of a thermocouple material by a connector made of the same thermocouple material, securing a lead, also made of the same thermocouple material, to the connector or the receptacles, attaching a lead made of a second thermocouple material to each of the aforementioned receptacles and measuring the voltages developed across the leads to determine the temperature differential as a function of temperature.

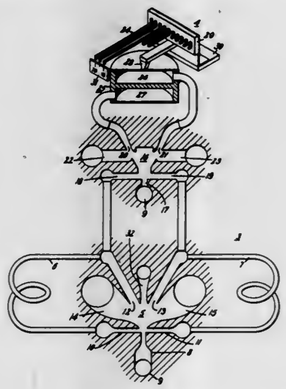
3,554,003
METHOD OF DETERMINING CURING CHARACTERISTICS OF AN ELASTOMER
Raleigh Warren Wise, Akron, Ohio, assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Apr. 10, 1968, Ser. No. 720,305
Int. Cl. G01n *25/00*
U.S. Cl. 73—15.6 **7 Claims**



The curing characteristics and hysteresis of an elastomer are determined by measuring and recording the tem-

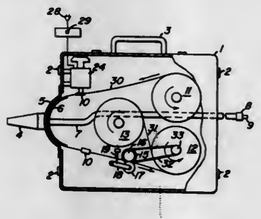
perature change of a confined sample subjected to dynamic stress at a rate sufficient to increase the sample temperature.

3,554,004
FLUIDIC GAS RATIO METER
William T. Rauch, Voorheesville, and Howard W. Avery, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Feb. 23, 1968, Ser. No. 707,496
Int. Cl. G01n *33/00*; F15c *1/12*
U.S. Cl. 73—23 **3 Claims**



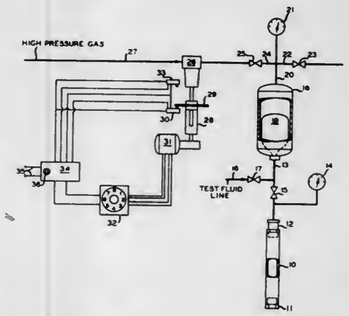
A fluidic device for measuring the ratio by volume of two known gases or for detecting the contamination of a gas includes a fluid amplifier oscillator circuit and readout means. A gaseous medium being monitored is supplied as the power fluid to a fluidic oscillator whose frequency is dependent upon the gas constant of the gas or gases. A proportional relationship exists between oscillator frequency and gas composition such that a means for reading out the oscillator frequency can be scaled to indicate the percent by volume of two known gases.

3,554,005
CONTINUOUS TAPE SAMPLER
Abraham Koblin, Pikesville, and George R. Freeburger, Edgewood, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed June 10, 1968, Ser. No. 735,860
Int. Cl. G01n *1/24*; G01w *1/00*
U.S. Cl. 73—28 **22 Claims**



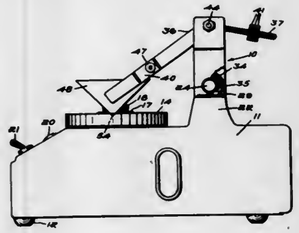
An apparatus and method of operation thereof for instantaneous and continuous monitoring aerosol particle concentration in the atmosphere as a function of time comprising a portable case means, nozzle means located within said case means and extending outside thereof, first feed reel means and a take-up reel means within said case means adapted to pass paper tape adjacent to the end of said nozzle means within said case means, a second feed reel means within said case means adapted to feed plastic tape between layers of said paper tape, means to activate said tapes, means to draw an air sample through said nozzle means, and means to expel said air sample outside of said case means.

3,554,006
QUICK BURST PIPE TESTER
Tom J. Windle, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 28, 1969, Ser. No. 819,616
Int. Cl. G01n *3/12*
U.S. Cl. 73—49.5 **6 Claims**



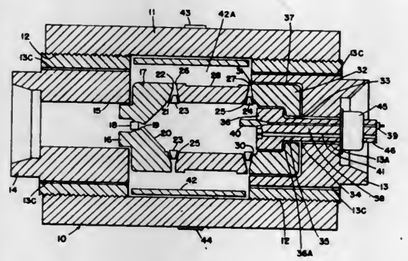
Apparatus for determining the short-time rupture strength of plastic pipe and fittings uses a variable speed motor to control the rate of pressure increase on a closed hydraulic system until the plastic sample ruptures. The drive shaft of the motor adjusts the regulating knob of a pressure regulator so that the output pressure from the regulator is increased, and this pressure is applied to the hydraulic system.

3,554,007
ABRASION TESTER AND METHOD OF TESTING ABRASION RESISTANCE OF FLEXIBLE SHEET MATERIAL
Kwoh H. Hu, Wayland, Mass., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 7, 1969, Ser. No. 848,284
Int. Cl. G01n *3/56*
U.S. Cl. 73—7 **5 Claims**



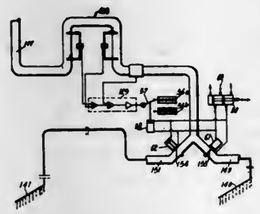
An abrasion tester having a moving abrasive surface and a counter-weighted sample holder for holding a folded corner of flexible sheet material in contact with the moving abrasive surface and a method of determining the abrasion resistance of a folded corner of flexible sheet material wherein the corner is subjected to a predetermined amount of abrasion and then tested for permeability to an indicating fluid to which the sheet material is normally impermeable.

3,554,008
PRESSURE VESSEL APPARATUS
Melvin Zaid, Jericho, N.Y., and Stanley Wachtell, Teaneck, N.J., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
Filed July 1, 1969, Ser. No. 838,118
Int. Cl. G01n *33/22*; B65d *25/18*
U.S. Cl. 73—35 **7 Claims**



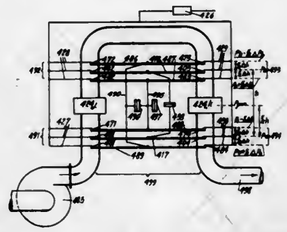
An ultra high pressure vessel for propellant testing in which two concentric cylinders enable the testing of burning properties of propellant and explosive materials at pressures up to 400,000 p.s.i., and wherein the inner cylinder has outwardly expendible seal means whereby seal tightening is obtained as the developed pressure increases.

3,554,009
METHOD AND DEVICE FOR DETERMINING THE QUANTITY OF DREDGING SPOIL TO BE PAID
Romke van der Veen, Jutphaas, Netherlands, assignor to N.V. Ingenieursbureau voor Systemen en Octrooien "Spanstaal," Rotterdam, Netherlands, a Dutch contracting company
Filed Apr. 21, 1969, Ser. No. 817,691
Claims priority, application Netherlands, Apr. 24, 1968, 6805777
Int. Cl. G01n *15/06*, *9/26*
U.S. Cl. 73—61 **10 Claims**



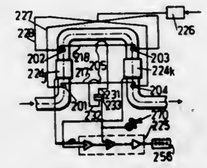
A method and apparatus are disclosed for measuring the quantity of dredging spoil. A flow of the spoil and water is guided vertically upwards along a first flow section and downwards along a second flow section. Pressure differentials between vertically spaced points on each flow section are obtained and added. The product of the pressure differential and flow velocity is integrated during the period in which the dredging spoil is being conveyed.

3,554,010
METHOD AND SUCTION DREDGING INSTALLATIONS FOR CONVEYING DREDGING SPOIL
Romke van der Veen, Jutphaas, and Jan de Koning, Amsterdam, Netherlands, assignors to N.V. Ingenieursbureau voor Systemen en Octrooien "Spanstaal," Rotterdam, Netherlands, a Dutch company
Filed Apr. 21, 1969, Ser. No. 817,692
Claims priority, application Netherlands, Apr. 24, 1968, 6805778
Int. Cl. G01n *15/06*, *9/26*
U.S. Cl. 73—61 **11 Claims**



In a method and apparatus for measuring the quantity of a suspension of dredging spoil and water, means are provided to compensate for the presence of air in the suspension. The measure compensation is derived by taking pressure measurements of at least two flow sections in the system at which the prevailing pressures are different.

3,554,011
METHOD AND DEVICE FOR DETERMINING THE CONVEY CONCENTRATION OF DREDGING SPOIL OF A SUSPENSION OF DREDGING SPOIL AND WATER
Romke van der Veen, Jutphaas, Netherlands, assignor to N.V. Ingenieursbureau voor Systemen en Octrooien "Spanstaal," Rotterdam, Netherlands, a Dutch contracting company
Filed Apr. 21, 1969, Ser. No. 817,999
Claims priority, application Netherlands, Apr. 24, 1968, 6805779
Int. Cl. G01n *15/06*, *9/26*
U.S. Cl. 73—61 **4 Claims**

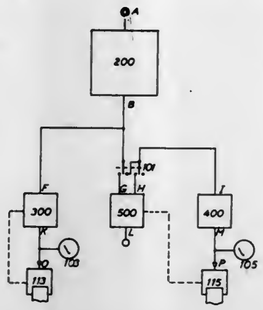


A system for measuring the concentration of a dredging spoil suspension wherein the suspension is caused to flow vertically upwards and vertically downwards in two pipe sections. Upper and lower conduits are coupled between corresponding upper and lower points on the two vertical pipe sections, and a pressure pickup is obtained between the midpoints of the upper and lower conduit.

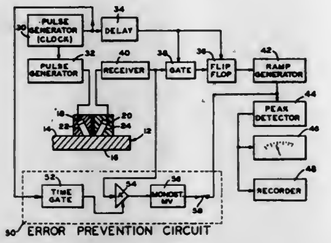
3,554,012
METHOD AND ARRANGEMENT FOR DETERMINING THE MECHANICAL STATE OF MACHINES
Eivind Olav Söhoel, Tumba, Sweden, assignor to Konsultbyran Iko Aktiebolag, Tumba, Sweden
Filed Feb. 29, 1968, Ser. No. 709,451
Int. Cl. G01h *1/00*
U.S. Cl. 73—67.2 **6 Claims**

A system for determining the mechanical state of machines by converting the mechanical vibrations occurring in said machines into electrical vibrations by means of a

pickup, and analyzing the electrical oscillations; whereby transient oscillations are separated from the electrical oscillations and used as a basis for determining the mechanical state of the machine being tested.



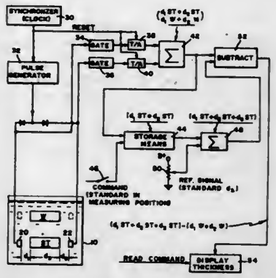
3,554,013
PULSE-ECHO ULTRASONIC THICKNESS GAUGE WITH ERROR PREVENTION CIRCUIT
Jerry Berg, Stamford, Conn., assignor to Branson Instruments Incorporated, Stamford, Conn., a corporation of Delaware
Filed July 22, 1969, Ser. No. 843,539
Int. Cl. G01n *29/00*
U.S. Cl. 73—67.7 **15 Claims**



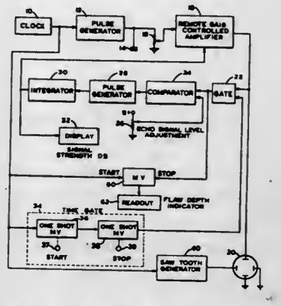
A pulse-echo ultrasonic thickness gauge for a workpiece measures the time interval between the sending of an ultrasonic search pulse and the receipt of a rear surface responsive echo pulse. A special circuit is provided for analyzing the amplitude of the echo pulse to determine whether such echo pulse is caused by a single or multiple reflection of acoustic energy within the workpiece. If the condition of multiple reflection exists, the indication of thickness is suppressed.

3,554,014
APPARATUS FOR MEASURING THE THICKNESS OF A WORKPIECE IN A LIQUID TEMPERATURE COMPENSATION MEANS
Jerry Berg, Stamford, and Lawrence E. Bauer, Jr., Springdale, Conn., assignors to Branson Instruments, Inc., Stamford, Conn., a corporation of Delaware
Filed Aug. 21, 1969, Ser. No. 852,034
Int. Cl. G01n *29/00*
U.S. Cl. 73—67.8 **7 Claims**

An apparatus and method for measuring the thickness of a workpiece uses a liquid body into which a standard and workpieces to be tested are immersed. A pair of transducers fixed at a distance apart are brought first into acoustic energy transferring contact with opposite sides of a standard immediately thereafter with a workpiece to be tested. During the respective energy transferring contacts pulse-echo ultrasonic energy is used to measure the length of the liquid path between the respective transducers and the standard and the workpiece. An electronic circuit coupled to the transducers provides a value indicative of the thickness of the workpiece, such value being independent of sound velocity changes in the liquid path.



3,554,015
ULTRASONIC PULSE-ECHO APPARATUS
Kilian H. Brech, Norwalk, Conn., assignor to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware
Filed Mar. 22, 1968, Ser. No. 715,276
Int. Cl. G01n *29/04*
U.S. Cl. 73—67.9 **11 Claims**

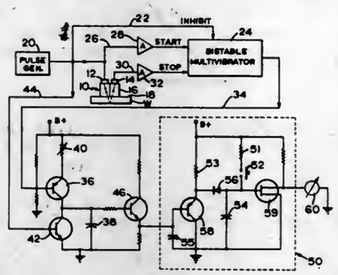


An ultrasonic pulse-echo test apparatus includes a feedback circuit coupled to a remote gain controlled video amplifier for maintaining the amplitude of the echo signal displayed on a cathode ray tube substantially constant. The amplitude of the feedback signal required to maintain constant echo amplitude is displayed on a meter, indicating the size of a flaw in relation to a calibration setting. Conventional switching of attenuators in and out of the circuit to determine flaw size is eliminated.

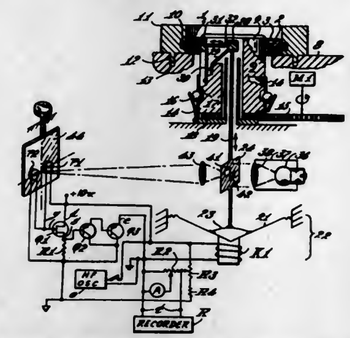
3,554,016
PULSE-ECHO ULTRASONIC TEST APPARATUS WITH SIGNAL SELECTION AND STORAGE MEANS
Kilian H. Brech, Norwalk, Conn., assignor to Branson Instruments, Incorporated, Stamford, Conn., a corporation of Delaware
Filed May 23, 1968, Ser. No. 731,455
Int. Cl. G01n *29/04*
U.S. Cl. 73—67.9 **16 Claims**

A pulse-echo ultrasonic apparatus designed for testing workpieces which are at a high temperature includes a signal selection and signal storage circuit for selecting

from a plurality of cyclic test readings the one signal responsive to minimum time lapse between search pulse and echo signal. The selected signal is stored over an extended period of time, permitting a display meter to be actuated and read. The arrangement necessitates only briefest contact between the transducer probe and the hot workpiece.



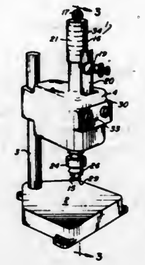
3,554,017
ELECTROMECHANICAL APPARATUS FOR DETECTING IRREGULARITIES IN A BODY
William O. Wernsing, % Williams Laboratories, Inc., 125 Northview Road, Ithaca, N.Y. 14850
Filed Nov. 15, 1968, Ser. No. 776,203
Int. Cl. G01n *3/48*
U.S. Cl. 73—81 **13 Claims**



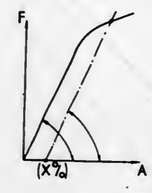
Apparatus for sensing irregularities such as surface flaws or internal non-uniformities which appear at the surface of a body such as at the lip of a shaft sealing ring comprises a contact which is pressed against the lip toward a point beyond the lip while being rotated around the lip. Deflections of the contact away from the point caused by an irregularity are transmitted through a compression linkage to a photoelectric deflection detector which generates a deflection signal. The signal is applied to a loudspeaker cone which, through the linkage, tends to correct the contact deflection. The signal is also used to indicate the amplitude of the deflection.

3,554,018
TENDEROMETER
Philip C. Anderson, Crete, Nebr., and Donald Buhmann, Cedar Falls, and Norman Hinkel, Waterloo, Iowa, assignors to Feed Service Corporation, Crete, Nebr., a corporation of Nebraska
Filed June 11, 1969, Ser. No. 832,261
Int. Cl. G01n *3/48*; A22b *5/00*
U.S. Cl. 73—81 **6 Claims**

The present invention relates to an apparatus for determining, with accuracy and reproducibility, the tenderness of a material, and more particularly, to an apparatus for the determining of the tenderness of the meat of an animal carcass. The apparatus, which cuts a small sample of such material, has a circular cutter having at least two, and more particularly three, relatively dull blades. The depth of penetration of the blades in the sample, which is sensed and indicated by the apparatus, is indicative of the tenderness of the material from which the sample was removed.



3,554,019
DETERMINATION OF STRESS STRAIN PROPERTIES OF METALLIC SUBSTANCES
Christian Marie van den Hove, Bressoux, Leonard Francois Lilet, Herstal, Paul Andre Cosse, Liege, and Maurice Augustin Wybo, Fexhe-le-haut-Clocher, Belgium, assignors to Centre National de Recherches Metallurgiques, Brussels, Belgium, a Belgian company
Filed May 17, 1968, Ser. No. 730,164
Claims priority, application Luxembourg, May 18, 1967, 53,693; Dec. 29, 1967, 708,839; Mar. 7, 1968, 711,852
Int. Cl. G01n *3/00*
U.S. Cl. 73—89 **19 Claims**



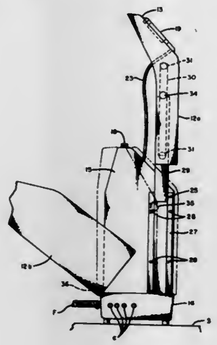
A process and apparatus for the rapid determination of tensile properties of metal specimens, more particularly steel specimens in which a test speciment of the metal in question is placed under tensile test, in which appropriate detectors are employed to establish the values of specific factors of the said tensile test including the elongation of the measuring base, the load, the variation in the width of the said measuring base, these data being transmitted to a set of electronic modules built up from elements for analogical calculation, the signals delivered by the said set being transmitted to devices such as recorders or the like, by means of which the values of the characteristics sought may be obtained. The apparatus specifically comprises a tensile test machine in which is comprised, on the one hand, a tensile test machine equipped with detectors of load, elongation and variation in the width of the measuring base of the test specimen undergoing a tensile test, the detectors of elongation and of variation in width being intended in particular to allow of simultaneous measurement of the elongation and of the variation in width or of measurement of the variation in width corres-

ponding to a specific elongation of the said measuring base for calculation of the coefficient r of normal anisotropy, and an assembly of electronic modules preferably built up from elements for analogical calculation, this assembly being connected to the detectors of the said tensile test machine and being intended to evaluate the signals received from the said detectors.

3,554,020
METHOD FOR THE REMOVAL OF EXCESS PENETRANT AND SIMULTANEOUS DEVELOPMENT OF COLOR INDICATIONS
Adolf Mlot-Fijalkowski, Elmwood Park, Ill., assignor to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Dec. 31, 1968, Ser. No. 788,344
Int. Cl. G01n *19/02, 21/16*
U.S. Cl. 73—104 **8 Claims**

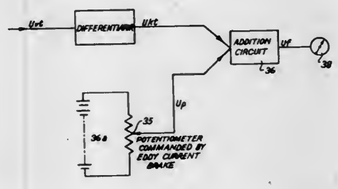
A method for the removal of excess colored liquid penetrant and the simultaneous development of color indications, thereby eliminating both the separate step of first removing excess penetrant by emulsification and water washing, and the separate subsequent step of applying a developer. The present method employs a pigmented aqueous remover-developer composition containing a nonvolatile surfactant and preferably a glycol-type of degelling agent. The remover itself serves to remove the excess of colored liquid penetrant from the surface of the workpiece without removing any penetrant entrapped in surface discontinuities, and at the same time a portion of the composition remains as a residual surface film of the surfactant and pigment to develop the color indications.

3,554,021
PORTABLE TEST EQUIPMENT WITH EXTENDABLE DISPLAY MEANS
Michael D. Burridge, Santa Barbara, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed June 30, 1969, Ser. No. 837,512
Int. Cl. A47b *45/00, 51/00;* **H05k** *5/00*
U.S. Cl. 73—116 **5 Claims**



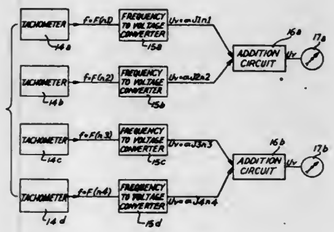
Portable test equipment adapted to rest on the floor and having an instrument panel supported for vertical movement between a lower collapsed position and a upper or raised position. An inner housing contains heavy components of the test equipment and constitutes the mounting base for vertically movable telescoping rails to which a lightweight outer housing comprising the instrument panel is connected. Upwardly facing display means such as meters are permanently secured to the upper part of the vertically movable panel and are electrically connected by flexible cable to the components in the inner housing. When the instrument panel is in the lower position, the unit is compact and portable. When the panel is extended to the raised position, the display means are more easily read by the operator while the danger of tipping of the unit is minimized due to the low center of gravity.

3,554,022
ROLLER TESTING STAND FOR MOTOR VEHICLES
Herman R. Geul, Leiden, Netherlands, (% Sun Electric (Nederland) N.V., Ariana Nozemanstraat 8, Amsterdam, Netherlands)
Filed Nov. 12, 1968, Ser. No. 774,806
Claims priority, application Netherlands, Nov. 14, 1967, 6715400
Int. Cl. G01l *5/13*
U.S. Cl. 73—117 **8 Claims**



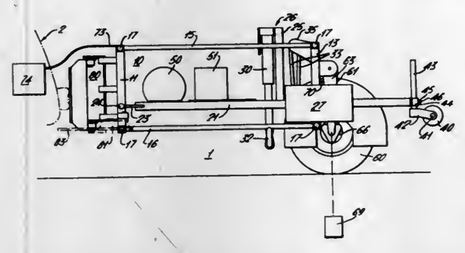
A roller testing stand for motor vehicles comprising a system of rotatably supported rollers for supporting the wheels of the vehicle to be tested and having an adjustable brake, which supplies a signal proportional to the braking effort, the rotatable rollers being coupled to respective tachometers for producing signals proportional to the velocity of the rollers, said velocity signals being differentiated and added to the signal representing the brake power to obtain an output signal representing the total pull exerted by the vehicle wheels.

3,554,023
ROLLER TESTING STAND FOR MOTOR VEHICLES
Herman R. Geul, Leiden, Netherlands (% Sun Electric (Nederland) N.V., Ariana Nozemanstraat 8, Amsterdam, Netherlands)
Filed Nov. 12, 1968, Ser. No. 775,037
Claims priority, application Netherlands, Nov. 14, 1967, 6715398
Int. Cl. G01l *5/13*
U.S. Cl. 73—117 **8 Claims**



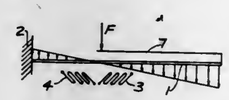
A roller testing stand for motor vehicles comprising independently rotating rollers which can be driven by means of driving motors, each of such independent rollers driving a tachometer for providing an output signal proportional to the speed of the roller in which the respective output voltages of the right and left rollers are treated independently of each other in electronic differentiating and integrating circuits to provide full information about the vehicle brake characteristics.

3,554,024
BRAKING FORCE TRAILER
Francis Ian Victor Walker, West Chiltington, Sussex, England, assignor to F. G. Miles Engineering Limited, Shoreham-by-Sea, Sussex, England
Filed June 24, 1968, Ser. No. 739,263
Int. Cl. G01l *5/28*
U.S. Cl. 73—121 **9 Claims**



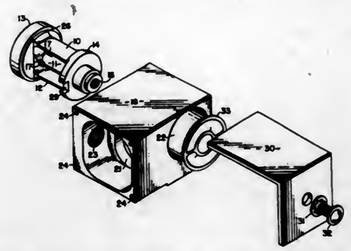
A braking force trailer for measuring the effectiveness of braking between a tire and the surface on which the tire runs has a test wheel on which the test tire is mounted. The test wheel is mounted at one end of an arm the other end of which is pivotally mounted to allow the arm to swing in a vertical plane relative to the rest of the trailer. The test wheel is equipped with a brake so that upon applying the brake the force generated between the test wheel tire and the running surface causes the supporting arm to swing backwards relative to the remainder of the trailer. A load cell is mounted between the supporting arm and the fixed part of the trailer to measure the force generated upon braking.

3,554,025
FORCE MEASURING DEVICE
John-Erik Andersson and Rolf Paul Häggström, Karlskogan, Sweden, assignors to Aktiebolaget Bofors, Bofors, Sweden
Filed Jan. 31, 1968, Ser. No. 702,059
Claims priority, application Sweden, Feb. 7, 1967, 1,732/67
Int. Cl. G01l *1/22*
U.S. Cl. 73—141 **9 Claims**



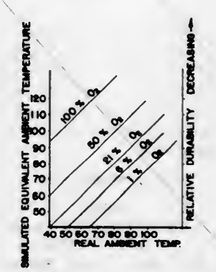
A force measuring device including a beam subjected to bending by the force to be measured and one or preferably several electrical impedance strain gages mounted on surfaces of the beam parallel to the bending plane of the beam so as to be responsive to the deformations in the beam caused by the shear strains therein. At least one end of said beam provided with the strain gages is unrestrainedly deflectable and rigidly connected to a second beam member, which extends parallel to and spaced from said first beam and is shorter than this. The free portion of said second beam member is adapted to serve as point of application for the force to be measured.

3,554,026
LOAD CELL
Aniese E. Seed, Toledo, Ohio, assignor, by mesne assignments, to The Reliance Electric and Engineering Company, Toledo, Ohio, a corporation of Ohio
Continuation of application Ser. No. 726,607, May 3, 1968, which is a continuation of Ser. No. 484,920, Sept. 3, 1965. This application May 22, 1969, Ser. No. 827,077
Int. Cl. G01l *1/22*
U.S. Cl. 73—141 **4 Claims**



A load cell comprising, in combination, a bending beam, a base for rigidly supporting one end of the beam while the other beam end is free to move, connecting means having inner and outer portions, single flexible sealing means for hermetically sealing the load cell connected to said connecting means forming a sealed space, said inner and outer connecting means portions having, respectively, an inner side connected to the movable beam end and an outer opposite side outside the sealed space, a load receiver for receiving forces to be measured connected to said outer portion, and load responsive means operatively connected to the beam. This structure results in any resultant force due to variations in air pressure on the sealing means and connecting means being generally perpendicular to forces sensed by the load cell.

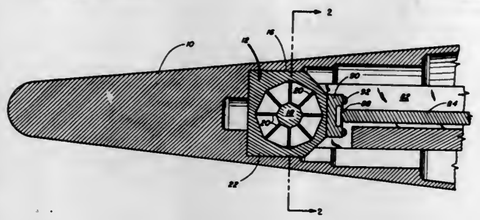
3,554,027
METHOD OF CONTROLLING TIRE DURABILITY, SIMULATING CLIMATIC CONDITIONS, AND CONTROL OF OXIDATION RATES IN PNEUMATIC TIRES
Lawrence R. Sperberg, P.O. Box 12308, El Paso, Tex. 79912
Continuation of application Ser. No. 601,275, Nov. 21, 1966. This application Apr. 4, 1969, Ser. No. 814,233
Int. Cl. G01m *17/02*
U.S. Cl. 73—146 **31 Claims**



A method of controlling tire durability by controlling the percentage composition of oxidant contained in the inflating agent. The percentage composition of the oxidant may also be used to simulate climatic conditions wherein the effective oxidative degradation of the tire is caused to proceed at a rate equivalent to the rate expected at a geographical location different from the geographical location where the tire is being used and at seasons of the

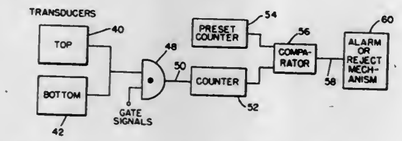
year different from the season where the testing is actually accomplished. This procedure also permits a rapid means of evaluation of tire liners and other tire body elements.

3,554,028
PITCH DAMPING BALANCE
Eugene V. Horanoff, Clarksville, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Oct. 3, 1968, Ser. No. 764,805
Int. Cl. G01m *9/00*
U.S. Cl. 73—147 **24 Claims**



A pitch damping wind tunnel balance having the model of aerodynamic shape mounted for oscillation in the pitch plane on a model support member secured to the forward end of the sting. A long thin beam has one end thereof secured to the sting and the other end thereof secured to the model support member such that oscillatory movement in the pitch plane is mechanically damped. A piston-cylinder sliding cam mechanism is utilized to induce oscillatory movement to the model.

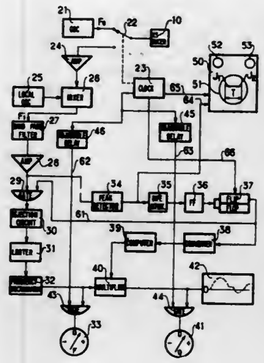
3,554,029
ULTRASONIC TESTING OF WELDS
Harry T. Deininger, Jr., Willingboro, N.J., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Mar. 21, 1969, Ser. No. 809,325
Int. Cl. G01n *29/00*
U.S. Cl. 73—67.5 **6 Claims**



An ultrasonic system for testing the number of acceptable welds in a device includes means for indexing the device and then rotating it for one revolution past an ultrasonic transducer. Signals are transmitted and received by the transducer. The received signals indicative of acceptable welds are counted to determine if any welds are missing or unacceptable.

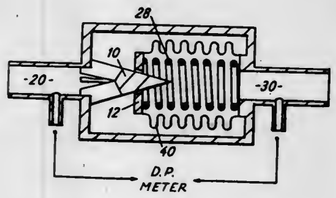
3,554,030
RECORDING ULTRASONIC FLOWMETER FOR BLOOD VESSELS
Pierre Peronneau, Paris, France, assignor to Compagnie Generale d'Electricite, Paris, France, a corporation of France
Filed Apr. 8, 1968, Ser. No. 719,591
Claims priority, application France, Apr. 7, 1967, 102,018
Int. Cl. G01p *5/00*
U.S. Cl. 73—194 **7 Claims**

A flowmeter, especially for use in measuring and recording the volume rate of blood flow, in which a single ultrasonic transducer is alternately used as emitter and receiver of ultrasonic waves. The transducer is used to measure echos indicating the size of the blood vessel



and the speed of the blood flowing in the vessel. By calculation, the volume rate of flow is derived.

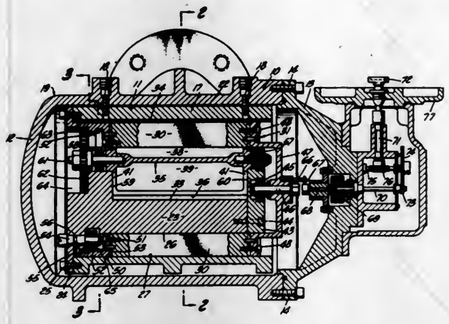
3,554,031
FLOW RATE METER
David Turner, London, England, assignor to Gervase Instruments Limited, a British company
Filed June 11, 1968, Ser. No. 736,123
Int. Cl. G01f *1/00*
U.S. Cl. 73—210 **2 Claims**



The invention relates to a flow rate meter which gives an indication of the flowrate dependent upon the differential pressure across, or the upstream pressure of a measuring orifice. The size of the orifice is varied by a control member, the position of which relative to the orifice is used to provide the indication of the flowrate. The meter is neither of the constant-pressure-drop type, nor of the constant-area type as the area of the orifice depends upon the position of the control member.

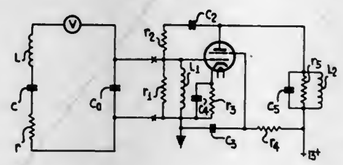
3,554,032
ROTARY FLUID METER
George W. Schneider, Jr., Huntingdon Valley, Pa., assignor, by mesne assignments, to The Singer Company, a corporation of New Jersey
Filed Jan. 3, 1967, Ser. No. 606,821
Int. Cl. G01f *3/08*
U.S. Cl. 73—257 **4 Claims**

A bladed rotor support at both ends within a housing turns in timed relation with a pocketed rotary gate mounted substantially within the rotor and turning in the same direction. The rotor blades pass through an arcuate channel and the gate pockets receive them as they pass between the channel ends. One end of the rotor is supported by rollers engaging a trackway, and an internal gear



drive near the trackway connects the rotor to the pocketed gate.

3,554,033
AMPLIFIER WITH FEEDBACK PARTICULARLY USEFUL WITH A GRAVITY WAVE DETECTOR
Joseph Weber, Chevy Chase, Md., assignor of one-half to Hyman Hurvitz, Washington, D.C.
Filed Oct. 25, 1967, Ser. No. 678,003
Int. Cl. G01v *7/04*; H03f *1/34*
U.S. Cl. 73—382 **18 Claims**



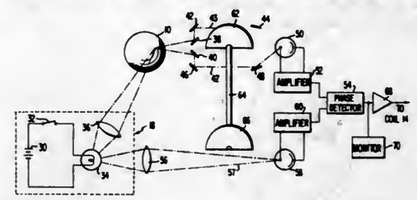
An amplifier particularly for use with a piezoelectric transducer bonded to a vibrating mass. The crystal is connected in the input circuit of the amplifier, and the mass and crystal are equivalently represented by a series tuned circuit, at resonance. A feedback path of high resistance is provided in the amplifier, and feedback is negative, so that the feedback resistance and the amplifier input impedance represent a voltage divider. For high input impedance large negative feedback occurs, while for low input impedance small negative feedback occurs, due to the action of the divider. The effective Q of the series tuned circuit is thus increased. The output circuit of the amplifier may be, if desired, a low Q tank circuit. If r_2 is the feedback resistance and r the effective resistance of the series tuned circuit gain can be

$$\frac{r_2}{r}$$

at resonance.

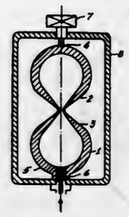
3,554,034
GRAVIMETER
Richard C. La Force, Grosse Point, Mich., assignor to Sinclair Oil Corporation, a corporation of New York
Filed Aug. 27, 1968, Ser. No. 755,635
Int. Cl. G01v *7/04*
U.S. Cl. 73—382 **4 Claims**

A superconductive sphere is levitated by a current-carrying coil. Displacement of the sphere from its equilibrium position, caused by changes in gravitational force, are optically detected, and in response to the detector output a current is generated in another coiled wire encircling the sphere. The magnetic field caused by this current generates a force which returns the sphere to its



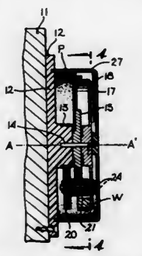
equilibrium position. Measurement of the restoring current permits determination of the change in gravitational force.

3,554,035
PRESSURE DETECTION AND MEASURING DEVICES
Pierre R. Buisson, 16 Avenue Victor Hugo, 92 Vanves, France, and Georges C. Denegre, 18 Rue Gramme, 75 Paris, France
Filed Apr. 11, 1968, Ser. No. 720,633
Claims priority, application France, Apr. 13, 1967, 102,667
Int. Cl. G01l *7/06*
U.S. Cl. 73—410 **8 Claims**



A device for measuring variations of pressure, comprising a deformable element in which the errors of measurement due to the phenomenon of hysteresis in the material constituting said element are reduced substantially to zero by choosing the form of the deformable element and the thickness of its wall in such manner that the thickness of said wall varies in a linear manner with the radius of said wall, whereby the stress-gradient is made small or zero throughout the whole mass of the material of the deformable element.

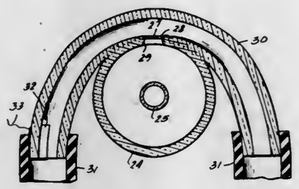
3,554,036
ROTARY POSITION INDICATOR
James F. Lawrence, Jr., 13161 Barrett Hill Circle, Orange County, Calif. 92705
Filed Apr. 21, 1969, Ser. No. 818,024
Int. Cl. G06m *1/22*
U.S. Cl. 74—421 **3 Claims**



An indicator for the number of turns through which a multiturn control wheel has been turned from a reference

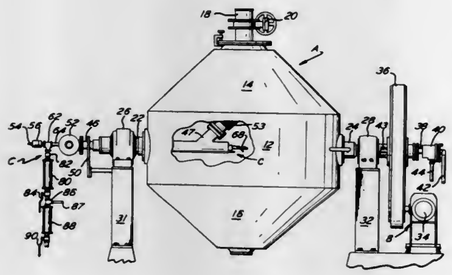
position. The control wheel drives a gear train leading to a pointer, and the pointer moves relatively to a scale on a rotatably mounted member biased to a stationary position by weighting at the bottom.

3,554,037
CONTINUOUS FLOW PIPELINE SAMPLING ORIFICE ARRANGEMENT
Robert H. Berg, 196 Clinton Ave., Elmhurst, Ill. 60126
Filed May 9, 1968, Ser. No. 727,823
Int. Cl. G01n *1/14*; G01r *27/24*
U.S. Cl. 73—422 10 Claims



A fluid sampling device has a hollow member which provides a chamber having a wall, a sampling duct is attached intermediate its length to the chamber wall and an orifice common to the united walls provides a passageway between the passage and the duct and the chamber for samplings of fluid such as for detecting or measuring particles present in the fluid by modulation of an electrical current passing through or across the orifice.

3,554,038
SAMPLING DEVICE FOR ROTARY CONE VACUUM DRYER
Daniel Patrick Sweeney and Werner Carl Haas, Philadelphia, and Harold R. Powell, King of Prussia, Pa., assignors to Pennsalt Chemicals Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 16, 1968, Ser. No. 784,115
Int. Cl. G01n *1/100*
U.S. Cl. 73—424 8 Claims



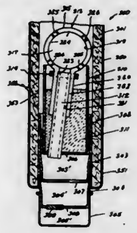
A sampling device for removal of product test specimens from a rotating vacuum dryer in which a spiral channel axially extends through one of the hollow trunnions held in the usual rotary gland system. Rotation of the screw channel extracts a portion of the product material and deposits it in a valve without interrupting rotation of the dryer or breaking the vacuum thereto or discontinuing any phase of the cycle of operations.

3,554,039
MANUALLY OPERATED WIPING APPARATUS FOR TAKING WIPED SPECIMENS FROM TEST SURFACES
Helmut W. M. Braun, Cadrezzate, Italy, assignor to European Atomic Energy Community-Euratom, Brussels, Belgium
Filed June 26, 1967, Ser. No. 654,304
Claims priority, application Germany, June 27, 1966, E 31,960
Int. Cl. G01n *1/04*
U.S. Cl. 73—425 10 Claims



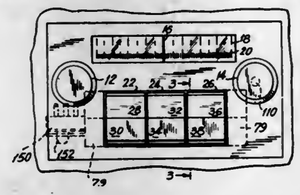
A manually operated apparatus for taking specimens from a test surface with wiping paper and having a handle and a supporting base attached thereto for positioning the apparatus with the wiping paper surface on the test surface. A reel wind-on mechanism supports the wiping paper which is capable of being paid off in a plane parallel to the test surface. A manually operated drive shaft is rotatably journalled in the supporting base and the reel wind-on mechanism is mounted eccentrically on the end of the shaft which is nearest to the test surface, thus permitting paper surface to move on a circular track around the handle axis. A manually operated means is provided for indexing the reel wind-on mechanism.

3,554,040
DEVICE AND METHOD FOR SAMPLING MOLTEN METAL
William J. Collins, Gary, Ind.
(7005 Madison St., Merrillville, Ind. 46410)
Continuation-in-part of application Ser. No. 713,640, Mar. 18, 1968. This application Mar. 25, 1969, Ser. No. 810,231
Int. Cl. G01n *1/12*
U.S. Cl. 73—425.4 13 Claims



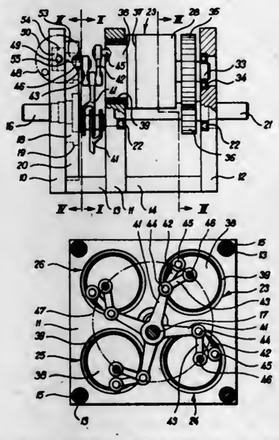
A molten metal sampler of the type having an elongated tubular housing with a sample receiver fixed therein so that when one end of the housing is immersed in a pool of molten metal a sample will be retained therein. The invention involves a housing in which a localized area is weak so that after the receiving means receives a sample of liquid, the housing may be readily broken in such area to facilitate access to the sample.

3,554,041
PUSHBUTTON TUNER
Russell D. Stamm, Wilbraham, Mass., assignor to General Instrument Corporation, Newark, N.J., a corporation of New Jersey
Filed Feb. 14, 1966, Ser. No. 527,318
Int. Cl. F16h *35/18*
U.S. Cl. 74—10.33 10 Claims



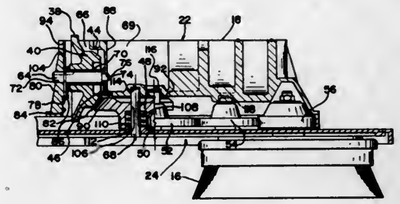
The pushbutton tuner has the usual rocker which is tilted by one or another key having independently adjustable means for bearing against and positioning the rocker for tuning. However, in this tuner each button assembly operates one or another of two collateral keys, the button assembly including a shuttle which is movable to one position to move one key, and to another position to move the other key. Each button assembly has a button shell with two superposed half buttons, and when one half button is pressed, the button assembly moves one key, whereas when the other half button is pressed, the button assembly moves the other key. For this purpose a shuttle lever has arms engaged by the half buttons to shift the shuttle at the beginning of the main button movement. One shuttle position may be used for AM tuning and the other for FM tuning, in which case there is an electrical switch for changeover from AM to FM or vice versa, and a switch plate is engaged by the keys for automatically operating the said switch in appropriate direction for AM or FM.

3,554,042
CONTINUOUS REGULATABLE DRIVE
Rudolf Pfister, Schaan, Liechtenstein, assignor to Ernst Ackermann, Wallisellen Zurich, Switzerland
Filed June 20, 1969, Ser. No. 835,138
Int. Cl. F16h *21/14*
U.S. Cl. 74—69 12 Claims



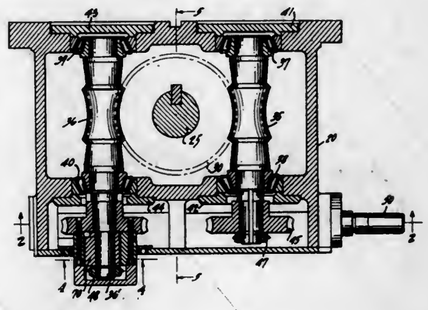
A continuously variable drive having a driving shaft and a driven shaft in alignment relative to each other. A plurality of shifting mechanisms are provided with means connected to the shafts in order to vary the drive ratio between the two shafts.

3,554,043
DRIVE TRAIN FOR ROTARY FLOOR CONDITIONERS
Clark A. Luckner, Jr., North Canton, Ohio, assignor to The Hoover Company, North Canton, Ohio, a corporation of Delaware
Filed June 2, 1969, Ser. No. 829,661
Int. Cl. F16h *1/12*, *55/18*
U.S. Cl. 74—409 10 Claims



A workhead assembly for a floor conditioner having a gear train which includes bevel gears. Means are provided to insure proper meshing of certain gears notwithstanding additive manufacturing tolerances between cooperating parts while obviating selective assembly techniques or abnormally close manufacturing tolerances.

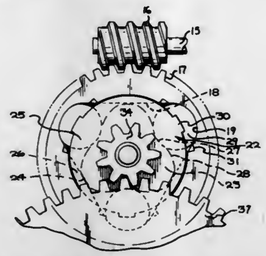
3,554,044
BACK LASH FREE POWER TRANSFER MECHANISM
Nils Hoglund, Short Hills, N.J., assignor to Tri-Ordinate Corporation, Berkeley Heights, N.J.
Filed June 24, 1969, Ser. No. 836,003
Int. Cl. F16h *1/18*, *37/06*, *55/18*
U.S. Cl. 74—409 3 Claims



The apparatus is intended primarily for transferring power from a prime mover to another mechanism, for example, accurately made cams where back lash must be minimal or preferably entirely eliminated.

The mechanism includes a power input shaft with spaced right and left hand worm gears mounted thereon. The main cam shaft is provided with a worm wheel engaged on opposite sides thereof by hour glass worms having attached thereto worm wheels engaging the worm gears on the power input shaft. One of the worm gears is fixed to its hour glass worm. However, the other is rotatably adjustable to take up the back lash at which point it can be fixed by set screws in a collar fixed to the worm gear.

3,554,045
MOMENTARY FLEXIBLE OVERLOAD RELEASE DEVICE FOR A MOTOR DRIVE
Joseph C. Littmann, Temperance, Mich., assignor to Dura Corporation, Toledo, Ohio, a corporation of New York
Filed June 27, 1969, Ser. No. 837,169
Int. Cl. E05f 15/16; F16d 3/14
U.S. Cl. 74—411 3 Claims

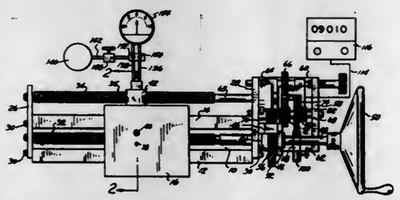


An overload release device for an electric motor drive which includes a driven gear enclosing a pinion-carrying actuator and between which are arranged flexible resilient rollers adapted to be compressed or deformed when subjected to an excessive torque, and upon release of such torque, the parts resume their normal driving relationship, spaced bearing means being provided between the actuator and the driven gear to militate against cantilevering of the bearing shaft.

ERRATUM

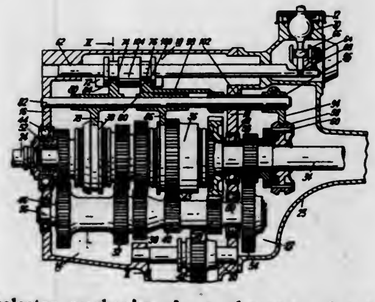
For Class 74—421 see:
Patent No. 3,554,036

3,554,046
POSITIONING MECHANISM FOR MACHINE TOOL
William H. Kirk, 1109 W. Selfridge, Clawson, Mich. 48017
Filed May 14, 1969, Ser. No. 824,402
Int. Cl. F16h 1/18, 55/18
U.S. Cl. 74—424.8 9 Claims



A positioning mechanism for machine tools and the like having a stationary bed provided with slideways and a slide supported by the slideways for linear displacement relatively to the bed. The slide is linearly displaced by means of a feed screw engaging a nut affixed to the slide; a second or master screw is straddled by a second nut-like member also affixed to the slide. Both screws are rotated in unison by way of a gear train consisting of a helical gear wheel keyed on the shaft of the feed screw meshing with a helical gear keyed on a countershaft, the countershaft having a spur gear keyed thereon meshing with a spur wheel keyed on the shaft of the master screw. A toothed wheel is also mounted on the countershaft for rotation thereby, and each incremental rotation of the toothed wheel corresponding to a unit of displacement of the slide is counted by means of appropriate counting means from a zero reference. Once the slide has been displaced to an appropriate position as indicated by the counting means, the countershaft is locked against rotation and is linearly displaced such that the interaction between the inclined teeth of the helical gear and of the helical wheel rotates the feed screw of a minute amount, while the master screw is held stationary, until an appropriate null indicating device gives an indication that the nut-like member cooperating with the master screw straddles evenly the corresponding side faces of the threads of the master screw. The slide is thus exactly positioned at a repetitive required position irrespective of any backlash in the feed screw-nut assembly.

3,554,047
SELECTOR MECHANISMS FOR CHANGE-SPEED GEARS
Thomas Charles Felix Stott, Harpenden, England, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Mar. 5, 1969, Ser. No. 804,447
Claims priority, application Great Britain, Mar. 18, 1968, 12,846/68
Int. Cl. G05g 5/10
U.S. Cl. 74—477 5 Claims

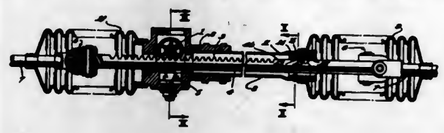


A selector mechanism for a change-speed gear, primarily for use in motor vehicles, includes selectively movable striker forks, or other striker members, which are slidably mounted on a striker shaft that is mounted at one end in a first wall of the gear housing. The striker members co-operate with clutch coupling sleeves or other coupling members of the change-speed gear. One of the coupling members, for an auxiliary gearset which may for instance be arranged to give an overdrive ratio, is disposed on the side of a second wall of the gear housing remote from the other coupling members: the striker member for the coupling member of the auxiliary gearset has a tubular boss portion which extends through, and is slidable in, an aperture in the second wall so as to form a mounting support for the striker shaft relative to the second wall.

With this arrangement, also, selector portions of the various striker members may be grouped closely together, for example in two or possibly only one common radical-plane regions, to facilitate selection by a single selector shaft, possibly with an associated interlock member.

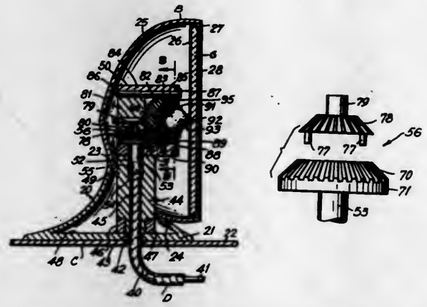
3,554,048
THREE POINT RACK BAR SUPPORT FOR RACK AND PINION ASSEMBLY
Frederick J. Adams, Campton, near Shefford, England, assignor to Cam Gears Limited, Hertfordshire, England, a British company
Filed July 8, 1969, Ser. No. 839,866
Claims priority, application Great Britain, Aug. 30, 1968, 41,437/68
Int. Cl. B62d 1/20
U.S. Cl. 74—498 10 Claims

A rack and pinion assembly especially suitable for automotive steering gear having a rack bar slidably supported on two laterally spaced converging surfaces, and urged against said surfaces by a third support. The rack bar preferably is slidably mounted in a pinion housing adjacent one end, extends through a tube projecting from the pinion housing, and is slidably mounted adjacent its other end by a plastic bearing secured in the tube having



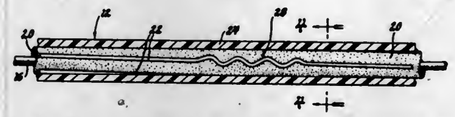
a wedge-shaped recess with converging sidewalls engaging opposite sides of the rack bar and slidably supporting a spring-urged plastic plug engaging the rack bar between the inclined surfaces to urge the bar deeper into the recess. The plastic bearing support is mounted in the end of the tube remote from the pinion housing.

3,554,049
REMOTE CONTROL REAR VIEW MIRROR
Stannard D. Holmes, P.O. Box 331, Naranjito, Puerto Rico
Filed Jan. 22, 1969, Ser. No. 793,018
Int. Cl. F16c 1/10; F16h 55/18
U.S. Cl. 74—501 10 Claims



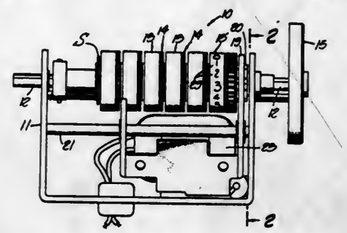
The disclosure relates to a remote control rear view mirror externally mounted on automobiles and trucks, controlled from the inside of the driver's compartment of the vehicle by a flexible cable having a flush mounted dial or knob inset in the door next to the driver. The movement of the mirror is controlled through gearing and through a face cam.

3,554,050
MOTION TRANSMITTING REMOTE CONTROL ASSEMBLY
Winthrop B. Conrad, Franklin, Mich., assignor to Teleflex Incorporated, North Wales, Pa., a corporation of Delaware
Filed June 30, 1969, Ser. No. 837,692
Int. Cl. F16c 1/26
U.S. Cl. 74—501 12 Claims



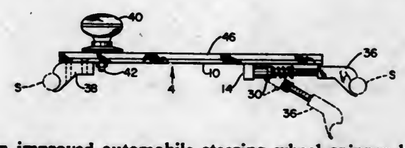
A flexible motion transmitting remote control assembly of the type including a flexible motion transmitting core element movably supported by a flexible conduit with fittings secured to the conduit and adapted for connection to a support structure and wherein the conduit comprises an inner tubular member of organic polymeric material disposed about the wires and the inner tubular member with the improvement being that the long lay wires have a plurality of irregularities at spaced intervals therealong.

3,554,051
DECADE COUNTER OR THE LIKE
William L. Tancred, Pacoima, and Joseph A. Richards, North Hollywood, Calif., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware
Filed June 27, 1969, Ser. No. 837,258
Int. Cl. G05g 5/06; G06c 7/10
U.S. Cl. 74—527 10 Claims



A pawl and ratchet arrangement for use between a decade counter number wheel and gear wheel to permit reset.

3,554,052
RAPIDLY ATTACHABLE SPINNER KNOB FOR AUTOMOTIVE STEERING WHEELS
Carl P. Mross, Denver, Colo., assignor to Robert E. Royce, Englewood, Colo.
Filed Apr. 25, 1969, Ser. No. 819,358
Int. Cl. B62d 1/22
U.S. Cl. 74—557 11 Claims

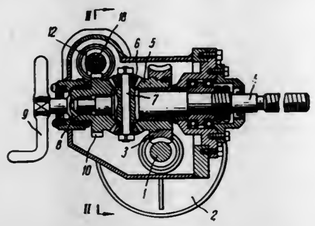


An improved automobile steering wheel spinner knob or handle device which may be adjusted to dispose the knob to various desired positions along a diameter within the wheel rim and be quickly adjusted to engage rims of various diameters and without causing any damage to the steering wheel. The device may be mounted in any diametral plane of the steering wheel. Its application or removal from the wheel rim is a manual operation, without the use of tools, rendering it of particular utility in instances where two or more persons operate a vehicle, only one of which persons requires use of the device, exemplary of which is a handicapped person who may occasionally operate one or more available automobiles, such as those normally operated by unhandicapped members of his family.

3,554,053
TWO-STAGE REDUCING GEAR FOR ANCHOR CHAIN ARRESTERS
Boris Andreevich Bugaenko, Prospekt Lenina 30, kv. 32; Georgy Ivanovich Vladinets, Prospekt Lenina 30, kv. 13; and Jury Filippovich Yantser, Ul. Belaya 13, kv. 37, all of Nikolaev, U.S.S.R.
Filed Dec. 13, 1968, Ser. No. 783,548
Int. Cl. F16h 1/22, 1/40
U.S. Cl. 74—626 10 Claims

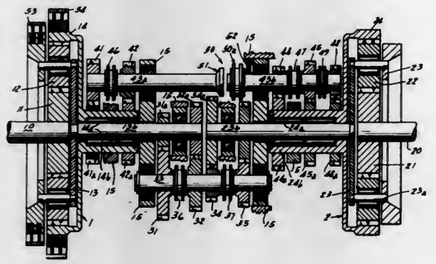
A two-stage reducing gear for anchor chain arresters the first stage of which is a worm pair, and second stage

of which is a differential. One of the differential center wheels, connected to the hand drive, is provided with a second set of teeth for engaging a cylindrical toothed rack, or a worm, having a longitudinal recess for disengaging it from the second set of teeth of said wheel. A spring-loaded shaft, carrying the rack or worm, is so



supported that it can axially travel over a certain distance, the rack or worm being loaded with a torsion spring. A pick-up, registering the movement of the shaft, is located at one of the ends thereof, said pick-up producing a signal to disengage the drive of the reducing gear after the shaft has travelled over a required distance.

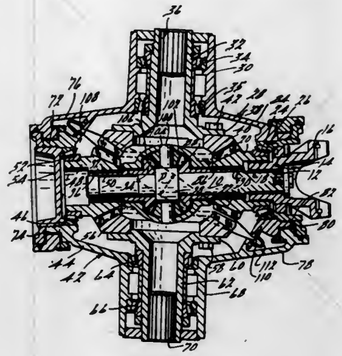
3,554,054
TRANSMISSION
Algirdas L. Nasvytis, 10823 Magnolia Drive, Cleveland, Ohio 44106
Filed May 21, 1968, Ser. No. 730,883
Int. Cl. F16d *21/04;* **F16h** *37/06*
U.S. Cl. 74—682 **11 Claims**



A novel transmission providing shifting capabilities under full loads and additionally providing a transmission-neutral condition without external clutch provision. A novel two-way shiftable clutch is provided for realization of the transmission and accomplishes a face-to-face clutching relationship capable of substantially infinitely variable angular engagement position.

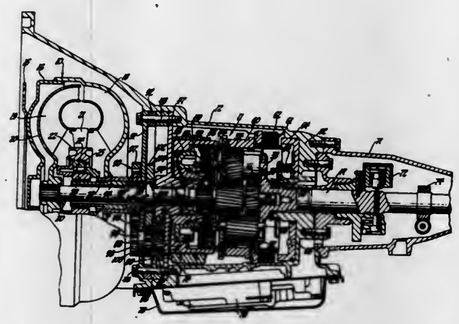
3,554,055
DIFFERENTIAL GEAR MECHANISM FOR AN AUTOMOTIVE VEHICLE DRIVELINE HAVING A FIXED DIFFERENTIAL HOUSING AND SWING AXLES
Alexander H. Galaniuk, Southfield, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 10, 1969, Ser. No. 790,222
Int. Cl. B60k *17/16;* **F16h** *1/40*
U.S. Cl. 74—713 **6 Claims**

A differential gear unit for connecting an automotive vehicle driveshaft to each of two axle shafts wherein the inboard ends of the two axle shafts may be disposed with less road clearance than their respective outboard ends thereby providing a low vehicle silhouette, the housing for the unit including two separate parts, one of which supports one axle shaft and the other of which supports



the other axle shaft, said housing parts being mounted for oscillation with respect to each other about the center line of the power input shaft axis.

3,554,056
VEHICULAR TRANSMISSION PUMP DRIVES
Edward N. Cole, Bloomfield Hills, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 2, 1969, Ser. No. 838,549
Int. Cl. B60k *17/28;* **F16h** *47/07*
U.S. Cl. 74—730 **5 Claims**

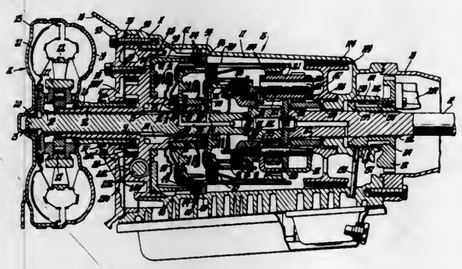


A vehicular transmission having a hydraulic pump driven by the transmission input through a one-way drive when the input is powering the transmission and driven by the transmission output through a one-way drive when the output is powering the transmission.

3,554,057
TRANSMISSION AND CONTROL
Raymond P. Michnay, Wiesbaden, Germany, and Charles R. Moore, Grosse Pointe Park, and Gilbert K. Hause, Bloomfield Hills, Mich., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 13, 1968, Ser. No. 759,671
Int. Cl. F16d *35/00;* **F16h** *47/08, 57/10*
U.S. Cl. 74—732 **23 Claims**

The transmission shown has a torque converter driving an input drum and a gear unit having an inner drum

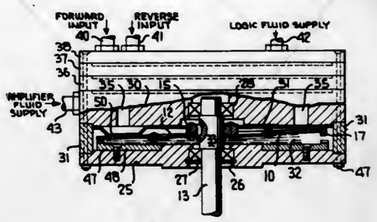
connected to an input sun gear meshing with a short pinion which meshes with a long pinion. Both pinions are mounted on the output carrier. The long pinion meshes with a reaction sun gear and with an input reaction ring gear splined to an outer drum and with a reaction sun gear. When the reaction sun gear is held, low ratio is provided by a one-way clutch in automatic low gear and by the one-way clutch and a direct clutch in manual low to provide engine braking. The direct clutch is located between the input drum and inner drum. The input during second ratio is provided by an intermediate clutch located between the input drum and the outer drum and the reaction is provided by the reaction sun gear. For third ratio, the reaction sun gear is released and both clutches drive. For reverse, the reverse plate brake between the outer drum and an outermost fixed housing drum and the direct clutch are engaged. The engagement of the direct clutch in reverse supplements the input to the gear set through the one-way clutch and prevents freewheeling in reverse gear. The direct clutch handles no torque except on coasting. The drums are concentrically arranged and successively longer from the short inner drum to the longest outermost fixed drum so the successively outer clutch and brake plate packs are further from the gear set and the fluid motor for operating each plate pack clears the inner drum and is within the outer drum for that plate pack. This motor and plate pack arrangement with sheet metal intermediate and outer drums, having rolled nested splines,



provides within the space profile of this gear set space for three successively larger area motors and larger radius plate packs having the same number of plates to provide direct and second clutch torque capacity and reverse brake torque capacity which with a reverse pressure boost to match the torque requirements of this gear set. Also, the single plate area of each pack is successively larger and sufficient for durability. The concentric plate packs are made of sets of three different size plates stamped from a single blank. The carrier has a central plate member and a pair of side members welded to the faces of the plate with the short and long pinion shafts mounted on the plate and side members within the perimeter so three or four sets of pinions can be used in a small diameter gear set. The transmission housing is formed of a bell-shaped converter housing and gear housing securing together and clamping therebetween a wear plate and a one-piece wall structure jointly providing passages and the latter providing a pump and valve body, a stator shaft and motor portions.

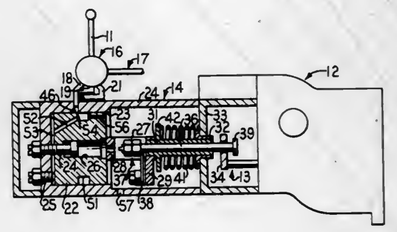
In the transmission controls, the upshift and downshift bias signals are controlled to prevent hunting of the shift valve. A downshift control valve controls the operation of downshift bias signals such that some of the bias signals are disconnected from the shift valve during upshifted low torque demand operation. The control also directs fluid through the shift valve and a shift control valve to engage and disengage the friction torque establishing devices.

3,554,058
STEP MOTOR WITH PURE FLUID ACTUATION
Harold R. Newell, South Newbury, N.H., assignor to Mesur-Matic Electronics Corporation, Warner, N.H., a corporation of Delaware
Filed May 8, 1969, Ser. No. 822,919
Int. Cl. F15b *13/02;* **F15c** *1/12;* **F16h** *1/28*
U.S. Cl. 74—800 **14 Claims**



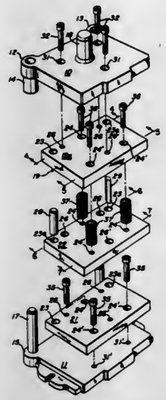
A step motor includes a motor housing defining a chamber into which a rotable shaft extends. A rotor disk is pivotally coupled to the shaft and supports a circular gear having a common axis with the shaft when the plane of the disk is perpendicular to the shaft. Otherwise the gear axis and shaft axis intersect at a slight skew angle when the rotor disk is tilted relative to the shaft axis. A cooperating circular gear having an axis in common with the shaft is longitudinally displaced from the rotor gear by a distance sufficient to prevent meshing of the confronting teeth of the two gears when they lie in parallel planes, but to permit meshing in a limited sector when the rotor is deflected through a sufficient tilt angle relative to the shaft axis. One of the gears is fastened to the shaft to produce rotation upon continued meshing of the teeth of the two gears through a circularly moving sector, the shaft thereby rotating at a speed depending on the tooth differential between the two gears. A fluid logic driver delivers fluid actuating pulses in a predetermined format to a circular array of ducts oriented substantially perpendicular to the rotor and conforming in number and location to the desired motor phases, to produce sequential deflection of the rotor in a wobbling motion about the shaft axis.

3,554,059
VARIABLE GOVERNOR CONTROL
John H. Parks and Robert H. Miller, Peoria, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Sept. 6, 1968, Ser. No. 758,001
Int. Cl. B60k *21/02;* **F15b** *9/02*
U.S. Cl. 74—860 **5 Claims**



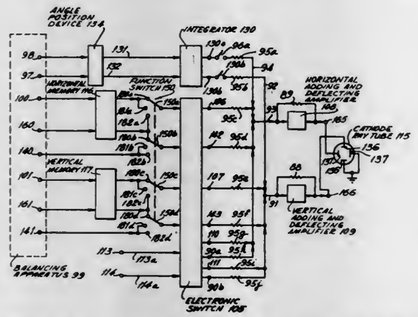
Variable control apparatus which is responsive to drive ratio selection of a transmission for adjusting the setting of an engine governor and thus varying normal engine power.

3,554,060
DIE PLATES
Robert J. Gargrave, Dayton, Ohio, Allan E. Randolph, Sr., Livonia, Mich., and Ludomil A. Holiga, Dayton, Ohio, assignors to Dayton Perforators, Inc., Dayton, Ohio, a corporation of Ohio
Filed Aug. 11, 1967, Ser. No. 660,134
Int. Cl. B21k *5/20*
U.S. Cl. 76—107 **13 Claims**



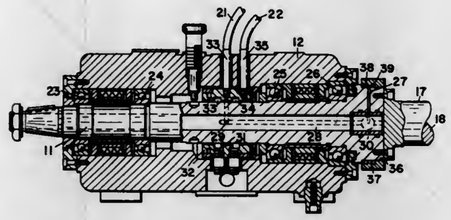
A unique stock die plate formed with staggered hold-down openings arranged in a truss pattern to provide the plate with maximum tooling area and with increased strength and rigidity on mount thereof to a die shoe, said plate also featuring key apertures affording both datum control enabling a fast and accurate location of holes and various tool components which may subsequently be machined in or attached to the die plate and means for a radial lock of similar stacked plates, said plate, as described, being so designed that a plurality thereof provides an improved die assembly the components of which may be readily interchanged or substituted for by like plates.

3,554,061
APPARATUS AND METHOD FOR INDICATING UNBALANCE AND CONTROLLING BALANCING OF A BODY
Paul Holdinghausen, Bickenbach, Germany, assignor to Carl Schenck Maschinenfabrik GmbH, Darmstadt, Germany, a corporation of Germany
Filed Mar. 12, 1969, Ser. No. 806,622
Claims priority, application Germany, Mar. 16, 1968, 1,698,165
Int. Cl. B23b *35/00, 49/00;* **G01m** *1/38*
U.S. Cl. 77—5 **11 Claims**



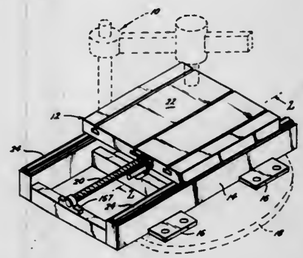
A light spot representing an unbalance value of a body of direction and magnitude is indicated on the screen of a cathode ray tube and is positioned on the screen relative to a reference point in accordance with the sum and angular position of the unbalance. The unbalance values of direction and magnitude are stored. A line of light is produced on the screen extending from the reference point and indicates the instantaneous position of the unbalance on the body. The unbalance of the body is balanced and the light line is adjusted relative to the light spot by rotating the body. The unbalance of the body is removed and the light line is removed in accordance with the removal of the unbalance commencing with the reference point and toward the center of the light spot until the light spot is reached.

3,554,062
MACHINE TOOL
Robert L. Price, Paxton, and Robert S. Hahn, Northboro, Mass., assignors to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed May 16, 1968, Ser. No. 729,666
Int. Cl. B23b *29/034*
U.S. Cl. 77—58 **6 Claims**



This invention relates to a machine tool and, more particularly, to a spindle construction that permits very accurate radial adjustment of a tool mounted thereon by means of a transverse slot in the spindle which is opened to selected angles by the introduction of pressure fluid.

3,554,063
PNEUMATIC-MECHANICAL LINEAR INDEX SYSTEM
Wesley D. Cawley, 721 Ave. A, Port Neches, Tex. 77651
Filed Sept. 12, 1968, Ser. No. 759,362
Int. Cl. B23b *39/06*
U.S. Cl. 77—64 **22 Claims**

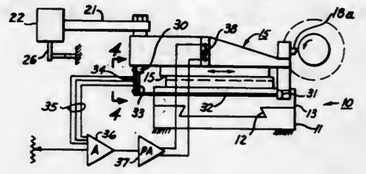


The present invention utilizes a primary cylinder to move a work table a distance predetermined by the positioning of limit valves attached to the table. The primary cylinder utilizes clamping means connected to its piston rod to grip a stationary, but rotatable, lead screw to push the table the predetermined distance. A secondary

cylinder acts by means of a rack to rotate the lead screw a selected amount, causing the table to translate along the lead screw an additional, but relatively minute distance. Means are also provided to lock the table securely in a stationary position between indexing movements and to manually adjust the table.

3,554,064
SERVO CONTROLLED DIMENSION STABILIZER FOR MACHINE TOOLS
Dawson C. Skillen, Covina, Calif., assignor to Textron, Inc., Covina, Calif., a corporation of Delaware
Filed Mar. 21, 1969, Ser. No. 809,141
Int. Cl. B23b *3/28;* **B24b** *17/00*
U.S. Cl. 82—14 **6 Claims**

A servo controlled stabilizer for maintaining constant a dimension of a machine tool, an example being the axial spacing between the stylus of the tracer and the cutting tool which it controls. This is accomplished by providing a temperature insensitive rod along the length of the mechanism, the rod being anchored at one end to the body whose length is to be controlled and supported at its other by a motion sensitive element such as a strain gauge

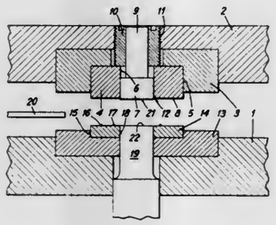


also mounted to body, the output of the strain gauge being utilized to operate a heater or cooler for maintaining the dimension of the spacing at a stable condition by controlling the temperature of the body.

3,554,065
PRECISION CUTTING PUNCHING TOOL FOR PRECISION PUNCHING OF PARTS

Otto Kunz, Lyss, Switzerland, assignor to Feintool AG., Lyss, Berne, Switzerland

Filed May 21, 1968, Ser. No. 730,752
Claims priority, application Switzerland, June 5, 1967, 7898/67
Int. Cl. B26d 3/00
U.S. Cl. 83—124 7 Claims

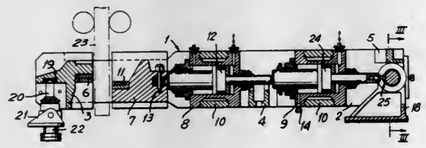


A precision cutting punching tool incorporating a die member with a die opening and a cutting punch which can be displaced through a pressure or contact plate into the die opening. A counterpunch which counteracts the cutting punch is arranged in the die opening. The contact plate has an opening for receiving the cutting punch and this last-mentioned opening is provided at the operable side of such contact plate with protruding ring teeth or projections. The generatrices or surface lines of the die opening with the exception of the location of the cutting edge of the die member extend substantially parallel, and the cutting edge of the die member is irregular, e.g. facetlike or paraboliclike configuration and possesses a convex form.

3,554,066
HYDRAULIC SHEARS FOR CUTTING UP MOVING INGOTS

Nikolai Vasilievich Kolypaev, Sosialisticheskaya ulitsa 18, kv.1; Alexandr Ivanovich Vekke, Prospekt Pravdy 5, kv.207; Ivan Petrovich Ivanov, Prospekt Pravdy 5, kv.204; Lev Nikolaevich Kravtsov, Prospekt Lenina II, kv.25, and Iosif Srulevich Shmukler, Prospekt Pravdy 5, kv.22, Kharkov, U.S.S.R.

Filed July 11, 1968, Ser. No. 744,130
Int. Cl. B26d 1/56; B23d 25/06
U.S. Cl. 83—316 2 Claims

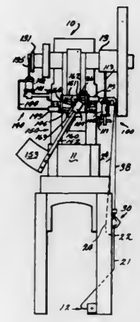


Hydraulic shears for continuous casting plants provided with a frame having knives mounted thereon and hydraulic cylinders mounted in succession actuating the knives. The frame is disposed with one end thereof on guide blocks pivoting on a bracket so as to move in a longitudinal direction along the guide blocks during cutting. The opposite end of the frame rests on a movable portion of a pivotally mounted hydraulic cylinder intended for counterweighting and oscillating the frame.

3,554,067
FAIL-SAFE DOUBLE-ACTION SAFETY GUARD

Joseph Scutella, 886 N. 4th St., Olean, N.Y. 14760

Filed Feb. 26, 1969, Ser. No. 802,346
Int. Cl. B26d 5/00
U.S. Cl. 83—397 8 Claims



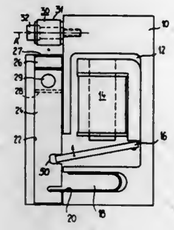
A fail-safe, double-action safety guard having two separate and distinct protective circuits, shown installed on a treadle operated punch press, the primary circuit being both pneumatically and electrically operated, while the secondary or followup circuit is hydraulically operated. Actuation of the foot treadle will open the pneumatic circuit to a preset flow control circuit and also to an air solenoid valve. From the flow control circuit, air pressure passes through and operates a pneumatic drive cylinder which in turn drives a guard-actuating device or butterfly flipper having a guard shield attached thereto. The butterfly flipper is rotated a preset amount to drive the guard shield in front of the work area. Only when the guard shield is completely in front of the work area, an electrical off/on switch is operated which in turn actuates an air solenoid and releases line air pressure to the clutch trip cylinder which trips the press.

To operate the followup hydraulic circuit, a preset cam throw is mounted on the crankshaft of the press. When the press is tripped and the ram starts its downward stroke, the cam positively drives a hydraulic cylinder. This cylinder is connected via hydraulic lines to a second hydraulic cylinder which is mounted next to the guard-actuating device or butterfly flipper diagonally opposite the pneumatic drive cylinder, the length of the stroke of the second hydraulic cylinder and the pneumatic drive cylinder being equal. Before the ram has completed a minor fraction of its downward stroke, the second hydraulic cylinder is completely activated against the butterfly flipper. In normal operation, the hydraulic cylinder merely follows the pneumatic cylinder and butterfly flipper action. It is a positive drive but only drives the guard shield in any emergency operation such as a double tripping of the press, or a clutch, air pressure, spring, electrical or air solenoid valve failure. The positive hydraulic drive exerts a large force that may be as great as the punch press, however, and in both normal and unexpected operations, this force cannot easily be overcome by the operator. When the stroke of the second hydraulic cylinder is fully extended to the butterfly flipper, it holds the guard shield in front of the work area until the ram has completed its downward stroke and has started its upward stroke. Meanwhile, the pneumatic drive cylinder retracts and is ready for the next cycle. Desirably the guard shield is opened by means of a return spring and the work area is cleared and made ready for the next cycle of the press.

3,554,068
APPARATUS FOR CUTTING A STRAND OF MATERIAL

Hermann Schwartz, Adliswil, Switzerland, assignor to Siegfried Peyer, Bach, Switzerland

Filed Aug. 19, 1968, Ser. No. 753,447
Claims priority, application Switzerland, Aug. 23, 1967, 11820/67
Int. Cl. B26d 1/08
U.S. Cl. 83—561 6 Claims

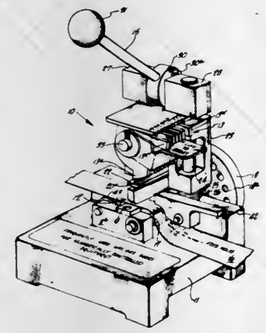


There is disclosed an apparatus for cutting a through passing lengthwise displaceable strand of material, especially a textile yarn, which incorporates a displaceably guided cutting knife means having a cutting edge portion. An anvil body means providing an anvil surface is rotatably mounted in a position to cooperate with the cutting knife means. The anvil body means is formed of a material possessing less hardness than the material forming the cutting edge portion. Drive means serve to advance the cutting knife means with its cutting edge portion against the anvil surface. The rotatably mounted anvil body means is contacted by the lengthwise displaceable strand of material in such a way that during each cutting operation the anvil body means carries out a partial rotational movement in order to expose a different portion of the anvil surface for the next cutting operation.

3,554,069
RECORD MEMBER PUNCH

Fred Wohlman, Jr., Palos Verdes Estates, Calif., assignor to Ex-Cell-O Corporation, Detroit, Mich., a corporation of Michigan

Filed July 25, 1968, Ser. No. 747,704
Int. Cl. G06k 1/10
U.S. Cl. 83—571 5 Claims

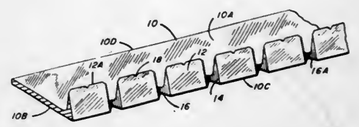


A punching device for recording binary coded information on a record member in a sequential fashion. The punching device having a punch and die assembly for perforating a record member wherein the punches may be independently selected and operated between punching and nonpunching positions. The record member to be punched is arranged to be incrementally stepped through the device and thereby punched.

3,554,070
PERFORATING STRIP FOR PRINTING PRESSES

Harry S. Boyd, 6409 S. Knoxville, Tulsa, Okla.

Filed Nov. 18, 1968, Ser. No. 776,831
Int. Cl. B26d 1/22
U.S. Cl. 83—678 2 Claims

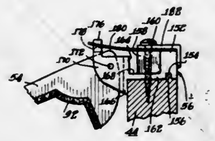


This invention relates to an improved perforating strip for printing presses. More particularly, the invention relates to a device for perforating paper as the paper passes over the impression cylinder of an offset or lithographic press, the device comprising an elongated thin metal strip having a base portion and having upstanding teeth along one edge of the base portion, the teeth being spaced apart from each other and the base portion having notches therein between the teeth so that the base portion is of reduced width at the notches, the notches providing relief of pressure of paper pressing against the teeth and base portion and permitting each of the teeth to flex individually.

3,554,071
PLASTIC PIANO ACTION

Geroge Stanley Klaiber, Tonawanda, N.Y., assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Delaware

Filed July 5, 1968, Ser. No. 742,630
Int. Cl. G10c 3/18
U.S. Cl. 84—237 22 Claims



The butt flange of a piano action is molded of a plastic material, a preferred example being polypropylene. In one embodiment of the invention the butt flange is provided with a relatively thin section so that the pivot pin for the hammer butt is capable of translatory movement. A spring holds the butt flange against such flexing, and precludes such translatory movement of the pivot unless the key is struck with greater than normal force. In another embodiment of the invention the pivot is eliminated and the hammer butt, and preferably also the shank, is made integral with the butt flange, the section between the butt flange and the hammer butt being thin to permit flexing and movement of the hammer toward and away from the sounding element.

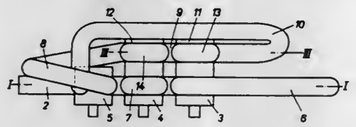
3,554,072
WIND INSTRUMENT POSSESSING AT LEAST THREE VALVES

Peter Hirsbrunner, Dorbgasse, Sumiswald, Bern, Switzerland

Filed Aug. 14, 1969, Ser. No. 850,068
Claims priority, application Switzerland, Aug. 23, 1968, 12662/68
Int. Cl. G10d 9/04
U.S. Cl. 84—390 3 Claims

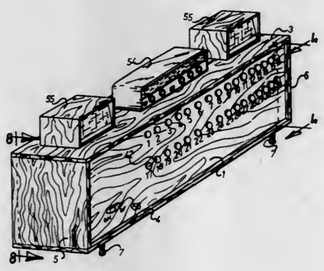
There is disclosed a brass wind instrument comprising a first, second and third rotary valve and a first, second and

third valve slide associated with said first, second and third rotary valve, respectively, for changing the total valve slide length in accordance with a whole, a half and 1½ tones. A first auxiliary rotary valve is operably connected with said first rotary valve and a second auxiliary rotary valve is operably connected with said second rotary valve. The first auxiliary rotary valve and the second auxiliary rotary valve are coaxially arranged with respect to said first rotary valve and said second rotary valve, respectively, both said auxiliary rotary valves being connected in series between sections of



said third valve slide. A compensating loop is provided for each said first and second auxiliary rotary valves, said compensating loops each possessing such a length that upon actuation of said first rotary valve and said first auxiliary rotary valve together with said third rotary valve, due to connecting in of said first compensating loop with said third valve slide, and also upon actuation of said second rotary valve and said second auxiliary rotary valve together with said third rotary valve, due to connecting in of said second compensating loop with the third valve slide, there results a purer tone.

3,554,073
VARIABLE RHYTHM METRONOME
Arthur Castilloux, 2534 Chateauguay St., Pointe St. Charles, Montreal, Quebec, Canada
Filed Nov. 19, 1968, Ser. No. 776,974
Int. Cl. G10b *15/00*
U.S. Cl. 84—484 **13 Claims**

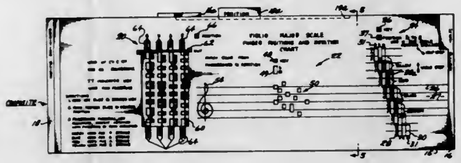


A metronome adapted to selectively produce a variety of rhythms, having one or more series of strikers adapted to be selectively set at any one of a number of rest positions and an actuating means extending adjacent said strikers and in cooperation therewith, whereby said actuating means are operated to lift selected ones of said strikers in sequence and to successively drop them such that the selected strikers will produce a rhythmic arrangement upon hitting underlying elements determining the aforementioned rest positions.

3,554,074
STRINGED INSTRUMENT MUSIC TEACHING DEVICE
James C. Rickey, 14634 SE 21st St., Bellevue, Wash. 98004
Filed Aug. 5, 1968, Ser. No. 750,057
Int. Cl. G09b *15/02*
U.S. Cl. 84—485 **37 Claims**

A multisheet adjustable slide chart having a simulated violin fingerboard region coordinated with a central key signature region and a graphic notation region and in some forms including a chord index. The graphic notation region is aligned with a musical staff drawn through the key signature region and both regions are to the right of the fingerboard region. The fingerboard region visually displays the names of the tones and the proper fingering on a simulated violin fingerboard. The fingering and notation are also displayed in the graphic notation region with a color coordinated code visually assisting the student in moving from one region to the other.

The graphic notation region is used for teaching the reading of music in general and includes openings or window forming portions and note and fingering indicia arranged to indicate whole and half step musical intervals of the scale for

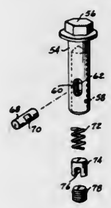


the various key signatures, as well as to show which notes are altered.

The key signature region is a music teaching device having openings or window forming portions, indicia to indicate the number of altered notes, the name of the key, and the actual signature. In a modified form of this region the signature on the staff that is used is also spelled out.

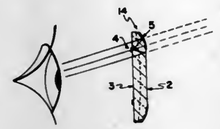
The fingerboard region shows the tones on a simulated violin fingerboard with half step spacing from the nut on each string, and in addition to the tones, also shows the fingering adjacent to the tones for a variety of major scales and fingering positions correlated with the key signature region and the graphic notation region.

3,554,075
HIGH STRENGTH ADJUSTABLE QUARTER TURN FASTENER
Norman S. Johnson, New Milford, N.J., assignor to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Nov. 7, 1968, Ser. No. 774,079
Int. Cl. F16b *19/00, 21/02*
U.S. Cl. 85—7 **5 Claims**



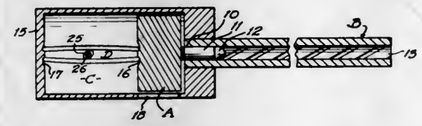
A quarter turn fastener assembly for joining two members in assembled relationship in which one of the members rotatably supports a hollow shaft having a head on one side thereof and having diametrically oppositely located, axially extended wall slots which receive a cross pin at the other side of the member for sliding movement in the direction of the axis of the shaft. Adjustable means limits movement of the cross pin in a direction away from the head to adjust the force with which the two members are drawn together when the fastener is operated. The side of the other member remote from the first member carries a receptacle having a central opening and diametrically oppositely extending slots and having generally circularly arranged cam tracks leading to level portions onto which the cross pin rides behind resilient locking detents in response to rotation of the shaft.

3,554,076
COMPACT VIEWFINDER WITH TORIC MIRRORS
Alfred H. Bellows, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Feb. 7, 1969, Ser. No. 797,550
Int. Cl. G03b *13/02*
U.S. Cl. 88—1.5 **6 Claims**



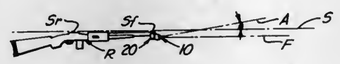
A toric reflecting element is associated with each major straight line segment of a reticle in a compact viewfinder. The strong curve of the toric element forms a one dimensional virtual image of the reticle line, much as a cylindrical mirror does. The weaker secondary curve of the toric element brings the extremities of the line into focus for the eye at short eye relief distances from the viewfinder.

3,554,077
DELAY BLOWBACK MECHANISM FOR FIREARMS
Harold A. Schlapia, Jr., 1258 N. Fuller Ave., West Hollywood, Calif.
Filed Apr. 21, 1969, Ser. No. 817,844
Int. Cl. F41d *1/08, 11/12*
U.S. Cl. 89—194 **4 Claims**



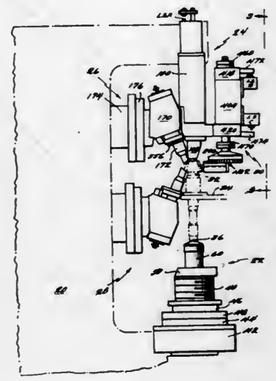
A gun breechblock of less weight than would be required for purely inertial delay of breech opening under blowback action, is subjected to additional delay action derived from compressive bowing of a backup leaf spring which provides an initially high and progressively decreasing resistance to the blowback.

3,554,078
SPHERICAL MISSILE AND LAUNCHING MEANS THEREFOR
Joseph S. Horvath, 2747 McAllister St., Riverside, Calif.
Continuation-in-part of application Ser. No. 671,284, Sept. 28, 1967, now abandoned. This application Feb. 10, 1969, Ser. No. 797,903
Int. Cl. F41f *3/04*
U.S. Cl. 89—1.808 **11 Claims**



A spherical jet-propelled missile and launching device adapted to securely retain and support the spherical missile oriented for stable rotation about a spin axis at a small angle of elevation relative to the straight-line path of flight of the missile for a short period of time following ignition and during which time the launching device utilizes means such as a motor or a turbine operated by the hot exhaust gases of the missile to spin the missile about the spin axis and preferably also utilizes the gases to cause release of the missile by thermal activation or melting of a thermally degradable bond by which the missile is initially retained to the launching device.

3,554,079
CHAMFERING MEANS
Ernst J. Hunkeler, Fairport, John L. Ash, Pittsford, and Myron F. DeWolf, Penfield, N.Y., assignor to the Gleason Works, Rochester, N.Y., a corporation of New York.
Filed Oct. 1, 1968, Ser. No. 764,216
Int. Cl. B23f *19/10*
U.S. Cl. 90—1.4 **36 Claims**

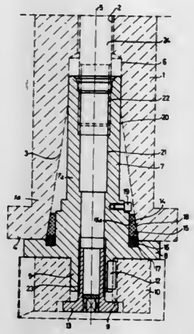


An automatic electrohydraulic chamfering unit, which can be operated with a conveyor means or incorporated into an automated gear-generating machine, comprises upper and lower centering and clamping assemblies for retaining a workpiece therebetween, upper and lower chamfering assemblies for chamfering the tooth edges at the toe and heel of each tooth, an indexing assembly for successively aligning each tooth of the workpiece with the chamfering tools and an automatic control system which governs the operating sequence of the above components during the chamfering cycle. The upper and lower centering and clamping assemblies are actuated by the control system to permit rotational movement of a workpiece during the indexing portion of the chamfering cycle and to firmly lock a workpiece in a fixed position during the chamfering portion of the cycle. The upper and lower chamfering assemblies are mounted on the chamfering unit so that the chamfering assemblies can be independently adjusted relative to the centering and clamping assemblies along the three major axes and about one of the axes for locating the chamfering assemblies relative to the workpiece. The indexing assembly through the reciprocating movement of a spring-biased finger which is received between the workpiece teeth indexes a workpiece by movement of the finger parallel to the axis of rotation of the workpiece. Scales are provided on the indexing assembly, the chamfering assemblies and mountings to facilitate initial and subsequent adjustments of the various components of the chamfering unit.

3,554,080
CUTTER MANDREL
Fritz Herrmann, Dietikon, Switzerland, assignor to Fritz Bachtold, Baltenswil, Switzerland
Filed Jan. 9, 1969, Ser. No. 790,079
Claims priority, application Switzerland, Jan. 12, 1968, 475/68
Int. Cl. B23c *9/00;* **B23b** *31/10*
U.S. Cl. 90—11 **4 Claims**

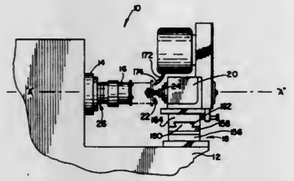
There is disclosed a cutter mandrel or arbor for centering and attaching cutting tools to the spindle of machine tools, especially milling machines. The mandrel of the invention comprises a central body member equipped with flange

means and a substantially cylindrical portion at the region of said flange means. A substantially conical sleeve member is



mounted for lengthwise movement upon the cylindrical portion.

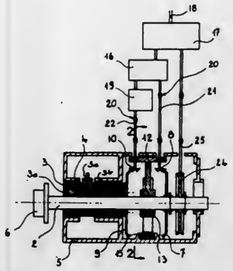
3,554,081
SEAL UNIT AND METHOD OF MANUFACTURING
William B. Haley, Davenport, Iowa, assignor to Chicago Rawhide Manufacturing Co., Chicago, Ill., a corporation of Illinois
Filed Apr. 17, 1969, Ser. No. 817,077
Int. Cl. B23b *3/34*
U.S. Cl. 90—11 **11 Claims**



An apparatus and method for cutting grooves from the body portion of a seal assembly which includes a casing element and a resilient seal body. The apparatus includes a combination rotatable spindle and fluid-operated clamping unit for holding the seal and supporting it along all the exterior surfaces thereof except the surface desired to be cut, and means for moving the spindle and holder into a position such that the portion thereof holding the seal surrounds a cutting tool. A rotary cutting tool which may be moved radially outwardly from its axis of rotation is provided to cut circumferentially extending grooves or slots defining plural sealing lips in the inwardly directed portions of the seal body. Preferably, the holder and the cutting tool are rotated in opposite directions, and means is provided to facilitate simple and rapid loading of the seals into the holder. The method of forming a seal by using the apparatus is also described.

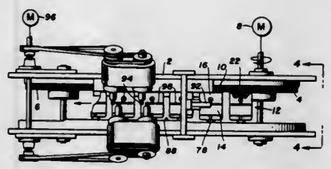
3,554,082
APPARATUS FOR TRACING CURVILINEAR PATHS ON WORKPIECES
Armand Faulcon, Lyon, France, assignor to Meyrat & Luisoni, Moudon, Switzerland, a firm of Switzerland
Filed May 17, 1968, Ser. No. 730,064
Claims priority, application France, May 18, 1967, 48662
Int. Cl. B23q *5/00*
U.S. Cl. 90—15 **5 Claims**

Apparatus for cutting out or inscribing workpieces of noncircular curvilinear form comprises a spindle that rotates in an eccentric that in turn rotates in a fixed bearing. The workpiece is fixed to the spindle and the tool is externally mounted, or vice versa. Separate gears are provided fixed to the spindle and to the eccentric for separately independently rotating the spindle and eccentric relative to each other. The direction of rotation of one relative to the other may be



reversed. Also, the spindle can be driven by a noncircular gear so as to have variable angular velocity if it is desired to inscribe the workpiece with divisions that lie on a noncircular path but which are spaced equal distances apart.

3,554,083
AUTOMATIC BLADE-EDGING MACHINE
William R. McKelvy, Jr., Douglas J. Lamb, and William T. Dowell, Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Nov. 18, 1968, Ser. No. 776,629
Int. Cl. B23c *9/00*; **B65g** *17/12*
U.S. Cl. 90—21 **10 Claims**



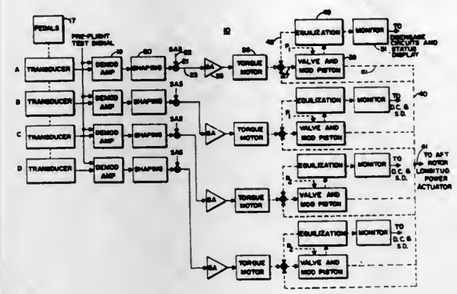
An automatic blade-edging machine having a driven, endless conveyor that circulates a train of spring-biased, modular blade carriers into and out of cammed and uncammed positions to effect blade aligning, clamping and unclamping functions, and into and out of the path of cutting tools to form edges on blades clamped within the carriers in continuous and repeating sequence.

3,554,084
REDUNDANT FORCE SUMMING SERVO UNIT
Robert F. Rasmussen, Brooklyn Center, and John C. Taylor, Golden Valley, Minn., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Nov. 17, 1967, Ser. No. 683,994
Int. Cl. F15b *13/02, 13/16*
U.S. Cl. 91—3 **11 Claims**

The servosystem which will tolerate failure in two of its four redundant channels and still be operational consists of four identical redundant units. The force outputs of the four redundant units are summed together, by means of a summing link or member, with the resultant force on the member being applied to a control valve of a fluid operated motor which is a low resistive load.

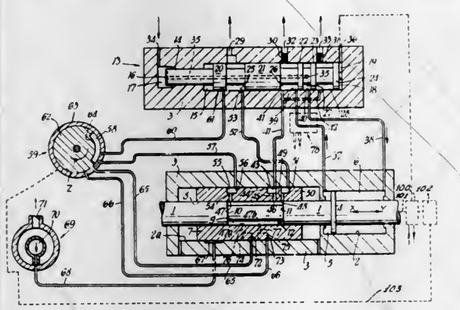
The input signal to each redundant unit is an electrical signal which energizes a torque motor. The torque motor responds by developing a force on its armature, which force is transmitted to a jet pipe valve. The jet pipe is deflected thereby causing a fluid pressure differential at the receiving holes coacting with the jet pipe nozzle. This pressure differential is transmitted to both a mod piston (which is the drive piston of the redundant unit) and the pressure sensor

piston in parallel with the mod piston. The motion of both pistons is force fed back to the jet pipe by means of yielda-



ble, impositive members as flat springs, thus closing two independent loops.

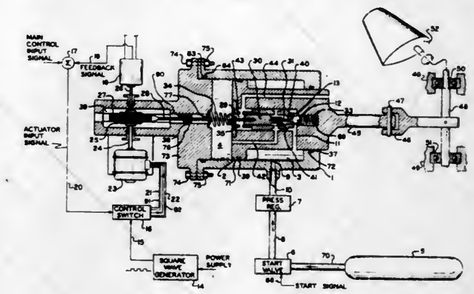
3,554,085
FLUID PRESSURE OPERATED MOTORS
Philip Butterworth, Bramhall, England, assignor to Butterworth Hydraulic Development Limited, a British company
Filed Jan. 29, 1969, Ser. No. 795,101
Claims priority, application Great Britain, Feb. 12, 1968, 6798/68
Int. Cl. F01l *15/04, 21/02, 25/06*
U.S. Cl. 91—239 **11 Claims**



A fluid pressure operated motor having a cylindrical sleeve slidably located in a piston housing and surrounding a piston; the piston being movable axially within the housing; and a fluid pressure pad for locking the sleeve in a given position; the sleeve having pegs located on the inner surface thereof to engage the piston to permit the center of oscillation of the piston to be axially adjusted within predetermined limits relative to the housing.

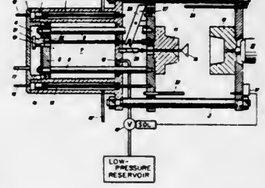
3,554,086
DIGITALLY POSITIONED ACTUATOR
Donald F. Wills, Suffield, Conn., assignor to Chandler Evans Inc., West Hartford, Conn., a corporation of Delaware
Continuation of application Ser. No. 500,915, Oct. 22, 1965, now abandoned. This application Nov. 2, 1967, Ser. No. 680,264
Int. Cl. F15b *9/10, 15/17*
U.S. Cl. 91—376 **13 Claims**

Incremental rotary movements of a stepping motor shaft are converted to corresponding linear movements of valve elements which seal against valve seats integral with corresponding power piston affixed to a linear output member. Pressurized fluid moves the piston until sealing engagement with the valve elements occurs; each equal stepping motor shaft movement producing like increments of output member



movement regardless of the action of variable external loads on the output member.

3,554,087
HYDRAULIC CLOSING DEVICE PARTICULARLY FOR INJECTION MOLDING MACHINES
Peter Florjancic, Sankt Martin-Str. 12, Garmisch-Partenkirchen, Germany
Filed Jan. 29, 1968, Ser. No. 701,168
Claims priority, application Austria, Feb. 13, 1967, A1341/67
Int. Cl. F15b *13/04, 15/17, 15/22*
U.S. Cl. 91—404 **6 Claims**

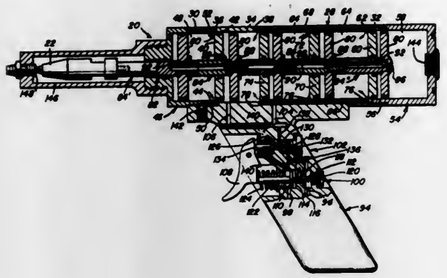


A hydraulic apparatus for sequentially moving a member by a small force and for forcing said member against a stop by a large force comprises pumps and hydraulic pistons which are mechanically connected to said member. A working piston and a compensating piston which is smaller in cross section than the working piston are mechanically connected to one another and to the member which is to be moved. The associated cylinder chambers are hydraulically connected by an opening, which is adapted to be closed. The cylinder chamber containing the compensating piston communicates through an outlet, which is preferably adapted to be closed, with a chamber in which a pressure exists which is lower than the working pressure.

3,554,088
AIR TOOL
Charles D. Bruyn, Vails Gate, N.Y., assignor to James Henry Bruyn, Newburgh, N.Y., a part interest
Filed Nov. 6, 1968, Ser. No. 773,886
Int. Cl. F15b *11/06*; **F01b** *7/00*
U.S. Cl. 91—411 **21 Claims**

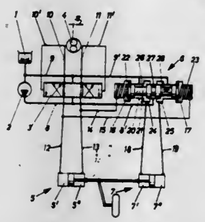
An air tool which incorporates a plurality of pistons connected to a common elongated rod, each piston being received within one of a series of aligned cylinders and communicated with a source of pressurized air whereby the pressurized air will act equally upon the multiple pistons and provide for a substantial amplification of the operating force derived from the pressurized air. The two flow paths provided comprise one extending longitudinally through the

piston rod itself and the other surrounding the cylinders within a cylinder enclosing housing. Also, with selected ones of the piston receiving cylinders, one way check valves can



be provided for enabling the creation of a vacuum upon a forward stroke so as to assist in amplifying the force of the return stroke.

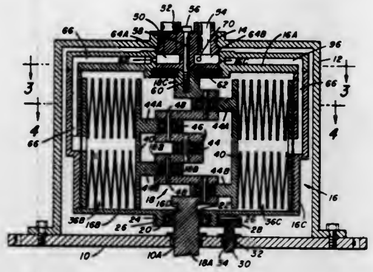
3,554,089
SERVOSTEERING SYSTEM
Armin Lang, Gmuund, Germany, assignor to Zahnradfabrik Friedrichshafen Aktiengesellschaft, Friedrichshafen, Germany, a corporation of Germany
Filed Apr. 7, 1969, Ser. No. 813,932
Claims priority, application Germany, Apr. 13, 1968, 1,755,225
Int. Cl. F15b *15/18*; B62d *5/06*
U.S. Cl. 91—412 **8 Claims**



A dual cylinder hydraulic steering booster system is disclosed which has one primary servomotor normally operable, but which system also has a secondary servomotor automatically pressurized to supplement the power of the primary servomotor in response to an increase in steering required effort. A single servopump output feeds both servomotors; thus if only the primary servomotor is operating, the steering rate is rapid, but the rate is decreased when the secondary servomotor is pressurized should increased steering resistance be met; the booster force of both servomotors then being utilized.

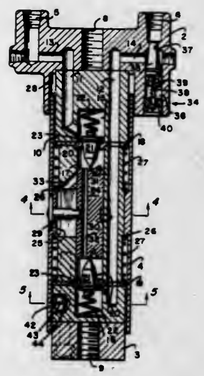
3,554,090
FLUID PRESSURE ACTUATED MOTOR
Arthur G. Wallace, 3011 W. 53rd St., Tulsa, Okla. 74107
Filed Apr. 4, 1969, Ser. No. 813,587
Int. Cl. F01l *33/02*; F01b *13/06*; F10J *3/00*
U.S. Cl. 91—496 **3 Claims**

This invention relates to a fluid pressure actuated motor. More particularly, the invention relates to a fluid pressure actuated motor having a crankshaft within a closed housing and a plurality of bellows, each of the bellows having a connecting rod extending therefrom and connected to the crankshaft, including valve means communicating fluid pressure to the interior of the bellows and exhausting fluid pressure from the exterior of the bellows during one-half of a cycle and communicating fluid pressure to the exterior of the



bellows and exhausting the bellows, during the other half of the cycle.

3,554,091
COUPLING AND POWER CONTROL DEVICE
Emanuel G. Spyridakis, Belle Mead, N.J., and Otmar M. Ulbing, Berkshire, N.Y., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Aug. 26, 1968, Ser. No. 755,338
Int. Cl. F15b *13/04*
U.S. Cl. 91—428 **16 Claims**

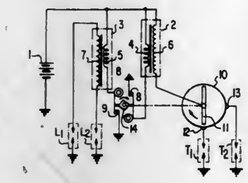


An elongate coupling member having means for attaching at either ends thereof a hook block and a hoist cable adapter. Within the coupling member are fluid passageways and valves, the valves being operated by means coupled to a slidable sleeve which envelopes the coupling member. The valves and passageways communicate pressured fluid with the hoist, or prohibit the communication, in response to sleeve movement, to power the hoist to raise or lower an attached hook block.

3,554,092
IGNITION SYSTEM FOR MULTICYLINDER ROTARY PISTON ENGINE
Masao Shibagaki, Hiroshima, and Masayoshi Onishi, Himejishi, Japan, assignors to Toyo Kogyo Co., Ltd., Hiroshima-ken and Mitsubishi Denki Kabushiki Kaisha, Tokyo-to, Japan
Filed Nov. 22, 1968, Ser. No. 778,131
Claims priority, application Japan, Nov. 22, 1967, 42/75,037; Nov. 6, 1968, 43/81,157
Int. Cl. F02b *53/12*
U.S. Cl. 92—8.07 **5 Claims**

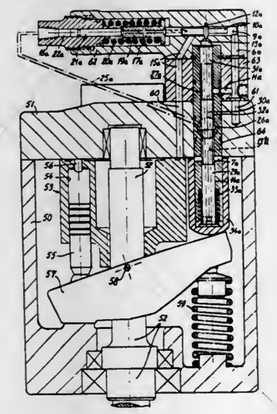
An ignition system for a multicylinder engine has two ignition coils energized by an electrical source to generate two

igniting voltages substantially at the same time. A plurality of trailing ignition plugs, one for each cylinder, are connected to one of the two ignition coils through a synchronously



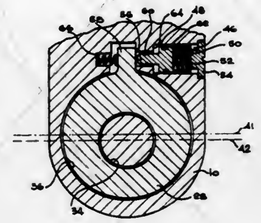
operable distributor for timed sequential energization, and a plurality of leading ignition plugs are connected in series to the other of the two ignition coils for simultaneous ignition.

3,554,093
CONSTANT POWER REGULATOR FOR HYDRAULIC PUMPS
Kurt R. Lonnemo, Troy, Mich., assignor to Sperry Rand Corporation, Troy, Mich., a corporation of Delaware
Filed Nov. 29, 1968, Ser. No. 779,881
Claims priority, application Sweden, Dec. 4, 1967, 16593/67
Int. Cl. F04b *49/00*
U.S. Cl. 92—13.1 **24 Claims**



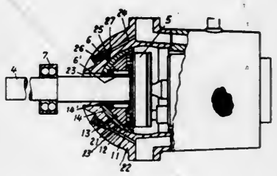
A variable displacement pump including pressure-compensated means for operating a pump-adjusting mechanism to vary the displacement of the pump and spring means yieldingly opposing the pressure-responsive means. A pressure is provided which is responsive to the effective position of the pump-adjusting mechanism and works in unison with the spring means.

3,554,094
PISTON ROD LOCKING MECHANISM
George Groos, Burbank, Calif., assignor to Bell Aerospace Corporation, a corporation of Delaware
Filed Feb. 20, 1969, Ser. No. 801,110
Int. Cl. F15b *15/26*
U.S. Cl. 92—28 **6 Claims**



A piston rod locking mechanism in which a locking ring is formed with an eccentric bore for the rod. Means are provided for rotating the locking ring eccentrically with respect to the bore to thereby bind the rod against axial movement.

3,554,095
AXIAL PISTON UNIT
Gerhard Bobst, Oensingen, Switzerland, assignor to Von Roll A.G., Gerlafingen, Switzerland, a corporation of Switzerland
Filed July 3, 1968, Ser. No. 742,396
Claims priority, application Switzerland, July 7, 1967, 9806/67
Int. Cl. F04b *1/26*; F01b *13/04, 31/10*
U.S. Cl. 92—57 **9 Claims**

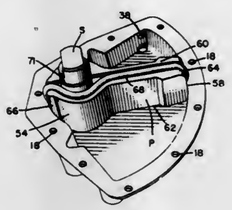


An axial piston unit of the type comprising a drive shaft and a cylinder having an inclined cylinder axis. Support means serve to support the drive shaft, such support means incorporating a substantially ring-shaped hydrostatic axial sliding bearing means acted upon by the pressure of the fluid medium, typically oil for instance. The hydrostatic axial sliding bearing means comprise rotor means and stator means. At least one throttle means is provided for transmitting the pressure of the fluid medium to the hydrostatic sliding bearing means, the throttling action of said throttling means being at least partially suppressed during low pressure of the fluid medium and becoming more pronounced during increasing pressure of the fluid medium.

3,554,096
VANE-TYPE ACTUATOR
Everett J. DeJager, Cincinnati, Ohio, assignor to Xomox Corporation, Cincinnati, Ohio, a corporation of Ohio
Filed Dec. 9, 1968, Ser. No. 782,224
Int. Cl. F01c *9/00*
U.S. Cl. 92—125 **5 Claims**

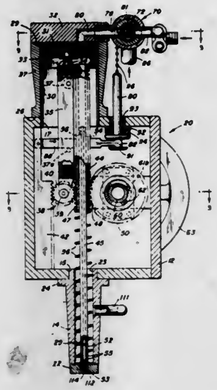
The performance of a vane-type actuator or fluid motor is greatly enhanced by coating the inner surfaces of the piston chamber with Teflon-S, a material which endows the

chamber surfaces with a fluorocarbon-rich surface stratum which is highly wear-resistant, nearly frictionless of nature,



and self-renewing in the presence of wear, scoring or scuffing.

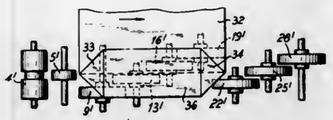
3,554,097
PRESSURE ENGINE
William Karpowicz, 230 W. 10th St., New York, N.Y. 10025
Filed Feb. 24, 1969, Ser. No. 801,558
Int. Cl. F01b *9/00*
U.S. Cl. 92—136 **10 Claims**



This disclosure is directed to a pressure engine in which pressure developed in a cylinder and acting against a piston generates a unidirectional force component which is transmitted to an output shaft through a rack and pinion type gearing arrangement. A unidirectional clutch assembly translates alternating rotative motion from the rack and pinion gear arrangement into a unidirectional rotative motion of the output shaft. Rotary valving provides positive intake and exhaust functions, and the engine is self-lubricating.

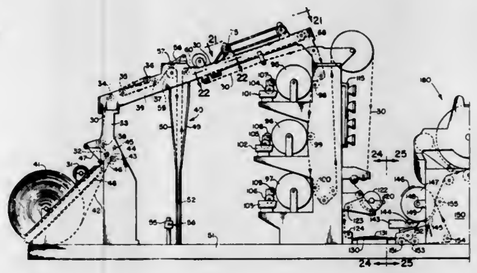
3,554,098
BAGMAKING MACHINE
Fritz Achelpohl, and Herbert Schmedding, Lengerich of Westphalia, Germany, assignors to Windmoller & Holscher, Westphalia, Germany
Filed Feb. 5, 1968, Ser. No. 703,134
Claims priority, application Germany, Feb. 21, 1967, W43408
Int. Cl. B31b *1/00*
U.S. Cl. 93—8 **11 Claims**

A bag-making machine comprises pairs of pressure rollers for applying contact pressure to the end portions of continuously conveyed bag workpieces, which end portions are to be adhered. At least on one side of the plane in which the workpieces are conveyed the pressure rolls consist of a plurality of disc-shaped rolls, the axes of which are offset in the direction of travel and which have an axial length each amounting only to a fraction of the width of the bag end portion. The disc-shaped rolls are offset transversely to the direction of travel



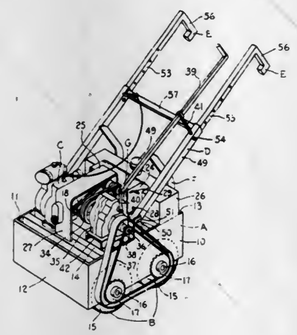
in such a manner that the ranges of action of the discs taken together cover the entire area of the workpiece end portion.

3,554,099
PROCESS AND APPARATUS FOR MAKING SHOPPING BAG
Frederick T. Rodley, 139 W. Main St., Walden, N.Y. 12586
Filed Oct. 10, 1968, Ser. No. 766,554
Int. Cl. B31b *1/86*
U.S. Cl. 93—8 **20 Claims**



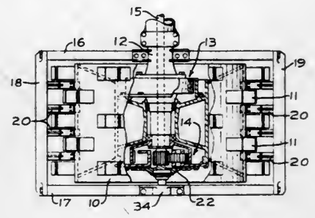
A handled shopping bag having a full turned top edge and reinforcing patches for each of the handles. A continuous process for its manufacture comprises providing a continuous supply of shopping bag material to a constant tensioning means, folding and unfolding a portion of one side of the constant tension shopping bag material to prepare a continuous fold line along one side of the material, applying adhesive to the unfolded material adjacent to the continuous fold line, refolding and sealing the material along the prepared fold line to make a sealed continuous folded edge, applying adhesive at uniform spaced locations along the sealed continuous folded edge, attaching alternately a prepared short and a prepared long shopping bag handle to each uniformly spaced adhesive location, notching and slitting alternately the unfolded edge of the shopping bag material opposite each handle, separating a desired length having two attached handles from the continuous shopping bag material, preparing three fold lines substantially perpendicular to the sealed folded edge across the separated length at two locations, one of the locations being between the two attached handles and the other location being between the handle adjacent to the trailing end and the trailing end of the separated length, applying adhesive across the width of the separated length on the surface adjacent to the leading end of the separated length, holding the separated length by the sixth fold from the leading end and folding the trailing end at the sixth fold on top of the separated length, holding the separated length by the third fold from the leading end and folding the leading end at the third fold on top of the separated length to form a flattened shopping bag tube, rotating the unbottomed shopping bag tube approximately 90° to have the open bottom leading and the handles trailing, forming a gusset in each side of the unbottomed tube by infolding the sides of the tube at the first and second fold lines from the leading edge on one side and at the third and fourth fold lines from the leading edge on the other side, and folding and sealing the bottom of the gusseted shopping bag tube. The apparatus comprises a series of inline machine stations comprising a first station for mounting at least two rolls of shopping bag material to provide a continuous web of shopping bag material to subsequent inline machine stations, a second machine station having a constant tensioning means for the continuous web, a third machine station having means for continuously folding and unfolding the advancing web along the edge, a fourth machine station having means to print at least one color on the surface of the advancing web, a fifth machine station having means to fold and seal the edge of the continuous web at the prepared fold line to prepare a continuous folded sealed edge along one side of the continuous web, a sixth machine station comprising means for attaching shaped handles with reinforcing patch to the advancing web, a seventh machine station having means for notching the edge of the advancing web opposite one handle and means for slitting the edge of the advancing web opposite the next handle, an eighth machine station having means for forming an unbottomed shopping bag tube, a ninth machine station having means for rotating the handled shopping bag tube substantially 90° to cause the notched and slit end of the unbottomed shopping bag tube to lead in the inline direction of the machine, and a tenth machine station for folding and sealing the leading notched and slit end of the handled shopping bag tube to form a sealed bottom in the tube to provide a handled shopping bag having a full turned top edge.

3,554,100
ASPHALT ROLLING AND PACKING MACHINE
Bennett E. Mauldin, Rte. 4 Alta Vista Circle, Travelers Rest, S.C., and John H. Mauldin, 1606 N. Main St., Greenville, S.C.
Filed May 29, 1968, Ser. No. 733,195
Int. Cl. E01c *19/28*
U.S. Cl. 94—50 **2 Claims**



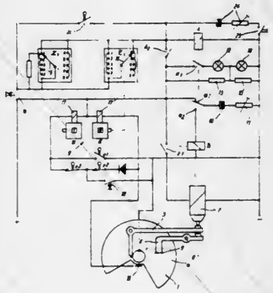
An asphalt-rolling and packing machine having a frame upon which a gasoline motor is mounted for propelling a plurality of transverse elongated longitudinally spaced rollers for packing asphalt and the like. A handle is pivotally connected to the frame of the machine intermediate the front and rear portions thereof, for presenting a more nearly balanced load when lifting the machine thereby. An attachment means is carried on the other end of the handle and is adapted to be connected to the tailgate of the body of the dump truck when such is in an unloading or tilted position so that when the body is lowered to the horizontal position the machine is lifted off the ground for transporting such. An upwardly extending cam is carried on the rear portion of the frame for positioning the machine in spaced relation from the truck. A vibrating member is carried by the frame for vibrating the entire frame of the machine during the rolling and packing operation for minimizing the possibility of disengagement of the drive chain.

3,554,101
SUPPORT BEARING FOR COMPACTOR CLEANER BAR FRAME
Gerald E. Grant, Oswego, and Victor Randour, Aurora, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Sept. 19, 1968, Ser. No. 760,798
Int. Cl. E01c *19/24*
U.S. Cl. 94—50 **2 Claims**



A bearing and seal arrangement for supporting the framework which surrounds a compactor wheel and supports cleaner bars which project into the spaces between rows of compactor tamping pads. The seal is supported in radial alignment with the bearing and the bearing is of generally spherical construction to permit flexing of the framework without breaking the seal.

3,554,102
PHOTOGRAPHIC MONITORING DEVICE
Herbert Maronde, Dusseldorf, Germany, assignor to Robot Foto und Electronic G.m.b.H. & Co., KG., Dusseldorf, Germany
Filed July 10, 1968, Ser. No. 743,819
Claims priority, application Germany, July 18, 1967, 1,597,380
Int. Cl. G03b *9/62, 17/24, 17/36*
U.S. Cl. 95—1.1 **12 Claims**

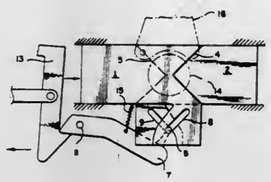


A camera has an instantaneously operating main shutter operated by the actuation of an electromagnetic tripping device and an auxiliary shutter held open so long as the device is actuated. An exposure relay operates the device and a release relay operates the exposure relay for a period of time determined by an adjustable resistance-capacitor means. The release relay also increases the illumination provided by an auxiliary light source. A counter is controlled by a switch on the main shutter and disables the release relay after a given number of actuations of the main shutter except when a magazine is inserted in the camera.

3,554,103
AUTOMATIC EXPOSURE CONTROL SYSTEM

Donald M. Harvey, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Apr. 1, 1968, Ser. No. 717,759
Int. Cl. G03b 7/08, 9/06
U.S. Cl. 95—10 4 Claims

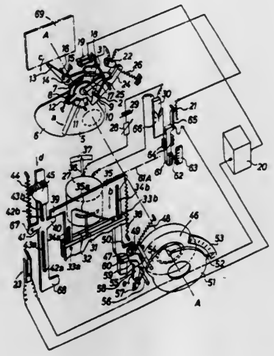


A photographic camera having a diaphragm and a shutter wherein the diaphragm is opened to initiate the exposure and may be stopped at an aperture opening determined by a photoresponsive control device. The exposure is terminated by the movement of the shutter from an aperture uncovering position to an aperture covering position a predetermined time after the diaphragm has been actuated to initiate the exposure.

3,554,104
EXPOSURE CONTROL FOR PHOTOGRAPHIC CAMERAS

Alfred Winkler, Munich, Karl Wagner, Ottobrunn, and Dieter Engelsmann, Unterhaching, near Munich, and Rolf Schroeder, Munich, Germany, assignors to Afga-Gevaert Aktiengesellschaft, Leverkusen, Germany

Filed Apr. 18, 1968, Ser. No. 722,466
Claims priority, application Germany, May 5, 1967, A55,629; Dec. 22, 1967, A57,780
Int. Cl. G03b 7/08, 7/12
U.S. Cl. 95—10 25 Claims

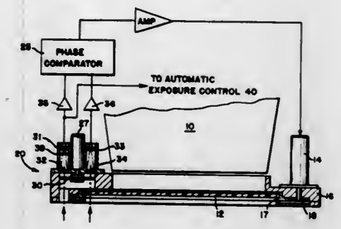


An exposure control for photographic cameras wherein the electrical delay circuit for the shutter is adjustable by way of a manually operated first selector which simultaneously adjusts a regulating device serving to adjust the sensitivity of an exposure meter for the diaphragm. A second manually operated selector can be used to adjust the diaphragm independently of or by way of the exposure meter. Alternatively, the first selector can also serve to adjust the diaphragm at the will of the user.

3,554,105
METHOD AND APPARATUS FOR ORIENTING A POLARIZING FILTER

Neal R. Dougherty, Bellbrook, Ohio, assignor to The Mead Corporation, Dayton, Ohio, a corporation of Ohio. by mesne assignments

Filed Jan. 8, 1968, Ser. No. 696,398
Int. Cl. G03b 11/00
U.S. Cl. 95—12.5 9 Claims

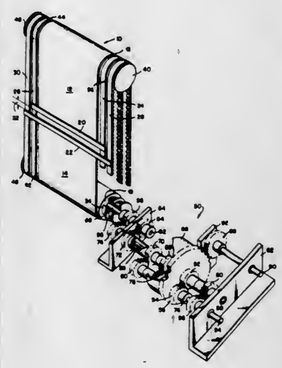


A system for use with a camera or other optical device, to obtain optimum filtering of light polarized by atmospheric scattering or by specular reflections, includes a polarimeter which supplies an electrical signal representing the polarization plane angle of the light scattered by the atmosphere to control the orientation of a polarizing filter positioned before the optical device. Both the method of orienting the polarizing filter and an apparatus to perform this method include the use of photoelectric transducers to produce electrical signals representing both the actual polarization plane angle of the scattered light and the phase relationship of the polarization axis of the polarizing filter with respect to the polarization plane angle. The output of the polarimeter is also used to control the exposure of the film in a camera.

3,554,106
SHUTTER DEVICE

Aaron Baumgarten, San Mateo County, Calif., assignor to Hycon Mfg. Company, Monrovia, Calif.

Filed Aug. 28, 1967, Ser. No. 663,586
Int. Cl. G03b 9/28
U.S. Cl. 95—57 1 Claim

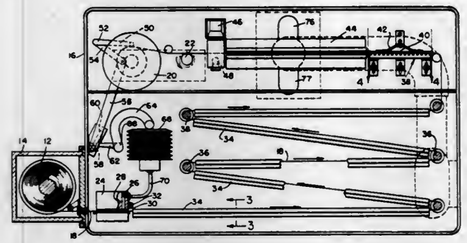


Focal plane shutter apparatus having a shutter slit which is adjustable from a remote location. A pair of shutter curtains is utilized to form the shutter slit, and a transmission mechanism is controlled to drive the curtains simultaneously at the same speed and alternatively at different relative speeds.

3,554,107
PHOTOGRAPHIC FILM PROCESSOR

Joseph V. McCarthy, Needham, and Francois R. Gruber, Wilmington, Mass., assignors to Itek Corporation, Lexington, Mass., a corporation of Delaware

Filed Apr. 24, 1967, Ser. No. 633,151
Int. Cl. G03d 3/06
U.S. Cl. 95—89 20 Claims

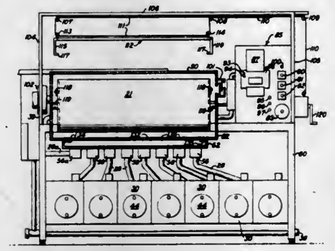


A photographic film processor utilizing viscous monobath techniques. The film is fed into the processor and a controlled layer of viscous processing agent is deposited on the film by an applicator. Both the thickness and temperature of the viscous layer applied to the film are controlled. The film is then routed through a torturous path in the processor for a sufficient amount of time to enable processing to occur. The viscous processing agent is then wiped off the film by a plurality of obliquely positioned blades adjacent to the film path. The film then runs through a dryer into a viewing station and then onto a takeup reel. The diameter of the film on the takeup reel is monitored and controls the flow of the viscous processing agent from its storage reservoir to the applicator.

3,554,108
APPARATUS AND METHOD FOR PROCESSING PHOTOGRAPHIC MATERIALS

Kurt Gall, 22 Welfenstrasse, 7 Stuttgart-Birkach, Germany

Filed May 16, 1968, Ser. No. 729,792
Int. Cl. G03d 3/06, 3/02
U.S. Cl. 95—93 8 Claims

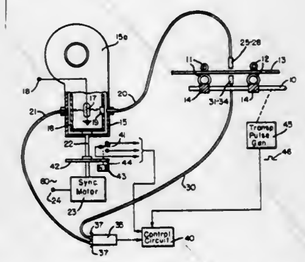


A drum-carrying photographic film is rotated in a housing in which developing solutions and wash water are introduced and withdrawn in a predetermined sequence with high rapidity through the same conduit. A baffle is provided in the housing to prevent splattering. Wash and rinse water is introduced at a rate exceeding that which is otherwise practicable by accumulating a reserve of water as the process continues and simultaneously discharging the accumulated wash water together with rinse water from normal outlets into the drum housing during the wash and rinse cycle. Color film rotated on the drum is subjected to reexposure lights disposed at the top of the drum. Polygonal drums are provided for photogrammetric plates. Expandible holding rods with spaced intermediate resilient means automatically adjust for expansion of the film which takes place during the processing. Exceedingly large paper prints are wound loosely about the drum and developed in such position while the drum rotates. A modified drum with a helical path provided about its periphery receives long strips of film such as movie film. The drum housing is selectively ventilated by means of a programmed exhaust fan, air being drawn into the housing through a light trap affixed adjacent the periphery of the drum.

3,554,109
IMAGE MONITORING AND CONTROL SYSTEM

John N. Street, Alexandria, William L. Brady, and Walter L. McIntosh, Woodbridge, Va., assignors to Logetronics Inc., Springfield, Va., a corporation of Delaware

Continuation-in-part of application Ser. No. 734,297, June 4, 1968. This application Sept. 17, 1969, Ser. No. 858,719
Int. Cl. G03d 3/06
U.S. Cl. 95—89 7 Claims

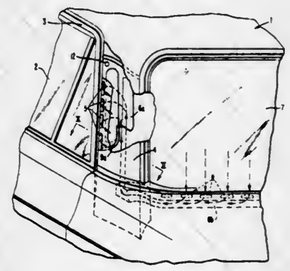


An automatic replenishment system for a film processor comprises an optical sensor and associated circuit for monitoring and integrating the optical densities developed in sheets of image bearing photosensitive material, to control the feeding of replenishment chemicals to the film processor. An improved sensor is employed wherein scanning occurs at constant speed to permit use of an integrator having a fixed integration time; and the integrator is activated as a function of the distance that an image-bearing photosensitive sheet has been transported past the sensor. A rebalancing zeroing circuit automatically adjusting the monitoring system for each scan is added to improve overall accuracy without requiring regulated power supplies.

3,554,110
VENTILATION SYSTEM FOR PASSENGER MOTOR VEHICLE

Hans Goetz, Sindelfingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

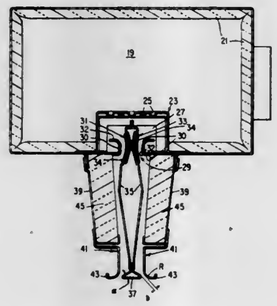
Filed Feb. 14, 1969, Ser. No. 799,230
Claims priority, application Germany, Feb. 16, 1968, 1,680,018
Int. Cl. B60h 1/00
U.S. Cl. 98—2 8 Claims



A motor vehicle, especially a passenger motor vehicle, in which a rainwater deflector or the like is arranged along the

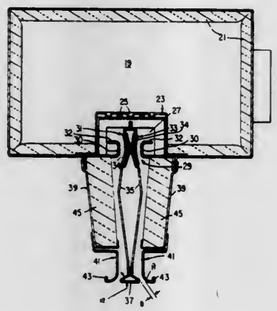
edge of the roof to prevent rainwater from flowing off over the side windows, and which is equipped with a ventilation system for the passenger space that includes apertures provided in the outer body surface of the rear column directly to the rear of the rainwater deflector; the space within each rear column which forms a part of the air guidance channel for the ventilation system is thereby subdivided by a partition wall extending over a part of its height.

3,554,111
AIR CONDITIONING TERMINAL
Darwin G. Traver, Dewitt, and Fred V. Honnold, Jr., North Syracuse, N.Y., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Nov. 29, 1968, Ser. No. 779,832
Int. Cl. F24f *13/06*
U.S. Cl. 98—40 **4 Claims**



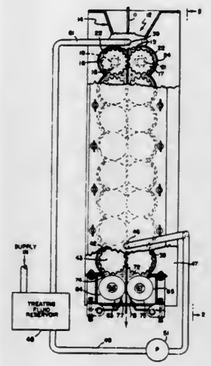
A variable volume ceiling air-conditioning terminal having a diffuser construction to discharge air along the surface of the ceiling for attachment of the air stream thereon to evenly distribute the air within the area being conditioned.

3,554,112
CEILING AIR TERMINAL
Carl C. Herb, Syracuse, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Nov. 29, 1968, Ser. No. 779,833
Int. Cl. F24f *13/06, 13/10*; F16r *7/17*
U.S. Cl. 98—40 **4 Claims**



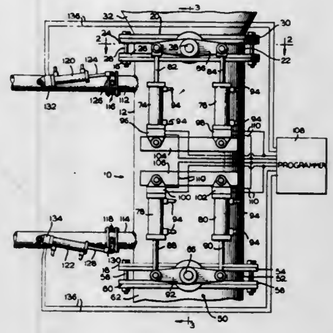
A ceiling terminal to distribute conditioned air into an area to be conditioned employing a damper comprised of inflatable bladders to regulate the quantity of air discharged into the area served thereby.

3,554,113
APPARATUS FOR PROCESSING PROTEIN FIBER
John A. Page, Minneapolis, Minn., and Walter G. Bauer, Dickinson, Tex., assignors to General Mills, Inc., a corporation of Delaware
Original application May 6, 1965, Ser. No. 453,695, now Patent No. 3,403,027. Divided and this application Apr. 25, 1968, Ser. No. 724,208
Int. Cl. A47j *44/00*
U.S. Cl. 99—234 **11 Claims**



This apparatus is used in the food field to impregnate fibrous food product with flavoring, coloring, and fat ingredients by subjecting the food product to mechanical manipulation between stacked pairs of cooperating gear like members.

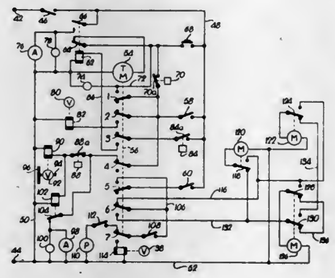
3,554,114
APPARATUS FOR INTRODUCING MATERIALS INTO OR REMOVING MATERIALS FROM A HERMETICALLY SEALED VESSEL
Joe L. McPhail, Houston, Tex., assignor to P & S Rice Mills, Inc., Houston, Tex., a corporation of Texas
Filed Mar. 7, 1968, Ser. No. 711,425
Int. Cl. B65g *3/08*; A23b *9/00*
U.S. Cl. 99—237 **16 Claims**



An apparatus for introducing materials into and removing materials from a hermetically sealed vessel without destroying the hermetic integrity of the vessel comprising; a container defining a chamber therein which chamber communicates between the vessel and an environment having a dissimilar pressure, four valve means each operatively connected to the container and communicating between the interior and exterior thereof, and means for cyclically actuating said valve means so that the pressure within the chamber is

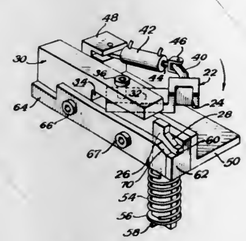
equalized to the pressure within the vessel before the materials are transferred between the container and the vessel, and the pressure within the chamber is equalized to said dissimilar pressure before the materials are transferred between the container and said dissimilar pressure environment.

3,554,115
TEMPERATURE-RESPONSIVE PROTECTIVE SYSTEM FOR AUTOMATIC POPCORN POPPERS
Charles G. Manley, Mission Hills, Kans., and Francis Leo Lomaglio, Kansas City, Mo., assignors to Manley, Inc., Kansas City, Mo., a corporation of Missouri
Filed Jan. 23, 1969, Ser. No. 793,245
Int. Cl. A23l *1/18*
U.S. Cl. 99—238.3 **10 Claims**



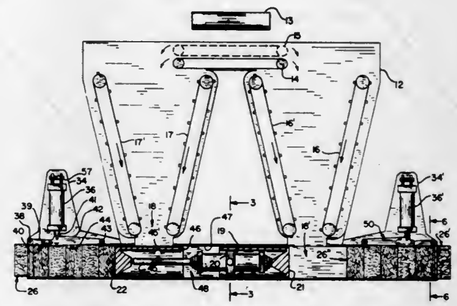
In an automatic popcorn popper, a thermostat senses the temperature drop of the cooking kettle at the time that the kettle is supplied with corn and seasoning. The temperature will decrease to a predetermined level or below if the proper quantities of corn and seasoning are supplied. Depletion of either ingredient will be sensed since the temperature will fail to decrease to such level, whereupon automatic shutoff of the popper is effected and an alarm signal is produced. A high temperature thermostat also effects shutoff if, during cooking, the kettle reaches a temperature indicative of overheating of the product.

3,554,116
PIVOTING GRIPPER
Robert W. Smith, Darlington, Ind., assignor to Midstates Steel and Wire Company, Crawfordsville, Ind., a corporation of Indiana
Filed Oct. 18, 1968, Ser. No. 768,808
Int. Cl. B65b *13/28*
U.S. Cl. 100—31 **3 Claims**



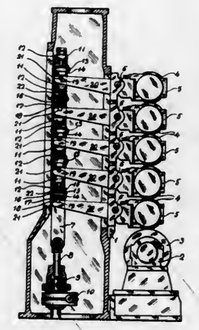
A pivoting gripper for a wire typing machine of the type which wraps wire from a coil around a package, twists the wire firmly to bind the package, and cuts the twisted wire from the coil. The pivoting gripper holds the free end of the wire from the coil during the twisting operation and includes a first and a second gripper jaw, each jaw having a face adapted to grip the free end of the wire. The first jaw is mounted in a gripper housing and moves alternately into and out of a gripper position with the second jaw intermediate the free end of the wire and the package. A pneumatic cylinder drives the first jaw into and out of the gripping position.

3,554,117
APPARATUS FOR BALING LOOSE MATERIAL
Werner P. Goldkuhle, Dallas, Tex., assignor to Concentric Engineering Company, Dallas, Tex., a corporation of Texas
Continuation-in-part of application Ser. No. 747,900, July 26, 1968. This application Apr. 3, 1969, Ser. No. 813,177
Int. Cl. B30b *15/26, 7/04, 15/30*
U.S. Cl. 100—43 **9 Claims**



A refuse baler having a conveyor system, a supercharger, an elongated bale forming tunnel, and two spaced apart bale forming pistons reciprocatingly received therein; with each piston being actuated by a common power means. The bale forming tunnel has a movable wall portion at each extremity thereof which cooperates with the piston and power means to extrude a continuous length of refuse which is of consistent density. A bale breaker separates the extruded refuse into individual bales of uniform length.

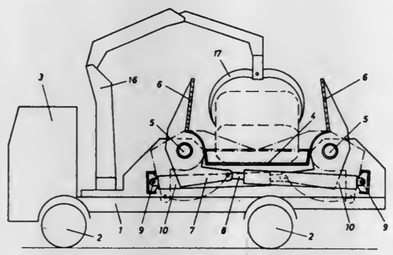
3,554,118
RELIEF AND RAISING DEVICE ARRANGEMENT IN MULTINIP CALENDER
Paavo J. Laine, Tampere, Finland, assignor to Oy Tampella Ab, Tampere, Finland, a corporation of Finland
Filed Feb. 12, 1968, Ser. No. 704,909
Int. Cl. B30b *3/04*
U.S. Cl. 100—163 **4 Claims**



A relief and raising device arrangement in a multinip calender or calender stack, in which upon a stationarily rotatable lower roll are mounted two or more superimposed rolls which are pivotably attached by arms to the calender body and in which each roll has its individual relief device at-

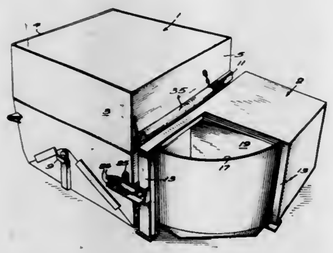
tached to a common raising device. The relief devices are so attached to the raising device that the raising device will through the pneumatically regulated relief device constantly be in connection with the roll and that an adjustable free spacing for movement of the relief devices increases in the downward direction. The raising device is preferably a rod movable in vertical direction and attached to the lower or upper part of the calender body.

3,554,119
SCRAP BALING PRESS TRUCK
Martin Schoelthorn, Kissing, near Augsburg, and Georg Schaffler, Augsburg, Germany, assignors to Keller & Knappich GmbH, Germany
Filed Oct. 31, 1969, Ser. No. 872,959
Claims priority, application Germany, Nov. 2, 1968, 1,806,596
Int. Cl. B30b *15/30*
U.S. Cl. 100—215 **2 Claims**



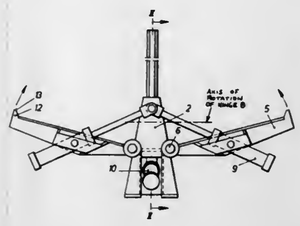
This provides a scrap-baling press truck having two press plates which are mounted on shafts arranged in parallel to the axles of the truck. The press plates fold over a pressing trough in which the scrap material is placed. A further feature of the invention provides an extension platform adjacent the base of the pressing trough. The extension platform can be hydraulically operated by a lever arm system on the lower portion of the truck platform. The scrap-baling press truck is especially adapted for baling scrap automobiles.

3,554,120
STATIONARY PACKER ASSEMBLIES
Harvey W. Liberman, Charles R. Toppins, and Paul D. Alford, Knoxville, Tenn., assignors to Dempster Brothers, Inc., Knoxville, Tenn., a corporation of Tennessee
Filed July 23, 1968, Ser. No. 746,906
Int. Cl. B30b *7/00, 15/06*
U.S. Cl. 100—229 **23 Claims**



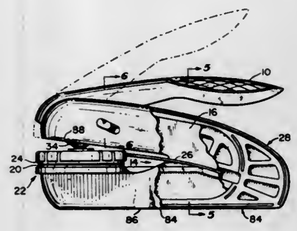
A stationary packer for compacting refuse into a transport container wherein the charging box has a swinging head capable of moving the refuse from the charging box through an opening in a wall of the container and compacting the refuse into the container. The container is locked to the charging box during filling. Baffling is provided in the container to facilitate distribution of the refuse therein under force of the packer head.

3,554,121
APPARATUS FOR COMPRESSING AUTOMOBILE BODIES
Hellmut Galter and Volker Stille, Kassel, Germany, assignors to Rheinstahl Henschel Aktiengesellschaft, Kassel, Germany
Filed Jan. 27, 1969, Ser. No. 794,278
Claims priority, application Germany, Jan. 27, 1968, 1,627,960
Int. Cl. B30b *7/04*
U.S. Cl. 100—232 **3 Claims**



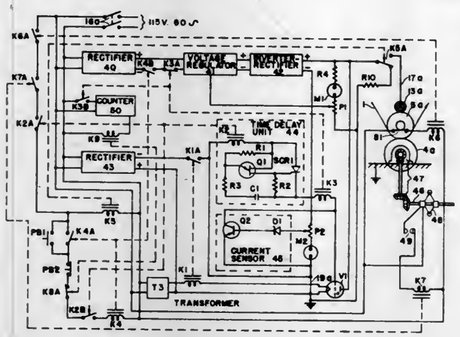
Apparatus for compressing automobile bodies comprising a preferably U-shaped support and sheet metal plates welded to the end faces of the machine frame while being provided with lateral flaps hinged to opposite sides of said machine frame, a wedge member being pivotally connected to one end face of the machine frame, and said lateral flaps and wedge member being adapted to be tilted toward the automobile body inserted perpendicularly with regard to the longitudinal axis of the machine frame.

3,554,122
PLASTIC COVERED SEAL PRESS
Charles Priesmeyer, Park Ridge, and John W. Meyer, Glenview, Ill., assignors to Meyer & Wenthe, Inc., Chicago, Ill., a corporation of Illinois
Continuation of application Ser. No. 642,834, June 1, 1967, now abandoned. This application Dec. 15, 1969, Ser. No. 882,364
Int. Cl. B44b *5/00*
U.S. Cl. 101—3 **13 Claims**



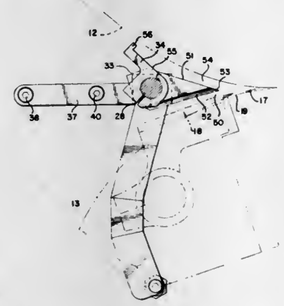
A seal press having a single U-shaped stamping of heavy steel plate with a handle removably assembled in pivotal relation astraddle the upper arm. A spring opened die unit is received in the throat of the stamping to rest on the lower arm to support the lower die in place with the handle and upper die urged to open position. A slidable catch locks the handle in closed position and two plastic side members fastened to the stamping, protect and hold in operative relationship the working parts.

3,554,123
CONTROL OF COLOR DENSITIES AND TONES IN MULTICOLOR PRINTING
Bernard E. Lewallen, Danville, Ill., assignor to Hurletron Incorporated, Danville, Ill., a corporation of Delaware
Filed Dec. 15, 1967, Ser. No. 691,039
Int. Cl. B41m *1/10*
U.S. Cl. 101—170 **1 Claim**



In web-fed, multicolor printing operations wherein individual colors which make up the final composite copy are separately applied to the web, each at a separate printing unit or station, the invention provides a new and advantageous method of controlling the color densities and tones obtained in said composite copy, so that they closely correspond to those of the original art work or composition to be reproduced. The method provided employs electrical energy of controlled relatively high voltage and low amperage which is applied in the area of each printing unit or station wherein said individual colors are transferred to the web, whereby to effect or assist said transfer. It further provides for separately regulating the potential of the electrical energy supplied to each of the separate printing units or stations, to govern the amount of pigment there transferred to the web and thereby independently control the density of each individual color in the composite copy. By controlling the density of each individual color applied to the web, the tone values of combined colors in the copy (such as, for example, a purple formed by overprinting blue on red) may also be controlled.

3,554,124
PROTECTIVE DEVICE FOR LITHOGRAPHIC PRESS
Harry H. McIntire, Portland, Oreg., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Nov. 12, 1968, Ser. No. 774,724
Int. Cl. B41f *13/24*
U.S. Cl. 101—233 **5 Claims**



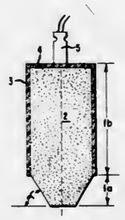
A protective device for a lithographic press used for lithographing metal sheets to minimize damage resulting from defective sheets or jam-ups. The protective device includes a spring-biased rocker assembly having stripper fingers which are disposed to permit uninterrupted travel of the metal sheets between the blanket cylinder and the impression cylinder when the leading edge of the metal sheets is gripped by gripper fingers mounted on the impression cylinder. When the leading edge of a metal sheet is not gripped by the gripper fingers, the stripper fingers guide the metal sheet into engagement with means for rocking the rocker assembly out of the normal position. Upon rocking of the rocker assembly the power to the press is cut off.

3,554,125
METHOD OF MAKING A LITHOGRAPHIC MASTER AND METHOD OF PRINTING THEREWITH
Warren G. Van Dorn, Columbus, John F. Byrne, Worthington, and Thomas Greeno, Columbus, Ohio, assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Apr. 26, 1967, Ser. No. 633,916
Int. Cl. B41m *1/06*; **B01k** *5/00*
U.S. Cl. 101—451 **27 Claims**



The subject matter of this patent application pertains to a method of preparing a lithographic printing master wherein a photoresponsive imaging composition is interpositioned between two hydrophilic substrates to form a dual electrode imaging configuration. Upon selective exposure to electromagnetic radiation and separation of each electrode complementary images are formed on the respective surfaces. The resulting imaged substrates are then utilized as lithographic masters.

3,554,126
PROCESS FOR INITIATING EXPLOSIVE AND CHARGE THEREOF
Oswald R. Bergmann, Cherry Hill Township, N.J., Joseph Buchwald, Media, Pa., and George R. Cowan, Woodburg, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 15, 1968, Ser. No. 798,831
Int. Cl. F42b *1/00*
U.S. Cl. 102—24 **2 Claims**

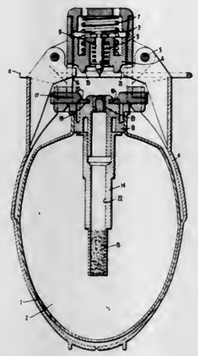


Improvement in the explosion bonding of metals which comprises initiating the layer of explosive used therefor interiorly throughout its thickness in such a manner that the metal parts to be bonded are driven together under bonding conditions in the area of initiation until the attainment of steady-state collision conditions, with little or no damage to the metals; and an explosive primer particularly useful for effecting such improvement.

3,554,127
HAND GRENADE WITH PERCUSSION DETONATION

Franz Becker, Bonn, Germany, assignor to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany

Filed Jan. 9, 1969, Ser. No. 790,059
Claims priority, application Germany, Jan. 16, 1968, D55119
Int. Cl. F42b 27/00, 27/10
U.S. Cl. 102—64 8 Claims

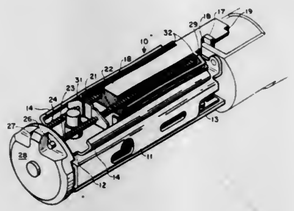


A hand grenade with a projectile body spring urged away from a drop cap having pivotally mounted half shells encompassing the projectile body and a safety bolt normally holding the shells in their encompassing position, is provided with a firing pin containing slide spring urged into engagement with the percussion sensitive primer and held against its spring bias by the safety bolt. After the firing pin strikes the primer, the slide member continues further under its spring bias into engagement with cam jaws for releasing the secure connection between the cap and projectile body.

3,554,128
SAFETY-ARMING DEVICE FOR USE IN FUZES

Warren R. Hoelzen, Ontario, and Charles R. Hamilton, Riverside, Calif., assignors to the United States of America as represented by the Secretary of the Navy

Filed June 7, 1963, Ser. No. 286,891
Int. Cl. F42c 21/00, 15/24, 7/00
U.S. Cl. 102—70.2 8 Claims



1. In an inertia operated safety-arming device for a missile, the improvement comprising:

(a) a setback weight having first and second operating positions and being mounted for longitudinal reciprocal motion,

(b) means for locking said setback weight in said first and said second operating positions,

(c) means responsive to longitudinal acceleration forces normally encountered in missile flight for arming said device,

(d) first resilient means coupled to said setback weight for allowing said setback weight to travel a predetermined distance intermediate said first and second operating positions in response to acceleration forces encountered in normal missile flight,

(e) second resilient means coupled to said setback weight for allowing said setback weight to travel a distance greater than said predetermined distance to said second operating position in response only to acceleration forces greater than said acceleration forces encountered in normal missile flight,

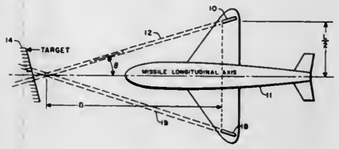
(f) control means coupling said arming means to said setback weight for permitting said arming means to return to a safe condition when said setback weight is locked in said second operating position and acceleration forces opposite to the acceleration forces for arming said device are applied.

The invention herein described may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

3,554,129
OPTICAL FUSING SYSTEM

Frederick C. Alpers, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed July 14, 1964, Ser. No. 384,036
Int. Cl. F42c 13/02, 11/06, 13/00
U.S. Cl. 102—70.2 4 Claims



Claim 1. In an active optical fuze for detonating a missile warhead at a prescribed distance in front of a target, the combination comprising:

a. an optical transmitter mounted on one end of the airfoil of the missile for transmitting a light beam in the forward direction of the missile;

b. an optical receiver mounted on the other end of the airfoil of the missile for receiving the reflected light beam transmitted by said optical transmitter; and

c. circuit means coupled to said transmitter and to said receiver for correlating the received light beam with the transmitted light beam and producing a firing signal when said light beams are of a predetermined time coincidence.

3,554,130
AMUSEMENT RIDE SYSTEM

Roger E. Broggie, Burbank, and Bert W. Brundage, La Crescenta, Calif., assignors to Wed Enterprises, Inc., Glendale, Calif., a corporation of California

Filed Apr. 26, 1968, Ser. No. 724,330
Int. Cl. A63g 7/00
U.S. Cl. 104—75 12 Claims

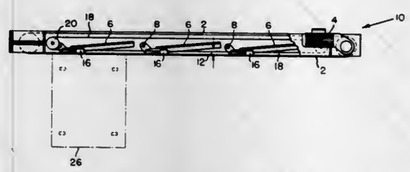


An amusement ride system for conveying passengers past a display and including a support track having inclining and declining portions. A plurality of seats are supported on trucks that are conveyed along the track and such seats swivel to face the display as the trucks pass thereby and tilt relative to the inclining and declining portions of the track to maintain the passengers seated erect. Contoured first and second orienting rails extend longitudinally of the support track and guide first and second followers which control the swiveling and tilting, respectively, of the seat. The amusement ride system may also include a safety bar for retaining passengers in the seat and actuated by a trip which strikes an actuating rail in the unloading area.

3,554,131
AUTOMATIC CONVEYOR FOR CONTAINER

Zeljko Radovic, Aarau, Switzerland, assignor to Sybron Corporation, Rochester, N.Y., a corporation of New York

Filed Apr. 9, 1969, Ser. No. 814,783
Claims priority, application Germany, July 11, 1968, 1,756,772
Int. Cl. B65g 17/12, 17/42
U.S. Cl. 104—165 10 Claims

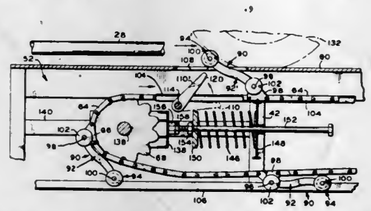


A conveyor belt 2 travels across the face of permanent magnets 6, the magnets being moveable toward and away from the belt by a cam roller 16; the magnets being moved toward the belt to attract and hold against the belt a moveable self-supporting container so that the conveyor can move the container along the floor surface without supporting the full load of the container; the magnet being moveable away from the conveyor belt to release the container.

3,554,132
VEHICLE CONVEYOR

Daniel C. Hanna, 2020 SE. 82 Ave., Portland, Oreg. 97216, and James S. Richardson, Arleta, Calif.; said Richardson assignor to said Hanna

Filed May 19, 1967, Ser. No. 639,861
Int. Cl. B61b 13/12; B65g 19/22
U.S. Cl. 104—172 11 Claims



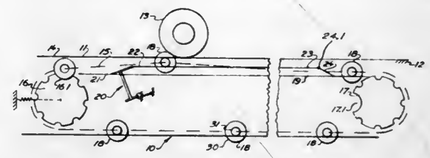
A vehicle conveyor suitable for a car wash is described wherein tire-engaging rollers are attached to a continuous chain positioned underneath the path of the vehicle. The rollers are normally carried by the chain in a nonengaging position below the vehicle track. Then, when movement of the vehicle is desired, a coin-actuated control or a manual control is actuated to move a cam into operative position to cam one of the rollers upwardly through a slot onto the top surface of the vehicle track where it engages the vehicle's tire. The roller subsequently drops through a slot proximate the end of the conveyor course.

3,554,133
AUTOMOBILE CONVEYOR

Milo De Angelis, 5080 Glen Carin St., North Burnaby, and Charles P. Koch, 301-2235 W. 3rd, Vancouver, British Columbia, Canada

Filed Nov. 21, 1968, Ser. No. 777,574
Int. Cl. F04b 1/00; B65g 19/00
U.S. Cl. 104—172 8 Claims

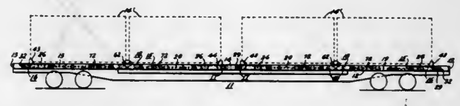
An automobile conveyor having an endless conveyor chain to which automobile engaging assemblies are connected in spaced apart intervals, extending longitudinally of and normally beneath a longitudinally extending slot formed in an automobile supporting platform and a manually operated elevator for selectively lifting any assembly to a projecting position through the slot and onto a track which supports the lifted assembly in said projecting position so as to permit the latter to engage and move an automobile across the platform.



3,554,134
CUSHIONING SYSTEM FOR CONTAINER SUPPORTS

James T. Brown, Johnstown, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware

Filed July 11, 1968, Ser. No. 744,086
Int. Cl. B65j 1/22; B60p 7/08
U.S. Cl. 105—366 4 Claims

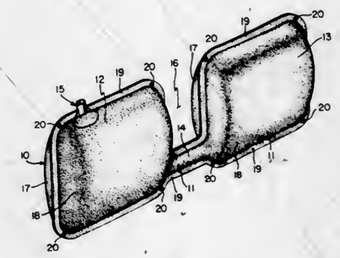


A railway flatcar having container cushioning systems mounted below deck level in side wells constituted by inverted hat-shaped sections used also as trackways and to form the side sills. A plurality of cushioning systems is mounted in each side sill. Each system comprises two end carriages and one intermediate carriage carrying container support pedestals, interposed elastomeric sandwich pads or blocks in shear, and tie rods joining the system together for multistage longitudinal cushioning.

3,554,135
SHORING DEVICE

William C. Duvall and Stephen L. Tomcsak, Akron, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

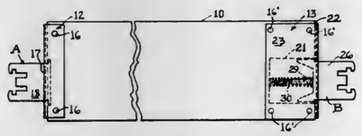
Filed Oct. 1, 1968, Ser. No. 764,147
Int. Cl. B60p 7/14; B61d 45/00
U.S. Cl. 105—369 12 Claims



An inflatable member having a body composed of opposed plies of air impervious, pressure retaining flexible material

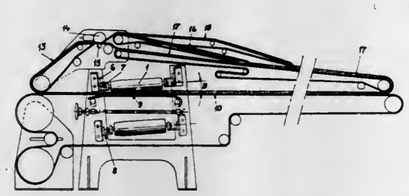
which are joined together along their peripheral edges to form a seam around the entire body of the member. The member has at least two pneumatic chambers with at least one crossover connecting any two such chambers and a single valve means connected with the body through the seam. The principal application for the inflatable members of this invention is as a dunnage device for shoring merchandise, for instance, in the storage compartment of a transport vehicle or in a warehouse. Each chamber of the plural-chambered device is the size and capacity of the ordinary single inflatable dunnage bag but inflation and deflation of the device is accomplished through a single valve assembly. Since the valve extends through the seam of the dunnage device it is readily accessible to the source of the inflating medium for inflating the bag. These devices are also designed with an open area between each pair of chambers so that the device may be positioned to avoid obstructing or interfering structures in the storage area.

3,554,136
FREIGHT RETAINING DEVICE
Nels L. Falk and Emanuel Val Verde, Chicago, Ill., assignors to Transco Inc., Chicago, Ill., a corporation of Delaware
Filed Oct. 21, 1968, Ser. No. 769,159
Int. Cl. B61d *45/00*
U.S. Cl. 105—369 3 Claims



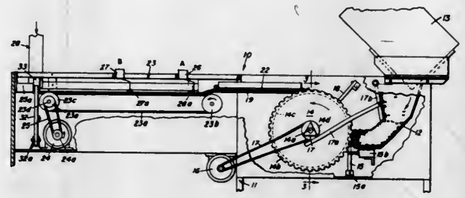
A freight retaining device adapted to be positioned between opposite vertical walls of a freight containing compartment which device comprises an elongated member having enlarged freight engaging surfaces and identical end connectors mounted on its opposite end edges with one of the end connectors telescopical with respect to the longitudinal length of the freight retaining member for accommodation in compartments of varying widths, and having a pair of oppositely directed spaced apart hook-shaped end portions for mounting to a fixed supporting rail of varying configurations.

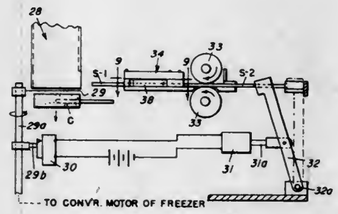
3,554,137
MACHINE FOR MAKING PUFF PASTE
Pierre Carre, Pierre Tanguy, and Jean LeBoulbouech, all of 2 Rue Bodelio, Lorient, France
Filed May 9, 1968, Ser. No. 727,890
Claims priority, application France, Feb. 16, 1968, 140076
Int. Cl. A21c *7/01*
U.S. Cl. 107—4 19 Claims



A machine for making puff paste (obtained by superimposition of layers of dough spaced by fatty material), which comprises at least one delivery belt bringing the superimposed layers of dough under rollers, flattening them against support means located under the belt forming a flattening station and at least another belt transferring the dough coming out from this station to means for cutting the dough in parallel strips, other belts for transferring the cut strips of dough and for superimposing them and at least one belt for transferring the stack thus obtained to a conveyor belt for bringing the stack to another flattening station, the time needed for this last transfer determining the rest period necessary for the operation.

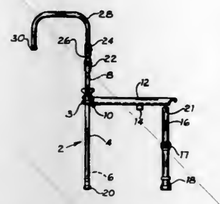
3,554,138
STICK CONVEYOR AND INSERTER FOR FROZEN CONFECTIONS
Robert Taylor Glass, 415 W. 6th St., Austin, Tex. 78710
Filed Sept. 9, 1968, Ser. No. 758,320
Int. Cl. A23g *5/02*
U.S. Cl. 107—70 14 Claims





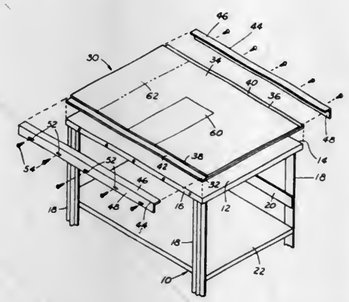
There is a drum disposed on a horizontal axis that has spaced apart transverse recesses therein to receive and transport sticks for confections. There are two spaced apart annular grooves in the drum and the drum has a portion thereof that exposes its circumference to rotation within a hopper where sticks are picked up in the transverse recesses. There are throwout fingers which ride in the annular grooves below the bottoms of the transverse recesses in an in position and in an out position. They intersect the recesses thereby in the latter position preventing sticks to enter and be carried by the transverse recesses. The drum discharges the sticks onto a generally horizontal tray that extends generally tangentially adjacent the uppermost portion of the drum. There are feelers associated with the entrance of the tray that extend into the annular grooves in the drum to strip off the sticks from the drum and guide them onto the tray. The sticks are pushed along the tray abutting each other and guided under a top hold down leaf spring or top guide member. An endless belt conveyor picks up the sticks from the discharge end of the tray. A first detector associated with the endless conveyor senses the presence of sticks on the conveyor and causes a solenoid to move the throwout fingers to out position whereupon they prevent sticks from entering the transverse recesses in the drum. A second detector along the conveyor belt senses the absence of sticks on the conveyor belt and causes the throwout fingers under the influence of their solenoid operator to move to the in position in the annular grooves in the drum and the pick up of sticks by the drum resumes. The endless conveyor discharges to a stick inserter that moves the sticks endwise in succession at the discharge station. There is a pusher that rocks and moves each successive stick endwise between a pair of continuously running knurled rolls. These move a stick endwise into a holding clamp and the next stick moved by the rolls pushes the head stick into a partially frozen and formed confection as it leaves an extruder head where it is chopped off as by a hot wire. The hot wire is timed to operate with the conveyor and a cam on the operating shaft that rotates the hot wire closes a microswitch to a solenoid that rocks the pusher arm moving each stick in succession off of the conveyor and between the continuously running feed rolls.

3,554,139
FOLDING TRAY
Bette J. Rosner, 6777 E. Pleasant Run Parkway S. Drive, Indianapolis, Ind. 46219
Filed Mar. 19, 1969, Ser. No. 808,615
Int. Cl. A47b *23/00*
U.S. Cl. 108—44 2 Claims



Folding tray which is useful in conjunction with an automobile seat. The folding tray is supported by a pair of opposing hook portions which are adapted to engage the back of an automobile seat. The hook portions are connected to a rectangular framework. The relative height of the tray section is adjustable by means of a pair of opposing pawls which are adapted to engage indents in the rectangular framework.

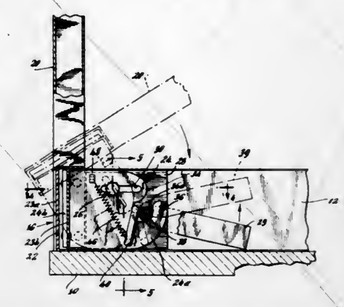
3,554,140
REPLACEABLE TABLE TOP
Joseph L. Homesberger, 41 Montrose Ave., Buffalo, N.Y. 14214
Filed Sept. 24, 1968, Ser. No. 761,981
Int. Cl. A47b *13/08*
U.S. Cl. 108—90 8 Claims



A replaceable table top for a work table comprising a base member and a panel adhesively bonded to the base member. The panel can be provided with one or more inserts having surfaces flush with the planar surface of the panel and formed of abrasion resisting materials such as stainless steel, ceramics, etc. A pair of angle members extend along opposite sides of the replaceable table top, each having a leg engageable with the upper surface of the base member and a leg secured to a primary table top by fastening means for detachably attaching the replaceable table top to the primary table top of a work table.

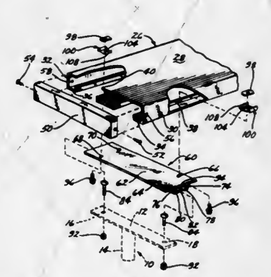
3,554,141
FOLDING TABLE
Alan Carleton Burr, East Norwalk, Conn., assignor to Howe Folding Furniture, Incorporated, New York, N.Y., a corporation of Connecticut
Filed Aug. 20, 1968, Ser. No. 785,408
Int. Cl. A47b *3/08*
U.S. Cl. 108—132 13 Claims

A table top having depending side aprons is provided with folding and support means, each comprising a subassembly of two legs and an interconnecting stretcher-end apron, which are floatingly mounted between brackets depending from the top by pin and slot means and are controlled by the disposition of the pins and slots and by coacting spring means to cause the end assemblies to abut against the ends of the side aprons when unfolded and to swing away from the top and move inwardly of the top to lie wholly within the perimeter of the top and superimposed on the side aprons when folded, or, if the legs of the two subassemblies are too long relative to the length of the top to be folded into the same plane, with the legs of one end assembly superimposed on the side



aprons and with the legs of the other end assembly superimposed upon them. Hooklike members projecting from inward extensions of the legs of each subassembly partly encircle a crossbar as the subassembly is moved from folded to unfolded position, and press against it, to provide an automatic lock, and eccentric pivot means rotatably supporting the crossbar provides increased locking pressure when the bar is rotated, the spring means and the pivot means coacting to resist inadvertent rotation of the crossbar in an unlocking direction.

3,554,142
ADAPTER BRACKET
Bill W. Sorenson, Dane R. Kious, and Carl Denhardt, Jefferson, Iowa, assignors to American Athletic Equipment Co., Greene County, Iowa, a corporation of Iowa
Filed Apr. 10, 1969, Ser. No. 815,088
Int. Cl. E04h *3/10*
U.S. Cl. 108—153 15 Claims



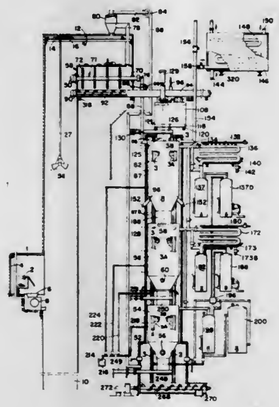
An adapter bracket for securing metal seat and foot boards to vertical risers having a plate means at the upper end thereof. The bracket is comprised of a horizontal base portion having an elongated channel means extending downwardly from the bottom side thereof which is adapted to slidably receive a plurality of bolt members therein. The bolt members are prevented from rotation in the channel means and are received by the plate means to secure the bracket to the riser. The metal board is then secured to the bracket by means of a plurality of bolt members which extend through the bolt openings formed in the base portion. The bolt members have clips secured thereto which engage the board to facilitate the attachment of the boards to the

bracket. The adapter bracket is also designed to permit the abutting ends of a pair of boards to be secured together. The bracket permits the metal boards to be substituted for the wooden planks which are commonly used as seat and foot boards in grandstands or the like.

3,554,143
METHOD OF AND APPARATUS FOR THERMOLYTIC DESTRUCTIVE DISTILLATION OF CARBONACEOUS MATERIALS, INCLUDING THE RECOVERY OF CERTAIN PRODUCTS THEREFROM

Elbert A. Rodgers, 4520 Spencer Drive, Wichita Falls, Tex., and Thornton C. Huddle and Kent B. Knox, both of D-406 Petroleum Center Bldg., San Antonio, Tex. 78209

Filed Jan. 3, 1969, Ser. No. 788,708
Int. Cl. F23g *5/00*
U.S. Cl. 110—10 16 Claims



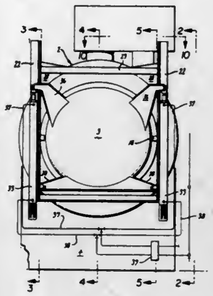
A system for treating carbonaceous material, particularly garbage and refuse by destructive distillation to reduce the material to ash, in an expeditious manner, while recovering usable byproducts therefrom, such as gas, tars, oils, greases, acids, and fly ash, and destructively burning the odoriferous gases and other pollutants present in the garbage and refuse, and progressively and continuously moving the material through a plurality of heating chambers in the system, in batches, and utilizing the processing heat, which would normally be discharged to atmosphere from the stack, to dry and heat incoming refuse and garbage in heat exchange relation so as to consume a minimum of fuel for the maximum amount of refuse and garbage processed, and producing some or most of the fuel gas required in operating the system, or even more than the fuel requirement. Further, the spent flue gases are utilized to heat water in heat exchange relation to produce steam. Inasmuch as no odor is given off by the system, and due to the fact that only a small amount of land space is required for installation, the system can be installed in populated areas, close to the source of refuse and garbage.

3,554,144
FURNACE SEALING DOOR

Harold E. Mescher, Pico Rivera, Calif., assignor to Pacific Scientific Company, Commerce, Calif., a corporation of California

Filed July 9, 1969, Ser. No. 840,433
Int. Cl. F23m *7/00*
U.S. Cl. 110—177 6 Claims

A sealing door for heat-treating furnaces having a piston and cylinder arrangement that not only raises and lowers the door but also moves the door outwardly slightly upon opening to protect the door seal during the vertical movement of the door and also presses the door against the furnace upon

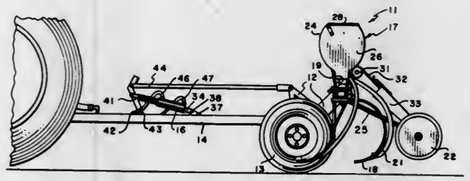


closure to seal the furnace against leakage of internal vacuum or pressure.

3,554,145
SEED AND FERTILIZER-METERING APPARATUS

Michael C. Hornung and Everett J. Tasset, Spearville, Kans., assignors to American Products, Inc., Spearville. Kans.

Filed Aug. 7, 1967, Ser. No. 658,861
Int. Cl. A01c *7/18*
U.S. Cl. 111—77 7 Claims



A feed- and fertilizer-metering apparatus is provided with a frame, ground wheels, and a hopper carried by and transversely extending the frame. The hopper is provided with a plurality of outlets at its bottom surface which communicates with a housing having a plurality of openings at a 135° angle with respect to the vertical plane of the hopper, a plurality of rotatable means having smooth peripheral faces and provided with acting faces in parallel-spaced relationship and arranged obliquely to the axes are positioned upon an axle extending the length of the hopper and passing through the plurality of housing units. The axle and thus the rotatable means are rotated thereby causing the desired amount of seed or fertilizer to enter the dispensing element.

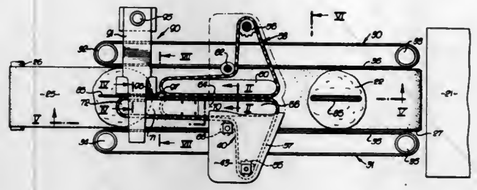
3,554,146
MEANS AND METHOD FOR SEWING BAGS FILLED WITH DISCRETE ARTICLES

Stanley A. McClusky, 3001 Baylor Ave., Bakersfield, Calif.

Filed Oct. 14, 1968, Ser. No. 767,137
Int. Cl. D05b *13/02*
U.S. Cl. 112—11 13 Claims

An apparatus and a method for sewing the open end of a bag along the upper end portion thereof after the bag has been filled with a plurality of discrete articles so that the contents of the bag are contained. The apparatus and method includes transporting the filled bags to and from a sewing station through a plurality of supporting belts and includes apparatus for feeding, grasping and crimping the upper end

portion of the bag before and during the sewing operation; the method and apparatus also discloses provision for tucking

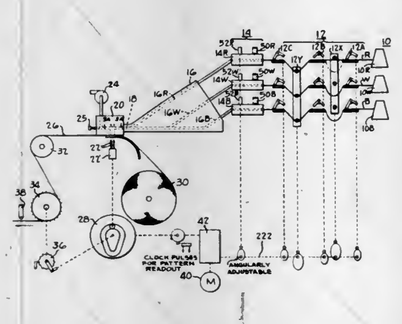


the open end portion of the bag during sewing so as to provide a tight closure.

3,554,147
APPARATUS FOR METERING AND DELIVERING YARN BITS TO TUFTING NEEDLES OR OTHER UTILIZATION DEVICES

Abram N. Spanel, 344 Stockton St., Princeton, N.J. 08540, and George J. Brennan, Blackwood, N.J., said Brennan assignor to said Spanel

Continuation-in-part of application Ser. No. 680,813, Nov. 6, 1967, now abandoned. This application Dec. 18, 1967, Ser. No. 697,268
Int. Cl. D05c *15/34*
U.S. Cl. 112—79 16 Claims



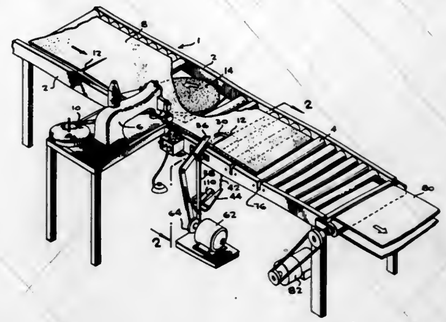
Tufting machines in which the feed of yarn to individual tufting stations from one or more yarn sources controlled in accordance with a program which may be based, for example, on yarn color and/or yarn composition and/or number of plies or strands.

3,554,148
CARPET BINDING AND CUTTING APPARATUS

Walter Johnson, Jr., Rte. 1, Box 38-A, Glasgow, Va. 24555

Filed Feb. 4, 1969, Ser. No. 796,381
Int. Cl. D05b *37/04*
U.S. Cl. 112—137 4 Claims

An apparatus for automatically severing a carpet binding and thread following a sewing operation which attaches the binding to the carpet. The carpet is conveyed on an elongated table through a sewing machine. A spring-urged feeler arm extends upwardly through the table and is normally depressed by the carpet as it moves through the machine. As the trailing end of the carpet passes over the feeler arm, the

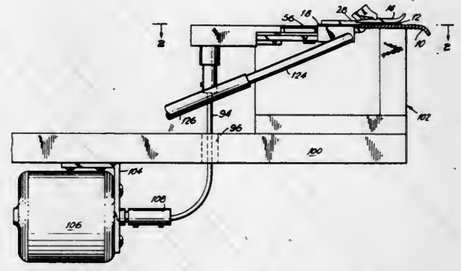


arm springs upwardly, thereby cutting the binding and thread at that point and turning off the sewing machine.

3,554,149
THREAD-CUTTING ATTACHMENT FOR SEWING MACHINES

Kenneth F. Diehm, Temple, and Lawrence H. Gruber, Sinking Spring, Pa., assignors to Trim-Master Corporation, Temple, Pa.

Filed Oct. 21, 1968, Ser. No. 769,085
Int. Cl. D05b *65/06*
U.S. Cl. 112—252 11 Claims



A thread-cutting attachment for sewing machines, adapted to cut surplus thread from a stitched article. A first guide means is provided for guiding the article along a predetermined path in a predetermined plane during the stitching thereof. A second, low-friction guide means is located along this path immediately subsequent to the first guide means to continue the guiding of the article with low friction immediately subsequent to the stitching of the article. The stitched article slides along an exposed upper surface of this second guide means. A cutting means, which has cooperating fixed and oscillatable blades, is situated immediately beneath the second guide means for cutting surplus threads which extend from the article as it moves along the second guide means.

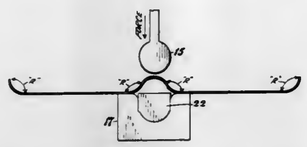
3,554,150
METHOD OF FORMING HEAT EXCHANGE TUBES

George K. Goetschius, Wellsville, and Edmund J. Kent, Snyder, N.Y., assignors to The Air Preheater Company Inc., Wellsville, N.Y., a corporation of Delaware

Substituted for abandoned application Ser. No. 593,937, Nov. 14, 1966. This application Jan. 30, 1969, Ser. No. 800,335
Int. Cl. B21d *53/02*
U.S. Cl. 113—118 10 Claims

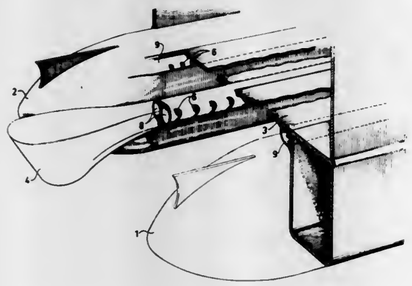
A method of forming a heat exchange tube having an extended surface configuration impressed on the lateral sides

thereof. A longitudinal embossing is formed on the surface of a plane sheet and the extended surface is impressed thereon



prior to its being formed in a suitable die arrangement that locates a bend at a predetermined location marked by the longitudinal embossing.

3,554,151
SEA-GOING VESSEL EQUIPPED WITH TWO OR MORE HULLS
Bengt Wilhelm Toernqvist, Lidingo, Sweden, assignor to Seasafe Transport AB, Osthammarsgatan, Stockholm, Sweden
Filed Sept. 23, 1968, Ser. No. 761,520
Claims priority, application Sweden, Dec. 8, 1967, 16,928/67
Int. Cl. B63b *1/10*
U.S. Cl. 114—61 **12 Claims**



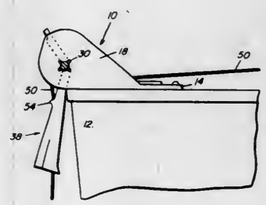
A sea-going vessel comprising several hulls interconnected by a deck in parallel spaced relationship, there being arranged at the prow of the vessel a wave breaking damping keellike structure extending below the water line at moulded draft and having openings for capturing the water thrown against the same and guiding said water out aft of said openings through tubes extending towards the stern of the vessel.

3,554,152
STRUCTURAL ARRANGEMENT OF LARGE TANKERS
George T. R. Campbell, 455 Craig St., W., and Norman V. Laskey, 406 Pine Ave., W. Montreal, Quebec, Canada
Filed Feb. 24, 1969, Ser. No. 801,720
Int. Cl. B63b *43/06, 25/08*
U.S. Cl. 114—125 **8 Claims**



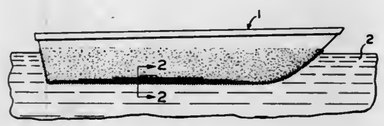
A cargo vessel whose hull is provided with a series of transverse bulkheads to form a series of cargo holds or tanks, and two longitudinal bulkheads to form one central and two side holds or tanks, the side tanks having a transverse width of between one tenth and one twelfth of the transverse width of the central holds or tanks, and a central longitudinal partial bulkhead extending through the center holds or tanks and extending downwards from the deck of the vessel a distance about one-third the depth of the center holds or tanks, the central partial bulkhead having a series of air openings therethrough adjacent the connection of the bulkhead with the deck of the vessel.

3,554,153
WEIGHT FOR BOAT ANCHOR
Charles F. Davis, Portland Trailer Court, 9000 Northeast Union, Portland, Oreg. 97211
Filed Aug. 27, 1968, Ser. No. 767,595
Int. Cl. B63b *21/22*
U.S. Cl. 114—210 **14 Claims**



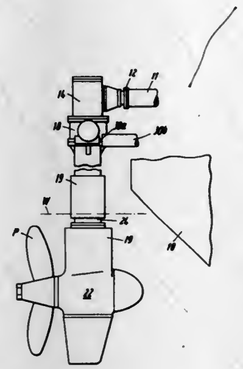
A compact anchor hoist is mounted on the bow of a boat and provides for unique cooperation between an anchor socket, a spring-tensioned shaft and pressure member arranged for extension between spaced-apart support members so that from a remote position the boat anchor can be retrieved and automatically launched to and from an inboard position on the boat.

3,554,154
STRUCTURE WITH ANTIFOULING SURFACE
William J. Thomas, Los Angeles, Calif., assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Feb. 26, 1969, Ser. No. 802,607
Int. Cl. B63b *59/00, 1/36*
U.S. Cl. 114—222 **4 Claims**



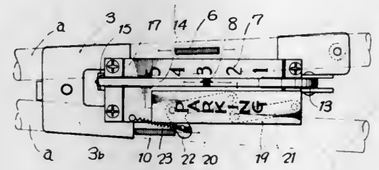
The invention relates to covering the surface of a boat below the water line with short outwardly projecting bristles which dampen cavitation vortices produced by motion of a boat. The bristles may include an antifouling composition.

3,554,155
DRIVE MECHANISM FOR A STEERABLE PROPELLER
Hans Eichinger, Munich, Germany, assignor to Carl Hurth Maschinen-und Zahnradfabrik, Munich, Germany, a corporation of Germany
Filed Nov. 7, 1968, Ser. No. 774,028
Claims priority, application Germany, Nov. 11, 1967, Feb. 21, 1968, 1,531,749;1,650,729
Int. Cl. B63h *1/14, 5/06*
U.S. Cl. 115—35 **10 Claims**



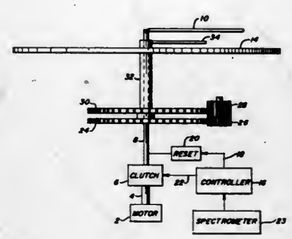
A steerable propeller for watercraft wherein the propeller is driven through a planetary system, the same being loosely mounted but self-centering in operation. A further feature limits the radial play of the planetary parts to minimize tooth contact when same is not operating.

3,554,156
INDICATING SYSTEM OF OPERATIONAL STATE OF PARKING BRAKE FOR A BICYCLE
Etuji Kishida and Takuo Ishida, both c/o Shimano Industry Company, No. 77, 3-cho, Oimotu-cho, Sakai, Opaka, Japan
Filed Oct. 10, 1968, Ser. No. 766,439
Claims priority, application Japan, Aug. 16, 1968, 43/58,674
Int. Cl. G01d *21/00*
U.S. Cl. 116—114 **3 Claims**



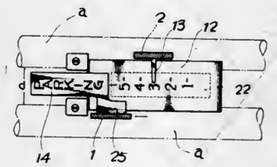
A bicycle indicator system for showing the operational state of a brake and the gear shift condition of the bicycle, in which a brake position indicator plate is moveably connected to a brake handle lever and in parallel with and above a gear shift indicator plate such that movement of the brake handle lever to operate the brake will move said brake indicator plate to cover simultaneously all of the gear shift indicia on a gear shift indicator plate from view by an operator and such that release of the brake by movement of the brake handle lever will move said brake position indicator plate to uncover the gear shift indicator plate for view by the operator.

3,554,157
TIMER-INDICATOR
Richard E. Haughtington, Michigan City, Ind., and Earl H. Shipley, Flossmoor, Ill., assignors to United States Steel Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed June 30, 1969, Ser. No. 837,438
Int. Cl. G09f *9/00*
U.S. Cl. 116—129 **8 Claims**



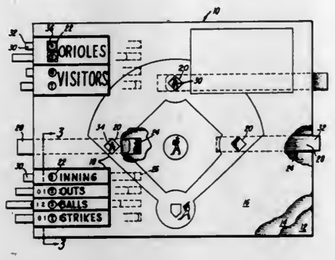
A timer-indicator for an element concentration spectrometer has a straight indicating hand indexing on a direct reading calibrated spiral for the concentration. A curved second hand is mounted on a shaft concentric with the indicating hand shaft and is geared to move at 95 percent of the travel of the indicating hand. The curvature of the second hand provides continuous indexing of the intersection of the two hands along the spiral indicating the proper place on the spiral for the determined concentration.

3,554,158
INDICATING SYSTEM OF OPERATIONAL STATE OF THE PARKING BRAKE FOR A BICYCLE
Kelzo Shimano and Takuo Ishida, both c/o Shimano Industry Company, No. 77, 3-cho, Oimatu-cho, Sakai, Osaka, Japan
Filed Oct. 10, 1968, Ser. No. 766,495
Claims priority, application Japan, May 11, 1968, Sept. 3, 1968, 43/38,721, 43/76,257
Int. Cl. G01d *21/00*
U.S. Cl. 116—114 **3 Claims**



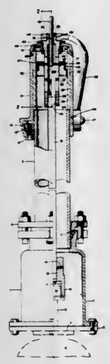
A bicycle indicator system for showing the operational state of a brake and the speed of a gear shift system, in which a brake position indicator is moved by a brake handle which also operates the brake, in such a manner as to cover a gear shift indicator when the brake is applied and to uncover the gear shift indicator when the brake is released thereby to permit an operator to determine when the bicycle is in a braked condition and if not what gear shift position is employed.

3,554,159
GAME SCORE CARDS
Carle D. Klupt, Baltimore, Md., assignor to Sylvan H. Sack, Baltimore, Md.,
Filed May 16, 1969, Ser. No. 825,218
Int. Cl. A63b 71/06
U.S. Cl. 116—120 4 Claims



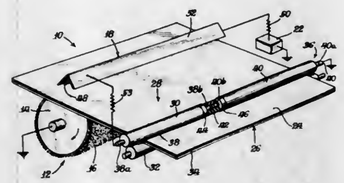
Game score cards are provided which are representations of game-playing fields with adjustable sliding elements by which progress of games may be recorded and visualized.

3,554,160
INDICATOR POSTS FOR USE IN CONJUNCTION WITH VALVES
Ronald Fortune, Hamilton, Ontario, and Ernest G. Mills and James Beverley Woods, Kitchener, Ontario, Canada, assignors to Canada Valve Limited, Kitchener, Ontario, Canada, a body corporate of Canada
Filed Apr. 1, 1969, Ser. No. 812,255
Int. Cl. F16k 37/00
U.S. Cl. 116—125 14 Claims



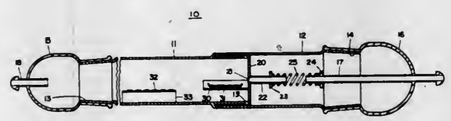
An indicator device for a nonrising stem valve has a housing in which is mounted an elongated screw adapted to be coupled to the valve stem. The screw is rotatable but cannot move axially. The screw is hollow and has a pair of elongated slots through which a bar extends transversely and an indicator rod, located in the hollow screw, is attached to the bar. The ends of the bar are attached to a follower threaded onto the screw. The follower nut can move axially of the screw but is restrained against rotation. The bar ends are connected to the nut in a manner to allow the bar to rotate with the screw. As the screw is turned the nut, bar and rod move axially of the screw.

3,554,161
DEVELOPING APPARATUS
Robert G. Blanchette, Elk Grove Village, Ill., assignor to Addressograph-Multigraph Corporation, Mount Prospect, Ill., a corporation of Delaware
Filed Nov. 14, 1968, Ser. No. 775,871
Int. Cl. B05c 11/00
U.S. Cl. 118—8 12 Claims



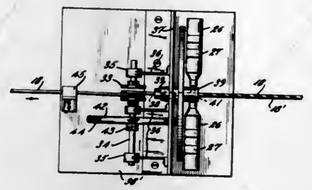
The apparatus uses a corona discharge electrode at the developing station which governs the application of developing powder to nonimage areas of the member. The electrode is provided with a control device that automatically regulates the corona emission of the former as a function of the conductivity of the paper base of the member. The control device includes conductors which electrically couple the base with a source of electrical power and the electrode to sense the conductivity of the base.

3,554,162
DIFFUSION TUBE
Mario E. Cota, Scottsdale, and James H. Williams, Tempe, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Jan. 22, 1969, Ser. No. 793,030
Int. Cl. C23c 11/00
U.S. Cl. 118—48 5 Claims



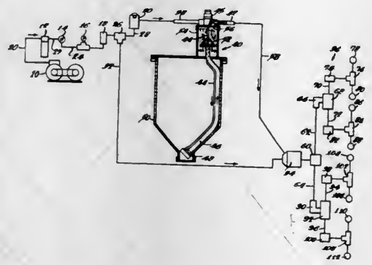
A diffusion tube is described which incorporates an internal seal to prevent the back diffusion of impurity material and the condensation thereof on the input portion of the tube. The tube is provided with an internal baffle plate which is urged into contact with a stop provided on the inner periphery of the tube. The baffle plate contains an aperture to permit the passage of gas therethrough from the input port of the tube. An impurity support is attached to the side of the baffle plate opposite the input port. The impurity source and the semiconductor wafers being processed are inserted in the same end of the diffusion tube. This end is relatively free from condensed impurity material at the completion of the diffusion process due to the combination of the shoulder and the baffle plate. As a result, the processed wafers can be withdrawn from the tube without significant surface contamination.

3,554,163
COLOR STRIPING DEVICE
William W. Scott, 3206 Plantation Road, Raleigh, N.C. 27609
Filed May 27, 1968, Ser. No. 732,452
Int. Cl. B05c 1/06
U.S. Cl. 118—221 2 Claims



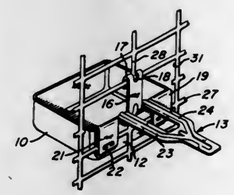
A device for feeding a strand of wire or other substance past color applicators and for rotatively applying color in strips as the strand is fed and utilizing the driving mechanism which advances the strand to rotate to color applying mechanism.

3,554,164
POWDER SPRAY SYSTEM
James A. West, Elmhurst, Ill., assignor to Binks Manufacturing Company, Chicago, Ill., a corporation of Delaware
Filed July 13, 1966, Ser. No. 564,843
Int. Cl. B05b 7/14
U.S. Cl. 118—302 3 Claims



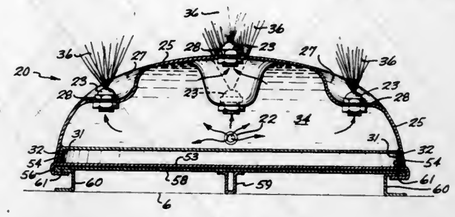
Powder spraying apparatus which includes a plurality of nozzles fed by a manifold. Each nozzle is placed at an angle to the web being sprayed and has a deflector surface substantially perpendicular to the web. A curved transition zone is located between the nozzle and deflector to provide a fan-shaped powder spray.

3,554,165
ANIMAL FEEDER
Vernon Carter, 8575 Upper Miamisburg Road, Miamisburg, Ohio 45342
Filed July 8, 1968, Ser. No. 743,174
Int. Cl. A01k 05/00
U.S. Cl. 119—18 10 Claims



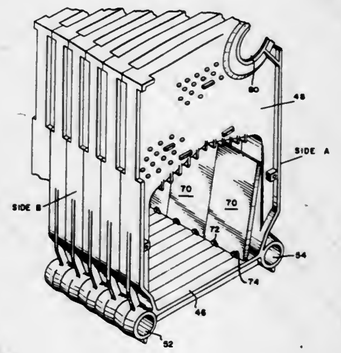
A cage mounted feed tray or the like having a traylike portion to dispose in a cage and a handle portion to project outside the cage, tabular sections at the base of the handle being deformed to interengage with cage bars to firmly support and stabilize the tray.

3,554,166
UDDER TREATMENT APPARATUS
Dallas J. B. Belden, Rte. 1 Box 311, Rochester, Wash. 98579
Filed June 13, 1968, Ser. No. 736,644
Int. Cl. A01k 29/00
U.S. Cl. 119—159 15 Claims



The mammary region of a dairy animal is treated by washing and stimulating her teats and udder before milking and applying a disinfectant after milking. The apparatus for this treatment includes a spraying unit having a convex dome exterior surface through which the washing, stimulating and disinfecting fluids are sprayed in a pattern covering the entire exposed area of the teats and the adjacent exposed area of the udder. The size of the dome is selected to correspond with the size of the udder so that the dairy animals straddle the dome.

3,554,167
BOILER CONSTRUCTION
Allan E. Martin, Tonawanda, N.Y., and Edmund C. Shirley, New Albany, Ind., assignors to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Apr. 1, 1969, Ser. No. 812,241
Int. Cl. F22b 23/00
U.S. Cl. 122—225 12 Claims

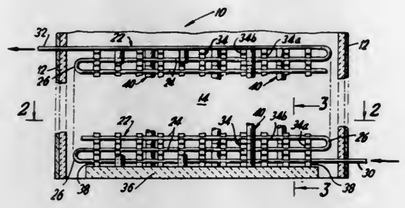


Covers a wet base multisectional boiler in which a substantially rectangular plate, preferably made of a refractory material, is inserted within the firebox of the boiler but adjacent to one of the sidewalls of the boiler. The plate is held within the boiler in a vertical or substantially vertical position. The insertion of the plate will reduce the amount of bubble formation within the sections on the sides or tubes adjacent to the plate. The flow of the heated water in each of the sections adjacent to the plate will be modified to the extent that those sides or tubes of the sections adjacent to the plate will have water flowing downwardly to the base of the boiler and those sides or tubes of the sections remote from the plate will have water flowing upwardly into the common upper compartment.

3,554,168
FURNACE APPARATUS

Herman N. Woebcke, Lexington, Mass., assignor to Stone & Webster Engineering Corporation, Boston, Mass., a corporation of Massachusetts

Filed Oct. 17, 1968, Ser. No. 768,326
Int. Cl. F22b *37/24*
U.S. Cl. 122—510 1 Claim

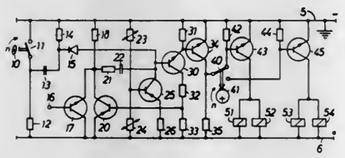


A self-supporting conduit comprised of a plurality of horizontal tubes connected by tube bends. The self-supporting conduit is provided with support members which are integrally formed with each horizontal tube and arranged in vertical alignment to provide a continuous tube support from the base of the furnace to the top tube. The individual support members associated with each tube frictionally engage the support members associated with the horizontally adjacent tubes and thereby facilitate sliding therebetween to compensate for expansion. Vertical columns arranged on either side of the composite coil are provided to stabilize the coil.

3,554,169
FUEL INJECTION ARRANGEMENT FOR INTERNAL COMBUSTION ENGINES

Josef Wahl, Stuttgart-Kaltental, and Wolfgang Reichardt, Stuttgart-Rohr, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed Jan. 21, 1969, Ser. No. 792,716
Claims priority, application Germany, Jan. 23, 1968, 1,601,363
Int. Cl. F02d *5/00*
U.S. Cl. 123—32 15 Claims

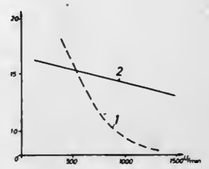


A fuel injection arrangement for internal combustion engines in which the duration is varied as a function of an operating characteristic of the engine. The timing of a monostable multivibrator is varied by varying the resistance values of magnetically-sensitive resistors mounted within a magnetic field which is varied as a function of a desired operating characteristic. A function sensor coupled to either the rotational speed, intake manifold pressure or throttle of the engine, varies the reluctance of the magnetic flux through a magnetic circuit path. The magnetically-sensitive resistors are mounted within the magnetic path so that the resistance values become varied through the function sensor.

3,554,170
CARBURETION CONTROL METHOD FOR OPERATING FUEL INJECTION SPARK-IGNITION INTERNAL COMBUSTION ENGINES

Rudolf Schenk, Pocking, Kreis Starnberg, and Fritz Flory, Munich, Germany, assignors to Kugelfischer Georg Schafer & Co., Schweinfurt, Germany

Filed Jan. 27, 1969, Ser. No. 813,784
Int. Cl. F02m *45/00*
U.S. Cl. 123—32 2 Claims

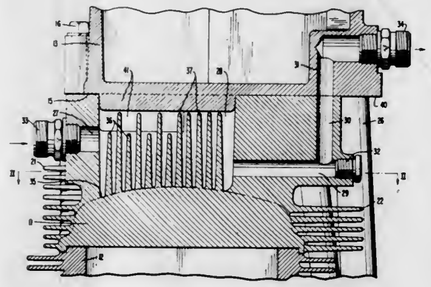


A method for operating an internal combustion engine of the fuel injection spark-ignition type, whereby at no-load idling speed the engine is operated under conditions of excess air relative to the stoichiometric mixture ratio, the degree of excess air being gradually diminished in conformity with the engine speed diminishing from the no-load idling speed.

3,554,171
CYLINDER HEAD OF AN AIR-COOLED INTERNAL COMBUSTION ENGINE

Otto Herschmann, Schorndorf, Josef Reisacher, Fellbach, Heinz Stockfisch, Stuttgart-Rohracker, and Alfred Goetz, Stuttgart, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

Filed Apr. 19, 1968, Ser. No. 722,611
Claims priority, application Germany, Apr. 22, 1967, D52898
Int. Cl. F01p *3/04, 9/04*
U.S. Cl. 123—41.42 13 Claims

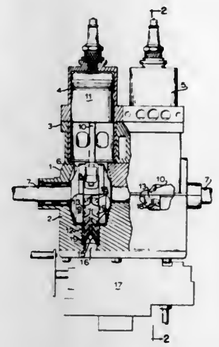


A cylinder head of an air-cooled internal combustion engine which is provided with a pressure oil channel for the additional cooling of places in the cylinder head that are particularly subjected to thermal stresses; on the inside of the cylinder head the pressure oil channel passes over into a hollow space whereby cooling ribs are arranged at the inner walls of the hollow space.

3,554,172
REED BLOCK CRANKCASE INDUCTION FOR TWO-CYCLE ENGINE

Elmer Carl Kiekhaefer, Winter Haven, Fla., assignor to Brunswick Corporation, Chicago, Ill., a corporation of Delaware

Filed Oct. 1, 1969, Ser. No. 863,425
Int. Cl. F02b *33/04*
U.S. Cl. 123—73 9 Claims

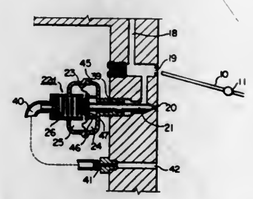


A V-type reed block extends circumferentially of the crankcase in excess of 60° and is curved to conserve space requirements within the crankcase chamber.

3,554,173
APPARATUS FOR REDUCING HYDROCARBON CONTENT OF ENGINE EXHAUST GASES DURING DECELERATION OF AUTOMOBILE

Kenji Masaki and Hiroyuki Maruoka, Tokyo, Japan, assignors to Nissan Motor Company, Limited, Yokohama, Japan

Filed Dec. 5, 1968, Ser. No. 781,531
Claims priority, application Japan, Mar. 30, 1968, 43/20781, 43/20782, 43/20783
Int. Cl. F02m *7/04*
U.S. Cl. 123—119 13 Claims



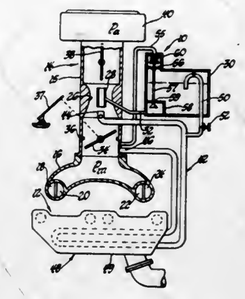
Apparatus for reducing the engine exhaust gas hydrocarbon content during deceleration of an automobile through the enrichment of the air-fuel mixture in the slow running mixture supply flow path of a carburetor, the mixture being enriched by increasing the fuel content in response to the rapid increase in the intake manifold vacuum when decelerating.

3,554,174
DUAL CIRCUIT INDUCTION SYSTEM

Lawrence G. Clawson, Dover, Mass., assignor to Dynatech Corporation, Cambridge, Mass., a corporation of Massachusetts

Continuation-in-part of application Ser. No. 794,864, Jan. 29, 1969. This application July 7, 1969, Ser. No. 842,815
Int. Cl. F02m *31/00*; F01p *1/08*; F02m *13/06*
U.S. Cl. 123—122 16 Claims

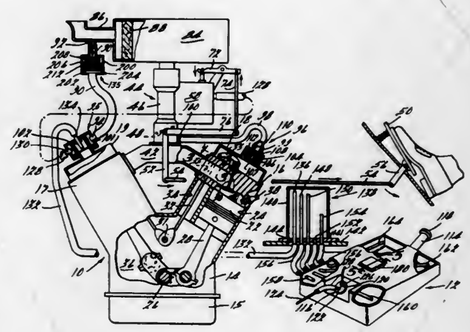
An improved induction system for internal combustion engines comprising a relatively large capacity throttle controlled ambient air induction circuit and a relatively small capacity unthrottled air induction circuit for high-temperature air, the air induction balance between the circuits being variable to automatically and continuously regulate engine inlet air temperature between a maximum at idle and a minimum at full load, and means for admitting fuel to the inlet in such quantities that the fuel-air ratio approaches the lean limit of combustibility corresponding to the inlet air temperature provided at each throttle setting across a wide range of engine operating conditions. Both carburetion and fuel injection systems are disclosed.



3,554,175
EVAPORATIVE EMISSION CONTROL SYSTEM

Jorma O. Sarto, Orchard Lake, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware

Original application Mar. 8, 1968, Ser. No. 711,680. Divided and this application Dec. 8, 1969, Ser. No. 883,054
Int. Cl. F02m *25/08*
U.S. Cl. 123—136 5 Claims

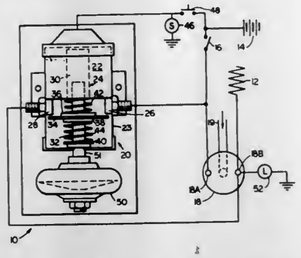


A system for controlling evaporative emissions from the fuel system of a motor vehicle wherein the fuel tank and carburetor bowl are vented to the crankcase of the engine so that the crankcase serves as an accumulator to collect fuel vapors from the fuel tank and fuel bowl while the engine is turned off; the crankcase is in turn vented to the engine intake so that the collected vapors are subsequently burned in the engine during subsequent operation of the engine. The venting of the carburetor bowl to the crankcase is selectively controlled by a valve.

3,554,176
ELECTRICAL SWITCHING SYSTEM

Albert J. Melloni, 140 Tiptoe Lane, Burlingame, Calif. 94010

Filed June 27, 1969, Ser. No. 837,229
Int. Cl. F02b 77/08; F02n 11/06
U.S. Cl. 123—146.5 3 Claims

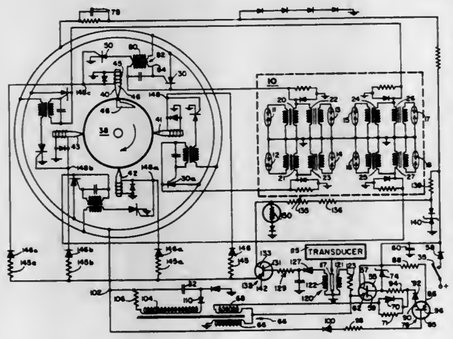


An electrical switching system is designed for use in conjunction with the ignition system of an engine having an ignition switch and an oil pump, such as the engine of a vehicle. An ignition switch is included, and supplies electrical energy to (1) one side of an oil pressure-sensitive switch, sensitive to the oil pressure of the engine, and to (2) one side of a solenoid-actuated switch. The starter switch, when closed, closes the solenoid-actuated switch to supply electrical energy therethrough to the ignition coil. After the engine is started, the oil pressure-sensitive switch closes, and electrical energy is supplied therethrough to the ignition coil. Means are included for keeping the solenoid-actuated switch closed until oil pressure in the engine has been built up sufficiently to close the oil pressure-sensitive switch.

3,554,177
ELECTRONIC VACUUM ADVANCE FOR AN IGNITION SYSTEM

Arthur G. Hufton, Elk Grove, and Peter Dogadko, Chicago, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Nov. 21, 1968, Ser. No. 777,719
Int. Cl. F02p 3/02
U.S. Cl. 123—148 7 Claims

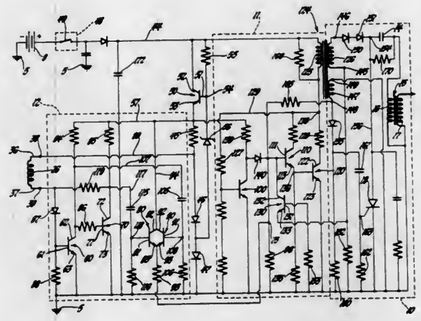


A vacuum servo device connected to an internal combustion engine is operated in accordance with engine load to vary the position of a core electrically coupling first and second windings of a transformer. By changing the coupling between the windings the output of the transformer is changed. This variable output from the transformer is used to control the conduction of a transistor amplifier which provides a modulating bias on a potential representing ignition advance relative to engine r.p.m. which is connected to the gate of a high sensitivity silicon-controlled rectifier (SCR) which acts as a voltage level detector. The SCR is triggered when the modulated potential reaches a given level providing a firing pulse to discharge the ignition capacitor. The time required for the modulated potential to reach this triggering level varies according to engine r.p.m. and vacuum.

3,554,178
DUAL SPARK CAPACITOR DISCHARGE IGNITION SYSTEM

James A. Boyer and Donald O. Ruff, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 3, 1969, Ser. No. 838,993
Int. Cl. F02p 3/06
U.S. Cl. 123—148 4 Claims



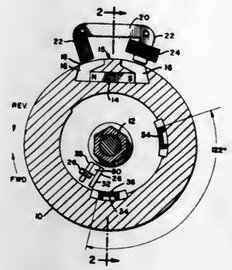
A capacitor discharge ignition system which produces two sparks per cylinder per compression stroke in response to each half-cycle of alternating current ignition signals. The ignition signals are applied across the base-emitter electrodes of a first normally conducting transistor which is rendered nonconductive during a selected one-half-cycle of each ignition signal cycle. As the first transistor goes nonconductive, a second transistor is triggered conductive to maintain the first transistor in the nonconducting state and a first capacitor begins to charge from a direct current potential source through a series resistor. The charging current of this capacitor produces base-emitter and, consequently, collector-emitter current flow through a third transistor while the capacitor is charging. The collector-emitter current flow of this transistor produces a potential drop across an emitter resistor which is applied across the input terminals of an inverter circuit which produces the charging potential for the ignition capacitor and renders an ignition capacitor switch conductive to discharge the ignition capacitor through the primary winding of the ignition coil. With the other half-cycle of each alternating current ignition signal, the first transistor is rendered reconductive to extinguish the second transistor. As the second transistor goes nonconductive, another capacitor begins to charge through a series resistor. The charging current of this capacitor produces base-emitter and, consequently, collector-emitter current flow through a fourth transistor while the capacitor is charging. This collector-emitter current flow through the same emitter resistor, common to both the third and fourth transistors, produces a potential drop thereacross which is applied to the inverter circuit and the sequence of events is repeated as previously described.

3,554,179
ANTIREVERSE TRIGGER FOR AN IGNITION SYSTEM

Bob O. Burson, East Longmeadow, Mass., assignor to R. E. Phelon Company, Inc., East Longmeadow, Mass., a corporation of Massachusetts

Filed June 19, 1969, Ser. No. 834,649
Int. Cl. F02p 3/06
U.S. Cl. 123—149 11 Claims

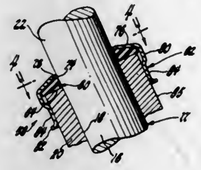
In an electrically triggered ignition system for two-cycle internal combustion engines, utilizing a trigger coil in which a trigger signal is produced by a flux-varying member carried by a rotating part of the engine, a second flux-varying member is provided on such rotating part which during reverse motion of the engine produces a trigger signal in the trigger coil which is so timed relative to the engine cycle that reverse engine operation cannot be sustained.



3,554,180
VALVE STEM SEAL

Carl W. Lesser, Swartz Creek, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Mar. 21, 1969, Ser. No. 809,100
Int. Cl. F01l 3/08
U.S. Cl. 123—188 3 Claims



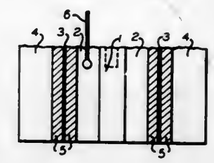
A two-piece valve stem seal for preventing the passage of oil between a valve guide and a valve stem in an internal combustion engine includes an apertured elastomeric sealing ring having converging frustoconical surfaces forming a sharp radially inwardly facing seal lip that is adapted to sealingly engage the valve stem and a cup-shaped retaining cap telescopically received over the sealing ring with a corrugated cylindrical sleeve frictionally engaging the valve guide for compressively loading the sealing ring and radially inwardly biasing the seal lip.

3,554,181
METHOD FOR THE RAPID REACHING AND MAINTENANCE OF A CERTAIN TEMPERATURE LEVEL

Heinz Gawlick, Fuerth Bayern, Hellmut Bendler, Nuernberg, Guenther Marondel, Erlangen, and Werner Siegelin, Stein Nuernbrg, Germany, assignors to Dynamit Nobel AG., Troisdorf (Bejirk Cologne), Germany, a corporation of Germany

Filed Jan. 24, 1969, Ser. No. 796,642
Claims priority, application Germany, Jan. 25, 1968, 1,692,251
Int. Cl. F24J 1/00
U.S. Cl. 126—263 10 Claims

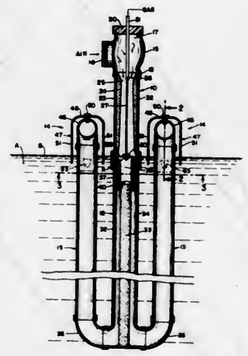
Heating and temperature maintenance device including a hollow body portion containing a core housing, a material to be heated, a first chamber disposed about the core containing a first pyrotechnic composition capable, upon ignition, of rapidly heating the material to a desired temperature, a meltable metal or alloy disposed about the first chamber capable of being melted by the ignition of the first pyrotechnic composition, and a second chamber, disposed between the body periphery and the metal or alloy, containing a second pyrotechnic composition having, upon ignition, a slower burning rate than the first pyrotechnic composition and capable of maintaining the metal or alloy in a molten condition for a predetermined time.



3,554,182
LIQUID HEATER ESPECIALLY ADAPTED FOR LIQUID SUBMERGED USE

Francis M. Whitacre, 148 Shoreview Road, Manhasset, N.Y. and John L. Umpleby, Tuthill Drive, Shelter Island Heights, N.Y. 11965

Filed Nov. 14, 1968, Ser. No. 775,853
Int. Cl. F24h 1/20
U.S. Cl. 126—360 12 Claims

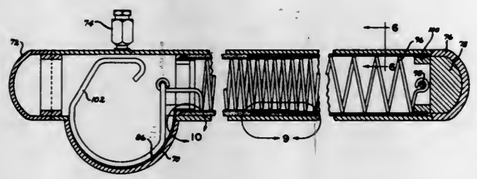


The invention relates to a liquid heater, especially adapted for liquid submerged uses, as for example, for heating a swimming pool. The heater has a mixing unit for air and fuel with a venturi configuration to permit the use of air under comparatively low pressures. The combustion generated is of the pulse type and the combustion chamber in which the fuel-air mixture is ignited has a body of material of high radiating potential, such as ceramic, which is heated in the combustion chamber and which radiates its heat to the enclosing heat-conducting walls of the chamber in contact with the liquid to be heated. An exhaust tube also submerged in the liquid to be heated carries the exhaust gases to a region near the surface of the liquid to be heated and discharges it into the liquid causing the liquid to splash against part of a discharge device at the outlet of the exhaust tube made of heat-conducting material, such as metal, to extract thermal energy from said exhaust gases.

3,554,183
HEAT PIPE HEATING SYSTEM FOR A RAILWAY TANK CAR OR THE LIKE

George M. Grover, Los Alamos, N. Mex., and Edward L. Coyle, St. Charles, Mo., assignors to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Oct. 4, 1968, Ser. No. 765,208
Int. Cl. B61d 5/04; F28d 15/00
U.S. Cl. 126—343.5 3 Claims

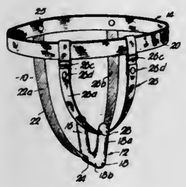


A heat transfer pipe containing a vaporizable fluid and having a porous wick on its inner surface is mounted in the tank of a railway tank car and extends into a furnace outside the tank. The outer end of the pipe communicated with a reservoir for the fluid. The wick has a plurality of porous metallic layers designed to provide good heat transfer, as well as a high degree of capillary action. Evaporation of the liquid produced by the furnace and condensation along the whole length of the pipe in the tank transfer a great amount of heat into the tank at a generally uniform temperature.

3,554,184
PUBO-VAGINAL INCONTINENCE DEVICE

Henry N. Habib, 440 E. 74th Terrace, Kansas City, Mo. 64131

Filed Apr. 17, 1968, Ser. No. 721,959
Int. Cl. A61f 5/48
U.S. Cl. 128—1 12 Claims



A pubo-vaginal device for females afflicted with urinary incontinence. The device consists of a silicone rubber unit provided with an element adapted to be removably inserted in the vagina and an exterior member integral with the element and designed to lie against the pubic region of the wearer. A supporting belt having straps secured to the member engaging the pubic area maintains the unit in a location so that the element is normally held in a position causing the same to exert an upward thrust against the anterior wall of the vagina of sufficient magnitude to block flow of urine from the bladder through the urethra to the urethral opening.

3,554,185
CERVICAL BIOPSY-SAMPLING INSTRUMENT

Gerald C. Kohl, 1106 S. 4th St., Tacoma, Wash. 98405

Filed Feb. 29, 1968, Ser. No. 709,470
Int. Cl. A61b 10/00
U.S. Cl. 128—2 6 Claims

A cervical biopsy-sampling instrument is disclosed which comprises an aspirator having a spatulated sampling tip thereon by which a mucus aspirate and surface scrapings are collected from the cervix for cytological diagnosis. The tip is flexibly connected with the aspirator so that it can follow the relative deflection of the cervical canal when the canal is out of alignment with the vaginal canal. In addition, the scraping edge of the tip is defined on at least one side by a profile face

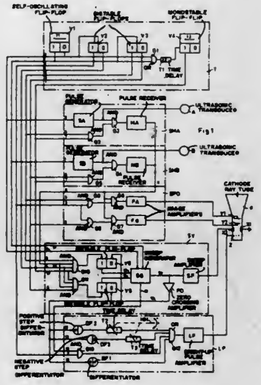


of the tip which is substantially flat over the entire profile on that side, so that the edge and face of the tip can be applied to a smear plate in the manner of a spatula for purposes of transferring the scrapings directly to the plate from the tip.

3,554,186
APPARATUS FOR ULTRASONIC ECHO-ENCEPHALOGRAPHY

Lars Leksell, Stockholm, Lars-Gunnar Kjellberg, Sollentuna, and Sven Olofsson, Skalby, Sweden, assignors to LKB Medical AB, Bromma-Stockholm, Sweden

Filed Mar. 22, 1968, Ser. No. 715,428
Claims priority, application Sweden, Apr. 5, 1967, 4776/67
Int. Cl. A61b 5/00
U.S. Cl. 128—2 4 Claims



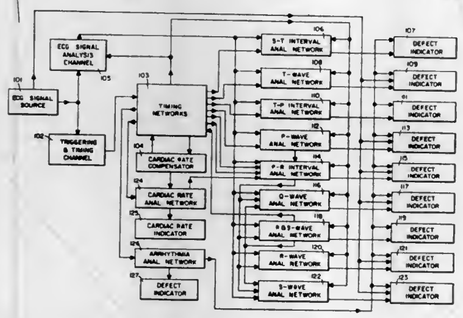
An apparatus for ultrasonic echo encephalography comprising two separate ultrasonic transducers for emitting and receiving ultrasonic pulses, which are adapted to be positioned at the temples on opposite sides of the skull of a patient to be examined and which are connected to a transmitter-receiver assembly. The transmitter-receiver assembly is controlled by a timing device having a constant operating frequency in such way that the apparatus is automatically repeating, at a rate determined by the timing device, a sequence of four different measurements, viz echo measurement from the left side of the skull; echo measurement from the right side of the skull; through measurement from the left side to the right side of the skull; and through measurement from the right side to the left side of the skull. The echo pulses received by the two transducers during the echo measurements are supplied with opposite polarities to the Y-deflection means of a cathode ray tube. The X-deflection means of the cathode ray tube are supplied with a sweep voltage, which starts at the beginning of each measurement period as

determined by the timing device and varies linearly between two constant voltage levels alternately in the positive-going and the negative-going sense. The ultrasonic pulses recieved by the transducers during the through measurements are used for automatically adjusting the rate of change of the sweep voltage to such a value that the length of each sweep equals the time of travel for an ultrasonic pulse from the one side of the skull to the opposite side and back again.

3,554,187
METHOD AND APPARATUS FOR AUTOMATICALLY SCREENING OF ELECTROCARDIAC SIGNALS

Harvey F. Glassner, Los Angeles, Calif., Clinton O. Jorgensen, Ogden, Utah, and Lee R. Baessler, Manhattan Beach, Calif., assignors to Humetrics Corporation, a corporation of Delaware, by mesne assignment

Filed Oct. 21, 1965, Ser. No. 500,122
Int. Cl. A61b 5/04
U.S. Cl. 128—2.06 43 Claims



The method of evaluating electrocardiac signals comprising:

detecting electrocardiac signals comprising cycles of successive functional periods variable in both recurrency and wave form characteristics, one of said variable periods including a QRS wave train having at least one peak;

determining S-wave duration;

generating a triggering signal responsive to the substantially unfiltered detected electrocardiac signal in substantial uniform time phase relation with the R wave peak and after a delay of S-wave duration;

generating gating pulses in dependency on the triggering signal. each of the gating pulses having a duration and time phase range for selecting a prescribed functional period of the detected signal;

electrically measuring the detected electrocardiac signal during each gating pulse to evaluate at least one predetermined characteristic of the related functional period; and

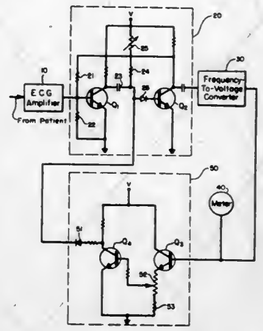
generating a distinctive output signal when said measurement deviates from limits prescribed for each functional period.

3,554,188
HEARTBEAT FREQUENCY MONITOR

Frank J. Lasch, Chicago, and Andrew M. Stemple, Morton Grove, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Feb. 27, 1969, Ser. No. 802,809
Int. Cl. A61b 5/04
U.S. Cl. 128—2.06 3 Claims

There is described a diagnostic system for measuring the frequency of a patient's heartbeat which automatically protects against erroneous low readings resulting from abnormally high heartbeat frequencies. An input transducer monitors the patient's electrocardiac signal and develops an amplified electrical signal representative thereof. A monostable multivibrator is responsive to this amplified signal to produce an output signal consisting of a series of pulses having a uniform amplitude and width and having a repetition rate representative of the heartbeat frequency. The pulse series is converted into a DC voltage, proportional to the repetition rate, by a frequency-to-voltage converter. A readout device in the form of a voltmeter is responsive to the DC voltage to provide a visual indication of the patient's heartbeat frequency. The output signal of the multivibrator is subject to erroneous low values resulting from abnormally high heartbeat frequencies having periods shorter than the pulse width of

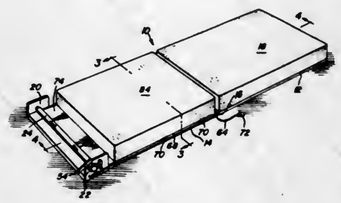


the multivibrator. To overcome this deficiency, an additional amplifier circuit is employed which is responsive to the repetition rate of the multivibrator output signal for effecting variations in the multivibrator timing circuit to maintain its pulse width shorter than the heartbeat period regardless of variations in the patient's heartbeat frequency. This prevents the erroneous low values in the multivibrator output signal and thereby precludes erroneous heartbeat frequency readings resulting therefrom.

3,554,189
TRACTION DEVICE

Ray V. Hendrickson, 235½ 33rd St., West Palm Beach, Fla. 33407

Filed July 30, 1968, Ser. No. 748,823
Int. Cl. A61f 5/00
U.S. Cl. 128—71 7 Claims



A traction device that is divided into two sections with one section moving relative to the other so that when the human body reclines thereon said portion of the body lying on the movable section is pulled relative to that portion of the body lying on the relatively fixed section. The surface of the two sections is resilient so that the body sinks therein producing a frictional holding or purchase on sections of the body to facilitate the exertion of the tractive force thereon.

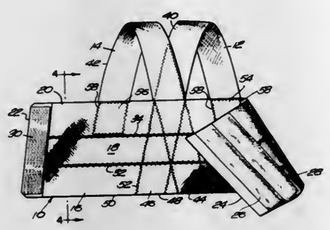
3,554,190
BACK, SHOULDER AND STOMACH SUPPORT

David Kaplan, Sharon, Mass. (7—11 Cross St., Plainville, Mass. 02762)

Filed Aug. 15, 1968, Ser. No. 752,984
Int. Cl. A61f 5/02
U.S. Cl. 128—78 3 Claims

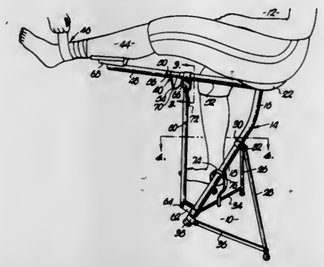
A body support having a body encircling member composed of a plurality of elastic panels made of webbing

stretchable in a body encircling direction and having means at their ends for securing the member together in a body encircling form, the garment further having a pair of shoulder loops each made of the same type of elastic webbing as in the



panels and secured at their ends to the body encircling member and adapted to extend from the back of the member, about the shoulders and under the arms to the sides of the member.

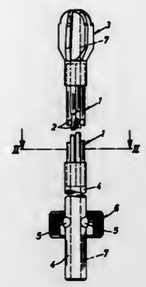
3,554,191
PORTABLE TAPING STOOL
Robert E. Barnes, Tri-B Industries East Border at First, Monroe City, Mo. 63456
Filed Jan. 6, 1969, Ser. No. 789,218
Int. Cl. A61f *13/00, 15/00*
U.S. Cl. 128—82 **7 Claims**



A taping stool for athletes which is strong enough to support the weight of a person seated thereon yet is lightweight and foldable for portability. The invention comprises a main support member having a platform thereon for supporting a person in a seated position, along with pivotal structure extending laterally from the main support member to hold the leg of a person outstretched in a convenient position for taping. Brace means carried by the main support may be shifted to a position engaging the leg support member to hold the same in its extended position. Foldable leg means cooperate with the main support member to form a self-supporting base for the taping stool. The leg support member, the brace means and the foldable leg means are all pivotally connected to the main support member and are movable from a normal collapsed position adjacent the main support member into extended positions for supporting a person seated on the stool with his leg in an elevated position.

3,554,192
MEDULLARY SPACE DRILL
Dietmar R. Isberner, Gross-Nordsee, Germany, assignor to Orthopedic Equipment Company, Inc., Bourbon, Ind., a corporation of Indiana
Filed July 23, 1968, Ser. No. 747,000
Claims priority, application Germany, July 24, 1967, 1,566,134
Int. Cl. A61f *5/04*
U.S. Cl. 128—83 **5 Claims**

The invention relates to a medullary space drill including a flexible shaft carrying at its opposite ends respectively a drill head, and an adapter piece adapted to be connected for rotation with a driving means. The shaft comprises a plurality of



parallel flexible elements arranged to provide a central passage for receiving an elongated guide element.

3,554,193
FEMUR-SETTING SURGICAL DEVICE
Ilias Konstantinou, 1851 Hawthorne St., 33579, and Merton F. Wilcox, 3135 N. Washington Blvd. 33580, both of Sarasota, Fla.
Filed July 5, 1968, Ser. No. 742,713
Int. Cl. A61f *5/04*
U.S. Cl. 128—92 **11 Claims**

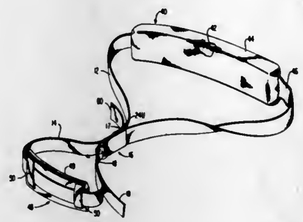


A surgical device for use in the internal fixation of a fracture in the upper region of the femur including an elongated member having a portion extending through the fracture and a head, a bone plate having an upper portion and a shank portion adapted to be secured to the shaft of the femur. The upper portion of the plate has an opening for the reception therein of the head. There is provided a connecting member positionable on the outer side of the upper portion and engageable with the head to maintain the head within the opening while permitting universal angular movement between head and upper portion. Additionally the device includes a selectively operable locking means between the connecting member and upper portion for fixing the head and upper portion to selective angular positions.

3,554,194
ARM SLING
Curt Johnson, Largo, Fla., assignor to Curty, Inc., Clearwater, Fla., a corporation of Florida
Filed Sept. 24, 1968, Ser. No. 761,992
Int. Cl. A61f *5/40*
U.S. Cl. 128—94 **7 Claims**

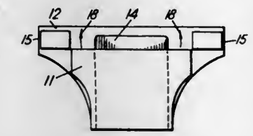
The arm sling comprises upper and lower loop or strap portions joined together to form a generally figure-eight configuration. The upper loop includes a padding comprised of a plastic foam material encased within a fabric stockinet, the padding being adapted to bear against the nape of the patient's neck. The lower loop includes a padding of plastic

foam material encased within a fabric stockinet. A pair of fabric straps are provided on the lower loop padding and threadedly receive the lower strap portion to retain the lower



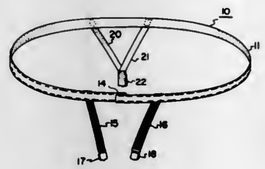
padding in adjustable position therealong. A buckle is provided for adjusting the length of both the upper and lower loop strap portions.

3,554,195
NAPKIN FOR BABIES
Ian Lindsay Murdoch, Barnes, London, England, assignor to Bowater-Scott Corporation Limited, London, England, a corporation of Great Britain
Filed May 13, 1968, Ser. No. 728,443
Claims priority, application Great Britain, May 17, 1967, 22856/67
Int. Cl. A61f *13/16*
U.S. Cl. 128—284 **6 Claims**



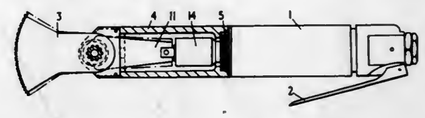
A baby's napkin comprises a paper-thin backing sheet having a central crutch portion and a back portion at the top of the sheet which is wider than a front portion at the bottom of the sheet, so that in use the ends of the back portion overlap end areas of the front portion, and one face of each pair of overlapping faces carries an area of pressure-sensitive adhesive protected by a strippable covering.

3,554,196
SANITARY BELT
Eva M. Wargo, 1441 S. Normount Place, Tucson, Ariz. 85713
Filed Feb. 19, 1968, Ser. No. 706,438
Int. Cl. A61f *13/16*
U.S. Cl. 128—291 **5 Claims**



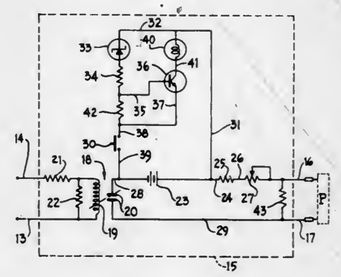
A sanitary belt having a nonelastic waistband. A "V" elastic suspension is attached to the rear of the waistband, and two separate elastic straps are attached to the band in front, thus securing the napkin at three points and minimizing pressure on the wearer.

3,554,197
PORTABLE POWER-OPERATED SAW
Arthur Kenneth Dobbie, London, England, assignor to Desoutter Brothers Limited, London, England, a British company
Filed July 22, 1968, Ser. No. 746,360
Claims priority, application Great Britain, Aug. 11, 1967, 37,000/67
Int. Cl. A61b *17/14*
U.S. Cl. 128—317 **5 Claims**



A portable power-operated saw comprising a blade with actuate teeth thereon which oscillates by means of a motor driving the blade and in which the output shaft of the motor rotates about an axis which cuts the axis about which the saw oscillates and the rotary motion of the motor is converted into the oscillating motion of the blade by a flat bladelike spring, one end of which is drivingly connected and parallel to the saw blade, while the other end of the spring is mounted by means of a spigot in a bearing on the output shaft of the motor and is eccentric therewith.

3,554,198
PATIENT-ISOLATING CIRCUITRY FOR CARDIAC FACING DEVICE
George Tatoian, Williamsville, and Richard R. Celer, East Aurora, N.Y., assignors to Cardiac Electronics, Inc., Clarence, N.Y., a corporation of New York
Filed Aug. 4, 1967, Ser. No. 658,478
Int. Cl. A61n *1/36*
U.S. Cl. 128—419 **4 Claims**

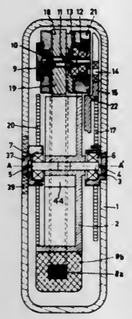


A circuit for isolating a cardiac pulsing device from a periodic timing source to prevent stray voltages from being transmitted to a cardiac patient including a high speed relay having a solenoid in series with a resistor to form a primary circuit and the relay contacts in series with a battery to form a secondary circuit which provides the voltage for stimulating the heart of a cardiac patient, with the secondary circuit including variable resistor means for varying the voltage supplied to the patient and a built-in test circuit associated for periodically testing the battery to insure that it possesses sufficient voltage for providing adequate stimulation.

3,554,199
HEART STIMULATING DEVICE

Michel Auphan, d'Orleans-Neuilly, France, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed July 5, 1968, Ser. No. 742,880
Claims priority, application France, July 24, 1967, 115.358
Int. Cl. A61n 1/36
U.S. Cl. 128—421 7 Claims



A device for stimulating the action of the heart is implanted and supplies electric pulses to the heart muscle. The device includes a balance activated by heart movement which oscillates a rotor of an alternating-current generator. Rotation of the rotor within the generator's magnetic field provides electric pulses communicated to the heart for stimulating its action.

3,554,200
GIRDLE WITH CROTCH INSERT

Concetta L. Cuozzi, Yorktown Heights, N.Y., assignor to Munsingwear, Inc., Minneapolis, Minn., a corporation of Delaware

Filed Dec. 2, 1968, Ser. No. 780,359
Int. Cl. A41c 1/00
U.S. Cl. 128—535 13 Claims

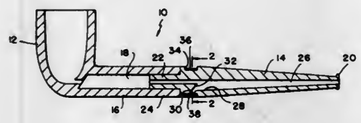


The legs and crotch of a panty girdle are respectively defined and formed by stretch yarn material. A wide strip of stretch yarn material of uniform width has its ends attached to form a loop. The loop is longitudinally cut until it is almost severed into two loops. The halves are spread apart, and front and back girdle panels sewn to the edges of the loop so cut. The two uncut edges of the loop define the leg sections of the girdle, while the uncut central section defines a crotch portion.

3,554,201
PIPESTEM

William H. Strausser, 5082 Parker, Apt. 9, Detroit, Mich.

Filed Aug. 14, 1969, Ser. No. 849,972
Int. Cl. A24f 5/06, 13/04
U.S. Cl. 131—203 5 Claims



A pipestem having a moisture vent leading downward from a moisture trap formed in the smoke passage therein, to a grooved portion on the exterior of the stem. An absorbent member is applied externally to the stem over the outlet of the moisture vent within the groove.

3,554,202
FOAMED CELLULOSE TOBACCO FILTER ROD

Saunders E. Jamison, Summit, and Gene H. Anthony, Whitehouse Station, N.J., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware

Filed July 1, 1966, Ser. No. 562,095
Int. Cl. A24d 01/06.
U.S. Cl. 131—266 3 Claims

A cylindrical rod particularly suitable as a cigarette filter is described which is comprised predominantly of foamed fibrous cellulose and a water-insoluble polymer having a glass transition temperature of at most 50° C. and a minor amount of wetting agent, the weight ratio of the polymer to the fibrous cellulose being at least about 0.4, said rod being encased by a skin of said polymer.

3,554,203
UMBRELLA SUPPORT

Lemuel R. Hall, Sr., 527 Rainbow Court, West Columbia, S.C. 29169

Filed Sept. 28, 1967, Ser. No. 671,248
Int. Cl. A45b 11/02
U.S. Cl. 135—20 4 Claims

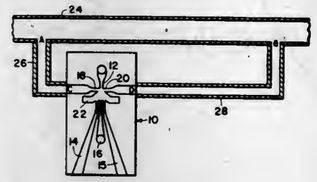


An adjustable umbrella support having a framework member receiving an umbrella thereon and having horizontally disposed slots adjacent each end thereof, backstraps adjacent each end of the framework and having vertically disposed slots in intersecting registry with the horizontal slots, shoulder straps adjacent to and representing an extension of the backstraps and carrying fastening means which pass through the aforesaid registered slots for adjustably securing the framework, backstraps and shoulder straps together, and a flexible web belt carried by the backstraps for securement about the waist of the user.

3,554,204
SYSTEM FOR DETERMINING THE RATE CHANGE OF PRESSURE

Robert H. Bellman, Horseheads, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Oct. 20, 1967, Ser. No. 676,803
Int. Cl. F15c 1/14
U.S. Cl. 137—81.5 7 Claims



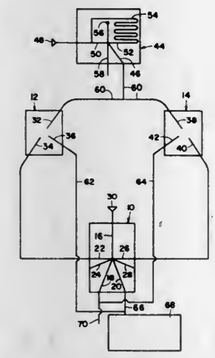
A rate of change of pressure detector employing an open loop circuit where the control nozzles of a proportional fluid amplifier are connected to a pressure source, whose rate of change of pressure is to be measured, by a pair of passages one of which is longer than the other. The pressure at the pressure source is differentiated to provide a pressure difference at the outlets of the proportional fluid amplifier which is a function of the rate of change of pressure of said pressure source in accordance with the equation

$$\Delta P_0 = G_p K \frac{(L_1 - L_2)}{c}$$

3,554,205
BINARY COUNTER

Robert H. Bellman, Horseheads, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Jan. 2, 1968, Ser. No. 695,072
Int. Cl. F15c 1/12
U.S. Cl. 137—81.5 11 Claims

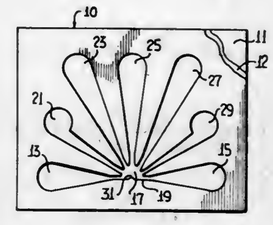


A high recovery rate binary counter having high-pressure sensitivity and independence to output loading. The counter embodies a bistable fluid amplifier, two exclusive gates, and a fluid pulse device for providing signal pulses of predetermined duration. The outlet of each exclusive gate is connected to opposing control ports of the bistable fluid amplifier while the input to the exclusive gates is connected to the outlet of the pulse device. Feedback is provided from the outlets of the bistable fluid amplifier to the control ports of the exclusive gates. A second embodiment employs AND gates in place of exclusive gates.

3,554,206
COMPARATOR AMPLIFIER

Peter Bauer, Germantown, Md., and Robert N. Jones, Wallingford, Conn., assignors to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland

Filed Mar. 20, 1968, Ser. No. 714,683
Int. Cl. F15c 1/14
U.S. Cl. 137—81.5 20 Claims

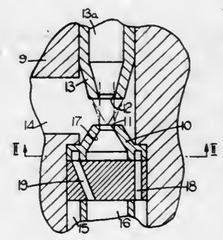


A pair of substantially opposed nozzles issue respective input fluid streams along a common wall extending from a sidewall of each of the nozzles. A wedge shaped protrusion is formed in the wall approximately midway between the nozzles, the protrusion serving to impart a velocity component normal to the wall to each of the input streams. The streams interact in the region of the protrusion producing a resultant stream having an angular direction with respect to the wall which depends upon the pressure differential between the two input streams. Alternatively the resultant stream may be deflected by control stream to represent a measure of control stream strength.

3,554,207
FLUID SWITCHING DEVICE

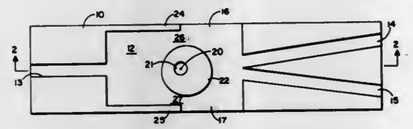
Robert Thomas John Skinner, Kenilworth, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed May 8, 1968, Ser. No. 727,581
Int. Cl. F15c 1/16
U.S. Cl. 137—81.5 2 Claims



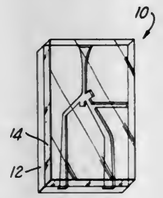
A device comprising a first nozzle having an interior chamber, a pair of inlet passages communicating with the chamber through tangential portions thereof, and a recovery nozzle, the form of the jet issuing from the first nozzle being dependent upon the pressures of the inlets and only when they are equal is there a laminar stream issuing for reception in the recovery nozzle.

3,554,208
SUPERVISORY APPARATUS
Apostolos P. Kizilos, Minnetonka, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Apr. 17, 1969, Ser. No. 817,096
Int. Cl. F15c *3/00*
U.S. Cl. 137—81.5 **14 Claims**



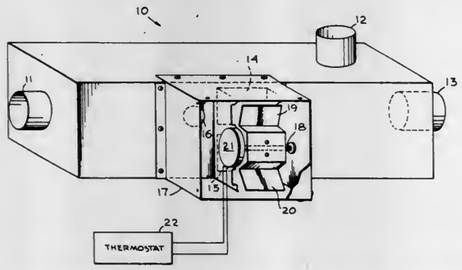
Apparatus for giving a fluidic signal in accordance with the angular position of a rotatable shaft.

3,554,209
FLUID DIODE
Richard V. Brown, Upland, and Donald G. Tweed, Riverside, Calif., assignors to Bourns, Inc., a corporation of California
Filed May 19, 1969, Ser. No. 825,595
Int. Cl. F15c *4/00*
U.S. Cl. 137—81.5 **4 Claims**



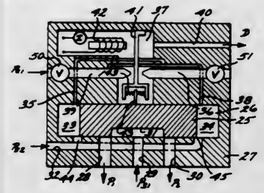
A device composed of fixed structure only and which structure defines an input fluid-passage and an output fluid-passage through which passages fluid normally passes through the input fluid-passage and into the output fluid-passage in a desired or forward direction, the fixed structure comprising fixed fluid-flow controlling means effective to inhibit reverse or backward flow of fluid from said output fluid-passage backwardly through the input fluid-passage in a fashion analogous to an electronic diode.

3,554,210
FLUID AMPLIFIER CONTROL DEVICE
Gene W. Osheroff, 2740 S. Highland Drive, Las Vegas, Nev.
Filed June 25, 1969, Ser. No. 836,328
Int. Cl. F15c *3/00, 1/04*
U.S. Cl. 137—81.5 **4 Claims**



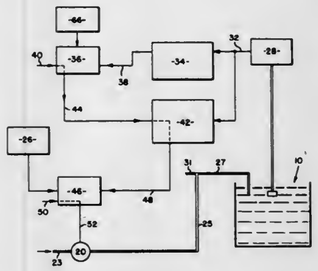
The present invention provides a new way for controlling the switching of fluid streams in a pure fluid amplifier device that is especially useful in air-conditioning systems. First, motor-driven paddles are used to selectively close the device's control channels, the operation of the motor being initiated by a thermostat, and, second, it avoids ambient air from getting into the main air-conditioned stream.

3,554,211
HYDRAULIC VALVE AND SYSTEM
Robert J. Bernstein, Garden Grove, Calif., assignor to A. B. G. Hydraulics, Inc., Garden Grove, Calif., a corporation of California
Filed Oct. 22, 1968, Ser. No. 769,491
Int. Cl. F15b *13/02, 5/00*
U.S. Cl. 137—85 **8 Claims**



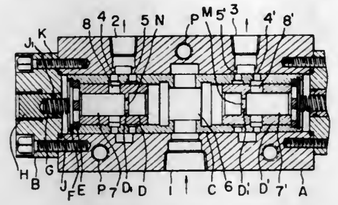
This invention relates to hydraulic control systems of the amplifier and servo valve type and to an improved valve advantageously employed in such systems. The specification discloses a hydraulic Wheatstone bridge all four legs of which includes means for varying the pressure drop in that leg including a fluid nozzle in two of the legs flow from which is altered by a movable vane actuated electromagnetically. The vane is mechanically connected to the output member the position of which is also controlled by hydraulic pressure to create a control system with feedback.

3,554,212
CHEMICAL FEED CONTROLLER
William J. Maroney, Williston Park, N.Y., assignor to Ritter Pfaudler Corporation, Rochester, N.Y., a corporation of New York
Filed June 19, 1968, Ser. No. 738,255
Int. Cl. G05d *11/08, 11/13*
U.S. Cl. 137—93 **10 Claims**



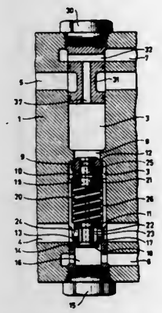
A device for automatically controlling the amount of chemicals introduced into a chemical process is disclosed. The device utilizes a variation in the chemical balance of the process to control a proportioned amount of chemical fed into the system. The proper chemical balance is maintained by compensating for variations in water flow and chemical compositions and automatically adjusting the time duration of the chemical feed to the system. The device allows chemicals to be fed to the system for a controlled time and then senses the effect on the system. If the effect deviates from a desired result, the device makes an appropriate change in the feed cycle by increasing or decreasing the cycle. The device also contains means for delaying the feed changes until the result of a previous change is effective and contains means to adjust the percentage limit of change.

3,554,213
FLOW CONTROL VALVE
Masao Yoshino, 26-8, 1-Chome, Numabukuro, Nakano-ku, Tokyo, Japan
Filed Apr. 14, 1969, Ser. No. 815,632
Int. Cl. G05d *11/00*
U.S. Cl. 137—101 **6 Claims**



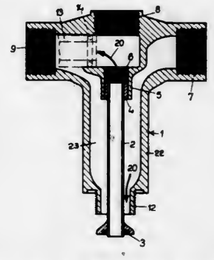
A flow control valve is formed of valve body having a longitudinally extending bore containing a main spool axially, slidably positionable within the bore and arranged to be centered along its axis. A pair of slidable subsidiary spools is positioned within an axially extending passageway in the main spool with each of the spools being located on an opposite side of a transverse plane dividing the main spool in half. Each of the subsidiary spools has an axially extending passage which is divided by a partition into two chambers with a sharp-edged orifice in the partition affording communication between the two chambers. Openings through the valve body, the main and subsidiary spools afford fluid flow through the chambers in the subsidiary spools so that the fluid can be passed in either direction through the sharp-edged orifices in the partitions.

3,554,214
VALVE DEVICE WITH RELIEF ACTION AND SUCTION ACTION FOR HYDRAULIC SYSTEMS
Stig Gote Stenlund, Boras, Sweden, assignor to Monsun-Tison AB, Boras, Sweden, a company of Sweden
Filed July 7, 1969, Ser. No. 839,207
Claims priority, application Sweden, July 11, 1968, 9567
Int. Cl. F16k *17/18*
U.S. Cl. 137—270 **9 Claims**



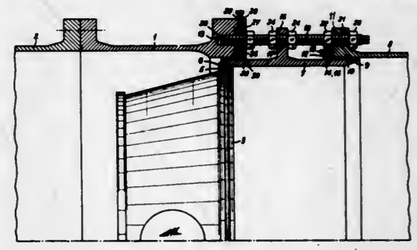
The invention relates to a valve device intended for connection into a pressure fluid conduit, as for instance a pressure fluid conduit from a pressure fluid source to a hydraulic motor. The valve device has a combined relief or overpressure valve action and suction or underpressure valve action; at excessive pressure in the pressure fluid conduit pressure fluid being discharged through the valve device to a tank and at underpressure in the pressure fluid conduit a communication being established through the valve device between the pressure fluid conduit and a tank conduit for neutralization of the underpressure in the pressure fluid conduit. The valve device is easily adjustable to give alternatively only the overpressure valve action or only the underpressure valve action. A preferred embodiment of the valve device can be connected into two different pressure fluid conduits, as for instance the two pressure fluid conduits from a pressure fluid source to the two cylinder chambers of a double action hydraulic cylinder. This preferred embodiment of the valve device gives overpressure valve action as well as underpressure valve action in both pressure fluid conduits and can easily be adjusted to discharge the overflowing pressure fluid at an excessive pressure in any one of the pressure fluid conduits alternatively to a tank conduit or directly to the other pressure fluid conduit.

3,554,215
SHUTOFF DEVICE FOR WATER LINES
Horst Jahrling, 6 am Heiligenhaus, 6204, Wehen, Taunus, Germany
Filed Apr. 1, 1969, Ser. No. 811,733
Int. Cl. G01f *15/18*
U.S. Cl. 137—271 **4 Claims**



A shutoff device which can readily accommodate a water meter comprising a pipe cross having a pair of opposing horizontal and vertical openings, an elongated vertical leg containing one of the vertical openings and an internal nipple having a vertical passageway therethrough aligned with the vertical openings of the pipe cross and a lateral passageway communicating with the vertical passageway and aligned with one of the horizontal openings of the pipe cross. An internal pipe is coaxially aligned within the elongated leg and connects into the nipple at one end and serves as a valve seat at the other end. Similar connecting arms are threaded into the two horizontal openings of the pipe cross and serve as the inlet and outlet for a water meter connected therebetween. One connecting arm has a sleeve with an O-ring seal which cooperates with the lateral opening of the internal nipple to direct the water into the water meter.

3,554,216
VALVE, PARTICULARLY SUITABLE FOR PRESSURE PIPING
Pierre Piguet, Onex, Switzerland, assignor to Ateliers Des Charmilles S. A., Geneva, Switzerland, a Swiss company
Filed Oct. 28, 1968, Ser. No. 771,164
Claims priority, application Switzerland, Nov. 7, 1967, 15,625/67
Int. Cl. F16k *43/00, 1/22*
U.S. Cl. 137—315 **4 Claims**

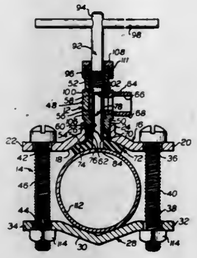


A valve has an axially movable sleeve carrying a valve seat, and for axial bolts and radial screws axially adjusting the position of the sleeve and for adjusting the roundness of the seat respectively.

3,554,217
SELF-TAPPING VALVE

Henry Ehrens, Bayside, N.Y., and Sidney Weiner, Cresskill, N.J., assignors to Sealed Unit Parts Co., Inc., Allenwood N.J., a corporation of New York

Filed Apr. 21, 1969, Ser. No. 817,990
Int. Cl. F16k 41/04
U.S. Cl. 137—318 14 Claims

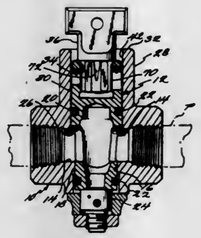


A valve for tapping a fluid carrying member comprising a valve body provided with a through bore which communicates with a fluid passageway. The body is adapted to rest matingly with the member and to be connected therewith. Movably received in the bore is a piercing element having a passage therethrough. Axially movably received in the bore is a valve stem which is movable in a first direction to engage and to initially move the piercing element to cause the element to pierce the fluid carrying member, and in a second direction away from said piercing element. The valve stem is provided with a piercing element engaging surface for sealing the piercing element passage when the valve stem engages the piercing element to prevent fluid flow therethrough.

3,554,218
TAMPER-PROOF ROTARY PLUG VALVE

John J. Smith, Decatur, Ill., assignor to Mueller Co., Decatur, Ill., a corporation of Illinois

Filed Apr. 15, 1969, Ser. No. 816,230
Int. Cl. E05b 67/36, 19/00; F16k 35/00
U.S. Cl. 137—385 9 Claims

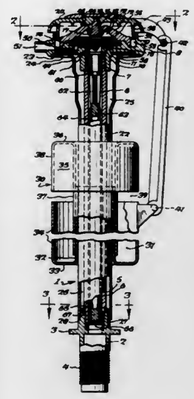


A rotary plug valve capable of being locked in a selected position by an elongated plunger-type lock member, the elongated plunger-type lock member, when in the locking position, being completely isolated from engagement by hammers, saws or the like used in an attempt to destroy the lock member for unauthorized opening of the rotary plug valve. The rotary plug valve also has the operating means for the valve plug member which may be removed and replaced by a closure plug, thereby eliminating the chance of damage to the valve plug member if an unauthorized attempt is made to operate the same. Preferably, the rotary plug valve, when used as a gas meter stop, is arranged to be locked in its closed position and when so locked, only authorized personnel with a nonstandard key means can reopen the rotary plug valve.

3,554,219
TOILET TANK SUPPLY VALVE ASSEMBLY

Harry W. Hudson, Littleton, Colo., assignor to Twentieth Century Products Corporation, Englewood, Colo.

Filed Feb. 1, 1968, Ser. No. 702,249
Int. Cl. F16k 33/00
U.S. Cl. 137—414 12 Claims

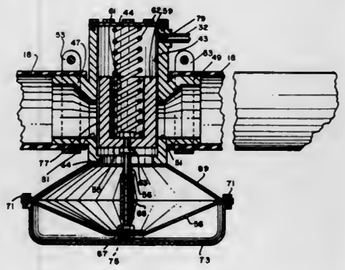


A float is supported on a normally upright casing for rising and falling therealong. A housing on the casing above the float contains a pressure chamber defined in part by a control valve movable to interrupt communication between an inlet supply conduit and a tank filling outlet. The chamber is subject to inlet pressure at all times and the control valve remains closed until the chamber pressure is relieved by opening a bleed passage from the chamber. A valve control member is mounted for swiveling movement in opposite directions about the casing and in a direction canting a bleed valve to open the bleed passage in response to falling movement of the float to which it is connected by linkage, the linkage and the float being movable with the valve control member about the casing.

3,554,220
HIGH VOLUME, RAPID RELEASE DISCHARGE VALVE

Jack W. Kice and Herbert D. Vanderlip, Wichita, Kans., assignors to Jack W. Kice, doing business as K-B Engineering Company. by mesne assignments; Russell W. Kice, doing business as K-B Engineering Company. by mesne assignments and James V. Kice, doing business as K-B Engineering Company. by mesne assignments

Continuation-in-part of application Ser. No. 730,480, May 20, 1968, now Patent No. 3,521,430. This application Aug. 12, 1968, Ser. No. 752,079
Int. Cl. F16k 31/38
U.S. Cl. 137—489.3 8 Claims



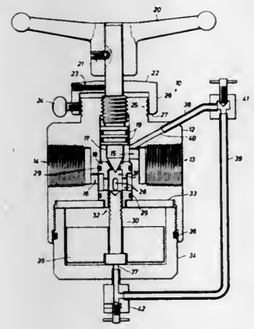
This invention is a rapid release discharge valve operable to open under differential pressure to expose a discharge

opening therethrough for the rapid release of high volume, low-pressure fluid therethrough. More particularly, this invention is a discharge valve having a main housing means; a piston assembly mounted within the housing means to open and close a discharge channel therethrough; and a pressure fluid release opening in the housing means on one side of the piston assembly whereby the discharge valve is operable to immediately move from a closed condition to a fully open condition on variation of fluid pressure on opposite sides of the piston assembly.

3,554,221
METHOD AND APPARATUS FOR STABILIZING FLUID FLOW

Everett D. McMurry and Bolling A. Abercombie, Houston, Tex., assignors to McMurry Oil Tools, Inc., Houston, Tex., a corporation of Texas

Filed Jan. 27, 1969, Ser. No. 794,189
Int. Cl. G05d 7/01
U.S. Cl. 137—501 7 Claims

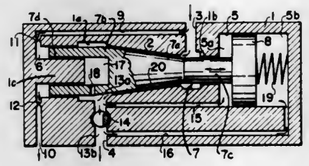


Methods and apparatus are provided for stabilizing the flow rate of fluid independently of variations in upstream or downstream pressure. A controller is provided which incorporates a selectively adjustable throttling valve, and a control valve responsive to variations in upstream pressure. A chamber is provided between the two valves to contain the fluid at a pressure intermediate of upstream and downstream pressures, and a loading mass is connected to the control valve to maintain a fixed differential in the chamber between the intermediate and the upstream pressure.

3,554,222
AUTOMATIC FLOW CONTROL VALVE

Shiso Kihara, Kobe-shi, Hiroshi Nosaka, Akashi-shi, and Takuji Koyama, Kobe-shi, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan

Filed June 3, 1969, Ser. No. 830,011
Claims priority, application Japan, June 4, 1968, 43/37789
Int. Cl. G05d 7/00
U.S. Cl. 137—501 9 Claims

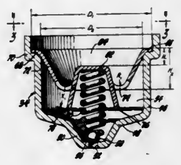


An automatic flow control valve is made up of a housing forming a valve chamber and a separate piston cylinder with a valve axially positionable within the valve chamber and piston cylinder for maintaining the outlet flow rate at a constant level regardless of any pressure changes in the liquid being supplied to the valve. The valve has a frustoconically shaped section positioned within a similarly shaped part of the valve chamber so that as the valve is displaced there are no significant changes in the cross-sectional area of the flow passageway of the liquid through the valve which could cause cavitation or vortical flow. An adjustable throttle valve, positionable between a fully opened and fully closed position, is located at the outlet from the valve. The housing has several passageways for supplying pressurized liquid to various locations within the valve chamber and the piston cylinder to regulate the position of the valve within the housing.

3,554,223
PRESSURE CONTROL VALVE ASSEMBLY AND METHOD OF CALIBRATION

James M. Shea, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed May 1, 1969, Ser. No. 820,947
Int. Cl. F16k 15/00
U.S. Cl. 137—539 6 Claims

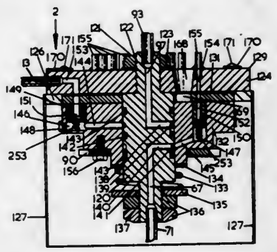


In preferred form, a pressure control valve assembly including a hollow cylindrical housing having an open end and a closed end formed by a conical member including a centrally located inlet port therein, the open end of the cylindrical member is closed by a sheet metal spring retainer having a continuously formed relatively rigid peripheral flange thereon joined by a continuously formed surface inclined downwardly into the interior of the hollow cylindrical housing to a centrally located inverted cup formation located coaxially of the inlet port. The cup formation is plastically deformable relative to the peripheral flange to set a relief pressure of a ball check element held against the inlet port by a spring element carried by the cup formation.

3,554,224
FLUID DISTRIBUTION VALVE

Colin John Kirk and Reginald John Bailey, Twickenham, Middlesex, England, assignors to Martonair Limited, Twickenham, England

Filed July 11, 1969, Ser. No. 841,081
Int. Cl. F16k 37/00, 11/02, 31/53
U.S. Cl. 137—555 10 Claims

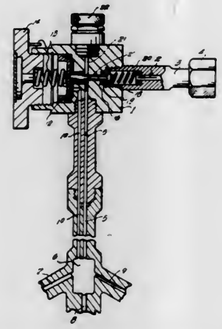


A fluid distribution valve for use, for example, in a control circuit for controlling the machine elements of a machine tool, includes a spindle supporting a rotor. Two passages in the spindle communicate with respective annular galleries between the rotor and spindle and two series of ports are arranged in a circle about a nonrotary member. The two series of ports communicate with the respective galleries through passages in the rotor, and the rotor is rotated by indexing means in increments to connect the spindle passages with different ports in the respective series of ports.

3,554,225
DEVICE FOR CHARGING A CONTAINER WITH GAS UNDER PRESSURE

Jose Debenedetto, Cordsba 1611, Rosario, Pcia de Santa Fe, Argentina

Filed Jan. 7, 1969, Ser. No. 789,472
Claims priority, application Argentina, Apr. 25, 1968, 213,796
Int. Cl. F16k 37/00; G05d 7/00
U.S. Cl. 137—557 6 Claims

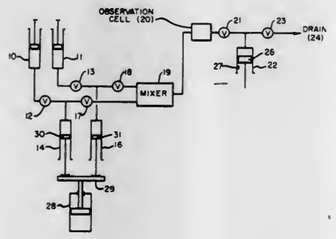


The invention relates to a device for charging a gas under pressure, such as carbon dioxide, into containers such as barrels containing beer or other drinks. The device avoids the possibility of the control valve being blocked or jammed by the formation of frost and/or ice caused by the expansion of the gas, by providing a gas expansion chamber removed from said valve, whereby the frost of ice formed therein will not prevent the normal operation of the movable parts of the valve.

3,554,226
VALVING FOR A STOPPED FLOW CELL

John F. W. Robbins, Los Altos, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Apr. 9, 1969, Ser. No. 814,546
Int. Cl. F16k 37/00, 37/00
U.S. Cl. 137—559 3 Claims

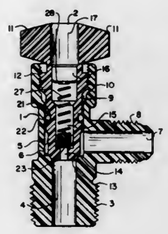


A valving device for a stopped flow kinetic system employing reactant reservoirs for filling drive cylinders, which cylinders force reactants through a mixer and into an observation cell. The valving device includes a pair of check valves, such as ball check valves, one interposed between the reservoirs and drive cylinders and the other interposed between the drive cylinders and the mixer. Responsive to reactant fluid pressure, the valving device permits reactants to flow from the reservoirs to the drive cylinders and, in turn, to the mixer while stopping backflow from the mixer to drive cylinders and from the drive cylinders to the reservoirs.

3,554,227
FAIL-SAFE SHIPPING CONTAINER FOR COMPRESSED FLUIDS

William C. Yocum, Mount Lebanon Township, Allegheny County, Pa., assignor to Superior Valve Company, Washington, Pa.

Continuation-in-part of application Ser. No. 672,273, Oct. 2, 1967, now abandoned. This application Dec. 30, 1968, Ser. No. 814,472
Int. Cl. F16k 45/00
U.S. Cl. 137—588 7 Claims

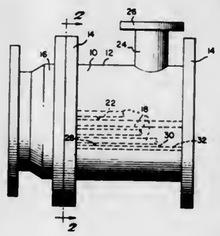


Apparatus for shipping and storing compressible fluids and for controlled withdrawal and use of said fluids without danger of explosion. Specifically disclosed is apparatus comprising thin-walled metallic container means and thermoplastic valve means therefor. Container means has an opening therein for receiving thermoplastic valve means whereby fluids are sealed within container means when the valve means is closed. Thermoplastic valve means has constructed therein safety valve means including (i) first and second bores, (ii) sealing means interposed between said bores, and (iii) spring means urging against said sealing means at a selected pressure to block fluid passage between said bores whereby fluid is contained in the container means at internal pressures of fluid within the container means below the selected pressure. Thermoplastic valve means is of a composition which is at least deformable under pressures up to said selected pressure when heated to an elevated temperature above normal working temperatures but below the annealing temperature of the container means.

3,554,228
FLUID MIXING APPARATUS AND METHOD

Raymond T. Schneider, Lakeland, Fla., assignor to Wellman-Lord, Inc., a corporation of Florida

Filed June 28, 1968, Ser. No. 740,866
Int. Cl. B01f 5/00; C01b 21/42; C05c 1/00
U.S. Cl. 137—599 5 Claims

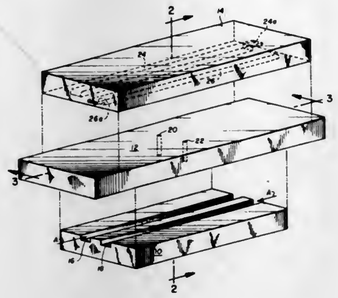


A method of and an apparatus for mixing fluids. A first fluid is introduced into a fluid zone defined by a cylindrical shell. A second fluid is introduced into a plurality of pipes passing through the fluid zone at a pressure lower than that of the first fluid. Each pipe has a small passageway through its wall through which the first fluid enters due to the pressure difference. The two fluids then mix during passage from the fluid zone within the pipes.

3,554,229
FLUIDIC POTENTIOMETER

Vincent E. Coyle, Wayne, N.J., assignor to Singer-General Precision, Inc., Little Falls, N.J., a corporation of Delaware

Filed Dec. 19, 1968, Ser. No. 785,273
Int. Cl. F16d 1/00; F15c 3/00
U.S. Cl. 137—608 6 Claims

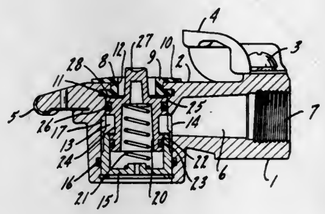


A fluidic potentiometer having a slidable member adapted to slide with respect to a passage containing fluid under pressure and sense the pressure of fluid at any point along said passage, along with means for providing an output signal corresponding to the pressure sensed.

3,554,230
GLADHAND CONSTRUCTION

Arthur A. Berg, 6719 N. Leroy Ave., Lincolnwood, Ill., 60645, and Werner Kobnick, 6900 Heidelberg-Kirchheim Oppelner Strasse 6, Heidelberg, Germany

Filed July 3, 1968, Ser. No. 742,341
Int. Cl. F16l 37/28
U.S. Cl. 137—614.04 3 Claims



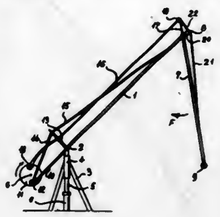
A gladhand containing a valve automatically closing its outlet and having a portion extending through the outlet for automatic opening upon engagement with a cooperating gladhand construction.

3,554,231
COUNTERPOISED SELF-BALANCING FLUID-TRANSFER SWIVEL JOINTED RIGID-PIPING CONNECTION

Cesare Caregnato, 36/D Via Arrigo Beito, Genoa-Pegli, Italy

Filed June 27, 1968, Ser. No. 740,595
Claims priority, application Italy, July 4, 1967, 7132A/67
Int. Cl. B67d 5/00
U.S. Cl. 137—615 1 Claim

A fluid transfer piping comprising a swinging rigid pipe section fulcrumed to and connected by means of a swivel joint onto a stand pipe, a supplementary pipe section connected by a swivel joint to the free end of said swinging pipe section, a counterpoise pivotably supported eccentrically on a cantilever arm extending from said stand pipe, and connecting members connecting said counterpoise and said swinging pipe sections so that by swinging the swiveling pipe sections with respect to the stand pipe and to one another,

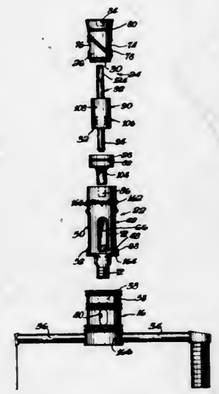


the counterpoise is rotated so as to always substantially balance the varying momentum of the swiveling rigid pipe sections.

3,554,232
MIXING FAUCET

Frederick M. Kappel and John G. Pecis, Wilmington, Del., assignors to Speakman Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 30, 1968, Ser. No. 725,414
Int. Cl. F16k 11/08
U.S. Cl. 137—625.17 4 Claims



A valve housing for a mixing faucet with molded surface waterways on the exterior of the housing and an integral sealing member surrounding the waterways for separating them. A method is also provided for producing the integral seal by introducing sealing material under pressure in the space between the surface waterways and the interior wall of a valve casing that snugly fits around the valve housing.

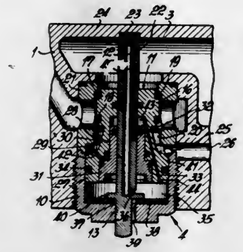
3,554,233
CONTROL VALVE ASSEMBLY FOR A PNEUMATICALLY OPERATED FASTENER DEVICE

Jurgen Korth, 7 Birkenweg 3001, Berenbostel, Germany

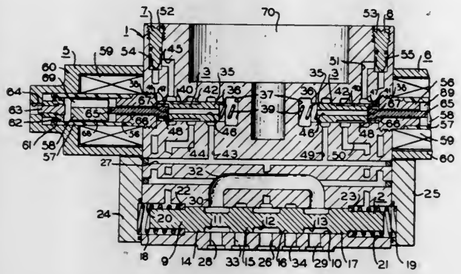
Filed Sept. 20, 1968, Ser. No. 761,027
Int. Cl. F16k 11/07
U.S. Cl. 137—625.6 4 Claims

Within the valve piston of a control valve assembly for a pneumatically operated fastener device, an auxiliary valve member is slidably mounted on the valve stem which valve member is designed as a differential piston, the middle annular area of which communicates with the open air whereas the upper smaller face communicates with a chamber which, in its turn, communicates with the valve housing space beneath the valve piston. Compressed air is supplied to this

chamber when the valve piston moves to open position and the valve piston is returned to closed position upon completion of the working stroke of the tool, whereby a higher sequence of working strokes is achieved.



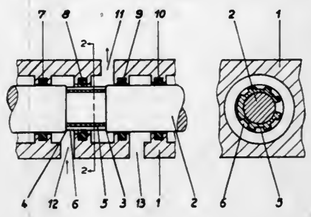
3,554,234
HYDRAULIC DIRECTIONAL CONTROL VALVE DEVICE
Ronald C. Kurtz, Lexington, Ky., assignor to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania
Filed Dec. 22, 1967, Ser. No. 692,999
Int. Cl. F15b *13/043*
U.S. Cl. 137—625.64 **14 Claims**



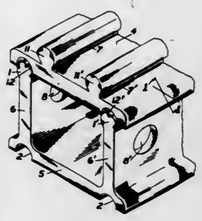
A hydraulic directional control valve device in which a pair of pressure balanced solenoid-operated pilot valves are disposed in a single housing with a liquid pressure operated slave spool valve controlled thereby, the solenoid being liquid cooled by communicating the armature chamber with the liquid pressure system by which the slave spool valve is operated, thereby totally immersing the armature in the same liquid utilized to control the slave spool valve member.

3,554,235
CONTROL VALVE DEVICE HAVING SEAL RETAINING MEANS
Detlef Opel, Gehrden, and Karl-Heinz Brinkmann, Hannover, Germany, assignors to Westinghouse Bremsen-und Apparatebau G.m.b.H., Hannover, Germany
Filed Aug. 30, 1968, Ser. No. 756,611
Claims priority, application Germany, Sept. 19, 1967, W40625
Int. Cl. F16k *11/07*
U.S. Cl. 137—625.69 **3 Claims**

A control valve device having seal retaining means, in which the conventional O-rings disposed in ring grooves on the bore of a slide control valve body or on a spool member axially movable in the bore are retained in their respective ring grooves against blowout pressure across the rings by way of a compression ring member installed on the necked portion of the spool member or an expansion ring member installed in a groove on the bore, which ring members include circumferentially, alternately disposed, axially extending, parallel grooves and lands, the lands serving to prevent movement of the O-rings out of their respective ring grooves, and the grooves serving to pass fluid through the bore around the O-rings.



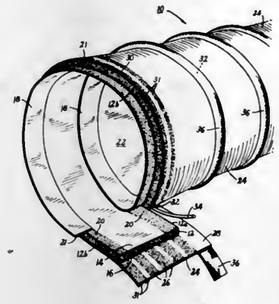
3,554,236
STACKABLE WIRING DUCT
Clifford A. Rhodes, 2816 German St., Erie, Pa. 16504
Filed Nov. 26, 1968, Ser. No. 779,107
Int. Cl. F16l *9/22*
U.S. Cl. 138—117 **5 Claims**



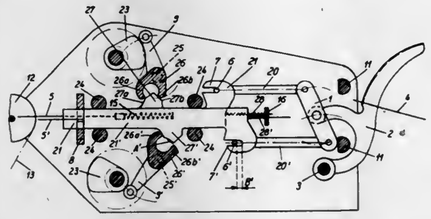
A raceway made up of a plurality of raceway units for electrical wiring or the like which may be placed one on top of another to form a multiple raceway assembly. The raceway assembly provides separate raceway conduits for isolating different types of wiring. A joint structure is provided for holding the sections of the raceway firmly together. The joint structure is the form of grooves that receive cylindrical beads. The grooves have radii that are slightly greater than the radii of the cylindrical beads so that the beads snap into the grooves and thereby hold the raceway assembly together. The raceway may be cast from metal, extruded from plastic material or made from any other suitable material. The raceway sections may be easily added to or changed without disturbing the wiring in the other raceways.

3,554,237
INSULATED WIRE-REINFORCED FLEXIBLE HOSE
Richard B. Pelley, East Kingston, N.H., James R. Warner, Groveland, and George E. Herbert, Haverhill, Mass., assignors to Callahan Mining Corporation, New York, N.Y.
Filed Mar. 29, 1968, Ser. No. 717,307
Int. Cl. F16l *9/16*
U.S. Cl. 138—122 **8 Claims**

The disclosed hose comprises an inner strip of insulating material laminated with heat reflective sheeting and covered with a flexible tape. The composite is wound into a hose with the lateral edges of consecutive tape convolutions overlapped and adhered together to form a helical seam. A helically deformed reinforcing wire is lodged in the helical seam just prior to its formation and a wear strip may be adhered thereover for abrasion resistance. The inner seam of the hose is sealed by a band of heat reflective material. The hose is manufactured by a continuous process in which the insulating strip, band, tape and wear strip are fed through a pressure guide which bonds them together, and the composite hose cover is then fed to hose forming apparatus.



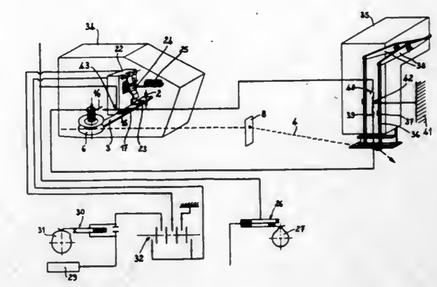
3,554,238
DOBBIES
Ernst Hoenig, Horgen-Zurich, Switzerland, assignor to Staubli Ltd., Zurich, Switzerland
Filed Apr. 23, 1968, Ser. No. 723,527
Claims priority, application Switzerland, Apr. 25, 1967, 5906/67
Int. Cl. D03c *1/00, 15/00*
U.S. Cl. 139—68 **2 Claims**



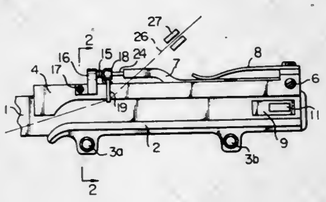
A dobby in which the reading needles are actuated into reading position of a perforated pattern card by a first system that applies a low value driving force to the needles so that the pattern card is not damaged if a perforation is not sensed by the needles as would be the case if too strong a force were applied to the reading needle. A second driving system operative in a series mode with the first system applies a stronger driving force to the needles in those instances where a perforation in the pattern card is read by the needles.

3,554,239
SHUTTLELESS LOOM WEFT CONTROL DEVICE
Michel Gabet, Montigny en Cambraisis, France, assignor to Fatex, Lyon (Rhone), France
Filed June 25, 1968, Ser. No. 739,697
Claims priority, application France, June 30, 1967, 112,685
Int. Cl. D03d *47/34, 51/34*
U.S. Cl. 139—122 **10 Claims**

A shuttleless loom weft control device comprises, for each weft, a rocking lever whose position is determined by the advance of the weft during its insertion, having a thread tightener at one end for this purpose. At the other end of the lever is a permanent magnet facing which are situated, for the two extreme positions of the lever, magnetic blade switches connected respectively to two working and resting contacts of a weft thread selector. The lever cooperates with a switch whose successive openings and closings are synchronized with the motion of the loom. The movement of the lever is cam- or electromagnet- governed so that the lever is free to rock during the second part of the thread drawing. The loom-synchronizing switch comprises a magnetic rotating pastille or a cam coordinated with the lever cam. The weft thread selector has a thread selector element for each weft thread and each has a permanent magnet which closes one or other of the working and resting contacts.



3,554,240
FEEDING DEVICE OF FILLING YARN USED FOR SHUTTLELESS LOOM
Toemon Sakamoto, Hamamatsu-shi, Japan, assignor to Enshu Limited, Hamamatsu-shi, Japan, a company of Japan
Filed July 15, 1968, Ser. No. 744,929
Claims priority, application Japan, Sept. 9, 1967, 42/58,062
Int. Cl. D03d *47/34, 47/38*
U.S. Cl. 139—125 **11 Claims**



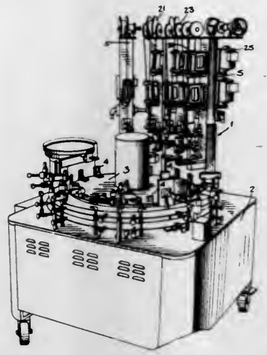
A feeding device of filling yarns disposed to a shuttle box of a pirnless shuttle loom having at least one filling yarn supply source and shuttle having yarn-catching means. A yarn guide arm introduces the filling yarn from the supply source into a cavity of the shuttle in response to the rearward pivotation of a shuttle swell caused by the presence of the shuttle in the shuttle box while keeping the filling yarn out of the shuttle box when the shuttle is absent in the shuttle box.

The feeding device is usable with a dobby or Jacquard mechanism of the loom. The yarn guide arm is put in an operable position intermittently and periodically according to signals transmitted mechanically, hydrostatically or electromagnetically from such mechanism.

3,554,241
LAMP BRIDGE FORMING MACHINE WITH WIRE CUTTING AND GUIDING MEANS
William T. Engel, Union, and Arthur C. Sonderland, Bergenfield, N.J., assignors to Kahle Engineering Co., Union City, N.J., a corporation of New Jersey
Filed Sept. 15, 1967, Ser. No. 667,936
Int. Cl. C03b *23/14*
U.S. Cl. 140—1 **4 Claims**

A method and means for automatically assembling lamp bridges and similar articles consisting of a glass rod or other support element having several short wires embedded in the rod or element. A machine is provided having a rotating turret mounting a series of spaced wire support dies. These dies are loaded with a predetermined number of short wires at a

series of vertically oriented wire feed heads. The wire feed heads are arranged for precisely positioning and feeding

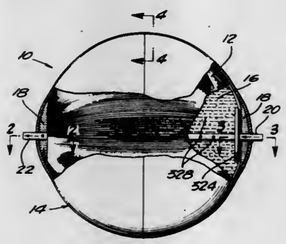


short lengths of wire into the dies and are arranged to handle such wires of varying diameters and lengths. After the dies are filled at the wire feed heads with the appropriate number of wires, the rotating die support turret then moves the wire filled dies first to a rod feeding station where rods are loaded onto the dies and thereafter the dies are moved to a series of rod heating and pressing stations where the wire ends are imbedded in the support rods.

3,554,242
METHOD OF FORMING A SCREEN

Norman L. Cleghorn, North Hollywood, and Albert G. Anderson, Fountain Valley, Calif., assignors to Western Filter Co., Inc., Gardena, Calif., a corporation of California

Filed Apr. 1, 1968, Ser. No. 717,816
Int. Cl. B21f *27/18*
U.S. Cl. 140—107 **10 Claims**



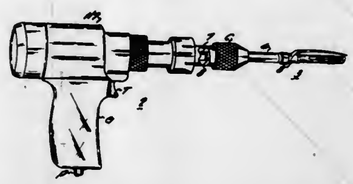
Methods of fabricating hollow concavo-convex shapes from a flat blank by pleating and then forming the blank. The pleated, rolled blank is not placed in a die cavity. It is only expanded into a spherical shape. Liquid-gas separator screens produced by the forming methods in such manner that a predetermined screen pore size is maintained whereby the screens exhibit a meniscus liquid gas separating action under a normal pressure drop across the screens.

3,554,243
INSULATION STRIPPING AND WIRE WRAPPING EQUIPMENT

Ralph A. DeRose, Villa Park, and Renualdas P. Dicius, Hinsdale, Ill., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware

Filed Mar. 28, 1968, Ser. No. 716,878
Int. Cl. B21f *15/00*
U.S. Cl. 140—124 **10 Claims**

Wire wrapping equipment is provided in the form of a novel bit for a wire wrap machine. The bit has the capability of removing insulation from a wire and then wrapping the bared wire around a terminal. To perform these functions the bit includes a rotary shaft supported within a cylindrical element. The cylindrical element and the rotary shaft couple directly to the wire wrap machine which holds the cylindrical element in a fixed position while coupling the rotary element

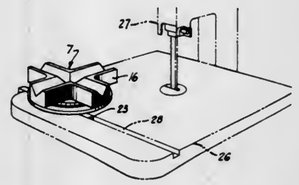


to a drive shaft. An insulated wire to be wrapped is inserted into a slot on the rotary element, under a cutting element on the rotary element and over a slot fixed to the cylindrical element. A terminal to be wrapped is inserted into a hole in the end of the rotary element. When the rotary element is turned, insulation is severed by the cutting element, and the wire is pulled from the insulation by coaction of the rotary element and the slot in the fixed element. With further rotation, the bared wire is wrapped around the terminal.

3,554,244
GUIDED GAGE FOR BAND SAWS

Charles T. Biscardi, 19 East Mill Road, Maple Shade, N.J. 08052

Filed Oct. 14, 1968, Ser. No. 767,349
Int. Cl. B27b *27/08*
U.S. Cl. 143—169 **5 Claims**



This invention consists of a circular base plate; a graduated rotationally stationary ring that encircles the base plate; and another ring that encircles the graduated ring. The last mentioned ring having a work holder secured to the top thereof. When viewed from the top, the work holder is in the shape of a cross which is V-shaped when viewed from the end of each arm of the work holder. A guide bar is provided with two vertically disposed and spaced pins that project upward into recesses located in the underside of the aforesaid graduated ring for holding the guided gage on the table of a bandsaw or other power tool when the guide bar is placed in the slot that is located in the table of the bandsaw or other power tool.

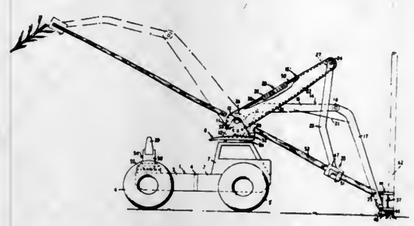
3,554,245
FELLER-LIMBER-BUNCHER LOGGING MACHINE

John E. Eynon, Port Arthur, Ontario, Canada, assignor to Abitibi Paper Company Ltd., Toronto-Dominion Centre, Toronto, Canada

Continuation-in-part of application Ser. No. 704,016, Feb. 8, 1968. This application July 16, 1968, Ser. No. 745,238
Int. Cl. A01g *23/08*
U.S. Cl. 144—3 **45 Claims**

A tree harvesting machine includes a mobile carrier 1 upon which a felling boom assembly 14 and a limbing boom assembly 15 are pivotally mounted. A tree is severed and lowered to a limbing position by the felling boom assembly

14 and then while the tree is held by the felling boom assembly 14, the limbing boom assembly 15 removes the limbs.

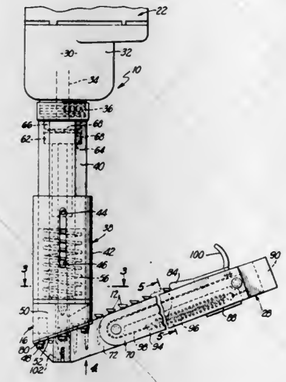


The limbed tree is then moved to a bunching position, with or without the assistance of the limbing boom assembly.

3,554,246
TOOL FOR DRIVING FASTENERS

Donald B. Halstead, 278 Foxbury Ave., Pomona, Calif. 91767

Filed June 7, 1968, Ser. No. 735,420
Int. Cl. B25b *23/00*
U.S. Cl. 144—32 **5 Claims**



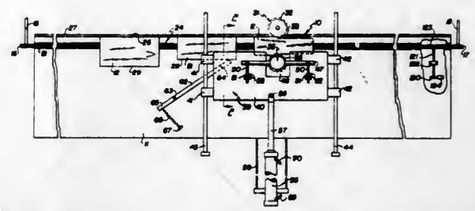
A tool is provided for driving fasteners, such as nails, screws and the like, into a workpiece. The tool has a guide with a forwardly opening bore containing a fastener driving spindle which is longitudinally movable in the bore in a forward driving stroke and a rearward retraction stroke. The fasteners are prepackaged in a friable carrier strip to which the fasteners are secured in spaced relation and which is fed endwise into the guide bore following each retraction stroke of the tool spindle to locate the currently leading fastener on the strip in coaxial driving position within the bore in front of the spindle. During each forward driving stroke, the spindle shears and fragments the leading end of the carrier strip to release the leading fastener and drive the latter forwardly into a workpiece.

3,554,247
APPARATUS FOR TRIMMING ARTICLES OF VARYING WIDTHS

Arild Larsen, Langley, British Columbia, Canada, assignor to MacMillan Bloedel Limited, Vancouver, British Columbia, Canada

Filed Dec. 5, 1968, Ser. No. 781,350
Int. Cl. B27c *1/02*
U.S. Cl. 144—117 **13 Claims**

Automatic apparatus for trimming shingles, shakes, and other articles of varying widths to produce true sides thereon and including a carriage supporting a trimming head with means for moving the carriage towards and away from the path along which the articles are moved, a follower arm having an end biased towards the path and engaged by sides of

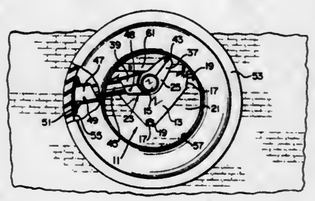


the article moving therealong, said arm being shifted to a position determined by the width of the article engaged thereby and through an electrical system causing the carriage to be shifted to position the trimming head so as to be able to trim or make true the side of this article.

3,554,248
TIRE STAND

William W. Chambers, Towson, and Jerome I. Rebold, Baltimore, Md., and Somers H. Smith III, Falls Church, Va., assignors to The Black and Decker Manufacturing Company, Towson, Md., a corporation of Maryland

Filed July 26, 1968, Ser. No. 747,983
Int. Cl. B29h *17/00*; B60c *25/00*
U.S. Cl. 144—288 **15 Claims**



The device disclosed herein is a removable, wall-mounted stand adapted to support a tire while it is being studded. The stand is reversible to suit available space where installed and is adapted to accommodate a stud gun when not in use, studs, and an automatic stud feeder.

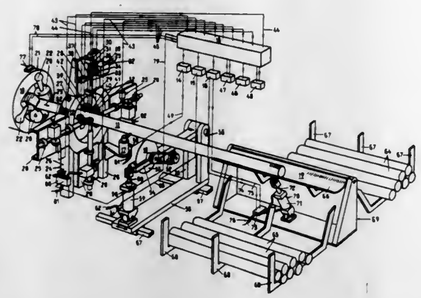
3,554,249
METHOD FOR GRADING AND CLASSIFYING DEBRANCHED TREE-TRUNKS AND SIMILAR ROUNDWOOD ACCORDING TO THE USEFULNESS OF THE WOOD CONTAINED THEREIN, AND AN APPARATUS FOR PUTTING THE METHOD INTO EFFECT

Anders Ingvar Arnelo, Vasteras, and Nils August Arnelo, Malmo, Sweden, assignors to Essem Metotest AB, Skultuna, Sweden

Filed Apr. 17, 1968, Ser. No. 722,129
Claims priority, application Sweden, Apr. 19, 1967, 5462/67
Int. Cl. A01g *23/02*
U.S. Cl. 144—312 **22 Claims**

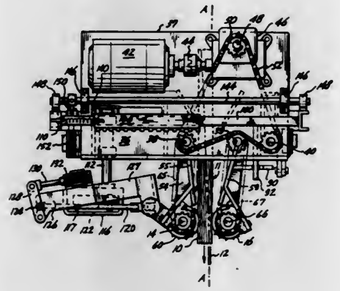
An apparatus and method are provided for grading and classifying debranched tree trunks or similar roundwood. The apparatus includes a system for sensing change in diameter of the wood along its length; and for registering differences in diameter along the length of the wood. A device then determines the degree of crookedness of the wood along its length and registers the crookedness of the wood whereafter signals are sent in response to variations in diameter of the wood

and in response to varying degree of crookedness of the wood. Upon receipt of these signals the wood is cut or



marked or sorted according to a predetermined program based upon standard norms for saw wood and pulpwood.

3,554,250
METHOD AND APPARATUS FOR SAWING SHINGLE AND SHAKE BLANKS
Carl M. Ulsky, Rte. 2, Box 733, Lake Stevens, Wash. 98258
Filed Apr. 28, 1969, Ser. No. 827,461
Int. Cl. B27m *3/02*; B27b *13/00*
U.S. Cl. 144—323 11 Claims



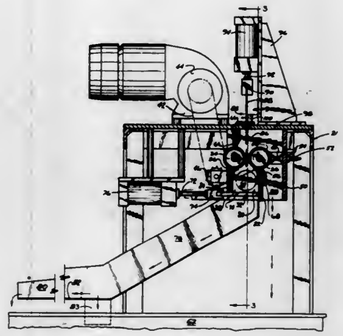
A method and means employing a crowding pressure is provided to saw a board diagonally or obliquely between its broad faces from end-to-end for the production of tapered shingles or shakes.

3,554,251
DETACHABLE BIT RATCHET HAND TOOL
Russell E. McLogan, Hillsdale, Mich., assignor to Vaco Products Company, a corporation of Illinois
Filed Aug. 15, 1968, Ser. No. 752,952
Int. Cl. B25g *3/12*
U.S. Cl. 145—75 3 Claims



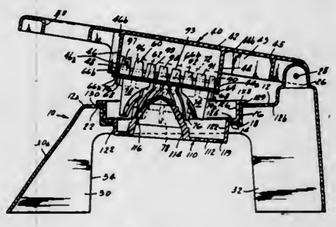
A detachable bit ratchet hand tool having an axially aligned handle bit and adapter and a ratchet means coupling the handle and bit adapter for selective combination, reverse and forward driving, and a spring in said adapter for quick-connect and quick-release engagement of tool bits.

3,554,252
METHOD AND APPARATUS FOR DEPITTING PIT-CONTAINING FRUIT MATERIAL
Mariano V. Artiaga, Winnetka, Arthur Storrie, Chicago, and Brian P. Suzik, Fox Lake, Ill., assignors to Kitchens of Sara Lee, Inc., a corporation of Maryland
Filed Apr. 25, 1968, Ser. No. 724,093
Int. Cl. A23n *3/00*
U.S. Cl. 146—18 3 Claims



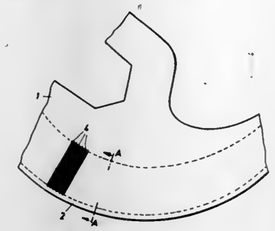
Described herein is a method and apparatus for depitting fruit such as cherries, apricots and the like. The fruit, which may be precooked, is conveyed to a pair of members such as a pair of rollers defining a gap between them, which gap is slightly less than the smallest dimension of the pit in particular fruit. The rollers are counterrotated and the fruit supplied at the throat of the rollers leading to the gap is passed through the gap between the rollers, the pits remaining behind. The fruit meat is conveyed to a suitable receptacle and the pits are collected from the vicinity of the rollers and intermittently removed therefrom.

3,554,253
COMBINED SLICING, DICING, CORING AND JUICING APPARATUS
Paul Vasile, 124 Dickason St., Jackson, Ohio 45640
Filed Aug. 30, 1968, Ser. No. 756,569
Int. Cl. B26d *3/26*
U.S. Cl. 146—40 9 Claims



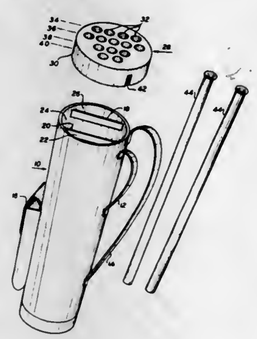
A food preparation apparatus includes a pivotally mounted operating arm that carries a detachable reversible, shaped pusher means for driving the object to be prepared into operative engagement with an interchangeable cooperating treating element. Examples of the treating elements are a juicer assembly, corer and cutters.

3,554,254
KNIFE BLADE FOR MACHINES PRODUCING SAUSAGE FILLING MATERIAL
Fritz Knecht, Am Schlachthof 798, Revensburg, Germany
Filed Aug. 29, 1968, Ser. No. 756,253
Claims priority, application Germany, Sept. 2, 1967, 1,632,111
Int. Cl. B02c *18/06*
U.S. Cl. 146—106 3 Claims



A knife blade having countersinks on its surface, in particular for machines for production of sausage filling, in which the countersinks are designed such that a closed, non-toothed cutting edge remains.

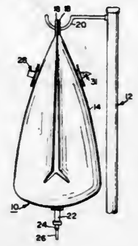
3,554,255
ADAPTER FOR GOLF BAG
Joseph P. Mangan, Whitestone, N.Y., assignor to North American Forwarding Corporation, Sparta, N.J., a corporation of New Jersey
Filed Oct. 30, 1968, Ser. No. 771,815
Int. Cl. A63b *55/00*
U.S. Cl. 150—1.5 4 Claims



The invention is concerned with an adapter for facilitating the orderly arrangement of golf clubs within the open end of a golf bag. The adapter comprises a resilient body member removably positioned in the open end of the golf bag in frictional engagement therewith. The body member has a plurality of passageways therethrough for the reception of the golf clubs and preferably, the passageways are arranged in a predetermined pattern in accordance with the preferred order of golf club usage.

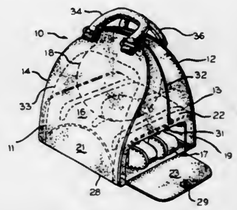
3,554,256
FLEXIBLE INTRAVENOUS CONTAINER
Douglas W. Anderson, Palatine, Ill., assignor to Dave Chapman, Goldsmith & Yamasaki, Inc., Chicago, Ill., a corporation of Delaware in Trust
Filed Nov. 8, 1968, Ser. No. 774,291
Int. Cl. A61m *5/14*
U.S. Cl. 150—8 11 Claims

A container for packaging and feeding intravenous fluids includes a flexible tubular container member having sealed ends and an outlet connector disposed midway between the ends of the container for interconnecting with an intravenous tube. The ends of the container member are adapted to be attached to a support so that the container member can be



folded over and its ends attached to the support, whereby the outlet is disposed at the bottom of the container member. At least one other connector is located near one end of the container member to permit an additive to be added to the contents of the container.

3,554,257
COMPARTMENTALIZED BOWLING BALL BAGS AND STANDS THEREFOR
Samuel N. Glantz and Milton Glantz, both of 1127 W. Division St., Chicago, Ill. 60622
Filed Nov. 29, 1968, Ser. No. 779,693
Int. Cl. A45c *3/12*, *11/00*, *13/02*
U.S. Cl. 150—52 8 Claims



Compartmentalized bowling ball bags providing selective access to the individual compartments or access to the compartments collectively.

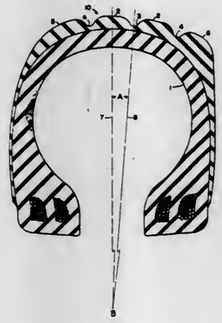
3,554,258
SELF-LOCKING THREADED ELEMENT
Richard J. Duffy, Salem, Mass., assignor to USM Corporation, Flemington, N.J., a corporation of New Jersey
Filed May 2, 1969, Ser. No. 821,178
Int. Cl. F16b *39/34*
U.S. Cl. 151—7 4 Claims



A self-locking threaded element to give low but consistent resistance to displacement including a resin deposit on the threaded surface with spaced portions of greater thickness than intervening portions. The resin deposit may be formed

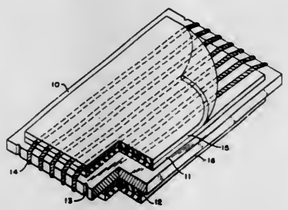
by directing a stream of fine particles of heat softenable resin against a threaded surface portion of a heated metallic element under controlled conditions. Resin particles contacting the heated surface are caught and fused as a deposit of the desired contour and the resin is then hardened by cooling.

3,554,259
TIRES
John Webb, Egham, Surrey, England, assignor to The Firestone Tire & Rubber Company, Akron, Ohio
Filed Oct. 14, 1968, Ser. No. 767,338
Claims priority, application Great Britain, Oct. 20, 1967, 47,936/67
Int. Cl. B60c *5/00, 9/00, 11/00*
U.S. Cl. 152—352 **4 Claims**



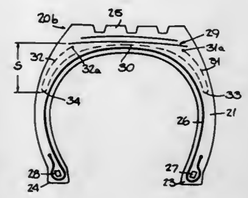
This invention relates to a tire to be utilized on a cambered wheel assembly of an aircraft. The tire of this invention has its ground-engaging tread surface laterally offset in relation to the medial plane of the tire carcass and is mounted in the cambered wheel assembly so that the offset caused by the camber of the cambered wheel assembly is compensated for by the offset of the ground-engaging tread surface of the tire.

3,554,260
GLASS CORD REINFORCEMENT OF ELASTOMERIC ARTICLES
Paul S. Shoemaker, Grosse Pointe Woods, and Walter K. Klamp, Ann Arbor, Mich., assignors to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey
Filed Jan. 6, 1969, Ser. No. 789,217
Int. Cl. B60c *9/06, 9/20;* **D02a** *3/48*
U.S. Cl. 152—359 **8 Claims**



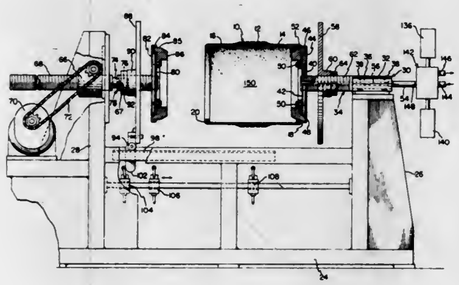
The elimination or reduction of broken glass cords in pneumatic tires is accomplished by using cords with tensile efficiency greater than 75 percent and a twist product within the range of zero to 0.300 turns. Tensile efficiency is a ratio of the in-rubber tensile strength of the cord to its theoretical, calculated tensile strength.

3,554,261
PNEUMATIC TIRES
Henri Mirtain and Andre Devienne, Compiegne, France, assignors to Uniroyal Englebert France S. A., Paris, France, a corporation of France
Filed July 16, 1968, Ser. No. 745,278
Claims priority, application France, July 24, 1967, 115,427
Int. Cl. B60c *9/64*
U.S. Cl. 152—361 **15 Claims**



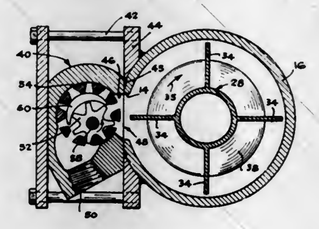
Radial ply tires having good vertical flexibility as well as lateral stability even at high speeds are disclosed. The tires are characterized by a sidewall construction in which a radially inward zone in at least one sidewall is reinforced only by the ply structure of the radial carcass itself, and the respective adjacent radially outwardmost sidewall zone contiguous with the tread region of the tire is additionally reinforced by a supplementary ply structure of the carcass extending from the breaker region into the sidewall. In a preferred embodiment, the supplementary ply structure comprises sheet material folded back upon itself, with the folded edge defining the boundary between said sidewall zones. As a refinement of the invention, the respective adjacent radially inwardmost zone of the same sidewall contiguous with the associated bead region is also additionally reinforced by an extended bead turnup section folded back upon itself. The resultant intermediate sidewall zone of limited reinforcement, bounded by the proximate edges of the additional reinforcing plies in the two other zones, is of considerably reduced width with respect to the normal width of a sidewall between the proximate edges of the standard breaker and bead turnup, whereby the tire is somewhat rigidified but retains an optimum degree of flexibility. The sidewall region corresponding to the intermediate zone may also be reduced in thickness.

3,554,262
METHOD AND APPARATUS FOR FOLDING TIRES
Harry R. Swanson, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Sept. 4, 1968, Ser. No. 757,374
Int. Cl. B60c *25/00*
U.S. Cl. 157—1 **7 Claims**



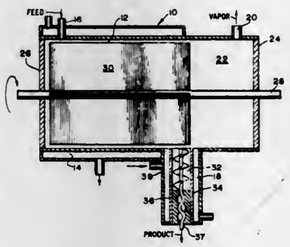
A method and apparatus for folding the sidewalls of a foldable tire under the tread portion of the tire. The apparatus comprises two axially opposed bead-engaging members which engage the beads of a cylindrical tire and force them axially toward each other. The sidewalls of the tire are backed up by plates which cause the sidewalls to fold under the tread. Pressurized air is applied to the cavity of the tire concurrently with the movement of the bead-engaging members to expand the tread slightly and prevent it from wrinkling.

3,554,263
DISCHARGE APPARATUS
Thomas H. Bachmann, New Albany, Ind., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 9, 1968, Ser. No. 719,926
Int. Cl. B01d *1/22*
U.S. Cl. 159—6 **8 Claims**



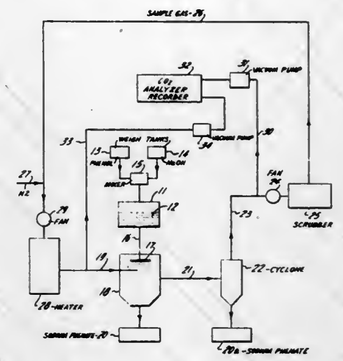
Discharge apparatus for rotary thin film processors having a product discharge section for expelling treated product and a pump having intake elements positioned in close contact to the treated product being expelled.

3,554,264
THIN-FILM EVAPORATOR HAVING IMPROVED APPARATUS FOR REMOVING VISCOUS MATERIAL
James L. Baird, Winchester, and Leo J. Monty, Reading, Mass., assignors to Artison Industries Inc., Waltham, Mass., a corporation of Massachusetts
Filed June 14, 1968, Ser. No. 736,997
Int. Cl. B01d *1/22, 1/22*
U.S. Cl. 159—6 **11 Claims**



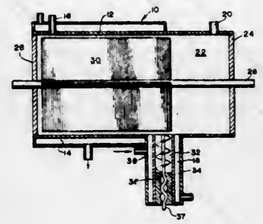
A horizontally axised rotary thin-film-type evaporator for the processing of viscous material having within the product outlet of the evaporator an auger screw in combination with a screw pump. The auger screw removes viscous thixotropic material from the evaporator and transfers it to the screw pump which discharges the material.

3,554,265
METHOD OF CONTROLLING THE ALKALINITY OF ALKALI METAL PHENATES
Gonzalo D. Millan, Hasbrouck, N.J., assignor to Tenneco Chemicals, Inc., a corporation of Delaware
Filed May 19, 1969, Ser. No. 825,519
Int. Cl. B01d *1/18*
U.S. Cl. 159—48 **6 Claims**



In a process for the spray drying of alkali metal phenates the carbon dioxide content of the gases leaving the drying chamber serves as an indication of the alkalinity of the product.

3,554,266
METHOD FOR REMOVING VISCOUS MATERIAL
James L. Baird, Winchester, and Leo J. Monty, Reading, Mass., assignors to Artisan Industries Inc., Waltham, Mass., a corporation of Massachusetts
Continuation-in-part of application Ser. No. 736,997, June 14, 1968. This application May 29, 1969, Ser. No. 828,928
Int. Cl. B07d *1/22*
U.S. Cl. 159—49 **7 Claims**

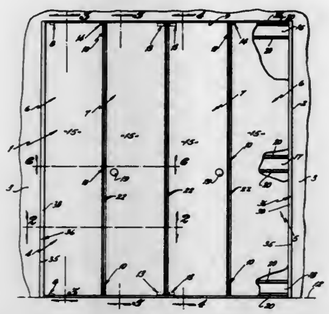


A horizontally axised rotary wiped thin-film type evaporator for the processing of viscous material having within the product outlet of the evaporator an auger screw in combination with a screw pump. The auger screw removes viscous thixotropic material from the evaporator and transfers it to the screw pump which discharges the material.

3,554,267
FOLDING DOORS
John H. Brinker, Cincinnati, Ohio, assignor to The Steelcraft Manufacturing Co., Cincinnati, Ohio, a corporation of Ohio
Filed July 14, 1969, Ser. No. 841,479
Int. Cl. E05d *15/26*
U.S. Cl. 160—118 **9 Claims**

A folding door formed of sheet metal and intended for indoor use, such as a closure for closets and similar storage areas. The folding door preferably is constructed in the form

of two independent-folding sections, each section comprising a hinged door pivotally connected to one side of the door opening and having a sliding door hingedly connected to the free edge of the hinged door. The outer edge of the sliding



door includes guide block assemblies at top and bottom and the door opening at top and bottom is provided with tracking rails in which the blocks are slidably engaged.

The arrangement is such that each folding section may be pivoted to an open position in accordion fashion, with the hinged door and sliding door substantially parallel with one another and projecting from the side of the door opening into the room.

In order to facilitate installation, the edges of the hinged doors include pivot screws which provide a bearing engagement with pivot blocks secured to the door opening at top and bottom. The pivot location is such that the pivoted edge portion of the door swings outwardly in lever fashion when the door is closed so as to engage a trim strip and provide a neat finished appearance.

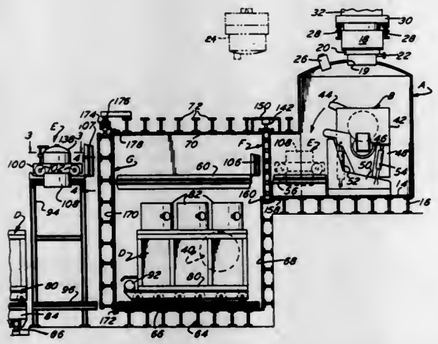
The slide blocks, which guide the outer edges of the sliding doors for straight line motion, are spring-loaded and may be released from the tracking rails, permitting the entire door section to be swung about the pivot screws to an open position for access into the closet for cleaning or painting.

3,554,268

VACUUM MELTING FURNACE AND METHOD

Kendrick C. Taylor, Erdenheim, Herman R. Hutchinson, Wyncote, Gilbert Wagner, Ardmore, and Michael J. Blasko, Doylestown, Pa., assignors to Pennwalt Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Apr. 5, 1968, Ser. No. 719,188
Int. Cl. B22d *27/16*
U.S. Cl. 164—65 **13 Claims**



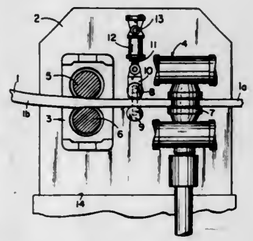
Vacuum metallurgical refining plant having adjoining vacuum chambers with intermediate valve for selectively interconnecting or isolating the chambers with respect to each other to permit simultaneous interdependent or independent operations within each. Furnace in first chamber receives cold or molten charge during initial refining treatment. Refining effected during pouring and stirring of metal in furnace chamber and during tapping into mobile ladle. During final refining, ladle traverses throughout second chamber and successively advances over rows of mobile molds statically arranged in files within second chamber for vacuum teeming into abreast mold assemblies without using an intermediate refractory conduit, such as a tundish.

3,554,269

METHOD OF DEFORMING AND STRAIGHTENING A CURVED CONTINUOUS CASTING STRAND

Curt Hermann and Hans G. Baumann, Duisburg, Germany, assignors to Demag Aktiengesellschaft, Duisburg, Germany

Original application Oct. 26, 1967, Ser. No. 678,391. Divided and this application Aug. 21, 1969, Ser. No. 870,854
Int. Cl. B22d *11/12*
U.S. Cl. 164—82 **3 Claims**



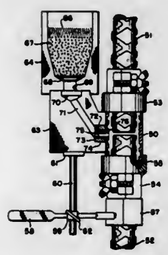
An arc type continuous casting plant for curved strands is comprised of adjustably positionable forming rolls and a straightening machine. The straightening machine is formed of a flexibly mounted holddown roll for applying variable pressure to the strands during the straightening operation, and, preferably, includes a counter roll disposed on the opposite side of the cast strand from the holddown roll. A hydraulic piston assembly may be used to mount the holddown roll for variable pressure operation. Further, the counter roll may be interconnected and movable relative to the holddown roll for handling strands of different thickness. In an embodiment with the strand oriented horizontally the holddown roll is positioned between two pairs of forming rolls while in an arrangement with the strand positioned vertically, the forming rolls are disposed between spaced holddown or straightening rolls.

3,554,270

METAL CASTING APPARATUS AND METHOD

Leonard Gelfand, Chagrin Falls, Ohio, assignor to Erico Products, Inc., Cleveland, Ohio, a corporation of Ohio

Filed July 24, 1967, Ser. No. 655,447
Int. Cl. B22d *19/00*
U.S. Cl. 164—108 **11 Claims**



Thermite casting apparatus particularly for joining reenforcing bar including a sleeve mold surrounding the bar ends

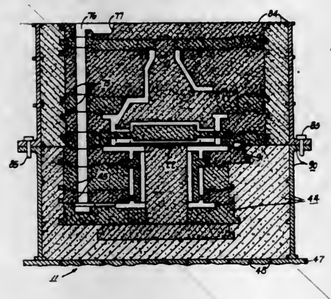
into which metal is cast and having a generally central tap hold of a predetermined size; a crucible and pouring basin for introducing the cast metal into such sleeve, the latter including a disposable ceramic sleeve insert snugly fitted in the exit end of the pouring basin passage to maintain the exit aperture thereof in proper correspondence to the tap hole in the sleeve.

3,554,271

MOLDING ASSEMBLY METHOD

Harold R. Goss, Richmond Heights, Ohio, assignor to Acme-Cleveland Corporation, a corporation of Ohio

Filed Mar. 18, 1968, Ser. No. 713,895
Int. Cl. B22d *33/04*
U.S. Cl. 164—137 **18 Claims**



The disclosure relates to a method of making and the apparatus of a molding assembly for use in a casting process. The molding assembly may be used in casting molten metal in a mold of sand or other refractory material. A drag and a cope mold are each prepared in a similar manner with the drag mold being built up on an assembly plate from an assembly of building blocks each of which may be a mold/core block of sand held together with a binder and made in a core making machine. The building blocks nest together and form the internal core parts as well as the external mold parts of the molding assembly. These building blocks are backed by mechanical means or by a flask and rammed or slung sand. The cope assembly is made in a similar manner. Next the drag assembly is inverted and the assembly plate removed and then the cope assembly is placed on top. A pouring sprue opening and gating system is contained entirely within the building blocks of either the mold or the core portion of the assembly so that sand inclusions do not appear in the casting. Also no pattern is at any time drawn from the mold.

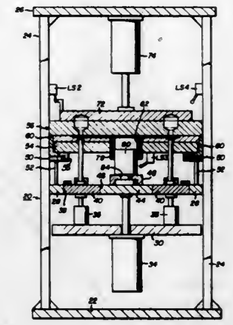
3,554,272

DIE CASTING APPARATUS AND METHOD FOR CASTING ARTICLES FROM MOLTEN MATERIAL HAVING A PLURALITY OF HORIZONTALLY AND VERTICALLY MOVABLE DIES

Corliss Lauth, Dearborn Heights, Mich., assignor to Multifastener Corporation, d/b/a Cast Forge Company, Livonia, Mich., a corporation of Michigan

Filed Mar. 7, 1968, Ser. No. 711,423
Int. Cl. B22d *17/04*
U.S. Cl. 164—319 **8 Claims**

Die casting apparatus in which a plurality of separable die elements are relatively movable to each other to a die open position in which completed castings can be ejected simultaneously with the filling of the die with molten metal for the next subsequent casting operation. While the die is closed, pressure is applied to molten metal within the die cavities by pins to eliminate solidification shrinkage, the pins upon subsequent retraction creating weakened portions or voids in the solidified metal which are sheared during movement of the die elements to their open position to separate the completed castings from the major portion of the waste metal.

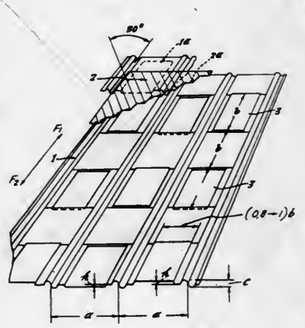


3,554,273

ELEMENTS FOR REGENERATIVE HEAT EXCHANGERS

Gerhard Kritzler, Freudenberg, Germany, assignor to Apparatebau Rothemuhle Brandt & Kritzler, Westphalia, Germany, a company of Germany

Filed Sept. 3, 1969, Ser. No. 854,854
Claims priority, application Germany, Sept. 7, 1968, 6,751,210
Int. Cl. F28d *19/00*
U.S. Cl. 165—10 **6 Claims**



A corrugated plate for use in the regenerative mass of a rotary regenerative heat exchanger has also alternating, approximately square-shaped, flat-topped protuberances between the corrugations so that the gas passage formed between it and an adjacent plate of the pack and defined laterally by the corrugations is alternately and regularly constricted and expanded.

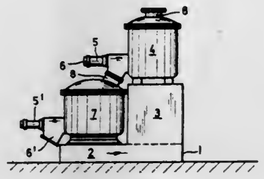
ERRATUM

For Class 165—23 see:
Patent No. 3,554,849

3,554,274
HEATING AND COOLING MIXER FOR PREPARING PLASTIC MATERIAL

Friedrich W. Herfeld, 1 Wall, 5982, Neuenrade, Germany

Filed Jan. 2, 1969, Ser. No. 788,526
Claims priority, application Germany, Jan. 3, 1968, 1,729,530
Int. Cl. F28f 13/12
U.S. Cl. 165—65 12 Claims

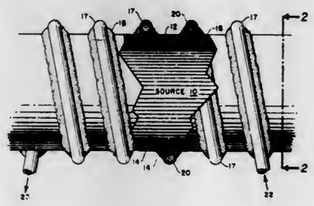


A heating and cooling mixing device consisting of a heating mixer for heating the plastic material rapidly, and a cooling mixer for subsequently rapidly cooling the material under an almost continuous operation. The centrifugal heating-mixing apparatus contains a three-step mixing device for achieving a homogenous and fast mixing, as well as fast heating. The cooling mixer is also a centrifugal mixer and includes on the driving shaft, a plurality of cooling rings. Cooling means also flow through the jacket of the device. Within the cooling mixer, helically formed lines are provided at the outside ends of the mixing fans which effect an intensive flow of the mixed plastic material within the range of the walls of the device. The cooling rings and the mixing fans may be provided singularly, or all together. This provides a large warming transfer face with a large relative movement of material so as to create a device having a high cooling power.

3,554,275
GASEOUS LASER COOLING SYSTEM

William J. Schade Jr., Tustin, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 3, 1969, Ser. No. 795,785
Int. Cl. F28d 7/00
U.S. Cl. 165—156 9 Claims



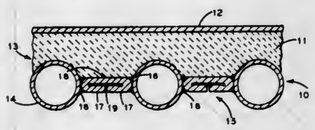
A system for the removal of thermal energy from nonmetallic material which forms the boundary of a gaseous laser.

3,554,276
INTEGRAL TUBE PANEL

Hubert G. Stallkamp, Akron, Ohio, assignor to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey

Filed Apr. 25, 1969, Ser. No. 819,371
Int. Cl. F28f 3/12
U.S. Cl. 165—168 3 Claims

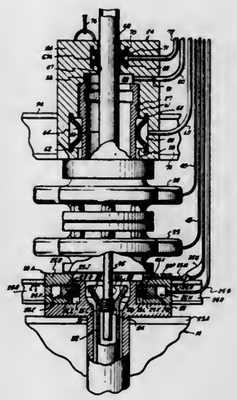
A gastight panel wall for a vapor generator having a plurality of substantially parallel, laterally spaced tubes and C-shaped metallic webs which extend between and are weld united to adjacent tubes.



3,554,277
UNDERWATER WELLS

Robert F. Bauer, Whittier, Robert C. McNeill, Long Beach, and Jerry T. Ledbetter, Whittier, Calif., assignors to Shell Oil Company, Los Angeles, Calif., a corporation of Delaware.

Continuation-in-part of application Ser. No. 468,214, Nov. 12, 1954, now Patent No. 2,808,229, dated Oct. 1, 1957. This application Aug. 1, 1957, Ser. No. 675,714
Int. Cl. E21b 7/12, 33/035
U.S. Cl. 166—.6 14 Claims



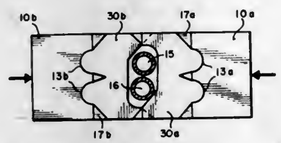
Apparatus for completing a well drilled into a formation under a body of water comprising a casing in the well, means sealing the casing exterior to the formation, a buoyantly supported floating vessel, a tubular conduit, elongated guide means extending from the bottom of the water body to the surface, means maintaining lower extremity of the guide means in fixed relation to the casing, means for maintaining the upper extremity of the guide means in the region of the vessel, means for lowering the tubular conduit from the vessel in engagement with the guide means whereby the tubular conduit is constrained by the guide means to enter the casing as it is lowered, means for sealing the conduit and casing in fixed communicating relation below the water surface, and remote control means for actuating the said sealing means from the water surface.

3,554,278
PIPE ALIGNMENT APPARATUS

Carl E. Reistle III, Chatsworth, and Thomas W. Childers, Woodland Hills, Calif., assignors to Esso Production Research Company

Filed July 31, 1969, Ser. No. 846,549
Int. Cl. E21b 33/06
U.S. Cl. 166—85 10 Claims

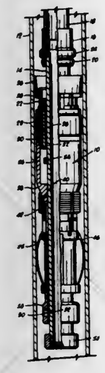
Pipe alignment apparatus for use with ram type blowout preventers used when running dual pipe strings into underwater wells from a floating vessel. A housing contains two alignment rams facing each other. The front face of each alignment ram is configured such that when the alignment rams close about two pipe strings, proper positioning of the pipe strings for engagement with grooves formed in each ram gate front face of a ram-type blowout preventer is ensured.



3,554,279
PACKER AND PACKER SETTING APPARATUS

Robert B. Meripol and Robert C. Pumpelly, Dallas County, Tex., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed Aug. 4, 1969, Ser. No. 847,224
Int. Cl. E21b 23/06
U.S. Cl. 166—121 6 Claims



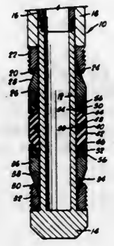
A packer and packer setting apparatus including a packing element arranged to be deformed into sealing engagement with a well casing, a packing cup encircling the packer and sealingly engaging the casing, an annular packer deforming member engaging the upper end of the packing element, and a frangible connection member releasably connecting the packing cup to the packer deforming member whereby fluid pressure in the annulus can be utilized to apply a setting force on the packer. At least one recess extends longitudinally along the exterior of the packer deforming member and is initially located below the packing cup. The connection member is arranged to part upon the application of a predetermined hydraulic pressure on the packing cup whereby the cup is driven downwardly permitting flow through the recess to prevent the cup from "swabbing" as the packer is pulled from the well.

3,554,280
WELL PACKER AND SEALING ELEMENTS THEREFOR

Andrew J. Tucker, Mesquite, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed Jan. 21, 1969, Ser. No. 792,674
Int. Cl. E21b 23/00
U.S. Cl. 166—134 9 Claims

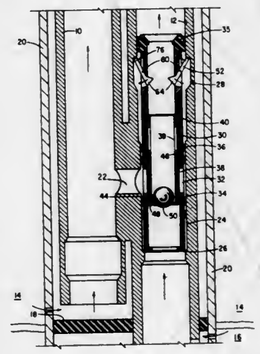
A deformable packing element for use on packers that are to be used in oil and gas wells and the like. The packing element includes a generally cylindrical body that is arranged to be deformed into sealing engagement with the wall of the well bore and a deformable annular ring disposed in an annular groove in the interior of the body. The annular ring is adapted, upon deformation of the body, to form a seal with a mandrel that extends through the body.



3,554,281
RETRIEVABLE CIRCULATING VALVE INSERTABLE IN A STRING OF WELL TUBING

John H. Ecuer, Lafayette, La., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Filed Aug. 18, 1969, Ser. No. 850,893
Int. Cl. E21b 33/16, 33/00
U.S. Cl. 166—155 5 Claims



A system for use particularly in multiple completion wells to facilitate the use of "PDT" (pumpdown tools). Two production strings are connected downhole by a crossover port. During normal producing operations the port is closed. When it is desired to use PDT, or pumpdown tools, the crossover port is opened, thereby establishing a circulating path down one string and up the other. The port is opened by merely applying pressure in one of the strings.

3,554,282
METHOD FOR IMPROVING THE SWEEP OF UNDERGROUND RESERVOIRS BY EXPLOITING INDIVIDUAL RESERVOIR SEGMENTS

Anthony F. Altamira, Houston, Tex., and Joseph Daleda, Montclair, N.J., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware.

Filed Apr. 1, 1969, Ser. No. 811,926
Int. Cl. E21b 43/20
U.S. Cl. 166—245 21 Claims

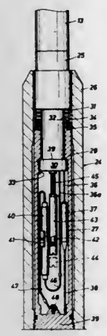
The sweep of an underground hydrocarbon formation having reservoir segments with trapped fluids therein is increased by locating wells in individual segments and injecting

extraneous fluid into the formation therefrom and producing simultaneously via other wells removed from said segments, while under the influence of an active aquifer, either native or by flooding.

3,554,283
SITU RECOVERY OF PETROLEUMLIKE HYDROCARBONS FROM UNDERGROUND FORMATIONS
Alvin Abrams, Woodmere, Long Island, N.Y.
No Drawing. Filed Nov. 28, 1967, Ser. No. 686,285
Int. Cl. E21b *43/26, 43/27*
U.S. Cl. 166—247 2 Claims

A void in a petroleumlike hydrocarbon-containing geological formation is filled with an acidic solution, and a nuclear device is exploded therein. The detonation fractures the surrounding shale structure, and the solution penetrates into the hydrocarbon shale in and about the resulting cavity, increasing its porosity and permeability. The desired hydrocarbon may then be removed by conventional methods, as by in situ retorting.

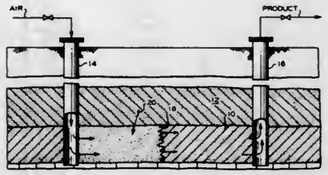
3,554,284
METHODS FOR FACILITATING THE DESCENT OF WELL TOOLS THROUGH DEVIATED WELL BORES
Horace A. Nystrom, Houston, Tex., assignor to Schlumberger Technology Corporation, New York, N.Y., a corporation of Texas
Filed May 2, 1969, Ser. No. 821,187
Int. Cl. E21b *47/12*
U.S. Cl. 166—250 11 Claims



To practice the new and improved methods of the invention disclosed herein, a well tool is dependently suspended from an electrical logging cable that is uniquely constructed to withstand limited axial compressive loading without undue lateral bending. In this manner, by selectively moving the suspension cable downwardly from the surface, corresponding axial compressive forces are developed in the lower portion of the cable, which forces are, in turn, imposed on the well tool for assisting its continued descent through substantially-deviated well bore intervals.

3,554,285
PRODUCTION AND UPGRADING OF HEAVY VISCOUS OILS
Robert F. Meldau, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 24, 1968, Ser. No. 770,257
Int. Cl. E21b *43/14, 43/24*
U.S. Cl. 166—258 10 Claims

Production and upgrading of viscous oils is effected by heating an underground formation for a period of time sufficient to heat said formation to a temperature of at least about 550° F. and form a substantial heat bank therein. A viscous oil is then flowed into said heated formation and maintained therein for a period of time sufficient to effect a



significant reduction in viscosity of the oil. Heating of said formation can be effected by in situ combustion or injection of a heat-bearing fluid, e.g., steam.

3,554,286
RECOVERY OF HYDROCARBONS FROM SUBTERRANEAN HYDROCARBON-BEARING FORMATIONS
David G. Feuerbacher, Bellaire, and Thomas E. Sample, Jr., Houston, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed June 19, 1969, Ser. No. 834,864
Int. Cl. E21b *43/22, 43/24*
U.S. Cl. 166—266 26 Claims

A process for the recovery of hydrocarbons from subterranean hydrocarbon-bearing formations by the treatment of the formation with an aqueous medium containing a base and a substituted nitrobenzene.

3,554,287
GELABLE COMPOSITION, RESULTING GELLED POLYMER COMPOSITION AND USE THEREOF
Louis H. Eilers and Christ F. Parks, Tulsa, Okla., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Nov. 7, 1966, Ser. No. 592,333
Int. Cl. C09k *3/10*; E21b *33/00*
U.S. Cl. 166—295 1 Claim

A fluid gelable composition, which sets autonomously to a water-swellable resilient solid, comprising:

(A) a sufficiently water-soluble salt of a selected metal in a specified minimum amount;

(B) water in an amount sufficient to make 100 parts by weight of water and said salt;

(C) a selected water-dispersible synthetic polymer in an amount sufficient to yield a gel with said brine, said gel being as in ASTM D 555-58 and method of use of said composition to provide a fluidtight seal in underground passageways including the space between the exposed face of a geologic formation and a well casing, tunnel, shaft, or retaining wall.

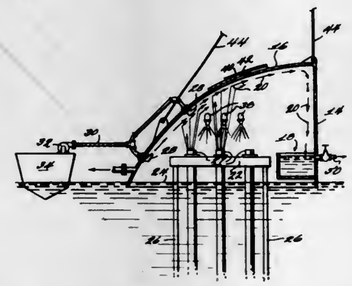
3,554,288
STIMULATING LOW PRESSURE NATURAL GAS PRODUCING WELLS
Rupert D. Ross, Findlay, Ohio, assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 24, 1968, Ser. No. 762,129
Int. Cl. E21b *43/22*
U.S. Cl. 166—305 19 Claims

Water blockage in subterranean formations, commonly known as water coning, is effectively removed by injecting into the well bore a sufficient amount of a micellar solution to contact the area of water blockage resulting in "solubilizing" the water to facilitate the flow of hydrocarbon toward the well bore.

3,554,289
USE OF MICELLAR SOLUTION AS AN EMULSION BREAKER
Thomas O. Webb, Tulsa, Okla., assignor to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 24, 1968, Ser. No. 762,140
Int. Cl. E21b *43/25*
U.S. Cl. 166—305 20 Claims

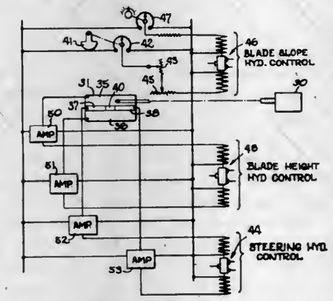
Production of formation fluids through a well bore from a hydrocarbon-bearing subterranean formation having a water and hydrocarbon emulsion blockage surrounding the well bore is restored by injecting from about 0.01 to 10 barrels per vertical foot of hydrocarbon-bearing formation of micellar dispersion into the formation to "solubilize" the emulsion.

3,554,290
OIL POLLUTION CONTROL AND FIRE EXTINGUISHING APPARATUS AND METHOD
Sam M. Verdin, 2600 Breton Drive, Marrero, La.
Filed Mar. 12, 1970, Ser. No. 18,846
Int. Cl. A62c *3/00*
U.S. Cl. 169—2 4 Claims



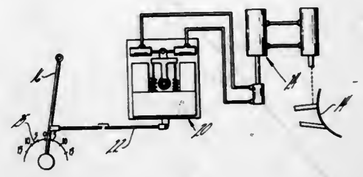
A device for extinguishing gas and oil well fires, particularly multiple-well, offshore installations, and for preventing loss of oil to the surrounding area after fire extinction comprises a hood adapted to be placed over the well site, the hood having a curved interior upper wall which deflects the gushing oil into a catch basin from which it can be pumped away.

3,554,291
LEVEL AND SLOPE CONTROL FOR SURFACING MACHINES
Richard E. Rogers, Oswego, and Rex C. Knapp, Aurora, Ill., assignors to Baldwin-Lima-Hamilton Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 8, 1967, Ser. No. 681,522
Int. Cl. E02f *3/85*
U.S. Cl. 172—4.5 4 Claims



A level and slope control for road graders and similar surfacing machines is described in which one or more very narrow electromagnetic beams are projected along the path to be graded, and photoelectric sensors on the grading machine are utilized to receive and detect positional information from the light beams and to generate correction signals which both adjust the position of the surfacing blade and steer the machine in the desired direction.

3,554,292
CONTROL AND POWER OPERATING MEANS FOR VEHICLE MOUNTED TOOL
William L. Lewis, Watertown, Conn., assignor to Leigh A. Waters, a part interest and Nelson H. Waters, Waterbury, Conn., a part interest
Filed Feb. 20, 1968, Ser. No. 715,457
Int. Cl. E02f *3/85*
U.S. Cl. 172—4.5 8 Claims



An apparatus for raising and lowering an earthmoving blade of a bulldozer has a control housing supported for rotation about a horizontal axis and relative to the bulldozer and containing signal means and a gravity responsive actuator for operating the signal means to thereby control power means for moving the blade. A control lever operably connected to the housing varies the angular position thereof relative to the front-to-rear attitude of the bulldozer to effect manual control of blade position. A means is provided for releasably retaining the lever in preselected position whereby blade position is automatically altered in response to a change in said front-to-rear attitude.

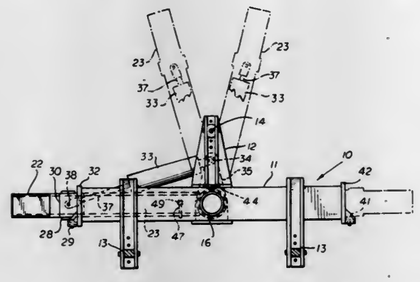
3,554,293
ROTARY WEEDING AND EDGING ATTACHMENT FOR ROTARY POWER SOURCE
Edward F. Aman, Greenville, and Ivan W. Rowell, 1101 N. Washington St., Perry, Fla. 32347; said Aman assignor to said Rowell
Filed Jan. 31, 1969, Ser. No. 795,431
Int. Cl. A01b *45/00*
U.S. Cl. 172—13 2 Claims



A readily portable implement which lends itself to attachment to a manually controllable motorized drill. An

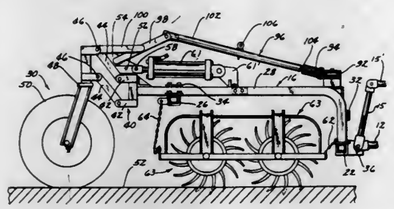
upper end of a vertically elongate shaft is secured in the usual drill chuck. The lower end is equipped with blade means, one for weeding and the other one for edging. The bladed lower end is operably confined within the limits of a cuplike shell or guard. The depending rim of the guard is provided with ground penetrating and holddown cleats.

3,554,294
REVERSING MECHANISM FOR TWO-WAY PLOWS
James Morkoski, Clarendon Hills, and Louis B. Garriott, Jr., Downers Grove, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Apr. 24, 1967, Ser. No. 633,132
Int. Cl. A01b *3/34*
U.S. Cl. 172—223 **9 Claims**



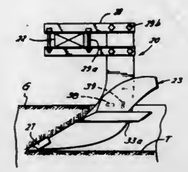
A two-way plow has a plow carrier swingable approximately 180° about a longitudinal axis through a central or dead center position between right- and left-hand plowing positions. Reversal is accomplished with a hydraulic cylinder which swings with the plow carrier on the retraction stroke through the dead center position to an overcenter position where it is locked to prevent the carrier from being bounced backward overcenter in the other direction until the cylinder fluid is reversed to extend the cylinder and continue the rotation of the plow carrier to its alternate plowing position.

3,554,295
IMPLEMENT TRANSPORT
Arnold F. Kopaska, Guthrie Center, Iowa 50115
Filed Sept. 19, 1967, Ser. No. 668,770
Int. Cl. A01b *63/22*
U.S. Cl. 172—398 **7 Claims**



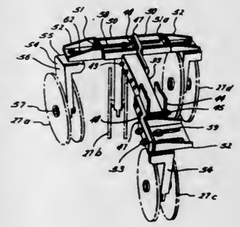
A transport device for implements carried on the front end by the lift arms of a tractor and on its rear end by a single ground support wheel, a hydraulic cylinder operatively connected to a pair of parallel members interconnecting the transport frame to the rear wheel for lowering and raising the transport frame whereby the implement is moved into and out of engagement with the ground. A wing unit may be provided at opposite ends of the transport frame for pivotal movement between lowered and raised positions and being operatively connected to the common power means for raising and lowering the implement whereby the wings are raised and lowered simultaneously with the lowering and raising of the implement.

3,554,296
CHISEL-LISTER ASSEMBLY
Charles L. Lehman, Rte. 3, Box 53, Corpus Christi, Tex. 77715
Filed Feb. 8, 1968, Ser. No. 703,977
Int. Cl. A01b *13/08*
U.S. Cl. 172—700 **11 Claims**



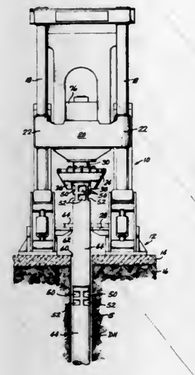
A farm implement having a laterally extending tool bar which is adapted to be moved forwardly over the ground level and a plurality of chisels supported at spaced-apart locations along the tool bar. Each chisel has a point on the front side of its lower end for penetrating the soil to form a trench therein as the tool bar moves forwardly. Each of a plurality of lister assemblies is mounted on a chisel to dispose a cutting edge on its lower edge in position to sever the soil beneath the ground level and above the chisel point and turn it onto beds on opposite sides of the trench.

3,554,297
CULTIVATOR
Charles L. Lehman, Rte. 3, Box 53, Corpus Christi, Tex. 77715
Filed July 10, 1967, Ser. No. 652,220
Int. Cl. A01b *15/00*
U.S. Cl. 172—741 **5 Claims**



A cultivator having a frame comprising a tool bar adapted to be moved longitudinally along laterally spaced-apart rows of crops planted on a single bed, and three brackets attached in laterally spaced-apart relation along the tool bar. A gang of rotary hoes supported on a beam carried by the intermediate bracket includes a first pair of gang sections connected to the beam near its opposite ends for movement over the oppositely facing inner sides of rows, and a second pair of gang sections mounted on the beam laterally outwardly of the first pair of gang sections for movement over the outer sides of the rows. Means are provided for adjusting the lateral and angular positions of each of the gang sections. A gang of rotary hoes is carried on each outer bracket for movement over opposite sides of the bed rearwardly and laterally outwardly of the gang sections.

3,554,298
BREAKOUT APPARATUS FOR A SECTIONAL DRILL STEM
Harold T. Klein, Belleview, Wash., assignor to James S. Robbins and Associates, Inc., Seattle, Wash., a corporation of Washington
Original application Aug. 7, 1967, Ser. No. 658,674, now Patent No. 3,463,247 dated, Aug. 26, 1969. Divided and this application Aug. 25, 1969, Ser. No. 852,537
Int. Cl. E21b *19/16*
U.S. Cl. 173—164 **5 Claims**



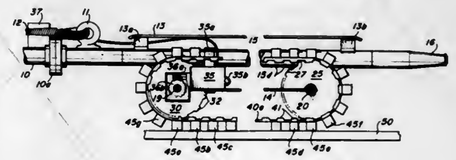
A drill stem section having breakout wrench receiving depressions or flats formed on its outer surface substantially immediately axially inwardly of an end located threaded tool joint component. A reversible rotary drivehead including a threaded tool joint component connectable to the stem section tool joint component and a breakout wrench including a jaw wrench on the drivehead and a torque transmitting insert element insertable between the breakout wrench receiving depressions or flats on the drill stem section and the jaws of the jaw wrench. Means for holding the stem section second from the drivehead during reverse rotation of the drivehead and first stem section through the insert element.

3,554,299
WELL-PERFORATING TOOL
James P. Sullivan, Cheyenne, Wyo., assignor to Aquatech Corporation, Houston, Tex., a corporation of Texas
Filed Sept. 19, 1968, Ser. No. 760,750
Int. Cl. E21b *43/116*
U.S. Cl. 175—4.55 **13 Claims**



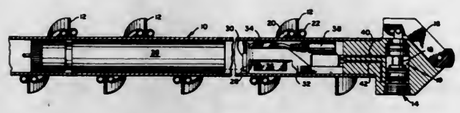
A perforating tool which is intended for use in a well bore. The tool includes a longitudinally extending body. A spring means is selectively movable longitudinally of the body along a predetermined path. A peripheral path surface on the body extending along the predetermined path faces toward the spring means. The spring means includes a free end resiliently biased in a transverse direction into contact with the path surface. A plurality of explosive perforating units are spaced along the body. Each perforating unit includes detonating means projecting into the predetermined path extending outwardly of the path surface. A plurality of projecting means connected with the body, spaced along the predetermined path alternately between the detonating means, cause the free end of the spring means to be successively deflected away from the path surface. Each projecting means terminates adjacent the next detonating means in the direction of motion so that the free end of the spring means springs back toward the path surface to exert a hammering action upon the adjacent detonating means.

3,554,300
DEEP SUBMERGENCE TUNNELING DEVICE
Edgar N. Rosenberg, 6914 Mission Gorge Road, San Diego, Calif. 92127
Filed May 28, 1969, Ser. No. 828,496
Int. Cl. F21b *7/12*; **B21d** *19/00*
U.S. Cl. 175—5 **10 Claims**



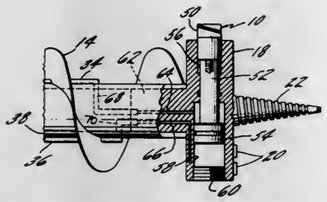
An apparatus for tunneling through sediment around a submerged object having a ferruginous surface is provided utilizing a crawler driven and directed jetting unit. The apparatus includes a flexible toothed belt carried on at least two bogie wheels mounting a plurality of permanent or selectively energized magnets in a side-by-side relationship. The magnets are successively brought to bear against a steel or similar ferruginous surface, as the bogie wheels are rotated in accordance with an applied electrical signal delivered to a motor mounted on the crawler apparatus. A supporting framework is formed of an essentially rectangularly-shaped hollow tubing, having at one end, a source of pressurized water, and, at the opposite end, a nozzle aimed in the direction of crawler travel. Upon a diver's placing the crawler on a steel surface, or, in the case of extreme deep submergence operation, positioning the crawler by a manipulator arm extending from a deep submersible, the tunneling operation around a submerged object progresses by simply turning on the source of pressurized water and driving the motor in the direction of desired travel. The plurality of adjacent magnets in magnetic engagement with the hull holds the crawler assembly from recoiling as high pressure water is jetted through the nozzle. As sediment is displaced in the path of the jetted water, forward motion by the crawler pulls a light pilot line which can later draw through heavy cables for hoisting operations. Heavy duty hoist lines are located to form a hoisting sling around the sunken vessel, where heretofore, such an operation has been impossible at great depths. Employing magnetic blocks carried on a flexible belt secures the crawler onto a steel surface, irrespective of its rounded contour, to permit tunneling and to overcome the recoil effect of the jetted water.

3,554,301
OPTICAL AUGER GUIDANCE SYSTEM
David E. Adkins, Jeremy M. Harris, Columbus, George R. Riley, Grove City, and Donald J. Hackman, Columbus, Ohio, assignors to American Gas Association, Inc., New York, N.Y., a corporation of New York
Filed Aug. 26, 1969, Ser. No. 853,123
Int. Cl. E21c 9/00, 19/00
U.S. Cl. 175—24 10 Claims



Signals indicative of the bending of an elongated rotating member are generated by a light sensitive detector mounted within the member and off-axis with respect to a circular light beam generator. The detector output signals are employed to control apparatus which reacts externally of the member in such a manner as to return the member to the desired straight line path.

3,554,302
DIRECTIONAL CONTROL OF EARTH BORING APPARATUS
David E. Adkins and Donald J. Hackman, Columbus, Ohio, assignors to American Gas Association, Inc., New York, N.Y., a corporation of New York
Filed July 5, 1968, Ser. No. 742,798
Int. Cl. E21b 7/04
U.S. Cl. 175—26 11 Claims



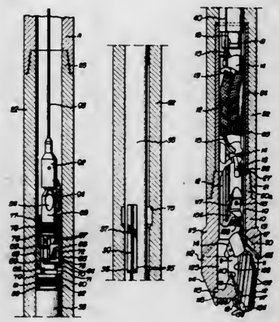
Apparatus for exercising directional control over earth boring equipment wherein means which may be periodically caused to engage the wall of the bore hole are provided. The bore wall engaging means are carried by an auger head and will engage the bore wall during a portion of each revolution of the boring apparatus when energized. The arc of the circle along which the bore wall engaging means will be extended from the auger head may be selectively adjusted to thereby permit the compensation for undesired borehole drift in any direction.

3,554,303
EARTH PIERCING APPARATUS AND METHOD
William Zajkowski, Fern Ave., R.D. 2, Collegeville, Pa. 19426
Filed Aug. 2, 1968, Ser. No. 749,641
Int. Cl. E01g 3/03; E21c 23/00; E21b 9/22
U.S. Cl. 175—62 7 Claims



An earth-piercing apparatus and method wherein an impactor driven nonrotary implement is provided, the implement comprising a series of rigid selectively coupled elongated sections. Cutting collars of successively larger in size are provided between adjacent sections so that the implement, when driven through the ground by the impactor, displaces successively larger volumes of earth to form a finished bore.

3,554,304
RETRACTABLE DRILL BITS
Howard D. Link, Harold C. Bridwell, and David S. Rowley, Salt Lake City, Utah, assignors to Christensen Diamond Products Company, Salt Lake City, Utah, a corporation of Utah
Continuation-in-part of application Ser. No. 583,263, Sept. 30, 1966, now Patent No. 3,437,159. This application Feb. 10, 1969, Ser. No. 798,042
Int. Cl. E21b 0/26
U.S. Cl. 175—259 21 Claims

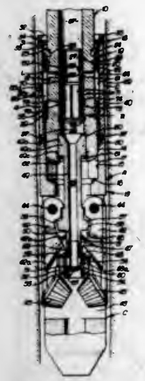


A rotary well-drilling bit lowered through drill pipe with cutters in tandem array, the cutters being expanded outwardly and locked to the lower end of the drill pipe to drill upon substantially the full cross-sectional area of the bottom of the well bore. The cutters can be pulled by a wire line device back into the drill pipe and elevated through the drill pipe to the drilling rig for replacement or inspection.

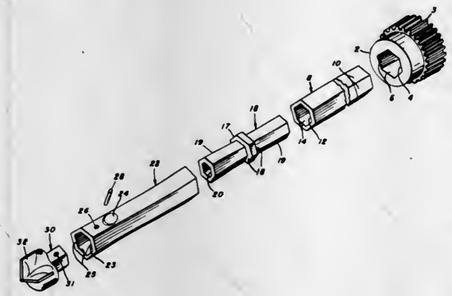
3,554,305
REVERSE CIRCULATION EXPANSIBLE ROTARY DRILL BIT WITH HYDRAULIC LOCK
Archer W. Kammerer, Jr., Fullerton, Calif., assignor to Rotary Oil Tool Company, Buena Park, Calif., a corporation of California, by mesne assignments
Filed Sept. 24, 1968, Ser. No. 761,947
Int. Cl. E21b 9/26
U.S. Cl. 175—268 19 Claims

A rotary drill bit having expansible cutters shiftably supported on a main body and expansible by a mandrel upon relative longitudinal movement of the main body and the mandrel, and in which a quantity of liquid is initially confined in a chamber to prevent such relative longitudinal movement, a closure being movable to release the fluid when expansion of the cutters is desired. Such a drill bit in which an enlarged flow passage is closed and fluid passes through a smaller

opening during initial circulation of drilling fluid to provide operating fluid pressure differential for expanding the cutters, the enlarged opening allowing for free flow of drilling fluid following expansion of the cutters.



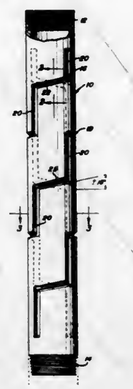
3,554,306
POLYGONAL DRILL ROD ASSEMBLY
Willard R. Wilburn, Williamson, W. Va., assignor to Carmet Company, Pittsburgh, Pa., a corporation of New Jersey
Filed Nov. 29, 1968, Ser. No. 780,142
Int. Cl. E21b 17/00; E21c 15/00
U.S. Cl. 175—320 2 Claims



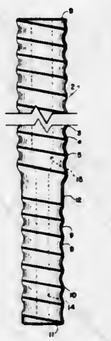
A vacuum drill rod system of tubular members having polygonal inner and outer cross sections which interact with comparable outer and inner cross sections of cooperating elements when the rod system is connected to achieve concurrent rotation of the elements of the system.

3,554,307
TURBULENT FLOW DRILL COLLAR
Nolen A. Yount, Beeville, Tex., assignor to W. E. Eeds, Beeville, Tex., a part interest to
Filed July 3, 1969, Ser. No. 838,764
Int. Cl. F21b 17/00
U.S. Cl. 175—323 5 Claims

A tubular drill string member having grooves formed in the outer surface thereof extending circumferentially thereabout and longitudinally thereof. The grooves include short sections or lengths of first groove portions which generally parallel the longitudinal centerline of the tubular drill string member or drill collar and short sections or lengths of second groove portions which are inclined generally 15° relative to a plane normal to the longitudinal centerline of the drill collar. The second groove portions interconnect the adjacent ends of adjacent first groove portions and the first and second groove portions of each groove are disposed generally in a helical path extending along and about the corresponding drill collar.



3,554,308
ROCK DRILL ROD
J. D. Ditson, Asbury, N.J., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Dec. 12, 1968, Ser. No. 783,366
Int. Cl. E21b 17/042
U.S. Cl. 175—395 12 Claims

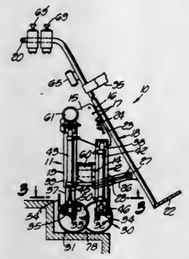


A rock drill rod which has a reduced diameter portion at either or both ends. The main portion of the rod is of constant diameter and threaded throughout its length. The reduced diameter portion is threaded substantially throughout its length. A drill bit is secured to the reduced diameter end and is dimensioned to drill a hole slightly larger than the diameter of the drill rod.

3,554,309
POWER-OPERATED LOAD TRANSPORTING DEVICE
Lucas L. Abercrombie, 6333 Cedar St., Huntington Park, Calif. 90255
Filed Oct. 10, 1968, Ser. No. 766,493
Int. Cl. B62b 5/02
U.S. Cl. 180—8 18 Claims

A power-operated load-transporting device operable up and down steps and along passageways. The device is equipped with front and rear supports selectively reciprocal

to elevate the main frame between step treads and includes wheels for rolling movement of the device as well as means for arresting rolling movement. In a typical embodiment, the

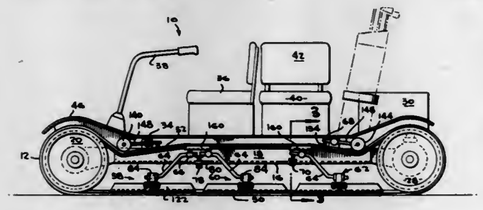


device comprises a hand truck for moving cargo but the invention principles are equally suitable for use on a wheelchair for the handicapped or incapacitated. All power components are energized from a battery.

3,554,310
LAND TRACK VEHICLE

Harry A. Dieffenbach, Walnut Lane Farm, North East, Md. 21901

Filed Dec. 17, 1968, Ser. No. 784,432
Int. Cl. B62d *55/10*
U.S. Cl. 180—9.24 7 Claims

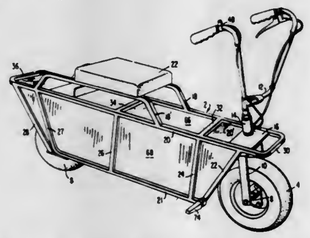


A land vehicle having flexible endless tracks extending from and over front and rear wheels with a ground-engaging flight having backup means in the form of plural vertically adjustable metal skids each having a low-friction nylon surface engaging the inside surface of the track for resisting upward movement of that portion of the inside of the tracks between the wheels.

3,554,311
ELECTRICAL VEHICLE

Jack M. Thompson and Michael J. Thompson, Ardmore, Okla., assignors to Revolt, Inc., Ardmore, Okla., a corporation of Delaware

Filed Aug. 2, 1968, Ser. No. 749,695
Int. Cl. B62k *11/02*
U.S. Cl. 180—34 7 Claims

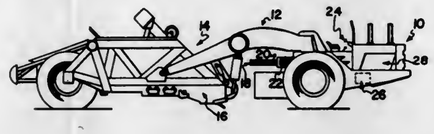


A two-wheeled electrically powered vehicle has a body formed of tubular members and a unitary panel assembly which encloses the mechanisms therewithin. An elevatable footrest carries a ground-engaging support which lowers upon raising the footrest.

3,554,312
VEHICLE STEERING SYSTEM

Fred P. Niedermeier, Irwin L. Joslin, and Edward G. Orth, Peoria, Ill., assignors to Westinghouse Air Brake Company, Peoria, Ill., a corporation of Pennsylvania

Filed Sept. 1, 1967, Ser. No. 665,147
Int. Cl. B62d *5/06*
U.S. Cl. 180—79.2 8 Claims

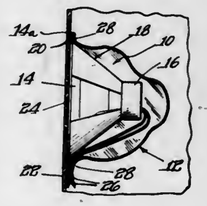


A steering system for an articulated vehicle of the off-highway type including tractor and trailer units pivotally connected for wagonlike steering movement about a vertical axis by actuation of hydraulic cylinders connected between the units. To facilitate fine control of the steering system, a variable displacement pump is provided to motivate the hydraulic cylinders at an infinitely variable rate. Additionally, cam means are positioned between a manually operable steering control and the pump whereby movement of the steering control means through one increment of movement results in an increased displacement and output of the pump, and increased rate of steering change relative to other similar increments of movement.

3,554,313
LOUDSPEAKER SYSTEMS

Richard Owen Young, 1110 S. Scoville Ave., Oak Park, Ill. 60304

Filed Nov. 20, 1968, Ser. No. 777,348
Int. Cl. G10k *13/00*; H04r *1/28*
U.S. Cl. 181—31 2 Claims



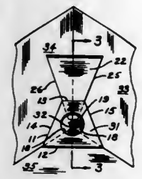
Loudspeaker systems which include a loudspeaker assembly and a thin, slack, easily movable, essentially nonresilient backing member located behind the loudspeaker assembly. The movable member acts to avoid the effects on the cone of the loudspeaker assembly of compression and rarefaction of the air mass behind the assembly caused by rearwardly directed sound waves emanating therefrom, thereby to provide substantially unimpeded movement of the loudspeaker cone of the assembly.

3,554,314
APPARATUS FOR CONSTRUCTING A SPEAKER ENCLOSURE

Fred C. Schneidewind, 229 Beechmont, Dearborn, Mich. 48124

Filed May 7, 1969, Ser. No. 822,365
Int. Cl. G10k *13/00*; H04r *1/28*
U.S. Cl. 181—31 6 Claims

The invention relates to portable panels which, when mounted into a corner of a room in conjunction with the walls of the corner, substantially encloses a speaker that can be attached to one of the panels and provides the enclosure

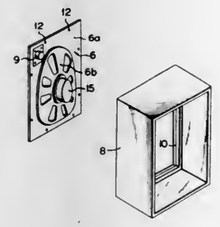


with a horn duct that makes possible a wide range of frequency response, especially in the lower range.

3,554,315
LOUDSPEAKER

Yoshio Ohashi, Fukuroi-shi, Japan, assignor to Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi Shizuoka-ken, Japan

Filed May 12, 1969, Ser. No. 823,833
Claims priority, application Japan, May 21, 1968, 43/41286
Int. Cl. G10k *13/00*; H04r *7/00*
U.S. Cl. 181—31 1 Claim



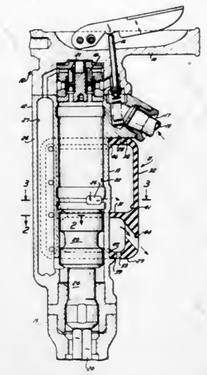
In a loudspeaker including a diaphragm, a driver unit for driving said diaphragm and a frame for supporting said diaphragm and driver unit, said frame including arms for supporting said driver unit and a flange portion integrally formed with said arms, said flange portion being formed at its inner periphery in such shape as to conform to the outer periphery of the diaphragm and at its outer periphery in such dimension and shape as to substantially fit in a cabinet to which said frame is to be fixed, whereby the loudspeaker can be mounted in the cabinet without using a baffle board.

3,554,316
DETACHABLE ELASTOMER MUFFLER FOR PNEUMATIC PERCUSSIVE TOOLS

Sebastian F. Judd, Whitesboro, and Paul J. Bilodeau, Utica, N.Y., assignors to Chicago Pneumatic Tool Company, New York, N.Y., a corporation of New Jersey

Filed Nov. 25, 1969, Ser. No. 879,679
Int. Cl. F01n *1/08*
U.S. Cl. 181—36 13 Claims

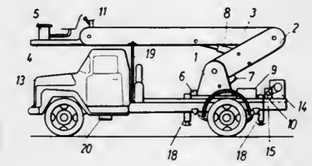
A one-piece muffler formed of elastomer material, having a C-configuration adapted to collar over the exhaust ports of a pneumatic percussive demolition tool, and adapted to be detachably clamped in fluid tight relation to the tool. The muffler defining with the surface of the tool a pair of internal connected chambers, each tuned to filter out certain objectionable noise characteristics of the air exhausting from the tool before the exhaust air is discharged to atmosphere. The elastomer construction serves to minimize ice formation within the muffler, and to resist damage from rough handling and impact blows.



3,554,317
HYDRAULIC FILMING OR TELEVISION CAMERA CRANE

Adrian Birbanescu, Bucharest, and Tiberiu Rusu, Buftea, Rumania, assignors to Comitetul de Stat Pentru Cultura Si Arta, Bucharest, Rumania, a firm

Original application Nov. 22, 1965, Ser. No. 509,062. Divided and this application Apr. 3, 1968, Ser. No. 740,001
Int. Cl. B66f *11/04*; G03b *17/00*
U.S. Cl. 182—14 6 Claims



A camera crane adapted to support movie or television cameras which is mounted on its own chassis. The camera crane is operatively connected to hydraulic cylinder actuating means mounted on the same chassis. A pumping unit is adapted to pump hydraulic fluid into the hydraulic cylinder actuating means via flexible hose means being in communication, on the one hand, with the pumping unit, and, on the other hand, with the hydraulic cylinder actuating means. The pumping unit being mounted on a separate support structure so that vibrations from the pumping unit during its operation are not transmitted to the camera crane.

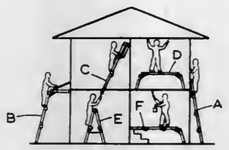
3,554,318
FOLDING LADDER

Hugh P. Knight, H.P. Knight Limited, East Street, Portslade, Sussex BN 4 1EN, England

Filed Dec. 12, 1968, Ser. No. 783,360
Claims priority, application Great Britain, Dec. 13, 1967, 56,636/67
Int. Cl. E06c *1/10*
U.S. Cl. 182—24 7 Claims

A folding ladder comprises a plurality of ladder sections which are connected together in end-for-end relationship by coupling means and in which at least two of the coupling means are hinge devices, the axes of all the hinge devices being located on the same side of the plane of the ladder, the

arrangement being such that when the ladder sections are in alignment, adjacent end portions of adjoining ladder sections

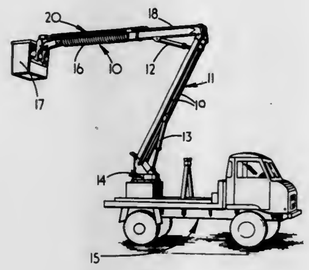


or hinge devices are in abutting relationship with one another.

3,554,319
STRUCTURES

Carl A. Smith, Dudley, John Sidney Thomas Looms, East Molesey, and Cyril Harold Arthur Ely, Effingham Junction, England, assignors to Simon Engineering Dudley Limited, Queens Cross, Dudley Worcestershire, England, a British company and Central Electricity Generating Board, London, England, a British Body Corporate

Filed Nov. 15, 1968, Ser. No. 776,229
Claims priority, application Great Britain, Nov. 17, 1967, 52502/67
Int. Cl. B66f *11/04*
U.S. Cl. 182—46 18 Claims



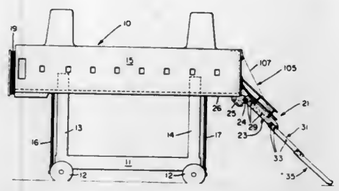
In a lifting or load-supporting structure for use in work on high voltage installations there is provided a boom formed wholly or part by a tubular beam made of material of high electrical insulation, which beam is provided with sheds on the outside and partitions dividing the bore into a plurality of voids. Preferably such a boom is formed of a plurality of insulating elements nested together.

3,554,320
LADDER-SLIDE APPARATUS

Walter S. Eggert, Jr., Huntingdon Valley, Pa., assignor to The Budd Company, Philadelphia, Pa.

Filed Dec. 8, 1969, Ser. No. 882,945
Int. Cl. E06c *5/16*
U.S. Cl. 182—49 9 Claims

A folding ladder-slide apparatus for an aircraft transfer vehicle having a passenger compartment capable of being positioned to various elevations within a given range above ground level. In cases of emergency the ladder-slide apparatus is rotated from its folded position adjacent the end of the vehicle so that the same may be extended to make contact with the ground surface. Handrails linked to the ladder

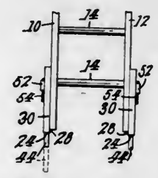


are actuated when the ladder is moved between its folded and operative positions.

3,554,321
EXTENSIBLE FOOT FOR LADDERS

Victor S. Stedman, Worcester, Mass., assignor to Jacob L. Kotlier, Worcester, Mass.

Filed Dec. 17, 1969, Ser. No. 885,702
Int. Cl. E06c *7/44*
U.S. Cl. 182—201 7 Claims

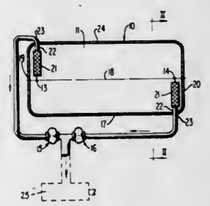


An extensible foot for ladders for adjustment of the ladder to uneven and slanting terrain, comprising a channel fixed on at least one of the sidepieces of the ladder, by a bolt passing through one of the crosspieces thereof, and a lockable sliding channel in the fixed channel.

3,554,322
INTERNAL COMBUSTION ENGINE CRANKCASE WITH DRY SUMP LUBRICATION

Herbert Deutschmann, Stuttgart-Bad Cannstatt, Juergen Wahnschaffe, Stuttgart-Stammheim, Wolfgang Rudert, Grunbach Kreis Waiblingen, and Herbert Mader, Stuttgart, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany

Filed July 24, 1968, Ser. No. 747,362
Claims priority, application Germany, July 26, 1967, 1,576,364
Int. Cl. F01m *1/12*
U.S. Cl. 184—6 26 Claims

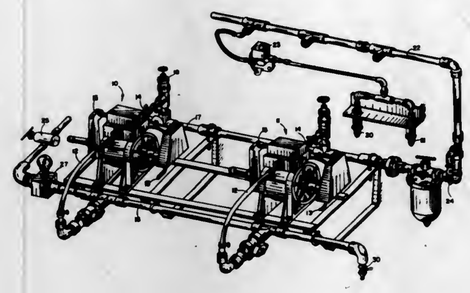


A crankcase for an internal combustion engine, particularly with dry-sump lubrication in which the crankcase bottom part forms at least one space for the sump of the lubricant in which are arranged two or several suction places, of which at least two suction places are connected with separate suction pumps and are arranged at a place of the suction space which is a relatively lower place for a predetermined inclined position of the engine.

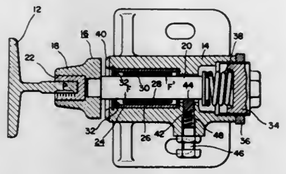
3,554,323
APPARATUS FOR AUTOMATIC LUBRICATION OF CHAIN LINK CONVEYORS

Lee A. Wheelock, 233 Glenullen, Pasadena, Calif. 91105

Filed Dec. 16, 1968, Ser. No. 794,466
Int. Cl. F16n *13/16, 7/14*
U.S. Cl. 184—15 11 Claims

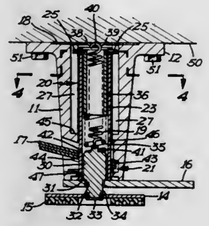


3,554,327
ELEVATOR GUIDING DEVICE
Akira Takamura, Kazushi Kunii, Saburo Seharada, and Hiroshi Nakatani, Inazawa, Japan, assignors to Mitsubishi Denki Kabushiki Kaisha Chryoda-ku, Tokyo, Japan
Filed Jan. 12, 1968, Ser. No. 697,525
Claims priority, application Japan, Jan. 14, 1967, 42/3,613; Sept. 1, 1967, 42/75,070
Int. Cl. B66b *17/22*
U.S. Cl. 181—95 **9 Claims**



An elevator car is provided with supporters by which individual holders for holding guide shoes are supported in rolling contact relation for limited movement toward and away from the associated guide rails and also rotational movement respectively. A friction member resiliently engages the shoe holder to apply a controlled frictional force to it.

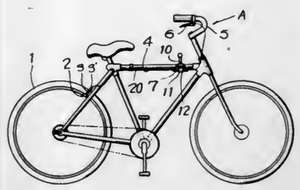
3,554,328
FLOOR TRUCK LOCK
Vercoe C. Jones, Faribault, Minn., assignor to Nutting Truck and Caster Company, Faribault, Minn., a corporation of Minnesota
Filed Feb. 12, 1969, Ser. No. 798,697
Int. Cl. B60t *1/14*
U.S. Cl. 188—5 **1 Claim**



A floor truck lock for temporarily securing a movable device, such as an industrial cart, in a fixed position. An extensible and retractable member is extended generally downward from a housing mounted to the device to engage a fixed surface. Means is provided to releasably lock the extensible member in engagement with the fixed surface and the elements are associated in a highly compact and efficient manner.

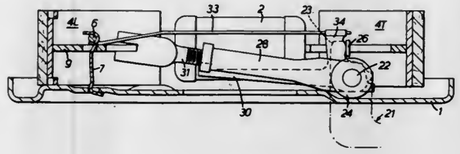
3,554,329
HAND BRAKE FOR A BICYCLE
Keizo Shimano, Sakai, Japan (c/o Shimano Industry Company No. 77, 3-cho Oimatu-cho)
Continuation of application, Ser. No. 734,020, June 3, 1968, now abandoned. This application Jan. 29, 1970, Ser. No. 007,388
Claims priority, application Japan, Apr. 26, 1968, 43/34,330, 43/34,331, 43/34,332
Int. Cl. B62l *3/02*
U.S. Cl. 188—24 **1 Claim**

A bicycle braking system in which a secondary apparatus is provided which is independent of the primary braking apparatus, for locking the brake in a braked position. The secondary apparatus may be either a means for operating on



the linkage between the brake handle and the brake, or means operating directly on the brake.

3,554,330
DRUM BRAKES
Antony W. Harrison, Birmingham, England, assignor to Girling Limited, Birmingham, England, a British company
Filed Feb. 28, 1969, Ser. No. 803,142
Claims priority, application Great Britain, Mar. 1, 1968, 10208/68
Int. Cl. F16d *51/20*
U.S. Cl. 188—78 **3 Claims**

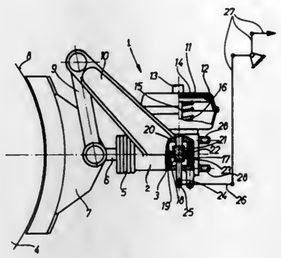


In an internal shoe drum brake in which a pair of shoes each have one end in sliding engagement with an abutment surface fast to a back plate, and brake-actuating means carried by the back plate operate to force apart the other ends of the two shoes, a single spring serves both to return the shoes towards one another (holding them pressed against the abutment surfaces in the brakes-off condition) and also to hold down the shoes against the face of the back plate. In the construction described and illustrated, a spring of generally C form operates to urge towards one another a pair of coupling members, each of which is anchored at one end to the back plate, and extends through an aperture in the web of one of the shoes, a portion of the coupling member which is inclined to the plane of the back plate making sliding engagement with the margin of the aperture.

3,554,331
BRAKING UNIT FOR RAILWAY VEHICLES
Hans Poellinger, Munich, Germany, assignor to Knorr-Bremse G.m.b.H., Munich, Germany, a corporation of Germany
Filed Nov. 15, 1968, Ser. No. 776,050
Claims priority, application Germany, Dec. 5, 1967, 1,605,284
Int. Cl. F16d *65/26*; **B61h** *13/28*
U.S. Cl. 188—74 **1 Claim**

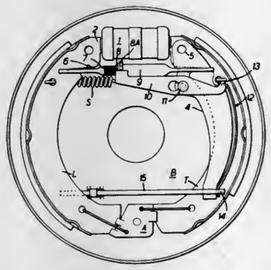
A railway vehicle wherein brake shoes are applied against the periphery of a wheel to achieve the braking effect is provided with a braking unit in which axial movement of an actuating rod is translated at right angles to axial movement of one or more brake shoe rods. The translating of motion is achieved by a wedge member carried by the actuating rod and acting upon a parallel inclined surface on the brake shoe

rod through roller means interposed between the parallel surfaces. The brake unit comprises a housing and an actuating



cylinder attached thereto with the entire unit being mounted on the frame of the railway vehicle.

3,554,332
VEHICLE BRAKES
Anthony William Harrison, Birmingham, England, assignor to Girling Limited
Filed Mar. 18, 1968, Ser. No. 713,741
Claims priority, application Great Britain, Mar. 21, 1967, 13,282/1967
Int. Cl. F16d *51/70, 65/56*
U.S. Cl. 188—79.5 **7 Claims**

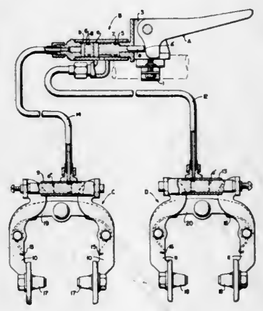


The invention is concerned with several principal constructional features of internal shoe drum brakes, these principal features being combined in the brake of FIGS. 3 to 6 of the drawings.

3,554,333
DISC BRAKE AND MULTIPLE ACTUATOR THEREFOR
Hermannhans Hoenick, Immendorf, Heinrich Bernhard Rath, Koblen-Lutzel, and Wolfgang Hess, Rubenach, Germany, assignors to Girling Limited
Filed Dec. 6, 1968, Ser. No. 781,860
Claims priority, application Great Britain, Dec. 14, 1967, 56,848/67
Int. Cl. B60t *11/10*
U.S. Cl. 188—152 **6 Claims**

An hydraulic brake actuator comprising a cylinder containing a pair of pistons having annular skirts which are directed towards one another and are each slidingly sealed on a common sleeve, the sleeve dividing the space enclosed within the cylinder between the two pistons into two separate pressure chambers, having separate inlets for the supply of hydraulic fluid. A disc brake of the sliding yoke type incorporating an hydraulic actuator of the above construction is described in detail.

3,554,334
HYDRAULIC BICYCLE BRAKE SYSTEM
Keizo Shimano and Yuji Fujii, both c/o Shimano Industry Company, 3-cho, Oimatu-Cho, Sakai, Japan
Filed Jan. 3, 1969, Ser. No. 788,768
Claims priority, application Japan, June 17, 1968, (utility model), 43/51,037 and 43/51,038
Int. Cl. B60z *11/24*
U.S. Cl. 188—152 **2 Claims**

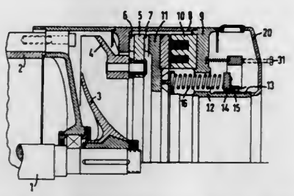


A hydraulic bicycle brake system comprising a master cylinder having dual chambers and dual pistons associated respectively therewith, with each operating in sequence the rear and front wheels against different tension springs on the respective wheel brake unit, with provision in the master cylinder construction for operating either wheel brake in the event fluid should leak from the other cylinder.

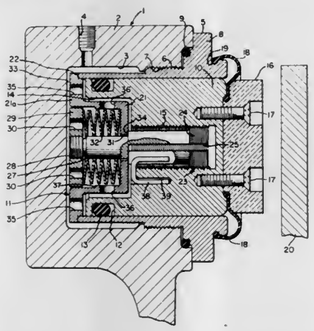
3,554,335
ELECTROMAGNETICALLY CONTROLLED FRICTION CLUTCH
Wilhelm Ritter, Bad Neustadt Saale, and Hans-Joachim Adelski, Bad Neustadt, Germany, assignors to Siemens Aktiengesellschaft, Munich, Berlin, Germany, a corporation of Germany
Filed May 1, 1968, Ser. No. 725,875
Claims priority, application Germany, May 5, 1967, 109,736
Int. Cl. B60t *13/04*
U.S. Cl. 188—171 **8 Claims**

A spring set and electromagnetically released friction brake, preferably for electric motors, has an exteriorly

threaded sleeve coaxially spaced from the magnetic armature disc which is magnetically attracted toward the releasing position. A ring-shaped abutment structure surrounds the sleeve and is held in an adjusted position relative to the sleeve by means of a ring which is seated on the sleeve in threaded engagement therewith. One end of each brake pressure spring is in pressure engagement with the armature disc. The other end bears against the abutment structure. Rotating the ring on the sleeve causes the ring to shift axially and thereby also displaces the abutment structure to adjust the spring force. The threaded ring is prevented from inadvertent rotation by having marginal recesses engaged by leaf springs which are fastened to the ring-shaped abutment structure and are lifted out of the recesses when a tubular wrench or the like tool is pushed over the ring for the purpose of turning it.

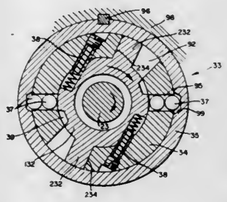


3,554,336
AUTOMATIC BRAKE ADJUSTER
Richard L. Crossman, Tallmadge, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Oct. 14, 1968, Ser. No. 767,324
Int. Cl. F16d *65/54*
U.S. Cl. 188—196 **11 Claims**



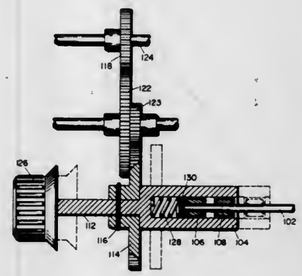
An automatic brake adjuster for compensating for the wear of the brake friction surfaces. The brake piston has a centrally located threaded hole which is resiliently engaged by a threaded split stem. The stem is spring biased toward the closed end of the brake cylinder but upon application of fluid pressure to the cylinder, the piston and the stem move together for a limited distance toward the open end of the cylinder. The stem contacts a stop which prevents it from moving any farther toward the open end of the cylinder while the continued pressure against the piston urges it toward the open end of the cylinder with sufficient force to cause the split portion of the stem to deflect radially inwardly and permit the threaded portion of the cylinder to skip across the threaded portion of the stem until the piston has traveled outwardly a sufficient distance to move the brake friction surfaces in contact and apply the brake. When the brake fluid pressure is released from the cylinder, the spring causes the stem to return to its original retracted position against the closed end of the cylinder. When sufficient wear has occurred in the brake to require adjustment of the clearance, the next time the brake is applied, the piston will skip one or more threads on the stem and position itself axially outwardly on the stem so that when the brake pressure is released and the stem returns to its retracted position, the outer end of the piston will remain in a sufficiently extended position to compensate for the change in brake clearance due to wear.

3,554,337
REVERSE LOCKING CLUTCH
Walter J. Denkowski, King of Prussia, Pa., assignor to King of Prussia Research and Development Corporation, King of Prussia, Pa., a corporation of Pennsylvania
Original application Oct. 10, 1968, Ser. No. 766,518, now Patent No. 3,505,888, dated Apr. 14, 1970. Divided and this application Nov. 17, 1969, Ser. No. 871,303
Int. Cl. F16d *67/02, 11/06*
U.S: Cl. 192—8 **1 Claim**



A valve operator is disclosed which in a typical application is used to control an alumina slurry valve. In normal operation, the alumina slurry valve operator raises and lowers the valve stem (to open and close the valve) by driving a nut rotationally while the stem is locked against rotation. The locking means includes a sleeve keyed to the stem and coupled through gears to a no-back drive. Torque sensing means sense that the valve seat of the alumina slurry valve should be scraped and cleaned. Clutch means are then engaged to utilize the no-back drive to drive the gear train to rotate the stem in the same direction and at the same time as the nut but at a slightly slower speed of rotation, thereby to move the rotating stem very slowly in the downward direction, thereby to scrape and clean the valve seat. In some cases, it will be preferable to utilize the no-back drive to drive the gear train to rotate the stem in the same direction and at the same time and at the same speed as the nut, thereby to rotate the stem to scrape the valve seat but without moving the stem downwardly.

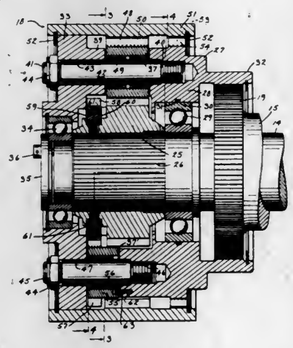
3,554,338
TWO-DIRECTIONAL ROTATION CLUTCH ASSEMBLY
Hugh W. Kennedy, Jr., Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed June 23, 1969, Ser. No. 835,708
Int. Cl. F16d *15/00*
U.S. Cl. 192—48.92 **11 Claims**



A clutch assembly is shown which provides two-directional rotation to a shaft coupled therewith while permitting axial

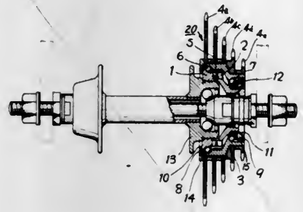
movement of the shaft with respect to the clutch assembly. The above is accomplished without the necessity for keyways, splines, flats, etc., on the shaft by providing a pair of clutches. One clutch is positioned for communicating rotational power to provide rotational power to provide rotation of the shaft in a clockwise direction and is free running in the counterclockwise direction. The other clutch is positioned to provide rotation of the shaft in the counterclockwise direction and is free running in the clockwise direction. The clutches are sized to permit relative axial movement of the shaft to the clutches.

3,554,339
OVERRUNNING POSITIVE AND SYNCHRONIZED CLUTCH
Williams S. Richardson, Fox Point, Wis., assignor to The Falk Corporation, Milwaukee, Wis., a corporation of Delaware
Filed June 25, 1969, Ser. No. 836,458
Int. Cl. F16d *15/00, 23/02*
U.S. Cl. 192—20 **5 Claims**



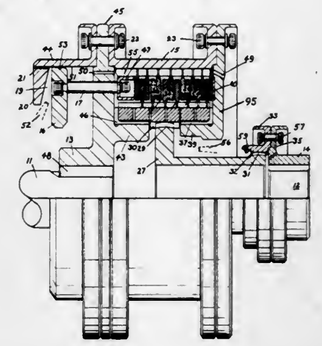
An overrunning clutch is shown which is adapted to connect a drive shaft to an externally driven shaft when the speed of the shafts are in synchronization and to overrun when the speed of the externally driven shaft is greater than the speed of the drive shaft. Engagement of the clutch is effected by the rotation of trigger pinions mounted in a housing connected to the driven shaft, such rotation causing a shift of a sleeve rotatably about the housing to in turn rotate drive pinions which are also mounted in the housing so that the drive pinions engage a drive gear on the drive shaft. A connection is thereby accomplished between the shafts by means of the drive gear, the drive pinions and the housing.

3,554,340
FREE WHEEL FOR A BICYCLE
Keizo Shimano and Masashi Nagano, both c/o Shimano Industry Company, 3-cho Oimatu-cho, Sakai, Japan
Filed Feb. 10, 1969, Ser. No. 797,912
Claims priority, application Japan, Oct. 2, 1968, 43/85,824
Int. Cl. F16d *41/18*
U.S. Cl. 192—64 **3 Claims**



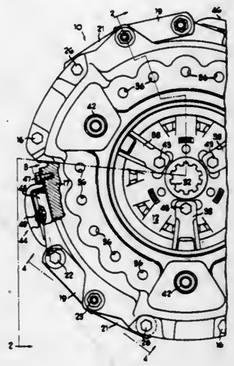
A freewheeling hub apparatus for bicycle having a recess formed by extension of a driving element and a driven element, and in which recess is provided a sealing device which is attachable to the driving element and which has a lip portion which abuts the driven element, thereby to keep out contaminants from the opening between the driving element and driven element.

3,554,341
COMBINATION CLUTCH AND COUPLING
Norman J. Anderson, Erie, Pa., assignor to Zurn Industries, Inc., Erie, Pa., a corporation of Pennsylvania
Filed Jan. 2, 1969, Ser. No. 788,475
Int. Cl. F16d *25/062, 23/10*
U.S. Cl. 192—70.2 **13 Claims**



A clutch-coupling combination made up of a drive member and a driven member connected together by an inner drum, an outer sleeve and friction disc arrangement. The inner drum is connected to the driven member by a crowned tooth coupling. The inner drum has an inner cylindrical bearing surface which is piloted on and rotates on a bearing surface on the driving member. The main feature of the invention is that structure is provided whereby the friction clutch friction disc systems are always aligned, insuring uniform loading, while the shafts may be misaligned at some angle and offset from each other.

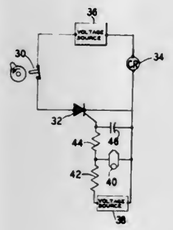
3,554,342
TORQUE TRANSMITTING DEVICE
Romas B. Spokas, Rockford, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Dec. 23, 1968, Ser. No. 785,923
Int. Cl. F16d *13/18, 13/44*
U.S. Cl. 192—70.18 **3 Claims**



A torque transmitting device includes a plurality of axially shiftable pressure plates connected to a drive housing ar-

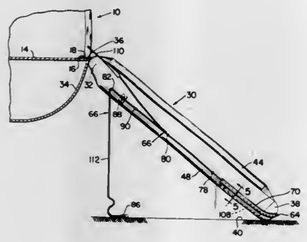
ranged for cooperation with a flywheel, parallel flexible drive straps distribute the torque from the drive housing among the several pressure plates, and a separating means provides for axially separating the pressure plates from the flywheel in a disengaged condition.

3,554,343
MOTION DETECTING METHOD AND APPARATUS
William L. Calvert, Westfield, and James H. Bowen, Somerville, N.J., assignors to Union Carbide Corporation, New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 664,102, Aug. 29, 1967, now abandoned. This application Feb. 26, 1969, Ser. No. 802,446
Int. Cl. F16d *71/00*
U.S. Cl. 192—127 **12 Claims**



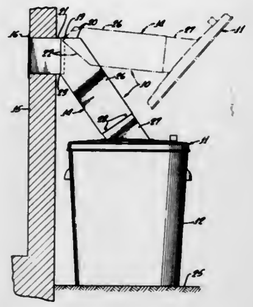
Motion detecting sensor is provided which stops a machine when a malfunction occurs such as a supply roll which fails to feed.

3,554,344
VARIABLE LENGTH INFLATABLE ESCAPE SLIDE
James R. Summer, Brielle, Henry C. MacLaughlin, New Shrewsbury, and Clarence S. Melander, Neptune, N.J., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Aug. 13, 1968, Ser. No. 752,355
Int. Cl. B65g *11/10*
U.S. Cl. 193—25 **14 Claims**



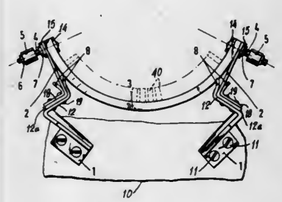
A lower extensible end portion of an inflatable escape slide is tucked or stowed and retained uninflated by restraint flaps enclosing the end portion intermediate the slide ends, and closed by quick release grip means on the flap edges. A cable, cooperable with the grip means, passes through a one-way lock assembly and terminates with a weighted mass. When the upper end of the slide is below a predetermined height, the mass weight contacts the ground and the cable is not active to open the closed and locked flaps. Above the predetermined height, the mass fails to make ground contact and its weight draws the cable through the one-way lock assembly which locks the cable against reverse movement, inflation of the slide causing the cable to release the restraint flaps and permit the lower extensible end portion of the slide to inflate and extend.

3,554,345
ADJUSTABLE RUBBISH CHUTE
George O. Mullens, 18202 Coltman Ave., Gardena, Calif.
Filed Aug. 13, 1968, Ser. No. 752,372
Int. Cl. B65g *11/14*
U.S. Cl. 193—33 **9 Claims**



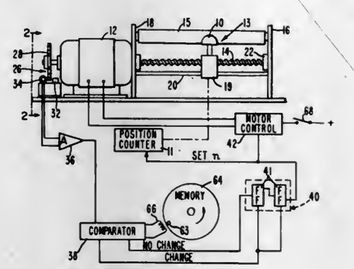
A rubbish disposal device that includes a chute connected to a lid of a rubbish container, the lower end of the chute being doubled over a flange bent downwardly around the perimeter of an opening in the lid, the chute including an inclined portion having a telescoping section for length adjustment hinged at an overlapping joint to a horizontal upper portion adapted to extend through an opening in a wall.

3,554,346
TYPE LEVER SUPPORT FOR TYPEWRITERS AND SIMILAR MACHINES
Erich Kattner, Sven Voelcker, Werner Westram, and Manfred Nemeth, Munich, Germany, assignors to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed Mar. 13, 1968, Ser. No. 712,813
Claims priority, application Germany, Mar. 30, 1967, S109087
Int. Cl. B41j *7/30*
U.S. Cl. 197—42 **10 Claims**



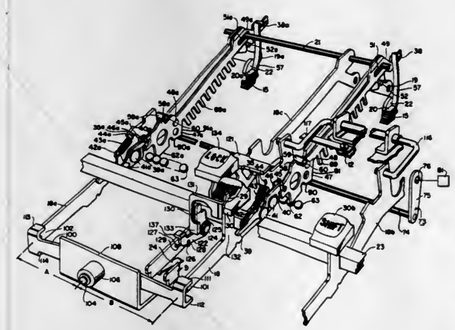
Support for the type levers for typewriters, teletypewriters and the like, arranged to abate the noise and attenuate the recoil force of the type levers when returning from printing to rest positions. The support is in the form of a relatively thick tape made from a plastic material having shock absorbing properties but poor elastic properties. The tape is suspended in the form of a uniform arc by leaf springs, extending tangentially of the arc of the tape, and connected with the tape in laterally offset relation with respect to the body of the tape. Guide pins extending perpendicularly to the leaf springs suspend the tape from the leaf springs. The guide pins extend perpendicular to and outwardly of the springs and have weights movable along their outer ends between stops, to increase the attenuating properties of the tape. Stops spaced on opposite sides of the springs are provided to limit flexing of the springs and degrade the impact oscillation of the springs.

3,554,347
SYSTEM FOR AUTOMATICALLY SETTING A POSITION COUNTER TO EFFECT AGREEMENT WITH THE POSITION OF A TRAVELING PRINTING ELEMENT
Cornelius C. Perkins, Birmingham, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 29, 1968, Ser. No. 724,965
Int. Cl. B41j *1/60*
U.S. Cl. 197—48 **1 Claim**



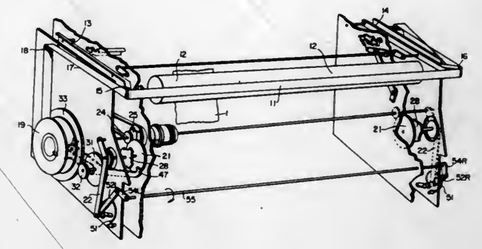
A system for synchronizing the lateral movement of a printing element with an electronic position counter. A pulse generator is operatively connected to a printing element drive motor to generate a pulse at each printing position. The pulses from the pulse generator are supplied via an amplifier to a comparator circuit which is periodically tested for a voltage level change in the amplifier output. When the level has not changed for a predetermined time due to the arrested movement of the printing element, the electronic position counter is set to a predetermined number corresponding to the present position of the printing element.

3,554,348
KEY LOCK SHIFT MECHANISM
John F. Herrmann, Pittsford, N.Y., assignor to The Singer Company, a corporation of New Jersey
Filed Nov. 1, 1967, Ser. No. 679,753
Int. Cl. B41j *5/22*
U.S. Cl. 197—107 **6 Claims**



A key lock mechanism for a keyboard wherein a shift key lever and a key lock lever are mutually coupled by bridging members spanning intermediate key levers to latch and unlatch the shift key lever for deriving a compact, shallow keyboard.

3,554,349
HIGH-SPEED PRINTER HAVING IMPROVED RIBBON TENSIONING AND REVERSING DRIVE MECHANISM
Donald G. Hebert, Rochester, N.Y., assignor to General Electric Company, a corporation of New York
Filed June 4, 1968, Ser. No. 734,467
Int. Cl. B41j *33/02, 33/51*
U.S. Cl. 197—154 **17 Claims**

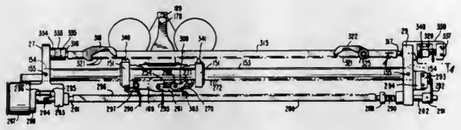


A high-speed printer of the type having an inked ribbon traversing across a printing area and which is selectively movable to permit character impression and subsequent visibility of the character formed. A pair of pivoted cantilever arms are provided on each side of the printing area of the high-speed printer with a first ribbon guide being mounted adjacent the end of each pivoted cantilever arm. The inked ribbon is supported under tension between the two guides across the width of the printing area and pivoting means are provided for pivoting the cantilever arms in unison about a common pivot axis whereby the printing ribbon is selectively moved as a relatively rigid beam between the printing and viewing positions by pivotal movement of the cantilever arms. A second ribbon guide is mounted on each side of the high-speed printer for supporting the ribbon at points intermediate ribbon takeup and payout spools and the respective first ribbon guides. Each of the second ribbon guides are mounted with their peripheral surface supporting the ribbon in axial alignment with the pivot axis of the pivoted cantilever arm and the ribbon is twisted through substantially a right angle in the space between each second ribbon guide and its associated first ribbon guide so as to extend along a path that bisects the angular movement of the pivoted cantilever arms. Reversible, tensioning ribbon spool drive mechanisms are supported on opposite sides of the high-speed printer for moving the ribbon in either direction between the pair of takeup and payout spools. The spool drive mechanisms are selectively operable alternately to cause the spools to take up or pay out the ribbon and comprise rotatable supporting plates having driving and neutral freewheeling positions. A movable center gear and ratchet arrangement is supported on each supporting plate and coacts with a fixed center gear when the rotatable supporting plate is in its driving position. A spindle for supporting a ribbon spool is rotated by the fixed center gear and includes an actuable finger which is extended upon exhaustion of a ribbon from a spool under conditions where the spool is operating as a payout spool with the supporting plate in its neutral freewheeling position. An interposer lever is actuated by the extended finger upon exhaustion of the ribbon from the spool which then coacts with the ratchet to rotate the rotatable supporting plate from its neutral freewheeling position into a driving position thereby reversing the operation of the spool. A rotatable shaft interconnects the ribbon spool drive mechanisms on opposite sides of the printer with respective connecting links interconnecting the supporting plate of each spool drive mechanism with the rotatable shaft in a manner such that rotation of one of the supporting plates from the neutral freewheeling position to the driving position results in automatic rotation of the opposite supporting plate from the driving position to the neutral freewheeling position thereby providing jam-proof operation.

3,554,350
TABULATION AND MARGIN CONTROL STRUCTURE

Donald L. Rolph, Fairport, and Ronald Tristram, Rochester, N.Y., assignors to The Singer Company, a corporation of New Jersey

Filed Oct. 6, 1967, Ser. No. 673,440
Int. Cl. B41j 25/18
U.S. Cl. 197—176 6 Claims

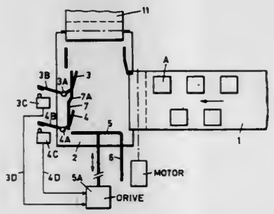


A tabulation and margin control structure for use with a character-by-character printer having a margin stop rack and a tab rack each supported for pivotal and longitudinal motion away from a home position. In response to a start tab signal, the tab rack is pivoted to rotate tab stop members into engaging relationship with a tab pawl member and in response to the pivotal motion of the tab rack, an escapement pawl is extracted from the engaged rack tooth to allow carrier motion. In response to the engagement of the tab pawl member with a tab stop, the tab rack is moved longitudinally and produces an electrical signal which initiates a reverse pivotal motion of the tab rack to terminate tab motion and reengage the escapement pawl with the associated rack. In response to the carrier entering a zone defined by the position of the right-hand margin stop member, the margin stop rack is pivoted and an electrical signal provided indicative of entry into the zone. In response to a carrier return signal, the carrier is moved to the left until a projection on the carrier engages the left-hand margin stop member, thereby moving the margin stop rack longitudinally. In response to said last mentioned longitudinal motion, an electrical signal is generated to terminate the carrier return motion.

3,554,351
DEVICE FOR LINING UP OBJECTS

Theo Rothenbach and Werner Gaberthuel, Neuhausen am Rheinfall, Switzerland, assignors to Schweizerische Industrie-Gesellschaft, Neuhausen am Rheinfall, Switzerland

Filed Nov. 8, 1968, Ser. No. 774,293
Claims priority, application Switzerland, Nov. 20, 1967, 16,205/67
Int. Cl. B65g 47/42
U.S. Cl. 198—21 3 Claims

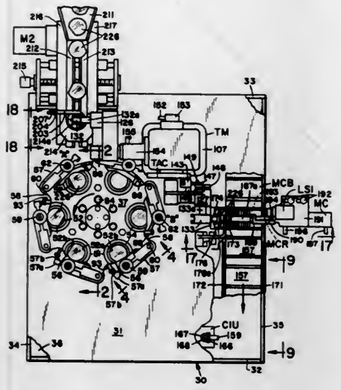


Objects delivered by a supply conveyor onto a table operate feelers that control the operation of a pusher for moving the objects so assembled and lined up to a further conveyor. Further embodiments include brakes, additional feelers, additional independently driven conveyors, and time comparator circuits for improving the performance.

3,554,352
ARTICLE HANDLING

Thomas F. Hillman, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Feb. 24, 1969, Ser. No. 801,683
Int. Cl. B65g 47/24, 47/80, 47/91
U.S. Cl. 198—21 15 Claims

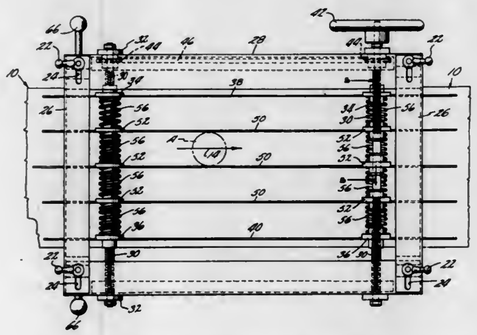


An apparatus for correspondingly rotatively orienting each of a series or succession of similar and relatively flat or dishlike articles having generally curved outer peripheries such as, for example, lens blanks for spectacles or other types of eyeglasses, and for stacking predetermined quantities of the oriented articles of said series or succession in rows for delivery to a station such as an article inspection station.

3,554,353
ADJUSTABLE LANE GUIDES

John L. Raudat, North Madison, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut

Filed Sept. 18, 1968, Ser. No. 760,563
Int. Cl. B65g 47/26
U.S. Cl. 198—30 9 Claims

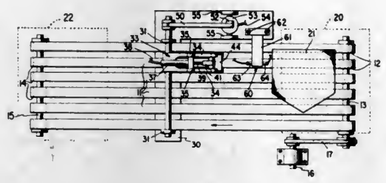


A plurality of laterally adjustable lane guides are mounted on a rectangular frame, which frame is itself adjustable laterally on fixed posts adjacent the sides of a conveyor. A pair of cross-shafts rotatably mounted in the frame threadably receive left and right hand nuts adjacent their respective end portions, which nuts carry the outside lane guides so that rotation of the shafts moves both guides toward or away from one another. Additional lane guides slidably mounted on unthreaded intermediate portions of these cross-shafts are separated from one another by coil springs to assure that they remain equally spaced from one another as the cross-shafts are so rotated.

3,554,354
DEVICE FOR TURNING FABRIC PANELS

Orland B. Reid, Kenilworth, N.J., and Joseph W. A. Off, Dallas, Tex., assignors to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed July 22, 1968, Ser. No. 746,660
Int. Cl. B65g 47/24
U.S. Cl. 198—33 2 Claims

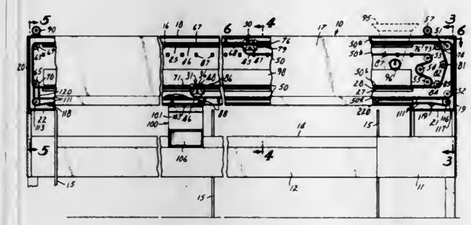


A device for turning fabric panels to present a predetermined surface thereof upwardly is disclosed with a conveyor for transferring successive fabric panels to an operating station. Associated therewith is mechanism automatically responsive to the presence of a fabric panel with the wrong side up for operating the device for turning the fabric panels.

3,554,355
FEED DISTRIBUTING APPARATUS

Alfred Sheldon Berg, 508 W. Oakland Ave., Austin, Minn.

Filed Apr. 1, 1968, Ser. No. 717,613
Int. Cl. A01k 5/02; B65g 65/28
U.S. Cl. 198—36 7 Claims

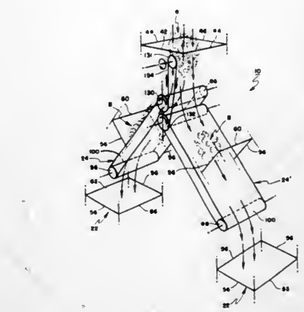


A pair of elongated tracks one mounted in vertical overlying relationship to the other, each having a carriage thereon with a pulley rotatably mounted therein for movement about a horizontal axis transverse to the tracks, chains extending between the carriages around guiding and power sprockets at one end of the tracks and an endless belt extending around the pulleys in the carriages and around pulleys and power means at the other end of the tracks so that a lower portion of the endless belt is substantially horizontal for receiving feed or other particulate matter thereon and rotation of the belt causes the feed to be dropped off the end of the horizontal portion while movement of the chains causes the carriages and, consequently, the end of the horizontal portion of the belt to move horizontally along the track, thereby, distributing the feed or particulate matter.

3,554,356
DISPENSING CHUTE DEVICE

Clinton L. Milliken, Pleasant Hill, Calif., assignor to Kaiser Industries Corporation, Oakland, Calif., a corporation of Nevada

Filed Apr. 22, 1968, Ser. No. 722,854
Int. Cl. B65g 47/44, 47/38
U.S. Cl. 198—65 11 Claims

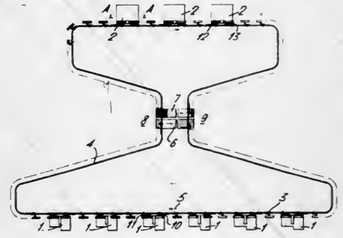


An improved and noncloggable chute-dispensing device having a plurality of discharge outlets for effecting simultaneous discharge of material, under the influence of gravity, introduced into the chute device at the inlet thereof, each one of the discharge outlets including a wall movable relative to the other walls and in a direction toward the discharge end thereof.

3,554,357
MECHANICAL HANDLING APPARATUS

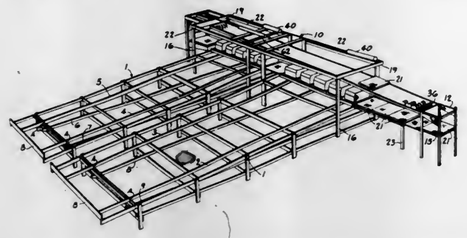
Desmond Walter Molins and Tom Rowlands, London, England, assignors to Molins Machine Company Limited, a corporation of Great Britain

Filed Dec. 8, 1967, Ser. No. 689,199
Claims priority, application Great Britain, Dec. 12, 1966, Mar. 15, 1967, 55562/66;12195/67
Int. Cl. B23q 5/22; B61b 3/00
U.S. Cl. 198—85 27 Claims



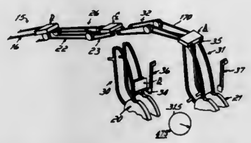
A conveyor system for transferring cigarettes in trays from tray-fillers supplied by cigarette-making machines to tray-unloaders supplying cigarette-packing machines and for returning empty trays to the tray-fillers having an endless continuously moving overhead conveyor track carrying a series of hoists for supporting carriers for the trays, wherein the forward and return reaches of the conveyor are interconnected by cross-conveyors to enable any empty trays in the forward reach to be transferred to the return reach and any filled trays in the return reach to be transferred to the forward reach. The tray loads of cigarettes are handled by various means for exchanging the trays between an overhead continuously moving conveyor and stations where the trays are filled and unloaded which means includes hooks to support the trays on the conveyor in carriers which hooks are automatically released by movement of the carriers off the conveyor and secured by movement of the carriers back to the conveyor.

3,554,358
PALLET CAR AND BOTTOM BOARD INSTALLATION FOR HANDLING MOLDS
Jesse M. Turner, Rte. 4, Box 393, Cumming, Ga. 30130
Filed Nov. 18, 1968, Ser. No. 776,357
Int. Cl. B65g *37/00*
U.S. Cl. 198—85 11 Claims



Apparatus and method for an automatic pallet car loading and return mechanism, and a bottom board loading and return mechanism of a metal casting system having rail means, elevator means and return conveyor means for the bottom boards; rail means, return means and elevator means for the pallet cars, and controlling means for directing the movements of both bottom boards and pallet cars.

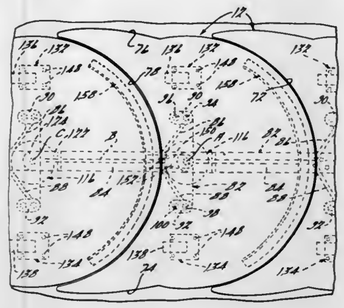
3,554,359
BOOK-TRANSFERRING APPARATUS
Ernest J. Sarring, Fort Thomas, Ky., assignor to Crawley Machinery Co., Newport, Ky., a corporation of Ohio
Original application Jan. 25, 1966, Ser. No. 700,414, now Patent No. 3,494,455. Divided and this application July 8, 1969, Ser. No. 871,001
Int. Cl. B65g *37/00*
U.S. Cl. 198—103 1 Claim



Apparatus for transferring books from a first upper station, to which books are sequentially conveyed horizontally with their backbones leading, alternatively to second and third lower stations at each of which the books are deposited at fixed positions in a vertical disposition with their backbones lowermost, and thereafter advancing the books horizontally from their fixed positions to selectively variable delivery positions.

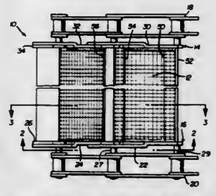
3,554,360
CONVEYOR
Jorgen S. Bildsoe, Royal Oak, Mich., assignor to Seatech Engineering, Inc., Southfield, Mich., a corporation of Michigan
Filed Aug. 12, 1968, Ser. No. 751,935
Int. Cl. B65g *17/06*
U.S. Cl. 198—189 15 Claims

A conveyor assembly comprising a plurality of generally crescent-shaped, adjacently oriented conveyor pallets presenting a flat article supporting surface and adapted to follow both linear and nonlinear paths of travel which may either be horizontal or inclined upwardly or downwardly; the conveyor pallets being movable longitudinally along the aforesaid paths in response to actuation of one or more friction drive assemblies disposed below the pallets and adapted to operate independently of one another and without synchronization or mechanical or electrical interlocks; the conveyor pallets being supported for longitudinal movement upon an associated support structure which is of an extremely compact, low profile construction and comprises a series of modules that may be conveniently added, removed or



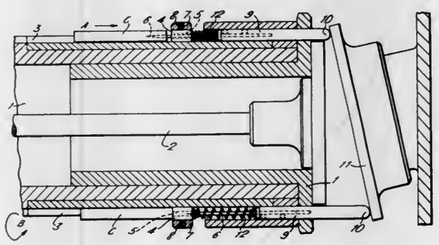
rearranged to selectively alter the layout of the path of travel of the conveyor pallets.

3,554,361
CONVEYOR APPARATUS
William R. Keough, Birmingham, Mich., assignor to Multifastener Company, Detroit, Mich., a partnership
Filed Oct. 28, 1968, Ser. No. 771,160
Int. Cl. B65g *15/30*
U.S. Cl. 198—194 11 Claims



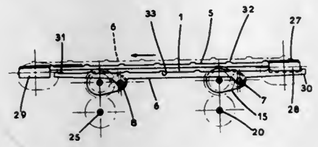
A guard structure for a conveyor including link chains secured to side edges of a conveyor web, each chain being made up of pivotally connected plates which act as side guards for the web. The plates overlap each other, but are constructed to prevent the formation of gaps at the side edges of the web through which articles could drop from the web.

3,554,362
ARTICLE-HANDLING DEVICES
Peter John Salkeld, Bromley, England, assignor to Molins Machine Company Limited, London, England, a corporation of Great Britain
Filed June 17, 1968, Ser. No. 737,455
Claims priority, application Great Britain, June 30, 1967, 30304/67
Int. Cl. B65g *29/00*
U.S. Cl. 198—210 6 Claims



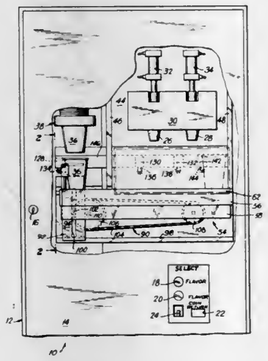
A rotatable, fluted catcher drum to receive cigarettes moving endwise off a cigarette maker which is provided with a movable needle in each flute to impale a cigarette and bring it to rest against a stop so that the cigarettes can be delivered transversely and accurately aligned.

3,554,363
CONVEYOR, PARTICULARLY FOR BARS OR SIMILAR OBJECTS
Hubert Jean Elineau, Versailles, France, assignor to R. Senard et Fils, Maromme, Seine-Maritime, France
Filed Feb. 20, 1968, Ser. No. 706,912
Claims priority, application France, Feb. 21, 1967, 7172
Int. Cl. B65g *25/04, 25/02*
U.S. Cl. 198—219 4 Claims



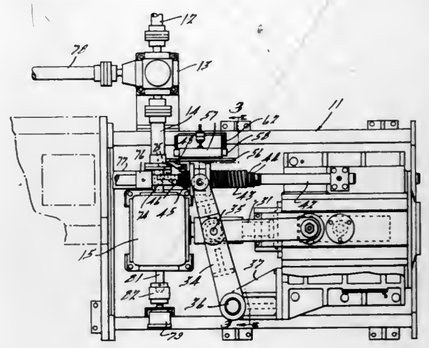
A conveyor for transferring of bars or similar objects has a plurality of units which are disposed parallel to one another in a substantially horizontal manner. Each one of the units comprises at least one stationary and one movable beam, the movable beams being driven by a planetary mechanism which causes an epicycloidal translatory movement of the movable beams.

3,554,364
CONTROL AND CUP-PUSHING ASSEMBLY FOR DISPENSERS
Curtis Lane, Riverdale, N.Y., and Leon Greenstein, Cranford, N.J.
Filed June 12, 1968, Ser. No. 736,383
Int. Cl. B65g *25/08;* A01c *9/00*
U.S. Cl. 198—221 15 Claims



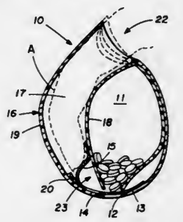
A dispenser having an assembly which pushes a cup along a given path and which controls the operation of the dispenser. A guide means guides a cup for movement along a given path and a pusher means is moved by a moving means to engage and push the cup along this path. As the cup approaches the end of the path a displacing means coacts with the pusher to displace it from a cup-gripping position to a nongripping position where it will release the cup, and it is in this latter nongripping position that the moving means acts on the pusher means to retract it back away from the cup. Control switches are located along the path of movement of part of the moving means, and the latter part of the moving means carries a switch-actuating member for actuating the control switches simultaneously with the pushing of the cup.

3,554,365
MECHANICALLY DRIVEN TRANSFER SYSTEM
Zoltan E. Zilahy, Nutley, N.J., assignor to Standard Tool & Manufacturing Company, a corporation of New Jersey
Filed Nov. 18, 1968, Ser. No. 776,543
Int. Cl. B65g *43/00*
U.S. Cl. 198—232 7 Claims



A transfer system has pallets which are advanced in a horizontal path containing a plurality of work performing stations by a drive which simultaneously moves the pallets from one station to another by continuously driven intermittent drive which provides dwell time during which the machine operations are performed.

3,554,366
CHILD-SAFE ACTUATING DEVICE FOR NORMALLY SEALED CONTAINERS
James A. Corll, 4029 Simms Ave. SE, Albuquerque, N. Mex. 87108
Filed Jan. 13, 1969, Ser. No. 790,727
Int. Cl. B65d *83/04*
U.S. Cl. 206—42 4 Claims



A device for preventing the operation of a dangerous article by children while permitting operation of the article by adults. The device includes a curved hollow tube having the length and diameter of an adult finger that extends to a dangerous article actuator, such as a container opening lever, an aerosol bomb push button, an electrical appliance switch, etc. The length of the tube prevents operation of the actuator by a child's finger while permitting operation of the actuator by an adult's finger. The diameter of the tube prevents entry of a child's hand into the tube. And, the curve of the tube prevents operation of the actuator by foreign objects that a child might employ.

3,554,367
STANDUP DISPLAY PACKAGE
Lawrence E. Hoover, Cuyahoga Falls, Ohio, assignor to American Packaging Corporation
Filed Sept. 6, 1968, Ser. No. 758,008
Int. Cl. B65d *5/50*
U.S. Cl. 206—45.14 9 Claims

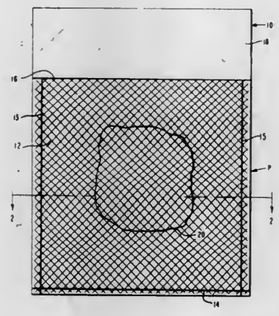
A standup display package having face panels with a product receiving aperture and a plastic film closing the

aperture and providing a product retaining pocket. Panel portions along a bottom portion of the package are spread



apart beneath the pocket to form a base for supporting the package erect on a support surface.

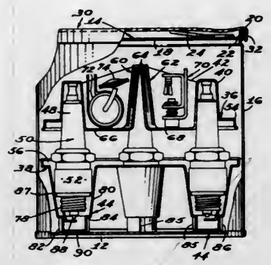
3,554,368
PACKAGE AND PACKAGING METHOD
Herbert Nagel, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Mar. 13, 1969, Ser. No. 806,868
Int. Cl. B65b *43/06;* **B65d** *33/04, 85/00;* **D04h** *3/16*
U.S. Cl. 206—46 **11 Claims**



A package comprising a container with an article therein, such container including a rigid backing member and an elastomeric thermoplastic netting member which is secured to the backing member and has means defining an elastic pocket therein for locking the article in position within the container. A method of packaging is provided for packaging the article in the container.

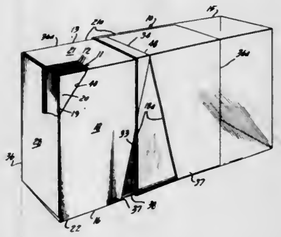
3,554,369
PACKAGING DEVICE FOR IGNITION COMPONENTS
Wilbert A. Paschke, 21214 Pennie, Dearborn Heights, Mich.
Filed Apr. 3, 1969, Ser. No. 813,199
Int. Cl. B65d *79/00*
U.S. Cl. 206—47 **11 Claims**

This disclosure relates to a packaging device for holding a plurality of ignition components for an internal-combustion engine including a plurality of spark plugs, a set of breaker points and a condenser. It comprises a container having a pair of opposed end walls and a continuous sidewall, preferably of cylindrical configuration, joining the two end walls. A first means in the form of a thin, stiff plastic insert and a second means in the form of a thin, stiff plastic insert each has a plurality of receptacles positioned therein. The receptacles in the first means or insert receive one end of the spark plugs, while the receptacles in the second means or insert receive the other end of the spark plugs. Each of these inserts has outwardly extending means, complementary in configuration to the continuous sidewall of the container. The first and second insert together with the spark plugs are positioned within the container and the dimension of the out-



wardly extending means of the inserts is less than the inner dimension of the cylindrical wall of the container to provide a loose fit so that the first and second inserts and the spark plugs may be readily inserted into and removed from the container. Additionally, the first insert has a pair of recesses positioned therein which receive a condenser and a set of breaker points respectively.

3,554,370
SHEET ITEM PACKAGE AND DISPENSER
Hal G. Davis, 309 S. 14th St., Haines City, Fla. 33844
Filed Dec. 4, 1968, Ser. No. 780,969
Int. Cl. B65d *83/08;* **A47f** *5/11*
U.S. Cl. 206—57 **6 Claims**

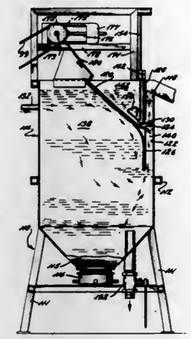


A package of stacked items has a rectangular carton that serves as a dispensing holder for the stack. As a holder, the carton has a discontinuity in a sidewall structural portion which divides the carton into opposite sections that are solely interconnected by a portion of the bottom wall. The bottom wall is bent when the stack is held between the sections and the sections have inner edge portions which facially contact the stack end items and which are substantially contiguous when the wall is unbent so that the weight of the stack in the holder arrangement for the carton is such as to urge the edges together and to thus continuously support the end items as the stack diminishes in size. Removable panels may be provided at the discontinuity to connect the sections in the package form or in lieu thereof, a sleeve may be provided to surround the side wall structure.

3,554,371
SEPARATION OF MATERIALS HAVING DIFFERENT SPECIFIC GRAVITIES
Gordon C. Leonard, Dalton, Ga., assignor to Meat Separator Corporation, Dalton, Ga.
Filed Apr. 27, 1967, Ser. No. 634,264
Int. Cl. B03b *3/30*
U.S. Cl. 209—3 **1 Claim**

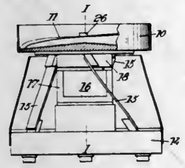
Liquid separation apparatus having a tank with liquid inlet means connected to the tank directing liquid against a first

partition member located within the tank between the inlet means and the tank sidewall. A second partition member spaced above the first member to provide a throat discharg-



ing meat and bones into an upwardly rising current of liquid in the channel which allows the meat to float and the bones to sink.

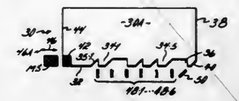
3,554,372
APPARATUS FOR ORIENTATING CHANNELLED OBJECTS
Isaj Gutman, Harrow, Middlesex, England, assignor to English Numbering Machines Limited, Enfield, Middlesex, England, a part interest and Flexico France, Paris, France, a part interest
Filed Apr. 29, 1969, Ser. No. 820,066
Claims priority, application Great Britain, Apr. 29, 1968, 20,200/68
Int. Cl. B65g *47/24*
U.S. Cl. 209—73 **11 Claims**



The apparatus comprises a track which is provided with lateral rails leading to a distribution station where an element is located which is to receive a channelled object. The track is banked alternately in opposite directions so that the objects, as they travel along this track, have successively the occasion to engage themselves by their channel on one or the other of these rails.

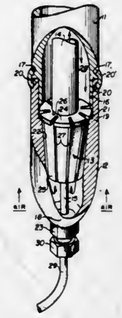
3,554,373
MAGNETIC DOCUMENT-SHIFTING METHOD AND APPARATUS
Ralph W. Rothfusz, Southfield, and Markus H. Ritter, Dearborn Heights, Mich., assignors to The Bendix Corporation, a corporation of Delaware
Filed Feb. 5, 1969, Ser. No. 796,845
Int. Cl. B07c *5/344*
U.S. Cl. 209—111.8 **10 Claims**

A magnetic card-shifting device for shifting a card, which has a ferromagnetic chip implanted in an edge thereof, from a first position, wherein the chip is spaced from the shifting device, to a second position displaced from the first position, the distance shifted being in excess of the initial displacement of the shifting device and implanted chip. The shifting device includes an electromagnet positionable adjacent the chip in spaced apart magnetic flux linking relationship therewith at an intermediate point between the first and second positions, and an electromagnet energization circuit for initially energizing the electromagnet with a first relatively high current level signal to exert a large attractive force on the implanted ferromagnetic chip and advance the chip into contact with



the electromagnet, thereby simultaneously acquiring the card and advancing it to the intermediate position, and thereafter energizing the electromagnet with a second relatively low current level signal to exert on the ferromagnetic chip of the acquired card in contact with the electromagnet a relatively small force for holding the acquired card fixed relative to the electromagnet, thereby enabling movement of the acquired and fixedly held card from the intermediate position whereat the card is acquired to the second position in response to movement of the electromagnet from the intermediate position to the second position.

3,554,374
PLUGGING COMPOUND COLLECTOR
Roy C. Blair and Lawrence E. Pohl, Los Gatos, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
Filed July 2, 1968, Ser. No. 741,959
Int. Cl. B01d *25/16*
U.S. Cl. 210—85 **9 Claims**

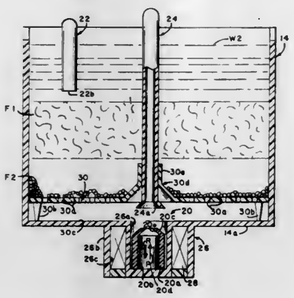


A device for selectively extracting impurities from sodium coolant for subsequent analysis, identification and/or disposal. This is accomplished by arranging a battery of demountable, narrow sodium flow passages in a system where sodium temperature can be controlled. As sodium temperature decreases, any impurity will precipitate and collect on the flow passage walls when its equilibrium solubility is exceeded. The demountable arrangement of the device allows easy access to the collected material for removal and identification or disposal.

3,554,375
AQUARIUM FILTRATION DEVICE
Allan H. Willinger, New Rochelle, N.Y., assignor to Metaframe Corporation, Hawthorne, Calif., a corporation of Delaware, by mesne assignments
Filed Aug. 21, 1968, Ser. No. 754,249
Int. Cl. E04h *3/20*
U.S. Cl. 210—169 **11 Claims**

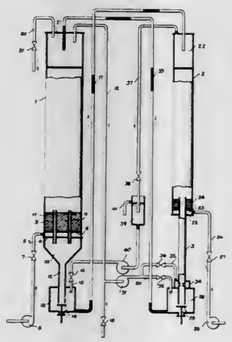
An aquarium filtration device in which optimum advantage is taken of the siphon inlet and the flow outlet fluid connections between two water bodies by the use, in combination

therewith, of a valveless pump, the dynamics of the fluid connections imposing the required unidirectional fluid flow and



thereby enabling efficient operation of the pump without pump inlet and outlet valves.

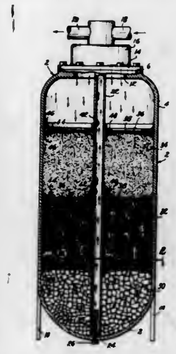
3,554,376
ION EXCHANGE APPARATUS FOR TREATING LIQUIDS
Gerhard Kunz, Gustavsburg, Germany, assignor to GHH-M.A.N. Technik Gesellschaft fur Anlagenbau m.b.H., Essen(Ruhr), Germany
Filed Feb. 16, 1968, Ser. No. 706,107
Claims priority, application Germany, Mar. 1, 1967, Apr. 29, 1967, M72,968;M73,793
Int. Cl. B01j *1/06, 15/02;* **C02b** *1/72*
U.S. Cl. 210—189 **7 Claims**



In an ion exchange apparatus such as for the softening or desalting of water, the active column and the combined regenerating and washing columns are interconnected by pipe systems including counterpressure chambers so that spent ion exchange material is recycled from the active column through the regenerating and washing columns and back to the active column with a balanced rate of flow.

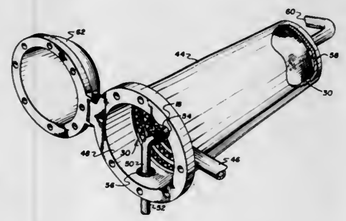
3,554,377
LIQUID TREATING APPARATUS
Omer E. Miller, 2316 Linden Ave., S. Plainfield, N.J.
Filed Sept. 18, 1968, Ser. No. 760,437
Int. Cl. B01d *23/12*
U.S. Cl. 210—275 **12 Claims**

Flexible, free-floating filters are used within a tank structure of liquid treating apparatus. The filters may be of any liquid pervious material but by the use of porous flexible foamed plastic material special advantages are obtained. In a representative embodiment, a vertically disposed tank is provided with a plurality of layers of particulate treating material and the layers are preceded and separated by the flexible filters which slidably engage the tank walls. The pressure of liquid flowing during a normal treatment cycle compacts the layers and the filters and backwash flow in the opposite direction causes the filters to rise and lift the layers thus loosening and agitating the particulate material of the layers.



Simultaneously the filters are cleaned. By use of the invention it is possible, for example, to provide within a single compact tank, a complete water treating unit containing replaceable or replenishable layers of treating materials, for the production of high quality water meeting the highest standards for taste, color, odor, pH and mineral content.

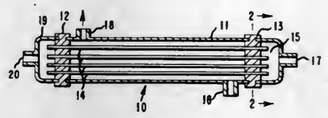
3,554,378
REVERSE OSMOSIS MODULE HAVING SPIRALLY WRAPPED REVERSE OSMOSIS MEMBRANE FABRIC
Arthur L. Kohl, Woodland Hills, Calif., assignor to North American Rockwell Corporation
Filed June 28, 1968, Ser. No. 740,868
Int. Cl. B01d *31/00*
U.S. Cl. 210—321 **14 Claims**



A reverse osmosis module that minimizes concentration polarization and product fluid pressure drop effects by the use of a fabric having selected hollow fibers. One or more panels of the formed fabric are attached to and spirally wound around a tube and the spirally wrapped unit is inserted into a cylindrical pressure vessel so that a product fluid can be obtained from a feed fluid by the principle of reverse osmosis.

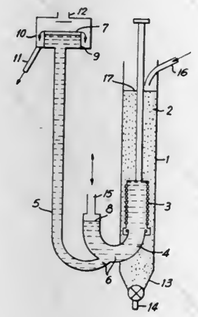
3,554,379
DESALINATION APPARATUS AND PROCESS OF MANUFACTURE USING IMPROVED, ACID GRAFTED NITROGENOUS MEMBRANES
Donald George Pye, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed June 10, 1969, Ser. No. 831,969
Int. Cl. B01d *13/00*
U.S. Cl. 210—321 **23 Claims**

Selectively permeable membranes comprising substantially linear nitrogeneous polymers grafted with polymerizable unsaturated organic acids are chemically treated to convert free acid groups present into forms exhibiting a lesser degree of hydrophilicity, such as polyvalent metal salt forms or



nonacidic derivative forms. The inventive treatment reduces the tendency of such membranes for swelling or dimensional change in water and thereby makes practical the assembly and operation of permeation separation apparatus in which they are incorporated either in the form of a flat film or in the form of a hollow fiber or capillary.

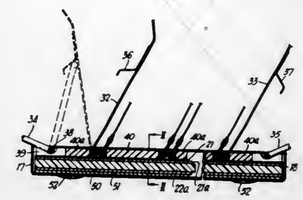
3,554,380
DEVICE FOR PREPARING THICK PULP
Susanna Mikhailovna Karpacheva, 2 Schukinsky proezd, 2, kv. 88; Jury Georgievich Karkhachev, 7 ulitsa oktyabrskogo Polya, 5, kv. 6; Valerian Matveevich Muratov, Astakhovsky pereulsk, 1/2, kv. 118, and Leonid Solomonovich Raginsky, Nikitinskaya ulitsa, 16, korpus 1, kv. 29, Moscow, U.S.S.R.
Filed Mar. 6, 1968, Ser. No. 711,101
Claims priority, application U.S.S.R., Mar. 10, 1967, 1,137,933
Int. Cl. B01d *35/20*
U.S. Cl. 210—412 **4 Claims**



A device is provided for preparing thick pulp including a tank supplied from above with suspension and containing a submerged filter element therein. The filter element communicates with a pulsation chamber which receives filtered liquid, and a vertical discharge pipe is connected to the pulsation chamber and has an expanded discharge chamber at its end remote from the pulsation chamber at a level thereabove. A pulsation is connected to the pulsation chamber for producing periodic pressure pulses to discharge filtered liquid from the discharge chamber and to force filtered liquid in the pulsation chamber back through the filter element.

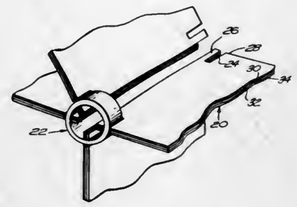
3,554,381
DOCUMENT SORTING DEVICE
Jack B. Guest and Kathleen E. J. Guest, 119 Albury Drive, Pinner, Great Britain
Filed Apr. 15, 1969, Ser. No. 816,338
Claims priority, application Great Britain, July 26, 1968, 35,674/68
Int. Cl. B42f *17/06, 17/12;* **B65d** *1/34*
U.S. Cl. 211—11 **9 Claims**

A document sorting device comprising a plurality of document dividers each in the form of a sheet mounted on a pair of rollers which are trapped between a resilient upwardly urged base and a pair of spaced horizontal guide rails, the



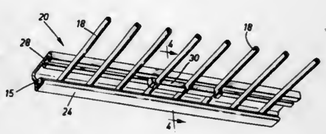
rollers being permanently attached to the dividers and being held in frictional engagement between the guide rails and the base by the spring member which urges the base upwardly.

3,554,382
CONSTRUCTION PRODUCT WITH SLOTTED PANELS AND ANNULAR CONNECTORS
Karlis E. Grinbergs, Louders Lane, Jamaica Plain, Mass.
Filed June 24, 1968, Ser. No. 739,453
Int. Cl. A57f *55/00;* **A63h** *33/10;* **E04h** *1/40*
U.S. Cl. 211—135 **6 Claims**



A construction product for randomly fabricating shelves, divider, etc., comprises a plurality of panels, which have slots that are parallel to and adjacent to edges of such panels, and annular connectors, each of which can be press fitted into the adjacent slots of such panels. The angular relationships among the panels may be selected with great versatility and the angular connectors join selected edges of the panels with respect to each other in order to provide selected anchor points.

3,554,383
SHELF TRIM ASSEMBLY
Charles A. Ball, 3410 Lakeshore Blvd. W., Toronto, Ontario, Canada
Filed Apr. 20, 1967, Ser. No. 632,355
Int. Cl. A47b *96/02*
U.S. Cl. 211—153 **3 Claims**

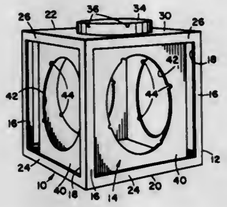


Clip means for holding a trim plate on a metal shelf structure with a frame and spaced transverse bars thereon. The clip means engages the trim plate and at least one of the transverse bars.

3,554,384
DISPLAY STAND

Alphonse R. DeNatale, Wilson, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware

Filed May 21, 1968, Ser. No. 730,723
Int. Cl. A47f *5/10*
U.S. Cl. 211—177 **10 Claims**

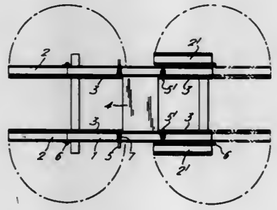


A boxlike display stand or unit comprising an outer shell and an inner casing mounted within said shell. The shell is provided with top and bottom end walls having bosses extending outwardly therefrom, respectively, and support members extending between said top and bottom end walls defining openings or ports in said shell. The inner casing comprises vertical walls having apertures therein adapted to receive the projecting bosses of adjacent units whereby a plurality of such units may be joined in a display or to receive articles for display.

3,554,385
SAFETY BOLT

Fredrik Munck, Bergen, Norway, assignor to Munck International A/S

Filed Nov. 6, 1968, Ser. No. 773,799
Claims priority, application Norway, Nov. 6, 1967, 170,418
Int. Cl. B66c *5/02*
U.S. Cl. 212—15 **1 Claim**



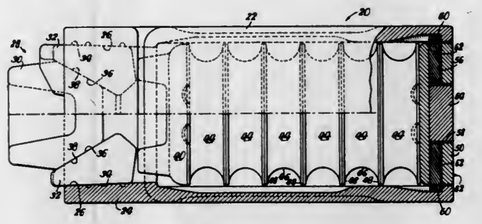
A gantry crane includes a framework supporting a main girder and a pair of swingable jibs which are movable between a first position in which they form an extension of the main girder and a second, stowed position in which they are parallel to the main girder. A trolley is mounted on rails provided on the girder and jibs. A stopper arrangement includes spring-loaded bolts which are displaced into the path of the trolley upon swinging of the jibs to the stored position to prevent the trolley from running off the rails.

3,554,386
DRAFT GEAR MECHANISM

Laurence T. La Belle, Lansing, Ill., assignor to Miner Enterprises, Inc., Chicago, Ill., a corporation of Delaware

Filed Aug. 14, 1968, Ser. No. 752,696
Int. Cl. B61g *9/08, 11/06*
U.S. Cl. 213—22 **8 Claims**

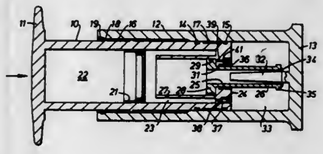
A rear wall construction, for a draft gear mechanism having a casing, comprising a plate member seated within the rear end of the casing, passageway means formed in the plate member, aperture means in the casing and alignable with the ends of the passageway means, and key means lying in the passageway means and engaged in the aperture means to retain the plate member in position.



3,554,387
BUFFERS AND DRAW GEAR FOR RAILWAYS, TRAMWAYS AND LIKE VEHICLES

Peter W. Thornhill, Freeport, Grand Bahama Island, and Quinton H. Carlton, Leamington Spa, England, assignors to Oleo International Holdings Limited, Leamington Spa, England

Filed July 22, 1968, Ser. No. 746,519
Claims priority, application Great Britain, Aug. 8, 1967, 36376/67
Int. Cl. B61g *11/12*
U.S. Cl. 213—223 **10 Claims**



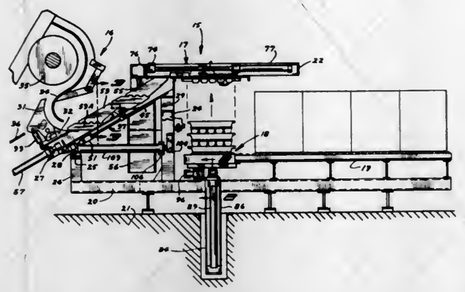
A hydraulic buffer or draw gear shock absorber for rail vehicles having means to control flow of liquid from a compression chamber in a cylinder into a reservoir chamber in a hollow plunger which flow control means provide flow restriction of different characteristics during slow inward plunger movement and during rapid inward plunger movement respectively, the said control means comprising a sleeve which, during slow inward plunger movement cooperates with a seat in the cylinder to provide substantially no flow until a predetermined pressure is built up in the compression chamber and during rapid inward plunger movement, moves away from the seat and cooperates with a profiled member to provide increasing flow restriction as the buffer plunger moves inwardly.

3,554,388
OBJECT STACKER

Wallace M. Thompson, Cordele, Ga., assignor to American Hoist & Derrick Company, St. Paul, Minn., a corporation of Delaware

Filed Sept. 20, 1968, Ser. No. 761,103
Int. Cl. B65g *57/18*
U.S. Cl. 214—6 **16 Claims**

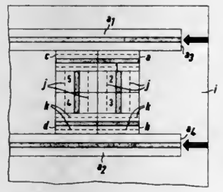
An automatic machine for stacking objects, as metal ingots, having a loading unit with a movable carriage operable to carry ingots to an ingot collector and holding unit. The ingots are collected on movable supports located above a rotatable elevator platform. On movement of the supports to the open positions, the ingots are transferred to the elevator platform or the top layer of ingots carried by the elevator platform. Consecutive layers of ingots are normally disposed with respect to each other by rotating the elevator platform after each layer of ingots is transferred to the top layer of ingots. The complete stack of ingots is pushed with a hydraulic ram from the elevator platform onto a roller stack conveyor.



3,554,389
MECHANIZED STORAGE SYSTEMS AND APPARATUS THEREFOR

Thomas John Robert Bright, 270 Sandridge Road, Rockcliffe Park, Ottawa, Ontario, Canada

Filed Apr. 2, 1968, Ser. No. 718,049
Claims priority, application Great Britain, Apr. 5, 1967, 15723/67
Int. Cl. E04h *6/06*
U.S. Cl. 214—16.1 **14 Claims**



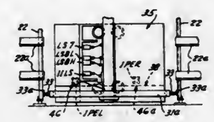
A vehicle storage and retrieval system including a plurality of storage unit each having N storage locations within a rectangular area accessible from at least one vehicle transporting route (a_1, a_2,) N-3 pallets (1 to 5), two pallet carriers (a,b,) and two locations (c,d,) devoid of pallets (1 to 5) or carriers, (a,b,) the pallets arranged in two parallel rows for sequential step-by-step circulation about the area and the carriers being reciprocable between rows, the transfer of vehicles mounted on the pallets to or from a transporting route being effected by reciprocatory movement of the carriers and circulatory movement of the pallets around the area.

3,554,390
WAREHOUSE SYSTEM WITH AUTOMATIC MEANS TO SELECTIVELY TRANSFER A SINGLE OR PLURALITY OF ARTICLES

Sanford Saul, Cleveland, Ohio, assignor to The Triax Company, Cleveland, Ohio, a corporation of Ohio

Filed Dec. 16, 1968, Ser. No. 784,056
Int. Cl. B65g *1/06*
U.S. Cl. 214—16.4 **14 Claims**

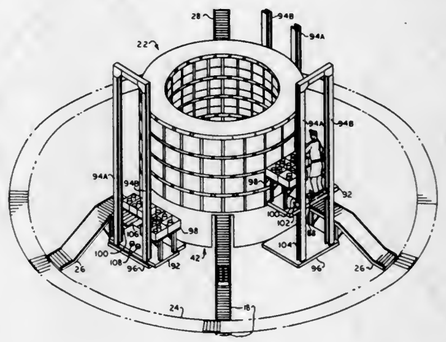
An automatic warehousing system having a mechanized load carrier including an extensible extractor, for depositing loads into and withdrawing loads from the associated storage structure, and including control means for the load carrier whereby a plurality of smaller loads or a single large load can be stored in each storage location, and the extractor is operable to selectively remove from a selected storage location one or more of the loads stored therein.



3,554,391
ELEVATORS AND ROTATORY STORAGE RACK

Harry Goodell, Bonita, Calif., assignor to Rohr Corporation, Chula Vista, Calif., a corporation of California

Filed Mar. 21, 1969, Ser. No. 809,254
Int. Cl. B65g *1/00*
U.S. Cl. 214—16.4 **10 Claims**



A storage rack having the form of a hollow cylinder is mounted on an annular base for rotation about the vertically disposed longitudinal axis thereof. Shelves of the rack are divided into a plurality of compartments which extend between the inner and outer sides of the rack. A circular platform is moved up or down within the central opening in the aforesaid base and rack by means of a hydraulic ram, and a conveyor line is arranged to convey packaged goods to this platform for transfer to the compartments of the rack from the interior side thereof. The goods are subsequently transferred from the compartments to platforms mounted for vertical movement adjacent the outer sides of the base and rack, and conveyor lines are provided for conveying said goods from the outer platforms to a conveyor line which encircles said base and connects with another conveyor line leading to a loading area.

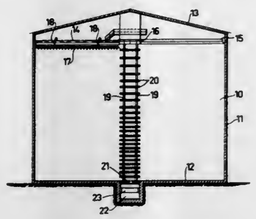
3,554,392
ARRANGEMENT IN SILOS

Karl-Gustaf L. Ivstedt, Hogerudsgatan, Sweden, assignor to Ingeniorsfirman Nils Weibull A.B., Malmo, Sweden, a Swedish Company

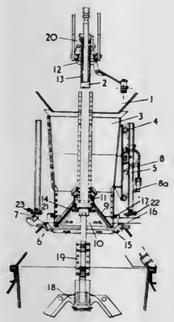
Filed Mar. 25, 1969, Ser. No. 810,100
Claims priority, application Sweden, Mar. 26, 1968, 3990/68
Int. Cl. B65g *65/38*
U.S. Cl. 214—17 **10 Claims**

A silo for storing bulk material has a shaft communicating with the storage space of the silo through openings formed between horizontally extending walls which are vertically spaced from each other. The extension and spacing of these walls is adjusted with regard to the kind of material to be

stored in the silo in such a way that the slope surface from the margin of a wall facing away from the shaft will end at a distance inside the margin of an adjacent lower wall facing the shaft.



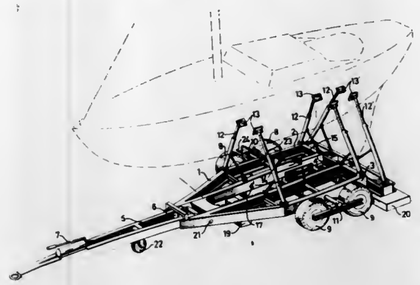
3,554,393
CHARGING DEVICE FOR A FURNACE
Leon Jean Barballe, Seraing, and Maurice Joseph Hermans, Liege, Belgium, assignors to Centre Nationale De Recherches Metallurgiques, Brussels, Belgium, a company of Belgium
Filed Mar. 20, 1968, Ser. No. 714,668
Claims priority, application Luxembourg, Mar. 20, 1967, 53230
Int. Cl. B66c *17/08*
U.S. Cl. 214—37 **7 Claims**



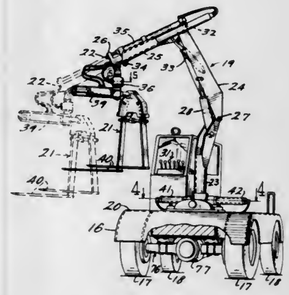
A blast furnace charging device having a distributing hopper vertically movable above a small charging bell and a large charging bell below the small bell, with the hopper resting on a protective element on the outside of the small bell which acts as a mobile base for the hopper, and the device charging the furnace by successive vertical movements of the hopper and small bell, and the large bell.

3,554,394
TRAILER AND METHOD FOR LOADING AND UNLOADING THE SAME, IN WHICH ONLY ONE WORKMAN NEED BE USED TO CARRY OUT THE METHOD
John Gunnar Hedman, 58 Loerholmsraegen, Pitea, Sweden
Filed Feb. 29, 1968, Ser. No. 709,393
Claims priority, application Sweden, Mar. 6, 1967, 3,010/67
Int. Cl. B65g *67/02*; **B62d** *63/06*
U.S. Cl. 214—38 **6 Claims**

A boat trailer having a U-shaped chassis, when loaded by one man, is moved thus passing the U-legs of the chassis beyond and on either side of the shoring member or members supporting the boat, whereupon removable support stocks are introduced into holes in the U-legs so as to interconnect said legs, thus enabling to lift the boat first at the stave and then at the stern by means of hydraulic means regulating the angle between the coupling arm of the trailer and the chassis to which said arm is pivoted.



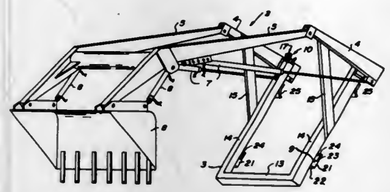
3,554,395
CRANE
Glenn G. Dunbar, 2608 Overbrook Drive, Toledo, Ohio 43614
Filed Apr. 25, 1969, Ser. No. 819,361
Int. Cl. E02f *3/75*
U.S. Cl. 214—138 **8 Claims**



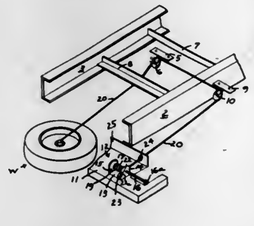
An automatic yard crane for lifting and moving materials. A loading arm extends above a generally flat, hollow body. The body is divided into a number of enclosed chambers having removable access covers for adding and removing granular ballast. An internal combustion engine drives a first pump for supplying pressurized fluid to a hydraulic drive motor and a second pump for supplying pressurized fluid to hydraulic pistons for operating the loading arm.

3,554,396
FRONT END LOADER
Eugene Demkiw, Vegreville, Alberta, Canada
Filed Apr. 11, 1968, Ser. No. 720,511
Int. Cl. E02f *3/70*
U.S. Cl. 214—140 **3 Claims**

A detachable front end loader having a rigid frame comprised of a horizontal U-shaped yoke and vertical rigid posts extending upwardly from the ends of the yoke side members. The usual arms carrying a pivoted bucket at the front end are pivotally mounted at the upper ends of the vertical posts. Hydraulic cylinder-piston assemblies actuate the arms and bucket. When not is use, the loader rests with the transverse member of the yoke on the ground and the side members extending upwardly. The tractor's front end, equipped with a pair of outwardly extending, horizontal pins, is driven between the side members so they contact the pins. By a combination of contracting the front cylinder-piston assemblies and driving the tractor ahead, the loader can be pivoted around the front pins and slid into operating position supported on front and rear side pins carried by the tractor. Means for locking the loader in place are provided.

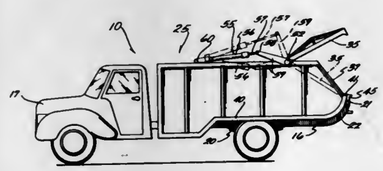


3,554,397
SPARE TIRE LIFT AND CARRIER
John Verl Cluff, 841 W. Pine St., Meridian, Idaho 83642
Filed Nov. 29, 1968, Ser. No. 780,015
Int. Cl. B62d *43/04*
U.S. Cl. 214—451 **2 Claims**



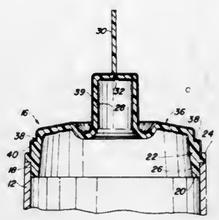
A spare tire carrier for flat bed vehicles comprises a pulley suspended beneath the bed against cross bars between the side frames that support the bed. A cable having a spare tire mounting bracket at one end threads through the pulley, then over one of the side frames to another pulley suspended beneath the bed, thence rearwardly to a winch on the rear bumper of the vehicle. The winch includes a flanged drum having a shaft rotatable by a lug wrench. One flange of the drum has apertures closely spaced around its periphery. The drum support has an aperture which is successively aligned with the drum flange apertures to receive a locking pin.

3,554,398
POWER ACTUATOR FOR PACKING DOOR OF REFUSE TRUCK
Ronald W. Nickel, 604 Glenview Ave., Oconomowoc, Wis.
Original application May 25, 1966, Ser. No. 552,765, now Patent No. 3,447,700. Divided and this application Mar. 25, 1969, Ser. No. 810,103
Int. Cl. B60p *1/16*
U.S. Cl. 214—503 **4 Claims**



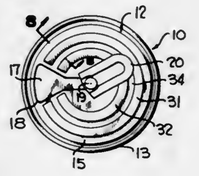
A special packing door arrangement for a refuse dump truck which adapts the packing door for power movement to a clearance position so that the door will not interfere with the dumping operation of the dump truck while the latter is dumping its contents into a larger truck. The packing door mechanism is especially adapted for refuse dump trucks arranged to provide small pickup trucks for collecting the refuse at its source and then dumping their contents in a large refuse truck which hauls it to its ultimate destination.

3,554,399
INFANT FEEDING UNIT
Dave Chapman, Chicago, Douglas W. Anderson, Palatine, Ill., and Joseph E. Phalon, White Bear Lake, Minn., assignors to Dave Chapman, Goldsmith & Yamasaki, Inc., Chicago, Ill., a corporation of Delaware, Trust
Filed June 14, 1968, Ser. No. 737,017
Int. Cl. A61j *11/04*
U.S. Cl. 215—11 **6 Claims**



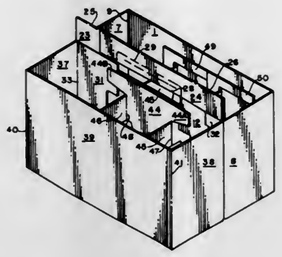
An infant feeding unit comprises a flexible tube having a nipple and overlying removable cap hermetically sealed thereto. The inner surface of the cap conforms to the outer surface of the nipple which is injection molded directly into the cap thereby assuring that the nipple remains in an aseptic condition until the cap is removed.

3,554,400
NONFLIPPING BEER CAN END
John S. Bozek, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 18, 1964, Ser. No. 345,615
Int. Cl. B65d *17/20*, *17/24*
U.S. Cl. 220—54 **3 Claims**



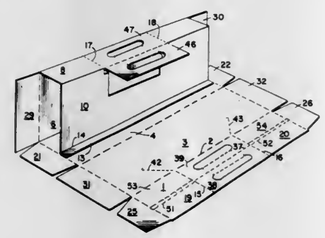
An easy opening end particularly adapted for use on beverage cans, said end including an end panel, weakening line formed in said end panel and defining a removable tearout portion which extends generally from the central portion of said end panel to the periphery of said end panel, and a circumferential rib in said end panel, said rib being generally C-shaped in outline and having opposite ends terminating adjacent said tearout portion and reinforcing said end panel around said tearout portion to prevent premature rupturing of said can end along said weakening line, and a pull tab secured to said tearout portion for effecting the removal thereof, said rib being depressed to define an upwardly opening groove, and said pull tab having a free end overlying said groove whereby clearance is provided between said pull tab free end and said end panel to facilitate the initial lifting of said pull tab.

3,554,401
ARTICLE CARRIER
Prentice J. Wood, Jonesboro, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Feb. 4, 1969, Ser. No. 796,441
Int. Cl. B65d 75/00
U.S. Cl. 220—113 11 Claims



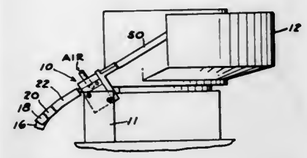
A basket style article carrier is disclosed having a bottom wall, sidewalls joined to opposite side edges of the bottom wall, end wall panels joined to the end of the edges of the sidewalls and extending inwardly therefrom, riser panels foldably joined to the inner edges of the end wall panels and extending inwardly of the carrier, a handle secured to the riser panels, and partition structure secured to the sidewalls and to the riser panels on each side of the handle, the partition structure being formed by supplemental separate blanks and being specially constructed so as to be extensible.

3,554,402
FULLY ENCLOSED CARTON FOR RETURNABLE ITEMS
Joseph H. Lock, Mableton, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Apr. 24, 1969, Ser. No. 818,903
Int. Cl. B65d 5/46, 5/48, 5/54
U.S. Cl. 220—115 6 Claims



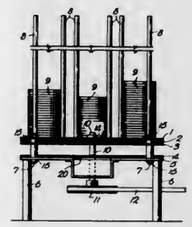
A fully enclosed carton having top, bottom and spaced sidewalls foldably joined along their side edges to form a tubular structure is provided with a longitudinal partition panel foldably joined to the bottom and top walls and the ends of the carton are provided with end closures which are of a composite construction. Each end closure comprises top and bottom end flaps foldably joined to the top and bottom walls respectively together with side end flaps which are foldably joined together in flat face contacting relation to close the carton ends. A pair of transverse weakened severance lines are formed in spaced relation in the top wall and in the upper portions of the sidewalls to provide a handle for the carrier and a reinforcing panel is struck from the top portion of the partition panel and folded into flat face contacting relation with an interior surface portion of the top wall so as to afford reinforcement therefor.

3,554,403
APPARATUS FOR DELIVERING ARTICLES INTO A PLURALITY OF TUBES
Gary D. Ginther, Leonard, Mich., assignor to The Clyde Corporation, Troy, Mich., a corporation of Michigan
Filed Oct. 15, 1968, Ser. No. 767,666
Int. Cl. B65h 3/44
U.S. Cl. 221—93 10 Claims



A movable shuttle has a plurality of openings, each of which is aligned in one position of the shuttle with one of a plurality of tracks and each of which is aligned in another position of the shuttle with one of a plurality of delivery passageways, each passageway being adapted to be connected with a tube. Upon movement in opposite directions, each shuttle opening alternately receives an article from a series of articles in its respective track and transfers it into alignment with its respective passageway. The shuttle is actuated by an air motor within the body of the apparatus. Compressed air is introduced behind the articles aligned with the delivery passageways to propel them into and through the tubes.

3,554,404
APPARATUS FOR COLLATING DISCLIKE OBJECTS
Richard G. Schmid, Osgood, Ind., assignor to Gulf Oil Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 3, 1969, Ser. No. 788,746
Int. Cl. B65h 3/44
U.S. Cl. 221—95 2 Claims

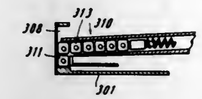


A series of plates having apertures to receive disclike objects is used to collate the objects. Three fixed plates are mounted in a stack with two rotating plates beneath the first and second. The top rotating plate removes one disclike object from each of a series of stacks of disclike objects mounted on the top fixed plate, drops each object through the offset apertures in the second fixed plate into the second rotating plate which drops the collated series of objects through the bottom fixed plate for further handling.

3,554,405
TOOL FOR BINDING CABLE HARNESSES
Heinrich Kabel, Quickborn Holstein, Germany, assignor to Paul Hellermann G. m. b. H., Pinneberg, Germany
Filed Nov. 4, 1968, Ser. No. 773,217
Claims priority, application Germany, Nov. 14, 1967, 64,464
Patent 1,640,415
Int. Cl. B65h 1/08
U.S. Cl. 221—227 4 Claims

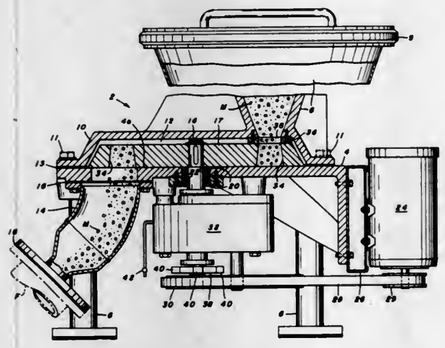
Cable assemblies are to be bound by means of a strap whose ends are held by a lock member. The improved appliance comprises an elongated body with a holder for a lock

member to be fixed and a magazine for lock members extending parallel to the body. The magazine is pivoted so that the magazine mouth can be moved towards the holder to push lock members through a guide duct joining the magazine mouth and the holder. When the magazine is subsequently moved away from the holder the mouth is opposite



an empty part of the guide duct and another lock member from the magazine is urged into the empty space. To load the magazine, the lock members are attached to a flexible belt and are fed into guides. One guide leads the lock members into the magazine and the guide leads the belt first parallel to the lock member guide then sharply away from this to separate the belt from the lock members.

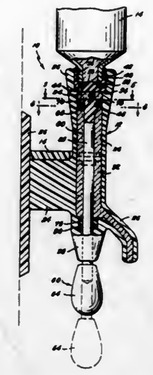
3,554,406
ROTARY APPARATUS FOR FEEDING GRANULAR MATERIAL INTO AN EVACUATED RECEIVER
William K. Kleysteuber, Wexford, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Oct. 21, 1968, Ser. No. 769,288
Int. Cl. B67d 5/24
U.S. Cl. 222—30 8 Claims



Apparatus and method of controlling the flow rate of granular material into a receiver. The apparatus departs from the conventional paddle-type of apparatus for regulating flow. Instead, a rotating wheel with recesses is employed, whereby material falls from a hopper into the recesses of the wheel, one recess at a time, and is carried by these recesses to a discharge position above the material receiver. Means are provided for counting the number of recesses discharging material into the receiver, and according to the method, an operator noting the rate of such discharging can increase or decrease the speed of the wheel. A vacuumtight chamber may be provided for housing the wheel, so that the apparatus can be used to feed material into an evacuated vessel.

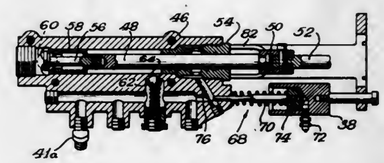
3,554,407
DISPENSER FOR VISCOUS MATERIAL
Wilbert J. Des Roches, Edmeston, N.Y., assignor to Des Roches-Hurlburt Industries, Inc., Oneonta, N.Y., a corporation of New York
Filed Apr. 8, 1968, Ser. No. 719,585
Int. Cl. B65d 35/28
U.S. Cl. 222—95 5 Claims

A device for withdrawing a viscous material from a container and dispensing the material in desired quantities, an operating member being located in said device for axial movement therein and being movable in a first direction for withdrawing the viscous material from the container into a load chamber of the device from a feed chamber therein,



movement of the operating member in a reverse direction causing the viscous material to be drawn from the load chamber into the feed chamber for the charging thereof in preparation for the next reversal movement of the operating member.

3,554,408
HOT MELT GLUE APPLICATOR
Viles K. Fremstad, deceased, late of Pomona, Calif., by Edna Fremstad, administratix, Pomona, Calif., assignor to The Aro Corporation, Bryan, Ohio, a corporation of Delaware
Filed Sept. 16, 1968, Ser. No. 759,925
Int. Cl. B67d 1/16
U.S. Cl. 222—109 9 Claims

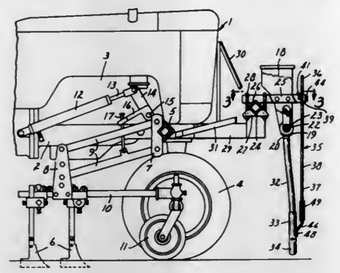


A hot melt glue applicator including a console for housing controls and a tank containing hot melted glue and at least one glue carrying hose connected with an external glue gun. The device includes separate heaters for the tank, the hose and the gun, an improved solenoid pump for the gun, an automatic fluid pressure release device to prevent hose failure due to high expansion rate of the melting glue, and a pneumatic pump for pumping the glue through the glue carrying hoses to the gun in which seals and packings are eliminated.

3,554,409
CHEMICAL APPLICATOR AND SUPPORT MEANS THEREFOR
Ebenhard S. Gandrud, 10 Grandrud Road, Owatonna, Minn. 55060
Filed May 21, 1968, Ser. No. 730,887
Int. Cl. A01c 7/20
U.S. Cl. 222—176 4 Claims

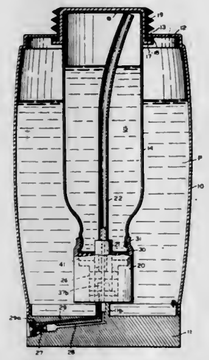
A device for distributing granular material to the ground, including a dispensing hopper and a flexible delivery tube extending downwardly from the hopper toward the ground, having means including a flexible resilient member and a tubular discharge head for supporting the lower discharge end of the tube in spaced relation to the ground and adjustable to selectively move the tubular head vertically and laterally

relative to the ground. The resilient member is operative to permit displacement of the tubular head upon engagement



thereof with an obstruction, and to reposition the same, when the obstruction is passed.

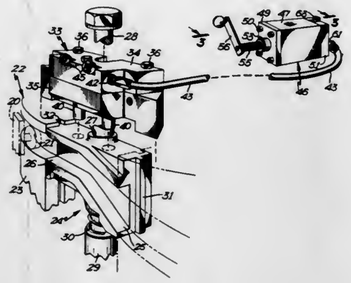
3,554,410
AEROSOL DISPENSER WITH SPRAY NOZZLE AT BOTTOM THEREOF
Charles D. Chambers, Huntington, Conn., assignor to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of New York
Filed Apr. 1, 1969, Ser. No. 812,146
Int. Cl. B05b *7/30*
U.S. Cl. 222—193 **4 Claims**



An aerosol-type dispenser for dispensing aerosol spray into low places. A product container has a base through which separate product and propellant passages extend to an aspirating nozzle directed outwardly of the base, preferably laterally. A propellant cartridge is positioned within the container and movable vertically for actuating the valve means in the bottom thereof to release propellant into the propellant passage. The upper end of the propellant cartridge extends out through the top of the container so that finger pressure can be exerted thereon to actuate the valve means.

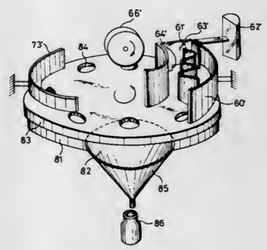
3,554,411
ADJUSTMENT MECHANISM FOR FILLER APPARATUS
Lyndon R. Leining, Mapleview, Minn., assignor to Geo. A. Hormel & Company, Austin, Minn., a corporation of Delaware
Filed Apr. 22, 1968, Ser. No. 723,058
Int. Cl. B67d *5/52*
U.S. Cl. 222—255 **3 Claims**

A filling machine including a revolvable multicavity unit having a plurality of vertical cavities therein. A plurality of vertical movable dispensing plungers which force a flowable food product from the cavities during downward movement of the plungers and which control the filling of the cavities during upward movement thereof. Cam rollers on the dispensing plungers and a cam track for controlling the vertical movement of the plungers, including an adjustable plunger lifting portion which is vertically shiftable relative to



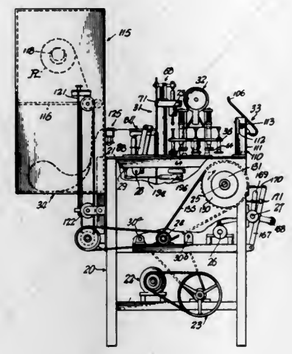
a fixed cam portion, and which is shiftable in response to movement of a fluid pressure piston and cylinder unit. A control device including a second piston and cylinder unit wherein a piston is shiftable in a cylinder in response to axial movement of a threaded revolvable member to control operation of said first piston and cylinder unit and the vertical position of said plunger lifting portion.

3,554,412
CAPSULE CHARGING SYSTEM
Naoichi Hayashi, Nobuhiro Takeuchi, and Sakae Sunagawa, Tokyo, Japan, assignors to Sankyo Co., Ltd, Tokyo, Japan
Original application Mar. 13, 1967, Ser. No. 622,647, now Patent No. 3,501,894, dated Mar. 24, 1970. Divided and this application Apr. 14, 1969, Ser. No. 840,875
Int. Cl. G01f *11/10*
U.S. Cl. 222—346 **1 Claim**



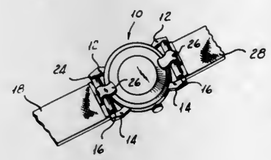
A stationary base supports a rotary disc having trap chambers. A feed trough is superposed upon the disc and is open at the leading end and closed at the trailing end, except for an opening immediately above the disc. An agitator is within the trough. Following the trough in the direction of rotation of the disc is a roller to press excess material into the trap chambers, and a wiper blade to deflect remaining excess material from the surface of the disc out of the path of the trap chambers. Each trap chamber then passes over an aperture in the base, releasing the contents of the trap chamber.

3,554,413
BOW-FORMING MACHINE
Josephus J. Thayer, West Lafayette, Ind., assignor to Thayer, Inc., Wolcott, Ind., a corporation of Indiana
Filed July 1, 1960, Ser. No. 40,439
Int. Cl. A41h *43/00*
U.S. Cl. 223—46 **16 Claims**



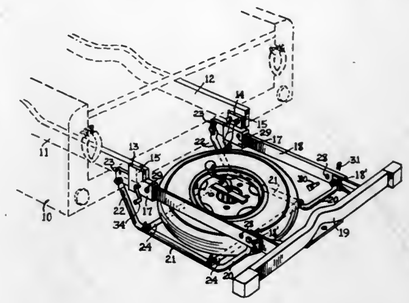
In a machine adapted for forming bows, the combination of rotatable spindle means for rotatably supporting ribbon placed thereon, feed means for projecting successive lengths of ribbon generally normal to the axis of rotation of said spindle means and disposing such lengths of ribbon across such axis of rotation to form successive loops of ribbon on said spindle means, means for securing a plurality of such loops on said spindle means, and drive means for cooperatively actuating said feed means and rotating said spindle means.

3,554,414
TAB STOP FOR WATCHBAND TUBE END
Louis Gluck, New York, N.Y., and John G. Siska, Cresskill, N.J., assignors to Kreisler Manufacturing Corporation, North Bergen, N.J., a corporation of Delaware. by mesne assignments
Filed July 24, 1968, Ser. No. 747,349
Int. Cl. A44c *5/14*
U.S. Cl. 224—4 **2 Claims**



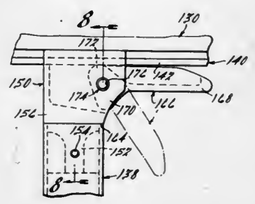
A flexible, nonexpansible metal watchband in which each of the tube ends on the band carries a single, centrally located tab on the underside thereof for engaging the underside of the watchcase when the band tends to drop vertically downwardly under the influence of gravity as the case is held face up, thus to limit the movement of the band to a position at which sharp corners on the band do not extend above the case.

3,554,415
BUMPER WITH SPARE TIRE CARRIER ASSEMBLY
William T. Woods, Rte. 1, Bertrand, Mo. 63823
Filed July 26, 1968, Ser. No. 747,955
Int. Cl. B60r *9/00, 19/02;* **B62d** *43/04*
U.S. Cl. 224—42.05 **6 Claims**



A combination bumper and spare tire mounting structure for a vehicle wherein the structure is slidably disposed beneath the vehicle body and movable longitudinally through a horizontal plane with respect thereto so as to provide access to the spare tire carried thereby.

3,554,416
VEHICLE LUGGAGE RACK
John A. Bott, 931 Lake Shore Drive, Grosse Pointe Shores, Mich. 48236
Filed Feb. 21, 1968, Ser. No. 707,148
Int. Cl. B60r *9/04*
U.S. Cl. 224—42.1 **7 Claims**

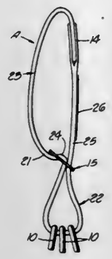


A roof mounted luggage rack comprising a pair of longitudinally extending spaced parallel side rails, the side rails having longitudinally extending slideway portions provided thereon; a pair of transversely extending cross rails; a pair of slide members mounted one on each end of both of the cross rails and adapted to slidably engage the slideway portions on the side rails for supporting the cross rails for longitudinal sliding movement; a camming lever pivotably mounted on each of the slide members and adapted to clampingly engage the side rails for fixedly securing the cross rails at a preselected longitudinal position thereon, and a plurality of stanchion members operatively supporting the side rails on the associated vehicle, each of the stanchions having an eyelet formed in the upper end thereof adapted to have a suitable restraining strap or tiedown rope secured thereto for use in securing luggage and the like within the rack.

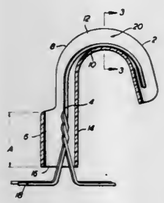
3,554,417
CARRIER DEVICE FOR GARMENTS ON HANGERS
Samuel W. Yorty, 12979 Blairwood, Studio City, Calif. 91604
Filed Sept. 19, 1968, Ser. No. 760,839
Int. Cl. A45f *5/10*
U.S. Cl. 224—45 **2 Claims**

A carrier device for articles such as garments supported on hangers, wherein a flexible strap is formed into an endless

band, the strap at one side of the band being threaded through one opening of a buckle frame constructed with two openings therein, a portion of the strap adjacent that which is threaded through said one opening being folded upon itself and passed through the other of said buckle openings to provide an adjustable loop on one side of the buckle for receiving the supporting hooks of the hangers, and a hand grip-carrying loop on the other side, the buckle frame being tiltable upon the application of a pulling or hanging force on the hand grip portion to grippingly engage the strap portions which are positioned in said other buckle opening and retain the hook-receiving loop in its adjusted position.



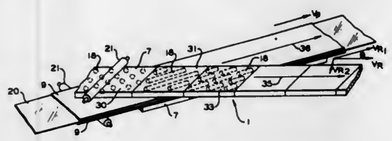
3,554,418
CARRIER FOR GARMENT HANGERS
Norman C. Holmes, 351 Pasadena Place, Corpus Christi, Tex. 78411
Filed Feb. 2, 1968, Ser. No. 702,716
Int. Cl. A45f *5/10*
U.S. Cl. 224—45 **6 Claims**



This application discloses a garment hanger carrier which, in one exemplar form, has a tubular collar section and a hook-shaped body section having a U-shaped cross section fixed to the upper edge of the collar section and extending upwardly and outwardly therefrom. The hook-shaped body section accepts and supports the garment hanger hooks in its U-shaped cavity while the tubular collar section encircles the shanks of the hanger hooks and retains them together as a single unit for ease in transporting.

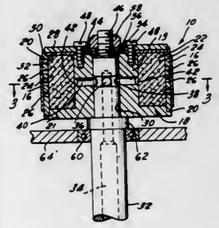
3,554,419
NONWOVEN FABRICS
Leroy E. Robinson and Dan E. Perry, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Original application Mar. 25, 1965, Ser. No. 442,588, now Patent No. 3,424,358, dated Jan. 28, 1969. Divided and this application Aug. 1, 1968, Ser. No. 749,506
Int. Cl. B26f *3/02*
U.S. Cl. 225—93 **8 Claims**

Oriented film is fibrillated between two belts of elastic material by distending the belts in a direction transverse to the direction of orientation of the film by passing pressure means across and in contact with at least one elastic belt so that the component of the velocity of the pressure means that



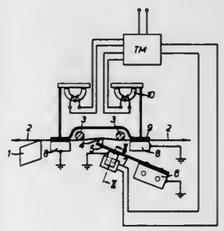
is parallel to the direction of movement of the film is substantially equal to the velocity of movement of the film.

3,554,420
TAPE TRANSPORT CAPSTAN WITH FILTER
Jerome G. Agius, Ridgefield, Conn., assignor to Benrus Corporation, Ridgefield, Conn., a corporation of Delaware
Filed Aug. 19, 1968, Ser. No. 753,358
Int. Cl. B65h *17/30*
U.S. Cl. 226—95 **20 Claims**



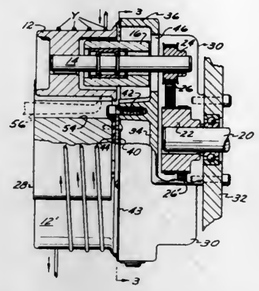
A tape transport capstan comprises an outer annular wall defining a tape-engaging surface and an annular chamber formed in the body. That chamber is filled with a filter material having a plurality of fluid-flow-restricting passages communicating with a fluid passage provided in the body and with relatively large apertures formed through the outer wall. An easily removable chamber cover permits the ready insertion or removal of the filter material from the chamber.

3,554,421
INCREMENTAL TAPE DRIVE
John H. Streeter, Ilford, England, assignor to The Plessey Company Limited, Ilford, England, a British company
Filed June 11, 1968, Ser. No. 736,137
Claims priority, application Great Britain, June 12, 1967, 27,083/67
Int. Cl. G11b *15/20*
U.S. Cl. 226—145 **5 Claims**



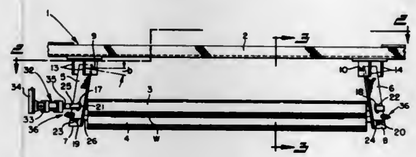
An incremental tape drive actuator for a tape recorder comprises two supports in which means to deflect a magnetic tape from the shortest path between the supports comprises a vibratory reed. Movement of the reed is synchronized with the actuation of tape brakes and feeding speeds up to 350 or more increments per second are possible.

3,554,422
YARN-PROCESSING APPARATUS
John D. Page, Clemson, S.C., assignor to Maremont Corporation, Chicago, Ill., a corporation of Illinois
Filed Mar. 5, 1969, Ser. No. 804,460
Int. Cl. B65h *17/20*
U.S. Cl. 226—180 **5 Claims**



Yarn-processing apparatus including a belt-driven yarn transporting roll mounted for convenient adjustment of its inclination and for substantially constant belt tension in all adjustive positions. A heater block associated with the roll is shaped to facilitate the removal of yarn wraps therefrom.

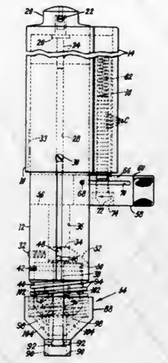
3,554,423
WEB GUIDING APPARATUS
Alexander V. Alexeff, Cleveland, Ohio, assignor to Alexeff-Snyder Enterprises, Inc., Cleveland, Ohio, a corporation of Ohio
Filed May 21, 1969, Ser. No. 826,593
Int. Cl. B65h *23/02*
U.S. Cl. 226—199 **10 Claims**



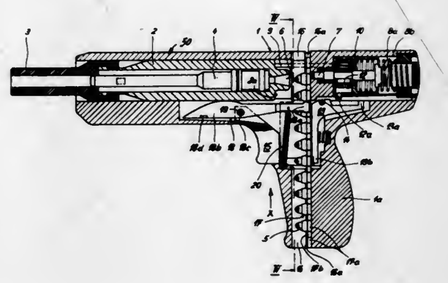
A web-guiding apparatus including plural guide rolls each independently supported by pivot links at opposite ends of the guide rolls whose pivotal axes are angularly disposed with respect to the centerline of the web material to achieve a desired canting and tilting of the rolls in a corrective direction during lateral movement back and forth. Adjacent rolls are connected together by spring links for balancing the rolls one against the other and permitting differential movements therebetween which will occur when the angular orientation of the pivots and support links of adjacent rolls is varied to vary the cant angle and wrap angle during lateral shifting of the rolls. The relative lengths of the support links may also be varied for varying the angle of wrap of the web material from side to side during such lateral shifting of the guide rolls.

3,554,424
PUSH TO FIRE EXPLOSIVE TOOLS
Albert E. Newton and Paul G. Rumball, Beverly, Mass., assignors to USM Corporation, Flemington, N.J., a corporation of New Jersey
Filed July 19, 1968, Ser. No. 746,220
Int. Cl. B25c *1/14*
U.S. Cl. 227—8 **12 Claims**

An explosively actuated device for driving pins and studs, for instance, by using only one hand. Compact and simple in structure, the tool preferably employs an impact-ignitable primerless charge for generating gas pressure, a simple means for advancing successive charges from a supply source on the tool into firing position, and safety features preventing premature ignition. The loaded tool may be manually pushed against the locality of a workpiece which is to receive a fastener in order to initiate the explosion resulting in the fastener driving.



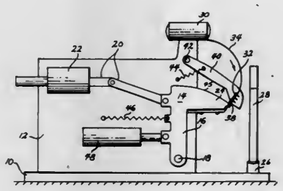
3,554,425
MAGAZINE FEEDING MECHANISM FOR AN EXPLOSIVE CHARGE OPERATED SETTING TOOL
Helmut Oesterle, Feldkirch-Nofels, Austria, assignor to Hilti Aktiengesellschaft, Schaan, Liechtenstein
Filed Mar. 11, 1969, Ser. No. 806,207
Claims priority, application Germany, Sept. 9, 1968, 1,728,198
Int. Cl. B25c *1/14*
U.S. Cl. 227—10 **11 Claims**



A magazine feeding mechanism for feeding a magazine in a setting tool or gun. The magazine includes a plurality of cartridges which are moved successively into alignment with a cartridge chamber defined in a moving barrel of the setting tool. The mechanism comprises a feeding or indexing lever member which is pivoted by movement of the barrel to engage and index or move the magazine during each firing operation. The magazine feeding lever includes a first arm portion with a camming surface which contacts and is moved by the reciprocation of the barrel which moves in a driving direction after the explosion of each cartridge. The lever member also includes a second arm portion which engages in a side notch of a magazine band and moves the magazine band upwardly into a position at which the next cartridge is aligned with the barrel during the retreating movement of the barrel to its original position during coiling of the gun. A fea-

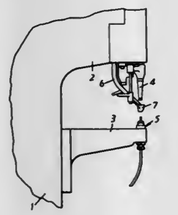
ture of the arrangement is that the lever is mounted so that it may be moved in three separate planes. A spring biases the lever in a direction which it is urged toward the side of the magazine to engage in a notch thereof and the pivotal mounting permits it to move laterally out of the notch during its downward movement backwardly and laterally to engage in the next lower notch for a subsequent upward indexing movement.

3,554,426
ATTACHING MACHINE
Erich A. Schmidt, Lexington, Ky., assignor to Textron, Inc., a corporation of Delaware. a part interest by mesne assignments
Filed July 2, 1968, Ser. No. 742,098
Int. Cl. A41h *37/02*
U.S. Cl. 227—18 **11 Claims**



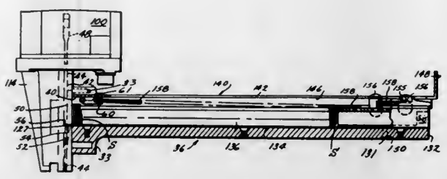
Apparatus for securing a pronged member to an article such as a garment or the like having a punch member for receiving and carrying the pronged member from the supply to an anvil where the pronged member is attached to the article. The punch member includes a tongue having a tip portion thereof displaceable from a surface of the punch member for the purpose of accepting a pronged member at the exit of the supply, with the tongue adapted to grasp the pronged member and carry the same to an anvil where it is to be attached to the article.

3,554,427
RIVETTING MACHINES
David Steggles, Evington, England, assignor to Steels & Busks Limited, Leicester, England, a British company
Filed Jan. 28, 1969, Ser. No. 794,519
Int. Cl. B21j *15/10*
U.S. Cl. 227—61 **2 Claims**



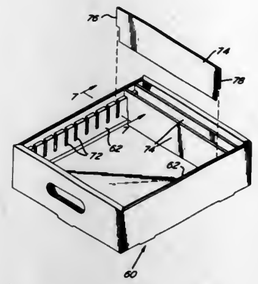
The anvil of a rivetting machine has a pneumatically-supported pin to locate the work being rivetted and/or to guide the rivet, the anvil pin being retractable against an adjustable but substantially uniform rate to cushion the force of the descending rivetting plunger.

3,554,428
MAGAZINE ASSEMBLY FOR A FASTENER-DRIVING DEVICE
George M. Smith, Pawcatuck, Conn., assignor to Textron Inc., Providence, R.I., a corporation of Delaware
Filed Feb. 27, 1969, Ser. No. 802,885
Int. Cl. B25c *5/06*
U.S. Cl. 227—109 **12 Claims**



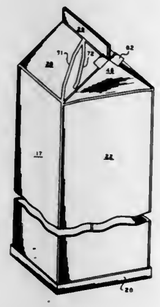
A magazine assembly for a corrugated fastener-driving device is described in which the magazine includes an elongated member having a U-shaped cross section. Longitudinal grooves opening inwardly of the U-shaped member are placed in the outermost ends of the legs of the U-shaped member forming opposed pairs of longitudinal grooves progressively more distant from the base of said U-shaped member. An elongated cover means of substantially inverted U-shaped cross section is provided to cover the U-shaped magazine. The cover means has out-turned flanges adapted to be received by the above-mentioned grooves so that the magazine may be opened and closed by sliding the cover within the grooves. The distance of the cover from the base of the U-shaped magazine may be adjusted by placing the cover in different pairs of grooves. A pusher assembly for yieldably urging the fasteners toward the driving means is mounted on the cover and entirely contained thereon. The pusher which engages with the fasteners rides in a longitudinal slot in the bight of the U-shaped cover. The longitudinal slot opens at the rear end of the cover and extends forwardly toward the driving element. A tension spring having one end anchored to the pusher extends forwardly around a pulley at the forward end of the cover and then rearwardly to be anchored at the rear end of the cover. Proper spacing of the pusher from the cover in order that the pusher will engage with the fasteners in the magazine is obtained by spaced studlike members extending from the pusher to engage with the longitudinal slot in the cover. A detent means, which is either vertically acting or side acting, mounted in the U-shaped magazine member cooperates with the cover to secure the cover in the fully-closed position. The detent means may be released to a first position permitting the cover to slide rearward away from the driving element to a fastener loading position. At this point, the detent means, in said first release position, cooperates with the cover to limit the rearward movement of the cover from the fastener loading position. The detent means may be released further, allowing the cover to slide rearward from the fastener loading position, permitting the cover to be removed from the U-shaped magazine member so that it may be placed in a different pair of grooves in the U-shaped magazine member thereby adjusting the magazine assembly for a different fastener height. The preferred embodiment of the magazine assembly constructed according to the principles of this invention is adapted for use in fastener-driving devices for corrugated fasteners of the type which positions the leading fastener to be engaged by the driving element and subsequently cammed into alignment with the driver element and driven into the workpiece. Thus, a wear plate and blade guide are provided and adapt the drive track to cooperate with the magazine assembly to perform this function.

3,554,429
CONTAINER WITH PARTITION SUPPORTING MEANS
Joel B. Cohen, Glenside, Pa., assignor to Shell Containers, Inc., Newark, N.J., a corporation of New Jersey
Filed Dec. 16, 1968, Ser. No. 784,044
Int. Cl. B65d *5/48*
U.S. Cl. 229—15 **6 Claims**



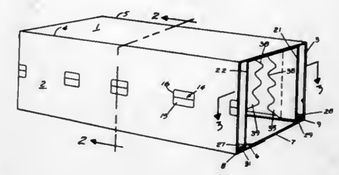
A paperboard container includes inserts permitting compartmentizing of the container. The inserts may be glued or heat-sealed to the interior side walls and/or end walls of the container. The container may be composed of double-faced or solid fiber paperboard and the interior and exterior thereof may be curtain coated with a low viscosity plastic in order to provide a moisture and sulfur barrier. The curtain coating also provides a grease-resistant barrier. The inserts may be composed of plastic which may be vacuum formed, injection molded, or otherwise thermoformed into the desired shape or may be composed of compressed fiber. The inserts have slots or grooves formed therewith adapted to receive partitioning members therein. The inserts may be color coded to facilitate insertion of partitioning members into aligned slots.

3,554,430
GABLE TOP CONTAINER
George E. MacEwen, Kansas City, Mo., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 17, 1969, Ser. No. 817,107
Int. Cl. B65d *5/72, 5/74*
U.S. Cl. 229—17 **14 Claims**



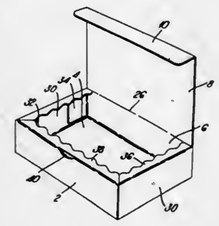
A gable top container and blank for forming same. The container includes inclined roof panels which define a gable opening therethrough, and a pair of end closure panels for closing opposite ends of the gable opening. The gable top structure is provided with a novel score line configuration for causing one of the end closure panels to snap outwardly forming a pouring spout.

3,554,431
CARTON HAVING ARTICLE CUSHIONING STRUCTURE
Joseph H. Lock, Mableton, Ga., assignor to The Mead Corporation, a corporation of Ohio
Filed Feb. 25, 1969, Ser. No. 802,148
Int. Cl. B65d *5/04, 25/12, 71/00*
U.S. Cl. 229—28 **6 Claims**



An open ended tubular wraparound carton structure is provided with internal article-cushioning and holding means secured to the top and bottom panels of the tubular structure and including inner wall structure spaced inwardly from the sidewalls of the tubular structure and provided with pairs of cushioning flaps struck from the inner wall structure to define article receiving pockets.

3,554,432
CARTONS
William Thompson Horry, East Keswick, England, assignor to John Waddington Limited, Yorkshire, England, a British company
Filed Jan. 23, 1969, Ser. No. 793,410
Claims priority, application Great Britain, Feb. 8, 1968, 6,292/68; Aug. 8, 1968, 40,238/68
Int. Cl. B65d *5/02, 5/22*
U.S. Cl. 229—33 **12 Claims**

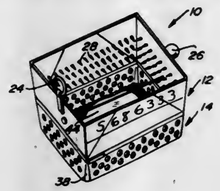


A carton comprising a single blank of sheet material, folded and joined into a tube comprising a front, bottom, rear and top of the carton, said blank including further parts for closing the ends of the carton, the joint in the circumference of the tube being formed by a flange connected to the lid, sandwiched between inner and outer portions of the material folded down the inner face of the front and up again, the front having flaps extending therefrom at the ends, and the inner of the said portions having further flaps extending therefrom and glued to the respective flaps of the front.

3,554,433
CONTAINER FOR TISSUE SPECIMENS
Mary L. Cardenaz, 615 W. Alturs, 213, Tucson, Ariz.
Filed May 20, 1969, Ser. No. 826,173
Int. Cl. B65d *17/16*
U.S. Cl. 229—51 **8 Claims**

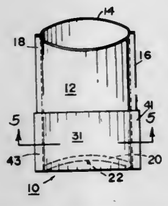
A single unit container having easily separable upper and lower portions utilized during the preparation of a histologic specimen. The lower portion is perforated to allow circulation of infiltrating liquid while the upper portion is folded to form a container closure. After infiltration, the container is placed in a pan during which time an embedding liquid is in-

troduced into the container. After solidification, the container is removed from the pan and a zip strip separating the



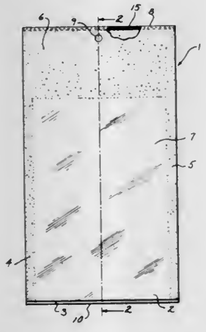
upper and lower portions is torn to allow removal of the lower portion thereby exposing the embedded tissue.

3,554,434
FREE-STANDING FLEXIBLE PACKAGE
Douglas W. Anderson, Palatine, Ill., assignor to Dave Chapman, Goldsmith & Yamasaki, Inc., Chicago, Ill., a corporation of Delaware
Filed Nov. 8, 1968, Ser. No. 774,398
Int. Cl. B65d *33/02*
U.S. Cl. 229—55 **6 Claims**



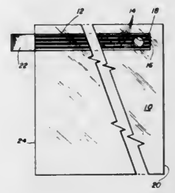
A freestanding flexible package comprises two flexible plastic sheets heat-sealed together along their marginal edges to form a container, and a pair of flexible plastic base-forming strips disposed over opposite faces of the sheets with their marginal edges heat-sealed to the sheets. When the package is filled, the flexible strips assume a circular cross-sectional shape for supporting the container and its contents in an upright position.

3,554,435
POUCH WITH REINFORCED EDGE
Harvey F. Martinez, Milwaukee, Wis., assignor to Milprint, Inc., Milwaukee, Wis., a corporation of Delaware
Filed Jan. 16, 1969, Ser. No. 791,625
Int. Cl. B65d *33/02*
U.S. Cl. 229—55 **4 Claims**



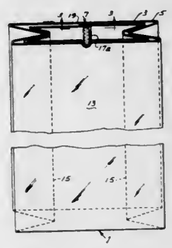
A pouch of heat sealable packaging film having a string impregnated or coated with a heat sealable composition arranged between opposed pouch walls along an edge of the pouch, wherein the string is heat sealed to the walls to thereby reinforce said edge of the pouch.

3,554,436
RECLOSEABLE BAG MEMBER
Charles E. Palmer, Turnpike Road, Somers, Conn. 06071
Filed June 5, 1969, Ser. No. 830,720
Int. Cl. B65d *33/30*
U.S. Cl. 229—62 **9 Claims**



A bag member has a tubular body with a sealable inner surface having a peripheral strip of nonresiliently deformable material secured thereover. The strip is spaced downwardly from the upper end of the body to partially block the sealable material and to expose a peripheral band thereof above the strip at which sealing can be effected. Because the deformable material is nonadherent to itself, subjecting the upper end portion of the body to sealing conditions effects a seal at a location which is substantially limited to the exposed band of sealable material; because the deformable material is nonresilient and capable of maintaining a folded configuration, opposing portions of it may be interengaged by folding the bag along the strip to provide a closure for the bag.

3,554,437
MULTIWALL PAPER BAG WITH RIPCORD
Vale G. Kimsey, Vancouver, Wash., assignor to Bemis Company, Inc., Minneapolis, Minn., a corporation of Missouri
Filed May 15, 1969, Ser. No. 824,912
Int. Cl. B65d *27/38*
U.S. Cl. 229—66 **2 Claims**



A multiwall paper bag having a ripcord extending endwise of the bag between the lapping margins of the longitudinal seam of the inner ply of the bag with its ends adhered to the inner ply but free of inner ply throughout a major portion of its length between its ends.

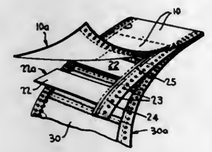
ERRATUM

For Class 229—69 see:
Patent No. 3,554,447

3,554,438
CORRESPONDENCE ASSEMBLY
Edmund G. Van Malderghem, Lewiston, N.Y., assignor to Moore Business Forms, Inc., Niagara Falls, N.Y., a corporation of Delaware
Filed June 24, 1968, Ser. No. 739,261
Int. Cl. B65d *27/10, 27/34*
U.S. Cl. 229—69 **7 Claims**

The envelope and data sheets combination comprises a top or face mailing envelope member, a bottom or back mailing envelope member, and one or more intervening insert members, which last-named may be a single data sheet, multiple data sheets, a return envelope, or combinations thereof. The top and bottom marginal portions and one side portion of one face and back sheets are glued or pasted directly together to form the closed sides of the pocket comprising the mailing envelope. A stub portion of the intervening insert members and the remaining side portions of the face and back of the envelope are glued together and the insert members are cropped on the top and bottom and first-named side portion to be free of the glued attachment of the envelope parts along those edges of the assembly. A line of perforations in the face and back members of the envelope extend along the first-named side portion inwardly of the line of gluing, and a keener line of perforations extend along the opposite side edge of the insert member.

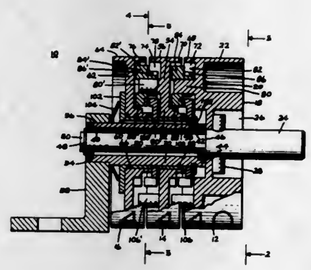
In the simultaneous bursting of the envelope and removal of the insert, the stub margin of the assembly is gripped out-



wardly of the position of the keen line of separation in the insert, and the opposite extraction side margin of the assembly is gripped in effect just outside of the line of perforation in the envelope parts and, more importantly, to include the free end of the insert which is preformed to extend that far, but no farther. A sharp tug applied to the assembly tears the extraction end of the envelope structure along the line of perforations and separates that end portion from the main body of the envelope structure; and the gripped free end of the insert comes along with that severed end portion of the envelope but being unattached thereto. At the same time the insert is separated from its stub portion at the opposite end of the assembly along the line of keen perforations. Thus, the bursting of the envelope and the removal of the insert occurs through a single quick movement.

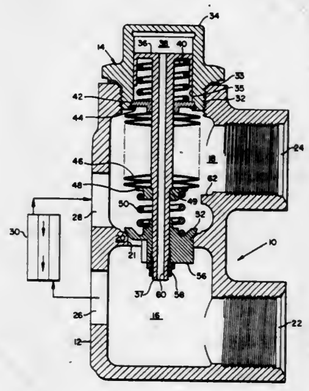
Modifications include similar gluing and perforating patterns for inserts including return envelopes of both side and top opening types.

3,554,439
INTERNAL PINION COUNTER
Edward D. Sigl, Fort Wayne, Ind., assignor to Bowmar Instrument Corporation, Fort Wayne, Ind., a corporation of Indiana
Filed Sept. 8, 1969, Ser. No. 855,824
Int. Cl. G06c *7/10, 9/00, 5/26*
U.S. Cl. 235—139 **11 Claims**



A revolution counter having an input shaft with a units drum secured thereto. A sleeve coaxially surrounds a portion of the input shaft and has one end rigidly secured to a frame element. Bearings rotatably support the input shaft within the sleeve. The outer surface of the sleeve is cylindrical with a flat formed thereon. A transfer pinion is rotatably mounted on the unit's drum radially outwardly from the shaft and sleeve. A tens drum is rotatably mounted on a bushing supported on the sleeve and has a full tooth gear thereon meshing with the full tooth portion of the transfer pinion. A mutilated gear and locking cam is mounted on the sleeve between the units and tens drum, being restrained against rotation by the flat. The mutilated gear has a toothed portion and a mutilated portion with the locking cam being coextensive with the mutilated portion. The full tooth portion of the transfer pinion meshes with the toothed portion of the mutilated gear, thereby restraining rotation of the tens drum except during transfer, the mutilated portion of the transfer pinion being out of engagement with the locking cam when the toothed portion is in mesh with the toothed portion of the mutilated gear, the mutilated portion of the transfer pinion engaging the locking cam when the toothed portion is out of mesh with the toothed portion of the mutilated gear, thereby restraining rotation of the transfer pinion and rotationally advancing the tens drum by an incremental part of one revolution.

3,554,440
THERMOSTATIC VALVE
Irving G. Austin, Inglewood, Max V. Greeven, Palos Verdes Estates, and Steven A. Shaw, Manhattan Beach, Calif., assignors to The Garrett Corporation, Los Angeles, Calif., a corporation of California
Filed Apr. 28, 1969, Ser. No. 819,583
Int. Cl. F01p *7/16*
U.S. Cl. 236—34.5 **14 Claims**

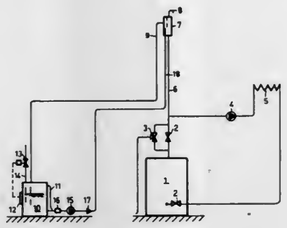


A thermostatic valve having a bimetallic member controlling the flow of fluid between two chambers of the valve. When the flow of fluid is prevented between the valve chambers, it is passed through a heat dissipating means.

3,554,441
ARRANGEMENT IN CENTRAL HEATING SYSTEMS
Karl Gunnar Malmstrom, 130 20 Saltsjoe-Boo, Privatvagen, and Roy Henning Donald Carlson, Eklidsvagen 11, 146/00, Tullinge, Sweden
Filed Dec. 9, 1968, Ser. No. 782,042
Claims priority, application Sweden, Dec. 22, 1967, 17,654/1967
Int. Cl. F24d *3/10*
U.S. Cl. 237—56 **6 Claims**

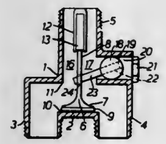
A central heating system comprises a vessel placed on a level above the heating circuit. Said vessel has an overflow pipe belonging to a circulating circuit by means of which liquid is continuously fed to the vessel from a lower container

to maintain a constant level in the vessel. The lower container communicates with the atmosphere, the volume



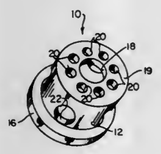
changes in the heating circuit being taken up in said container.

3,554,442
VALVES
Erik Landberg, Monte Carlo, Monaco, assignor to Aktiebolaget Fellingsbro Verkstader, Fellingsbro, Sweden, a corporation of Sweden
Filed Mar. 13, 1969, Ser. No. 806,961
Claims priority, application Sweden, Apr. 30, 1968, 5857/68
Int. Cl. F24d *3/00*
U.S. Cl. 237—59 **4 Claims**



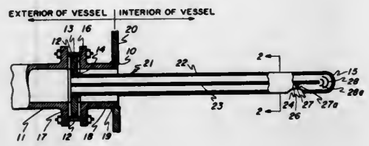
A central heating radiator control valve comprising a valve housing with an inlet, a main outlet and a branch outlet, and a valve member slidably mounted in the housing for movement between two terminal positions in one of which flow of fluid from the inlet to the main outlet is a minimum and in the other of which flow of fluid from the inlet to the branch outlet is a minimum.

3,554,443
PHASE-RESONANT STREAMING
Nathaniel Hughes, Beverly Hills, Calif., assignor to Energy Sciences, Inc., El Segundo, Calif., a corporation of California
Filed Apr. 23, 1969, Ser. No. 827,451
Int. Cl. B05b *7/04*
U.S. Cl. 239—4 **11 Claims**



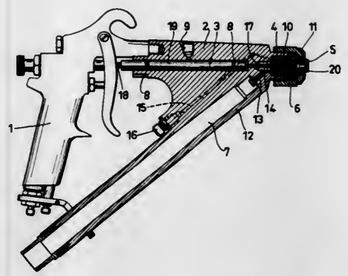
Boundary layer sculpted supersonic nozzle with holes thereinto of diameter such that the frequency corresponding to a wavelength equal thereto is within 10 percent of being equal to, or a multiple or submultiple of, the shock wave frequency associated with the main stream passing through the nozzle.

3,554,444
METHOD AND NOZZLE FOR INJECTING ONE FLUID INTO ANOTHER FLUID
Jack M. Hochman, Boonton, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
Filed Feb. 28, 1969, Ser. No. 803,290
Int. Cl. A01n *17/02*
U.S. Cl. 239—8 **2 Claims**



This invention provides an improved apparatus for discharging a horizontally flowing fluid stream in a substantially vertical direction by means of a horizontally positioned, elongated conduit quench nozzle wherein two channels are provided for fluid flow therethrough, the two channels having fluid turning vanes that split the fluid flow into a plurality of streams as the fluid exists vertically from the quench nozzle.

3,554,445
PAINT SPRAY GUN
Olof Engwall, Lidingo, Sweden, assignor to Svenska Maskinaktiebolaget Greiff, Stockholm, Sweden, a joint stock company of Sweden
Filed Oct. 10, 1968, Ser. No. 766,455
Claims priority, application Sweden, Oct. 11, 1967, 13885
Int. Cl. B05b *5/00*
U.S. Cl. 239—15 **6 Claims**

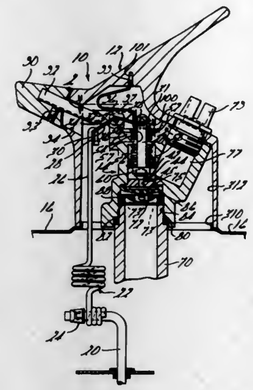


An electrostatic paint spray gun has a spray head body of electrically nonconductive material. The body includes a device for effecting the charging and atomization of the paint, characterized in that the paint control needle has an extension forming a paint needle, the extension being in electrical contact with a high voltage line and extending with clearance as a passageway into an inner paint nozzle, through which clearance the paint passes for being electrically charged to be ejected in and through an outer paint nozzle prior to the atomization of the paint. The paint control needle has a central portion of electrically nonconductive material.

3,554,446
WATER DISPENSING APPARATUS
Herman B. Castillo, Clawson, and Lawrence A. Burke, Royal Oak, Mich., assignors to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio. by mesne assignments
Filed Dec. 5, 1966, Ser. No. 599,003
Int. Cl. E03b *9/20*
U.S. Cl. 239—24 **9 Claims**

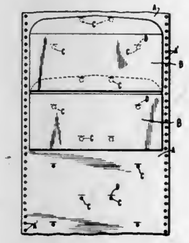
A water dispensing apparatus for use as a drinking foun-

tain, said apparatus comprising a cabinet, a splash tray and water dispensing nozzle on top of said cabinet, a foot pedal member mounted near the bottom of said cabinet, valve means for controlling flow of water to the nozzle, with said



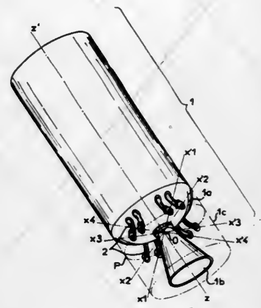
valve means being positioned above said splash tray, actuating means for opening said valve means, and linkage means for operatively interconnecting said actuating means and said foot pedal member.

3,554,447
CONTINUOUS ENVELOPES
John P. Sebring, Youngstown, N.Y., assignor to Moore Business Forms, Inc., Niagara Falls, N.Y., a corporation of Delaware
Filed Feb. 10, 1969, Ser. No. 797,775
Int. Cl. B65d *27/10*
U.S. Cl. 229—69 **1 Claim**



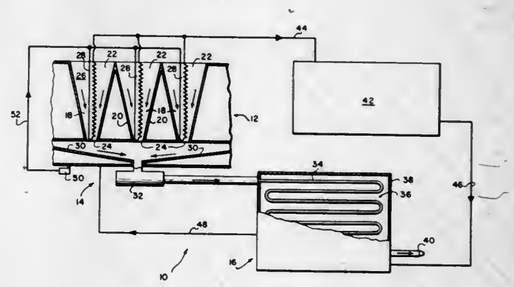
In order to prevent excessive delamination, peeling, or shredding of the carrier web of a continuous envelope assembly adjacent the glue spots, especially when the envelopes are machine detached, an opening or weakened portion is formed in the carrier web closely adjacent the trailing side of such glue spots. These portions may take various forms: slits, perforations forming interrupted slits, holes of various shapes, or even extremely heavily scored lines; all of which terminate any tears which might occur, almost at their incipiency.

3,554,448
METHOD OF PILOTING ENGINES BY LATERAL GASEOUS JETS ISSUING FROM THE MAIN PROPULSIVE MEANS AND NOZZLE WITH A CENTRAL OBSTRUCTING DEVICE IN PARTICULAR IN THE APPLICATION OF SAID METHOD
Daniel Nerwer, Bourg-la-Reine, France, assignor to Nord-Aviation Societe Nationale de Constructions Aeronautiques, Paris, France, a joint stock company of France
Filed Nov. 18, 1968, Ser. No. 776,461
Claims priority, application France, Nov. 24, 1967, 129695
Int. Cl. B64d *33/04*
U.S. Cl. 239—127.3 **4 Claims**



Method of piloting ballistic and spacial engines of the type comprising a propulsive means with a stationary main nozzle, wherein hot gases are taken off from the rear over the said propulsive means and brought on to radial peripherical nozzles by suitable conduits. The flow of said gases are then regulated by adjustably obstructing devices mounted in said radial peripherical nozzles in order to produce the necessary impulsions.

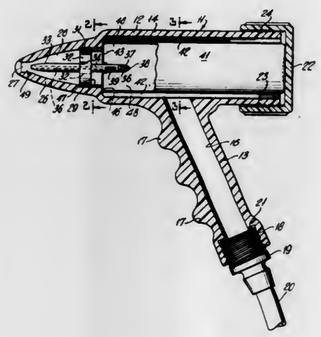
3,554,449
PORTABLE PLASTIC MELTER
Adam Currie, Huntingdon, Pa., assignor, Prismo Universal Corporation, Huntingdon, Pa., a corporation of Delaware by mesne assignments
Filed Dec. 23, 1968, Ser. No. 786,234
Int. Cl. B05b *1/24*
U.S. Cl. 239—135 **8 Claims**



A portable plastic melter is provided for melting large or small amounts of thermoplastic material containing glass beads or other aggregate without permitting settling of the aggregate. This is accomplished by heating the composition to an intermediate temperature sufficient to provide the plastic with a high viscosity (mushy state) so that the plastic is capable of flowing by gravity but without permitting the aggregate to settle; and then, immediately prior to spraying

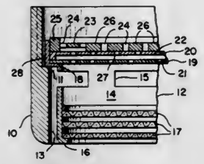
the plastics from a suitable nozzle such as onto a road surface for the provision of a traffic line, superheating the material very quickly up to a temperature sufficiently high so that the viscosity drops rapidly thereby permitting such spraying without aggregate settling.

3,554,450
SPRAY GUN WITH REPLACEABLE CARTRIDGES
Thomas F. D'Muhala, Exeter Road, Lebanon, Conn. 06249
Filed Nov. 15, 1968, Ser. No. 776,176
Int. Cl. B05b *7/30*
U.S. Cl. 239—309 **13 Claims**



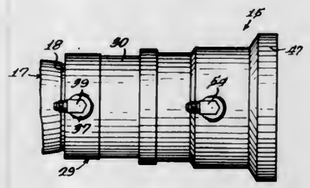
A handheld spray gun accommodating a removable cartridge insert and a combined aspirator-piercing element for piercing the cartridge and permitting the contents thereof to flow by aspirating means through the nozzle of the spray gun when water under pressure is transmitted through said spray gun.

3,554,451
AERATOR WITH VARIABLE PROPORTIONING
Elie P. Aghnides, 795 Fifth Ave., New York, N.Y. 10021
Continuation-in-part of application Ser. No. 616,286, Feb. 15, 1967. This application Feb. 1, 1968, Ser. No. 702,358
1968, Ser. No. 702,358
Int. Cl. E03c *1/08*
U.S. Cl. 239—428.5 **18 Claims**



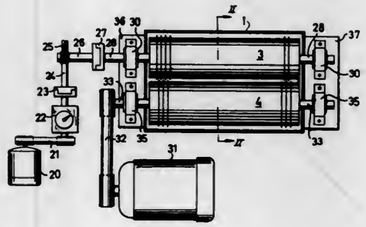
The disclosure relates to water aerators of the type which are affixed to the discharge end of a water faucet in order to provide a soft, bubble-laden aerated stream. Jet-forming means or diaphragms are provided at the inlet end of the aerator to produce a plurality of high velocity jet streamlets which pass through a mixing space into which air enters through an air passageway. The jet streamlets and entrained air are then directed upon one or more of mixing screens with the result that the air becomes intimately admixed with the water so as to produce a highly aerated stream. A separate element is provided upstream of the jet forming diaphragm, and this element may be selectively inserted with either side facing upstream, or may be entirely removed. Dependent upon which of these several methods of assembly is employed, there results a substantially different proportioning between the velocity of the jet streamlets and the screen resistance so as to affect appreciably the degree of aeration of the stream, the amount of water flow, the amount of back pressure, and the effect of use of the aerator upon gas heater ignition which has been found to be adversely affected by the use of some types of water aerators.

3,554,452
HYDRAULICALLY CONTROLLED NOZZLE
Kenneth H. Davidson, St. Joseph, Mich., and William S. Thompson, Elkhart, Ind., assignors to Snorkel Fire Equipment Company, a corporation of Missouri
Filed Sept. 4, 1968, Ser. No. 757,421
Int. Cl. B05b *1/32*
U.S. Cl. 239—956 **13 Claims**



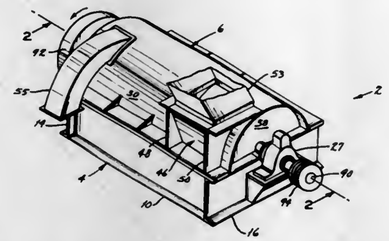
A nozzle, particularly adapted for use in fire fighting apparatus, including a first tubular member adapted to be connected to a source of fluid, a second tubular member mounted for axial sliding movement relative to the first tubular member, said first and second members having cooperating means thereon for regulating the flow of fluid through the nozzle, and a third tubular member mounted for axial sliding movement on the second tubular member, said third tubular member comprising means for regulating the pattern of flow emerging from the nozzle. Hydraulic means is provided for moving the second member relative to the first member in both directions for increasing and decreasing the flow from the nozzle; and hydraulic means is also provided for moving the third member relative to the second member for both increasing and decreasing the angle of spray emerging from the nozzle.

3,554,453
METHOD OF SHREDDING FIBROUS PULP
Allan Thale, Kokkedal, and Olav B. Hovstad, Farnum, Denmark, and Lennart Ivnas, Skarblacka, Sweden, assignors to Aktieselskabet Niro Atomizer, Soborg, Denmark, and Fiskeby Aktiebolag, Noukoping, Sweden
Filed June 19, 1967, Ser. No. 647,088
Claims priority, application Sweden, June 20, 1966, 8396/66
Int. Cl. B02c *4/08, 4/42, 18/06*
U.S. Cl. 241—28 **3 Claims**



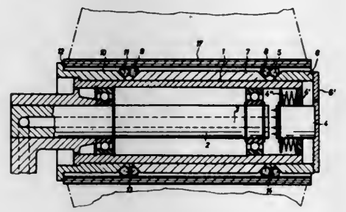
A shredding or fluffing machine for fibrous material such as groundwood, comprising a toothed holding member and a shredding roller with teeth engaging the axial space between the teeth of the holding member with a depth of engagement less than half of the length of the shredding roller, preferably near zero, and a method for operating the machine with a peripheral speed of the shredding roller exceeding 20 m./sec.

3,554,454
SHREDDER AND SEPARATOR UNIT
William P. Gruendler, St. Louis County, Mo., assignor to Gruendler Crusher & Pulverizer Co., St. Louis, Mo., a corporation of Missouri
Filed Nov. 9, 1967, Ser. No. 681,861
Int. Cl. B02 *13/10, 13/13, 13/284*
U.S. Cl. 241—73 **1 Claim**



A shredder and separator unit for refining, blending, classifying, and reducing composted refuse. The unit includes a cylindrical housing having circumferentially extending shredder bars and screens. A rotor revolves within the housing and is provided with a plurality of canted and straight swingably mounted hammers which pass close to the bars and screens. A downfeed inlet opens into the housing through the shredder bars and a discharge conduit extends tangentially from the upper portion of the housing. An arcuate discharge opening opens into the interior of the housing at the hammer tip circle defined by the endmost hammers.

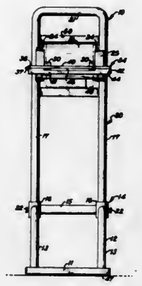
3,554,455
EXPANDIBLE MANDREL FOR BOBBINS
Felix Graf, Winterthur, Switzerland, assignor to Rieter Machine Works, Ltd., Winterthur, Switzerland, a corporation of Switzerland
Filed Nov. 27, 1967, Ser. No. 685,896
Claims priority, application Switzerland, Dec. 13, 1966, 17945/66
Int. Cl. B65h *75/30, 79/00*
U.S. Cl. 242—46.4 **3 Claims**



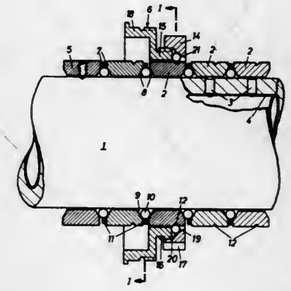
A pair of elastic deformable rings are disposed in each annular groove between adjacent tubes on the sloped surfaces of the tubes. Upon bringing the tubes together to close the grooves, the rings roll up the sloped surfaces to engage the bobbin sleeve with a friction fit. Upon moving the tubes apart, the rings roll down the sloped surfaces of the tubes out of gripping engagement with the bobbin sleeve.

3,554,456
PORTABLE TOILET TISSUE DISPENSER
Martha E. Moore, 7235 Leavitt Road, R.D. 2, Elyria, Ohio 44035
Filed Aug. 21, 1968, Ser. No. 754,294
Int. Cl. B65h *19/00*
U.S. Cl. 242—55.2 **6 Claims**

A portable dispenser for a toilet tissue roll having a base sufficiently heavy to maintain the dispenser in place during normal use and an extensible inverted U-shaped framework extending upwardly from the base, the crossbar of the frame being a handle with roll of toilet tissue carried by cylindrical parts immediately under the handle. A guide for the toilet tissue having a horizontal slot is mounted on the legs of the framework immediately in front of the roll of toilet tissue so that for the paper to be parted, it is normally pulled in an upward or downward direction.



3,554,457
WINDING SHAFT WITH PLURAL BOBBIN CARRYING RINGS
Armin S. P. Hutzenlaub, Gassenhagen, and Paul Gerhard Winchenbach, Gummersbach, Germany, assignors to Erwin Kampf Machinenfabrik, Muhlen, Germany
Filed May 26, 1969, Ser. No. 827,703
Int. Cl. B65h *19/04*; **F16c** *13/04*
U.S. Cl. 242—56.9 **9 Claims**

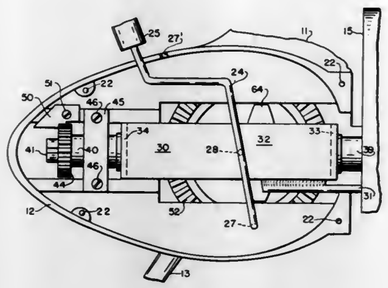


A plurality of carrier rings are concentrically spaced from a shaft and supported for independent rotation relative to each other by ball bearings between adjacent rings and the shaft. The rings are held against axial separation and each ring has a groove to receive an annular element for releasably locking a bobbin holder on each ring.

3,554,458
SPINNING REEL
Melvin William Smith, Altaloma, Calif., assignor to The Gracia Corporation, a corporation of New Jersey
Filed Oct. 2, 1967, Ser. No. 672,279
Int. Cl. A01k *89/00*
U.S. Cl. 242—84.2 **11 Claims**

A spinning reel having a drum with a bail thereon and hav-

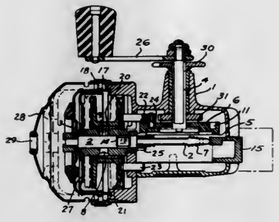
ing a line spool, the reel having means to selectively rotate said drum and bail while maintaining said spool against rotation and to rotate said line spool while maintaining said drum and bail against rotation.



3,554,459
FISHING ROD REEL

Yoshio Matsui, Tokyo, Japan, assignor to Daiwa Seiko Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

Filed Feb. 21, 1968, Ser. No. 707,225
Claims priority, application Japan, Jan. 20, 1968, 43/3,286
Int. Cl. A01k *89/00*
U.S. Cl. 242—84.21 **1 Claim**

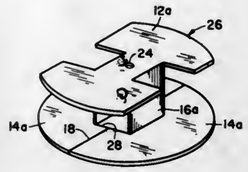


This spinning reel has a manually operated drive in which a gear train rotates a winding body about a spool which is simultaneously reciprocated by linkage to wind the line in a level manner. The winding body includes rearwardly directed hooks that engage the line to wind it onto the spool. Line is unwound or cast from the spool by shifting the winding body forward by means of a thumb button acting on a central shaft carrying the winding body. When the winding body is in its casting position; an arcuate ridge therearound and the forward flange of the spool define a clear path for the line to permit it to unwind without catching on the winding hooks. To releasably retain the winding body in its casting position, a leaf spring has a centrally depressed detent portion to cooperate with retaining portions of the main shaft. When the casting is completed, the manually operated drive rotates the winding body and its central shaft causing associated cam portions thereof to deflect the detent portion of said ieaf spring radially outward clear of the retaining portions whereby the central shaft and winding body carried thereon are biased to their rearward winding position.

3,554,460
ONE-PIECE REEL

Lewis F. Reas, Big Flats, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Oct. 7, 1968, Ser. No. 765,303
Int. Cl. B65h *75/14*
U.S. Cl. 242—118.8 **5 Claims**

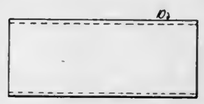


A reel for winding lightweight material is produced from a single die-cut or stamped blank which folds along crease lines into a unitary assembled reel having a pair of side panels joined by a central core portion.

3,554,461
SUPPORT TUBE FOR WINDINGS OF SHRINKABLE FILAMENTS

Alexandre Boutonnet, Tassin, France, assignor to Societe Rhodiaceta, Paris, France, a French Body Corporate

Filed May 16, 1966, Ser. No. 550,273
Claims priority, application France, May 25, 1965, 18,348
Int. Cl. B65h *75/24*
U.S. Cl. 242—118.11 **9 Claims**

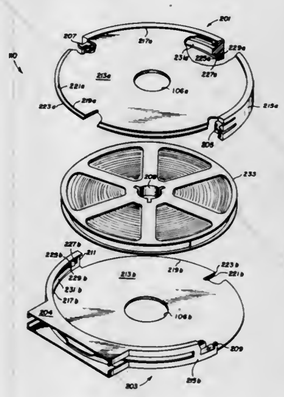


A heat-shrinkable support tube for yarn, constructed of a thermoplastics material which shrinks uniformly under the influence of heat.

3,554,462
CARTRIDGE

John J. Bundschuh, Penfield, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 23, 1968, Ser. No. 731,561
Int. Cl. G11b *23/10*
U.S. Cl. 242—197 **3 Claims**



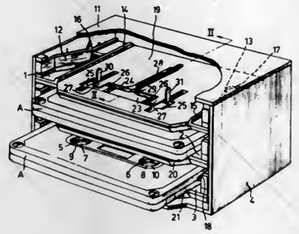
A cartridge adapted to contain a standard reel of processed motion picture film or other strip material has two

cartridge parts, each of which includes a circular sidewall and a semicircular edge-wall extending perpendicularly from and about a peripheral portion of the sidewall. The parts fit together in mating relationship with the sidewall of one part being received in a groove defined by the edge-wall of the other part, to form the chamber for the reel of film or other strip material.

3,554,463
HOLDER FOR STORING A RECORDER-TAPE MAGAZINE

Jan Hendrik Jacob Theuwissen, Emmasingel, Eindhoven, Netherlands, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 10, 1968, Ser. No. 758,881
Claims priority, application Netherlands, Sept. 18, 1967, 6712753
Int. Cl. G03b *1/04*; **G11b** *15/32, 23/04*
U.S. Cl. 242—199 **7 Claims**

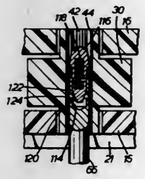


A holder for a tape-recorder magazine with a freely rotatable tape-winding hub has a support with guides for sliding the magazine over a transport path into and out of a storage position. A hub-locking member is movable under the control of the magazine between nonlocking positions and a locking position in which the member extends into the transport path to lock the hub against undesired rotation when the magazine is in the storage position.

3,554,464
FILM MOUNTING AND DRIVING APPARATUS

George A. Bennett, London, England, assignor to Selectro-Micro Company Limited, London, England, a British Company

Filed Dec. 18, 1968, Ser. No. 784,757
Claims priority, application Great Britain, July 3, 1968, 31670/68;31673/68
Int. Cl. G03b *1/04*; **G11b** *15/32, 23/04*
U.S. Cl. 242—200 **6 Claims**

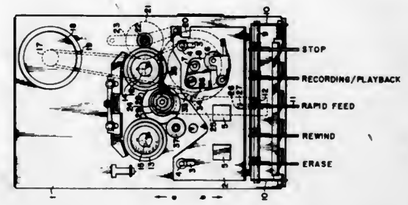


Apparatus for mounting film strip, such as microfilm strip, and for driving the film past a reading or viewing position, is disclosed in which the film is mounted on one spool in a cassette which also supports a takeup spool. The cassette, which is removable from the driving apparatus, is positively located by spigot means so that each spool engages a respective spindle of the apparatus, there being radial play between each spool and the cassette. Different forms of the driving means for the spindles are disclosed, each driving means enabling either of the spindles to be driven. Means are also disclosed which locate the spools in positive driving engagement with the spindles but enable the cassette to be placed in position on the driving apparatus without the necessity for angularly aligning the spools with the spindles.

3,554,465
TAPE DRIVE UNIT FOR TAPE RECORDER

Yujiro Marukawa, Ichinoseki-shi, Japan, assignor to General Denshi Kogyo Kabushiki Kaisha, Ichinoseki-shi, Japan, a limited liability company of Japan

Filed Sept. 16, 1969, Ser. No. 858,392
Claims priority, application Japan, Sept. 16, 1968, 43-80682
Int. Cl. B11b *15/32*; **G03b** *1/04*
U.S. Cl. 242—201 **9 Claims**

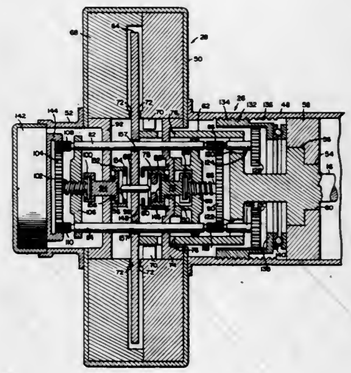


A tape drive unit for a tape recorder comprising a takeup reel shaft, a friction disc operatively connected with a drive source normally for driving the shaft, a transmission roller operable to operatively connect the shaft with the drive source, control means to disengage the friction disc from operative connection with the shaft and at the same time to engage the transmission roller with the shaft, and reset means for resetting the control means. The transmission roller is mounted on a rockable lever, of which movement is controlled by said control means and said resetting means.

3,554,466
BEARING AND GIMBAL LOCK MECHANISM AND SPIRAL FLEX LEAD MODULE

T. O. Paine, Administrator of the National Aeronautics and Space Administration, in respect to an invention of Wayne B. Lloyd, Baltimore, Md. 21228

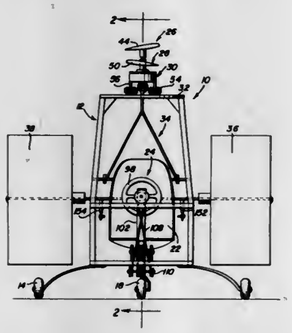
Filed Mar. 18, 1969, Ser. No. 808,193
Int. Cl. B64g *1/00*
U.S. Cl. 244—1 **7 Claims**



The invention relates to a two-axis gimbal supported payload of an orbital spacecraft. In normal orbit operation, the gimbal is supported along each of its rotational axes by a sleeve and thrust bearing assembly permitting pivotal motion of the gimbal in response to relatively low amplitude loads occasioned by orbital forces. Initially, the sleeve and thrust bearings are disengaged from the gimbal and a gimbal lock

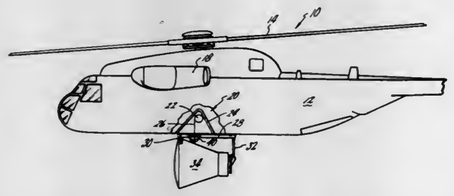
mechanism restrains pivotal motion of the gimbal during launch of the spacecraft. The gimbal lock mechanism further sealably contains the sleeve and thrust bearings thereby isolating them from contaminants until attaining a required orbit. A spring motor is actuated to disengage the gimbal lock mechanism and engage the sleeve and thrust bearings subsequent to launch. Electrical conductors in the form of metal strips, together with an associated insulating strip, are wrapped spirally about a rotational axis of the gimbal to provide power conduction to the gimbal payload without introduction of restraining forces which would interfere with the angular movement of the suspended gimbal.

3,554,467
COUNTERROTATING ROTOR TRANSMISSION FOR HELICOPTERS
Maurice A. Yowell, Kenne, Tex., assignor to Universal Helicar Company, Midland, Tex., a corporation of Texas
Filed Feb. 19, 1968, Ser. No. 706,420
Int. Cl. B64c *27/52*
U.S. Cl. 244—17.19 **4 Claims**



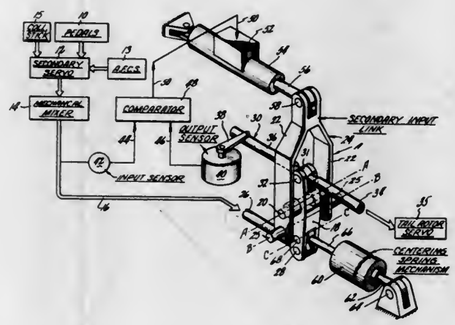
A helicopter having counter-rotating airfoil blades driven from a single drive shaft through a pivoted transmission which may be canted with the blades. Vertical stabilizers are mounted by the helicopter air frame in the downdraft of the rotor blades to overcome gyroscopic forces while the control movements of the stabilizers are interrelated with pivotal movement of the transmission on the airframe for flight stabilization and directional maneuverability.

3,554,468
EXTERNAL LOAD STABILIZER
James Marion McVicar, Trumbull, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed May 19, 1969, Ser. No. 825,600
Int. Cl. B64d *1/22*
U.S. Cl. 244—137 **31 Claims**



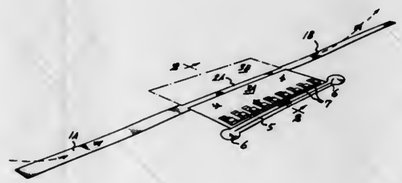
A load stabilizer is attached to an aircraft and projects therefrom and is shaped so that as a load is elevated on a winch, either projections on the load or the load-carrying beam engage a continuous cam member contoured to intercept the load projections or the load beam and guide the beam into a retaining slot so as to stabilize the load in a selectively oriented position and without respect to the attitude or orientation of the load during the load-elevating process.

3,554,469
HIGH RESOLUTION CONTROL SYSTEM
Robert J. Snow, Newtown, and Gregory Bochnak, Milford, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware
Filed Sept. 9, 1969, Ser. No. 856,312
Int. Cl. B64c *13/04*
U.S. Cl. 244—83 **6 Claims**



A high resolution control system for aircraft, such as a helicopter, in which a mechanical control system for translating motion from a pilot operated input member to a remotely located output member has a mechanical connection between the input member and the output member including a walking beam located adjacent the output member and means for providing a second input supplied directly to said walking beam in response to an electrical system producing an error signal by comparing a first signal generated in response to displacement of the input member with a feedback signal generated in response to displacement of the walking beam.

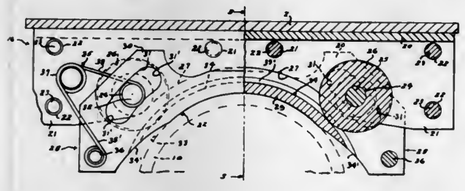
3,554,470
AIRPORT
Robert E. Dudley, Bellevue, Wash., assignor to Richard M. Tracey, Seattle, Wash., and Gerald R. Brunstrom, Dalkeith, Australia, respectively
Continuation of application Ser. No. 645,213, June 12, 1967, now abandoned. This application Aug. 18, 1969, Ser. No. 852,969
Int. Cl. B64f *1/36*
U.S. Cl. 244—114 **19 Claims**



A taxiway is located between two runways, which runways may be disposed in tandem, either in a straight line or offset

laterally somewhat relative to each other, or disposed at a small angle to each other, or the runways may be in substantially parallel laterally offset relationship. The runways and taxiways between them may be floating on a body of water, or supported on columns over shallow water, over train tracks, or over one or more roadways. Airport terminal buildings or docks are arranged in a row generally parallel to the taxiway, and passenger transporting means connect the building or docks. Each terminal building includes a recess into which an airplane wing can be moved spanwise, and transfer means such as a shiftable platform running on rails can support an airplane for movement transversely of the length of its fuselage to locate the airplane wing within the terminal building and the airplane fuselage alongside the terminal building. An airplane can be loaded by elevators adjacent to the terminal building and by a walkway movable downward into a position alongside the airplane fuselage.

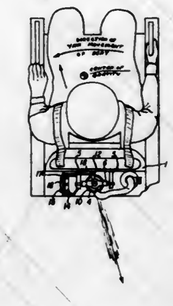
3,554,471
SHOCK ABSORBING ADJUSTABLE BUMPER DEVICE FOR ROTATABLY ADJUSTING AIRCRAFT EJECTION SEAT CATAPULT ROCKET DEVICES
Ralph Eugene Hantzsch, Los Alamitos, Calif.
Filed July 3, 1969, Ser. No. 838,860
Int. Cl. B64d *25/10*
U.S. Cl. 244—122 **3 Claims**



A bumper device which includes an arcuately movable saddle member on a support that is carried on the back of an aircraft ejection seat for impingement by a rotatably adjustable seat ejection rocket barrel. The rocket barrel is attached to the rear of the upper portion of the ejection seat structure and is initially carried in and projected from a catapult barrel that is secured at its lower end to the aircraft structure in back of the lower portion of the ejection seat. The saddle member has rollers between it and its support and is resiliently centered on the support and impinged by the forward movement of the lower portion of the rocket barrel. When the rocket barrel leaves the catapult barrel, it seats in the saddle which is adjustable by, and with, the rotative adjustment of the rocket barrel about its axis, to a limited degree. The rocket barrel has an inclined thrust nozzle at its lower end which inclines downwardly and rearwardly away from the back of the ejection seat and stresses the barrel toward the saddle. A gyroscope device is carried by the seat structure and connected to the rocket barrel, and is responsive to "yaw" movements of the seat when ejected to rotatably adjust the rocket barrel to direct the thrust of the jet from the rocket in a direction to resist, or correct, any relative rotative movements of the ejected seat about its "yaw" axis.

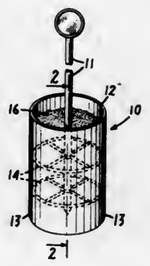
3,554,472
YAW CONTROL STABILIZATION EJECTION SEAT
Robert G. McIntyre, Manhattan Beach; Browning Nichols, Jr., Culver City, and Ralph E. Hantzsch, Los Alamitos, Calif.
Filed July 3, 1969, Ser. No. 838,861
Int. Cl. B64d *25/10*
U.S. Cl. 244—122 **4 Claims**

A "yaw" control stabilizing ejection seat structure for high-speed aircraft which comprises a seat ejection rocket barrel secured to the back of the top portion of an ejection seat for limited rotative adjustments about its longitudinal axis. The rocket barrel is secured to and extends downwardly from the top of the back of the seat intermediate the opposite sides thereof and is provided with a downwardly inclined jet discharge opening at its lower end, directing the jet discharge therefrom downwardly and rearwardly away from the back of the ejection seat. A rocket ejection catapult barrel is secured at its lower end to the aircraft structure, adjacent the bottom of the back of the seat and extends upwardly, and receives the ejection seat rocket barrel and its inclined rocket jet discharge opening telescopically therein. Gyroscope means carried by the seat processes in response to



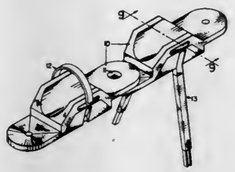
"yaw" movements of the ejection seat when ejected out of the aircraft and is connected to the seat ejection rocket barrel to rotatably adjust the rocket barrel about its longitudinal axis to adjust the direction of the thrust of the relatively downwardly inclined jet discharge to resist and counteract "yaw" or rotative movement of the ejected seat as it leaves its guide tracks in the plane. Gyroscope caging means is carried by the seat and means automatically uncages and spins the gyroscope upon the ejection of the rocket barrel from within the catapult barrel to initiate the operation of the "yaw" control of the seat by the gyroscope.

3,554,473
SUPPORTING BASE FOR REFLECTORS AND THE LIKE
Peter W. Rakov, West Road, and Peter P. Grad, 900 Yerry Hill Road, both of Woodstock, N.Y. 12498
Filed Apr. 16, 1968, Ser. No. 721,847
Int. Cl. G09f *17/00*
U.S. Cl. 248—44 **3 Claims**



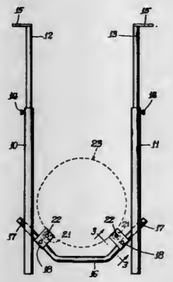
A portable base is described for supporting driveway reflectors, signs, etc. mounted atop relatively thin standards. The base comprises a cylindrical container open at one end and adapted to stand in an upright position with its closed end resting on any generally flat surface. An interior frame including spaced apart, concentrically aligned inner rings through which the standard of the reflector passes is secured inside the container. With the standard inserted in the supporting rings, the container is filled with sand or other high density material to maintain it in an upright position. If struck by a vehicle, it will tip over without damage to the sign and can be righted easily. The base is easily moved to desired locations and can be readily stored when not in use.

3,554,474
TRESTLE FOR FLEXIBLE PIPE
David M. Davies, W. 3235 Rosewood Ave., Spokane, Wash.
Filed Aug. 2, 1968, Ser. No. 749,824
Int. Cl. F16l *3/10, 3/14*
U.S. Cl. 248—49 4 Claims



A trestle comprising plural similar structural elements releasably, movably joined to form a structure supported by releasably attached vertically adjustable legs upon a supporting surface therebeneath. The trestle is adapted particularly to support a flexible pipe such as the common trailer sewage disposal pipe. The elements may be moved relative each other to determine trestle angle and direction by adjustment of intercommunicating nut-bolt combinations, and the legs may be adjusted to determine vertical orientation of the trestle relative the supporting surface.

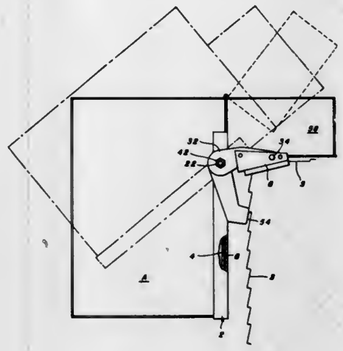
3,554,475
APPARATUS FOR SUPPORTING A ROTATABLE TUBE
Edward L. Benno, Rte. 1, Box 198, Grayslake, Ill. 60030
Filed May 27, 1969, Ser. No. 828,403
Int. Cl. F16c *13/00*; B61l *21/00*
U.S. Cl. 248—55 6 Claims



This invention concerns the construction of a simple yet sturdy multipurpose apparatus which as a series of stands, hangers, or both, can be used to support a rotatable tube. The primary object of the invention is to provide such a construction which is simple to fabricate. A feature of the construction is that the apparatus can be assembled either as a stand or hanger merely by a different geometric arrangement of the same parts with a simple bolt or pin locking thereof.

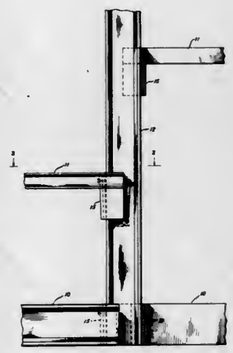
3,554,476
TILTING MOUNT FOR WINDOW AIR CONDITIONER
Robert B. Gaylor, Jr., Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Aug. 4, 1969, Ser. No. 847,364
Int. Cl. A47j *5/08*; F24j *1/02*
U.S. Cl. 248—208 4 Claims

Apparatus includes a tilting U-shape stirrup adapted to receive and support a window air conditioner. The stirrup is pivotal outside a window opening about a pair of locking bolt assemblies attached to a pair of fixed brackets mounted on the window sill. Each of the assemblies comprises a bolt with a ratchet, a pair of winged cranks having opposed radially ribbed faces, a belleville washer and tensioning nut thereon. Pawls adapted to engage the ratchets are provided on opposite sides of the stirrup. In operation, to mount an air conditioner, the stirrup is tilted upwardly from a vertical position outside the window to a substantially horizontal position generally perpendicular to the window opening. During upward movement of the stirrup, the pawls on the stirrup ride



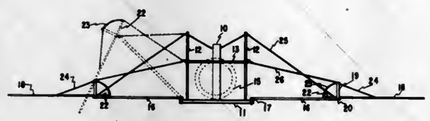
free over the ratchets. The air conditioner is installed and locked in the horizontally positioned stirrup. Then the stirrup with the air conditioner supported therein is returned to vertical position by applying sufficient downward manual pressure thereon to cause movement by engagement of the pawls with the ratchets and slippage of one winged crank against the other of each assembly.

3,554,477
CANTILEVER STORAGE RACK
Thomas N. D'Altrui, Union, N.J., assignor to Midland Machine Corporation, Elizabeth, N.J., a corporation of New Jersey
Filed Feb. 28, 1969, Ser. No. 803,176
Int. Cl. A47f *5/00*
U.S. Cl. 248—245 11 Claims



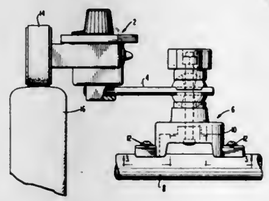
A cantilever storage rack section comprises a vertical post having flat side walls joined by a central web. A bracket for supporting a horizontal load-bearing member comprises two overlapping portions and is clamped onto one side wall of the vertical post by a bolt extending through the overlapping portions. One of the overlapping portions includes a plurality of apertures interconnected by a slot, and the other portion contains a threaded aperture, whereby the width of the bracket may be adjusted by registering different apertures of the two bracket portions.

3,554,478
FOLDING BOOM FOR SPRAYER
Henry L. Sunderman, 945 S. Holt Ave., Sioux Falls, S. Dak.
Filed Oct. 28, 1968, Ser. No. 770,951
Int. Cl. B05b *3/00*
U.S. Cl. 248—278 5 Claims



A folding sprayer arm having a unique mechanism to fold the arm and position it behind the sprayer by a single manual control. An arrangement of pivots and arms contribute to the motion and a flexible support wound onto a quadrant helps to control the motion.

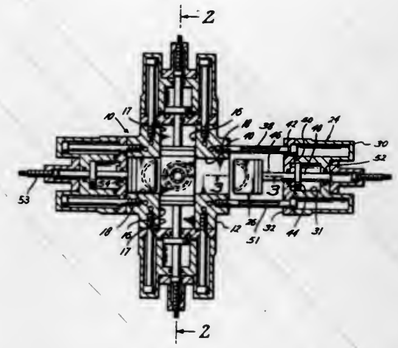
3,554,479
DEVICE FOR ATTACHING A TRAVEL DISTANCE MEASURING INSTRUMENT TO A WHEELED VEHICLE
Charles O. Slemmons, Akron, Ohio, assignor to The General Tire & Rubber Company, a corporation of Ohio
Filed Oct. 7, 1968, Ser. No. 765,513
Int. Cl. G01p *1/00*
U.S. Cl. 248—289 2 Claims



A device for attaching a travel distance measuring instrument to a wheeled vehicle is formed with a mounting bracket, a split ball clamp, and spring-biased indexing unit for maintaining the measuring instrument in a predetermined position relative to the vehicle wheel.

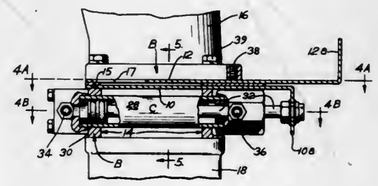
3,554,480
BLOWOUT PREVENTER
Frederick G. Rowe, Leeds, England, assignor to Cameron Iron Works, Inc., Houston, Tex.
Filed Jan. 16, 1968, Ser. No. 698,259
Int. Cl. F16k *3/02*
U.S. Cl. 251—1 10 Claims

The blowout preventer disclosed is formed of a body having a vertical bore therethrough. Two sets of opposing guideways extend laterally from the vertical bore on the same level. The guideways intersect at portions spaced radially from the bore whereby a common upstream body surface surrounds the end of the upstream portion of the bore. A set of rams is located in each set of guideways. The rams of each set have complementary inner faces which, in the closed position, engage with each other or with a pipe in the bore to close the upstream portion of the bore. A part of each ram extends into and is restrained by its guideway against axial downstream movement. Seal means is provided on each ram. The seal means has a face portion which cooperates with the face portion of the opposing seal to seal across the bore. The opposing face portions extend upstream to contact the common upstream body surface. Each seal means has a body portion which extends from the face portion to form a continuous seal path against the body from one end of the face portion to the other. Therefore, when the rams of either set are



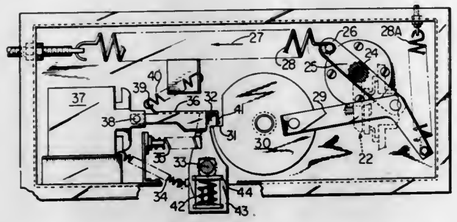
closed, the seal means seal off the other guideways from the upstream portion of the bore. To augment such seal, a seal is provided between each ram and its guideway and a passageway extending from the upstream portion of the bore to the rear of the guideways delivers well pressure to the rear of the ram.

3,554,481
WIND DAMPER ASSEMBLY FOR GLASSWARE FORMING MACHINES
Paul Brinduse, Anderson, Ind., assignor to Lynch Corporation, Anderson, Ind., a corporation of Indiana
Filed Feb. 9, 1968, Ser. No. 704,489
Int. Cl. C03b *9/00*
U.S. Cl. 251—31 10 Claims



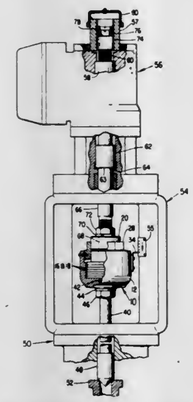
A damper box for interposition between a wind source and a source of wind utilization wherein a slide-type damper plate is actuated by a cylinder and piston assembly. The piston spans the opening through the damper box whereby minimum space around the damper box is required for the damper plate actuating mechanism. The cylinder and piston assembly is actuated hydraulically under the control of a glassware forming machine timer.

3,554,482
PNEUMATIC DUMP VALVE
Albert Dunkin, South Norwalk, Conn., assignor to Remington Arms Company, Inc., Bridgeport, Conn., a corporation of Delaware
Filed Apr. 18, 1969, Ser. No. 817,405
Int. Cl. F16k *31/44*
U.S. Cl. 251—74 7 Claims



A quick dump valve for use in conjunction with an air operated trap, the valve having a seat for holding it in closed position and being closable after air has been released from the reservoir closed by the valve.

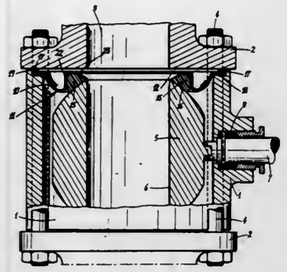
3,554,483
THRUST LIMITING SPRING COUPLING
John J. Kuwik, Willoughby, Thomas E. Stevenson, Willoughby Hills, and John J. Yagoda, Willowick, Ohio, assignors to Bailey Meter Company, a corporation of Delaware
Filed Jan. 17, 1969, Ser. No. 792,062
Int. Cl. F16k *35/04*
U.S. Cl. 251—77 6 Claims



A spring coupling device for a valve actuator assembly having a plurality of preloaded disc springs for absorbing an applied thrust above a predetermined amount to preclude distortion of the valve members to which the thrust is applied.

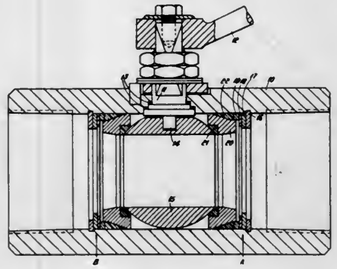
3,554,484
BETWEEN FLANGE BALL VALVE WITH COMPOSITE ANNULAR SEAL
Jean Gachot, 179 Ave de la Division Leclerc, Enghien, France
Filed May 20, 1968, Ser. No. 730,268
Claims priority, application France, June 2, 1967, 108,920
Int. Cl. F16k *5/06*; F16l *29/00*
U.S. Cl. 251—152 4 Claims

A ball valve which is intended to be mounted between the coupling flanges of a pipe and which comprises at least one composite annular seal having a metallic web fitted on the side adjacent to the internal orifice thereof with a packing seal which is adapted to come into contact with the ball. The composite annular seal is fitted along the outer edge thereof with a sealing ring formed of flexible material which is



clamped at the time of assembly between the lateral face of the valve body and the adjacent pipe-coupling flange. Preferably the outer sealing ring has a U-shaped cross section and the outer edge of the web is engaged in the annular groove thus formed in said ring.

3,554,485
SEALING ASSEMBLIES FOR ROTARY BALL VALVES
Cecil Graham Francis Richards, Aspley, Brisbane, Australia, assignor to B. C. Richards & Co. Pty. Ltd., Geebung, Brisbane, Queensland, Australia, a corporation of Queensland
Filed Oct. 17, 1968, Ser. No. 768,314
Claims priority, application Australia, May 29, 1968, 38523/68
Int. Cl. F16k *5/20*
U.S. Cl. 251—172 1 Claim

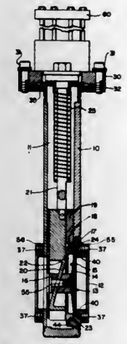


A sealing assembly for a ball valve includes in succession a seat ring, a retaining ring and a backing ring exerting pressure on said retaining ring, in which a wedge ring contacts said retaining ring on its outer conical surface and said backing ring presses only on the rear surface of said wedge ring and not directly on said retaining ring.

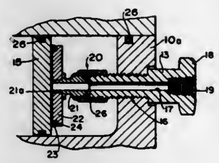
3,554,486
HIGH VACUUM VALVE
Eugene A. Thebado, 25 Smith Drive, Westwood, Mass. 02090
Filed Nov. 18, 1968, Ser. No. 776,701
Int. Cl. F16k *3/10*
U.S. Cl. 251—204 9 Claims

A valve for use in ultra high vacuum apparatus comprises a valve chamber located at a right angle to the vacuum line containing a gate and a bar cam mounted on a drive shaft communicating with a driving force outside the vacuum line, said bar cam releasably engaging the gate carrying an arcuate

spherical sealing element, the engagement of said bar cam and said gate enabling the sealing element to be moved into position in the vacuum line. When the sealing element is located opposite the aperture in the vacuum line to be sealed, the action of the bar cam, as a result of the continuing downward stroke, operates on the sealing element moving it into position in the sealing zone within the aperture and then flexing the sealing element so that the sealing element forcibly seats the edge into the aperture providing a vacuum-tight seal.

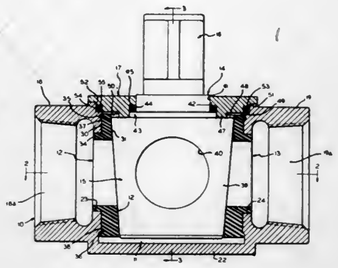


3,554,487
ROTARY VALVE WITH PIVOTABLE SEAT
Robert L. Vesco, Denville, N.J., assignor to International Controls Corp., Fairfield, N.J., a corporation of Florida. by mesne assignment
Continuation of application Ser. No. 584,821, Oct. 6, 1966, now abandoned. This application June 16, 1969, Ser. No. 838,005
Int. Cl. F16k *1/16*
U.S. Cl. 251—298 7 Claims



A closeable valve port with sealing means angularly movable with respect to the valve port to achieve a complete seal of the valve port when the port is closed by an actuator which through wear or otherwise has its actuator surface means in nonjuxtaposed relation to valve port to be closed.

3,554,488
PLUG VALVE
William H. Alexander, Houston, Tex., assignor to Texsteam Corporation, Houston, Tex., a corporation of Texas
Filed Aug. 19, 1968, Ser. No. 753,664
Int. Cl. F16k *5/02*
U.S. Cl. 251—317 15 Claims



Plug valve including a cylindrical cavity with ports and elastomeric seats within the cavity at the ports defining a tapered opening for receiving a tapered plug.

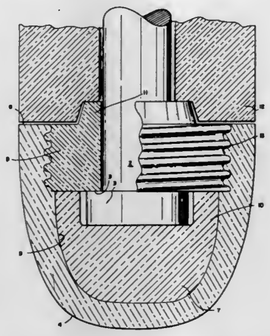
3,554,489
COATED STOPPER HEAD FOR CONTROLLING OUTFLOW OF MOLTEN METAL THROUGH THE NOZZLE OF A BOTTOM POUR RECEPTACLE
Ronald V. Kilgore, Croaopolis, Pa., assignor to Vesuvius Crucible Company, Swissvale, Pa., a corporation of Pennsylvania
No Drawing. Filed Aug. 26, 1968, Ser. No. 755,424
Int. Cl. F16k *21/00*
U.S. Cl. 251—356 4 Claims

A coated stopper head for controlling outflow of molten metal through the nozzle of a bottom pour receptacle comprising a stopper head body with a coating thereon so that when the stopper head is in position closing the nozzle and molten metal is introduced into the relatively cold receptacle metal freezes in the bottom of the receptacle and against the coating of the stopper head, the coating being of material which is nonwetting or lubricating with respect to the solidified metal and hence inhibits the adherence of the solidified metal to the stopper head so that when the stopper head is subsequently urged upwardly to permit outflow of molten metal through the nozzle the coating minimizes the adherence of the solidified metal to the stopper head and permits free movement of the stopper head in the bottom of the receptacle. The coating preferably comprises finely divided nonwetting or lubricating refractory material and a binder and is desirably of such consistency that it may be applied by dipping. The coating preferably comprises an unfired nonwetting or lubricating refractory powder. The coating is preferably formed in situ on the stopper head body.

3,554,490
STOPPER HEAD FOR A LADLE OR SIMILAR RECEPTACLE
John B. Cahoon, Jr., Thornburg Borough, Pa., assignor to Vesuvius Crucible Company, Swissvale, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 609,654, Jan. 16, 1967, now abandoned. This application Mar. 17, 1969, Ser. No. 840,069
Int. Cl. F16k *21/00*
U.S. Cl. 251—356 1 Claim

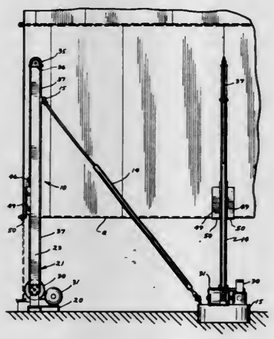
A stopper head for a ladle or similar receptacle comprising a hollow shell of refractory material having its greatest transverse dimension at its upper portion and tapering to smaller transverse dimension toward its lower portion, the shell being open at its top and closed at its sides and bottom, the shell

being adapted to receive the lower end of a stopper rod through its open top, the shell containing at its lower portion and extending up to a level at least two-fifths the distance from the bottom to the top of the shell material having an in-



sulating property greater than the insulating property of the refractory material of the shell, and insert means in the upper portion of the head for holding the lower end of the stopper rod against withdrawal.

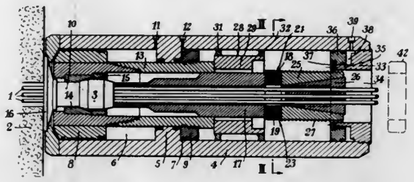
3,554,491
LIFTING DEVICE
Roger Tegtmeier, Kindred, N. Dak. 58051
Filed Nov. 26, 1968, Ser. No. 778,945
Int. Cl. B66f *7/12*
U.S. Cl. 254—1 **8 Claims**



This invention relates to a lifting device employing a single upright member having a continuous chain or the like arranged thereon with shiftable article engaging elements carried thereby which elements are swingable into and out of alignment with the predetermined lifting area and are likewise removable from the continuous element. A drive mechanism is provided for individual lifting devices with a master control arrangement to coordinate a plurality of these lifting devices.

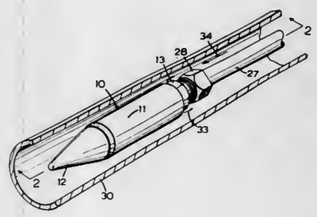
3,554,492
APPARATUS FOR DRAWING AN ANCHOR HEAD ON A ROD OR A TIGHT CABLE
Rene Beghi, Bois-Colombes, France, assignor to Societe Des Grands Travaux De Marseille, Paris, France
Filed Nov. 14, 1968, Ser. No. 775,603
Claims priority, application France, Dec. 26, 1967, 133,720
Int. Cl. E04g *21/12*
U.S. Cl. 254—29 **7 Claims**

An apparatus for drawing an anchor head on a rod or a tight cable, which comprises a single hydraulic piston-cylinder unit of which the cylinder receives the cable therethrough and engages with one end the base plate, and of which the piston rigid with a hollow piston rod having a die secured therein is slidably mounted in a working chamber adapted to be connected to a source of fluid under pressure. An annular distance-piece slidably mounted in said working chamber is adapted to be either interposed between said



piston rod and a pair of transverse keys adapted to slide in longitudinal slots formed in said cylinder and disposed between said annular distance-piece and said cable clamping device when said cable is being tensioned, or positioned to bear against the cylinder bottom. A hollow central punch fitted in the bore of said hollow piston rod receives said cable therethrough and engages with one end the socket to be drawn and with the opposite end said pair of transverse keys.

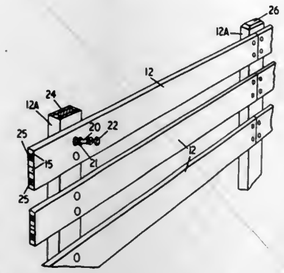
3,554,493
RODDING JET
John E. Bowden, Stratford, Murray R. McLarty, Jr., Peterborough, and Robert V. Zeller, Mississauga, Ontario, Canada, assignors to Bell Canada, Montreal, Quebec, Canada
Filed Feb. 20, 1969, Ser. No. 801,067
Int. Cl. E21c *29/16*
U.S. Cl. 254—134.3 **10 Claims**



A method and apparatus for rodding conduits in which the projectile is self-propelling by rearwardly directed gas ejection means and propellant gas is fed under pressure to the projectile from a source through a line of flexible tubing attached to the projectile.

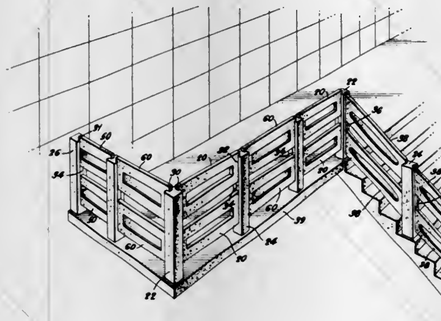
3,554,494
BUILDING COMPONENTS
Frederick Bee, Dorlins Orpington Road, Chislehurst, Kent, England
Filed Sept. 19, 1968, Ser. No. 794,436
Claims priority, application Great Britain, Sept. 20, 1967, 42,767/67
Int. Cl. E04h *17/14*
U.S. Cl. 256—19 **8 Claims**

Building components particularly suitable for constructing fences or the like are formed as hollow plastic extrusions of substantially rectangular section having their hollow interiors divided into a plurality of channels by partitions. Rail sections have the partitions parallel only to their shorter sides while post sections have partitions parallel to each side. Core



members of wood or steel which are a close sliding fit in one or more channels may also be provided.

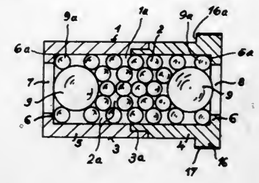
3,554,495
PRECAST CONCRETE RAIL CONSTRUCTION
David Bach, 2601 NE. 55th Court, and Walter Rothman, 2801 NE. 51st St., both of Fort Lauderdale and Carlos Manuel Pascual, 571 NW. 49th Ave., Plantation, Fla. 33313
Filed Mar. 13, 1969, Ser. No. 807,043
Int. Cl. E04h *17/16*
U.S. Cl. 256—19 **6 Claims**



A precast concrete post and panel assembly, the posts having vertical grooves to hold the panels between them so that the panels can be slid into place after the posts have been erected. Concrete spacers are provided to provide vertical spacing between panels supported by the same pair of posts.

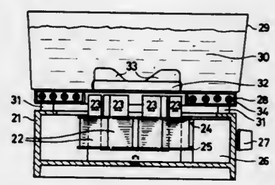
3,554,496
INJECTION MOLDING APPARATUS PROVIDED WITH INTERNAL PLASTICIZING CAPSULE
Georg Nusstein, Munich, Germany, assignor to Firma Georg Seidl, Munich, Germany
Filed May 8, 1967, Ser. No. 636,715
Claims priority, application Germany, May 14, 1966, S103,818
Int. Cl. B01f *15/02*
U.S. Cl. 259—4 **9 Claims**

An injection molding apparatus of the type in which a piston moves a mass of material along a cylinder toward a nozzle and in which there is an internal plasticizing capsule within the cylinder which has a plurality of internal balls held in place therein so that the plastic material must be forced through the capsule and pass through the interstices between the balls, thereby thoroughly mixing the material and raising its temperature by friction to assist in plasticizing the same. The balls are held within the capsule in an arrangement which includes a large ball at each end of the capsule, there being an opening at each end, and a ring of smaller balls



holding each large ball in place, the capsule being removable from the cylinder and capable of being disassembled to release the balls and permit ready cleaning.

3,554,497
ELECTRONICALLY CONTROLLED MAGNETIC STIRRER
Manfred Zipperer, 141 Etzenbach 7813, Grunern/Staufen, Germany
Filed June 21, 1968, Ser. No. 738,870
Claims priority, application Germany, June 22, 1967, 1,638,968
Int. Cl. B01f *7/00*
U.S. Cl. 259—102 **5 Claims**

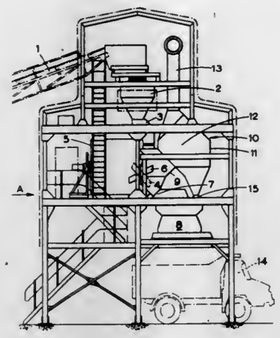


A magnetic stirrer for stirring low viscosity media comprises a plurality of stationary electromagnets arranged in a housing on which a receptacle containing the medium to be stirred can be mounted. The receptacle also contains one or more freely movable stirring arms controlled by the electromagnets which produce a rotary magnetic field by corresponding consecutive energization of the individual electromagnets by means of an electronic control element.

3,554,498
PROCESS FOR THE PRODUCTION OF AGGREGATE COATED WITH BITUMINOUS MATERIAL
Geoffrey Laycock, Darlington, England, assignor to Underground Mining Machinery Limited, London, England, a British company
Filed Feb. 5, 1968, Ser. No. 702,850
Claims priority, application Great Britain, Feb. 3, 1967, 5,249/67
Int. Cl. B28c *1/22*
U.S. Cl. 259—159 **3 Claims**

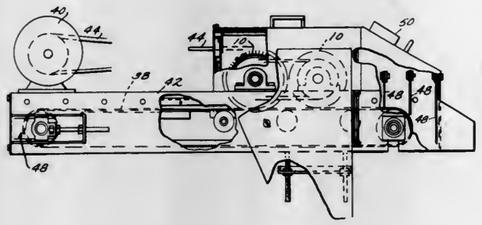
A process and apparatus are provided for the production of aggregate coated with bituminous material, including tarmacadam, bitumen macadam, fine cold asphalt and hot rolled asphalt. The process involves check weighing a batch of aggregate passing it into a rotary batch heater, where the aggregate is heated to the desired temperature which the batch is being heated the exhaust gases produced by the heater carry smaller particles of aggregate out of the heater and these are collected in a multitubular cyclone-type collector. When the batch in the heater reaches the desired temperature it is fed to a mixer along with the appropriate quan-

tity of heated bitumen and the particle collector is arranged to automatically feed the small particles collected from the



batch during the heating step into the mixer. This ensures that the resultant mix does not vary from specification.

3,554,499
SAND AERATING DEVICE
Rutherford L. Cooper, Dallas, Pa., assignor to Royer Foundry & Machine Co., Kingston, Pa., a corporation of Pennsylvania
Filed Mar. 27, 1969, Ser. No. 811,049
Int. Cl. B01f *3/00*
U.S. Cl. 259—182 **8 Claims**

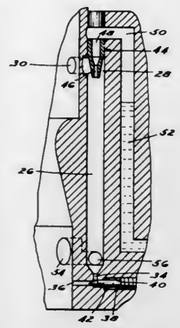


This invention relates to an improved device for conditioning foundry sand or the like, comprising primarily a smooth surfaced drum support, tightly enclosed by a belt which carries a plurality of outwardly extending tool elements fastened thereto. The belt and tools associated therewith may be readily and quickly removed and replaced as a unit, whereby changing from one set of tools to another, or from a set of worn tools to a set of new tools is greatly facilitated.

The novel device is readily associated and employed with conventional foundry conveyor belts used to transport sand.

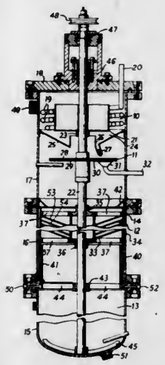
3,554,500
CARBURETOR IDLE SYSTEM CONTROL
Laszlo Hideg, Dearborn Heights, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Jan. 6, 1969, Ser. No. 789,262
Int. Cl. F02m *3/08*
U.S. Cl. 261—41 **3 Claims**

A downdraft-type carburetor has an idle system including an emulsion passage that is relatively large in diameter in comparison to a reduced diameter outlet from the emulsion passage that is connected to the main induction passage below the throttle valve, the emulsion passage containing a fuel jet that directs the fuel stream axially through the center of the emulsion passage to essentially eliminate wetting of the walls with fuel to thereby minimize random fluctuations of



the fuel flow and provide a more finite control of idle fuel flow.

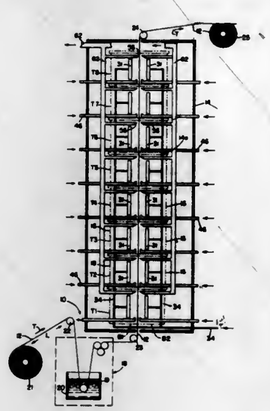
3,554,501
MASS TRANSFER MEDIA AND METHOD OF OPERATION
Ralph W. King, 19 Grosvenor Place, London, England
Filed Apr. 8, 1968, Ser. No. 719,357
Claims priority, application Great Britain, Apr. 14, 1967, 17,237/67
Int. Cl. B01f *3/04*
U.S. Cl. 261—84 **11 Claims**



The invention is concerned with mass transfer media or devices such as are used to obtain effective contact between two fluids, for example in fractionating columns, washers, scrubbers, countercurrent liquid-liquid extractors and reactors. The invention is particularly concerned with a mass transfer device of the dished helical fin type which is rotated during operation with the axis inclined to the vertical, and by providing a line or band of perforations extending around the fin or fins of the device in the outer half thereof ensures improved wetting of the underside of the fin or fins and consequently improves the effectiveness of the device.

3,554,502
DRYER OR HEATER
Grover W. Rye, Cuyahoga Falls, and Alexander V. Alexeff, Cleveland, Ohio, assignors to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed May 15, 1968, Ser. No. 729,282
Int. Cl. F27b *9/28*
U.S. Cl. 263—3 **15 Claims**

A machine or apparatus for coating, heating or drying fibers in a continuous length element; a machine for impregnating such fiber with a liquid fiber-to-rubber adhesive coating in the manufacture of rubber products; or an apparatus wherein the element is heated and heat products are removed from said element by a gas stream rapidly moving



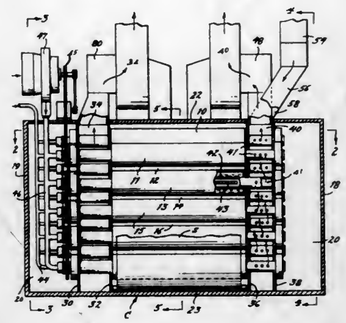
over the surface of said element, wherein said heat products are evaporated water molecules for rapidly drying the element, heat, or other products resulting from heating this element.

3,554,503
APPARATUS FOR HEATING SYNTHETIC SUBSTANCE THREADS
Max Borner, Stuttgart-Vaihingen, Germany, assignor to Sulzer Brothers, Ltd., Winterthur, Switzerland, a corporation of Switzerland
Filed Jan. 17, 1969, Ser. No. 792,090
Claims priority, application Switzerland, Jan. 25, 1968, 1175/68
Int. Cl. F27b *9/28*
U.S. Cl. 263—3 **7 Claims**



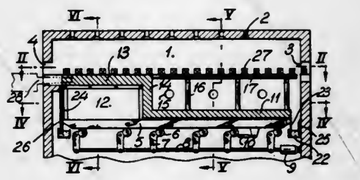
The heating element cells are constructed with double-tube sides to conduct the threads through the inner tubes while the heat carrier flows through the outer tubes. The heat carrier maintains the path of the threads within the double tube under a substantially uniform heat for substantially the entire passage.

3,554,504
MACHINE FOR HEAT TREATING SHEET MATERIAL
Ralph C. Parkes, North Hancock & Lehigh Ave., Rydal, Pa. 19133
Filed June 6, 1969, Ser. No. 830,942
Int. Cl. F27b *9/28*
U.S. Cl. 263—3 **5 Claims**



A plurality of heated, rotary rolls over which the sheet material to be treated passes; a casing enclosing said rolls; an exhaust system for the gaseous products of combustion, and a separate exhaust system for the fumes generated by the application of heat to the sheet material as it moves through said casing.

3,554,505
WALKING BEAM FURNACES
Pierre Dessarts, Paris, France, assignor to Societe Anonyme Heurtey, Paris, France
Filed Dec. 12, 1968, Ser. No. 783,223
Claims priority, application France, Dec. 20, 1967, 133,033
Int. Cl. F27b *9/14*
U.S. Cl. 263—6 **10 Claims**

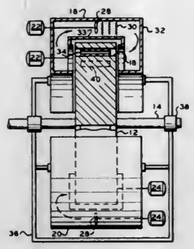


A beam furnace comprises at least two main zones, one of which is for heating and the other for equalizing the temperatures of the charge elements. The beams of the first zone include charge supports which maintain the charge spaced from the furnace bottom and the beams of the second zone a bottom coating on which the charge rests directly.

3,554,506
RAPID HEATING OF THICK WALL PARISON PREFORMS

Charles L. Seefluth, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 13, 1968, Ser. No. 783,657
Int. Cl. F27b 9/16
U.S. Cl. 263—7 10 Claims

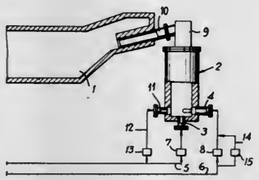


A parison preform is placed in a heating block so as to heat the parison from the outside by means of conductive heat, during which time a fluid such as air is circulated through the parison to impart heat from the inside.

3,554,507
REGENERATIVE REVERBERATORY PREDOMINANTLY OPEN HEARTH, GAS-FIRED FURNACE

Sergei Mikhailovich Andoniev, Prospekt Pravdy 5, kv.60, Kharkov; Mark Nikolaevich Berman, ul. Artema 64, kv.7; Georgy Gavrilovich Zhitnik, Bulvar Pushkina 25, kv.35; Evgeny Mikhailovich Kondratiev, Prospekt Metallurgov 107; Yakov Matveevich Levitasov, Kvartal 15/16, dom 11, kv.14, Donetsk; Konstantin Ivanovich Makarov, Varshavskoe shosse 135-a, korpus 3, kv.149, Moscow; Nikolai Ivanovich Pevny, Kharkov, Komsomolskoe shosse 59/12, kv.2, Kharkov; Leonid Moiseevich Pokrass, Pionerskaya ul. 69, Donetsk; Alexandr Markovich Pochtman, Prospekt Pravdy 5, kv.41, Kharkov; Mark Anisimovich Robin, 2 kvartal 11, kv.19; Pavel Alexandrovich Tesner, ul. Chaplygina 2, kv. 3, Moscow; Felix Isaakovich Sheinfain, Pushkinskaya ul. 20, kv.18, Donetsk, and Oleg Vladimirovich Filipiev, Prospekt Pravdy 5, kv.41b, Kharkov, U.S.S.R.

Filed Aug. 9, 1968, Ser. No. 751,621
Int. Cl. F23l 15/02
U.S. Cl. 263—15 4 Claims

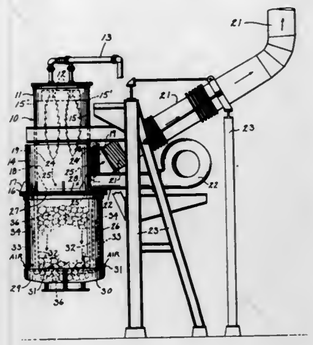


A regenerative reverberatory furnace is equipped with apparatus defining a reformation chamber for the partial combustion of gas to obtain soot. Communicating with the reformation chamber is a primary gas supplying conduit and a primary air supplying conduit, each of which conduits is provided with a shutoff device. The air supplying conduit is provided with a channel for bypassing the air shutoff device. Interposed between and communicating with both the gas supplying conduit and the reformation chamber is an alternate gas supplying channel also provided with a shutoff device. When the shutoff devices in each of the primary gas and air supplying conduits are closed, the shutoff devices in the air bypass channel and in the alternate gas supplying channel remain open to provide a continuous supply of combustible material to the chamber to continuously heat the chamber lining.

3,554,508
SCRAP METAL PREHEATERS

David E. Dell'Agnese, Port Washington, Wis., assignor to Modern Equipment Company, Port Washington, Wis., a corporation of Wisconsin

Filed Mar. 5, 1969, Ser. No. 804,546
Int. Cl. F27b 17/00
U.S. Cl. 263—15 19 Claims

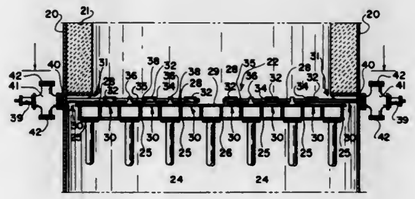


A preheater apparatus including a combustion chamber with a blower air annulus and a concentric exhaust gas annulus and communicating exhaust duct, a charge bucket positionable beneath said chamber having an annular cavity with vertical tubes therein communicating with said combustion chamber exhaust gas annulus, ejector means for drawing the exhaust gases upwardly into said tubes, an opening through which air is drawn into said tubes to cool said gases as they flow upwardly into said combustion chamber exhaust gas annulus and out through said exhaust duct, and a combustion air blower adapted to direct air into and through said blower air annulus to the burners, said air cooling the combustion chamber wall and also being preheated thereby to promote maximum burner efficiency.

3,554,509
DISCHARGE GRATE FOR CIRCULAR SHAFT KILN

Craig C. Waddle, Englewood, and Robert K. Harris, Littleton, Colo., assignors to Mintech Corporation, a corporation of Colorado. by mesne assignments

Filed Dec. 9, 1968, Ser. No. 782,072
Int. Cl. F27b 9/00, 9/18
U.S. Cl. 263—29 6 Claims

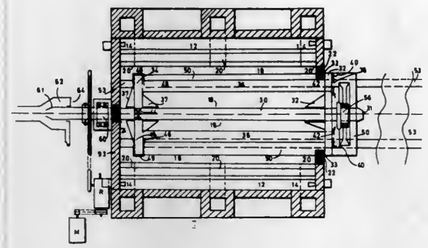


A discharge grate for a circular shaft kiln includes a concentric plurality of coplanar annular retarder plates defining concentric annular throats. A plurality of radially extending pusher rods each mounts a series of annular sector-shaped pusher plates which, when positioned over the annular throats, retard the flow of solids through the grate, and which, upon reciprocation of the rods, move to open the throats and push material off the edges of the retarder plates.

3,554,510
ROTARY MULTITUBULAR KILN FOR ROASTING MOLYBDENITE AND SIMILAR SULFIDES

Carlos Arrizaga, Alameda Bernardo O'Higgins 146, Office 406, and Anibal Gajardo, Sebastian del Piombo 7691, Santiago, Chile

Filed Sept. 17, 1968, Ser. No. 760,273
Claims priority, application Great Britain, Sept. 18, 1967, 42,468
Int. Cl. F27b 7/08
U.S. Cl. 263—34 12 Claims

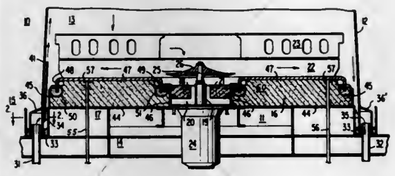


Kiln for roasting sulfide ores comprising a cage of hollow ore-holding tubes mounted to rotate in a reverberatory furnace about a horizontal axis, said tubes being open at one end for the introduction of ore and vented at the other end for the release of gas generated by the roasting ore.

3,554,511
BELL-TYPE FURNACE

Herbert Wald and Harold K. Young, Baltimore, Md., assignors to Bethlehem Steel Corporation, a corporation of Delaware

Filed Jan. 13, 1969, Ser. No. 790,578
Int. Cl. F27b 11/10
U.S. Cl. 263—40 12 Claims

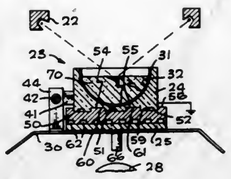


An improved bell-type furnace which includes a base and a removable inner cover that rests on the base and forms with it an enclosed heating chamber. The base has an outer peripheral sealing trough which receives the lower end of the inner cover and acts to prevent the escape of gas which is circulated in the heating chamber. The gas is delivered to and discharged from the heating chamber by means of gas inlet and discharge pipes which extend into the base inner cover peripheral sealing trough. The base also includes a refractory pedestal which is enclosed by a gastight sheath. The sheath includes a bottom plate, an outer peripheral sidewall having an outer peripheral sealing trough adjacent its upper end, and an inner peripheral sidewall having an inner peripheral sealing trough adjacent its upper end. Means are provided to seal between the sheath bottom plate and the outer and inner sidewalls and between the sidewalls and the outer and inner troughs. The sheath further includes a top plate which has downwardly projecting outer and inner peripheral flanges that extend into the sheath outer and inner peripheral troughs. Lead, liquid at furnace operating temperatures, in the sheath troughs seals between them and the flanges of the top plate.

3,554,512
CRUCIBLE FOR HOLDING MOLTEN SEMICONDUCTOR MATERIALS

George H. Elliott, 16501 Knollwood Drive, Grande Hill, Los Angeles County, Calif. 91344 and Leonard F. Roman, 11018 Moorpark St., North Hollywood, Los Angeles County, Calif. 91602

Filed Mar. 24, 1969, Ser. No. 809,623
Int. Cl. F27b 14/10
U.S. Cl. 263—48 12 Claims

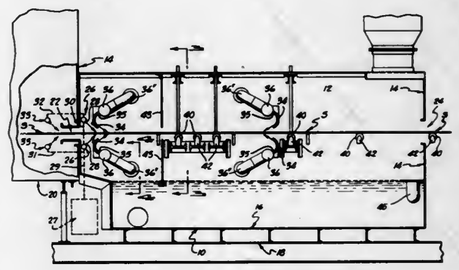


A crucible is disclosed herein for holding a source material in which a portion thereof is to be melted including a crucible body forming a heat sink composed of material having sufficient electrical and thermal conductivity adapted for operation as an element of an electrical circuit and being formed with a hemispherical recess for confining the source material. Means are provided for recirculating a coolant through the body which is slidably mounted on a base by a mating ribbed and grooved construction therebetween so as to form a thermal transmission path for dissipating maximum heat into the base constituting a portion of the total heat sink.

3,554,513
SYSTEM AND APPARATUS FOR QUICK QUENCHING CONTINUOUSLY HEATED STRIP

Richard D. Chance, Spokane, Wash., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

Filed Apr. 8, 1968, Ser. No. 719,428
Int. Cl. C21d 9/56
U.S. Cl. 266—3 26 Claims

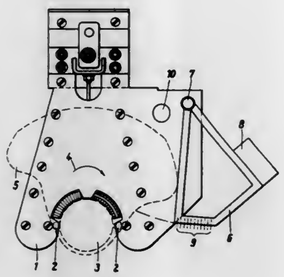


System and apparatus for quick quenching a continuously moving solution heat treated aluminum or aluminum alloy strip and the like in a substantially instantaneous fashion promptly after the strip exits from a solution heat treatment furnace, wherein a relatively thin curtain of liquid coolant of substantially uniform cross-sectional thickness from one curtain edge to the other is applied to at least one side of and in a straight line across and transverse of the strip and wherein an improved arrangement is employed for enclosing the strip in a heated gaseous envelope substantially immediately after it exits from the furnace to preclude contact of the strip with the atmosphere prior to quenching and to prevent back splash of the coolant from the line of coolant application and a deleterious premature quenching of the strip and wherein the application of the coolant is fully coordinated with enclosing the strip in the heated gaseous envelope.

3,554,514
APPARATUS FOR UNIFORMLY INDUCTIVELY HEATING CRANKSHAFTS

Gerhard Preyer, Wermelskirchen, Germany, assignor to Deutsche Edelstahlwerke Aktiengesellschaft

Filed Nov. 14, 1968, Ser. No. 767,183
Claims priority, application Germany, Dec. 23, 1967, 1,583,357
Int. Cl. C21d 1/66
U.S. Cl. 266—4 7 Claims

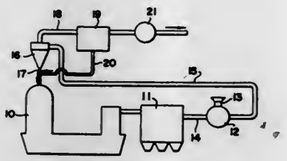


When inductively heating crankshaft workpieces, there is a tendency for the crank webs to become locally overheated during heating of crankpin portions of the rotating crankshaft workpieces. This is overcome by the invention by the provision of two cooling arms which are located one on each side of the inductor and pivoted in the manner of a pendulum to swing parallel thereto, and which are biassed for motion towards the crankshaft during rotation of the crankshaft, whereby the portion of the crankshaft liable to overheating is effectively cooled during the portion of revolution of the workpiece.

3,554,515
WASTE HEAT RECOVERY APPARATUS FOR FLASH SMELTING FURNACE

Kazuo Tonooka and Kazuo Yokomatu, Kamitsuga-gun, Japan, assignors to Furukawa Mining Co., Ltd., Tokyo, Japan

Filed May 3, 1968, Ser. No. 726,339
Claims priority, application Japan, May 11, 1967, 42/29464
Int. Cl. C22b 15/00
U.S. Cl. 266—13 3 Claims

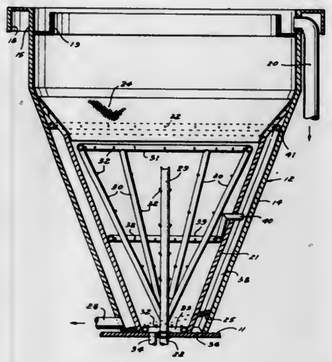


According to the present invention, a flash smelting furnace is provided with a radiation boiler for cooling high-dust-content, hot waste gas generated in the furnace down to a relatively low temperature, and an arrangement for utilizing the low temperature waste gas obtained for gaseous conveying drying of fine ore to be charged into the furnace.

3,554,516
APPARATUS FOR PRECIPITATING METAL FROM A SOLUTION

Jere Robert Denny, New York, N.Y., and Deenahalli S. Krishnaswamy, Kelly Lake, Minn., assignors to Kennecott Copper Corporation

Original application Dec. 28, 1965, Ser. No. 516,953, now Patent No. 3,457,065, dated July 22, 1969. Divided and this application Feb. 4, 1969, Ser. No. 845,110
Int. Cl. C22b 3/02
U.S. Cl. 266—22 9 Claims



Apparatus for precipitating particles of a desired metal from a pregnant solution thereof, comprising: an upright vessel adapted to contain a precipitant metal for stripping the desired metal values from a pregnant solution in the form of a particulate precipitate, means for forcefully supplying pregnant solution to the interior of said vessel for reactive contact with the precipitant metal, and means for injecting a different fluid forcefully into said vessel at a plurality of spaced locations therein, for engagement against said precipitant metal, to enhance the contact between said solution and the precipitant metal.

3,554,517
SHAFT FURNACE SHELL COOLING SYSTEM

William G. Seacrest, Coopersburg, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware

Filed Nov. 18, 1968, Ser. No. 776,719
Int. Cl. C21b 7/10
U.S. Cl. 266—32 5 Claims

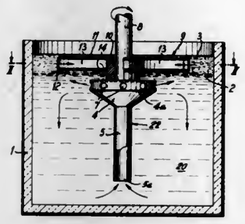


A cooling system for a shaft furnace having horizontal rows of stave coolers installed between the outer shell and the inner refractory lining. The upper ends of each row of coolers are spaced from the furnace shell a greater distance than the lower ends of the coolers of the next higher row.

3,554,518
APPARATUS FOR IMPROVING THE REACTION BETWEEN TWO LIQUIDS OF DIFFERENT SPECIFIC GRAVITIES

Jan-Erik Ostberg, Bettna, Sweden

Filed Oct. 9, 1967, Ser. No. 673,542
Claims priority, application Germany, Oct. 11, 1966, 012013
Int. Cl. C21c 7/00, 7/10
U.S. Cl. 266—34 11 Claims



A method of improving the reaction between two liquids of different specific gravities such as between a metallurgical melt and a slag layer covering it comprises producing a flow in the reaction zone between the two liquids of different specific gravities such that the liquid of high specific gravity, for example, the melt is circulated in the vessel and guided substantially radially outwardly in the reaction zone whereas the liquid of low specific gravity, for example, the slag, is conveyed in a circulation from the periphery inwardly in substantially opposite direction to that of the high specific gravity liquid.

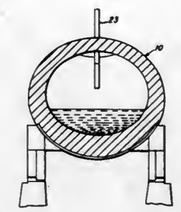
A device for carrying out the method includes two pumping elements, one of which takes suction at the lower end of the liquid of high specific gravity and circulates this liquid upwardly to the reaction zone in the vicinity of the level of the liquid of low specific gravity and directs outwardly toward the outer periphery of the reaction zone. A second pumping element is arranged to take suction at the outer periphery of the liquid of low specific gravity and to direct it inwardly at a location adjacent the level of the high specific gravity. A pump construction for this purpose may advantageously include a single rotor mounting an impeller having an elongated cylindrical suction extending downwardly into the high specific gravity melt and an upper portion extending radially outwardly and having peripheral openings for discharging the high specific gravity liquid radially outwardly. The same pump shaft also carries an impeller at the upper end having vane elements which are curved in a formation for moving the low specific gravity liquid inwardly and for discharging it toward the center. The low specific gravity pumping impellers may advantageously be formed as blade elements on the top of the impeller for pumping the high specific gravity liquid.

3,554,519
FURNACE FOR PRODUCING STEEL CONTINUOUSLY

Walter L. Kerlie, Forest Hills Borough, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed Sept. 9, 1968, Ser. No. 758,317
Int. Cl. C21c 7/00
U.S. Cl. 266—34 7 Claims

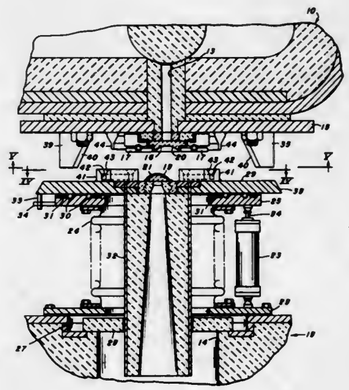
An elongated steel-refining vessel, roofed over the greater portion of its length, has a cross wall spaced inwardly from one end extending upwardly to the roof. This leaves an open intake chamber for receiving molten pig iron. A passage through the wall adjacent the vessel bottom conducts metal to the refining chamber enclosed under the roof. Oxygen lances extend through the roof at an angle to the vertical such that the gas jets tend to push slag floating on the bath toward the wall and through a slag passage therein. Limestone entrained with oxygen delivered by the lances forms the slag to refine the charge. An outlet for refined steel is provided in the vessel bottom and an outlet for effluent gases in the roof. The vessel is preferably mounted for tilting.



3,554,520
MECHANISM FOR CONNECTING A RECEIVING VESSEL WITH A BOTTOM-POUR VESSEL

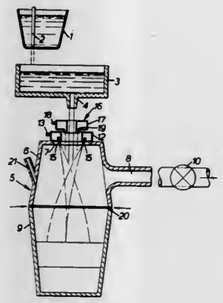
John A. Grosko, West Mifflin Borough, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed May 1, 1969, Ser. No. 820,845
Int. Cl. C21c 7/10
U.S. Cl. 266—34 10 Claims



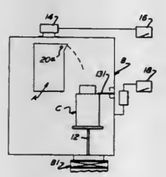
A mechanism which aligns and connects the inlet of a receiving vessel with the outlet of a teeming vessel. When molten metal is teemed into a vacuum-degassing vessel, it is necessary to have an airtight connection between vessels to maintain the vacuum, and it is difficult to align the vessels with the necessary precision to achieve such a connection. The invention provides a cam means for automatically shifting an inlet tube on the receiving vessel into alignment with the outlet of the teeming vessel.

3,554,521
THE TREATING OR REFINING OF METAL
Malvern John Rhydderch, Firbeck, near Worksop, England, assignor to The British Iron and Steel Research Association
Filed May 22, 1967, Ser. No. 640,122
Claims priority, application Great Britain, May 23, 1966, 22790/66
Int. Cl. C21c 5/28
U.S. Cl. 266—35 8 Claims



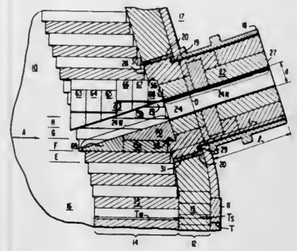
A method and apparatus for refining iron in which a stream of molten iron is shattered by oxidizing gas in a vessel from which gas is withdrawn to induce air into the vessel.

3,554,522
CONTROLLED TILTING APPARATUS FOR METALLURGICAL FURNACE
Henry O. Herrmann, Philadelphia, Pa., assignor to Pennwalt Corporation, Philadelphia, Pa., a corporation of Pennsylvania
Filed June 2, 1969, Ser. No. 829,427
Int. Cl. F27d 19/00
U.S. Cl. 266—36 10 Claims



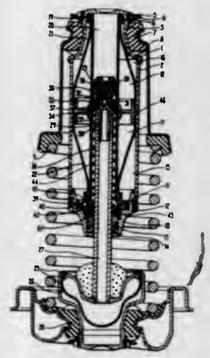
Apparatus for tilting a metallurgical furnace at duplicatable predetermined speeds including "slow," "quick" and "throw" tilting rates. Forward and backward tilting of the furnace can be performed manually, semiautomatically or automatically by selective actuation of solenoid-operated hydraulic control valves. The furnace may be rocked between a predetermined back tilted position and a front prepouring position, and safety interlocks are provided to prevent electrohydraulic actuation in manual position or manual tilting when in semiautomatic or automatic positions.

3,554,523
TAPHOLE ASSEMBLY FOR METALLURGICAL FURNACES
Edwin B. Miller, 3002 Dunmurry Road, Baltimore, Md. 21222
Filed Jan. 9, 1969, Ser. No. 790,121
Int. Cl. C21b 7/12
U.S. Cl. 266—42 7 Claims



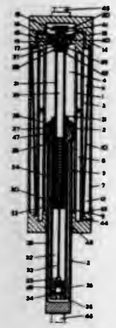
A basic oxygen furnace taphole assembly which includes a prefabricated taphole outer portion and an inner portion having wedge shaped blocks for the taphole bottom, T-shaped blocks for its top, and conventional working lining bricks for its sides.

3,554,524
HYDROPNEUMATIC SUSPENSION AND DAMPING DEVICES HAVING LEVEL REGULATION FOR USE IN MOTOR VEHICLES
Wilhelm Riehl, Rauhnheim-Am-Main, Germany, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 26, 1968, Ser. No. 755,417
Claims priority, application Germany, Sept. 6, 1967, 1,630,886
Int. Cl. B60g 11/28
U.S. Cl. 267—64 2 Claims



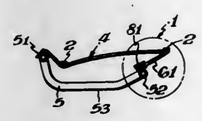
A hydropneumatic suspension and damping device having level regulation, for use in a motor vehicle, includes a damper piston by means of which, when the vehicle is in motion, fluid is pumped from a low-pressure reservoir by way of a damper space to a high-pressure reservoir. Subsequently, with the vehicle standing and being either loaded or unloaded, the damper piston is returned to midposition by the transfer of fluid through transfer apertures controlled by a pair of slide valves which surround a piston rod for the damper piston and are disposed in the region of the ends of the damper space.

3,554,525
HYDRO-PNEUMATIC SPRING ELEMENT
Arie Adrianus de Koning, Paradijs, and Kornelis Korstiaan Karel de Koning, Kwaksewegl, both of Oud-Beijerland, Netherlands
Filed Sept. 11, 1968, Ser. No. 759,093
Claims priority, application Netherlands, Sept. 22, 1967, 6712963
Int. Cl. B60g 11/28
U.S. Cl. 267—64 10 Claims



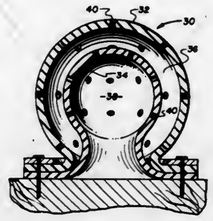
A spring element having a damping effect and comprising a cylinder and two fluid reservoirs disposed concentrically relative to each other and to said cylinder and extending substantially throughout the longitudinal extent of the latter.

3,554,526
SEAT CUSHIONING SPRING DEVICE
Seizho Ohta and Motokuni Kage, Toyota, Japan, assignors to Toyota Jidosha Kogyo Kabushiki Kaisha, Toyota, Japan, a corporation of Japan
Filed July 26, 1968, Ser. No. 747,888
Claims priority, application Japan, Aug. 3, 1967, 42/49,932
Int. Cl. A47c 7/20, 23/00
U.S. Cl. 267—109 1 Claim



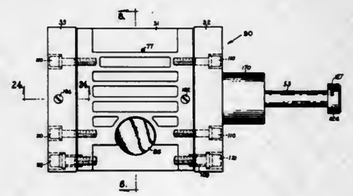
Seat comprises seat frame with seat frame line elastically supported above seat frame. Zigzag-line spring members are stretched in parallel over spring frame line between forward and rearward portions of line. Seat cushioning spring device includes upwardly extending portion of front of seat frame located behind forward portion of seat frame line and terminal portions of zigzag-line spring members folded back in acute angle from forward portion of seat frame line to connection points on upwardly extending portion of seat frame. Upwardly extending portion on seat frame supports zigzag-line spring members on seat frame line when excessive load is placed upon seat cushioning spring device.

3,554,527
SHOCK ABSORBER
Lester G. Hall, Los Angeles, Calif., assignor to North American Rockwell Corporation
Filed June 26, 1968, Ser. No. 740,363
Int. Cl. F16f 9/10, 5/00
U.S. Cl. 267—116 3 Claims



An improved shock absorber having a chamber wall that defines a chamber volume in fluid communication with a working fluid through a plurality of apertures in the chamber wall which control the expulsion rate of the fluid from the chamber volume when the chamber wall is deformed.

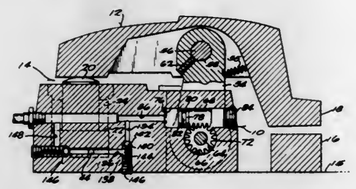
3,554,528
ENERGY DISSIPATING HYDRAULIC SYSTEMS
Joseph R. Kring, 676 Kennedy Drive, Mansfield, Ohio 44904, and Josef F. Schraner, 35914 Weideman, Mount Clemens, Mich. 48043
Filed Sept. 21, 1967, Ser. No. 669,515
Int. Cl. F16f 5/00
U.S. Cl. 267—126 29 Claims



Improvements in energy dissipating hydraulic systems are disclosed for dissipating the energy of impacting forces comprising an industrial-type hydraulic shock absorber having an hydraulic ram chamber and an hydraulic ram operative therein which has a single energy dissipating power stroke in respect to an impacting force acting in one direction thereon. A self-contained hydraulic reservoir, a piston therein and yieldable means operative upon said piston are provided. Means interconnecting the ram chamber and the reservoir are provided so that a transfer of hydraulic liquid occurs in opposition to said yieldable means from said ram chamber to said reservoir under relatively free flow conditions for a first part of said power stroke and under flow restriction conditions for the remainder thereof. Said ram chamber provided with axially spaced orifices all but the last of which are closed off progressively by said hydraulic ram in its movement to its retracted position in said ram chamber during said power stroke. The first of said orifices being free flow orifices through which hydraulic liquid flows from said ram chamber to said reservoir under free flow conditions for a first part of said power stroke and the remainder of said orifices being flow restriction orifices through which hydraulic liquid flows from said ram chamber to said reservoir under flow restriction conditions for the remainder of said power stroke. Said hydraulic ram being fully retracted without closing off the last of said flow restriction orifices. At the end of the power stroke the reservoir piston effects a return of hydraulic liquid from the reservoir to the ram chamber to return the ram in the opposite direction in a single return

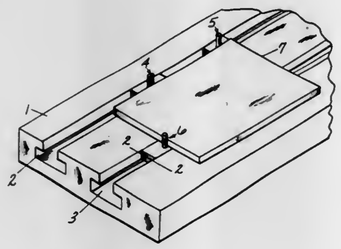
stroke thereof. Said interconnecting means includes unidirectional valve means closed during said power stroke and open to the ram chamber during said return stroke.

3,554,529
RETRACTABLE AND SWINGABLE CLAMPS
Vitas T. Thomas, Racine, and Robert A. Lovdahl, Racine, Wis., assignors to Tomco, Inc., Racine, Wis., a corporation of Wisconsin
Filed June 7, 1968, Ser. No. 735,352
Int. Cl. B25b *5/06*
U.S. Cl. 269—32 **7 Claims**



Disclosed herein is a force transmitting device comprising a base adapted to be mounted on a work surface, a clamp arm mounted on said base for movement from an inoperative to an operative position, a force ram to pivot the clamp arm when in the operative position and a hydraulic circuit to move the arm and force ram in sequence.

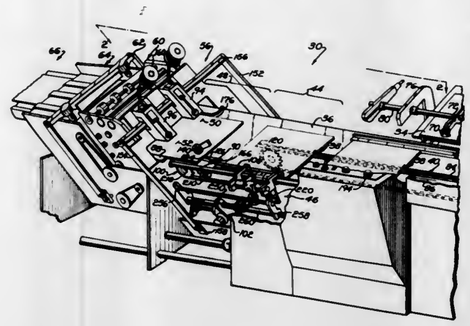
3,554,530
TEE SLOT LOCATOR
Donald E. Moore, 928 Potomac Ave., Erie, Pa. 16505
Continuation of application Ser. No. 465,537, June 21, 1965, now abandoned. This application Dec. 5, 1968, Ser. No. 781,641.
Int. Cl. B23q *3/18*
U.S. Cl. 269—301 **2 Claims**



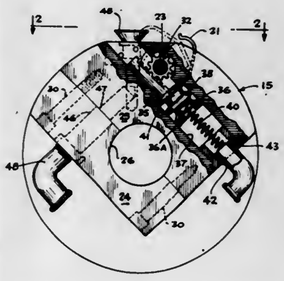
A locator for work on T-slotted beds of machine tools having a body slidably received in the T-slot with means for anchoring the body in the T-slot. A pin fixed to the body upstands above the table and serves only for location. Separate clamps secure the work to the table and take the cutting loads.

3,554,531
BINDER ASSEMBLY
Carl H. Heigl, Westlake, and Keith S. Macey, Rocky River, Ohio, assignors to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed June 18, 1968, Ser. No. 738,031
Int. Cl. B42g *1/02*; **B65h** *39/02*
U.S. Cl. 270—53 **38 Claims**

An improved binder assembly includes a collator for grouping sheets into unfolded signatures or gathers which are sequentially moved by a continuously operating conveyor to a pickup station. Each gather is transferred from the pickup station to a stitching station by a shuttle assembly. The shuttle assembly moves the gather forwardly past a register member or gauge finger and then moves the gather in a reverse direction toward the register member to cause the gather to engage the register member and be positioned in a predetermined relationship with a stitcher. Next, the unfolded gather is either saddle or sidestitched along a stitch line extending transversely to the path of movement of the shuttle assembly. Finally, the stitched gather is pushed into a folder assembly by the shuttle assembly as the next gather is moved by the shuttle assembly toward the stitching station. The folder assembly is selectively capable of folding or not folding the stitched gather.



3,554,532
SIGNATURE MACHINES
James F. Cosgrove, Western Springs, Ill., and John Balla, Argo, Ill., assignors to Chicago Machinery Laboratory, Inc., Chicago, Ill., a corporation of Illinois
Filed Aug. 21, 1968, Ser. No. 754,287
Int. Cl. B65b *39/02*
U.S. Cl. 270—54 **1 Claim**

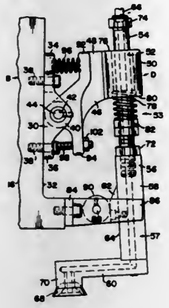


A gripper finger for clamping the margin of a signature sheet may be operated from the same source of suction which enables a suction cup to be effective on the same sheet, and this is made possible by oscillating the finger through a piston responsive to suction.

3,554,533
SHEET MATERIAL-HANDLING APPARATUS
Jack E. Cox, Hastings, Mich., assignor to Gulf & Western Industrial Products Company, Grand Rapids, Mich., a corporation of Delaware by mesne assignments
Filed Apr. 15, 1969, Ser. No. 816,197
Int. Cl. B65h *9/10*
U.S. Cl. 271—54 **6 Claims**

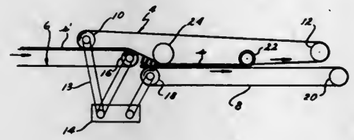
A blank locating device for use with machines having a vertically reciprocable working member designed to register blanks below the working member against fixed rearward positioning stops. The device includes a mounting bracket which is carried on a side of the working member, an arm

pivotable on the mounting bracket about a horizontal axis, and a downwardly extending rod which is supported by and vertically slidable within the arm. The rod has at its lowermost end a vacuum cup or other means for engaging the blanks while the working member and rod thereon are in downward motion but still above the blanks. After engagement with a blank, downward movement of the rod stops, and a cam surface on the rod contacts a cooperating surface on the still moving working member as the latter continues in



its downward direction. This relative movement of the working member and rod forces the rod lowermost end rearwardly, the length of the rearward positioning stroke depending upon the shape of the cam. Also provided to change the rearward stroke is an adjustment which varies the normal inclination of the rod and thus the starting point for the stroke. The device further includes a third adjusting means for varying the pressure with which the rod engages the blank.

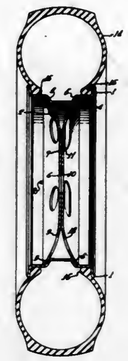
3,554,534
SHEET-SHINGLING APPARATUS
Donald R. Grody, 6 Lee Road, Lenox, Mass. 01240
Filed June 6, 1968, Ser. No. 735,034
Int. Cl. B65h *29/18*, *29/66*
U.S. Cl. 271—76 **2 Claims**



Apparatus for shingling or overlapping sheets having a high-speed upper tape system extending in overlying relationship from a lower, high-speed tape system to an overlying relationship with a low-speed, lower or overlap tape system. The upper surface of the low-speed tape system is disposed at a level substantially below the upper surface of the lower, high-speed tape system. Also the upper tape system has a substantial angle of inclination formed with the sheet-receiving surface of the low-speed tapes with a deflector located at the angle of inclination and in superposed relation to the upper surface of the low-speed tapes.

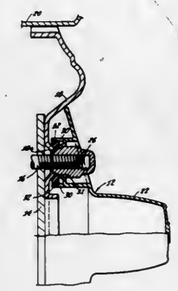
3,554,535
REVERSIBLE VEHICLE WHEEL
Martin E. Gerry, 13452 Winthrope St., Santa Ana, Calif. 92705
Filed Mar. 12, 1969, Ser. No. 806,388
Int. Cl. B60b *3/08*
U.S. Cl. 301—63 **8 Claims**

A tire rim and a pair of spider members circumferentially attached at the outer peripheries thereof at least in part to the tire rim for providing virtually uniform force distribution over the tire rim during rotational action of the vehicle wheel. The spider members are paraboloidal in shape, the



inner portions of these members being adjacent to each other. The wheel is reversible offering a choice of design patterns in the spider configurations.

3,554,536
MOTOR VEHICLE WHEEL AND COVER ASSEMBLY
Roy E. Richter, 9835 Wiley Burke Ave., Downey, Calif. 90240
Filed Oct. 22, 1968, Ser. No. 769,591
Int. Cl. B60b *7/06*
U.S. Cl. 301—108 **4 Claims**

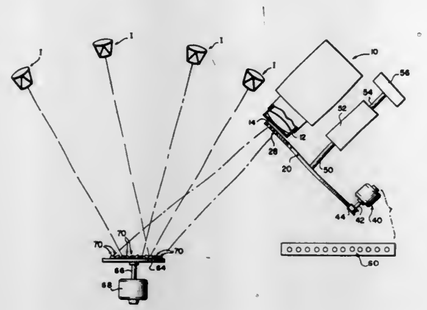


An improved wheel assembly for a motor vehicle is provided whereby a hub cap and wheel are supported on the hub of the vehicle by lug bolts which extend through the wheel and through the hub cap, and which includes resilient insert means between the hub cap and the wheel to assure that the assembly will be properly mounted on the hub despite manufacturing tolerances.

3,554,537
TEMPLATE PROJECTED IMAGES REFLECTED AND COLORED BY ASYMMETRICAL BODIES EACH HAVING AN OPTICAL REFLECTING LENS
Edward H. Phillips, 108 King George Road, Bound Brook, N.J. 08805
Filed Sept. 23, 1968, Ser. No. 761,428
Int. Cl. A63j *5/00*
U.S. Cl. 272—10 **16 Claims**

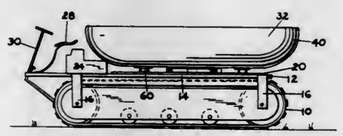
A source of light is provided, and a template having a plurality of shaped holes formed therethrough is disposed ad-

jacent the source of light. A control means is provided for selecting which one of the shaped holes of the template means is disposed adjacent the source of light. The light beam passing through the template means is adapted to impinge upon a plurality of reflecting lens means mounted on a movable support. Each of these reflecting means includes a



curved optical surface for reflecting an image onto one or more surfaces. Each of the lenses includes means for determining the color reflected from the lens means. The lens means includes asymmetrical bodies which tend to cant the lens means for random orientation of the various individual reflecting lens means.

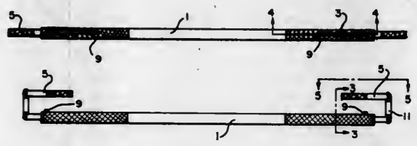
3,554,538
VEHICLE WITH FREELY ROTATING SAUCER
Fremont Fullmer, Salem Route, Rexburg, Idaho 03440
Filed June 17, 1968, Ser. No. 737,472
Int. Cl. A63d *1/00*
U.S. Cl. 272—29 **2 Claims**



An apparatus comprising a vehicle which is adapted to be propelled over irregular terrain and provided with a platform upon which is pivotally disposed a compartment or seat of saucerlike configuration and provided with roller support so that the seat is freely rotatable with respect to the pivotal connection upon which it is disposed. This therefore provides an unbalanced or eccentrically disposed weight or force freely rotatable about the pivotal connection when the seat is occupied by people. When the vehicle is moved over an uneven terrain, it will cause the people sitting on the seat to be thrown in an irregular or erratic movement back and forth so as to provide recreation and amusement for the parties occupying the seat. The vehicle also has a plurality of manual brake devices and hydraulic brake devices which are disposed in the rotatable saucer to stop its rotation as desired.

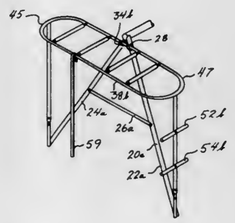
3,554,539
HAND-HELD JUMP-OVER EXERCISE ROD WITH PIVOTAL HANDLE MEMBERS
Henry V. Beutel, 1639 10th St., Jeffersonville, Ind. 47130
Filed Apr. 3, 1969, Ser. No. 813,137
Int. Cl. A63b *1/00, 5/00*
U.S. Cl. 272—62 **3 Claims**

A lightweight metal rod which is intended to be manually held at opposite ends while being jumped over by the holder. The ends, by which it is held, are in the form of handles which may be positioned in the axis of the rod to provide one



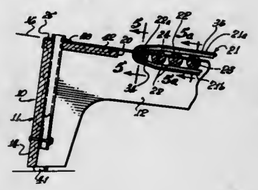
jumping height or moved to a parallel but offset position to provide a smaller jumping height.

3,554,540
CLIMBING ASSEMBLY FOR ATTACHMENT TO AN A-FRAME
Martin Green, Mahwah, N.J., assignor to No-Limit Inventions Corporation, Mahwah, N.J., a corporation
Filed Jan. 21, 1969, Ser. No. 792,729
Int. Cl. A63b *3/00*
U.S. Cl. 272—63 **7 Claims**



A climbing device assembly for attachment to an A-frame having hooks to fasten the device to the apex of the A-frame. A set of spaced apart parallel hollow bars, one of which is held to the A-frame by said hooks, and ladder rungs connecting said parallel bars together. At least one pole is connected to each end of the set and to the bottom of the legs of the A-frame.

3,554,541
EXERCISE TREADMILL WITH CONVEX SURFACE
Louis Seaman, Los Angeles, Calif., assignor to Faye Spoth, Lubbock County, Tex.
Filed Mar. 3, 1969, Ser. No. 803,599
Int. Cl. A63b *23/06*
U.S. Cl. 272—69 **4 Claims**



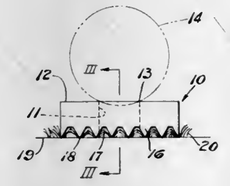
An exercise treadmill with an endless belt disposed on rollers to present a walking surface in an inclined plane, the belt having an inwardly projecting ridge at its longitudinal center line; which ridge provides an upwardly convex walking surface between the upstream and downstream ends of said treadmill, and also retains the endless belt in longitudinal alignment by virtue of annular aligning grooves in the rollers located at the upstream and downstream ends of the walking surface.

3,554,542
BODY MANIPULATED LOOP DEVICE
Samuel Span, Teaneck, and Walter Thum, Fair Lawn, N.J. (both of 93 Bellmont Ave., Paterson, N.J. 07522)
Filed May 8, 1968, Ser. No. 727,756
Int. Cl. A63f *9/00*
U.S. Cl. 273—1 **5 Claims**



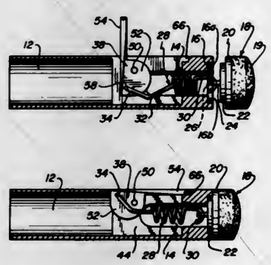
A game to be played by two persons facing each other joined by a loop device around their waists. The loop device threads through a spherical member and loosely supports a ring having a center hole larger than the diameter of the spherical member.

3,554,543
GOLF TEE OF SYNTHETIC FOAM
Arnold E. DiLaura, 410 Parker Ave., Buffalo, N.Y. 14216
Filed Oct. 12, 1966, Ser. No. 586,114
Int. Cl. A63b *57/00*
U.S. Cl. 273—33 **9 Claims**



A golf ball supporting tee formed from a synthetic foam disc adapted to lie on the surface of the ground, having an upper surface and a lower surface, the upper surface having a golf ball supporting seat and the lower surface having a plurality of downwardly extending projections. The tee is provided with a centrally located aperture extending from the ball supporting seat, at the upper surface to the lower surface. The disc may be cut along a chord to form a cordwise edge whereby a golf ball placed on the tee has a side portion overhanging the edge of the tee.

3,554,544
CAM ACTUATED REPLACEABLE CUE STICK TIP ASSEMBLY
Paul Wodarczyk, 5605 S. Merrimac, Chicago, Ill. 60638
Filed Jan. 27, 1969, Ser. No. 794,131
Int. Cl. A63d *15/12*
U.S. Cl. 273—70 **2 Claims**



A tip construction assembly for cue sticks in which one part is mounted to the modified end of a cue stick and a detachable part includes a cue tip on a member which is detached and attached to the mounted member by an improved cam lever and spring combination, said detachable part further having means to form an interlock with the front end of the mounted part against rotational movement.

3,554,545
BASEBALL BAT WITH A DOG LEG TYPE HANDLE
Kenneth M. Mann, 378 Mangles Ave., San Francisco, Calif. 94127 and Willis C. Allen, 1525 Sunnyslope Ave., Belmont, Calif. 94002
Filed July 2, 1969, Ser. No. 838,411
Int. Cl. A63b *59/06*
U.S. Cl. 273—72 **6 Claims**



A baseball bat characterized by an improved handle section which facilitates swinging of the bat during use to improve the batter's hitting power and effectiveness. The handle section is formed with a dog leg configuration which imparts a laterally offset contour thereto relative to the bat longitudinal axis. The handle section is generally symmetrical in transverse cross section and preferably is circular in cross section throughout its length to facilitate gripping thereof.

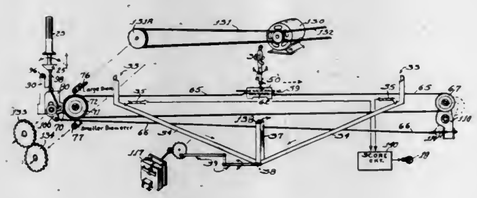
3,554,546
SPRING WHIP
Harold N. Brauhut, c/o Honey Toy Industries Inc. 200 Fifth Ave., New York, N.Y. 10010
Filed Sept. 6, 1968, Ser. No. 757,842
Int. Cl. A63b *59/00;* **B68b** *11/00*
U.S. Cl. 273—84 **4 Claims**



As a defensive weapon, a spring whip formed of interconnected lengths of springs wherein the selected diameters of

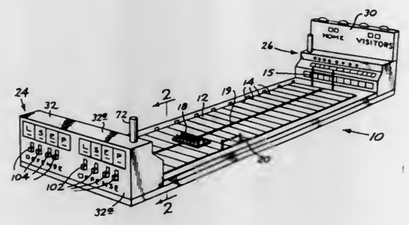
the springs provide a compact, telescoped arrangement which contributes to the convenience of carrying the device and the conventional spring construction which consists of a succession of helical turns permits interconnecting the spring lengths in their extending operative positions by merely providing variations in the diameters of cooperating helical turns that produce wedging engagement between adjacent spring lengths.

3,554,547
AMUSEMENT GAME APPARATUS
Leonard I. Vedeen, Chicago; Joseph E. Lally, McHenry; Herman L. Seiden, and Freida B. Administrator Seiden, Skokie, Ill., assignors to Bally Manufacturing Corporation, a corporation of Delaware
Filed Dec. 22, 1967, Ser. No. 693,055
Int. Cl. A63f 7/06
U.S. Cl. 273—85 **19 Claims**



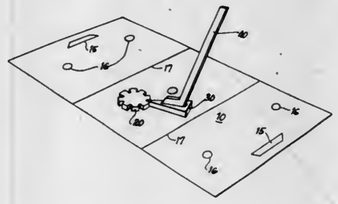
In simulated amusement game apparatus, e.g. a football game, a manual control module having three degrees of motion is selectively operative by mechanical or electrical means to actuate a pulley cord system to cause a manikin playing piece to travel in different directions and at different speeds over a playing field composed of guide tracks having an especial cross-sectional structure, the said module also being operative to cause the playing piece to move in situ to strike a ball or the like independently of the travelling movements thereof. Supplements to the subject: manikin figures are carried by a novel shuttle structure including a slide reciprocable to rotate a cam table, the slide being actuated by causing an effective elongation of the drive cable which travels the shuttle, such elongation being wholly independent of any travel motion of the shuttle and any power means utilized in connection therewith.

3,554,548
FOOTBALL GAME
Dallas W. Isom, 1265 NW. 97th Ave., Portland, Oreg. 97229
Filed June 5, 1968, Ser. No. 734,684
Int. Cl. A63f 7/06
U.S. Cl. 273—94 **10 Claims**



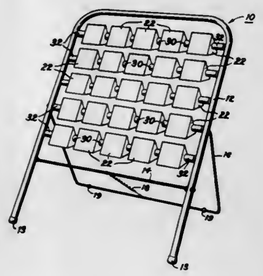
A simulated football game including a football playing field, a ball position marker, and a pair of player stations located at opposite extremities of the field for supplying information dictating movement of the ball marker on the field. Each player station has a set of offensive type play selectors and a set of defensive type play selectors, both concealed from an opposing player's view. Each station also includes a chance-controlled device having multiple play instructions thereon for randomly arriving at a play instruction for an offensive or defensive type play selected by the player. The position of the marker is determined by integrating instructions displayed by both chance-controlled devices.

3,554,549
GAME WITH MAGNETIC PROJECTOR AND PROJECTILE
Thaddeus Grabowski, 5132 W. 10th St., Oak Lawn, Ill. 60453
Filed Nov. 6, 1968, Ser. No. 773,783
Int. Cl. A63f 7/06
U.S. Cl. 273—94 **8 Claims**



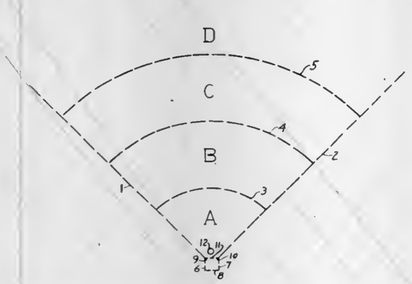
A game having a magnetic scoring object for movement on a playing surface by manual manipulation of a plurality of pieces, representing opposed teams. Attraction and repulsion between the pieces magnetic tips and areas of alternate polarity on the object determines control. The magnetic tips and areas are bar magnets with N–S axes vertically disposed, so relative polarity is readily changed by flipping of the pieces, which are manipulated by individual stick members to transport and impel, or to block and intercept, the object, respectively, in a manner simulating sports action of either hockey, soccer, football, basketball, or the like.

3,554,550
BEAN BAG TOSS TARGET GAME
Douglas J. Schram, 29,557 Van Laan, Warren, Mich. 48092
Filed May 14, 1968, Ser. No. 728,934
Int. Cl. A63b 63/00
U.S. Cl. 273—95 **2 Claims**



A bean bag toss target game is disclosed comprising, in combination, bean bags, a freestanding frame, and hollow equilateral triangular prism target pieces supported for individual 360° bidirectional rotation on same frame; the frame supports the target pieces in equally spaced parallel rows each having the same number of target pieces therein; the frame and the target pieces are constructed in relation to the bean bags so that the bean bags are capable of passing completely through the frame from one side to the other thereof when tossed at the target pieces and so that no bean bag can pass through the frame without causing rotation of a target piece on the frame; each target piece when struck by a bean bag passing through said frame is rotatable between three target positions to present to view of the user of the game any one of three target faces but only one thereof at any one time, whereby scoring is effected by observing when corresponding target faces first fill any parallel or diagonal row from rotation of target pieces caused by bean bags tossed thereat passing through said frame.

3,554,551
BALL FIELD AND PLAYING APPARATUS
Sylvester K. Apiki, 2226 Tantalus Drive, Honolulu, Hawaii 96813
Filed Apr. 14, 1969, Ser. No. 815,619
Int. Cl. A63b 67/00
U.S. Cl. 273—95 **5 Claims**



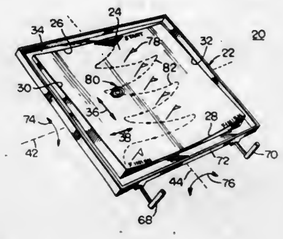
A playing field with a substantially flat surface having an angular form bounded by side lines which taper inwardly to form a corner portion, the corner portion having a batter's position and a wicket structure. A bird and bat are placed at the batter's position, the bird comprising a spoollike element and having a space beneath a central portion to accommodate a prong portion extending from an end of the bat so that a batter can engage the bird and toss it in the air and strike it for a play position on the field.

3,554,552
FRANGIBLE ARTICLE COMPOSED OF POLYSTYRENE AND POLYETHYLENE WAXES
Thomas E. Nixon, John A. Barber, and Floyd B. Nagle, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Mar. 8, 1968, Ser. No. 711,509
Int. Cl. F41j 9/16; C08c 11/70; C08f 45/52
U.S. Cl. 273—105.4 **8 Claims**

The invention comprises fragible molded articles composed of compositions of polystyrene and polyethylene waxes, together with a lubricant or mold release agent, which articles are useful as targets in the practice of skeet shooting.

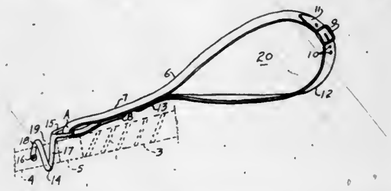
3,554,553
TILTING GAME BOARD WITH FRUSTO-CONICAL ROLLING MEMBER
Kikuo Hayashi, 2119-1/2 Hoagland Ave., Fort Wayne, Ind. 46804
Filed Apr. 30, 1968, Ser. No. 725,278
Int. Cl. A63b 67/14
U.S. Cl. 273—110 **12 Claims**

A game apparatus including a game board which has an extended area, upwardly facing playing surface, the playing surface in cross section being substantially straight in one direction and convexly curved in a second direction which is transverse to the first direction. A supporting structure is provided for supporting the game board upon a supporting surface for compound tilting movement of the playing surface so that manipulation of the game board will cause a playing member to move on the playing surface in a desired path. In one embodiment, the board is supported for tilting movement of the playing surface in all directions. In another embodiment the board is supported for tilting movement about two axes respectively parallel with the first and second directions of the playing surface. The apparatus further includes a playing member which rolls upon the playing surface, the playing member having a rolling surface defining a frustum of a cone. In a preferred embodiment, the playing



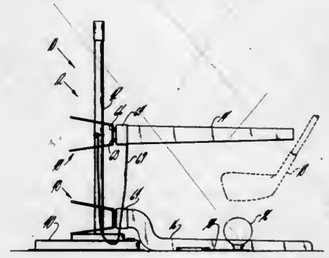
member comprises a pair of spaced-apart, coaxially mounted discs, one larger than the other, the outer peripheral edges of the discs mutually defining the frustum. An indicator member is provided rotatably supported between the discs and projecting radially outwardly beyond the frustum, the indicator member having means for maintaining the same in an upright position.

3,554,554
POWER HAND GRIP FOR GOLF CLUBS, ETC.
Howard Y. F. Zane, 1634 Kamole St., Honolulu, Hawaii 96821
Filed Feb. 26, 1969, Ser. No. 802,472
Int. Cl. A63b 53/14
U.S. Cl. 273—165 **3 Claims**



The invention involves a sling for the handle portion of a golf club and is effective in enabling a player to be more secure in swinging the club.

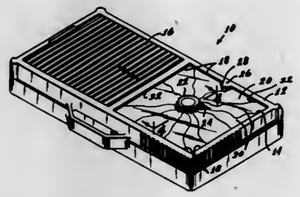
3,554,555
GOLF TRAINING DEVICE
Frank D. Macri, 27 Button St., Meriden, Conn. 06450
Filed May 2, 1968, Ser. No. 726,004
Int. Cl. A63b 69/36
U.S. Cl. 273—186 **12 Claims**



A stanchion carries a pair of vertically spaced and outwardly extending arms of cellular plastic material arranged to

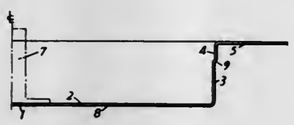
permit the head portion of a golf club to pass between the free ends thereof when the club is swung through a generally desired arc relative to a ball position. The arms are vertically adjustable and releasably coupled to the stanchion so that either and both arms may separate therefrom if struck by any portion of the club.

3,554,556
TALKING LEARNING PUZZLE
Ralph H. Stewart, Los Angeles, Calif., assignor to Mattel, Inc., Hawthorne, Calif., a corporation of Delaware
Filed Mar. 5, 1969, Ser. No. 804,490
Int. Cl. G11b *25/04*
U.S. Cl. 274—1 **17 Claims**



A teaching device having a phonograph record containing a plurality of sound tracks in interleaved grooves selectively playable in response to a rotatable and depressable dial, the dial coacting with locking means preventing depression of the dial, the housing having means for receiving a selected puzzle having an indexing portion for aligning the puzzle with respect to the housing and a detent for receiving a portion of the dial, the puzzle disengaging the locking means allowing the depression of the dial so that the portion thereof engages the detent whereby the sound track corresponding to the selected puzzle is reproduced.

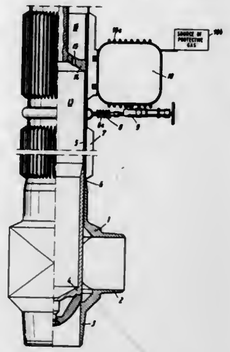
3,554,557
GRAMOPHONE TURNTABLES
Henry James Fortune, Ilford, England, assignor to The Plessey Company Limited, Ilford, England, a British company
Filed Nov. 22, 1968, Ser. No. 778,080
Claims priority, application England, July 12, 1968, 33508/68
Int. Cl. G11b *3/60*
U.S. Cl. 274—39 **4 Claims**



A rigid large-diameter gramophone turntable having a standard driving rim is made by drawing a sheet of metal to form a flat circular inner portion from which extends an outwardly stepped vertical wall joined by an annular outer flat portion, then cutting the wall along the step, turning over the outer portion and fitting its vertical wall portion tightly over that of the inner portion until the two flat portions are flush.

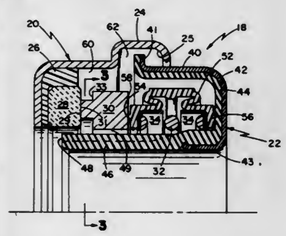
3,554,558
SEALED JOINT
Gundolf Rajakovics, Kapfenberg, Austria, assignor to Gebr. Bohler & Co. Aktiengesellschaft, Vienna, Austria
Filed May 24, 1968, Ser. No. 731,750
Int. Cl. F16j *15/00, 15/40*
U.S. Cl. 277—18 **17 Claims**

A movable machine element extends through a housing and defines a gap therewith. A supply line communicates with the gap at an intermediate point of the length thereof and is adapted to supply liquid sealing fluid to the gap. Cool-



ing means are provided to cool the sealing fluid in the gap below its solidification point on both sides of the intermediate point.

3,554,559
SEAL
John Charles Dahlheimer, Laconia, N.H., assignor to International Packings Corporation, Bristol, N.H., a corporation of New Hampshire.
Filed Oct. 25, 1968, Ser. No. 770,758
Int. Cl. F16k *41/00;* **F16j** *9/00*
U.S. Cl. 277—37 **1 Claim**

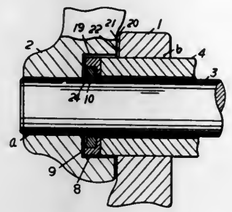


A unitized face seal for fluid sealing between a rotatable shaft and a radially disposed housing surface through which the shaft extends. Axially directed sealing surfaces are biased into sealing contact by a spring isolated from the fluid sealed by a flexible bellows. Internal components of the seal are enclosed and protected from contaminants prior to seal installation and from abrasive impingement during seal operation by an annular shroud integral with the rotating portion of the seal.

3,554,560
SEALING DEVICE SERVING CONCURRENTLY AS A THRUST BEARING DEVICE FOR A HINGE JOINT OF ENDLESS TRACK LINKS
Hideo Miyake, Moriguchi-shi, Japan, assignor to Kabushiki Kaisha Komatsu Seisakusho (Komatsu Mfg. Co. Ltd.), Tokyo, Japan
Filed June 11, 1969, Ser. No. 832,340
Claims priority, application Japan, June 26, 1969, 43/53713
Int. Cl. F16j *15/38*
U.S. Cl. 277—92 **4 Claims**

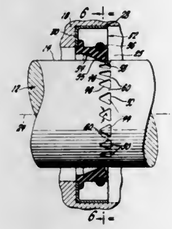
A sealing device serving concurrently as a thrust bearing device for a hinge joint of endless track links comprising an annular wave shaped spring, a metal ring and an annular resilient member. The annular wave-shaped spring so made of hard steel and fitted in an annular recess formed in one pair of links. The metal ring is substantially L-shaped in section and also fitted in said annular recess. The metal ring is caused by said wave-shaped spring to press against one end

of a bushing which is secured to another pair of links adjacent said one pair of links for pivotal connection therewith. The annular resilient member is mounted between an offset portion of said metal ring and a pin firmly secured to said one pair of links and has dimensions slightly larger than the



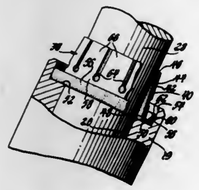
clearance between said offset portion of said metal ring. Said pin, said annular wave-shaped spring, said metal ring and said annular resilient member form a unit and are mounted in said annular recess between said pairs of links pivotally connected to each other.

3,554,561
UNIDIRECTIONAL PUMPING SEAL
Louis H. Weinand, Warren, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Sept. 6, 1966, Ser. No. 577,236, now Patent No. 3,515,395. Divided and this application June 10, 1969, Ser. No. 871,237
Int. Cl. F16j *15/32, 15/02*
U.S. Cl. 277—134 **3 Claims**



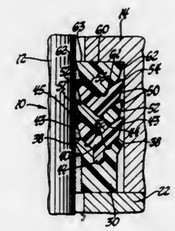
A sealing arrangement wherein an elastomeric member sealingly engages the surface of a bidirectionally rotatable shaft which has a plurality of V-shaped grooves formed therein. The sealing member coacts with the grooves under dynamic operation to generate hydrodynamic forces for sealing a fluid located to one side of the sealing member irrespective of the direction of shaft rotation.

3,554,562
VALVE STEM SEAL ASSEMBLY
Carlisle R. Davis, Jr., Grand Blanc, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 21, 1967, Ser. No. 647,674
Int. Cl. F16j *9/06*
U.S. Cl. 277—149 **1 Claim**



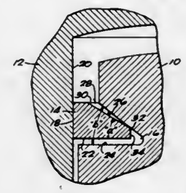
A valve stem seal assembly formed from a thin sheet of wear resistant filled Teflon assembled with a sheet metal retainer to provide an extended lip urged to sealing engagement with the valve stem by resilient fingers of the retainer and having means to seal against and retain the assembly on the valve guide. One embodiment is installed on the valve guide in a partially formed state and the final configuration of the lip and resilient fingers is formed after assembly to correct for eccentricity of the valve guide and the seal mounting.

3,554,563
HYDRAULIC SEAL
Roger R. Schumacher, and William Olson, Birmingham, Mich., assignors to Dyanmic Seals, Incorporated, Roseville, Mich., a corporation of Michigan
Filed Oct. 10, 1968, Ser. No. 766,575
Int. Cl. F16j *15/00*
U.S. Cl. 277—124 **16 Claims**



An annular hydraulic seal assembly including a base seal of polyurethane having a cross section with a planar bottom, a groove in the top and a sealing lip on either side of the groove. A loading seal has a projection extending downwardly for disposition in the groove of the base seal and has a V-shaped groove in the top thereof which terminates in a sealing lip on either side thereof. There is included a plurality of intermediate seals each having a generally V-shaped groove in the top thereof and a V-shaped bottom for coacting with one another and with one of the intermediate seals having its V-shaped bottom in the V-shaped groove of the loading seal. A terminal member having a V-shaped bottom and a flat planar top is included for engaging the topmost intermediate seal. The loading seal, intermediate seals, and terminal member are preferably made of an elastomer material filled or reinforced with a fabric. The polyurethane base seal is harder than the loading seal, intermediate seals, and terminal member.

3,554,564
PRESSURE BACKED PISTON RINGS
George G. Lassanske, Oconomowoc, Wis., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed June 12, 1968, Ser. No. 736,513
Int. Cl. F02f *5/00;* **F16j** *9/00*
U.S. Cl. 277—170 **3 Claims**



Disclosed herein is a piston ring and piston groove assembly which includes a wedge shaped piston ring positioned within a groove in a piston with the included angle between the top and bottom surfaces of the piston ring being less than the included angle between the top land and bottom land of the groove.

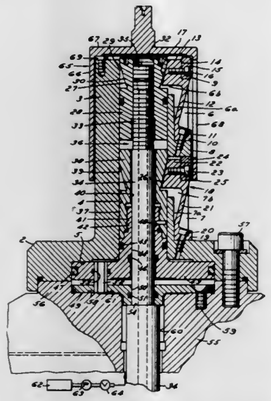
ERRATUM

For Class 279—4 see:
Patent No. 3,554,565

3,554,565
CHUCK CONSTRUCTION

Robert W. Cashman, Saginaw, Mich., assignor to Saginaw Machine and Tool Company, Saginaw, Mich., a corporation of Michigan

Filed Feb. 9, 1968, Ser. No. 704,280
Int. Cl. B23b *31/40, 31/30*
U.S. Cl. 279—4 11 Claims

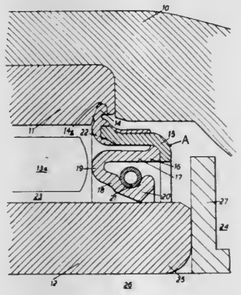


A chuck construction having a rotatable head on which is mounted a plurality of sets of axially spaced, radially expansible and contractile jaws and axially reciprocable, cam operating means for effecting radial movement of each set of jaws independently of one another.

3,554,566
SEAL ASSEMBLY FOR RELATIVELY ROTATABLE MEMBERS

Hans Bechthold and Hans-Jürgen Stössel, Russelsheim (Main), Germany, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed July 16, 1969, Ser. No. 842,128
Claims priority, application Germany, July 26, 1968, 1,995,813
Int. Cl. F16j *15/32*
U.S. Cl. 277—153 2 Claims

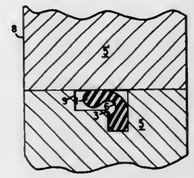


A seal assembly for a pair of relatively rotatable members, in which one member includes an annular elastomeric seal element which is folded in accordion fashion to provide at least two diaphragm portions located radially one within the other. An annular sealing lip carried by one of the diaphragm portions is resiliently biased into sealing engagement with the surface to be sealed of the other member.

3,554,567
FLUID SEAL

Alexander A. Carroll, Greensburg, and Leonard P. Damratowski, Monroeville, Pa., assignors to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware

Filed Mar. 16, 1966, Ser. No. 534,692
Int. Cl. F16j *15/12*
U.S. Cl. 277—164 2 Claims

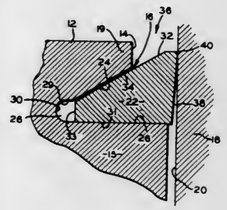


A high pressure seal having a cross section of generally arcuate shape with a narrowed central section. The seal is adapted for deformation in the narrowed central section by the structure to be sealed to deflect the top portion of the seal toward the high pressure side of the structure so that fluid pressure acting against the seal wedges the seal against the surfaces of the structure employing the seal.

3,554,568
PISTON AND PISTON RING COMBINATION

Robert W. Heid, Jr., Richmond, Ind., assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia

Filed Aug. 19, 1968, Ser. No. 753,370
Int. Cl. F02f *5/00*; F16j *9/00*
U.S. Cl. 277—170 3 Claims



Disclosed herein is the combination of a wedge-shaped, pressure-backed piston ring and piston, with the ring located closely adjacent the upper end of the piston. The top land of the piston is relieved to allow the combustion gases to exert positive downward and outward pressure on the ring.

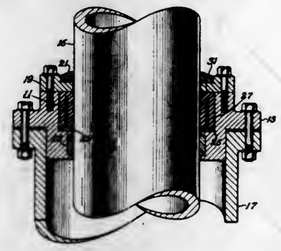
3,554,569
DYNAMIC PRESSURE SEAL DEVICES

Gerald W. Gorman, Rte. 2, Midlothian, Tex. 76065

Continuation of application Ser. No. 614,710, Feb. 8, 1967. This application Aug. 4, 1969, Ser. No. 849,580
Int. Cl. F16j *15/32*
U.S. Cl. 277—205 6 Claims

Seal devices of generally annular form having inner and outer sides each carrying one or more sealing lips, a closed end face, and an open end face, the openings

of which are entries to cavities which are separated by ribs that are symmetrically disposed about the seal device central axis. In some embodiments, the total area of the cavity inner and outer sidewalls is specially related to

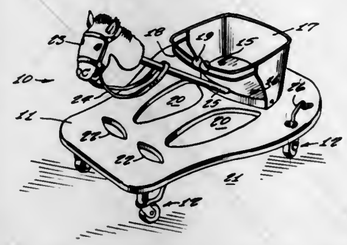


the total area of the open end face to establish a "controlled counterpressure" condition. In a preferred embodiment, the ribs are slanted to achieve an internal spring action.

3,554,570
COMBINATION BABY WALKER

Robert M. Dawson, 2109 W. 17th, Pueblo, Colo. 81003

Filed Oct. 3, 1968, Ser. No. 765,747
Int. Cl. B62b *7/14*
U.S. Cl. 280—7.1 1 Claim

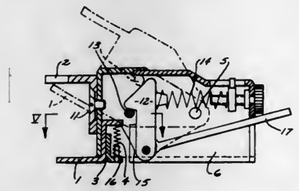


A baby walker which is adaptable for other uses after a baby has outgrown its use as a walker, the device including a removable seat and a horse head whereby the device then comprises a platform upon rollers and which can be used as a skate board or other vehicle for use by a growing child.

3,554,571
SKI BINDING

Thomas G. Smolka, Vienna-Mauer, and Walter Schwarz, Strasshof, Austria, assignors to Wiener Metallwarenfabrik Smolka & Company, Vienna-Schwechat, Austria

Filed Nov. 14, 1968, Ser. No. 775,694
Claims priority, application Austria, Nov. 21, 1967, A 10,513/67
Int. Cl. A63c *9/084*
U.S. Cl. 280—11.35 5 Claims

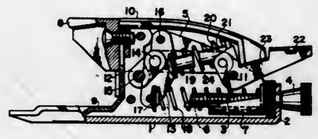


A ski binding having a clamp member for projecting over and engaging the top of the sole of a shoe and a projection for extending under and engaging the underside of the sole of a shoe. Means are also provided for supporting the projection and the clamp for movement relative to one another with releasable locking means for releasably locking the projection and the clamp member together.

3,554,572
SAFETY SKI HEEL BINDING

Tokuyasu Hashioka, Tokyo, Japan, assignor to Hope Kabushiki Kaisha, Tokyo, Japan, a corporate body of Japan

Filed Dec. 3, 1968, Ser. No. 780,861
Claims priority, application Japan, Dec. 11, 1967, 42/79,625
Int. Cl. A63c *9/084*
U.S. Cl. 280—11.35 3 Claims

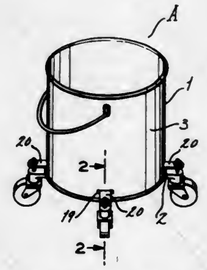


A cableless safety ski heel binding is provided. The binding includes two springs, one arranged in the horizontal direction and the other arranged inclined forwardly relative to the ski. The stresses of the respective springs are adjusted proportionally and simultaneously by a single screw adjusting means by the medium of a toggle linkage.

3,554,573
LATCH FOR SECURING A RECEPTACLE TO A SUPPORT FRAME

Lester Miller, St. Louis, Mo., assignor to Contico International, Inc., St. Louis, Mo., a corporation of Missouri

Filed Mar. 11, 1969, Ser. No. 806,246
Int. Cl. B62b *3/04*
U.S. Cl. 280—79.2 3 Claims



An elongated latch arm for extension into a keeper-defining opening provided in the depending flange or skirt of a receptacle, and means for engaging the outer end of the latch arm upon a support frame such as a mobile spider for maintaining against unauthorized displacement.

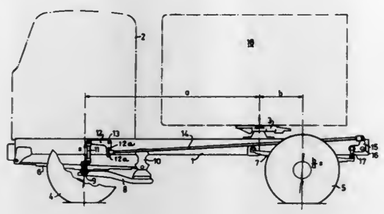
3,554,574
ARRANGEMENT IN THE SUSPENSION SYSTEM OF TRACTION VEHICLES FOR SEMITRAILERS

Carl Ingvar Andreas Bergstrom, Frolunda, Sweden, assignor to Aktiebolaget Volvo, a body corporate of Sweden

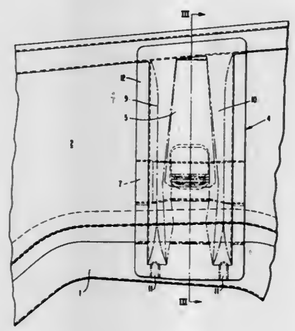
Filed Oct. 1, 1968, Ser. No. 764,056
Claims priority, application Sweden, Oct. 17, 1967, 14,206/67
Int. Cl. B60g *19/02*
U.S. Cl. 280—104 2 Claims

A suspension system for a traction vehicle of semitrailers, said traction vehicle being provided with a turntable for taking up the load from the trailer, the front

axle and the springs of the rear axle being interconnected by means of coupling means for transmitting vertical movements of the front wheel to the rear wheel in the opposite direction, said coupling means being such that the movements of the wheels are proportional to the distance of the turntable from the respective axles.



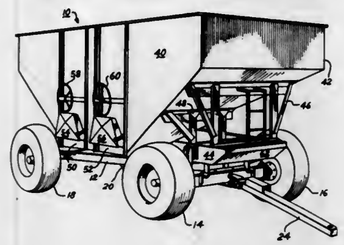
3,554,575
WHEEL MOUNTING FOR MOTOR VEHICLES, ESPECIALLY FOR THE FRONT WHEELS OF PASSENGER MOTOR VEHICLES
Franz Deckert, Sindelfingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Nov. 8, 1968, Ser. No. 774,436
Claims priority, application Germany, Nov. 11, 1967, 1,630,384
Int. Cl. B62d *21/00*
U.S. Cl. 280—106 **14 Claims**



A wheel mounting for motor vehicles, especially for the front wheels of passenger motor vehicles which includes a longitudinal bearer and a wheel-casing sheet metal panel laterally adjoining the longitudinal bearer; a bracket is provided for the purpose of mounting the upper end of a shock absorber which extends nearly over the entire height of the wheel-casing panel and which is secured at the longitudinal bearer and at the wheel-casing panel.

3,554,576
VEHICLE UNDERCARRIAGE
Shirley L. Parker, Warsaw, Ind., assignor to Parker Industries, Inc., Silverlake, Ind., a corporation of Indiana
Filed Feb. 18, 1969, Ser. No. 800,060
Int. Cl. B60g *9/02*
U.S. Cl. 280—112 **10 Claims**

A front axle assembly for a wagon type vehicle in which the front axle is pivotably connected at its center to a bolster and a stabilizing device interconnects the axle and bolster on the lateral sides of the interconnecting pivot. The stabilizing means includes a downwardly extending part on the fixture of the bolster and an upwardly extending part on the fixture on the axle and a resilient element of elastomeric material is disposed between and connected to the two parts.

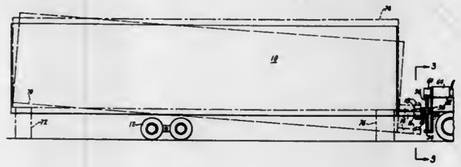


3,554,577
SAFETY BELT SYSTEM
John R. Hane, P.O. Box 444, Shalimar, Fla. 32579
Filed Jan. 19, 1970, Ser. No. 3,906
Int. Cl. B60r *21/10*
U.S. Cl. 280—150 **10 Claims**



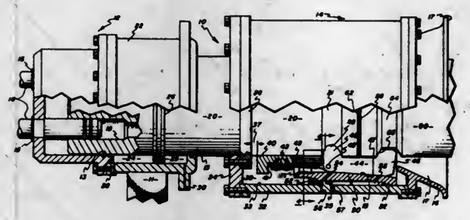
A safety belt system for vehicles wherein an over-the-shoulder belt is attached at its upper end to a semi-circular track mounted on the roof of the vehicle whereby the belt can be moved in and out of its operative position quickly and easily.

3,554,578
ADJUSTABLE TRAILER HITCH
Rowland H. Reed, 1505 Rock Rose Road, West Sacramento, Calif. 95691
Filed Nov. 12, 1968, Ser. No. 774,867
Int. Cl. B60d *1/06*
U.S. Cl. 280—490 **1 Claim**



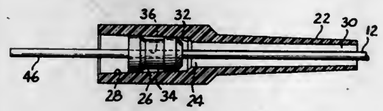
The two elements of a trailer hitch are connected respectively to the forward end of a trailer and to the rear end of a truck or other towing vehicle, the latter element being vertically movable by power to effect the tilting of the trailer when desired.

3,554,579
FLOWLINE CONNECTOR
Walter Brown, Long Beach, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware
Filed June 27, 1969, Ser. No. 837,083
Int. Cl. F16l *35/00, 55/00*
U.S. Cl. 285—18 **8 Claims**



A remotely operable flowline connector comprises a plurality of latch-type elements, each element having at one end a rounded lobe and at the other end a latching finger. Within the connector body the elements are swivelly retained by an equal number of spring members which axially extend from a slidable ring. The spring members bias the lobe end of the latch members in a groove in the connector body. A hydraulically operable piston engages a lip on the ring member to positively bias or rock the latch members radially outwardly in an unlatched position which accepts the "stinger" or pipe end while in the reverse position, the inner walls of the piston engage the outer surface of the latch members thus locking them in a groove in the flowline pipe.

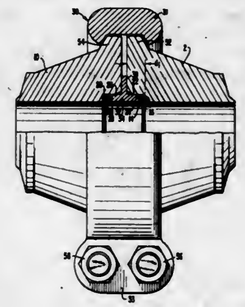
3,554,580
CATHETER ADAPTER AND PROCESS AND ASSEMBLY FOR ITS SECURANCE
Leonard F. Goyke, Chicago, and Craig L. Bottorff, Evanston, Ill., assignors to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware
Filed Dec. 2, 1968, Ser. No. 780,530
Int. Cl. F16l *31/00*
U.S. Cl. 285—260 **7 Claims**



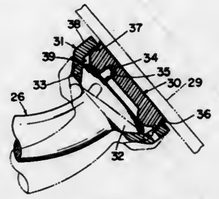
An elastic bushing disposed within an adapter has: (1) a tensioned condition to enable its assembly with, and longitudinal adjustment relative to, a tube for selectively adjusting catheter length, and (2) a normal condition for its securance in an adjusted position longitudinally of said tube.

3,554,581
SEAL ASSEMBLY IN A CONDUIT CONNECTION
John F. Mason, Bruce J. Frazier, and Norman L. Freeman, Jr., Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
Filed May 23, 1968, Ser. No. 731,424
Int. Cl. F16l *21/06*
U.S. Cl. 285—367 **9 Claims**

A seal assembly for a conduit connection including a first and a second conduit part, each having an axially extending flow passage and an end surface radially intersecting the flow passage. Each of the conduit parts includes an internal sealing cavity adjacent the end surface and radially off-set from the flow passage. A composite sealing ring is interposed between the conduit parts and extends into the two sealing cavities. The composite sealing ring includes a central rim portion from which extend two generally axially disposed lip portions projecting oppositely outwardly into the conduit sealing cavities. An elastomeric sealing member extends peripherally about each of the lip portions and into conforming engagement with the internal sealing surfaces of the conduit parts. The composite sealing ring also includes two generally axially disposed flexible sealing flanges extending oppositely outwardly from the central rim at a position radially outwardly from the lip portions. A portion of each of the elastomeric sealing members engages each of the flexible sealing flanges. A clamping assembly is positioned about the conduit parts to draw them together and force the elastomeric sealing members to redistribute their volume and conformingly engage the internal condit sealing surfaces. The clamping assembly is also operative to draw the conduit parts further together and cause the portions of the elastomeric members which engage the flexible sealing flanges to redistribute their volume and force the flexible flanges radially outwardly into sealing engagement with the internal conduit sealing surfaces.



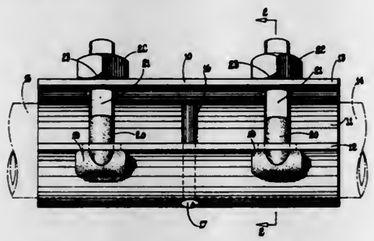
3,554,582
SAFETY FITTING ATTACHMENT ASSEMBLY EMBODYING COMPONENTS WITH DISTORTABLE THREAD MEANS
Makoto Yamashita, Isehara-machi, Kanagawa-ken, and Masagoro, Kushida, Tokyo, Japan, assignors to Kabushiki Kaisha Ichikawa Seisakusho, Tokyo, Japan
Original application Feb. 26, 1968, Ser. No. 708,315, now Patent No. 3,507,562, dated Apr. 21, 1970. Divided and this application Jan. 21, 1969, Ser. No. 839,097
Claims priority, application Japan, Feb. 28, 1967, 42/16,699; Mar. 10, 1967, 42/19,695
Int. Cl. F16b *29/00*; B60r *1/04*
U.S. Cl. 287—20.5 **3 Claims**



An improved safety fitting attachment assembly for detachably mounting various fittings, such as rear view mirrors in automobiles, which fitting assembly is capable of absorbing impacts and permitting the fitting to become disloded or separated from its mounting or support when subjected to relatively intense impacts of a predetermined stress value. This is achieved by providing a male-threaded

relatively flat cylindrical base for attachment, as by a suitable adhesive to a support surface, and further providing an annular complementally threaded collar which fits over and complementally cooperates with a base flange portion of a fitting or mounting stay member to hold the stay onto the mounted cylindrical base. The complemental threaded portions being of a relative size and character with at least one of them being fabricated of a plastic material to permit a nonrotative generally axial or oblique separation thereof responsive to an application of a predetermined force thereagainst, as a safety precaution to preclude injury as by personal engagement against an otherwise normally or relatively immovable object. The cylindrical base and flange of the mounting stay may have complemental interengaging means to positively orient and preclude relative rotative movement of the base and flange when held in fully assembled condition by said collar; and may further include complemental cooperating means such as straight knurled portions on the flange of the mounting stay and on a portion of said collar to effect a locking action to preclude inadvertant unscrewing of the assembled fitting components.

3,554,583
COUPLERS FOR SCAFFOLD TUBES
Jack G. Lowe, Belbroughton, England, assignor to Burton Delingpole & Company Limited, Warley, England, a British company
Continuation-in-part of application Ser. No. 794,527, Jan. 28, 1969. This application Aug. 18, 1969, Ser. No. 850,985
Int. Cl. E04g 7/00
U.S. Cl. 287—53.5 **3 Claims**



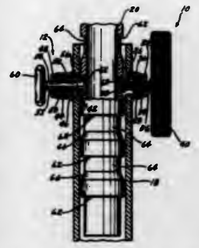
This invention relates to couplers which secure a pair of scaffold tubes in end-to-end relationship in builders scaffolding and is concerned with couplers in which part of the coupler body is locally deformed so as to apply local clamping pressure to the scaffold tube when the coupler is tightened.

3,554,584
CONNECTOR ASSEMBLIES FOR MODELS AND THE LIKE
George C. Brumlik, 154 Upper Mountain Ave., Montclair, N.J. 07042
Filed June 26, 1969, Ser. No. 836,698
Int. Cl. F16b 7/00
U.S. Cl. 287—54 **9 Claims**



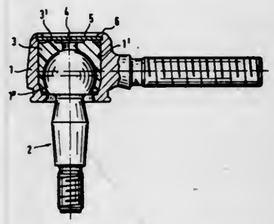
A connector assembly comprises a group of connector elements interconnected by flexible looped straps. Each connector element has an elongated portion adapted to receive and mount one end of a tubing or rod connectors constituting the body of a model or the like, the elongated portions each terminating in a generally spherical portion. The connecting straps maintain the surfaces of the cylindrical portions pressed together and the latter cause the elongated portions to orient themselves in such a manner that the elongated connectors project from a common center forming polyhedral angles with each other.

3,554,585
LOCKING DEVICE FOR GYMNASTIC APPARATUS OR THE LIKE
Bill W. Sorenson, Jefferson, Iowa, assignor to American Athletic Equipment Co., Jefferson, Iowa, a corporation of Iowa
Filed Aug. 20, 1968, Ser. No. 753,993
Int. Cl. F16b 7/14
U.S. Cl. 287—58 **3 Claims**



A locking device for gymnastic apparatus or the like adapted to selectively lock telescoping members in various positions of their slidable movement. One of the telescoping members is a hollow tubular member which slidably receives a cylindrical member having a plurality of spaced apart shoulders formed therein. The tubular member has an opening formed in its wall portion and has a bored support rigidly secured thereto which registers with the opening. A bushing is threadably secured to the bored support and has an elongated shaft movably extending therethrough, the inner end of which is adapted to engage one of the shoulders to limit the relative movement of the telescoping members. The shaft may be completely removed from the apparatus by threadably removing the bushing from the bored support.

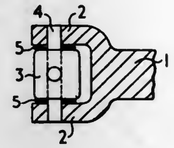
3,554,586
BALL-AND-SOCKET JOINT
Richard G. Cutler, Hollage, Germany, assignor to Messrs. Elastogran G.m.b.H., Hannover, Germany, a corporation of Germany
Filed July 8, 1969, Ser. No. 839,964
Claims priority, application Germany, July 10, 1968, 1,775,151; June 26, 1969, 1,932,520
Int. Cl. F16c 11/06
U.S. Cl. 287—87 **4 Claims**



A ball-and-socket joint with a housing for the bearing of the ball end of the ball pin, the bearing having an outer shape mating with a cylindrical-trunconical bore in

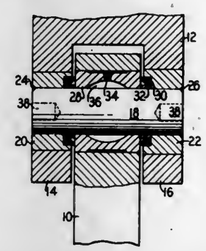
the housing and being forced into the cone portion by exerting a force onto the upper bearing face, transmitted by resilient projections of the bearing, the projections being designed to freely expand perpendicularly with respect to the force direction in order to provide sufficient pre-stress in spite of the bearing being shifted into the cone during use of the joint.

3,554,587
SEALING MEMBERS
Denis W. Baker, Coalville, and Brian R. J. Haydon, Wigston Magna, England, assignors to The Dunlop Company Limited, London, England, a British company
Filed July 24, 1968, Ser. No. 747,382
Claims priority, application Great Britain, Aug. 2, 1967, 35,403/67
Int. Cl. F16j 15/38
U.S. Cl. 287—100 **5 Claims**



An annular sealing washer having an axially projecting ridge on one side for interposition between two relatively rotatable joint members.

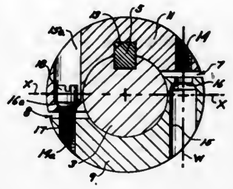
3,554,588
CARTRIDGE TYPE HINGE ASSEMBLY
Harold L. Reinsma, Dunlap, Ill., and Ronald E. Adams, Enterprise, Kans., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Sept. 4, 1969, Ser. No. 855,219
Int. Cl. F16c 11/00
U.S. Cl. 287—100 **7 Claims**



A hinge assembly for use between articulated members which is made up of preassembled relatively rotatable and permanently lubricated and sealed parts capable of being completely assembled in cartridge form for later application to their useful environment between articulated members.

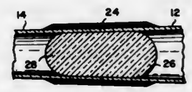
3,554,589
SHAFT ALIGNMENT COUPLING
Le Roy R. Boggs, 313 Lynwood St., Bristol, Tenn. 37620
Filed May 23, 1969, Ser. No. 827,312
Int. Cl. F16d 1/12
U.S. Cl. 287—111 **4 Claims**

A shaft alignment coupling for use with shafts having keys for establishing the angular shaft position, the coupling incorporating a coupling member common to the two end portions of the two shafts to be coupled and further including separate coupling parts for respectively receiving the two end portions of the shafts, the separate parts having keyways adapted to cooperate with shaft keys, and means for securing the separate parts of the coupling to



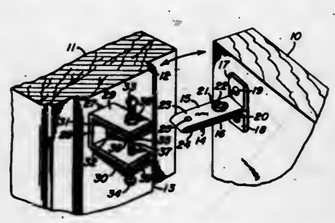
the common coupling member including means providing for adjustment of at least one of said separate coupling parts with respect to the common coupling member in a direction circumferentially of the associated shaft.

3,554,590
FERRULE FOR FISHING RODS AND THE LIKE
Jon E. Tarantino, San Francisco, Calif., assignor to The Compleat Angler, Ltd., San Francisco, Calif.
Filed Apr. 23, 1968, Ser. No. 723,548
Int. Cl. F16d 1/00
U.S. Cl. 287—127 **2 Claims**



The present invention provides a method of making a ferrule or a joint for fishing rods and the like for a fishing rod comprised of at least two sections or separate parts in which a trapezoidal shaped reinforcement is wrapped around the outside of a rod blank of tubular configuration which forms the tip section and the butt section of the fishing rod. Thereafter, the wrapped around reinforcement section and the tubular rod blank are cured at the same time and become an integral piece. The rod blank is then cut into two pieces in the center of the reinforced area around which is wrapped the reinforcement. The rod blank is made of fiberglass and the reinforcement is made of fiberglass and a solid bar of fiberglass forming a plug is inserted within the reinforced section.

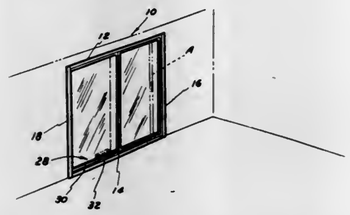
3,554,591
DOOR RESTRAINER
Oren E. Rowe, 1441 Flesher Ave., Dayton, Ohio 45240
Filed June 3, 1968, Ser. No. 734,067
Int. Cl. E05c 7/06, 19/06
U.S. Cl. 292—17 **3 Claims**



A door restraining device comprising cooperating components in the form of a tongue and a restrainer affixed

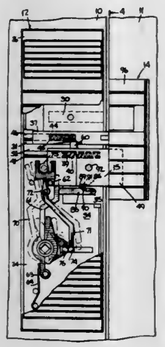
respectively to a door and to the casing therefor to hold the door in closed and apparently locked position except when extraordinary force is applied toward opening it.

3,554,592
SLIDING DOOR FASTENER
Marvin Katz, 27156 Sutherland, Southfield, Mich. 48075
Filed July 30, 1968, Ser. No. 748,830
Int. Cl. E05c *17/32*; E05d *13/04*
U.S. Cl. 292—263 **4 Claims**



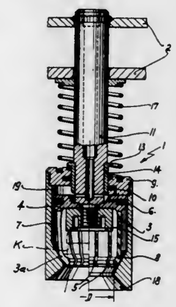
A locking device is disclosed for a sliding door structure or door wall which comprises a pair of elongated bars; one bar is hinged to the end of the other and both are engagable with the lower rail of a door wall in the path of motion of a slidable glass panel. The two bars have an overall, unfolded length which corresponds to the distance between the panel and one of the frame stiles when the panel is adjacent the other stile in its closed position, so that when engaged with the rail behind the panel they form an obstruction which prevents the panel from being opened. When the shorter of the two bars is pivoted with respect to the other bar, the panel can be partially opened to provide a limited access opening.

3,554,593
AUTOMATIC LOCKING SYSTEM
Paul Maddison Hawkins, Stillwater, Minn., assignor to General Alarm Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 16, 1968, Ser. No. 721,809
Int. Cl. E05b *63/20, 23/04*
U.S. Cl. 292—335 **14 Claims**



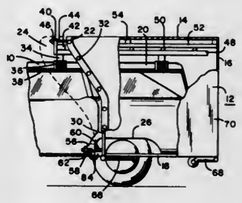
A security system for locking closure members and having a locking bolt adapted to be automatically projected to its locking position when the closure members are also in the locking position and having means for automatically deadlocking the locking bolt when it is in the locking position.

3,554,594
PNEUMATICALLY OPERATED GRIPPER FOR BOTTLE TRANSFERRING APPARATUS
Ernst Erwin Thoma, Steppach, Germany, assignor to Certus Maschinenbau GmbH, Augsburg, Germany, a corporation of Germany
Continuation-in-part of application Ser. No. 698,776, Jan. 18, 1968. This application Sept. 25, 1969, Ser. No. 861,129
Claims priority, application Austria, Sept. 30, 1968, A 9,513/68
Int. Cl. B66c *1/54*
U.S. Cl. 294—90 **10 Claims**



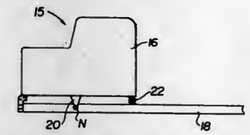
A gripper for bottles comprising a plurality of downwardly extending gripper fingers integrally secured to a base member made of resilient plastic. The base member constitutes a piston which is surrounded by a sleeve having a conical surface adjacent the lower end thereof which cooperates with the gripper fingers in such a way that upon an upward movement of the sleeve the gripper fingers are moved inwardly to grip the bottle neck while a downward movement of the sleeve will release the gripper fingers so that they will be moved outwardly due to their resiliency to release the bottle neck.

3,554,595
AUTOMOBILE-CARRIED CAMPER
Kevin M. Wolff, 13248 Lindo Lane, Lakeside, Calif. 92040
Filed Oct. 2, 1968, Ser. No. 764,400
Int. Cl. B62d *33/08*
U.S. Cl. 296—26 **7 Claims**



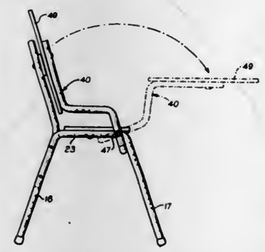
A portable camper that is attached directly to an automobile and comprises a box-like shell that slides on runners attached to the top of the automobile and that is moved from a position enclosing the rear portion of the automobile to a position wherein the open end of the shell is adjacent the rear of the automobile and which shell has floor panels that fold down forming the floor and has a fabric covering that extends from the open end of the shell to enclose the space between the sides and top of the automobile and the open end forming an enclosed camper shell.

3,554,596
CAB SUPPORT
William F. Le Fevre, Shaker Heights, Ohio, assignor to White Motor Corporation, Cleveland, Ohio, a corporation of Ohio
Continuation of application Ser. No. 512,285, Dec. 8, 1965. This application Feb. 6, 1969, Ser. No. 834,916
Int. Cl. B62d *33/06*
U.S. Cl. 296—28 **10 Claims**



A spring is interposed between a truck cab and frame. The spring rate changes the inherent frequency of cab vibration to establish ratios of frequencies of different frame vibrations to cab vibrations that fall outside specified limits. The front pivoted end of a tiltable over-engine cab is spring mounted.

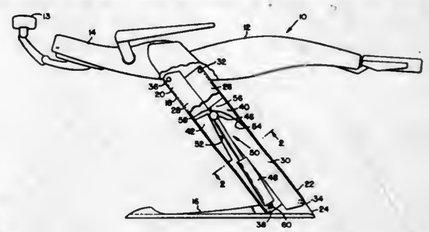
3,554,597
SELECTIVELY CONVERTIBLE CHAIR-TABLE
Herbert S. Gurbst, Kingston, Pa., assignor to Remco Industries, Inc., Harrison, N.J.
Filed Mar. 20, 1969, Ser. No. 808,945
Int. Cl. A47c *13/00*
U.S. Cl. 297—126 **5 Claims**



A chair table which can be selectively converted into a relatively high backed chair, or into a relatively low backed work chair with table attached. The chair is a four legged chair with an upstanding low back member secured thereto. The table portion is formed by a flat member mounted on an S-shaped frame, pivoted to the front of the chair, with the frame including a latch bar movable from a position adjacent the underside of the seat to a position adjacent the rear of the front legs thus permitting the flat member on the frame to be selectively positioned and held either in an extended table functioning orientation or in a position overlying the relatively low back of the chair to provide a high back facilitating use of the chair for comfort purposes.

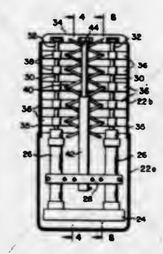
3,554,598
LOW SILHOUETTED DENTAL CHAIR OR THE LIKE
Albert Dunkin, South Norwalk, Conn., assignor to Sybron Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 22, 1968, Ser. No. 769,564
Int. Cl. A61g *15/00*
U.S. Cl. 297—330 **7 Claims**

Elevating and supporting means for dental chairs and the like in which the chair supporting pedestal is cantilevered having one end pivotally supporting the dental chair and another end pivotally supported by a base member, the supporting cantilevered pedestal being adapted to lie along and substantially parallel to the base to rest the dental chair, at its lowest position, on the base and in close proximity to the floor surface and



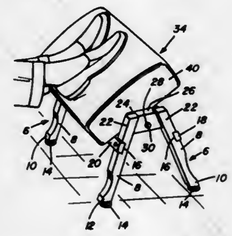
being pivoted about its supported end to raise and lower the chair.

3,554,599
LONGITUDINALLY ADJUSTABLE BACK-REST FOR DENTAL CHAIR AND THE LIKE
Helmut Richard Pietschmann, Karlsruhe, Germany, assignor to Sybron Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 30, 1968, Ser. No. 771,772
Claims priority, application Germany, Apr. 27, 1968, R 37,436
Int. Cl. A47c *7/36*
U.S. Cl. 297—353 **5 Claims**



A longitudinally adjustable back-rest for dental chairs and the like having a fixed section and a telescoping section, the telescoping section having a plurality of spaced transverse supporting members covered with upholstery, the sections moving together and apart as the sections are telescoped together and apart respectively to permit increasing or decreasing the length of the back-rest for accommodating patients of various heights.

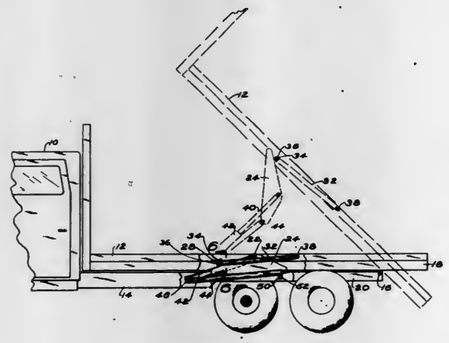
3,554,600
LEG LOUNGER
Lyle C. Hennessey, 101 Franklin, Waterloo, Iowa 50703
Filed Sept. 23, 1968, Ser. No. 761,413
Int. Cl. A47c *9/12*
U.S. Cl. 297—439 **2 Claims**



An upholsotered cushion of suitable size and shape provides an ottoman-like foot and leg lounger. It is pivotally and tiltably cradled atop a stand-supported rung.

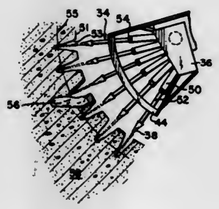
Forward and rearward tilting positions of the cushion are regulated by rigidifying limit stop rails embodied in the stand. A simple spring holds the cushion in a normal horizontal state but permits the cushion to tilt under weight and pressure to a comfortable angularly tilted position.

3,554,601
TRUCK BED HOIST WITH FOLDING LINKAGE
Richard B. Miskin, Ucon, Idaho 83454
Filed Sept. 10, 1968, Ser. No. 758,888
Int. Cl. B60p *1/20*
U.S. Cl. 298—22 **7 Claims**



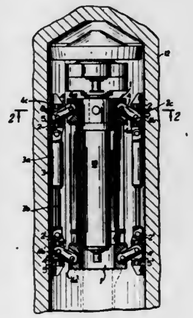
A truck bed hoist apparatus with folding linkage means including hydraulic ram means operatively connected to truss means with the truss means being operatively connected to holding bar means and push rod means with the holding bar means operatively connected to a truck chassis and the ram means also connected to the truck chassis with the truck bed hoist means providing a folding linkage when not in use, and with the truck bed hoist means provided with means to selectively connect it to different portions of the truck bed and chassis, so as to permit the hoist to be used for raising heavy loads and raising light loads.

3,554,602
EXCAVATING METHOD AND APPARATUS
Preston E. Chaney, Dallas, Tex., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
Filed July 24, 1968, Ser. No. 747,319
Int. Cl. E21c *25/60*
U.S. Cl. 299—17 **2 Claims**



The embodiment of the invention described herein utilizes, in an earth excavating operation, fluid jets arranged to cut vertically spaced, horizontal recesses in the face of a formation being excavated. An earth excavating bucket engages the face of the formation after the recess has been cut therein.

3,554,603
DEVICE FOR ANCHORING A TUNNEL DRIVING DEVICE IN A TUNNEL SHAFT
Gerd Kampf-Emden, Hosel, and Heinz Horst and Friedrich Klapdohr, Rheinhausen, Germany, assignors to Demag Aktiengesellschaft, Duisburg, Germany
Filed Feb. 19, 1969, Ser. No. 800,482
Claims priority, application Germany, June 14, 1968, 1,759,857
Int. Cl. E21b *3/12*; E01q *3/04*
U.S. Cl. 299—31 **6 Claims**

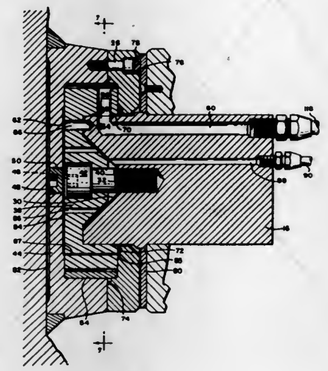


A device for clamping a driving or drilling machine in relation to a surrounding shaft or tunnel wall includes one or more claws arranged at at least two longitudinally spaced locations and connected to the drilling machine by short link elements. Each link element is provided at its one end to the drilling machine and pivoted in a universal manner to the claw at its opposite end. Two longitudinally spaced claw elements are conneted together by means of a fluid piston and cylinder connection which extends therebetween. The link connection and the fluid piston and cylinder connection to each jaw is such that when the fluid piston and cylinder applies substantially directed axial force in one direction the claws are disengaged from the wall and when it applies an axial force in an opposite direction the claws are engaged with the wall. The connection of the fluid piston and cylinder combination to each claw is at a location offset from the connection of the link member which connects the claw to the drilling machine.

3,554,604
VIBRATOR SYSTEMS AND ROCK CUTTER TYPE UTILIZATION MECHANISMS
David B. Sugden, Kingston Beach, Tasmania, Australia, assignor to James S. Robbins and Associates, Inc., Seattle, Wash., a corporation of Washington
Original application Aug. 21, 1968, Ser. No. 754,322. Divided and this application Nov. 24, 1969, Ser. No. 877,587
Int. Cl. E21c *25/16*
U.S. Cl. 299—34 **9 Claims**

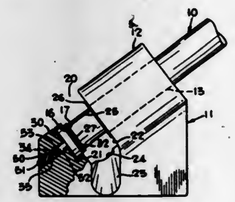
A first member includes an inner cavity containing a second member which diametrically is slightly smaller than the cavity and axially is snugly received in the cavity. One of the members is connected to a large mass backup structure and the other is free for orbiting radial shifting movement within the limits of the radial gap between the members. Radially movable seals carried by one of the members divide the gap into a plurality of

pulse chambers. A separate bidirectional flow passageway leads into each pulse chamber. Fluid pressure pulses are distributed around the gap in repetitive cyclic fashion from pulse chamber to pulse chamber. A radial piston type pulse generator divided into two axially spaced sets



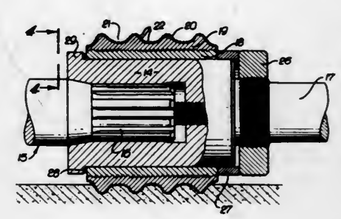
of pistons moved radially by separate rotary cams offset on opposite sides of a cam shaft. A cutting edge on such a first member, and means for moving the backup structure to advance the cutting edge into an earth formation.

3,554,605
BIT AND BLOCK ASSEMBLY
Gerald W. Elders, 10 Hillcrest, Christopher, Ill. 62822
Filed Dec. 20, 1967, Ser. No. 692,078
Int. Cl. E21c *35/18*
U.S. Cl. 299—86 **2 Claims**



The assembly includes a bit having a bearing face at the butt end and a cutting head at the other end. A base block is provided which includes a support portion having a hole receiving the shank of the bit and a bearing face which is spaced from the support portion to provide a transverse opening completely exposing the shank of the bit at the bearing end. The transverse opening facilitates access to the butt end of the bit and assists dispersal of collected debris. The bearing portion of the base block includes a replaceable pad which is removable from the transverse oepning without the necessity to withdraw the bit from the support completely. A lock ring frictionally engaging the reduced portion of the bit insures against inadvertent withdrawal of the bit from the hole in the support portion. The base block is susceptible to modification to accept a reversible type of bit. Further, the replaceable pad may be provided with a resilient plug that moves the bit longitudinally and keeps the bit free for rotation. The transverse opening may be provided by a circular hole.

3,554,606
CUTTERS FOR FORMING HIGHWAY PAINT RECEIVING GROOVES
Donald H. Mabey and Jack C. Gledhill, Salt Lake City, Utah, assignors to Christensen Diamond Products Company, Salt Lake City, Utah, a corporation of Utah
Filed Jan. 22, 1969, Ser. No. 793,054
Int. Cl. E21c *37/26*; E01c *23/16*
U.S. Cl. 299—89 **21 Claims**

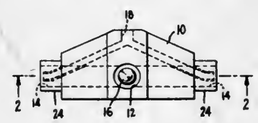


A rotatable cutter to form grooves in highways receiving reflective highway paints to indicate separation between highway lanes. The cutter has longitudinally spaced ridges normal to its aixs with convexly curved crests, tapered sides curving into elongate roots which, preferably, have intermediate cylindrical surfaces, the crest, side and root portions having diamond cutting elements embedded therein. Rotation of the cutter while moving along the highway produces grooves, valleys or troughs in the highway of a depth to rapidly collect and drain rain water and keep it off the upper portions of the reflecting sides of the trough, the highway crests between troughs having flat surfaces insuring vehicle control when its tires pass over the grooved area.

ERRATA

For Classes 301—63 and 301—108 see:
Patent Nos. 3,554,535 and 3,554,536

3,554,607
PARTICULATE MATERIAL DISTRIBUTING APPARATUS
Andrew E. Herman, Rockville, and James L. Kearney, Glastonbury, Conn., assignors to Jetair, Inc., East Hartford, Conn., a corporation of Connecticut
Filed Oct. 23, 1968, Ser. No. 770,051
Int. Cl. B65g *53/04*
U.S. Cl. 302—28 **4 Claims**

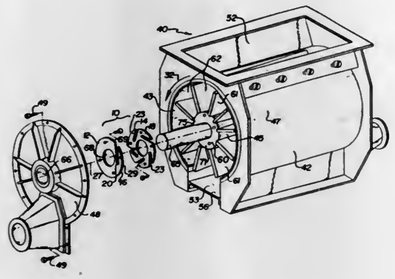


A distributor for dry particulate material comprises a body having an inlet channel and a plurality of outlet channels communicating therewith. The body has a deflector member positioned adjacent the juncture and means is provided in each outlet channel to deliver gas thereto in a direction away from the juncture to carry the material outwardly. Apparatus for delivering the particulate material comprises a container for the material connected to the distributor, a plurality of delivery conduits connected to the outlets of the distributor, and gas pressure means connected to the gas supply means.

3,554,608
SCRAPER APPARATUS FOR RELATIVELY ROTATABLE SURFACE

Edwin Farnworth, 6251 Overstone Drive, West Vancouver, British Columbia, Canada, and Eduard Friedrich Fischer, 430 Somerset Crescent, North Vancouver, British Columbia, Canada

Filed Mar. 27, 1967, Ser. No. 805,389
Int. Cl. B65g *53/40*
U.S. Cl. 302—49 14 Claims

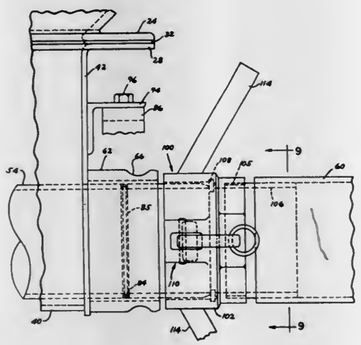


Scraper apparatus for equipment liable to have foreign matter lodge between relatively rotatable surfaces therein, such as rotary air-lock feeders for directing particulate material into fluid conveyor systems, said apparatus during operation of the equipment constantly scraping the relatively rotatable surfaces to gather up foreign matter tending to lodge therebetween, and ejecting the gathered matter from between said surfaces.

3,554,609
PNEUMATIC OUTLET FOR A HOPPER

Dallas W. Rollins, St. Charles, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey

Filed Aug. 26, 1968, Ser. No. 755,091
Int. Cl. B65g *53/40*
U.S. Cl. 302—52 4 Claims

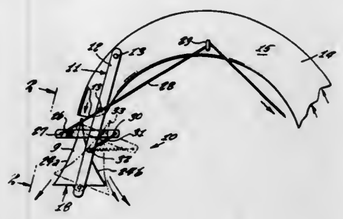


The outlet of a hopper has a rotary valve tube provided with an adaptor at each end of the hopper. The adaptor has a bushing in which the valve tube rotates, and each adaptor has an external groove in which an end closure cap may be locked. The rotary tube has grooves in which the coupler of a material discharge hose may be locked. Seals are provided to prevent air leakage when either the end cap or the discharge tube is connected. The coupler has handles for rotating the tube to open or close the valve.

3,554,610
SILAGE DISTRIBUTOR

Cecil S. Gelle, Rte. 1, Grasston, Minn. 55030

Filed Sept. 11, 1968, Ser. No. 758,980
Int. Cl. B65g *53/40*
U.S. Cl. 302—60 1 Claim

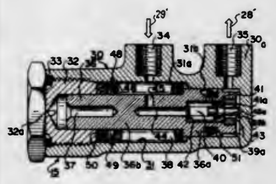


An improved distributor for silage into a silo, the device comprising a pivotable deflector which serves as a silage spreader, the deflector being controlled by a rope extending to a person upon the ground, the deflector intercepting the stream of silage being blown out of a discharge pipe into the silo.

3,554,611
HYDRAULIC BRAKE PRESSURE CONTROL ASSEMBLY

Tsuneo Kawabe, Noriakira Ishigami, and Masashi Ban, Kariya-shi, Japan, assignors to Aisin Seiki Company Limited, Kariya-shi, Aichiken, Japan

Filed Apr. 4, 1969, Ser. No. 813,484
Claims priority, application Japan, Apr. 6, 1968, 43/27,750
Int. Cl. B60t *8/26, 15/00*
U.S. Cl. 303—6 4 Claims

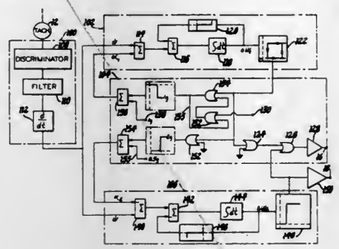


This invention concerns with a proportionating hydraulic pressure control valve assembly inserted in a piping provided between a hydraulic master cylinder and rear wheel cylinders on a motor vehicle. The improvements comprise the provision of a pneumatic cushioning chamber defined by the stationary cylinder and the hydraulic piston reciprocatably mounted therein and adapted for assisting the function of an actuating spring provided for said piston, said spring being housed in a first hydraulic chamber formed around said piston and hydraulically connected with the delivery side of said master cylinder. The pressure control valve proper arranged for the on-off control of the hydraulic pressure leading to the rear wheel cylinders through a second hydraulic chamber is mounted within said hydraulic piston, the connecting passage means provided between said both hydraulic chambers and controlled by said control valve proper being provided totally within the body of said hydraulic piston.

3,554,612
ANTILOCK BRAKE CONTROL

John L. Harned, Grosse Pointe Woods, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Aug. 21, 1968, Ser. No. 754,252
Int. Cl. B60t *8/08*
U.S. Cl. 303—21 9 Claims

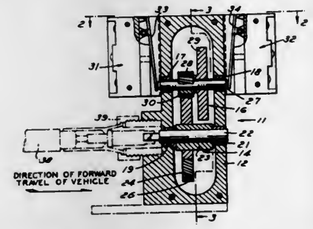


An electronic control is responsive to wheel acceleration to produce signals for effecting alternating brake release, hold, and application to avoid wheel lock. A wheel velocity error circuit compares a wheel acceleration signal to a reference signal and integrates the difference to control brake release. A similar circuit responsive to the wheel acceleration signal and another reference signal controls brake hold and application. A third circuit varies the reference signals to optimize the control function.

3,554,613
SKID CONTROL SENSING DEVICE

Dudley F. Fiscus, Livonia, and Achille C. Sampietro, Bloomfield Hills, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

Filed Sept. 24, 1968, Ser. No. 761,967
Int. Cl. B60t *8/06, 8/12*
U.S. Cl. 303—21 11 Claims



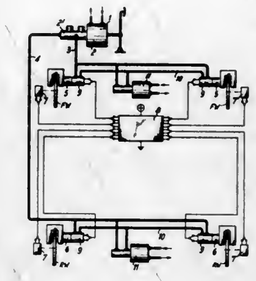
An automotive anti-skid brake control sensing device that compares the linear deceleration of a vehicle along its direction of travel with the angular deceleration of a vehicle wheel. The device incorporates two side-by-side helical gears having axes of rotation mounted parallel to the longitudinal axis of the vehicle. One of the gears is linearly displaceable in one direction of its axis of rotation to signal a skid condition.

3,554,614
HYDRAULIC BRAKING ARRANGEMENT

Alexander von Löwis of Menar, Mauren, Germany, assignor to Robert Bosch G.m.b.H., Stuttgart, Germany

Filed June 24, 1969, Ser. No. 836,079
Claims priority, application Germany, July 17, 1968, 1,755,965
Int. Cl. B60t *8/02*
U.S. Cl. 303—21 12 Claims

A hydraulic braking arrangement for vehicle wheels in which a feeler senses retardation of the wheel during braking to disconnect during excessive retardation of the wheel the brake cylinder from a conduit which feeds pressure fluid into the brake cylinder and to connect the latter to a relief conduit, and in which fluid return means

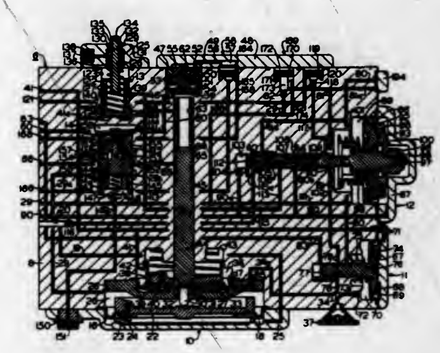


return pressure fluid from the relief conduit to the conduit for feeding pressure fluid into the brake cylinder to assure prompt action of the latter during the next braking step.

3,554,615
FLUID PRESSURE BRAKE CONTROL VALVE APPARATUS

Robert J. Worbois and James F. Ferguson, Irwin, and Richard L. Wilson, Monroeville, Pa., assignors to Westinghouse Air Brake Company, Wilmerding, Pa., a corporation of Pennsylvania

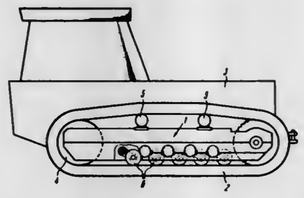
Filed Feb. 27, 1969, Ser. No. 802,930
Int. Cl. B60t *15/52*
U.S. Cl. 303—36 7 Claims



A railway car brake control valve device having a combined quick service and selector valve means operative upon both a service and an emergency rate of reduction of pressure in a train brake pipe to establish a communication between a selector valve volume reservoir and a brake cylinder thereby insuring the same reduction of pressure in the selector valve volume reservoir as is effected in the train brake pipe for any brake pipe reduction not greater than that required to effect a full service brake application irrespective of the normally charged train brake pipe pressure, and further insuring equalization of pressure between the selector volume reservoir and the brake cylinder upon effecting in emergency brake application. This equalization of pressure between the selector valve volume reservoir and the brake cylinder provides that a full service brake application can always

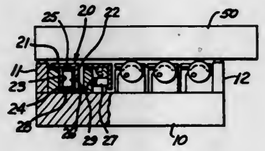
be maintained upon manual movement of the handle of an engineer's brake valve device to its suppression position subsequent to an automatically effected emergency brake application as the result of overspeed, an adverse signal indication or incapacitation of the engineer.

3,554,616
RUNNING GEAR FOR AN ENDLESS TRACK TRACTOR
Nikolai Alexandrovich Litvinov, Boris Mikhailovich Pozin, Vladimir Vasilievich Emelianenko, Chelyabinsk, U.S.S.R., assignors to Chelyabinsky Traktorny Zavod, U.S.S.R., Chelyabinsk, prospekt Lenina
Filed Aug. 28, 1968, Ser. No. 756,045
Int. Cl. B62d *55/16*
U.S. Cl. 305—14 **3 Claims**



A running gear for an endless track tractor, in which the side equalizers are pivotably connected to each other and to the tractor frame, each of said equalizers being made as two longitudinal beams interconnected by spacers. Track support rollers are mounted on the beams and sprung by means of torsion bars.

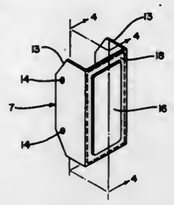
3,554,617
MACHINE TOOLS SLIDE ASSEMBLY
Paul J. Weaver, 2790 Gainborough Drive, San Marino, Calif. 91108
Filed Apr. 1, 1969, Ser. No. 811,952
Int. Cl. F16c *17/26*
U.S. Cl. 308—3 **7 Claims**



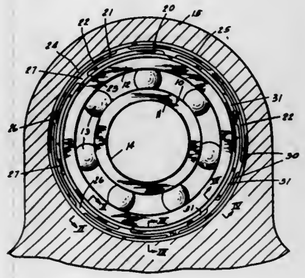
A machine tool slide assembly capable of providing a multiplicity of slides in a minimum area by virtue of a nesting relationship. The assembly is also adaptable to a zero play arrangement by utilizing magnetic attraction between the slide members and the surfaces which guide them.

3,554,618
RAILROAD TRUCKS
James A. Ditzler, Donald D. Carswell, Jr., and Kenneth E. Reisch, Reading, Pa., assignors to The Polymer Corporation, a corporation of Pennsylvania
Continuation of application Ser. No. 579,687, Sept. 15, 1966. This application Jan. 6, 1969, Ser. No. 791,868
Int. Cl. B61f *5/32;* **F16c** *33/20*
U.S. Cl. 308—3 **4 Claims**

In a railroad vehicle, a nylon wear plate or liner is used as a bearing surface in place of a conventional metallic wear liner. The bearing surface is positioned at the point where the truck wheels and the vehicle body move relative to each other in a generally vertical direction. A pedestal leg wear liner having a flat nylon wear plate is disclosed.



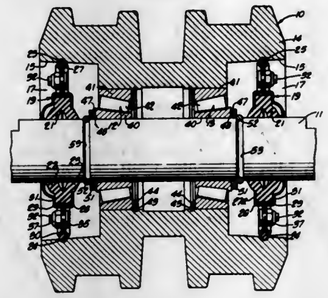
3,554,619
BEARING SUPPORT
Arthur S. Irwin, Jamestown, N.Y., assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio
Filed Nov. 22, 1968, Ser. No. 778,202
Int. Cl. F16c *35/00*
U.S. Cl. 308—184 **2 Claims**



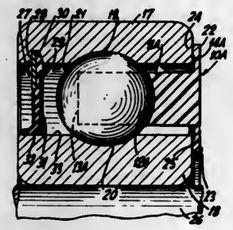
A cylindrical bearing support for encirclingly supporting an antifriction bearing assembly having three spaced concentric metallic cylinders, the center one having a plurality of alternately radially inwardly directed and radially outwardly directed protuberances contacting respectively the inner and outer cylinders, said protuberances circumferentially spaced from each other. The bearing support then acts as a spring storing energy caused by radial deflection of the inner ring. The spaces between the cylinders are filled with elastomer or with alternating layers of extremely thin elastomer and nonelastomeric substances.

3,554,620
TRACK ROLLER ASSEMBLY
Frank E. Dalton, 25909 Richfield Drive, Torrance, Calif. 90505
Filed Oct. 30, 1968, Ser. No. 771,832
Int. Cl. F16c *33/78*
U.S. Cl. 308—187.1 **1 Claim**

A track roller assembly for track-laying vehicles has a roller shell mounted on a stationary shaft by means of axially spaced bearings, and the inner races of the bearings are engaged at one end by elastomeric rings backed up by circular washers and split retainer rings mounted in grooves on the shaft. Sealing assemblies at each end of the roller shell each include a pair of annular clamping plates having outer peripheries engaging an O-ring mounted in a groove in the roller shell, and inner peripheries supporting a lip-type seal having rotary contact with the shaft.



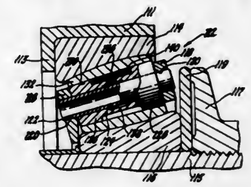
3,554,621
COMBINATION CAGE AND SEAL FOR ANTIFRICTION BEARINGS
William D. McAllister, Poughkeepsie, N.Y., assignor to The Federal Bearings Co., Inc., Poughkeepsie, N.Y., a corporation of New York
Filed Aug. 23, 1967, Ser. No. 662,678
Int. Cl. F16c *33/78*
U.S. Cl. 308—187.2 **2 Claims**



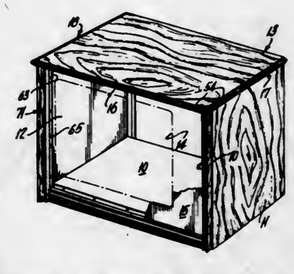
A combination bearing cage and seal is provided for an antifriction bearing having inner and outer rings comprising an annular member having a tubular body portion of predetermined thickness to enable insertion of one end thereof into the annular space of the bearing, said one end of the tubular body having a plurality of ball pockets which may be spherical or cylindrical in shape disposed radially about said end, the pockets being formed so as to fit against the bearing balls. The other end of the tubular member has an enlarged flange portion for sealing off one side of the annular bearing space. The cage may advantageously be made of plastic including synthetic or natural rubber with a hard tubular portion, at least a portion of the flange being preferably resilient to provide sealing contact at the end face of the bearing. The cage may be molded with one or more metal inserts to add strength thereto.

3,554,622
ROLLER BEARINGS
Arthur William Gaubatz, 2805 NW. 48th St., Fort Lauderdale, Fla. 33313
Filed May 23, 1969, Ser. No. 827,265
Int. Cl. F16c *33/34*
U.S. Cl. 308—214 **8 Claims**

A high speed heavy duty roller bearing construction is disclosed. This bearing in which the races may be separate pieces or provided by integral structure adjacent the rollers uses a cage comprising two end rings and a number of circumferentially spaced pins. The rollers are hollow and floating bushings are provided between the rollers and the pins to decrease the rubbing velocity between the rollers and the pins and thereby increase the bearing life.



3,554,623
METAL KNOCKDOWN CABINET
Benjamin W. Suckle, Elkins Park, and William Gavin, Old Forge, Pa., assignors to Nytronics, Inc., Pelham Manor, N.Y., a corporation of Delaware
Filed Mar. 24, 1969, Ser. No. 809,708
Int. Cl. A47b *81/61;* **H05k** *5/00*
U.S. Cl. 312—7 **23 Claims**

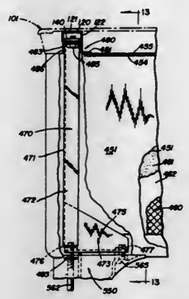


The invention contemplates a cabinet construction using primarily panels which can be pre-finished or laminated, with simulated wood-grain or other decorative effects embodied in an outer plastic lamination. The plastic is laminated to sheet metal such as steel, for toughness, strength, and precision of formation, and is assembled with special edge molding to create the appearance of richly contoured edge routing on thick wood panels. The construction lends itself to bulk shipment of parts to the customer's location, for simple and precise in-plant assembly as the customer needs his cabinets.

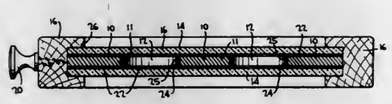
3,554,624
LOAD BEARING END PANEL CONSTRUCTION
Kenneth D. Schreyer, Doylestown, Pa., assignor to Lyon Metal Products, Incorporated, Aurora, Ill., a corporation of Illinois
Application Apr. 5, 1967, Ser. No. 635,939, which is a division of application Ser. No. 503,157, Oct. 23, 1965, now Patent No. 3,363,955, dated Jan. 16, 1968. Divided and this application Jan. 17, 1969, Ser. No. 835,824
Int. Cl. A47b *96/20*
U.S. Cl. 312—194 **11 Claims**

The present invention is directed to a load bearing end panel comprising a pair of spaced apart and substantially parallel sheet metal side walls, a pair of sheet metal end walls interconnecting the side walls at the opposite ends thereof and a bottom wall interconnecting the side walls at the bottoms thereof, a body of rigid cellular construction disposed between the side walls and extending between the end walls and substantially filling the space therebetween, layers of adhesive disposed between the inner surfaces of the side walls and the adjacent surface of the body of

cellular material for securing the side walls to the body of cellular material throughout the entire facing areas thereof, and a pair of mounting channels respectively disposed adjacent to the side walls and extending from adjacent to the bottom wall upwardly and beyond the upper edges of the side walls.

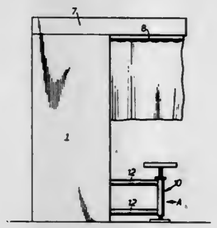


3,554,625
DISPLAY DEVICE
Harold P. Sly, Sr., Elmira, N.Y.; Reda W. Sly, executrix of said Harold P. Sly, Sr., deceased
Filed Sept. 30, 1968, Ser. No. 763,795
Int. Cl. A47b *81/00*; A47f *3/14*
U.S. Cl. 312—234 **1 Claim**



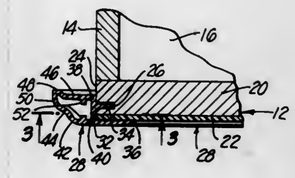
A display device for coins, medals, or the like is provided, comprising a display board having coin or the like receiving openings tightly sandwiched by means of a removable surrounding frame member between two sheets of transparent material. Edges of the openings are sealed to inhibit contact of displayed objects with any tarnish accelerating contaminants contained in the display board material.

3,554,626
COMPARTMENT AND ADJUSTABLE STOOL ASSEMBLY
Charles W. Clark, Kings Grove, Maidenhead, Berkshire, England
Filed Nov. 15, 1968, Ser. No. 776,060
Claims priority, application Great Britain, Nov. 16, 1967, 52,298/67
Int. Cl. A47b *83/00*
U.S. Cl. 312—235 **3 Claims**



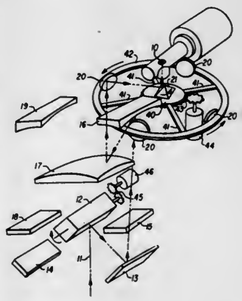
An adjustable stool assembly, particularly for use in an automatic photographic studio, which includes a vertically extending pillar connected to an arm locating it in position with respect to a fixed support which, where the arm is used in a photographic studio is the compartment which is arranged to house the photographic apparatus. The pillar has affixed to its upper end a seat, the height of which is adjustable, and to its lower end a base member which can be lowered to the floor or other supporting surface, to support the pillar.

3,554,627
DRAWER TRIM STRUCTURE
Donald E. Mock, Covina, Calif., assignor to Anjac Plastics, Inc., El Monte, Calif., a corporation of California
Filed July 22, 1969, Ser. No. 843,474
Int. Cl. A47b *88/00*
U.S. Cl. 312—330 **1 Claim**



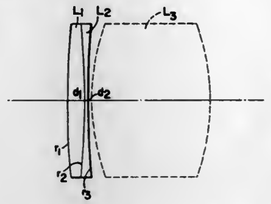
A drawer trim structure which includes a base plate adapted to overlie the edge of a drawer front, an inner holding lip adapted to engage within a groove in such edge, an outer holding lip adapted to overlie the front surface of such a drawer front, and abutting means for extending from the drawer front and overlying the structure around the drawer front. These lips and abutting edge are all supported on the base plate. Means are provided within the abutting means for engaging corner members so that mitered corners of the trim structure may be secured together in a frame-like manner upon a drawer front.

3,554,628
INFRARED OPTICAL SYSTEM UTILIZING CIRCULAR SCANNING
Howard V. Kennedy, Dallas, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed May 3, 1966, Ser. No. 548,350
Int. Cl. G02b *13/14*
U.S. Cl. 350—1 **9 Claims**



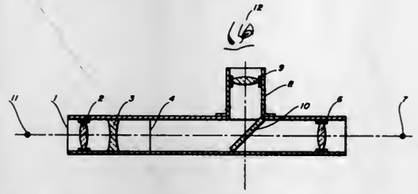
An optical apparatus is disclosed for use in producing a visual picture of the infrared image of a terrain area, the apparatus utilizing a circular scan of the terrain area in the image plane of the apparatus.

3,554,629
ADAPTER LENS FOR MINIMIZING CHROMATIC ABERRATION IN THE INFRARED RANGE
Yasuo Takahashi, Tokyo-to, Japan, assignor to Asahi Kogaku Kogyo Kabushiki Kaisha, Tokyo-to, Japan, a corporation of Japan
Filed Mar. 27, 1968, Ser. No. 716,474
Claims priority, application Japan, Apr. 3, 1967, 42/20,759
Int. Cl. G02b *13/14*
U.S. Cl. 350—2 **4 Claims**



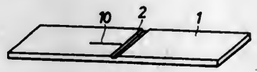
An adapter lens system is mounted on the front of a photographic object lens having a focal length between 135 mm. and 300 mm. and includes a fluorite lens of a focal length between 350 mm. and 500 mm. and a negative lens of greater refractive index, the adapter lens system having a focal length of infinity. The adapter lens reduces chromatic aberration of the lens system in the infrared range.

3,554,630
ALIGNMENT TELESCOPE
Benjamin T. Rogers, Jr., Embudo, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 11, 1968, Ser. No. 758,940
Int. Cl. G01b *11/26*; G02b *27/32*
U.S. Cl. 350—10 **1 Claim**



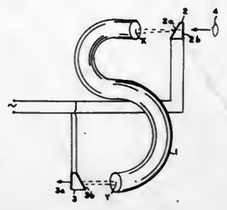
An alignment telescope for locating points along a line from a fixed point having lens structure to establish said line from the fixed point and a moveable mirror and eyepiece means for introduction into the device to locate points along said line.

3,554,631
GROOVED OBJECT SLIDE FOR INTERFERENCE MICROSCOPE
Hermann Beyer and Gunter Schoppe, Jena, Germany, assignors to VEB Carl Zeiss Jena, Jena, Germany
Filed Jan. 22, 1968, Ser. No. 703,511
Int. Cl. G02b *21/34*; G01n *21/46*
U.S. Cl. 350—94 **5 Claims**



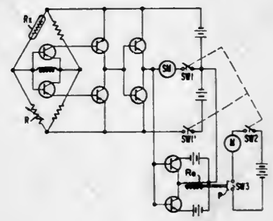
An object slide, particularly for interference microscopes, is provided with a groove. The groove is broader at the surface of the slide than it is at its bottom. A mark on the surface of the slide is in close vicinity to the groove.

3,554,632
FIBER OPTICS IMAGE ENHANCEMENT USING ELECTROMECHANICAL EFFECTS
Anwar K. Chitayat, Plainview, N.Y., assignor to OPTOmechanisms, Inc., Plainview, N.Y.
Filed Aug. 29, 1966, Ser. No. 575,797
Int. Cl. G02b *5/14*
U.S. Cl. 350—96 **4 Claims**



Apparatus for enhancing the quality of transmission in fiber optic cables using input and output optical elements having electromechanical properties. The input and output optical means may be optical wedges of material having electro-optical properties, for instance electro-optical materials so that by the application of voltage to the element, the angle between the entrance and exit beam is changed. Compensating optical means are provided at the exit end and the same voltage is applied to the exit optical means to restore the image.

3,554,633
SWITCH CIRCUIT FOR MOTION PICTURE CAMERA
Jiro Sekine, Tokyo, Japan, assignor to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
Filed Mar. 22, 1968, Ser. No. 715,351
Claims priority, application Japan, Mar. 22, 1967, 42/23,709
Int. Cl. G03b *19/18, 9/06*
U.S. Cl. 352—141 **4 Claims**

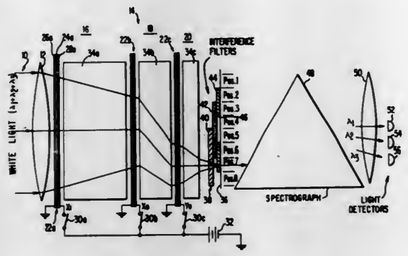


A switch circuit for use in a motion picture camera having a servomotor controlled iris. The servomotor operates only after the picture taking switch has been operated. The switch circuit prevents operation of the film-driving motor until the servomotor driving the iris is still or nearly still.

3,554,634
OPTICAL LOGIC DEVICE FOR POSITION-ENCODING A LIGHT BEAM
William L. Duda and Kurt M. Kosanke, Wappingers Falls, Werner W. Kulcke, Poughkeepsie, and Erhard Max, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 23, 1965, Ser. No. 515,843
Int. Cl. G02f *7/00*
U.S. Cl. 350—160 **10 Claims**

A light beam is digitally deflected to selected ones of a plurality of discrete positions in accordance with a

logical function which controls the operation of the beam deflecting means. Optical encoding means uniquely encode a characteristic of the beam for each discrete position. When the light beam is polychromatic, the light beam is passed through a different combination of filters at each discrete position so that the beam contains a unique combination of wavelengths at each position. When

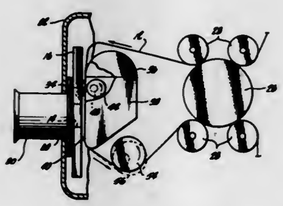


the light beam is monochromatic, the beam may be split into a unique combination of paths for each discrete position and then intensity-encoded by masks in the paths. A monochromatic beam may also be directed to a processed Lippmann film which will reflect the beam at unique combinations of Bragg angles corresponding to each discrete position.

ERRATUM

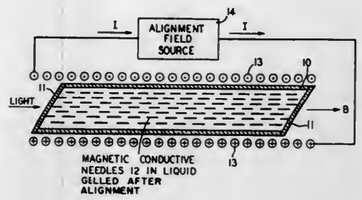
For Class 352—141 see:
Patent No. 3,554,633

3,554,635
TRANSPORT MECHANISM
Donald B. Milliken, Altadena, Calif., assignor, by mesne assignments, to Teledyne, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Mar. 11, 1968, Ser. No. 712,116
Int. Cl. G03b *1/34*
U.S. Cl. 352—184 **2 Claims**



A transport mechanism for intermittently moving an elongated, flexible length of material past a location and for positively indexing a portion of the material at that location while it is not in motion. A stationary index pin secured to a mounting plate engages perforations in the material and a rotatable cam adjacent the index pin periodically disengages the material and the pin. After the two have been disengaged, a second rotatable cam moves a predetermined length of the material past the pin. During this motion the first cam ceases to bias the material away from the pin such that the pin engage another perforation after the predetermined length of material has been transported past it.

3,554,636
OPTICAL MODE FILTER EMPLOYING A COLLOIDAL SUSPENSION
Solomon J. Buchsbaum, Westfield, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Dec. 4, 1967, Ser. No. 687,689
Int. Cl. G02b *5/20*
U.S. Cl. 350—311 **1 Claim**

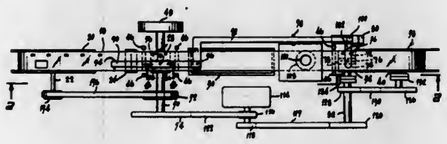


In an optical mode filter, colloidal conductive needles of high aspect ratio are axially oriented and suspended in a transparent medium. The medium may be a liquid; and the needles may be magnetic. In this case, the needles may be axially oriented by an applied magnetic field.

ERRATUM

For Class 352—184 see:
Patent No. 3,554,635

3,554,637
PICTURE PROJECTION WITH SOUND
Dallas R. Andrews, Indianapolis, Ind., assignor to RCA Corporation, a corporation of Delaware
Filed Apr. 11, 1968, Ser. No. 720,722
Int. Cl. G03b *31/06*
U.S. Cl. 353—19 **2 Claims**

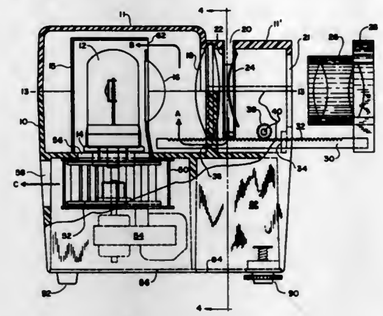


Apparatus for providing sound from a sound track on a film while a single frame of a picture on the film is being projected, in which the length of the sound track may be variable. The means for positioning the picture for projection are held stationary while the film is advanced through the sound reproducing arrangement. The sound reproduction being completed, a detector responsive to an indicator on the film causes the picture positioning means to be released for positioning a new picture portion of the film in the picture projecting arrangement.

3,554,638
SMALL SLIDE AND FILM-STRIP PROJECTOR
Panayotis Constantine Dimitracopoulos, 3435 Drummond St., Suite 26, Montreal, Quebec, Canada
Filed Apr. 19, 1968, Ser. No. 722,774
Int. Cl. G03b *21/00*
U.S. Cl. 353—68 **3 Claims**

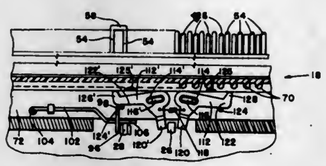
A blower-cooled slide and film-strip projector having an adjustable projection lens module mounted on toothed

racks for extension during projection and retraction, within the projector housing, during storage. The projector



has a slot at the upper forward portion of its housing for the manual insertion and removal of individual slides and film-strips into and out of a support assembly.

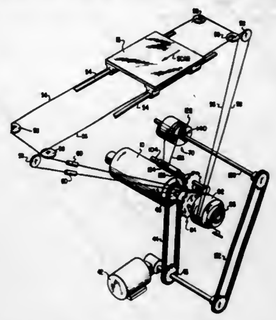
3,554,639
SLIDE TRAY FOR A SLIDE PROJECTOR
Herbert T. Robinson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Jan. 9, 1968, Ser. No. 696,573
Int. Cl. G03b *23/06*
U.S. Cl. 353—117 **21 Claims**



An improved slide tray for a slide projector in which the tray has a compartmented body member for slides, and in addition may have a slide retaining member carried by and movable relative to the body member. When a slide tray of the latter type is mounted in a slide projector, the slide retaining member is held in a fixed position with a slide exit slot therein in register with the slide projection gate of the projector. The slide tray has, among other things, an improved mechanism through which the compartmented member may be indexed one slide compartment at a time in forward and reverse directions during projection operation, an improved slide guiding mechanism for guiding slides into and out of the slide compartments, and an improved detent mechanism for precisely locating the slide tray members with each slide compartment in registry with the slide exit slot and slide projection gate.

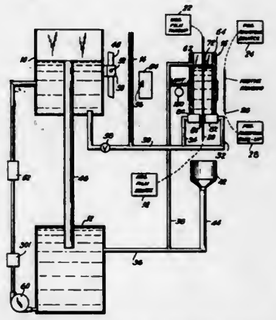
3,554,640
DRIVE COUPLING SYSTEM
Thomas A. Hoskins, Lexington, Ky., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Nov. 25, 1968, Ser. No. 778,492
Int. Cl. G03g *15/00*
U.S. Cl. 355—8 **20 Claims**

A drive coupling system in a xerographic machine for synchronizing the reciprocation of a copy carriage with a rotatable xerographic drum. A clutch releasably couples a driven member to a rotatable drive in synchronism with a specific point on the rotatable drive to provide limited movement of the driven member from a first to a second position in one direction. An additional drive consisting



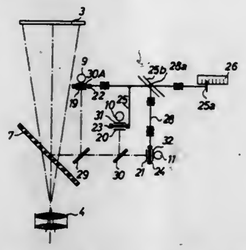
of a spring motor drives the driven member in the opposite direction to the first position. A cam member controls the acceleration and deceleration of the driven member from and to the first position.

3,554,641
APPARATUS AND PROCESS FOR THE LIQUID GATE PRINTING OF A PHOTOGRAPHIC FILM
Saul Jeffee, Scarsdale, and Pedro Pablo Weinschenk, Flushing, N.Y., assignors to Movielab, Inc., New York, N.Y.
Filed Aug. 8, 1968, Ser. No. 751,186
Int. Cl. G03b *27/68*
U.S. Cl. 355—30 **10 Claims**



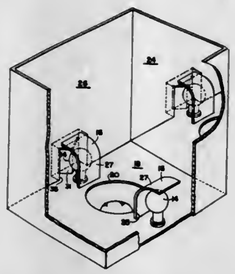
A device is provided for the liquid gate printing of photographic negatives. The device includes a liquid gate into which fluid is supplied in such a manner that the fluid flows from the bottom to the top of the gate. The flow rate and level of the fluid is controlled by adjusting the height of a liquid source relative to the gate. In addition, a valve is employed for controlling the input of the fluid into the gate and still further it is possible to exercise a control by means of controlling the escape of fluid from the entrance opening into the gate. A closed fluid circuit is provided by means of which overflow from the gate is returned to a reservoir from which the fluid is pumped into an open vessel, the height of which is controlled relative to that of the gate. A receptacle is, moreover, provided to receive fluid leaking from the entrance opening, this fluid being returned to the aforesaid reservoir. An open sight tube is connected in the fluid circuit between the aforesaid vessel and the gate and constitutes a device by which the flow rate of the fluid in the gate as well as the level of the fluid in the gate is gauged.

3,554,642
APPARATUS FOR REPRODUCING IMAGES OF COLOR PHOTOGRAPHIC NEGATIVES
Wolfgang Zahn, Munich, Germany, assignor to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Nov. 28, 1967, Ser. No. 686,151
Claims priority, application Germany, Dec. 10, 1966, A 54,333
Int. Cl. G03b 27/78
U.S. Cl. 355—38 10 Claims



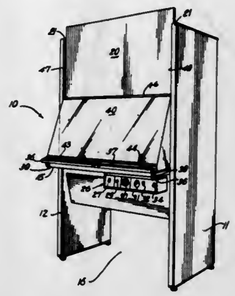
Controlled reproduction of undercorrected images of color photographic negatives on print material which is sensitized in the primary colors is achieved by deflecting three secondary light beams from a beam of white light issuing from a printing lamp and passing through a negative toward the printing station, by placing into the path of each secondary light beam a combination filter which includes a color filter capable of permitting passage of light in one of the primary colors and a grey filter so that some light passes through the color filter and the remainder of the light passes through the grey filter, directing the thus mixed light against secondary electron multipliers, and utilizing signals produced by the multipliers to control the duration of exposure of print material to light in the respective primary colors.

3,554,643
EXPOSURE SYSTEM
John F. Batter, Jr., Lincoln, and Joseph A. Stella, Peabody, Mass., assignors to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Aug. 28, 1968, Ser. No. 756,010
Int. Cl. G03b 27/54, 27/00
U.S. Cl. 355—65 10 Claims



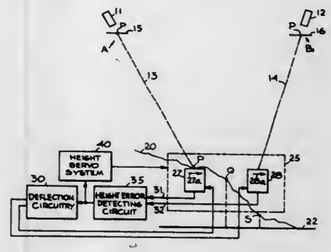
A document copier exposure system including a pair of light sources having baffles located within a chamber, the chamber including a pair of reflecting surfaces and a window for supporting an original in position for exposure such that the intensity of the light incident upon the original decreases inwardly toward the center thereof. The light sources and the reflecting surfaces are positioned such that the latter form multiple virtual images of each of the light sources appearing to the window to be located outside of the chamber.

3,554,644
PHOTOGRAPHIC PRINTER
Maksymilian A. Michalski, Woodside, N.Y., assignor to Berkey Photo, Inc., New York, N.Y.
Filed June 19, 1968, Ser. No. 738,305
Int. Cl. G03b 27/02
U.S. Cl. 355—78 6 Claims



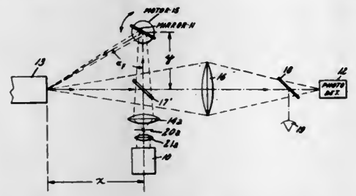
A printer for exposing photographic material is shown with a printing table horizontally mounted within a cabinet to receive photosensitive material and copy. A transparent plate is pivotably mounted to hold the photosensitive material and copy in contact above the table which may be of the vacuum type. The front of the vacuum table may or may not extend beyond the front of the cabinet. A pivotable panel may be provided to support a printing light above the table. A movable plate at least partially opaque to actinic rays may be moved upwardly as the transparent plate is raised. A safelight may be mounted within the cabinet. A control panel may be mounted under the vacuum table and a combination lifting and latching handle may be mounted at the front edge of the transparent plate.

3,554,645
AUTOMATIC MAPPING SYSTEM HAVING A MECHANICALLY AND ELECTRONICALLY CONTROLLED SCANNING MEANS FOR PROVIDING FASTER RESPONSE
Sidney Bertram, Woodland Hills, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Jan. 24, 1966, Ser. No. 522,671
Int. Cl. G01c 11/12
U.S. Cl. 356—2 19 Claims



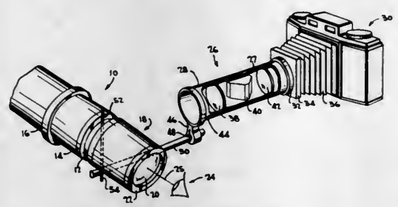
An automatic stereomapping system incorporating a mechanically and electronically controlled scanning arrangement. In one embodiment means are provided for electronically controlling the positioning of the scanning means in accordance with the detected time displacement of the signals obtained as a result of scanning each incremental area so as to electronically compensate for any height error without having to wait for mechanical compensation. In another embodiment electronic differential delay means are used to eliminate any time displacement between the signals obtained from scanning. In the first embodiment a measure of height is obtained in response to the mechanical and electronic positions of the scanning means, and in the second embodiment is obtained in response to the mechanical position of the scanning means and the amount of differential delay required to compensate for any time displacement between the signals obtained from scanning.

3,554,646
OPTICAL DISTANCE GAGE
Gerald J. Carlson, Scotia, N.Y., assignor to General Electric Company, a corporation of New York
Filed Jan. 28, 1969, Ser. No. 794,622
Int. Cl. G01c 3/08
U.S. Cl. 356—4 16 Claims



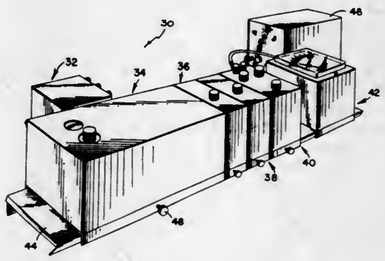
An instrument for measuring distances to bodies having reflective surfaces and without mechanical contact therewith utilizes an intense light source, rotatable mirror, photo-detector and read-out means. The photo-detector, mirror and reflective surface body are oriented to form a right triangle having a first side of the right angle being of known length y corresponding to the known distance from the center of the rotatable mirror to the optical axis of the photo-detector. The second side of the right angle is the unknown length x corresponding to the unknown distance along the photo-detector optical axis from the instrument to the reflective surface body. The read-out means measures the angle α between the hypotenuse of the right triangle and side y to thereby determine the unknown distance x from the geometric relationship $x=y \tan \alpha$.

3,554,647
SPECTROSCOPE EQUIPMENT USING A SLENDER CYLINDRICAL REFLECTOR AS A SUBSTITUTE FOR A SLIT
T. O. Paine, Acting Administrator of the National Aeronautics and Space Administration, with respect to an invention of Ralph A. Goodwin and Edgar D. Hall, Annapolis, Md.
Filed Dec. 27, 1968, Ser. No. 787,393
Int. Cl. G01j 3/40, 3/42
U.S. Cl. 356—76 6 Claims



In a spectrometer for use in analyzing a portion of light emitted from a relatively large light source comprising a cylindrical, highly polished metallic member the size of a common needle located at the focal plane of an achromatic collimator of the spectrometer, the cylindrical member being adjustably situated in the path of a light source of relatively large area, said cylindrical member being illuminated by a portion of said light source, said cylindrical member reflecting a portion of said light source in a narrow beam configuration suitable for collimation.

3,554,648
COMBINATION TEACHING AID AND MODULAR INSTRUMENTAL ANALYSIS SYSTEM AND COMPONENTS THEREFOR
Roy E. Boostrom, Elmhurst, Arman Mandell, Chicago, and Lewis Malter, Morton Grove, Ill., assignors to Sargent-Welch Scientific Company, Skokie, Ill., a corporation of Illinois
Filed Dec. 29, 1967, Ser. No. 694,517
Int. Cl. G01j 3/42, 3/48; G09b 23/24
U.S. Cl. 356—96 11 Claims

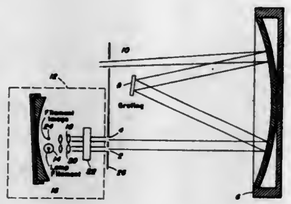


A combination teaching aid and modular instrumental analysis system in which a plurality of modules are provided, each having a separate function, and in which the different modules are adapted to be place together in different combination to provide different optical analysis instruments. The modules include a light source for providing light, a detector module for receiving light which has been exposed to a sample compartment module which receives one or more samples to be analyzed, and may include display means in the form of a meter or the like for reading the output of the detector module. The combination may also include a monochromator unit for providing substantially monochromatic light, and a filter module which is adapted to contain one or more filters through which a light beam may be passed for obtaining a beam of desired frequency.

Different arrangements of the various modules will produce a spectrophotometer, a filter photometer, or a nephelometer. The described module units are arranged so that at least some of them may be disposed on a base and optically aligned by means of combination adjusting and clamping means, so that the units may be thereafter moved, or replaced as desired without affecting the alignment thereof. The described units are constructed and arranged so that all the significant operational and functional properties of each module may be directly observed by the student. Therefore, each module is adapted to perform a minimum number of functions, and the modular concept and the construction features are used as a teaching aid used to emphasize the relation between various systems of optical instrumental anaylsis.

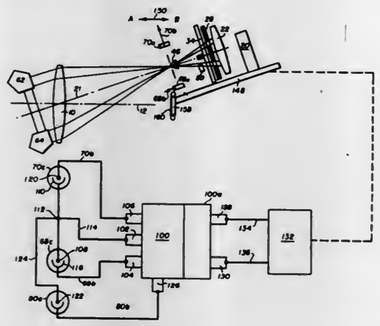
The filter compartment module and the sample compartment module include holder means for holding light filters or sample units, and the holder unit is constructed so as to facilitate interchange of sample holders and filter units, and to be adapted for use without change to perform different functions in different instrumental combinations.

3,554,649
APPARATUS FOR SLIT ILLUMINATION
Stuart L. Ridgway, Princeton, N.J., assignor to Princeton Applied Research Corporation, Princeton, N.J.
Filed Oct. 28, 1968, Ser. No. 770,954
Int. Cl. G01j 3/18, 3/10, 3/04
U.S. Cl. 356—100 9 Claims



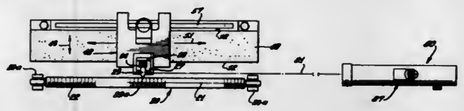
Apparatus for illuminating a slit is provided wherein multi-wavelength radiation is caused to impinge sequentially on a plurality of input means. The multi-wavelength radiation emanating therefrom is diffracted and selected wavelength components of the multi-wavelength radiation emanating from each input means is caused to impinge on a single exit slit. The selected wavelength component impinging on the exit slit from each input means being different and the sequential illumination of such exit slit with radiation from each of such input means causing the various selected wavelength components from each input means to be presented to the exit slit in a time multiplex sequence.

3,554,650
FOCUS SENSOR
Joseph R. Vyce, Lexington, Mass., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 695,242
Int. Cl. G01d 1/00, 11/26
U.S. Cl. 356—121 14 Claims



An electro-optical, autocollimated focus sensor for an optical system. The focus sensor consists of a small sensor head in the focal plane outside the desired image area, and a retroreflective set of two diametrically opposed small penta reflectors on the object side of the lens. A light beam from a small illuminated slit in the sensor head is alternately directed at each penta, collimated by the lens, reflected across the optical system aperture by the corresponding penta reflector, and reflected by the other penta back into the optical system to form an autocollimated slit image. The alternating slit images are precisely superimposed on the slit when the optical system is in focus, but separate laterally with defocus. Two light detectors are arranged to detect light falling on either side of the slit, and each puts out a signal indicative thereof. One signal is compared with the second signal to form a comparison signal, and the amplitude and phase of the comparison signal indicate the magnitude and direction of focus.

3,554,651
SCREW CALIBRATION METHOD AND APPARATUS
William A. Ware, Crestline, Calif., assignor, by mesne assignments, to Rusco Industries, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Oct. 18, 1967, Ser. No. 676,309
Int. Cl. G01b 11/24, 11/26
U.S. Cl. 358—138 14 Claims



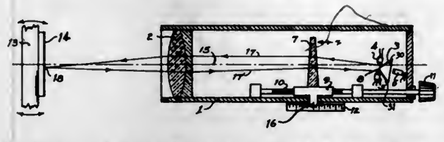
A screw is calibrated by sensing the location along the screw of a first selected screw portion in relation to a first point offset from the screw for establishing a first corresponding optical axis; sensing the location along the screw of a second selected screw portion in relation to a second point offset from the screw and establishing a second corresponding optical axis; the offset points being spaced along the screw; and deriving an indication of the relative angularity of those axes.

3,554,652
INDICATOR SYSTEMS FOR ANGLE-MEASURING INSTRUMENTS INCLUDING AN ALTITUDE CIRCLE
Wieland Feist and Ulrich Schmidt, Jena, Germany, assignors to VEB Carl Zeiss Jena, Jena, Germany
Filed May 8, 1969, Ser. No. 827,468
Int. Cl. G01c 1/06
U.S. Cl. 356—139 2 Claims



An indicator system for altitude circles of angle-measuring instruments comprises an imaging system by which a first of two diametrically opposite places in the circle is imaged in a plane wherein this image and the second place in the circle can be viewed via a beam-combining system. The imaging system, or part thereof, or the beam-combining system may be suspended in the manner of a pendulum.

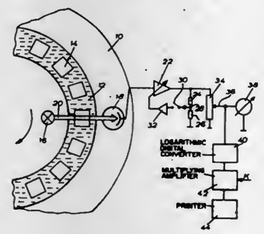
3,554,653
AUTOCOLLIMATOR
Lawrence Zielke, 3681 Vista de Oro, and William H. Thurston, 4181 Farquhar Ave., both of Los Alamitos, Calif. 90720
Filed Jan. 24, 1968, Ser. No. 700,146
Int. Cl. G01b 11/26
U.S. Cl. 356—153 9 Claims



An improved autocollimator employs a pair of modulated light sources and a pair of plane reflecting surfaces to direct the light out through an objective lens. Between the reflecting surfaces is a window or slit, and behind the slit a light sensor. The purpose of the autocollimator is to direct light onto an external reflector and measure sensitively the direction of the reflection. The reflected light reenters the objective and forms an image which may fall centered on the slit or may fall displaced with respect to the slit. The displacement of the image is a measure of the angular deviation of the returning light beam and is displayed on a zero-center indicator controlled by the light sensor through phase-sensitive circuitry.

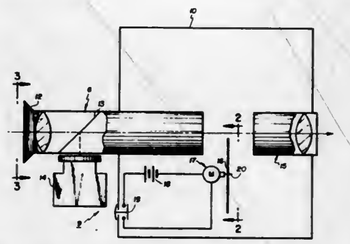
The displacement may be measured more accurately by means of an optical wedge, movable in translation by a calibrated mechanism. The reflector and light-source assembly is mounted slightly off-axis and the beam is bent toward the slit by the wedge. Thus, small angular displacements of the returning beam are measured by setting the position of the optical wedge to re-zero the indicator reading.

3,554,654
SINGLE-BEAM PHOTOMETER
Peter Paatzsch and Toma Tomoff, Uberlingen (Bodensee), Germany, assignors to Bodenseewerk Perkin-Elmer & Co. G.m.b.H., Ubderlingen (Bodensee), Germany
Filed Oct. 3, 1968, Ser. No. 764,791
Claims priority, application Germany, Oct. 18, 1967, 1,648,841
Int. Cl. G01j 3/46; G01n 21/26
U.S. Cl. 356—180 4 Claims



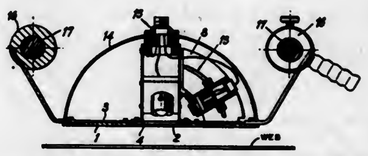
A single beam photometric system for determining the concentration of a tested-for sample component in a series of individual sample cells includes a carrier for moving the individual cells into the measuring light beam, the transmitted intensity of which varies with the concentration of the tested-for component. An "empty value" reference level is set into the instrument by positioning a calibration cell, identical to the sample cells but without the specific component being tested for, in the light beam, and adjusting, for example, a variable potentiometer in the detector signal output to a 100% transmission level. An automatic gain control type of feed-back is provided by monitoring a fixed proportion of the detector output when the measuring beam passes between each of the sample cells in a series (the sample cells being sufficiently spaced apart for this purpose). In this manner, the correct "empty value" reference signal is readjusted between such sample measurement without requiring reintroduction of an actual calibration cell or any manual steps. This automatic gain control monitoring may be provided by a feedback loop having a switch which is closed only during those positions of the sample cell carrier in which the intermediate space between cells is in the light beam.

3,554,655
SMOKE DENSITY MEASURING DEVICE INCLUDING MEANS TO PERIODICALLY BLOCK A LIGHT FROM A PORTION OF THE FIELD OF VIEW
Harry Einstein, Springfield, N.J. (% Nebetco Engineering, 1100 Chandler Ave., Roselle, N.J. 07203)
Filed Jan. 27, 1969, Ser. No. 794,170
Int. Cl. G01n 21/12, 21/20
U.S. Cl. 356—204 18 Claims



A device for measuring the density of smoke suitable for measuring the density of either white smoker or black smoke. The device comprises one or more shutters, such as rotating discs, so placed as to partially periodically interfere with the field of vision of a viewing tube through which the smoke under examination is viewed. The density of the smoke is measured by comparing the appearance of the smoke with the appearance of ambient air through the rotating shutter in the field of vision. The device may be used for white smoke as well as black smoke density measurement by reflecting light off the shutter as it is rotating.

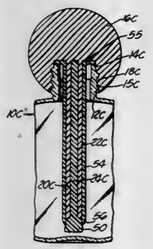
3,554,656
DETECTING DEVICE FOR VISUAL OBSERVATION OF A MOVING FABRIC
Henri Eicken, 5 Chemin de Malombre, Geneva, Switzerland
Continuation of application Ser. No. 461,433, June 4, 1965. This application Apr. 10, 1969, Ser. No. 837,976
Claims priority, application Switzerland, June 8, 1964, 7,468/64
Int. Cl. G01n 21/32
U.S. Cl. 356—238 2 Claims



For use in fabric straightening apparatus incorporating fabric straightening means is provided a detector device which includes a glass glate which is semi-transparent and is placed substantially parallel and close to the surface of

a fabric to be inspected, such that a light source arranged on the side of the plate opposite the fabric projects light rays through the plate which strike the fabric surface, as the latter is moved past the plate, at a predetermined angle, such that the light rays are reflected by the fabric onto the glass and the intensity of the reflected light rays can be detected by first and second detector heads arranged on the same side of the plate as the light source and symmetrically with respect thereto, the detector heads being connected in a bridge circuit operable to detect variations in the intensities of the reflected light rays caused by irregularities in the light reflecting fabric to control the fabric straightening means.

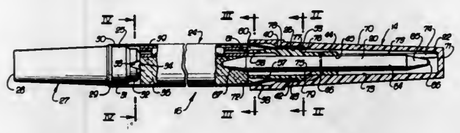
3,554,657
DEVICE FOR DISPENSING AND APPLYING LIQUID MATERIALS
Bruno D. Aston, 14421 Autumn Moon Drive, Hacienda Heights, Calif. 91745
Original application Aug. 11, 1967, Ser. No. 660,125, now Patent No. 3,494,702, dated Feb. 10, 1970. Divided and this application July 2, 1969, Ser. No. 842,434
Int. Cl. A46b *17/08*
U.S. Cl. 401—122 **1 Claim**



A bottle for a liquid has a stopper which serves as a handle for an applicator which normally extends downwardly from the stopper through an annular wiper into a body of liquid inside the bottle, which wiper removes surplus liquid from the applicator as the applicator is withdrawn from the bottle. The applicator comprises an elongated support member and a body of soft, resiliently yieldable, open cell foamed plastic which has an exposed dispensing portion, the remaining portion being a storage portion extending lengthwise of the support member. The foamed plastic may be in the form of a tubular stocking embracing the elongated support or the elongated support may be of tubular configuration with the storage portion of the foamed plastic body inside the tubular support. Such an applicator may be withdrawn from its normal position inside the bottle and used for extensive application of the liquid material without the necessity of repeatedly dipping the applicator back into the body of liquid.

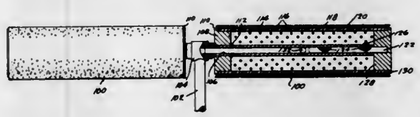
3,554,658
WRITING INSTRUMENT CONSTRUCTION
Curtis L. Malm, Norwalk, and Henry J. Loewenthal, Woodland Hills, Calif., assignors to The Gillette Company, Santa Monica, Calif., a corporation of Delaware
Filed June 18, 1969, Ser. No. 834,461
Int. Cl. B43k *8/00*
U.S. Cl. 401—199 **9 Claims**

A pocket-type writing instrument construction including a removable replaceable vapor-proof, impermeable cartridge or housing means having an air vent adjacent a writing tip member of wick-like type and presenting a yieldable sealing surface to internal surfaces on an instrument body means to provide an air seal between said cartridge and body means, and further seal means between said body means and a writing instrument cap cover means for the writing tip whereby evaporation and loss of



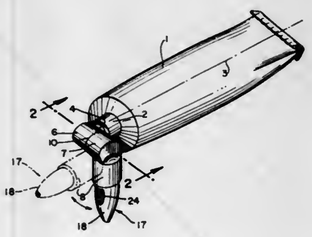
vaporizable ink components during storage or non-use of the writing instrument is inhibited and the overall writing life of the instrument is enhanced.

3,554,659
PAINT APPLICATOR ROLL WITH INTERNAL PAINT SUPPLY
Roy E. Stokes, 22946 Mariano, Woodland Hills, Calif. 91364
Filed Mar. 22, 1968, Ser. No. 715,217
Int. Cl. B44d *3/28*
U.S. Cl. 401—197 **2 Claims**



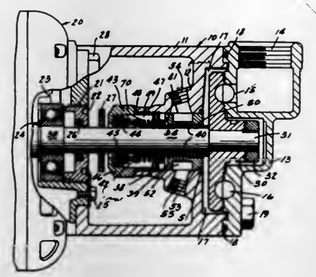
A paint applicator roll comprising a circumferentially perforated cylindrical shell; a permeable cloth sleeve snugly surrounding the exterior of said shell; a paint reservoir adjacent the interior of said shell; a hollow paint conducting spindle and means for mounting said shell for rotation about said spindle.

3,554,660
FLUID DISPENSING APPLICATOR
Lester E. Woods, Lima, Ohio, assignor to Artex Hobby Products, Inc., Lima, Ohio, a corporation of Ohio
Filed Feb. 28, 1969, Ser. No. 803,278
Int. Cl. B43k *7/10*
U.S. Cl. 401—214 **1 Claim**



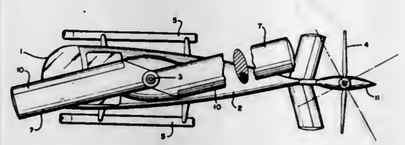
This disclosure relates to hand guided applicators for applying paints and other fluids to cloth, wood and like surfaces which include a fluid reservoir portion and an associated applicator. A connector unit is positioned between the reservoir and the applicator tip to permit the tip to be moved to various positions with respect to the reservoir portion of the applicator.

3,554,661
HIGH TEMPERATURE PUMP
Paul L. Oglesby, Moweaqua, and Richard E. Reeves and William K. Haebich, Decatur, Ill., assignors to Decatur Pump Company, Decatur, Ill., a corporation of Illinois
Filed Dec. 20, 1968, Ser. No. 785,556
Int. Cl. F04d *1/00, 29/00*
U.S. Cl. 415—112 **6 Claims**



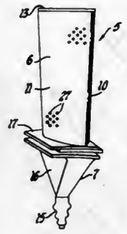
A restricted passageway between an impeller cavity area and a shaft seal cavity area in a high temperature pump allows a portion of the high temperature pumped fluid to be circulated to the shaft seal cavity area. A cooling jacket means located adjacent the passageway circulates a different cooled fluid to cool the portion of the high temperature fluid that passes through said restricted passageway to said shaft seal cavity area. Cool temperatures in the shaft seal cavity area allow the use of a simple and inexpensive shaft sealing means.

3,554,662
REVERSE VELOCITY ROTOR AND ROTORCRAFT
Harold E. Lemont, Germantown, Md., assignor to Fairchild Hiller Corporation, Bay Shore, N.Y., a corporation of Maryland
Filed Jan. 25, 1968, Ser. No. 700,469
Int. Cl. B64c *27/74*
U.S. Cl. 416—1 **9 Claims**



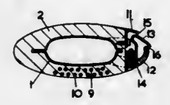
A rotary wing aircraft and rotor control system for such aircraft, which uses the reverse velocity airflow produced by high airspeeds of the aircraft across the retreating blade to generate positive lift on the retreating blade. Blade pitch control means and method for such aircraft providing a two/revolution, cam or higher order cyclic pitch input to generate more uniform lift in the advancing and retreating blade sectors of rotor motion. A main rotor for such aircraft having a new airfoil shape adapted to more efficiently generate positive lift from the reverse velocity airflow, and also having slotted flaps or other auxiliary lift devices for increasing lift at low aircraft airspeeds. A twistably-mounted tail rotor for such aircraft adapted for counter-torque operation at low aircraft airspeeds and for forward propulsion at high airspeeds.

3,554,663
COOLED BLADE
Harold E. Helms, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Sept. 25, 1968, Ser. No. 762,411
Int. Cl. F01d *5/08*
U.S. Cl. 416—90 **4 Claims**



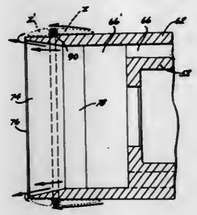
A transpiration cooled blade for a high temperature turbine has a wall of laminated structure of controlled porosity made up of several layers of thin sheet metal. Inner strengthening layers have grooves or channels for conduction of cooling air into the wall which extend spanwise of the blade and are tapered toward the base of the blade to provide an increase in cross-section and strength of the blade toward the base.

3,554,664
REINFORCED PLASTIC BLADES
Ian Clifford Cheeseman and Charles Reginald Lawrence, Camberley, and Thomas George Holmes Woolford, Farnborough, England, assignors to Minister of Technology in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed May 16, 1969, Ser. No. 825,188
Claims priority, application Great Britain, May 20, 1968, 23,876/68
Int. Cl. B64c *27/18*
U.S. Cl. 416—90 **9 Claims**



A helicopter rotor blade comprises a thin section hollow steel spine attached to a root section and with a fibre glass sheath moulded on to it to give the required profile. Sections of the sheath are cut away and faired by metal sheeting to provide fluid ducts extending along the blade. Slots formed in the metal sheeting enable air to be discharged over the blade surface for circulation control purposes. The ducts and slots are in three separate spanwise sections, of which the outer two are supplied with air passing along the hollow spine which is suitably provided with baffles. High tensile steel wires extending axially through the sheath and attached to the root section and the spine in the region of the blade lip act to restrict blade flexing and any consequent distortion of the slots. The use of carbon or other fibres is envisaged as are variations in the direction of the lay of the fibres, including a lattice structure.

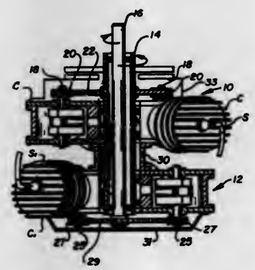
3,554,665
FLOW THROUGH PROPELLER
Eldon L. Lorenz and Robert F. Kress, Grand Rapids, Mich., assignors to Michigan Wheel Company, Grand Rapids, Mich., a corporation of Michigan
Filed June 24, 1969, Ser. No. 836,093
Int. Cl. B63h 1/16, 11/14
U.S. Cl. 416—93 8 Claims



A flow through marine propeller unit with unique exhaust creepage barrier structure to prevent cavitation at the blades, such unit having the exhaust barrier protuberance between the rearward end of the hub and the blades to prevent forward creepage of exhaust gases, by creating a stagnant water zone ahead of the front face of the protuberance and a shearing water flow action at the protuberance periphery.

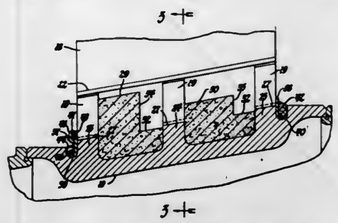
The angle of the protuberance front face to the hub periphery, and more specifically to the axis of the unit, should be 90° or less in a forward direction with respect to the direction of movement of the unit in operation.

3,554,666
ENGINE SYSTEM FOR HELICOPTER
Ellsworth V. Conkle, P.O. Box 190, Paonia, Colo. 81428
Filed Oct. 28, 1968, Ser. No. 771,012
Int. Cl. B64c 27/10
U.S. Cl. 416—125 11 Claims



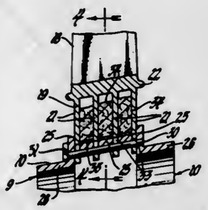
An engine system, including its mounts, for a helicopter includes at least a pair of banks of radial cylinders, each bank rotating one of a pair of concentric shafts in counter-rotation to the other, and with rotor blades secured on each shaft, is arranged for tilting the motor in its mounts thereby tilting the rotor blades to direct such blades in a desired tilted position for propelling the helicopter in a desired direction. The banks of radial pistons are essentially balanced and counter-rotating whereby the engine does not have the usual engine torque, and a pivoted rudder in the airstream from the rotors is all that is necessary for yaw control and rotational control of the craft.

3,554,667
TURBOMACHINE ROTOR
Joseph Albert Wagle, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Aug. 25, 1969, Ser. No. 852,556
Int. Cl. F01d 5/32
U.S. Cl. 416—217 3 Claims



A turbomachine rotor includes blade carrying rings with axially spaced flanges having dovetail slots through the flanges to receive dovetail roots of each blade in the slots in each flange. A reinforcement ring of a fiber composite is disposed around the outside of the ring between the flanges. These reinforcement rings are spaced sufficiently from one side of the flanges abreast the slots to allow movement of the blade to free it from the slots. Fiber reinforced blade locking rings preventing axial displacement of the blades are mounted on the outer surface of the ring.

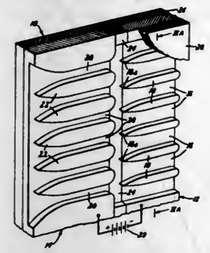
3,554,668
TURBOMACHINE ROTOR
Joseph A. Wagle, New Augusta, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 12, 1969, Ser. No. 823,608
Int. Cl. F01d 5/32
U.S. Cl. 416—220 14 Claims



A turbomachine rotor comprises a number of rings forming a drum with end bells at the ends of the drum. Each ring mounts a row of blades with clevis-type roots which extend through openings in the ring and which are retained by pins on the interior of the ring extending through holes in the arms of the blade root clevises. Rings of fibrous composite wrap extend around the blade mounting rings between the arms of the blade root clevises. Corrugated standoff rings between the ring and the fibrous wrap provide for slight growth of the ring relative to the wrap.

3,554,669
ELECTRIC-FLUID ENERGY CONVERTER
Trevor D. Reader, King of Prussia, Pa., assignor to General Electric Company, a corporation of New York
Filed Dec. 4, 1968, Ser. No. 781,180
Int. Cl. F04b 37/02; F04f 11/00
U.S. Cl. 417—48 12 Claims

A flueric device for converting electrical energy into fluid energy and vice versa. The basic device is of a laminate structure comprised of two electrically conductive, channelled electrode members, an emitter and a receiver, which are spaced a given distance from each other and joined between layers of electrically insulating material. The channels of the emitter and receiver are aligned so as to form a flow passage through the device.



A direct current electric power supply is impressed between the emitter and receiver to cause a flow of ions from the emitter to the receiver which causes fluid to be pulled from an inlet through the channels of the emitter and receiver and out an exit of the device.

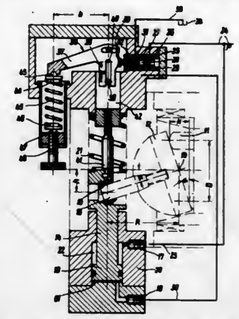
3,554,670
ELECTROMAGNETIC CONVEYING TROUGH FOR THE TRANSPORT OF LIQUID METALS
Axel von Starck, Remscheid-Luttringhausen, and Friedrich Schnake, Staatsangehorigkeit, Germany, assignors to AEG-Elotherm G.m.b.H., Remscheid-Hasten, Germany
Filed Nov. 12, 1968, Ser. No. 774,796
Claims priority, application Germany, Apr. 19, 1968, 1,758,191
Int. Cl. H02h 4/20; B65s 17/46; H03k 45/00
U.S. Cl. 417—50 5 Claims



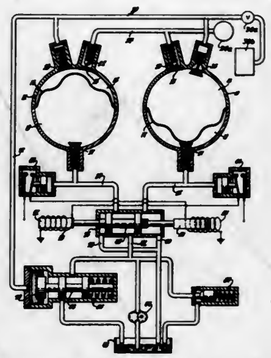
A liquid metal conveyor of the induction type with a gradually ascending liquid-metal trough, has the upper end of the trough bent toward the horizontal. This avoids the tendency of liquid metal to stagnate at the upper end where the end pole division of the induction winding tends to produce a weaker electromagnetic field.

3,554,671
DEVICE FOR ADJUSTING THE STROKE OF A VARIABLE DISPLACEMENT PUMP TO MAINTAIN THE PRODUCT OF PRESSURE AND VOLUME PER STROKE CONSTANT
Gunter Schlinke, Berlin, Germany, assignor to Bellows-Valvair-Kamper G.m.b.H., Berlin, Germany, a corporation of Germany
Filed Aug. 20, 1968, Ser. No. 754,006
Claims priority, application Germany, Aug. 25, 1967, B 94,214
Int. Cl. F04b 49/00, 15/22
U.S. Cl. 417—222 8 Claims

A device for adjusting the stroke of a variable displacement pump to keep the product of the pressure and volume per stroke constant, comprises a fluid pressure actuated adjusting member for varying the volume per stroke of the pump, the flow of fluid to the adjusting member being controlled by a spool valve, an auxiliary member mounted on a pivot, the pivot being carried by and movable with the adjusting member, the auxiliary member being urged to turn about the pivot in one direction by equalising means subjecting said member to a predetermined substantially constant moment, the spool of the spool valve being adapted to transmit a force to the auxiliarly member proportional to the pump output pressure, the moment of said force opposing the moment of the equalising member, the moment of the force varying with the movement of the pivot in proportion to the volume per stroke.



3,554,672
HOT GAS ENGINE WITH ACCUMULATOR TYPE GAS COMPRESSOR
Roy H. Brandes, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Jan. 10, 1968, Ser. No. 696,913, now Patent No. 3,496,879, dated Feb. 24, 1970. Divided and this application Sept. 10, 1969, Ser. No. 856,578
Int. Cl. F03g 7/06; F04b 17/00
U.S. Cl. 417—347 2 Claims

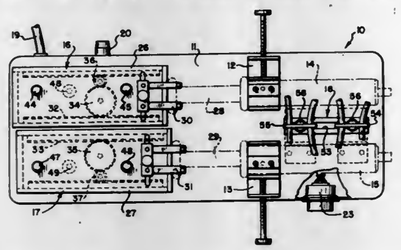


In preferred form, a gas compressor used in the control system of a hot gas engine powering a vehicle with high frequency of load change. The compressor provides plural accumulators which are sequentially discharged by fluid from a constantly running oil pump. The accumulators not being discharged are available to receive gas from the engine working chamber, permitting a quick reduction in gas pressure in the working chamber with a relatively slower discharge of gas from the accumulators into a gas storage tank.

3,554,673
SYRINGE PUMP
Joel M. Schwartz, White Plains, and Daniel F. Krebs, Yonkers, N.Y., assignors to Sage Instruments, Inc., White Plains, N.Y., a corporation of New York
Filed Jan. 31, 1969, Ser. No. 795,572
Int. Cl. F04b 7/00, 17/00
U.S. Cl. 417—412 4 Claims

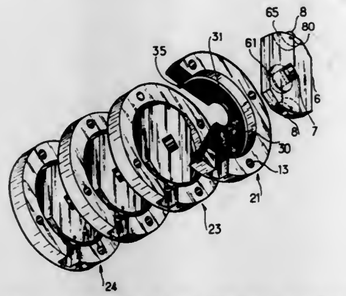
The motors for the separately reciprocating drive mechanisms of a two barrel syringe pump are provided with

electric control circuits and switches which are actuated by the reciprocating drive mechanisms and which cause a fully withdrawn syringe to commence infusion just before the other syringe completes infusion, the switches



also causing solenoid valve means to operate in phased relation to the infusion of the syringes whereby the infusion is carried out at a constant rate without perceptible interruptions or surges when the infusion of fluid changes over from one syringe to the other and back again.

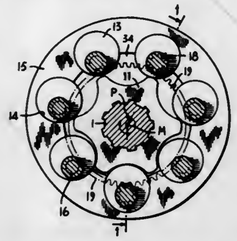
3,554,674
MICROPUMP FOR THE DOSAGING OF LIQUID, AND CONTAINER-FILLING LINE FOR SAME
Jacques Huret, Sainte-Genevieve-des-Bois, France, assignor to Compagnie Generale d'Automatisme, Paris, France, a corporation of France
Filed Jan. 23, 1969, Ser. No. 793,314
Claims priority, application France, Jan. 24, 1968, 137,318
Int. Cl. F04b *43/12*
U.S. Cl. 417—475 **4 Claims**



A micropump assembly of the peristaltic type for the dosing of liquid, comprising at least one rotatable small plate or arm carrying a roller and compressing a tube of elastic material arranged in a loop in a recess of the face of an aperture formed in a plate. The plate comprises hubs for connecting with the plate of another micropump to constitute a group of associated pumps which are aligned axially and whose arms or small plates are driven by one and the same shaft.

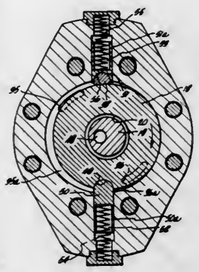
3,554,675
HYDRAULIC ROTARY-PRESSURE DEVICE
Gunnar Lyshoj Hansen, Nordborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Dec. 20, 1968, Ser. No. 785,586
Claims priority, application Germany, Dec. 23, 1967, D 54,949
Int. Cl. F04c *1/02*
U.S. Cl. 418—61 **6 Claims**

A rotary fluid pressure device having a ring member defining an outer wall of a chamber within which are disposed a plurality of circularly arranged circular discs independent of the ring member and within the chamber is disposed a toothed star member about which orbital movement is effected so that the meshing teeth and discs define expanding and contracting cells within the chamber and a rotary valve arrangement driven in synchronism with the



relative orbital movement of members places the cells sequentially in communication with inlet and outlet ports so that the device can function either as a pump or power motor which is reversible. The discs are pivotally mounted and rotationally driven from a main shaft of the device so that the relative orbital movement is effected by the discs imparting orbital movement to the ring member.

3,554,676
VAPOR COMPRESSOR
John O. Porteous, Pasadena, Calif., assignor to Loren A. Porteous
Filed Feb. 5, 1969, Ser. No. 796,840
Int. Cl. F04c *17/02*
U.S. Cl. 418—61 **4 Claims**

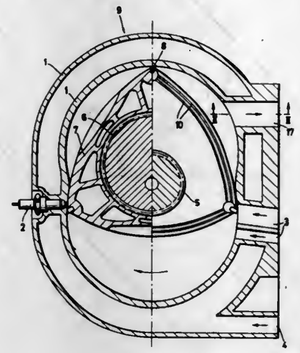


The piston in a rotary-type compressor makes a slip fit on a rotatable eccentric cam, and is prevented from rotating with respect to the compression cylinder by a slidable vane which fits in a slot in the piston and a recess in the cylinder. A second slidable vane fits in a recess on the opposite side of the cylinder and bears against the surface of the piston to divide the cylinder into two compression chambers.

3,554,677
ROTARY PISTON ENGINE
Gerhard Zapf, Krebsoge, Rhineland, and Jörg Niessen, Radevormwald, Germany, assignors to Sintermetallwerk Krebsoge G.m.b.H., Krebsoge, Rhineland, Germany
Filed May 7, 1969, Ser. No. 822,399
Claims priority, application Germany, May 14, 1968, 1,751,340
Int. Cl. F04c *15/00*
U.S. Cl. 418—178 **10 Claims**

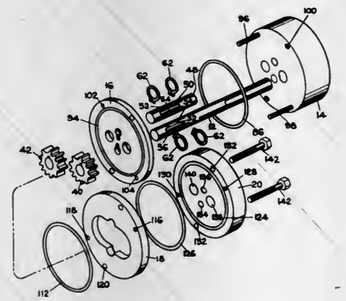
A rotary piston engine has a housing with a trochoidal surface in which a rotor rotates, the rotor having sealing strips which rub against the trochoidal surface of the

housing and both the trochoidal surface and the rubbing surfaces of the strips being coated with abrasion resistant layers of aluminium oxide, zirconium oxide or chromium oxide. The abrasion resistant layer on the trochoidal surface is from 0.2 to 0.4 mm. thick and an intermediate layer of a nickel iron alloy or a nickel chromium alloy of from 5 to 100μ thick is interposed between this abrasion resistant layer and the trochoidal surface. The abrasion resistant layers on the sealing strips are made of a



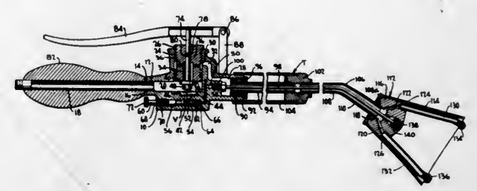
material of smaller abrasion resistance than that of the layer on the trochoidal surface. In the application of the intermediate and abrasion resistant layers to the trochoidal surface which has inlet and exhaust ports and an opening for a sparking plug, the trochoidal surface is roughened mechanically, the intermediate layer is applied, a coating is applied over the surfaces of the ports of the opening and finally the abrasion resistant layer is applied by flame spraying.

3,554,678
HIGH SPEED HYDRAULIC PUMP
Edward J. Jackoboice and Gerrit H. Kruizenga, Grand Rapids, Mich., assignors to Monarch Road Machinery Company, Grand Rapids, Mich., a corporation of Michigan
Filed Oct. 16, 1968, Ser. No. 780,925
Int. Cl. F04c *1/08*
U.S. Cl. 418—206 **9 Claims**



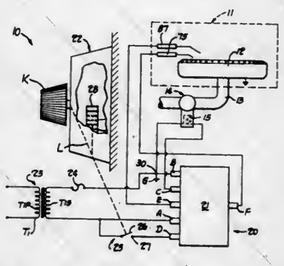
This disclosure relates to a high speed, high efficiency hydraulic pump made from a plurality of plate-like members. A pump cavity for a pair of intermeshing gear members is formed in one of the plates. Inlet and outlet conduits are provided to either side of the pump cavity. A recycle bypass line containing a pressure controlled valve is provided to recycle fluid at the outlet side of the pump to the inlet side in the event that back pressure at the outlet exceeds that of the inlet by a predetermined amount. Aligning pins extend into or through all of the plates to ensure precise alignment of the pump parts thereby permitting smaller tolerances to be used in the pump cavity. O-ring seals are provided between each of the plates to avoid external leakage outside the cavity.

3,554,679
PORTABLE HIGH-LOW LP GAS TORCH
Ben Brunner, 1324 15th St., Bedford, Ind. 47421
Filed Dec. 3, 1968, Ser. No. 780,832
Int. Cl. F23q *9/00*
U.S. Cl. 431—280 **10 Claims**



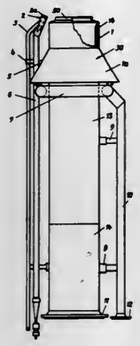
A high-low pressure LP gas torch that includes a pilot or low flame burner nozzle and a pair of main burner nozzles positioned to be ignited by the pilot burner nozzle and provide a high temperature flat flame; the main burner nozzles are in advance of the pilot burner nozzle to permit maximum utilization of the surrounding atmospheric air; flow of LP gas to the pilot burner nozzle is controlled by a screw actuated pilot valve and flow of LP gas to the main burner nozzles is controlled by a squeeze actuated valve; the discharge from the main burner nozzles is directed downwardly to produce a reaction force that counteracts some of the weight of the torch.

3,554,680
BURNER CONTROL SYSTEM
Stuart H. Malavasi, West Millington, N.J., assignor to Ranco Incorporated
Filed Dec. 3, 1968, Ser. No. 780,650
Int. Cl. F23n *5/00*
U.S. Cl. 431—78 **20 Claims**



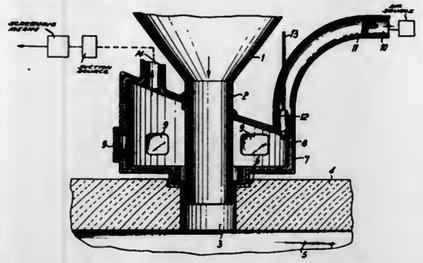
The present invention provides a burner control system for use in a furnace or the like. The system includes switching circuitry controlling energization of a solenoid operated fuel valve, trial circuitry for initially opening the fuel valve and establishing ignition at the burner, and flame sensing circuitry which maintains the fuel valve open in response to the presence of flame at the burner. The system is thermostatically controlled in accordance with the temperature of the heated medium.

3,554,681
FLARE STACK TIP
Albert Edward Proctor, "Craigmere," Howards Thickett, Gerrards Cross, Bucks, England
Filed Sept. 27, 1968, Ser. No. 763,266
Claims priority, application Great Britain, Oct. 9, 1967, 46,103/67
Int. Cl. F23d *13/20*
U.S. Cl. 431—202 9 Claims



A flare stack tip has an inlet for receiving a dump gas, an outlet for emitting the dump gas to the atmosphere for subsequent combustion and means for introducing ambient air into the dump gas stream prior to its leaving said outlet.

3,554,682
CHARGING ARRANGEMENT
Rudolf Krausse, Dortmund-Korne, Germany, assignor to Hoesch Maschinenfabrik Deutschland AG, Dortmund, Germany
Filed Dec. 5, 1968, Ser. No. 781,314
Int. Cl. F23d *17/00*
U.S. Cl. 431—202 6 Claims



A charging arrangement for furnaces and the like includes a charging conduit the outlet opening of which is arranged to be placed into communication with the charge hole of the furnace. A suction conduit surrounds the charging conduit and has an inlet opening which communicates with the charge hole and through which combustible gases and particulate matter carried thereby can be withdrawn. The suction conduit is in part configurated as a combustion chamber. An air supply supplies air to the combustion chamber and a gas or oil burner is provided for igniting and combusting gas and particulate matter which is aspirated into the combustion chamber through the charge hole.

CHEMICAL

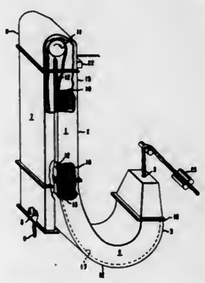
3,554,683
POLYOLEFIN COMPOSITION EXCELLENT IN DYEABILITY
Yoshisato Fujisaki and Itsuho Aishima, Tokyo, Noboru Fukuma, Nobeoka-shi, Atsuo Nakanishi, Yokohama, and Kenichi Matsui, Tsukasa Shima, and Schiyouzi Nakai, Nobeoka-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
No Drawing. Filed June 14, 1967, Ser. No. 645,903
Claims priority, application Japan, June 18, 1966, 41/39,153; Dec. 29, 1966, 42/85,636
Int. Cl. C08f *45/66*; D06p *3/02, 3/06*
U.S. Cl. 8—4 16 Claims

An easily dyeable polyolefin composition, obtained by adding a compound having in its molecule a basic nitrogen atom together with a specific amount of fine-grain inorganic compounds of specific kind and a specific amount of liquid pariffin to a polyolefin and mixing the same therewith.

3,554,684
ARTICLES CONTAINING NON-CONJUGATED ALKENYLGUANAMINE POLYMERS
William D. Emmons, Huntingdon Valley, and John G. Brodnyan, Langhorne, Pa., assignors to Rohm and Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 455,613, May 13, 1965. This application Feb. 26, 1969, Ser. No. 802,651
The portion of the term of the patent subsequent to May 27, 1986, has been disclaimed and dedicated to the Public
Int. Cl. D06m *13/34, 13/40*
U.S. Cl. 8—116.2 21 Claims

The present invention is concerned with articles containing addition polymers comprising 2-(ω-alkenyl)-guanamines in which the double bond of the alkenyl group is in non-conjugated relationship with respect to the unsaturation of the triazine ring and is part of a terminal group $H_2C{=}C<$.

3,554,685
TEXTILE BLEACHING PROCESS
Neil J. Stalter, Northminster, Del., and Otho S. McCullers, Greenville, S.C., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 590,587, Oct. 31, 1966. This application June 27, 1968, Ser. No. 755,014
Int. Cl. D06l *3/02*
U.S. Cl. 8—111 8 Claims



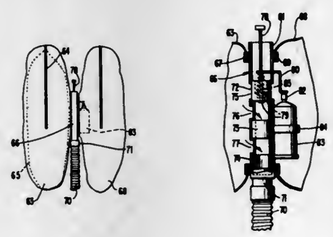
The invention relates to a process for continuously bleaching a textile fabric preimpregnated with a bleaching solution by passing the fabric through the storage zone in sliding contact with a removable inert fluoro-

carbon polymer sheet wherein chemical deposits and the fabric readily pass through said J-box with little or no abrasion and distortion being encountered by the fabric.

3,554,686
CELLULOSIC MATERIAL HAVING AN IMPROVED BALANCE BETWEEN APPEARANCE AND SERVICE PROPERTIES
William S. Tolgyesi, Silver Spring, Md., assignor to Cotton Producers Institute, Memphis, Tenn., a nonprofit corporation of Tennessee
No Drawing. Filed Oct. 2, 1967, Ser. No. 672,684
Int. Cl. D06m *13/34*
U.S. Cl. 8—115.6 6 Claims

In a durable-press process for cellulosic materials, a copolymer is first formed in a cellulosic material by copolymerization of a conventional polymer former such as an N-methylol compound or trisaziridinylphosphine oxide with a reactive polyfunctional comonomer such as urea or thiourea, which represses the ability of the polymer former to crosslink cellulose, the material being cured, preferably in a substantially dry system, under conditions such that a copolymer matrix is formed in the cellulose with relatively little or no crosslinking of the cellulose; and the cured, copolymer-bearing material is subsequently treated in liquid or vapor phase with a crosslinking agent such as dihydroxydimethylolethylene urea which reacts both with the copolymer and the cellulose and thereby upon re-curing of the material imparts to it improved crease retention and wrinkle recovery while preserving its breaking strength and abrasion resistance to a high degree.

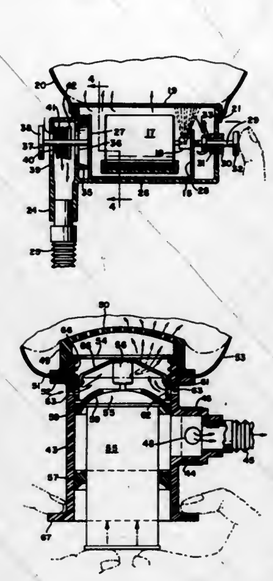
3,554,687
FUMIGATING APPARATUS
Robert J. Cassidy, 540 Chick Springs Road, Greenville, S.C. 29609
Filed Dec. 24, 1968, Ser. No. 786,577
Int. Cl. A61l *3/00*
U.S. Cl. 21—91 5 Claims



A fumigating or sanitizing apparatus comprising a flexible and collapsible receptacle and means for introducing fumigant therein to sanitize and deodorize articles placed within the receptacle.

3,554,688
FUMIGATION APPARATUS
Robert J. Cassidy, 540 Chick Springs Road, Greenville, S.C. 29609
Continuation-in-part of application Ser. No. 786,577, Dec. 24, 1968. This application May 12, 1969, Ser. No. 823,540
Int. Cl. A61l *3/00*
U.S. Cl. 21—91 17 Claims

A manifold has a first connection with a flexible and collapsible container for an article to be fumigated and a second connection with a vacuum source. An operator associated with the manifold causes a pressurized fumigant to be discharged within the manifold when the vacuum source is blocked and the flexible container and article are free to expand.



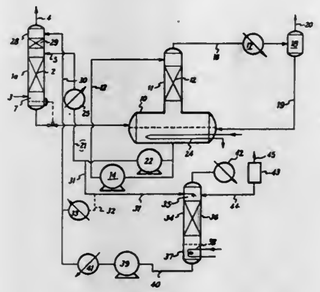
3,554,689
METHODS OF REMOVING CARBON OXYSULFIDE FROM GASES
Rudolf H. Bloembergen and Weigert C. Buningh, Amsterdam, and Adrianus Petrus Bally, The Hague, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Oct. 5, 1967, Ser. No. 672,977
Claims priority, application Netherlands, Oct. 24, 1966, 6615007
Int. Cl. B01d *53/00*; C01b *1/30*
U.S. Cl. 23—2 7 Claims

A process for the removal of carbon oxysulfide from oxygen and hydrogen containing gases comprising substantially completely removing oxygen by reaction with hydrogen in the presence of a highly active hydrogenation catalyst at a temperature below 150° C. and thereafter catalytically hydrolyzing the carbon oxysulfide to hydrogen sulfide at a temperature below 150° C.

3,554,690
APPARATUS AND METHOD FOR REMOVING CARBON DIOXIDE FROM PROCESS GASES
Bertrand J. Mayland, Jeffersontown, and Carl Robert Trimarke, Louisville, Ky., assignors to C & I/Girdler, Inc., Cincinnati, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 533,738, Feb. 18, 1966, which is a continuation-in-part of application Ser. No. 137,601, Sept. 12, 1961. This application Jan. 15, 1969, Ser. No. 824,327
Int. Cl. B01d *53/00*
U.S. Cl. 23—2 13 Claims

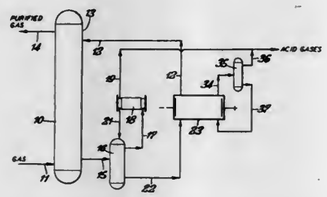
A process for stripping acidic gases from gaseous mixtures with a regenerable aqueous alkaline solution wherein the gaseous mixture and solution are contacted at ele-

vated temperature and super-atmospheric pressure in an absorber, and the rich absorbent solution is regenerated by successive flash vaporization at reduced pressure in a chamber of adequate capacity to allow, after the initial flash, a residence time of the solution in the chamber sufficient to permit the slower flash desorption reaction to



proceed to equilibrium. The solution is maintained in the chamber for the above mentioned residence time and heat is added thereto to compensate for the cooling resulting from the initial flashing and slower flash desorption reaction. The resulting lean solution is thereafter withdrawn, increased in pressure and returned to the absorber.

3,554,691
GAS PURIFICATION PROCESS
Wen Ling Kuo, Tarrytown, and John R. Anderson, Mount Kisco, N.Y., assignors to Union Carbide Corporation, a corporation of New York
Filed June 11, 1968, Ser. No. 736,056
Int. Cl. B01d *13/02, 53/00*
U.S. Cl. 23—2 **22 Claims**



A process for purifying natural gas streams and synthesis gas streams containing acid gases by employing alkanolamine absorbents to absorb the acid gases and regenerating the absorbents by feeding the absorbents containing the absorbed acid gases into an electrodialyzer which separates the acid gases from the absorbent. The aborbent, substantially free of acid gases in recycled in the process for further contact with gas.

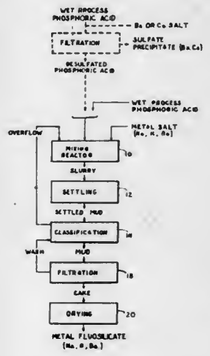
3,554,692
RECOVERY OF COPPER AND VANADIUM FROM A SOLUTION CONTAINING IRON
Bernhard D. Brast, Bay City, Tex., and Raymond E. Ory, Union City, N.J., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed May 26, 1969, Ser. No. 827,906
Int. Cl. C22b *59/00*
U.S. Cl. 23—22 **10 Claims**

Dissolved vanadium and copper are recovered from a solution which also contains dissolved iron by contacting the solution with a cation exchange resin in the hydrogen form, whereby the copped and vanadium are accumulated in the ion exchange bed. The bed is eluted periodically with a strong mineral acid, such as nitric acid. The iron is either selectively complexed with a polyphosphate incorporated into the liquid introduced into the bed, whereby the iron is not accumulated in the bed and is instead discharged with the waste liquor, or else alternatively it is allowed to accumulate in the bed to be periodically extracted therefrom by passing a polyphosphate-containing liquid such as polyphosphoric acid through the bed.

3,554,693
SEPARATION OF SCANDIUM FROM RARE EARTH ELEMENTS
Kent A. Orlandini, West Chicago, Ill., and Johann Korkisch, Vienna, Austria, assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Jan. 7, 1969, Ser. No. 789,619
Int. Cl. C22b *59/00*
U.S. Cl. 23—22 **4 Claims**

This invention relates to a process for purifying scandium and for separating scandium values from the rare earths and other values by dissolving the values in an aqueous hydrochloric acid solution which is then mixed with a water-miscible organic solvent containing an organic phosphorus compound. The resulting mixture is passed over a cation exchange resin bed where the rare earths and other values are absorbed by the resin and the pure scandium values pass through the bed and are recovered from the effluent.

3,554,694
PROCESS FOR PRODUCING FLUOSILICATES
James E. Barker, Freehold, N.J., and Julian H. Robinson, Lithia Springs, Ga., assignors to Cities Service Company, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 656,279, July 26, 1967. This application June 2, 1969, Ser. No. 829,344
The portion of the term of the patent subsequent to Aug. 19, 1986, has been disclaimed
Int. Cl. C01d *3/02;* **C01f** *11/22*
U.S. Cl. 23—88 **13 Claims**

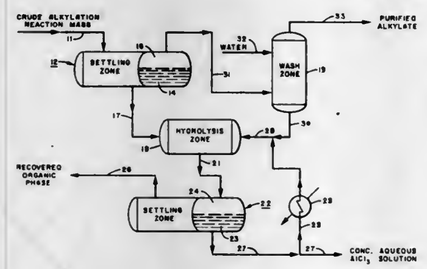


A process for the manufacture of commercially pure sodium fluosilicate from wet process phosphoric acid (WPA) by reacting a sodium salt preferably sodium chloride with the fluosilicic acid present in the phosphoric acid under conditions of moderate agitation characterized by a Reynolds number of between 7600 and 8300, thereby precipitating the sodium fluosilicates as a particle having a size between 200 mesh and 325 mesh. The reactant containing the precipitate is discharged as a slurry

to a settling tank where the precipitate is settled out and the clarified defluorinated acid passed out in a separate stream for further processing. The settled mud is then passed to a classifier where gypsum and other solids are floated out in the wash, the wash as overflow being recycled to the mixing reactor. The classified sodium ffuosilicate is filtered and dried to obtain a commercially pure sodiumfluosilicate.

Wet process phosphoric acid can also be defluorinated by reaction with either potassium or barium salts under like conditions. In the instance, either potassium or barium fluosilicate may be recovered. By reacting the wet acid with a mixture of sodium, potassium and/or barium salts, a mixed fluosilicate product can also be obtained.

3,554,695
DISPOSAL OF SPENT ALUMINUM CHLORIDE ALKYLATION CATALYST SLUDGE
David W. Marshall, Severna Park, Md., Jerry McCleskey, Franklin Lakes, N.J., and George O. Feighner, Pasadena, Tex., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Mar. 10, 1969, Ser. No. 805,684
Int. Cl. C01f *7/56, 7/62*
U.S. Cl. 23—92 **8 Claims**

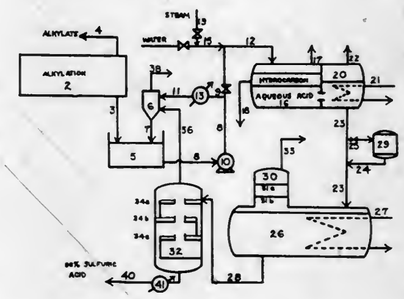


A method for separating aluminum chloride alkylation catalyst sludge from a mixture of product alkylate and sludge, is provided wherein the alkylate is separated from the sludge and passed through a washing zone. The liquid employed in the washing zone is then introduced into a hydrolysis zone wherein the separated sludge is hydrolyzed. The hydrolyzed sludge is then allowed to settle and form a water phase and an organic phase. A portion of the water phase, which contains the aluminum chloride, is then recycled to the hydrolysis zone and this recycle stream, coupled with the liquid wash stream from the wash zone, effects a desirable separation in the subsequent second settling zone.

3,554,696
WET PROCESS PHOSPHORIC ACID MANUFACTURE
Gerald E. G. Wilkinson, Temple Terrace, and Theodore T. Houston, Tampa, Fla., assignors to Tennessee Corporation, New York, N.Y., a corporation of Delaware
Filed May 6, 1968, Ser. No. 726,688
Int. Cl. C01b *25/22*
U.S. Cl. 23—165 **11 Claims**

A filtered and concentrated wet process phosphoric acid solution is separated from the fine solids that form therein during the concentration operation. These solids contain appreciable quantities of P_2O_5 in the form of iron or aluminum phosphates. The separated fine solids are recycled to the phosphate rock acidulation operation. The solids are introduced to either the first acidulation stage or, preferably, one of the intermediate reaction stages. The fine solids are dissolved in the acidulation mixture and the P_2O_5 content thereof is recovered in the product phosphoric acid solution. No significant increase in P_2O_5 loss in the by-product gypsum results. Furthermore, the level of impurities, such as iron and aluminum, in the resulting phosphoric acid solution reaches a tolerable equilibrium level after which no continuing build up of impurities in said phosphoric acid solution results.

3,554,697
REDUCTION OF FOAMING DURING ACID REGENERATION
Walter E. Goers, Westchester, N.Y., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Nov. 14, 1967, Ser. No. 687,087
Int. Cl. C01b *17/90*
U.S. Cl. 23—173 **11 Claims**



The reconcentration of spent sulfuric of from 95 to 80 percent or lower concentration which involves diluting the acid to 65 percent or lower acid concentration; digesting the diluted acid in a first digestion zone under atmospheric pressure at a temperature of between 200° F. and 300° F. to form a hydrocarbon phase and an acid phase; settling the digested acid for a minimum period of 1.5 hours while maintaining the temperature of the first digestion zone; removing contaminants; passing the resulting acid to a second digestion zone wherein under atmospheric pressure and a temperature of between 300° F. and 400° F. the remaining hydrocarbons are decomposed to elemental carbon; settling the digested acid for a minimum period of 1.5 hours at the temperature in the second digestion zone; removing elemental carbon; and reconcentrating acid in one or a plurality of steps under vacuum up to an acid concentration of about 90 percent or higher which includes the step of continuously adding small amounts of dilute acid to a hot pool of concentrated acid and continuously removing from the hot pool approximately an equally small amount of acid which has been concentrated up to about 90 percent.

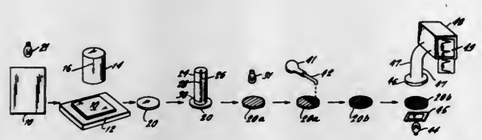
3,554,698
HYDROLYSIS OF ORGANIC SILICATES TO PRODUCE POLYMERS AND RESINS
Alfred J. Burzynski, Toledo, and Judith A. Walmsley, Sylvania, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Filed Feb. 1, 1966, Ser. No. 523,898
Int. Cl. C01b *33/00;* **C08f** *11/04;* **C07d** *103/02*
U.S. Cl. 23—182 **13 Claims**

Polymeric organosiloxanes which are clear and may be either flexible or rigid, hard, solid materials containing only silicon-oxygen linkages are formed by hydrolysis of alkyl or aryl orthosilicates in the presence of water, a mineral acid, and a solvent to form a single phase system. The mixture is refluxed until the reaction is essentially complete and then at least a portion of the solvent is removed while avoiding gelation of the resulting prepolymer. Subsequently, the prepolymer can be cast and cured to produce the solid clear polymeric product.

3,554,699
NITROSYL TRIFLUORIDE
John H. Gross, Lakeland, Fla., assignor to International Minerals & Chemical Corporation, a corporation of New York
No Drawing. Filed Dec. 13, 1960, Ser. No. 75,488
Int. Cl. C01b 21/00
U.S. Cl. 23—203 1 Claim

Compounds of fluorine, nitrogen, and oxygen, namely, nitrosyl trifluoride, fluoryldifluoroamine, nitroniumdifluoramide, and tetrafluorodinitrogen oxide. The compounds are useful as oxidizers in rocket propellant systems.

3,554,700
METHOD FOR OBTAINING A KNOWN VOLUME OF LIQUID AND ABSORPTION APPARATUS THEREFOR
Theodore Maxon, Elmhurst, N.Y., assignor to Scientific Industries, Inc., Hempstead, N.Y., a corporation of Delaware
Filed May 6, 1968, Ser. No. 726,652
Int. Cl. G01n 1/00, 1/28; B65b 43/42
U.S. Cl. 23—230 18 Claims



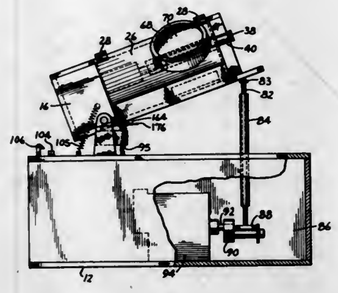
For obtaining a predetermined volume of liquid, a pad of predetermined volume is formed which is comprised of a material of known absorption characteristic, liquid is then applied to the pad until the pad is saturated; since a known volume pad is known to absorb a certain quantity of liquid per unit volume, the volume of liquid on a saturated pad is known; apparatus is provided for carrying out the foregoing method; this method may be used for analysis of the components of a liquid, through applying a reagent to the saturated pad and analyzing the reaction caused by the reagent on the pad.

3,554,701
URIC ACID TEST PROCEDURE
William N. Cottrell, Jr., Indianapolis, Ind., assignor to Bio-Dynamics, Inc., Indianapolis, Ind., a corporation of Indiana
No Drawing. Filed Jan. 23, 1969, Ser. No. 793,580
Int. Cl. C07d 33/00; G01n 33/16
U.S. Cl. 23—230 10 Claims

Test procedure which is useful in the determination of uric acid in body fluids. The test reagent comprises a solution of 2,4-dimethylquinoline in ethyl alcohol in the presence of sulfuric acid. Test reagent turns brown in the presence of uric acid and can be used for the qualitative and quantitative determination of uric acid.

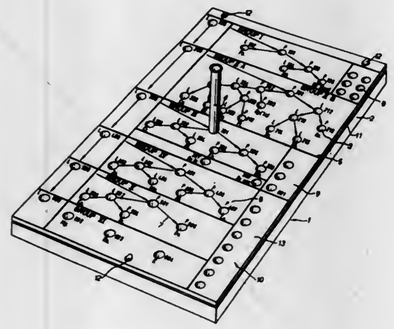
3,554,702
APPARATUS FOR VIEWING PARTICLE PRODUCING REACTIONS
Edward Shanbrom, Santa Ana, Calif., and Edward P. Kamienski, Jr., Upper Saddle River, N.J., assignors to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware
Filed May 17, 1968, Ser. No. 730,161
Int. Cl. G01n 31/02, 33/16
U.S. Cl. 23—253 15 Claims

A holder is movable in a first position at a predetermined rate for indirectly displaying particles produced in a time controlled reaction in a holder supported receptacle and under light passing through a path defined by the holder. The holder is held in a second position during a reaction



period and therafter spontaneously assumes the first position.

3,554,703
ANALYTICAL STEP INDICATOR BOARD
Graham William Moss, 20 Parkstead Road, London, England
Filed May 29, 1968, Ser. No. 732,914
Int. Cl. G01n 31/02; G09b 23/24
U.S. Cl. 23—253 9 Claims

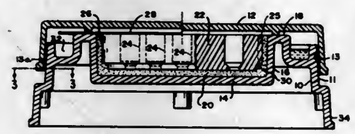


A board for instruction in the principles of chemical analysis and having a series of apertures labelled with instructions and arranged in groups to define the various stages of the analysis. In a preferred embodiment, the instructions are provided on a washable card apertured similarly to the board and removable therefrom so as to enable the card to be changed or to enable the board to be used without the instructions.

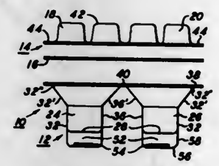
3,554,704
BIOLOGICAL ASSAY CELL
Alexis E. Ushakoff, Miami, Fla., assignor to Cordis Corporation, Miami, Fla., a corporation of Florida
Filed Feb. 10, 1969, Ser. No. 797,954
Int. Cl. C12k 1/10; G01n 33/16
U.S. Cl. 23—253 2 Claims

A ready to use two directional immunodiffusion (ouchterlony) cell consists of a transparent plastic container in which is housed a preformed gel layer and an adjacent surface contacting template formed with wells to receive liquid reactants. The volume occupied by the gel layer

is sealed by a membrane from most of the remaining air space within the cell, and a trough for water to maintain a saturated atmosphere is formed within such remaining air space.



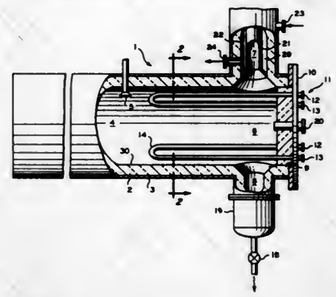
3,554,705
CHEMICAL PACKAGE
Donald LeRoy Johnston, Arcadia, and Vernon W. Dryden, Pasadena, Calif., and John T. Doyle, Lake Oswego, Oreg., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 645,665, June 13, 1967. This application Aug. 14, 1969, Ser. No. 860,140
Int. Cl. G01n 33/16; B01l 3/00
U.S. Cl. 23—253 47 Claims



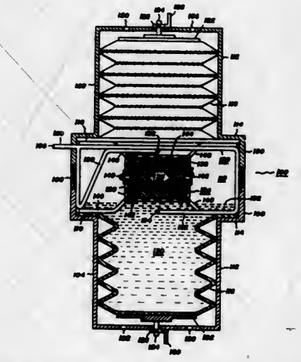
Disposable reaction containers suitable for use with automated analytical systems. The disposable containers have at least one lower compartment for the admixing and reaction of reagents and sample material added thereto and a storage section having at least one, and preferably a plurality of, reagent storage chambers adapted for communication with each reaction compartment. The upper portions of the side walls of each reaction compartment are positioned so that all material added to each reaction compartment is channeled to the bottom portion thereof. Each reaction compartment has at least one pair of opposite side walls which are substantially vertical and define an optical window through which optical analysis is made. The substantially vertical side walls are connected to each other, in one embodiment, by side wall portions substantially perpendicular thereto and, in a further embodiment, by curved wall portions. The bottom wall can be flat or of a non-planar configuration such that, when properly positioned over an adjacent ultrasonic mixing means, tabletted materials added to the reaction compartment are effectively agitated until brought into solution.

3,554,706
CARBON BLACK FURNACE
Eulas W. Henderson, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Mar. 26, 1969, Ser. No. 810,849
Int. Cl. C09c 1/58
U.S. Cl. 23—259.5 7 Claims

Reactor apparatus for the production of carbon black having a downward-extending outlet conduit positioned downstream of the quench system to facilitate removal of unvaporized quenching medium, and an upwardly-extending conduit for smoke removal, heat exchanger means being positioned therebetween.



3,554,707
ATTITUDE INSENSITIVE GAS GENERATOR
William A. Holmes, Marblehead, and Alfred D. MacKenzie, Lynnfield, Mass., assignors to General Electric Company, a corporation of New York
Filed Apr. 10, 1968, Ser. No. 728,378
Int. Cl. B01j 7/02
U.S. Cl. 23—282 5 Claims

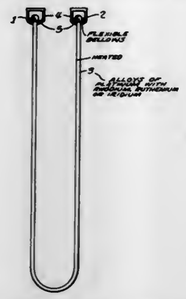


A generator housing is formed with one or more bellows sections so that a liquid reactant is confined within the housing by the bellows regardless of the angular orientation of the generator. A solid body providing a reaction surface is centrally mounted within the enclosure. Upon contact of the liquid reactant with the solid body a gas is generated, but contact is destroyed by expansion of the bellows. A plurality of gas outlets are provided within the housing so that if one is submerged by liquid reactant, the remaining outlet will remain exposed for the eduction of gas.

3,554,708
PROCESS AND APPARATUS FOR HEATING TITANIUM TETRACHLORIDE VAPOR
Peter M. Jones, Keelby, and Dennis Read, Laceby, England, assignors to Laporte Titanium Limited, London, England, a British company
Filed Mar. 13, 1968, Ser. No. 712,769
Claims priority, application Great Britain, Mar. 29, 1967, 14,220/67
Int. Cl. C01l 13/14
U.S. Cl. 23—293 12 Claims

Process and apparatus for heating titanium tetrachloride vapor to temperatures at which it may be utilized direct-

ly in vapor-phase oxidation to form titanium dioxide. The vapor is heated by passing it successively through an inlet conduit, a plurality of heating tubes arranged in parallel

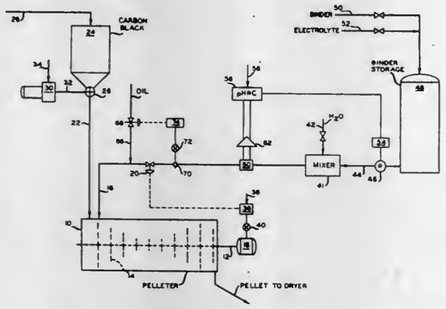


relationship with one another and an outlet conduit. The inlet and outlet conduits and the heating tubes are constructed of platinum or an alloy of platinum with rhodium, ruthenium or iridium.

3,554,709
SELECTIVE ION-EXCHANGE SEPARATION OF ALKALI METALS
Kent A. Orlandini, West Chicago, and Johann Korkisch, Hinsdale, Ill., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed June 17, 1968, Ser. No. 737,356
Int. Cl. C01d *3/16, 11/04;* **B01j** *1/04*
U.S. Cl. 23—312 **5 Claims**

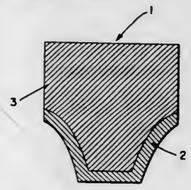
A method of separating alkali metal values from other elements contained in an acid feed solution by evaporating the solution to near dryness and dissolving the resulting residue in a solvent solution consisting of 2-thenoyltrifluoroacetone in pyridine and passing the resulting organic feed solution over a cation-exchange resin bed whereby the alkali metal values are retained on the resin and the other elements pass through the bed with the effluent.

3,554,710
APPARATUS AND PROCESS FOR CONTROLLING FLOW OF MIXED LIQUIDS TO A WET PELLETING PROCESS BY pH CONTROL
John A. Drummond, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed July 13, 1967, Ser. No. 653,205
Int. Cl. C01b *31/14*
U.S. Cl. 23—314 **6 Claims**



In pelleting flocculent carbon black with water containing a liquid, water-miscible binder wherein the flow rate of water varies somewhat to compensate for unavoidable variations in the flow rate of black to a wet pelleter, the concentration of binder in the water stream is controlled by adding an electrolyte (either a base or acid) in minor but effective concentration to the binder to form a homogeneous mixture, injecting the resulting mixture into the water stream, sensing the value of the pH or hydrogen ion concentration of the resulting aqueous stream, and regulating the injection rate of the binder in response to the sensed value to maintain said value relatively constant. Oil is also added to the aqueous stream fed to the pelleter by sensing the rate of flow of the aqueous stram and controlling the flow of oil in response to the sensed flow rate. Apparatus for effecting the controlled injection of binder and oil is provided.

3,554,711
MOLD OF COMPOSITE METAL
Herbert A. Jahnle, Havertown, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 23, 1968, Ser. No. 785,965
Int. Cl. B21c *3/16*
U.S. Cl. 29—197 **5 Claims**



A laminated molding tool especially adapted for punch molding comprising a molding surface layer of nickel intimately bonded to a supporting substrate comprising an alloy of aluminum and zinc which substrate imparts rigidity and strength to the molding surface layer.

3,554,712
GASOLINE CONTAINING N-SULFINYL AMINE
George C. Licke, Oxford, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Dec. 20, 1968, Ser. No. 785,804
Int. Cl. C10l *1/22*
U.S. Cl. 44—74 **10 Claims**

Gasoline, containing as an antiknock agent an N-sulfinyl amine compound, is described.

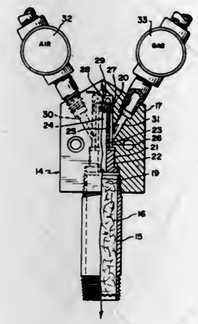
3,554,713
PROCESS FOR BURNING OILY RESIDUES IN TANKERS
Robert S. Bassett, Westfield, and Richard O. Norris, Belle Mead, N.J., assignors to Cities Service Tankers Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 5, 1968, Ser. No. 710,627
Int. Cl. C10l *1/04*
U.S. Cl. 44—80 **6 Claims**

A method for disposing of low flash point crude oil residues recovered from cargo tanks of ships by blending the low flash point residue with high flash point fuel oil to provide a blended fuel of sufficiently high flash point for safely burning on board ships. The blended fuel may then be burned in the propulsion system of the ship or for steam generation on board the ship.

3,554,714
AIR-GAS MIXING DEVICE
Richard S. Johnson, Racine, Wis., assignor to Modine Manufacturing Company, a corporation of Wisconsin
Filed July 3, 1968, Ser. No. 742,393
Int. Cl. F23d *13/40*
U.S. Cl. 48—180 **6 Claims**

An air-gas mixing device having an elongated annular first mixing chamber and an axial flow passage receiving

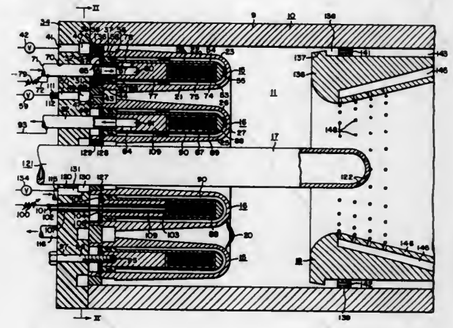
fluid from said chamber, a first passage means for introducing air into the annular chamber adjacent a first end thereof, a second passage means for introducing gas into the annular chamber also adjacent this first end, the first and second passages being arcuately spaced from each other and a second mixing chamber between the second end of the annular chamber and the axial flow passage. The first chamber is axially adjacent the flow passage with the result that the air-gas mixture flowing



from the annular chamber through the second chamber and into the axial flow passage makes a sharp turn (preferably an approximately 360° turn). Because mixing takes place immediately on introducing the air and gas to the annular chamber, then mixes further in flow through the annular chamber and mixes more thoroughly in flow through the second mixing chamber into the axial flow passage including the sharp turn, a very thorough mixing of the air and gas is achieved in a very small space.

3,554,715
CROSS FLOW ARC HEATER APPARATUS AND PROCESS FOR THE SYNTHESIS OF CARBON, ACETYLENE AND OTHER GASES
Armin M. Bruning, Export, Peter F. Kienast, Pittsburgh, George A. Kemeny, Export, and Chikara Hirayama Murrysville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 12, 1965, Ser. No. 507,345
Int. Cl. H05b *7/18*
U.S. Cl. 48—197 **16 Claims**

A gas arc heater for chemical processing in one embodiment has concentric annular electrodes each having a magnetic field coil therein near the arcing surface so that a radially extending arc between electrodes is caused to move substantially continuously in an annular path around the arcing surfaces of the electrodes. A process gas to be pyrolized is admitted into the arc chamber at a plurality of peripherally spaced positions where it passes directly through the rotating arc path and is pyrolized by the arc. A quenching gas is admitted at a plurality of peripherally spaced positions which may be around the outside of the electrode of larger diameter or around the inside of the electrode of smaller diameter, or both, the quenching gas mixing with pyrolized process gas and producing a gas mixture in which a desired recombination product is present at a certain temperature in substantial proportion. A tube slidable into the arc chamber through the central aperture of the annular electrode of smaller diameter has a number of small passageways therein for, if desired, introducing a quenching fluid or a fluid to "freeze" the recombination product to prevent further undesired chemical reactions. Additionally a gas or other fluid, process, quenching or other, may be introduced into the arc chamber at a plurality of peripherally spaced positions around the outside of the nozzle, and the nozzle has a plurality of axially and peripherally spaced bores passing through the surface thereof all communicating with fluid flow passageways for cooling fluid for injecting a "freezing" fluid into the gas mixture as it leaves the nozzle. The invention includes means for accomplishing quenching by causing a fias flow rate in the arc chamber which causes pyrolized gas to move in a predetermined time to a predetermined position distant from the arc



path where the pyrolyzed gas is cooled to a quenching temperature due to the normal drop in arc chamber temperature at that position. In another embodiment the heated gas mixture is caused to flow through a narrow throat portion of a nozzle and the speed thereof increased thence expanding into a portion of large volume where the speed of the gas is further increased with a conversion of heat energy to kinetic energy occurring and further cooling of the gas occurs. The second embodiment may include means for injecting a "freezing" fluid if desired, and may include heat exchanger means if desired.

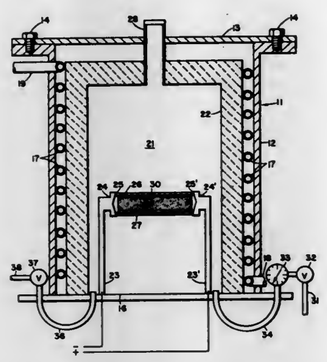
3,554,716
METHOD OF TREATING DIAMOND POWDER
Warren W. West, Gibbstown, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 8, 1968, Ser. No. 751,062
Int. Cl. B24d *3/02;* **C11d** *3/02*
U.S. Cl. 51—293 **10 Claims**

Diamond powder is treated to make its individual particles blocky and eliminate particles having internal weaknesses by entraining the powder in an inert gas stream moving at a velocity of about from 200 to 900 ft./sec., and impinging such stream with at least one jet of inert gas which causes the entrained particles to impact each other at a velocity sufficient to remove their friable portions.

3,554,717
SILICON CARBIDE CONTAINING BORON AND NITROGEN IN SOLID SOLUTION
Peter T. B. Shaffer, Grand Island, and Ellsworth D. Whitney, Snyder, N.Y., assignors to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Filed Jan. 30, 1968, Ser. No. 701,715
Int. Cl. C04b *35/14;* **B24d** *3/02*
U.S. Cl. 51—307 **8 Claims**

Beta silicon carbide having boron and nitrogen in replacement solid solution. Material is formed by subjecting mixtures of silicon and carbon in proportions corre-

sponding to 80 mole percent to 20 mole percent silicon carbide, boron in proportions corresponding to 20 mole percent to 80 mole percent boron nitride and nitrogen



to temperatures of between about 1300° C. and the decomposition temperature of silicon carbide and pressures of between 10 atmospheres and 7000 atmospheres.

3,554,718
APPARATUS FOR FEEDING STREAMS OF HEAT-SOFTENED MINERAL MATERIAL
Charles J. Stalego, Newark, and Samuel D. Philipps, Granville, Ohio, assignors to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Dec. 29, 1967, Ser. No. 694,581
Int. Cl. C03b *37/02*
U.S. Cl. 65—1 **2 Claims**

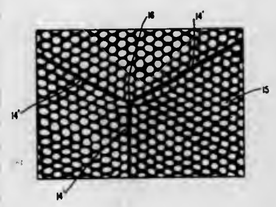


The disclosure embraces a method of correlating the characteristics of passages in a stream feeder or bushing for flowing glass streams and arrangement of tubular projections of different lengths providing differential surface areas defining the passages for the dissipation or transfer of heat from the glass to promote the delivery from the passages of streams of glass having substantially uniform viscosity characteristics.

3,554,719
METALLIC ROTORS FOR FORMING GLASS FIBERS
Stanley George Benner, South Plainfield, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 714,075, Mar. 18, 1968, which is a continuation-in-part of application Ser. No. 517,794, Dec. 30, 1965. This application Nov. 19, 1968, Ser. No. 777,201
Int. Cl. C03b *37/04*
U.S. Cl. 65—1 **5 Claims**

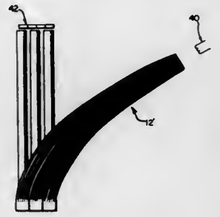
Glass fiberizing centrifugal rotor of improved metallic alloy containing chromium, iron, silicon, manganese and cobalt providing extended service life.

3,554,720
MANUFACTURE OF OPTICAL PLATES
Reneé Michelle Crépet, Villepinte, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France
Filed Oct. 30, 1967, Ser. No. 678,984
Claims priority, application France, Nov. 4, 1966, 82,585
Int. Cl. C03c *23/20*; C03b *11/08*
U.S. Cl. 65—4 **10 Claims**



Optical plates, useful inter alia as parts of cathode tubes, are mosaics of interfitting, prismatic disks without apertures at the apexes of the prism angles, optionally with means to absorb dispersed light. They are made by a novel process.

3,554,721
METHOD OF MAKING FIBER OPTIC BUNDLES
William L. Gardner, Wellesley, Mass., assignor to The Bendix Corporation, Detroit, Mich., a corporation of Delaware
Filed Jan. 10, 1968, Ser. No. 696,897
Int. Cl. C03b *37/00, 11/08*; C03c *15/00*
U.S. Cl. 65—4 **7 Claims**



A process of making a fiber optic reflective reader bundle having distinct illumination carrying fibers and signal or image carrying fibers differing substantially in diameters whereby the distinct fibers may be selectively segregated by their relative bending moments.

3,554,722
METHOD OF MAKING A GLASS WINDOW STRUCTURE
James E. Harvey, Dearborn Heights, Max J. Iriand, Dearborn, and Victor L. Lindberg, Northville, Mich., assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Aug. 30, 1968, Ser. No. 756,441
Int. Cl. C03b *18/02*; B32b *17/00*
U.S. Cl. 65—62 **6 Claims**

A method of making a glass window structure has the following steps. A ribbon of glass is manufactured by flowing molten glass out upon a molten bath to form the ribbon of glass. The ribbon is processed on the bath to

obtain a taper therein across the width thereof. The glass ribbon is cut into a plurality of glass brackets, each of the brackets having a taper from a thick edge thereof to an opposing, thin edge thereof. Individual glass window structures are assembled from the brackets by positioning



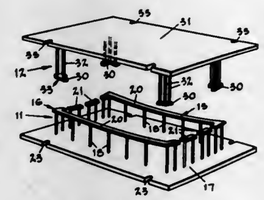
the thick edge of one of the brackets at one side of the frame of the window structure and thereafter positioning a second one of the brackets in the window frame so that the thick edge thereof is not in juxtaposition to the thick edge of the other bracket.

3,554,723
METHOD AND APPARATUS FOR AIR COOLING GLASS TUBE
Richmond W. Wilson, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Aug. 4, 1967, Ser. No. 658,572
Int. Cl. C03b *15/14*
U.S. Cl. 65—86 **6 Claims**



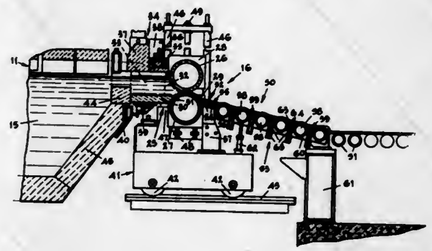
High velocity air is supplied to a confined space along an extended length of newly formed glass rod or tubing to provide improved controlled cooling rates and thereby permit higher production rates, and improved thermal stress control.

3,554,724
METHOD AND APPARATUS FOR BENDING GLASS SHEETS
George F. Ritter, Jr., Toledo, and Frank J. Hymore, Oregon, Ohio, assignors to Libbey-Owens-Ford Company, Toledo, Ohio, a corporation of Ohio
Filed May 24, 1968, Ser. No. 731,973
Int. Cl. C03b *23/02*
U.S. Cl. 65—107 **12 Claims**



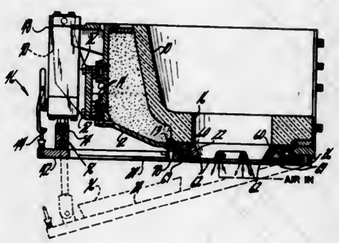
Method and apparatus for bending glass sheets in which a flat sheet of glass, heated to bending temperature, is supported horizontally above a primary mold member having a shaping surface of the curvature corresponding to the sheet when bent. The mold member is moved upwardly to lift the sheet, whereupon the sheet will settle into contact with the shaping surface of the mold under the influence of forces resulting from the inertia of the sheet and from gravity. A secondary mold member, mounted above the primary mold member, is provided to engage certain spaced portions only on the edges of the sheet which tend to curl upward as inertial forces cause the center of the sheet to sag to insure that these portions will be pressed into conformity with the primary mold member.

3,554,725
PATTERNED GLASS SHEET APPARATUS
Aubrey T. Bracken and Charles L. Ray, Toledo, and Conrad B. Schafer, Maumee, Ohio, assignors to Libbey-Owens-Ford Company, Toledo, Ohio, a corporation of Ohio
Filed June 24, 1965, Ser. No. 466,560
Int. Cl. C03b *5/32*
U.S. Cl. 65—185 **9 Claims**



Producing a continuous ribbon of patterned glass from a mass of molten glass contained in a plate glass furnace by delivering glass through a flow spout from the mass in said furnace to a pair of forming rolls, at least one of which has a pattern on its peripheral surface for forming a corresponding pattern on one surface of the ribbon, and gradually cooling the ribbon thus formed while conveying it across a supporting bed from the forming rolls to an annealing lehr.

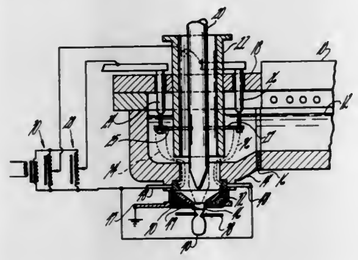
3,554,726
GLASS FEEDING APPARATUS WITH ORIFICE PLATE SUPPORT FRAME AND LIFTING MEANS THEREFOR
Robert A. Daly, West Hartford, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed July 11, 1968, Ser. No. 744,090
Int. Cl. C03b *5/26, 7/00*
U.S. Cl. 65—325 **5 Claims**



An orifice plate having three orifices through which molten glass gobs can be fed is mounted in a pan, which pan is mounted in a standardized support ring capable of

accommodating orifice plates and pans of various configurations. The support ring is loosely received on a pivoted frame movable to and from a raised position wherein a depending lug on the outlet spout casing of a conventional molten glass feeder bowl is received in an opening in the support ring to accurately locate the orifice plate and support ring in the outlet spout. The frame is raised by an air cylinder pivotally mounted to the outlet spout casing, and a toggle clamp releasably secures the frame in its raised position.

3,554,727
GROUNDING CIRCUIT FOR AUXILIARY ELECTRODE IN GLASS GOB FORMING APPARATUS
James F. Stevenson, West Hartford, Conn., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut
Filed Jan. 2, 1968, Ser. No. 695,113
Int. Cl. C03b *5/02, 5/26*
U.S. Cl. 65—327 **1 Claim**

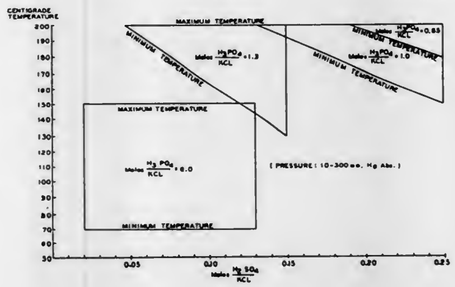


A feeder bowl is mounted at one end of a glass feeding furnace, or forehearth, and a reciprocating mechanism feeds successive gobs of molten glass downwardly through an outlet spout in the bowl. Electrode means in the feeder bowl is maintained at a relatively high potential, and electric current flows downwardly therefrom toward a primary annular electrode adjacent the outlet spout. An auxiliary annular electrode, located below the primary one, defines the outlet spout and is maintained at ground potential to prevent arcing between the glass gob being ejected through the spout and the glass gob shearing apparatus normally provided below the feeder bowl.

3,554,728
PROCESS FOR MAKING NON-HYGROSCOPIC AMMONIUM PHOSPHATE
William Percy Moore and James Earl Sansing, Chester, and Joseph Novotny, Hopewell, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Aug. 5, 1968, Ser. No. 749,955
Int. Cl. C05b *7/00*
U.S. Cl. 71—33 **9 Claims**

Wet process phosphoric acid is removed from an acidic sludge which settles from the crude acid and is concentrated to superphosphoric acid. The superphosphoric acid is then mixed with aqueous ammonia at a temperature greater than 70° C. whereupon the mixture is then held at 45–65° C. until at least 5% solids precipitate. The precipitated solids are neutralized to pH 5–6 with the acidic sludge to provide non-hygroscopic ammonium phosphate. The filtrate provides an ammonium polyphosphate fertilizer solution which does not precipitate magnesium-containing solids.

3,554,729
MANUFACTURE OF LOW CHLORIDE POTASSIUM PHOSPHATE FERTILIZER
William T. Curless, Overland Park, Kans., assignor to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
Continuation-in-part of application Ser. No. 578,212, Sept. 9, 1966. This application Aug. 28, 1969, Ser. No. 853,692
Int. Cl. C05b *7/00*
U.S. Cl. 71—34 **5 Claims**



In the manufacture of potassium acid phosphate for formulation into concentrated fertilizers having not more than 2 percent chloride, utilizing the reaction of potassium chloride with commercial phosphoric acid of strengths ranging from that of wet process to superphosphoric, improved removal of hydrogen chloride within the desirable reaction temperature within the range of about 70° C. to 200° C. is obtained by reduced pressure combined with steam stripping, in the presence of at least 0.02 mole of sulfuric acid per mole of potassium chloride. Though neither reduced pressure nor sparging steam or other inert gas into the reaction mixture is effective to remove all of the hydrogen chloride at equilibrium temperature, inert gas sparging greatly improves the release of hydrogen chloride under reduced pressure and makes it feasible to obtain a product having a very low chloride content.

3,554,730
CARBAMIC ESTER PROCESS AND FERTILIZER VALUES THEREIN
Jack D. Slater, Savannah, and Walter J. Culbreth, Garden City, Ga., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Jan. 17, 1967, Ser. No. 609,837
Int. Cl. C05b *7/00*
U.S. Cl. 71—34 **10 Claims**

An improved process for the production of carbamic esters of the general formula NH_2COOR, wherein R is a radical derived from a monofunctional monoalcohol of the formula ROH, which may be aliphatic, is disclosed. Urea, the alcohol of the formula ROH, and polyphosphoric acid are reacted together to produce the carbamic ester and ammonium polyphosphate as a by-product.

3,554,731
METHOD FOR MANUFACTURING AMMONIUM NITRATE CONTAINING MIXED FERTILIZERS
George H. Madany, Minneapolis, Minn., and George Burnet, Jr., Ames, Iowa, assignors to Iowa State University Research Foundation, Inc., Ames, Iowa, a corporation of Iowa
No Drawing. Filed Sept. 11, 1967, Ser. No. 666,977
Int. Cl. C05c *1/02*
U.S. Cl. 71—59 **10 Claims**

Mixed fertilizers containing ammonium nitrate are stabilized by incorporating a small percentage of a bromide or iodide salt, which inhibits the decomposition of the ammonium nitrate. Ammonium, alkali metal, or alkaline earth metal iodides or bromides can be used, preferably in amounts of from 0.2 to 4% by weight based on the ammonium nitrate. The method is particularly advantageous for granular mixed fertilizers using a slurry process including heat drying.

3,554,732
WEED KILLERS AND USE THEREOF
Michael Anthony Priola, Scarsdale, N.Y., assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 492,931, Oct. 4, 1965. This application Dec. 22, 1967, Ser. No. 692,693
Int. Cl. A01n *9/22, 9/24*
U.S. Cl. 71—93 **3 Claims**

Compositions containing diamino-s-triazines, 2,4–D, pentachlorophenol and herbicidal oil are long-term weed killers. A single application of these compositions effectively controls weeds through an entire growing season.

3,554,733
PROCESS OBTAINING SULFUROUS GASES AND MAGNETITE OR IRON SPONGE FROM WASTE FERROUS SULFATE
Umberto Colombo, Novara, Iti Mini, Milan, and Giuseppe Sironi, Novara, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy
Filed June 29, 1967, Ser. No. 650,109
Claims priority, application Italy, July 1, 1966, 15,164/66
Int. Cl. C01g *49/08*
U.S. Cl. 75—1 **10 Claims**

A process for obtaining concentrated sulfurous gases and magnetite or iron sponge with high iron content, which are valuable products for the iron-metallurgic industry, from heptahydrate ferrous sulfate. The process is broadly characterized by the following sequence: (a) Dehydration of the heptahydrate ferrous sulfate to the monohydrate form; (b) thermal decomposition of the monohydrate ferrous sulfate in a fluidized bed; (c) reduction of the hot hematitic ashes in a fluidized bed or in a rotary furnace, to magnetite or to sponge iron; (d) magnetic concentration of the product obtained in (c) with consequent elimination of the impurities undesirable in iron metallurgy and obtainment of a concentrate of high Fe grade; (e) preheating of the air necessary for operations (a), (b) and (c) by means of heat exchange with the hot sulfurous gases produced in (b); and (f) utilization of the sensible and chemical heat of the gases leaving the reduction (c) for the thermal decomposition of the monohydrate ferrous sulfate and/or for the dehydration of the heptahydrate ferrous sulfate to the monohydrate form.

3,554,734
STEEL ALLOY CONTAINING LOW CHROMIUM AND COPPER
Osamu Kikkawa and Akira Kambayashi, Yokohama-shi, Japan, assignors to Nippon Kokan Kabushiki Kaisha, Tokyo, Japan
No Drawing. Filed May 16, 1967, Ser. No. 638,720
Claims priority, application Japan, Sept. 10, 1966, 41/59,491
Int. Cl. C22c *37/10, 39/02*
U.S. Cl. 75—124 **4 Claims**

A low carbon steel alloy of high tensile strength. The steel alloy contains less than 0.23% carbon, less than 0.5% silicon, from 1.00 to 1.50% manganese, less than 0.040% phosphorus, less than 0.040% sulfur, less than 0.30% copper, less than 0.50% chromium, from 0.010 to 0.080% aluminum, and the remainder of iron and impurities in an amount and variety which do not impair the desired characteristics of the alloy. There is preferably not less than 0.20% silicon and from 1.00 to 1.35% manganese. This steel after being rolled into a steel plate is welded into a steel tube of high tensile strength. Also, the steel alloy is a killed steel and in particular an aluminum killed steel.

3,554,735
WOODWORKING TOOL OF CHROMIUM STEEL CONTAINING COBALT
Heinrich Hiltebrand, Bassersdorf, Zurich, Switzerland, assignor to ALBA-Werkzeugfabrik Lennartz & Co., Bulach, Zurich, Switzerland
No Drawing. Filed Nov. 19, 1968, Ser. No. 777,177
Int. Cl. C22c *39/14*
U.S. Cl. 75—126 **1 Claim**

A high-speed woodworking tool consisting of a steel alloy of substantially the following composition in percent by weight: carbon 1.5–2.0, silicon 0.20–0.40, manganese 0.20–0.40, chromium 12.0–13.0, molybdenum 0.40–0.60, vanadium 0.40–0.60, tungsten 1.50–2.50, cobalt 2.50–3.50, and the remainder substantially of iron.

3,554,736
HIGH TEMPERATURE CORROSION-RESISTANT AUSTENITIC STEEL
Kunio Kusaka, Yokohama, and Kunihiro Tsurumi, Tokyo, Japan, assignors to Tokushu Seiko Co., Ltd., Kawasaki, Kanagawa Prefecture, Japan, a corporation of Japan
No Drawing. Filed Dec. 31, 1968, Ser. No. 788,327
Claims priority, application Japan, Jan. 23, 1968, 43/3,449
Int. Cl. C22c *39/20*
U.S. Cl. 75—128 **6 Claims**

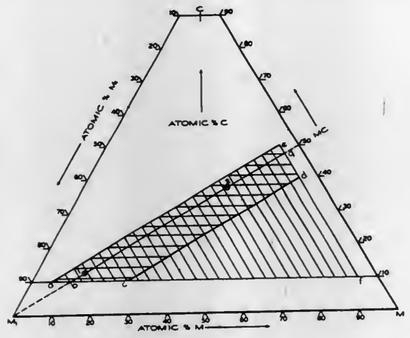
This patent relates to corrosion-resistant austenitic steels possessing improved mechanical and chemical resistance properties at high temperatures. The invention is more specially though not exclusively directed to such steels having improved corrosion-resistant characteristics in the presence of not only lead oxide but also vanadium pentoxide and which will consequently be highly suitable for use in the construction of certain parts of internal combustion engines, including especially the exhaust valves thereof, which are liable to be exposed to the combustion products of lead tetraethyl as present in high grade present-day fuels or low grade residual fuel oils for the operation of present-day diesel engines.

This invention discloses that the above mentioned desirable results are obtained in certain chromium-containing austenitic steels by using composition that exhibit the following features: (1) the use of a carbon content within a restricted range of about 0.30 to 0.70%, (2) the use of silicon contents of 0.10 to 1.0%, (3) manganese of 5.0 to 12.0%, (4) nickel of 2.0 to 7.0%, (5) chromium of 18.0 to 25.0%, (6) nitrogen of 0.20 to 0.60%, (7) arsenic of 0.02 to 1.0%, (8) the use of boron in amounts up to 0.1%, (9) the use of sulfur in substantial amounts up to 0.1%, all by weight, the balance being substantially iron with incidental impurities.

3,554,737
CAST REFRACTORY ALLOY
Ellis L. Foster and David E. Price, Columbus, Ohio, assignors to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware
Continuation-in-part of application Ser. No. 503,759, Oct. 22, 1965. This application May 21, 1968, Ser. No. 730,690
Int. Cl. C22c *15/00, 27/00*
U.S. Cl. 75—134 **15 Claims**

Cast refractory alloys of at least one metal selected from the group of tungsten, molybdenum, chromium, and rhenium, at least one metal selected from the group

titanium, hafnium and tantalum, and carbon, the W, Mo, Cr, or Re being present in amounts of from about 5 to about 85 atomic percent, the Ti, Hf, and Ta being present in amounts of from about 5 to about 85 atomic percent and the carbon being present in amounts of from about 10 to about 50.0 atomic percent have been found to



form eutectic structures that provide surprisingly high strength properties at elevated temperatures. Alloys consisting essentially of at least one metal selected from the group tungsten, chromium and rhenium, zirconium and carbon within corresponding ranges also have been found to have unexpected high temperature strength properties.

3,554,738
DENTAL AMALGAM

Victor E. Beldham, 552 Arizona Drive, New Kensington, Pa. 15068, and Richard F. Harvey, 5527 Old Carriage Lane, Orchard Lake, Mich. 48033

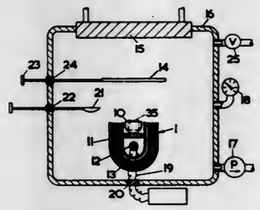
No Drawing. Filed May 21, 1968, Ser. No. 736,921
Int. Cl. C22c *7/00*
U.S. Cl. 75—134 **3 Claims**

An improved dental amalgam containing one to ten percent by weight of gallium for adhesion of the amalgam to the tooth surfaces.

3,554,739
ALLOYS AND PROCESSES FOR THEIR MANUFACTURE

Robert Lewis Bickerdike, Francis Julian Bradshaw, Garyth Hughes, and William Norman Mair, Farnham, and Harry Christopher Ranson, Farnborough, England, assignors to Minister of Technology in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England

Filed Sept. 6, 1967, Ser. No. 665,844
Claims priority, application Great Britain, Sept. 7, 1966, 39,928/66
Int. Cl. C22c *1/00*
U.S. Cl. 75—135 **5 Claims**



Bulk alloying process for the production of a multiphase alloy in the form of an engineering material comprising the steps of introducing at least one of the constituents into a controllable vacuum or low pressure system in solid form, evaporating the said constituent or constituents in a controllably heated source means and depositing the vapour on a collector means and alloys produced therefrom.

3,554,740
NICKEL-ALUMINUM ELECTRICAL RESISTANCE ELEMENTS

Keith Juxon Williams, Solihull, and Philip James Ennis, Birmingham, England, assignors to The International Nickel Company, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Apr. 29, 1969, Ser. No. 820,284
Claims priority, application Great Britain, May 17, 1968, 23,649/68
Int. Cl. C22c *19/00*
U.S. Cl. 75—170 **10 Claims**

Wrought electrical resistance elements produced from nickel-aluminum alloy powders are compacted, sintered and extruded into rod form. The nickel-aluminum alloys contain from 25% to 35% aluminum and may also include small amounts of one or more rare earth metals.

3,554,741
POLYMERIC PHOTOCONDUCTORS OF N-VINYLINDOLE AND THEIR USE IN ELECTROPHOTOGRAPHIC PROCESSES

Edward Gipstein and William A. Hewett, Saratoga, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

No Drawing. Filed Apr. 8, 1968, Ser. No. 719,663
Int. Cl. G03g
U.S. Cl. 96—1 **10 Claims**

Polymeric photoconductors of N-vinylindole, both unsubstituted and substituted, copolymerized through its vinyl substituent with a corepeating unit having the structural formula:



wherein R′ is a fused ring radical. Examples of these copolymers are N-vinylindole-indole copolymer, N-vinylindole-N-methylindole copolymer, N-vinylindole-indene copolymer, N-vinylindole-coumarin copolymer, and N-vinylindole-maleic anhydride copolymer.

3,554,742
ELECTROPHOTOGRAPHIC ELEMENT CONTAINING A BARRIER LAYER COMPRISING BLOCK COPOLYCARBONATES

Eugene P. Gramza and Edmond S. Perry, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 717,372, Mar. 29, 1968. This application Feb. 18, 1970, Ser. No. 12,470
Int. Cl. G03g *5/00, 5/04, 5/06*
U.S. Cl. 96—1.5 **7 Claims**

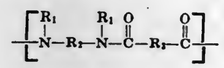
Electrophotographic elements comprised of a support, an electrically conducting layer, a novel barrier layer and a photoconductive insulating layer. The novel barrier layers are formed of block copolycarbonates having one recurring unit containing an alkylidene diarylene moiety and another recurring unit containing an oxytetramethylene moiety. These barrier layers have improved adhesion with contiguous layers.

3,554,743
ELECTROPHOTOGRAPHIC REPRODUCTION PROCESS USING LINEAR POLYAMIDES AS THE PHOTOCONDUCTOR

Keith Allan Maas, Glen Mills, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 2, 1967, Ser. No. 671,996
Int. Cl. G03g *5/06, 13/22*
U.S. Cl. 96—1.5 **12 Claims**

An electrophotographic reproduction process wherein the organic photoconductor is a linear, aromatic polyamide having recurring units of



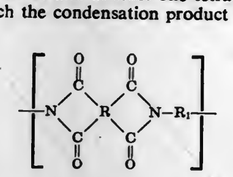
wherein R_1 is hydrogen or a lower alkyl, R_2 and R_3 are the same or different divalent hydrocarbon radicals at least one of which is a substituted or unsubstituted, phenyl or polyphenyl, divalent aromatic radical. The polyamide or copolymer thereof is the sole photoconductor.

3,554,744
ELECTROPHOTOGRAPHIC REPRODUCTION MATERIAL AND PROCESS EMPLOYING POLYIMIDE PHOTOCONDUCTORS

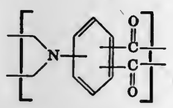
Keith Allan Maas, Glen Mills, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 2, 1967, Ser. No. 672,001
Int. Cl. G03g *13/22, 5/06*
U.S. Cl. 96—1.5 **13 Claims**

An electrophotographic reproduction element wherein the photoconductor surface has a surface potential of 0.25 to 10 kv./0.001 inch thickness and is a condensation product of diamines and at least one tetracarboxylic acid moiety in which the condensation product has the repeating unit



or a homopolyimide of repeating units



where R is an organic tetravalent radical containing at least two carbon atoms, said tetravolent radical being bonded to four carbonyl groups, no more than two carbonyl groups being bonded to any one carbon atom of said tetravalent radical, R_1 is an organic divalent radical containing at least two carbon atoms, said divalent radical being bonded to two nitrogen atoms, the said nitrogen atoms being attached to different carbon atoms of said divalent radical, and either R, R_1, or both, contain at least one ring of six carbon atoms characterized by benzenoid unsaturation. The polyimides should have an inherent viscosity of at least 0.1 measured as a 0.5% solution in concentrated sulfuric acid at 30° C. This polyimide or copolymer thereof can be the sole photoconductive insulating material used in an electrophotographic reproduction process.

3,554,745
ELECTROPHOTOGRAPHIC COMPOSITION AND ELEMENT

James A. Van Allan, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 29, 1968, Ser. No. 717,373
Int. Cl. G03g *5/00*
U.S. Cl. 96—1.6 **7 Claims**

4-amino benzo(b)pyrylium and 4-amino benzo(b)thiapyrylium salts are sensitizers for photoconductors. Photoconductive compositions sensitized with these compounds have increased electrophotographic speed and are sensitive in the ultraviolet region of the spectrum.

3,554,746
PHOTOCONDUCTIVE ELEMENTS CONTAINING HALOARYLKETONE-FORMALDEHYDE POLYMERIC BINDERS

Stewart H. Merrill, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Apr. 7, 1969, Ser. No. 814,202
Int. Cl. G03g *13/22, 5/06*
U.S. Cl. 96—1.6 **17 Claims**

Photoconductive elements containing a photoconductor and binder for the photoconductor comprising a haloaryl-ketone-formaldehyde resin are described. The described elements can be sensitized and charged either negatively or positively and used to prepare images electrophotographically.

3,554,747
ELECTROSTATIC PRINTING MATERIAL AND METHOD OF ITS PREPARATION

Minoo N. Dastoor, Stow, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 27, 1967, Ser. No. 678,533
Int. Cl. G03g *5/00*
U.S. Cl. 96—1.8 **9 Claims**

An electrostatic printing material having improved print density and a method of its preparation where the electrostatic printing material comprises an electrically conductive support layer and a second layer, the said second layer comprising a polymeric binder containing a dispersion of a photoconductive material, where the polymeric binder is a polymer comprising from about 50 to about 65 percent by weight units derived from ethyl acrylate, from about 3 to about 10 percent by weight units derived from at least one compound selected from the group consisting of hydroxyethyl methacrylate and hydroxypropyl methacrylate, from about 30 to about 45 percent by weight units derived from styrene and up to about 10 percent by weight units derived from monochlorostyrene.

3,554,748
SILVER HALIDE NUCLEATING COMPOSITIONS CONTAINING IONIC BORON HYDRIDES

Charleton C. Bard and Howard W. Vogt, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 28, 1966, Ser. No. 605,220
Int. Cl. G03c *7/16, 5/50, 5/30*
U.S. Cl. 96—22 **15 Claims**

Ionic boron hydrides having at least two boron atoms per molecule, such as, for example, tetramethylammonium octahydrotriborate, are effective silver halide nucleating agents for use in nucleating baths or developer solutions employed in photographic processing. These compounds are superior nucleating agents, as compared to the alkali metal borohydrides or the boranes used heretofore

for this purpose, with respect to such factors as stability in solution, ease of process control, and improved sensitometric results.

3,554,749
PROCESS FOR PRODUCING PHOTOGRAPHIC IMAGES WITH PHOTOSENSITIVE MATERIALS AND PRODUCTS PRODUCED THEREBY

Gerald Matthew Fletcher, Arlington, Amal Kumar Ghosh, Lexington, and Fahd G. Wakin, Bedford, Mass., assignors to Itek Corporation, Lexington, Mass., a corporation of Delaware

Filed July 13, 1967, Ser. No. 653,198
Int. Cl. G03c *5/04*
U.S. Cl. 96—27 **27 Claims**

This invention relates to a process of producing photographic images using photosensitive materials which have been presensitized by exposure to activating radiation so that the photosensitive substrate becomes sensitive to wavelengths of radiation to which the substrate is usually not sensitive. The photosensitive material which becomes reversibly activated upon exposure to activating radiation but preferably remains unchanged after such exposure is hereinafter referred to as a photoconductor. The presensitized photoconductor is exposed to a pattern of light to which the presensitized photoconductor is sensitized to form a latent image which is developed by known methods, e.g. using liquid redox systems, to obtain the visible image of the pattern. The redox system may be applied to the photoconductor either before or after the step of latent image formation. It has also been found that the quality of the visible image may be substantially improved by selection of light of specific wavelength to ensure optimum density differentials between the background and the visible image.

3,554,750
PROCESS FOR THE PRODUCTION OF PHOTOGRAPHIC IMAGES

Edith Weyde, Anita von König, and Harald von Rintelen, Leverkusen, Siegfried Wagner, Witzhelden, and Hans-Jörg Metz, Cologne-Nippes, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 549,191, May 11, 1966. This application Dec. 13, 1966, Ser. No. 601,319
Claims priority, application Germany, May 19, 1965, A 49,250
Int. Cl. G03c *1/06, 5/54*
U.S. Cl. 96—29 **17 Claims**

The invention relates to a process for the production of photographic images, in particular a copying process, wherein a supported layer which contains imagewisely distributed development nuclei for dissolved silver salts, in either visible or invisible form, is developed in the presence of an aqueous solution of silver salts soluble in water at pH values between 1 and 7.

3,554,751
PRESENSITIZED POSITIVE-WORKING LITHOGRAPHIC PLATE AND METHOD FOR MAKING SAME

Daniel C. Thomas, Covina, Calif., assignor to Lithoplate, Inc., Covina, Calif., a corporation of Illinois

Continuation-in-part of application Ser. No. 497,416, Oct. 18, 1965. This application Oct. 8, 1968, Ser. No. 765,937
Int. Cl. G03c *1/52*; G03f *7/02*
U.S. Cl. 96—33 **20 Claims**

A positive-working lithographic plate utilizing in its light-sensitive surface the reaction product of a light-sensitive diazo resin and a naphthalene sulfonic reactant. The diazo resin is applied to the plate support first, and then the naphthalene sulfonic compound.

3,554,752
LIGHT-SENSITIVE REPRODUCTION MATERIAL

Ernst-August Hackmann, Roland Dietrich, Roland Moraw, Wiesbaden-Biebrich, Germany, assignors to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany, a corporation of Germany

No Drawing. Filed Nov. 7, 1966, Ser. No. 592,293
Claims priority, application Germany, Nov. 10, 1965, K 57,619
Int. Cl. G03c *1/52*
U.S. Cl. 96—90 **3 Claims**

Light-sensitive imaging material comprises a support and a coating thereon of a composition comprising a halogenated hydrocarbon which splits off halogen when exposed to light, an N-vinyl compound selected from the group of N-vinyl amines, N-vinyl amides, and N-vinyl imides, and a sensitizer which is a merocyanine dye. The fixing of images resulting directly from imagewise light exposure of the negative-working imaging material is effected by washing the material with a solvent for the sensitizing dye, for example with a petroleum ether.

3,554,753
HEXAARYLBIIMIDAZOLE-CARBOCYANINE DYE COMPOSITIONS

Robert L. Cohen, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 20, 1967, Ser. No. 654,676
Int. Cl. G03c *1/72*
U.S. Cl. 96—90 **19 Claims**

Visible-light activated phototropic compositions of a hexaarylbiimidazole that normally requires ultraviolet light for activation and a carbocyanine dye that is a visible-light absorbing enery-transfer agent, and optionally, an oxidizable leuco form of a dye, preferably an aminotriarylmethane. A method for irradiating the composition with visible light in the 500–600 mμ range.

3,554,754
LIGHT-SENSITIVE REPRODUCTION MATERIAL

Ernst-August Hackmann, Wiesbaden-Dotzheim, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany

No Drawing. Filed Dec. 21, 1967, Ser. No. 692,325
Claims priority, application Germany, Dec. 24, 1966, K 61,021
Int. Cl. G03c *1/72*
U.S. Cl. 96—90 **3 Claims**

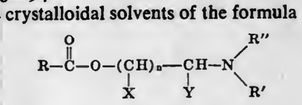
A particularly storage-stable light-sensitive reproduction material is prepared by combining a photo-active organic compound source of halogen free radicals with a triphenylimidazole derivative in a layer on a support. Exposure of the material to actinic light results in the print-out of a dye. Fixing of exposed material may be accomplished by heating or washing with a non-polar solvent.

3,554,755
PHOTOGRAPHIC EMULSIONS CONTAINING CHEMICAL ADJUVANTS DISPERSED IN CRYSTALLOIDAL SOLVENTS

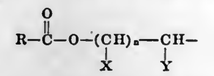
Giancarlo Rinauro, Ferrania, Savona, Italy, assignor to Ferrania, S.p.A., Milan, Italy

No Drawing. Filed Nov. 9, 1967, Ser. No. 681,921
Claims priority, application Italy, Sept. 15, 1967, 786,716/67
Int. Cl. G03c *1/10*
U.S. Cl. 96—94 **6 Claims**

Organic crystalloidal solvents of the formula



wherein R is an alkyl radical having from 1 to 18 carbon atoms, *n* is an integer up to 6, X and Y individually are a hydrogen radical or an alkyl radical, R′ is a hydrogen atom, an alkyl group or the monovalent radical



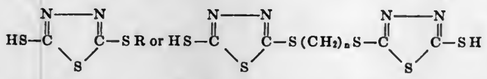
where R, X, Y and *n* are as defined above; R″ is a hydrogen atom or acyl radical having from 1 to 18 carbon atoms. These crystalloidal solvents are particularly useful in dispersed coupler photographic layers and constructions.

3,554,756
PHOTOGRAPHIC SILVER HALIDE LIGHT-SENSITIVE COLOR ELEMENT CONTAINING 1,3,4-THIADIAZOLES

Yahachi Terashima and Reiichi Ohi, Minami-Ashagara Machi, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Minami-Ashagara Machi, Kanagawa, Japan

No Drawing. Filed July 27, 1967, Ser. No. 656,324
Claims priority, application Japan, July 27, 1966, 41/49,280
Int. Cl. G03c *1/40*
U.S. Cl. 96—100 **10 Claims**

By incorporating in a silver halide light-sensitive emulsion layer containing a coupler of a photographic light-sensitive color film the compound represented by the formulae



wherein R is an alkyl group or an aralkyl group and *n* is an integer of 2 through 10, a dye image having improved granularity can be formed by processing the color film with a developer containing a p-phenylenediamine derivative.

3,554,757
STABILIZED PHOTOGRAPHIC SILVER HALIDE COMPOSITION

Yoshimi Kuwabara, Koganei-shi, Tokyo, and Sadao Sugita, Hanno-shi, Japan, assignors to Konishiroku Photo Industry Co., Ltd., Tokyo, Japan

No Drawing. Filed May 19, 1967, Ser. No. 639,600
Int. Cl. G03c *1/34*
U.S. Cl. 96—109 **6 Claims**

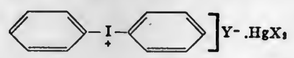
Photographic compositions containing a light-sensitive photographic substance such as a silver halide, and photographic film, paper or plate bearing such a substance, are stabilized against deterioration in storage, by including certain triazolopyridazine compounds in the compositions.

3,554,758
PHOTOGRAPHIC LIGHT-SENSITIVE MATERIAL

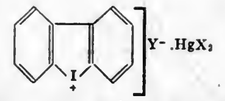
Jozef Frans Willems, Wilrijk, Robrecht Julius Thiers, Brasschaat, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a company of Belgium

No Drawing. Filed Dec. 7, 1967, Ser. No. 688,659
Claims priority, application Great Britain, Mar. 6, 1967, 10,373/67
Int. Cl. G03c *1/34*
U.S. Cl. 96—109 **6 Claims**

A light-sensitive material comprising a silver halide emulsion layer containing an iodonium compound corresponding to one of the following general formulae:



and



wherein Y^- represents an anion and X represents a halogen atom having an atomic number greater than 9 is described. The iodonium compound stabilizes the emulsion against any increase in fog without substantial desensitization of the emulsion.

3,554,759
STABILIZATION OF BEER

Helmut Beschke, Frankfurt, Helmut Reinhardt, Weiss, Bezirk Cologne, and Karl Achenbach, Frankfurt, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany

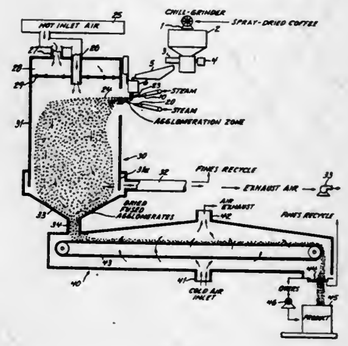
No Drawing. Filed Apr. 1, 1968, Ser. No. 717,956
Claims priority, application Germany, Apr. 4, 1967, D 52,699
Int. Cl. C12h *1/04*
U.S. Cl. 99—48 **5 Claims**

Beer is treated to improve its stability during storage whereby the beer is contacted with a modified finely divided silica obtained by precipitating silica from an aqueous alkali metal silicate solution with an acid in the presence of water soluble polyvinyl pyrrolidone, polyvinyl-3-methyl pyrrolidone or vinyl pyrrolidone-vinyl acetate copolymers.

3,554,760
METHOD OF AGGLOMERATING FOOD POWDER

Boleslaw Sienkiewicz, Pearl River, and Ferdinand A. Bagley, Scotia, N.Y., assignors to General Foods Corporation, White Plains, N.Y.

Filed Dec. 26, 1967, Ser. No. 693,503
Int. Cl. A23f *1/08*; B01j *2/00*
U.S. Cl. 99—71 **17 Claims**



A process and apparatus for agglomeration of powders, especially soluble coffee, involving the use of upper and lower jets of steam which impinge against at least one falling curtain of powder at a substantial angle so as to disrupt said curtain into agglomerates which are then wetted and redirected into a drying zone. The purpose of the upper jets of steam is to form agglomerates of varying size, density, and moisture content whereas the purpose of the lower jets of steam is to further wet the agglom-

erates and render them more uniform in density, size and moisture content while insuring that all of said agglomerates are projected into the drying zone.

3,554,761
COFFEE CONCENTRATE AND PROCESS OF PRODUCING THE SAME

Robert J. Carbonell, Stamford, Conn., assignor to Standard Brands Incorporated, New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 7, 1968, Ser. No. 707,366
Int. Cl. A23f *1/08, 3/02*
U.S. Cl. 99—71 **11 Claims**

A method of producing an instant coffee which when reconstituted in hot water has substantially the flavor and aroma of freshly brewed coffee. Ground, roasted coffee is subjected to a flavor and aroma extraction process and the flavor and aroma constituents collected. A sufficient amount of coffee solids, for instance spray dried coffee, is mixed with suitable proportions of the flavor and aroma constituents to obtain an aqueous mixture having a solids concentration of above about 20 percent by weight. This mixture is freeze dried and mixed in suitable proportions with a dried instant coffee in order to obtain an instant coffee which when reconstituted in hot water has substantially the flavor and aroma of freshly brewed, ground, roasted coffee.

3,554,762
POLYOL CARBONATES IN CHEMICAL LEAVENING SYSTEMS

Theodore W. Craig, Minneapolis, and Eugene H. Borochoff, St. Louis Park, Minn., assignors to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Jan. 17, 1968, Ser. No. 698,407
Int. Cl. A21d *2/14*
U.S. Cl. 99—92 **9 Claims**

Baked goods are prepared from compositions and batters wherein at least a portion of the chemical leavening system is comprised of various polyol carbonates. The polyol carbonates serve to provide an essentially steady liberation of carbon dioxide during baking.

3,554,763
PREPARATION OF READY-TO-EAT CEREAL CHARACTERIZED BY A HONEY-GRAHAM FLAVOR

Robert B. Fast, Glen Rock, Bohdan O. Hreschak, Hawthorne, and Clyde E. Spotts, Fair Lawn, N.J., assignors to National Biscuit Company, a corporation of New Jersey

No Drawing. Filed Sept. 7, 1967, Ser. No. 665,999
Int. Cl. A23l *1/10*
U.S. Cl. 99—83 **11 Claims**

A honey-graham flavored ready-to-eat cereal is prepared by partially cooking a syrup comprising liquid honey and sodium bicarbonate together with wheat flour in order to partially gelatinize the starch in the flour. The partially cooked product is cooled, compressed, puffed and dried to an extent sufficient to produce a product having a bulk density of 5–7 pounds per cubic foot.

3,554,764
FREEZE-THAW RESISTANT FLOUR AND STARCH THICKENER BLEND

David J. Yoder, Newburgh, Ind., and Maurice W. Bugg, Henderson, Ky., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

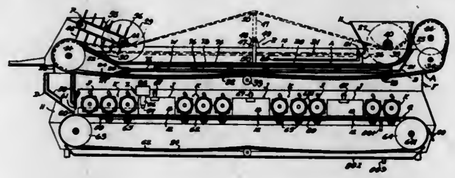
No Drawing. Filed Dec. 21, 1967, Ser. No. 692,302
Int. Cl. A23l *1/14, 1/04, 1/40*
U.S. Cl. 99—101 **13 Claims**

A food product having improved freeze-thaw stability is prepared using a thickening mixture containing pregelatinized wheat flour, and/or starches, an edible gum and sodium stearyl fumarate. The product is prepared by simple, dry blending of the ingredients, eliminating the need to chemically modify the starch or flour.

3,554,765
PREPARATION OF PLASTICIZED CHEESE

Nicholas E. Pontecorvo, Tarzana, and Wilfred A. Shaffer, Los Angeles, Calif., assignors to American Foods Machinery Corporation, Memphis, Tenn., a corporation of Tennessee

Continuation-in-part of applications Ser. No. 489,833, Sept. 24, 1965, and Ser. No. 601,177, Dec. 12, 1966. This application July 12, 1968, Ser. No. 744,499
The portion of the term of the patent subsequent to May 20, 1986, has been disclaimed
Int. Cl. A23c *19/00*
U.S. Cl. 99—115 **2 Claims**



Disclosed herein is a method and apparatus for processing raw cheese curd into fine, plasticized, substantially homogenous cheese such as Mozzarella, wherein the curd is carried by a stainless steel conveyor belt through an elongated body of water which is heated by steam or hot water circulated in heat-exchange ducts in the bottom of the tank which holds the water; the curd, after being softened and moistened by the heated water, being elevated by its conveyor belt up an incline, out of the body of water and thence discharged over the end of the tank and downwardly onto a kneading belt which carries it beneath successive kneading rollers and finally delivers the fully processed cheese to a receiving apparatus such as an elevator or conveyor. Successive kneading rolls flatten the cheese into ribbon form. Between successive rolls the cheese ribbon is gathered and folded over upon itself preparatory to being again flattened beneath the next roll. Salt may be applied to the cheese ribbon at a suitable station along the kneading ribbon.

3,554,766
PROCESS FOR MAKING CANDY CONTAINING FREEZE-DRIED FRUIT PARTICLES

Peter H. Engel, Riverside, Conn., and Herbert Knechtel, Park Ridge, Ill., assignors to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia

Filed June 7, 1967, Ser. No. 644,378
Int. Cl. A23g *3/00*
U.S. Cl. 99—134 **1 Claim**

This disclosure relates to an improved fruit product comprising freeze-dried fruit having a preserving and protecting layer comprising sugar and corn syrup, said fruit, under certain circumstances, being partially reconstituted. More particularly, the disclosure relates to fruit-flavored hard candy comprising a hard candy matrix containing particles of freeze-dried fruit, said particles being partially reconstituted and having a preserving and protective layer of sugar and corn syrup. Preferably, the candy also contains natural or synthetic fruit flavoring corresponding to the freeze-dried fruit, whereby a substantially enhanced ultimate flavor results.

The disclosure also relates to a candy product comprising freeze-dried fruit having an inner coating of gum arabic and an outer coating of sugar.

In a preferred embodiment of the invention, a substantial portion of the partially reconstituted freeze-dried fruit

is maintained substantially free of any material from the hard candy matrix, whereby the fruit particle is maintained in a desirably brittle condition, retaining its ability to become fully reconstituted during consumption.

The disclosure also relates to an improved process for making a candy product as described above, wherein the fruit particles are added to the syrup at a point after the maximum cooking temperature has been reached in the cooking of the syrup ingredients and are maintained in the mix under specified conditions of time and temperature.

3,554,767
COATED CONFECTIONERY

Wilhelm Daum, deceased, late of Darmstadt, Germany, by Martin Daum, Elisabeth Daum, Wilfried Daum, and Irmgard Daum, heirs, all of Darmstadt, Germany, and Eberhard Nürnberg and Hans Joachim Sippel, Darmstadt, Germany, assignors to E. Merck A.G., Patentabteilung, Darmstadt, Germany

No Drawing. Continuation-in-part of application Ser. No. 835,823, Jan. 6, 1969, which is a division of application Ser. No. 449,637, Apr. 20, 1965, now Patent No. 3,420,931. This application Feb. 24, 1969, Ser. No. 802,759
Claims priority, application Germany, Apr. 23, 1964, M 60,752
Int. Cl. A23g *3/00;* **A23l** *1/27;* **B44d** *1/00*
U.S. Cl. 99—134 **16 Claims**

An improved method for producing coated confection eries wherein the confectionery coating solution comprises about 35–60% by weight of sugar and about 0.5–10% by weight of a vinyl polymer, such as polyvinyl pyrrolidone, this method permitting automatic operation, and markedly reducing the time conventionally employed for producing sugar coated candies. The resultant confectioneries are also claimed.

3,554,768
CARBOHYDRATE FIXED ACETALDEHYDE

Jacob R. Feldman, New City, N.Y., assignor to General Foods Corporation, White Plains, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 1, 1967, Ser. No. 657,531
Int. Cl. A23l *1/22*
U.S. Cl. 99—140 **14 Claims**

A carbohydrate substance and acetaldehyde is uniformly mixed in water and the resulting mixture is dried to form a flavor enhancing composition. This composition is useful for adding freshness to rehydratable dried fruit and vegetable foodstuffs. The shelf storageability of the flavor enhancing composition or the dry food containing it may be extended indefinitely by packaging it in a hermetically sealed container.

3,554,769
FLAVORING COMPOSITION

James Jerry Caillouet, P.O. Box 4108, Huntsville, Ala. 35902

No Drawing. Filed Dec. 5, 1967, Ser. No. 687,973
Int. Cl. A23l *1/00, 1/22*
U.S. Cl. 99—140 **5 Claims**

A composition having a synthetically produced lemon flavor, is made by combining a major proportion of citric acid, and minor proportions of oil of lemon and oil of sweet orange. The two oils may vary in quantity relative to one another, and the composition may be made in the form of tablets, powders or liquid. Additional components may be included in the composition, depending primarily upon the form (powder, tablets, liquid) in which the composition is to be marketed.

3,554,770
PACKAGED FOOD PRODUCT

Marcus Lipsky and William J. Mahan, Los Angeles, Calif.; Dorothy C. Mahan, executrix of the estate of said William J. Mahan, assignor, by mesne assignments, to Hunt-Wesson Foods, Inc., Fullerton, Calif., a corporation of Delaware

Filed Nov. 17, 1964, Ser. No. 411,740
Int. Cl. B65b *25/06;* **B65d** *85/00*
U.S. Cl. 99—174 **11 Claims**



A package for heating precooked food formed from a sheet material comprising an inner plastic layer, an intermediate metal foil layer and an outer electrically-insulative layer. The package is rectangular such that one end extends out of a heating unit when the food is being heated. The edges of the sheet material are electrically insulated by folding the edges (with the exception of the edge extending out of the heating unit) so that the foil layer is completely enclosed by the outer electrically-insulative layer.

3,554,771
SOLID GELATED ALCOHOLIC FOAM

Sol B. Wiczer, 3235 Sleepy Hollow Road, Falls Church, Va. 22042, and Lloyd S. Luther, 4740 Connecticut Ave. NW., Washington, D.C. 20008

No Drawing. Continuation-in-part of application Ser. No. 628,276, Apr. 4, 1967. This application Aug. 11, 1967, Ser. No. 659,869
Int. Cl. A23 *7/08*
U.S. Cl. 99—189 **10 Claims**

Alcoholic products are gelated to a solid with methyl cellulose or gelatin as preferred gelating agents, the alcoholic product preferably being a beverage, typically a cordial, rum or whiskey, the solidified product being loaded in a dispensing container and pressurized with a non-toxic propellant gas such as nitrous oxide or perfluorocyclobutane to exude the solidified foam, and is generally useful as an edible topping for desserts or the like.

3,554,772
METHOD OF PASTEURIZING FLOUR

Cloyce L. Hankinson, Camillus, Ernest George Linke, North Syracuse, and William Arvid Seleen, Dewitt, N.Y., assignors to Borden, Inc., New York, N.Y., a corporation of New Jersey

No Drawing. Filed Jan. 30, 1967, Ser. No. 612,319
Int. Cl. A21d *6/00*
U.S. Cl. 99—215 **5 Claims**

A stable pasteurized flour composition with a substantial proportion of the enzymes therein inactivated is prepared by heating an aqueous flour suspension to about 135° to 150° F. in the presence of a hydration prevention agent, said hydration prevention agent being present in an amount sufficient to result in a suspension viscosity not greater than one-half the viscosity of the same flour suspension in water measured without any hydration prevention agent.

3,554,773
PROCESS FOR INACTIVATING ENZYMES IN MEAT TO BE STABILIZED BY RADIATION
Gary W. Shults, Milford, and Eugen Wierbicki, Framingham, Mass., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Feb. 29, 1968, Ser. No. 709,188
Int. Cl. A23b *1/00*
U.S. Cl. 99—217 4 Claims
In a process for the radiation stabilization of fresh beef wherein the beef is first blanched to inactivate proteolytic enzymes and then stabilized with high energy ionizing radiation, the improvement which consists of increasing the salt content of beef to a level from between 0.5 to 1.5% by weight by pumping and/or marinating with a concentrated salt solution prior to blanching whereby the beef enzymes are rendered susceptible to inactivation at lower temperatures or the same temperature for shorter times than was heretofore possible.

3,554,774
PROCESS FOR THE MANUFACTURE OF COLORED STRUCTURES FROM CELLULOSE TRIACETATE
Maxwell James Hewitt, Kenilworth, England, and Felix Steinlin, Dornach, Solothurn, and Werner Grubenmann, Muttenz, Switzerland, assignors to Courtaulds Limited, Coventry, England, a company of the United Kingdom, and Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed Aug. 29, 1969, Ser. No. 854,325
Claims priority, application Switzerland, Sept. 2, 1968, 13,131/68
Int. Cl. D01f *1/04*
U.S. Cl. 106—193 5 Claims
Process for the manufacture of colored articles from cellulose triacetate, which comprises adding to a solution of cellulose triacetate a preparation consisting of a pigment and/or an optical brightener and ethyl cellulose, shaping the so pigmented solution to structures and removing the solvent.

3,554,775
PRODUCTION OF CELLULOSE ESTERS
Derek Abson, Vancouver, British Columbia, Canada, and Richard P. Taylor, Chillicothe, Ohio, assignors to Columbia Cellulose Company Limited, Vancouver, British Columbia, Canada, a Canadian corporation
Filed Apr. 26, 1967, Ser. No. 633,832
Int. Cl. C08b *21/04*; C09j *3/04*
U.S. Cl. 106—196 7 Claims
A lignocellulosic material, such as sawdust, is esterified to produce a solid phase, and a liquid phase containing esterified pentosans; water and peracetic acid are added to the resulting solid and liquid phases; esterified lignin present in the solid phase is oxidized so as to pass into solution; and a solid cellulose ester composition is recovered which contains 65 to 95% cellulose ester, 5 to 35% esterified hexosans and 0 to 15% esterified pentosans. The resulting cellulose ester composition may be used in molding applications and possesses modified physical properties when compared with the corresponding cellulose ester.

3,554,776
NOVEL PERYLENETETRACARBOXYLIC DIIMIDE COMPOSITIONS
Herman Gerson, New York, N.Y., and William Eugene Bachmann, North Haledon, and Paul B. Woodlock, Midland Park, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Nov. 24, 1967, Ser. No. 685,341
Int. Cl. C08h *17/14*
U.S. Cl. 106—288 8 Claims
This specification discloses novel pigment compositions comprising solid solutions of two or more 3,4,9,10-perylenetetracarboxylic diimides. The solid solutions extend the range of colors and shades of perylene pigments available and the masstone of coatings prepared from these pigments is deeper and more transparent than that of known pigments.

3,554,777
PRODUCTION OF PIGMENTARY TITANIUM DIOXIDE
Gerald Lederer, Hartburn, Stockton-on-Tees, John M. Rackham, Fairfield, Stockton-on-Tees, and John P. Humphreys, Marske-on-Sea, Redcar, England, assignors to British Titan Products Company Limited, Durham, England, a corporation of the United Kingdom
No Drawing. Filed Feb. 29, 1968, Ser. No. 709,212
Claims priority, application Great Britain, Mar. 10, 1967, 11,379/67
Int. Cl. C09c *1/36, 3/00*; C09d *5/02*
U.S. Cl. 106—300 18 Claims
The production of pigmentary titanium diodixe by depositing on the surface of the particles in aqueous dispersion a hydrous oxide of aluminum from an aqueous solution of an alkali metal aluminate and a hydrous oxide of silicon, the coating so obtained containing the hydrous oxide of silicon expressed as SiO_2 in an amount of from 60 to 90 molar percent and the hydrous oxide of aluminum expressed as Al_2O_3 in an amount of from 40 to 10 molar percent of the total coating and the amount of the coating being such as to contain from 9 to 15 percent by weight of SiO_2 based on the weight of uncoated titanium dioxide. Coating compositions comprising a binder and titanium dioxide pigment having been coated by the previously described process particularly those in which the binder is a film-forming polymer in aqueous emulsions.

3,554,778
METHOD FOR DEVELOPING LATENT ELECTROSCOPIC IMAGES
Daniel B. Granzow, Jr., Arlington Heights, Ill., assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
No Drawing. Filed Apr. 19, 1966, Ser. No. 543,530
Int. Cl. G03g *13/08*
U.S. Cl. 117—17.5 4 Claims
Disclosed is a method of developing latent electrostatic images which comprises passing the surface containing the image through a fluid-like granular developing composition composed of toner particles and carrier particles wherein the carrier particles are composed of silicates of calcium, magnesium, aluminum or silica. The surface area and bulk density of the carrier component is about 95–200 sq. meters/g. and 5–15 lbs./cu. ft. respectively.

3,554,779
TRANSFER COMPOSITIONS
Donald Firth, Skelmanthorpe, near Huddersfield, England, assignor to Datacopy Limited, Park Mill, Clayton West, near Huddersfield, Yorkshire, England, a British company
No Drawing. Filed Oct. 25, 1967, Ser. No. 677,865
Claims priority, application Great Britain, Oct. 26, 1966, 48,082/66; Oct. 5, 1967, 45,520/67
Int. Cl. B41m *5/10*
U.S. Cl. 117—36.3 17 Claims
The present invention relates to a transfer sheet system in which a sheet support is provided with a coating of a transfer composition on one side and a coating of a receptor composition on the other, the transfer composition comprising a binder including a resin soluble in a spirit and a transferrable colouring material including a colouring pigment which is insoluble in said spirit, and the receptor composition comprising a thermoplastic polyalkylene, such as polyethylene together with an alkyl cellulose and/or alkyl hydroxyalkyl cellulose binder, the arrangement being such that on placing a layer of transfer composition adjacent a layer of the receptor composition, the application of pressure, as with a typewriter key, to bring said layers into pressure contact results in the transfer of colouring material from the layer of the transfer composition to the layer of receptor composition. The alkyl cellulose and/or alkyl hydroxyalkyl cellulose are preferably ethyl cellulose and ethyl hydroxyethyl cellulose respectively.

3,554,780
REMOVABLE PROTECTIVE COATING FOR SELECTIVE PLATING OF SURFACES
Vernon F. Miller, Jenkintown, and David R. Gehman, Lansdale, Pa., assignors to Rohm and Haas Company, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Aug. 28, 1967, Ser. No. 663,514
Int. Cl. B44d *1/52*
U.S. Cl. 117—5.5 15 Claims
This invention relates to an improvement in the metallizing of various surfaces wherein an acid resistant but alkaline removable stop-off coating is applied to selected portions of the surface of an article to be plated for the purpose of masking particular areas which are to remain unplated during the plating process. The stop-off coating compositions are aqueous dispersions of vinyl emulsion copolymers containing at least one carboxylic acid. The process of this invention is particularly applicable to a surface formed from a plastic or synthetic polymeric material.

3,554,781
METHOD OF PRODUCING PRESSURE-SENSITIVE RECORDING PAPERS
Hiroharu Matsukawa, Shizuoka, Japan, assignor to Fuji Photo Film Co. Ltd., Tokyo, Japan
No Drawing. Filed Jan. 24, 1968, Ser. No. 700,037
Claims priority, application Japan, Jan. 24, 1967, 42/4,649
Int. Cl. B01j *13/02*; B41m *5/16*
U.S. Cl. 117—36.8 14 Claims
A single-sheet pressure-sensitive recording material is produced by applying to a substrate an electron-acceptive adsorbent and microcapsules formed by coacervating a hydrophilic material around colorless electron donors. By incorporating 5–15 parts by weight, based on the weight of the materials used to form the wall of the microcapsules of a water-soluble alkyd resin, a water-dispersible metal soap, a water-dispersible paraffin or an aqueous emulsion of a paraffin wax and rosin into the composition used to coacervate the microcapsules prior to application onto the substrate an improved pressure sensitive recording material is obtained.

3,554,782
METHOD FOR DEPOSITING CARBIDE COMPOUND
Vernon A. Nieberlein, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army
Filed Aug. 23, 1967, Ser. No. 662,830
Int. Cl. C23c *9/00*
U.S. Cl. 117—46 7 Claims
A method for depositing a carbide compound such as silicon carbide on a heated wire through the use of a film-boiling technique. The reinforced filament product is useful in reinforced filament-wound missile and aircraft structures.

3,554,783
LOW TEMPERATURE METHOD FOR COATING NUCLEAR FUELS WITH MULTIPLE CARBON COATINGS
Hans Beutler, Sulz-Attikon, Switzerland, assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Nov. 4, 1968, Ser. No. 773,351
Int. Cl. G21c *3/20*; B44d *1/16*
U.S. Cl. 117—46 2 Claims
A thin, impervious, carbon coating is deposited onto a porous buffer coating in pyrolytically coated fuel microspheres to prevent diffusion of the coating gas into the porous buffer coating during subsequent coating operations by initiating the deposition at a temperature of about 1500° C. and immediately thereafter reducing the deposition temperature to within the range of 1100°–1300° C. to complete deposition of an outer, high density pyrolytic carbon coating.

3,554,784
SOFTENING OF TEXTILE MATERIALS
Warren I. Lyness, Mount Healthy, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed June 5, 1967, Ser. No. 643,343
Int. Cl. D06m *13/34, 15/72*
U.S. Cl. 117—47 9 Claims
A process for softening textiles in aqueous solution with critical amounts of trialkylamine oxide having one alkyl chain containing at least 20 carbon atoms.

3,554,785
PERSULFATE AND HYPOCHLORITE TREATMENT OF DARK OR MEDIUM COLORED WOODS
Stephen Dombay, Stevenage, England, assignor to The Furniture Industry Research Association, Stevenage, England, a corporation of the United Kingdom
No Drawing. Filed Dec. 4, 1967, Ser. No. 687,464
Claims priority, application Great Britain, Dec. 8, 1966, 55,026/66
Int. Cl. B27k *5/02*
U.S. Cl. 117—57 14 Claims
The invention relates to a process for imparting stabilised colour to wood and other ligno-cellulosic materials. In the process, the wood is treated with an oxidizing agent so as to produce therein light-stable products which stabilise the colour of the wood. Preferred details for the treatment of various materials are given.

3,554,786
METHOD FOR PREPARING AN ELEMENT HAVING A SUBSTRATE COATED WITH A PRESSURE-INSENSITIVE, CLOSED-MICROCELLED COMPOSITION
Erwin Paul Lieberman, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 28, 1967, Ser. No. 663,521
Int. Cl. B44d *1/092*; D21h *1/28, 1/38*
U.S. Cl. 117—60 4 Claims
A method for coating a substrate such as paper with a mixture of a water-soluble proteinaceous such as paper with a mixture of a water-soluble proteinaceous binder and an elastomeric latex having a cell-forming liquid with

a boiling point less than 100° C. imbibed in the mixture and drying the applied coating. The dried coating is an essentially closed-microcelled, pressure-insensitive coating.

3,554,787

GLASS ARTICLE HAVING DUAL SCRATCH AND ABRASION RESISTANT COATING AND METHOD FOR PRODUCING SAME

Charles E. Plymale, Maumee, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

No Drawing. Filed Aug. 16, 1965, Ser. No. 480,098
Int. Cl. C03c 17/32
U.S. Cl. 117—72 7 Claims

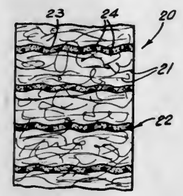
Glass surfaces are provided with abrasion-resistant characteristics by forming a first layer of an oxide of tin or titanium thereon and then overcoating this first layer with organic copolymers. Suitable copolymers include copolymers of vinyl acetate with vinyl chloride, vinyl acetate with vinyl benzoate, ethylene with vinyl acetate, vinyl acetate with dibutyl fumurate, vinyl acetate with methyl methacrylate, ethyl acrylate with methacrylic acid and ethylene with ethyl acrylate.

3,554,788

WATER DISPERSIBLE NONWOVEN FABRIC

Michael R. Fechillas, Linden, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

Filed Oct. 9, 1968, Ser. No. 766,056
Int. Cl. D06h 3/08; D04h 1/58; A61f 13/16
U.S. Cl. 117—140 16 Claims



A water dispersible nonwoven fabric comprising a layer of overlapping, intersecting fibers bonded with a water insoluble, substantially water insensitive, film-forming, nonself-crosslinking polymer containing a water soluble material having pseudo-plastic flow properties uniformly distributed throughout the polymer.

3,554,789

PROCESS FOR THE PRODUCTION OF VAPOUR PERMEABLE MICROPOROUS STRUCTURES AND STRUCTURES OBTAINED BY THE PROCESS

Koji Kigane, Nobuji Ishihara, and Kazuo Koga, Mihara-shi, Japan, assignors to Teijin Limited, Osaka, Japan, a corporation of Japan

No Drawing. Filed Nov. 6, 1967, Ser. No. 681,024
Claims priority, application Japan, Nov. 7, 1966, 41/73,168
Int. Cl. D06n 3/14; B44d 1/44
U.S. Cl. 117—161 4 Claims

Process for preparing a vapour permeable microporous structure in which a coating of a dispersion of a polyurethane and an aqueous emulsion of a polymer is applied to the surface of a substrate and dried. A microporous structure which has a high velocity of vapour permeability is produced.

3,554,790

METHOD OF POLISHING FLOORS WITH POLISH CONTAINING BIDENTATE AMINO ACID CHELATE OF POLYVALENT METAL AND ARTICLE

David R. Gehman, Harleysville, Pa., and Irwin S. Fiarman, Willingboro, N.J., assignors to Rohm and Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 686,689, Nov. 29, 1967. This application Mar. 26, 1969, Ser. No. 810,833
The portion of the term of the patent subsequent to Sept. 16, 1986, has been disclaimed and dedicated to the Public
Int. Cl. C09g 1/04, 1/10, 1/16
U.S. Cl. 117—161 11 Claims

This invention relates to the use of coating compositions, especially floor polishing compositions, containing a water-insoluble additional polymer, a polyvalent metal chelate and, as optional components, a wax and an alkali-soluble resin wherein the polyvalent metal chelate is derived from a polyvalent metal ion and a bidentate amino acid ligand.

3,554,791

COVERED WELDING ELECTRODE

Edwin W. Johnson, Murrysville, and Frederick C. Hull, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 4, 1968, Ser. No. 765,037
Int. Cl. B23k 35/22
U.S. Cl. 117—205 11 Claims

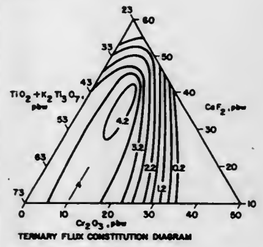
A covered welding electrode having an austenitic alloy core wire containing less than 0.01% carbon and essential for acceptable creep-rupture ductility of weld metal in the as-deposited condition.

3,554,792

WELDING ELECTRODE

Edwin W. Johnson, Murrysville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 4, 1968, Ser. No. 765,159
Int. Cl. B23k 35/22
U.S. Cl. 117—205 12 Claims



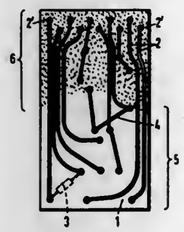
High-strength austenitic steel arc welding electrodes which electrodes are productive of weld deposits having low susceptibility to hot cracking as well as having high creep-rupture strength and ductility in the as-welded condition. The coating, applied to austenitic steel core wire containing most of the desired alloy elements of the final weld deposit, is composed, in parts by weight (p.b.w.), of from about 5 p.b.w. to about 40 p.b.w. of CaF_2, from about 5 p.b.w. to about 25 p.b.w. of Cr_2O_3, from about 10 p.b.w. to about 15 p.b.w. of a binder consisting of an alkali-metal silicate and about 0.5 p.b.w. of an organic gum such as sodium carboxymethyl cellulose, up to about 10 p.b.w. $CaMoO_4$, up to about 10 p.b.w. Mn metal powder, up to 0.2 p.b.w. boron, other alloy metal powders as needed to provide the desired final alloy composition of the weld deposit, and the balance being at least one compound of a group consisting of TiO_2 and the titanates of the alkali and alkaline-earth elements along with incidental impurities.

3,554,793

METHOD OF APPLYING A DISCRETE LAYER OF METALLIC SUBSTANCE OVER A METAL PATTERN ON AN INSULATING CARRIER

Friedrich Krieger, Gilching, Germany, assignor to Siemens Aktiengesellschaft

Filed Feb. 20, 1968, Ser. No. 706,979
Claims priority, application Germany, Feb. 24, 1967, S 108,491
Int. Cl. B41m 3/08; H05k 3/02
U.S. Cl. 117—212 12 Claims



Soldering material is sprayed over an electrical circuit pattern positioned on an insulating carrier. The solder is in the liquid state, but is below the temperature at which the solder forms an alloy with the metal circuit pattern. The layer of solder is then heated to its alloying temperature causing the solder to contract, by surface tension, onto the metal circuit pattern forming an alloy therewith and leaving the insulating carrier substantially free of solder, which could cause a short circuit.

3,554,794

ELECTROMAGNETIC-SENSITIVE RECORDING MEDIUM

Charles H. Geisler and Joseph A. Wiese, Jr., St. Paul, Minn., assignors to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Aug. 24, 1966, Ser. No. 574,827
Int. Cl. H01f 10/02; G03g 5/00
U.S. Cl. 117—217 17 Claims



A sheet like storage medium sensitive to electromagnetic radiation comprising a backing with an imaging coating comprising a halogen-containing binder which releases atomic halogen upon exposure to electromagnetic radiation and an organic coordination complex of a magnetic metal.

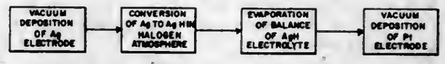
3,554,795

ULTRA-THIN FILM SOLID ELECTROLYTE ELECTROCHEMICAL DEVICES AND FABRICATION METHODS THEREFOR

Gershon M. Goldberg, Arlington, Mass., assignor to Technical Operations, Incorporated, Burlington, Mass., a corporation of Delaware

Filed Aug. 30, 1968, Ser. No. 756,584
Int. Cl. B44d 1/18
U.S. Cl. 117—217 9 Claims

This disclosure depicts ultra-thin film solid eletcrolyte devices for use as batteries, sensors, and the like, comprising electrodes and solid electrolytes all formed by vacuum deposition. Novel fabrication methods are shown for depositing a silver halide electrolyte in a very thin layer without the occurrence of voids in the electrolyte by first



depositing a layer of silver which is converted to silver halide in halogen gas atmosphere and then completing the electrolyte by silver halide vapor deposition techniques.

3,554,796

METALLIZATION OF TITANATE WAFERS

William H. Liederbach, Carmel, Ind., and Leopold Pessel, Wyndmoor, Pa., assignors to RCA Corporation, a corporation of Delaware

No Drawing. Filed May 20, 1968, Ser. No. 730,647
Int. Cl. H01b 1/02, 1/06
U.S. Cl. 117—227 4 Claims

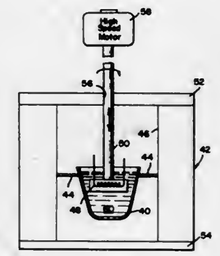
A substance adapted to provide gold, silver or mercury by the decomposition of a compound containing these elements is included in a metallizing composition for ceramic wafers to prevent cracking of the wafers during the firing of the metallizing composition.

3,554,797

METHOD OF PRODUCING AN ENCAPSULATED INDUCTOR WITH A HIGH VALUE OF PERMEABILITY

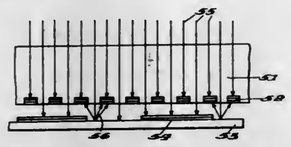
Leo E. Coerver, Jr., and Frank A. Pizzarello, Santa Ana, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed May 26, 1967, Ser. No. 661,739
Int. Cl. C23c 3/00; H01f 15/02, 17/06
U.S. Cl. 117—227 9 Claims



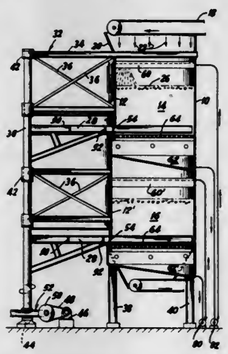
An inductor element (wire, coil, etc.) is fully encapsulated with an insulating ferromagnetic material to produce an encapsulated inductor having a high permeability magnetic circuit. The inductor element may have any arbitrary shape and is placed within a solution of encapsulating material and flux solvent at a high temperature. The temperature is slowly reduced at a rate sufficient to prevent flux occlusions and to allow the encapsulating material to crystallize on the element. A seed may be utilized and the seed may be threaded to serve as a guide for precisely wrapping the coil into its particular shape before encapsulation is commenced.

3,554,798
MAGNETIC RECORDING MEMBERS
George Raymond Nacci, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
This is a continuation-in-part of 796,490, Feb. 4, 1969, which is a continuation-in-part of 682,234, Nov. 13, 1967, which is a continuation-in-part of 636,728, May 8, 1967 and 410,007, Nov. 9, 1964. This application is also a continuation-in-part of 636,955, May 8, 1967, as a continuation-in-part of said 410,007, Nov. 9, 1964, all but Ser. No. 796,490 being now abandoned. This application June 17, 1969, Ser. No. 834,121
Int. Cl. H01f *10/00*
U.S. Cl. 117—235 8 Claims



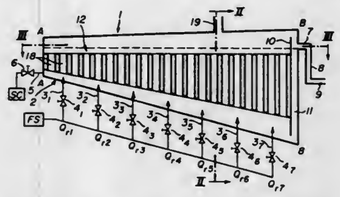
A magnetic recording member particularly adapted for use in thermomagnetic recording and copying having hard magnetic material such as CrO_2 discretely but regularly disposed in the surface of a transparent, usually plastic support. The magnetic material is discretely disposed in the form of three-dimensional "dots" and "lines" or other regular patterns to provide the essential transparency to light.

3,554,799
APPARATUS FOR DIFFUSION AND LIXIVIATION OF SUGAR CANE, BEET-SUGAR OR SWEET SORGHUM
Jerónimo E. Díaz-Compain, P.O. Box 370, Cathedral Station, New York, N.Y. 10025
Filed May 15, 1968, Ser. No. 729,187
Int. Cl. C13d *1/12, 1/10;* B01d *11/02*
U.S. Cl. 127—6 9 Claims



An apparatus for diffusing a crop, such as sugar cane, beet-sugar, sorghum and the like, comprising means defining a vertically elongated treatment chamber having a plurality of annular treatment passes or corona paths arranged one above the other. The product to be treated, such as sugar cane chips, is directed downwardly into the top annular treatment chamber at one circumferential location and they are advanced around the complete annular path of the chamber at that level by means of a rotating slat member or pusher. During the course of travel over the treatment path, a treatment liquid is directed downwardly over the product as the product is advanced over alternately arranged plate screens and steam heated plates of the floor of such treatment chamber. The treatment liquid passes through the material and is collected below the plate screens in tanks. The product is delivered after treatment from one layer downwardly through a chute to one or more additional layers in which it is moved through a similar path.

3,554,800
BOILING APPARATUS FOR CONTINUOUS CRYSTALLIZATION AND METHOD OF OPERATING SAID APPARATUS
Alain Javet, Grange-Canal, Geneva, and Aldo Torelli, Grand-Lancy, Geneva, Switzerland, assignors to Ateliers Belges Reunis S.A., Petit-Enghien, Belgium
Filed Apr. 30, 1968, Ser. No. 725,322
Claims priority, application Switzerland, May 2, 1967, 6,332/67
Int. Cl. C13f *1/02, 1/00*
U.S. Cl. 127—16 8 Claims



An apparatus for continuous crystallization comprising an elongated, horizontal evaporating chamber having an increasing transverse section and an inclined bottom from one end to the other. A constant level bath of mother solution containing the growing crystals is heated by a longitudinal series of heating elements including heating surfaces which increase longitudinally and form, on one side of said chamber a series of vertical and transverse passages. The crystals in suspension in the bath advance longitudinally by gravity during their growth, while following a helicoidal path with constant pitch.

3,554,801
METHOD OF REMOVING MANGANESE OXIDE DEPOSITS
Joseph P. Kleiman, Birmingham, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Continuation-in-part of application Ser. No. 692,321, Dec. 21, 1967. This application Dec. 3, 1969, Ser. No. 881,896
Int. Cl. B08b *3/08;* C23g *1/02*
U.S. Cl. 134—3 10 Claims

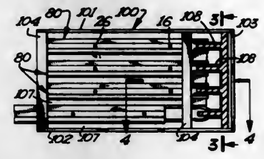
A method of removing manganese containing deposits formed on the surfaces of jet engines from burning fuel containig a cyclopentadienyl manganese tricarbonyl as a smoke reducer, by treating the deposit coated surfaces with an aqueous solution of hydroxylamine salt.

Hydroxlyamine salts of carboxylic acids are examples of useful compounds.

3,554,802
PROCESS FOR MAKING SULFUR IRON ACTIVE MATERIAL FOR BATTERY PLATES
Jack T. Brown, Pittsburgh, and William Feduska, Edgeworth, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 764,457, Oct. 2, 1968. This application Dec. 8, 1969, Ser. No. 878,988
Int. Cl. H01m *13/00, 43/04*
U.S. Cl. 136—25 8 Claims

A method of producing active battery material comprises adding a ferric ammonium sulfate or ferrous ammonium sulfate solution to an aqueous solution of potassium hydroxide and potassium sulfide to form a precipitate containing at least 5 weight percent sulfur based on the weight of iron.

3,554,803
FUEL CELL DESIGNED FOR EFFICIENT STACKING
Armand R. Poirier, New Brighton, Minn., assignor, by mesne assignments, to Studebaker Corporation, South Bend, Ind., a corporation of Delaware
Filed Aug. 24, 1967, Ser. No. 663,110
Int. Cl. H01m *27/02*
U.S. Cl. 136—86 8 Claims



A fuel cell battery having a plurality of unitized duplex fuel cells, each being comprised of conventional fuel cell elements. The unitized duplex cells are mounted in the battery such that each cell operates independently of all other cells in the battery. A fluid fuel circulates inside each duplex cell and a fluid reactant circulates between adjacent duplex cells, thereby permitting each cell to be removed for repair or replacement without the disassembly of the entire battery.

3,554,804
SEALED RECHARGEABLE BATTERY HAVING A SENSING ELECTRODE
William N. Carson, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed Aug. 22, 1968, Ser. No. 754,576
Int. Cl. H01m *35/00, 1/06*
U.S. Cl. 136—3 4 Claims

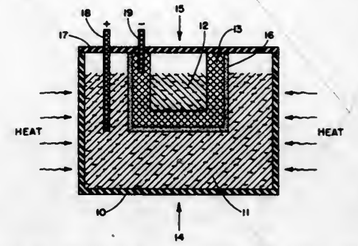
An improved sealed rechargeable cell unit is provided having a sensing electrode which delivers an electrical signal quantitatively indicative of oxygen partial pressure within the cell. The signal can then be connected to suitable current monitoring means which can include a charge rate controller to control the rate of charging to inhibit excessive evolution of gas within the cell.

3,554,805
SEALED RECHARGEABLE BATTERY HAVING A SENSING ELECTRODE
Irwin B. Weinstock, Gainesville, Fla., assignor to General Electric Company, a corporation of New York
Filed Aug. 22, 1968, Ser. No. 754,654
Int. Cl. H01m *35/00, 1/06*
U.S. Cl. 136—3 4 Claims

An improved sealed rechargeable cell unit is provided having a sensing electrode which delivers an electrical signal quantitatively indicative of oxygen partial pressure within the cell. The signal can then be connected to suitable current monitoring means which can include a charge rate controller to control the rate of charging to inhibit excessive evolution of gas within the cell.

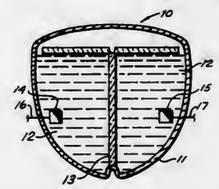
3,554,806
HEAT ACTIVATED CELL WITH ALKALI ANODE AND ALKALI SALT ELECTROLYTE
Jacob Greenberg, Pepper Pike, and Thomas E. Seitz, Willoughby, Ohio, assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Dec. 30, 1968, Ser. No. 787,906
Int. Cl. H01m *35/02*
U.S. Cl. 136—6 10 Claims

A heat activated cell having an anode made of one or more alkali metals and a cathode made of an oxidizing material which will react with the anode to form a stable salt. The anode and cathode are separated by an alkali salt electrolyte deposited in a thin layer on a divider made



of a porous electrically conductive material. The salt is heated to a temperature sufficiently below its melting temperature that it does not disintegrate.

3,554,807
THERMOELECTRIC ELEMENTS COMPRISING BISMUTH-BISMUTH BROMIDE OR BISMUTH-BISMUTH CHLORIDE
Jordan D. Kellner, Simi, Calif., assignor, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
Filed Sept. 6, 1966, Ser. No. 577,449
Int. Cl. H01m
U.S. Cl. 136—83 11 Claims

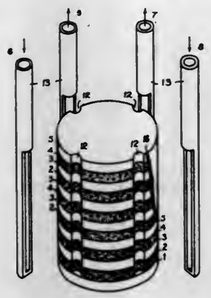


A thermoelectric element and process for the direct conversion of heat to electricity wherein a temperature gradient established in a molten bismuth-bismuth bromide or bismuth-bismuth chloride composition serves to establish a concentration gradient in the composition and a resultant potential difference. The concentration gradient is continuously maintained in the composition by preventing convective heat flow within the composition and by passage of the more volatile bismuth bromide or bismuth chloride component in the vapor phase from one portion of the molten composition at one temperature to another portion at a lower temperature.

3,554,808
HIGH-TEMPERATURE FUEL-CELL BATTERY
Wilfried Fischer and Werner Baukal, Neuenhof, Switzerland, assignors to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Sept. 6, 1967, Ser. No. 665,882
Claims priority, application Switzerland, Sept. 20, 1966, 13,546/66
Int. Cl. H01m *27/16*
U.S. Cl. 136—86 5 Claims

A high-temperature fuel-cell battery consists of a column of fuel cells connected electrically in series, and each cell is composed of a plurality of superimposed layers consisting of a porous electron-conducting layer through which fuel gas is fed transversely, a gas-tight oxygen-ion-conducting layer of cubically stabilized zirconium oxide such as ZrO_2 with an additive of Y_2O_3

forming the electrolyte, and a porous electron-conducting layer such as Mn_2O_3 through which an oxidant gas is passed transversely. A gas-tight electron-conducting layer separates each cell from an adjacent cell in the



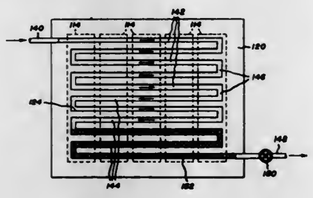
column, a similar gas-tight electron-conducting layer is provided at the upper and lower ends of the column and all of the layers of the fuel cells and the separation layers between adjacent cells are sintered together to establish a compact columnar structure.

3,554,809

PROCESS AND APPARATUS FOR DISTRIBUTING FLUID INERTS WITH RESPECT TO THE ELECTRODES OF A FUEL BATTERY

Donald W. Craft, Melrose, Mass., assignor to General Electric Company, a corporation of New York

Filed Dec. 18, 1967, Ser. No. 691,300
Int. Cl. H01m *27/16*
U.S. Cl. 136—86 **11 Claims**



A fuel battery is provided having an electrolyte element, such as a matrix immobilized electrolyte or ion exchange structure, carrying first and second segmented electrodes on opposite faces. The electrode segments are electrically serially related. Fluid reactant is distributed to the first electrode segments through one or more channels which direct the fluid reactant to flow serially across the electrode segments along laterally spaced interconnected courses which are free of interconnection mediate their ends. This causes fluid inerts present in the fluid reactant to be collected in the terminal courses so that the fluid inerts are distributed between the electrode segments.

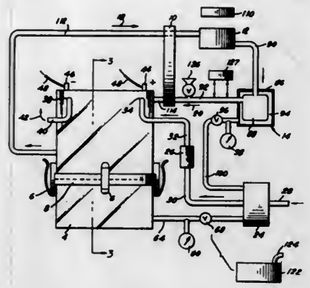
3,554,810

METAL-OXYGEN POWER SOURCE

Solomon Zaromb, 376 Monroe St., Passaic, N.J. 07055

Continuation-in-part of applications Ser. No. 354,084, Mar. 23, 1964, and Ser. No. 656,595, July 27, 1967. This application Apr. 12, 1967, Ser. No. 633,348
Int. Cl. H01m *29/04*
U.S. Cl. 136—86 **6 Claims**

A power source comprises a metal anode and an oxygen depolarized cathode at least partly enclosing a battery cell compartment, and a reversibly collapsible electrolyte storage reservoir, said collapsible reservoir being adapted to



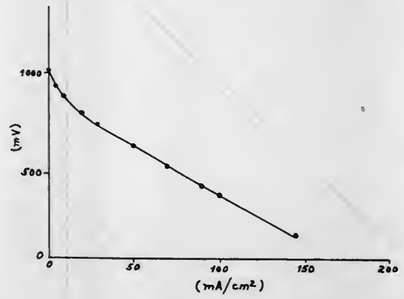
control the volume of electrolyte contained in said battery cell compartment and thereby to control the current density at the surface of said anode.

3,554,811

OXIDE CATHODE MATERIAL FOR PRIMARY FUEL CELLS FOR HIGH TEMPERATURES

Arnold Isenberg, Neu-Isenburg, and Wilfried Pabst and Gerd Sandstede, Frankfurt am Main, Germany, assignors to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company

Filed Oct. 9, 1967, Ser. No. 673,557
Claims priority, application Germany, Oct. 22, 1966, B 89,522
Int. Cl. H01m *27/04, 27/16*
U.S. Cl. 136—120 **2 Claims**



An oxide cathode material for primary fuel cells with oxygen-ion-conducting mixed-oxide solid electrolytes working at high temperatures with gaseous oxidants. The material consists of indium oxide doped with gallium oxide and/or zinc oxide, and the quantity of these latter two oxides in the indium oxide is between 0 and 30% by weight.

3,554,812

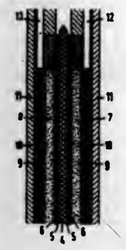
FUEL CELL COMPRISING ASBESTOS DIAPHRAGMS AND NICKEL MESH ELECTROLYTE SUPPORTS

Ferdinand v. Sturm and Herbert Nischik, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany

Continuation-in-part of application Ser. No. 454,947, May 11, 1965. This application Feb. 14, 1969, Ser. No. 800,830
Int. Cl. H01m *27/00*
U.S. Cl. 136—86 **4 Claims**

An asbestos diaphragm is positioned between and next adjacent the supporting structure and each of a pair of

spaced thin electrodes in an electrochemical cell. The supporting structure is porous and is impregnated with



nickel mesh having large pores and regions adjacent the electrodes of nickel mesh having fine pores.

3,554,813

METHOD FOR SEALING AN ELECTROCHEMICAL CELL

Ralph H. Feldhake, Verona, Wis., assignor to ESB Incorporated, a corporation of Delaware

Filed Feb. 7, 1969, Ser. No. 797,576
Int. Cl. H01m *1/00, 1/02*
U.S. Cl. 136—133 **4 Claims**

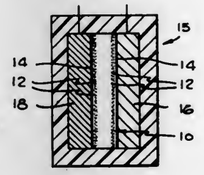
An electrochemical cell having a cylindrical metallic container sealed by a hard plastic closure made from a cold-flow resistant plastic, e.g. nylon. The plastic closure is radially compressed by pushing it through a reducing die and into the metallic container. The plastic closure expands in the container with such force that the upper edge of the container is slightly deformed outwardly. The upper edge of the container is crimped over upon the top of the closure by means of a closing die which axially compresses the closure between the upper edge of the container and a bead rolled into the container. The axial compression develops an axial force in the plastic closure, increases the radial force exerted by the plastic closure upon the container, and the compression of the upper edge of the container upon the closure increases the sealing surface by forming both an axial and radial sealing area.

3,554,814

INORGANIC SEPARATOR AND PROCESS FOR PRODUCING SAME

Frank C. Arrance, Costa Mesa, and Carl Berger, Santa Ana, Calif., assignors to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

Filed Feb. 13, 1969, Ser. No. 798,992
Int. Cl. H01m *3/00; C09d 3/24*
U.S. Cl. 136—146 **14 Claims**



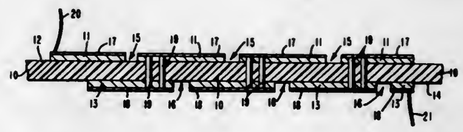
Method for increasing the transverse strength and reducing the resistivity of an inorganic separator, e.g., a separator comprising a sintered solid solution consisting essentially of magnesium silicate and iron silicate, comprising, according to one embodiment, impregnating the open pores of such sintered separator with pitch, covering the impregnated separator with graphite dust, and heating the so-treated separator at temperature ranging, for example, from about 1500 to about 2500° F. for a period of hours, and cooling the separator; and the improved inorganic separators thereby produced, impregnated with metal carbides and having a thin porous carbon coating on the surface of the separator.

3,554,815

THIN, FLEXIBLE THERMOELECTRIC DEVICE

Robert Otto Osborn, Snyder, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Continuation-in-part of application Ser. No. 276,815, Apr. 30, 1963. This application Oct. 16, 1967, Ser. No. 675,640
Int. Cl. H01v *1/02, 1/04*
U.S. Cl. 136—203 **4 Claims**



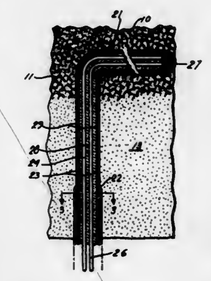
A thermoelectric device is provided such as, for example, a thermopile consisting of a base support of a thin, flexible film of polyethylene terephthalate having noncontacting bands of antimony and bismuth each disposed on the opposite surface thereof in conductive electrical association.

3,554,816

HIGH TEMPERATURE THERMOCOUPLE CONTAINING CONDUCTORS COMPOSITIONALLY DISSIMILAR

Walter K. Moen, Whittier, Calif., assignor to North American Rockwell Corporation, a corporation of Delaware

Filed Aug. 23, 1967, Ser. No. 662,762
Int. Cl. H01v *1/04*
U.S. Cl. 136—233 **10 Claims**



A tantalum sheathed thermocouple with tungsten-rhenium wires and beryllium oxide insulation is employed for temperature measurement in ablative materials. The elements of the thermocouple are made relatively small in a narrow range to achieve an erosion rate of the sheath and insulation substantially the same as the ablative erosion rate and less than the erosion rate of the wires. A chemical etching step is employed for reducing sheath diameter during manufacture of the thermocouple to obtain the small size. Unexpectedly it is found that the thermocouple

wires reweld at the temperature of the lowest melting leg as the hot junction is eroded away during exposure of the ablative to a high temperature environment. The rewelding at a well known temperature provides a means for calibrating the thermocouple during use and also affords the opportunity to measure cooling temperatures after the thermocouple has been exposed to temperatures exceeding its melting point.

3,554,817

CAST NICKEL-COLUMBIUM-ALUMINUM ALLOY

Earl R. Thompson, Glastonbury, Conn., assignor to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Mar. 20, 1969, Ser. No. 808,956
Int. Cl. B22d 21/00; C22c 15/00
U.S. Cl. 148—32 8 Claims

The pseudo-binary eutectic alloy occurring between the intermetallic compounds Ni_3Al and Ni_3Cb is unidirectionally solidified into a casting characterized by an aligned, lamellar microstructure.

3,554,818

INDIUM ANTIMONIDE INFRARED DETECTOR AND PROCESS FOR MAKING THE SAME

Vernon L. Lambert and Norman J. Gri, Cincinnati, Ohio, assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed Apr. 25, 1968, Ser. No. 724,684
Int. Cl. H01l 7/36, 7/44
U.S. Cl. 148—186 4 Claims

The invention here disclosed is an indium antimonide infrared detector and a process for making the same. A diffusion process yields a very shallow p-region on an n-type indium antimonide substrate. This layer has a thickness of 1.0 to .5 micron and has a high concentration of acceptors, providing a very efficient collection region for carriers created by photon absorption. The layer is of cadmium or zinc and the concentration is within a range such that while lattice damage occurs detector operation is not impaired. The layer is so shallow that most of the carriers created by photon absorption are collected.

3,554,819

SOLID PROPELLANT COMPOSITION CONTAINING A KETENEIMINE AS A CROSSLINKING AGENT

David C. Sayles, Huntsville, Ala., assignor to the United States of America as represented by the Secretary of the Army

No Drawing. Filed Aug. 9, 1967, Ser. No. 661,166
Int. Cl. C06b 1/00
U.S. Cl. 149—19 6 Claims

The use of a diketeneimine as a cross-linking agent in solid propellant compositions to improve the properties and quality of the solid propellant.

3,554,820

CAP-SENSITIVE SELF-SUPPORTING EXPLOSIVE WITH CROSSLINKED THERMOSET RESIN BINDER

William L. Evans, Blackwood, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 27, 1968, Ser. No. 755,722
Int. Cl. F42b 1/00; C06b 3/00, 7/00
U.S. Cl. 149—19 13 Claims

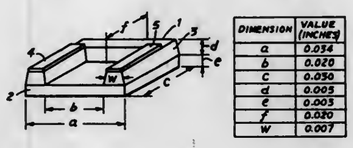
Stiff, tough, low-exotherm formulated self-supporting cap-sensitive explosive composition comprising a mixture of cap-sensitive high explosive and crosslinked thermoset resin binder comprising either (a) the crosslinked reaction product of liquid isocyanate terminated polyurethane and nitrocellulose or (b) the crosslinked reaction product of liquid epoxy resin and liquid phenol-formaldehyde resin.

3,554,821

PROCESS FOR MANUFACTURING MICROMINIATURE ELECTRICAL COMPONENT MOUNTING ASSEMBLIES

Martin Caulton, Princeton, Stanley P. Knight, Hightstown, and Ralph Di Stefano, Mercerville, N.J., assignors to RCA Corporation, a corporation of Delaware

Filed July 17, 1967, Ser. No. 653,849
Int. Cl. C03c 15/00; C23f 1/02
U.S. Cl. 156—3 9 Claims



DIMENSION	VALUE (INCHES)
a	0.034
b	0.020
c	0.030
d	0.005
e	0.005
f	0.030
W	0.007

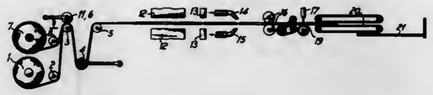
A process for manufacturing a microminiature mounting assembly for receiving a semiconductor wafer. The assembly is of laminated construction having a metal supporting layer, a U-shaped glass insulating layer, and metal terminal layers on each leg of the U. The semiconductor wafer is secured to the metal supporting layer within the area enclosed by the U and electrodes on the upper surface of the wafer are connected to their corresponding metal terminal layers.

3,554,822

PROCESS AND APPARATUS FOR MANUFACTURING BAGS OF PLASTICS MATERIALS HAVING PRESSURE OR SLIDE FASTENER STRIPS JOINED BY HEAT-SEALING

August Schwarzkopf, Lengerich of Westphalia, Germany, assignor to Windmoller & Holscher, Lengerich of Westphalia, Germany

Filed May 19, 1967, Ser. No. 639,711
Claims priority, application Germany, June 1, 1966, W 41,709
Int. Cl. B32b 31/10
U.S. Cl. 156—66 10 Claims



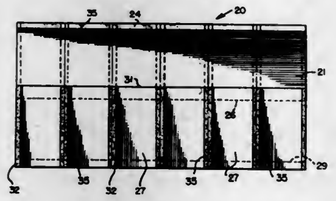
Intermittently fed fastener strips, which are hooked together, are introduced between the spread-apart edges of an intermittently advanced sheeting web, which has been laid to form two plies. The strips are heat-sealed to the sheeting web with the aid of pulse-heated heat-sealing jaws. In the manufacture of bags having pressure fasteners, at least one further advancing step is then performed and the fastener strips are subsequently joined together by heat-sealing in a second heat-sealing station with the aid of preferably pulse-heated heat-sealing jaws. One or more further advancing steps are performed and the sheeting web is thereafter subjected in a third heat-sealing station to a transverse severing and heat-sealing operation by a preferably continuously heated severing and heat-sealing tool, whereby individual bags are severed and closed. In the same station, the fastener strips are cut through their heat-sealed node. The timing of the closed position of the jaws and the timing of the heat-sealing pulses are controlled independently of each other. The timing of the heat-sealing pulses is controlled so that the heat-sealing pulses are terminated considerably before the heat-sealing jaws are opened.

3,554,823

METHOD FOR MAKING CONTAINER MEANS

Harry W. Lee, Jr., Chesterfield County, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware

Original application Mar. 26, 1965, Ser. No. 442,965. Divided and this application July 20, 1967, Ser. No. 668,728
Int. Cl. B65b 7/00
U.S. Cl. 156—69 8 Claims



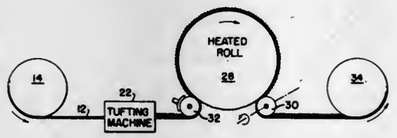
This disclosure relates to a method for making cylindrical container bodies by providing an elongated rectangular flat board means and applying lining means to one side thereof and label means to the other side thereof so that the board means can be subsequently convolutely wound to provide a plurality of cylindrical container bodies each having the lining means forming the entire interior surface thereof and the label means forming the entire exterior surface thereof, the flat board means having sealing means disposed thereon in transverse, parallel and spaced relation so that each resulting container body will have an annular band of sealing means at the opposed ends thereof to cooperate with end closures subsequently closing the ends to provide a sealing means for such end closures.

3,554,824

METHOD OF MAKING A TUFTED FABRIC

Francis G. Callahan, Dalton, Ga., assignor to Textile Rubber & Chemical Co., Inc., Dalton, Ga., a corporation of Georgia

Filed Oct. 21, 1966, Ser. No. 588,444
Int. Cl. D05c 15/04, 17/02
U.S. Cl. 156—72 2 Claims



A tufted fabric having the loops that connect the tufts intimately bound in a focused thermoplastic material. In preparation for the tufting operation, this material is coated upon and caused to penetrate a sheet of interlocked reinforcing fibers, and then fused. The yarns are tufted through the reinforcing fibers, after which heat and pressure are applied to cause the thermoplastic coating to flow about the connecting loops.

3,554,825

SURFACE MODIFICATION OF CELLULOSE

David A. I. Goring, Montreal, Quebec, Canada, assignor to Pulp and Paper Research Institute of Canada, Pointe Claire, Quebec, Canada

Filed May 31, 1967, Ser. No. 642,544
Claims priority, application Great Britain, May 31, 1966, 24,291/66
Int. Cl. D21h 3/68; D21j 3/12
U.S. Cl. 156—76 8 Claims

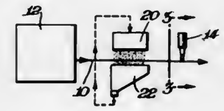
A process for bonding cellulose surfaces comprising oxidizing said surfaces by contacting said surfaces in a substantially dry state with ozone to thereby activate the surfaces for bonding and then pressing said surfaces in the presence of moisture into contact with each other and drying the pressed surfaces to effect bonding thereof.

3,554,826

METHOD OF BONDING FIBERS

Pat Macaluso, White Plains, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

Filed Sept. 13, 1967, Ser. No. 667,424
Int. Cl. B29c 25/00
U.S. Cl. 156—82 11 Claims



Fibers such as in non-woven scrim are bonded together at selected contact points by direct flame exposure of the fibers with or without bonding aids. The fibers are preferably multifilament glass fibers, although they may be organic thermoplastics, such as nylon or polypropylene.

3,554,827

METHOD OF FORMING A DECORATIVE PANEL

Iwao Yamagishi, Osaka, Japan, assignor to Eidai Sangyo Kabushiki Kaisha, Sumiyoshiku, Osaka, Japan, a corporation

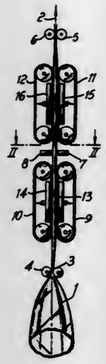
Filed Nov. 12, 1968, Ser. No. 774,875
Int. Cl. B32b 3/30, 31/32, 31/24
U.S. Cl. 156—85 5 Claims



A panel including a sheet, on at least one surface thereof a first selected design is defined, which design is overlaid by a layer of polymerizable resin in which a second indented design is formed.

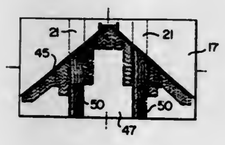
The panel of the present invention is formed by defining the second design with a polymerization retarding agent on the surface of the sheet on which the first design exists, coating the surface on which the first and second designs are defined with a layer of transparent polymerizable resin that contracts when cured, subjecting the sheet to a resin polymerizing environment to first cure the portions of the resin that are out of contact with the retarding agent and then cure the resin in contact with the retarding agent. The second indented design is formed due to the time differential in curing those portions of the layer of resin in contact with, and out of contact with, the polymerization retarding agent.

3,554,828
PROCESS FOR THE MANUFACTURE OF BONDED PLASTIC SACKS EMPLOYING AN ELECTRICAL FIELD AND AN IONIZABLE GAS
Herbert Schmedding and Helmut Helbig, Lengerich, Germany, assignors to Windmoller & Holscher, Lengerich, Germany
Filed Jan. 3, 1967, Ser. No. 607,021
Claims priority, application Germany, Feb. 14, 1966, W 40,937
Int. Cl. B29c *17/00*
U.S. Cl. 156—156 5 Claims



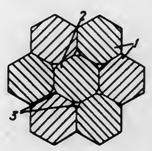
A process for the manufacture of sacks made of plastic material. The process consists of the following steps: forming a continuous tube of plastic material and then filling the tube with an ionizable gas to separate the inside surfaces thereof; moving the continuous tube longitudinally through a pretreating electric field and ionizing the gas inside of the tube to activate the internal surfaces thereof; severing the tube into sections when the internal surfaces have been activated and opening the tube section ends and then applying an adhesive to the interior of said tube section ends and adhesively joining same.

3,554,829
METHOD OF SPLICING A WEB OF A RUNNING ROLL TO THE LEADING EDGE OF A NEW ROLL
Thomas J. Luckett, Sr., 7901 Pennsylvania Ave. Extended, Suitland, Md. 20012
Filed Sept. 30, 1966, Ser. No. 583,392
Int. Cl. B65h *69/02*
U.S. Cl. 156—157 5 Claims



This invention relates in general to new and useful improvements in the splicing of webs and more particularly relates to the high speed splicing of the web of a running roll to the leading end of a new roll as the running roll nears the end thereof, applying a first paste to the leading edge of the new roll in a prescribed pattern, applying a second inactive paste to fill in the vacant spaces of the pattern, bonding the leading edge to the expiring roll and activating the second paste to obtain a continuous bond across the sheet.

3,554,830
PRODUCTION OF GRAPHITE BODIES
Harry L. Riley, Wolvercote, Oxford, and Peter H. Pinchbeck, Chesterfield, England, assignors to United Coke & Chemicals Company Limited, Treeton, near Rotherham, Yorkshire, England, a British company
Filed Dec. 6, 1966, Ser. No. 599,537
Claims priority, application Great Britain, Dec. 8, 1965, 52,099/65
Int. Cl. B32b *31/26*
U.S. Cl. 156—167 6 Claims



Graphite electrodes and similar bodies are made by assembling extruded lengths of green carbonaceous masses in lengthwise contact to form the green bodies which are baked and graphitized.

3,554,831
METHOD FOR PRODUCING THIN-FOIL STRIPS
Hermann Schill, Regensburg, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
Filed Sept. 12, 1968, Ser. No. 759,404
Claims priority, application Germany, Sept. 25, 1967, S 111,989
Int. Cl. B65h *81/00*
U.S. Cl. 156—184 7 Claims

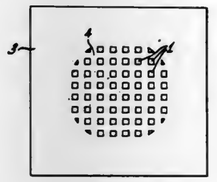


Methods and processes for producing thin-foil strips by winding thin-foil strips onto an auxiliary carrier layer and then unwinding them so as to form a composite strip of foil layers.

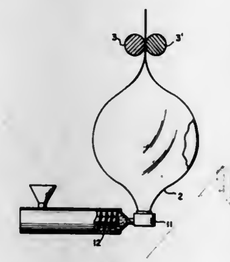
3,554,832
PROCESS FOR HANDLING AND MOUNTING SEMICONDUCTOR DICE
Adam Fischer, Jr., Maplewood, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed May 29, 1968, Ser. No. 733,094
Int. Cl. B32b *31/00*
U.S. Cl. 156—229 8 Claims

A scribed semiconductor wafer is detachably secured to a plastic film. The wafer is cracked along the scribed lines into individual dice which remain secured to the film. The film is stretched to provide a spaced array of the dice.

Each die is then mounted to a header by positioning the plastic film so that the die is adjacent the header. A rod is pushed against the plastic film opposite the die to depress the film and bring the die into contact with the header. When the die contacts the header, it adheres to the header and detaches from the plastic film.



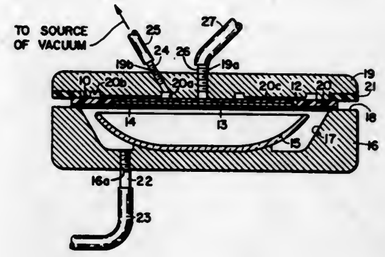
3,554,833
METHOD FOR THE PRODUCTION OF LAMINAR THERMOPLASTIC FILMS
William C. De Vries, Macedon, and Eldon L. Johnson, Shortsellie, N.Y., assignors to Mobil Oil Corporation, a corporation of New York
Filed Jan. 12, 1968, Ser. No. 697,342
Int. Cl. B29c *17/02*
U.S. Cl. 156—229 2 Claims



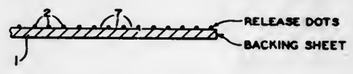
A method for the production of thermoplastic film laminates which comprises extruding a thermoplastic tube; inflating the extruded tube with a gaseous medium; flattening the inflated tube by passing it through a pair of rotating nip rollers, said collapsing step being effected while the tubular film is still in a heat-softened plastic condition whereby the walls of the tube fuse together thereby forming a flat, two-layer thermoplastic film laminate.

3,554,834
DECAL APPLYING
Robert W. Bennett, Corning, and Wendell S. Blanding, Painted Post, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed July 24, 1968, Ser. No. 747,260
Int. Cl. B44c *1/16*
U.S. Cl. 156—230 6 Claims

A method of transferring or applying a decal of the type including a water soluble glue or similar soluble adhesive to a surface of an article to be decorated. Such decal is disposed against a generally flat surface of a first of a pair of complementally cooperative members and is here thereto by vacuum while such member and the decal are dipped into a container of water or other solvent suitable for dissolving the specific adhesive employed in the decal. The backing paper of the decal is then removed therefrom. Said surface of said first member is then disposed against an annular surface of the second member of said pair of members, such surface surrounding the entrance to a cavity in the second member in which said article is disposed with the surface thereof to be decorated facing the entrance to the cavity. Pressurized aeriform fluid is then supplied to the transfer film of the decal and vacuum is supplied to said cavity to cause the transfer of the film and its associated decoration to said surface of said article.



3,554,835
SLIDABLE ADHESIVE LAMINATE AND METHOD OF MAKING
Burton D. Morgan, Hudson, Ohio, assignor to Morgan Adhesives Company, Stow, Ohio, a corporation of Ohio
Filed Aug. 16, 1967, Ser. No. 661,047
Int. Cl. B44d *5/00*
U.S. Cl. 156—234 3 Claims

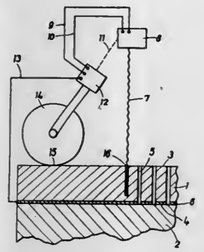


A slidable adhesive laminate composed of several distinct layers including a pressure sensitive adhesive layer, a layer of vinyl film or the like, and a layer of release material. There are two different release layers or means to permit sliding on one release surface until pressure is applied to the laminate.

3,554,836
TRANSFER PROCESS
Gordon A. Steindorf, Oakdale Township, Washington County, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed July 19, 1968, Ser. No. 746,195
Int. Cl. B44c *1/24*
U.S. Cl. 156—240 13 Claims

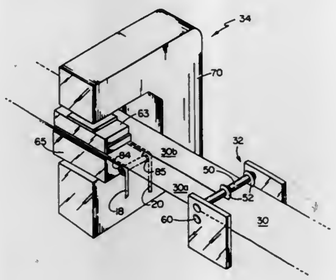
A process for the controlled reception and transmission of thermoplastic transfer medium via one or more silicone elastomer surfaces to final deposition on a receptor surface which may be another silicone elastomer surface or, more generally, paper, a polymeric film, metal, glass, clay, etc. The process utilizes forces intrinsic to the materials employed, i.e., silicone elastomers, thermoplastic transfer medium (ink) and the various receptor surfaces. The physical state of the transfer medium can be manipulated to provide for non-splitting transfer from one silicone elastomer surface to another, adhesively favored silicone elastomer or nonsilicone elastomer surface. The process finds utility in the coating, printing, and duplicating field.

3,554,837
LAMINATED LEATHER AND PROCESS FOR PRODUCING THE SAME
Karl Heinz Steigerwald, Mozartstrasse 27, Lochham, near Munich, Germany
Filed Dec. 8, 1966, Ser. No. 600,122
Claims priority, application Germany, Dec. 10, 1965, St 24,746
Int. Cl. B32b *31/28*
U.S. Cl. 156—252 **5 Claims**



In a laminated imitation leather consisting of an outer ply of substantially impervious material over a ply of porous, pervious material, the outer ply is perforated by a plurality of small holes, which do not continue into the second ply, by means of a beam of radiant energy.

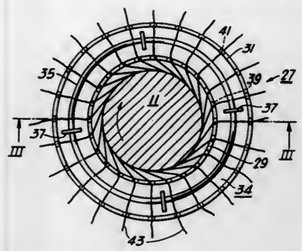
3,554,838
MANUFACTURING PHOTOGRAPHIC FILM PACKETS
Leonard L. Leinonen, Framingham, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Dec. 12, 1968, Ser. No. 783,359
Int. Cl. B32b *31/00*
U.S. Cl. 156—259 **1 Claim**



In manufacturing film packets a unitary web is centrally slit into two identical strips which are rejoined by a narrow tape. Preferably, the web is simultaneously cut centrally and along its margins and a second tape is adhered to the web overlapping one of its margins.

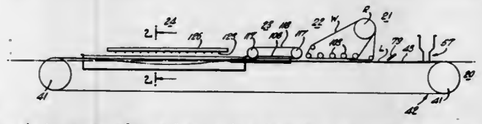
3,554,839
FILAMENT WINDING APPARATUS
Jonas Medney, Oceanside, N.Y., assignor to Koppers Company, Inc., a corporation of Delaware
Continuation-in-part of application Ser. No. 390,433, Aug. 18, 1964. This application Oct. 2, 1967, Ser. No. 672,361
Int. Cl. B65h *81/02*
U.S. Cl. 156—430 **4 Claims**

A circular, annular resin trough is movable axially of a rotatable mandrel and filament rovings, passing through holes in the walls of the trough, become resin impregnated before being helically wound onto the rotating mandrel.



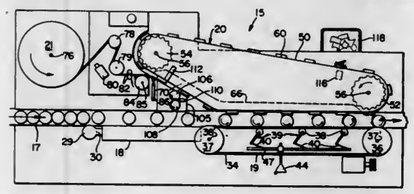
By omitting alternate rovings, a tubular cylindrical structure having a porous, basket-weave type shell may be formed.

3,554,840
APPARATUS FOR THE CONTINUOUS PRODUCTION OF CELLULOSE SPONGE PRODUCTS
James Teng, Cleveland, and Pao-Chi Wang, Bay Village, Ohio, assignors to Nylonge Corporation, Cleveland, Ohio, a corporation of Ohio
Filed May 8, 1967, Ser. No. 636,822
Int. Cl. B27d *27/00, 27/06;* **B32b** *3/12*
U.S. Cl. 156—436 **18 Claims**



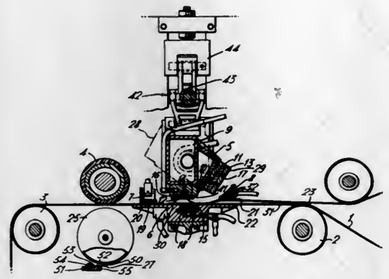
A transversely reciprocating hopper deposits a viscose sponge forming layer on a longitudinally advancing belt. A web to be laminated to the sponge layer is guided along a convoluted path from an inner web package and includes superimposed runs along the viscose layer the superimpoed web runs being pressed by a longitudinally reciprocating weight thereon, a single layer of the web continuing with the sponge mass layer. The laminate is transported by the belt with its opposite edges immersed in conducting liquids carried in longitudinal troughs along the belt edges and connected to an electric current which heats the viscose mass to coagulate it and regenerate the cellulose. A conducting liquid is sprayed onto the advancing web carrying sponge mass layer.

3,554,841
STRAIGHT LINE LABELING MECHANISM
Kazmier Wysocki, Michael J. Flynn, Harold Paitchell, and Ronald C. Keller, Hackensack, N.J., assignors to Kazmier Wysocki, Hackensack, N.J.
Filed June 22, 1967, Ser. No. 648,102
Int. Cl. B25c *9/04*
U.S. Cl. 156—455 **6 Claims**



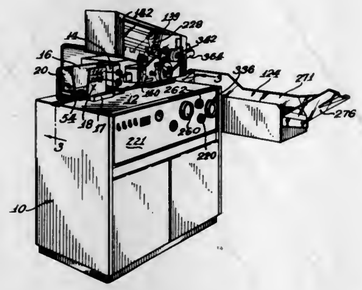
A mechanism for applying adhesive labels to spaced rotating containers moving in a straight line on a conveyor. The labels are accurately cut from a preprinted roll and carried by vacuum pads to the moving containers for trailing-edge-first application thereto.

3,554,842
BUTT-SPLICING
Graham Archie Bruce Byrt, Bristol, England, assignor to Masson Scott Thrissell Engineering Limited, London, England, a corporation of Great Britain
Filed July 20, 1967, Ser. No. 654,753
Claims priority, application Great Britain, Aug. 1, 1966, 34,500/66
Int. Cl. B31f *5/00;* **G03d** *15/04*
U.S. Cl. 156—505 **9 Claims**



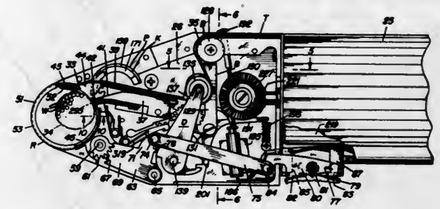
Butt-splicing apparatus having an anvil on which the webs to be spliced are held one above the other and a splicing head rotatable above the anvil and movable towards and away from the anvil firstly to cut the webs and then to apply a piece of adhesive tape across the trailing end of the outgoing web and the leading end of the incoming web, the offcut from the incoming web being removed meantime.

3,554,843
ADDRESSING MACHINE
Harry V. Kirk and James E. Doane, Mundelein, Ill., assignors to Cheshire Incorporated, Mundelein, Ill., a corporation of Illinois
Continuation of application Ser. No. 505,930, Nov. 1, 1965. This application July 2, 1969, Ser. No. 842,800
Int. Cl. B65c *9/18;* **B32b** *31/20*
U.S. Cl. 156—521 **22 Claims**



A machine for addressing articles including a transfer wheel for bringing labels having information indicia, such as addresses, into transfer contact with articles to be labeled; transport means for bringing articles to be labeled in succession into operative relationship with the transfer wheel; means for supplying labels in succession to the transfer wheel; an accumulator for used labels; means for carrying used labels from the transfer wheel to the accumulator during the heat transfer mode operation; means for applying glue to the labels where the labels are to be affixed to the articles; and means for collecting addressed articles leaving the transfer wheel.

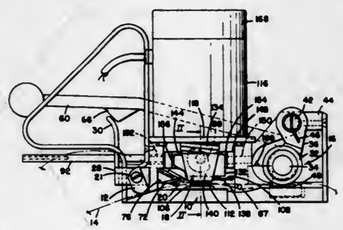
3,554,844
TYING DEVICE
Charles J. Ingram, 880 Grossmort, El Cajon, Calif. 92020
Continuation-in-part of application Ser. No. 552,002, May 23, 1966. This application Apr. 7, 1969, Ser. No. 826,041
Int. Cl. B32b *31/18;* **B31f** *5/04;* **B29c** *17/04*
U.S. Cl. 156—522 **22 Claims**



Apparatus for tying a plurality of objects, such as electrical wires in a bundle including a frame which forms a tape track that substantially encompasses the objects. The excess tape is pulled back from the track to tighten the tape around the objects and a bonding agent is then applied to the outward surface of the extended tape end and the feed tape is pressed overlappingly against said end. The feed tape is then sheared from the tape that has been bonded around the objects and the clamp is subsequently released.

The device for carrying out the above described method includes a frame which forms a tape track that substantially encompasses the objects. A tape feed means is provided to drive the tape around the tape track and a clamp is provided for clamping the leading extremity of the tape. Tightening means is provided to tighten the tape around the objects by pulling the excess tape back from the track to tighten the encompassing tape around the objects. The device includes an applicator for applying a bonding agent to the outward face of the leading end of the tape and a cutter is provided for severing the tape bonding the objects from the feed tape. A control mechanism is included for actuating the drive means, tightening means, applicator and cutter.

3,554,845
FRICTION WELDING OF PLASTIC STRAPPING
Ronald J. Billett, Sunnyvale, and Terence H. West, San Jose, Calif., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Nov. 17, 1967, Ser. No. 683,943
Int. Cl. B32b *31/00;* **B23k; B29c** *27/00*
U.S. Cl. 156—580 **3 Claims**



A method and apparatus for securing together overlapping ends of plastic strapping by means of frictional

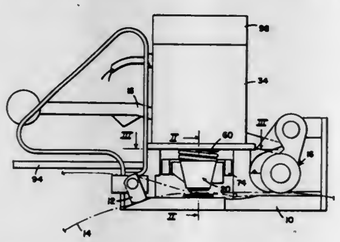
heat developed at the interfaces of the overlapping ends. The apparatus involves means for tensioning a length of strapping about an object, means for severing the tensioned strap from a supply, means for pressing overlapping end portions of the tensioned strap together and means for rubbing one of the ends against the other with an orbital motion.

3,554,846

FRICTION WELDING APPARATUS

Ronald J. Billett, Sunnyvale, Calif., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Mar. 21, 1968, Ser. No. 714,871
Int. Cl. B32b *31/20*; B29c *27/00*
U.S. Cl. 156—580 6 Claims



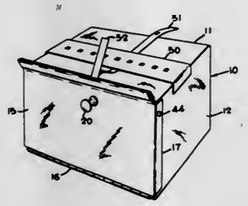
Apparatus for friction welding plastic articles and especially overlapping portions of plastic strapping comprises means for producing a relative rotary motion between the parts to be welded while they are pressed together. Provision is made for stopping the relative motion with the plastic parts oriented in the same relative positions at the end of the welding operation as at the beginning.

3,554,847

DISPENSING CONTAINER FOR ROLL LABELS

John C. Broemmelsiek, Chesterfield, Mo., assignor to Drug Package, Incorporated, O'Fallon, Mo., a corporation of Missouri

Filed Nov. 13, 1967, Ser. No. 682,365
Int. Cl. B32b
Int. Cl. 156—584 9 Claims



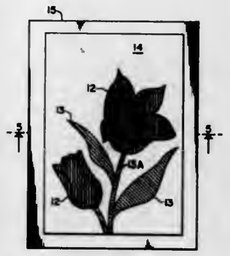
The dispensing container includes an upper wall having an outwardly turned flange, the flange including a separating edge; and a hinged lid also having an outwardly turned flange. The flanges are adjacent when the lid is closed. The bend lines at the juncture of the upper wall and its flange, and the lid and its flange, define a throat receiving the loaded strip of labels. The lid bend line provides a pressure edge adjustably disposed relative to the loaded strip. The interior of the container is subdivided into a plurality of stalls each accommodating one roll. A guide plate above the upper plate includes a plurality of downwardly projecting tabs forming slots in register with the stalls so that the strip which passed through the throat, over the separating edge and through the guide slots is prevented from inadvertent tearing.

3,554,848

MATERIAL FOR EXPANDING AND ASSEMBLING COMPONENTS USED IN THE CREATION OF BAS-RELIEF ART

Mortimer R. Dock, 26 Broadway, New York, N.Y. 10004

Continuation-in-part of application Ser. No. 663,427, Aug. 25, 1967. This application June 9, 1969, Ser. No. 831,341
Int. Cl. B44f *7/00*
U.S. Cl. 161—18 4 Claims



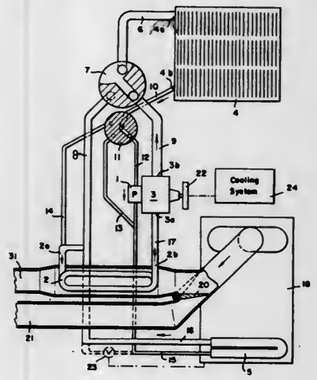
This invention relates to new and improved materials and methods for their assembly in the creation of decorative articles, by the application of absorbent material moistened by the rupture of water-containing members intermixed therewith, said material thus moistened being adhesively attached to an adhesive-coated surface.

3,554,849

AUTOMOTIVE VEHICLE WITH AUXILIARY MOTIVE-POWER SOURCE

Jakob Wagner, Mainz-Kastel, Germany, assignor to Linde Aktiengesellschaft, Wiesbaden, Germany, a corporation of Germany

Filed Dec. 16, 1968, Ser. No. 784,037
Claims priority, application Germany, Dec. 21, 1967, 1,601,457
Int. Cl. B60h *3/04*
U.S. Cl. 165—23 10 Claims



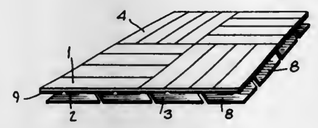
An automotive vehicle has an auxiliary power source comprising a cold-vapor engine running off the normally wasted heat of the exhaust gas and/or of the lubricant as generated by its internal-combustion engine. This cold-vapor engine converts the abstracted heat into mechanical work which is used to run the vehicular cooling, air-conditioning or other system. The cold-vapor fluid used for this auxiliary power source is a refrigerant which is preheated in a coil in the motor oil and further heated by the exhaust gas prior to driving an expansion engine, e.g. a rotary displacement-type motor.

3,554,850

LAMINATED FLOOR COVERING AND METHOD OF MAKING SAME

Erich Kuhle, Schulstrasse 1515, Heerbrugg, Switzerland

Filed Oct. 19, 1967, Ser. No. 676,548
Claims priority, application Germany, Oct. 20, 1966, K 60,502
Int. Cl. B32b *3/14*
U.S. Cl. 161—38 6 Claims



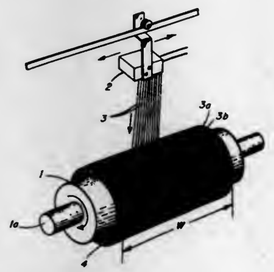
A flooring element is disclosed which comprises at least three layers; an upper layer which forms the floor surface, a lower layer which contacts the under floor and a middle layer; all layers being bonded by adhesives. Each of the lower and middle layers is composed of continuous strips which are parallel and spaced apart, preferably by a distance of two to three times the thickness of the element. The strips of the lowest and middle layers intersect at an angle of 90°. The various layers are generally similar in horizonal dimensions, and all layers but the lowest are superimposed. The lowest layer is diagonally offset to provide a projection on two sides which preferably has a width which is at least 5 to 8 times the element thickness. These elements may be assembled into a floor without the necessity of bonding to the floor by applying adhesive to the projections formed by the offset lower layer, laying a second element adjacent the first to cover the extension of the first and applying pressure to the superimposed portions, as by tapping with a hammer.

3,554,851

GLASS REINFORCED FOAM STRUCTURE AND METHOD OF MAKING THE SAME

John Philip Modigliani, Morristown, N.J., assignor to Artfiber Corporation, New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 379,856, July 2, 1964, which is a continuation-in-part of applications Ser. No. 175,709, Feb. 26, 1962, and Ser. No. 371,949, June 2, 1964. This application Nov. 20, 1967, Ser. No. 689,222
Int. Cl. B32b *5/12, 5/20*; B65h *81/04*
U.S. Cl. 161—58 2 Claims



This disclosure relates to a novel product and method of forming the same, said product comprising a reinforced structure comprising an expanded mat of stretched glass fibers, said fibers forming interstices between them, the interstices of said mat containing a plastic foam, such as a polyurethane foam. The fibers of said mat extend through the surface of said foam into a resin surfacing layer.

3,554,852

BREATHABLE LAMINATE SUBSTANTIALLY NON-PERMEABLE TO AEROSOLS AND DUSTS

Nathan Sugarman, Needham, Mass., and George L. Braude, Ellicott City, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Filed Mar. 9, 1967, Ser. No. 621,856
Int. Cl. B32b *5/02*; D04h *1/54*
U.S. Cl. 161—82 22 Claims

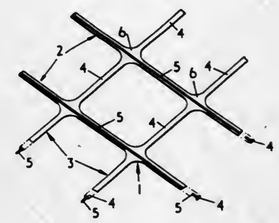
This invention is directed to a flexible, breathable, wearable, protective laminate substantially non-permeable to aerosols and dusts, said laminate being excellently adapted for the manufacture of protective clothing; said laminate can be made by bonding a web of flexible, breathable, wearable woven fabric to at least one surface of a flexible, breathable, wearable nonwoven fabric comprising a mixture of a first thermoplastic staple fiber having a commercial moisture regain value of less than about 5 percent and having a diameter of about 17 to 50 microns and a second staple fiber having a commercial moisture regain value of about 5 to 15 percent and having a diameter of about 1 to 16 microns.

3,554,853

EXTRUDED PLASTIC NET MADE OF NON-CYLINDRICAL STRANDS ORIENTED AT POINTS REMOTE FROM BONDED AREAS

Frank Brian Mercer and Keith Fraser Martin, Blackburn, England, assignors to Plastic Textile Accessories Limited, Blackburn, England, a British company

Filed Nov. 2, 1967, Ser. No. 680,089
Int. Cl. B32b *3/10*
U.S. Cl. 161—109 3 Claims



An integral extruded thermoplastic net structure, which has been molecularly oriented in known manner, comprising two sets of strands and integral extruded intersections, wherein each strand comprises at least two distinct and demarcated linear portions, viz a base portion adjacent the median plane of the net and one or more outlying portions extending from the base portion away from said plane, the thermoplastic material in the outlying portion or portions being molecularly oriented throughout the continuous length of each strand and the thermoplastic material in the base portion being molecularly oriented between the net intersections leaving the two sets of strands connected together at their intersections by the unoriented intercepts of the base portions of the strands.

3,554,854

NON-WOVEN FABRIC

Ludwig Hartmann, Oberflockenbach, Germany, assignor to Carl Freudenberg Kommanditgesellschaft, Weinheim an der Bergstrasse, Germany, a corporation of Germany

Continuation-in-part of applications Ser. No. 254,601, Jan. 29, 1963, Ser. No. 302,370, Aug. 15, 1963, Ser. No. 341,489, Jan. 29, 1964, now Patent No. 3,502,763, and Ser. No. 614,093, Feb. 6, 1967, now Patent No. 3,509,009. This application Feb. 7, 1969, Ser. No. 797,439

Claims priority, application Germany, Feb. 3, 1962, F 35,926; Feb. 10, 1966, F 48,397; Feb. 16, 1966, 1,560,801; July 15, 1966, 1,532,162

Int. Cl. D04h *1/04*

U.S. Cl. 161—150 2 Claims

A non-woven fabric comprising a multiplicity of groups of individual continuous filaments, said filaments being in generally parallel alignment within the groups and partially fused to each other within the groups, said groups being bonded together predominantly at the crossing points and being substantially uniformly randomly disoriented with respect to the other groups.

3,554,855

VIBRATION DAMPED SANDWICH SYSTEMS HAVING INTERLAYERS OF A MIXTURE OF TWO EXTERNALLY PLASTICIZED COPOLYMERS CAPABLE OF BEING CROSS-LINKED

Hermann Oberst, Hofheim, Taunus, Joachim Ebigt and Günther Duve, Frankfurt am Main, and Alfred Schommer, Bad Soden, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

Filed Nov. 21, 1967, Ser. No. 684,741

Claims priority, application Germany, Nov. 25, 1966, F 50,756

Int. Cl. B32b *15/08;* E04b *1/99*

U.S. Cl. 161—165 8 Claims

A vibration damped sandwich system comprising hard plates and a vibration damping, self-adherent interlayer consisting of a mixture of (a) a mixture of a copolymer I of vinyl acetate and dibutyl maleate and a copolymer II of vinyl acetate and crotonic acid, (b) at least one plasticizer and (c) a bifunctional epoxide soft resin, which interlayer is subjected to a thermal treatment to bring about cross-linking. Vibration damped sandwich systems having interlayers of a mixture of two externally plasticized copolymers capable of being cross-linked.

3,554,856

ACRYLIC POLYMERS AS BINDERS FOR PRESSBOARDS AND COATINGS

Robert E. Opferkuch, Jr., Kettering, Ohio, and Frank Stutz, Pensacola, Fla., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 450,157, Apr. 22, 1965, which is a continuation-in-part of application Ser. No. 413,336, Nov. 23, 1964, both now abandoned. This application Dec. 17, 1969, Ser. No. 886,023

Int. Cl. B32b *5/16, 21/02*

U.S. Cl. 161—218 18 Claims

A pressboard comprised of a mixture of acrylic polymers and wood particles is prepared by subjecting the mixture to heat and pressure conditions for a time sufficient to convert the polymer into a viscous mass for bonding the wood particles.

3,554,857

METHOD OF MINIMIZING DEGRADATION OF POLYESTER/RUBBER VULCANIZATES, AND PRODUCT THEREOF

Bernard C. Barton, Butler, N.J., assignor to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 29, 1968, Ser. No. 718,025

Int. Cl. B32b *27/36;* C08c *11/66, 17/28;* C08d *13/00*

U.S. Cl. 161—231 4 Claims

A composite polyester fiber-reinforced vulcanized rubber article is made with a vulcanizing system comprising a sulfur-yielding vulcanizing agent, typically sulfur itself, and as an accelerator thereof a zinc phosphorodithioate, such as zinc O,O-dibutyl phosphorodithioate.

3,554,858

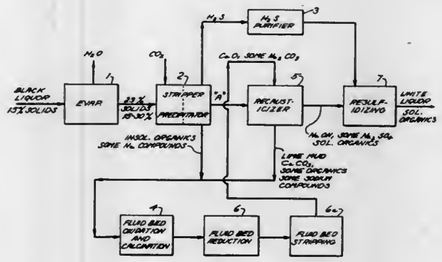
PROCESS FOR REGENERATION OF WHITE LIQUOR WITH HYDROGEN SULFIDE RECYCLE

Winfried George Timpe, New City, N.Y., assignor to Copeland Process Corporation, Oak Brook, and Container Corporation of America, Chicago, Ill., both corporations of Delaware

Filed Sept. 15, 1967, Ser. No. 668,226

Int. Cl. D21c *11/14*

U.S. Cl. 162—30 7 Claims



Disclosed is a process of regenerating white pulping liquor from black pulping liquor. Black liquor is made acid to liberate hydrogen sulfide which is recovered, and to precipitate the organic content which is separated from a first mother liquor. The smelt is taken up in water and the insoluble portion is separated to leave a second mother liquor. The two mother liquors are combined and recausticized, producing lime mud and an aqueous sodium hydroxide solution. The hydrogen sulfide is added to the liberated sodium hydroxide solution to form white pulping liquor.

3,554,859

PROCESS FOR RECOVERY OF SULPHUR FROM FURNACED BLACK LIQUOR

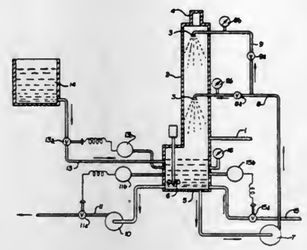
Francis E. Murray, Richmond, British Columbia, Canada, assignor to British Columbia Research Council, Vancouver, British Columbia, Canada

Continuation-in-part of application Ser. No. 465,406, June 21, 1965. This application July 10, 1968, Ser. No. 743,768

Int. Cl. D21c *11/12, 11/14, 11/02*

U.S. Cl. 162—30 6 Claims

Sulphur containing compounds are recovered from sulphur and CO_2 containing gases from the furnacing of cooking liquor in the kraft or sodium base sulphite process by mixing the gases with air and an oxygen-containing gas and contacting the mixture with an aqueous alkaline solution containing at least one molar concentration of sodium ions while maintaining the pH of the solution at



9.0 or above and the temperature thereof at about 135° to 180° F.

3,554,860

ORGANIC FIBER-ANTHOPHYLLITE FIBER SHEET AS A FRICTION MATERIAL

Arthur J. Lacroix, Jr., Milford, Conn., assignor to Raybestos-Manhattan, Inc., Passaic, N.J., a corporation of New Jersey

No Drawing. Filed Mar. 30, 1967, Ser. No. 626,925

Int. Cl. D21h

U.S. Cl. 162—145 6 Claims

Paper base friction material and wet felting method for producing same comprised of a porous, flexible sheet of a mixture of 40% to 60% organic and 40% to 60% of anthophyllite asbestos fibers, the paper base further including resin binder incorporated during felting or subsequent thereto. The paper is ultimately bonded to a metal mounting member whereby it is useful as friction material particularly in oil such as in automotive automatic transmissions.

3,554,861

HEAT-RESISTANT FIBROUS ASBESTOS BOARD WITH COMPOSITE BINDER

Eugene D. Ermenc and Marion F. Smith, Cincinnati, Ohio, assignors to Panacon Corporation, a corporation of Michigan

No Drawing. Filed July 6, 1967, Ser. No. 651,366

Int. Cl. D21h *5/18*

U.S. Cl. 162—153 3 Claims

An asbestos millboard particularly adapted for use under high temperature conditions composed of asbestos fibers of which at least 30 percent are crocidolite blue asbestos, the remainder being chrysotile asbestos, and wherein a composite binder is used, the binder being composed of starch and bentonite clay. The bentonite clay is a permanent binder and the starch a temporary binder, said starch decomposing when the millboard is used at high temperatures thereby leaving space for the expansion of the asbestos to eliminate cracking of said millboard.

3,554,862

METHOD FOR PRODUCING A FIBER PULP SHEET BY IMPREGNATION WITH A LONG CHAIN CATIONIC DEBONDING AGENT

Laurence R. B. Hervey, West Concord, Mass., and Donald K. George, Greenwood, S.C., assignors, by direct and mesne assignments, to Riegel Textile Corporation, Ware Shoals, S.C., a corporation of Delaware

No Drawing. Filed June 25, 1968, Ser. No. 739,641

The portion of the term of the patent subsequent to Aug. 6, 1985, has been disclaimed

Int. Cl. D21d *3/00*

U.S. Cl. 162—158 2 Claims

In a method of producing from cellulose fiber pulp, a pulp sheet, the improvement of impregnating the pulp with about 0.1% to 5.0% based on the weight of the dry pulp, of a cationic long chain fatty alkyl compound debonding agent having at least 12 carbon atoms in at least one alkyl chain such as dihydrogenated dimethyl ammonium chloride derived from a tallow oil, and forming a sheet from the impregnated pulp that can be easily mechanically fiberized.

3,554,863

CELLULOSE FIBER PULP SHEET IMPREGNATED WITH A LONG CHAIN CATIONIC DEBONDING AGENT

Laurence R. B. Hervey, West Concord, Mass., and Donald K. George, Greenwood, S.C., assignors, by direct and mesne assignments, to Riegel Textile Corporation, Ware Shoals, S.C., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 739,641, June 25, 1968. This application Feb. 5, 1969, Ser. No. 796,880

The portion of the term of the patent subsequent to Aug. 6, 1985, has been disclaimed

Int. Cl. D21d *3/00*

U.S. Cl. 162—158 4 Claims

A pulp sheet impregnated with about 0.25% to 1.0%, and preferably about 0.25% to 0.5%, based on the weight of the dry pulp, of a cationic long chain fatty alkyl compound debonding agent having at least 12 carbon atoms in at least one alkyl chain such as di-hydrogenated dimethyl ammonium chloride derived from a tallow oil, and drying the impregnated pulp to form a pulp sheet that can be easily mechanically fiberized.

3,554,864

CONTINUOUS DIGESTER WITH DUAL CHARGING MEANS

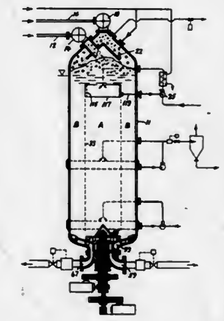
Johan C. F. C. Richter, St. Jean Cap Ferrat, France, assignor to Aktiebolaget Kamyr, Karlstad, Sweden, a company of Sweden

Filed May 13, 1968, Ser. No. 728,397

Claims priority, application Sweden, May 16, 1967, 6,789/67

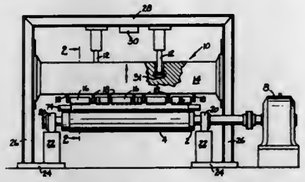
Int. Cl. D21c *7/06, 7/08*

U.S. Cl. 162—237 3 Claims



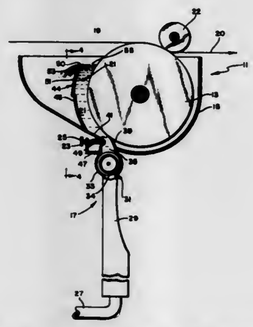
A continuous cellulose digester equipped with two charging devices, one delivering a cellulosic material into the center area of the inlet end of the digester, and the other distributing a cellulosic material over the surrounding annular area. Different digesting conditions are employed and different cellulosic materials may be used in the central area than in the surrounding annular area.

3,554,865
APPARATUS FOR FORMING ASBESTOS-CEMENT PIPE
Frank A. Claessens, Somerville, N.J., assignor to Johns-Manville Corporation, New York, N.Y., a corporation of New York
Filed Jan. 31, 1967, Ser. No. 612,937
Int. Cl. B31c *1/00*
U.S. Cl. 162—284 **6 Claims**



Apparatus for providing stability in an asbestos-cement pipe manufacturing machine utilizing a press section and an anvil roll by limiting the possible movement of the press section while maintaining the axis of rotation of the anvil roll in a fixed location.

3,554,866
CYLINDER PAPERMAKING APPARATUS
Carl J. Wynstra, Quincy, Ill., assignor to Boxboard Research and Development Association, Kalamazoo, Mich.
Filed Jan. 30, 1968, Ser. No. 701,758
Int. Cl. D21f *1/04*
U.S. Cl. 162—321 **6 Claims**

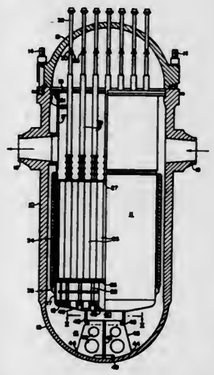


To provide an improved ratio of strength properties in the machine direction to the strength properties in the cross machine direction, a cylinder papermaking apparatus is provided with means to control the linear velocity of the paper stock relative to the tangential velocity of the rotating cylinder. The volume of stock available at the area of web formation may be controlled, and in a cylinder machine of the overflow kind, the position at which the stock overflows can be adjusted.

3,554,867
METHOD OF OBTAINING AMERICIUM
Stanley G. Thompson, Richmond, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Aug. 23, 1946, Ser. No. 692,729
Int. Cl. C01g *51/00*; G21g *1/00*
U.S. Cl. 176—16 **11 Claims**

1. In a process for the synthesis of element 95, the steps which comprise dissolving a neutron-irradiated mass of uranium containing a transuranic fraction comprising predominantly plutonium which contains at least about 0.01% of the isotope 94^{241} and a detectable quantity of element 95 in an aqueous acidic solution, oxidizing the plutonium contained in the resulting solution to a valent state greater than +4, removing uranium fission products and element 95 therefrom by means of a water-insoluble rare earth salt carrier, dissolving the carrier precipitate thus obtained, introducing fluosilicate ions into the resulting solution, contacting said solution with a water-insoluble rare earth salt carrier for said fission products and separating the resulting precipitate, adding sufficient hydrofluoric acid to render the supernatant solution thus obtained from about 3 to 6 M with respect thereto, thereafter contacting the solution with a water-insoluble rare earth salt carrier for element 95, and separating the carrier precipitate from the solution.

3,554,868
REACTOR INTERNALS LOWER RADIAL SUPPORT SYSTEM
Arthur G. Thorp II, deceased, late of Churchill Borough, Pa., by Ruth S. Thorp, administratrix, Churchill Borough, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 9, 1967, Ser. No. 674,705
Int. Cl. G21c *1/02*
U.S. Cl. 176—40 **10 Claims**

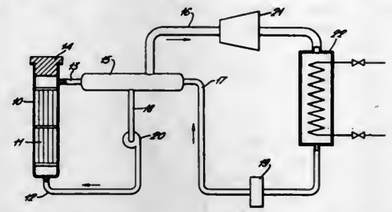


A lower radial support system is provided for a nuclear reactor internals which permits free radial and axial differential expansion while preventing the lower end of the internals from moving off center due to vibration or earthquake shock. One embodiment includes a plurality of Inconel plates welded to the bottom of the reactor pressure vessel and an Inconel centering sleeve, the upper end of which is fitted to the bottom support plate for the reactor core in such a way as to have an interference fit on the inside diameter of the sleeve at operating temperature. The lower end of the sleeve is fitted to the plate structure with a tapered fit to permit vertical differential expansion of the reactor internals.

3,554,869
NUCLEAR REACTOR SYSTEMS OF THE DIRECT CYCLE BOILING WATER TYPE
George Kenneth Dickson, Stretton, England, assignor to United Kingdom Atomic Energy Authority, London, England
Filed Oct. 27, 1967, Ser. No. 678,717
Claims priority, application Great Britain, Nov. 9, 1966, 50,336/66
Int. Cl. G21c *15/00, 9/00*
U.S. Cl. 176—55 **1 Claim**

A nuclear reactor of the direct cycle boiling water type has steam generation, utilisation, condensation and return to the reactor all at superatmospheric pressure and in an atmosphere which is chemically reducing. The chemically reducing atmosphere may be created by an initial supply

of ammonia or hydrogen or may be allowed to build up from radiolysis products retained in the system. The heat

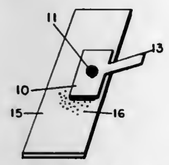


removed at steam condensation can be used in a low temperature turbine or engine system.

3,554,870
PROCESS FOR PREPARING ESTROLOLACTONE
Samuel C. Pan, Metuchen, Joan Semar, Somerset, Pacifico A. Principe, South River, and Leonard J. Lerner, New Brunswick, N.J., assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 1, 1968, Ser. No. 717,936
Int. Cl. C07c *167/14*
U.S. Cl. 195—51 **1 Claim**

Estrololactone is prepared by subjecting 19-nortestololactone to the action of a 1-dehydrogenating microorganism.

3,554,871
STRIP FOR STAINING BACTERIA
Anthony H. Lariccia, Erie, Pa., assignor to American Sterilizer Company, Erie, Pa., a corporation of Pennsylvania
Continuation-in-part of application Ser. No. 534,786, Mar. 16, 1966. This application May 16, 1969, Ser. No. 825,379
Int. Cl. C12k *1/10*
U.S. Cl. 195—127 **1 Claim**

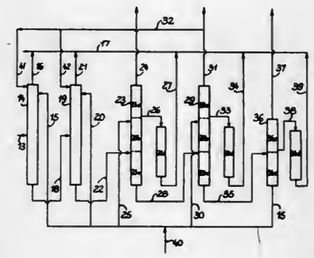


A process of staining bacteria fixed on a slide and device for carrying out the process. The device is made out of a non-absorbent material supporting an absorbent material which has been treated with stain and then dried. To stain the bacteria, either a drop of solvent is placed on the slide or solvent is dropped through a hole or holes in the non-absorbent material. The solvent redissolves the stain which is then carried down onto the bacteria. The stain is kept on the bacteria for as long as is necessary to complete staining. The structure does not dry out during staining because of the presence of the water-impervious material.

3,554,872
PROCESS FOR SEPARATION OF 2,6-TOLYLENE DIISOCYANATE FROM ISOMERIC MIXTURES
Eugene Yue Chieh Chang and Samuel Kaizerman, Bridgewater Township, Somerset County, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Continuation-in-part of application Ser. No. 526,393, Feb. 10, 1966. This application July 24, 1968, Ser. No. 747,105
Int. Cl. B01d *3/34*; C07c *119/04*
U.S. Cl. 203—38 **4 Claims**

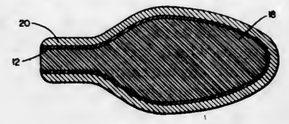
A process for separating 2,6-tolylene diisocyanate from a mixture containing 2,4-tolylene diisocyanate and at least 10% of 2,6-tolylene diisocyanate by (1) reacting said mixture with a hydroxyl-terminated polyester or polyether and (2) subsequently vacuum distilling to obtain pure 2,6-tolylene diisocyanate or an isomer mixture richer in this component than was the starting material.

3,554,873
SIMPLIFIED EXTRACTIVE DISTILLATION PROCESS FOR OBTAINING AROMATICS OF DIFFERING BOILING-POINT RANGES
Günter Luther, Werderstrasse 29, Essen, Germany; Jürgen Ludwig, 33 Ursulinestrasse, 516 Duren, Germany; and Martin Schulze, 9 Weissenburgstrasse, 43 Essen, Germany
Filed Oct. 11, 1967, Ser. No. 674,682
Claims priority, application Germany, Oct. 13, 1966, K 60,457
Int. Cl. B01d *3/34*; C07c *7/00*
U.S. Cl. 203—51 **14 Claims**



An extractive distillation process for simultaneously obtaining aromatics with different boiling-point ranges from a feed stock containing varied amounts of non-aromatics along with the desired aromatics, said process being of the type wherein the feed stock is passed through at least one extractive distillation column and is contacted with a selectively active extraction agent to which aromatics other than the desired aromatics have been added, and wherein the mixture of aromatics and extraction agent is withdrawn from the bottom of the column while withdrawing the non-aromatics in vapor form from the top of the column, the improvement comprising passing the aromatics containing mass received from the said extractive distillation column through a plurality of in-series connected column systems, the number of said systems corresponding to the number of aromatics to be obtained and subjecting the mass in each of said column systems successively to an extractive distillation and to a normal distillation and recovering from each system the desired aromatic fraction.

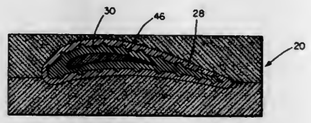
3,554,874
METHOD OF ELECTROFORMING VESSELS
Michael Mattia, Upper Darby, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 31, 1968, Ser. No. 733,413
Int. Cl. C23b *7/02*; B51c *3/08*
U.S. Cl. 204—9 **1 Claim**



A method of electroforming a vessel includes first casting a hollow flexible body inside a mold. The flexible body

is then collapsed, taken out of the mold and inserted inside a two-piece mold. The flexible body is then filled with a castable material to form a mandrel and the two-piece mold is then removed. Metal is then electrodeposited on the mandrel which includes the flexible body and castable material. The castable material is then removed after which the flexible material is removed leaving the electroformed vessel.

3,554,875
METHOD OF FABRICATING A MANDREL FOR ELECTROFORMING
John J. MacKinney, Narberth, and Michael Mattia, Upper Darby, Pa., assignors to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Aug. 1, 1968, Ser. No. 749,464
Int. Cl. B51c *3/08*; C23b *7/02*
U.S. Cl. 204—9 **3 Claims**

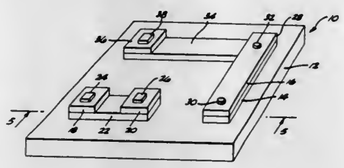


A method of electroforming an article corresponding in shape to a cavity and smaller in dimension than the cavity is provided. A mold is first cast having an opening therein corresponding to the cavity. A liner is inserted into the mold with a mandrel being then formed in the mold with the liner in place. After the mandrel is removed from the mold, the article is formed on the mandrel by an electrodeposition process.

ERRATUM

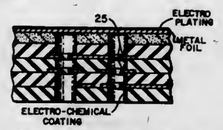
For Class 204—10 see:
Patent No. 3,555,265

3,554,876
PROCESS FOR ETCHING AND ELECTRO PLATING A PRINTED CIRCUIT
Carl E. Keene, Huntington Beach, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Jan. 29, 1968, Ser. No. 701,194
Int. Cl. C23b *5/48*
U.S. Cl. 204—15 **3 Claims**



An insulative substrate has at least one continuous metal layer secured thereon, which metal layer is to be etched away to form separate circuit elements. Electroplating of additional metal is accomplished before such etching so that the continuous metal layer can act as a cathode during the electroplating process. Thereafter, portions of the metal layer are etched away to define separate circuit elements.

3,554,877
METHOD OF MAKING PRINTED CIRCUIT ASSEMBLIES
Robert R. Geisler, Keansburg, N.J., assignor to the United States of America as represented by the Secretary of the Army
Filed Feb. 7, 1968, Ser. No. 703,730
Int. Cl. B32b *31/14*; C23b *5/48*
U.S. Cl. 204—15 **2 Claims**



The invention herein is concerned with a method of making double-sided or multilayer printed circuit boards with hole-free terminal leads on one surface of the board for attachment of wire leads while providing electrical interconnection between conductive layers.

3,554,878
PLATING TIN-LEAD ALLOY ON PRINTED CIRCUITS AND ELECTROLYTE THEREFOR
Bill F. Rothschild, Whittier, Calif., assignor to North American Rockwell Corporation
Filed July 2, 1968, Ser. No. 741,957
Int. Cl. C23b *5/38, 5/40*
U.S. Cl. 204—24 **5 Claims**

A high throwing power tin lead (solder) fluoborate plating bath. The bath has a very low total metal content, typically 15 to 30 grams per liter, and a high fluoboric acid content, typically 300 to 500 grams per liter. A small weight percentage of peptone, typically 2 to 10 grams per liter completes the solution. The inventive plating bath has a very high throwing power value, typically greater than 65, and permits substantially uniform thickness solder plating of printed wiring boards through holes having board thickness to hole diameter ratios of 5:1 or greater.

3,554,879
ELECTROPLATING METAL SHIELD ON ELECTRICAL CABLE
James A. Shotton and Roy E. Stansbury, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Feb. 29, 1968, Ser. No. 709,356
Int. Cl. C23b *5/50, 5/58*
U.S. Cl. 204—28 **6 Claims**

A cable core of one or more electrical conductors is covered by an electroplatable copolymer of at least one monoolefin and at least one diolefin or a block copolymer of a major amount of at least one monovinyl-substituted aromatic compound and a minor amount of at least one conjugated diene. A metal layer is electroplated on the outer surface of the polymer to form an electrical shield for the cable core. The electroplated layer is covered with a protective polymer layer, the latter preferably being separated from the electroplated layer by a lubricant to prevent bonding of the protective polymer layer to the electroplated layer.

3,554,880
PROCESS FOR ELECTROPLATING POLYOXYMETHYLENE RESINS
William C. Jenkin, Kettering, Ohio, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Jan. 11, 1968, Ser. No. 697,031
Int. Cl. B44c *1/22*; B44d *1/092*; C23b *5/60*
U.S. Cl. 204—30 **2 Claims**

A process for preparing polyoxymethylene homopolymer for electroplating by acid etching, e.g. in orthophosphoric acid, followed by basic treatment, e.g. 10% sodium hydroxide.

3,554,881
ELECTROCHEMICAL PROCESS FOR THE SURFACE TREATMENT OF TITANIUM, ALLOYS THEREOF AND OTHER ANALOGOUS METALS
Roberto Piontelli, Viale Bianca Maria 26, Milan, Italy
Filed Apr. 19, 1967, Ser. No. 632,885
Claims priority, application Italy, Apr. 23, 1966, 9,365/66; Feb. 9, 1967, 12,456/67
Int. Cl. C23b *5/50, 11/02*
U.S. Cl. 204—42 **8 Claims**

An electrochemical process suitable for modifying the surface characteristics of titanium and alloys thereof, as well as of metals having a behavior analogous to that of titanium such as niobium, tantalum and the like. The process may be used to confer to the metals a uniform, pleasant color, required for many applications or, also and mainly, to render it possible to form on them, with known methods, coating layers of any desired metal, which layers are endowed with outstanding characteristics of adhesion, uniformity and compactness. The process according to the invention is characterized in that it comprises an electrochemical treatment of the titanium and the above cited alloys and metals, in baths constituted by concentrated aqueous solutions of a strong base, followed optionally by a second electrochemical treatment with alternating current in baths containing acidic solutions, both treatments being carried out under specific critical conditions of concentration, applied voltage, temperature and time.

3,554,882
POLYMERIZABLE MIXTURES
Harvey A. Hodes, James F. Sobleski, and Michael C. Zerner, Eatontown, N.J., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Sept. 26, 1967, Ser. No. 670,808
Int. Cl. C08f *1/00*
U.S. Cl. 204—72 **1 Claim**

Solutions are provided in which rapid polymerization can be initiated by the passing of an electric current therethrough. The polymer thus formed has excellent adhering properties to metallic cathodes. The solution is comprised of at least one polymerizable monomer, a strong acid, an electrochemical initiator, and a solvent in which the monomer, acid and electro-chemical initiator are soluble.

3,554,883
METHOD OF PURIFYING AQUEOUS SILVER NITRATE SOLUTIONS
Gerald R. Green, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed June 6, 1968, Ser. No. 734,848
Int. Cl. C22d *1/12*
U.S. Cl. 204—109 **9 Claims**

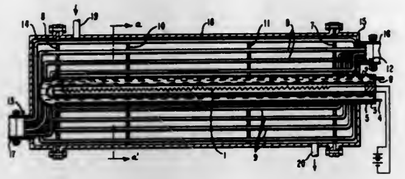
Aqueous silver nitrate solutions, such as are prepared by dissolving silver bullion in nitric acid or recovered from the electrolytic cell in electrorefining of silver, are treated to remove a major proportion of metal contaminants therefrom, with minimum loss of silver, by successive additions of silver oxide to increase the pH and thereby precipitate the metal contaminants which are removed after each precipitation.

3,554,884
ADDITION AGENT FOR THE ELECTROLYTE USED IN THE ELECTRODEPOSITION OF LEAD
George R. Quimby, Shelton, Wash., assignor to ITT Rayonier Incorporated, Shelton, Wash., a corporation of Delaware
No Drawing. Filed Aug. 1, 1968, Ser. No. 749,299
Int. Cl. C22d *1/24*
U.S. Cl. 204—114 **3 Claims**

The uniform electrolytic deposition of lead from a conventional electrorefining aqueous electrolytic solution containing lead fluosilicate and hydrofluosilicic acid is promoted by adding to the electrolytic solution from about 140–1200 mg./liter of a lignosulfonate and from about 40–600 mg./liter of a water-soluble block copolymer of propylene oxide and ethylene oxide having the following general formula:

$$HO(CH_2CH_2O)_y(CHCH_2O)_x(CH_2CH_2O)_yH$$
$$\quad\quad\quad

tained at a fixed distance from the radiant energy source, a means for introducing and passing reactant materials

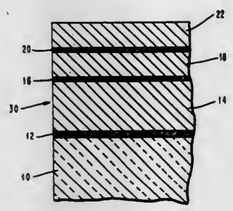


through said reactor tube, and the process for conducting a radiation initiated chemical reaction in such a reactor.

3,554,888
METHOD OF ELECTROPAINTING FROM AN EMULSION
Jerry T. Seitz, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Sept. 5, 1968, Ser. No. 757,793
Int. Cl. B01k *5/02*
U.S. Cl. 204—181 **10 Claims**

An article is electropainted by electrophoresis in an aqueous emulsion containing pigment particles and a polymeric material. The polymeric material comprises a dispersion of pigment particles and an at least partially neutralized dicarboxylic acid of a block copolymer of an α-methyl styrene and an aliphatic conjugated diolefin such as 1,3-butadiene characterized by having a relatively low degree of polymerization and, as a second polymeric material, an at least partially neutralized dicarboxylic acid of a block copolymer of α-methyl styrene and an aliphatic conjugated diolefin such as 1,3-butadiene characterized by having a relatively high degree of polymerization. The article is electropainted by disposing it in an aqueous electrodeposition bath containing the aqueous emulsion and applying a voltage between the article and a cathode disposed within the bath to cause direct current flow through the bath and thus effect a migration of the pigment particles and polymeric materials to the surfaces of the article.

3,554,889
COLOR CATHODE RAY TUBE SCREENS
Clifton E. Hyman, Kingston, and George M. Krembs, Hyde Park, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Nov. 22, 1968, Ser. No. 778,167
Int. Cl. B01k *5/02*
U.S. Cl. 204—181 **8 Claims**



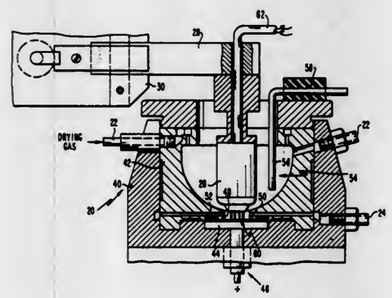
A luminescent color cathode ray tube screen is produced by cataphoretically depositing two or more phosphor layers onto intervening transparent electrically conductive layers on a transparent base. Accurate phosphor layer thickness control is enabled by controlling the cataphoretic deposition parameters, such as field strength, time and solution concentration.

3,554,890
OBSERVATION DEVICE FOR AN ELECTROLYTIC CORROSION TEST SYSTEM
Susmu Kariya, 4/120 Karelke-machi, Kasamatsu-cho, Hashima-gun, Gifu-ken, Japan
Filed Sept. 23, 1968, Ser. No. 761,486
Claims priority, application Japan, Sept. 30, 1967, 42/83,439
Int. Cl. B01k *3/00;* **B23p** *1/04*
U.S. Cl. 204—194 **6 Claims**



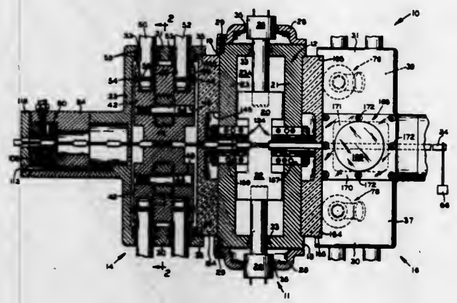
An observation device for an electrolytic corrosion test system comprising a hollow cylindrical substantially V-shaped cell having two identical hollow cylindrical portions interconnected at the lower ends by a hollow cylindrical base portion, one of said interconnected cylindrical portions receiving and holding an electrode element in position therein; and a resilient annular gasket snugly fit around said cylindrical base portion and having a seat for the base portion and a center annular boss extending downwards from the body of said gasket, said boss being adapted to abut against an article to be tested so as to provide a fluid-tight seal between the bottom end of the boss and the surface of the article.

3,554,891
AUTOMATIC IMPURITY PROFILING MACHINE
Michael C. Duffy, Boissise-le-Roi, France, and Richard L. Hudson, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 22, 1967, Ser. No. 692,817
Int. Cl. B01k *3/00*
U.S. Cl. 204—195 **6 Claims**



A machine and method for automatically determining the distribution of impurities contained in a semiconductor body. The machine is particularly useful in determining the depth of very shallow junctions in the order of ½ micron and less. The machine successively anodizes the surface of the semiconductor body to produce an anodized semiconductor layer, removes the anodized layer by chemical etching, measures an electrical characteristic, such as spreading resistance and sheet resistance, of the semiconductor body and records the electrical characteristic in terms of the characteristic versus the amount of material removed. The machine automatically repeats this cycle until a resistivity profile for the desired depth of material is obtained. A sharp change will be observed in the recorded profile of the electrical characteristic versus the amount of material removed when a PN junction is crossed.

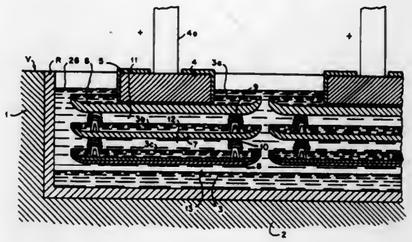
3,554,892
ELECTROLYTIC MACHINING AND FIXTURING MEANS
Eugene P. Schellens and Roy E. Black, Jr. Essex, Conn., assignors, by mesne assignments, to Schellens True Corporation, Ivoryton, Conn., a corporation of Indiana
Filed Feb. 27, 1967, Ser. No. 618,909
Int. Cl. B01k *3/00;* **B23p** *1/04*
U.S. Cl. 204—206 **5 Claims**



A fixturing arrangement utilized in the electrolytic machining of shapes from bar stock having a pair of cooling chambers disposed on opposite sides of an electrolyte containing chamber. Expandable sealing means are disposed between the cooling chambers and electrolyte containing chamber and sealing means are also disposed at the ends of the cooling chambers remote from the electrolyte containing chamber. The sealing means envelop the bar stock permitting it to extend through and be movably indexed within the cooling and electrolyte containing chambers. A guidance and alignment means having non-interfering machining electrode characteristics is also included within the electrolyte containing chamber to provide guidance and support for the position of the bar stock therewithin.

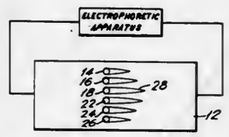
3,554,893
ELECTROLYTIC FURNACES HAVING MULTIPLE CELLS FORMED OF HORIZONTAL BIPOLAR CARBON ELECTRODES
Giuseppe de Varda, Milan, Italy, assignor of seventy percent to Montecatini Edison S.p.A., Milan, Italy
Filed Oct. 17, 1966, Ser. No. 587,243
Claims priority, application Italy, Oct. 21, 1965, 23,575/65
Int. Cl. C22d *3/02,* **B01k** *3/04*
U.S. Cl. 204—244 **17 Claims**

Described is a fused bath electrolysis furnace for producing metals, of higher specific gravity than the bath, from their oxides. The furnace comprises a vat with a cathodic bottom, a carbon anode adapted to be lifted and lowered relative to said bottom, and at least one horizontal bipolar carbon electrode between said anode and



cathode in vertically spaced relation thereto and having a cathodic top face for accumulating metal produced. Also described is the production of aluminum from alumina in a bath containing fluorine salts in such furnaces.

3,554,894
PROTEIN QUANTITATION PLATE FOR ELECTROPHORETIC APPARATUS AND METHOD OF MAKING AND USING SAME
Edward Saul Zemel, Miami Beach, Fla.
(708 W. 192nd St., Apt. 1A, New York, N.Y. 10040)
Filed Jan. 11, 1968, Ser. No. 697,098
Int. Cl. B01k *5/00;* **B01d** *59/42*
U.S. Cl. 204—299 **8 Claims**



A quantitation plate is made by coating a strip of, for example, polyester with an agar-antiserum mixture. Wells are formed in the coating and standard concentrations and a specimen of a protein to be measured are placed in the wells. The proteins are caused to migrate electrophoretically and the magnitude of migration is charted to quantitate the specimen.

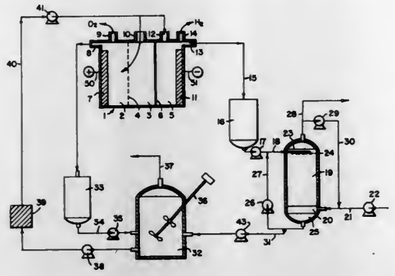
3,554,895
REMOVAL OF ACIDIC GASES FROM GAS STREAMS
Wayne A. McRae, Lexington, and Daniel L. Brown, Wayland, Mass., and Stuart G. McGriff, Alexandria, Va., assignors to Ionics, Incorporated, Watertown, Mass.
Original application Mar. 22, 1967, Ser. No. 625,149, now Patent No. 3,475,122, dated Apr. 18, 1969. Divided and this application May 19, 1969, Ser. No. 837,004
Int. Cl. B01d *13/02*
U.S. Cl. 204—301 **8 Claims**

This is a cyclic process for the removal and recovery of sulfur dioxide from waste stack gases to lessen atmospheric pollution. The process involves:

(a) electrolytically converting a salt solution into an acid and base;

(b) employing the base to absorb the sulfur dioxide from the waste gas;

(c) neutralizing the resulting spent base with the electrolytically produced acid to reform the original salt solution and to release the absorbed sulfur dioxide gas, and



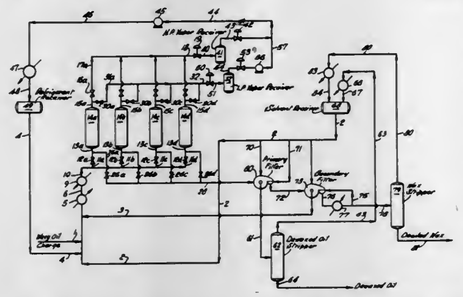
(d) recycling the salt solution to the electrolytic cell and recovering sulfur dioxide gas.

3,554,896

SOLVENT DEWAXING AND DEOILING PROCESS

Paul P. Bozeman, Jr., Groves, Tex., Herbert C. Morris, Wappingers Falls, N.Y., and Robert A. Woodle, Nederland, Tex., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed July 25, 1968, Ser. No. 747,535
Int. Cl. C10g *43/14*
U.S. Cl. 208—31 **5 Claims**



This invention relates to a method of separating wax from a wax bearing mineral oil employing a mixture of an aromatic hydrocarbon and a ketone as a dewaxing solvent and chilling of the oil-solvent mixture by direct heat exchange with a liquid refrigerant. Cooling to dewaxing temperature is effected by admixing liquid refrigerant with the oil-solvent mixture at an elevated pressure and reducing the pressure effecting evaporation of refrigerant and concomitant cooling. Wax crystals formed at the dewaxing temperature are separated from oil-solvent mixture and repulped with additional solvent and dewaxed oil product is separated from the oil-solvent mixture. Repulped wax is separated from the repulping solvent mixture forming wax of low oil content. Repulping solvent containing oil washed from the wax crystals is recycled to the initial dewaxing step to achieve high yields of dewaxed oil.

3,554,897

ANTIFOULANT ADDITIVE OF N-CONTAINING METHACRYLATE COPOLYMERS

Maurice E. Stanley, Port Arthur, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 9, 1967, Ser. No. 681,917
Int. Cl. C10g *9/16;* **C10t** *1/14*
U.S. Cl. 208—48 **7 Claims**

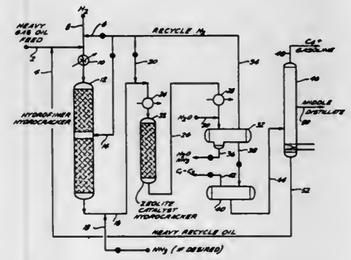
Treating method at 200 to 1200° F. to effect distillation, reforming, cracking, isomerization, hydrogenation, alkylation and/or polymerization involving addition of an oil-soluble, basic amino-nitrogen-containing addition-type copolymer to the hydrocarbon feed stream to inhibit fouling.

3,554,898

RECYCLE HYDROCRACKING PROCESS FOR CONVERTING HEAVY OILS TO MIDDLE DISTILLATES

Frederick C. Wood, Fullerton, Cloyd P. Reeg and Arnold E. Kelley, Orange, and George D. Cheadle, Fullerton, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed Aug. 29, 1968, Ser. No. 756,275
Int. Cl. C10g *37/02*
U.S. Cl. 208—59 **7 Claims**



Heavy mineral oils boiling mainly in the 700–1000° F. range are selectively converted to middle distillates boiling in the 300–700° F. range with a minimum production of lighter hydrocarbons, by contacting the feed under hydrocracking conditions first with a relatively nonacidic, hydrofining type catalyst supported on a substantially noncracking refractory oxide carrier, and then with an acidic, zeolite hydrocracking catalyst. Unconverted oil from the second contacting zone is recycled to the first zone. Most of the desired conversion is effected in the first contacting zone, while the second zone is utilized to effect a minor additional conversion to desired product, and to hydrocrack (and thus prevent their buildup in the recycle oil) heavy, fused-ring polycyclic aromatics such as coronenes and ovalenes.

3,554,899

HYDROCRACKING PROCESS

Rowland C. Hansford, Yorba Linda, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Continuation-in-part of application Ser. No. 488,712, Sept. 20, 1965, which is a continuation-in-part of application Ser. No. 339,897, Jan. 24, 1964, now Patent No. 3,267,022, which in turn is a continuation-in-part of application Ser. No. 150,129, Nov. 6, 1961. This application Nov. 26, 1968, Ser. No. 779,216
Int. Cl. C10g *13/02*
U.S. Cl. 208—111 **12 Claims**

Hydrocracking process for converting high-boiling hydrocarbons to lower boiling hydrocarbons, wherein the essential novel feature resides in utilizing, at temperatures above about 600° F., a unique class of catalysts comprising (1) a Group VIII metal-promoted crystalline zeolite component intimately composited with (2) an amorphous alumina-silica cogel component containing about 1–35 weight-percent of silica. At temperatures above about 600° F., these catalysts are found to display higher activities and lower deactivation rates than certain presumably analogous prior art catalysts wherein the amorphous component (2) contains higher silica ratios, while at temperatures below about 600° F. the relative activities and deactivation rates appear to be reversed.

3,554,900

SUPPRESSION OF EXTERNAL ACTIVITY OF METAL-CONTAINING ZEOLITE CATALYSTS

Emmerson Bowes, Erie, Pa., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Sept. 16, 1968, Ser. No. 760,058
Int. Cl. C10g *13/02*
U.S. Cl. 208—111 **18 Claims**

A method of treating a zeolite contatining a catalytically active metal component on its external surface to render the external surface of said zeolite lower in catalytic activity without affecting the catalytic activity of the interior of said zeolite which comprises contacting said zeolite with a solution of a compound of a metal other than that constituting said catalytically active metal component in a solvent incapable of entering the pores of said zeolite and depositing the metal of said compound on the surface of said zeolite containing said catalytically active metal component, whereby the catalytic activity of the external surface of said zeolite is diminished without effecting removal of a substantial portion of said catalytically active metal from said zeolite. Also, the zeolite prepared by the aforesaid method and catalytic hydrocarbon conversion in the presence thereof.

3,554,901

AROMATIZATION WITH A CHROMIUM-PLATINUM PALLADIUM CATALYST

Naoya Kominami and Toshiyuki Iwaisako, Tokyo, and Kyugo Tanaka and Kusuo Ohki, Saitama-ken, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan

No Drawing. Filed May 1, 1969, Ser. No. 821,094
Claims priority, application Japan, May 10, 1968, 43/30,875, 43/30,876
Int. Cl. G10g *35/08*
U.S. Cl. 208—136 **5 Claims**

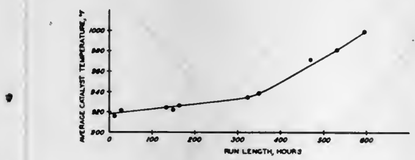
Process for producing aromatic hydrocarbons by bringing a mixture of hydrogen and hydrocarbons into contact with a catalyst at a temperature of from 400° C. to 650° C., characterized in that said catalyst is prepared by impregnating a carrier with a solution containing three components of 0.1–1.0% by weight of platinum calculated as metal, 0.1–1.0% by weight of palladium calculated as metal and 5–25% by weight of chromium oxide and treating the resulting impregnated carrier with hydrogen.

3,554,902

PLATINUM IRIDIUM

Waldeen C. Buss, Richmond, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

Filed Aug. 16, 1968, Ser. No. 753,165
Int. Cl. C10g *35/08*
U.S. Cl. 208—138 **5 Claims**



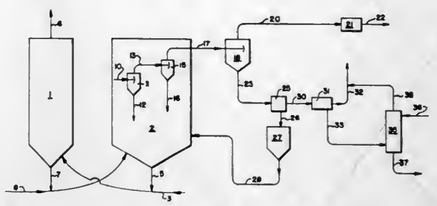
Reforming a naphtha in a reaction zone in the presence of hydrogen with a catalyst composition of a porous solid carrier and 0.01 to 3 weight percent platinum and 0.001 to 1 weight percent iridium, and maintaining within the reaction zone less than about 15 p.p.m. sulfur.

3,554,903

CATALYTIC CRACKING PROCESS

Joseph G. Wilson, Riverside, Conn., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

Filed Dec. 10, 1968, Ser. No. 782,650
Int. Cl. C10g *11/18*
U.S. Cl. 208—164 **3 Claims**



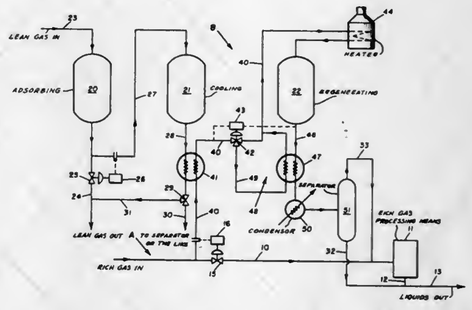
A catalytic cracking process having high catalyst activity and low catalyst consumption, effected by separating substantially all entrained catalyst particles from the regenerator off-gas stream, classifying the particles into a larger particle fraction and a smaller particle fraction, and returning the larger particle fraction to the catalytic cracking process.

3,554,904

PROCESS AND APPARATUS FOR RECOVERING CONDENSABLE COMPONENTS FROM FLUID STREAMS

Curtis L. Humphries, Duncanville, Tex., assignor to Mobil Oil Corporation, a corporation of New York

Filed Sept. 23, 1968, Ser. No. 761,611
Int. Cl. C10g *5/02*
U.S. Cl. 208—340 **7 Claims**



The specification discloses a process and apparatus for recovering condensable, heavier hydrocarbon components, e.g., propane, butane, etc., from natural gas streams wherein at least one of said gas streams originates from a source of gas rich in said hydrocarbon components and at least one of the other gas streams originates from a source of gas lean in said hydrocarbon components. The rich gas is stripped by oil absorption, refrigeration, or other well-known rich gas recovery means. The lean gas is stripped by solid adsorption means which utilizes an open-cycle regeneration system which in turn is supplied with a portion of said rich gas to act as the regenerative gas. The regenerative gas is flowed through a saturated adsorbent bed where it desorbs previously

adsorbed heavier hydrocarbons and carries said hydrocarbons to a separator where said heavier hydrocarbons are condensed. The gaseous phase of the regenerative gas plus desorbed heavier components are returned from the separator to the rich gas stream and are stripped therewith in said rich gas recovery means.

3,554,905

PROCESS FOR TREATING WATER WITH A POLYHALIDE RESIN USING A SEMIPERMEABLE MEMBRANE BARRIER

John Place, Ulrich Weissenberg, and Robert D. Goodenough, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 1, 1969, Ser. No. 812,319
Int. Cl. B01d *13/00*
U.S. Cl. 210—22 **8 Claims**

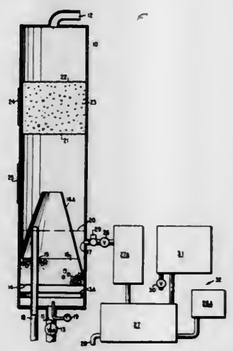
An improved process for treating water with halogen released by an anion-exchange resin in polyhalide form is obtained by using a membrane permeable to halogen but essentially impermeable to water and water-soluble anions to separate the polyhalide resin and the water being treated. Such a membrane reduces the polyhalide resin instability arising from the influence of water-soluble anions and alkalinity in the water supply. Particularly effective in this process is a polyethylene film packet of a polybromide resin.

3,554,906

EXTRACTING OIL WASTE

Neil H. Wolf, Metairie, La.
(P.O. Box 513, Westwego, La. 70094)

Continuation-in-part of application Ser. No. 709,293, Feb. 29, 1968. This application Mar. 10, 1970, Ser. No. 18,238
Int. Cl. B01d *12/00, 15/00*
U.S. Cl. 210—23 **6 Claims**



An apparatus for removing oil particles from water comprising an absorption tower containing a diffusing medium, a solvent having a higher specific gravity than water and being insoluble in water, and a porous material which is permeable to water and impermeable to oil and solvent. A method for removing oil particles from water comprising the steps of passing water containing oil particles through a particulate diffusing medium containing particles such as sand, gravel or Raschig rings, and high specific gravity solvent, the oil particles adhering to the solvent by a process of absorption, and the oil-free water discharging through a water-permeable porous mass. Electrically operated sensing means is located near the discharge of the oil-free water to verify that adequate separation is achieved and to guarantee efficient recovery of the solvent.

3,554,907

BASIC ALUMINUM SALT FOAMS

Earl P. Moore, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del.

No Drawing. Continuation-in-part of application Ser. No. 692,730, Jan. 22, 1968, which is a continuation-in-part of application Ser. No. 535,734, Mar. 21, 1966, which in turn is a continuation-in-part of application Ser. No. 442,806, Mar. 25, 1965. This application May 16, 1969, Ser. No. 825,387
Int. Cl. A62d *1/00;* **B01j** *13/00*
U.S. Cl. 252—3 **18 Claims**

Aqueous compositions having a pH of from 3.5 to 7 and comprising from 2 to 40 percent by weight of water dispersible polymeric aluminum compounds such as basic alumnium chloride and from .02 to 4 percent by weight of anionic organic acid compounds containing from 6 to 18 carbon atoms per acid group such as sodium lauryl sulfate, can be foamed to produce stable, essentially inorganic foams.

3,554,908

PHOSPHORODITHIOATE SALTS AS ANTIWEAR AGENTS

Joseph J. Dickert, Jr., and Carleton N. Rowe, Lower Makefield Township, Bucks County, Pa., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Filed Feb. 23, 1968, Ser. No. 707,399
Int. Cl. C10m *1/48*
U.S. Cl. 252—32.7 **12 Claims**

The dihydrocarbyl phosphorodithioate salts of gold, in industrial fluids used to lubricate moving or sliding metal surfaces provide a unique phenomenon of depositing a layer of metal over the metal surfaces. This deposit aids in lubricating the moving metal by forming new contact surfaces and prevents wear of the metal substrate. This discovery represents also a novel method of depositing a metal coating upon a metal substrate and of improving the lubricating of metal surfaces under high torque or high shear movement.

3,554,909

LUBRICANT COMPOSITIONS

Marc Eugène Hermant, St. Cloud, and Raymond Albert Alexandre Debrebant, Coye la Foret, France, assignors to Societe Anonyme dite: Ugine Kuhlmann, Paris, France, a corporation of France

No Drawing. Filed Apr. 25, 1968, Ser. No. 724,268
Claims priority, application France, Apr. 27, 1967, 104,504; Apr. 8, 1968, 147,318
Int. Cl. C10m *1/24, 1/32*
U.S. Cl. 252—34.7 **20 Claims**

The invention relates to additives for lubricants containing metal salts, and also to the lubricating compositions obtained with the aid of these additives. The invention also has as its object a process for producing such additives. The invention makes it possible to obtain stable mixtures of mineral oils or of synthetic lubricants and alkali or alkaline earth metal salts and also lead salts having a high metal content. The invention relates particularly to additives for stable lubricating compositions in which the metal content, particularly an alkaline earth metal such as calcium, is 5–6% that is to say before dilution in a lubricating oil. The invention also relates to concentrated, stable, homogeneous additives having a high lead content, which may for example amount to 30–40% by weight.

The lubricant additive according to the invention comprises a mixture of salts formed by reacting at least one branched chain carboxylic acid containing 5–20 carbon atoms with

(a) a basic metallic compound selected from the oxides and hydroxides of alkali metals, alkaline earth metals and lead and,

(b) at least one alkanolamine.

3,554,910

ORGANOSILANE MOLD LUBRICANTS

Milton L. Johnson, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Oct. 17, 1968, Ser. No. 768,507
Int. Cl. C10m *1/50, 1/52*
U.S. Cl. 252—49.5 **7 Claims**

Alkoxysilanes, such as $(CH_3)_2Si(OC_{10}H_{21})_2$ are lubricants for molds utilized in the casting of metal articles.

ERRATUM

For Class 252—52 see:
Patent No. 3,554,945

3,554,911

VISCOSITY INDEX IMPROVERS

Sidney Schiff, Marvin M. Johnson, and William L. Streets, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 30, 1967, Ser. No. 686,825
Int. Cl. C10m *1/18*
U.S. Cl. 252—59 **6 Claims**

Shear-stable, high viscosity index lubricating oil formulations are formed by the addition of a small amount of a hydrogenated random butadiene-styrene copolymer having a butadiene content of 30 to 44 weight percent.

3,554,912

BASIC ALUMINUM SALT FIRE EXTINGUISHING COMPOSITIONS

Earl P. Moore, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Coutinuation-in-part of abandoned application Ser. No. 692,682, Dec. 22, 1967, which is a continuation-in-part of abandoned application Ser. No. 486,562, Sept. 10, 1965. This application Feb. 4, 1969, Ser. No. 799,547
Int. Cl. A62c *1/12;* **A62b** *1/00*
U.S. Cl. 252—3 **6 Claims**

Aqueous foams comprising water, from 2 to 40 percent by weight of a water dispersible polymeric basic aluminum salt, such as basic aluminum chloride, and from 0.02 to 4 percent by weight of an anionic organic acid compound containing from 6 to 18 carbon atoms per acid group, such as sodium lauryl sulfate, are useful in extinguishing and preventing the spread of fires by blanketing the burning and combustible material with a cover of foam.

3,554,913

FRICTION REDUCTION BY COPOLYMER OF n-ALKYL METHACRYLATES AND METHACRYLIC ACID IN SOLUTION

Henry Gisser and Marco Petronio, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of the Army

No Drawing. Continuation-in-part of application Ser. No. 642,673, May 25, 1967. This application Aug. 15, 1969, Ser. No. 850,622
Int. Cl. C10m *1/26*
U.S. Cl. 252—56 **1 Claim**

A copolymer of n-alkyl methacrylates and methacrylic acid wherein the alkyl group may vary from 14 to 22 carbon atoms, which when applied in solution, reduces the friction of solid surfaces.

ERRATUM

For Class 262—62.1 see:
Patent No. 3,554,946

3,554,914

HEAT TRANSFER OIL

Anthony J. Nagy, Ponca City, Okla., assignor to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed Sept. 5, 1967, Ser. No. 665,290
Int. Cl. C09k *3/02;* **C23f** *14/02*
U.S. Cl. 252—75 **8 Claims**

Heat transfer oil composition comprising a base stock and an effective amount of a basic calcium sulfonate, wherein the basicity is due to calcium hydroxide.

3,554,915

CLEANSING AND SANITIZING COMPOSITIONS

Robert E. Keay, Hightstown, N.J., and Russell R. Keast, Yardley, Pa., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 19, 1968, Ser. No. 777,163
Int. Cl. C11d *7/56*
U.S. Cl. 252—99 **4 Claims**

Cleansing and sanitizing compositions are provided which are effective in cleansing and sanitizing utensils used for serving foods and beverages to humans. The compositions comprise a chlorinated isocyanurate, a polyphosphate, a urea compound, sodium bisulfate, sodium tetraborate and a nonionic or anionic surfactant. Where the surfactant is anionic, these compositions are particularly effective in cleansing and sanitizing bar glasses without an after-rinse.

3,554,916

VISCOSITY MODIFICATION OF AMINE SALTS OF LINEAR ALKYLARYL SULFONATES

Oliver Carl Kerfoot, David W. Marshall, Delmar D. Krehbiel, and William L. Groves, Jr., Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

No Drawing. Filed June 1, 1965, Ser. No. 460,520
Int. Cl. C11d *1/22, 3/16*
U.S. Cl. 252—152 **4 Claims**

The viscosity of a detergent intermediate consisting of the product of an alkylaryl sulfonic acid neutralized with an amine is reduced by incorporating in said neutralized product a small amount of a C_4 to C_8 alcohol.

3,554,917

FINISH REMOVER COMPOSITION

Stanley J. Buckman, Richard T. Ross, Lester A. Wienert, and Harry D. Slawson, Memphis, Tenn., assignors to Buckman Laboratories, Inc., Memphis, Tenn., a corporation of Tennessee

Filed Jan. 30, 1968, Ser. No. 701,749
Int. Cl. C09d *9/00;* **C11d** *7/52;* **C23g** *5/02*
U.S. Cl. 252—171 **13 Claims**

Compositions comprising methylene chloride and an N,N-dimethylamide of an 18-carbon unsaturated carboxylic acid are efficient paint removers.

3,554,918

AZEOTROPIC COMPOSITION

John Allan Schofield, Irvington, and Roger A. Delano, Dobbs Ferry, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 24, 1967, Ser. No. 677,715
Int. Cl. C09d *9/00;* **C11d** *7/50;* **C23g** *5/02*
U.S. Cl. 252—171 **1 Claim**

The disclosure also relates to ternary azeotropes of tetrachlorodifluoroethane and trichloroethylene with isopropanol.

3,554,919
ION-EXCHANGE COMPOSITIONS
Monte H. Rowell, 777 Meadowsweet Drive, Apt. 219, Corte Madera, Calif. 94925
No Drawing. Filed Oct. 26, 1967, Ser. No. 678,173
Int. Cl. B01j *1/04;* C02b *1/16, 1/44*
U.S. Cl. 252—179 4 Claims
Improved ion-exchange compositions and the process for preparation thereof which are suitable for ion-exchange or chromatographic separation of cation solutes in fused salts.

3,554,920
ENERGY INDEPENDENT RADIOPHOTOLUMINESCENCE DOSIMETER WITH GOOD FADING STABILITY
Klaus H. Becker, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Apr. 19, 1968, Ser. No. 722,711
Int. Cl. C03c *3/00;* G01t *1/20;* H01j *39/00*
U.S. Cl. 252—301.4 5 Claims
A dosimeter having an essentially energy independent response without the use of filters and being substantially stable against fading is provided by a lithium borate glass containing Li, B, and Ag. This glass may be prepared, for example, by melting a mixture of $LiNO_3$, B_2O_3, and $AgPO_3$ in various proportions. The glass also permits sensitive measurements at high temperatures, the measurement of a thermal neutron component in mixed (n, γ) radiation fields, and sensitive measurements at high dose levels such as occur in sterilization and food processing systems.

3,554,921
ALKALI METAL ALUMINUM PHOSPHATE EMULSIFIER COMPOSITION AND ITS PREPARATION
Thomas P. Kichline, Chesterfield, Mo., and Norman Earl Stahlheber, Columbia, and James L. Vetter, Des Plaines, Ill., assignors to Monsanto Company, a corporation of Delaware
No Drawing. Original application Oct. 24, 1963, Ser. No. 318,509, now Patent No. 3,337,347, dated Aug. 22, 1967. Divided and this application Apr. 18, 1967, Ser. No. 645,084
Int. Cl. B01f *17/14;* C01b *25/30;* A23c *19/00*
U.S. Cl. 252—351 13 Claims
An alkali metal aluminum phosphate composition is described having an empirical formula

$$xM_2O \cdot yAl_2O_3 \cdot 8P_2O_5 \cdot zH_2O$$

wherein M is alkali metal, x is a number between 5 and 30 inclusive, y is a number between 4.7 and 15 inclusive, and z is a number between 0 and 50 inclusive, said composition further characterized by having a soluble fraction of greater than about 35 weight percent of said composition and selected from the group consisting of dialkali metal orthophosphates, trialkali metal orthophosphates, and mixtures thereof and by the pH of a 2 weight percent aqueous slurry of said composition at about 25° C. being between 7 and 10, as well as a process for preparing the same. The alkali metal aluminum phosphate composition is useful as a cheese emulsifier in process cheese compositions.

3,554,922
OCTADECYLAMINE SUSPENSIONS
Roland Berner, Tinley Park, Ill., assignor to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Sept. 3, 1968, Ser. No. 757,151
Int. Cl. C09k *3/00;* C23f *11/00*
U.S. Cl. 252—392 6 Claims
Stable octadecylamine suspensions are prepared by combining the amine with a vegetable polysaccharide gum.

3,554,923
DIENE POLYMERIZATION PROCESS AND CATALYST THEREFOR
Walter Nudenberg, West Caldwell, N.J., Dudley B. Merrifield, St. Louis, Mo., and Edward A. Delaney, Dover, N.J., assignors to Texas-U.S. Chemical Company, Port Neches, Tex., a corporation of Delaware
No Drawing. This application is a division of application Ser. No. 599,671, filed Dec. 5, 1966, now U.S. Pat. No. 3,424,736, which is a continuation of Ser. No. 288,877, filed June 19, 1963, now abandoned, which is a continuation-in-part of Ser. No. 38,417, filed June 24, 1960, and now abandoned. Divided and this application Aug. 22, 1967, Ser. No. 662,285
The portion of the term of the patent subsequent to Jan. 28, 1986, has been disclaimed
Int. Cl. C08d *1/14, 1/16, 3/08*
U.S. Cl. 252—429 4 Claims
Polymerization catalyst complex composition formed of titanium tetrahalide, ether-free Grignard composition, in prescribed mol ratio, on contact with butadiene in inert solvent with titanium tetravalent.

3,554,924
RARE EARTH METAL HALIDES WITH ORGANOALUMINUMS AS OLEFIN REACTION CATALYSTS
Edmund T. Kittleman and Ernest A. Zuech, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 635,676, May 3, 1967. This application Jan. 2, 1968, Ser. No. 694,874
Int. Cl. C07c *3/00;* B01j *11/78*
U.S. Cl. 252—429 9 Claims
A catalyst active for the olefin reaction including olefin disproportionation comprising a rare earth metal halide (e.g. $SmCl_3$) combined with an organoaluminum compound (e.g., ethylaluminum dichloride).

3,554,925
THERMOSETTING RESIN AND CATALYST
Ivan H. Tsou, Pontiac, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 387,420, Aug. 4, 1964. This application Oct. 27, 1969, Ser. No. 869,940
Int. Cl. B22c *1/22, 15/20*
U.S. Cl. 252—429 7 Claims
A liquid catalyst solution having utility in heat polymerization of a thermosetting material is provided by mixing aqueous hydrochloric acid and an excess of urea or methyl urea and heating the resultant acid solution until its pH is raised to at least about 7. Specific embodiments include addition of minor amounts of a polysaccharide, calcium chloride, ammonium nitrate, etc.

3,554,926
CATALYST FOR THE HYDRATION OF OLEFINS TO ALCOHOLS
Max Statman and Don S. Martin, Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed June 7, 1968, Ser. No. 735,178
Int. Cl. B01j *11/82*
U.S. Cl. 252—435 4 Claims
Catalyst for the hydration of olefins which is prepared by impregnating a silica-alumina support with phosphoric acid and heating the acid-impregnated support in the presence of an oxygen-containing gas at a temperature of about 220 to 240° C. for at least 8 hours. The support typically has an alumina content of about 10 to about 40 weight percent.

3,554,927
CATALYST FOR MANUFACTURE OF METHACRYLALDEHYDE
Roger P. Cahoy, Merriam, and Donald M. Coyne, Prairie Village, Kans., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware
No Drawing. Original application Feb. 17, 1966, Ser. No. 528,050, now Patent No. 3,439,045, dated Apr. 15, 1969. Divided and this application Sept. 13, 1968, Ser. No. 798,478
The portion of the term of the patent subsequent to May 27, 1986, has been disclaimed
Int. Cl. B01j *11/82*
U.S. Cl. 252—437 2 Claims
Catalysts which are useful for vapor phase oxidation of isobutylene, consisting of intimately mixed oxides of copper, molybdenum and tellurium on a refractory solid support are made, for example, by coating a solid such as silicon carbide with an aqueous solution of copper, molybdenum and tellurium compounds and heating the coated solid to at least 350° C.

3,554,928
OXIDATION CATALYST CONTAINING MOLYBDENUM OXIDE, TELLURIUM OXIDE AND A VANADIUM PHOSPHATE
Jamal S. Eden, Akron, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Original application Aug. 30, 1965, Ser. No. 483,866, now Patent No. 3,457,303, dated July 22, 1969. Divided and this application Jan. 21, 1969, Ser. No. 823,203
The portion of the term of the patent subsequent to Jan. 11, 1983, has been disclaimed
Int. Cl. B01j *11/82*
U.S. Cl. 252—437 4 Claims
Oxidation catalysts useful in preparing unsaturated aldehydes and unsaturated carboxylic acids by oxidation of unsaturated hydrocarbons at an elevated temperature comprise molybdenum oxide, tellurium oxide and a vanadium phosphate.

3,554,929
HIGH SURFACE AREA ALUMINA COATINGS ON CATALYST SUPPORTS
Ralph Aarons, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed June 8, 1967, Ser. No. 644,488
Int. Cl. B01j *11/06, 11/32*
U.S. Cl. 252—462 6 Claims
Catalyst supports having low surface area are coated with an aqueous colloidal boehmite-activated alumina composition, dried, and then calcined at about 500° C., to obtain a high surface area coating. The coating composition can optionally contain catalytic material or these materials can be subsequently applied to form a complete catalyst.

3,554,930
SUPPORTED BIMETALLIC ALLOY CATALYSTS HAVING HIGH SURFACE AREAS
Edward S. Rogers, Hinsdale, Ill., and Robert A. Sanford, Prospect, Ky., assignors to Sinclair Oil Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Nov. 22, 1968, Ser. No. 778,306
Int. Cl. B01j *11/06, 11/32*
U.S. Cl. 252—463 14 Claims
Supported bimetallic alloys are prepared by coating a support with a hydrogen-reducible salt of a first metal, e.g. copper, converting the salt coating to an elemental metal coating, and subliming a second metal, e.g. zinc, thereon at a temperature slightly above the melting point of the resultant alloy of the two metals. The method is especially suitable for preparing high surface area, alumina-supported brass catalysts, which catalysts are useful for catalyzing the dehydrogenation of carbinol-containing hydrocarbons.

3,554,931
PRETREATMENT OF CATALYST USED IN THE PRODUCTION OF ACRYLIC ACID AND ACROLEIN
Christopher John Brown, Walton-on-the-Hill, Tadworth, England, assignor to BP Chemicals (U.K.) Limited, London, England, a British company
No Drawing. Original application Nov. 22, 1965, Ser. No. 509,155, now Patent No. 3,403,177, dated Sept. 24, 1968. Divided and this application May 31, 1968, Ser. No. 733,283
Claims priority, application Great Britain, Nov. 26, 1964, 48,035/64
The portion of the term of the patent subsequent to Sept. 24, 1985, has been disclaimed
Int. Cl. B01j *11/06, 11/22*
U.S. Cl. 252—472 6 Claims
A catalyst of Sb, V and Sn and/or Fe used in the oxidation of propylene to acrylic acid and acrolein is heated to reaction temperature for at least one hour in a oxygen-free reducing atmosphere, in order to avoid undesirable temperature peaks in the catalyst bed.

3,554,932
PRODUCTION OF FOAMED THERMOPLASTIC
Robert H. Overcashier, Walnut Creek, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 28, 1967, Ser. No. 626,384
Int. Cl. C08f *47/10;* C08j *1/26*
U.S. Cl. 260—2.5 9 Claims
Finely divided particles having fluorocarbon surfaces, distributed in expandable thermoplastic compositions which contain volatilizable blowing agents, provide extremely effective foam nucleation during expansion of the composition, resulting in a large number of foam bubble nuclei per unit volume.

3,554,933
DYEABLE FOAMED POLYPROPYLENE
Charles F. Grainger, Charlotte, N.C., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 3, 1967, Ser. No. 627,666
Int. Cl. C08j *1/14;* C08f *47/10;* C08d *13/08*
U.S. Cl. 260—2.5 6 Claims
A process for the preparation of dye site containing foamed polyolefin shaped articles and the products produced thereby, the process involving blending a blowing agent which a hot melt of the polyolefin prior to formation of the shaped article, the blowing agent comprising the reaction product of a thermally degradable acid and a polyamide.

3,554,934
TREATMENT OF FOAM PLASTICS TO RENDER THEM FIRE-RESISTANT
Alvin R. Ingram, Murrysville, Pa., assignor to Sinclair-Koppers Company, a partnership
No Drawing. Filed Sept. 15, 1967, Ser. No. 668,199
Int. Cl. C08f *47/02;* C08j *1/26*
U.S. Cl. 260—2.5 6 Claims
An aqueous mixture of a thermosetting phenol-formaldehyde resin and a self-extinguishing agent, ammonium bromide, is impregnated into the spaces of an incompletely fused thermoplastic bead foam. The finished product is produced by heating the foam, containing the thermosetting resin and self-extinguishing agent, to remove water and cure the thermosetting resin.

3,554,935
POLYIMIDE FOAMS
Edmund C. Knapp and Albert H. Markhart, Wilbraham, and Irving Serlin, Springfield, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Mar. 12, 1968, Ser. No. 712,347
Int. Cl. C08f 47/10; C08j 1/26
U.S. Cl. 260—2.5 21 Claims

Disclosed herein are polyimide foams prepared from a mixture of

(1) an A-staged polyimide resin forming composition having a volatile content of at least 9% by weight, and
(2) a B-staged polyimide resin having a volatile content of less than 9% by weight.

The mixture is heated to at least that temperature where foaming occurs contemporaneously with the polymerization of the A-staged system, to form a polyimide foam having a density up to 70 lbs./cu. ft.

3,554,936
STABLE HIGH EXPANSION FOAM COMPOSITION AND PROCESS OF FOAMING
George L. Braude, Ellicott City, Joseph A. Cogliano, Baltimore, and Edwin W. Lard, Bowie, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Mar. 26, 1968, Ser. No. 715,969
Int. Cl. C08f 47/10; C08j 1/16
U.S. Cl. 260—2.5 5 Claims

A flowable stable high expansion foam composition based on a urea-formaldehyde resin is provided having good strength properties and a retarded setting time. In addition a process of foaming is provided which produces a high strength, high expansion foam from a number of foam systems. This process also enables improved generation and transport of the high expansion foams through enclosed areas by intermittently foaming the aqueous prefoam composition and passing it through an enclosed area.

3,554,937
PRODUCTION OF EXPANDED POLYAMIDES
Anton Cadus, Ludwigshafen (Rhine), and Klaus Benker, Konigsbach, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed July 8, 1968, Ser. No. 743,052
Claims priority, application Germany, July 8, 1967, 1,669,706
Int. Cl. C08f 47/10; C08j 1/20
U.S. Cl. 260—2.5 8 Claims

Expanded polyamides and a process for ther production by discharging mixtures of polyamides and hydrazodicarboxylic esters from equipment having a conveying or mixing action.

3,554,938
PROCESS OF FOAMING RESINS USING PHOSPHORUS-CONTAINING SULFONYLHYDRAZIDES AS BLOWING AGENTS
John E. Herweh and Algirdas C. Poshkus, Lancaster, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
No Drawing. Original application Apr. 6, 1966, Ser. No. 540,486, now Patent No. 3,423,485. Divided and this application June 24, 1968, Ser. No. 753,818
Int. Cl. C08d 13/08; C08g 53/08; C08j 1/14
U.S. Cl. 260—2.5 4 Claims

The invention relates to the process of incorporating a phosphorus-containing sulfonylhydrazide blowing agent into a resin and heating the admixture to foam the resin.

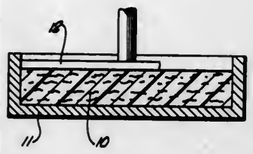
3,554,939
PROCESS FOR THE PREPARATION OF A POLYIMIDE FOAM
Edward Lavin, Longmeadow, and Irving Serlin, Springfield, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 568,129, July 27, 1966. This application May 20, 1969, Ser. No. 826,290
Int. Cl. C08g 20/32; C08j 1/26
U.S. Cl. 260—2.5 21 Claims

Disclosed herein is a process for the preparation of a polyimide foam which comprises preparing a foamable polymer forming composition by intimately mixing an ester derivative of benzophenone tetracarboxylic acid and a polyamine having at least two primary amino groups per molecule to form a system having a volatile content of at least 9% and then heating this system at a temperature at which foaming occurs contemporaneously with the polymerization of the reactants.

3,554,940
PRESSURE-SENSITIVE ADHESIVES
Morimasa Arakawa, Osaka-shi, Bunjiro Yamada and Akisato Katanosaka, Nishinomiya-shi, and Kazuhiko Kato, Suita-shi, Japan, assignors to Arakawa Rinsan Kagaku Kogyo Kabushiki Kaisha, Higashi-ku, Osaka-shi, Japan
No Drawing. Filed Jan. 4, 1968, Ser. No. 695,578
Int. Cl. C08d 9/08
U.S. Cl. 260—5 7 Claims

A pressure-sensitive adhesive which comprises 100 weight parts of at least one of natural and synthetic rubbers and 30 to 120 weight parts of a hydrogenated hydrocarbon resin tackifier prepared by polymerizing a cracked petroleum fraction, boiling between —10 and 280° C. and containing unsaturated hydrocarbons at least 50 weight percent of which is at least one of aromatic olefins, cyclic olefins and cyclic diolefins, and hydrogenating the resultant polymer to a hydrogenation rate of at least 40 percent.

3,554,941
BUILDING MATERIAL MADE OF A MIXTURE OF POLYESTER RESIN AND RICE HULLS
William R. Varnell and Mance R. Mitchell, San Antonio, Tex., assignors to Concrete Development Corporation, a corporation of Texas
Continuation of application Ser. No. 681,305, Oct. 20, 1967, which is a continuation-in-part of applications Ser. No. 366,332, May 11, 1964, Ser. No. 437,669, Mar. 8, 1965, and Ser. No. 659,830, July 6, 1967. This application Mar. 21, 1969, Ser. No. 809,434
Int. Cl. B32b 27/36; C08f 45/16; C08g 51/16
U.S. Cl. 260—9 4 Claims



This invention relates to building materials made with a mixture of rice hulls and polyester resin which preferably includes fine inorganic particles in the 0.001 to 20 micron range to increase the strength of the product. The rice hulls, which may be either ground or whole, or a mixture of both, are thoroughly coated with resin or polyester resin cement, and bonded together to make a solid product which is strong, durable, inexpensive, lightweight, acid resistant, and a good electrical, thermal and sound insulator. The product is ideal for molding articles such as drainboards, wall tiles, shingles, corrugated sheets, siding, roofing, deck panels, silo doors, and frames. The product can be used either as it comes from the mold, or it can be decorated or colored with a coating of a mixture of polyester resin and pigment.

3,554,942
SEALANT OR SPACKLING COMPOSITION CONTAINING UNSATURATED CARBOXYLIC ACID COPOLYMER SALTS
Richard E. Zdanowski, 542 Dreshertown Road, Fort Washington, Pa. 19034, and Frank J. Glavis, 1187 Rydal Road, Rydal, Pa. 19046
No Drawing. Continuation of application Ser. No. 490,668, Sept. 27, 1965. This application June 10, 1969, Ser. No. 834,605
Int. Cl. C08f 37/16
U.S. Cl. 260—17 7 Claims

The present invention comprises a composition adapted to be used for spackling and sealing purposes consisting essentially of water, a filler, and an organic binder, said binder comprising 2.5 to 10 parts by weight, per 100 parts of the filler, of an alkali-metal salt of a copolymer, having a molecular weight of 10,000 to 600,000, of about 5 to 40% by weight of at least one α,β-monoethylenically unsaturated acid and 25 to 60% by weight of at least one ester of acrylic acid with an alkanol having 1 to 8 carbon atoms, copolymer salt being water-soluble or being water-swellable and soluble in water upon the addition of more alkali, and 0.25 to 3 parts by weight, per 100 parts of the filler, of a water-soluble methyl cellulose ether, hydroxyethyl cellulose ether, or hydroxypropyl cellulose ether having a viscosity of 50 to 8,000 cps. determined at 25° C. on a 2% solution in water, the weight ratio of the copolymer salt to the cellulose ether being from 3:1 to 40:1, and the amount of water being such as to provide trowelling consistency.

3,554,943
EPOXY RESIN INK FOR PRINTING ON SUBSTRATES SUCH AS GLASS
John E. Dereich, Pittsburgh, Pa., assignor to Neville Chemical Company, Pittsburgh, Pa., a corporation of Pennsylvania
No Drawing. Original application Oct. 5, 1964, Ser. No. 401,724, now Patent No. 3,386,848, dated June 4, 1968. Divided and this application Feb. 15, 1968, Ser. No. 718,290
Int. Cl. C08g 30/12, 51/34
U.S. Cl. 260—18 3 Claims

An initially fusible printing composition suitable for printing on substrates such as glass bottles which comprises a normally solid epoxy resin, a solid fluxing agent, a dicarboxylic acid anhydride such as hexahydrophthalic anhydride as a hardener and a tin salt of a monocarboxylic acid such as stannous oleate as a cure accelerator. The composition can be applied or printed as a hot melt which solidifies immediately after contact with the cool substrate to form a dry, adherent film and which thereafter can be cured to an infusible form at a more elevated temperature than that used in the printing stage.

3,554,944
UNSATURATED POLYAMIDE RESINS
Dietrich Helm, Unna, and Rainer Janssen, Altlunen, Germany, assignors to Schering AG, Bergkamen, Germany
No Drawing. Filed July 30, 1968, Ser. No. 748,629
Claims priority, application Germany, Aug. 5, 1967, Sch 41,100
Int. Cl. C08g 20/20, 51/70, 20/38
U.S. Cl. 260—18 9 Claims

A reactive unsaturated polyamide resin prepared by condensing a high molecular weight polycarboxylic acid (C_{12} or greater) and an aliphatic primary or secondary diamine (C_3 or greater) to form a product with free amino groups which are then reacted with maleic acid anhydride. The unsaturated polyamide resin can also be further modified by reaction of the carboxyl groups with mono- or di-epoxide compounds. Hardenable mixtures of such a resin with a copolymerizable monomer such as styrene. Resin bodies prepared by hardening such mixtures by free-radical polymerization.

3,554,945
LUBRICATING COMPOSITIONS CONTAINING ALKYLATED POLYHYDROXY AROMATIC COMPOUNDS
Harry J. Andress, Jr., Pitman, and Albert L. Williams, Princeton, N.J., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 591,715, Nov. 3, 1966, which is a continuation-in-part of application Ser. No. 355,405, Mar. 27, 1964. This application July 2, 1969, Ser. No. 838,682
Int. Cl. C10m 1/20
U.S. Cl. 252—52 17 Claims

The presence of alkylated polyhydroxy benzenoid compounds, preferably of substituted phenols and naphthols, having from 1 to 4 alkyl groups of 6 to 100 carbon atoms, preferably 6 to 30 carbon atoms, and at least 2 hydroxy groups, such compounds being prepared from the appropriate polyhydroxy compound and olefin in the presence of a boron trifluoride catalyst, provide high temperature oxidation protection to lubricating oils and other organic materials.

3,554,946
LIQUID DEVELOPERS FOR ELECTROPHOTOGRAPHY CONTAINING A PIGMENT COATED WITH A COPOLYMER
Zenjiro Okuno and Itsuo Ikeda, Tokyo, Japan, assignors to Kabushiki Kaisha Ricoh, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Nov. 13, 1967, Ser. No. 682,568
Claims priority, application Japan, Nov. 21, 1966, 41/76,101
Int. Cl. G03g 9/02
U.S. Cl. 252—62.1 3 Claims

A liquid developer for electrophotography prepared by adding, to a pigment, an electric charge polarity controlling agent consisting of a synthetic resin and having a novel chemical structure, kneading the mixture, and dispersing the kneaded mixture either independently or together with a surface active agent in a carrier liquid consisting of a hydrocarbon having a high electric resistance (a specific resistance of $10^{10}\Omega$ cm. or more) and a low dielectric constant of 3 or less.

3,554,947
METHOD OF PREVENTING AGGLOMERATION OF POWDERED UREA-FORMALDEHYDE RESINS
Iwao Maruta, Funabashi-shi, and Akihiko Iida, Chiba-shi, Japan, assignors to Kao Soap Co., Ltd., Nihonbashi-Bakurocho, Chuo-ku, Tokyo, Japan
No Drawing. Filed Sept. 30, 1968, Ser. No. 763,907
Claims priority, application Japan, Oct. 4, 1967, 42/63,927
The portion of the term of the patent subsequent to June 18, 1985, has been disclaimed
Int. Cl. C09k 3/16
U.S. Cl. 260—21 8 Claims

A method of preventing agglomeration of powdered urea-formaldehyde resins in which an antiagglomerating agent comprising a water-solubilized macromolecular vinylic compound and an anionic surface active agent is

incorporated in the resin in an amount of between about 0.005 to 2% by weight of the resin powder.

3,554,948
WAX COMPOSITIONS WITH NITROGEN-CONTAINING MATERIALS AS ANTIOXIDANTS

Henry R. Ertelt, Westfield, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Nov. 30, 1966, Ser. No. 597,856
Int. Cl. C08f 45/52; C08g 51/52; C08k 1/64
U.S. Cl. 260—28 3 Claims

A wax composition inhibited against oxidation comprises petroleum wax and an oxidation inhibitor selected from the group consisting of (a) oil soluble copolymers having a basic amino nitrogen content such as the copolymer of beta-diethylaminoethyl methacrylate and an ester of methacrylic acid and a C_{10} to C_{20} alkanol, and (b) oil soluble amino alkyl phenols such as the condensation product of nonyl phenol, formaldehyde, and ethylene diamine.

3,554,949
WAX FORMULATIONS

Oliver W. Burke, Jr., 506 Intracoastal Drive, Fort Lauderdale, Fla. 33304

No Drawing. This application is a continuation of Ser. No. 447,977, filed Apr. 14, 1965, which in turn is a continuation-in-part of Ser. No. 29,595, filed May 17, 1960, now abandoned, which in turn is a continuation-in-part of Ser. No. 538,728, filed Oct. 5, 1955, and Ser. No. 462,611, filed Oct. 15, 1954, and patented June 22, 1965, Patent No. 3,190,850, which in turn is a continuation-in-part of Ser. No. 378,735, filed Sept. 8, 1953, now abandoned, which was a continuation-in-part of Ser. No. 795,881, filed Feb. 20, 1959, now abandoned, which in turn replaced by Ser. No. 416,585, filed Dec. 7, 1964. This application Nov. 16, 1966, Ser. No. 594,944
Int. Cl. C08f 45/52; C09g 1/10; C09d 5/02
U.S. Cl. 260—28.5 5 Claims

Meltable soluble waxes 99 to 22% are combined with 1 to 78% of rigid, non-meltable, non-soluble cross-linked, colloidal-sized, vinylic filler particles by weight, to produce improved compositions having wax-like properties. Similar improvements are effected by adding 1 to 78% of the rigid, non-meltable vinylic filler particles to meltable wax-resin compositions of which the wax content is at least 5% and of which the resin is a meltable, soluble resin.

3,554,950
WAX-POLYMER COMPOSITIONS

Richard W. Sauer, Cherry Hill, N.J., assignor to Atlantic Richfield Company, New York, N.Y., a corporation of Pennsylvania

No Drawing. Continuation of application Ser. No. 507,248, Nov. 10, 1965. This application Aug. 1, 1968, Ser. No. 751,688
Int. Cl. C08f 45/52; C09d 13/00; D21h 1/36
U.S. Cl. 260—28.5 7 Claims

This invention relates to wax compositions and to a method for producing a suitable dispersion in wax of insoluble polymer of the vinyl and vinylidene series which comprises polymerizing the monomers in situ in molten wax in the presence of a wax-soluble polymer having a molecular weight of at least 8,000. Preferably, the wax-insoluble polymer is a butadiene-styrene copolymer having from 50–85 weight percent bound styrene and the wax-soluble polymer is an ethylene/vinylacetate copolymer having from 5–50 weight percent bound vinyl acetate. The insoluble polymer may be incorporated into the wax in amounts ranging from 5–400 parts per 100 parts of wax.

3,554,951
POLYESTER POLYURETHANE LACQUERS FROM MIXED PHTHALIC ACIDS

Friedrich Blomeyer, Cologne-Stammheim, Wilhelm Bunge, Leverkusen, Gerhard Mennicken, Opladen, and Reinhard Hebermehl, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Continuation of application Ser. No. 535,025, Mar. 17, 1966. This application Mar. 26, 1969, Ser. No. 812,958
Claims priority, application Germany, Mar. 17, 1965, F 45,546
Int. Cl. C08g 22/06, 22/10, 51/26
U.S. Cl. 260—29.1 7 Claims

Polyurethane lacquer composition which comprises a solvent solution of a polymer prepared by reacting an aliphatic polyisocyanate with an hydroxyl polyester of an excess of a polyhydric alcohol with a mixture of phthalic acid and hexahydrophthalic acid.

3,554,952
AQUEOUS DISPERSION OF AMINOALKYL SILANE-ALDEHYDE REACTION PRODUCTS

Edwin P. Plueddemann, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Jan. 21, 1969, Ser. No. 792,842
Int. Cl. C08g 51/24
U.S. Cl. 260—29.2 3 Claims

Aminosilanes such $(CH_3O)_3Si(CH_2)_3NH(CH_2)_2NH_2$ are mixed with aldehydes such as formaldehyde to give water-soluble reaction products. These products are useful as bonding agents between organic resins and siliceous and other surfaces.

3,554,953
PROCESS FOR THE PRODUCTION OF POLYVINYL HALIDE

Eugene Alfred Duchesneau, Jr., and Donald Francis Boudreau, Leominster, Mass., assignors to Borden, Inc., New York, N.Y., a corporation of New Jersey

No Drawing. Filed Dec. 14, 1966, Ser. No. 601,556
Int. Cl. C08f 3/30, 15/36, 45/24
U.S. Cl. 260—29.6 6 Claims

This invention relates to a process of making fine particle size polymerized vinyl chloride and copolymers of vinyl chloride with other copolymerizable monomers by aqueous suspension in the presence of a suspending agent which is the reaction product of a C_2–C_4 alkylene oxide and a partially neutralized copolymer of an acrylate ester and an acrylic acid.

3,554,954
PROCESS FOR PREPARING COPOLYMER LATEXES

Constantine Rosis, West Boylston, and Milton Kline, Leominster, Mass., Jack Dickstein, Huntingdon Valley, Pa., and Harry C. Wechsler, Leominster, Mass., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Oct. 16, 1967, Ser. No. 675,283
Int. Cl. C08f 45/24, 15/24
U.S. Cl. 260—29.6 8 Claims

This invention relates to a process for preparing copolymer latexes wherein a monomeric vinyl halide and an acrylate ester are copolymerized. The acrylate ester and the vinyl halide are each added to the reaction vessel in a spaced manner and at predetermined intervals. Heat is supplied during reaction.

3,554,955
PRIMERS FOR COATING SURFACES WITH POLYTETRAFLUOROETHYLENE AND POLYTETRAFLUOROETHYLENE DISPERSIONS CONTAINING SUCH PRIMERS

Robert Hartwimmer, Burghausen (Salzach) and Herbert Fitz, Burgkirchen (Alz), Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany

No Drawing. Filed Nov. 29, 1967, Ser. No. 686,750
Claims priority, application Germany, Dec. 3, 1966, F 50,846
Int. Cl. C08f 3/24
U.S. Cl. 260—29.6 4 Claims

The present invention relates to polytetrafluoroethylene dispersions for coating surfaces of metal, glass or ceramics. The dispersions contain soluble additives which consists of complex compounds of metal hydroxides, preferably copper-, cadmium- or zinc hydroxide, with 2 to 6 moles of primary amines as ligands, or hydroxozincates. These additives improve the polytetrafluoroethylene coatings in respect of adherence to the substrate and freedom from cracks and voids.

3,554,956
THERMOPLASTIC POLYHYDROXYPOLYAMINE RESIN COMPOSITIONS CONTAINING AN INERT DILUENT AND PROCESS OF MAKING SAME

Faber B. Jones, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 675,771, Oct. 17, 1967. This application Aug. 4, 1969, Ser. No. 847,394
Int. Cl. C08g 51/44
U.S. Cl. 260—30.2 10 Claims

Thermoplastic compositions useful, for example, as hot melt coating materials, are produced by adding, under thermoplastic composition forming conditions, an admixture of a diluent and an epoxy compound having two terminal epoxy groups to an admixture of a diluent and a cyclic or acylic disecondary diamine, the relative portions being such that the ratio of secondary amine groups to epoxy groups in the thermoplastic composition is in the range of 0.9:1 to 1.1:1.

3,554,957
SOLVENT SYSTEMS FOR COPOLYMERS OF ETHYLENE AND ACRYLIC ACID

Edgar John Van Tilburg, North Olmsted, Ohio, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Jan. 11, 1968, Ser. No. 697,003
Int. Cl. C08f 45/34
U.S. Cl. 260—30.4 6 Claims

A solvent system for copolymers of ethylene and acrylic acid characterized in that the copolymer will remain dissolved at substantially normal room temperature comprising between about 55 and about 65 percent by weight toluene, based upon the total weight of the solvent blend, and between about 35 and about 45 percent by weight tetrahydrofuran, based upon the total weight of the solvent blend. The copolymer can be dissolved and held in solution at normal room temperature in amounts up to about 5 percent by weight based upon the total weight of the solution.

3,554,958
PROTECTIVE COATING AND LUBRICANT

Robert V. Sandstrom, Moline, Ill., assignor to Sandstrom Products Company, a corporation of Illinois

No Drawing. Filed May 9, 1968, Ser. No. 728,074
Int. Cl. C08g 45/06, 51/26
U.S. Cl. 260—30.4 13 Claims

An air-drying composition for use as a protective and/or decorative coating and solid film lubricant for steel and other surfaces. The composition consists of a combination of low and high molecular weight polyepoxides in such proportions that when mixed with polymerizing catalysts and with solid lubricant such as molybdenum disulfide and corrosion inhibitors such as antimony trioxide and dibasic lead phosphite, the composition remains stable for long periods. When the polyepoxides are dissolved in a solvent composed of a major portion of methylene chloride and minor amounts of low molecular weight alcohol, low molecular weight ketone, and a glycol ether using a mixture of Freon and nitrous oxide as propellant, the coating can be packaged as an aerosol product which is not only stable but which can be sprayed onto a surface to produce a smooth, hard coating that dries within a few minutes. The resulting cured epoxy resin product has excellent protective and lubricating properties and can be colored to produce decorative coatings.

3,554,959
RUBBER ANTIOXIDANTS

David Alan Hammersley, Bangor-on-Dee, Wales, and John Payne, Oswestry, England, assignors to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed June 1, 1967, Ser. No. 642,711
Claims priority, application Great Britain, June 14, 1966, 26,388/66
Int. Cl. C08d 11/04; C08f 45/60
U.S. Cl. 260—41.5 7 Claims

The disclosure is a pulverulent or pulverizable antioxidant composition suitable for incorporation in rubber, which comprises a blend of a liquid or non-pulverizable solid phenolic rubber antioxidant absorbed on a finely divided absorbent solid and a solid, nitrogen-containing rubber antioxidant in finely divided form.

3,554,960
CLAY-LOADED ELASTOMERS

Edward F. Cluff and John J. Verbanc, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed June 24, 1968, Ser. No. 739,210
Int. Cl. C08d 9/00; C08c 11/14
U.S. Cl. 260—41.5 12 Claims

A compounded elastomer comprising essentially a kaolin clay-loaded sulfur curable elastomeric polymer in admixture with at least one dihydroxy (C_6–C_{10}) aromatic-ring promoter of the mercapto resorcinol and resorcinol disulfide type.

3,554,961
IODINE, CHLORINE OR BROMINE STABILIZED OLEFIN POLYMERS

Clive D. Moon, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Oct. 7, 1968, Ser. No. 765,660
Int. Cl. C08f 45/56
U.S. Cl. 260—45.7 4 Claims

Olefin polymers are stabilized to minimize melt flow drop off at elevated temperatures by admixing the polymer with 0.004 to 0.5 weight percent of elementary iodine, chlorine or bromine, resulting in improved processability.

3,554,962
LIGHT STABLE POLYURETHANES

William K. Fischer, Woodbury, Conn., assignor to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 29, 1968, Ser. No. 717,387
Int. Cl. C08g 41/00, 51/58, 51/60
U.S. Cl. 260—45.8 5 Claims

Light stable polyurethane prepolymer compositions containing

(a) polyether polyurethane prepolymer made from aromatic diisocyanate (e.g. TDI),

(b) polyether polyurethane prepolymer made from "hydrogenated MDI," i.e., 4,4'-methylenebis(cyclohexylisocyanate),
(c) ultraviolet light screening agent, and
(d) antioxidant.

The prepolymer compositions produce light stable products even when cured with diamine curvatives which normally present a light stability problem, such as MOCA [4,4'-methylenebis(ortho-chloroaniline)].

3,554,963

POLYALKYLATED AROMATIC COMPOUNDS AS A HEAT STABILIZER FOR OLEFIN POLYMERS

John Boor, Jr., Amstelveen, Netherlands, assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 10, 1968, Ser. No. 735,542
Int. Cl. C08f *45/58*
U.S. Cl. 260—45.85 **9 Claims**

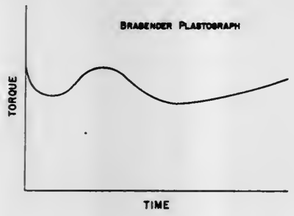
This invention relates to heat stabilized olefin polymer compositions stabilized by a low molecular weight polyalkylated polymer such as poly-o-xylene. In synergistic combination with the polyalkylated polymer may be a dialkylthiodipropionate.

3,554,964

STABILIZATION SYSTEMS FOR POLYMERS

Donald E. Miller, Akron, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Oct. 19, 1967, Ser. No. 676,450
Int. Cl. C08f *45/58*
U.S. Cl. 260—45.95 **13 Claims**



Phenolic/phosphite stabilizer systems for polymers containing divinyl benzene and polymers containing divinyl benzene stabilized therewith.

3,554,965

WITHDRAWN

3,554,966

AMORPHOUS POLYAMIDES

Michael Edward Benet Jones and Isaac Goodman, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Continuation of application Ser. No. 550,106, May 16, 1966. This application Jan. 7, 1970, Ser. No. 3,557
Claims priority, application Great Britain, May 21, 1965, 19,751/66
Int. Cl. C08g *20/20*
U.S. Cl. 260—47 **14 Claims**

Amorphous or at most only weakly crystalline, melt-fabricatable aromatic polyamides prepared by polycondensation of specific aromatic diamines in which the amino groups are on nonadjacent carbon atoms and aromatic dicarboxylic acids. Representative diamines are 4,4'-diaminodiphenyl ether, m-phenylene diamine and 4,4'-diaminodiphenyl sulphoxide while examples of the acids include the mono- and poly- alkoxy derivatives of isophthalic and terephthalic acids, dicarboxydiphenyl ethers, bis(carboxyphenoxy)alkanes and bis(carboxyphenoxy)-benzenes.

3,554,967

ACCELERATED EPOXY-AMINE RESINOUS COMPOSITIONS CATALYZED WITH —SH YIELDING MATERIAL

Heinz Uelzmann, Cuyahoga Falls, Ohio, assignor to The General Tire & Rubber Company, a corporation of Ohio

No Drawing. Filed Jan. 21, 1969, Ser. No. 792,853
Int. Cl. C08g *30/14*
U.S. Cl. 260—47 **6 Claims**

A sulfur compound, which can form a cure-accelerating, SH-containing compound in the presence of an amine curing agent, e.g., ethylene trithiocarbonate, is added to an epoxy resin composition. The resulting composition is stable, but will undergo rapid curing at low temperatures upon the addition of an amine curing agent.

3,554,968

STORAGE-STABLE HOT-CURABLE COMPOSITIONS OF POLYEPOXIDES AND ACYL SUBSTITUTED UREA DERIVATIVES

Juergen Habermeier, Allschwil, and Daniel Porret, Binningen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing, Filed Sept. 23, 1969, Ser. No. 860,426
Claims priority, application Switzerland, Oct. 8, 1968, 14,985/68
Int. Cl. C08g *30/14*
U.S. Cl. 260—47 **11 Claims**

Hot-curable moulding, coating and adhesive compositions which are storage-stable at room temperature and which contain a polyepoxide compound, for example a liquid polyglycidyl ether of bisphenol A and, as a latent curing agent, a C_2–C_4-acylurea, for example N-monoacetylurea, N,N'-diacetylurea or N,N'-dipropionylurea. As a rule 0.2–0.7 mol of acetylurea are employed per epoxide equivalent. In order to obtain perfect castings, the cure should be carried out stepwise by gradual warming, with the mixtures being exposed to gradually rising temperatures in the range of 100–180° C., and the temperature must, especially in the range of 120–150° C., only be raised in small steps.

3,554,969

POLYAMIDE ACIDS AND POLYIMIDES PREPARED FROM A MIXTURE OF POLYCARBOXYLIC ACID ANHYDRIDES

Frank Long, Wrexham, and Gordon Roy Ensor, Llangollen, Wales, assignors to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed Jan. 29, 1968, Ser. No. 701,103
Claims priority, application Great Britain, Feb. 3, 1967, 5,362/67
Int. Cl. C08g *20/32*
U.S. Cl. 260—47 **12 Claims**

Disclosed herein are polymeric materials characterized by having a plurality of recurring imide linkages and direct linkages between aromatic nuclei. These materials are the polymeric reaction product of (1) a polycarboxylic anhydride having a molecular structure comprising at least two units (D) each derived by the loss of one or more hydrogen atoms from the nucleus of an aromatic carboxylic anhydride and at least one unit (E) derived by the loss of two or more hydrogen atoms from the nucleus or the nuclei of an aromatic compound containing one or more nuclei, and wherein any D unit is linked directly to one or more E units and any E unit is linked directly to at least two units selected from D units and B units, with (2) a polyamine containing two or more primary amino groups per molecule.

3,554,970

LATENT HARDENER FOR EPOXY RESINS COMPRISING DICYANDIAMIDE AND AN AMINOALKYL GLYCOL MONOBORATE ESTER

Raymond Michael Moran, Jr., Brick Town, and Henry Thomas Blekicki, Convent Station, N.J., assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 26, 1967, Ser. No. 670,770
Int. Cl. C08g *30/14*
U.S. Cl. 260—47 **11 Claims**

Salts of aminoalkyl glycol monoborate esters, illustratively, 2-(β-dimethylaminoethoxy)-4-methyl - 1,3 - dioxa-2-borinane phenate, are effective latent accelerators for dicyandiamide in the curing of epoxy resin systems. The combination of dicyandiamine with aminoalkyl glycol monoborate ester salts will provide systems when combined with epoxy resins which will be stable for long periods when stored at ambient temperatures while still providing hardened products of satisfactory properties on curing for relatively short periods at elevated temperatures.

3,554,971

AMORPHOUS OR WEAKLY CRYSTALLINE AROMATIC POLYAMIDES

Michael Edward Benet Jones and Isaac Goodman, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Continuation-in-part of application Ser. No. 550,149, May 16, 1966. This application Jan. 21, 1969, Ser. No. 792,773
Claims priority, application Great Britain, Jan. 24, 1968, 3,697/68
Int. Cl. C08g *20/20*
U.S. Cl. 260—47 **31 Claims**

Amorphous or at most weakly crystalline aromatic polyamides made by polycondensation of at least one diaminodiphenyl sulphone and one or more diacids from a grouping which includes, for example, isophthalic acid, certain naphthalene dicarboxylic acids, polyhaloterephthalic acids and haloisophthalic acids other than 5-haloisophthalic acids, alkoxyterephthalic acids and alkoxyisophthalic acids and dicarboxy-diphenyl ethers. The polyamides are melt-fabricatable.

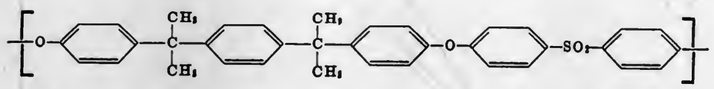
3,554,972

THERMOPLASTIC POLYARYLSULFONE RESIN

Robert J. Cornell, Naugatuck, Conn., assignor to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey

No Drawing. Filed Aug. 4, 1969, Ser. No. 847,427
Int. Cl. C08g *23/00*
U.S. Cl. 260—49 **6 Claims**

Thermoplastic polyarylsulfone resin having recurring units of the structure



is made by reacting the dipotassium salt of alpha, alpha'-bis(4 - hydroxyphenyl) - p - diisopropylbenzene with 4,4'-dichlorodiphenyl sulfone. The resin has a high heat distortion temperature but good processability and can be injection molded. It can be blended with ABS to make a tough but readily processable gum-plastic.

3,554,973

MODIFYING HALOGENATED CYCLOALKENYL KETONE CONTAINING ALPHA OLEFIN POLYMERS

Eiichi Morita, St. Albans, W. Va., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 308,324, Sept. 12, 1963, and Ser. No. 407,869, Oct. 10, 1964. This application July 24, 1967, Ser. No. 655,319
Int. Cl. C08f *27/03, 27/04, 27/07*
U.S. Cl. 260—66 **29 Claims**

Polymers are modified or vulcanized with halogenated cycloalkenyl ketone comprising at least one six-membered carbocyclic unsaturated ring containing a single keto substituent and a plurality of halogen substituents. The polymers include saturated plastic polymers derived from an alpha olefin, diene rubbers, silicone rubber, and polyurethane rubbers. Auxiliary agents which may be present include sulfur, basic metal compound, hydroquinone, and quinone compounds.

3,554,974

ELASTOMERIC LINEAR POLYURETHANE FILAMENT FORMED WITH CHAIN EXTENSION AGENT COMPRISING DIALKYLENE-TRIAMINE/ALDEHYDE REACTION PRODUCT

Henri A. Mommaerts, 17 Rue Paul Emile Janson, Brussels, Belgium, and Wilfried J. Melaerts, Kruiskensveld, 2 Halle, Essen Beek, Belgium

No Drawing. Filed Mar. 4, 1968, Ser. No. 709,961
Claims priority, application Great Britain, Mar. 3, 1967, 10,165/67
Int. Cl. C08g *9/04*
U.S. Cl. 260—72 **3 Claims**

The present invention is concerned with new, linear polymeric urethanes of the elastomeric type with an improved dyestuff affinity and is also concerned with the production thereof.

3,554,975

POLYESTERS MODIFIED WITH SULFOPHENYLINDAN DICARBOXYLIC ACID AND DERIVATIVES

Max H. Keck, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Jan. 27, 1969, Ser. No. 794,415
Int. Cl. C08g *17/04*
U.S. Cl. 260—75 **4 Claims**

The invention relates to sulfophenylindan dicarboxylic acids, salts and esters thereof and to polyester resins containing units of these materials. The polyester resins have improved dye receptivity.

3,554,976

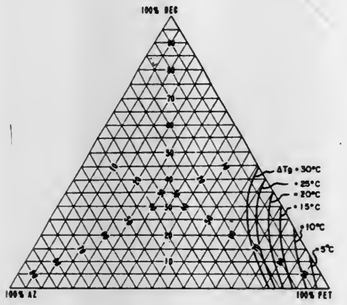
PREPARATION OF COPOLYESTERS

Charles F. Hull, Circleville, Ohio, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 24, 1968, Ser. No. 747,356

Int. Cl. C08g *17/01*

U.S. Cl. 260—75 4 Claims



Uniform composition in poly(ethylene terephthalate-azelate) is achieved by preforming dihydroxyethyl terephthalate, determining its concentration of diethylene glycol, and adding a quantity of preformed dihydroxyethyl azelate determined by reference to a ternary graph of glass transition temperature depression.

3,554,977

PROCESS OF PREPARING POLYESTERS FROM BIS-HYDROXYALKYL ESTERS OF AROMATIC DICARBOXYLIC ACIDS

Mary E. Carter, Philadelphia, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Aug. 30, 1967, Ser. No. 664,262

Int. Cl. C08g *17/015*

U.S. Cl. 260—75 13 Claims

A process of preparing polyester resins comprising polycondensing a bis-hydroxyalkyl ester of an aromatic dicarboxylic acid and an aromatic dicarboxylic acid in the presence of a catalyst selected from the group consisting of a suitable hexafluoroantimonate, hexafluoroarsenate, hexafluorotitanate, tetrafluoroantimonite, or tetrafluoroarsenite.

3,554,978

HEXAFLUORO CATALYTIC ADDITIVES FOR FIRST AND SECOND STAGE OF DIRECT ESTERIFICATION METHOD OF PREPARING POLYESTERS

Mary E. Carter, Philadelphia, and John A. Price, Swarthmore, Pa., and Robert P. Mervine, Claymont, Del., assignors to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Aug. 30, 1967, Ser. No. 664,263

Int. Cl. C08g *17/015*

U.S. Cl. 260—75 12 Claims

Process of preparing polyethylene terephthalate resin comprising carrying out both a direct esterification reaction between ethylene glycol and terephthalic acid and polycondensing the resulting product thereof in the presence of a hexafluoroantimonate, hexafluoroarsenate, hexafluorotitanate, tetrafluoroantimonite, or tetrafluoroarsenite compound.

3,554,979

POLYETHERURETHANES CONTAINING N-t-BUTYL TERTIARY AMINE GROUPS IN THE CHAIN

Oliver Larry Hunt, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 31, 1968, Ser. No. 733,289

Int. Cl. C08g *22/00*

U.S. Cl. 260—77.5 10 Claims

Long-chain synthetic elastomeric polyether-based polyurethanes stabilized against discoloration by light and smog by having tertiary amine nitrogen in the polymer chain. The nitrogen is attached to two non-carbonyl carbon atoms in the chain, and the third attachment is a tertiary butyl group.

3,554,980

METHOD FOR PREVENTING STICKINESS OF FIBRES CONSISTING OF OR COMPRISING COPOLYAMIDE

Satoshi Ando and Yusaku Tanaka, Osaka, Minoru Kojima, Mishima-gun, and Kyoichi Fujimura, Ibaraki, Japan, assignors to Kanegafuchi Boseki Kabushiki Kaisha, Tokyo, Japan, and Snia Viscosa Societa Nazionale Industria Applicazioni Viscosa S.p.A., Milan, Italy

Filed Dec. 14, 1966, Ser. No. 601,757

Claims priority, application Japan, Dec. 23, 1965, 40/79,726

Int. Cl. C08g *20/38*

U.S. Cl. 260—78 4 Claims

A copolyamide composition of improved elastic recovery properties, dyeability, resistance to stickiness and hygroscopicity in which a polycondensation product of at least two polyamide forming compounds is combined with metal salts of monocarboxylic and dicarboxylic acid.

3,554,981

POLY(ESTER-IMIDES) FROM MALEOPIMARIC ACID AND AMINOALCOHOLS

Martin F. Sloan, Brandywood, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 10, 1967, Ser. No. 674,123

Int. Cl. C08g *20/32*

U.S. Cl. 260—78 7 Claims

Novel polymeric materials for use in the manufacture of inks are prepared from maleopimaric acid and aminoalcohols.

3,554,982

POLY(AMIDE-IMIDES) FROM MALEOPIMARIC ACID AND DIAMINES

Paul H. Aldrich, Greenville, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 10, 1967, Ser. No. 674,124

Int. Cl. C08g *20/32*

U.S. Cl. 260—78 3 Claims

Novel polymeric materials for use in the manufacture of ink are prepared from maleopimaric acid and diamines.

3,554,983

POLYESTERAMIDES PREPARED FROM CAPROLACTONE HEXAMETHYLENE DIAMINE AND A MIXTURE OF ISOPHTHALIC AND TEREPHTHALIC ACIDS

Isaac Goodman and Neville Robert Hurworth, Runcorn, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Continuation-in-part of application Ser. No. 538,545, Mar. 30, 1966, now Patent No. 3,475,385, dated Oct. 28, 1969. This application July 26, 1968, Ser. No. 747,803

Claims priority, application Great Britain, Apr. 2, 1965, 14,106/65

Int. Cl. C08g *20/30*

U.S. Cl. 260—78 11 Claims

Polyesteramides prepared from caprolactone, hexamethylene diamine, and a mixture of isophthalic acid and terephthalic acid, said polymers being useful in the form of molding plastics.

3,554,984

POLYAMIDE-IMIDE RESINS

Norman J. George, St. Louis, Mo., assignor to The P. D. George Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 423,331, Jan. 4, 1965. This application Oct. 16, 1968, Ser. No. 768,164

Int. Cl. C08g *20/32*

U.S. Cl. 260—78 8 Claims

A polyamide-imide resin (and the polydiamide-monocarboxylic acid precursor) containing at least one amido group which is not part of the amide-imide polymeric unit, and to the use thereof as electrical insulation. This is exemplified by polyamide-imides derived from trimellitic anhydride or an equivalent and an aromatic type polyamine containing at least one amido group which is not part of the amide-imide polymeric unit.

3,554,985

CROSS-LINKED COPOLYMER POLYELECTROLYTES BASED ON ALPHA, BETA-ETHYLENICALLY UNSATURATED ACIDS

Joseph E. Fields, Ballwin, and John H. Johnson, Kirkwood, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. This application is a continuation-in-part of Ser. No. 777,499, filed Nov. 20, 1968, which is a continuation-in-part of Ser. No. 590,127, filed Aug. 19, 1966, now abandoned, which is in turn a division of Ser. No. 440,911, filed Mar. 18, 1965, now U.S. Patent No. 3,398,092, which is a continuation-in-part of Ser. No. 248,881, filed Jan. 2, 1963, now abandoned. This application Dec. 15, 1969, Ser. No. 885,266

Int. Cl. C08f *27/08*

U.S. Cl. 260—78.5 16 Claims

Water-insoluble, cross-linked polyelectrolyte copolymers of (a) an unsaturated monomer of 2 to 12 carbon atoms and (b) a monomer selected from the group consisting of (1) a mixture of an unsaturated polycarboxylic acid or anhydride and an unsaturated polycarboxylic acid amine-imide, and (2) an unsaturated polycarboxylic acid amine-imide, the polymeric units of the polyelectrolyte containing at least three percent of an amine-imide group, which group is a diloweralkylaminoloweralkylimide group wherein lower alkyl has 1 to 5 carbon atoms inclusive, including acid addition and quaternary ammonium salts thereof, the polyelectrolyte having a molecular weight of at least 1000. The polyelectrolytes are used for purifying water contaminated with viruses, coliform bacteria, other microorganisms or surface active agents by adsorption.

3,554,986

POLYSULFITE OF 2,2,4,4-TETRAALKYL-CYCLOBUTANE-1,3-DIOLS

Roger H. Garst and Joseph P. Henry, South Charleston, W. Va., assignors to Union Carbide Corporation, a corporation of New York

Filed Sept. 21, 1967, Ser. No. 669,650

Int. Cl. C08f *13/00*

U.S. Cl. 260—79.3 11 Claims

Novel polysulfites prepared from 2,2,4,4-tetramethylcyclobutane-1,3-diol and thionyl chloride for example are disclosed. These polymers may be used for the manufacture of plastic fibers, films and the like.

3,554,987

NOVEL COMPOUNDS AND PHOTOGRAPHIC MATERIALS CONTAINING SAID COMPOUNDS

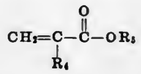
Donald Arthur Smith, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 525,272, Dec. 20, 1965. This application Aug. 22, 1968, Ser. No. 754,731

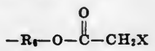
Int. Cl. C08f *15/16, 15/18;* C07c *69/66*

U.S. Cl. 260—79.3 14 Claims

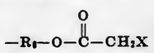
Polymeric materials comprising units of the monomer:



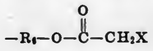
where R_4 is hydrogen, alkyl or



where R_6 is alkylene and X is aliphatic acyl or cyano; and R_5 is alkyl, cycloalkyl, aryl or



where R_6 is alkylene and X is aliphatic acyl or cyano, provided that one and only one of R_4 and R_5 is always



In one embodiment, interpolymers comprising units of the above monomer provide improved properties in photographic compositions.

3,554,988

VULCANIZABLE UNSATURATED QUATERPOLYMERS

Hans Emde, Gunter Kerrutt, Heinrich Weber, and Harald Blumel, Marl, Germany, assignors to Chemische Werke Huels A.G., Marl, Germany

Filed Aug. 7, 1967, Ser. No. 658,779

Claims priority, application Germany, Aug. 18, 1966, C 39,903, C 39,904

Int. Cl. C08f *15/40*

U.S. Cl. 260—79.5 13 Claims

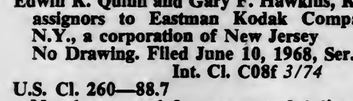
Rapidly vulcanizable unsaturated quaterpolymers of two I-olefins, an alkylidene or alkenyl norbornene and either hexadiene-1,4 or dicyclopentadiene are prepared with catalysts formed by mixing particular compounds of elements in Main Groups I to III of the Periodic Table with compounds of elements of Subgroups IV to VI of the Periodic Table.

3,554,989
MODIFIED HALOGEN CONTAINING POLYMERS
Walter Stamm, Tarrytown, N.Y., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 608,751, Jan. 12, 1967, now Patent No. 3,461,091, dated Aug. 12, 1969, which is a continuation-in-part of abandoned application Ser. No. 586,045, Oct. 12, 1966. This application Nov. 29, 1968, Ser. No. 780,164
Int. Cl. C08f *27/06*
U.S. Cl. 260—79.5 4 Claims

A novel modified polymer is produced through the reaction of a thio acid or thio anhydride and a chlorine containing polymer. The thio modifying agent is employed in amounts in excess of 10% and the reaction is conducted at temperatures in excess of the temperature at which hydrogen halide is formed from the polymer.

3,554,990
ESTERS OF 2-CYANOPENTA-2,4-DIENOIC ACID AND POLYMERS THEREOF
Edwin K. Quinn and Gary F. Hawkins, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed June 10, 1968, Ser. No. 735,557
Int. Cl. C08f *3/74*
U.S. Cl. 260—88.7 13 Claims

Novel esters of 2-cyanopenta-2,4-dienoic acid having the structural formula



wherein R is an alkenyl group of 2–10 carbon atoms or an alkoxy substituted alkyl group of 2–10 carbon atoms. These esters are useful as adhesives for general and particularly for surgical uses. These compounds are particularly characterized by the fact that they are autopolymerizable and produce strong, flexible bonds which are highly resistant to fracture under impact.

3,554,991
CRYSTALLINE OLEFINIC NITRILE POLYMERS AND METHOD FOR MANUFACTURING SAME
Russell K. Griffith, Chagrin Falls, Ohio, assignor to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Original application Oct. 3, 1966, Ser. No. 583,958, now Patent No. 3,493,648, dated Feb. 3, 1970. Divided and this application Mar. 5, 1969, Ser. No. 804,711
Int. Cl. C08f *3/76, 15/22*
U.S. Cl. 260—88.7 2 Claims

Olefinic nitrile polymers, such as polyacrylonitrile, are subjected to shearing on a roll mill and the thus sheared polymer, which has 3-dimensional crystallinity, is molded into articles having excellent heat distortion and impact properties.

3,554,992
POLYMERISATION CATALYSTS AND USES THEREOF
Donald Charles Lamb, Norton-on-Tees, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed Mar. 25, 1968, Ser. No. 715,523
Claims priority, application Great Britain, Apr. 11, 1967, 16,475/67; Oct. 2, 1967, 44,775/67
Int. Cl. C08f *3/38, 15/10*
U.S. Cl. 260—91.1 7 Claims

A novel catalyst for vinyl ether homo or heteropolymerisation comprises a Grignard complex RXMg (hal) mounted on or in a solid support. R is a hydrocarbon group such as phenyl or an alkyl group, (hal) is a halogen and X is oxygen, sulphur, selenium or tellurium or is introduced by reacting a Grignard reagent RMg(hal) with a compound containing an unsaturated linkage between different elements or with an olefine oxide. Preferably X is O or CO_2 and the complex may be formed in situ on the support. In the polymerisation the vinyl ether with or without other unsaturated monomers is contacted in the liquid phase with the catalyst, preferably in continuous fashion with a bed or column of the catalyst.

3,554,993
POLYMERIZATION CATALYST PROCESS AND CATALYST
Charles W. Moberly and Gerald R. Kahle, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Sept. 2, 1965, Ser. No. 484,717
Int. Cl. C08f *1/56*
U.S. Cl. 260—93.7 5 Claims

1. A catalyst system formed on admixing an organometal compound of the formula MR_n wherein M is a metal of Group I-A, II-A, III-A and IV-A of the Periodic Table, *n* is the valence of M and R is a radical selected from the group consisting of alkyl, cycloalkyl and aryl having from 1 to 20 carbon atoms with a titanium trichloride-aluminum trichloride complex of the formula $TiCl_3 \cdot \frac{1}{3}AlCl_3$, an organoaluminum dihalide of the formula $RAlX_2$ wherein X is a halogen and R is a member of the group consisting of alkyl, cycloalkyl and aryl radicals having from 1 to 20 carbon atoms and a silazane selected from the group consisting of $R_3Si—NR'—SiR_3$, $(R_3Si)_3—N$, $R_3Si—NR'—SiR_2—NR'—SiR_3$ and

$$R'(R_2SiNH)_yR'$$

wherein R is a member of the group consisting of alkyl, cycloalkyl and aryl radicals having from 1 to 20 carbon atoms, R' is R or hydrogen and *y* is an integer from 4 to 50, and wherein the molar ratio of said $RAlX_2$ compound to said $TiCl_3 \cdot \frac{1}{3}AlCl_3$ compound is in the range of 0.5:1 to 10:1, the molar ratio of said silazane compound to said $TiCl_3 \cdot \frac{1}{3}AlCl_3$ compound is in the range of 0.25:1 to 7.5:1 and the molar ratio of said MR_n compound to said $TiCl_3 \cdot \frac{1}{3}AlCl_3$ compound is in the range of 0.5:1 to 7.5:1 and wherein the molar ratio of said $RAlX_2$ compound to said MR_n compound is in the range of 5:1 to 5:2.

3,554,994
PROCESS FOR ALTERING THE PARTICLE SIZE DISTRIBUTION OF ALPHA MONOOLEFIN POLYMERS
Richard P. Maloney, Chester, Habet M. Kheighatian, Springfield, and James F. Dempsey, Philadelphia, Pa., assignors, by direct and mesne assignments, to Standard Oil Company, Chicago, Ill., a corporation of Indiana
No Drawing. Filed Apr. 3, 1967, Ser. No. 627,653
Int. Cl. C08f *47/03*
U.S. Cl. 260—93.7 10 Claims

A process for rearranging the particle size distribution of finely divided solid alpha monoolefin polymers comprising heating a slurry of polymer wet cake and water to a temperature in the range of 35°–150° C. in a closed autoclave for the time necessary to precondition the polymer and thereafter shock cooling the heated slurry to provide a polymer powder having a changed particle size distribution in the range of 70 to 250 microns.

3,554,995
DEASHING SOLVENT RECOVERY PROCESS
Ernest G. McCray, Odessa, Tex., assignor to Dart Industries Inc., Los Angeles, Calif., a corporation of Delaware
Filed Jan. 23, 1969, Ser. No. 793,417
Int. Cl. C08f *3/08, 47/24*
U.S. Cl. 260—93.7 3 Claims

The improvement in a process for recovering deashing solvent from a mixture of a solvent containing catalyst and polymeric residues comprises separating bottoms recovered from a vaporization system in a heat treatment zone in the absence of flux medium at temperatures of above about 300° F. with agitation into residue and solvent, removing the residue to storage and recovering from the zone the solvent which contains substantially all of the solvent in the bottoms fed to the zone. The residue contains a predominant amount of amorphous polymeric materials which is of commercial value.

3,554,996
METHOD OF MAKING POLYOLEFIN METAL-ORGANIC CHELATE COMPOSITIONS AND THE RESULTING PRODUCTS
Henry Nelson Beck, Walnut Creek, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Apr. 24, 1967, Ser. No. 632,930
Int. Cl. C08f *27/04*
U.S. Cl. 260—93.7 12 Claims

This invention discloses a method of crystallizing hydrocarbon polymers as well as the resulting product. A hydrocarbon polymer is melted with a small amount of a metal-organic chelate so as to induce the crystallization of the melt at a higher temperature than would normally occur. The use of this method and/or composition in the fabrication of useful shapes of the polymeric composition results in higher production rates due to the more rapid crystallization and/or hardening of the desired shape and an increase in the tensile strength of the finished product.

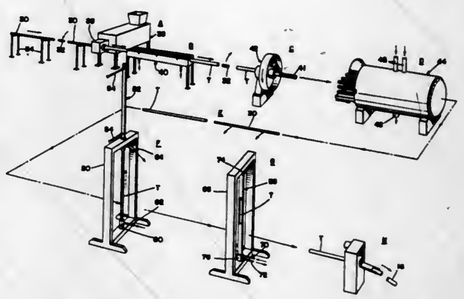
3,554,997
PROCESS FOR PREVENTING GEL FORMATION DURING POLYMERIZATION IN TUBE REACTOR
Stanley I. Bates, Midland, and Gerald R. Girard, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Oct. 2, 1968, Ser. No. 764,640
Int. Cl. C08d *3/08, 3/12;* C08f *3/18*
U.S. Cl. 260—94.2 8 Claims

Substantially gel-free polymers and copolymers of conjugated diolefins such as 1,3-butadiene are prepared in a continuous process by employing a sufficient amount of a 1,2-diolefin gel inhibitor such as propadiene to substantially prevent the formation of gel during polymerization. The process involves contacting the conjugated diolefin monomers alone or with additional polymerizable monomers such as styrene with an organolithium catalyst such as butyllithium in a suitable hydrocarbon diluent under polymerization conditions of suitable temperature and pressure to produce the polymer. The polymers produced by the process of this invention are suitable for fabrication, for example, into a variety of useful rubber articles of manufacture.

3,554,998
DIENE POLYMERIZATION PROCESS AND CATALYST THEREFOR
Walter Nudenberg, West Caldwell, N.J., Dudley B. Merrifield, Williamsville, N.Y., and Edward A. Delaney, Dover, N.J., assignors to Texas-U.S. Chemical Company, Port Neches, Tex., a corporation of Delaware
No Drawing. Original application Aug. 22, 1967, Ser. No. No. 662,285. Divided and this application Aug. 8, 1969, Ser. No. 848,743
The portion of the term of the patent subsequent to Jan. 28, 1986, has been disclaimed
Int. Cl. C08d *3/06*
U.S. Cl. 260—94.3 4 Claims

Polymerization catalyst complex composition formed of titanium tetrahalide, ether-free Grignard composition, in prescribed mol ratio, on contact with butadiene in inert solvent with titanium tetravalent and the high cis content polybutadiene prepared therewith.

3,554,999
METHOD OF MAKING A SHRINK DEVICE
Leslie E. Shaw, Islington, Ontario, and Peter M. Maclean, Willowdale, Ontario, Canada, assignors to Shaw Pipe Protection Ltd., Toronto, Ontario, Canada
Filed July 14, 1966, Ser. No. 565,139
Int. Cl. B29g *2/00;* B29c *17/04*
U.S. Cl. 264—95 11 Claims



A method for making a heat shrinkable tubing from an extruded cross-linkable polymeric material including the steps of curing the tubing at a temperature above its crystalline melting point to give cross-linking of the material sufficient to provide a predetermined elastic memory in the finished tubing, applying a uniform adhesive coating to the interior surface of the tubing, and expanding the coated tubing at a temperature above its crystalline melting point while maintaining the uniformity characteristics of the coating to set the tubing with a predetermined shrink-back from its fully expanded dimension.

3,555,000
PLASMINOGEN ACTIVATOR AND ISOLATION THEREOF FROM STROMATA OF HUMAN ERYTHROCYTES
Otto Wagner, Wuppertal-Elberfeld, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Feb. 20, 1968, Ser. No. 706,787
Claims priority, application Germany, Mar. 2, 1967, F 51,690
Int. Cl. C07g *7/00, 7/026*
U.S. Cl. 260—112 3 Claims

A new plasminogen activator distinguishable from urokinase can be isolated from stromata of human erythrocytes at a pH of from about 1 to 4. The plasminogen activator is useful for the therapy and prophylaxis of thromboses and embolisms. The plasminogen activator is administered in the form of an injectable solution which can be prepared by techniques which are per se known in a therapeutic dosage of the same order of magnitude as urokinase. It has a molecular weight after processing in the ultracentrifuge between about 20,000 and 50,000. It is a protein, acid stable to pH 1 but is almost entirely

destroyed at pH 9–10 at +4° C. for 5 hours. It is activated or catalyzed by small amounts fo urokinase which raises its activity 20–100 fold.

3,555,001

PROCESS FOR THE FRACTIONATION OF PLASMA AND SERUM USING WATER-INSOLUBLE POLYELECTROLYTES CONTAINING DILOWERALKYLAMINOLOWERALKYLIMIDE GROUPS

Craig Wallis and Joseph L. Melnick, Houston, Tex., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed May 29, 1969, Ser. No. 829,147

Int. Cl. C07g 7/00

U.S. Cl. 260—112 18 Claims

Fluids such as plasma or serum containing a plurality of proteins are fractionated by contacting the fluid with a water-insoluble polyelectrolyte polymer containing basic groups to selectively sorb specific protein on the polymer to the exclusion of other specific protein and where necessary removing the polymer containing the sorbed protein from the fluid. The polymer contains basic groups and is polycationic or polyampholytic in nature and contains imide groups in the form of diloweralkylaminoloweralkylimide groups or loweralkyliminodi(loweralkylamide) linkages.

3,555,002

WATER-INSOLUBLE BENZIMIDAZOLONE CONTAINING MONOAZO DYESTUFFS

Joachim Ribka, Offenbach am Main, and Wolfgang Pretzer, Fischbach, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Oct. 22, 1968, Ser. No. 769,711

Int. Cl. C09b 29/36

U.S. Cl. 260—157 7 Claims

Water-insoluble monoazo-dyestuffs consisting of 5-amino-isophthalic-diamides as diazo component and 5-acetoacetylamino-benzimidazolones as coupling component and process for their preparation. Said pigments are especially suitable for dyeing and printing plastics, caoutchouc, resins of natural or synthetic origin, fibrous textile materials or paper. Moreover, the pigments can be used for the preparation of dispersion paints, lacquers and printing inks.

3,555,003

WATER-INSOLUBLE BENZIMIDAZOLONE CONTAINING MONOAZO DYESTUFFS

Joachim Ribka, Offenbach am Main, Germany, assignor to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany

No Drawing. Filed Oct. 22, 1968, Ser. No. 769,728

Int. Cl. C04b 29/36

U.S. Cl. 260—157 7 Claims

Water-insoluble monoazo dyestuffs consisting of 5-amino-isophthalic-acid-dimethylester as diazo component and 5-acetoacetylamino-benzimidazolones as coupling component and process for their preparation. Said pigments are especially suitable for dyeing and printing plastics, caoutchouc, resins of natural or synthetic origin, fibrous textile materials or paper. Moreover, the pigments can be used for the preparation of dispersion paints, lacquers and printing inks.

3,555,004

DISAZO PIGMENTS

Willy Mueller and Karl Ronco, Riehen, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

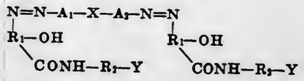
No Drawing. Filed Feb. 26, 1968, Ser. No. 707,953

Claims priority, application Switzerland, Mar. 16, 1967, 3,859/67

Int. Cl. C09b 33/02

U.S. Cl. 260—181 10 Claims

Disazo dyestuffs of the formula



in which A_1, A_2 and R_2 each represents an arylene residue, R_1 represents a naphthalene residue in which the azo, hydroxy and carboxylic acid amide group are respectively in 1,2,3-position, X represents a direct bond or a bridging group and Y represents a group of the formula

—NHCOR$_3$

or —CONHR$_4$ in which R_3 represents a hydrogen atom or an alkyl, aryl, alkoxy, amino, alkylamino or arylamino group and R_4 represents a hydrogen atom or an aryl group are valuable pigments which color plastic masses in violet to blue shades of good fastness to light and migration.

3,555,005

PROCESS FOR THE MANUFACTURE OF BENZENE AZO NAPHTHOIC ACID ARYLIDES PIGMENTS

Karl Ronco, Riehen, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

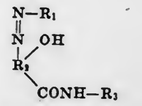
No Drawing. Filed Sept. 18, 1967, Ser. No. 668,706

Claims priority, application Switzerland, Sept. 22, 1966, 13,686/66; Aug. 11, 1967, 11,360/67

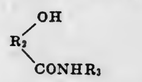
Int. Cl. C07c 107/04; C09b 29/20

U.S. Cl. 260—204 1 Claim

A process for the manufacture of azo pigments of the formula



in which R_1 represents an aryl residue, R_2 represents a naphthalene residue in which the azo, hydroxyl and carboxylic acid amide groups are in 1,2,3-position and R_3 represents an aryl residue, and in which at least one of the residues represented by R_1 or R_3 contains in acylamino group or a carboxylic or sulphonic acid amide group which may be substituted, wherein a diazoamino compound containing a residue represented by R_1 is heated together with a naphthol of the formula



in an organic solvent or in an aqueous/organic solvent.

3,555,006

POLYSACCHARIDE POLYMER CYCLIC KETALS

Stanley J. Storfer, Elizabeth, N.J., assignor to Esso Production Research Company, a corporation of Delaware

Filed June 15, 1967, Ser. No. 646,246

Int. Cl. C07c 47/18

U.S. Cl. 260—209 11 Claims

Long chain water-soluble organic polymers having hydroxyl groups located at β positions with respect to one another are reacted with α-keto carboxylic acids under aqueous conditions to form modified polymers useful in the preparation of oilfield drilling fluids and similar compositions.

3,555,007

7-DEOXY-7-HALO LINCOMYCIN D DERIVATIVES

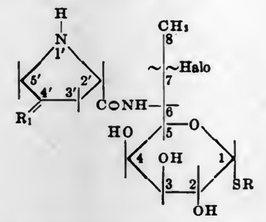
Barney J. Magerlein, Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed July 22, 1968, Ser. No. 746,281

Int. Cl. C07c 47/18

U.S. Cl. 260—210 7 Claims

Antibacterial compound, $\Delta^{4',8}$-1-demethyl-7-halo-7-deoxylincomycins of the formula



I

are obtained by acid methanolysis of 1'-(carbo-t-butoxy) I which in turn is obtained by N-acylating an alkyl 7-halo-7-deoxy-α-thiolincosaminide with 1-(carbo-t-butoxy)-4-alkylidene-L-2-pyrolidinecarboxylic acid which in turn is obtained by N-acylation of 4-alkylidene-L-2-pyrrolidinecarboxylic acid, which in turn is obtained by acid hydrolysis of N-carbobenzoxy-4-alkylidene-L-2-pyrrolidinecarboxylic acid.

3,555,008

PREPARATION OF GELATINIZED CARBOXYALKYL STARCH DERIVATIVES

Richard Shaw Johnson, Wirral, England, assignor to Lever Brothers Company, New York, N.Y., a corporation of Maine

No Drawing. Filed Oct. 12, 1967, Ser. No. 674,718

Claims priority, application Great Britain, Oct. 13, 1966, 45,771/66

Int. Cl. C08b 19/01

U.S. Cl. 260—233.3 2 Claims

This invention relates to an improved process for the preparation of gelatinised carboxyalkyl derivatives of starch, wherein ungelatinised starch granules are reacted with an unsaturated ester at a strictly controlled pH of 9.5–10.5. The ungelatinised starch derivative thus obtained is separated from the neutralised reaction slurry and subsequently gelatinised and dried, preferably by application as an aqueous suspension to the outer surface of a heated, rotating drum.

3,555,009

PROCESS FOR THE PRODUCTION OF STARCH DERIVATIVES

Shigeo Suzuki, Tokyo, Keiji Kainuma, Urawa-shi, and Koehi Tanida and Tsuneo Oda, Tokyo, Japan, assignors to Food Research Institute, Ministry of Agriculture and Forestry, Japanese Government

Filed Mar. 28, 1967, Ser. No. 626,523

Claims priority, application Japan, Jan. 16, 1967, 42/2,679

Int. Cl. C08b 9/04

U.S. Cl. 260—233.5 6 Claims

This invention relates to improvements in the synthesis of starch derivatives. The process in accordance with this invention is characterized in that an alkaline aqueous starch suspension is reacted with phosphoric anhydride, yielding inhibited-swelling cross-linking type starch phosphates. The primary product is esterified, neutralized and allowed to stand until orthophosphate is sufficiently formed, yielding acid resistant, electrolyte resisting, and low temperature stable derivatives, which have been heretofore produced by employing two kinds of phosphoric acids. These products are useful in the edible condiment industry and as pastes in the textile industry and other industries.

3,555,010

5-ALKENYL SUBSTITUTED-1,4-BENZODIAZEPINES

Stephen T. Ross, Berwyn, Pa., assignor to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 625,636, Mar. 24, 1967. This application Jan. 7, 1970, Ser. No. 1,309

Int. Cl. C07d 53/06

U.S. Cl. 260—239 16 Claims

2,3 - dihydro - 1,4 - benzodiazepines which have a 5-lower alkenyl substituent, a chloro or trifluoromethyl substituent on the benzene ring and an optional 1-lower alkyl, alkanoyl, alkoxycarbonyl, cycloalkylloweralkyl, phenyl or diloweralkylaminoloweralkyl substituent and corresponding 2,3,4,5-tetrahydro derivatives are useful as tranquilizers. The basic compounds are generally prepared by reaction of an appropriate 2-halophenyl alkenyl ketone and an ethylenediamine in a polar solvent and in the presence of a transition metal.

3,555,011

FLUORINE SUBSTITUTED α-AZIDO-BENZYLPENICILLINS

Bertil Åke Ekström and Berndt Olof Harald Sjöberg, Sodertalje, Sweden, assignors to Aktiebolaget Astra, Sodertalje, Sweden, a company of Sweden

No Drawing. Filed Mar. 12, 1969, Ser. No. 806,673

Claims priority, application Great Britain, Mar. 22, 1968, 14,055/68

Int. Cl. C07d 99/16

U.S. Cl. 260—239.1 7 Claims

α-Azidobenzylpenicillins substituted in the phenyl nucleus with a fluorine atom are disclosed. The compounds give much higher and more prolonged blood levels after oral administration compared to unsubstituted α-azidobenzylpenicillin and lower binding to human serum compared to chlorine-substituted α-azidobenzylpenicillins.

3,555,012

DIBENZOTHIADIAZOCINE DERIVATIVES

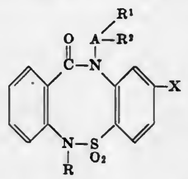
Michio Nakanishi, Nakatsu, Oita, and Tomohiko Munakata and Tatsumi Tsumagari, Fukuoka, Japan, assignors to Yoshitomi Pharmaceutical Industries, Ltd., Osaka, Japan

No Drawing. Filed Apr. 2, 1969, Ser. No. 812,887

Int. Cl. C07d 41/00, 41/06, 53/00, 87/54, 93/36

U.S. Cl. 260—239.3 20 Claims

Dibenzothiadiazocine derivatives of the formula



wherein X is H, Cl, OCH_3, CH_3 or CF_3, R is benzyl or alkyl of 1 to 4 carbon atoms such as methyl, ethyl, propyl, isopropyl, butyl or isobutyl, each of R^1 and R^2 independently is alkyl of 1 to 4 carbon atoms, phenyl or benzyl, or —N(R^1)(R^2) is morpholino, piperidino, 2-methylpiperidino, 4-methyl-1-piperazinyl, 4 - phenyl - 1-piperazinyl, and A is alkylene of 2 to 4 carbon atoms such as ethylene, propylene, trimethylene or 2-methyltrimethylene, and pharmaceutically acceptable acid addition salts possess analgesic and anti-inflammatory activity.

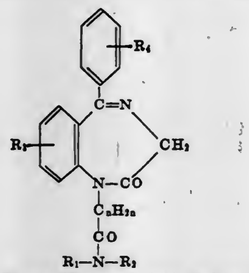
3,555,013

PROCEDURE FOR PREPARING 1,4-BENZODIAZEPINE-2-ONE DERIVATIVES

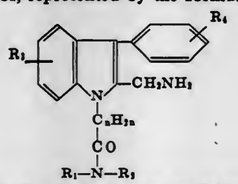
Hisao Yamamoto, Nishinomiya-shi, Shigeho Inaba, Takarazuka-shi, Tadashi Okamoto, Ashiya-shi, Toshiyuki Hirohashi, Kobe, Kikuo Ishizumi, Minoo-shi, Michihiro Yamamoto, Takarazuka-shi, Isamu Maruyama, Minoo-shi, Kazuo Mori, Kobe, Tsuyoshi Kobayashi, Minoo-shi, and Takahiro Izumi, Takarazuka-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Apr. 14, 1969, Ser. No. 816,091
Claims priority, application Japan, Apr. 16, 1968, 43/25,673
Int. Cl. C07d *53/06*
U.S. Cl. 260—239.3 5 Claims

1,4-benzodiazepine-2-one derivatives represented by the formula,



wherein R_1 and R_2 signify respectively a hydrogen atom or a lower alkyl group; R_3 and R_4 signify respectively a hydrogen atom, a halogen atom, a nitro group, a lower alkyl group or a halogenated lower alkyl group; and *n* signifies 1, 2 or 3, and being effective as tranquillizers, muscle-relaxants and hypnotics, are produced by reacting with an oxidizing agent a 2-aminomethyl indole derivative, or a salt thereof, represented by the formula,



wherein R_1, R_2, R_3, R_4 and *n* are as defined above.

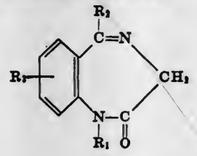
3,555,014

METHOD FOR PREPARING BENZODIAZEPINE DERIVATIVES

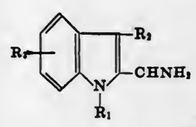
Hisao Yamamoto, Nishinomiya-shi, Shigeho Inaba, Takarazuka-shi, Tadashi Okamoto, Ashiya-shi, Toshiyuki Hirohashi, Kobe, Kikuo Ishizumi, Minoo-shi, Michihiro Yamamoto, Takarazuka-shi, Isamu Maruyama, Minoo-shi, Kazuo Mori, Kobe, and Tsuyoshi Kobayashi, Minoo-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Apr. 16, 1969, Ser. No. 816,827
Claims priority, application Japan, Apr. 26, 1968, 43/28,189
Int. Cl. C07d *53/06*
U.S. Cl. 260—239.3 5 Claims

Benzodiazepine derivatives having prominent effects as tranquilizers, musculorelaxants, antispasmodics and hypnotics and represented by the formula,



wherein R_1 is a lower alkanoyl amino group or a benzoyl amino group; R_2 is a phenyl group, a pyridyl group, or a halogen- or trifluoro-methyl-substituted phenyl group; and R_3 is a hydrogen atom, a halogen atom or a trifluoromethyl group, are produced by reacting a 2-aminomethylindole derivative represented by the formula,



wherein R_1, R_2 and R_3 are as defined above, with an oxidizing agent.

3,555,015

PROCESS FOR THE PREPARATION OF GONA-1,3,5(10),7-TETRAENES

Reinhardt P. Stein, Conshohocken, George C. Buzey, Jr., Philadelphia, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

Continuation-in-part of applications Ser. No. 559,175, June 21, 1966, and Ser. No. 646,961, June 19, 1967. This application Sept. 17, 1968, Ser. No. 760,212
Int. Cl. C07c *173/00*
U.S. Cl. 260—239.55 25 Claims

Treatment of a 13-alkylgona-1,3,5(10),8-tetraene with organic peracid results in the formation of a corresponding 8,9-epoxy-13-alkylgona-1,3,5(10)-triene, which upon treatment with acid, is ring-opened and rearranged to the corresponding 13-alkylgona-1,3,5(10),9(11)-tetraen-8-ol. Catalytic hydrogenation then affords the corresponding 13-alkylgona-1,3,5(10)-trien-8-ol which upon dehydration gives the corresponding 13-alkylgona-1,3,5(10),7-tetraene. There is thus provided a route to the synthesis of equilin and related compounds.

3,555,016

WATER-INSOLUBLE STYRYL DYESTUFFS

Richard Peter and Hans Joerg Angliker, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Nov. 15, 1967, Ser. No. 683,128
Claims priority, application Switzerland, Nov. 16, 1966, 16,444/66
Int. Cl. C09b *23/14*
U.S. Cl. 260—240 6 Claims

Styryl dyes containing a heterocyclic carbamate group bound via an alkylamino bridge to the coupling component of the styryl moiety. The dyes are particularly useful in the so-called thermosol process.

3,555,017

DERIVATIVE OF 7-ACYLAMINO-CEPHALOSPORANIC ACID

Hans Bickel, Binningen, Rolf Bosshardt, Arlesheim, Bruno Fechtig, Binningen, Enrico Menard, Basel, Johannes Mueller, Arlesheim, and Henrich Peter, Riehen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 15, 1967, Ser. No. 690,760
Claims priority, application Switzerland, Dec. 20, 1966, 18,179/66; Apr. 28, 1967, 6,108/67; Oct. 3, 1967, 15,174/67
Int. Cl. C07d *99/24*
U.S. Cl. 260—243 12 Claims

Antimicrobially active 7-dihalogenacetylaminocephalosporanic acids and derivatives and salts thereof.

3,555,018

THIAZINOPYRIDOINDOLONE DERIVATIVES

Martin A. Davis, Montreal, Quebec, Canada, assignor to Ayerst, McKenna & Harrison Limited, Ville St. Laurent, Quebec, Canada, a corporation of Canada

No Drawing. Filed Dec. 3, 1968, Ser. No. 780,890
Int. Cl. C07d *93/12*
U.S. Cl. 260—243 10 Claims

There are disclosed herein 2,3,6,7,12,12b-hexahydro-4H-1,3 - thiazino[3',2':1,2]pyrido[3,4-b]indol-4-one and its 10-chloro-, 11-chloro-, 10-methyl-, 9-methoxy-, 10-methoxy-, 9,10-dimethoxy-, 8-nitro-, and 10-nitro- derivatives. The compounds have antiinflammatory and antifungal activities and methods for their preparation and use are also disclosed.

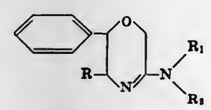
3,555,019

[2H]-1,4-OXAZINE DERIVATIVES

Jean Clement Louis Fouche, Bourg-la-Reine, Hauts-de-Seine, and Gilbert Poiget, Thiais, Val-de-Marne, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed May 2, 1968, Ser. No. 726,235
Claims priority, application France, May 5, 1967, 105,382
Int. Cl. C07d *87/48*
U.S. Cl. 260—244 4 Claims

1,4-ozazine derivatives of the formula:



wherein R, R_1 and R_2 represents hydrogen or alkyl of 1 through 5 carbon atoms, and non-toxic acid addition and quaternary ammonium salts thereof, which are new compounds, are active as antidepressants, central stimulants, anorexigencis, hypertensives and antihypotensives.

3,555,020

PROCESSES FOR MAKING COMPLEX COMPOUNDS OF HALOBERYLLIUM HYDRIDE WITH TERTIARY AMINES

Lawrence H. Shepherd, Jr., Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Original application July 3, 1967, Ser. No. 652,652, now Patent No. 3,483,219, dated Dec. 9, 1969. This application Sept. 22, 1969, Ser. No. 860,064
Int. Cl. C07d *87/30*
U.S. Cl. 260—247 5 Claims

Novel complex compounds of haloberyllium hydride with tertiary amines, such as certain alkyl amines, N,N-dimethylbenzylamine, N,N - dimethylcyclohexylamine, N-methyl or N-ethyl pyrrolidine, N-methyl piperidine and N-methyl morpholine, are prepared (1) by reacting a tertiary amine hydrohalide with a tertiary emine-beryllium hydride complex, (2) from anhydrous beryllium halide and a tertiary amine-beryllium hydride complex, (3) from anhydrous beryllium halide, an alkali metal hydride and an excess of tertiary amine, (4) by halogenation of a tertiary amine-beryllium hydride complex or (5) by hydrohalogenation of a tertiary amine-beryllium hydride complex. The obtained complex compounds are useful as intermediates for the production of pure beryllium hydride, a useful component for propellants. The obtained complexes can be decomposed thermally to pure metallic beryllium, or reacted with olefins or used as selective reducing agents.

3,555,021

PROCESS FOR THE PREPARATION OF HETEROCYCLIC NITRILES

Ralph H. Beutel, Colts Neck, Paul Davis, Metuchen, and Erwin F. Schoenewaldt, Watchung, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 21, 1967, Ser. No. 617,506
Int. Cl. C07d *51/76*
U.S. Cl. 260—250 12 Claims

Loweralkyl substituted saturated or partially unsaturated heterocyclic compounds are converted to the corresponding cyano substituted fully unsaturated heterocyclic compounds by reaction with ammonia and oxygen in the presence of compound oxide catalysts. Also within the scope of the invention is the conversion of alkyl substituted saturated or partially unsaturated heterocyclic compounds and their unsubstituted analogs to the corresponding fully unsaturated derivatives.

3,555,022

IRRADIATED PRODUCTS OF 3H-1,4-BENZODIAZEPINE 4-OXIDES

George Francis Field, West Caldwell, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Sept. 5, 1967, Ser. No. 665,293
Int. Cl. C07d *51/78*
U.S. Cl. 260—250 3 Claims

1,3,6-benzoxadiazocines and 1,2-dihydro-quinoxalines are useful as anti-inflammatory agents, anti-convulsants and anti-bacterial agents and methods for their production.

3,555,023

1-(3 - AMINOPYRAZINOYL) - 3 - SUBSTITUTED-3-THIOISOSEMICARBAZIDES AND METHOD FOR PREPARATION

Edward J. Cragoe, Jr., Lansdale, and Kenneth L. Shepard, Ambler, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 13, 1968, Ser. No. 775,542
Int. Cl. C07d *51/76*
U.S. Cl. 260—250 10 Claims

1 - (3 - aminopyrazinoyl) - 3 - substituted - 3 - thioisosemicarbazides are described that can be optionally substituted in the 5- and/or 6-position of the pyrazinoyl moiety and additionally optionally substituted on the terminal nitrogen of the semicarbazide moiety. These compounds are prepared either by alkylation of the 1-(3-aminopyrazinoyl)thiosemicarbazide or by the reaction of a 3-substituted - 3 - thioisosemicarbazide and a 3-(3-aminopyrazinoyloxy)-acrylamide which in turn is prepared by reaction between a pyrazinoic acid and an isoxazolium salt. The products possess saluretic and diuretic properties and therefore are useful in the treatment of conditions asso-

ciated with abnormal retention of fluid and/or sodium and chloride ions such as the treatment or management of edematous conditions.

3,555,024

1-(3-AMINOPYRAZINOYL)SEMICARBAZIDES, 1-(3-AMINOPYRAZINOYL) - THIOSEMICARBAZIDES, AND METHOD FOR THEIR PREPARATION

Edward J. Cragoe, Jr., and John B. Bicking, Lansdale, and Kenneth L. Shepard, Ambler, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Nov. 13, 1968, Ser. No. 775,543

Int. Cl. C07d *51/76*

U.S. Cl. 260—250 13 Claims

1-(3-aminopyrazinoyl)semicarbazides and -thiosemicarbazides are described that can optionally be substituted in the 5- and/or 6-position of the pyrazinoyl moiety and additionally optionally substituted on the carbazide nitrogen are prepared by the reaction of the selected 3-aminopyrazinoic acid hydrazide and the selected isocyanate or isothiocyanate. The products possess natriuretic and diuretic properties without kaluretic properties and are useful in the treatment of conditions associated with an abnormal retention of sodium and chloride ions such as the treatment and management of edematous conditions.

3,555,025

2 - METHYL - 3 - AMIDINO - QUINOXALINE-1,4-DI-N-OXIDES AND THEIR PRODUCTION

Kurt Ley, Odenthal-Globusch, Ulrich Eholzer, Cologne-Stammheim, Karl-Georg Metzger, Wuppertal-Elberfeld, and Dieter Fritsche, Wuppertal-Vohwinkel, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

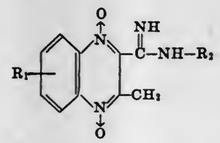
No Drawing. Filed Oct. 2, 1968, Ser. No. 764,612

Claims priority, application Germany, Oct. 4, 1967, F 53,668

Int. Cl. C07d *51/76*

U.S. Cl. 260—250 16 Claims

2-methyl-3-amidino-quinoxaline-1,4-di-N-oxides of the formula:

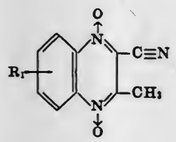


(I)

wherein:

R_1 is hydrogen, lower alkyl, lower alkoxy or chlorine, and R_2 is hydroxy or amino,

are useful as antibacterial compounds. These compounds may be produced, inter alia, by reacting a 2-methyl-3-cyano-quinoxaline-1,4-di-N-oxide of the formula:



(II)

with a compound of the formula:

$$R_2—NH_2 \quad \text{(III)}$$

wherein R_1 and R_2 are as above defined.

3,555,026

HALOPYRIDAZONE DERIVATIVES

Franz Reicheneder, Ludwigshafen (Rhine), and Adolf Fischer, Mutterstadt, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

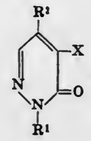
No Drawing. Continuation of application Ser. No. 598,224, Dec. 1, 1966. This application Sept. 11, 1969, Ser. No. 857,652

Claims priority, application Germany, Jan. 3, 1966, B 85,240

Int. Cl. C07d *51/04*

U.S. Cl. 260—250 3 Claims

Pyridazones having the formula:



in which X denotes iodine, R^1 is phenyl, R^2 is —OCH_3 or is —OCH_3 or the group



in which R^3 is α-hydroxy-β,β,β-trichloroethyl. These compounds have been found to have excellent herbicidal activity.

3,555,027

WATER SOLUBLE PYRENE FIBRE-REACTIVE DYESTUFFS

Karl Seitz, Oberwil, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed July 22, 1968, Ser. No. 746,315

Claims priority, application Switzerland, July 28, 1967, 10,711/67

Int. Cl. C07d *51/36*

U.S. Cl. 260—256.5 2 Claims

Water soluble pyrene dyestuffs containing a fibre-reactive radical, which consists of a 2,6-dichloro-5-pyrimidine-residue, bound via a methyleneaminobridge; are valuable for dyeing and printing both natural and synthetic textile materials.

3,555,028

DERIVATIVES OF 11-PIPERAZINYL- AND 11-HEXAHYDRODIAZEPINYL - 10,11 - DIHYDRODIBENZO [b,f]THIEPIN-10-OL

Walter Schindler, Riehen, and Erich Schmid, Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Filed Feb. 5, 1968, Ser. No. 702,828

Claims priority, application Switzerland, Feb. 10, 1967, 2,020/67

Int. Cl. C07d *67/00*

U.S. Cl. 260—268 14 Claims

The compounds are of the class of thiepin derivatives, more particularly thiepin derivatives, which may be substituted in the benzene rings by alkyl, alkoxy or alkylthio, further substituted in 11 positions by piperazinyl which may be fully substituted, and in 10-position by hydroxy or o-alkanoyl, and acid addition salts thereof. The compounds are useful as anti-emetic, anaesthesia-potentiating,

reflex-inhibiting and catatonia inducing agents. An illustrative embodiment is 11-(4-methyl-1-piperazinyl)-10,11-dihydrodibenzo[b,f]thiepin-10-ol.

3,555,029

AZECINO[2,1-a]TETRAHYDROISOQUINOLINES AND PROCESS FOR THEIR PRODUCTION

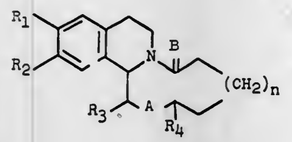
John Shavel, Jr., Mendham, Marx von Strandtmann, Rockaway, and Chester Puchalski, Dover, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed July 31, 1967, Ser. No. 657,086

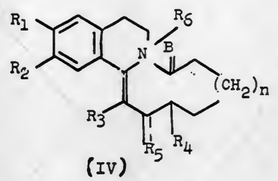
Int. Cl. C07d *39/00*

U.S. Cl. 260—286 15 Claims

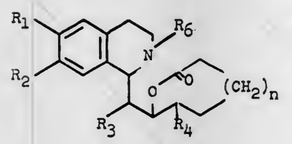
The present invention relates to compounds of the formula:



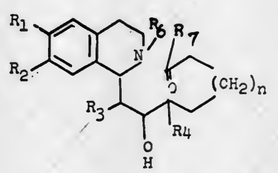
(III)



(IV)



(V)



(VI)

wherein B is oxygen or hydrogen; A is >CHOH, $>CHOSO_2C_6H_4CH_3$, >C=O, $>CH_2$, >C=NOH, >C=NOCOCH$_3$, >CONH; R_1 and R_2 are hydrogen, lower alkoxy, hydroxy, or if taken together, methylenedioxy; R_3 is hydrogen, halogen, lower alkyl, aralkyl, lower alkoxy; R_4 is alkyl, aralkyl, aryl, carboalkoxy, halogen; n is 1–20; R_5 is >C=O or >C=NOH; R_6 is hydrogen, acyl or tosyl; R_7 is hydroxy, lower alkoxy, amine, lower alkylamine and aralkylamine. These compounds are useful as antihypertension agents.

3,555,030

MUSCLE RELAXANT AND ANALGESIC COMPOSITIONS

Bernard Loev, Broomall, and Edward Macko, Philadelphia, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Continuation of application Ser. No. 215,523, Aug. 8, 1962. This application Nov. 25, 1964, Ser. No. 413,957

Int. Cl. A61u *27/00*

U.S. Cl. 260—289 8 Claims

This invention relates to pharmaceutical compositions having muscle relaxant and analgesic activity and to a method of producing muscle relaxation and analgesia. In addition this invention relates to new carbostyril compounds having muscle relaxant and analgesic activity.

3,555,031

HALOPHENYL-PYRIDINES

Frank Long, Llangollen, and Kamal Naguib Ayad, Wrexham, Wales, assignors to Monsanto Chemicals Limited, London, England, a British company

No Drawing. Filed June 30, 1967, Ser. No. 650,176

Int. Cl. C07d *31/20, 31/22*

U.S. Cl. 260—290 8 Claims

Substituted-pyridines selected from the group consisting of

(1) a pyridine base,
(2) acid addition salts of (1),
(3) quaternary ammonium salts of (1), and
(4) N-oxides of (1),

said pyridine base having at least one aromatic group as a substitute in the pyridine nucleus and at least one other substitutent in the pyridine nucleus selected from the group consisting of halogen, cyano, amino, acylamino, hydroxyl, mercapto, aliphatic, aliphatic-oxy, aliphatic-thio and aliphatic sulphonyl groups, provided that when the pyridine nucleus contains both a chlorine atom and a cyano group an aromatic group is present in an α- or β-position of the pyridine nucleus and further provided that when the pyridine nucleus contains an aliphatic group, there is also present in the pyridine nucleus at least one additional substituent selected from the said other substituents.

3,555,032

PROCESS FOR THE MANUFACTURE OF 2,3,4,5-TETRACHLOROPYRIDINE

Howard Johnston, Walnut Creek, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 22, 1968, Ser. No. 715,147

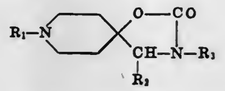
Int. Cl. C07d *31/26*

U.S. Cl. 260—290 5 Claims

The process for the manufacture of 2,3,4,5-tetrachloropyridine which comprises contacting chlorine with a 2-chloropyridine hydrochloride composition. 2,3,4,5-tetrachloropyridine is useful as an antimicrobial and as an intermediate for the production of 2,3,5-trichloro-4-pyridinol.

3,555,033
5-(PIPERIDINE-4-SPIRO) OXAZOLIDIN-2-ONES
Jacques Georges Albert Maillard, Paris, France, assignor to Laboratoires Jacques Logeais, Issy-les-Moulineaux, France, a French body corporate
Filed Aug. 21, 1967, Ser. No. 661,896
Claims priority, application Great Britain, Aug. 22, 1966, 37,477/66
Int. Cl. C07d *29/26*
U.S. Cl. 260—294.3 **6 Claims**

5 - piperidine - 4 - spiro)-oxazolidin - 2-ones of the formula:



in which: R_1 is a member selected from the group consisting of hydrogen, lower-alkyl, phenyllower-alkyl and benzoyllower-alkyl,

R_2 is a member selected from the group consisting of lower-alkyl, phenyl and phenyllower-alkyl and

R_3 is a member selected from the group consisting of hydrogen, lower-alkyl, lower-alkenyl, lower-alkynyl; lower-alkanoyl, phenyllower-alkyl and benzoyl,

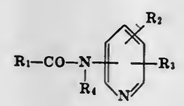
and the salts thereof, have antifibrillating and antiarythmic properties.

3,555,034
CERTAIN 5,6,7,8-TETRAHYDRO-1,6-NAPHTHYRIDIN-2-OL ESTERS
James L. Diebold, Havertown, and Milton Wolf, West Chester, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 18, 1968, Ser. No. 737,834
Int. Cl. C07d *31/34*
U.S. Cl. 260—295 **10 Claims**

This invention concerns 5,6,7,8-tetrahydro-1,6-naphthyridin-2-ol esters which are pharmacologically active as central nervous system depressants.

3,555,035
N-(SUBSTITUTED PYRIDYL) LINOLAMIDES AND -LINOLENAMIDES
Alex Meisels, Basel, and Emilio Schott, Riehen, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 610,804, Jan. 23, 1967, which is a continuation-in-part of application Ser. No. 474,107, July 22, 1965. This application June 9, 1969, Ser. No. 834,596
Claims priority, application Switzerland, Jan. 28, 1966, 1,234/66, 1,236/66, 1,238/66
Int. Cl. C07d *31/44*
U.S. Cl. 260—295 **12 Claims**

Pyridylamides of the formula



wherein:

R_1—CO— represents the acyl radical of an alkanoic, alkenoic or alkapolyenoic acid, which radical has from 6 to 22 carbon atoms,

R_2 represents halogen, lower alkyl, lower alkoxy, lower alkenyloxy, lower alkylthio, lower alkenylthio, hydroxy-lower alkyl, lower alkanoyloxy-lower alkyl, oxo-lower alkyl, lower alkanoyl, hydroxyl, mercapto, sulpho, sulphamyl, cyano, amino, lower alkyl-substituted amino, lower alkanoylamino, chloro-anilino, lower alkoxycarbonyl, carbamoyl or lower alkyl-substituted carbamoyl,

R_3 represents hydrogen, halogen or lower alkyl, and

R_4 represents hydrogen or lower alkyl, and their addition salts with inorganic and organic acids, and urea adducts of certain of the above pyridylamides which compounds have valuable pharmacological properties, in particular antiviral and tumour inhibiting activity with remarkably favourable relationship between the significantly active and the maximal tolerated dosages; compositions containing the above-defined compounds as active substances in combination with pharmaceutically acceptable carriers; and methods of treating viral afflictions and of inhibiting tumours with the aid of the aforesaid compounds and compositions. Analogous compounds in which R_2 is replaced by nitro, as intermediates.

3,555,036
CYCLOPROPYL-1,2,4-OXADIAZOLYLPYRIDINES
Victor John Bauer, Montvale, N.J., William Joseph Fanshawe, Pearl River, N.Y., and Sidney Robert Safir, River Edge, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Continuation-in-part of application Ser. No. 676,706, Oct. 20, 1967. This application Nov. 10, 1969, Ser. No. 875,526
Int. Cl. C07d *31/42*
U.S. Cl. 260—296 **5 Claims**

Cyclopropyl-1,2,4-oxadiazolylpyridines are described along with methods of preparing the same. These compounds are useful as intermediates in the preparation of quaternary cyclopropyl - 1,2,4 - oxadiazolylpyridinium salts, which are oral hypoglycemic agents. These compounds also show depressant properties evidenced by their ability to prevent convulsive seizures in animals caused by strychnine sulfate.

3,555,037
CERTAIN 5,6,7,8-TETRAHYDRO-β-CARBOLINES
William Alan Remers, Suffern, N.Y., and Martin Joseph Weiss, Oradell, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Continuation-in-part of application Ser. No. 823,480, May 9, 1969, which is a continuation-in-part of application Ser. No. 588,317, Oct. 21, 1966. This application Dec. 5, 1969, Ser. No. 882,732
Int. Cl. C07d *31/42*
U.S. Cl. 260—296 **3 Claims**

The preparation of keto-1-lower alkyl-5,6,7,8-β-carbolines from 5,8-dihydromethoxy-1-lower alkyl β-carbolines by treatment with a mineral acid, is described. These compounds are physiologically active as antidepressants.

3,555,038
PREPARATION OF TRIORGANOLEAD COMPOUNDS BY OZONOLYSIS
Louis C. Willemsens, Utrecht, Netherlands, assignor to International Lead Zinc Research Organization, Inc., New York, N.Y., a membership corporation of New York
No Drawing. Filed Dec. 18, 1967, Ser. No. 691,250
Claims priority, application Netherlands, Dec. 29, 1966, 6618311
Int. Cl. C07f *7/24;* **C11c** *1/00;* **C07d** *105/00*
U.S. Cl. 260—299 **15 Claims**

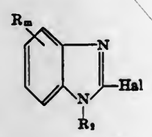
A process for preparing triorganolead compounds having the general formula R_3PbX, wherein R is an alkyl, aryl, aralkyl or cycloalkyl radical, and X is an anion easily bonded to lead, comprising reacting a hexaorganodilead compound R_6Pb_2 with ozone and a compound HX in a suitable solvent.

3,555,039
IMIDAZO[1,2-c]THIAZOLES
Robert E. Manning, Mountain Lakes, N.J., assignor to Sandoz-Wander, Inc., Hanover, N.J., a corporation of Delaware
No Drawing. Filed Jan. 22, 1968, Ser. No. 699,306
Int. Cl. C07d *49/34, 91/26*
U.S. Cl. 260—306.7 **4 Claims**

This disclosure pertains to 5-imino-2,3-dihydroimidazo-[1,2-c]thiazoles, e.g., 7 - phenyl-5-imino - 2,3 - dihydro-1H,5H-imidazo[1,2-c]thiazole hydrochloride. These compounds are useful as hypotensive agents and as CNS stimulants.

3,555,040
2-HALOGENO-BENZIMIDAZOLE DERIVATIVES
Wilhelm Ernst Frick, Pfeffingen, Basel-Land, and Thomas Wenger, Riehen, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York
No Drawing. Filed Aug. 4, 1966, Ser. No. 570,184
Claims priority, application Switzerland, Aug. 16, 1965, 11,111/65
Int. Cl. C07d *49/38*
U.S. Cl. 260—309.2 **3 Claims**

2-halogeno-benzimidazole derivatives having the structure



in which Hal is fluorine, chlorine or bromine, R is halogen, lower alkyl, lower alkoxy, trifluoromethyl, lower alkylamino, or other substituents, R_2 is hydrogen or a metal cation, and *m* is an integer from 2 to 4, are useful for the control of keratin-devouring insects. A sub-class of these derivatives in which *m* is at most 3 and which additionally contain on the phenyl ring a substituent selected from among certain benzoylamino, benzenesulfonylamino or alkylsulfonylamino groups are new compounds.

3,555,041
IMIDAZOLINE SURFACTANT HAVING AMPHOTERIC PROPERTIES
Jacob Katz, Providence, R.I.
(1224 Mendon Road, Ashton, R.I. 02904)
No Drawing. Filed Mar. 9, 1966, Ser. No. 532,861
Int. Cl. C07d *49/34*
U.S. Cl. 260—309.6 **1 Claim**

1-aminoethyl-2-imidazoline and 1-hydroxyethyl-2-imidazoline derivatives which are useful as surfactants.

3,555,042
2,3,5,9b-TETRAHYDRO-1H-IMIDAZO[2,1-a] ISOINDOL-5-OLS
Theodore S. Sulkowski, Wayne, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 731,740, May 24, 1968. This application Oct. 4, 1968, Ser. No. 765,228
Int. Cl. C07d *49/34*
U.S. Cl. 260—309.7 **3 Claims**

This invention concerns 2,3,5,9b-tetrahydro-1H-imidazo[2,1-a]isoindol-5-ols which are pharamacologically active as anorexiants and useful as intermediates. Further, it concerns the process for the preparation of these compounds.

3,555,043
TERTIARY-AMINO-LOWER-ALKOXY-9-BENZYL-XANTHENES AND THIOXANTHENES
Sydney Archer, Town of Bethlehem, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of applications Ser. No. 355,475, Mar. 27, 1964; Ser. No. 615,058, Feb. 10, 1967; and Ser. No. 698,390, Jan. 17, 1968. This application Feb. 17, 1969, Ser. No. 799,914
Int. Cl. A61k *27/00;* **C07d** *7/42, 65/16*
U.S. Cl. 260—328 **4 Claims**

Lower-tertiary-amino-lower-alkoxy substituted xanthenes and thioxanthenes bearing in the 9-position a secondary or tertiary carbinol group, a benzylidene group or a benzyl group are prepared from the appropriate hydroxy substituted 9-xanthenones or 9-thioxanthenones. They have useful pharmacological properties, e.g., as anti-inflammatory, anti-secretory and anti-ulcerogenic agents.

3,555,044
HEXAHYDRO-NAPHTHOQUINONE SEMICARBAZONES
Stephen I. Sallay, Montgomery, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Dec. 6, 1967, Ser. No. 688,359
Int. Cl. C07d *15/04*
U.S. Cl. 260—340.7 **13 Claims**

The invention is directed to hexahydro-naphthoquinone semicarbazones which are prepared by reacting substituted naphthoquinones cyclic ketals with thiosemicarbazides. These products have therapeutic activity as antagonists of Herpes simplex virus.

3,555,045
2-SUBSTITUTED-1,3-DIOXOLANE COMPOUNDS AND METHOD FOR PREPARING SAME
Russell K. Griffith, Chagrin Falls, Romanas Zorska, South Euclid, and William O. Fitzgibbons, Hudson, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 22, 1968, Ser. No. 715,179
Int. Cl. C07d *13/04*
U.S. Cl. 260—340.9 **3 Claims**

The novel herbicidal compounds, the 2-(haloalkly)-2-amino-1,3-dioxolanes are prepared in a one-step process by reacting an alpha-haloaliphatic nitrile with an alkylene glycol in the presence of an alkaline catalyst.

3,555,046
PLICATIN TETRA-ACETATE AND PROCESS FOR ITS PRODUCTION
Donald W. Langille, Vancouver, British Columbia, Canada, assignor to ITT Rayonier Incorporated, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 425,066, Jan. 12, 1965. This application Jan. 26, 1967, Ser. No. 611,814
Int. Cl. C07d *5/06*
U.S. Cl. 260—343.3 **4 Claims**

This invention provides compounds derived from plicatic acid, particularly plicatin tetra-acetate, and a process for producing them. The process comprises the acetylation of sodium or potassium plicatate with acetic acid and pyridine under anhydrous conditions at ambient temperatures, preferably at 10° to 40° C. to produce plicatin tetra-acetate, indicated by analyses as ($C_{28}H_{28}O_{13}\cdot H_2O$), in good yield. The invention also produces a by-product compound closely resembling plicatin tetra-acetate indicated by analyses as ($C_{30}H_{32}O_{15}$). Plicatin tetra-acetate

is useful as an intermediate for forming other compounds or products such as paint pigments and dyes, and as a plasticizer and stabilizer for plastics such as cellulose acetate, polyesters, vinyl resins and similar products.

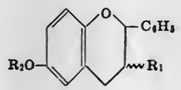
3,555,047

3 - LOWER ALKYL OR ALKOXY - 6 - HYDROXY FLAVANS AND ESTER DERIVATIVES THEREOF

Klaus Irmscher and Josef Krämer, Darmstadt, Herbert Halpaap, Jugenheim, and Karl-Otto Freisberg, Speyer, Germany, assignors to E. Merck A.G., Darmstadt, Germany

No Drawing. Filed Oct. 19, 1966, Ser. No. 587,667
Claims priority, application Germany, Oct. 20, 1965, M 67,001
Int. Cl. C07d *7/20*
U.S. Cl. 260—345.5 **9 Claims**

The following flavane compounds exhibit a cholesterol-level-lowering activity without, however, effecting a nonphysiological accumulation of desmosterol or 7-dehydrocholesterol in the sterols of the serum or of the liver:



wherein

R_1 represents alkyl or alkoxy of 1–6 carbon atoms;
R_2 represents hydrogen, alkyl of 1–6 carbon atoms, or an ester, the acyl portion being up to 5 carbon atoms.

3,555,048

HYDROXYMETHYLTETRAHYDROPYRAN PRODUCTION

Paul R. Stapp and James D. Allen, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 15, 1967, Ser. No. 683,153
Int. Cl. C07d *7/04*
U.S. Cl. 260—345.9 **3 Claims**

Production of 2-hydroxymethyltetrahydropyrans and 3 - hydroxymethyltetrahydropyrans in high yields is effected by hydroformylation of 3,6 - dihydro - 2 - [H]-pyrans in the presence of CO, hydrogen, and an oxo catalyst.

3,555,049

VAPOR PHASE REACTION OF N_2F_4 WITH CERTAIN UNSATURATED ORGANIC COMPOUNDS

Ellington M. Magee, Scotch Plains, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Oct. 30, 1961, Ser. No. 149,482
Int. Cl. C07d *5/00*
U.S. Cl. 260—347.7 **6 Claims**

1. In the addition reaction of an unsaturated organic compound reactant in vapor-phase with N_2F_4 to form an adduct, said unsaturated organic compound containing 2 to 6 carbon atoms and 1 to 3 double bonds, the improvement which comprises admixing N_2F_4 having a partial pressure of 38 to 380 mm. Hg abs. at 25° C. with the unsaturated organic reactant having a partial pressure of 80 to 380 mm. Hg abs. at 25° C. and with an inert gas having a partial pressure at 25° C. above the combined partial pressures of the N_2F_4 and organic reactants to form a gaseous reaction mixture, reacting the reactants in said gaseous reaction mixture at a reaction temperature in the range of about 20° to 200° C., and recovering a resulting adduct product containing NF_2 groups linked to carbon in the unsaturated organic compound.

3,555,050

CYCLOALIPHATIC COMPOUNDS

Ralph F. Sellers, Somerset, Samuel G. Smith, Jr., Hillsborough Township, and Allison S. Burhans, Millington, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 26, 1966, Ser. No. 589,507
Int. Cl. C07d *1/00*
U.S. Cl. 260—348 **2 Claims**

The disclosure of this application is directed to cycloaliphatic epoxides, specifically di-2,4(2,3-epoxycyclopentyl)anisole and tri - 2,4,6(2,3-epoxycyclopentyl)anisole, which can be admixed with epoxide curing agents such as polyfunctional amines to form compositions which have excellent storage life and can be formed into castings or used as binders in structural laminates and cured to infusible products characterized by excellent properties.

3,555,051

GAMMA-METHACRYLOXY-ALPHA,BETA-EPOXY-PROPYLTRIMETHOXYSILANE

James G. Marsden, Amawalk, and Samuel Sterman, Chappaqua, N.Y., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 231,273, Oct. 17, 1962. This application Jan. 30, 1968, Ser. No. 701,533
Int. Cl. C07d *1/00*
U.S. Cl. 260—348 **1 Claim**

This invention is directed to acryloxy or methacryloxy substituted organosilicon compounds in which the organo portion connects the acryloxy or methacryloxy moieties to the silicon atom and contain ethylenic unsaturation or 1,2-epoxy groups.

3,555,052

PROCESS FOR PREPARING SELF-CONDENSATION PRODUCTS

Eiichi Yonemitsu, Takanari Nawata, and Masanobu Masu, Tokyo, Japan, assignors to Mitsubishi Edogawa Kagaku Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Aug. 26, 1968, Ser. No. 755,422
Claims priority, application Japan, Aug. 31, 1967, 42/55,474; Apr. 15, 1968, 43/24,745; May 13, 1968, 43/31,692
Int. Cl. C07c *49/62*
U.S. Cl. 260—396 **13 Claims**

Self-condensation products of aromatic compounds having a hydroxyl group are prepared by oxidizing with oxygen aromatic compounds having a hydroxyl group in the presence of ruthenium, rhodium, palladium, iridium, platinum or a mixture thereof as catalyst.

3,555,053

13β-ALKYL-9β,10α-PREGNANES

Rudolf van Moorselaar, van Houtenlaan, Weesp, Netherlands, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 9, 1968, Ser. No. 743,311
Claims priority, application Great Britain, July 11, 1967, 31,785/67; June 5, 1968, 26,719/68
Int. Cl. C07c *169/30*
U.S. Cl. 260—397.3 **6 Claims**

18-ethyl or 18-propyl 9β,10α steroids for example 18-methyl 9β,10α-pregn-4-ene-3,20-dione and 6-chloro-18-methyl-9β,10α pregna-1,4,6-triene-3,20-dione are shown. These compounds are useful as progestational agents.

3,555,054

PROCESS FOR ALKOXYALKYLATING A 3-HYDROXY GROUP IN 13-ALKYLGONA-(AND 8-ISOGONA)-1,3,5(10)TRIENES AND DELTA-6-, DELTA-7-, DELTA-8(9)-, DELTA-9(11)-, AND DELTA - 6,8(9) - DEHYDRO DERIVATIVES THEREOF

Harshavadan C. Shah, Philadelphia, Reinhardt P. Stein, Conshohocken, and Herchel Smith, Wayne, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 814,446, Apr. 8, 1969. This application May 19, 1969, Ser. No. 825,948
Int. Cl. C07c *169/08*
U.S. Cl. 260—397.4 **22 Claims**

3-(alkoxymethoxy)-13-alkylgona(and 8-isogona)-1,3,5(10)-trienes and Δ^{6}-, Δ^{7}-, $\Delta^{8(9)}$-, $\Delta^{9(11)}$- and $\Delta^{6,8(9)}$-dehydro analogs thereof are prepared by alkylating an active metal derivative of a 3-hydroxyl group in the corresponding A-ring aromatic steroid with a (lower)alkyl halomethyl ether. The products of the process are hormonally active, especially estrogenically and anti-lipemically and are also useful as intermediates in the preparation of hormonally active steroids.

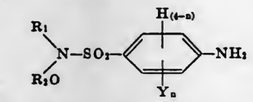
3,555,055

N-ALKOXY SULFANILAMIDES

Ephraim H. Kaplan, Skokie, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Feb. 9, 1968, Ser. No. 704,219
Int. Cl. C07c *143/80*
U.S. Cl. 260—397.7 **6 Claims**

New compounds of the formula



wherein R_1 is selected from the group consisting of alkyl, alkenyl and haloalkyl; R_2 is alkyl; Y is selected from the group consisting of halogen, alkyl and haloalkyl; and n is an integer from 0 to 2. These compounds are useful as fungicides and as intermediates in the preparation of urea compounds useful as herbicides.

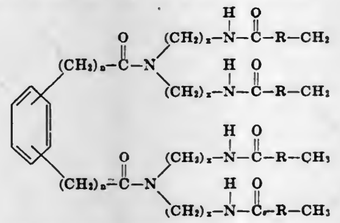
3,555,056

NOVEL AMIDE AND A NOVEL DIACYL DERIVATIVE OF A TRIAZA ALKANE

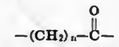
Lamberto Crescentini, Chester, and Robert C. Wincklhofer, Richmond, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 14, 1968, Ser. No. 767,489
Int. Cl. C07c *103/24;* **C09f** *7/00*
U.S. Cl. 260—404.5 **2 Claims**

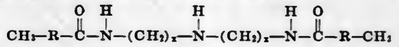
A novel amide having the general formula:



wherein the hexagon represents the benzene nucleus, R is a divalent radical containing up to about 30 carbon atoms which can be linear or branched aliphatic, n is an integer from 0 to about 6, x is an integer from 2 to about 6, and the



radicals connected to the benzene nucleus are relatively disposed in the ortho, meta, or para positions. The novel amide is prepared from a novel diacyl derivative of a triaza alkane having the general formula:



wherein R is a divalent radical containing up to about 30 carbon atoms which can be linear or branched aliphatic and x is an integer from 2 to about 6. These compounds are useful in increasing the soil resistance of synthetic fibers.

3,555,057

AROMATIC ESTERS OF DIMER ACID

Winfred E. Parker, Philadelphia, Hogan B. Knight, Mainland, Ronald E. Koos, Lansdale, and Waldo C. Ault, Glenside, Pa., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Original application Feb. 17, 1965, Ser. No. 433,524, now Patent No. 3,393,214. Divided and this application Aug. 17, 1967, Ser. No. 671,180
Int. Cl. C09f *7/06*
U.S. Cl. 260—407 **9 Claims**

Benzyl esters of dimerized linoleic acid and hydrogenated dimerized linoleic acid were prepared by reacting the dimer acid with the appropriate alcohol in the presence of an acid catalyst. The esters were evaluated and found to have viscosity characteristics, lubricating properties and thermal stabilities desired in lubricants, lubricant additives and hydraulic fluids.

3,555,058

CATALYTICALLY HYDROGENATING EDIBLE OILS

Louis H. Going, Deerfield Township, Warren County, Robert E. Mersfelder, Springfield Township, Hamilton County, and Robert O. Schmitt, Wyoming, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 27, 1967, Ser. No. 693,751
Int. Cl. C11c *3/12*
U.S. Cl. 260—409 **4 Claims**

Increased hydrogenation catalyst life results from filtering hydrogenation catalyst from catalyst containing edible oils in the substantial absence of oxygen and in the presence of an inert gas on a flexible filter medium. Catalyst is periodically dislodged from filter medium by back pressure created in an inert gas cushion and the filtered oil. Dislodged catalyst is then transferred from the filter medium as catalyst in oil slurry without exposure to air. Life of catalyst filtered by this method is further increased when concentration of oxygen, water, and free fatty acids in edible oils are reduced prior to hydrogenation.

3,555,059

PROCESS FOR THE PRODUCTION OF ω-AMINOALKANE NITRILES

Hans-Helmut Schwarz, Krefeld-Bockum, and Otto Immel, Krefeld-Urdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed June 10, 1968, Ser. No. 735,556
Claims priority, application Germany, July 7, 1967, F 52,884
Int. Cl. C07c *121/12*
U.S. Cl. 260—465.2 **6 Claims**

In the process for producing ω-aminoalkane nitriles by reacting the corresponding lactam with excess of am-

monia in the gaseous phase in the presence of a dehydration catalyst the improvement comprising using titanium dioxide as dehydration catalyst.

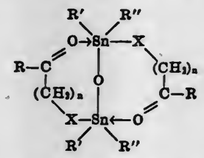
3,555,060

ORGANOTHIO-, ORGANOCARBOXY-, AND ORGANOTHIO-ORGANOCARBOXYSTANNOXANES

Samuel Hoch, Brooklyn, N.Y., assignor to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Oct. 5, 1967, Ser. No. 672,985
Int. Cl. C07f 7/22; C08f 45/62
U.S. Cl. 260—429.7 4 Claims

Basic organotin compounds that have the structure



wherein each X is oxygen or sulfur; each R is an alkyl group having 4 to 17 carbon atoms, an alkoxy group having 1 to 18 carbon atoms, an aralkyl group or the group



each R′ and R″ is an alkyl group having 4 to 8 carbon atoms, an alkaryl group, an aralkyl group, a cycloalkyl group or an aryl group; R‴ is an alkyl group having from 1 to 18 carbon atoms, a cycloalkyl group, or an aralkyl group; and each *n* is an integer in the range of zero to one are prepared by reacting a compound having the structure



with a stoichiometric excess of an organotin oxide having the structure

R′R″SnO

in the presence of an inert, non-polar solvent. Illustrative of these compounds are basic dibutyltin-bis-(isooctyl maleate), basic dibutyltin-bis-(isooctyl thioglycolate), and basic dibutyltin dilaurate.

These basic organotin compounds are superior to the corresponding neutral compounds as heat and light stabilizers for vinyl halide resin compositions.

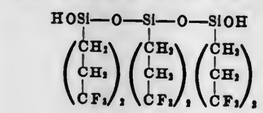
3,555,061

1,1,3,3,5,5-HEXA-(TRIFLUOROPROPYL)-TRISILOXANE-1,5 DIOL

Dwain R. Chapman, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Oct. 21, 1968, Ser. No. 769,418
Int. Cl. C07f 7/08
U.S. Cl. 260—448.2 1 Claim

A fluoroalkylsiloxane compound which exhibits androgen depressant effects. For example, by orally administering a fluoroalkylsiloxane of the formula



it has been shown that a significant depression of seminal fluid, seminal vesicle, and/or testes weight occurs.

3,555,062

DIHALOGENOETHYL-SUBSTITUTED ORGANOSILICON COMPOUNDS AND USE THEREOF

Edgar D. Brown, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Sept. 11, 1967, Ser. No. 666,946
Int. Cl. C07f 7/08
U.S. Cl. 260—448.2 2 Claims

Mixtures of dihalogenoethyl-substituted organosilicon compositions have been prepared by adding either IBr or ICl to vinyl-substituted silanes and siloxanes. Lubricating compositions of extreme pressure and high temperature characteristics are prepared by adding the mixtures to oils of lubricating viscosity. The lubricating compositions are especially useful for lubricating high temperature alloys.

3,555,063

METHOD FOR PREPARING SILOXANE-POLYOXYALKYLENE COPOLYMERS

Isao Nakajima, Nichiro Suzuki, Makio Yamaguchi, and Kiyohire Kondo, Gunma-ken, Japan, assignors to Shin-Etsu Chemical Co., Tokyo, Japan

No Drawing. Filed Dec. 4, 1967, Ser. No. 687,489
Claims priority, application Japan, Mar. 6, 1967, 42/14,080
Int. Cl. C07f 7/18
U.S. Cl. 260—448.8 16 Claims

A method for preparing siloxane-polyoxyalkylene copolymers having high storage stability which comprises substituting chlorine for hydrogen in organohydrogen siloxane polymers containing hydrogen atoms directly bonded to silicon atoms, and then reacting the polymers with a hydroxypolyoxyalkylene compound in the presence of organic amines, and neutralizing them with basic compounds of alkali metals or of alkaline earth metals in the presence of alcohols. The copolymers according to the invention are useful as additives to paints, antifog agents, and the like and are particularly recommended as surfactants for the manufacture of polyurethane foams for their foam-stabilizing effect.

3,555,064

METHOD FOR THE MANUFACTURE OF PHENYL AND METHYLPHENYLCHLOROSILANES

Raisa Anatolievna Turetskaya, Protochny pereulok 16/1, kv. 9; Tamara Alexandrova Tsvanger, Ul. Z. and A. Kosmodemyanskikh 4, kv. 7; and Sergei Alexandrovich Golubtsov, 3 Vladimirskaya ul. 4a, kv. 89, all of Moscow, U.S.S.R.; Margarita Andreevna Luzganova, Respublikanskaya ul. 6, St. Kraskovo, Moskovskaya oblast, U.S.S.R.; Vadim Nikolaevich Pensky, 2 Vladimirskaya ul. 56, kv. 60, Moscow, U.S.S.R.; Ljudmila Petrovna Filjukova, Malaya Kolkhoznaya ul. 7, poselok Kotelniki, Ljubertsy, U.S.S.R.; and Alexandr Georgievich Pogorelov, Novye Cheremushki 30, kvartal, korpus 42, kv. 36, Moscow, U.S.S.R.

No Drawing. Filed Dec. 22, 1967, Ser. No. 692,673
Int. Cl. C07f 7/16
U.S. Cl. 260—448.2 4 Claims

Phenylchlorosilanes and methylphenylchlorosilanes are produced by reacting chlorobenzene and methyl chloride with silicon in the presence of a copper catalyst which is promoted by a zinc compound and cadmium chloride or oxide.

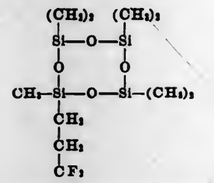
3,555,065

1,2,3,5,5,7,7-HEPTAMETHYL-1-TRIFLUOROPROPYL-CYCLOTETRASILOXANE

James F. Hampton, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Oct. 21, 1968, Ser. No. 769,419
Int. Cl. C07f 7/08
U.S. Cl. 260—448.2 1 Claim

A fluoroalkylsiloxane compound which exhibits androgen depressant effects. For example, by orally administering a fluoroalkylsiloxane of the formula



it has been shown that a significant depression of seminal fluid, seminal vesicle, and/or testes weight occurs.

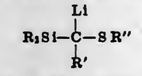
3,555,066

ORGANO-LITHIUM DERIVATIVES OF ALPHA-SILYLMETHYL SULFIDES

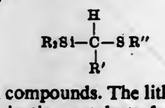
Gary E. Le Grow, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Dec. 13, 1968, Ser. No. 783,748
Int. Cl. C07f 7/08, 7/10
U.S. Cl. 260—448.2 5 Claims

Organosilyl compounds of the formula



where R is hydrocarbon, H, or NX_2, R′ is R_3Si— or hydrocarbon, R″ is alkyl or phenyl and X is alkyl are prepared by reacting



with alkyl lithium compounds. The lithium compounds are useful as polymerization catalysts for styrene.

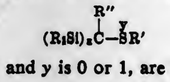
3,555,067

ALPHA (SILYLMETHYL) SULFIDES AND THE CORRESPONDING SILOXANES

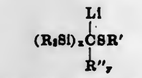
Gary E. Le Grow, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Dec. 13, 1968, Ser. No. 783,749
Int. Cl. C07f 7/08, 7/10
U.S. Cl. 260—448.2 2 Claims

Bis- and tris-alpha-silyl sulfides of the formula



where *x* is 2 or 3 and *y* is 0 or 1, are prepared by the reaction



plus R_3SiCl. When at least one R is a silanol group or a hydrolyzable group the corresponding siloxanes are prepared by hydrolyzing and/or condensing such compounds. The compositions are useful as anti-oxidants and as lubrication additives.

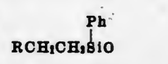
3,555,068

B-PERFLUOROALKYL-ETHYL PHENYLCYCLOTRISILOXANES

George W. Holbrook, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Dec. 18, 1968, Ser. No. 784,875
Int. Cl. C07f 7/08
U.S. Cl. 260—448.2 2 Claims

Cyclotrisiloxanes of the formula



are disclosed. A specific cyclotrisiloxane contains units of phenyltrifluoropropylsiloxane. The novel compounds can be polymerized to yield solid lubricants.

3,555,069

SPIROHETEROCYCLIC PENTACOORDINATE SILICON COMPOUNDS

Cecil L. Frye, Midland, Mich., assignor to Dow Corning Corporation, Midland, Mich., a corporation of Michigan

No Drawing. Filed Dec. 17, 1968, Ser. No. 784,489
Int. Cl. C07d 103/04; C07f 7/18
U.S. Cl. 260—448.8 10 Claims

Spiroheterocyclic pentacoordinate silicon compounds useful as corrosion inhibitors and antioxidants in lubricants are disclosed.

3,555,070

N-METHYLOLSILYLETHERS OF URETHANES

Ferdinand Senge, Krefeld, and Hermann Schnell, Krefeld-Urdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Original application July 11, 1967, Ser. No. 652,413. Divided and this application June 30, 1969, Ser. No. 837,941
Claims priority, application Germany, July 26, 1966, F 49,786
Int. Cl. C07d 103/04
U.S. Cl. 260—448.8 3 Claims

N-methylolsilylethers formed by reacting N-methylol compounds with hexalkyldisilazanes in a molar ratio of about 1:1 to 1:8 at temperatures of 20–130° C. and their utility in modifying polymeric products.

3,555,071

ISOCYANATOSTILBENES

Durvasula V. Rao, Hamden, Adnan A. R. Sayigh, North Haven, and Henri Ulrich, North Branford, Conn., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed Oct. 17, 1967, Ser. No. 675,776
Int. Cl. C07c 93/14, 119/04
U.S. Cl. 260—453 19 Claims

Mono- and diisocyanato-stilbenes having in one phenyl ring at least one isocyanato group and, in the other phenyl ring, from 1 to 3 alkoxy substituents are prepared by phosgenation of the corresponding amines. The latter are prepared by conventional procedures. Both cis- and trans-isomers of the stilbenes are described. The monoisocyanato and mono-amino-stilbenes are useful, by virtue of fluorescence in U.V. light, as optical brightening agents, for "tagging" molecules containing active H atoms (for the isocyanates) or anhydride groups (for the amines) and in the preparation of photoresist polymers. The diisocyanates and diamines are useful in the preparation of light sensitive polymers.

3,555,072
STABILIZATION OF TOLYLENE DIISOCYANATE
Ehrenfried H. Kober, Hamden, and Wilhelm J. Schnabel, Branford, Conn., and Paul A. Steudler, Woods Hole, Mass., assignors to Olin Corporation, a corporation of Virginia
No Drawing. Filed Sept. 20, 1968, Ser. No. 761,341
Int. Cl. C07c *49/04*
U.S. Cl. 260—453 3 Claims

Discoloration and turbidity formation in tolylene diisocyanates can be inhibited by the addition of a stabilizing amount of a di(higher)alkyl thiodipropionate.

3,555,073
SUBSTITUTED ALKANOIC ACIDS
Peter Baumann, Fullinsdorf, Basel-Land, Markus Zimmermann, Riehen, and Franz Hafliger and Andre R. Gagneux, Basel, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 514,102, Dec. 15, 1965, which is a continuation-in-part of application Ser. No. 263,422, Mar. 7, 1963. This application June 12, 1967, Ser. No. 645,537
Claims priority, application Switzerland, Mar. 9, 1962, 2,878/62
Int. Cl. C07c *149/21*; A61k *25/00*
U.S. Cl. 260—468 10 Claims

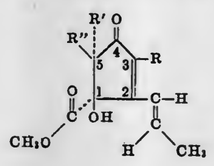
1'-adamantylthioacetic acid and alpha phenyl or alpha lower alkyl substituted 1'-adamantylthioacetic acids have been prepared. They are valuable intermediates in the production of penicillins and themselves possess antiviral properties.

3,555,074
PROCESS FOR PRODUCING AN INSECTICIDE
Robert J. Du Bois, Morristown, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Dec. 26, 1967, Ser. No. 693,371
Int. Cl. C07c *69/74*
U.S. Cl. 260—468 3 Claims

A process for producing a relatively high yield of decachlorooctahydro - 1,3,4 - metheno - 2H - cyclobuta[c,d]-pentalen-2-one ($C_{10}Cl_{10}O$) adducts which possess high purity and sharp melting points. In particular the $C_{10}Cl_{10}O$ ethyl levulinate adduct, $C_{10}Cl_{10}O$ levulinate, is produced by reacting decachlorooctahydro - 1,3,4 - metheno - 2H-cyclobuta[c,d]-pentalen-2-one with ethyl levulinate in a solvent at a temperature within the range of 55–250° C. The solution is then cooled to 10–100° C. and washed with an aqueous basic solution. The recovered $C_{10}Cl_{10}O$ levulinate is water washed until free of any alkali whereupon it is purified by crystallization. $C_{10}Cl_{10}O$ levulinate is an effective insecticide with low toxicity to animals and human beings at prescribed dosages.

3,555,075
NOVEL ANTIFUNGAL AGENTS
William James McGahren, Demarest, N.J., Lester Allen Mitscher, Columbus, Ohio, and John Norman Porter, Ramsey, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed June 6, 1968, Ser. No. 734,866
Int. Cl. A61k *21/00*; C07c *69/74*
U.S. Cl. 260—468 4 Claims

By cultivation under controlled aerobic conditions of *Sporormia affinis*, there are prepared new compounds of the formula:



wherein R, R' and R'' are individually hydrogen or chloro, but the 5-position has no more than one chloro substituent. All the compounds of this invention have antimicrobial activity.

3,555,076
PROCESS FOR THE PRODUCTION OF CYANAMIDE DICARBOXYLIC ACID ESTERS
Wilhelm Thoma, Cologne, and Otto Bayer, Burscheid, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed June 21, 1966, Ser. No. 559,117
Claims priority, application Germany, Aug. 31, 1965, F 47,047
Int. Cl. C07c *125/08*
U.S. Cl. 260—479 10 Claims

Cyanamide dicarboxylates and a process for their production, the resulting product having utility as a plant protection agent or preservative.

3,555,077
BIS-CARBAMATES OF ALKYLADAMANTANES
Robert E. Moore, Wilmington, Del., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Filed Sept. 23, 1968, Ser. No. 761,877
Int. Cl. C07c *125/06*
U.S. Cl. 260—482 9 Claims

New compounds are disclosed which are 1,3-bis-carbamates of certain alkyladamantanes of the C_{11}–C_{13} range, an example being 5,7 - dimethyladamantane - 1,3 - diol, bis(6-methylcarbamate). These compounds exhibit fungicidal activity particularly against the soil fungus, *Fusarium solani*.

3,555,078
PROCESS OF MANUFACTURING ALIPHATIC ESTERS
Louis Amiet and Jean-Claude Soula, Lyon, France, assignors to Progil, Paris, France, a corporation of France
Continuation-in-part of application Ser. No. 583,538, Oct. 3, 1966. This application Aug. 22, 1969, Ser. No. 859,239
Int. Cl. C07c *67/02*
U.S. Cl. 260—491 7 Claims

A process for manufacturing aliphatic esters, such as ethyl acetate, essentially free of impurities and at a high conversion rate and yield is provided. The process involves absorbing an olefin under pressure in sulfuric acid; reacting the absorbate with monochloro acetic acid; separating the alkyl monochloracetate from the reaction mixture under reduced pressure; submitting the ester to an acidolysis utilizing a suitable carboxylic acid in excess; and separating the final ester by distillation with recycling of the organic reagents and sulfuric acid.

3,555,079
PREPARATION OF AMPHOTERIC SURFACE ACTIVE AGENTS
Hideo Marumo, Tokyo, and Minoru Saitoh, Saitama-ken, Japan, assignors to Lion Fat & Oil Co., Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Continuation of application Ser. No. 593,688, Nov. 14, 1966. This application Aug. 18, 1969, Ser. No. 853,594
Int. Cl. C07c *101/00*
U.S. Cl. 260—501.13 9 Claims

A method for preparing betaine type amphoteric surface active agents by reacting a tertiary amine containing polyoxyethylene radicals and an alkali metal salt or an ammonium salt of monochloroacetic acid in either
(a) a solvent having the formula

$$RO(CH_2CH_2O)_nH$$

wherein:

R is hydrogen or an alkyl having 1 to 4 carbon atoms, and
n is the integer 1 or 2, or

(b) a mixture of said solvent and an additional solvent selected from the group consisting of methanol, ethanol, propanol or dioxane, with the amount of said additional solvent not exceeding 80% by weight of the total weight of the solvent used.

3,555,080
SULFONIC ACIDS AND THEIR DERIVATIVES AND METHODS OF PREPARING SAME
Paul Raphael Resnick, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 25, 1969, Ser. No. 852,943
Int. Cl. C07c *143/08*
U.S. Cl. 260—513 3 Claims

Compounds of the formula

$$CF_3CFHOCF_2CFXSO_2M$$

wherein X is F or CF_3, and M is a monovalent group, for example hydroxyl, are disclosed. These compounds are useful in such applications as dielectric fluids or dispersing agents.

3,555,081
PROCESS FOR THE PRODUCTION OF N-CYCLOHEXYL SULFAMIC ACID
Joachim Zirner, Leverkusen, and Karl-Gustav Kleb, Schildgen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Nov. 14, 1968, Ser. No. 775,910
Claims priority, application Germany, Nov. 21, 1967, 1,643,376, 1,668,044
Int. Cl. C07c *143/20*
U.S. Cl. 260—513.6 14 Claims

Process for the preparation of N-monocyclohexyl amidosulfonic acid, i.e. N-cyclohexyl sulfamic acid of the formula

$$R—NH—SO_3H$$

in which R is cyclohexyl, by contacting a cyclohexyl urea of the formula

$$R—NH—\underset{\underset{O}{\|}}{C}—NH—R'$$

in which R is cyclohexyl and R' is hydrogen or cyclohexyl, substantially in the absence of water and in the presence of an inert organic diluent or solvent at about —20 to 140° C., with
(A) at least twice, preferably 2–4 times, the molar quantity of SO_3; or
(B) in a first stage with at least the equimolar quantity, preferably 2 times the molar quantity, of SO_3 or a compound that gives off SO_3 under the reaction conditions, and in a second stage with at least the equimolar quantity, preferably 2 times the molar quantity, of SO_3; or
(C) in a first stage with at least the equimolar quantity, preferably 2 times the molar quantity, of SO_3 or a compound that gives off SO_3 under the reaction conditions, and in a second stage with a quantity of oleum containing at least the equimolar quantity, preferably 2 times the molar quantity, of SO_3;

and recovering the resulting precipitate, e.g. by suction filtration, from the reaction mixture.

3,555,082
PROCESS FOR ISOLATING ACRYLIC ACID FROM THE REACTION GASES OBTAINED BY OXIDATION OF PROPYLENE OR ACROLEIN
Kurt Sennewald and Alfred Hauser, Knapsack, near Cologne, and Winfried Lork, Friesheim, near Euskirchen, Germany, assignors to Knapsack Aktiengesellschaft, Knapsack, near Cologne, Germany, a corporation of Germany
Filed Nov. 15, 1967, Ser. No. 683,246
Claims priority, application Germany, Dec. 15, 1966, K 60,928
Int. Cl. C07c *57/04*
U.S. Cl. 260—526 10 Claims

Process for isolating acrylic acid from hot reaction gases obtained by oxidation of propylene or acrolein comprising the steps of cooling the reaction gas down to a temperature between about 90 and 200° C., extracting thereafter the gas in counter-current fashion with an ester of an aliphatic or aromatic monocarboxylic or dicarboxylic acid or with tributyl or tricresyl phosphate, subjecting resulting extract to distillation to remove acrylic acid in the form of a concentrated aqueous solution, and using remaining distillation residue for the extraction of further acrylic acid-containing reaction gas.

3,555,083
PROCESS FOR THE PURIFICATION OF LOWER FATTY ACIDS
Takeo Nakamura, Musashino-shi, Hiroshi Murayama, Meguro-ku, and Tatsuya Yamaguchi, Tokyo, Japan, assignors to Tekkosha Co. Ltd., Tokyo, Japan, a corporation of Japan
Filed Mar. 12, 1964, Ser. No. 351,334
Int. Cl. C07c *51/22*
U.S. Cl. 260—533 6 Claims

A process for recovering lower fatty acids, such as formic acid and acetic acid, from the oxidized products obtained by oxidizing, in the liquid phase, paraffinic hydrocarbons, naphthenic hydrocarbons and mixtures thereof, said hydrocarbons having boiling points lower than 200° C., with molecular oxygen or an oxygen-containing gas, in which the light fractions obtained from the oxidized products made by the liquid phase oxidation of the abovementioned hydrocarbons are recycled to the distillation apparatus to serve as entrainers for water in the dehydrating distillation of azeotropic mixtures of water and lower fatty acids having 1–4 carbons atoms.

3,555,084
OXALIC ACID MANUFACTURE
Jaspal Singh Mayell, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Aug. 1, 1967, Ser. No. 657,490
Int. Cl. C07c *55/06*
U.S. Cl. 260—533 6 Claims

The present invention relates to a novel process for preparing oxalic acid. More particularly, it relates to the novel oxidation of acetylene utilizing alkali metal ferricyanide and either osmium tetraoxide or an alkali metal osmiate to prepare corresponding oxalic acid. Still more particularly, the invention is concerned with the electrolytic oxidation of an alkali metal ferrocyanide

$$(M_4Fe(CN)_6 \cdot 3H_2O$$

where M is an alkali metal, such as sodium or potassium) to obtain an aqueous alkaline solution of alkali metal ferricyanide [$M_3Fe(CN)_6$], adding thereto a suitable catalytic quantity of either osmium tetraoxide or an alkali metal osmiate while introducing acetylene into the latter solution, and recovering resultant oxalic acid in good yield and purity.

3,555,085
NITRO-TRIFLUOROMETHYLTHIOBENZAMIDES

Dean E. Welch and Robert R. Baron, Charles City, Iowa, assignors to Salsbury Laboratories, a corporation of Iowa

No Drawing. Original application Aug. 14, 1967, Ser. No. 660,179. Divided and this application July 14, 1969, Ser. No. 871,085

Int. Cl. C07c *153/05*

U.S. Cl. 260—551 2 Claims

A new series of nitro-trifluoromethylbenzamides and feed compositions containing the same to be used for the prevention and control of coccidiosis in animals.

3,555,086
HERBICIDAL N-OCTAHYDRO-1,2,4-METHENO-PENTALENYL-(5)-UREAS

Claus Dieter Weis, Ariesheim, Basel-Land, and Jürg Rumpf, Binningen, Basel-Land, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

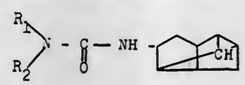
No Drawing. Filed Dec. 18, 1967, Ser. No. 691,200

Claims priority, application Switzerland, Dec. 22, 1966, 18,376/66

Int. Cl. C07c *127/00*

U.S. Cl. 260—553 5 Claims

Herbicidal compounds of the formula



in which

R_1 represents hydrogen, lower aliphatic hydrocarbons, cycloalkyl, lower alkoxy, or phenyl,

R_2 represents hydrogen, lower alkyl, or lower alkenyl, or

R_1 and R_2 together represent ethyleneoxyethylene or a polymethylene bridging member.

are described as particularly suitable for controlling weeds and undesirable grasses. Compositions containing these compounds as active ingredients in mixture with agriculturally acceptable carriers and a method of controlling weeds and undesirable grasses with the aid of such compounds or compositions containing them are also described, as well as intermediates which are methenopentalene derivatives from which the compounds of the above formula can be produced.

3,555,087
TEREPHTHALAMIDES

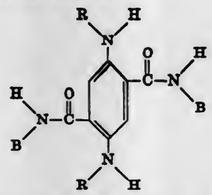
Vincent Gerard Grosso, North Plainfield, and Boydston Lewis Butterfield, East Amwell Township, Hunterdon County, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Mar. 27, 1968, Ser. No. 716,319

Int. Cl. C07c *103/30*

U.S. Cl. 260—558 3 Claims

Compounds of the formula:



wherein B is hydrogen, alkyl of up to 4 carbon atoms, or benzyl and R is an aromatic radical selected from the group consisting of naphthyl, 9-ethylcarbazyl, quinolyl, pyridyl, and phenyl having up to 2 substituents selected from the group consisting of alkyl of up to 12 carbon atoms, acetamido, chloro, bromo, trifluoromethyl, and methoxy. Useful self colored fluorescent marking compositions are obtained by incorporating the compounds of the foregoing formula in suitable liquid vehicles.

3,555,088
PLICATYL HYDRAZIDE

John Howard, Vancouver, British Columbia, and Terence D. McIntosh, North Vancouver, British Columbia, Canada, assignors to ITT Rayonier Incorporated, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 13, 1968, Ser. No. 712,580

Int. Cl. C07c *103/19*

U.S. Cl. 260—559 1 Claim

A new composition of matter comprising plicatyl hydrazide, and the use of this compound as an antioxidant for fats and oils, is disclosed.

3,555,089
PERFLUOROALKYL ETHER AMIDO QUATERNARY AMMONIUM SALTS

Philip Lee Bartlett, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 621,128, Mar. 7, 1967. This application Feb. 16, 1968, Ser. No. 705,923

Int. Cl. C07c *103/34*

U.S. Cl. 260—561 5 Claims

Perfluoroalkyl ether amido quaternary ammonium salts of the formula

$$[R_fO(C_3F_6O)_nCF(CF_3)CON(R')Q]^+A^-$$

in which Q is selected from certain radicals containing a quarternary ammonium nitrogen atom and 4–25 carbon atoms are useful as surface active agents or antiwetting agents and are noncorrosive to steel.

3,555,090
PROCESS FOR SELECTIVE DEHALOGENATION OF 2,2-DIHALOALKYL-ALKANOYLACETAMIDES

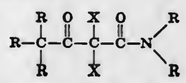
David L. Pearson, Aurora, Colo., and Jon B. Reid, Whitehall, Mich., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 8, 1967, Ser. No. 666,501

Int. Cl. C07c *103/12*

U.S. Cl. 260—561 9 Claims

A process for selective dehalogenation of 2,2-dihaloalkylalkanoylacetamides to 2 - haloalkylalkanoylacetamide which comprises reacting a 2,2-dihaloalkylalkanoylacetamide of the formula



wherein R is hydrogen or alkyl and X is chlorine or bromine, with a molar equivalent of one or more of certain multi-valent transition metals, in an aqueous acidic solvent.

3,555,091
DIPROPYLACETYLANILIDES

Jean-Louis Alain Benoit-Guyod and André Louis Boucherle, Grenoble, France, assignors to Laboratoires J. Berthier, Grenoble, France, a French company

No Drawing. Filed Oct. 6, 1967, Ser. No. 673,267

Claims priority, application France, Jan. 13, 1967, 91,010

Int. Cl. C07c *103/30*

U.S. Cl. 260—562 6 Claims

Dipropylacetylanilide and the nuclear substituted hydroxy, alkoxy, halo, nitro, halomethyl, amino, amido or alkyl dedivatives are described which are useful as intermediates in organic synthesis and as food preservatives.

3,555,092
CYCLOALKYL N-[OCTOHYDRO - 1,2,4-METHANO-PENTALENYL-(5)]OXIME-CARBAMATES

Claus Dieter Weis, Ariesheim, Basel-Land, and Karl Gatzi, Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Filed Dec. 18, 1967, Ser. No. 691,135

Claims priority, application Switzerland, Dec. 22, 1966, 18,373/66

Int. Cl. C07c *131/02*

U.S. Cl. 260—566 4 Claims

Certain oxime N-[octahydro-1,2,4-methenopentalenyl-(5)]-carbamates are disclosed as fungicides; compositions containing these carbamates as fungicidal agents and methods of controlling fungi therewith are also described.

3,555,093
2,α-DIMETHYL-β-ETHYL-β-(p-FLUOROPHENYL)-ETHYLAMINES AND THE SALTS THEREOF

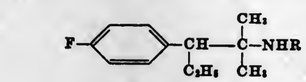
Yvon Jean L'Italien, Wayne, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed May 26, 1967, Ser. No. 641,478

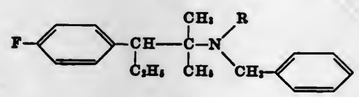
Int. Cl. C07c *87/28*

U.S. Cl. 260—570.8 10 Claims

Phenethylamines (I) and salts are prepared:

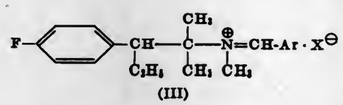


(I)



(II)

by reducing a benzylamine (II), 2,2-dimethyl-3-ethyl-3-(p - fluorophenyl)aziridine, N-[α,α-dimethyl-β-ethyl-β-(p-fluoro)phenethyl]formamide or N-methylene-α,α-dimethyl-β-ethyl-β-(p-fluoro)phenethylamine or by hydrolyzing N-[α,α - dimethyl-β-ethyl - β - (p - fluoro)phenethyl]formamide or an immonium salt (III):



(III)

where R is hydrogen or methyl, Ar is aryl and X^- is an anion. The compounds are pharmacological agents having anorexic properties. They exist in the racemic (*dl*) form and optically active (*d* and *l*) forms.

3,555,094
PREPARATION OF 1,1'-(FLUOROIMINO)BIS(N,N,N',N',1-PENTAFLUOROMETHANEDIAMINE)

John J. Hoekstra, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 31, 1962, Ser. No. 222,257

Int. Cl. C07c *87/20, 87/22*

U.S. Cl. 260—583 1 Claim

Process for preparing fluorinated biguanide which comprises passing fluorine into substantially anhydrous biguanide (or salts thereof) at a temperature below 10° C., collecting the reaction product mixture, and separating fluorinated biguanide therefrom.

3,555,095
HYDROXY AMINIMINES

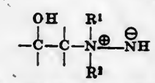
Robert C. Slagel, Savage, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed Mar. 19, 1968, Ser. No. 714,323

Int. Cl. C07c *109/02, 109/04*

U.S. Cl. 260—584 7 Claims

An anhydrous compound useful as chemical intermediates and surfactants, having at least one moiety of the formula:



wherein R^1 and R^2 represents the same or different alkyl, cycloalkyl, or aralkyl radicals or together represent a single divalent organic radical, and processes for their preparation.

3,555,096
D-HOMOGONA-4,9-DIENES AND PROCESS

Gordon Alan Hughes, Wayne, Herchel Smith, 500 Chestnut Lane, Wayne, Pa. 19087, and David Hartley, Conshohocken, Pa.; said Hughes and said Hartley assignors to said Smith

Application Aug. 3, 1964, Ser. No. 386,986, now Patent No. 3,458,579, dated July 29, 1969, which is a continuation-in-part of application Ser. No. 194,972, May 5, 1962, now Patent No. 3,502,699. Divided and this application Sept. 5, 1968, Ser. No. 777,534

Int. Cl. C07c *49/48*

U.S. Cl. 260—586 8 Claims

D-homogona-4,9-diene compounds possessing antiestrogenic, pituitary-blocking, anabolic, and progestational activity are disclosed as well as novel intermediates for their preparation.

3,555,097
ACYLATED STYRENES

Paul Y. C. Gee, Woodbury, and Harry J. Andress, Jr., Pitman, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Original application May 17, 1967, Ser. No. 639,049, now Patent No. 3,485,756, dated Dec. 23, 1969. Divided and this application Jan. 7 1969, Ser. No. 810,425

Int. Cl. C07c *49/76*

U.S. Cl. 260—592 1 Claim

Liquid hydrocarbon compositions are provided which contain small amounts, sufficient to improve their fluidity characteristics, of acylated styrenes having at least about 20 carbon atoms per acyl group. A method for preparing these acylated styrenes is also provided.

3,555,098
HYDROFORMYLATION

Kenneth L. Olivier and Frank B. Booth, Placentia, and David E. Mears, Fullerton, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Dec. 13, 1967, Ser. No. 690,089

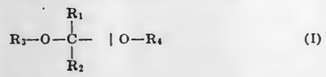
Int. Cl. C07c *45/12*

U.S. Cl. 260—604 9 Claims

Catalytic activity is maintained in a hydroformylation reaction by the treatment of all or a portion of the recycled reaction medium containing the catalyst with an aqueous solution, preferably with an alkaline aqueous solution. The treatment is effective at mild conditions and results in the extraction of the byproduct acid formed in the hydroformylation which unless removed deactivates the catalyst. The invention is applicable to the hydroformylation reactions performed in liquid phase using a complex of a biphyllic ligand and a Group VIII noble metal catalyst, preferably a rhodium complex with a triaryl phosphine.

3,555,099
PEROXYKETALS
Giuliano Ballini and Carlo Bujtar, Ferrara, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy
No Drawing. Continuation of application Ser. No. 505,760, Oct. 29, 1965. This application Mar. 6, 1969, Ser. No. 805,046
Claims priority, application Italy, Oct. 30, 1964, 23,318/64
Int. Cl. C07c *43/30*
U.S. Cl. 260—610 2 Claims

New peroxyethers having the general formula



(I)

wherein both R_1 and R_2 are unhalogenated radicals other than hydrogen.

3,555,100
DECARBONYLATION OF FLUORINATED ACYL FLUORIDES
Bruce H. Garth, Newark, and William H. Gumprecht, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Nov. 19, 1968, Ser. No. 777,170
Int. Cl. C07c *19/08, 43/00*
U.S. Cl. 260—615 8 Claims

Process for the liquid phase decarbonylation of fluorinated acyl fluorides which comprises reacting the fluorinated acyl fluoride with antimony pentafluoride.

3,555,101
PROCESS FOR THE PRODUCTION OF $\alpha,\alpha,\alpha',\alpha'$-TETRA-METHYL-XYLYLENE-DICARBINOLS
Hans-Josef Buysch, Krefeld, Heinrich Krimm, Krefeld-Bockum, and Hermann Schnell, Krefeld-Urdingen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Continuation of application Ser. No. 571,995, Aug. 12, 1966. This application Dec. 10, 1968, Ser. No. 785,036
Claims priority, application Germany, Sept. 8, 1965, 47,125
Int. Cl. C07c *29/00*
U.S. Cl. 260—618 4 Claims

The process involves passing molecular oxygen through an anhydrous liquid mixture containing diisopropyl-benzene and 1–5% by weight, based on the weight of diisopropyl-benzene present, of finely divided anhydrous alkali metal hydroxide at temperatures between 100 and 150° C. This oxidation procedure may be carried out in the presence of an anhydrous inert diluent. The anhydrous liquid mixture containing finely dispersed anhydrous alkali metal hydroxide may be prepared by azeotropic distillation of a solution containing concentrated aqueous alkali metal hydroxide, diisopropyl-benzene and an inert diluent.

3,555,102
METHOD FOR PRODUCING A VINYL FLUORIDE
Eiji Ogura, Onoda, Kiyotada Hatabu, Ube, and Nobuki Nomura, Onoda, Japan, assignors to Onoda Cement Company, Limited, Yamaguchi Prefecture, Japan
No Drawing. Filed Apr. 16, 1969, Ser. No. 816,814
Claims priority, application Japan, May 8, 1968, 43/30,255
Int. Cl. C07c *17/08, 21/18*
U.S. Cl. 260—653.4 7 Claims

This invention relates to an improved catalyst usable for producing vinyl fluoride and a method of producing vinyl fluoride by using such an improved catalyst. The catalyst is comprised of a porous carrier which is impregnated with at least one member selected from mercuric compounds and at least one member selected from inorganic compounds of Pb, Sn, Cd and Zn. The vinyl fluoride is produced by the reaction of acetylene and hydrogen fluoride in the presence of the above catalyst.

3,555,103
PREPARATION OF CYMENES
Max Strohmeyer, Ludwigshafen (Rhine), Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed July 16, 1968, Ser. No. 745,093
Claims priority, application Germany, July 19, 1967, 1,643,629
Int. Cl. C07c *3/58, 5/22*
U.S. Cl. 260—672 15 Claims

Process for the preparation of cymenes by reaction of methyldiisopropylbenzenes with toluene and propylene in two or three stages. The products of the new process are valuable starting materials for the production of plastics materials or fibers.

3,555,104
ALKYLATION OF C_9 METHYL-SUBSTITUTED BENZENES
Gerald Sugerman, Parsippany, N.J., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 797,313, Dec. 30, 1968, which is a continuation-in-part of application Ser. No. 761,211, Sept. 20, 1968. This application Dec. 15, 1969, Ser. No. 885,320
Int. Cl. C07c *5/24*
U.S. Cl. 260—671 9 Claims

In the alkylation of C_9 methyl-substituted benzenes by means of methyl chloride or bromide in the presence of an aluminum chloride catalyst to produce tetramethylbenzenes, the ratio of isodurene to durene in the product is increased by incorporating a small amount of soluble iron in the reaction mixture.

3,555,105
DEHYDROGENATION
George J. Nolan, Robert J. Hogan, Emory W. Pitzer, and Elliott P. Doane, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Feb. 19, 1968, Ser. No. 706,646
Int. Cl. B01j *11/82;* C07c *5/18*
U.S. Cl. 260—680 7 Claims

Catalysts formed from a phosphorus-containing compound such as phosphoric acid, a tin compound such as tin chloride, and at least one of a Group I–B, II–B, or VIII metal or a compound containing at least one of said metals are used for oxidative dehydrogenation.

3,555,106
PROCESS FOR SELECTIVE HYDROGENATION OF ACETYLENIC HYDROCARBONS IN A DIOLEFINIC HYDROCARBON FRACTION, AND CATALYST THEREFOR
Tadashi Ohmori, Kawasaki-shi, Japan, assignor to Nippon Oil Company Limited, Tokyo, Japan
Filed Dec. 20, 1967, Ser. No. 692,120
Claims priority, application Japan, Dec. 20, 1966, 41/82,959
Int. Cl. B01j *11/22;* C01b *33/28;* C07c *7/00*
U.S. Cl. 260—681.5 14 Claims

The present disclosure provides for a catalyst composition containing an inert catalyst carrier formed by calcining a mixture of alumina and silica at a temperature below 850° C. onto which carrier are dispersed copper and nickel as active metal components, the weight of the copper exceeding the weight of the nickel, the weight of the carrier exceeding the weight of the active metal components, at least 25% by weight of the active metal components being in the metallic state, and the remaining percentage being in the form of their oxides. The present invention also provides for the use of the aforementioned catalyst for selectively hydrogenating acetylenic hydrocarbons.

3,555,107
HYDROCARBON CONVERSION PROCESS WITH A CATALYST ACTIVATED WITH AN ORGANIC CHLORIDE AND OXYGEN
John H. Estes and Robert M. Suggitt, Wappingers Falls, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 636,000, May 4, 1967, which is a continuation-in-part of applications Ser. No. 428,572, Jan. 27, 1965, and Ser. No. 495,327, Oct. 12, 1965. This application Mar. 24, 1969, Ser. No. 810,031
Int. Cl. B01j *11/64;* C07c *5/30;* C10g *11/02*
U.S. Cl. 260—683.68 12 Claims

A hydrocarbon conversion process in which a hydrocarbon is contacted at conversion conditions with a catalyst comprising alumina and chlorine wherein at least a portion of said chlorine is introduced into said catalyst by contacting said alumina at elevated temperature with a selected organic chloride in the presence of an amount of oxygen sufficient to convert all of the carbon in said organic chloride to carbon dioxide. In addition, the catalyst may contain a metal selected from the group consisting of ruthenium, rhodium, palladium and platinum. The catalyst so prepared is useful in hydrocarbon conversion processes as isomerization, hydrocracking, alkylation, hydrogenation, and polymerization.

3,555,108
METHOD OF PROVIDING USEFUL HEAT-SETTING AROMATIC POLYMER RESINOUS COMPOSITIONS AND PRODUCTS
Norman Bilow, Los Angeles, and Leroy J. Miller, Canoga Park, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 349,770, Mar. 5, 1964. This application Sept. 5, 1967, Ser. No. 665,578
Int. Cl. C08d *13/00*
U.S. Cl. 260—823 10 Claims

The combination of an aromatic polyphenylene, polyphenylene oxide, polyphenylene sulfide, polybenzimidazole, with aromatic polymethylol and acid catalyst material forming a resin in partially reacted state in solution and a soluble and fusible plastic product, composition thereof curable to a useful infusible state, with or without the addition of other material.

3,555,109
IN SITU GENERATION OF UNIQUE PARTICULATE MATTER IN ORGANOPOLYSILOXANES
John Charles Getson, Onsted, Mich., assignor, by mesne assignments, to Stauffer-Wacker Silicone Corporation, a corporation of Delaware
Filed Sept. 8, 1967, Ser. No. 666,404
Int. Cl. C08f *35/02;* C08g *47/10*
U.S. Cl. 260—825 15 Claims

A grafted organopolysiloxane composition containing in situ generated elongated particulate matter and a method for preparing the same which comprises contacting an organopolysiloxane with an organic monomer in the presence of a free-radical initiator at a shear rate of from 5 to 1,000 $sec.^{-1}$.

3,555,110
BLENDS OF ALPHA-MONOOLEFIN BLOCK COPOLYMERS WITH ETHYLENE-ACRYLATE OR ALKENYL CARBOXYLATE COPOLYMERS
Richard L. McConnell and Max F. Meyer, Jr., Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 507,677, Nov. 15, 1965. This application May 7, 1969, Ser. No. 822,727
Int. Cl. C08f *29/12, 29/40, 29/46*
U.S. Cl. 260—876 10 Claims

Copolymers such as ethylene/alkyl acrylate, ethylene/aryl acrylate and ethylene/alkenyl carboxylate are highly compatible with 2-period sequential alpha-monoolefin block polymers such as propylene/ethylene polymers having from about 50% to about 99% by weight of polypropylene segment in the polymer chain. Molded objects prepared from 2-period sequential block polymer and ethylene/alkyl acrylate, ethylene/aryl acrylate and ethylene/alkenyl acrylate blends have excellent clarity, improved low temperature properties and good impact strength at low temperature.

3,555,111
FAST CURE EPOXY RESIN COATING POWDERS CONTAINING ADDUCTS OF TRIMELLITIC ANHYDRIDE AND POLYOLS
Ronald C. Benham, Olean, N.Y., assignor to The Dexter Corporation, Hartford, Conn., a corporation of Connecticut
No Drawing. Filed Mar. 19, 1968, Ser. No. 714,330
Int. Cl. C08g *45/00, 45/14*
U.S. Cl. 260—835 10 Claims

Powered epoxy resin coating compositions consisting essentially of a solid, essentially linear, epoxy resin having a molecular weight of 2000 to 6000 and an epoxide equivalency of about 2, a polyol-trimellitic anhydride hardener selected from the group consisting of adducts of trimellitic anhydride with a polyol containing at least 3 alcohol groups which has been increased in molecular weight to 400–1500 by addition of a lower alkylene oxide, and polyols containing at least six alcohol groups, said hardener providing two acid groups for each alcohol group of the starting polyol, said composition containing approximately one epoxide equivalent of resin to each acid equivalent of adduct, and a rapid cure catalyst in the proportion of about 0.2% to 1.0% by weight of said composition. While various catalysts can be employed, the preferred catalyst is triphenyl phosphine in the proportion of about 0.2% to 0.3%.

3,555,112
HYDROXYLATED STYRENE BUTADIENE BLOCK COPOLYMERS
De Loss E. Winkler, Orinda, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Mar. 20, 1968, Ser. No. 714,453
Int. Cl. C08f *19/00;* C08g *45/04*
U.S. Cl. 260—836 5 Claims

Block copolymers are provided which have polyvinyl arene end blocks and a highly hydroxylated conjugated diene center block capable of swelling in water and other hydrogen bonding solvents.

3,555,113

BLENDS OF POLYMERIC AMIDE-IMIDE-ESTER WIRE ENAMELS AND CONDUCTORS INSULATED THEREWITH

Frank A. Sattler, Monroeville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed May 21, 1968, Ser. No. 730,833
Int. Cl. C08g 37/16, 41/04
U.S. Cl. 260—841 25 Claims

Polymeric amide-imide-ester wire enameling compositions are prepared from (1) a monoanhydride of an aromatic tricarboxylic acid, e.g. trimellitic anhydride, (2) an aromatic primary diamine compound and (3) either polyfunctional acids and polyhydroxy compounds or the polyesters thereof. At least a portion of the polyol or polyhydroxy compound is a tris (hydroxyalkyl) isocyanurate, e.g. tris (hydroxyethyl) isocyanurate. The polyfunctional acids (3) comprise an acid component selected from the group consisting of trimellitic anhydride, isophthalic acid and esters of isophthalic and terephthalic acid. The polymeric amide-imide-ester may be blended with terephthalate or isophthalate polyesters, polyisocyanates and other materials. One particularly suitable polyisocyanate is prepared from dimethylterephthalate, tris (2-hydroxyethyl) isocyanurate and tolylene diisocyanate. Small amounts of aliphatic amino compounds, aliphatic polyols and other flexibilizing materials may be incorporated into either the polymeric amide-imide-ester or the polyester blended therewith. A variety of block and modified block polymers may be made. Imidization occurs during the preparation of the polymeric amide-imide-ester so that the condsensed water is removed before the fluid compositions are applied and cured.

3,555,114

POLYCAPROLACTAM POLYMERIZED WITH DIETHANOLAMINE

Herbert K. Reimschuessel, Morristown, Gerald J. Dege, Parsippany, and Robert Fuhrmann, Morris Plains, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Oct. 11, 1968, Ser. No. 766,691
Int. Cl. C08g 41/04
U.S. Cl. 260—857 9 Claims

The modified polyamides formed by polymerization of E-caprolactam in the presence of diethanolamine, possess numerous advantages over other polyamides. The modified polyamides have excellent dying characteristics in fiber form and excellent printability in film form. When blended with polyesters and/or other polyamides, the composite blend has superior tear properties in comparison with conventional polyester/polyamide composite blends.

3,555,115

LOW MOLECULAR WEIGHT POLYURETHANES CONTAINING N-t-BUTYL GROUPS

Charles Gregory Bottomley and Oliver Larry Hunt, Waynesboro, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 31, 1968, Ser. No. 733,272
Int. Cl. C08g 41/04, 51/60, 122/08
U.S. Cl. 260—858 12 Claims

Polyurethanes containing in the polymer chain tertiary amine nitrogen bearing a t-butyl substituent and having an inherent viscosity between 0.07 and 0.6 are blended with long-chain synthetic elastomeric segmented polyurethanes to stabilize the latter against discoloration by light and smog. Articles of such blends are more resistant to loss of physical properties upon exposure to chlorine bleaches than are articles stabilized with tertiary amines heretofore used.

3,555,116

PRODUCT AND A METHOD OF IMPROVING THE SHELF LIFE OF UNCURED POLYESTERS

Eldon E. Stahly, Ellicott City, and Edwin W. Lard, Bowie, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Dec. 10, 1968, Ser. No. 782,757
Int. Cl. C08f 21/02, 45/58
U.S. Cl. 260—864 8 Claims

Inhibitors, such as, phenazine are added to uncured polyester resin systems to prevent gelation of those systems when they are stored at room temperature or at elevated temperatures for periods of time in excess of three years. Between 0.5 and 1.0 mole percent inhibitor is added to the uncured polyester systems.

3,555,117

PRODUCT AND A METHOD OF IMPROVING THE SHELF LIFE OF UNCURED POLYESTERS

Eldon E. Stahly, Ellicott City, and Edwin W. Lard, Bowie, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Dec. 10, 1968, Ser. No. 782,710
Int. Cl. C08f 21/02, 45/58
U.S. Cl. 260—866 8 Claims

Dihydroxynaphthalenes are added to uncured polyester resin systems to prevent gelatin of those systems when they are stored at room temperature or at elevated temperatures for periods of time in excess of three years. Between 0.5 and 1.0 mole percent the dihydroxynaphthalene is added to the uncured polyester systems.

3,555,118

UNSATURATED POLYESTERS OF NITRILOTRIACETIC ACID, A POLYHYDRIC ALCOHOL AND AN UNSATURATED POLYCARBOXYLIC ACID

Bruce N. Wilson, Niagara Falls, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Jan. 26, 1968, Ser. No. 700,688
Int. Cl. C08f 21/02; C08g 17/12
U.S. Cl. 260—870 6 Claims

Novel thermosetting esters are provided by reacting nitrilotriacetic acid with an unsaturated hydroxy composition. Preferably the nitrilotriacetic acid is reacted with a polyhydric alcohol and then with a polycarboxylic compound, wherein at least one of the polyhydric alcohol and the polycarboxylic compound contain aliphatic carbon-to-carbon unsaturation. The unsaturated esters can be cured with an olefinic cross-linking agent to form thermoset compositions useful as coatings and in castings.

3,555,119

THERMOPLASTIC RESIN BLEND OF A POLYSULFONE WITH ABS

Alfred F. Ingulli, Woodbury, and Henry L. Alter, West Haven, Conn., assignors to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey

Continuation of application Ser. No. 671,654, Sept. 29, 1967. This application Sept. 30, 1969, Ser. No. 866,068
Int. Cl. C08f 41/12
U.S. Cl. 260—876 19 Claims

Blends of thermoplastic polysulfone resin with ABS plastic are characterized by an unusually useful combination of properties, particularly high heat distortion temperature in combination with good flow characteristics, as well as impact resistance, flexural strength and self-extinguishing characteristics.

3,555,120

ABS RESIN HAVING VERY HIGH IMPACT STRENGTH AND HIGH HEAT DEFLECTION TEMPERATURE

Edward M. Hagerman, Royal Oak, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

No Drawing. Filed Sept. 15, 1967, Ser. No. 668,160
Int. Cl. C08f 15/04, 15/22
U.S. Cl. 260—880 2 Claims

A styrene-acrylonitrile grafted polybutadiene composition wherein the polybutadiene is polymerized to a high molecular weight, characterized by a limiting viscosity number of at least 1.6 in benzene at 30° C., has a Izod impact strength at about room temperature of greater than 10 foot pounds per inch of notch and a heat deflection temperature greater than 85° C.

3,555,121

METHOD FOR MANUFACTURING HIGH IMPACT POLYOXYMETHYLENE GRAFT COPOLYMERS

Atsushi Tanaka, Hideo Sawada, Hirotaka Toba, and Masatoshi Mikumo, Iruma-gun, Saitama, Japan, assignors to Daicel Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Nov. 13, 1967, Ser. No. 682,540
Claims priority, application Japan, Nov. 15, 1966, 41/75,080
Int. Cl. C08g 1/18
U.S. Cl. 260—887 7 Claims

Disclosed herein is a process for producing a new polyoxymethylene graft copolymer having improved impact strength without a sacrifice in crystallinity.

3,555,122

MIXTURE OF A SUSPENSION RESIN OF VINYL CHLORIDE AND AN ORGANOSOL RESIN OF VINYL CHLORIDE

Charles W. Simons, Bedford, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

No Drawing. Filed Mar. 10, 1966, Ser. No. 533,263
Int. Cl. C08f 29/24
U.S. Cl. 260—899 2 Claims

A plastisol composition particularly suited for use in sealing container closures and containing (1) a mixture of a suspension resin of a vinyl chloride polymer and an organosol resin of a vinyl chloride polymer and (2) a liquid non-volatile plasticizer for the resin mixture (e.g. dioctyl phthalate). The organosol resin is present in an amount between about 5 and 30% by weight of the resin mixture.

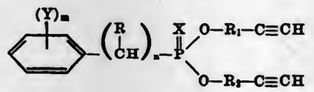
3,555,123

DI-OMEGA-ALKYNYL ARYL(ARYLALKYL) PHOSPHONATES

Milton H. Fischer, 4032 Perry Ave. N., Robbinsdale, Minn. 55422; Harry H. Incho, 137 Ensign Ave., Medina, N.Y. 14103; and Paul E. Drummond, 54 S. Vernon St., and Ronald E. Montgomery, 46 S. Vernon St., both of Middleport, N.Y. 14105

No Drawing. Continuation-in-part of application Ser. No. 540,175, Apr. 5, 1966. This application June 23, 1966, Ser. No. 559,745
Int. Cl. A01n 9/36; C07f 9/38
U.S. Cl. 260—956 9 Claims

Insecticidal esters of chrysanthemumic acid, e.g. pyrethrins, allethrin, etc., form synergistic insecticidal compositions in combination with phosphonates having the formula:



wherein R_1 and R_2 are lower alkylene groups; R is hydrogen, halogen, a lower alkyl or alkoxy group, or a substituted or unsubstituted phenyl; n is an integer from 0 to 3, X is oxygen or sulfur; and Y represents a variety of substituents. The preparation and properties of representative members of this new class of synergistic phosphonates are described, and test results of their synergistic combinations with representative chrysanthemumates are reported.

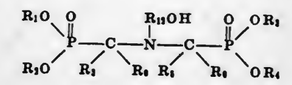
3,555,124

METHOD FOR PREPARING HYDROXYALKYL-AMINO-N,N-DI (METHYLENE PHOSPHONATES)

Thomas M. Beck, Hastings-on-Hudson, N.Y., and Stanley B. Mirviss, Stamford, Conn., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 676,743, Oct. 20, 1967. This application Feb. 10, 1969, Ser. No. 798,149
Int. Cl. C07f 9/40
U.S. Cl. 260—970 12 Claims

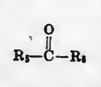
A method for preparing compounds having utility as fire retardant compounds for polyurethane foams of the formula:



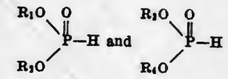
wherein R_1, R_2, R_3 and R_4 can be independently selected from the group consisting of alkyl, haloalkyl, alkoxyalkyl, hydroxyalkyl, hydroxyalkoxyalkyl or aryl radicals; and R_5 and R_6 can be independently selected from the group consisting of hydrogen, alkyl, alkoxyalkyl, hydroxyalkyl, hydroxyalkoxyalkyl or aryl and R_{12} is an alkylene group of from 2 to 10 carbon atoms and substituted derivatives thereof which comprises (a) reacting a primary monoalkanolamine of the formula

$$H_2NR_{12}OH$$

with at least two molar equivalents of a carbonyl compound of the formula



and (b) incrementally adding the reaction mixture reuslting from step (a) to a phosphonic acid diester of the formula



the addition being conducted after adjusting the amount of free water present in said reaction mixture to less than 0.75 mole water per mole of phosphonic acid diester reactant used.

3,555,125

PRODUCTION OF MONO- AND DI-ALKYLPHOSPHITES

John D. Curry, Oxford, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 7, 1967, Ser. No. 688,691
Int. Cl. C07f 9/08, 9/40
U.S. Cl. 260—980 5 Claims

Mono- and di-alkylphosphites are produced by the reaction of phosphorus trioxide, P_4O_6, with an excess, greater than a 6:1 molar ratio, of an aliphatic alcohol containing from about 1 to about 20 carbon atoms. The desired

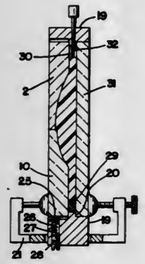
phosphite reaction products are present in an equimolar ratio and can be separated by conventional methods. The mono- and di-alkylphosphites are useful for preparing phosphorous-containing organic phosphonate and phosphinate compounds which are useful as wetting agents, detergents, plasticizers, bonding agents, lubricants, corrosion inhibitors and flame proofing agents.

3,555,126

METHOD OF MAKING A MOLD AND MOLDING A BIFOCAL LENS

Abraham Gitson, 15705 Van Blvd., Cleveland, Ohio 44120

Filed Dec. 19, 1967, Ser. No. 691,828
Int. Cl. B29c *1/02*; B29d *11/00*
U.S. Cl. 264—1 **3 Claims**



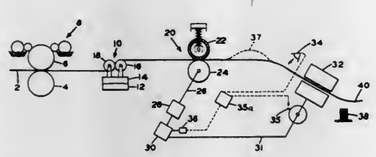
The invention is concerned with the manufacture of bifocal lenses and the like, in which the reading and distance fields are entirely independent of each other; with the reading fields being decentered nasalward from the distance fields, and with each field being set accurately at the required interpupillary distance, whereby eyestrain resulting from use of the lenses is virtually eliminated.

3,555,127

METHOD OF CUTTING TILE IN REGISTER FROM A CONTINUOUS SHEET

Donald Gene Messer, Columbia, and Herbert Dwight Nease, Lancaster, Pa., assignors to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania

Filed Feb. 23, 1968, Ser. No. 707,763
Int. Cl. B29c *17/10*
U.S. Cl. 264—40 **1 Claim**



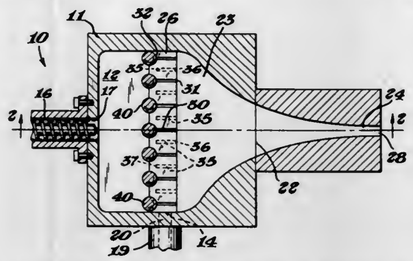
A method of trimming and cutting into short tile-size sections a continuous length of sheet goods with impressions thereon. The continuous sheet goods is first guided in its longitudinal direction by a guider. The sheet material is then fed into a photocell controlled feeder which operates to feed the sheet material in a proper sequence to a punch press. The punch press then cuts the goods in register from the continuously fed sheet material.

3,555,128

METHOD FOR THE CONTROLLED EXTRUSION OF MULTICOMPONENT SYNTHETIC RESINOUS BODIES

Walter J. Schrenk, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Continuation-in-part of application Ser. No. 603,981, Dec. 22, 1966. This application Mar. 10, 1969, Ser. No. 811,275
Int. Cl. B28b *1/08*; B29f *3/00*; B32b *31/30*
U.S. Cl. 264—40 **4 Claims**



In extrusion of layered film where a layered stream is dicharged from a single die, control of the volume of material passing through the feed ports is obtained by introducing varying mechanical shear rates to at least a portion of the individual layers of the composite stream.

3,555,129

METHOD OF FORMING MOISTURE PERMEABLE SELF-SUSTAINING AND COATING FILMS

Kazuo Fukada, Takarazuka, Yoshiaki Sakata, Nishi Yodogawa-ku, Yoshio Yamada, Minami-ku, Masaaki Mizuno, Amagasaki, and Hiroaki Tanaka, Ibaraki, Japan, assignors to The Toyo Rubber Industry Co., Ltd., Osaka, Japan

No Drawing. Filed July 12, 1967, Ser. No. 652,731
Claims priority, application Japan, July 22, 1966, 41/48,244
Int. Cl. B29d *27/04*
U.S. Cl. 264—41 **6 Claims**

In a process for producing moisture permeable polymer films by coating polymer solution on a substrate, coagulating with a non-solvent which is miscible with the polymer solvent, and washing to remove the solvent, the improvement comprising facilitating the washing by incorporating in the polymer solution a particulate solid material, the particles of which have dimensions such that the smallest dimensions of the particles are at least 0.1 micron and the largest dimensions are not in excess of 300 microns. Suitable materials are, e.g., calcium carbonate, magnesium carbonate, iron oxide, titanium oxide, milled pulp and cellulose crystallite.

3,555,130

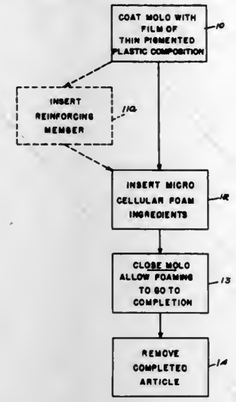
FORMING PIGMENTED INTEGRALLY BONDED COVERINGS ON ARTICLES OF MICROCELLULAR URETHANE FOAM

Seymour S. Feuer, Bloomfield Hills, Mich., and Richard D. Rhodes, Jr., and Allan F. Torres, Dover, N.H., assignors to Davidson Rubber Company Incorporated, Dover, N.H., a corporation of New Hampshire

Filed Aug. 29, 1966, Ser. No. 575,759
Int. Cl. B29h *7/20*; B29d *27/00*; B29c *5/02*
U.S. Cl. 264—45 **5 Claims**

A method of producing a molded article of microcellular urethane foam having an integral urethane skin comprising spraying at least a portion of the mold wall with a thin non-supporting layer of a vinyl/acrylic polymer dispersed in an organic liquid carrier, injecting a foamable microcellular urethane formulation into the

mold, closing the mold and foaming the urethane composition such that the foam forms an integral microcellular urethane skin that is strongly bonded to the vinyl/acrylic copolymer coating.

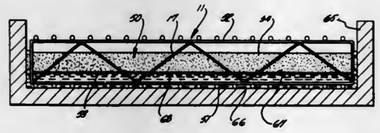


3,555,131

METHOD FOR MAKING REINFORCED MODULAR FOAM PANELS

Victor P. Weismann, 430 Prospect Circle, South Pasadena, Calif. 91030

Application Dec. 4, 1964, Ser. No. 419,286, now Patent No. 3,305,991, which is a continuation-in-part of application Ser. No. 140,504, Sept. 25, 1961. Divided and this application Nov. 18, 1966, Ser. No. 595,375
Int. Cl. B29d *9/00, 27/04*
U.S. Cl. 264—45 **9 Claims**



A method of fabricating lightweight modular structural panel having heat and sound insulating properties and which is impervious to the passage of moisture therethrough, which includes: first, fabricating of elongated metal rods a three dimensional lattice defining skeletal forms of spaced side, end, top and bottom surfaces and a plurality of internal braces traversing the interior of the lattice; second, supporting the lattice on a form surface; third, introducing into the supported lattice around the braces a layer of hard-setting liquid foam organic resin plastic material; and fourth, hard-setting the foam plastic material in the lattice to provide a unitary rigid mass of unicellular foam which surrounds and bonds to the braces internally of the lattice during setting of the material.

3,555,132

PROCESS FOR FORMING GELATIN-FORM-ALDEHYDE FOAMS

Calvin J. Benning, Clarksville, Md., assignor to W. R. Grace & Co., a corporation of Connecticut

No Drawing. Continuation of application Ser. No. 729,936, May 17, 1968. This application June 16, 1969, Ser. No. 837,997
Int. Cl. B29d *27/04*
U.S. Cl. 264—50 **2 Claims**

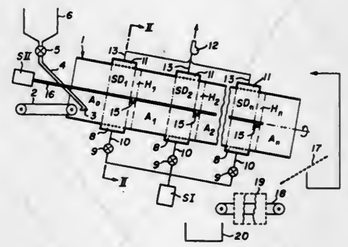
A process for producing an aldehyde-hardened gelatin by adding 4 to 24 parts of aldehyde/100 parts gelatin to a solution of 50% by weight gelatin in water, beating the solution into a foam which is shaped to a desired configuration and then simultaneously heating and drying the foam at temperatures between 125 and 200° F. The drying may be carried out at less than 130° F. while the wet foam is packed in powdered diatomaceous earth.

3,555,133

METHOD FOR PRODUCING PELLETS

Claude Gentaz, Grand-Lancy, Geneva, Switzerland, assignor to Battelle Memorial Institute, International Division, Geneva, Switzerland

Filed Jan. 31, 1968, Ser. No. 702,011
Claims priority, application Switzerland, Feb. 1, 1967, 1,569/67
Int. Cl. B01j *2/12*
U.S. Cl. 264—82 **6 Claims**



The invention provides a method for producing pellets from a finely divided material, such as fine iron ore. The method comprises rolling nuclei or seeds of inorganic colloidal binder and water on a tumbling bed of said material, moving along a closed loop or straight path, whereby particles of this material may agglomerate in layers on the nuclei to form pellets of gradually increasing size, and, while the pellets keep rolling on the bed, periodically hardening the binder in a peripheral region of each pellet to limit outward drift of the binder as the pellets become larger, and, immediately after each binder hardening operation, moistening the pellets so that they may agglomerate further layers of material particles, and upon reaching the desired size, discharging the pellets and fully drying them to cause the binder contained therein to set throughout. The apparatus is designed to carry out the above method.

ERRATUM

For Class 264—95 see:
Patent No. 3,554,999

3,555,134

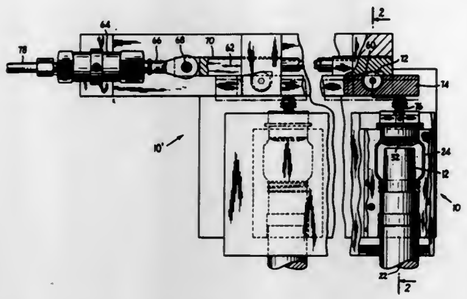
METHOD FOR FORMING PLASTIC CONTAINERS HAVING THICKENED BOTTOM RIMS

Paul Marcus, Pearl River, N.Y., assignor to APL Corporation, Brooklyn, N.Y., a corporation of New York

Filed Oct. 6, 1967, Ser. No. 673,449
Int. Cl. B29c *17/07, 24/00*
U.S. Cl. 264—97 **1 Claim**

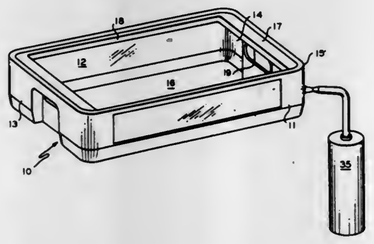
A plastic container is formed by expanding a parison in a blow mold. The part of the blow mold that shapes the bottom of the container is a movable flapper. After the expansion of the parison is completed, the flapper is moved inwardly against the bottom of the container to

increase the thickness of the plastic material at the bottom rim of the container and thereby increase the strength



of the container. The flapper is then retracted and the container removed.

3,555,135
STRESS RELIEVING OF MOLDED PLASTIC STRUCTURES
William Paul, Zephyr, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Feb. 29, 1968, Ser. No. 709,260
Int. Cl. B29c *23/00, 25/00*
U.S. Cl. 264—98 **9 Claims**

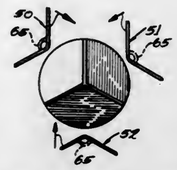


Molded plastic structures comprised of two or more intersecting generally rectilinear sides or surfaces are relieved of stresses developed in the structure during the manufacture thereof by applying heat to at least one corner of said structure.

3,555,136
PROCESS FOR THE PRODUCTION OF A POROUS SHEET
Paul Rouault, Rue d'Estienne d'Orves, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate
Filed June 27, 1967, Ser. No. 649,111
Claims priority, application France, July 1, 1966, 67,944
Int. Cl. B29d *27/08*
U.S. Cl. 264—122 **6 Claims**

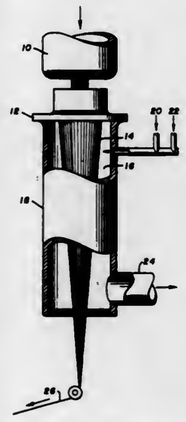
Porous sheets are made by depositing on a support a layer of a mixture of fusible powder and shrinkable thermoplastic fibrils and heating the layer from the side in contact with the support.

3,555,137
METHOD FOR FORMING CORNER CUSHIONS
John M. Carmody, Palos Heights, Ill., assignor to Republic Packaging Corporation, Chicago, Ill., a corporation of Delaware
Original application May 18, 1967, Ser. No. 639,365, now Patent No. 3,404,827, dated Oct. 8, 1968. Divided and this application July 26, 1968, Ser. No. 770,460
Int. Cl. B26d *3/08, 3/10, 7/10;* **B29c** *17/14*
U.S. Cl. 264—148 **6 Claims**



A method for forming corner cushions for shipping and/or storing. Three cutting members having V-shaped cutting edges are positioned about a length of material such that the members are radially displaced 120° from one another and in planes which are at an angle of 90° with respect to one another. The cutting members are moved in straight paths into the length of material at angles to the material longitudinal axis such that three faces are formed in the material which are at right angles relative to one another and which meet at a point. The cutting members are then displaced along the axis of the material and the cutting sequence repeated so as to form individual cushions having three-faced pointed tips on one end thereof and three-faced interior cavities on the other end thereof. Sets of cutting members can be used to simultaneously cut at points along the axis of the material. A sprue can be provided between the cushions to connect the cushions together to form a long length of connected cushions which can be removed individually as needed.

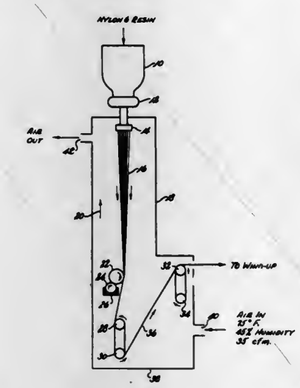
3,555,138
SURFACE HALOGENATION OF SHAPED ARTICLES
Roland Jennings Bryan, Jr., Raleigh, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed June 17, 1966, Ser. No. 558,400
Int. Cl. D01d *5/10*
U.S. Cl. 264—210 **8 Claims**



A continuous process for the halogenation of melt spun filaments consists of extruding the filaments directly into

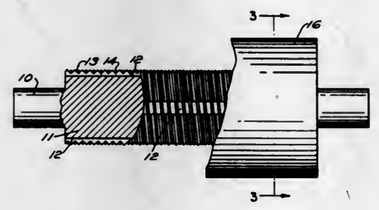
a gaseous atmosphere comprising a halogen gas which enables halogenation to be accomplished without the need for extraneous halogenation initiators.

3,555,139
METHOD FOR MELT SPINNING POLYCAPROLACTAM INTO A LOW HUMIDITY ENVIRONMENT
Herbert Waters, Chester, and Sterling M. Nichols, Hopewell, Va., assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Continuation of application Ser. No. 467,532, June 28, 1965. This application Aug. 20, 1969, Ser. No. 853,820
Int. Cl. D01d *5/12*
U.S. Cl. 264—210 **2 Claims**



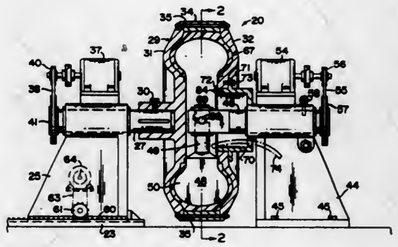
Polycaprolactam, dried to a moisture content of less than 1%, is melt spun into an enclosure in which relative humidity is kept less than 50%. While still within the enclosure, a non-aqueous finishing composition is applied to the filaments after they solidify. The filaments are thereafter, still in said enclosure in which the filaments are shielded from humidity, and without any intermediate cooling or aging step, drawn with a draw ratio of greater than 5.0:1. The resulting filaments have a tenacity on the order of 10 grams per denier.

3,555,140
METHOD OF MAKING CONTACT ROLLS
William Argereu, Hickory Drive, Pole 4, North Scituate, R.I. 02857
Filed Mar. 26, 1968, Ser. No. 716,209
Int. Cl. B29d *3/02;* **B29h** *9/00;* **B32f** *7/08*
U.S. Cl. 264—255 **5 Claims**



A method of making a contact roll which will be cord reinforced consisting of threading an arbor and cutting grooves axially of the arbor through the threaded portion thereof. A reinforcing cord is helically wound in the threaded grooves in a fashion whereby the cord will pass over the grooves in a mesh type relationship and then covering the arbor so formed with a resilient material which may be either a plastic material cast about the arbor or may be uncured rubber that is inserted into the grooves and then layers of rubber are built up on the rolls in the usual fashion to the required diameter whereby the entire roll may be vulcanized to form an integral structure.

3,555,141
METHOD OF MAKING TIRES
Heinz Wilhelm Beneze, Akron, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Feb. 4, 1969, Ser. No. 796,466
Int. Cl. B29d *23/00*
U.S. Cl. 264—311 **6 Claims**

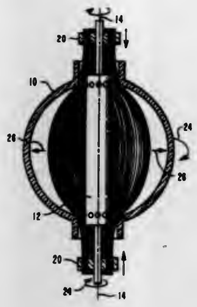


A method for making tires which include a separable mold which has an inner surface which defines the outer shape of a tire to be formed. A generally flat paddle shaped template member extends generally radially within the mold when it is assembled and the cross sectional shape of the tire is determined by the space between the template and the inner surface of the mold. The mold is rotated about its axis while the template member is preferably held in a fixed position. A flowable and hardenable elastomeric material suitable for use in constructing tires (such as polyurethane) is introduced into the rotating mold and centrifugal force urges the flowable material to the inner surface of the mold and when sufficient elastomeric material has been added, the wiping action of the template member on the elastomeric material forms the inner shape of the tire. The material hardens and the mold, the template member and finished tire are separated. The template member is preferably held in a fixed position, however, it may be rotated at a slower speed than the mold or in a reverse direction.

3,555,142
CENTRIFUGAL METHOD FOR PRODUCING HOLLOW AXIALLY SYMMETRIC BODIES
Juan A. Haener, San Diego, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Filed Jan. 8, 1969, Ser. No. 789,717
Int. Cl. B28b *1/20;* **B29c** *5/04*
U.S. Cl. 264—311 **6 Claims**

The desired generally axially symmetric shape of a hollow body is defined by interior walls of a mold structure mounted for rotation about a vertical spin axis. Fiber strands are uniformly distributed about the spin axis to extend through the mold with the opposite ends slidably engaged to move along the mandrel towards one another. The entire assembly is spun to move the fiber strands within the mold radially outward by centrifugal force toward the interior mold walls, gradually sliding the fiber ends together to release additional fiber lengths into the

mold. When the fibers lie against the interior mold surfaces, a liquid binder is released to flow radially outward by centrifugal force coating the fibers covering the



interior mold surfaces. The binder hardens during continued spinning, binding the fibers together to form a fiber reinforced hollow body of the desired shape.

3,555,143
METHOD FOR THE DETERMINATION OF PROTEINS AND POLYPEPTIDES

Rolf E. A. V. Axen, Upplands Balinge, and Jerker O. Porath and Leif Edvin Wide, Uppsala, Sweden, assignors to Pharmacia AB, Uppsala, Sweden, a company of Sweden

Filed June 2, 1967, Ser. No. 643,190
Claims priority, application Sweden, June 2, 1966, 7,541/66
Int. Cl. A61k *27/04*
U.S. Cl. 424—1 **3 Claims**

A process comprising contacting particles of water insoluble polymers to which have been bound antibodies, by means of covalent bonds, against the protein or polypeptide to be determined, wherein a certain quantity of the protein or polypeptide is labeled with a radioactive isotope, whereupon the particles, subsequent to the reaction between the protein or the polypeptide and the antibodies attached to the particles are separated from the sample liquid and the radioactivity of the particle material and/or in the liquid is determined.

3,555,144
COLOR-CODED JIGSAW DESIGN TABLET COMPRESSED FROM THERAPEUTIC EXTRUDED CYLINDRICAL GRANULES OF VISIBLY DIFFERENT COLORS

Charles Arnold Pazar, Glen Rock, and James Henry Wiley, Westwood, N.J., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

Continuation of application Ser. No. 436,631, Mar. 2, 1965, which is a continuation-in-part of application Ser. No. 98,407, Mar. 27, 1961, now Patent No. 3,177,820, which in turn is a continuation-in-part of application Ser. No. 22,876, Apr. 18, 1960. This application May 29, 1969, Ser. No. 853,996
Int. Cl. A61k *9/00*; **B29c** *9/00*
U.S. Cl. 424—2 **1 Claim**

Therapeutic tablets of improved uniformity of composition, absorbability, size and appearance; increased strength and greater density, as well as elegant appearance; and multicolored surface and cross-section for counterfeit detection and a product identification are obtained by compression into tablets of a dried plasticized extruded mixture. The medicament, a binder, and a liquid, often water, are compacted, homogenized, and extruded through a high pressure screw extruder as small strands, which are dried, and before or after drying segmented into granules, with the drying giving a surface hardness to the granules. On



lubrication and compaction, a denser more uniform tablet is produced, with reduction or elimination of capping and laminating, as compared with conventional procedures.

3,555,145
AEROSOL ANTIPERSPIRANT COMPOSITION

Thomas Andrew Wetzel and James A. Hellyer, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed Dec. 23, 1965, Ser. No. 516,117
Int. Cl. A61k *7/00*
U.S. Cl. 424—47 **6 Claims**

A single liquid phase aerosol antiperspirant composition containing a dissolved inorganic astringent salt, an alcohol, an aerosol propellant, a sodium, potassium or ammonium salt of an aryl sulfonic acid and water, in specified proportions.

3,555,146
ANTIPERSPIRANT COMPOSITION

John L. Jones, North Plainfield, and Andrew M. Rubino, Providence, N.J., assignors to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Original application Sept. 15, 1965, Ser. No. 487,580, now Patent No. 3,405,153, dated Oct. 8, 1968. Divided and this application Nov. 13, 1967, Ser. No. 704,200
Int. Cl. A61k *7/00*
U.S. Cl. 424—47 **2 Claims**

An antiperspirant preparation comprising an inorganic-organic complex of the formula:

$$nQ \cdot Al_2(OH)_{4-5}A_{1-2}R_{1-4}H_2O_{0.5-4}$$

wherein Q is a zinc chloride, iodide or bromide or hydroxychloride, hydroxy iodide or hydroxy bromide or a zirconyl chloride or hydroxy chloride, A is chloride, bromide or iodide, R is the coordinating moiety of a polyhydroxy compound having at least two carbon atoms and at least two hydroxy groups, with n being the number of moles for Q and at least 0.05, and with the antiperspirant preparation containing conventional cosmetic adjuvants.

3,555,147
PEROXYDIPHOSPHATE NEUTRALIZER FOR HAIR WAVING

Paul R. Mucenieks and Bernard Cohen, Trenton, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 19, 1967, Ser. No. 691,722
Int. Cl. A61k *7/10*
U.S. Cl. 424—71 **6 Claims**

Ammonium and alkali metal peroxydiphosphates have been found effective in treating hair as the second stage "neutralizer" or "oxidizer" during cold permanent waving of human hair. This waving process is carried out by treating the hair while in a curled condition in a first stage with reducing agents which are known to relax keratin-containing fibers, especially thioglycolic acid and salts thereof; in the second stage the treated hair is contacted with ammonium or alkali metal peroxydiphosphate which restores the hair to its original condition and imparts a long-lasting curl.

3,555,148
FUNGICIDES

Tatsuo Katsumura and Hirohisa Kataoka, Suita-shi, Osaka-fu, and Yutaka Mizuno, Osaka-shi, Japan, assignors to Nitto Kasei Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Oct. 20, 1965, Ser. No. 499,057
Int. Cl. A01n *9/00*
U.S. Cl. 424—78 **1 Claim**

Compositions active against microorganisms comprising a carrier and as an active ingredient a member selected from the group consisting of: homopolymers of bis-tributyltin itaconate, homopolymers of atributyltin butyl itaconate, homopolymers of bis-triphenyltin itaconate, copolymers of bis-tripropyltin itaconate and methacrylic acid, and intercopolymers of bis-tributyltin itaconate and bis-tripropyltin itaconate.

3,555,149
MUMPS VACCINE AND ITS PREPARATION

Eugene B. Buynak, North Wales, and Maurice R. Hilleman, Lafayette Hills, Pa., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 479,653, Aug. 13, 1965. This application July 5, 1968, Ser. No. 742,519
Int. Cl. A61k *27/00*
U.S. Cl. 424—89 **6 Claims**

A non-pathogenic but antigenic live mumps virus is produced by multiple serial passage of a virulent virus through embryonated chick eggs and chick embryo tissue culture, the attenuated virus thereby produced being useful in making mumps vaccine.

3,555,150
NIGERICIN FOR TREATING COCCIDIOSIS

Marvin Gorman and Robert L. Hamill, Indianapolis, Ind., assignors to Eli Lilly and Company, Indianapolis, Ind., a corporation of Indiana

No Drawing. Filed Apr. 17, 1968, Ser. No. 721,922
Int. Cl. A61k *21/00*
U.S. Cl. 424—122 **1 Claim**

Methods and compositions for controlling coccidiosis employing nigericin as the active anti-coccidiosis agent.

3,555,151
LONG ACTING SOLID ANTACID

Leonard L. Kaplan, Mount Vernon, and Robert H. Cox, Scarsdale, N.Y., assignors to Richardson-Merrell Inc., New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 595,736, Nov. 21, 1966. This application Dec. 21, 1966, Ser. No. 609,981
Int. Cl. A61k *27/00*
U.S. Cl. 424—156 **9 Claims**

An antacid composition prepared by intimately admixing: (a) from about 1 to 4 parts of a nontoxic acid counteracting (antacid) compound; (b) about one part of a hydrocolloid; (c) at least 4 parts of water to form an intimate aqueous dispersion of the antacid and hydrocolloid; and (d) finally evaporating the water from the dispersion to form a substantially solid composition wherein the antacid and hydrocolloid are intimately admixed.

3,555,152
CONTROLLING FUNGI AND BACTERIA WITH 2,3-DIALKYL - N[(HALOALKYL)THIO]BICARBAMIMIDES

Malcolm W. Moon, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Original application Apr. 14, 1967, Ser. No. 630,827, now Patent No. 3,484,451, dated Dec. 16, 1969. Divided and this application Dec. 30, 1968, Ser. No. 788,046
Int. Cl. A01n *9/22*
U.S. Cl. 424—269 **15 Claims**

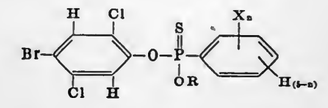
Certain new 2,3-dialkyl - N - [(haloalkyl)thio]bicarbamimides are active against fungi and bacteria. Alkyl groups of from 1 to 12 carbon atoms are disclosed; and haloalkyl groups on the imide nitrogen having 1 and 2 carbon atoms, and the halogens chlorine, bromine, and fluorine are disclosed. The compounds can be used against bean root rot fungi.

3,555,153
PESTICIDAL COMPOSITIONS COMPRISING BENZAMIDES AND THIOPHOSPHONATES AND METHOD OF USE

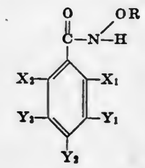
David L. Watson, Glen Ellyn, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Apr. 19, 1968, Ser. No. 722,552
Int. Cl. A01n *9/02, 9/36*
U.S. Cl. 424—222 **3 Claims**

An acaricidal and insecticidal composition comprising in combination a first compound selected from the group of compounds having the formula



wherein R is alkyl; each X is selected from the group consisting of alkyl, alkoxy, alkylthio, halogen and nitro; and n is an integer from 0 to 5, provided that a maximum of three X's are nitro; and a second compound selected from the group of compounds having the formula



wherein X_1 and X_2 are independently selected from the group consisting of alkyl, alkenyl, alkoxy, alkenyloxy, halogen, nitro, amino, alkylamino and dialkylamino; and Y_1, Y_2 and Y_3 are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkoxy, alkenyloxy, halogen, nitro, amino, alkylamino, and dialkylamino, provided that a minimum of two of X_1, X_2, Y_1, Y_2 and Y_3 are alkoxy, and provided that a maximum of two of X_1, X_2, Y, Y_2 and Y_3 are selected from the group consisting of nitro, amino, alkylamino and dialkylamino; and R is an alkyl group containing from 1 to 4 carbon atoms. A method for the control of acarids and insects which comprises applying to the locus of said acarids and insects in a quantity toxic to acarids and insects a composition heretofore described.

3,555,154

PREPARATIONS CONTAINING 6 - CYCLOALKYLGUANAMINES AND METHODS FOR TREATING INFLAMMATORY CONDITIONS THEREWITH

Takashi Enkoji, Park Forest, Ill., and Edward M. Levine, Buffalo, N.Y., assignors to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Original application Aug. 16, 1967, Ser. No. 660,919, now Patent No. 3,478,026, dated Nov. 11, 1969. Divided and this application Mar. 18, 1969, Ser. No. 808,300

Int. Cl. A61k *27/00*

U.S. Cl. 424—249 13 Claims

Preparations containing 6-cycloalkylguanamines wherein the cycloalkyl radical contains from 3 to 10 carbon atoms are disclosed and methods of using the preparations to treat inflammatory conditions. The compounds of the class of 6-(substituted) guanamines, also called 2,4-diamino-S-triazines are used in forming preparations for the therapeutic treatment of inflammatory conditions. Exemplary of the compounds used in the disclosed preparations is 6-cyclopropylguanamine. The nontoxic acid addition salts of the compounds are also therapeutically useful.

3,555,155

METHOD OF CONTROLLING INSECTS

Barbara Stearns, Highland Park, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 3, 1968, Ser. No. 733,812

Int. Cl. A01n *9/12, 9/22*

U.S. Cl. 424—246 4 Claims

Insects are controlled by contacting the insect with insecticidal amounts of 4-(2-diethylaminoethyl)-2-(para-methoxyphenyl)-2H-1,4-benzothiazin-3(4H)-one, and salts thereof.

3,555,156

PHENOTHIAZINE COMPOSITIONS AND METHODS OF PREPARING SAME

Boris Kviesitis, Des Moines, Iowa, assignor to VY Lactos Laboratories, Inc., Des Moines, Iowa

No Drawing. Filed Sept. 8, 1964, Ser. No. 395,038

Int. Cl. A61k *27/00*

U.S. Cl. 424—247 7 Claims

A livestock feed comprising the anthelmintic phenothiazine, and lecithin, propylene glycol, vegetable oil and molasses; and the method of making same wherein an emulsion of the propylene glycol, lecithin and vegetable oil is created to which the molasses and thence the phenothiazine are added wherein the phenothiazine is absorbed into the molasses.

3,555,157

METHODS OF PROTECTING PLANTS FROM FUNGI

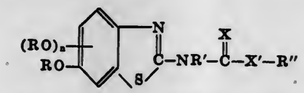
Robert F. Lindemann, Parsippany, N.J., assignor to Tenneco Chemicals, Inc., a corporation of Delaware

No Drawing. Filed Aug. 31, 1966, Ser. No. 576,219

Int. Cl. A61n *9/12, 9/20*

U.S. Cl. 424—270 3 Claims

Living plants are protected from attack by fungi by applying to them a fungicidal amount of a carbamate having the structural formula



wherein R and R'' each represents an alkyl group having from 1 to 4 carbon atoms; R' represents a member selected from the group consisting of hydrogen and alkyl groups having from 1 to 4 carbon atoms; X and X' each represents a member selected from the group consisting of oxygen and sulfur; and *n* represents an integer in the range of zero to one. Among the most active of these fungicidal compounds are methyl N-(6-methoxy-2-benzothiazolyl) carbamate and ethyl N-(6-methoxy-2-benzothiazolyl) thiol carbamate.

3,555,158

2-TRICHLOROMETHYLBENZTHIAZOLES AS ANTHELMINTICS

Eva Lea Samuel, East Bentleigh, Victoria, and George Holan, Brighton, Victoria, Australia, assignors to Monsanto Chemicals (Australia) Limited, West Footscray, Victoria, Australia, a company of Victoria

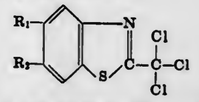
No Drawing. Original application Apr. 15, 1965, Ser. No. 448,286. Divided and this application Aug. 22, 1966, Ser. No. 596,027

Claims priority, application Australia, Apr. 23, 1964, 43,608/64

Int. Cl. A01n *9/12, 9/20*

U.S. Cl. 424—270 3 Claims

An anthelmintic composition and method of combating helminthiasis with said composition comprising administering a therapeutic amount of a 2-trichloromethylbenzthiazole having the formula:



wherein R_1 and R_2 are selected from the group consisting of hydrogen, chlorine, bromine, alkyl, alkoxy, alkylthio, nitro, amino, acylamino, alkylamino, and dialkylamino, wherein the alkyl and acyl moieties contain less than 9 carbon atoms.

3,555,159

ANTIMICROBIAL COMPOSITION AND METHOD OF USE

Louis I. Feldman, Spring Valley, N.Y., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware

No Drawing. Filed Mar. 14, 1967, Ser. No. 622,939

Int. Cl. A01n *9/18*

U.S. Cl. 424—302 9 Claims

A biocidal combination of 2,4,5-trichlorophenol and methylene bisthiocyanate useful for the protection of leather and for other fields where biocidal treatment is desired.

3,555,160

CHLORONITROPHENYL ESTERS OF POLYCARBOXYLIC ACIDS AS FUNGICIDES AND NEMATOCIDES

Delta W. Gier, Laurinburg, N.C., and Daniel M. Waleski, Kansas City, Mo., assignors to Chemagro Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 16, 1967, Ser. No. 675,287

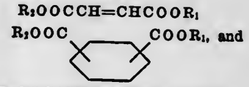
Int. Cl. A01n *9/12, 9/24*

U.S. Cl. 424—308 2 Claims

Compounds of the formulae

(1) $R_1OOC(CH_2)_nCOOR_1$

(2) $R_1OOCCH{=}CHCOOR_1$

(3)  and

(4) $R_1OOC(CH_2)_mS(CH_2)_mCOOR_1$

are useful as fungicides, herbicides and nematocides. R_1 and R_2 are mono to trihalo mono to dinitrophenyl or mono halo mono methyl nitrophenyl, *m* is 1, 2 or 3 and *n* is an integer from 0 to 8. Compounds of Formulae 1, 2 and 3 are plasticizers for cellulose esters and synthetic resins and compounds of Formula 4 are stabilizers for mono and diolefin polymers.

3,555,161

PARA - ALKENYLPHENOXY - HYDROXY - ISOPROPYLAMINOPROPANE IN THE TREATING OF CARDIAC AND VASCULAR DISEASES

Arne Elof Brandstrom, Goteborg, Hans Rudolf Corrodi, Askim, and Bengt Arne Hjalmar Ablad, Goteborg, Sweden, assignors to Aktiebolaget Hassle, Molndal, Sweden, a company of Sweden

No Drawing. Continuation-in-part of application Ser. No. 558,226, June 17, 1966, which is a continuation-in-part of application Ser. No. 521,436, Jan. 18, 1966. This application Mar. 18, 1969, Ser. No. 808,316

The portion of the term of the patent subsequent to Sept. 9, 1986, has been disclaimed

Int. Cl. A61k *27/00*

U.S. Cl. 424—330 9 Claims

Para-allyl substituted phenoxy-isopropylaminopropane, its preparation, pharmaceutical compositions containing this compound, and the use thereof in the treatment of cardiac and vascular diseases.

3,555,162

METHOD OF CONTROLLING NEMATODES

Barbara Stearns, Highland Park, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed June 3, 1968, Ser. No. 733,821

Int. Cl. A01n *9/00, 9/24*

U.S. Cl. 424—331 3 Claims

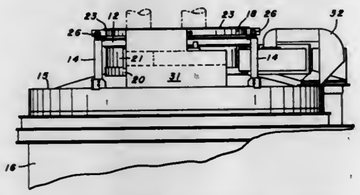
Soil nematodes are controlled by applying to the infected soil effective amounts of 2-methyl-1,3-diphenyl-1,3-propanedione.

ELECTRICAL

3,555,163
FUME-EXHAUST HOOD FOR ELECTRIC FURNACE

Bernard J. Lucas, Duquesne, Pa., assignor to United States Steel Corporation, a corporation of Delaware

Filed May 16, 1969, Ser. No. 825,202
Int. Cl. B08b *15/02*; **F27d** *17/00*
U.S. Cl. 13—1 **1 Claim**

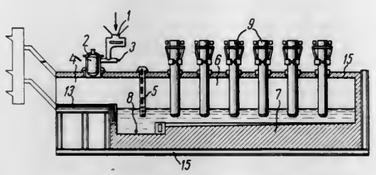


An insulated supporting framework including a circular refractory lined water-cooled ring around the furnace electrodes stands on the roof ring of the furnace. A stainless steel hood including a cylindrical sidewall with damper control and a refractory lined water-cooled cover with electrode holes therein is carried by the insulated frame, fitting within the ring thereof. A stainless-steel refractory-lined exhaust outlet extends radially from the sidewall and damper-controlled inlet extensions from the hood and outlet project over the rear and side doors of the furnace. Radial bearing lugs on the hood engage the insulated frame between adjustable positioning screws.

3,555,164
METHOD OF PROCESSING ORES AND CONCENTRATES CONTAINING RARE METALS AND A UNIT FOR EFFECTING SAID METHOD

Vladimir Nikolaevich Kostin, Kutuzovsky prospekt 15, kv.17; Ivan Vasilievich Paramonov, Prospekt Mira 188-a, kv.65, and Viktor Vladimirovich Tsyganov, Dmitrovskoe shosse 153, korp.22, kv.59, all of Moscow, U.S.S.R.

Filed Feb. 17, 1967, Ser. No. 616,889
Int. Cl. H05b *7/18*
U.S. Cl. 13—9 **8 Claims**



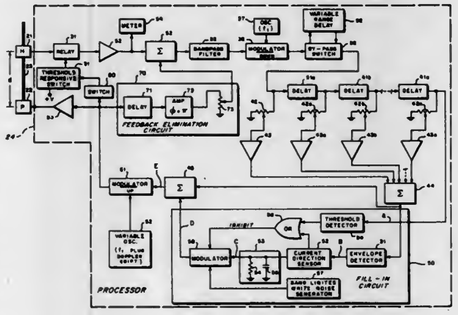
An ore-processing device comprising a melting chamber, a cyclone apparatus having an outlet hole and being connected to said chamber, an ejecting device for furnishing a charge to the device and a cooled sill under the outlet hole.

3,555,165
ACOUSTIC TARGET SIMULATOR

Kurt L. Ettenhofer and Francis E. Huff, Hatboro, Pa., assignors to the United States of America as represented by the Secretary of the Navy

Filed Jan. 29, 1969, Ser. No. 794,983
Int. Cl. G09b *9/00*; **G01s** *9/66*
U.S. Cl. 35—10.4 **21 Claims**

Apparatus for simulating acoustic echoes of sonar pulses from any selected target configuration including a hydrophone whose output signal is fed to a signal processor for modifying a received sonar pulse and generating an electrical echo analogue signal applied to a projector for transmission. The processor includes a modulator for down modulating the carrier frequency of the received pulse and delay devices for delaying the pulse by varying degrees equivalent to the travel times for the pulse between successive major echo producing discontinuities in the target whose echo is being simulated to form a series of pulses. The pulses are controlled in amplitude in accordance with the appropriate

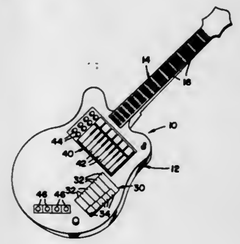


target strengths for the succession of discontinuities and are fed to fill-in and summing circuits for adding white noise of desired envelope characteristics in the intervals between successive pulses to form the echo analogue signal. A second modulator shifts the frequency band of the echo analogue signal upwardly and introduces a selected Doppler shift thereinto prior to its application to the projector for acoustic transmission. Feedback elimination circuitry delays and shifts the phase of the echo analogue signal and applies the resulting signal to a summer for eliminating the effect of acoustic feedback.

3,555,166
GUITAR-LIKE ELECTRONIC MUSICAL INSTRUMENT WITH PLURAL MANUALS

Robert A. Gasser, 871 Monica Lane, Campbell, Calif. 95008

Filed Mar. 19, 1968, Ser. No. 714,277
Int. Cl. G10h *1/00, 5/02*
U.S. Cl. 84—1.01 **14 Claims**



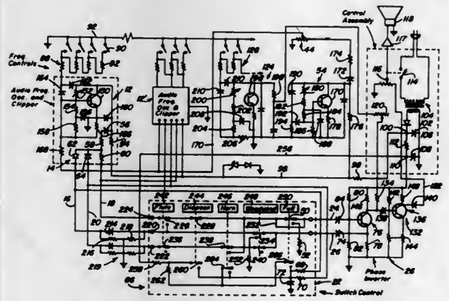
An electronic musical instrument for simulating a stringed instrument, such as a guitar, wherein the main body of the instrument is coupled to an elongated fingerboard member extending outwardly therefrom with the member having a plurality of key-actuated switches thereon with the keys of the switches being arranged in rows corresponding to the manual positions of strings, each key and switch representing a particular position along a string. Tone generator means carried

by the body is coupled to the switches to produce the various tones which simulate the plucking of the strings. Means is provided on the body to interlock the switches of several rows to permit various chords to be played by actuating the keys in different rows. An accordion-type keyboard is provided to operate the tone generator means in accompaniment with the actuation of said keys. The member is shiftably mounted on the body so that the instrument can be disassembled.

3,555,167
MULTIVOICE CIRCUITRY WITH VIBRATO FOR ELECTRONIC MUSICAL INSTRUMENT

John W. Padalino, Morris Plains, N.J., assignor to Whippany Electronics, Inc., a corporation of New Jersey

Filed June 2, 1969, Ser. No. 829,472
Int. Cl. G10h *1/02, 1/06*
U.S. Cl. 84—1.19 **21 Claims**

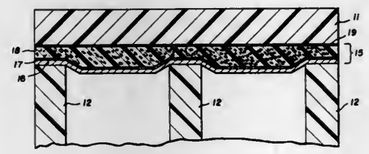


A sinusoidal waveform signal of audiofrequency is clipped at one or more amplitude levels to establish a plurality of signal components. Any one of the signal components, the combination of two signal components algebraically added, or the combination of three signal components algebraically added produce resultant output signals having different waveform characteristics providing selectable multivoice musical tones simulating such instruments as the flute, diapason, horn, woodwind, or full organ. The original sinusoidal signal is generated by a resonant feedback oscillator having a bias that may be varied to produce a vibrato effect in the resultant signals. Signal selection is made by a switch assembly combining different paths including a phase inverter, through which clipped signal components are conducted. The various oscillators and the phase inverter may be transistorized.

3,555,168
SHIELDING GASKET

William C. Frykberg, Rochester, N.Y., assignor to Tapecon Inc., Rochester, N.Y., a corporation of New York

Filed June 11, 1969, Ser. No. 832,266
Int. Cl. H05k *9/00*
U.S. Cl. 174—35 **3 Claims**

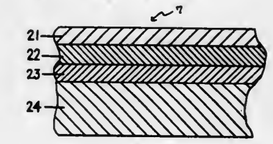


An RF shielding gasket is formed as a conductive foil lamina bonded to a compressively resilient foam backing by a flexible adhesive and mounted on a cover by pressure-sensitive adhesive coating on the back of the foam lamina so when the cover is closed over a cabinet containing electronic equipment, the foil is held in intimate contact with the cabinet by the resilient foam lamina.

3,555,169
COMPOSITE LAYER MATERIAL HAVING AN OUTER LAYER OF COPPER AND SUCCESSIVE LAYER OF STAINLESS STEEL, LOW CARBON STEEL AND COPPER

Edwin A. Miller, Attleboro, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Jan. 2, 1968, Ser. No. 694,894
Int. Cl. H01b *11/06*; **B32b** *15/00*
U.S. Cl. 174—36 **1 Claim**

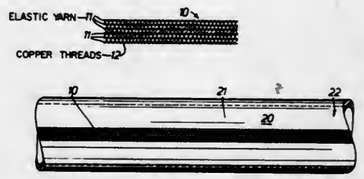


A cable for the transmission of communication impulses or signals uses as a cable shielding material a highly conductive cable shield material which is of high strength and which is corrosion resistant. The material consists of a four-layered composite bonded together and comprised of a thin conductive layer of copper as the outer layer to prevent rust formation next to a layer of high strength, corrosion-resistant nickel and chromium containing steel (stainless steel) next to a layer of low carbon steel which provides greater ductility and a cost saving next to an innermost layer of copper which provides corrosion protection and which is relatively thick to provide overall conductivity.

3,555,170
FLEXIBLE HOSE INCORPORATING EXTENSIBLE CONDUCTIVE TAPE

Aristovoulos George Petzetakis, Thessalonikis & Chandri St., Moschaton, Piraeus, Greece

Filed June 10, 1968, Ser. No. 735,639
Claims priority, application Greece, June 24, 1967, 35,261
Int. Cl. H05f *3/00*; **F16l** *11/12*
U.S. Cl. 174—47 **5 Claims**

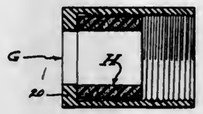


A flexible hose having a conductor element extending along the hose wall. The conductor element is in the form of an elastic conductive strip or tape having a generally flat configuration and formed of elastic yarns or threads extending along the strip or tape and flexible metal wires or threads of metal braided, plaited or interwoven with the elastic yarns or threads. The conductive element being of this form is of use especially for extruded hoses, since it can be laid along the hose parallel to the hose axis and will stretch to accommodate hose elongation.

3,555,171
CABLE CONNECTION INSULATOR AND SEAL

Robert L. Larson, 2873 Velasco Lane, Costa Mesa, Calif. 92626

Filed July 29, 1968, Ser. No. 748,285
Int. Cl. H02g 15/02, 15/08
U.S. Cl. 174—138 4 Claims

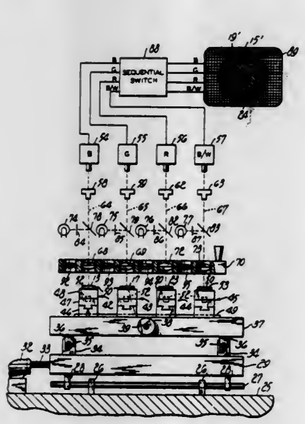


An insulated enclosure for spliced electrical conductors, wherein abutted ends of electrical cables are stripped of sheathing and are joined by a connector sleeve, providing an imperforate hermetically sealed closure for the cable connection that fully embraces the connector sleeve and stripped portions of cable and sealed with the sheathing, thereby assuring continuity of insulation surrounding the connected cables.

3,555,172
TELEVISION SYSTEM FOR CHECKING MASK REGISTRATION

Alfred Heinz, Flemington, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed July 16, 1968, Ser. No. 745,332
Int. Cl. H04n 9/32
U.S. Cl. 178—5.2 7 Claims

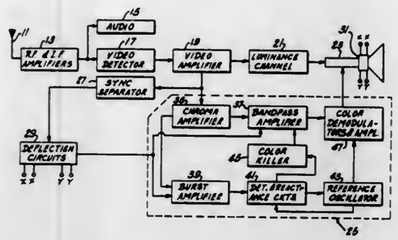


A method and system in which a plurality of photographic masks comprising a set are individually mounted, spaced from one another, upon a platform. The surface of each of the masks is illuminated with a light of a different color and a television camera, which is mounted above each mask, generates an electronic signal indicative of the appearance of the pattern on each mask. The video signals from the cameras are sampled by sequentially connecting the cameras to the input terminal of a color television monitor which corresponds to the color of light which is illuminating the associated mask. The monitor displays a composite, multicolored image of all the mask patterns in a set which clearly shows any misalignment of registration of the respective patterns on the masks.

3,555,173
COLOR KILLER CIRCUIT FOR TELEVISION RECEIVERS

Robert C. Wheeler, Batavia, N.Y., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Continuation of application Ser. No. 618,522, Feb. 24, 1967, now abandoned. This application Jan. 15, 1970, Ser. No. 4,165
Int. Cl. H04n 9/48
U.S. Cl. 178—5.4 8 Claims

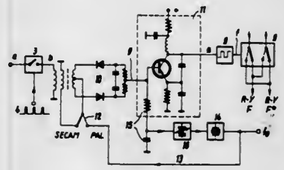


A solid state color killer circuit which functions as a switching circuit to control a direct current potential which is applied to a stage in the chrominance channel to disable the chrominance channel when monochrome signals are received. When color signals are received, the color killer circuit shunts the direct current potential away from the chrominance channel to permit normal color signal processing. The circuit is adapted to provide a visual indication of the presence or absence of color signals.

3,555,174
SYNCHRONIZING CIRCUIT FOR SECAM SWITCH

Walter Bruch, Hannover, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany

Filed Oct. 31, 1967, Ser. No. 679,361
Claims priority, application Germany, Dec. 3, 1966, T32667
Int. Cl. H04n 9/40
U.S. Cl. 178—5.4 5 Claims



The present invention relates to a color television receiver according to the SECAM principle, and to a circuit for synchronizing a line frequency switch in such a receiver. The synchronizing voltage is derived from the color carrier gated during the horizontal retrace. The mean frequency of the carrier is changed from line to line. The gated color carrier is passed to a frequency dependent circuit, e.g. a frequency discriminator or a resonant circuit tuned to one of the mean carrier frequencies. At the output terminals of the frequency dependent circuit there is delivered a voltage with half the line frequency which voltage is used for synchronizing the line frequency switch.

3,555,175
KINESCOPE BIAS TRACKING CIRCUITS

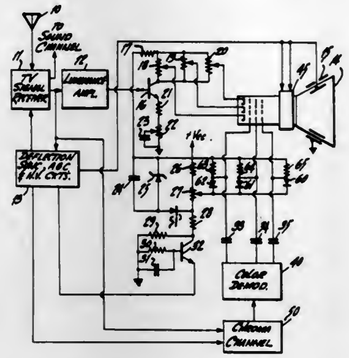
Dal F. Griepentrog, Indianapolis, Ind., assignor to RCA Corporation, a corporation of Delaware

Filed May 22, 1968, Ser. No. 731,038
Int. Cl. H04n 9/16
U.S. Cl. 178—5.4 8 Claims

A circuit functions to make the kinescope grid electrode bias track with the cathode electrode bias in a direction to

maintain a constant difference therebetween for changes in AC line voltage.

A Zener diode is coupled across a source of clamping pulses to maintain the level of clamping pulses used to operate a

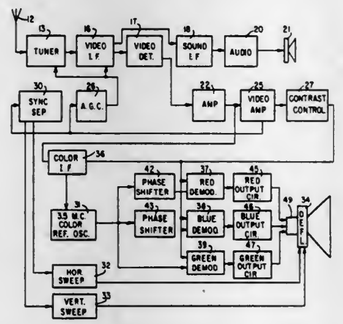


DC restoring circuit for the grid electrode of the kinescope, constant; which, in effect, assures a constant potential difference between the grid and cathode electrodes, both of which are biased from an unregulated supply, subject to potential variations.

3,555,176
COLOR DEMODULATOR

Gildo Cecchin, Niles, Ill., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed May 31, 1968, Ser. No. 733,336
Int. Cl. H04n 9/50
U.S. Cl. 178—5.4 8 Claims



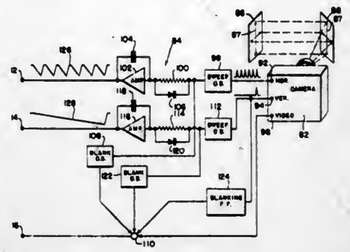
A color demodulator for a color television receiver uses three separate demodulators each having a pair of diodes to separately demodulate the three color signals. The polarity of the pair of diodes used to demodulate one color is reversed from the polarity of the diodes used the other two colors in order to provide the proper phase angles necessary to carry out the demodulation.

3,555,177
VIDEO RECORDER HAVING AN ADAPTER TO RECEIVE AND MODIFY VIDEO INPUT SIGNALS FOR APPLICATION TO A CATHODE RAY TUBE RECORDING DEVICE

Tommy N. Tyler, Littleton, Colo., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed July 3, 1967, Ser. No. 650,739
Int. Cl. H04n 5/86
U.S. Cl. 178—6.7 1 Claim

An adapter for recording a video picture upon a light-sensitive recording medium is connected between a video camera and a fiber optics cathode ray tube recording apparatus. The adapter modifies the input signal received from the camera to generate synchronized horizontal and vertical sweep signals and to modulate the intensity of the electron

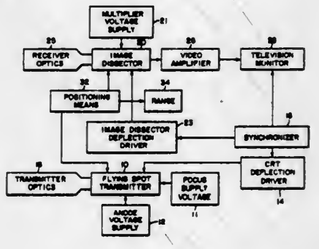


beam, formed by the cathode ray tube, in response to the video signal. The adapter also blanks alternate fields for allowing a continuous series of picture frames to be recorded upon the recording medium passing over the face plate of the fiber optics cathode ray tube.

3,555,178
OPTICAL IMAGING AND RANGING SYSTEM

Homer A. Humiston, Arnold, and Fitz-Hugh B. Marshall, Ellicott City, Md., assignors to Westinghouse Electric Corporation, East Pittsburgh, Pa., a corporation of Pennsylvania

Filed Jan. 11, 1965, Ser. No. 424,577
Int. Cl. H04n 5/30
U.S. Cl. 178—6.8 8 Claims



A field of view is scanned with a flying spot scanner projecting radiation of a certain wavelength. At the same location, radiation reflected back from the field of view is received by an image dissector tube having a photosensitive surface responsive to the wavelength of radiation being transmitted, to form an electron image. The electron image is scanned over a small aperture of an apertured plate member in the image dissector tube at a rate synchronized with a rate of scanning of the flying spot scanner. The scanning in the image dissector tube may, in effect, start at various predetermined times after the scanning of the flying spot scanner so that fields of view at correspondingly different ranges may be examined. The output of the image dissector is fed to a TV monitor for viewing purposes.

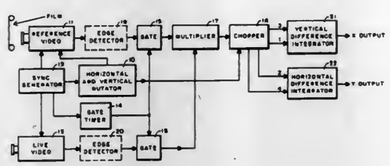
3,555,179
ANALOGUE VIDEO CORRELATOR FOR POSITION FIXING OF AN AIRCRAFT

David Rubin, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 2, 1969, Ser. No. 789,086
Int. Cl. H04n 1/00; H03k 5/153; G01s 5/00
U.S. Cl. 178—6.8 6 Claims

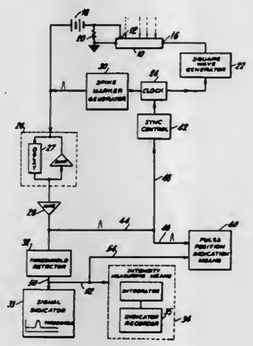
An in-flight analogue video correlator for position fixing of an aircraft using edges of scenes derived from relatively high

contrast reference and live video signals. Several horizontally displaced video edge outputs, obtained by passing reference edge pulses through parallel delay lines, are first widened and then individually multiplied with the edge widened line video



output to determine coincidence. Static and dynamic matching is used to first obtain the approximate position of correlation and then given continuous directional information.

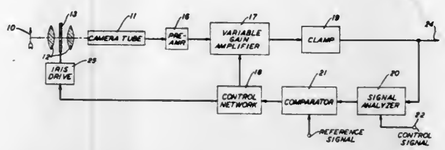
3,555,180
SEMICONDUCTOR DETECTOR AND SCANNING DEVICE
Melvin S. Cook, Hewlett Harbor, N.Y., assignor to Servo Corporation of America, Hicksville, N.Y., a corporation of New York
Filed Feb. 17, 1967, Ser. No. 616,861
Int. Cl. H04n *5/30*
U.S. Cl. 178—7.1 **11 Claims**



This invention employs a radiation detection device including semiconductor material positioned to receive radiation. The radiation releases free carriers and a scanning voltage drives the carriers to a collector. Synchronizing means and a recirculating delay line control the scanning voltage and provide improved signal to noise properties.

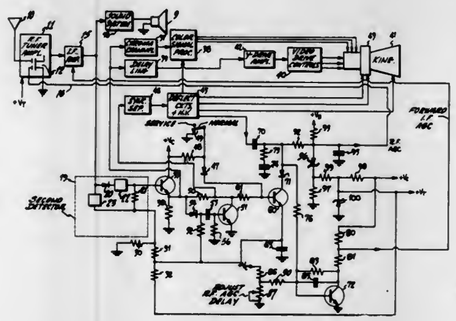
3,555,181
AUTOMATIC VIDEO LEVEL CONTROL EMPLOYING IRIS AND AMPLIFIER GAIN ADJUSTMENTS
Werner Thommen, Marlboro, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York
Filed June 5, 1968, Ser. No. 734,630
Int. Cl. H04n *5/38*
U.S. Cl. 178—7.2 **5 Claims**

The amplitude of a signal generated by a video pickup tube is controlled by employing an automatic iris at high illumination levels and an automatic gain control circuit at low illumination levels. The crossover point between iris and gain control is selected so that the gain circuit operates as long as increased illumination and decreased gain improve the signal to noise ratio and picture quality. Above this point, signal level is maintained by an automatic iris which improves the depth of field as illumination increases. Both functions are



controlled by sampling a selected field of the output from the pickup tube.

3,555,182
PLURAL OPERATING MODE AUTOMATIC GAIN CONTROL SYSTEM
Dal F. Griepentrog, Indianapolis, Ind., assignor to RCA Corporation, a corporation of Delaware
Filed May 20, 1968, Ser. No. 730,415
Int. Cl. H04n *5/52*
U.S. Cl. 178—7.3 **16 Claims**

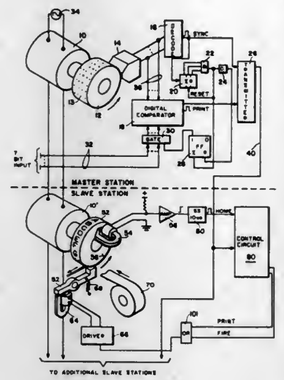


An automatic gain control system for a television receiver employing a fixed biasing arrangement for a video detector, noise inverter, sync separator, and automatic gain control amplifier. The noise inverter operates when noise pulses exceed a threshold limit determined in part by the biasing arrangement. Relatively noise-free sync pulses therefore are supplied to the sync separator and AGC circuit. The AGC circuit is arranged to supply control voltages having different ranges to the R.F. and I.F. amplifiers in the receiver. Furthermore, the AGC circuit operates such that a reference video signal is supplied to the image-reproducing kinescope during a service operating mode.

3,555,183
ASYNCHRONOUS MASTER-SLAVE PRINT SYSTEM EMPLOYING CHARGING AND DISCHARGING OF A CAPACITOR
Frederick F. Ladd, Jr., Newbury, Mass., and David L. Nettleton, Moorestown, N.J., assignors to Mohawk Data Sciences Corporation, East Herkimer, N.Y., a corporation of New York
Filed Aug. 20, 1968, Ser. No. 754,021
Int. Cl. H04l *15/34*
U.S. Cl. 178—35 **15 Claims**

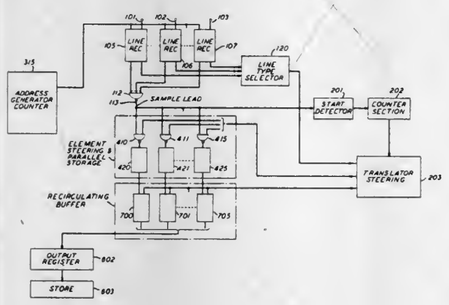
A master-slave print system in which the master station has a code carrier and each slave station has a type carrier, all the carriers moving at substantially the same velocity. Each character transmitted from the master to a slave station is represented in a transmitted signal by the time interval between a pair of pulses and each such time interval is indicative of the position of the character on the master's code carrier with respect to a reference point thereon. A capacitor at the slave station starts charging at the beginning of the

transmitted time interval. When the time interval ends or when a reference point on the slave's carrier is detected (whichever occurs first), the charging operation is arrested and the charge level held. When the second of the latter two



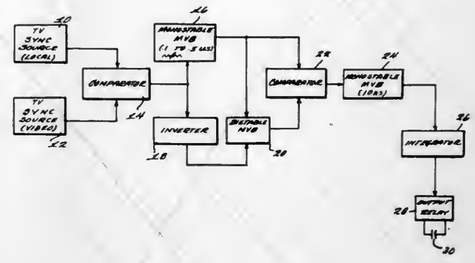
events (reference point detection or time interval termination) occurs, the capacitor is discharged at the same rate it was charged and when it reaches its initial reference level the slave print hammer is fired to print the transmitted character.

3,555,184
DATA CHARACTER ASSEMBLER
Ray C. Townley, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 21, 1964, Ser. No. 405,536
Int. Cl. H04l *5/24*
U.S. Cl. 178—52 **11 Claims**



Incoming serial data from a plurality of lines dedicated to different signaling rates is arranged in parallel form by an assembler which scans the lines and applies the interleaved bits to parallel gate circuits. The gate circuits are enabled to pass the bits to delay line stores by a logic circuit which detects incoming character start elements and thereafter successively operates the gates when the active lines are sampled at the theoretical midpoint of each successive code element. The stores are then simultaneously read out to pass the elements of each data character, in parallel, to a register.

3,555,185
SYNCHRONIZING PULSE COMPARATOR CIRCUITRY
Ole Skrydstrup, Pierrefonds, and Bjorn Larsen, Pointe Claire, Quebec, Canada, assignors to Central Dynamics, Ltd., Pointe Claire, Montreal, Quebec, Canada, a body corporate and politic
Filed Jan. 5, 1968, Ser. No. 695,976
Int. Cl. H04n *1/36;* **H03d** *13/00;* **H03k** *5/18*
U.S. Cl. 178—69.5 **8 Claims**

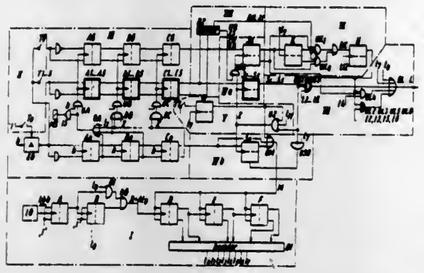


A circuit for comparing two trains of synchronizing pulses is disclosed wherein the circuitry determines whether the time displacement between the trains is within a predetermined limit, the limit being adjustable. The above circuit comprises a comparator to which is applied the two pulse trains. The output of the comparator is a pulse whose width is a direct function of the displacement. This pulse is applied to an invertor and a monostable multivibrator, the pulse width of which is adjustable. The monostable multivibrator output and the invertor output are applied to a bistable multivibrator. The positive-going, leading edge of the monostable multivibrator output sets the bistable multivibrator and the positive-going, trailing edge of the invertor output pulse resets the bistable multivibrator. The output pulses of the monostable and bistable multivibrator are applied to a second comparator which generates an output alarm signal whenever the bistable multivibrator output signal is greater in time duration than the monostable multivibrator output signal. The occurrence of an alarm signal at the output of the second comparator indicates that the time displacement between the pulse trains is greater than the predetermined limit established by the adjustable pulse width of the monostable multivibrator output signal. The second comparator output signal is applied to a second monostable multivibrator which detects the occurrence of an output signal from the second comparator even though the width pulse thereof is very slight. The second monostable multivibrator output signal is then applied to an integrator which provides an output signal only after a predetermined number of pulses of the two trains are out of synchronization. The integrator output signal is then applied to an appropriate control device.

3,555,186
KEY-OPERATED TELEPRINTER
Adrian Allemann, Soleure, Welschenrohr, Switzerland, assignor to Hasler A. G., Bern, Switzerland, a company of Switzerland
Filed Apr. 25, 1968, Ser. No. 724,150
Claims priority, application Switzerland, Apr. 26, 1967, 5917/67
Int. Cl. H04l *17/02*
U.S. Cl. 178—79 **4 Claims**

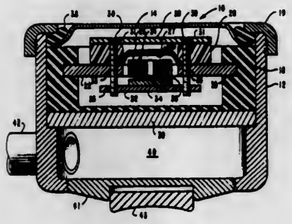
Key-operated teleprinter for the transmission of code symbols by the start-stop method, wherein each key triggers a further bit which has a first value and a second value for letters and numerals respectively, the bit combination and further bit being supplied to a reserve store adapted to store same and a master clock for controlling transmission of said bit combinations and associated further bits from the reserve store to the transmitter sotre, also for controlling the output

circuit which transmits the bit combination to the transmission line and means for temporarily blocking the transmission of a bit combination to said line if the further bit transmitted together with the bit combination is different from



that transmitted with the preceding bit combination and means for producing an operating character for shifting the receiver from letters to numerals or vice versa.

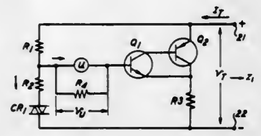
3,555,187
STETHOSCOPE
Donald G. Rowley, 16042 Ventura Blvd., Woodland Hills, Calif. 91364
Filed Dec. 19, 1966, Ser. No. 613,061
Int. Cl. H04r 1/46; A61b 7/04
U.S. Cl. 179—1 **5 Claims**



The stethoscope is characterized by a housing having an external body contact membrane. A pickup plate is mounted in the housing near the membrane. An electromagnetic coil and armature are mounted on a support plate in the housing. The armature is mounted on the side of support plate opposite to the pickup plate and is connected to the pickup plate so that vibrations detected by the pickup plate are transmitted to the armature. In this way, when the body contact membrane is pressed against the body of a person, with sufficient force to compact the skin-clothing interface, the armature is forced away from the electromagnetic coil so it can vibrate freely. With this arrangement the maximum sensitivity of the transducer coincides with the optimum acoustical matching between the body and the transducer.

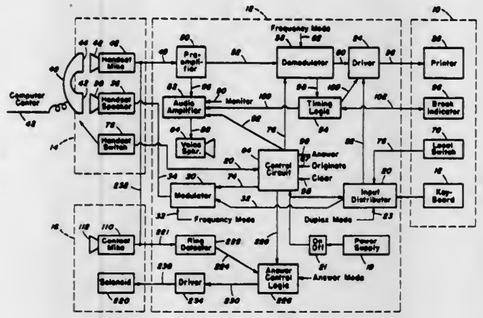
3,555,188
SPEECH NETWORK FOR A TELEPHONE SET EMPLOYING AN ELECTROMAGNETIC TRANSDUCER
Larned A. Meacham, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York
Filed Aug. 9, 1967, Ser. No. 659,440
Int. Cl. H03f 1/34
U.S. Cl. 179—1 **7 Claims**

In a telephone speech network employing an electromagnetic transmitter, compensation for nonlinearity and stabilization of an included transistor amplifier is provided for



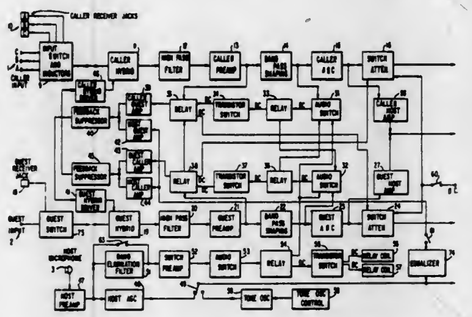
without utilizing either inductive or capacitive circuit elements.

3,555,189
AUTOMATIC TELEPHONE ANSWERING MECHANISM
Jesse T. Quatse, 613 Copeland St., Pittsburgh, Pa.
Original application Mar. 6, 1967, Ser. No. 620,760, now Patent No. 3,505,474, dated Apr. 7, 1970. Divided and this application Nov. 20, 1967, Ser. No. 684,217
Int. Cl. H04m 1/64
U.S. Cl. 179—1 **2 Claims**



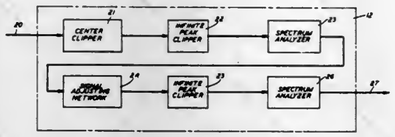
An improved Automatic Telephone Answering Mechanism comprising a novel ring detector means which determines the proper time sequence of ringing and silence by timing and logic circuit networks, thereby filtering out spurious telephone rings to automatically answer an associated telephone only when a true call is being made.

3,555,190
AUTOMATIC TELEPHONE CONFERENCE CONNECTOR
Warren L. Braun, Harrisonburg, Va., assignor to Television, Radio and Film Communication, Nashville,
Filed Jan. 25, 1968, Ser. No. 700,550
Int. Cl. H04m 3/56
U.S. Cl. 179—1 **6 Claims**



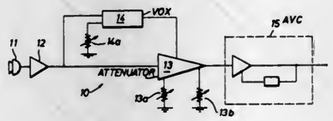
An automatic interconnector of two normal telephone calls from standard subscriber drops, simultaneously permitting a local party to talk with both external parties, with three-way conversation mode normal to conference telephony. Switching systems are provided for assigning priorities to each of the parties.

3,555,191
PITCH DETECTOR
A Michael Noll, Newark, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York
Filed July 15, 1968, Ser. No. 744,931
Int. Cl. G10l 1/00, 1/04
U.S. Cl. 179—1 **7 Claims**



The pitch of a complex speech wave is determined by spectrum analyzing the infinitely peak-clipped log spectrum of a center-clipped and infinitely peak-clipped interval of an analogue speech wave.

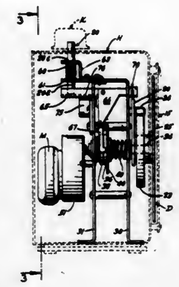
3,555,192
AUDIO SIGNAL PROCESSOR
Robert L. Hymer, Houston, Tex., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed July 8, 1969, Ser. No. 839,941
Int. Cl. H04b 15/00
U.S. Cl. 179—1 **4 Claims**



The output signal from a microphone is fed through a preamplifier to a variable attenuator and then to an automatic volume control (AVC) circuit. A voice operated switch is connected between the output of the microphone preamp and the attenuator and activates the latter when the output signal from the preamp falls below a predetermined minimum amplitude to introduce signal attenuation at the same rate as gain is increased in the automatic volume control circuit to thereby eliminate induced noise surges during periods of silence or low amplitude input into the microphone.

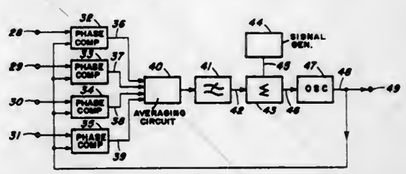
3,555,193
LONG DISTANCE TIMER
Paul M. Brand, Fort Lauderdale, and Lawrence Reich, West Hollywood, Fla., assignors to Lorbon Manufacturing Co., Inc., West Hollywood, Fla., a corporation of Florida
Filed Apr. 12, 1968, Ser. No. 720,938
Int. Cl. H04m 15/30
U.S. Cl. 179—7.1 **5 Claims**

The overtime cost of a long distance telephone call is registered on a dial, the dial being turned by a timing motor which is energized through a manual start button when the conversation is commenced. The motor is also effective to wind a spring for resetting the dial. At the end of the call the motor is disabled by pressing a stop button, the dial is stopped in a position showing the overtime cost of the call and the spring is in a tensioned state. At the commencement of the next call the dial is instantly reset by releasing the



spring automatically as an incident to operating the start button.

3,555,194
INTERSTATION SYNCHRONIZATION APPARATUS
Hirokazu Goto, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan
Filed Nov. 14, 1968, Ser. No. 775,696
Claims priority, application Japan, Nov. 17, 1967, 42/74022
Int. Cl. H04j 3/06
U.S. Cl. 179—15 **14 Claims**

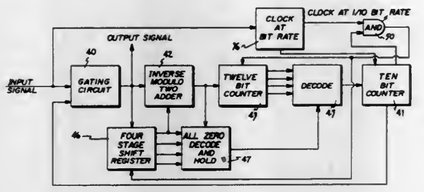


Interstation synchronization apparatus for a time division multiplex communication system having a plurality of communication stations is provided wherein multi-input, phase-controlled oscillator means, whose output signal represents the station synchronization signal, is present at each station therein. The multi-input, phase-controlled oscillator means is synchronized by a comparison of the synchronization signal generated thereby with synchronization signals generated at stations remotely located therefrom. The multi-input phase-controlled oscillator means is compensated for phase lags present in the externally generated synchronization signals as applied thereto by discrete signal levels introduced therein to control the frequency of the output signal thereof.

3,555,195
MULTIPLEX SYNCHRONIZING CIRCUIT
James C. Rester and Curtis D. Brudos, Northridge, Calif., assignors to RCA Corporation, a corporation of Delaware
Filed Oct. 5, 1967, Ser. No. 673,076
Int. Cl. H04j 3/06
U.S. Cl. 179—15 **5 Claims**

There is disclosed a synchronizing circuit which automatically selects the proper phasing alignment when demultiplexing a digital data stream. The data stream is generated by the time multiplexing of two or more modulated channels. The data stream is demultiplexed in a specified format at a receiver and one demultiplexed channel is coupled to a synchronizing circuit. The synchronizing circuit detects a pattern which is known to be forbidden due to certain properties of the modulation technique or the original analogue signal and hence can occur only if synchronization is lost. A counter controlling an input gate determines the time the

data stream is sampled and by means of a decoding circuit can detect the forbidden pattern. The detection of this pattern causes the input signal to be shifted in phase by the action of the synchronizing circuit until the reception of proper signals is accomplished.

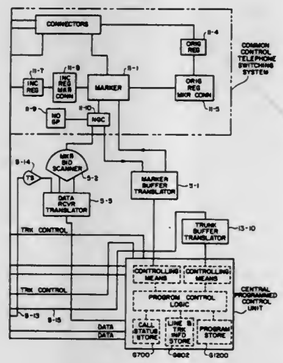


3,555,196

TELEPHONE SWITCHING SYSTEM WITH PROGRAMMED AUXILIARY CONTROL FOR PROVIDING SPECIAL SERVICES

Fred J. Singer, Chatham, N.J., assignor to Northern Electric Company Limited, Montreal, Canada

Filed Sept. 21, 1967, Ser. No. 669,436
Int. Cl. H04q *3/54*
U.S. Cl. 179—18 **31 Claims**



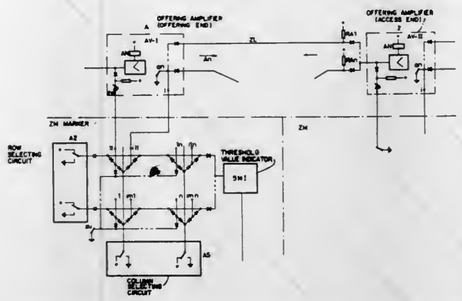
A wired logic common control telephone system which has a program controlled auxiliary control system or central programmed control unit operating in consort therewith for particular calls, in order that special features and Centrex operation can be provided to subscribers. For certain call features, interface to the program controlled control unit is made from the marker via a number group connector upon designation of a particular class of service; for others a special circuit which splits a certain type of junctor provides access to an auxiliary interline switching means which is controlled by the program controlled control system, and is activated by a signal from the subscriber whose line is terminated on the common control system. For Centrex operation, a private branch exchange or a remote switching unit is terminated via trunk circuits on a line-link frame in the common control system, and is controlled by the main office program controlled control system.

3,555,197

GUIDE-WIRE ROUTE SEARCHING NETWORK

Kurt Strunk, Markgroningen, Heinrich Halfmann, Ulrich, and Klaus Luhmann, Valhingen, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 23, 1968, Ser. No. 707,543
Claims priority, application Germany, Feb. 24, 1967, St26542
Int. Cl. H04g *3/49*
U.S. Cl. 179—18 **11 Claims**



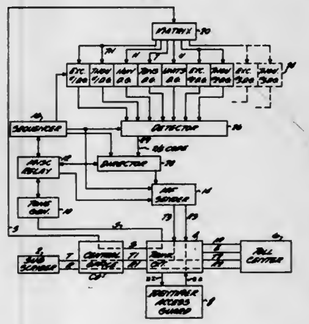
A route search may be completed through a switching network using a guide-wire or pilot network. The search is performed using only a single polarity feeder voltage and ground potential as a reference. A voltage divider is included in each guide-wire which can be influenced by the offering signal on the offering end of the guide-wire so that a first voltage value appears on the guide-wire to actuate an offering amplifier on the end. The actuated offering amplifier provides an access potential on the guide-wire carrying the offering potential. The access potential on a guide-wire carrying the offering potential affects the voltage divider on the access end so that a second, higher voltage value of the same polarity appears on the said guide-wire if the said offering amplifier in the access end represents a further guide-wire which is in the idle condition. An indicator connected at the offering end responds to the higher voltage value of the same polarity to effect the connection of the actual network on the corresponding switches and links.

3,555,198

IDENTIFIER TO DETERMINE THE CLASS OF SERVICE TO WHICH A SUBSCRIBER IS ENTITLED

James Lawrence Stepan, Humboldt, and John Samuel Welch, Milan, Tenn., assignors to International Telephone and Telegraph Corporation, a corporation of Delaware

Filed Apr. 1, 1968, Ser. No. 718,318
Int. Cl. H04m *3/38*
U.S. Cl. 179—18 **5 Claims**



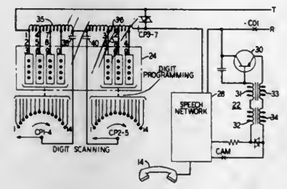
Identifier circuits are provided for determining which services a calling telephone subscriber is entitled to dial. The identifier circuits also provide identification of the originating central office when more than one central office is serviced by the equipment. Means are provided for routing permitted calls automatically to called parties and for routing unauthorized calls for special screening.

3,555,199

FRAUD PROTECTED PRESET TELEPHONE

Carol H. Eubank, Cedar Hills, and Daniel L. Miller, Indianapolis, Ind., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill; Berkeley Heights, N.J., a corporation of New York

Filed Oct. 1, 1968, Ser. No. 764,231
Int. Cl. H04m *1/66*
U.S. Cl. 179—18 **8 Claims**



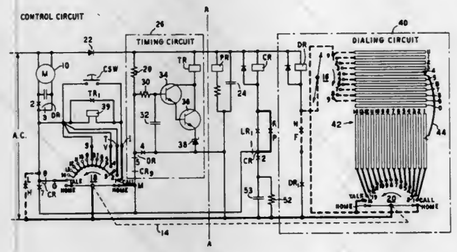
A telephone in which the closure of the hookswitch energizes a relay that seizes the telephone line and initiates the operation of a sequential switching means if the sequential switching means is in the first of three rest positions. The operated sequential switching means advances to the second rest position wherein an automatic dial may be activated to call a single preselected telephone number and the activation of the dial advances the sequential switching means to the third rest position. The opening of the hookswitch at any time deenergizes the relay to drop the telephone line and returns the sequential switching means to the first rest position.

3,555,200

FRAUD PROTECTED DIRECT CALL TELEPHONE CIRCUIT

Carol H. Eubank, Cedar Hills, Ind., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York

Filed Oct. 1, 1968, Ser. No. 764,093
Int. Cl. H04m *1/40*
U.S. Cl. 179—18 **10 Claims**



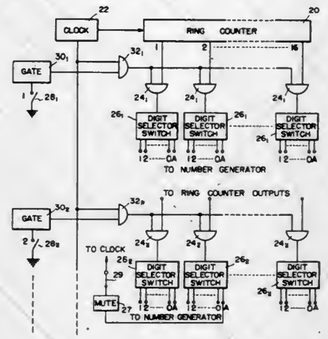
A telephone in which the closure of the switchhook seizes the telephone line and energizes a pair of relays that initiate the operation of sequential switching means if the sequential switching means is in the first of three reference positions. The operated sequential switching means advances to the second reference position wherein the speech transmitter and the hookswitch are disabled and call initiating means are enabled. The call initiating means causes an automatic dial to call a preselected telephone number and at the same time advances the sequential switching means to the third reference position. In this position the speech transmitter and hookswitch are enabled so as to permit conversation with the called station and the dropping of the telephone line when the conversation is completed. The opening of the enabled hookswitch deenergizes the pair of relays, which returns the sequential switching means to the first reference position.

3,555,201

ELECTRONIC REPERTORY DIALER

Manfred R. Kuehnle, Lexington, and Jurgen Kok, Bedford, Mass., assignors to DASA Corporation, Andover, Mass., a corporation of Massachusetts

Filed Mar. 27, 1968, Ser. No. 716,520
Int. Cl. H04m *1/45*
U.S. Cl. 179—90 **11 Claims**



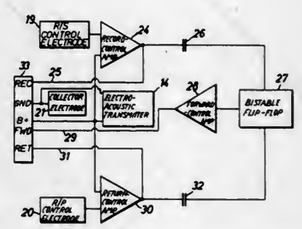
A repertory dialer for automatically dialing any one of a stored group of telephone numbers. The numbers are stored by an array of mechanically alterable switches, and a number to be called is selected and dialed by logic circuitry associated with the array of switches.

3,555,202

MICROPHONE WITH A PLURALITY OF HAND CONNECTABLE CONTROL ELECTRODES

Egon Fred Warnke, Mellendorf, Germany, assignor to Sennheiser Electronic, Bissendorf, Germany

Filed Aug. 16, 1967, Ser. No. 661,078
Claims priority, application Germany, Oct. 29, 1966, S 106,796
Int. Cl. G11b *19/16*
U.S. Cl. 179—100.1 **20 Claims**

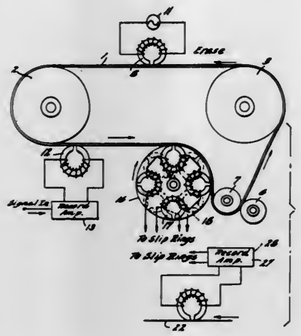


A hand-held microphone electrically connected with a sound-recording and reproducing apparatus and including a housing containing an electroacoustic transmitter and a plurality of electrodes mounted on the outside of the housing, at least one electrode being a counter electrode and other electrodes constituting control electrodes. The electrodes are selectively interconnected, through the operator's hand, to actuate the recording and reproducing functions of the apparatus.

3,555,203
METHOD OF AND APPARATUS FOR TIME ADJUSTMENT OF INFORMATION

Robert J. Scott, Satellite Beach, Fla., assignor to the United States of America as represented by the Secretary of the Army

Filed Nov. 30, 1966, Ser. No. 598,127
Int. Cl. G11b 5/52
U.S. Cl. 179—100.2 9 Claims

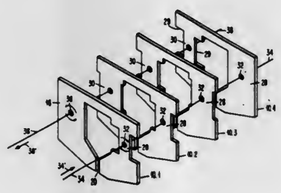


A train of information is sectioned into two groupings of information. Each grouping is an alternate sample of the original information and is channeled to one ear of a listener thereby adjusting the listening time with minimal discarding of any of the original information. Two quadripole transducers, secured to a shaft so as to be offset with respect to each other, sample the original information to obtain the two groupings.

3,555,204
ELECTRONIC SWEEP MAGNETIC SCANNING TRANSDUCER

Richard E. Braun, Boulder, Colo., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 12, 1968, Ser. No. 697,483
Int. Cl. G11b 5/16, 5/28
U.S. Cl. 179—100.2 10 Claims

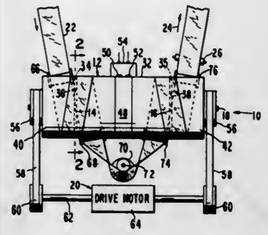


A scanning transducer including plural laminations, the reluctance of which is alterable by energization of scan control windings. Each lamination has controlled width portions linked by the control windings. The widths of the portions are arranged so that they will be saturated in an orderly progression as current in the control windings is varied. Saturation of a controlled width portion of a lamination effectively places the lamination in a high reluctance state and renders it incapable of normal transducing action. One lamination at a time is allowed to remain effective and the position of this lamination is moved across the transducer by operation of the control windings.

3,555,205
APPARATUS FOR SCANNING TWO SETS OF ANGULARLY DISPOSED OBLIQUE TRACKS ON A MAGNETIC MEDIUM

Moghazi F. Barkouki, Palo Alto, Calif., assignor to Mobark Instruments Corporation, Sunnyvale, Calif., a corporation of California, by mesne assignment

Filed Mar. 5, 1968, Ser. No. 710,537
Int. Cl. G11b 5/52, 21/04; H04n 1/24
U.S. Cl. 179—100.2 14 Claims

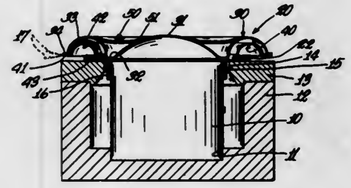


Apparatus and a method for recording and reproducing a pair of electronic signals on a movable, flexible magnetic tape wherein the tape is helically looped about the circular paths of travel of a pair of rotatable transducers and is disposed to cause the transducers to scan relatively angularly disposed tracks on the tape, whereby the tracks for the two signals will be arranged in crisscross fashion as the transducers rotate and as the tape moves in a predetermined direction. The apparatus and method are suitable for recording and reproducing the chrominance and luminance signals of a video transmission.

3,555,206
MICROPHONE DIAPHRAGM ASSEMBLY

Alexander L. Dvorsky, Conneaut, Ohio, assignor to The Astatic Corporation, Conneaut, Ohio

Filed Sept. 15, 1967, Ser. No. 671,185
Int. Cl. H04r 9/08, 9/04
U.S. Cl. 179—115.5 11 Claims



A composite diaphragm structure combining a deeply drawn main diaphragm, an inturned compliance ring under the main diaphragm and an elastomer stiffener and damper applied to the front face of the main diaphragm.

3,555,207
EARPHONE

Karl Cech, Modling, Austria, assignor to Akustische u. Kino-Gerate Gesellschaft m.b.H., Vienna, Austria

Filed June 4, 1968, Ser. No. 734,353
Claims priority, application Austria, June 5, 1967, A5242/67
Int. Cl. H04m 1/05, 1/15
U.S. Cl. 179—156 5 Claims

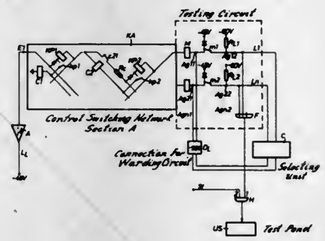
An earphone is disclosed in which the headband is pivoted to the earpieces so that the headband can be worn either over the top of the head or under the chin while the earpieces remain in position so that the cables come out the bottom and do not become kinked.



3,555,208
CIRCUIT ARRANGEMENT TO CHECK A SECTION OF A SWITCHING NETWORK

Wolfgang Arndt, Ludwigsburg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed June 19, 1968, Ser. No. 738,360
Claims priority, application Germany, June 23, 1967, 1,512,993
Int. Cl. H04m 3/24
U.S. Cl. 179—175.23 2 Claims



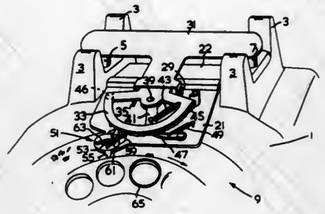
This common control telephone network provides an inherent system for checking the most recently operated switching path of sections of the control network for malfunction. A first potential, the idle marking potential is applied to all output terminals of a first stage of the control network. A second potential is applied from the network input to seize the path such that on completion of a switching-through operation, a second marking potential appears at the output terminal of the switched path. A detecting circuit employing transistors senses the potential at the output terminal and thereby can determine when the switching path or any portion of it has malfunctioned, or is improperly held when it should have released.

3,555,209
TELEPHONE SECURITY DEVICE

Rainsford H. Ireland, North Kildonan, Manitoba, Canada, assignor to John Oliver Blick

Filed May 28, 1968, Ser. No. 732,632
Claims priority, application Canada, Apr. 1, 1968, 016,379
Int. Cl. H04m 1/66
U.S. Cl. 179—189 11 Claims

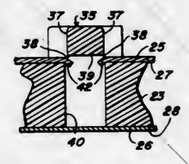
In order to prevent the unauthorized use of dial-type telephones to make long distance calls, the security device of the present invention is fitted to the outer case of a standard desk or wall-type telephone instrument. In position, it permits the dialing of up to, say, eight digits, and then prevents the dialing of any further digits until the telephone handpiece has been replaced and removed. The number of digits permitted will depend upon the type of installation, eight digits being used in a PABX: in a PABX a long distance direct dialed call requires the dialing of 9-1-and seven digits, i.e. nine digits in all, and any attempted call is aborted in the absence of the last digit. A lug on the rotatable dial mechanically sets a stop after eight dialings, which stop then engages the lug to prevent the ninth dialing.



3,555,210
SWITCH CONTACT MOUNTING FOR ROTARY SWITCHES

Lonnie J. Richardson, Elgin, Ill., assignor to Oak Electro/Netics Corporation, a corporation of Delaware

Filed May 27, 1969, Ser. No. 828,220
Int. Cl. H01h 19/58
U.S. Cl. 200—11 8 Claims



A mounting for a contact blade on a carrier surface. The carrier surface has a boss which extends upwardly with openings in opposite side walls. Opposed tabs on the contact blade extend into the openings, securing the blade on the carrier. The method of assembly of the contact to the carrier in which the tabs initially extend at an angle from the plane of the contact, the contact and carrier are moved together with the tabs extending into the openings and the tabs are straightened.

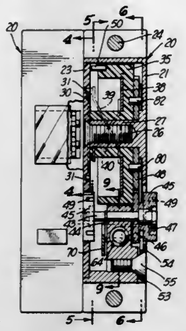
3,555,211
THUMBWHEEL TYPE ROTARY SWITCH WITH IMPROVED MANUAL LEVER OPERATOR

David Silverman and Robert R. Wells, Anaheim, Calif., assignors to Beckman Instruments, Inc., a corporation of California

Filed Mar. 6, 1969, Ser. No. 804,834
Int. Cl. H01h 3/00
U.S. Cl. 200—17 13 Claims

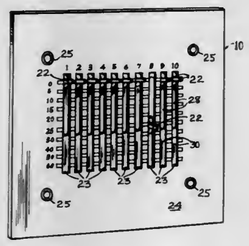
A rotary switch having a plurality of switch positions and an indicia wheel for visually indicating the switch position. A

rotary switch adapted for ganging with a plurality of similar switches to provide multidigit switching capability and a



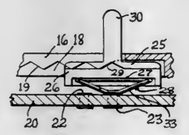
carry function. A manually operated lever for setting the switch to any desired position.

3,555,212
CROSSBAR SLIDER SWITCH WITH IMPROVED SHROUDING STRUCTURE FOR ACTUATOR MEANS
Walter L. Cherry and Raymond G. Castle, Highland Park, Ill., assignors to Cherry Electrical Products Corporation, Highland Park, Ill., a corporation of Illinois
Filed Feb. 24, 1969, Ser. No. 801,327
Int. Cl. H01h *3/00*
U.S. Cl. 200—17 **3 Claims**



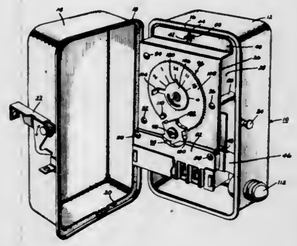
A crossbar slider switch having a front panel provided with an elongated slot through which the actuator of the slider switch housing projects and which has movably connected thereto a closure member for continuously enshrouding the elongated slot to protect the components of the switch against contamination.

3,555,213
CROSS BAR SLIDE SELECTOR SWITCH
Walter L. Cherry and Raymond Castle, Highland Park, Ill., assignors to Cherry Electrical Products Corporation, Highland Park, Ill., a corporation of Illinois
Filed Feb. 3, 1969, Ser. No. 795,970
Int. Cl. H01h *15/00*
U.S. Cl. 200—17 **4 Claims**



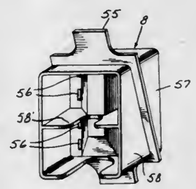
An electric switch having an open-sided housing normally closed by a dielectric base supporting on opposite faces thereof transversely extending independent conductive elements with contacts for each of said elements exposed on one face of the base, and a slider carrying a contactor provided with a pair of interconnected spring contacts that wipably engage the exposed contacts of all of the conductive elements, with the slider positioned over the base by actuation of an operating lever carried by the slider that extends outwardly of the housing through an elongated slot formed therein.

3,555,214
TIMING DEVICE
Art Lee, Bloomington, Ill., and Ralph M. Manning, Winchester, Mass., assignors to General Electric Company, a corporation of New York
Filed Mar. 7, 1969, Ser. No. 805,122
Int. Cl. H01h *7/08, 43/10*
U.S. Cl. 200—38 **8 Claims**



A timing device for performing a switching function at dusk and at a specific time during the night. A synchronous motor drives a time dial at a first speed during the daylight hours and a double that speed after dusk through a power train including a lever arm driven by an eccentric to engage the teeth of a ratchet gear to rotate a cam assembly which actuates movable contacts through which the motor and a load controlled by the timing device are energized. Projections carried by the time dial engage cam portions formed on a star wheel to rotate the star wheel and the cam assembly to actuate the movable contacts to deenergize the load and the motor.

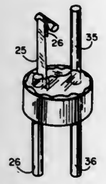
3,555,215
MODULAR LIMIT SWITCH
William F. Dehn, Milwaukee, Wis., assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed June 6, 1969, Ser. No. 831,018
Int. Cl. H01h *21/28*
U.S. Cl. 200—47 **5 Claims**



A limit switch includes tiered contact modules, each comprising a case made up of a base and a removable cover with a movable contact carrier therein. A headed retaining pin extends through the cover, base and contact carrier, and a retaining clip at the other end of the pin acts with the head to hold the elements of the module together. The pin is rotatable and has a tool socket in the head and has a threaded portion beyond the retaining clip which is used to mount the module in the housing of the switch. The upper contact carrier is fitted with an extension engageable with the carrier of the lower module. The extension is threaded to be axially ad-

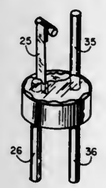
justable and has a noncircular cross section. An adjustment wheel has a mating noncircular opening which receives the extension to provide a keyed connection so that rotation of the wheel causes adjustment of the extension. The switch housing is vertically split and a gasket is interposed between the two parts, the gasket comprising a central web which seals off the two sections from one another and skirts which extend into respective housing sections to provide electrical isolation.

3,555,216
XERISTAT
Ralph L. Fenner, Mill Valley, Calif., assignor to Hygrometrix, Inc.
Filed June 17, 1969, Ser. No. 834,088
Int. Cl. H01h *1/02, 1/02*
U.S. Cl. 200—61.04 **8 Claims**



This invention relates to a xeristat, which is defined as a device which is sensitive to changes in vapor pressure (i.e., relative humidity) and which gives an electrical signal when the relative humidity passes through some preselected point.

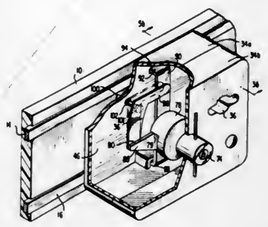
3,555,217
THAW ALARM
Ralph L. Fenner, Mill Valley, Calif., assignor to Hygrometrix, Inc.
Filed June 17, 1969, Ser. No. 834,089
Int. Cl. H01h
U.S. Cl. 200—61.04 **8 Claims**



This invention relates to a thaw alarm which is operable to give a signal to indicate that thawing has occurred, or that the temperature in a particular environment, such as in a cold storage system, has risen to the melting point of water.

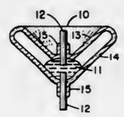
3,555,218
STOP MOTION DEVICES
Cecil S. Adams and James S. Russell, Greenville, S.C., assignors to Adams, Incorporated, Greenville, S.C., a corporation of South Carolina
Filed June 3, 1969, Ser. No. 829,871
Int. Cl. B65h *25/14*
U.S. Cl. 200—61.18 **20 Claims**

There is disclosed an improved stop motion switch for use as and with a drop wire assembly for textile machines. The switch includes a shaft member journaled in a switch housing and carrying a drop wire for engaging a strand from a textile machine. The switch housing, when installed on a machine, is supported on an insulative member carrying bus bars. The switch is provided with contacts for effecting a short circuit between the bus bars and through the shaft in the event that the strand breaks or becomes excessively slack. Contacts are also provided to effect a second circuit between the bus bars



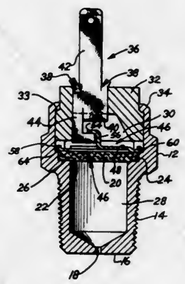
in response to a force exerted on the drop wire by the strand in a direction away from the insulative member.

3,555,219
TILT SWITCH
Wade M. Johnson and Harry L. Mussett, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed June 4, 1969, Ser. No. 830,360
Int. Cl. H01h *35/02*
U.S. Cl. 200—61.47 **3 Claims**



A tilt-sensitive electrical mercury switch wherein the mercury chamber comprises upper and lower spaced walls of essentially conical shape having the cone apexes oriented downward and the two-cone bases joined at their peripheries to form a fluid-tight chamber; various embodiments for restricting splashing of the mercury are provided.

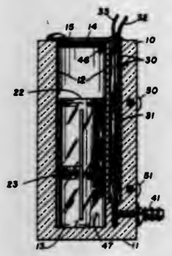
3,555,220
PRESSURE SWITCH
Charles G. Wood, Royal Oak, Mich., assignor to Essex International, Inc., Fort Wayne, Ind., a corporation of Michigan
Filed Apr. 8, 1968, Ser. No. 719,319
Int. Cl. H01h *35/40*
U.S. Cl. 200—83 **9 Claims**



A switch responsive to fluid pressure includes a housing constructed of an electrically conductive material and a pair of chambers are formed within the housing separated by a flexible diaphragm. One of the chambers is adapted to be connected to a fluid pressure source and an electrically nonconductive cap seals the end of the other chamber and car-

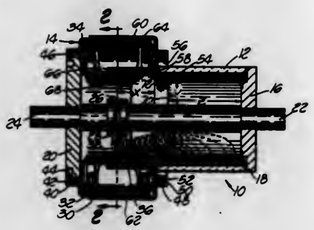
ries a stationary contact which extends into the other chamber. A resilient disc is disposed in the other chamber adjacent the diaphragm and includes a rim clamped between the housing and the cap, a resilient tab and a movable contact. The resilient tab is responsive to movement of the diaphragm which, in turn, is movable in response to pressure changes in the first chamber, to move the contact surface into and out of electrical contact with the stationary contact. The disc contacts the electrically conductive housing to complete the circuit.

3,555,221
PURGING LIQUID SUPPLY SENSOR
Jack J. Booth, P.O. Box 10872, Dallas, Tex. 75207
Filed Oct. 14, 1968, Ser. No. 767,206
Int. Cl. H01h *35/18*
U.S. Cl. 200—84 5 Claims



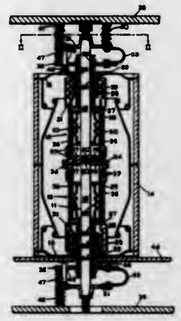
A float including a magnet is mounted in a chamber for vertical travel in a liquid body, with a control switch adjacent the path of travel of the magnet for opening and closing of the switch in response to liquid level. A liquid inlet path leads to the bottom of the float chamber and an outlet path leads from the top of the chamber, with a bleedoff path extending between the bottom of the chamber and the outlet path and of small flow capacity relative to the inlet and outlet paths.

3,555,222
VACUUM SWITCH WITH CYLINDRICAL GUIDE MEANS AND ANNULAR FIELD DEFLECTOR MEANS
Julian Camacho, San Jose, Calif., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware. by mesne assignment
Filed Mar. 4, 1968, Ser. No. 710,197
Int. Cl. H01h *33/66*
U.S. Cl. 200—144 2 Claims



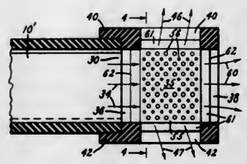
A power switch in which a hermetically sealed envelope includes a tubular insulator section sealed to a cylindrical bearing assembly which surrounds the adjacent ends of contact rods fixedly mounted on end cap structures of the envelope. The bearing assembly includes two telescopically mounted cylindrical shells which provide large bearing surfaces for supporting the contact rods in axial alignment. An annular deflector having a convex inner surface is positioned in the insulator portion of the envelope adjacent to the bearing assembly to produce a uniform distribution of the voltage gradient or field over the insulator portion of the switch.

3,555,223
VACUUM CIRCUIT INTERRUPTERS WITH CO-AXIAL MOVABLE MAIN AND MOVABLE AUXILIARY CONTACTS
Alfred Alexander Robinson, and James William Calvesbert, Stafford, England, assignors to The English Electric Company Limited, London, England, a British company
Filed Dec. 3, 1968, Ser. No. 780,621
Claims priority, application Great Britain, Jan. 3, 1968, 523/68
Int. Cl. H01h *33/66*
U.S. Cl. 200—144 7 Claims



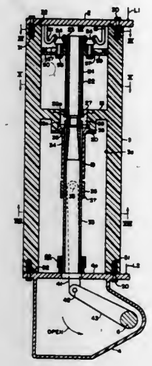
The load current carrying contacts of a vacuum circuit interrupter are surrounded by a normally open pair of annular contacts which are closed before, and opened after, the load current carrying contacts are opened, so that arcing between the load current carrying contacts is negligible; substantially all the arcing occurring between the annular contacts. Each annular contact may incorporate a helical conductor, the two helical conductors being wound magnetically in opposition, with the advantage that a magnetic field, which causes spreading and rotation of the arc, is established before the arc is struck.

3,555,224
ARC CHUTE FOR AN AIR CIRCUIT BREAKER
Gerhard Frind, Glenolden, Pa., Rudolf Hunziker, Collingswood, N.J., and Richard M. Korte, Media, Pa., assignors to General Electric Company, a corporation of New York
Filed Dec. 23, 1968, Ser. No. 786,126
Int. Cl. H01h *9/34*
U.S. Cl. 200—144 5 Claims



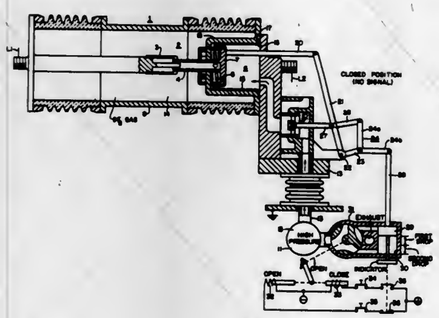
Discloses an exhaust cooler for the arcing products leaving the arc chute of an electric circuit breaker. The cooler has four open sides. Through one of these sides the arcing products enter the cooler, and through the other three sides the arcing products exhaust after passing through the cooler. The cooler comprises a stack of corrugated metal sheets that allow the arcing products to pass between the sheets along the length of the corrugations and out one of said open exhaust sides of the cooler. The corrugated sheets are perforated to permit arcing products also to pass transversely of the length of the corrugations and out the remaining two open exhaust sides of the cooler.

3,555,225
FLUID-FLOW CIRCUIT INTERRUPTER WITH ARC-ASSISTED PISTON ACTION
Thomas F. Saffold and Russell E. Frink, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 25, 1967, Ser. No. 670,168
Int. Cl. H01h *33/70*
U.S. Cl. 200—148 12 Claims



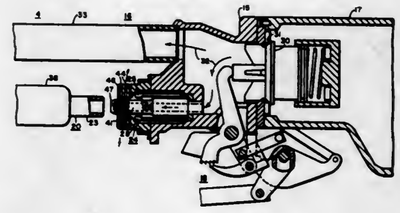
A fluid-flow circuit interrupter of the piston type has a serially related pressure-generating arc to mechanically assist the fluid-driving motion of the piston member to offset the arcing pressure generated within the interrupting nozzle by the main current arc disposed therein. The fluid-driving piston is connected by piston rods to the movable contact structure and hence to the operating mechanism. The interrupting device functions to establish a main current arc between the separable main contacts and additionally a pair of serially related arcs, in electrical parallel, on the rear side of the fluid-driving piston to assist the latter in its fluid-driving motion by the pressure generated.

3,555,226
CONTACT INDICATING VALVE ACTUATOR FOR GAS-OPERATED CIRCUIT BREAKERS
Harvey E. Spindle, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 21, 1968, Ser. No. 715,086
Int. Cl. H01h *9/16*
U.S. Cl. 200—148 5 Claims



The movable contact of a gas blast operated circuit interrupter has a piston connected thereto, which is connected to either an exhaust chamber or to a high-pressure gas supply. The three-way control valve, controlling the opening and closing operations of the piston-actuated movable contact, is linked to a bellcrank-shaped valve operating lever which is moved by an insulating operating rod extending down to ground potential. An indicator lever is pivotally connected to said operating lever and has a stationary pivotal support. The arrangement causes the insulating operating rod, extending down to ground potential, to indicate the open and closed circuit positions of the separable contact structure and, additionally, effects valve operating movement.

3,555,227
GAS-BLAST CIRCUIT INTERRUPTERS WITH LATERAL VENTING ACTION
Charles F. Cromer and Ronald W. Crookston, Trafford, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 21, 1968, Ser. No. 769,246
Int. Cl. H01h *33/80*
U.S. Cl. 200—148 8 Claims



A gas-blast type of circuit interrupter is provided having an arcing chamber of insulating material with rows of lateral venting slots, serving as splitters. A cluster of stationary contact fingers within the arcing chamber make separating engagement with a tubular movable contact. A stationary hollow insulating arc plug is provided interiorly of the arcing chamber, within which gas is forced to flow. The arcing plug has lateral inlet slots provided therein, which emit arcing gas under pressure into the interior of the arcing chamber and laterally outwardly across the arc, and radially outwardly through the lateral slots provided in the stationary insulating arcing chamber. The arc is moved by the radial outward blast to be forced against the arcing splitters provided by the sidewalls of the stationary insulating arcing chamber.

As an alternate arrangement, a side lateral dump is provided adjacent an elongated arcing contact finger, at which the arc is constantly drawn. This prevents the accumulation of stagnant ionized gases and arc products, which may otherwise accumulate in the pocket surrounding the annular stationary contact finger assembly.

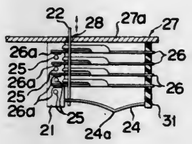
ERRATUM

For Class 200—150 see:
Patent No. 3,555,274

3,555,228
CONTACT SPRING SYNCHRONIZING SWITCH ASSEMBLY
Junji Ohno, Shizuoka-ken, Japan, assignor to Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Shizuoka-ken, Japan, a corporation of Japan
Filed Apr. 10, 1969, Ser. No. 814,938
Claims priority, application Japan, Apr. 13, 1968, 43/29,887;43/29,888;43/29,889
Int. Cl. H01h *1/28*
U.S. Cl. 200—166 6 Claims

A synchronizing switch assembly involves a vertically movable operation member having a plurality of horizontally penetrating apertures, a plurality of stationary contact members corresponding to said apertures respectively and arranged parallel to the lengthwise direction of the operating member at a space, and a plurality of movable contact members of resilient material horizontally extending to the upper sides of the stationary contact members. Said movable con-

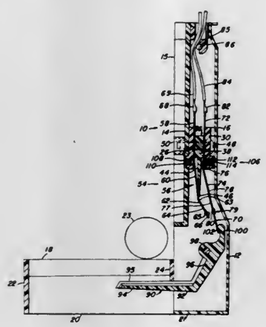
tact members are respectively provided with upper and lower horizontally extending sections passing through the corresponding aperture to be pressed to the inner wall of said aperture by the elasticity prevailing therebetween.



3,555,229
ELECTRICAL SWITCH AND METHOD OF ADJUSTING THE SAME

Leon R. Britton, Chicago, Kurt T. Johnson, Palatine, Edward K. Kusch, Chicago, and Bernhard O. Williams, Elmhurst, Ill., assignors to The Seeburg Corporation of Delaware, Chicago, Ill., a corporation of Delaware. by mesne assignments

Filed Aug. 16, 1968, Ser. No. 753,108
Int. Cl. H01h 1/34
U.S. Cl. 200—166 12 Claims



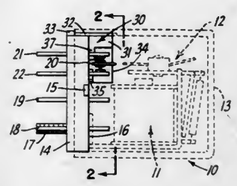
A readily adjustable electrical switch, such as a coin-actuated switch, is provided by placing a divider element between, but for the major portion of its length separated from, two resilient switch blades, each of which is independently adjustable by an associated adjusting member, such as a setscrew. An electrical indicating circuit and a weight and lever arrangement are utilized to adjust the setscrews so that one switchblade bears against a free end of the divider element with a predetermined force, while the other switchblade is precisely spaced from the first switchblade so that contact elements on the switchblades will not engage until a force of the desired magnitude is applied to the second switchblade.

3,555,230
CONTACT ISOLATING MEANS FOR MULTIPOLED SWITCH DEVICES

Edwin L. Deck, Princeton, Ind., assignor to American Machine & Foundry Company, a corporation of New Jersey

Filed Nov. 12, 1968, Ser. No. 774,917
Int. Cl. H01h 9/02
U.S. Cl. 200—168 8 Claims

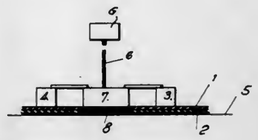
In switching means such as a relay having a plurality of spaced pairs of fixed contacts spaced from each other and a corresponding number of contact arms movable to engage each of corresponding pair of fixed contacts, and a removable insert of a dielectric material providing isolating walls between adjacent pairs of fixed contacts to prevent an ionized spark path therebetween.



3,555,231
PROCESS FOR WELDING BUTYL RUBBER

Michel Laurentie, 215 Blvd. Francois Ier, Albert Bouteville, 29 rue Sery, and Roger Pennananec'h, 45 rue Louis Richard, all of Le Havre, France

Filed Mar. 12, 1969, Ser. No. 806,474
Claims priority, application France, Mar. 13, 1968, 143,529
Int. Cl. H05b 5/00; B23k 13/02
U.S. Cl. 219—10.53 15 Claims

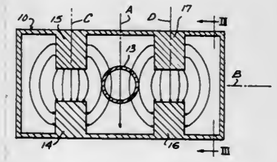


Two overlapped sheets of butyl rubber are welded together by applying UHF energy to the sheets, by means of a transducer connected to a UHF generator, and pressing the sheets together until the weld is formed.

3,555,232
WAVEGUIDES

William J. Bleackley, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada, by mesne assignments

Filed Oct. 21, 1968, Ser. No. 769,090
Int. Cl. H05b 9/06, 5/00
U.S. Cl. 219—10.55 32 Claims



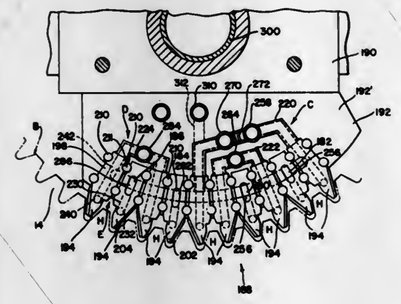
A rectangular waveguide has two pairs of inwardly projecting ridges. Intensification of the electric field occurs between the ridges of each pair, thus causing an area of relative field rarefaction in a central region of the waveguide between the pairs of ridges. The ridges are tapered longitudinally to vary the ratio of intensification to rarefaction. Workpieces to be heated (dried or cooked or otherwise processed) are passed through the central area to receive controlled quantities of microwave energy, thus improving the uniformity of heating. The structure can also be used in a slotted waveguide antenna.

Variants include use of a region of field intensification for energy extraction instead of a region of field rarefaction, in which case the taper will usually be negative, i.e. will take the form of enlargement. Alternatively, the ridges can be caused to converge to vary the electric field, or a combination of converging and tapering ridges can be used. Alternatively, two spaced areas of field intensification can be used simultaneously, for example to dry the match striking compound on the sides of a matchbox cover.

3,555,233
METHOD AND APPARATUS FOR HARDENING GEAR TEETH

George D. Pfaffman, Farmington, Mich., and Robert G. Armstrong, Chardon, Ohio, assignors to Park-Ohio Industries, Inc., Cleveland, Ohio, a corporation of Ohio

Original application June 16, 1966, Ser. No. 558,087, now Pat. No. 3,446,495. Divided and this application Mar. 20, 1969, Ser. No. 851,504
Int. Cl. H05b 5/00, 9/02
U.S. Cl. 219—10.59 5 Claims



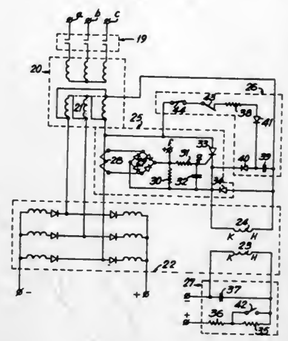
An inductive heating assembly is provided comprising a support block having an upper and a lower supporting surface and a front wall. A plurality of inductor sectors each including a recess defined by an upper leg and a lower leg and a nose are mounted on the support block with the recesses receiving the block and with the legs overlapping the upper and lower surfaces, respectively, and the nose extending along the front wall. The nose is shaped to fit between adjacent gear teeth and means is provided for passing current in series through the legs and the nose of each sector.

3,555,234
APPARATUS FOR PLASMA ARC METAL MACHINING

Vladimir Romanovich Lepp, Chapaevsky pereulok 14, kv. 121; Jury Surenovich Seviev, ul. Marshala Birjuzova 12, kv. 44; Ilya Samuilovich Shapiro, Verkhne-Predtechensky pereulok 11, kv. 8; Boris Davydovich Beider, Shelepikhinskoe shosse 3, kv. 11, and Lev Moiseevich Persits, Korovinskoe shosse 7, korpus 1, kv. 24, all of Moscow, U.S.S.R.

Filed Apr. 2, 1968, Ser. No. 718,171
Int. Cl. B23b 1/06; B23k 9/10
U.S. Cl. 219—69 7 Claims

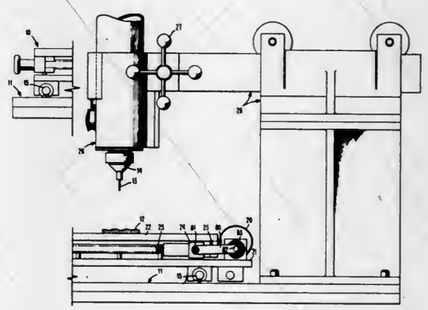
Plasma arc machining of metals is effected by an apparatus which comprises a power system and an external working current feedback circuit. The power system includes a magnetic amplifier with magnetizing and demagnetizing windings to which is electrically connected a transformer and the windings of the magnetic amplifier are switched by a working current relay. The external working current feedback circuit includes a current transformer and a rectifier electrically connected to the demagnetizing winding of the magnetic amplifier. A control diode is connected in the external working current feedback circuit and the control circuit of the diode is connected to the rectifier through a self-contained DC source connected in opposition to the rectifier.



3,555,235
METALLIC SURFACE FUSION APPARATUS

William C. Darrow, Vestal, Richard H. Holmwood, Binghamton, Keith A. Snyder, Vestal, and Walter C. Treiber, Endwell, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Nov. 13, 1967, Ser. No. 682,350
Int. Cl. B23k 9/12, 9/04
U.S. Cl. 219—76 9 Claims



Apparatus for controlling intermittent contact at different points of a consumable element (such as an electrode) with a member (such as a workpiece to be locally hardened) by vibrating the element at high frequency and in such manner as automatically to compensate for consumption of the element and also accommodate and follow irregular contours on the member. Such apparatus is especially suitable for use in a metallic fusion system wherein a consumable electrode imparts its characteristics to the base metal of a workpiece.

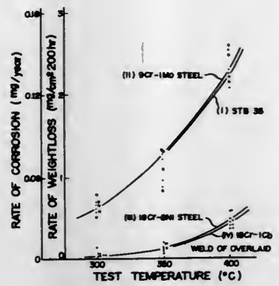
3,555,236
CORROSION RESISTANT BOILER TUBE FOR CHEMICAL RECOVERY VAPOR GENERATING UNIT

Tsuneto Hayashi, Hidejiro Kinoshita, and Koji Iwahashi, Nagasaki-shi, Japan, assignors to Messrs. Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan

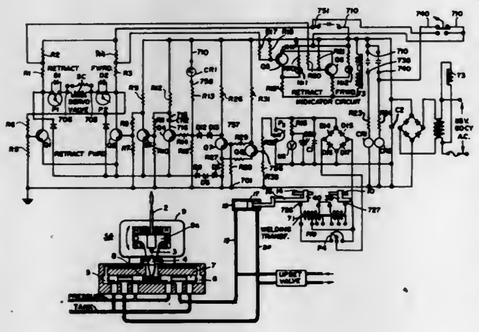
Original application Sept. 27, 1967, Ser. No. 671,075. Divided and this application Sept. 26, 1968, Ser. No. 790,182
Claims priority, application Japan, Sept. 29, 1966, 41/91,214
Int. Cl. B23k 9/04
U.S. Cl. 219—76 3 Claims

The disclosure relates to a corrosion resistant boiler tube for chemical recovery vapor generating units, in which a

boiler tube of carbon steel or low alloy Cr–M. steel has weld deposited on its exterior surface a coating of high chromium steel containing 13—26 percent Cr and 0.5—1.5 percent Cb.



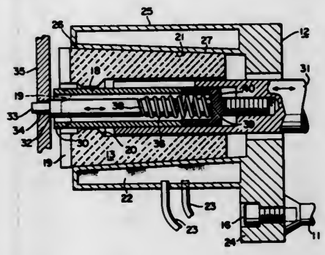
3,555,237
CONTROL OF MOVABLE PLATEN OF FLASH-BUTT WELDING MACHINE
Joseph J. Riley, Warren, Ohio, assignor to The Taylor-Winfield Corporation, Warren, Ohio
Filed Mar. 20, 1968, Ser. No. 714,606
Int. Cl. B23k *11/04*
U.S. Cl. 219—97 **7 Claims**



A solid state control system for a flash-butt welding machine for controlling a movable platen clamping a workpiece to effect "forward" and "retract" movements with respect to a stationary platen clamping a stationary workpiece, through the medium of an electrohydraulic servo valve.

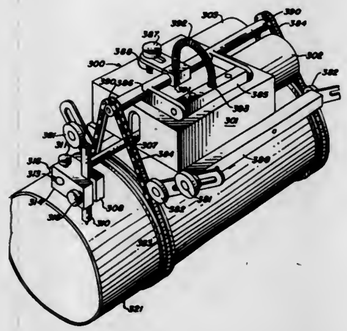
Said control system involves a novel, highly responsive switching circuit which allows reversal of valve current and resulting oil flow by the use of only two transistors, which current reaches adjusted maximum value almost instantaneously, and which circuit includes a logic feature, such that when one transistor is switched "on," the other is automatically switched "off." The circuit also consists of potentiometers and diodes shunting them, in series with the servo valve coil, such that one potentiometer setting for maximum coil "retraction" current has no influence on the other potentiometer setting for maximum coil "forward" current, making the settings independent of each other. The control system also involves an indicator circuit consisting of transistors and highly responsive neon lamps which indicate valve current reversal up to double line input frequency. The control circuit also includes an input or feedback circuit from the welding dies, rectifying the voltage which is applied to a Schmitt trigger so that the "forward" switching transistor can be made to conduct over an interval of 150 to 0 electrical degrees through adjustment of a potentiometer in conjunction with the setting of another potentiometer through a 3 to 1 input range of welding die voltage. This input circuit may include a capacitor to allow the forward switching transistor to conduct through the full 180° interval so as to reduce valve mechanical wear and yet be responsive to a reduction in die voltage if the workpieces butt sufficiently hard to reduce weld resistance and die voltage.

3,555,238
PERMANENT ARC SHIELD
Elliott J. Fay, Willingboro, and Ralph K. Ritter, Moorestown, N.J., assignors to Omark Industries, Inc., Portland, Oreg., a corporation of Oregon
Filed Apr. 26, 1967, Ser. No. 633,844
Int. Cl. B23k *9/20*
U.S. Cl. 219—98 **6 Claims**



Permanent arc shields, both internal and external, together with attachments associated therewith for use in conjunction with electrical arc welding apparatus suitable for welding studs and spuds to a workpiece. The external permanent arc shield is used externally of the member being welded and is secured to the welding apparatus by means of an arc shield attachment or cooling jacket and includes a peripheral molding chamber in one end thereof which is disposed around the member being welded to provide a shield and mold. The internal arc shield is adapted for use in welding spuds to a workpiece, and is disposed interiorly of the spud to provide an internal molding chamber therein. The permanent arc shields are of a composition such that they may be used for repeated welds. They may be formed of boron nitride material and/or force cooled.

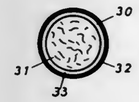
3,555,239
WELDING MACHINE WITH DIGITAL PULSE CONTROL
William J. Kerth, 600 Garden St., Sacramento, Calif. 95815
Filed Nov. 16, 1966, Ser. No. 594,726
Int. Cl. B23k *9/12*
U.S. Cl. 219—125 **15 Claims**



An integrated programmed automatic welding machine is presented.

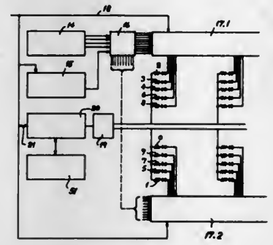
First, second, third, fourth and fifth independent pulse-actuated position control means respectively move the welding torch 1 up and down vertically, 2 right and left horizontally, and 3 horizontally forward and back and for tilting the torch 4 right and left and 5 forward and backward. There may be pulse-actuated wire feed control means for varying the rate of feed of welding wire to the torch, and pulse-actuated electrical control means for varying the weld energy factors at the torch. Programming means direct the time cycle of all of the control means, and digital pulse delivery means are connected to and controlled by the programming means and are connected to and control each control means, by sending thereto an appropriate quantity of pulses at an appropriate rate.

3,555,240
FILLED WELDING ROD
Karl Gloor, Zollikon, Hans Baach, Niederglatt, Switzerland, Hans Dieter Jacubasch, Eisenberg, Rudolf Stein, Neuleiningen, and Hans Dieter Erhard, Frankenthal, Germany, assignors to Elektrodenfabrik Oerlikon Buhrle AG, Zurich, Switzerland, a corporation of Switzerland
Filed Nov. 20, 1967, Ser. No. 684,157
Claims priority, application Switzerland, Nov. 23, 1966, 16765/66
Int. Cl. B23k *35/22*
U.S. Cl. 219—146 **2 Claims**



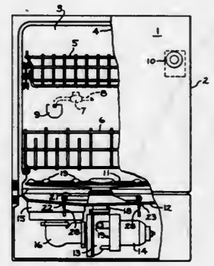
Filled-welding rods comprising basically seamless or circumferentially continuous metallic sheath or jacket and a filling material of a welding powder which may include mixtures of deoxidation and alloying substances, slag formers and, if desired, iron powder. The jacket or sheath is gas tight to protect the filling material against environmental moisture and the like. A large variation in the ratio between external diameter of the welding rod and wall thickness of the sheath or jacket may be provided. The sheath or jacket may be coated or plated with another metal such as copper.

3,555,241
THERMOPRINTING DEVICES
Henning Gunnar Carlsen, Sandbjergvej, Sandbjerg, Osterskov 2950, Vedbaek, and Erling Carlsen, Fuglevadsvej 2800 Kgs., Lyngby, Denmark
Filed Feb. 6, 1969, Ser. No. 797,012
Claims priority, application Denmark, Feb. 8, 1968, 493/68
Int. Cl. H05b *1/00*
U.S. Cl. 219—216 **2 Claims**



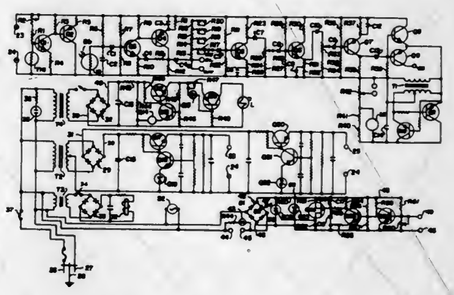
In a thermoprinting device the printing elements necessary for printing any one of the characters of a system of recording information are distributed among a plurality of rows which are successively activated for printing on the same area of a thermosensitive carrier. The printing elements may be in the form of rows of bar groups forming subdivisions of a bar mosaic. Alternatively, the printing elements may be in the form of rows of character printing elements of full character configuration; the number of rows corresponding to the total number of characters of the system. In the latter case high speed printing may be obtained by progressively printing from all the rows at a time.

3,555,242
DISHWASHER HAVING IMPROVED HEATING MEANS
Thomas E. Jenkins and Donald S. Cushing, Louisville, Ky., assignors to General Electric Company, a corporation of New York
Filed Apr. 10, 1969, Ser. No. 815,033
Int. Cl. F24h *1/00*
U.S. Cl. 219—335 **7 Claims**



A dishwasher having an improved arrangement for heating the washing compartment. A sheath-type electric heating element disposed in the bottom of the compartment is enclosed by a tubelike shield of greater diameter than the heating element. The shield prevents direct radiation from the electric-heating element to the walls of the compartment, and itself acts as a secondary heating surface of greater area and lower temperature than the heating element for effectively heating the interior of the compartment.

3,555,243
OPTICAL PYROMETER
Terrance S. Roman, Latrobe, Pa., assignor to Ratio Controls Corporation, Addison, Ill., a corporation of Delaware. by mesne assignments
Filed Sept. 22, 1966, Ser. No. 581,242
Int. Cl. H05b *1/02*
U.S. Cl. 219—502 **8 Claims**

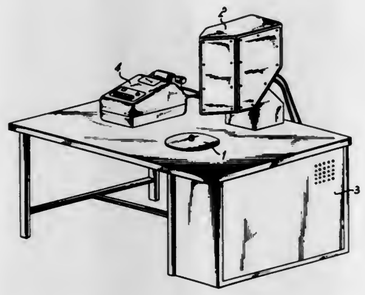


A novel, solid state heating circuit is provided to maintain the photosensitive cell. At a predetermined temperature such that the instrument response is essentially independent of ambient temperature.

3,555,244
METHOD AND APPARATUS FOR THE AUTOMATIC EVALUATION OF A BAR GRAPH RECORD

Seigfried Spauszus, Villingen, Schwarzwald, Wolfgang Kohler, Alzenau, in unter Franken, Herbert Blieske, Frankfurt, am Main, and Klaus-Peter Vetter, Bad Soden, Taunus, Germany, assignors to Kienzle Apparate G.m.b.H., Villingen, Black Forest, Germany

Filed Dec. 12, 1966, Ser. No. 601,018
Claims priority, application Switzerland, Dec. 14, 1965, 17,206/65
Int. Cl. G06f 7/38; G06k 11/00; G01n 21/30
U.S. Cl. 235—61.6 16 Claims

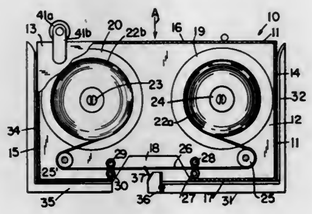


A bar graph having different bar widths corresponding to different operating conditions is scanned in the direction of the bar widths. Pulses are generated having pulse widths corresponding to the width of the graph. The number of pulses of each pulse width occurring during the recording time is counted and each of these numbers is printed out furnishing a record corresponding to the amount of time each operating condition occurred during the recording time.

3,555,245
TAPE CARTRIDGE AND READER

Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840

Continuation-in-part of application Ser. No. 152,702, Oct. 17, 1961, now abandoned, which is a division of Ser No. 142,748, Aug. 28, 1961 and Ser. No. 449,874, July 28, 1954, now abandoned. This application June 11, 1965, Ser. No. 463,097
Int. Cl. G06k 7/04; B65h 17/42; G11b 15/32
U.S. Cl. 235—61.11 12 Claims



A tape cartridge or magazine and reading apparatus therefore are provided wherein tape in the cartridge may be driven past a plurality of transducers supported by a mount for the cartridge when the cartridge is predeterminately located on said mount. The cartridge contains an opening exposing a length of the recording tape to a bank of transducers.

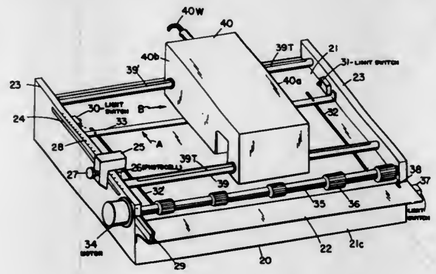
In one form, the transducers comprise a plurality of switches arranged in parallel circuits which are made and broken when perforations in the tape are sensed by the switches. In another form, recordings on the tape are sensed by respective transducers disposed off the tape as it is driven therepast. Suitable tape tensioning means associated with the mount is operative after properly mounting the cartridge, to engage and predeterminately provide tension in the tape driven past the bank of transducers.

In another form of the invention recording is effected on the tape and the cartridge by a bank of transducers operative to punch holes in the tape as it is driven therepast.

3,555,246
DOCUMENT READING APPARATUS

Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840

Continuation-in-part of application Ser. No. 337,615, Jan. 14, 1964, now Patent No. 3,309,669. This application Mar. 13, 1967, Ser. No. 622,650
Int. Cl. G06k 7/10
U.S. Cl. 235—61.11 10 Claims



A document reading device for reading a selected line of characters or coded information provided on a document such as a card or sheet of paper. Documents are individually fed to the upper surface of a platform and are driven in a first direction therealong by controlled roller means until a selected line of characters becomes aligned with a scanner which is operative thereafter to scan lateral to said first direction. The means for controlling the driving means includes a detection means for detecting the leading edge of the document or a mark which is predeterminately printed on the document with respect to the line of the document to be scanned and read. The apparatus includes adjustable means for the detecting means or delay means for the output signal thereof which is adjustable in time so as to provide means for stopping the document at different locations along the upper surface of said platform so as to bring a selected lateral line of characters into alignment with the reading scanner. The detecting means may also be operative to scan marks or edge notches in the document aligned with each line of characters or recording area therefore so as to permit the immediate reading of any selected line of the document. In addition to providing means for predeterminately stopping and locating documents with respect to a scanning device for reading selected recording areas of a document, the detecting means is also operative to directly or indirectly control scanning of said selected recording area.

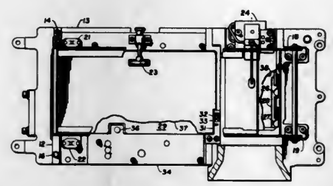
3,555,247
STATION DOCUMENT READER

Norman P. Gruczelak, Houston, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed July 21, 1967, Ser. No. 655,144
Int. Cl. G06k 7/10
U.S. Cl. 235—61.11 18 Claims

A remote station document reader operating in conjunction with a master control having an array of phototransistors for translating coded data on a document into electrical pulses. The phototransistors are mounted on a carriage movable between a home position and a second position by a motor energized by the insertion of a coded document into the remote station reader. Various checking devices are located in the reader to insure proper orientation of an inserted document prior to reading the coded data. Both coded

identification badges and punched hole cards can be read by the reader. When a coded identification badge is in the

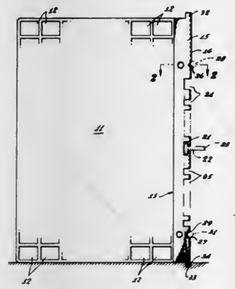


process of being read, a latch mechanism prevents removal of the badge prior to the code thereon being read.

3,555,248
CARD-TYPE STORAGE ITEM AND CLIP

Eugene H. Irasek, Palos Verdes Peninsula, and Ben H. Owens, Orange, Calif., assignors to Image Systems, Inc., Culver City, Calif., a corporation of California, by mesne assignments

Filed June 28, 1968, Ser. No. 740,914
Int. Cl. G06k 19/00
U.S. Cl. 235—61.12 9 Claims



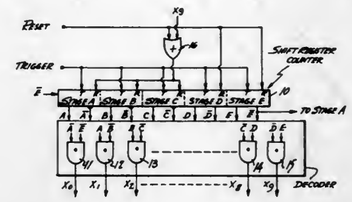
A card-type item for random access storage and retrieval formed of a transparent photographic film card or sheet carrying a plurality of microimages and having a metallic stiffening clip along one edge, such as a vertical edge, of U-shape within which that edge of the card or sheet is disposed and to which is interlocked as by dimpling of the metallic clip. The outer edge of the clip is provided with notches in any desired code, such as binary, to identify each item by the coded notches and their cooperation with address plates or bars positioned to permit only a single card-type item to be withdrawn from a store of a plurality of items. The opposite ends of the clip are provided with extensions of different breadth to positively orient the item in upright position. The outer edge of the clip is also provided with a generally central extractor notch to receive an extractor head and with upper and lower register notches, at least one of which locates the item vertically and the other establishes the vertical axis. The stiffening clip is desirably of magnetic material for initial magnetic movement of an addressed item from the store.

3,555,249
SELF-CORRECTING SHIFT COUNTER

Richard W. Ahrons, Somerville, N.J., assignor to RCA Corporation, a corporation of Delaware

Filed Dec. 28, 1967, Ser. No. 694,155
Int. Cl. H03k 23/02
U.S. Cl. 235—92 3 Claims

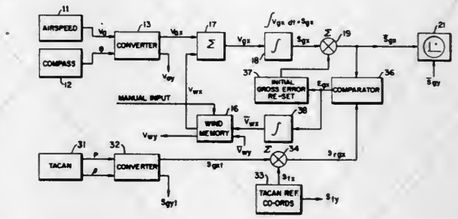
A counter which is capable of counting in several closed-loop counting cycles and means for sensing certain bits which are of the same value at least once in all counting cycles for placing in the counter a count which is unique to only one of the counting cycles.



3,555,250
NAVIGATION COMPUTER

William T. Curran, Palos Verdes Peninsula, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California

Filed Jan. 8, 1968, Ser. No. 696,397
Int. Cl. G06g 7/78; G01s 7/44
U.S. Cl. 235—150.27 8 Claims

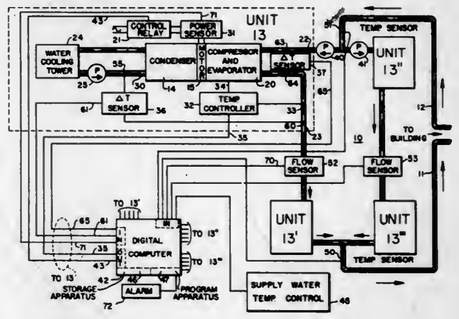


An aircraft navigation computer that computes the wind velocity during flight and uses the last measured wind velocity to compute the craft's position when out of range of landmark.

3,555,251
OPTIMIZING SYSTEM FOR A PLURALITY OF TEMPERATURE CONDITIONING APPARATUSES

Gideon Shavit, Skokie, Ill., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

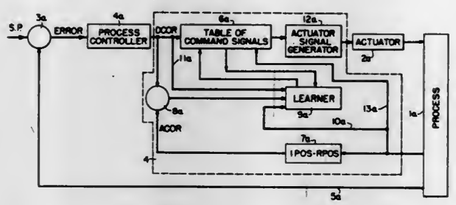
Filed Dec. 6, 1967, Ser. No. 688,613
Int. Cl. G06f 15/46
U.S. Cl. 235—151 6 Claims



A control system for optimizing the operation of a plurality of electrical power operated temperature conditioning apparatuses wherein a digital computer periodically determines

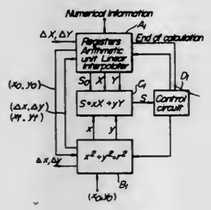
the prevailing total temperature conditioning load, selects the number of apparatuses to be energized, and distributes the total load by using efficiency data stored in the computer for each apparatus to thereby operate each apparatus to supply a selected portion of the total at a minimum total electrical power consumption for all the apparatuses.

3,555,252
LEARNING CONTROL OF ACTUATORS IN CONTROL SYSTEMS
Murray Garden, Oreland, Pa., assignor to Leeds & Northrup Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 11, 1967, Ser. No. 637,769
Int. Cl. G06f 15/18; G05b 13/00
U.S. Cl. 235—151.1 **17 Claims**



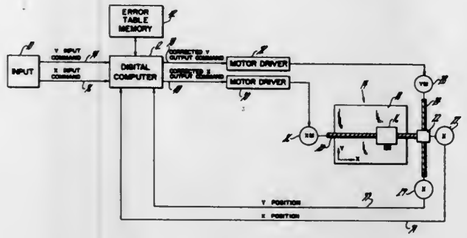
A learning control technique which learns the characteristics of actuators, such as electric drive units, and provides actuator signals based on them. The command signal, which is related to the actuator characteristic, and from which the actuator signal is derived, is stored in the computer memory and is modified by an amount related to a function of the error between the actual movement and the desired movement of the actuator. A specific application of learning control to both electric drive units and pneumatic actuators is described.

3,555,253
NUMERICAL CONTROL SYSTEM
Susumu Seki, Kokubunji-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Feb. 20, 1967, Ser. No. 617,257
Claims priority, application Japan, Feb. 21, 1966, 41/10041
Int. Cl. G06f 15/46
U.S. Cl. 235—151.11 **5 Claims**



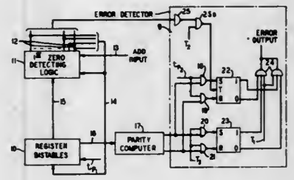
A system for controlling the curve tracing motion of machine tools in which a curve to be traced is divided into a plurality of segments and the curve portion in each segment is approximated by an arc or a straight line so that the curve tracing operation of the machine tool can be controlled by means of pulses distributed with relation to the approximated curve.

3,555,254
ERROR CORRECTING SYSTEM AND METHOD FOR USE WITH PLOTTERS, MACHINE TOOLS AND THE LIKE
Heinz Joseph Gerber, West Hartford, Conn., assignor to The Gerber Scientific Instrument Company, South Windsor, Conn., a corporation of Connecticut
Filed Apr. 17, 1967, Ser. No. 631,532
Int. Cl. G05b 19/18
U.S. Cl. 235—151.11 **10 Claims**



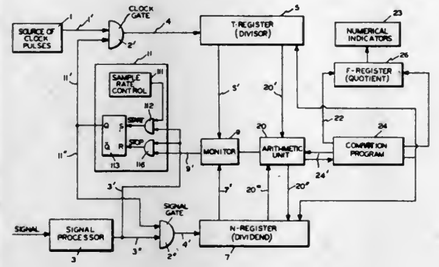
A method and system is provided for positioning a marking instrument, cutting tool or other driven part of a numerically controlled device and for overcoming, in such positioning, repeatable errors due to mechanical limitations such as, for example, lack of perfect straightness in guide ways or lead screws. A memory device forming part of the computer associated with the system is filled with a table of error correction values corresponding to different points or areas in the field of movement of the driven part and as the part is moved to such points or areas corrections are made in accordance with the table of error correction values.

3,555,255
ERROR DETECTION ARRANGEMENT FOR DATA PROCESSING REGISTER
Wing N. Toy, Glen Ellyn, Ill., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York
Filed Aug. 9, 1968, Ser. No. 751,573
Int. Cl. G06f 11/08
U.S. Cl. 235—153 **13 Claims**



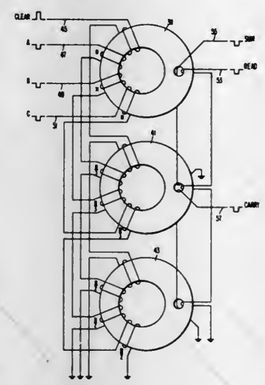
Outputs of the ordered stages of a register are applied to a first-ZERO-detecting logic and outputs of the latter are used to predict what parity state should prevail in registered information after a predetermined operation has been performed on the registered information. Illustrative predetermined operations are high-speed counting and marking a low order bit of a predetermined type. The first-ZERO-detecting logic is actuated simultaneously with the initiation of the operation to be performed on the registered information and is utilized in the performance of that operation. Predicted parity is then compared with a parity indication computed after the operation has been completed to evaluate the accuracy with which the operation was carried out.

3,555,256
AUTOMATIC ELECTRONIC COUNTER APPARATUS
Norman L. Westlake, Goffstown, N.H., assignor to General Radio Company, West Concord, Mass., a corporation of Massachusetts
Filed July 26, 1968, Ser. No. 747,963
Int. Cl. G06f 7/38, 7/39
U.S. Cl. 235—156 **5 Claims**



An improved automatic electronic digital counter is disclosed in which frequency-range switching is automatically effected and a quotient of the count of a clock pulse-fed counting register and a signal-period counting register is continually indicated.

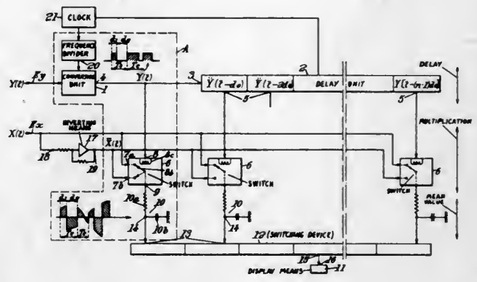
3,555,257
TRANSFLUXOR LOGIC CIRCUITS FOR PERFORMING THE EXCLUSIVE OR, HALF ADDER AND FULL ADDER OPERATIONS
Robert L. Gray, Cupertino, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Mar. 11, 1968, Ser. No. 712,026
Int. Cl. G06f 7/50
U.S. Cl. 235—176 **8 Claims**



Transfluxor logic circuits are described which make use of the fact that too much write current in the write windings has the same effect as not enough, i.e., the transfluxor is blocked.

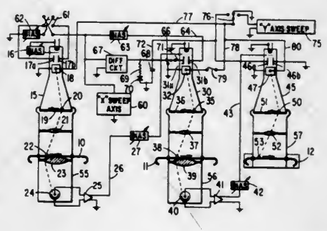
An EXCLUSIVE OR circuit is illustrated in which the energization of one write winding unblocks the transfluxor whereas the energization of both write windings switches the transfluxor completely to the opposite blocked state. Half adder and full adder circuits using the same principle are also described.

3,555,258
MULTICORRELATOR FOR ANALOG SIGNALS EMPLOYING PULSE WIDTH-AMPLITUDE MULTIPLICATION AND OPERATING IN REAL TIME
Daniel Berthier, Grenoble, and Jacques Max, Pont De Claix, France, assignors to Commissariat A L'Energie Atomique, Paris, France
Filed Apr. 13, 1967, Ser. No. 630,752
Claims priority, application France, Apr. 25, 1966, 58933
Int. Cl. G06g 7/19
U.S. Cl. 235—181 **8 Claims**



The correlator comprises two inputs for voltages $X(t)$, $Y(t)$ to be correlated, a conversion unit deducing from $Y(t)$ pulses $Y(t)$ which are width modulated by the amplitude of voltage $Y(t)$, a shifting register with $(n-1)$ stages imparting progressive delays d_0, $2d_0$, . . . $(n-1)$ d_0 to pulses $Y(t)$, n pulse width-amplitude multipliers receiving each on one input, from said conversion unit and said shifting register, the undelayed and $(n-1)$ delayed width modulated pulses and on a second input the voltage $X(t)$, and n low-pass filters connected each with the output of one of said multipliers, said filters delivering preferably their outputs successively to an oscilloscope through a switching device.

3,555,259
ELECTRONIC OPTICAL DATA PROCESSING SYSTEM
Daniel Silverman, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 695,138
Int. Cl. G06g 7/19
U.S. Cl. 235—181 **11 Claims**

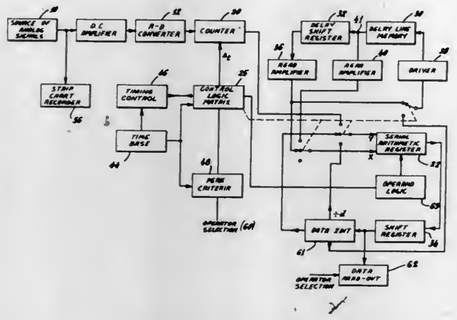


An electro-optical system convolves two variable-density traces by two cathode-ray scanning means using the output of scanning of a first trace to vary the beam intensity while scanning the second. A stepping bias voltage delays one sweep relative to the other and also correspondingly positions an output light beam which integrates a running product of the two variable-density functions by making a photographic exposure on film.

3,555,260
CHROMATOGRAM ANALYZER

Jimmy G. Karohl, Fairfield, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York

Filed Mar. 4, 1968, Ser. No. 710,375
Int. Cl. G06f 15/20; G06g 7/18
U.S. Cl. 235—183 **4 Claims**

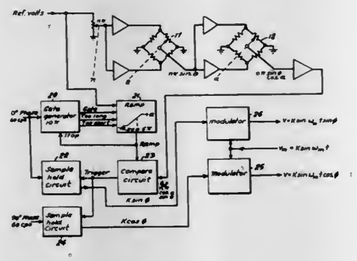


A chromatogram analyzer is provided which continuously computes successive digital sums A of pulses derived from an analogue to digital converter, each sum being representative of the average amplitude of an analogue input signal during N successive intervals of time Δt_r. Successively generated sums A, formed during a prior period of time T, are stored and from this data the average rate of change of slope B′ of the signal baseline component is calculated. The amplitude of a sum occurring next in time is predicted from this data and is compared with the sum A_o as actually measured. A difference in amplitude A_0 existing between A_0 and the predicted baseline value B_p is compared with preestablished criteria PC for sensing and indicating the beginning of a signal peak and the existence of a valley between unresolved peaks. A difference in amplitude I_x existing between $\underline{A_0}$ and $\underline{A_{0-1}}$ is compared for sensing and indicating peak tops and termination of peak. Upon sensing the initiation of a peak, the difference $\underline{A_0}$ between predicted baseline B_p and actual sum A_0 is accumulated for each of the intervals N of the peak. A highly accurate baseline corrected peak integration is thereby provided.

3,555,261
SOLID STATE ANALOG COMPUTER-TYPE CALIBRATOR FOR A RADIO INTERFEROMETER

William Christian McClurg, Wethersfield, Conn., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Army

Filed Oct. 28, 1968, Ser. No. 771,042
Int. Cl. G06g 7/22, 7/16
U.S. Cl. 235—189 **6 Claims**

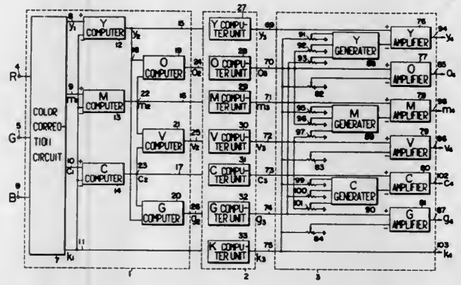


A solid state multiplier for an analogue computer which permits the unique determination of the bearing and elevation angles of arrival of a signal ray. The multiplier provides solutions to a set of interferometer descriptive equations corresponding to data supplied by three two-element interferometers and a central-crossed Adcock array.

3,555,262
APPARATUS FOR PRODUCTION OF COLOR SEPARATION RECORDS

Shoichi Shimada, Kyoto, Japan, assignor to Dainippon Screen Seizo Kabushiki Kaisha (Dainippon Screen Manufacturing Company, Limited), Kyoto, Japan

Filed May 7, 1968, Ser. No. 727,191
Int. Cl. H04n 1/46; G06g 7/00
U.S. Cl. 235—193 **5 Claims**

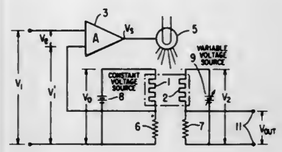


Color separation records are produced which are necessary to produce printers for printing color images by scanning an original copy. More particularly, printers are produced for reproducing color images with the use of color inks other than the standard inks. Black ink is used for the separation of color to substitute for the neutral color which is normally obtained by printing the standard three color inks one over the other.

3,555,263
SOLID-STATE ANALOG COMPUTING DEVICE FOR CONTROLLING A PHOTO-RESISTOR IN NON-LINEAR RELATIONSHIP TO INPUT

Jean C. Lejon, Paris, France, assignor to Controle Bailey (Societe Anonyme), a company of France

Filed Apr. 26, 1967, Ser. No. 633,772
Claims priority, application France, Aug. 4, 1966, 72,046
Int. Cl. G06g 7/16
U.S. Cl. 235—194 **3 Claims**



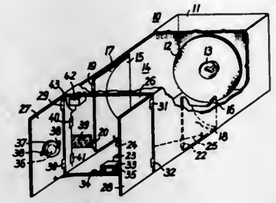
A solid-state device for generating an impedance varying in functional relation to a variable input signal.

3,555,264
SEARCHLIGHT APPARATUS

Peter Schimmelpfennig, Wedel, Germany, assignor to Licentia Patent-Verwaltungs-G.m.b.H., Frankfurt am Main, Germany

Filed Apr. 3, 1968, Ser. No. 718,485
Claims priority, application Germany, Apr. 6, 1967, L56,185
Int. Cl. F21p 5/04
U.S. Cl. 240—3.1 **10 Claims**

Searchlight apparatus for selectively emitting a strong beam of white or infrared light for target finding purposes or a weak beam of light for nighttime assistance in a "passive-viewing" system. The searchlight includes a light source, a searchlight housing with a light-exit opening, an infrared filter arranged in the housing to be selectively swung into the path of the searchlight beam and a protective cover arranged to selectively close the light-exit opening. Another opening, substantially smaller than the light-exit opening, is provided in the protective cover with a red filter arranged therein. A shutter, arranged between the light source and the smaller opening, is also provided to selectively prevent light from passing through the red filter. An actuating device is included to automatically close the shutter when the light source is turned off.



3,555,265
FINE PARTICLE MAGNETIC MATERIAL

John R. Feller, Trufant, Mich., assignor to General Electric Company, a corporation of New York

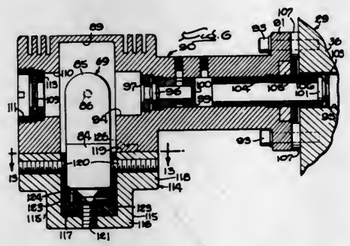
Filed Dec. 18, 1967, Ser. No. 691,640
Int. Cl. H01f 1/08
U.S. Cl. 204—10 **7 Claims**

Fine particle magnetic material prepared by electrodeposition of iron or iron-cobalt alloys into a mercury cathode is coated with a protective coating of antimony and then placed in a lead matrix containing a small but critical percentage of an additive material which may be calcium, tin or a tin-base alloy. The additive material acts to enhance the dimensional stability and retard the growth of whiskers on the resulting magnet.

3,555,266
FACSIMILE TRANSMITTER AND METHOD OF ASSEMBLING THE SAME

Paul H. Dixon, Belvidere, and Paul R. Schmidt, Rockford, Ill., assignors to Dixon Automatic Tool, Inc., Rockford, Ill., a corporation of Illinois

Filed May 3, 1968, Ser. No. 726,408
Int. Cl. F21v 19/02
U.S. Cl. 240—41.35 **6 Claims**

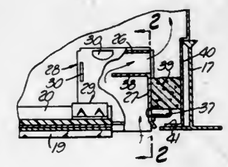


A facsimile transmitter includes a lamp for directing a light beam toward a scanner which reflects the light onto a document to be reproduced, picks up the light reflected from the document and directs such light to a photomultiplier operable to send to a reproducing recorder an electrical signal proportional to the intensity of the light and the shade value of the document. The lamp is accurately prelocated and premounted in a permanent holder which is detachably secured to a lamp housing and which, as an incident to attachment to the housing, automatically locates the lamp in a precisely established position to produce light of maximum intensity, the premounted lamp being located in such position by the holder regardless of dimensional irregularities in the lamp. To focus the light beam on the document accurately and to direct the reflected light along an exact path toward the photomultiplier, the scanner is formed as two initially adjustable telescopic units carrying relatively simple plane mirrors adapted to be adjusted into precisely established positions by sliding and rotating the units and thereafter held permanently in such positions by bonding the units rigidly together.

3,555,267
VENTILATED LIGHTING FIXTURE

Ormond S. Sutter, Placentia, Calif., assignor to Lok-Products Co., Fullerton, Calif., a corporation of California

Filed Sept. 13, 1967, Ser. No. 667,567
Int. Cl. F21v 29/00
U.S. Cl. 240—47 **7 Claims**

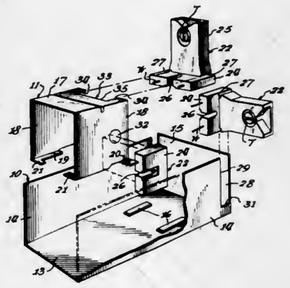


A recessed lighting fixture having a ventilating channel positioned at one or both ends thereof. The channel is formed by plates, one having an offset portion and the other extending into the offset portion to form a tortuous path for air flowing into the fixture. The channel acts as a dust trap and prevents any light from escaping therethrough.

3,555,268
FLUORESCENT LIGHT FIXTURE ASSEMBLY

Edward F. Zurawski, Chicago, Ill., assignor to Garcy Corporation, a corporation of Illinois

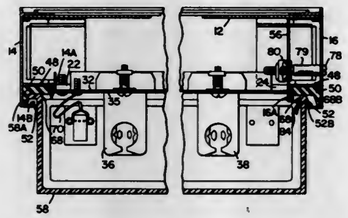
Filed Apr. 25, 1968, Ser. No. 724,092
Int. Cl. H05b 33/02
U.S. Cl. 240—51.11 **9 Claims**



A fluorescent light fixture assembly having a channel holding a pair of brackets and a plurality of sockets so that the

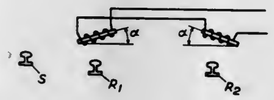
entire assembly can be packaged, stored and shipped in a package using only the space required by the channel. The brackets are detachably engageable with the channel and when engaged hold sockets securely, without screws or other fastening means, so that several fluorescent light tubes may be held exteriorly of the channel in a plurality of different locations, each in predetermined spatial relationship to the channel. A channel of minimum width may hold one, two or three light tubes, and a wider channel may hold up to five or more light tubes.

3,555,269
LIGHT FIXTURE
Reed P. Gardner, 1803 Bayview Ave., Belmont, Calif.
Filed Nov. 27, 1967, Ser. No. 685,910
Int. Cl. F21v *17/00*
U.S. Cl. 240—146 **5 Claims**



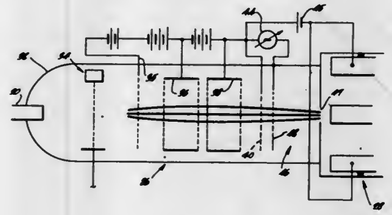
A light fixture having a frame which holds illuminating means and a cover adapted to fit thereon, the frame having attached thereto a spring member, the frame and spring member being adapted to receive and selectively hold a portion of an edge of the cover, the distance between the spring member and frame being variable to thereby vary the holding force on that portion of the edge of the cover.

3,555,270
RAIL SIGNAL DISTURBANCE AVOIDANCE MEANS
Erik Persson, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a Swedish corporation
Filed Apr. 22, 1968, Ser. No. 723,060
Claims priority, application Sweden, Apr. 26, 1967, 5,866/67
Int. Cl. B61l *3/00*
U.S. Cl. 246—194 **4 Claims**



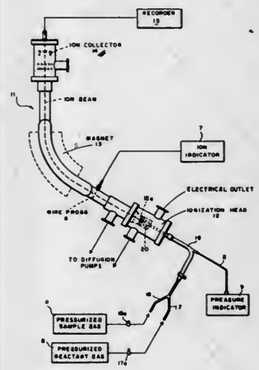
In electrically operated rail vehicles in which signals are inductively transmitted from rails to vehicle through coils applied in the vehicle, disturbances are avoided by pivoting said coils (preferably series-connected) to such an angle in relation to the plane of the rails that the resultant voltage from an asymmetrical current conductor is very low or zero. The same effect could also be accomplished by placing said coils horizontally and supplementing them by transverse coils.

3,555,271
RADIO FREQUENCY MASS ANALYZER OF THE NONUNIFORM ELECTRIC FIELD TYPE
Wilson M. Brubaker, Arcadia, and Charles F. Robinson, Pasadena, Calif., assignors to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Nov. 6, 1967, Ser. No. 680,742
Int. Cl. H01j *39/34*
U.S. Cl. 250—41.9 **13 Claims**



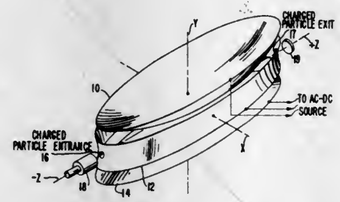
Radio frequency mass analyzers of the nonuniform electric field type and a charged particle source for use therewith. The source provides means for ionizing particles and means for imparting energy pulses to charged particles emanating from the source. A drift tube is interposed between the source and analyzer in some embodiments to allow the pulsed particles to separate into discrete groups in space. The length of the drift tube and the frequency of the impulser are arranged such that charged particles of a predetermined mass are admitted to the mass analyzer during a specific phase angle of the AC voltage connected to the electrodes of the mass analyzer.

3,555,272
PROCESS FOR CHEMICAL IONIZATION FOR INTENDED USE IN MASS SPECTROMETRY AND THE LIKE
Milam S. B. Munson, Newark, Del., and Frank H. Field, Summit, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
Continuation-in-part of application Ser. No. 512,599, Nov. 1, 1965, now abandoned. This application Mar. 14, 1968, Ser. No. 716,274
Int. Cl. B01d *59/44*; H01j *39/34*
U.S. Cl. 250—41.9 **31 Claims**



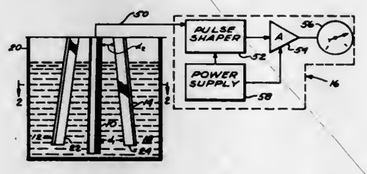
Ionizable substances are reacted by continuously ionizing a mixture of a first gasiform material and second gasiform material to form stable ions from the first gasiform material which undergo ion-molecule reactions with the second gasiform material to produce ions characteristic of the second material. The reaction may be conducted in a mass spectrometer which provides a volume of high pressure relative to the pressure in the mass spectrometer envelope.

3,555,273
MASS FILTER APPARATUS HAVING AN ELECTRIC FIELD THE EQUIPOTENTIALS OF WHICH ARE THREE DIMENSIONALLY HYPERBOLIC
James T. Arnold, Los Gatos, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed July 18, 1968, Ser. No. 745,836
Int. Cl. H01j *39/34*
U.S. Cl. 250—41.9 **11 Claims**



A mass filter apparatus for use in mass spectrometers and the like having an electrode structure capable of generating an electric field, the equipotentials of which are three dimensionally hyperbolic and thus avoid the prior art difficulties associated with discontinuities at the entrance and exit ends of the filter apparatus.

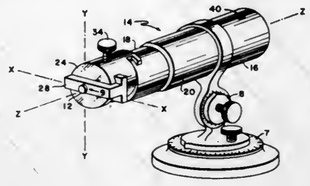
3,555,274
RADIATION MEASUREMENT INSTRUMENT USING SCATTER RADIATION
Leonard Baurmash, Canoga Park; Burton T. Harwick, Northridge, and Jack T. Meyer, Santa Susana, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware
Filed Apr. 26, 1967, Ser. No. 633,966
Int. Cl. G01n *23/12*
U.S. Cl. 250—43.5 **4 Claims**



A radiation measurement instrument for measuring a quantity or mass of material where the instrument has at least a radiation source and radiation detector suitably positioned in the material.

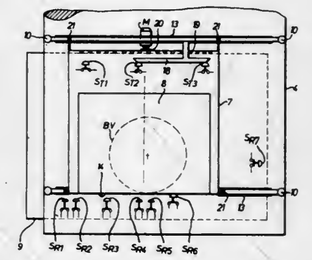
3,555,275
SPECIMEN POSITIONING APPARATUS FOR USE WITH A BACK REFLECTION X-RAY CAMERA
James F. Kreider, Cincinnati, Ohio, assignor to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Nov. 4, 1968, Ser. No. 772,941
Int. Cl. G01h *23/20*
U.S. Cl. 250—51.5 **3 Claims**

A specimen positioning apparatus is disclosed which permits translation of the specimen relative to a reference point in space. A plurality of interfitting members supported by the operating assembly permits positioning of the specimen in



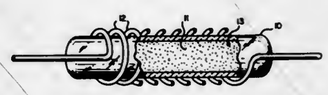
the X- and Y-directions. An independent member provides longitudinal or Z-axis positioning.

3,555,276
X-RAY DIAGNOSTIC APPARATUS FOR UROLOGICAL EXAMINATIONS
Helmut Endesfelder, Wald-Michelbach am Kohlhof, Klaus Lentz, Gaiburg am Kirchwald, Klaus Jando, Neckahausen, and Klaus Schulze, Mannheim-Neckarau, Germany, assignors to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware: by mesne assignment
Filed Mar. 11, 1968, Ser. No. 712,236
Claims priority, application Germany, Mar. 9, 1967, M-73,102
Int. Cl. G03b *41/16*
U.S. Cl. 250—58 **4 Claims**



An X-ray diagnostic apparatus for urological examinations including a cantilever table plate movable on a frame with a cassette carriage movable within the table plate, and means for automatically moving the carriage and for returning the carriage due to overtravel.

3,555,277
HIGH THERMAL CONDUCTIVITY GAS THERMOLUMINESCENT DOSIMETER
Frank H. Attix, Hillcrest Heights, and Edward J. West, Silesia, Md., assignors to the United States of America as represented by the Secretary of the Navy
Filed June 27, 1968, Ser. No. 740,608
Int. Cl. G01t *1/11*
U.S. Cl. 250—71 **10 Claims**

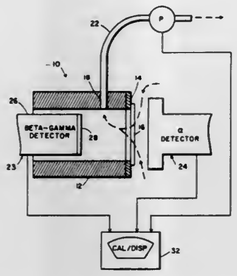


This invention is directed to an improved thermoluminescent dosimeter of the type in which the dosimeter material and heater elements are combined into a unitary element. The improvement is brought about by increasing the thermal conductivity between the heating means and the thermoluminescent material.

3,555,278
POTENTIAL ALPHA RAY ACTIVITY METER

Gerald L. Schroeder, Brookline, Mass.

Filed Dec. 18, 1968, Ser. No. 784,720
Int. Cl. G01t *1/16, 1/20, 7/04*
U.S. Cl. 250—83.3 6 Claims

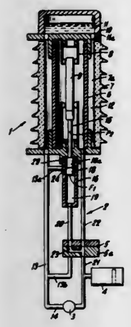


Method and apparatus for measuring the potential alpha ray activity of a gas sample containing a gaseous component such as Rn having solid short-lived daughter products some of whom are alpha ray emitters. The apparatus collects on a filter the particulate of the solid daughter products over a finite period of time and measures separately the alpha and the beta-gamma activities. The portion of the latter which results in short-lived daughter products producing alpha energy is separated out and added to the alpha activity measured.

3,555,279
OIL CIRCUIT BREAKER WITH QUENCH CHAMBER CONNECTED TO THE HIGH PRESSURE SIDE OF A FLUID PUMP

Hans Manz, Wallisellen, and Hans Widmer, Zurich, Switzerland, assignors to Maschinen Fabrik Oerlikon, Zurich, Switzerland

Filed Mar. 1, 1968, Ser. No. 709,713
Claims priority, application Switzerland, Mar. 17, 1967, 3,846/67
Int. Cl. H01h *33/68*
U.S. Cl. 200—150 19 Claims

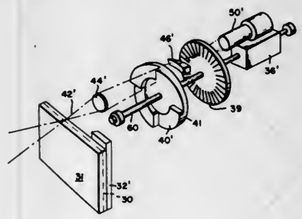


A power circuit breaker is comprised of a quench chamber, a hydraulic cylinder, and a hydraulic fluid system in permanent communication with the quench chamber and the hydraulic cylinder for supplying them with either a high-pressure or low-pressure source of hydraulic fluid. The quench chamber contains stationary contact means and a contact member movably positionable between an off position and an on position. A piston rod is connected to the contact member within the quench chamber and extends into the aligned hydraulic cylinder where it is attached to a piston. Positioned within the hydraulic system is a multiposition valve for selectively directing hydraulic fluid to the hydraulic cylinder and to the quench chamber. The hydraulic fluid system includes a pump having a high-pressure and a low-pressure side and a hydraulic fluid reservoir on the high-pressure side of the pump. An insulator chamber forms an annular space about the quench chamber and is in contact with low-pressure side of the hydraulic fluid system. A number of alternative arrangements are provided for removing switching gases from the quench chamber, generally these means include valve members which allow the switching gas to be discharged from the circuit breaker without any loss of pressure in the hydraulic fluid. Where it is important to maintain the liquid within the quench chamber separated from the hydraulic fluid an element is provided between the two fluids whereby the pressure of the hydraulic fluid is transmitted to the quench fluid without permitting any intermixing of the two fluids. Means are provided in combination with the hydraulic cylinder for dampening the movement of the piston rod and in turn the movable contact member at the termination of its movement between the off to the on position.

3,555,280
AUTOMATIC FOCUS SENSOR AND CONTROL

Chester L. Richards, Jr., Costa Mesa, Calif., assignor to Hycon Manufacturing Co., Monrovia, Calif.

Filed Apr. 19, 1966, Ser. No. 543,755
Int. Cl. G03b *3/10*; G01j *1/20*
U.S. Cl. 250—201 13 Claims

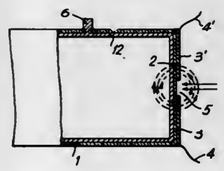


The present invention provides apparatus for controlling the focus of an optical system by examining one spatial frequency from the spatial spectral response of the optical system. The system operates by modulating the image optical spectrum and by examining the signal produced to control the focus of the image. The preferred embodiment of the invention uses a rotating disk focus scanner, positioned between a transfer lens and a spatial filter to produce the necessary amplitude modulation.

3,555,281
PHOTOTUBE WITH ELECTRODE DISPOSED ON OUTSIDE OF TUBE ENVELOPE FOR MODULATION PURPOSES

Alexei Petrovich Skibarko, ulitsa Danfilova, 4/5, kv. III, Moscow, and Karen Andranikovich Gulgazaryan, Ulitsa kirova, 3, kv. 6, Erevan, U.S.S.R.

Filed Feb. 12, 1968, Ser. No. 704,674
Int. Cl. H01j *39/14*
U.S. Cl. 250—211 3 Claims

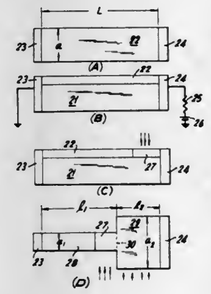


A photocell receiver is provided on the outer surface thereof in front of its light-sensitive surface with at least one electrode capable of transmitting luminous radiation, the electrode being positioned so that when supplied with an alternating voltage it produces an alternating electric field which penetrates through the light-sensitive surface to affect photoelectrons thereon.

3,555,282
RADIATION SENSITIVE SWITCHING SYSTEM EMPLOYING A SEMICONDUCTOR ELEMENT

Hisayoshi Yanai, Toshiaki Ikoma, Takayuki Sugeta, Yasuo Matsukura, and Kuniichi Ohta, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan

Filed July 30, 1968, Ser. No. 748,680
Claims priority, application Japan, July 31, 1967, 49215/67
Int. Cl. H01i *15/00*
U.S. Cl. 250—211 5 Claims

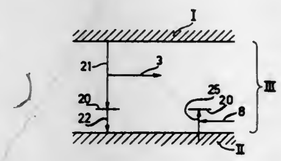


A device is described for generating the beam effect in a semiconductor suitable therefor by applying a source of light at a portion of the semiconductor material to lower the resistance thereof and effectively raise the field intensity elsewhere in the semiconductor. The field intensity is produced by applying a voltage source across the semiconductor with a level selected to produce an electric field intensity in the material that is less than that necessary to produce Gunn oscillations but which is sufficiently high to permit the light source to trigger the semiconductor into high field domain Gunn oscillations.

3,555,283
SOLID STATE LIGHT EMITTING DIODE WHEREIN OUTPUT IS CONTROLLED BY CONTROLLING ELECTRON POPULATION OF AN INTERMEDIATE LEVEL WITH AN AUXILIARY LIGHT SOURCE

Hermann Georg Grimmeiss, Aachen, Germany, and Peter Johannes Philippus Gerardus Simons, Emmasingel, Eindhoven, Netherlands, assignors to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware, by mesne assignments

Filed Feb. 24, 1965, Ser. No. 434,787
Int. Cl. H01l *15/06*
U.S. Cl. 250—217 5 Claims

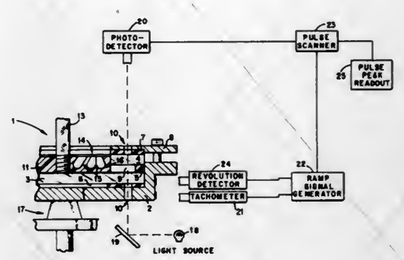


A controllable injection recombination radiation or light source comprising a semiconductor having an intermediate level in its forbidden gap is described. The output radiation is controlled or modulated by controlling or modulating the electron population of the intermediate level using an auxiliary source of radiation to irradiate the semiconductor.

3,555,284
MULTISTATION, SINGLE CHANNEL ANALYTICAL PHOTOMETER AND METHOD OF USE

Norman G. Anderson, Oak Ridge, Tenn.

Filed Dec. 18, 1968, Ser. No. 784,739
Int. Cl. G01n *21/26, 1/10*
U.S. Cl. 250—218 10 Claims

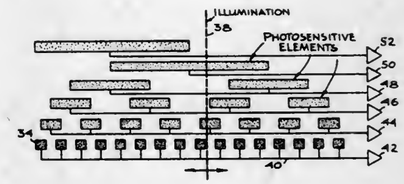


An analytical photometer is provided for simultaneously determining the presence of a common substance in a multiplicity of discrete samples. A multiplicity of sample chambers with axially aligned transparent windows are arranged within a centrifuge rotor to provide a rotary cuvette system. Solution handling systems comprising sets of interconnected, solution-accepting chambers are disposed generally in radial alignment with the sample chambers forming the cuvette system. The solution-accepting chambers of the solution handling systems are shaped and sized to retain liquid when the rotor is at rest, and to release the liquid to the cuvettes when the rotor is spinning. A single light source and a photodetecting unit are aligned with the windows to determine chemical species concentrations by light absorbancy in the samples contained in the cuvettes. Means for receiving the output from the photodetecting unit are provided for individually indicating the phototransmittance of the samples within each cuvette.

3,555,285
CODED ARRANGEMENT OF PHOTOCELLS MOUNTED ON RIGID BODY TO DETERMINE POSITION THEREOF

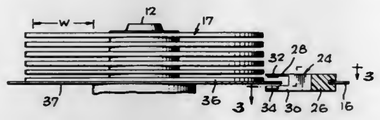
Robert Irving, Northridge, Calif., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware

Filed Apr. 29, 1966, Ser. No. 546,371
Int. Cl. H01j *39/12*
U.S. Cl. 250—220 10 Claims



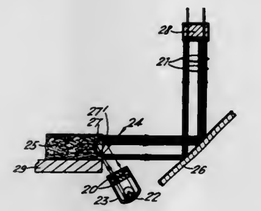
A system capable of precisely determining the instantaneous geometrical relationship between two or more elements of a large substantially rigid structure, which elements may nevertheless exhibit small amounts of movement relative to one another. The geometrical relationship is determined by focusing light from a source fixed to one of the elements on an encoding sensor also fixed to one of the elements to thus generate digitally encoded signals representative of the position of the light incident on the sensor.

3,555,286
DISC FILE SYSTEM
Lawrence Cote, Englewood, Colo., assignor to Data Products Corporation, Culver, Calif., a corporation of California
Filed Aug. 22, 1968, Ser. No. 754,703
Int. Cl. G01n *21/30*
U.S. Cl. 250—222 **6 Claims**



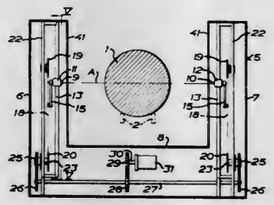
Apparatus for use in a disc file system to sense the presence of a disc pack comprising a light sensor and lamp, both mounted on a bracket for movement onto opposite sides of the lower disc of the disc pack.

3,555,287
METHOD OF CHECKING THE ENDS OF CIGARETTES FOR CAVITIES IN THE TOBACCO FILLING
Alfred Schmermund, 62 Kornerstrasse, Gevelsberg, Westphalia, Germany
Continuation-in-part of application Ser. No. 532,635, Mar. 8, 1966, now Patent No. 3,473,037. This application Feb. 20, 1969, Ser. No. 801,136
Int. Cl. G06m *7/00*
U.S. Cl. 250—223 **1 Claim**



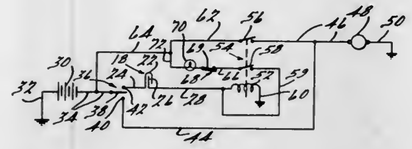
An arrangement for checking cigarettes comprises means for forming an image of an end of each cigarette on a photoelectric element by directing light obliquely towards the cigarette end, and electric means responsive to the illumination of said photoelectric element for creating a control effect under the control of said photoelectric element.

3,555,288
PHOTOELECTRIC CLASSIFIER USING MOVEABLE CURTAIN OF RADIATION
Stig Emil Uno Morenius, Sundsvall, Sweden, assignor to Ingenjorsfirma Stig Morenius AB, Sundsvall, Sweden
Filed July 18, 1967, Ser. No. 654,117
Claims priority, application Sweden, July 19, 1966, a836/66
Int. Cl. G01b *11/02*
U.S. Cl. 250—236 **16 Claims**



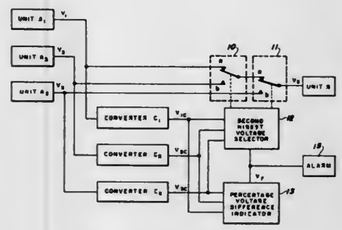
A method of and apparatus for automatically controlling, by continuous classification of articles, the working and other treatment of said articles which are conveyed by a conveyor and moved through a curtain of radiation between a source of radiation and a radiation receiver for continuous adjustment of the working machine. The source of radiation and the radiation receiver and thus the curtain of radiation are caused to perform a parallel movement, whereby the curtain of radiation is repeatedly moved towards, across and away from the article to be classified in each particular classification case.

3,555,289
WINDSHIELD WIPER ENERGIZATION SYSTEM
William J. Sobkow, Livonia, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Sept. 9, 1968, Ser. No. 758,361
Int. Cl. H02g *3/00*
U.S. Cl. 307—10 **6 Claims**



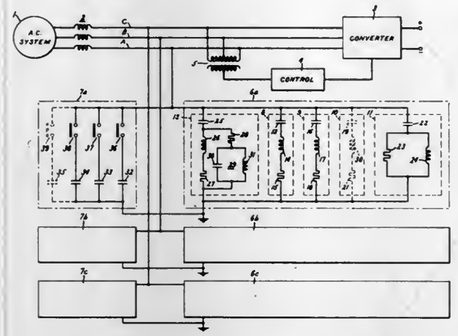
A motor vehicle windshield wiper energization system wherein a motor driving a windshield wiper is actuated upon moisture on the vehicle windshield being sensed by a moisture sensitive switch. The switch is positioned on a portion of the windshield wiped by the windshield wiper. In order to assure that the windshield is fully cleaned, a time delay mechanism maintains motor operation for a predetermined time period following the removal of moisture from the switch.

3,555,290
SECOND-HIGHEST REDUNDANT VOLTAGE SELECTOR
Walter Ellermeyer, 4878 Niagara Ave., Apt. 10, San Diego, Calif. 92107
Filed May 29, 1969, Ser. No. 828,900
Int. Cl. H02j *9/00*
U.S. Cl. 307—65 **11 Claims**



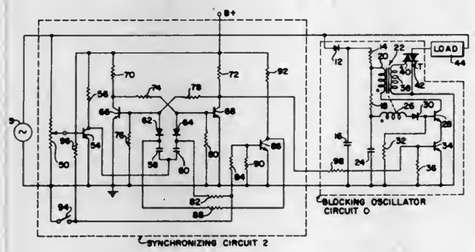
A second-highest redundant voltage selector which continually compares the voltage outputs of three indentical electrical units and continuously selects the preferred voltage to drive a following electrical state. The selection of the second-highest of three input voltages is accomplished by the use of three two-input comparators. The output of each comparator indicates which of the two voltages connected to it is the higher and which is the lower. The outputs of the comparators actuate switching circuitry which continually selects the second-highest of the three input voltages. Malfunction of the invention will never produce a faulty output voltage. Regardless of any malfunction of the invention, the preferred voltage will be within acceptable limits if the three redundant input voltages are within acceptable limits.

3,555,291
POWER SYSTEM FILTER
Clyde G. Dewey, Drexel Hill, Pa., assignor to General Electric Company, a corporation of New York
Filed May 16, 1968, Ser. No. 729,638
Int. Cl. H02j *1/02*
U.S. Cl. 307—105 **7 Claims**



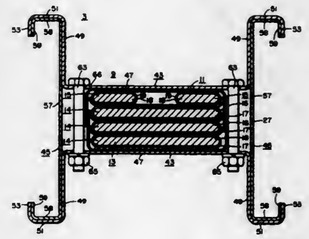
A harmonic filter for an AC power system, particularly for converter installations, which provides damping to diminish the effects of parallel resonance. The filter consists of a plurality of conventional LC shunt filters tuned to the expected harmonic frequencies. The power system may also include static capacitors for power factor correction. Since the power factor capacitors and the harmonic filters are effectively in parallel with the inherent inductance of the AC system, a parallel resonance, which may occur at one of the lower harmonic frequencies, results. In order to reduce the effects of a parallel resonance, there is provided an additional filter tuned to provide damping at the harmonic frequency at which parallel resonance may occur. This additional filter comprises an LC filter with a resistor connected in parallel with the inductance. This resistor is connected to a blocking filter which presents a high impedance to the system fundamental frequency. The effect of this resistor is to provide damping which will reduce the amplitude of oscillations under parallel resonant conditions. Since this resistor is connected through a blocking filter, it provides damping without providing excessive additional loading at the fundamental frequency.

3,555,292
ZERO SWITCHING NETWORK FOR A TRIAC SWITCHING CIRCUIT
Donald E. Henry, Davenport, Iowa, assignor to Gulf + Western Industries, New York, N.Y., a corporation of Delaware, by mesne assignments
Filed Aug. 26, 1968, Ser. No. 812,481
Int. Cl. H01h *9/56*
U.S. Cl. 307—133 **7 Claims**



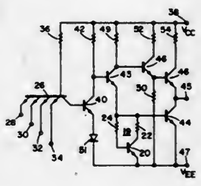
There is provided a switching circuit for switching an alternating voltage source across a load including switch means, such as a triac, having a first, second, and control electrode, and exhibiting the characteristic of presenting a low impedance to current flow from the voltage source to the load when a forward biasing signal is applied to the control electrode; and circuit means for applying a forward biasing signal to the control electrode. The circuit means includes a transformer having a primary winding, and a secondary winding coupled between the first and control electrode of the switch means, first actuatable switching means for coupling one terminal of the primary winding to a source supply, second actuatable switching means for, upon energization, completing a circuit between the primary winding and the source supply, means for periodically actuating the first actuable switching means, and means for actuating the second switching means when the alternating voltage source is at a predetermined voltage level.

3,555,293
BUS DUCT
Bill M. Shannon, Rochester, and James R. Kotala, Aliquippa, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 4, 1969, Ser. No. 813,473
Int. Cl. H01b *7/34*; **H02g** *3/28*
U.S. Cl. 307—147 **10 Claims**



Improved three-phase four-wire half-neutral bus duct construction. A set of bus bars is supported in a housing in four layers with three phase-carrying bus bars occupying three layers and at least two additional bus bars occupying the fourth layer.

3,555,294
TRANSISTOR-TRANSISTOR LOGIC CIRCUITS HAVING IMPROVED VOLTAGE TRANSFER CHARACTERISTIC
Ronald L. Treadway, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Feb. 28, 1967, Ser. No. 619,379
Int. Cl. H03k *19/08, 19/36*
U.S. Cl. 307—203 **7 Claims**

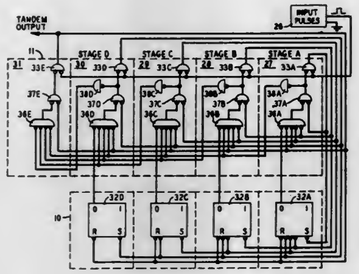


Transistor-transistor logic (TTL) circuitry having a bypass network connected to the output device of the circuitry for providing turnoff drive for the output device. The bypass network includes a resistor connected in series with at least one PN junction, and such PN junction is within either a simple diode or a transistor. The bypass network prevents undesirable spiking in the output signal of the TTL logic circuitry.

3,555,295
PARALLEL COUNTER

Wing N. Toy, Glen Ellyn, Ill., assignor to Bell Telephone Laboratories, Incorporated, Berkeley Heights, N.J., a corporation of New York

Filed Oct. 12, 1967, Ser. No. 674,834
Int. Cl. H03k 21/00
U.S. Cl. 307—224 13 Claims

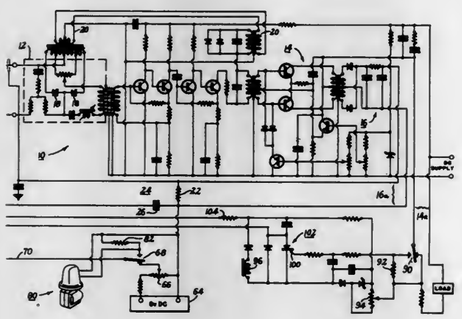


A parallel counter using noncomplementing bistable circuits has coincidence gates associated with the bistable circuits to detect the lowest ordered counter stage in a reset state at the time of a counter input pulse. The gates are operative to set that counter stage and to reset all lower ordered stages. By using gates with different degrees of fan-in, the amount of delay in each counting operation can be correspondingly changed to produce a similar change in the input pulse repetition frequency that can be accommodated by the counter.

3,555,296
INDUSTRIAL PROCESS INSTRUMENT FOR PRODUCING LINEARLY-VARYING CONTROL SIGNALS

Allan L. Flanagan, Attleboro, Mass., assignor to The Foxboro Company, Foxboro, Mass.

Filed June 24, 1968, Ser. No. 739,243
Int. Cl. H03k 3/00
U.S. Cl. 307—228 9 Claims

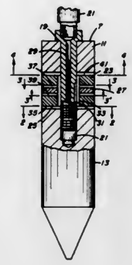


An electronic signal-controlling apparatus adapted to produce output signals of a predetermined time-varying nature, for example linearly-varying output signals, sometimes referred to in the art as ramp signals.

3,555,297
COOLED ULTRASONIC TRANSDUCER

Charles W. Pierson, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Oct. 13, 1969, Ser. No. 865,576
Int. Cl. H01v 7/00
U.S. Cl. 310—8.9 7 Claims

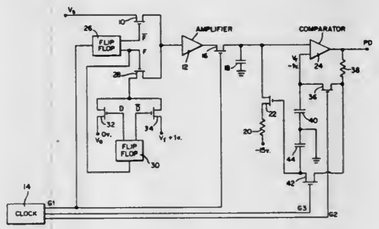


An ultrasonic transducer comprises a back body, a front body, one or more piezoelectric crystal discs sandwiched therebetween, and a central bolt holding the elements together. Cooling air passes into a central bore in the bolt, out the bottom of the bolt, and up through a longitudinal groove in the outside of the bolt to an annulus between the bolt and the piezoelectric discs. The air then passes outwardly through radial grooves between the crystal discs and adjoining metal elements.

3,555,298
ANALOG TO PULSE DURATION CONVERTER

Lewis J. Neelands, DeLand, Fla., assignor to General Electric Company, a corporation of New York

Filed Dec. 20, 1967, Ser. No. 692,045
Int. Cl. H03k 17/00
U.S. Cl. 307—235 5 Claims

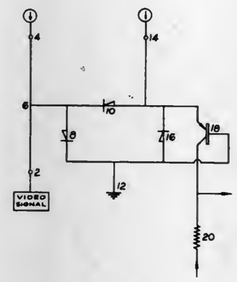


A capacitor is charged to the voltage level of an analogue signal to be converted. The capacitor is linearly discharged by a constant current with the resulting voltage ramp applied as one input to a comparator. The comparator output changes state when the voltage ramp passes through a reference voltage applied to the other input. The duration of the comparator output signal from the beginning of the voltage ramp to the comparator transition varies linearly with signal amplitude. Known reference voltages are converted alternately with the analogue signal. A known minimum is used to correct the reference voltage of the comparator, while a known maximum is used to correct the slope of the voltage ramp.

3,555,299
COMBINED VIDEO SIGNAL LIMITER

John David Millward, Orpington, England, assignor to the Rank Organization Limited, London, England

Filed Jan. 2, 1968, Ser. No. 695,092
Claims priority, application Great Britain, Jan. 18, 1967, 2616/67
Int. Cl. H03k 5/08
U.S. Cl. 307—235 7 Claims

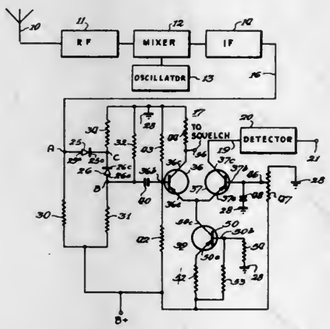


An electrical signal is limited to the range between first and second levels by limiting the signal to a direct current at the first level and limiting the resulting signal relative to a second direct current representing the difference between the first and second levels.

3,555,300
LIMITER CIRCUIT

Per T. Overlie, Chicago, Ill., assignor to Warwick Electronics Inc., a corporation of Delaware

Filed May 22, 1967, Ser. No. 639,977
Int. Cl. H03k 5/08
U.S. Cl. 307—237 2 Claims

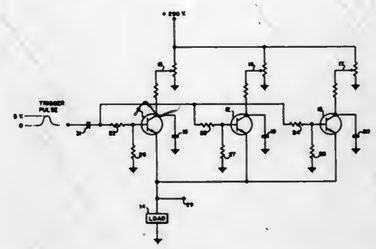


An FM receiver having an amplitude limiter with a pair of diodes for clipping positive and negative going portions of a signal and a semiconductor circuit providing a high-input impedance to the dual diodes and having a constant current output. The semiconductor circuit has a pair of emitter coupled transistors connected to a third transistor connected as a constant current source.

3,555,301
APPARATUS AND TECHNIQUES FOR GENERATING VARIABLE DELAY PULSES FROM PARALLELED AVALANCHE TRANSISTORS

James P. Hansen, Oxon Hill, Md., assignor to the United States of America as represented by the Secretary of the Navy

Filed Nov. 9, 1967, Ser. No. 681,678
Int. Cl. H03k 17/00
U.S. Cl. 307—246 6 Claims



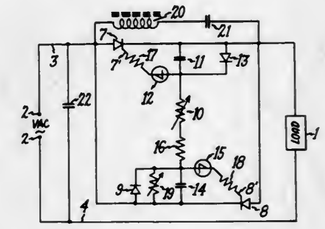
Apparatus for generating variable delay pulses from paralleled avalanche transistors wherein the individual transistor collector bias voltages can be adjusted so as to control the time at which each of the transistors avalanche when a triggering signal is applied to each of the transistors.

The invention described herein may be manufactured and used by or for the Government of the United States of America for Governmental purposes without the payment of any royalties thereon or therefor.

3,555,302
HIGH-FREQUENCY CONTROL CIRCUIT

Joe A. Nuckolls, Hendersonville, N.C., assignor to General Electric Company, a corporation of New York

Filed Nov. 30, 1967, Ser. No. 687,041
Int. Cl. H03k 17/00
U.S. Cl. 307—252 16 Claims



High-frequency control circuit operating gaseous discharge lamps from an alternating current source includes an alternating current wave-chopping circuit comprising parallel connected oppositely poled controlled rectifiers actuated by a voltage sensitive switch connected to an RC charging circuit, and a commutating branch connected across the controlled rectifiers comprising a capacitor and an inductor in series.

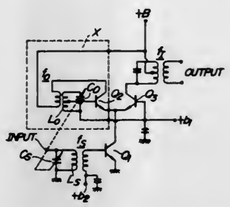
3,555,303
FREQUENCY CONVERTER CIRCUIT

Tokinori Kozawa, Kokubunji-shi, Japan, assignor to Hitachi, Ltd., Chiyoda-ku, Tokyo, Japan, a corporation of Japan

Filed Feb. 28, 1968, Ser. No. 709,092
Claims priority, application Japan, Mar. 1, 1967, 42/12567
Int. Cl. H03k 5/00
U.S. Cl. 307—260 5 Claims

A frequency converter circuit in which the emitters of a pair of transistors are connected to each other to constitute a

differential amplifier, said connected emitters being connected to a transistor which amplifies the input signal, one of said pair of transistors being comprised in a local oscillator

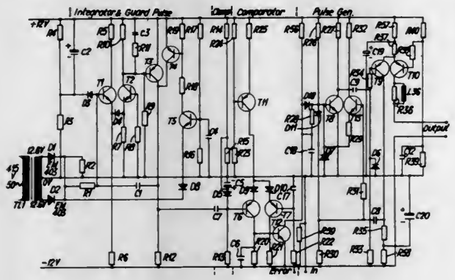


circuit in which signal is fed back from the collector to the base, and output signal of the converter circuit being derived from the other one of said pair of transistors.

3,555,304
FIRING UNIT FOR CONTROLLED RECITIFIERS

Brian Joseph Magee, 18 St. Clements Road, Queensland, Australia

Filed Jan. 31, 1968, Ser. No. 702,056
Claims priority, application Australia, Jan. 31, 1967, 17066/67
Int. Cl. H03k *1/12, 17/00*
U.S. Cl. 307—262 **4 Claims**



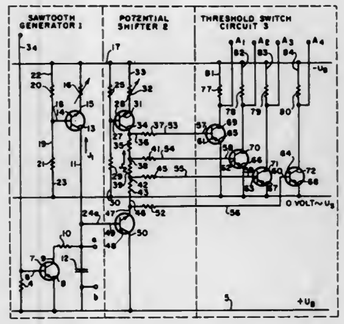
A firing unit for a controlled rectifier produces a firing pulse in response to equality of a DC error voltage and a voltage which is the integral of the rectifier input waveform; the integrated voltage is reset each cycle and its prereset value clamped at a constant level. Means for producing the error voltage may also use integration of the output current in the rectifier load.

3,555,305
PULSE GENERATING CIRCUIT ARRANGMENT FOR PRODUCING PULSES OF DIFFERENT ADJUSTABLE DURATIONS

Heinz Luczkowski, Bielefeld, Germany, assignor to Anker-Werke Aktiengesellschaft, Bielefeld, Germany, a corporation of Germany

Filed Mar. 21, 1967, Ser. No. 624,899
Claims priority, application Germany, Mar. 24, 1966, A51946
Int. Cl. H03k *1/18*
U.S. Cl. 307—265 **10 Claims**

A pulse generating circuit arrangement comprises a sawtooth generator. The sawtooth generator comprises an adjustable potentiometer connected in series with a capacitor. The input of a potentiometer comprising an adjustable potentiometer connected in series with a voltage divider is connected to the output of the sawtooth generator. The inputs of a threshold switch circuit are connected to the outputs of the potentiometer. The threshold switch circuit comprises a plurality of transistors having emitter electrodes connected to a zero voltage line, base electrodes connected to the outputs of the potentiometer and collector electrodes connected to the corresponding ones of a plurality of outputs and to a source of operating voltage via corresponding ones of a plurality of resistors. The sawtooth generator and potentiometer control the threshold switch circuit to produce at the outputs of said circuit a plurality of output circuits having coincident leading edges and different durations. The adjustable potentiometer

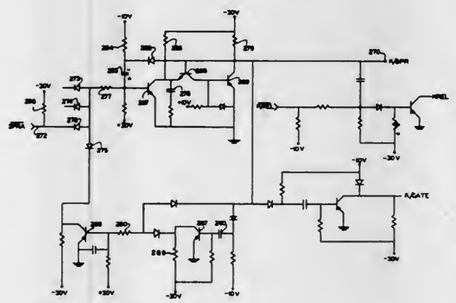


of the sawtooth generator controls the duration of the output pulse having a maximum duration provided at one of the outputs of the threshold switch circuit. The adjustable potentiometer of the potentiometer controls the duration of the output pulse having a minimum duration provided at another of the outputs of the threshold switch circuit and the voltage divider of the potentiometer controls the durations of the output pulses having intermediate durations provided at others of the outputs of the threshold switch circuit.

3,555,306
KEYBOARD SPROCKET CIRCUIT

George R. Cogar, Frankfort, Torkjell Sekse, Marcy, and Walter Banziger and Joseph W. Ming, Utica, and Laszlo Horvath, Ilion, N.Y., assignors to Mohawk Data Sciences Corporation, Herkimer, N.Y., a corporation of New York.

Original application Mar. 30, 1966, Ser. No. 541,450, now Patent No. 3,483,523. Divided and this application Jan. 14, 1969, Ser. No. 792,901
Int. Cl. H03k *5/00*
U.S. Cl. 307—268 **7 Claims**

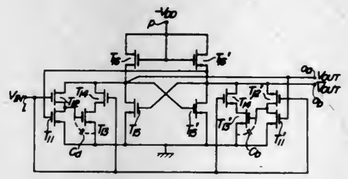


A pulse-shaping circuit for converting a signal from an operator controlled keyboard to one which is free of bounce-spikes and suitable for logic circuits in a data recording machine. The circuit contains a pair of integrating networks which reshape the leading and trailing edges of the keyboard output signal. Additionally, if the keyboard output occurs for a predetermined length of time, the circuit provides a continuous series of signals for repetitively recycling the machine as long as the keyboard output signal remains. This is accomplished by a timing circuit, responsive to such a keyboard output, which activates a circuit for transmitting repeated simulated keyboard outputs to the pulse-shaping circuit. The timing and simulation circuits are connected in a feedback delay loop to cause the pulse-shaping circuit to oscillate at a fixed frequency.

3,555,307
FLIP-FLOP

Minoru Hujita, Kodaira-shi, Japan, assignor to Hitachi, Ltd., Chiyoda-ku, Tokyo, Japan, a corporation of Japan

Filed Oct. 2, 1968, Ser. No. 764,428
Claims priority, application Japan, Oct. 16, 1967, 42/66,133
Int. Cl. H03k *3/286*
U.S. Cl. 307—279 **5 Claims**

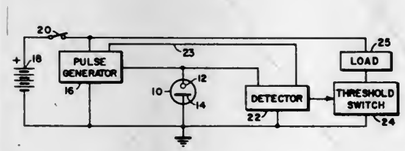


A flip-flop, comprising a pair of inverter stages including N-channel MOS field effect transistors serving as switching elements, the pair of inverter stages being cross coupled to each other so as to assume two stable switching states, steering gate circuits adapted to sense the switching states of each of the inverter stages, and switching circuits for changing one switching state sensed by the gate circuits to the other switching state, wherein each of the steering gate circuits is constituted by a P-channel MOS field effect transistor connected with the output terminal of one of the inverter stages and an N-channel MOS FET connected in series with the P-channel FET, the input terminal is connected with the P-channel FET's, and the output terminal of the other inverter stage is connected with the N-channel FET's.

3,555,308
ELECTRONIC CIRCUIT FOR ELECTROCHEMICAL TIMER

Arnold J. Peterson, Richmond, Ind., assignor to Avco Corporation, Richmond, Ind., a corporation of Delaware

Filed Nov. 27, 1968, Ser. No. 779,441
Int. Cl. H03k *17/28*
U.S. Cl. 307—293 **6 Claims**

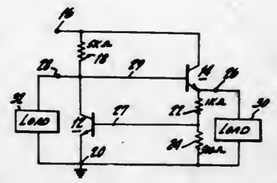


A longterm timing system includes an electrochemical cell, the impedance of which is very low until its anode deplates of silver. Deplating results from the application of current pulses supplied from a free-running multivibrator having time constants providing a low duty cycle. A detector circuit functioning at the time the electrochemical cell is substantially deplated serves to increase the pulse repetition rate of the multivibrator to accelerate deplating. This arrangement results in a more abrupt increase in cell impedance and therefore improves the accuracy of the overall time interval.

3,555,309
ELECTRICAL CIRCUITS

Allen LeRoy Limberg, Somerville, N.J., assignor to RCA Corporation, a corporation of Delaware

Filed Nov. 3, 1967, Ser. No. 680,483
Int. Cl. H03k *1/12*
U.S. Cl. 307—297 **8 Claims**

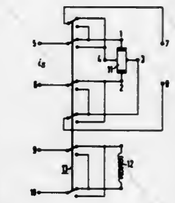


An electrical circuit especially suited for fabrication using integrated circuit techniques including a common emitter transistor amplifier connected in cascade relation with a common collector transistor amplifier and interconnected with a pair of resistors of predetermined resistance ratio in a degenerative feedback loop so that the common emitter stage additionally provides a stabilized direct current voltage reference for the common collector stage.

3,555,310
APPARATUS AND METHOD FOR REDUCING THE INVERSE EFFECT OF A HALL GENERATOR

Jochen Haeusler, Furth, Germany, assignor to Siemens Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed Oct. 14, 1968, Ser. No. 767,127
Claims priority, application Germany, Oct. 24, 1967, S112573
Int. Cl. H01v *5/00*
U.S. Cl. 307—309 **8 Claims**



The functions of the two pairs of electrodes of a Hall generator are interchanged simultaneously with the reversal of the direction of polarization of the magnetic field acting on the Hall generator to reduce the inverse effect of the Hall generator during reversal of the direction of polarization of the magnetic field.

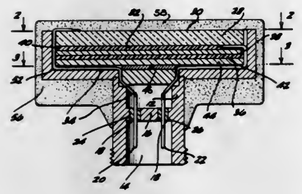
3,555,311
HIGH PRESSURE PIEZOELECTRIC TRANSDUCER

Peter E. Weber, Scarborough, N.Y., assignor to The Marquardt Corporation, Van Nuys, Calif., a corporation of Delaware

Filed Jan. 23, 1969, Ser. No. 793,344
Int. Cl. H01v *7/00*
U.S. Cl. 310—8.3 **20 Claims**

An alternating voltage is applied to the electrodes of a piezoelectric crystal at the frequency of natural vibration of the crystal in the thickness mode which causes the crystal to vibrate in the thickness mode. This vibration is at one-half wavelength resonance. Vibrations from the front surface are transmitted through an epoxy window as an ultrasonic wave. Vibrations off the back surface are reflected from a reflector

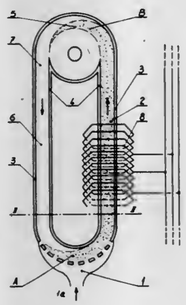
which is spaced one-quarter wavelength from the crystal. A filler material with negligible reflective qualities, such as neoprene, synthetic or natural rubbers, or the like, is sandwiched between the crystal and the reflective material. The filler also has the properties of compressions so that the crystal will not break or cave in when the transducer is subject to high pressures when submerged in very deep water.



ERRATUM

For Class 310—8.9 see:
Patent No. 3,555,297

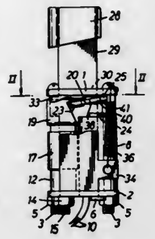
3,555,312
MAGNETOHYDRODYNAMIC DEVICE FOR CONVERTING IN A REVERSIBLE MANNER THERMODYNAMIC ENERGY INTO ELECTRICAL ENERGY OF THE ALTERNATING CURRENT TYPE
Rene Bidard, Paris, France, assignor to Compagnie Electro-Mecanique, Paris, France, a body corporate of France
Filed Nov. 26, 1969, Ser. No. 880,119
Claims priority, application France, Nov. 28, 1968, 175,737
Int. Cl. H02m *4/02*
U.S. Cl. 310—11 **12 Claims**



Magnetohydrodynamic device operable to convert thermodynamic energy into alternating current electrical energy comprises at least one closed loop placed completely within a multipolar magnetic field having a sliding characteristic for circulation of a conductive fluid. The fluid in the form of a gas-liquid emulsion passes along a portion of the loop with a velocity higher than that of the sliding field accompanied by an expansion of the emulsion, and the fluid in the form of a liquid following removal of the gas from the emulsion is then passed along another portion of the loop with a velocity lower than that of the sliding field accompanied by compression of the liquid.

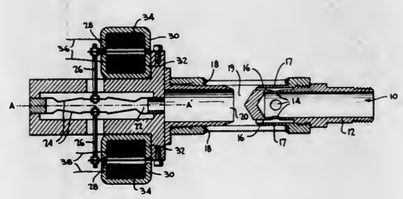
To convert alternating current electrical energy into thermodynamic energy, the emulsion is passed along the loop through a portion of the sliding magnetic field with a velocity lower than that of the magnetic field accompanied by a compression of the emulsion, and the liquid is passed along another portion of the loop with a velocity higher than that of the magnetic field accompanied by an expansion of the liquid.

3,555,313
KEY CONTROLLED PULSE GENERATOR
Otto Carl Selden, 72 Emlyn Road, London, England
Filed July 24, 1969, Ser. No. 844,361
Int. Cl. H02k *35/06*
U.S. Cl. 310—15 **4 Claims**



The invention relates to a key controlled pulse generator which generates a pulse in a coil surrounding a core in a self-energized magnetic circuit, the magnetic circuit having a gap therein which is reduced or increased by means of a bistable armature whose movement is initiated by a key. The bistable armature may be provided with an overcenter spring and the gap in the magnetic circuit may be defined by the core and the armature. A shim of nonmagnetic or nonmagnetizable material may be positioned on the armature so as to prevent contact in the magnetic sense between the armature and the coil core. A second magnetic circuit may be provided in which a gap is reduced by the armature when moving in the opposite direction to that in which it reduces the gap in the other magnetic circuit.

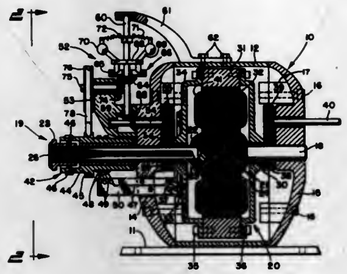
3,555,314
PLURAL REED RECIPROCATING GENERATOR
Fernando Villarroel, Bowie, and Carl Joseph Campagnuolo, Potomac, Md., assignors to the United States of America as represented by the Secretary of the Army
Filed Nov. 14, 1969, Ser. No. 876,938
Int. Cl. H02k *35/06*
U.S. Cl. 310—15 **4 Claims**



Fluid is caused to enter a nozzle in which a ring conduit is concentrically located to form an annular orifice. The fluid discharging from the annular orifice impinges directly on the edge of a resonating cavity producing a multiple frequency edgetone. The column of air in the resonating cavity is thereby caused to vibrate at a frequency determined by the depth of the cavity. The changes in pressure within the resonating cavity cause two diaphragms, diametrically opposite and longitudinally placed therein, to pulsate. To each diaphragm is connected a rod for transmitting the pulsations to metallic reeds, which are in turn free to oscillate within a pair of magnetic pole pieces. The oscillations of the reeds induce an electromotive force in a coil surrounding each reed.

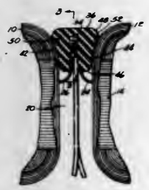
The resultant electrical currents produced by each coil are combined in series and phase to provide maximum energy for the operation of an external electrical circuit.

3,555,315
CONSTANT TORQUE ADJUSTABLE SPEED MOTOR
William P. Hunsdorf, P.O. Box 535, Riverview, Fla. 33569
Filed Feb. 2, 1970, Ser. No. 7,592
Int. Cl. H02k *13/00*
U.S. Cl. 310—67 **9 Claims**



A direct current constant torque adjustable speed motor having a stationary armature and revolving field structure, which through a self-propelled adjustable speed governor drives a revolving brush holder to produce magnetic field rotation in the armature. Iron windings are employed in both the armature and field to provide sufficient resistance to current and to minimize induced EMF's. The speed governor is of the centrifugal friction drum type and in two embodiments may be present or adjustable during motor rotation.

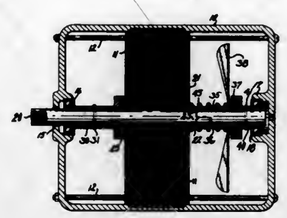
3,555,316
LEAD ATTACHMENT FOR DYNAMOELECTRIC MACHINE AND METHOD OF MAKING SAME
Donald D. Bleich, Owosso, Mich., assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Dec. 18, 1968, Ser. No. 784,694
Int. Cl. H02k *11/00*
U.S. Cl. 310—71 **12 Claims**



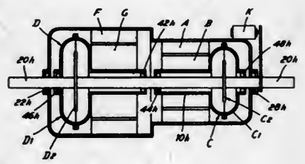
A coil end and lead connection is embedded in an insulating body which is molded directly around the connection. The insulating body is wedged between adjacent coils with the leads extending through the coil channel.

3,555,317
ELECTRIC MOTOR AND CLUTCH
Peter D. Allan, Circle Pines, and Mortimer J. Huber, St. Paul, Minn., assignors to Motion Rotators, Inc., Minneapolis, Minn., a corporation of Minnesota. by mesne assignments
Filed May 1, 1969, Ser. No. 821,055
Int. Cl. H02k *11/00*
U.S. Cl. 310—78 **5 Claims**

An electric motor having an internal clutch including a rotor operatively positioned within a stator and mounted on a sleeve having an inner diameter slightly larger than the outer diameter of an output shaft which extends coaxially therethrough. A compression spring coaxially mounted about the sleeve causes first and second frictional clutch plates rotationally affixed relative to the rotor and sleeve to engage adjacent mating clutch plates affixed to the output shaft. The bias provided by the compression spring allows disengagement of the clutch plates when the motor is overloaded thereby preventing damage to the motor.



3,555,318
ELECTRIC MOTOR HAVING A STARTING FRICTION COUPLING
Ubaldo Ranzi, Via Roma 2, Legnano, Italy
Continuation of application Ser. No. 467,844, June 29, 1965, now abandoned. This application July 8, 1969, Ser. No. 859,526
Int. Cl. H02k *7/108*
U.S. Cl. 310—78 **2 Claims**

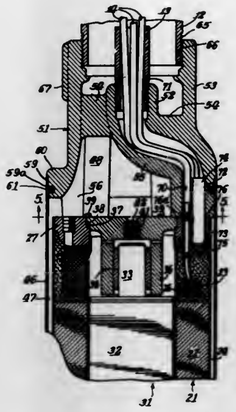


A combination electric motor and friction coupling wherein the motor comprises at least a motor rotor, a motor stator and a motor housing and the friction coupling comprises at least a coupling housing, a coupling rotor and torque transmitting material between the coupling rotor and the coupling housing, and wherein one element of the friction coupling is integral with the motor rotor and the other element of the coupling is connected to the means to be driven.

3,555,319
SUBMERSIBLE ELECTRIC MOTOR
Edward J. Schaefer, Bluffton, Ind., assignor to Franklin Electric Co., Inc., Bluffton, Ind., a corporation of Indiana
Filed Mar. 5, 1969, Ser. No. 804,533
Int. Cl. H02k *5/12*
U.S. Cl. 310—87 **21 Claims**

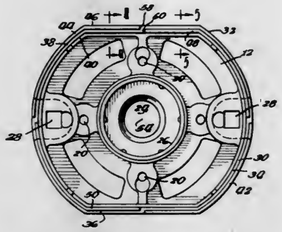
This disclosure deals with a submersible electric motor including a connector member at one end thereof. The connector member is constructed to serve the multiple functions of an end section for the motor, connecting means between the motor and a pipe for suspending the motor, the connecting means further forming a liquid connection between the pipe and liquid passages formed in the motor, and an electrical

connection between the motor winding and a power cable. The remainder of the motor may readily be disconnected



from the connector member, for servicing or replacement, thereby automatically breaking the above connections.

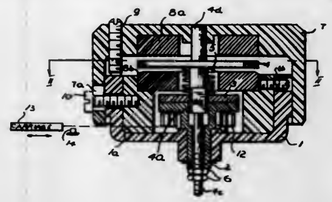
3,555,320
MOTOR HOUSING
Robert C. Johnson, Racine, Wis., assignor to MSL Industries, Inc., a corporation of Minnesota
Filed May 14, 1969, Ser. No. 824,569
Int. Cl. H02k *5/00*
U.S. Cl. 310—89 **3 Claims**



A motor housing comprising a pair of cup-shaped housing frames, each of which is identical to the other. Each housing frame has an open end and a relatively closed end. The rim of each frame at its open end has an integrally formed flange and groove for interengagement with the flange and groove of the other frame when the rims of both frames are connected together.

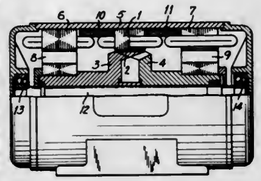
3,555,321
EDDY CURRENT BRAKE FOR USE IN BUSINESS MACHINES OR THE LIKE
Rolf Gruener, Oelber Am Weissen Wege, Dieter Sobottka, Jever, and Rolf Moritz, Wilhelmshaven, Germany, assignors to Olympia Werke AG, Wilhelmshaven, Germany
Filed July 31, 1968, Ser. No. 748,988
Claims priority, application Germany, Aug. 3, 1967, 012689
Int. Cl. H02k *49/04*
U.S. Cl. 310—93 **10 Claims**

An eddy current brake comprises a rotor which is driven by the carriage of a business machine in a gap between two ring-shaped laterally magnetized multipole permanent magnets whereby the eddy currents produce a braking force which is proportional to the speed of the carriage. One of the magnets is adjustable axially toward and away from the other magnet and the rotor is adjustable axially so that it is located



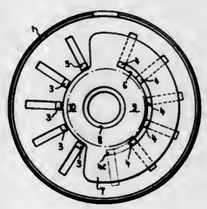
midway between the end faces of the magnets. The driving connection between the carriage and the rotor comprises a step-up gear transmission.

3,555,322
NONCONTACT ROTARY CONVERTER
Voldemar Voldemarovich Apsit, ul V. Latsisa, 2a, Kv. 21, and Viktor Alexeevich Sushkevich, ul. Dzelzvas, 15/1, kv. 55, Riga, U.S.S.R.
Filed Apr. 11, 1968, Ser. No. 720,623
Int. Cl. H02k *47/14*
U.S. Cl. 310—113 **1 Claim**



A noncontact rotary converter wherein a synchronous motor with claw-shaped poles and an inductor generator are mounted in a common ferromagnetic frame and on a common shaft and both have a common magnetic system with a common magnetic flux. The claw-shaped poles are mounted in the middle of the rotor of the motor and the end portions of the rotor are inductors with the same polarity as the claw-shaped poles. A stator cooperates with the claw-shaped poles and serves as the motor stator and two further stators cooperate with the inductors in the generator.

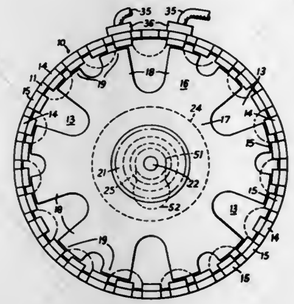
3,555,323
SMALL SYNCHRONOUS MOTOR
Hermann Gerber, Courgevaux, Switzerland, assignor to Saia AG, Fabrik elektrischer Apparate, Bern, Switzerland
Filed May 7, 1969, Ser. No. 822,573
Claims priority, application Switzerland, May 14, 1968, 7,153/68
Int. Cl. H02k *21/00*
U.S. Cl. 310—162 **11 Claims**



A small synchronous motor of the type having a rotor with permanent—magnet poles and a cage-like stator in the form of a closed ring enclosing an exciting coil and having at its

inner side groups of axially extending main poles and of shaded auxiliary poles, the utilization of the available space and the efficiency of shading discs being improved and the number of poles and magnetic flux increased by providing one single group of main poles and one single group of auxiliary poles, each group occupying one-half of the stator circumference.

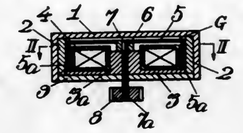
3,555,324
SYNCHRONOUS MOTOR WITH DISCLIKE ROTOR
Henry Joseph Lovegrove, Great Hormead, England, assignor to Sangamo Weston Limited, Enfield, Middlesex, England, a British company
Filed May 29, 1969, Ser. No. 828,977
Claims priority, application Great Britain, May 30, 1968, 25979/68
Int. Cl. H02k *19/00*
U.S. Cl. 310—162 **7 Claims**



Miniature alternating current synchronous electric motor comprising a stator structure including a cylindrical nonretentive ferromagnetic core-piece containing internal bearing bushings for a rotor spindle and two cup-shaped members of nonretentive ferromagnetic material, one shallow and the other deep, rigidly secured respectively to opposite ends of said core-piece, said cup-shaped members each having a rim part of castellated form to provide a ring of angularly spaced pole teeth and the two rings of the pole teeth being intermeshed to form a single annular ring within which each tooth is bent at a slight angle towards the extended axis of the core-piece so as to give the said annular ring of pole teeth a frustoconical formation, an energizing winding within an insulating casing located on said core-piece between said cup-shaped members, the ends of said winding being connected to related external connection leads on an annular shaped printed circuit board within said casing and a multipolar disc-shaped rotor of ceramic permanent material frictionally mounted upon a bushing secured near one end of a rotor spindle rotatable in said bearing bushings so as to be positioned within said frustoconical ring of stator pole teeth.

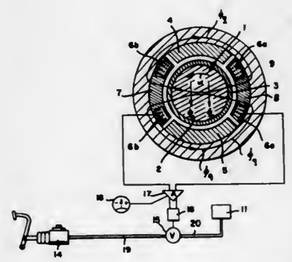
3,555,325
MINIATURE ELECTRIC SYNCHRONOUS MOTOR
Tokuzo Inariba, Nishikasugai-gun, Aichi Prefecture, Japan, assignor to Kabushiki Kaisha Tokai Rika Denki Seisakusho, Nishikasugai-gun, Aichi Prefecture, Japan
Filed Jan. 28, 1969, Ser. No. 794,606
Claims priority, application Japan, Jan. 31, 1968, 43/5373
Int. Cl. H02k *21/00*
U.S. Cl. 310—162 **2 Claims**

A miniature self-starting electric synchronous motor comprises an exciting coil to provide an AC magnetic field, a permanent magnet which serves as a stator to provide a DC magnetic field and a rotor having a plurality of pole teeth actuated by the magnetism of the said magnetic fields. The pole teeth are operatively rotated within an air gap between the inner periphery of the permanent magnet and the outer periphery of the exciting coil. To assume the motor runs in a predetermined direction, a ratchet device is provided to



cooperate with the rotor shaft to block rotation of the motor in the reverse direction.

3,555,326
ACCELEROMETER FOR VEHICULAR ANTI-SKID SYSTEM WITH SHEATHED ROTOR
Abootaleb Talebi, Ober Roden-Messenhausen, and Erwin Schlitz, Heusenstamm, Germany, assignors to Alfred Teves GMBH, Frankfurt am Main, Germany, a corporation of Germany
Filed Feb. 12, 1969, Ser. No. 798,636
Claims priority, application Germany, Feb. 17, 1968, 1,673,443
Int. Cl. H02k *19/20*
U.S. Cl. 310—168 **9 Claims**

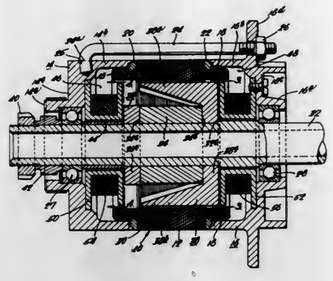


An accelerometer has a solid cylindrical ferromagnetic rotor rotationally coupled to a vehicle wheel and coated with a conductive nonferromagnetic metal sheath. Magnets create a radial primary flux through the rotor while pickup coils located on the stator outside this field sense any variation in flux of a secondary field produced by the eddy currents in the coating. The output of these differentiating (pickup) coil is a function of the angular acceleration of the rotor and is used to regulate braking force in the wheel.

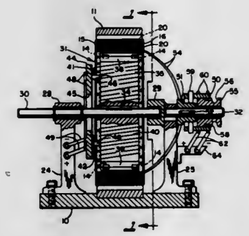
3,555,327
PERMANENT MAGNET ALTERNATOR WITH REGULATING MEANS
Stanley M. Terry, Hampden, Mass., assignor to AMBAC Industries, Incorporated, Springfield, Mass., a corporation of New York
Filed Mar. 25, 1969, Ser. No. 810,245
Int. Cl. H02k *19/20*
U.S. Cl. 310—168 **2 Claims**

An alternator with permanent magnet rotor having pole pieces is provided which has an output winding supported by a stator. At least one coil is employed which has a magnetic

circuit including at least one of the pole pieces but independent of the permanent magnet so that the magnetic flux associated with the coil effects the magnetic flux from the permanent magnet passing through the one of the pole pieces.



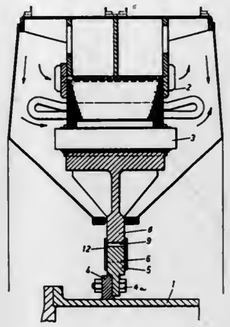
3,555,328
DC MOTOR WITH ROTATING BRUSH HOLDER
William P. Hunsdorf, P.O. Box 535, Riverview, Fla. 33569
Filed May 15, 1969, Ser. No. 824,786
Int. Cl. H02k *31/00*
U.S. Cl. 310—177 **3 Claims**



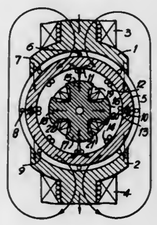
A DC motor having a ring stator slotted on the inside and outside surfaces to receive insulated square iron wire windings to form a stationary armature, the windings being connected at a plurality of taps thereon to a stationary commutator for creation of a rotating magnetic field. A rotating brush holder, driven by an external motor cooperates with the stationary commutator to effect the rotating magnetic field, DC voltage being applied to the brushes by way of a slip ring arrangement. A bipolar field structure is rotatably mounted inside the armature ring and is continuously energized in one polarity for reaction with the armature by another slip ring and brush arrangement.

3,555,329
GEARLESS DRIVE FOR CEMENT MILL
Eugen Meyer, Baden, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Apr. 24, 1969, Ser. No. 819,030
Claims priority, application Switzerland, May 27, 1968, 7806/68
Int. Cl. H02k *1/28*
U.S. Cl. 310—218 **3 Claims**

A gearless drive for the drum of a cement mill or the like wherein the pole wheel, i.e. the rotor of a low-speed electric motor surrounds the drum and is connected to it by a circumferential array of uniformly spaced studs which project radially from the drum and are received in a similar array of uniformly spaced recesses located in the pole wheel structure. Elastic members located between each side of each stud and the corresponding end of the recess provide a resilient drive for the drum by the pole wheel, and expansions and contractions of the drum due to changes in temperature are accommodated by sliding movement of the studs in their recesses thus preventing deformations of the drum caused by heat from exerting any forces upon the pole wheel.



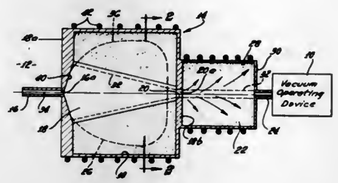
3,555,330
SINGLE-PHASE A.C. NON-COMMUTATOR ELECTRIC MOTOR
David Veniaminovich Svecharnik, Ul. Dobroljubova, 20, kv. 54, Moscow, U.S.S.R.
Filed Sept. 4, 1968, Ser. No. 757,313
Int. Cl. H02k *1/22*
U.S. Cl. 310—266 **3 Claims**



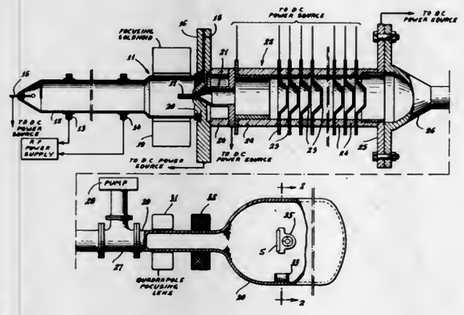
A motor with two sets of concentric poles with a rotor therebetween. One set of poles generates AC flux and the other DC flux. The rotor is a hollow cylinder, with AC and DC windings thereon connected by rectifiers. Current generated in the AC windings is rectified and passed to the DC windings for reaction with the DC flux to generate a torque in the rotor.

3,555,331
APPARATUS FOR MAINTAINING VACUUM CONDITIONS BY MOLECULAR DEPLETION OF GAS
Raymond L. Chuan, Altadena, Calif., assignor to The Susquehanna Corporation, a corporation of Delaware. by mesne assignments
Filed Aug. 8, 1968, Ser. No. 751,085
Int. Cl. H01j *7/18, 37/30*
U.S. Cl. 313—7 **7 Claims**

Incursion of ambient gas into a vacuum-operating device such as an election beam apparatus is protected against by sequentially expanding and adsorbing gas moving toward the device in a series of chambers to molecularly deplete the gas in advance of the device.



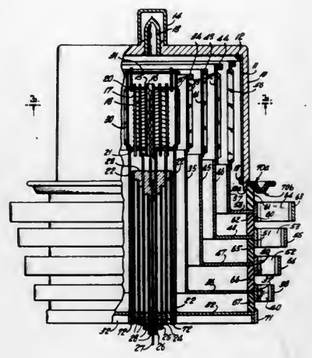
3,555,332
APPARATUS FOR PRODUCING A HIGH ENERGY BEAM OF SELECTED METALLIC IONS
John B. Schroeder, Weston, and Henry D. Dieselman, Norwalk, Conn., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Oct. 25, 1967, Ser. No. 678,024
Int. Cl. H05h *1/02*; **H01j** *37/26*
U.S. Cl. 313—63 **1 Claim**



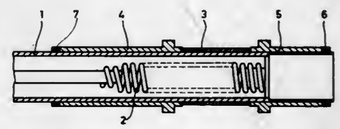
A technique for producing a high energy beam of ions of a selected metal without having the selected metal initially in gaseous form and the application of the technique to treating solid bodies of material. An inert gas is ionized in the source chamber section of an accelerator. The exit channel section of the accelerator is made from a material which includes the preselected metal. A deflecting magnet is positioned along the path of the ion beam emerging from the accelerator. Included in the emerging beam are ions of the inert gas and ions of the preselected metal used in the exit channel. All ions except either those of the inert gas or those of the preselected metal are selectively discarded by regulating the current of the deflecting magnet. The undiscarded ions remaining in the beam are used to treat the solid body of material.

3,555,333
ELECTRON MULTIPLIER TUBE HAVING COMBINED SUPPORTING-COOLING MEANS
Max Yarmovsky, Livingston, N.J., assignor to Wagner Electric Corporation, a corporation of Delaware
Filed Oct. 17, 1968, Ser. No. 768,482
Int. Cl. H01j *43/18, 43/22*
U.S. Cl. 313—105 **11 Claims**

A vacuum electron multiplier device is described having a cathode, one or more control grids, a plurality of dynodes, and an anode. The device is primarily designed for amplifying electrical pulses which are applied between the cathode and one of the control grids. All the dynodes (except one), are made with a plurality of louvers for generating secondary electrons. All the electrodes are held in position by annular insulators which are mounted at a distance from the electron paths so as not to be under electron bombardment at any time. The dynodes and the anode are connected to air fin radiators having a heat-dissipating capability directly proportional to the average amount of heat generated by the associated dynode or anode.



3,555,334
MAGNETRON CATHODE WITH GRAPHITE END SHIELDS
Johannes Antonius Van de Goor, Emmasingel, Eindhoven, Netherlands, assignor to U. S. Philips Corporation, New York, N.Y., a corporation of Delaware. by mesne assignments
Filed Oct. 25, 1968, Ser. No. 770,668
Claims priority, application Netherlands, Nov. 3, 1967, 6714947
Int. Cl. H01j *19/06, 19/42*
U.S. Cl. 313—107 **3 Claims**

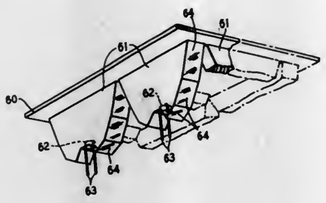


A tungsten dispenser cathode for a magnetron is described. The cathode is provided with end shields in the form of solid graphite rings to improve suppression of undesirable electron emission.

3,555,335
ELECTROLUMINESCENT DISPLAYS
Bertrand H. Johnson, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York
Filed Feb. 27, 1969, Ser. No. 802,853
Int. Cl. H01j *1/62, 63/04*
U.S. Cl. 313—108 **7 Claims**

The specification describes a device for enlarging the ap-

parent light-emitting area of an electroluminescent diode.



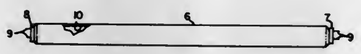
The device is a faceted body having a specular surface designed to be placed around the light-emitting diode.

3,555,336
CADMIUM VAPOR DISCHARGE LAMP CONTAINING A EUROPIUM ACTIVATED PHOSPHOR
Mijndert Koedamr and Willem Lambertus Wanmaker, Emmasingel, Eindhoven, Netherlands, assignors to U. S. Philips Corporation,, New York, N.Y., a corporation of Delaware, by mesne assignments
Filed Sept. 3, 1968, Ser. No. 756,933
Claims priority, application Netherlands, Sept. 2, 1967, 6712085
Int. Cl. H01j *1/62, 63/04*
U.S. Cl. 313—109 **10 Claims**



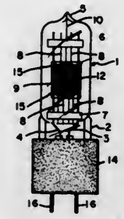
A cadmium vapor discharge lamp containing a bivalent europium activated luminescent substance.

3,555,337
ELECTRIC DISCHARGE DEVICE WITH DYSPROSIUM ACTIVATED YTTRIUM VANADATE PHOSPHORS
Sixdeniel Faria and Dominic T. Palumbo, Towanda, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Sept. 17, 1968, Ser. No. 760,181
Int. Cl. H01j *1/63, 63/04*
U.S. Cl. 313—109 **8 Claims**



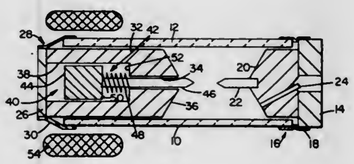
Compounds of dysprosium activated yttrium vanadate are novel and useful phosphors which luminesce when exposed to a source of activating radiation. The phosphors of the present invention can be advantageously employed in low pressure and high pressure electric discharge devices such as fluorescent or mercury lamps and the like.

3,555,338
INCANDESCENT LAMP
Robert F. Scoledge, Danvers, Emery G. Audesse, Salem, and Leroy S. Huston, Jr., Marblehead, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Mar. 10, 1967, Ser. No. 622,290
Int. Cl. F21v *7/02;* **H01k** *1/18, 7/02*
U.S. Cl. 313—113 **5 Claims**



A single-ended quartz-halogen lamp which includes a vitreous glass envelope containing a halogen for regeneratively gettering tungsten particles which evolve from the filament and a reflector disposed behind the filament and inside of the lamp.

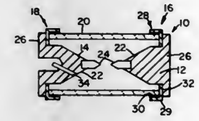
3,555,339
ELECTROMAGNETIC PIN RESTARTABLE LAMP
Teddy J. Peacher and Dorwin L. Kilbourn, Huntsville, Ala., assignors to The United States of America as represented by the Secretary of the Army
Filed Jan. 7, 1969, Ser. No. 789,531
Int. Cl. H01j *61/54*
U.S. Cl. 313—152 **3 Claims**



An arc lamp having a tubular envelope enclosing a first fixed electrode disposed at one end and a second electrode structure, having a movable tip, disposed at the other end of the tubular envelope. The second electrode structure includes a fixed hollow electrode portion secured to the tubular housing and a movable electrode portion slidably carried in the opening of the hollow electrode and provided with a tip portion for extending out of the hollow electrode. The movable electrode includes a core of magnetic material having a tip extending therefrom through an opening in the hollow electrode and in axial alignment with the first electrode. The core is in biased relation with the hollow electrode by means of a spring seated between the hollow electrode and core. An electromagnetic coil is circumferentially mounted about the core for movement of the movable electrode responsive to energization of the coil.

3,555,340
BUTTON SHORT-ARC GAS LAMP
Teddy J. Peacher and Dorwin L. Kilbourn, Huntsville, Ala., assignors to The United States of America as represented by the Secretary of the Army
Filed Jan. 7, 1969, Ser. No. 789,530
Int. Cl. H01j *61/06, 61/30, 61/36*
U.S. Cl. 313—184 **6 Claims**

An arc lamp having short length. The lamp includes an anode extending into one end of the lamp envelope and a cathode extending into the other end of the envelope. Both electrodes include a shoulder portion outside of the envelope in abutting relation with the ends of the envelope. The ends of the envelope are metallized on the outer surface thereof and a sealing ring includes an annular portion enclosing the



ends of the envelope for sealing relation with the metallized bands on the envelope. The ring further includes a radially inwardly extending seat portion disposed intermediate the ends of the envelope and the shoulder portion of the electrodes.

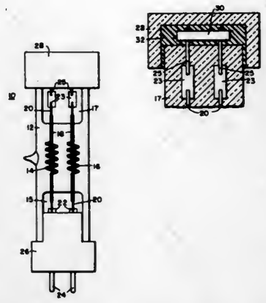
3,555,341
REAR LOADING PANEL LAMP ASSEMBLY
Lorin W. Curtis, Montclair, N.J., assignor to Wagner Electric Corporation, a corporation of Delaware
Filed Feb. 7, 1968, Ser. No. 703,583
Int. Cl. H01j *5/48, 5/50*
U.S. Cl. 313—318 **10 Claims**



A permanently based lamp for mounting in an aperture in a circuit board includes a base consisting of a thermoplastic material and having a chamber in which a lamp envelope and leads are permanently sealed. The lamp leads extend out of the chamber and into separate slots exterior to the chamber. Terminals are inserted into the slots to engage the leads mechanically and electrically.

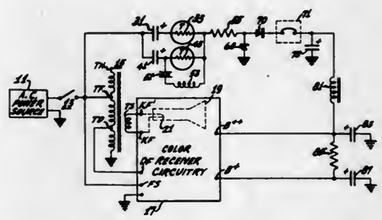
3,555,342
SINGLE-ENDED INCANDESCENT PROJECTION LAMP HAVING DUAL SERIES-CONNECTED FILAMENTS AND AN INTEGRAL GRIPPING CAP
Thomas McFall, Roseland, N.J., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Feb. 11, 1969, Ser. No. 798,388
Int. Cl. H01j *5/48, 5/50*
U.S. Cl. 313—318 **6 Claims**

A pair of elongated filaments, preferably of coiled coil construction, are suspended in side-by-side longitudinally-extending relationship within a tubular quartz envelope that contains a halogen gas and is closed at each end by a press seal. The filaments are connected in series with each other by a short-circuiting conductor that is located either within or exterior of the envelope. The press seal which constitutes the top of the envelope is provided with a cap of insulating material which serves both as a protective enclosure for that



end of the lamp and means for gripping the lamp during insertion and withdrawal from its socket.

3,555,343
AUTOMATIC DEGAUSSING CIRCUIT FOR TV HAVING HALF-WAVE VOLTAGE DOUBLER POWER SUPPLY
John K. Allen, Indianapolis, Ind., assignor to RCA Corporation, a corporation of Delaware
Filed Mar. 11, 1968, Ser. No. 712,017
Int. Cl. H01f *13/00, 29/98*
U.S. Cl. 315—8 **3 Claims**

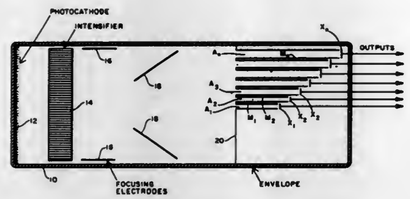


Automatic degaussing circuit for a color television receiver employing a half-wave voltage doubler type power supply. The series capacitance of a cascaded voltage doubler power supply is provided by a pair of capacitors in parallel current paths. A thermistor, connected in series with the capacitor of one current path, is shunted by the series combination of VDR and a degaussing coil. A second thermistor is connected in series with the capacitor of the remaining current path. Initially upon turn-on of the cold receiver, the major portion of capacitor charging current passes through the then low impedance VDR-coil path and the capacitor in series therewith, the value of this capacitor being chosen to ensure substantially symmetrical AC energization. Subsequently, after thermistor warmup, current flow is equally divided between the parallel capacitances, and the voltage doubler operates efficiently with an augmented value of series capacitance corresponding to sum of the parallel capacitances.

3,555,344
IMAGE DISSECTOR FOR COUNTERACTING MAGNIFICATION DUE TO RANGE CLOSURE
Loyd C. Moore, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 6, 1968, Ser. No. 711,468
Int. Cl. H01j *31/48*
U.S. Cl. 315—11 **5 Claims**

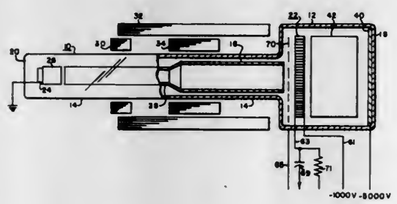
An image dissector tube having an aperture plate for form-

ing an electronic scanning slit and for counteracting the mag-



nification or growth effect of an object in the scene image due to range closure.

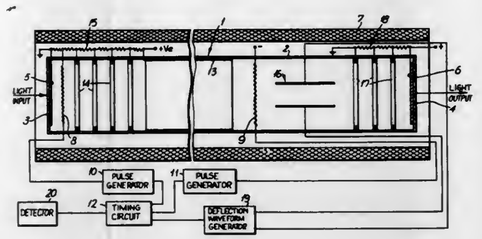
3,555,345
RADIATION PICKUP DEVICE INCORPORATING ELECTRON MULTIPLICATION
Peter R. Collings and Rolf R. Beyer, Horseheads, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 24, 1969, Ser. No. 819,021
Int. Cl. H01j *31/48*
U.S. Cl. 315—11 **7 Claims**



An electronic image pickup device for detecting a radiation image and providing an electrical output corresponding to said radiation image. The pickup tube incorporates a photocathode responsive to input radiation for generating an electron image which is directed through a channel electron multiplying structure for multiplying the electron image and a storage member is incorporated into the output of said channel multiplier to provide a charge image which can be readout by electronic means. In addition, the structure disclosed provides a combination microchannel multiplier and storage electrode which permits either destructive or nondestructive readout of the stored image by the reading electron beam.

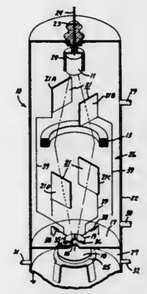
3,555,346
VACUUM TUBES
James Dwyer McGee and Robin Wyncliffe Smith, London, England, assignors to National Research Development Corporation, London, England, a corporation of Britain
Filed Feb. 5, 1968, Ser. No. 702,951
Claims priority, application Great Britain, Feb. 10, 1967, 6546/67
Int. Cl. H01j *29/46*
U.S. Cl. 315—16 **5 Claims**

An improvement is made in a known vacuum tube arrangement in which information is stored as a modulated electron stream traveling to and fro through a drift region between reflecting meshes, information retrieval being accomplished by gating pulses applied to one mesh to allow electrons to pass through it. Analysis of the gating mechanism shows that satisfactory high-speed operation requires a short electron transit time through the decelerating field associated with the gating mesh. One practical means of achieving this involves the provision of a high



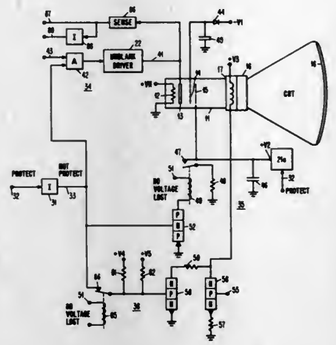
potential electrode between the drift region and the gating mesh.

3,555,347
SELF ALIGNING ELECTRON BEAM WELDER
Theodore M. Dickinson, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 10, 1967, Ser. No. 652,124
Int. Cl. B23k *9/10*
U.S. Cl. 315—18 **2 Claims**



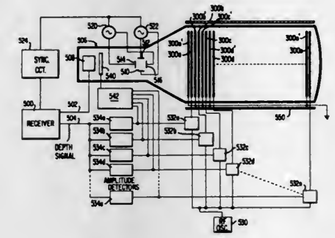
Alignment between a focused electron beam and an aperture within a partition plate separating a low pressure electron beam generating zone from a higher pressure welding chamber is obtained by positioning four carbon sensing electrodes in a circular pattern coaxial with and slightly above the aperture in the partition plate. The internal diameter of the circular pattern formed by the electrode disposition is no greater than the aperture in the partition plate to assure continuous impingement of a portion of a properly focused bell-shaped electron beam on the electrodes. The negative voltages produced upon diametrically opposite electrodes by the electron beam bombardment are fed back to an elongated pair of electrostatic deflection plates in the low pressure zone of the welding apparatus to deflect the beam at an angle proportional to the difference between the voltage signals from the electrodes. When a charged particle beam is generated in a zone having sufficient gaseous pressure to produce an electrostatic discharge between deflection plates, electromagnetic windings are employed to deflect the beam with a current amplifier being inserted between the electrodes and the electromagnetic windings to allow use of low inductance windings thereby reducing the response time of the system.

3,555,348
CATHODE RAY TUBE SCREEN PROTECTION SYSTEM
Van Clifton Martin, Boulder, Colo., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 13, 1969, Ser. No. 790,687
Int. Cl. H01j *29/52*
U.S. Cl. 315—20 **6 Claims**



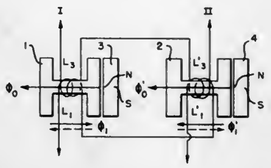
A protection circuit for the screen of a cathode ray tube wherein malfunction or failure in any of the input circuits to the tube which could result in high beam current and local overheating is detected and each malfunction or failure is used to develop a signal indicating that protection is required. Independent control circuits in parallel to one another are each responsive to the signal developed and used to regulate the voltage at the cathode, accelerator grid and horizontal deflection yoke whereby to ensure that the screen will not be damaged by a high beam current. The control circuits are operative together or independently of one another so that if one fails the others will act to protect the tube screen.

3,555,349
THREE-DIMENSIONAL TELEVISION SYSTEM
Otto John Munz, Harness Creek View Drive, Annapolis, Md.
Filed July 17, 1968, Ser. No. 745,613
Int. Cl. H01j *1/54, 1/66*
U.S. Cl. 315—21 **11 Claims**



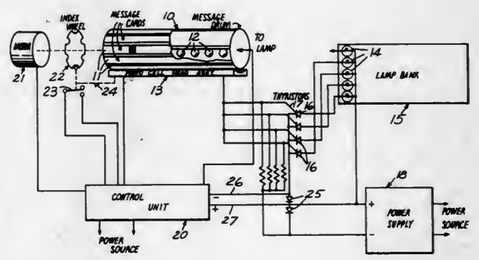
A three-dimensional display device including a cathode ray tube having a plurality of spaced, parallel light and electron pervious display planes. Each of the display planes is divided into a plurality of display zones disposed in a two-dimensional array such that a line perpendicular to any display zone passes through a corresponding display zone in every display plane. Each of the display zones is provided with a single luminescent element of smaller area than that of the display zone. The luminescent elements on successive corresponding display zones are nonoverlapping so that substantially all of the luminescent elements are visible from one end of the plurality of display planes, and an electron beam from a gun disposed at one end of said plurality of display planes may readily impinge against selected ones of the luminescent elements in any one of said planes. The single display plane whose luminescent elements are to be excited at any given time is selected in accordance with a depth signal, and the elements to be excited are then selected by sweeping and modulating the beam.

3,555,350
PIN-CUSHION CORRECTION APPARATUS FOR TELEVISION RECEIVERS
Osamu Okuda, Osaka, Japan, assignor to Sanyo Electric Co., Ltd., Moriguchi Osaka, Japan, a corporation of Japan
Filed Mar. 26, 1969, Ser. No. 810,598
Claims priority, application Japan, Mar. 30, 1968, 43/21137
Int. Cl. H01j *29/72*
U.S. Cl. 315—24 **9 Claims**



Apparatus for correcting pincushion effect in a television receiver in which two coil systems are used. Each coil system includes a coil which receives a vertical deflection signal and a coil which receives a horizontal deflection signal wound on a magnetic core in an inductive coupling relationship. A permanent magnet is associated with each coil system and the horizontal coils and the vertical coils of the two systems are respectively connected in series. The flux from the permanent magnet of each system aids the flux from the vertical coil of the system during one half of a vertical scanning cycle and opposes the flux from the vertical coil during the other half of the cycle. This effectively lowers and raises the saturation of the core so that the inductance of the horizontal coil is lowered and raised in a corresponding manner affecting the amount of flux induced from the horizontal coil of the system into the vertical coil of the same system to produce the pincushion correction. The two coil systems work alternately during one half of a vertical scanning cycle to produce correction over the whole cycle.

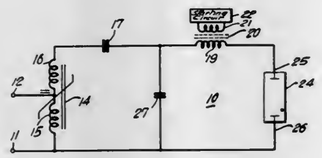
3,555,351
THYRISTOR OPERATED PHOTOSENSITIVE CONTROL FOR LAMP BANK DISPLAY
Richard N. Sherwin, Rockford Bay, Coeur D'Alene, Idaho
Filed May 1, 1967, Ser. No. 635,223
Int. Cl. H05b *37/02*
U.S. Cl. 315—154 **10 Claims**



This disclosure is concerned with a mechanical display selector and electronic control mechanism for a lamp bank comprising a series of rows of lamp units arranged geometrically to produce any desired lighted message thereon. The individual lamps are controlled by solid state components in an

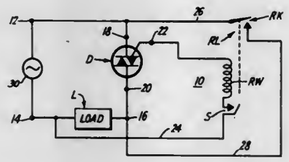
auxiliary control circuit which operates at power requirements much below those of the lamp bank itself. The control circuitry is completely isolated from the lamp bank power supply. The selection of lighted lamps is attained mechanically by apertured cards interposed between a light source and photocell units which are in series with the gate connections of thyristor devices or gate controlled semiconductors interposed in the lamp unit circuits. In addition, the indexing cards, the actuation of the read lamps, the activation of the photocells and the application of holding current to the thyristor devices or pulse controlled conductors are all sequentially controlled to provide a cycle of operation in which the selected display on a card is indexed, read, and displayed by lighted lamp units. The entire cycle of operation is automatic and the chosen cycle of displays is repeated until the unit is turned off.

3,555,352
GAS DISCHARGE LAMP OPERATING SYSTEM
Maksymilian A. Michalski, Woodside, N.Y., assignor to Berkey Photo Inc., New York, N.Y.
Filed Oct. 9, 1967, Ser. No. 673,837
Int. Cl. H05b *41/23, 41/231, 41/04*
U.S. Cl. 315—282 **10 Claims**



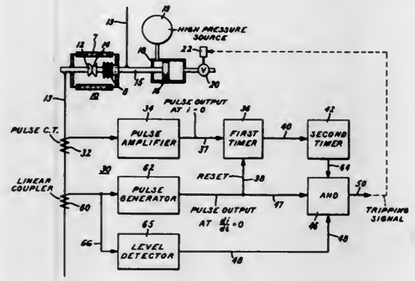
A gas discharge lamp operating system electric circuit is shown in schematic form with a saturable impedance in series with a capacitor and a discharge lamp. The system components are so selected that the system operates at or near third harmonic resonance during the warmup period, the operation gradually shifting close to resonance at supply current frequency during normal operation.

3,555,353
MEANS EFFECTING RELAY CONTACT ARC SUPPRESSION IN RELAY CONTROLLED ALTERNATING LOAD CIRCUITS
Charles F. Casson, Winslow, Ind., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Oct. 10, 1968, Ser. No. 766,507
Int. Cl. H02h *7/22*; **H01h** *9/30*
U.S. Cl. 317—11 **13 Claims**



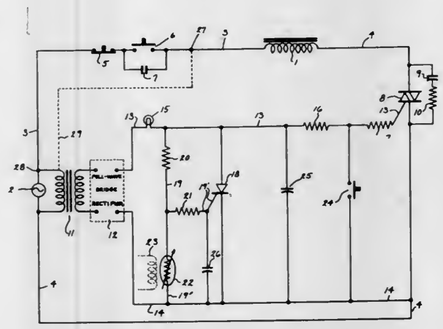
A relay controlled alternating current load circuit having a set of relay switch contacts connected in series with the load across the alternating current source is provided with a bilateral thyristor triode connected in parallel with the switch contacts and gated through the relay coil and a control switch connected in series to one side of the alternating current source for arc suppression.

3,555,354
ALTERNATING CURRENT CIRCUIT BREAKER HAVING A CONTROL FOR TIMING OPENING RELATIVE TO THE CURRENT WAVE
Peter Kotos, Havertown, Pa., assignor to General Electric Company, a corporation of New York
Filed Mar. 11, 1969, Ser. No. 806,191
Int. Cl. H02h *3/08*
U.S. Cl. 317—11 **19 Claims**



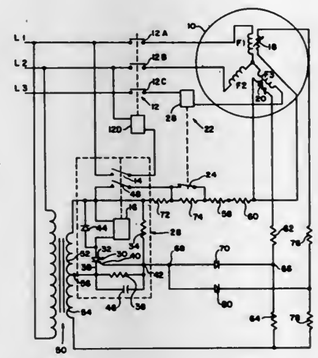
Discloses a fault current responsive opening control for an AC circuit breaker which is capable of fully separating its contacts within an operating time of less than 4 milliseconds following reception of a tripping signal from the control. The control comprises means for measuring during each full loop of fault current the time period from zero crossing to peak current. Means responsive to the length of this time period delivers a tripping signal to the circuit breaker at a point between peak current and the immediately following current zero if the measured time period exceeds a preselected value at least as great as said operating time.

3,555,355
THERMISTOR CONTROLLED OVERLOAD PROTECTION CIRCUIT
Anthony C. Pfister, Roland L. Krieger, and Gary J. Drinan, Milwaukee, Wis., assignors to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Oct. 31, 1968, Ser. No. 772,168
Int. Cl. H02h *5/04, 7/06*
U.S. Cl. 317—13 **2 Claims**



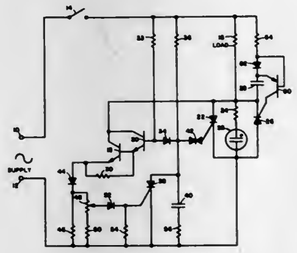
An overload protection circuit for use with a relay coil includes a triac in the coil operating circuit, a DC supply which normally supplies an actuating signal to the triac, a silicon controlled rectifier adapted to shunt the triac actuating signal, and a trigger circuit for the SCR which includes a PTC thermistor. When the thermistor is cool the SCR is off but heating changes circuit conditions and causes the SCR to turn on whereupon the triac turns off. The preferred embodiment includes a normally open reset switch operable to shunt the SCR trigger signal and conduction current, and a bias resistance to hold the SCR on when the reset switch is closed while the thermistor is still hot.

3,555,356
MOTOR PROTECTOR
Franz S. Kaiser, Worthington, Ohio, assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Apr. 1, 1969, Ser. No. 812,076
Int. Cl. H02h *7/085, 5/04*
U.S. Cl. 317—13 **9 Claims**



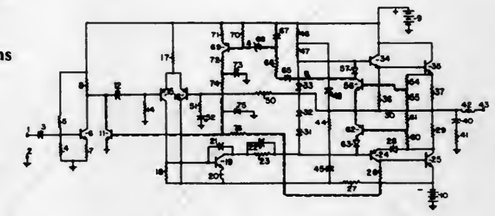
A motor protector circuit using thermal responsive sensors for controlling the circuit operation to protect the motor windings from damage due to overheating and using a current responsive electromagnetic sensing device for controlling the circuit operation to protect the motor windings from damage due to the prolonged application of current well in excess of the normal starting current for the motor. The thermal responsive sensors and the current responsive device are connected to control the operation of a thyristor which in turn controls the contactor connected to control the flow of current to the motor.

3,555,357
OVER-CURRENT PROTECTION FOR AN ALTERNATING CURRENT CIRCUIT INCLUDING AUTOMATIC RESET
Robert Ernest Gregson, and Edward Nicholas Freyling, Jr., Scottsdale, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed July 3, 1969, Ser. No. 839,028
Int. Cl. H02h *3/00*
U.S. Cl. 317—16 **10 Claims**



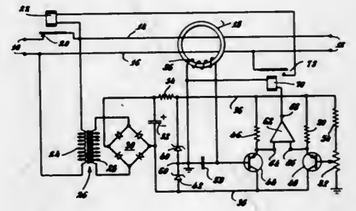
An overcurrent protective apparatus is disclosed for an alternating current circuit in which the circuit is broken when overcurrent exists and the circuit is remade when the fault in the line causing overcurrent is corrected and in which a series current sensing element carries load current for only a short portion of each cycle of the supply voltage.

3,555,358
OVERLOAD PROTECTION NETWORK FOR SOLID STATE AMPLIFIER
Allen G. Gibbs, Oklahoma City, Okla., assignor to LTV Ling Altec, Inc., Anaheim, Calif., a corporation of Delaware
Filed Oct. 8, 1969, Ser. No. 864,647
Int. Cl. H02h *7/20*
U.S. Cl. 317—16 **8 Claims**



A network employing auxiliary transistors to protect a solid state amplifier against short-circuited, reactive or abnormally low values of output impedance. Diodes in the network determine the level threshold for energizing the network. A time-constant circuit provides a time delay threshold to prevent nondamaging transients or momentary shorts from energizing the network. When energized, the network arranges bypassing of current from the output transistors, and for a serious abnormality clamps the input of the whole amplifier to ground. Another time-constant circuit determines how long the input shall be clamped to ground and automatically allows recycling of the protective function.

3,555,359
CIRCUIT PROTECTIVE DEVICE
Alton R. Morris, Trumbull, and Thomas M. McDonald, Monroe, Conn., assignors to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut
Filed Aug. 7, 1967, Ser. No. 658,853
Int. Cl. H02h *1/02*
U.S. Cl. 317—18 **6 Claims**

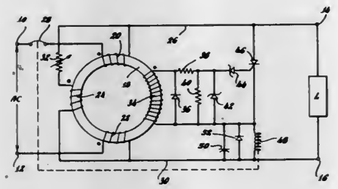


A device for detecting unbalanced current flow in the conductors of a power supply circuit and deenergizing the circuit upon predetermined conditions of unbalance. A differential transformer is employed which has a multiple-turn secondary winding, the primary windings being formed by the conductors of the power supply circuit. The output from the differential transformer controls the current flow through a detector transistor. A reference transistor, similar to the detector transistor, is connected so that its current flow is controlled by external means. The voltages produced by the current flows through the two transistors are compared by a comparator circuit which produces a tripping signal upon a predetermined unbalance of the currents. Circuit breaker means in the power supply circuit is responsive to the tripping signal to deenergize the load. By employing two transistors, common temperature effects are substantially canceled out.

3,555,360
PHASE CONTROLLED GROUND FAULT CIRCUIT INTERRUPTER

Sung Chuel Lee, Bridgeport, and Clifford E. Brockway, North Haven, Conn., assignors to Harvey Hubbell, Incorporated, Bridgeport, Conn., a corporation of Connecticut

Filed Mar. 20, 1969, Ser. No. 808,756
Int. Cl. H02h *3/28*
U.S. Cl. 317—18 10 Claims

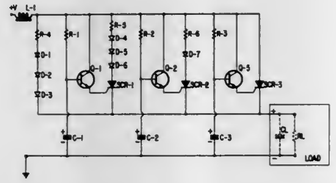


A ground fault circuit interrupter of the type which includes a differential transformer having a toroidal core, two identical primary windings of opposing polarity, and a secondary winding. In this invention, a biasing winding is also added to the core which normally opposes one primary winding and aids the other. During normal operation, the biasing winding induces a voltage in the secondary winding which keeps the load circuit breaker closed. The circuit breaker opens when the secondary voltage drips below an established minimum value.

3,555,361
TURN ON TRANSIENT LIMITER

Frederick C. Hallberg, Wheaton, Md.inistration

Int. Cl. H02h *9/00*
U.S. Cl. 317—20 7 Claims



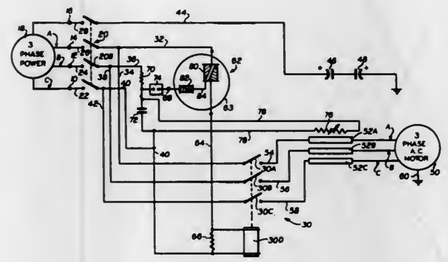
This disclosure describes a turn-on current transient limiter that controls the peak current that can flow into a high capacity load when voltage is initially applied to the load. A plurality of silicon controlled rectifier (SCR) circuits are connected in a parallel arrangement with the parallel arrangement being connected in series with the load. All of the SCR circuits except the last one, include current limiting means. The SCR circuits are sequentially switched "on" when voltage is initially applied and limit current until the last one is switched "on" at which time current transients have dropped below a predetermined level.

The invention described herein was made by an employee of the United States Government and may be manufactured and used by or for the Government for governmental purposes without the payment of any royalties thereon or therefor.

3,555,362
PHASE PROTECTION SYSTEM FOR PROTECTING A THREE-PHASE LOAD

Frederic R. Quinn, Red Hook, N.Y., assignor to Zyrotron Industries, Inc., South Hackensack, N.J., a corporation of New York

Filed Oct. 17, 1968, Ser. No. 768,489
Int. Cl. H02h *3/24, 3/08*
U.S. Cl. 317—46 9 Claims



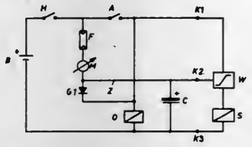
Apparatus for connecting a three-phase source of energy to a load only when a signal is present in each phase comprising a connector having a control relay for connecting the source with the load in respond to current flow through the relay. Switch means is provided which is responsive to the failure of a signal in any one phase for disconnecting the control relay from a source of current.

The apparatus further includes overload protection means and a device for preventing reverse DC current flow through the ground lead in a four-wire system.

3,555,363
EXPOSURE CONTROL CIRCUIT FOR A PHOTOGRAPHIC SHUTTER

Joachim Schubert, Munich, Germany, assignor to Ernst & Wilhelm Bertram Fabrik fototechn. Messgerate, Munich, Germany

Filed Feb. 26, 1968, Ser. No. 708,393
Claims priority, application Germany, Apr. 26, 1967, B 92,255
Int. Cl. H01h *47/24;* G01j *1/00*
U.S. Cl. 317—124 10 Claims

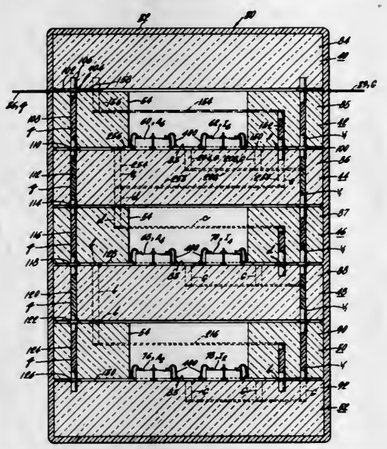


A light exposure control circuit for a photographic shutter, the opening and closing of which is caused by an electromagnet and the exposure time of which is indicated on an electric meter that is energized by a photoresistor and can be switched on by means of a main switch. The exposure time which is to be used can be read on the meter before the release of the shutter and the reading will show whether or not the taking of a picture is possible. A delay circuit is used to determine the exposure time, a capacitor in the delay circuit being charged through the photoresistor with the charge initiating the energizing of the shutter opening magnet and continuing until, at the end of the delay time, the shutter closing magnet is energized.

3,555,364
MICROELECTRONIC MODULES AND ASSEMBLIES

Thomas J. Matcovich, Maple Glen, Pa., assignor, by mesne assignments, to Drexel Institute of Technology, a nonprofit corporation of Pennsylvania

Filed Jan. 31, 1968, Ser. No. 702,103
Int. Cl. H05k *1/04*
U.S. Cl. 317—101 4 Claims

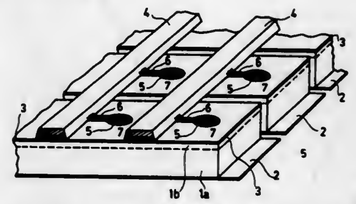


A vertical stack of multilayer-ceramic micro-electronic circuit-component modules having discrete circuit components mounted thereon and having contacts on opposite surfaces thereof, alternating with multilayer-ceramic transition modules having contacts on their opposite surfaces which mate with, and are bonded to, the corresponding contacts on the adjacent circuit-component modules; the transition modules provide the particular interconnections between the contacts of the circuit-component modules on either side thereof which are required for the particular circuit application. The transition modules are appropriately recessed or apertured to accommodate the discrete components on the circuit-component modules, and preferably an external-connection module is used at one end of the stack to provide transition to standard types of external connectors. (To fabricate the stack, the modules are made separately and provided at the intermodule contact points with globules of solder by a simple dip-soldering method, assembled in a suitable jig for holding the appropriate solder globules of the several modules against each other, and heated to provide simultaneous bonding of all solder connections to each other, thereby to provide electrical connection and physical support in one operation.) The external-connection module may be extended beyond the stack so as to provide similar connection and bonding to another adjacent similar stack.

3,555,365
INTEGRATED CIRCUIT MATRIX HAVING PARALLEL CIRCUIT STRIPS

Franco Forlani and Nicola Minnaja, Rho, Milan, and Giorgio Sacchi, Como, Italy, assignors to General Electric Information Systems, Italia S.p.A., Caluso, Torino, Italy, a corporation of Italy

Filed May 29, 1968, Ser. No. 732,988
Claims priority, application Italy, May 30, 1967, 16,644
Int. Cl. H01l *19/00*
U.S. Cl. 317—101 8 Claims

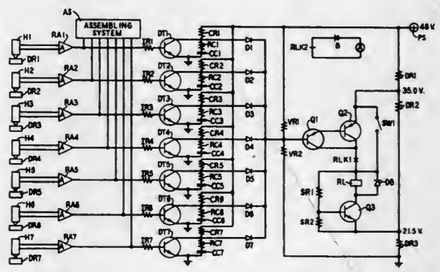


The invention relates to memories which may be mass formed as integrated circuits by suitable deposition of predetermined materials on a substrate and wherein memories having determined characteristics may be formed by selectively electrically destroying predetermined electrical links.

3,555,366
MONITOR CIRCUIT

William J. Brown, Brielle, N.J., assignor to Bell Telephone Laboratories, Incorporated, New York, N.Y., a corporation of New York

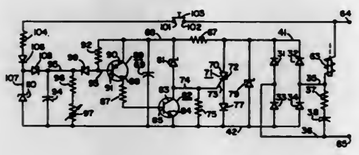
Original application Dec. 22, 1964, Ser. No. 420,310, now Patent No. 3,444,543, dated May 13, 1969. Divided and this application Sept. 18, 1968, Ser. No. 798,479
Int. Cl. H03k *17/64*
U.S. Cl. 317—135 2 Claims



A Darlington circuit maintains current through the coil of a relay. In response to signals beign monitored,

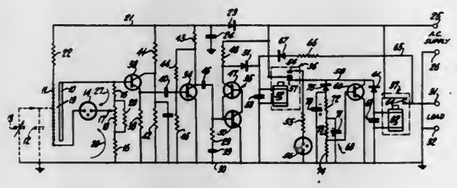
the Darlington circuit may reduce the coil current. A transistor, whose emitter-collector path is in series with the relay coil, then responds to the drop in voltage across the relay coil and extinguishes the current therein.

3,555,367
OFF DELAY TIMER AND INTERNALLY GENERATED AUXILIARY DIRECT CURRENT VOLTAGE SOURCE FOR A CONTROLLED RECTIFIER ALTERNATING CURRENT SWITCH FOR USE THEREIN
Guido Watson, Murrysville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 7, 1968, Ser. No. 735,226
Int. Cl. H01h *47/18*
U.S. Cl. 317—142 **4 Claims**



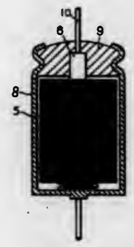
In an off delay timer for operation from an alternating current line, a novel form of internally generated D.C. power source is provided. The output switch of the timer is a controlled rectifier whose gate drive current is obtained from a series resistor **45** and breakdown diode **52** combination, connected to the anode of the aforesaid controlled rectifier. A saturating transistor switch is provided as a means to remove the gate drive to the controlled rectifier when required. In addition, with the aid of a storage capacitor **49**, and a series diode, a D.C. potential is derived from the said resistor-breakdown diode circuit, and this D.C. potential is used to power the ancillary circuits of the timer.

3,555,368
CAPACITY SENSING MEANS FOR AUTOMATIC FLUSHING SYSTEMS AND THE LIKE
Carl E. Atkins, Montclair, N.J., assignor to Wagner Electric Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 592,825, Nov. 8, 1966. This application Dec. 13, 1968, Ser. No. 795,381
Int. Cl. H01h *47/22*
U.S. Cl. 317—146 **18 Claims**



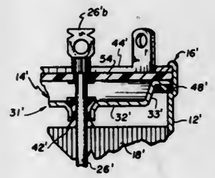
A body sensing apparatus for automatic flushing systems having a flat conductive plate and a conductive mesh screen, mounted parallel to the plate, mounted on or in a wall or partition which may divide one urinal from another. The plate and screen detect the body capacity of the user and energize an electrical circuit operate a flush valve after the user leaves the facility.

3,555,369
CONDENSER ELECTRODE WITH SEMI-PERMEABLE MEMBRANE SURFACE
Tomiya Yoshino, Saitama-ken, Japan, assignor to Towa Chikudenki Kabushiki Kaisha, Kanagawa-ken, Japan, and Tokyo Denki Kabushiki Kaisha, Yamagata-ken, Japan
Continuation-in-part of application Ser. No. 451,207, Apr. 27, 1965. This application Jan. 6, 1969, Ser. No. 795,395
Claims priority, application Japan, May 20, 1964, 39/28,111
Int. Cl. H01g *3/11, 9/00*
U.S. Cl. 317—230 **26 Claims**



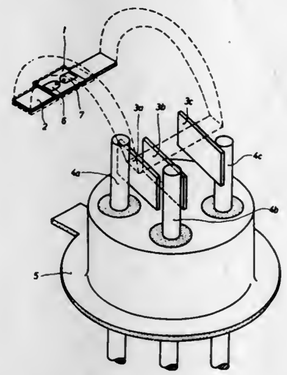
The new electrode plate includes an electrode base having on its surface a very thin, liquid absorbing, semipermeable membrane. The semipermeable membrane is composed of one or more films formed at least one of the following materials: a water soluble, high molecular weight, organic compound; a mixture thereof; an organosilicon compound; a mixture of any of the foregoing with an ion exchange material or a mixture of a water insoluble high molecular weight organic compound and an ion exchange material. Preferably, the membrane is obtained by applying to the base a solution of the film forming material which is dried to leave the semipermeable membrane coating. By means of the present membrane-coated electrode plate, a light, compact and efficient capacitor is obtained which has a high electrostatic capacity per unit area.

3,555,370
ELECTROLYTIC CAPACITORS HAVING IMPROVED SEAL AND VENT
Edward L. Bowling, Broadway, N.C., assignor to Cornell-Dubilier Electric Corporation, Newark, N.J., a corporation of Delaware
Filed Mar. 17, 1969, Ser. No. 807,605
Int. Cl. H01g *9/10*
U.S. Cl. 317—230 **9 Claims**



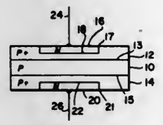
A capacitor including a container and a capacitor section enclosed in the container is provided with pressure-relief plugs around the terminals of the capacitor where those terminals extend through a wall of the container.

3,555,371
SEMICONDUCTOR DEVICE WITH TERMINALS ADAPTED FOR MASS FABRICATION
Ernst Ginsberg, Hamburg-Bramfeld, Oswald Hake, Hamburg, Norbert Kirchner, Hamburg-Altona, Edward Uden, Hamburg, Helmut Zittlau, Hamburg-Schnelsen, and Wilhelm Schreihage, Hamburg, Germany, assignors to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 12, 1968, Ser. No. 704,693
Claims priority, application Germany, Mar. 17, 1967, P 41,668
Int. Cl. H01l *3/00, 5/00*
U.S. Cl. 317—234 **3 Claims**



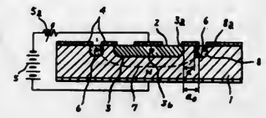
Novel semiconductor devices comprise a semiconducting body, a plurality of electrodes parallel to each other on one surface of said body, a corresponding number of parallel cross-pieces mounted in a header, the direction of length of each cross-piece being at right angles to the direction of length of the electrodes, the cross-pieces being secured to a corresponding number of terminal posts placed in the header. The cross-pieces may be metal strips, the upper edges of which are connected with the associated electrodes or may be printed conductors. The novel semiconductor devices may be completely manufactured by automatic machinery.

3,555,372
SEMICONDUCTOR BILATERAL SWITCHING DEVICE
Jearld L. Hutson, 907 Newberry, Richardson, Tex. 75080
Filed Jan. 2, 1969, Ser. No. 788,433
Int. Cl. H01l *9/00*
U.S. Cl. 317—234 **10 Claims**



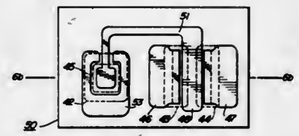
A semiconductor bilateral switch device comprises a relatively thick wafer of material of one electrical conductivity type and relatively high resistivity, a pair of regions of the same electrical conductivity type, but of lower resistivity formed in opposite faces of the wafer, and another pair of regions of an opposite electrical conductivity type formed in opposite faces of the wafer within the first mentioned pair of regions, respectively, with electrodes attached to the last mentioned regions. The device exhibits a negative resistance characteristic for currents above a predetermined breakdown current, and is employed to apply a control signal to semiconductor power switches.

3,555,373
SEMICONDUCTOR DEVICE
Yoshiyuki Kawana and Saburo Iwata, Tokyo, Japan, assignors to Sony Corporation, Tokyo, Japan, a corporation of Japan
Continuation of application Ser. No. 402,789, Oct. 9, 1964. This application Mar. 5, 1968, Ser. No. 710,683
Int. Cl. H01l *9/00*
U.S. Cl. 317—234 **7 Claims**



A semiconductor device including a wafer of semiconductor material having charge carriers of one polarity and a central region having charge carriers of the other polarity. A ring of semiconductor material is disposed around the central region and spaced therefrom by a distance that permits the depletion regions of the central layer and the ring to merge without the application of the voltage to the device.

3,555,374
FIELD EFFECT SEMICONDUCTOR DEVICE HAVING A PROTECTIVE DIODE
Koji Usuda, Tokyo, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Mar. 4, 1968, Ser. No. 710,047
Claims priority, application Japan, Mar. 3, 1967, 42/13,079
Int. Cl. H01l *9/00, 19/00*
U.S. Cl. 317—235 **25 Claims**

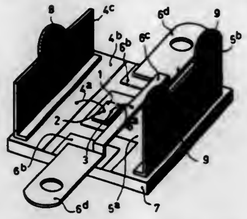


A semiconductor device comprising a semiconductor element having an insulated gate electrode and a protective diode region provided in the neighborhood of the semiconductor element to protect the gate electrode from a dielectric breakdown; the diode is formed by a low resistivity semiconductor material to reduce its internal resistance, thereby accelerating the action of the protective diode so that the clamp action of the diode occurs earlier than the dielectric breakdown of the gate electrode.

3,555,375
HIGH FREQUENCY POWER TRANSISTOR HAVING CROSSING INPUT AND OUTPUT LEADS
Antonius Hubertus Hilbers, Emmasingel, Eindhoven, Netherlands, assignor, by mesne assignments, to U.S. Philips Corporation, New York N.Y., a corporation of Delaware
Filed Nov. 29, 1968, Ser. No. 780,085
Claims priority, application Netherlands, Dec. 22, 1967, 6717634
Int. Cl. H01l *1/02, 1/14*
U.S. Cl. 317—235 **9 Claims**

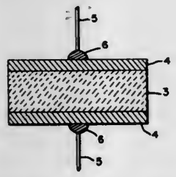
A high frequency transistor is described having input, output and common leads. In order to reduce the undesired feedback effect of a stray series inductance in the

common lead, the output leads are arranged so as to cross one another in such close proximity as to inductive-



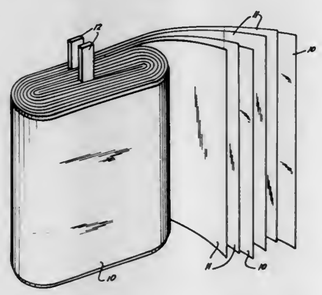
ly couple them together providing a feedback opposite to that of the stray inductance in order to compensate the latter.

3,555,376
OHMIC CONTACT ELECTRODE TO SEMICONDUCTING CERAMICS AND A METHOD FOR MAKING THE SAME
Tsuneharu Nitta and Akio Kuito, Osaka-fu, Kaneomi Nagase and Takashi Iguchi, Kyoto-shi, and Hiromitsu Taki, Sakai-shi, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan
Filed Dec. 5, 1966, Ser. No. 598,997
Claims priority, application Japan, Dec. 15, 1965, 40/78,430, 40/78,431
Int. Cl. H01l *3/08*
U.S. Cl. 317—238 **4 Claims**



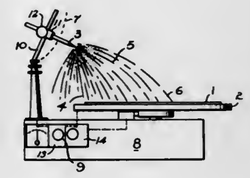
An electrode composition, for ohmic contact to an oxide semiconducting ceramic, consisting of a nickel-phosphorus alloy, the alloy containing 85–99.5% by weight of nickel and 0.5–15% by weight of phosphorus, and a method for making same by electroless plating.

3,555,377
CAPACITOR HAVING TALC SCAVENGER
Edward P. Bullwinkel, Interlaken, and William A. Selke, Stockbridge, Mass., assignors to Kimberly-Clark Corporation, a corporation of Delaware
Filed Aug. 1, 1969, Ser. No. 846,947
Int. Cl. H01g *3/11*
U.S. Cl. 317—259 **2 Claims**



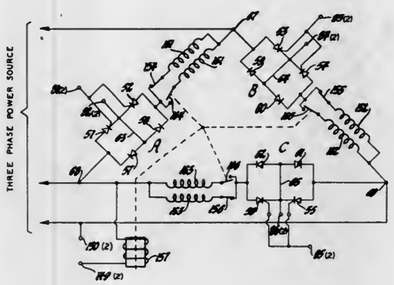
Impregnated paper-dielectric capacitor contains talc as an adsorbent scavenger for ionic constituents in the impregnant. The talc may form part of the dielectric paper, in which case it constitutes from 0.1% to 8% by weight of the main papermaking fibers. The talc may form part of paper wrapper for wound capacitor body, in which case it constitutes between 6% and 30% by weight of the main papermaking fibers.

3,555,378
CHARGING XEROGRAPHIC IMAGES
Ian E. Smith and Kenneth A. Metcalfe, Lockleys, South Australia, Australia, assignors to The Commonwealth of Australia, % The Secretary Department of Supply, Parkes, Australian Capital Territory, Australia
Filed May 14, 1968, Ser. No. 729,094
Claims priority, application Australia, May 15, 1967, 21,718/67
Int. Cl. H01t *19/04*
U.S. Cl. 317—262 **7 Claims**



Apparatus for charging surfaces, particularly xerographic surfaces, using a relative motion between a point and a surface to provide a radial sweep of a slope such that relatively uniform charge acceptance takes place over each incremental area.

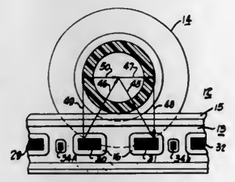
3,555,379
SYSTEM FOR OPERATING TWO OR MORE ALTERNATING CURRENT INDUCTION MOTORS IN PARALLEL
Donald E. Graham, Dayton, and Robert W. Leland, Kettering, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 22, 1968, Ser. No. 731,217
Int. Cl. H02p *1/54*
U.S. Cl. 318—101 **9 Claims**



A system for automatically connecting a second alternating current induction motor in parallel with a first operating alternating current induction motor across a compatible alternating current supply potential in response to an external demand. The parallel combination of a phase winding of both motors is connected in series with a network of two series connected, oppositely poled silicon controlled rectifiers connected in parallel with two

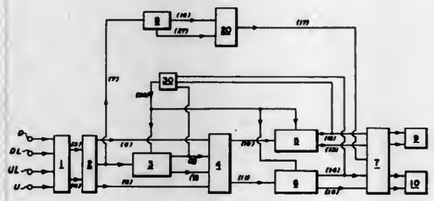
series connected, oppositely poled diodes electrically connected at the junction. Electrical trigger signals, produced by a speed control circuit, are applied across the gate-cathode electrodes of both silicon controlled rectifiers of each network during each potential half cycle. A switching circuit, responsive to operating motor load, energizes a relay which completes an energizing circuit for the starting contactor of the second motor and deenergizes the relay to remove the second motor when the demand no longer exists.

3,555,380
LINEAR ROLLING MOTOR
Donald Lewes Hings, 250 N. Grosvenor, Burnaby, British Columbia, Canada
Filed Dec. 31, 1968, Ser. No. 788,190
Int. Cl. H02k *41/06*
U.S. Cl. 318—135 **21 Claims**



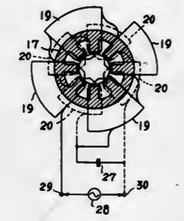
A linear motor is disclosed using stator electromagnets spaced along a linear guideway, for example, to guide a vehicle for rapid transit guidance and propulsion. The vehicle carries an armature reacting with the stator electromagnets for the propulsion of the vehicle. The armature is magnetically polarized as by a permanent magnet to eliminate any need for electrical power or control connections to the vehicle, for example, by the usual third rail or overhead catenary. The armature is preferably a rotatable wheel running on the guideway and the stator electromagnets are energized in travelling sequence to react with the armature to propel the vehicle independent of any torque on the wheel.

3,555,381
DIGITAL SYSTEM
Richard A. Rappaport, Henrietta, N.Y., assignor to Sybron Corporation, Rochester, N.Y., a corporation of New York
Filed May 31, 1968, Ser. No. 733,334
Int. Cl. H02k *37/00*
U.S. Cl. 318—138 **5 Claims**



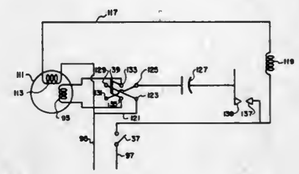
Digital circuitry converting input pulses into stepping motor winding energization pattern. Input pulses are converted by an up-down counter into sequence of pulse patterns corresponding to desired sequences of energization patterns, and produce gating pulses maintaining energization patterns between input pulses for only just such time as is needed to assure completion of motor steps. The counter is a flip-flop arrangement receiving input pulses from separate up and down input gates. The counter can produce more than the desired number of patterns, but production of undesired patterns makes the counter revert to a desired pattern. The stepping motor upon stepping to one of its limits disables the corresponding input gate, in effect.

3,555,382
CAPACITOR MOTOR
Takao Miyasaka and Hidekazu Shimizu, Yokohama, Japan, assignors to Victor Company of Japan, Limited, Yokohama, Japan, a corporation of Japan
Filed May 17, 1968, Ser. No. 730,148
Claims priority, application Japan, May 19, 1967, 42/31,880
Int. Cl. H02p *1/40*
U.S. Cl. 318—221 **1 Claim**



A capacitor motor comprising a stator, a phase splitting capacitor and a rotor in which the stator consists of a core and main and auxiliary windings extending thereabout. The main and auxiliary windings are connected in series and further the capacitor is connected in parallel with the auxiliary winding to generate a rotating magnetic field in the stator for rotating the rotor.

3,555,383
SUBMERSIBLE ELECTRIC MOTOR FOR TOOL OPERATION
Donald J. Hackman, Columbus, Jeremy M. Harris, Worthington, Ronald L. Legue, Columbus, and Donald E. Roop, Worthington, Ohio, assignors to The Battelle Development Corporation, Columbus, Ohio, a corporation of Delaware
Filed Aug. 23, 1968, Ser. No. 754,783
Int. Cl. H02p *1/44*
U.S. Cl. 318—221 **7 Claims**

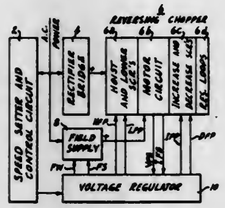


An electric motor of the induction type capacitor-start constructed to allow water to flow through the motor lubricating the bearings and a gear box. There is an absence of dynamic seals and the windings of the stator are sealed in a potting compound. Electrical conducting components are sealed and potted and a trip circuit is included to shut off the electrical power if there is any current from the high voltage lines that might endanger the operator. Two output shafts are included and they rotate at different speeds being connected to the motor shaft through the gear box. There is a reversing switch to provide for rotating a tool clockwise or counterclockwise.

3,555,384
STATIC SHUNT MOTOR CRANE HOIST CONTROL SYSTEM WITH DOUBLE-DUTY RESISTORS

John A. Halvorson and Max S. Knasinski, West Allis, Robert L. Risberg, Milwaukee, and Richard P. Serbiak, Glendale, Wis., assignors to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed June 17, 1968, Ser. No. 737,610
Int. Cl. H02p 5/06
U.S. Cl. 318—257 10 Claims

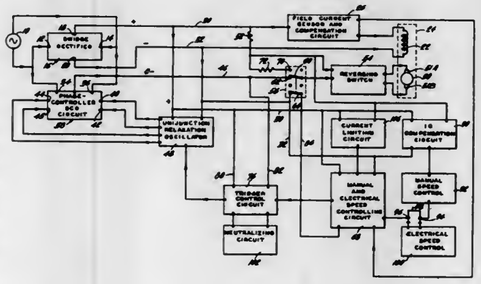


A static control system for the shunt field motor of a crane hoist control having a static field supply and a solid state reversing chopper supplied from a constant potential bus for armature control with a first SCR controlled resistor loop for 75 percent second quadrant retarding torque and a second SCR controlled resistor loop usable with the first one for 150 percent fourth quadrant retarding torque. Bootstrap circuits minimize the firing circuit power supply requirements for the resistor loops. Solid state anti-plugging control is incorporated in the direction and speed control circuit. Limit stop backout at reduced torque and speed is provided from the constant potential bus. A unidirectional diode circuit affords automatic field energization from the armature in the event of power failure. Commutating inductor energy decaying resistors are relocated in the chopper circuit to protect the chopper and directional SCR's from induced voltages during commutation and to protect the bus from a short circuit if both SCR's fail as added functions. Field weakening and field strengthening controls are incorporated in the direction and speed control circuit.

3,555,386
CONTROL APPARATUS FOR MOTORS AND THE LIKE

Franklin O. Wisman, Chambersburg, Pa., assignor to T. B. Wood's Sons Company, Chambersburg, Pa., a corporation of Pennsylvania

Filed May 22, 1968, Ser. No. 731,104
Int. Cl. H02p 5/16
U.S. Cl. 318—317 20 Claims

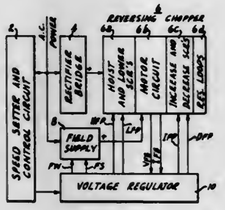


A speed control circuit for a D.C. shunt-field motor of the class in which the current to the motor armature is controlled by a phase-controlled SCR circuit, the phase angle of operation of the SCR circuit being in turn determined by the timing of trigger pulses from a unijunction relaxation oscillator. The input D.C. control voltage, which may be manually generated or produced by an external instrument, is compared in a closed-loop servo arrangement with a feedback voltage, developed across a feedback resistor, which is indicative of the voltage across the armature; the base-to-emitter dynamic characteristic of a control transistor is used in the error detection process to compare the feedback voltage with the input control voltage. The collector current of the control transistor determines the current fed to the relaxation-oscillator timing capacitor so as to vary the firing angle of the SCR circuit. The internal base-emitter voltage of the control transistor combined with the voltage drop in the above-mentioned feedback resistor provides a convenient voltage-offset level when an external instrument is used to produce the control voltage. The adverse effects of pulsations in the feedback voltage are mitigated by a neutralizing circuit which feeds the higher-frequency pulse components both to the emitter and to the base of the control transistor, an arrangement which at the same time retains adequately fast response to transients and good circuit stability. An improved and

3,555,385
STATIC SHUNT MOTOR CRANE HOIST CONTROL SYSTEM WITH ANTI-PLUGGING CONTROL

Robert L. Risberg, Milwaukee, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed June 17, 1968, Ser. No. 737,612
Int. Cl. H02p 5/06
U.S. Cl. 318—258 7 Claims



A static control system for the shunt field motor of a crane hoist control having a static field supply and a solid state reversing chopper supplied from a constant

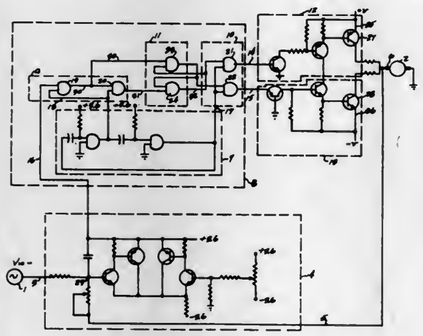
potential bus for armature control with a first SCR controlled resistor loop for 75 percent second quadrant retarding torque and a second SCR controlled resistor loop usable with the first one for 150 percent fourth quadrant retarding torque. Bootstrap circuits minimize the firing circuit power supply requirements for the resistor loops. Solid state anti-plugging control is incorporated in the direction and speed control circuit. Limit stop backout at reduced torque and speed is provided from the constant potential bus. A unidirectional diode circuit affords automatic field energization from the armature in the event of power failure. Commutating inductor energy decaying resistors are relocated in the chopper circuit to protect the chopper and directional SCR's from induced voltages during commutation and to protect the bus from a short circuit if both SCR's fail as added functions. Field weakening and field strengthening controls are incorporated in the direction and speed control circuit. Limit stop backout at reduced torque and speed is provided from the constant potential bus. A unidirectional diode circuit affords automatic field energization from the armature in the event of power failure. Commutating inductor energy decaying resistors are relocated in the chopper circuit to protect the chopper and directional SCR's from induced voltages during commutation and to protect the bus from a short circuit if both SCR's fail as added functions. Field weakening and field strengthening controls are incorporated in the direction and speed control circuit.

simplified transistor circuit is utilized for limiting the maximum current through the armature, in which circuit a voltage indicative of armature current is applied between base and emitter of a transistor so that, when the armature current exceeds a predetermined value, the inherent base-emitter junction voltage of the transistor is exceeded, causing the transistor to turn on and to bypass the nominal control circuit for the control transistor. The effects of line voltage variations and of motor warm-up are compensated by deriving a voltage related to the field current of the motor and combining it with the input control voltage of the system by way of a zener diode.

3,555,387
MOTOR DRIVE SYSTEM

Thomas J. Ulrich, Vestal, N.Y., assignor to National Electro-Mechanical Systems, Inc., Binghamton, N.Y., a corporation of New York

Filed Feb. 21, 1968, Ser. No. 707,048
Int. Cl. H02p 5/10
U.S. Cl. 318—331 1 Claim

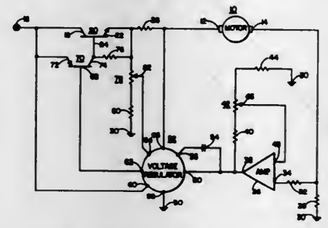


A motor speed control system for a velocity type servomechanism including a forward drive network, a reverse drive network, a gating and latching network, a compare amplifier, a multivibrator, and a feedback network, wherein the generated voltage of the servomechanism is directly compared with the input voltage and the servomechanism is driven for a fixed time period with a constant voltage to correct for any sensed deviation.

3,555,388
MOTOR SPEED CONTROL

Horton M. Rogers, Dunedin, Fla., assignor to Honeywell, Inc., Minneapolis, Minn., a corporation of Delaware

Filed Apr. 10, 1968, Ser. No. 720,114
Int. Cl. H02p 5/16
U.S. Cl. 318—332 7 Claims

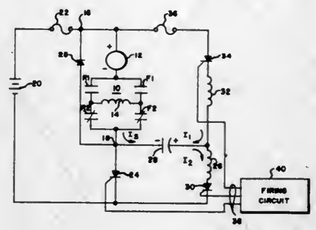


A motor speed regulator is shown wherein the speed of a direct-current motor is controlled. The load on the motor is constant and therefore its speed can be controlled simply by controlling the current through the armature winding of the motor; the voltage across the armature winding is not controlled. The armature current is sampled, providing a signal which is then amplified and applied to a voltage regulator. The output of the regulator controls a transistor in series with the armature winding. The motor speed is controlled by varying the amplification of the signal applied to the voltage regulator.

3,555,389
DIRECT CURRENT MOTOR CONTROL SYSTEM

Kenneth E. Opal, Oakmont, Pa., assignor to Power Control Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 10, 1968, Ser. No. 766,498
Int. Cl. H02p 5/16
U.S. Cl. 318—345 8 Claims

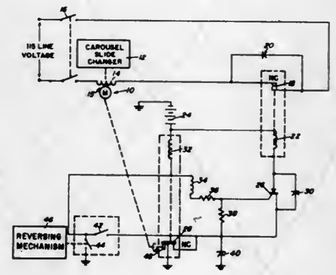


A direct current chopper for controlling the power supplied to a load through the use of a semiconductive controlled rectifier and a commutation capacitor which periodically discharges into the semiconductive controlled rectifier to cut it off, characterized in that in the event the semiconductive controlled rectifier fails to cut off or commutate, the capacitor goes through succeeding charging and discharging cycles until the semiconductive controlled rectifier cuts off.

3,555,390
SWITCHING CIRCUIT FOR MOTOR CONTROL IN SLIDE SCANNING SYSTEMS

Robert J. Peffer and George C. Waybright, Batavia, N.Y., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Oct. 7, 1968, Ser. No. 765,517
Int. Cl. G05d 3/00
U.S. Cl. 318—466 7 Claims

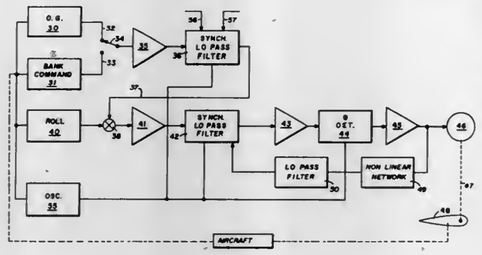


A motor drive for a slide changing mechanism in a slide projector is provided in which the motor is idle except when actually required to effect a change in slides.

3,555,391
OPEN LOOP SINGLE AXES SERVO FLIGHT CONTROL SYSTEM

James R. Younkin, Mineral Wells, Tex., assignor, by mesne assignments, to Thurman & Younkin, Inc., a corporation of Texas

Filed Mar. 11, 1966, Ser. No. 533,708
Int. Cl. B64c *13/16*; G05d *1/00*
U.S. Cl. 318—580 14 Claims

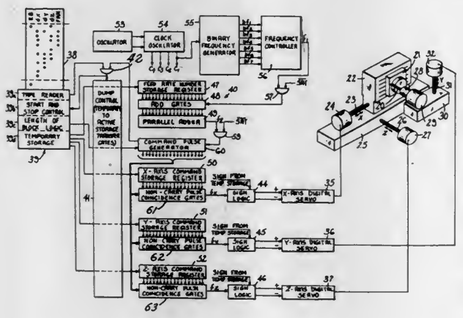


This disclosure is directed to a flight control system for an aircraft. A control sensor is responsive to movement of the aircraft about a preselected axis to produce a control signal. An amplifier channel includes a saturable amplifier unit which operates on the control signal and drives a servo motor unit. The servo motor unit actuates a control surface of the aircraft to cause movement of the aircraft about the preselected axis. The amplifier channel has a delaying feedback loop for adding a delayed representation of the amplifier channel output signal to the control signal to vary the transfer characteristic of the amplifier channel in order to produce a servo driving signal which matches the speed-versus-input characteristics of the servo motor unit. Displacement of the control surface is thus proportional to the control signal to eliminate the requirement of a follow-up element.

3,555,392
SERVO SYSTEM UTILIZING PULSE FREQUENCY PROPORTIONAL CONTROL

Johann F. Reuteler, Elmwood, Conn., assignor to Pratt & Whitney Inc., West Hartford, Conn.

Continuation-in-part of application Ser. No. 349,216, Mar. 4, 1964. This application May 5, 1969, Ser. No. 821,732
Int. Cl. G05b *19/28*
U.S. Cl. 318—603 23 Claims

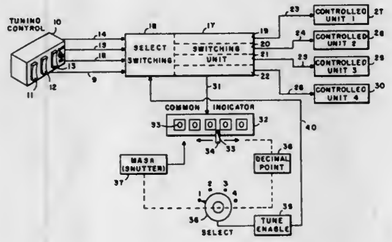


A numerical control servo system in which the position error or lag is converted to a pulse frequency proportional to the lag and where provision is made for varying the conversion factor as a function of the lag of a plurality of axes of movement.

3,555,393
REMOTE TUNING SYSTEM FOR PLURALITY OF CONTROLLED UNITS EMPLOYING COMMON TUNING CONTROL AND INDICATOR

Winston F. Williams, Cedar Rapids, Iowa, assignor to Collins Radio Company, Cedar Rapids, Iowa, a corporation of Iowa

Filed Apr. 9, 1969, Ser. No. 814,766
Int. Cl. G05b *11/14*
U.S. Cl. 318—673 6 Claims

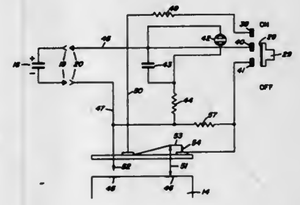


A single control unit, common indicator, and function selector switch is employed to effect the selective tuning of a number of different multi-channel or multi-function radio equipments. The selector switch indicates which of the several equipments is being tuned and monitored. The tuning control unit common to all the electronic services effects tuning of the selected service by enabling logic circuitry to effect an operable arrangement between the tuning control unit, the common indicator, and the selected equipment to be tuned.

3,555,394
POWER PACK FOR PHOTOGRAPHIC FLASHLAMP

Donald W. Bramer and Paul P. Clocksin, Rochester, N.Y., assignors to Graflex, Inc.

Filed Aug. 2, 1968, Ser. No. 749,711
Int. Cl. H02m *1/02*; F21l *1/00*
U.S. Cl. 320—1 13 Claims

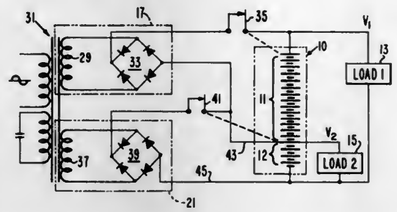


A power pack for a photographic flashlamp having a storage capacitor includes a battery and control circuitry in separable portions of the case with the battery contacts arranged so that when the case is opened the battery is first disconnected from the control circuit and then a normally open switch is closed to connect a resistor across the capacitor to discharge it. The power pack also includes an "on" indicator lamp flashed by a relaxation oscillator and mechanical strength and convenience features in the case.

3,555,395
MULTIPLE VOLTAGE BATTERY REGULATED POWER SUPPLY

Jack Beery, Farmington, Mich., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Sept. 9, 1968, Ser. No. 758,555
Int. Cl. H02j *7/04*
U.S. Cl. 320—46 3 Claims

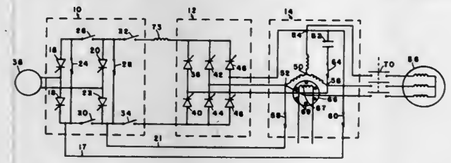


A power supply system utilizing a battery having one or more voltage sections comprising a plurality of rechargeable cells which are used to regulate the voltage output of the supply. A battery charger is electrically connected by a charge control member between the battery and a source of A.C. power to provide both charging current to the battery and output current to the load. The charge control member is operatively connected to the battery to sense the degree of charge within the battery. Each voltage section of the battery is connected by a separate charge control member to separate chargers thereby controlling the recharging of each section of the battery according to its own charge requirement.

3,555,396
SELF-STARTING POWER CONVERTER

Gabor P. Kalman, Palos Verdes Peninsula, Calif., assignor to The Garrett Corporation, Los Angeles, Calif., a corporation of California

Filed May 2, 1969, Ser. No. 821,368
Int. Cl. H02m *5/40*
U.S. Cl. 321—2 10 Claims



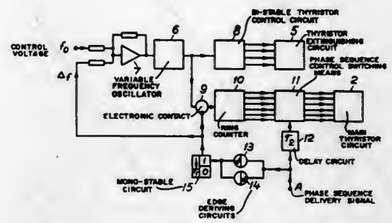
A starting system for a synchronously commutated power conversion unit. During start-up a bridge rectifier is connected and operated as an AC regulator to provide a variable reduced voltage to the synchronous condenser. After start-up the bridge rectifier is reconnected as a phase delay rectifier.

3,555,397
THYRISTOR CURRENT CONVERTER WITH MEANS FOR RAPIDLY EXTINGUISHING THE LOAD CURRENT

Kjell Frank, Vasteras, Sweden, assignor to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed Apr. 23, 1969, Ser. No. 818,736
Claims priority, application Sweden, Apr. 29, 1968, 5,764/68
Int. Cl. H02m *7/00, 7/52*
U.S. Cl. 321—5 3 Claims

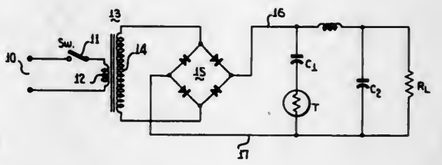
In a thyristor current converter having a control pulse device for delivering control pulses to the main thyristors, and at least one extinguishing circuit for extinguishing each thyristor at the end of its conducting interval, and having an oscillator for controlling the operating rate of the control pulse device and the extinguishing circuit, the load current is rapidly extinguished by an arrangement which first blocks the control pulses to the main thyristors and second regulates the control signal applied to the oscillator so that the oscillator frequency is higher during the blocking interval than immediately prior thereto. The blocking interval is sufficient to permit the extinguishing circuit to extinguish all of the thyristors.



3,555,398
RECTIFIER POWER SUPPLY WITH SURGE REDUCTION

Mioljub R. Nestorovic, Endwell, N.Y., assignor to McIntosh Laboratory, Inc., Binghamton, N.Y., a corporation of Delaware

Filed June 5, 1969, Ser. No. 830,814
Int. Cl. H02m *7/00*
U.S. Cl. 321—16 3 Claims



A rectifier power supply which reduces initial surge and also improves regulation over a wide range of load currents, consisting of a capacitor and a thermistor connected directly across the rectifier of the power supply on the output side of the rectifier.

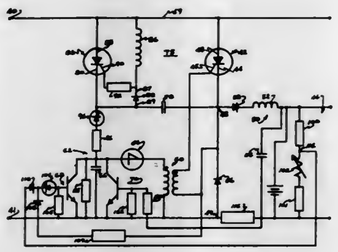
3,555,399
COMMUTATION SYSTEMS INCORPORATING THE ENERGY LOGIC CONCEPT

James L. Buchanan, McKean, and William B. Zelina, Erie, Pa., assignors to General Systems Inc., a corporation of Pennsylvania

Filed Nov. 16, 1967, Ser. No. 690,692
Int. Cl. H02m *7/44*
U.S. Cl. 321—43 35 Claims

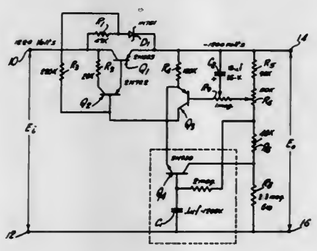
A commutation system for turning off an electric valve which when conducting supplies energizing current to an electrical load means from a direct current source wherein an electrical energy storage means is connected to be charged when the electric valve is nonconducting and the energy thereof is sensed by an energy sensing means connected to prevent the application of electrical turn on signals to the electrical valve unless a predetermined amount of energy is stored in such energy storage means.

At a desired time after the initiation of conduction in the electric valve, and preferably a fixed time thereafter, the



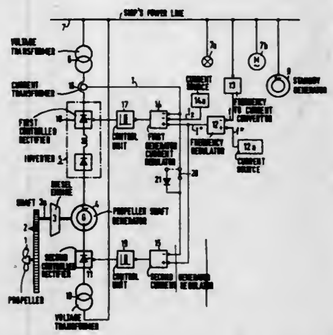
energy of the energy storage means is utilized to reverse bias the electric valve.

3,555,400
HIGH VOLTAGE REGULATOR USING IMPEDANCE TRANSFER CHARACTERISTICS OF TRANSISTORS
Robert A. Van Cleave, Jr., South Houston, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Aug. 21, 1968, Ser. No. 754,407
Int. Cl. G05f *1/56*
U.S. Cl. 323—22 **11 Claims**



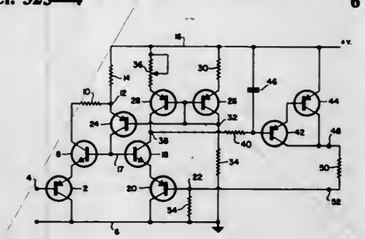
A high-voltage regulator employing a first PNP transistor connected in series between an input terminal and an output terminal of the regulator, the emitter of the first transistor being connected to the output terminal of the regulator. A second PNP transistor has its collector and emitter coupled with the collector and base, respectively, of the first transistor. Shunted across the output terminals of the voltage regulator is a resistive element, or series of them, across which is developed a regulated output voltage. Also shunted across the output terminals of the voltage regulator are a third transistor and a fourth transistor, the former being of the PNP type and the latter being of the NPN type. The emitters of the first, third and fourth transistors are coupled together. The collector of the third transistor is coupled with the base of the second transistor. The bases of the third and fourth transistors are coupled to the output resistive element. Also, the collector of the fourth transistor is coupled with the output resistive element. Coupled between the base of the fourth transistor and the other of the output terminals in a capacitor which is made to appear as a much larger capacitor than it actually is by virtue of the impedance transfer characteristics of the fourth transistor.

3,555,401
CIRCUIT ARRANGEMENT FOR REGULATING THE FREQUENCY OF ELECTRICAL POWER LINES ABOARD A SHIP
Karl-Heinz Bayer and Hermann Waldmann, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Apr. 11, 1969, Ser. No. 815,407
Claims priority, application Germany, Apr. 13, 1968, 1,763,167
Int. Cl. H02p *9/30*
U.S. Cl. 322—32 **6 Claims**



A first generator current regulator is connected to the controlled rectifier of an inverter connected between a synchronous generator mechanically coupled to the propeller shaft of a ship and the electrical power lines aboard the ship in the output circuit of the generator. A second generator current regulator is connected to a second controlled rectifier connected between the electrical power lines and the generator in the excitation circuit of the generator. The actual frequency of the power lines and a reference frequency are utilized to derive a reference current which is supplied to the first and second generator current regulators. One of the actual current in the power lines and the reference current of the first generator current regulator is varied relative to those of the second generator current regulator thereby compensating for speed variations of the propeller shaft.

3,555,402
CONSTANT CURRENT TEMPERATURE STABILIZED SIGNAL CONVERTER CIRCUIT
Theodore B. Bozarth, Jr., Perkasie, Pa., and Edward T. E. Hurd III, Willingboro, N.J., assignors to Honeywell Inc., Minnneapolis, Minn., a corporation of Delaware
Filed Dec. 18, 1968, Ser. No. 784,587
Int. Cl. G05f *1/58;* **H02j** *1/04*
U.S. Cl. 323—4 **6 Claims**



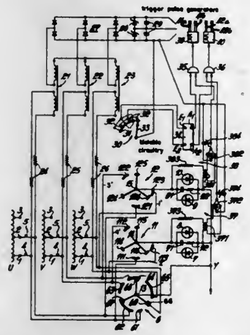
A differential amplifier is disclosed wherein a constant-current source is provided which is referred only to the power-supply leads. From the constant-current source, bias signals are derived which, in turn, provide and control constant-current supply means for each of the two

legs of the differential amplifier, individually. This arrangement provides a highly stable, highly accurate amplification of input signals and minimizes errors due to ambient temperature changes.

ERRATUM

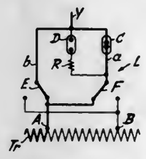
For Class 323—722 see:
Patent No. 3,555,400

3,555,403
THREE-PHASE TAP-CHANGING TRANSFORMER SYSTEM
Manfred Matzl, Zeitlarn, Uber Regensburg, and Ulrich Schweitzer, Wenzenbach, Germany, assignors to Maschinenfabrik Reinhausen Gebruder Scheubeck K.G., Regensburg, Germany
Filed Apr. 29, 1969, Ser. No. 820,151
Claims priority, application Germany, June 19, 1968, 1,763,529
Int. Cl. H02p *13/06;* **H02m** *5/12*
U.S. Cl. 323—43.5 **12 Claims**



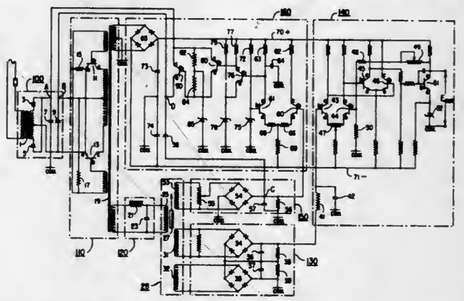
The number of gate-controlled semiconductor A-C switching devices (inverse parallel connected thyristors or triacs) in a three-phase tap-changing transformer system is minimized by sequentially using the same static semiconductor switching devices in combination with appropriate switching devices having relatively movable contacts for sequentially effecting tap-changing operations in all three phases of a Y-connected transformer whose windings are tapped.

3,555,404
TAP-CHANGING TRANSFORMER SYSTEM INCLUDING VACUUM SWITCH UNITS
Alexander Bleibtreu, Regensburg, Germany, assignor to Maschinenfabrik Reinhausen Gebruder Scheubeck K.G., Regensburg, Germany
Filed June 16, 1969, Ser. No. 834,245
Claims priority, application Germany, July 5, 1968, 1,763,623
Int. Cl. H02p *13/06;* **H02m** *5/12*
U.S. Cl. 323—43.5 **4 Claims**



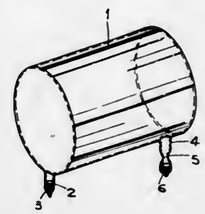
A tap-changing transformer and a method for operating the same. The tap-changing operations are performed by a pair of changeover switches both connected to each of a pair of contiguous taps of a tapped transformer winding and by a pair of vacuum switch units. The combination of the aforementioned changeover switches and vacuum switch units minimizes the power requirements for performing tap-changing operations. The changeover switches and the vacuum switch units are operated by a common drive which positively imposes upon the various switching means the required sequence of operations.

3,555,405
MOVABLE CORE TRANSFORMER TRANSDUCER WITH COMPENSATED PRIMARY WINDING
John C. Martin, Wickliffe, Ohio, assignor to Bailey Meter Company, a corporation of Delaware
Filed Sept. 1, 1967, Ser. No. 665,001
Int. Cl. H02p *13/10;* **H02m** *5/12*
U.S. Cl. 323—51 **4 Claims**



An MCT measuring circuit which includes a voltage regulator circuit forming a feedback path from an independent auxiliary secondary winding of the movable core transformer to an oscillator circuit which generates a square wave energization signal. This energization signal is applied to a filter circuit which is magnetically interposed between the oscillator circuit and the primary winding of the movable core transformer in order to attenuate the odd harmonic sinusoidal frequency components of the square wave signal while passing a substantial portion of its fundamental frequency component to the primary winding so as to enhance the operational characteristics of the transducer.

3,555,406
OPTICAL RESONANCE CELLS
Henri Brun, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed Oct. 3, 1968, Ser. No. 764,898
Claims priority, application France, Oct. 26, 1967, 126,033
Int. Cl. G01r *33/08*
U.S. Cl. 324—.5 **4 Claims**

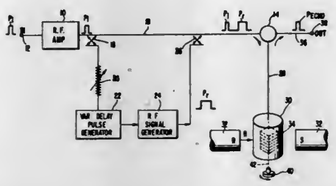


An optical resonance cell which comprises a bulb communicating with the body of the cell and containing a finely divided metal powder which, by adsorption, retains the metal whose saturating vapour phase is to be optically pumped.

3,555,407
VARIABLE BANDWIDTH SPIN ECHO DELAY LINE

Donald A. Bozanic and Dickron Mergerian, Baltimore, and Ronald W. Minarik, Lutherville, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed June 11, 1969, Ser. No. 832,115
Int. Cl. G01n *27/00;* **H03h** *7/30*
U.S. Cl. 324—.5 **11 Claims**

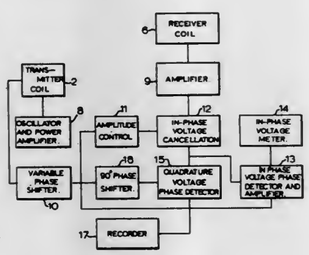


A delay line for microwave frequency signals utilizing apparatus for producing an electron spin echo signal from an RF input signal in conjunction with an anisotropic spin echo sample situated in a magnetic field in order to obtain a variable electron spin resonant absorption line width. This is accomplished by means of a crystalline quartz spin echo sample configured in a plurality of thin layers or laminations of a predetermined thickness with means for varying the orientation of the slabs with respect to one another in a static, unidirectional and substantially homogeneous magnetic field so that the crystallographic axis orientation of each layer is controlled relative to the direction of the applied magnetic field so that a spreading out of the composite absorption line or narrowing of the line can be achieved by varying the alignment of the laminations in a selected manner.

3,555,408
METHOD AND MEANS FOR AIRBORNE ELECTROMAGNETIC EXPLORATION UTILIZING THE RESULTANT TRANSMITTED ELECTROMAGNETIC FIELD COMPRISED OF THE PRIMARY FIELD AND SECONDARY FIELDS GENERATED THEREBY IN THE AIRCRAFT

William A. Robinson, Don Mills, Ontario, Canada, assignor to McPhar Geophysics Limited, Don Mills, Ontario, Canada

Filed Dec. 9, 1968, Ser. No. 782,272
Int. Cl. G01v *3/16*
U.S. Cl. 324—4 **17 Claims**

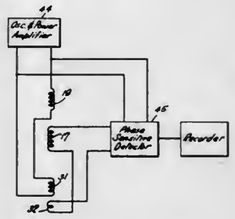


A method and apparatus for airborne geophysical prospecting utilizing the detection of electromagnetic field components in quadrature with the resultant transmitted field transmitted from an aircraft which transmitted field comprises the vector sum of the primary electromagnetic field created in the transmitter in the aircraft and the secondary fields created by the linking of such primary field with the conductor components of the aircraft, the existence of field components in quadrature with such resultant transmitted field indicating the presence of a conductor anomaly outside the aircraft.

3,555,409
MAGNETIC SUSCEPTIBILITY LOGGING SYSTEM WITH TRANSMITTER AND RECEIVER NULL COILS

George R. Atwood, 6614 Birdwood, Houston, Tex. 77036, and Donald J. Dowling, Houston, Tex. (% Texaco, Inc., P.O. Box 425, Bellaire, Tex. 77401)

Continuation of application Ser. No. 685,113, Nov. 22, 1967. This application Oct. 6, 1969, Ser. No. 866,092
Int. Cl. G01v *3/10*
U.S. Cl. 324—6 **5 Claims**

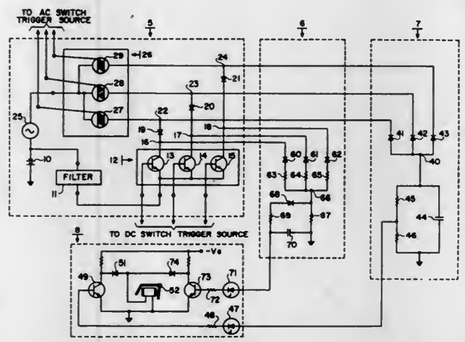


A borehole logging tool that includes air core transmitter and receiver coils plus auxiliary air core nulling coils. A compensated magnetic induction circuit is employed for nulling a major portion of the receiver coil signals, in order that the changes caused by magnetic property change in the surrounding borehole, may be readily detected. The auxiliary nulling coils are pancake shaped and are located outside the fields of the transmitter and receiver coils. But they are located on the logging tool so that they are subject to the same ambient conditions as are the transmitter and receiver coils.

3,555,410
TELEPHONE INTERRUPTER FAILURE DETECTION CIRCUIT

Rabindra N. Basu, Ottawa, Ontario, Canada, assignor to Northern Electric Company Limited, Montreal, Quebec, Canada

Filed Aug. 23, 1968, Ser. No. 754,829
Int. Cl. G01r *31/02*
U.S. Cl. 324—28 **3 Claims**

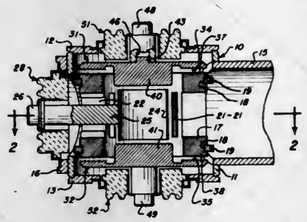


An apparatus for detecting the failure of any switch in two sets of sequentially operated switches used to interrupt a corresponding source of voltage to form two sets of switch signals. Each set of switch signals is integrated to form a separate output signal of relatively constant amplitude, the amplitude being dependent upon the proper operation of each switch in both sets. A voltage sensitive amplifier monitors both output signals and responds to activate an alarm circuit in the event that the amplitude of either output signal falls below a predetermined value.

3,555,411
COLD CATHODE MAGNETRON IONIZATION GAUGE WITH CATHODES FORMING POLE PIECES FOR CYLINDRICAL MAGNET

Robert O. Woods, Albuquerque, N. Mex., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed Feb. 14, 1969, Ser. No. 799,166
Int. Cl. G01n *27/62*
U.S. Cl. 324—33 **3 Claims**

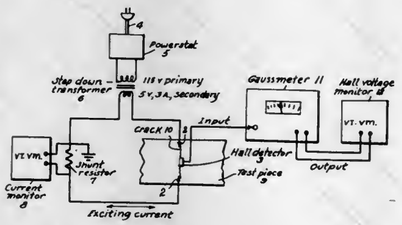


A cold cathode magnetron ionization gauge for measuring very low pressures, particularly in environments subject to high acceleration and vibration conditions. Magnetic flux for influencing the path of electrons is provided by means of a hollow magnet entirely enclosed within the gauge cavity. The location of the magnet and the position and configuration of a pair of cathodes is such that a maximum portion of the available flux is confined to the useful internal volume of the gauge. This construction ensures that magnetic flux closing outside the gauge is held to a minimum.

3,555,412
PROBE FOR DETECTION OF SURFACE CRACKS IN METALS UTILIZING A HALL PROBE

Kenneth A. Fowler, Medfield, Mass., assignor to the United States of America as represented by the Secretary of the Army

Filed Nov. 26, 1968, Ser. No. 779,026
Int. Cl. G01r *33/12*
U.S. Cl. 324—37 **7 Claims**

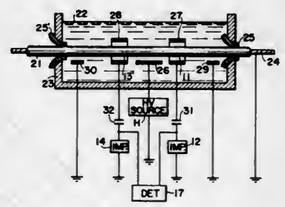


A Hall effect detector is mounted between a pair of electrodes. The electrodes are moved along a current conducting surface having a crack, or suspected of having a crack or other flaw. The crack alters the flow of current and channels it between the electrodes thereby increasing the magnetic field in the area of the crack. The magnitude of the increase of the magnetic field indicates the size of the crack or flaw. The direction of the crack also affects the magnitude of the change. Therefore, the direction of the crack, as well as its depth and length, can be ascertained by probing with the present instrument, as taught herein.

3,555,413
PARTIAL DISCHARGE MEASURING MEANS INCLUDING DISCHARGE DETECTING CIRCUITS AND A DISCHARGE DETECTOR CONNECTED THERETO AND INCLUDING A SELECTOR CIRCUIT

Hironori Matsuba, Kawasaki-shi, Japan, assignor to Furukawa Denki Kogyo Kabushiki Kaisha, Tokyo, Japan

Filed June 14, 1968, Ser. No. 737,194
Claims priority, application Japan, June 15, 1967, 42/3,702; May 28, 1968, 43/35,688
Int. Cl. G01r *31/14*
U.S. Cl. 324—54 **9 Claims**



A means for measuring partial discharge of electrical equipments, such as electric cables and transformers, having a special discharge detector, in which a detection circuit is formed by test objects, coupling condensers, and detection impedances. A defect in the test object produces partial discharge, which may be measured as discharge pulses in the discharge detector. To keep external disturbances from hampering measurement of partial discharge, pulses from the test object and the coupling condenser, after being shaped respectively, are led into a differential amplifier where external noises cancel each other. Discharge measurement can therefore be made without being hampered by external disturbances.

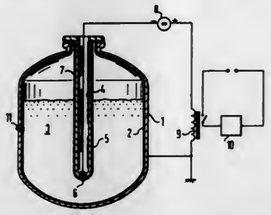
3,555,414
METHOD AND APPARATUS FOR DETECTING FAULTS IN THE ENAMEL COATING OF A VESSEL HAVING ELECTRICALLY CONDUCTIVE TANTALUM PLUGS WHEREIN A PASSIVATING INSULATING LAYER IS FORMED ON THE PLUGS

Hermann Deichelmann, Schwetzingen, Germany, assignor to Pfaudler-Werke AG, Schwetzingen, Germany, a corporation of Germany

Filed Jan. 21, 1969, Ser. No. 794,475
Claims priority, application Germany, Jan. 24, 1968, 1,648,662
Int. Cl. G01r *31/12*
U.S. Cl. 324—54 **4 Claims**

Faults in the enamel coating of vessels which have electrically conductive tantalum plugs extend through the walls of the vessel, and adapted to hold electrically conductive liquids, are detected by introducing into the vessel an exposed electrode, and connecting the electrode and the metal wall of the enameled vessel to the negative, and positive terminal, respectively, of an electrical direct current circuit which includes a current sensitive relay. Upon

connection, a passivating, insulating layer is formed on the tantalum plugs. Remaining leakage current is balanced



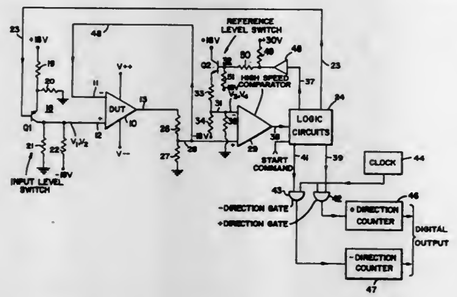
out and additional current due to breakdown in enamel is detected by changes in current in the circuit, causing the relay to respond.

3,555,415

AMPLIFIER TESTING APPARATUS HAVING A COMPARATOR FOR COMPARING THE AMPLIFIER OUTPUT SIGNAL WITH A PAIR OF REFERENCE SIGNALS

William E. Shoemaker, Los Altos, and David W. Wilson, Sunnyvale, Calif., assignors to Signetics Corporation, Sunnyvale, Calif., a corporation of California

Filed Jan. 27, 1969, Ser. No. 794,330
Int. Cl. G01r *27/00*
U.S. Cl. 324—57 **8 Claims**



Response time measuring apparatus for measuring response time in both the positive and negative directions of an electrical device such as an operational amplifier. The input to the device is switched between two different voltage levels producing an output voltage having positive and negative ramps. These are coupled into a comparator and the ramps are compared to two switchable reference level voltages. The comparator detects the crossovers of the voltages to provide command signals for switching both the input level voltages and the reference level voltages and causing an associated logic circuit to produce pulse trains having pulses of a time duration indicative of the response times of the output voltage of the device.

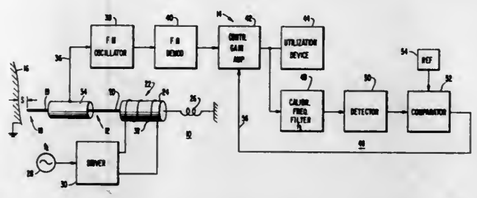
3,555,416

NONCONTACT DISPLACEMENT PICKUP EMPLOYING COAXIAL SIGNAL COUPLING

Eugene R. Lucka, Columbus, Ohio, assignor to Reliance Electric Company, Columbus, Ohio, a corporation of Ohio

Filed Sept. 9, 1968, Ser. No. 758,428
Int. Cl. G01r *27/26, 33/00*
U.S. Cl. 324—61 **18 Claims**

There is disclosed herein a noncontact proximity sensitive transducer employing a pickup responsive to distance dependent energy variations between a pickup and the object under inspection. The transducer includes means for generating a signal which is modified by the spacially dependent phenomenon measured by the pickup and suitable signal processing circuitry for extracting from the modified signal, the variations in the pickup to object



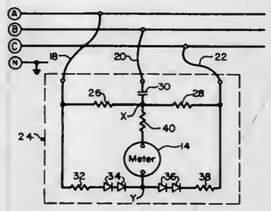
spacing. The pickup is characterized by an elongated rod-like sensing member coaxially positioned within an elongated hollow cylindrical coupling member by which the pickup signal is coupled from the sensing element to the ancillary electronic circuitry.

3,555,417

APPARATUS FOR INDICATING PHASE SEQUENCE

Benedict S. Mitchell, Sr., 2059 N. Mozart St., Chicago, Ill. 60647

Filed Sept. 23, 1968, Ser. No. 761,524
Int. Cl. G01r *25/00*
U.S. Cl. 324—86 **10 Claims**



An electrical apparatus in the form of an electrical instrument for identifying and indicating phase sequence of a three phase system having substantially equal phase-to-phase voltages at 120° space relation to each other, the instrument comprising a direct current meter with a zero center scale to register current flow in either direction therethrough, and a voltage dividing electrical circuit having a phase shifting portion and a rectifying portion with said meter connected therebetween, wherein when the circuit is selectively connected to the three phase system the meter will deflect in a predetermined direction to indicate phase sequence of the system, and where one phase can be identified the instrument is operative to identify that phase and thereinafter identify the remaining phases of the system.

3,555,418

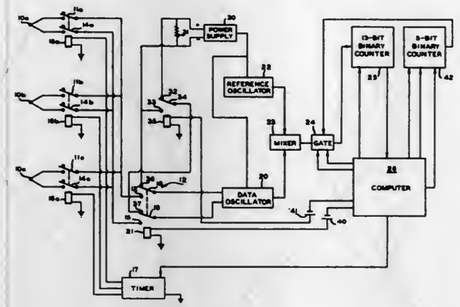
OSCILLATOR HAVING VOLTAGE SENSITIVE CAPACITORS THEREIN AND CALIBRATION CIRCUIT MEANS

Dale A. Fluegel, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 29, 1967, Ser. No. 671,827
Int. Cl. G01r *19/26, 1/02*
U.S. Cl. 324—120 **5 Claims**

A voltage to frequency circuit is provided, which utilizes an oscillator having a voltage sensitive capacitor

therein. Means are provided for checing the span of the circuit periodically and for transmitting the span check



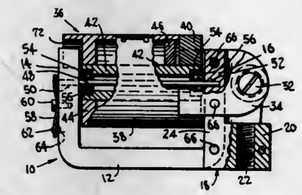
signals to a computer. The oscillator input circuit is designed to eliminate direct current paths to ground.

3,555,419

MAGNETICALLY OPERATED INDICATOR WITH U-SHAPED BEARING FRAME

Dana J. Blackwell, Naugatuck, Conn., assignor to Lewis Engineering Company, Naugatuck, Conn., a corporation of Connecticut

Filed Dec. 2, 1968, Ser. No. 780,438
Int. Cl. G01r *1/02*
U.S. Cl. 324—146 **9 Claims**



An electrically-operated "On-Off" indicator comprising an electromagnet having between its poles a rotatable permanent magnet connected to an indicia-carrying rotary drum. The permanent magnet and drum are on a central bushing carrying bearings through which a shaft extends. The ends of the shaft are disposed in aligned holes in the legs of a U-shaped integral frame between which the drum and magnet are located. The frame and the electromagnet are clamped to a plastic mounting block which, in conjunction with the U-frame, make for an exceptionally sturdy and shock-resistant instrument.

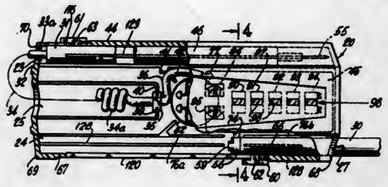
3,555,420

VOLTAGE TESTING INSTRUMENT

Harvey A. Schwartz, Merrick, N.Y., assignor to Soss Manufacturing Company, Detroit, Mich., a corporation of Nevada

Filed Sept. 6, 1967, Ser. No. 669,348
Int. Cl. G01r *1/06, 31/02*
U.S. Cl. 324—149 **4 Claims**

A portable instrument for indicating, by both visual and audible means, the voltage level of a circuit, the type of circuit tested (whether AC or DC), if DC, the polarity, and if AC, the frequency. A casing supports two probes, a portion of a coiled extensible conductor that is connected to one of said probes which is removable from the casing, the other probe being at all times connected to the casing, a panel with electrical components connected to said probes and including a series of neon lamps arranged in a circuit to fire at successively higher voltage levels, a scale with AC and DC readings adjacent said lamps,



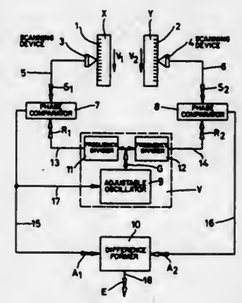
polarity indicating lamps, and a piezo-electric transducer for generating an audible tone in response to an applied AC voltage. The length of the column of light produced by the operatively lighted lamps indicates the voltage level, other lamps indicating whether the circuit is AC or DC, and the polarity if DC, the piezo-electric member indicating by its actuation that the circuit is AC, and by its pitch the frequency of the circuit.

3,555,421

METHOD AND APPARATUS FOR COMPARING TWO PULSE SEQUENCES OF DIFFERENT FREQUENCIES

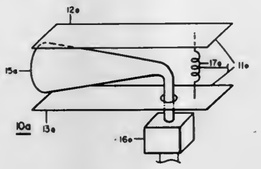
Diethard Budnick, Ludwigsburg, Wurttemberg, Germany, assignor to Carl Zeiss-Stiftung, Oberkochen, Wurttemberg, Germany, a corporation of Germany

Filed Oct. 7, 1968, Ser. No. 765,610
Claims priority, application Germany, Oct. 6, 1967, 1,537,218
Int. Cl. G01p *3/56*
U.S. Cl. 324—161 **10 Claims**



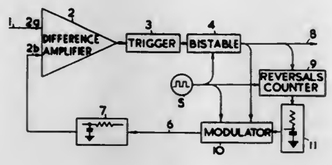
Two signal pulse sequences having different predetermined mean frequencies in a predetermined mean ratio are compared respectively with two reference pulse sequences, which have said mean frequencies in said ratio, to produce two sets of deviation signals respectively proportional in magnitude to the phase differences between the respective signal and reference pulse sequences. The sets of deviation signals are then combined to produce resultant signals proportional to the combined relative deviations of both signal pulse sequences from said mean frequencies.

3,555,422
ANTENNA AND ACOUSTIC HORN APPARATUS
William E. Buehrle, Jr., Huntington Station, and Gerald F. Woodard, Centerport, N.Y., assignors, by mesne assignments, to Hazeltine Corporation
Filed Feb. 20, 1969, Ser. No. 800,980
Int. Cl. H04b 1/38; H01q 1/00
U.S. Cl. 325—16 12 Claims



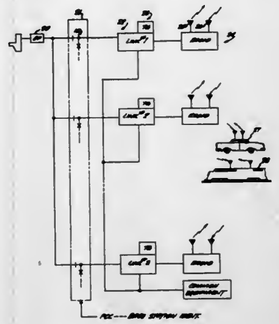
Disclosed are antenna and acoustic horn apparatus usable in portable communications units, such as transceivers. One such apparatus includes a dielectric acoustic horn positioned within the volume of space between two parallel plates of an antenna. The acoustic horn, which together with the air in the volume comprises dielectric between the antenna plates, provides a path of varying acoustic impedance for matching the acoustic impedance of free space to the acoustic impedance of a transducer, also included in the apparatus, for more efficiently coupling an acoustic signal therebetween. An inductive tuning device is connected between the antenna plates to compensate for the capacitive effects of antenna dielectric. Other embodiments are also covered.

3,555,423
MODULATION CONTROL CIRCUITS FOR DELTA-MODULATION TELECOMMUNICATION SYSTEMS
Raymond Charles Weston, Christchurch, England, assignor to Minister of Technology in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England
Filed Feb. 6, 1968, Ser. No. 703,418
Claims priority, application Great Britain, Feb. 10, 1967, 6,392/67
Int. Cl. H03k 13/22
U.S. Cl. 325—38 11 Claims



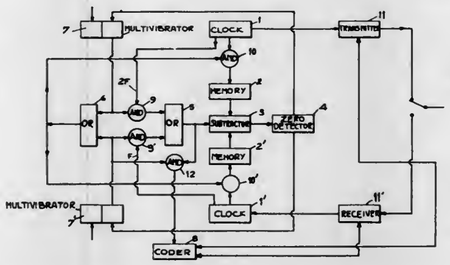
A delta-modulation telecommunications system can be made to carry signals of wider dynamic range by pulse-duration modulating feedback signals in the transmitter circuit and received signals in the receiver circuit. The modulation should vary with the amount of information carried or inversely with the frequency of reversals in the delta-modulated signal. A modulation control signal may be derived by a circuit comprising a two-stage shift register, three gates, and an R-C integrating network. Several pulse-duration modulating arrangements are described. These improvements can be incorporated in a compact form, using integrated circuits.

3,555,424
MEANS FOR ALLOCATING RADIO LINK CHANNELS IN MOBILE TELEPHONE SYSTEMS
Marvin F. Malm, Milan, Tenn., assignor to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware
Filed June 21, 1967, Ser. No. 647,746
Int. Cl. H04q 7/00
U.S. Cl. 325—53 14 Claims



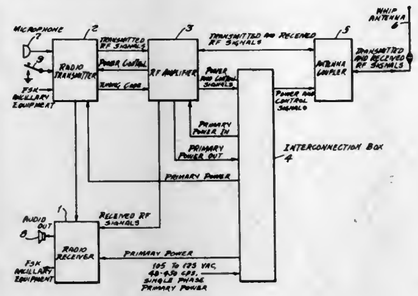
In a mobile telephone system, all idle channels are marked, and each mobile station lines up on any idle marked channel. Called number codes are sent simultaneously over all idle channels. Any mobile recognizing its code returns an answer tone, and the idle marking tone is removed. When the tone disappears, all mobiles on that channel move off in search of another idle marking. The mobile station includes a paystation.

3,555,425
SYNCHRONIZATION APPARATUS FOR TWO-WAY SYNCHRONOUS CODED LINK
Marc Dumaire, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France
Filed May 16, 1967, Ser. No. 638,864
Claims priority, application France, June 3, 1966, 64,145
Int. Cl. H04l 7/00
U.S. Cl. 325—58 3 Claims



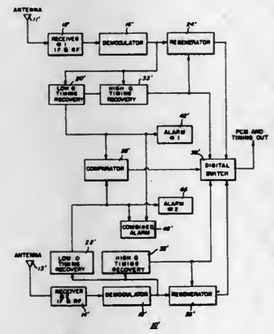
A transmitter and receiver station for a two-way synchronous coded link are provided. It comprises a key generator connected to a decoding and coding arrangement. A first clock controls the key generator with a predetermined phase value during the reception and a second clock controls the key generator with another predetermind phase value during the transmission. First means are provided, when the station switches from transmission to reception, for stopping the key generator, which was in synchronism with the first clock, during the time necessary for bringing it in phase with the second clock; second means are provided for accelerating, when the station switches from reception to transmission, the key generator, which was in phase with said second clock, during the time necessary for bringing it in phase with said first clock.

3,555,426
FREQUENCY SYNTHESIZER
Raymond J. Rogers, Rochester, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 29, 1968, Ser. No. 733,071
Int. Cl. H03b 21/02
U.S. Cl. 325—184 2 Claims



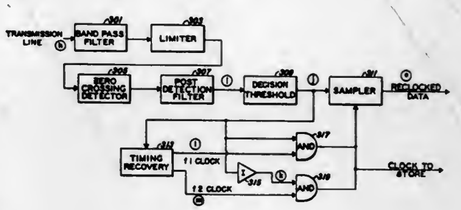
In a transmitter having a plurality of frequency conversion circuits, a synthesizer that is DC tunable to 11.0 or 11.5 kc. with the stability and accuracy of a frequency standard in the transmitter, through selection of respective indexed settings, and also operable to activate a continuously adjustable vernier resistive voltage divider to enable continuous adjustment of the synthesizer to any frequency over one kc. of a frequency range whereby the synthesizer is operable to set the transmitter to two tuned frequencies 500 cycles per second apart for every frequency setting of the higher order frequency conversion circuits or for continuous vernier tuning over at least a one kc. frequency range that brackets the 11.0 and 11.5 kc. tuned frequencies for every frequency setting of the other higher order frequency conversion circuits.

3,555,427
DIGITAL DIVERSITY RECEPTION SYSTEM
William L. Hatton, Wellesley, Mass., assignor to Raytheon Company, Lexington, Mass., a corporation of Delaware
Filed Feb. 1, 1968, Ser. No. 702,376
Int. Cl. H04b 7/08, 1/06
U.S. Cl. 325—306 5 Claims



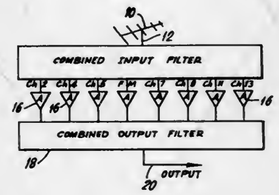
A digital diversity reception system utilizing digital logic circuitry for combining the incoming digital signals and employing timing recovery circuits to control the digital signal combining.

3,555,428
FSK RECEIVER FOR DETECTING A DATA SIGNAL WITH THE SAME NUMBER OF CYCLES OF EACH CARRIER FREQUENCY
Donald A. Perreault, Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Original application Oct. 3, 1966, Ser. No. 583,914, now Patent No. 3,454,718, dated July 8, 1969. Divided and this application Feb. 28, 1969, Ser. No. 816,863
Int. Cl. H04b 1/16; H04l 15/24
U.S. Cl. 325—320 5 Claims



In a frequency shift receiver the same number of cycles of each carrier frequency for each data state is delivered to a digital storage under the command of the receiver.

3,555,429
MASTER ANTENNA DISTRIBUTION SYSTEM
Henry Yastrov, Langhorne, Pa., assignor to Jerrold Electronics Corporation
Filed Mar. 11, 1968, Ser. No. 712,231
Int. Cl. H04b 1/18
U.S. Cl. 325—365 13 Claims

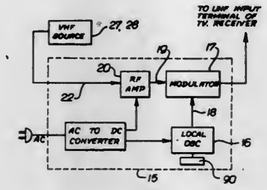


A multi-channel antenna signal distribution system is provided including an amplifier for each channel and filter means connected to each amplifier and tuned to the channel with which it is associated. Each amplifier is made as a plug-in modular unit so it can be quickly and easily replaced in the distributor housing. The channel selector filters are not included in the modular amplifier unit but instead are located on the distributor housing, so that each amplifier unit can be made the equivalent of each other unit and thus interchangeable with a single spare unit kept on hand to be quickly substituted in the event of amplifier failure in any channel.

3,555,430
TELEVISION RECEIVER CONVERTER

Thomas L. Fischer and Stanley C. Forrest, Jr., Santa Ana, Calif., assignors, by mesne assignments, to Anaconda Wire and Cable Company, New York, N.Y., a corporation of Delaware

Continuation of application Ser. No. 529,546, Feb. 23, 1966. This application Apr. 22, 1969, Ser. No. 818,450
Int. Cl. H04b 1/06, 1/26
U.S. Cl. 325—439 16 Claims

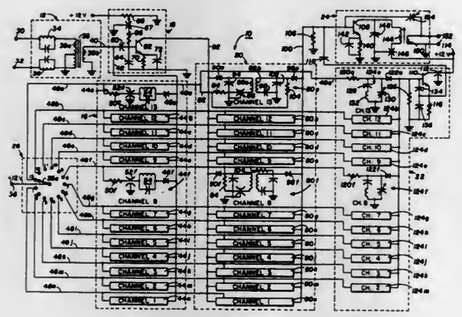


The disclosure concerns various unusually effective ways in which VHF, or VHF and UHF, signals may be transmitted by coaxial cable as VHF and then converted to UHF and supplied to a television receiver, together with tuning thereof by local or auxiliary UHF tuning means.

3,555,431
ALL ELECTRONIC VHF TELEVISION TUNER

Donald L. Wilcox, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 30, 1966, Ser. No. 606,315
Int. Cl. H04b 1/16
U.S. Cl. 325—465 16 Claims

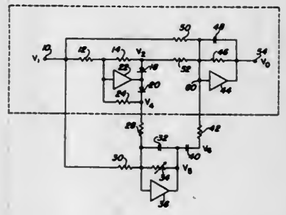


Disclosed are digital VHF television tuners for electronically selecting one of a plurality of channels that utilizes switching diodes, such as surface oriented PIN diodes, to selectively couple a plurality of parallel connected, band-pass filter circuit means between the RF signal translating means of the tuner and the IF signal translating means of the tuner. The band-pass filter circuit means of the tuner may include a plurality of parallel connected tuned transformers for preferentially passing filtered selected RF signals from the RF amplifier stage to the mixer stage, and may also include a plurality of tuned filter circuits for each channel electrically coupled at the input of the RF amplifier stage and a plurality of frequency determining networks for each frequency of the local oscillator. The band-pass filter means and the frequency determining circuits are selectively coupled into the circuit of the tuner by forward biasing a selected one of the switching diodes utilizing either DC current passed through the tuned circuits and the respective switching diodes or utilizing a DC current passed in shunt with the tuned circuits and the respective switching diode.

3,555,432
HIGH-SPEED AC/DC CONVERTER

Walter Ellermeyer, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Jan. 22, 1969, Ser. No. 793,123
Int. Cl. H03k 5/00
U.S. Cl. 328—26 2 Claims

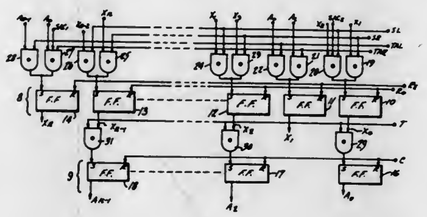


An improved high-speed AC to DC converter is disclosed which has a response time superior to that of existing converters. That is, the DC output of the converter reaches its steady state value in a shorter time period than is possible with existing AC to DC converters. The improvement in response time is achieved by a unique circuit arrangement including a plurality of operational amplifiers. By means of the unique arrangement, a comparatively large voltage proportional to the input voltage is added to the DC output initially and until the DC output reaches its steady state value. The large voltage allows a capacitor in filter circuit to charge more rapidly thereby significantly decreasing the time required for the DC output voltage to reach a steady state value. Furthermore, the converter of the present invention features increased accuracy and precision.

3,555,433
BIDIRECTIONAL SHIFT REGISTER

John E. Croy, Acton, Mass., assignor to RCA Corporation, a corporation of Delaware

Filed Feb. 26, 1968, Ser. No. 708,298
Int. Cl. G11c 19/00
U.S. Cl. 328—37 4 Claims

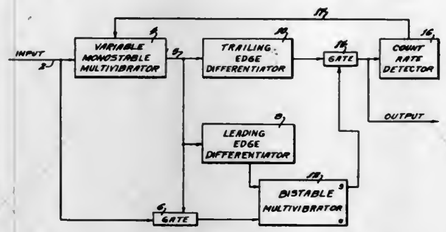


Information is shifted to the right or left by emptying alternate stages of a storage circuit, shifting the remaining information one position in the desired direction, then returning the removed information to the stages from which the remaining information has been shifted.

3,555,434
SYSTEM FOR THE SUPPRESSION OF TRANSIENT NOISE PULSES

Edwin M. Sheen, Richland, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed June 3, 1968, Ser. No. 733,845
Int. Cl. H03k 5/20
U.S. Cl. 328—109 5 Claims

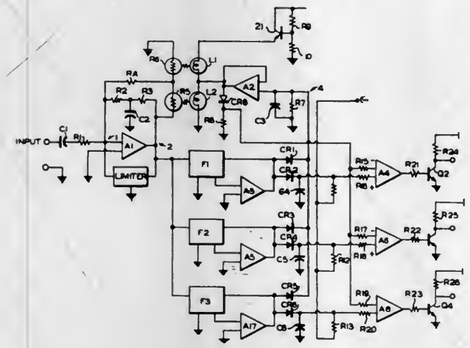


A system for suppressing transient noise pulses in a train of data pulses applied to the system input includes a monostable multivibrator which is connected to the system input, a logic circuit which generates a system output pulse in response to anticoincidence in time of a system input pulse and an output pulse of the monostable multivibrator, and a count rate detector which varies the monostable multivibrator output pulse width in response to the system output pulse rate.

3,555,435
MULTIFREQUENCY SIGNAL DETECTOR

Robert E. Vosteen, 315 W. Center St., Medina, N.Y. 14103

Filed Nov. 21, 1968, Ser. No. 777,858
Int. Cl. H03k 5/20
U.S. Cl. 328—140 14 Claims

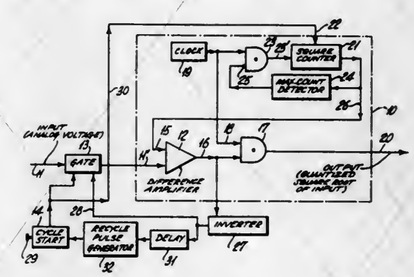


A multifrequency signal detector to selectively distinguish signals of different predetermined frequencies. The input signal to the detector is applied to an operational amplifier, the output of which commonly feeds a plurality of filter-amplifier means corresponding in number to that of the different frequencies to be selectively distinguished. A peak voltage output is produced by that filter-amplifier means which receives signals of the frequency selected to be detected. Feedback means including a voltage follower are connected between the outputs of the filter-amplifier means and the operational amplifier. Switch means that may comprise transistors are also connected to the outputs of the filter-amplifier means to indicate reception of frequencies selected to be detected.

3,555,436
ANALOG-TO-DIGITAL CONVERTER WITH PROGRAMMED CHARACTERIZING FUNCTION

James W. Elliott, St. Petersburg, Fla., assignor to Electronic Communications, Inc., a corporation of New Jersey

Filed Mar. 15, 1968, Ser. No. 713,484
Int. Cl. G08c 9/00; G06g 7/20
U.S. Cl. 328—144 7 Claims

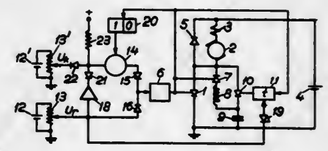


The invention contemplates a method and apparatus for achieving a digitalized and quantized root function of an input analog voltage, with techniques that involve no dependence on analog components for the root-taking function. The basic accuracy of the invention depends upon clock-timing of a computer, the characterizing function of which is related to time and appears across an output-summing network. This output voltage, in comparison with the given input analog voltage, is utilized to operate a gate, in such manner that the number of gated clock pulses is the quantized root function of the input analog voltage. The process may be automatically recycled to present current display or availability of the circuit's operation on the instantaneous magnitude of the input analog voltage.

3,555,437
METHOD AND MEANS FOR SUPPRESSING AN A.C. COMPONENT OF A GIVEN FREQUENCY IN A PULSED D.C. CURRENT

Erik Persson and Karl Gunnar Goliath, Vasteras, Sweden, assignors to Allmanna Svenska Elektriska Aktiebolaget, Vasteras, Sweden, a corporation of Sweden

Filed Dec. 26, 1968, Ser. No. 787,180
Claims priority, application Sweden, Dec. 27, 1967, 17,792/67; Apr. 29, 1968, 5,763/68
Int. Cl. H03b 1/04
U.S. Cl. 328—165 8 Claims



For supplying to a motor D.C. pulses with a variable frequency while suppressing an A.C. component of a given frequency (f), a switching device is connected between a source of D.C. and the motor, which is rendered

alternately conducting and nonconducting so as to supply the motor with pulses in groups of n pulses per group. The time interval between the groups can be varied, while the time interval Δt between successive pulses in each group is kept constant and equal to

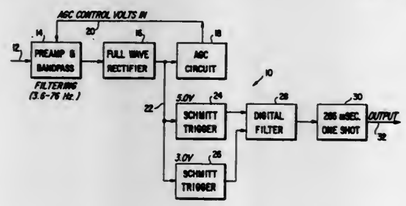
$$\frac{1}{f \cdot n}$$

as long as the average value of the pulse frequency is below the value at which the time interval between successive groups is less than Δt. At higher average values of the pulse frequency, up to a certain preselected value, the pulse length is kept substantially constant, while, if the load voltage is to be increased above that corresponding to such preselected value, the pulse length is increased while the pulse frequency is kept substantially constant.

3,555,438
DIGITAL FILTER AND PULSE WIDTH DISCRIMINATOR

Charles W. Ragsdale, Takoma Park, Md., assignor to the United States of America as represented by the Secretary of the Army

Original application Jan. 8, 1969, Ser. No. 789,694. Divided and this application Aug. 29, 1969, Ser. No. 854,073
Int. Cl. H03b *1/04*
U.S. Cl. 328—165 **10 Claims**

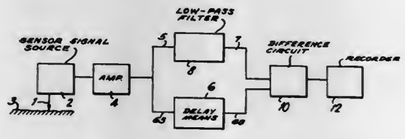


Disclosed is a digital filter for use in the rate monitoring portion of an electrical heart monitor. The filter comprises a pulse width discriminator coupled to receive the outputs of a pair of Schmitt triggers and includes a first timer for rejecting short duration pulses. The timer output is only activated when signals are received from both triggers. A second and third timer combine to reject subsequent long duration pulses for a predetermined time after an original pulse of intermediate duration.

3,555,439
ELECTRICAL FILTERS

Arthur Tisso Starr, New Barnet, and Thomas Charles Reeve, London, England, assignors to The Rank Organisation Limited, London, England, a British company

Filed Apr. 16, 1968, Ser. No. 721,710
Claims priority, application Great Britain, Apr. 19, 1967, 17,999/67
Int. Cl. H03b *1/04*
U.S. Cl. 328—167 **10 Claims**

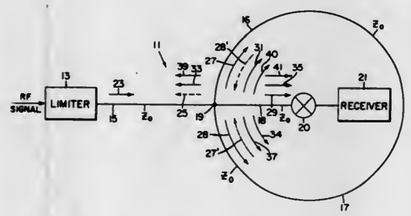


An electric signal including high and low frequency components is (a) filtered to remove the high frequencies without distorting the low frequencies, and (b) delayed to synchronise it, without distortion, with the filtered signals. The filtered signal is subtracted from the delayed signal to provide a signal comprising the undistorted high frequency component.

3,555,440
DELAY-LINE FREQUENCY DISCRIMINATOR

John E. Winter, Los Altos, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy

Filed July 1, 1969, Ser. No. 838,175
Int. Cl. H03k *3/00*
U.S. Cl. 329—116 **8 Claims**

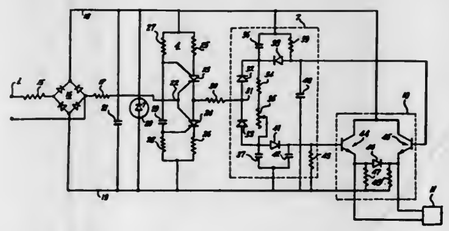


A frequency discriminator for processing frequency modulated RF signals including a voltage limiter, four transmission lines connected at a junction, a square law detector and an AM receiver. One transmission line connects the output of the limiter to the junction, another transmission line connects the input of the square law detector to the junction and the other two transmission lines form a single delay line where each of these two transmission lines has one end connected to the junction and the other ends are connected to each other. In alternative embodiments the two transmission lines are formed into either two open ended or two shorted delay lines of equal length. Because of signal absorption and signal cancellation by the limiter, square law detector and delay lines a signal is applied to the input of the square law detector such that its output voltage will vary linearly as a function of the input frequency over a pre-selected range of frequencies.

3,555,441
AC FREQUENCY TO DC TRANSDUCER

Kenneth L. Axford, Warrenton, Va., assignor to Weston Instruments, Inc., Newark, N.J., a corporation of Delaware

Original application Aug. 30, 1966, Ser. No. 576,026, now Patent No. 3,471,792, dated Oct. 7, 1969. Divided and this application Feb. 17, 1969, Ser. No. 844,678
Int. Cl. H03d *3/10*
U.S. Cl. 329—137 **2 Claims**

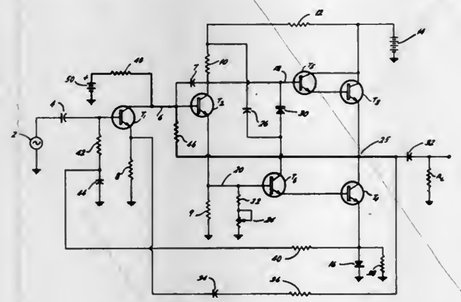


This invention relates to apparatus for providing a direct current output signal the magnitude of which varies in accordance with the frequency of an alternating current input signal. The invention is particularly useful for giving an indication when the frequency of an AC input signal deviates from a preselected value.

3,555,442
TRANSISTORIZED PUSH-PULL AMPLIFIER CIRCUIT UTILIZING DUAL BIAS SUPPLY

Earl P. Gardner, Philadelphia, Pa., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware

Filed May 12, 1969, Ser. No. 823,860
Int. Cl. H03f *3/26*
U.S. Cl. 330—15 **7 Claims**

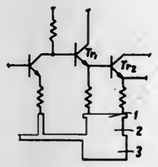


A direct coupled transistor audio amplifier comprising a phase-splitter stage and a push-pull output stage driven thereby, in which the phase-splitter transistor is biased both from a DC bias supply and the output of the output stage. A first resistor couples the base of the phase-splitter transistor to the output of the output stage and a second resistor, which preferably has a value about four times greater than that of the first resistor, couples the base of the phase-splitter transistor to the bias supply. By use of such biasing the phase-splitter transistor is maintained in Class A operation despite substantial variations in the amplitude of the input signal supplied thereto.

3,555,443
STRUCTURE OF INTEGRATED CIRCUIT

Masanobu Tsugita, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan

Filed Nov. 26, 1968, Ser. No. 779,058
Claims priority, application Japan, Nov. 29, 1967, 42/76,315
Int. Cl. H03f *3/11*
U.S. Cl. 330—38 **2 Claims**

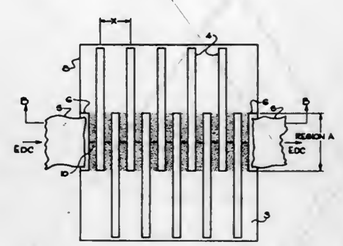


A cascade connected integrated circuit amplifier is described wherein the ground return circuits of distinct amplifier stages are selectively sized and shaped and interconnected to a ground pad to minimize feedback effects. The ground pad may be selectively located adjacent any stage with the ground return circuits correspondingly modified in cross-section to reduce feedback effects, whether these be negative or positive. Several embodiments are described.

3,555,444
HIGH POWER SOLID STATE MICROWAVE DEVICE

Marion E. Hines, Weston, Mass., assignor to Microwave Associates, Inc., Burlington, Mass., a corporation of Massachusetts

Filed Nov. 24, 1967, Ser. No. 685,611
Int. Cl. H03f *15/00*
U.S. Cl. 330—61 **2 Claims**

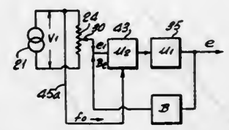


Solid-state microwave devices are disclosed which generate and amplify microwave energy at higher power levels than are attainable with prior types. In one embodiment of the invention a thin semiconductor sheet is biased to carry electric current along the surface. The surface is overlaid with a thin dielectric layer which is further overlaid with a mosaic pattern of narrow metallic stripes. Negative resistance effects, resulting in high frequency oscillation or amplification, occur through interaction of the moving electric charges with high frequency electric fields induced between the stripes.

3,555,445
STABILIZED HIGH POWER AMPLIFIER

Loebe Julie, Riverdale, N.Y., assignor to Julie Research Laboratories, Inc., New York, N.Y., a corporation of New York

Original application July 18, 1963, Ser. No. 297,177, now Patent No. 3,317,851, dated May 2, 1967. Divided and this application Dec. 27, 1966, Ser. No. 615,285
The portion of the term of the patent subsequent to May 2, 1984, has been disclaimed
Int. Cl. H03f *1/36*
U.S. Cl. 330—98 **4 Claims**



An electric amplifier system includes a preamplifier and a main amplifier. The preamplifier is controlled by the input frequency so that it amplifies only at that frequency. The main amplier is broadband. The system also includes a negative feedback circuit providing an error signal to the preamplifier.

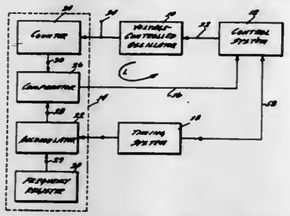
3,555,446
FREQUENCY SYNTHESIZER

Noel B. Braymer, Costa Mesa, Calif., assignor to Dana Laboratories, Inc., Irvine, Calif., a corporation of California

Filed Jan. 17, 1969, Ser. No. 791,912
Int. Cl. H03b *3/08*
U.S. Cl. 331—16 **14 Claims**

A frequency synthesizer is a means for producing a periodic, electrical signal at a frequency which is selected

numerically. The preferred form of frequency synthesizer produces a signal which is phase coherent with a fixed frequency, reference periodic signal. The signal is considered



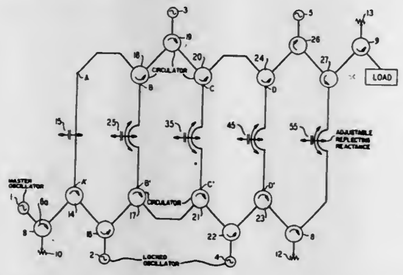
to be phase coherent if it produces N cycles during the time interval in which the reference signal computes M cycles. Both M and N must be integers, but may be large.

3,555,447

SIGNAL REFLECTOR AND CIRCULATOR NETWORKS FOR SYNCHRONIZING AND COMBINING THE OUTPUTS OF A PLURALITY OF OSCILLATORS

Murray D. Bonfeld, Allentown, and Louis F. Moose, Quakertown, Pa., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Dec. 18, 1968, Ser. No. 784,575
Int. Cl. H03b *3/06*
U.S. Cl. 331—55 **5 Claims**



A locked oscillator system is composed of a plurality of unit oscillators connected together by means including particularly adjusted signal reflectors. In one configuration, each reflector combines a previously generated output signal and a unit oscillator signal to produce a new and a larger output signal and a synchronizing signal for the next unit oscillator. In another configuration one set of reflectors splits a master locking signal into a number of synchronizing signals and a second set of reflectors combines the unit oscillator signals into one output power signal. Both configurations provide means for applying identical synchronizing signals to each unit oscillator and for combining the signals from all unit oscillators into a single microwave power source.

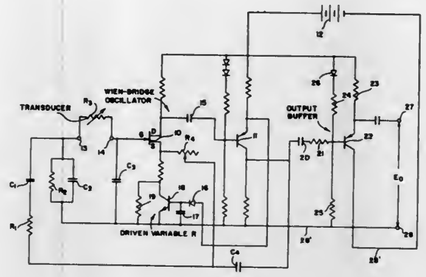
3,555,448

TRANSDUCER CONTROLLED VARIABLE FREQUENCY WIEN-BRIDGE OSCILLATOR

James W. Clarke, Jr., Plantation, and Worley C. Wilson, Jr., Fort Lauderdale, Fla., assignors to Data Research Corporation, Fort Lauderdale, Fla., a corporation of Florida

Filed June 3, 1969, Ser. No. 830,159
Int. Cl. H03b *5/26*
U.S. Cl. 331—65 **10 Claims**

The frequency selective bridge of a standard Wien-bridge oscillator is provided with an additional phase shifting network comprising a capacitor and a linearized transducer. The transducer exhibits impedance changes responsive to physical variations of a function being measured; and the overall circuit directly converts such transducer



impedance variations into a linear digital function in a computer compatible format without the use of a voltage driven analog-to-digital converter module.

3,555,449

LIQUID COOLED LASER SYSTEM

Thaddeus A. Osial, Penn Hills, and Kenneth B. Steinbruegge, Pittsburgh, Pa., assigors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Nov. 15, 1966, Ser. No. 594,548
Int. Cl. H01s *3/00*
U.S. Cl. 331—94.5 **11 Claims**

This invention relates to mountings for laser systems commonly known as laser heads and in one illustrative embodiment includes a laser rod and a pump lamp which are disposed within an enclosure. The enclosure presents a reflective surface to the laser rod and the pump lamp and is substantially filled with a cooling medium to provide a radiation path between the laser rod and the pump lamp free from optical reflections or refractions.

3,555,450

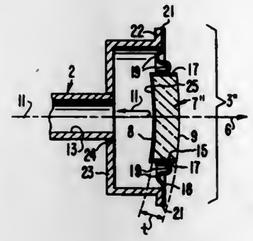
LASER WINDOW HAVING A METALLIC FRAME ARRANGED TO PERMIT POST OPTICAL GRINDING AND POLISHING

Albert M. Rockwell, Jr., Belmont, Calif., assignor, by mesne assignments, to Laser Associates, Bethel, Conn., a corporation of New York

Filed Jan. 22, 1968, Ser. No. 699,717
Int. Cl. H01s *3/02, 3/22*
U.S. Cl. 331—94.5 **5 Claims**

A gas laser having an improved output window is disclosed. The improved optical window includes an optically transparent dielectric window member hermetically sealed at its periphery to a metallic frame member which in turn is sealed to a gas-tight envelope of the laser. The metallic frame member is arranged and dimensioned relative to the window member to have an overall thickness which is less than the thickness of the window member, whereby the optical faces of the window member, as sealed into the

metallic frame, may be optically ground and polished without interference from the window frame member. In a preferred embodiment, the window frame member is made of sheet metal having a convolution therein for inhibiting transmission of stress through the frame member to the window member. In another embodiment of the



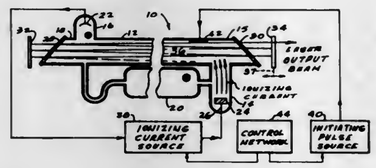
present invention, the window member has a concave surface facing into the gas envelope of the laser. The concave surface is coated with an optically reflective coating to form a partially reflecting mirror defining one end wall of the laser's optical resonator as well as the output optical window for the coherent beam of the laser.

3,555,451

LASER COLD CATHODE APPARATUS

Robert S. Witte, Redondo Beach, and Charles E. Wood, Woodland Hills, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio

Filed Mar. 28, 1968, Ser. No. 716,939
Int. Cl. H01s *3/02*
U.S. Cl. 331—94.5 **5 Claims**



This specification discloses a laser system made truly portable by the combination therein of a cold cathode providing high, direct current, electron flow for gas-ion laser pumping requirements. The cathode in the example shown may be a pellet of indium which is exposed to an electric field when emission is required.

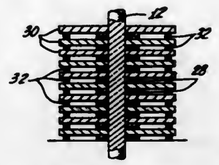
3,555,452

LASER APPARATUS

James W. Nielsen, Berkeley Heights, and Gerald C. Florio, Sr., Montclair, N.J., assignors to Litton Precision Products, Inc., San Carlos, Calif., a corporation of Delaware

Filed Oct. 2, 1967, Ser. No. 672,335
Int. Cl. H01s *3/00*
U.S. Cl. 331—94.5 **7 Claims**

A high efficiency, inexpensive, and mechanically simple laser device which operates at room temperature is presented. A plurality of annularly shaped luminescent diodes which radiate light energy at a frequency within the absorption band of a desired laser rod functions as an optical pump. Each of the annularly shaped diodes is stacked one on top of the other with each physically encircling the rod of laser material. Moreover, an annularly shaped cooling fin may be interposed between each diode in the stack to enhance the dissipation of heat. Each of the diodes is constructed of a mixture of gallium arsenide



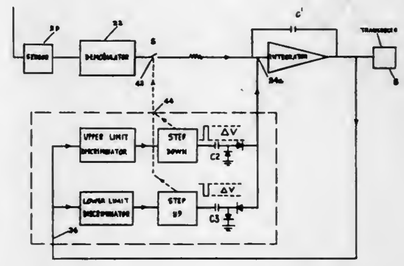
and gallium phosphide in relative mode proportions of 85% and 15% so that its radiation is readily absorbed by a neodymium yttrium aluminum garnet laser rod.

3,555,453

STABILIZATION OF LASERS OR THE LIKE

Raphael M. Littauer, Ithaca, N.Y., assignor to Lansing Research Corporation, Ithaca, N.Y.

Filed May 9, 1968, Ser. No. 727,889
Int. Cl. H01s *3/00;* **H01v** *7/00*
U.S. Cl. 331—94.5 **5 Claims**



A resonating device having frame end members between which a series of waves is reflected mounted on the frame, such as a laser, is provided with means responsive to relatively small variations in the length of the frame to apply voltage to a transducer which carries one of reflecting members so as to keep the spacing between the members constant at an integral multiple of one-half the wave length. Greater variations act to apply a different voltage to the transducer sufficient to cause it to shift the reflecting member by half a wave length or an integral number of half-wave lengths.

3,555,454

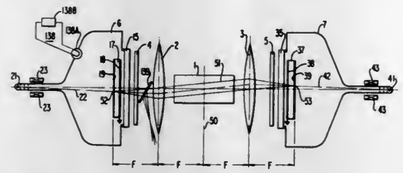
ELECTRON BEAM ADDRESSED DIGITAL SCANLASER

Robert A. Myers, New York, and Robert V. Pole, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed July 15, 1968, Ser. No. 745,003
Int. Cl. H01s *3/02*
U.S. Cl. 331—94.5 **13 Claims**

A scanlaser is a device for emitting a beam of coherent, laser radiation from a desired point or at a controlled angle of deflection. An optical resonator, capable of supporting a large number of transverse modes of oscillation driven by an associated active laser medium, is

controlled by an electron beam to allow oscillation only in chosen modes, thereby controlling the angle of beam deflection or position of beam emission. A polarizer and a birefringent plate are used as a biasing light attenuator to spoil all oscillatory modes, thereby preventing oscillation. The electron beam charges selected conductive, reflecting strips which create an electrostatic field in strip-

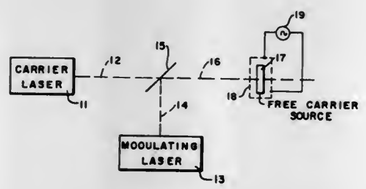


like regions of an electro-optic crystal. The field-influenced strip-like regions of the crystal are thus made birefringent to compensate for the birefringence of the plate, thereby reducing attenuation and allowing oscillation of electron-beam selected modes. External resistors to ground provide controlled leakage paths to reduce or control charge persistence in the conductive strips.

3,555,455
METHOD AND APPARATUS FOR OPTICAL MODULATING A LIGHT SIGNAL

T. O. Paine, Deputy Administrator of the National Aeronautics and Space Administration, with respect to an invention of Carl L. Gruber, Rapid City, S. Dak., and William E. Richards, Burtonsville, Md.

Filed Aug. 29, 1968, Ser. No. 756,260
Int. Cl. G02f *1/28;* **H01s** *3/00*
U.S. Cl. 331—94.5 **4 Claims**

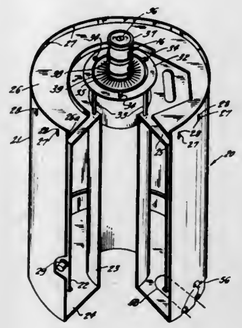


This disclosure describes a method and apparatus for optically modulating a light or microwave beam. The method comprises the steps of: generating a signal carrier light beam; directing said signal carrier light beam to a free carrier source that is normally transparent to said signal carrier bear; generating a modulating light beam, and directing the said modulating light beam to said free carrier source. The modulating light beam varies the transmission characteristics (transparency) of the free carrier source, thereby modulating the passage of the signal carrier light beam. The apparatus of the invention comprises a signal carrier light beam source, a modulating light beam source and a semiconductor free carrier source. Light beams from the signal carrier light beam source and from the modulating light beam source are directed onto the semiconductor free carrier source. The light from the modulating light beam source varies the transmission characteristics (transparency) of the semiconductor free carrier source to the light beam from the signal carrier light source, thereby modulating the signal carrier light beam. The transmission characteristics of the semiconductor free carrier source are varied by the creating of free carriers in it. The free carriers are created by the modulating light beam.

3,555,456
POWER OSCILLATOR

Jenoe Gross, Kew Gardens, N.Y., assignor to Solidyne, Inc., Brooklyn, N.Y., a corporation of New York

Filed Feb. 3, 1969, Ser. No. 795,866
Int. Cl. H03b *5/18*
U.S. Cl. 331—97 **9 Claims**



A stabilized high frequency power oscillator for heat sealing thermoplastic material is provided with a tank circuit constructed of three concentric conducting tubes. A conducting lower ledge connects the inner and outer tubes at their lower ends, while an upper conducting ledge connects the inner and intermediate tubes at their upper ends. An additional ledge extends inward from the outer tube, partially overlies the upper ledge, and is closely spaced with respect thereto. Fine tuning is achieved by controlling the spacing between the upper ledge and the additional ledge. The power oscillator tube is secured to the upper ledge and extends into the inner tube. The feedback loop in the control grid circuit extends through aligned apertures in the upper and additional ledges into the space between the two innermost tubes. The high voltage lead feeding the plate of the oscillator tube extends through other aligned apertures in the upper and additional ledges, through the space between the two innermost tubes, below the middle tube and outside of the tank, through an opening at the bottom of the outer tube. A plurality of insulators projecting outward from inward depressions in the middle tube rest against the inner surface of the outer tube to maintain the desired spacing between the outer and middle tubes.

ERRATUM

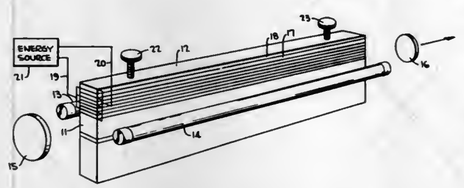
For Class 331—111 see:
Patent No. 3,555,469

3.555,457
MODULATED LASER DEVICE

Akira Fujisawa, Fort Belvoir, Va., assignor to the United States of America as represented by the Secretary of the Army

Filed Mar. 27, 1967, Ser. No. 626,669
Int. Cl. H01s *3/10*
U.S. Cl. 332—7.51 **1 Claim**

This invention is a modulated laser device wherein means are provided for subjecting the laser rod to a transverse forced vibration along its entire length. The transverse forced vibration affords a change in index of refrac-

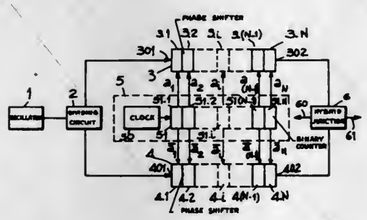


tion of the laser rod and this change in index of refraction alters the effective length of the cavity.

3,555,458
SIDE BAND GENERATOR

Paul Fombonne, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed Nov. 13, 1967, Ser. No. 682,243
Claims priority, application France, Nov. 24, 1966, 84,857
Int. Cl. H03c *1/52*
U.S. Cl. 332—44 **3 Claims**

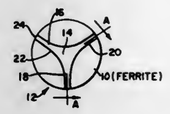


A side band generator providing two pairs of side bands in quadrature and comprising two phase shifters which are variable and controlled in a digital manner, and which phase shift, simultaneously and in opposite directions, each half of the energy of the high frequency wave carrier, the phase shift reaching 2π at the end of a period of the low frequency modulating wave.

3,555,459
GYROMAGNETIC DEVICE HAVING A PLURALITY OF OUTWARDLY NARROWING TAPERING MEMBERS

Ross Anderson, Berkeley, Calif., assignor to Western Microwave Laboratories, Inc., Los Gatos, Calif., a corporation of Virginia

Filed Nov. 21, 1968, Ser. No. 777,804
Int. Cl. H01p *1/16, 1/32*
U.S. Cl. 333—1.1 **29 Claims**

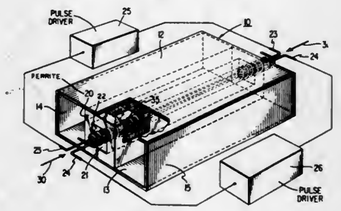


A wide band circulator or isolator device of the stripline or microstrip type which achieves a bandwidth exceeding one octave using standard polycrystalline ferrimagnetic materials, but which can achieve bandwidths up to and exceeding two octaves for certain configurations of the ferrite junction, or with a suitable mode suppressor. In the device, the inner conductor or circuit is planar and has a plurality of outwardly tapering legs each of which constitutes a port. Ferrimagnetic or gyromagnetic material is provided overlying a substantial portion of the circuit including at least substantially all of the portion thereof functioning as the input and output ports of the device. The energy in the device propagates along the edges thereof, and accordingly the edges are designed to be free of abrupt changes in order that there be no abrupt impedance changes in the circuit. Various methods of mode suppression for this device are provided including internally terminating one of the ports by an overlying layer of lossy material, and cutting slots through the ground plane in the same direction as the current flow of the desired mode of propagation.

3,555,460
ELIMINATION OF MODE SPIKES IN MICROWAVE FERRITE PHASE SHIFTERS

Norman R. Landry, Willingboro, N.J., assignor to RCA Corporation, a corporation of Delaware

Filed Mar. 27, 1969, Ser. No. 810,955
Int. Cl. H01p *1/32, 1/18*
U.S. Cl. 333—24.1 **4 Claims**

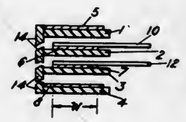


A typical microwave phase shifter includes, for example, a rectangular toroid of ferromagnetic or ferrimagnetic material mounted in the center of a rectangular waveguide with the toroid being biased by a magnetizing wire which passes through the center and along the length of the toroid. Elimination of mode spikes which result from this arrangement is provided by spiral wrapping a separate wire about the magnetizing wire.

3,555,461
ARTIFICIAL TRANSMISSION LINE FORMED BY COILING PLURAL LINE FOILS AND SHORTED SCREENING FOIL

Frank Ralph, John Llewellin Parmee, David Boswell, and Frederick Ronald Huntley, London, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

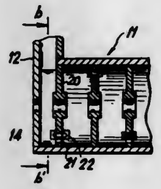
Filed Sept. 29, 1967, Ser. No. 671,772
Claims priority, application Great Britain, Sept. 30, 1966, 43,821/66
Int. Cl. H01p *3/08, 9/00*
U.S. Cl. 333—31 **2 Claims**



A wound up low inductance artificial line is formed by depositing resistive films on dielectric material which

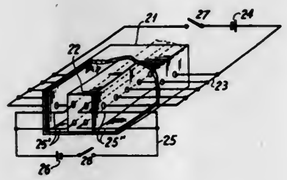
is then wound up, like a roll-type capacitor, with a screening conductor between each adjacent turn of the roll. Each turn of the screening conductor is short-circuited to eliminate its inductance. The screening conductor may be another resistive film on a dielectric web.

3,555,462
WAVEGUIDE-SLOW WAVE STRUCTURE IMPEDANCE MATCHING DEVICE
Toshinori Horigome, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Nov. 17, 1967, Ser. No. 683,973
Claims priority, application Japan, Nov. 17, 1966, 41/75,608
Int. Cl. H03h *7/30*
U.S. Cl. 333—31 **2 Claims**



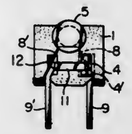
An impedance matching device for matching a loaded waveguide type slow-wave structure and an external waveguide divided by a partition wall including a coupling slot coupling loop pair in the partition wall, the dimensions of the coupling loop being varied to vary the impedance.

3,555,463
RECIPROCAL MICROWAVE PHASE SHIFTER HAVING A PLURALITY OF LONGITUDINAL AND TRANSVERSE ENERGIZING CONDUCTORS PASSING THROUGH THE FERRIMAGNETIC MATERIAL
Naoyuki Ogasawara, Tadashi Hashimoto, Mitsuru Sugie, and Hiromi Nomura, Tokyo, Japan, assignors to TDK Electronics Co., Ltd., and Nippon Electric Company, Limited, both of Tokyo, Japan, and both corporations of Japan
Filed Oct. 17, 1968, Ser. No. 768,408
Claims priority, application Japan, Oct. 21, 1967, 42/67,689
Int. Cl. H01p *1/18*
U.S. Cl. 333—31 **11 Claims**



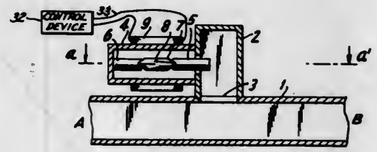
A reciprocal microwave phase shifter is described wherein a ferrimagnetic material is disposed along an electromagnetic energy guiding path. The ferrimagnetic material is provided with longitudinal and transverse oriented bores to accommodate correspondingly oriented conductors which are so interconnected and energized to form the desired reciprocal phase shifting performance.

3,555,464
COMPACT LCR COMPONENT AND METHOD OF MAKING
Tsutomu Maeda, Kiyoshi Watanabe, Tadaharu Akino, Eiitsu Ito, and Hisashi Osada, Tokyo, Japan, assignors to TDK Electronics Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Aug. 7, 1969, Ser. No. 848,224
Int. Cl. H03h *5/06;* **H03f** *15/02, 15/10*
U.S. Cl. 333—70 **3 Claims**



An electric composite component comprising a dielectric base plate having a cut-off part at an edge and at least a pair of projections at the other edge, an inductance element of a drum-shaped magnetic core with a coil in its intermediate groove and mounted to the plate at the cut-off so as to receive plate edges in the groove, and a condenser element of electrode plates respectively on each surface of the plate between the cut-off and projections. Each of lead wires of the coil is led over each condenser electrode on each plate surface to each of the projections and wound up thereto. A method of producing the component includes steps of applying a solder layer to the lead wires where contacting electrodes after removing insulation coating, preheating elements, and dipping the whole in a melted solder bath so as to simultaneously solder the contacting points of lead wires and electrodes.

3,555,465
MICROWAVE SWITCHING DEVICE EMPLOYING A REED SWITCH ELEMENT
Takaji Kuroda, Yoshimi Tagashira, and Hideo Nomura, Tokyo, Japan, assignors to Nippon Electric Company, Limited, Tokyo, Japan, an organization of Japan
Filed July 23, 1968, Ser. No. 746,821
Claims priority, application Japan, July 25, 1967, 42/48,316
Int. Cl. H01p *1/10, 1/20, 7/04*
U.S. Cl. 333—73 **9 Claims**



A microwave tuning circuit is described wherein a coaxial resonator which is electromagnetically coupled to the microwave circuit has an axial tuning element. The tuning element utilizes a series connected reed switch for electromagnetically controlling the resonator frequency and thereby the frequency response of the microwave circuit.

3,555,466
CAPACITIVE-INDUCTIVE NETWORK
Howard Bernstein, New York, N.Y., assignor to Bel Fuse Inc., Jersey City, N.J., a corporation of New Jersey
Filed July 21, 1967, Ser. No. 655,207
Int. Cl. H03h *7/10*
U.S. Cl. 333—76 **3 Claims**

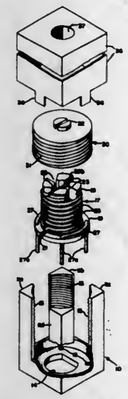
A miniaturized space-saving capacitive-inductive network including a toroidal support of non-conductive material on the opposite sides of which is disposed a pair

of metallicized surfaces, which, together with the toroidal support function as a capacitor. A conductor is wound through the central aperture of the toroidal support and



about the ring portion thereof to simultaneously function as an inductor. By electrically connecting one of the pair of metallicized surfaces to the conductor of the inductor a lumped capacitance may be provided.

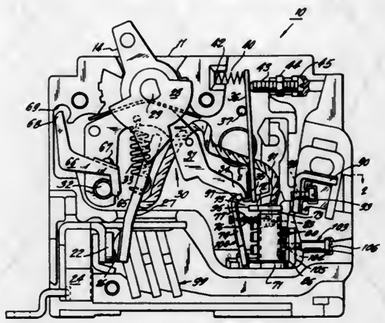
3,555,467
HELICAL COIL RESONATOR HAVING MOVABLE DIELECTRIC TUNING ELEMENT FOR VARYING CAPACITANCE
Brian K. A. Johnson, Lynchburg, Va., assignor to General Electric Company, a corporation of New York
Filed Mar. 19, 1969, Ser. No. 808,477
Int. Cl. H03j *3/20*
U.S. Cl. 334—78 **8 Claims**



A helical coil resonator is wound on a dielectric bobbin having a platform with a mounting portion. Coupling loops are positioned on the platform and inductively coupled to the coil. Four threaded posts on a base form a receptacle. An opening in the base is arranged to receive the platform mounting portion. After the coil is wound on the bobbin, and the coupling loops are mounted on the platform, the bobbin is mounted on the base with the mounting portion positioned in the base opening. A cup-shaped dielectric tuning element is threaded in the receptacle for movement toward and away from the coil, and a metallic can is positioned around the posts. The capacity between the coil and the can, and hence the resonant frequency of the resonator, is varied by moving the tuning element relative to the coil.

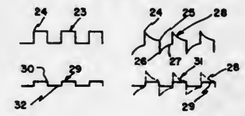
3,555,468
COMBINED THERMAL-MAGNETIC TRIP MEANS FOR CIRCUIT BREAKERS
Felix E. Myers, Cherry Hill, N.J., assignor to I-T-E Imperial Corporation, a corporation of Delaware
Filed Sept. 2, 1969, Ser. No. 854,706
Int. Cl. H01h *75/10*
U.S. Cl. 335—36 **10 Claims**

A circuit breaker for protection at relatively low current values, and having both thermal and magnetic trip means, is provided with a directly heated thermal element which upon deflection thereof reduces the width of the



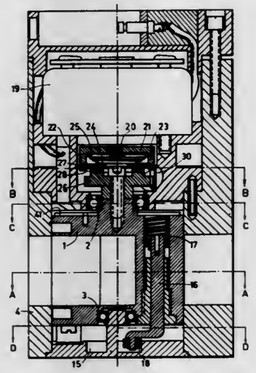
magnetic system air gap to a point at which the magnetic system is effective to unlatch the circuit breaker contact operating mechanism.

3,555,469
WIDE RANGE VOLTAGE CONTROLLED OSCILLATOR
Dyas N. Harvey, Jr., Gardena, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Aug. 13, 1968, Ser. No. 752,278
Int. Cl. H03k *3/26*
U.S. Cl. 331—111 **4 Claims**



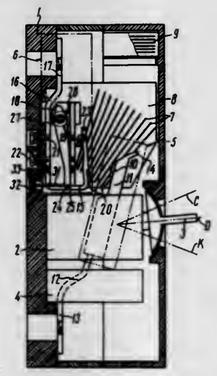
A voltage controlled oscillator (VCO) for producing square waveforms over a wide, linearly controlled frequency range. The VCO comprises a comparator having a noninverting feedback loop, an inverting feedback loop, and a signal output. There is a resistor in the noninverting feedback loop and a differentiator in the form of a capacitor in the inverting feedback loop. The noninverting and-inverting feedback loops connect the signal output with respective inputs to the comparator and a series resistor and variable resistor are positioned between the two loops to regulate oscillation frequency. A point between the resistor and variable resistor is adapted to be grounded. When the square wave produced by the comparator passes through the resistor in the noninverting feedback loop a diminished reference signal is produced; when the square wave passes through the differentiator in the inverting feedback loop, the waveform decays and a differentiated square wave is produced. The differential square wave and the reference signal are compared in the comparator and when the two signals cross at a common voltage the square wave produced by the comparator is triggered in the reverse direction causing oscillation to occur. This simplified circuit can be linearly controlled over a tuning range of several octaves.

3,555,470
DAMPING DEVICE IN ELECTRIC SWITCHES
Rolf Johansson, Skarholmen, Sweden, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 4, 1969, Ser. No. 796,411
Claims priority, application Sweden, Feb. 16, 1968, 2,080/68
Int. Cl. H01h *51/08*
U.S. Cl. 335—138 6 Claims



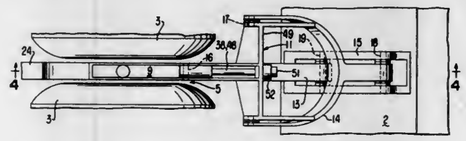
A device for the high speed actuation of electrical switches by releasing an energy absorbing spring from a bowed position to engage a rotatable abutment during the stepping operation and using a spring loaded cylindrical follower in a square guide having corners located at predetermined angular positions to lock the switch after the stepping operation has been complete.

3,555,471
AUTOMATIC BREAKER WITH COIL ADJUSTABLE TO EFFECT CURRENT LIMITING OR ELECTRODYNAMIC BLOWOFF COMPENSATION
Gennady Feodosievich Mitskevich, Vladislav Yakovlevich Guschin, Jury Nikolaevich Vorontsov, Vladimir Avramovich Boguslavsky, Anatoly Mikhailovich Bela-Belov, Viktor Izrailevich Rakhlis, Viktor Revoldovich Oktyabrev, Oleg Ivanovich Artsybashev, and Fedor Andreevich Vakhomchik, Kharkov, U.S.S.R., assignors to Vsesojuzny Nauchno-Issledovatelsky I Proektno-Konstruktorsky Institut Electroapparatov, Kharkov, U.S.S.R.
Filed Feb. 28, 1968, Ser. No. 709,101
Int. Cl. H01h *77/10*
U.S. Cl. 335—195 10 Claims



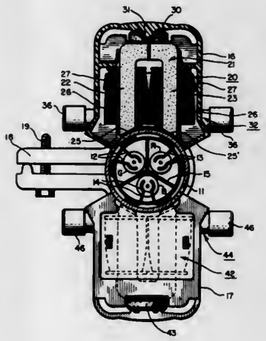
An automatic breaker includes a movable contact system and a stationary contact system operatively associated with one another. The stationary contact system is constituted as a series coil having both a movable and stationary member. The stationary member is adjustably supported so that it can be turned 180° from a first position to alter the electrodynamic forces exerted by the stationary member on the movable member. In this respect the stationary member when in the first position constitutes the series coil as a current limiter and when turned 180° therefrom constitutes the series coil as a compensator.

3,555,472
MAGNET EMPLOYING PROBE POSITIONING MEANS PIVOTABLE INTO THE GAP
William O. Reeser, Jr., Fremont, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Filed July 17, 1969, Ser. No. 842,500
Int. Cl. H01f *7/00*
U.S. Cl. 335—210 5 Claims



A magnet is disclosed having a probe positioning structure for swinging a probe into and out of the gap of the magnet. The probe positioning structure is in the general configuration of a four sided structure pivotably joined at the four corners of an imaginary parallelogram. The probe is carried from one side and the opposed side is fixed such that a constant reference direction for the probe is maintained as it is swung in and out of the gap. A dampener dampens movement of the probe at the limits of its movement. A rack-and-pinion and a screw, operable from outside the gap via concentric independent control shafts, permit horizontal and vertical adjustments of the probe position.

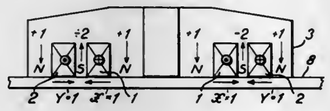
3,555,473
CONVERGENCE APPARATUS
Raymond C. Figlewicz, Park Ridge, and Victor J. Karhan, Glenview, Ill., assignors to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware
Filed July 7, 1969, Ser. No. 839,491
Int. Cl. H01f *1/00*
U.S. Cl. 335—212 4 Claims



An electron beam convergence apparatus for a multibeam color reproducing cathode-ray tube which has pole piece pairs individually flanking the path of at least two

of the three beams, includes a core of magnetic material having a pair of spaced legs each of which is supported adjacent an assigned pole piece. A permanent magnet is magnetically coupled to the core for simultaneously and symmetrically subjecting the two electron beams to equal and opposite horizontal static convergence deflection field components. An additional magnet, which is magnetically isolated from the core, is provided for simultaneously and symmetrically subjecting the two beams to equal and opposite vertical static convergence deflection field components, but without affecting the horizontal components.

3,555,474
LIFTING MAGNET FOR SHEET-FORMED OBJECTS OF MAGNETISABLE MATERIAL
Jorgen Marcher, Soborg, Denmark, assignor to H. Nielsen & Son Maskinfabrik A/S, Aldersrogade, Copenhagen N., Denmark
Filed Apr. 29, 1969, Ser. No. 820,172
Claims priority, application Great Britain, May 14, 1968, 22,934/68
Int. Cl. H01f *7/20*
U.S. Cl. 335—289 2 Claims



Lifting magnets having an intermediate pole of magnetizable material which is inserted between two coaxial magnetic coils. Each of the coils has substantially the identical number of ampere turns. The lifting magnet has a relatively high carrying capacity when the two coils are fed with current which permits the magnet to lift a single thin sheet from a stack of sheets of magnetizable material.

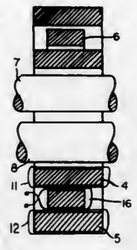
3,555,475
PERMANENTLY-MAGNETIC BALL WITH MULTIPLE POLARITY DISTRIBUTED OVER ITS SURFACE
Harry Szczepanski, 755 Oakleigh NW., Grand Rapids, Mich. 49504
Filed Mar. 25, 1968, Ser. No. 715,868
Int. Cl. H01f *7/02*
U.S. Cl. 335—306 2 Claims



A permanently magnetic ball having multiple polarity distributed over its surface so that each pole is most closely surrounded by opposite polarity.

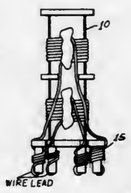
3,555,476
LEAKAGE CURRENT SENSOR
Michael B. Brenner, Wilkinsburg, Pa. (1100 Penn Center Blvd., Pittsburgh, Pa. 15235), and Iain Weir-Jones, Apt. 911, Rockview Towers, 1250 Ramsey View Court, Sudbury, Ontario, Canada
Filed Oct. 4, 1968, Ser. No. 765,750
Int. Cl. H01f *15/04, 27/28*
U.S. Cl. 336—73 4 Claims

A leakage current sensor for detecting leakage currents to ground from the conductors of an electrical network having one or more phases, such as due to insulation deterioration, is provided wherein a first magnetic core surrounds the conductors and has one or more windings for current detection and initial premagnetization. A second magnetic core, also surrounding the conductors of



the network, is located between the first, detection core and the conductors to shield against stray flux from the conductors. Preferably, also, a third magnetic core surrounds the detection core to shield against external stray fluxes. Both the second and third, or inner and outer, cores are shunted, i.e., have shorted turns therearound.

3,555,477
ELECTRICAL INDUCTOR AND METHOD OF MAKING THE SAME
Albert R. Hildebrandt, Cincinnati, Ohio, assignor to Standard International Corp., Cincinnati, Ohio, a corporation of Ohio
Filed Jan. 21, 1969, Ser. No. 792,328
Int. Cl. H01j *15/10*
U.S. Cl. 336—192 5 Claims

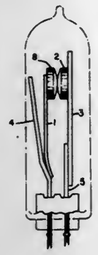


An electrical component comprising a coil form composed of a coil cage with a wound coil thereabout, and a base plate having mounting feet for insertion into a circuit board, and characterized by the feature that each coil termination is wound about a different foot and a solder coating is applied thereto to bond the individual turns to one another forming a solid metallic cylinder around said feet; and the method of making same.

3,555,478
CIRCUIT BREAKER
Philip J. Dennis, Lynn, Mass., assignor to Sylvania Electric Products Inc., a corporation of Delaware
Filed Apr. 25, 1968, Ser. No. 724,211
Int. Cl. H01h *37/04, 37/52, 61/013*
U.S. Cl. 337—89 9 Claims

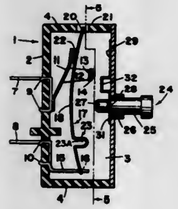
A glass enclosed control device comprising a contact plate and a metallic snap-action element capable of open-

ing an electrical circuit upon thermal or current overload. The snap element is fastened to a pair of lead-in wires



which limit the gap distance between the snap element and the contact plate, when the element snaps open.

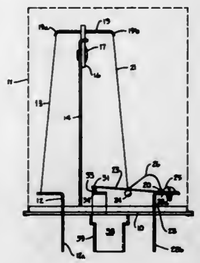
3,555,479
CIRCUIT BREAKER CONSTRUCTION
Melvin W. Polkinghorn, Livonia, Mich., assignor, by mesne assignments, to Essex International, Inc., Fort Wayne, Ind., a corporation of Michigan
Filed Sept. 8, 1967, Ser. No. 666,414
Int. Cl. H01h *37/54, 37/70*
U.S. Cl. 337—91 **16 Claims**



A circuit breaker having a bimetal conductor normally in bridging engagement with two spaced contacts and being responsive to the presence of a current therein in excess of a predetermined value to move out of bridging engagement with the contacts, the conductor incorporating spring means enabling such movement of the conductor and restraining return movement of the conductor into bridging engagement with the contacts. A manipulatable reset member is provided to restore the bimetal conductor to its normal position and incorporates apparatus for preventing bridging engagement between the conductor and the contacts until such time as the reset member disengages the conductor.

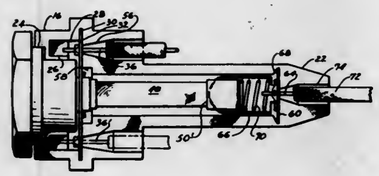
3,555,480
SEQUENTIAL FLASHER CONTROL SWITCH
Cleon F. Frey, Sebastian, Fla., assignor to International Flasher Corporation, Bayamon, Puerto Rico, a corporation of Puerto Rico
Filed May 5, 1969, Ser. No. 821,838
Int. Cl. H01h *61/06, 71/18*
U.S. Cl. 337—140 **1 Claim**

A "hot-wire" type thermally responsive flasher switch having a plurality of sequentially closed switch contacts. A teeter plate having a central, pivotal mounting and having the thermally responding members or wires attached to each of its two free ends permits an amplification of the work output of the thermally responding component within the confined space of the flasher switch housing so



as to permit reliable, sequential actuation of the multiple switch contacts.

3,555,481
HOLDERS FOR CARTRIDGE FUSE PROTECTORS FOR ELECTRIC CIRCUITS
Christopher B. Boone, 21 Station Square, Bergenfield, N.J. 07621
Filed May 23, 1969, Ser. No. 836,192
Int. Cl. H01h *85/20*
U.S. Cl. 337—187 **5 Claims**



A screwless terminal fuseholder for attaching wire leads without soldering or other connectors. The fuseholder comprises a hollow elongated casing of non-conductive material. A contact plate formed with resilient clinching tongues for clinching wire leads is mounted in one end of the casing. The contact plate has an opening through which extends a ferrule for removably holding one end contact cap of a cylindrical fuse. Another contact plate, likewise provided with resilient clinching tongues for clinching wire leads is mounted in the other end of the casing. This other contact plate is provided with an integral semi-cylindrical contact extension for receiving the other end cap of the fuse. A coil spring in the extension holds the fuse in firm engagement with the ferrule and the contact extension.

3,555,482
BIMETALLIC STRIP THERMOSTAT
Dale H. Callihan, Huron, Ohio, assignor to Norwalk Thermostat Company, Norwalk, Ohio, a corporation of Ohio
Filed Apr. 14, 1969, Ser. No. 815,863
Int. Cl. H01h *37/20, 37/52*
U.S. Cl. 337—360 **7 Claims**

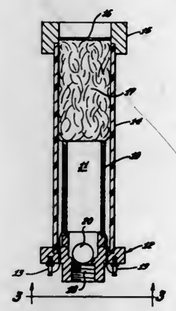
A bimetallic strip thermostat having a mounting of two abutments on opposite major faces of the strip and spaced longitudinally of each other. A resilient hold-down

element engages the strip in registry with one of the abutments and on the opposite face thereof from that engaged



by the abutment to sustain the strip with a free end remote from the abutments adapted to be displaced thermally.

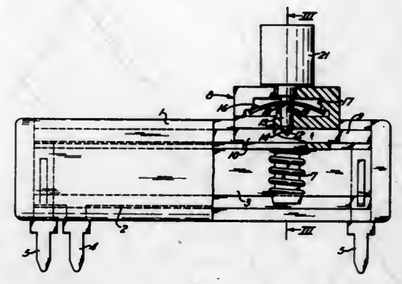
3,555,483
CRYOGENIC LIQUID SENSOR
Wallis M. Tener, Altadena, Calif., assignor to California Institute of Technology, Pasadena, Calif., a corporation of California
Filed Sept. 3, 1968, Ser. No. 757,017
Int. Cl. H01c *7/00;* **G01f** *23/24*
U.S. Cl. 338—25 **5 Claims**



A sensor unit for use in conjunction with a cryogenic vessel is provided, and which may be used to respond selectively to the presence of a liquid in a two phase gas/liquid flow, such as the overflow from a cryogenic vessel vent or cryogenic transfer tube. The sensor may be used to trigger relays and solenoid operated valves, so as to shut off the supply to the vessel when the cryogenic liquid starts to overflow. The unit includes an electric resistance wire element which is wound on a porous tubular support member. The electrical resistance of the wire element decreases to provide a desired electrical control effect when the porous tubular support member becomes saturated with the cryogenic liquid. However, the resistance of the wire element is relatively unaffected by cold gases passing through the tubular support member since it is thermally insulated from such gases by the support member in its unsaturated condition.

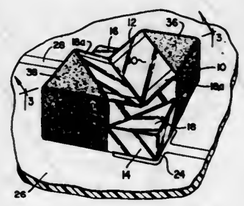
3,555,484
FINE ADJUSTMENT VARIABLE RESISTOR
Mogens W. Bang, Ridgway, Pa., assignor to Stackpole Carbon Company, St. Marys, Pa., a corporation of Pennsylvania
Filed May 16, 1969, Ser. No. 825,163
Int. Cl. H01c *9/00*
U.S. Cl. 338—183 **11 Claims**

A slide is disposed in a longitudinal slot in one wall of a case, in which there are parallel resistance and collector elements. The slide carries a bridging contact engaging both elements, and is provided with a passage extending inwardly at least as far as the slot. Rotatably mounted in this passage is a shaft, the inner end of which is pressed against the case at only one side of the slot. A knob on



the outer end of the shaft turns it so that the friction of the shaft against the case will cause the slide to move along the slot.

3,555,485
THIN FILM RESISTOR
Benjamin Solow, North Hollywood, Calif., assignor to Angstrohm Precision, Inc., Van Nuys, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 678,330, Oct. 26, 1967. This application Mar. 27, 1969, Ser. No. 810,995
Int. Cl. H01c *1/02*
U.S. Cl. 338—252 **6 Claims**

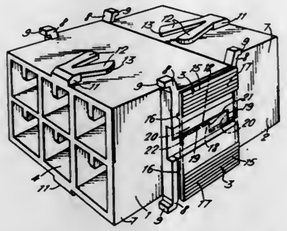


A resistive film is deposited in a groove formed in an appropriate substrate and a pair of terminal portions formed on this substrate are connected to respective opposite ends of the film and are especially adapted to interconnect the resistor in printed or etched circuits. A protective material can be provided over the film to prevent contamination. The value of resistance is adjustable by grinding or otherwise removing a portion of the film at the upper edges of the groove, until the desired value is achieved.

3,555,486
ELECTRICAL CONNECTORS
Wladimiro Teagno, Turin, Italy, assignor, by mesne assignments, to AMP Incorporated, Harrisburg, Pa.
Filed Sept. 22, 1969, Ser. No. 859,651
Claims priority, application Italy, Sept. 23, 1968, 21,566/68
Int. Cl. H01r *25/00, 25/06, 13/54*
U.S. Cl. 339—47 **7 Claims**

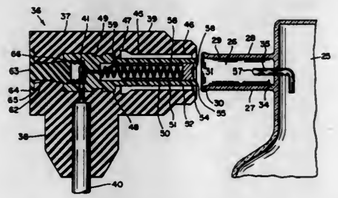
A hermaphrodite connector block has a pair of lateral flaps hinged on axes parallel to the mating direction. Each

flap has a sharpened leading edge so that on engagement of a pair of housings sharp leading edges abut and deflect



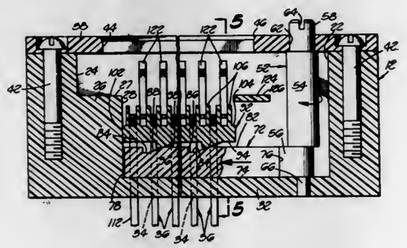
arbitrarily inwards or outwards. Blocks can be released by manual pressure on the flaps of either housing.

3,555,487
HIGH VOLTAGE CONNECTOR
Norman F. Jones, Amherst, N.H. 03031
Filed Apr. 17, 1969, Ser. No. 816,976
Int. Cl. H01r *3/04, 13/48*
U.S. Cl. 339—60 **6 Claims**



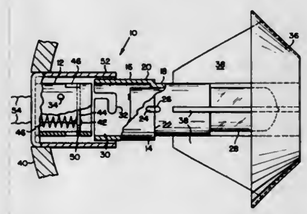
A firm, sealed, electrical connection with a contact pin, encircled by a fragile tubulation on a vacuum tube envelope, is obtained with a right angular, high voltage connector having a silicone rubber cable molded into one leg and having the other leg formed with an inner and outer insulative sleeve slidably mating with the tubulation. A spring-pressed brass plunger within the inner Teflon sleeve engages the contact pin.

3,555,488
PRINTED CIRCUIT BOARD CONNECTOR
William McIver, West Monroe, La., and Charles F. Brickell, Fullerton, Calif., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware
Filed May 8, 1969, Ser. No. 823,006
Int. Cl. H01r *13/54*
U.S. Cl. 339—75 **5 Claims**



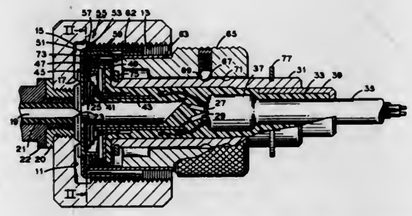
The disclosure relates to a cam actuated printed circuit board connector. The connector contains an opening therethrough for insertion of a printed circuit board. A cam is provided for driving a plate member in a horizontal direction. Movement of the plate member causes a vertical actuating member to move in a vertical direction perpendicular to the diretcion of the plate member. Vertical movement of the actuating member causes the connector contacts to move into initimate contact with the printed circuit board pads.

3,555,489
SEPARABLE LAMP SOCKET
Donald J. Brickle, Pittsford, and James A. Burling, Rochester, N.Y., assignors to Sybron Corporation, a corporation of New York
Filed Sept. 17, 1968, Ser. No. 760,205
Int. Cl. H01r *13/54*
U.S. Cl. 339—88 **6 Claims**



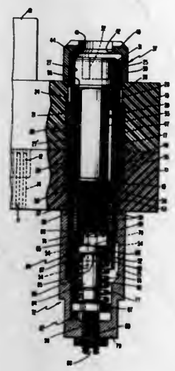
A separable socket and lamp shield for bayonet type bulbs or the like including a pair of separable elements, one element containing spring biased electrical terminals and the second element being adapted to slidably receive and retain the bayonet bulb wherein the second element acts as a shield to prevent direct contact with the bulb and as a handle to facilitate connection of the separable elements against the bias of the electrical terminals.

3,555,490
LATCH TYPE PYROTECHNIC DETONATOR CIRCUIT TEST PROBE
Robert A. Williams, 4800 Wedgeway Drive, Apt. 204, Fort Worth, Tex. 76133
Continuation-in-part of application Ser. No. 756,085, Aug. 14, 1968. This application Nov. 21, 1968, Ser. No. 777,674
Int. Cl. H01r *13/24, 17/18, 33/14*
U.S. Cl. 339—91 **10 Claims**



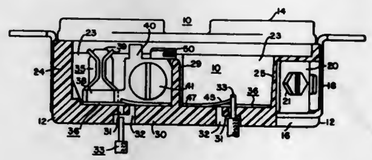
A test probe apparatus having electrical contacts for detecting electrical energy in breech caps or pyrotechnic cartridge wells that in operation carry an explosive for dischaging weapons, the apparatus including latch elements for securing the probe. The latch elements have radially extending fingers mounted on an axially extending base, and are adapted to extend through elongated apertures in an extremity of a shell carried on one end of the probe. The fingers are actuated by a movable sleeve having a portion inside the shell for movement between forward and rearward positions to selectively move the fingers outward for engaging a thread relief groove or equivalent.

3,555,491
ELECTRICAL CONNECTOR
Edward M. Moss, Unadilla, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
Filed Mar. 20, 1969, Ser. No. 808,776
Int. Cl. H01r *13/54*
U.S. Cl. 339—92 **12 Claims**



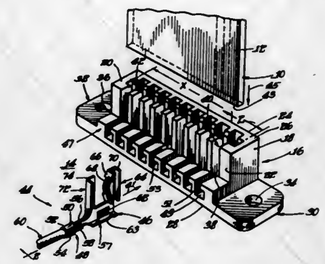
Screw means to secure together the main parts of a separable electrical connector which carry mating electrical contacts. The securing means includes a screw rotatable in a first connector part, said screw threadedly engaging a nut which is rotatably mounted in the other connector part. Means is provided normally to restrain the nut from rotation with respect to the said other connector part but to release the nut for rotation with the screw when the screw has tightened the connector parts together with a predetermined desired force.

3,555,492
COMBINATION TERMINAL WIRING DEVICE
Clarence M. Smith, Trumbull, Conn., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 623,653, Mar. 16, 1967. This application Nov. 13, 1969, Ser. No. 876,388
Int. Cl. H01r *9/08*
U.S. Cl. 339—95 **5 Claims**



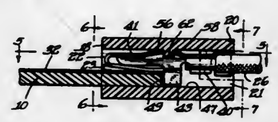
A female electrical outlet, such as a standard duplex wall receptacle, provided with quick-wiring terminals and conventional screw-type wiring terminals. This is accomplished by placing the quick-wiring terminal, in the form of a flat piece of spring metal, on the bottom inside surface of a regular terminal pocket or chamber provided in the base portion of the insulating receptacle housing. The spring metal is provided with a wire gripping or clamping edge disposed immediately above an opening provided in the bottom wall structure of the base portion thereby providing quick-wiring access to the quick wire terminal. The quick-wiring terminal is held in place in the terminal pocket by a conventional screw-type terminal structure disposed in the pocket and over the spring metal clamp.

3,555,493
RIGHT ANGLE PRINTED CIRCUIT BOARD CONNECTOR
Bruno Baumanis, River Forest, Ill., assignor to Molex Products Company, Downers Grove, Ill., a corporation of Illinois
Filed Mar. 25, 1968, Ser. No. 715,720
Int. Cl. H01r *13/50*
U.S. Cl. 339—176 **12 Claims**



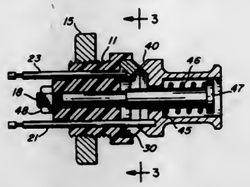
A right angle, edge-type printed circuit board connector including a housing having a first wall with a plurality of spaced-apart apertures therein and a second wall at right angles to said first wall having an elongated opening therein which communicates with the spaced-apart apertures within said housing. A plurality of snap-in terminal members is provided, certain ones thereof to be inserted into predetermined ones of the spaced-apart apertures. Each of the terminal members includes a bowed, slotted contact strip. A printed circuit board is inserted into the elongated opening whereby certain ones of the printed conductors of the board make contact with the contact strips of terminal members placed in correspondingly located ones of the spaced-apart apertures.

3,555,494
PRINTED CIRCUIT BOARD CONNECTOR
Bruno Baumanis, River Forest, Ill., assignor to Molex Products Company, Downers Grove, Ill., a corporation of Illinois
Filed Mar. 25, 1968, Ser. No. 715,710
Int. Cl. H01r *13/42*
U.S. Cl. 339—176 **5 Claims**



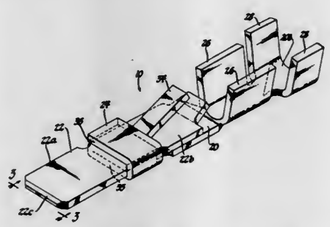
A printed circuit board connector including a housing having therein and extending partially therethrough, a first elongated aperture for receiving a printed circuit board, and a plurality of separate, second apertures which communicate with the first aperture. A plurality of terminal members each including a reversely bent, resilient, slotted contact strip, is received in predetermined ones of the second apertures in snap-in fashion; the resilient contact strip extending into the first aperture to contact the printed conductors of the printed circuit board upon the insertion of the latter into the first aperture. The terminal member further includes a pair of side portions upon which the former rests, partially on ledges extending into the second apertures as well as on the floor of the housing. The side portions also protect the free end of the contact strip from becoming entangled in foreign objects.

3,555,495
BINDING POST
William O. Christianson, Litchfield Park, Ariz., assignor, by mesne assignments, to Unidynamics/Phoenix, Goodyear, Ariz., a corporation of Delaware
Filed Feb. 12, 1969, Ser. No. 798,685
Int. Cl. H01r 7/28
U.S. Cl. 339—203 5 Claims



A pair of electrically conducting rings are spring-urged into contact with each other. A conducting post is connected to each of the rings; each post extends through a rigid body member of insulating material. The conducting posts are thus insulated from each other to insure that electrical connection between external conductors connected thereto, is made only at the conducting rings.

3,555,496
MALE CONNECTOR TERMINAL AND INSULATOR
Warren Pearce, Jr., and James L. Winger, Warren, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 26, 1969, Ser. No. 827,521
Int. Cl. H01r 9/00
U.S. Cl. 339—217 4 Claims



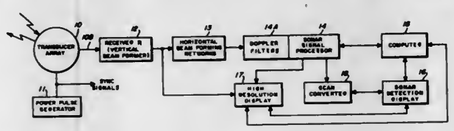
In a preferred form, this disclosure relates to an electrical connector means comprising a male spade terminal and associated insulator body. The spade terminal is a one-piece metal member of relatively thin gauge stock and has a main body portion, a terminal portion, and a wing portion, the latter two portions being integral with the main body portion along its sides. The terminal portion is adapted to be folded over and across the main body portion and the wing portion is adapted to be folded over and across the terminal portion whereby the terminal portion is disposed between the other two portions. The body and wing portions at their forward ends define stop surfaces and the wing portion has a locking tang extending transversely thereto. The insulator body has a central through opening, a pair of guide channels of a given depth adjacent its forward end and a pair of guide channels of a larger depth adjacent its rearward end. The insulator body also has a first pair of abutment surfaces at the juncture of the different depth guide channels and a second pair of abutment surfaces spaced rearwardly from the first pair of abutment surfaces and extending inwardly into the opening. The spade terminal when inserted into the insulator body is guided and held against rotation by the guide channels and is held against longitudinal movement relative thereto as a result of the stop surfaces on the terminal being engageable with the first pair of abutment surfaces and the locking tang being engageable with one of the second pair of abutment surfaces.

3,555,497
ELECTRICAL CONTACT MEMBER
Takashi Watanabe, Hamamatsu-shi, Japan, assignor to Kabushiki Kaisha Kawai Gakki Seisakusho, Hamamatsu-shi, Shizuoka-ken, Japan
Filed Aug. 29, 1968, Ser. No. 756,238
Claims priority, application Japan, Sept. 2, 1967, 42/56,270
Int. Cl. H01r 13/12
U.S. Cl. 339—258 1 Claim



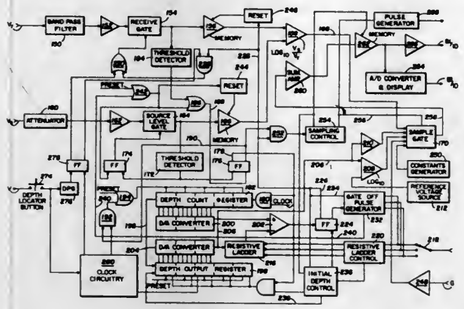
An electrical contact member which is punched from a rolled sheet having a thick longitudinal section and an adjacent thin longitudinal section, the thick section forming a terminal portion on which a lead wire can be wrapped while the thin section forms a contact portion. The contact portion is bent to form a loop, and in the event that a pair of opposed contact portions are to be formed, they in turn are bent relative to the terminal portion such that their loops face one another.

3,555,498
SONAR PROCESSOR AND DISPLAY CIRCUITS
Robert G. Nye, Joseph J. Marciano, William E. Klund, and Roger H. Prager, San Diego, Calif., assignors to the United States of America as represented by the Secretary of the Navy
Filed Nov. 12, 1963, Ser. No. 323,549
Int. Cl. G01s 9/68
U.S. Cl. 340—3 6 Claims



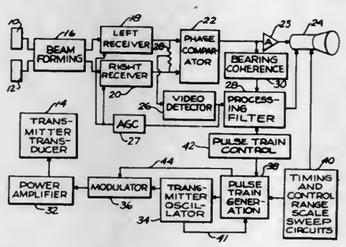
1. In a sonar system, means for transmitting selected pulses of different lengths of high frequency energy, each pulse length having a characteristic spectral distribution,
means for controlling the lengths of said pulses,
means for receiving echo signals with the spectral distributions determined by the lengths of said pulses,
means for determining the Doppler frequency of received signals, and the corresponding target range rate, said means comprising a first set of parallel connected bandpass filters resonant each to the center frequency of adjacent discreet bands of received frequency of the bandwidth corresponding to the spectrum of a first pulse length, and
a second set of parallel connected bandpass filters, said second set of filters being resonant respectively to the center frequency of adjacent discrete bands of received frequency of the bandwidth corresponding to the spectrum of a second length pulse,
switch means for selectively connecting either said first set or said second set of filters to the receiving means, and
interlocking means between the pulse-length controlling means and the switch means.

3,555,499
METHOD AND SYSTEM FOR DETERMINING REFLECTIVITY OF THE OCEAN BOTTOM
Frank H. MacDonald, Irving, and Charles R. Key, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed May 24, 1968, Ser. No. 731,948
Int. Cl. G01s 9/66
U.S. Cl. 340—3 16 Claims



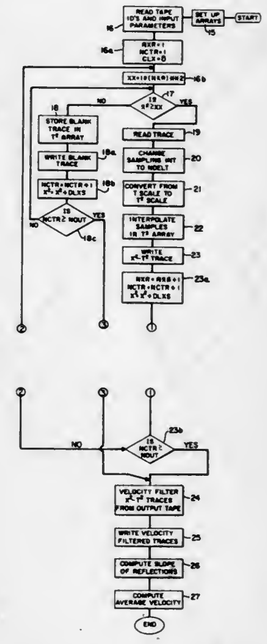
The bottom loss of a sonar signal reflected from the ocean bottom is determined by generating voltages proportional to the magnitude of signals transmitted to the ocean bottom, the amplitude of the sonar echo from the ocean bottom, the gains and sensitivities of the sonar circuitry, and the depth and absorption characteristics of the ocean. These generated voltages are operated upon according to a preselected function in order to generate an output signal representative of the bottom loss of the sonar signal. Bottom tracking of the ocean bottom is also utilized to eliminate errors caused by reflections other than the actual ocean bottom.

3,555,500
SONAR DETECTION SYSTEM
Ernest P. Longerich, Chatsworth, and Erland W. Rudy, Granada Hills, Calif., assignors to The Bendix Corporation, a corporation of Delaware
Filed Dec. 27, 1968, Ser. No. 787,422
Int. Cl. G01s 9/68
U.S. Cl. 340—3 16 Claims



A signal-processing system for echo-ranging sonar is described wherein a first embodiment shows the processing system with a preformed beam phase comparison type of sonar, and a second embodiment shows an essentially similar system in conjunction with a sonar of the preformed beam amplitude type. The transmitter sections of each include an oscillator for generating a high frequency signal, and means are supplied for controlling the length or duration of transmitted pulses. In addition, switching means are provided for separating normal transmit pulses into a pulse train with comparatively brief on and off times, and this switching is coordinated with post detection processing means in the receiver such that return signals of length comparable to the length of the individual pulses in the pulse train are filtered out. Longer pulses which are received because of the characteristic of reflections from larger objects to become elongated, and thus "fill in" the train, represent larger reflecting objects and are not filtered but are supplied to brighten the cathode ray tube display. The switching means is variable to adjust the length or duration of the "on" and "off" times and the number of such cycles in each train of pulses.

3,555,501
DETERMINING SUBSURFACE VELOCITY AND DISTINGUISHING BETWEEN PRIMARIES AND MULTIPLES BY VELOCITY FILTERING
Henry E. Teague, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed Feb. 10, 1969, Ser. No. 797,790
Int. Cl. G01v 1/28
U.S. Cl. 340—15.5 2 Claims

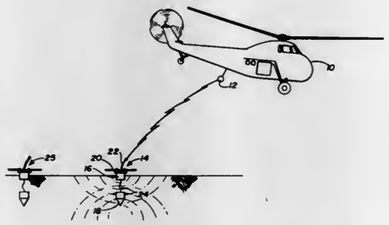


In seismic exploration, seismograms representing reflection times t as a function of distance x along a line of exploration are converted to the X^2–T^2 form. Reflections appearing as a hyperbolic function of distance on the original seismogram are converted to a linear plot from which acoustic velocity can be directly determined. The seismograms in the X^2–T^2 form are particularly suitable for velocity filtering.

3,555,502
AERIAL DROP TELEMETERING SENSOR
Paul D. Davis, Jr., Garland, and Edwin B. Neltzel, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex.
Filed Feb. 12, 1969, Ser. No. 798,730
Int. Cl. G01v 1/12, 1/14, 1/16
U.S. Cl. 340—15.5 6 Claims

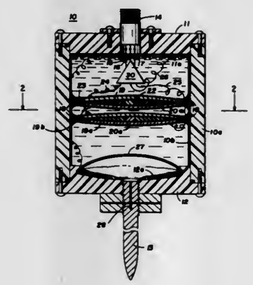
Preliminary seismic exploration and exploration in remote access areas may be carried out with a low-cost, ex-

pendable seismic telemetering unit contained in a two-part air-droppable probe that includes an upper section (light mass) designed to remain at the surface and a lower section (heavy mass) that is buried to a depth depending upon the soil conditions. As the two-part probe embeds itself in an earth-like surface, it generates underground seismic waves, thereby acting as its own source of seismic energy. Many probes may be dropped in an exploration area in any desired spread to produce the desired seismic data. The impact of each probe generates a new set of energy waves that will be picked up by all earlier dropped probes. By appropriate coding of the transmitted energy,



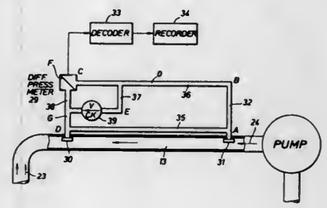
an airborne computer will segregate the signals from each probe to produce seismic data that may be read in the usual manner. Seismic waves are detected by a seismic sensor in the lower section (sensor section) which generates electrical signals proportional to the traveling waves. These electrical signals are amplified by one of many different amplification systems, depending on the application, and converted into radio frequency signals in a radio transmitter. An antenna is mounted to extend above the earth's surface as a communication link between the radio transmitter and a radio receiver operating at a remote location.

3,555,503
ACCELERATION DEPENDENT PHASE CONTROL SEISMIC EXPLORATION
Harold B. Morris, Houston, Tex., assignor to Electronic Systems, Inc., Houston, Tex., a corporation of Texas
Original application Dec. 31, 1968, Ser. No. 799,138, now Patent No. 3,489,997, dated Jan. 13, 1970. Divided and this application Aug. 5, 1969, Ser. No. 861,535
Int. Cl. G01v *1/16*
U.S. Cl. 340—17 **2 Claims**



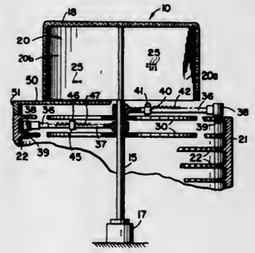
Seismic waves are detected and recorded by generating acceleration signals through prestressed piezoelectric crystals of wide band frequency capability and passing the wide band signal to a multi-stage amplifier having wide band input and progressively narrowed frequency band through successive stages of the amplifier while retaining signals of frequency in the range of about 100 cycles per second and above.

3,555,504
PRESSURE WAVE NOISE FILTER
Roger Q. Fields, Houston, Tex., assignor to Schlumberger Technology Corporation, New York, N.Y., a corporation of Texas
Filed Dec. 12, 1968, Ser. No. 783,239
Int. Cl. H04b *11/00*
U.S. Cl. 340—18 **13 Claims**



An illustrative embodiment of the present invention in pressure pulse signal detecting systems for use in detecting downhole data transmitted to the surface in the form of encoded pressure pulses in the drilling fluid flow lines while drilling a well, includes a noise filter for enabling detection of such pulses in the presence of noise due to the mud pump. The noise filter includes a differential pressure sensor having opposite fluid pressure inputs connected to spaced points in a flow line by means providing equal travel times to opposite inputs of the sensor for pressure pulses due to the pump, but providing unequal travel time to opposite sensor inputs for pressure pulse signals arriving from a downhole signalling device. This enables the pump noise to be effectively cancelled while the downhole signals are detected.

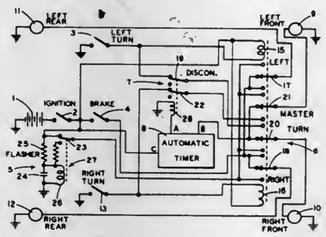
3,555,505
AIR SPACE TRAFFIC SIMULATOR
Ladislaw G. Srogi, 1861 Oxford Road, Berkley, Mich. 48072
Filed Mar. 17, 1969, Ser. No. 807,851
Int. Cl. G08g *1/12*
U.S. Cl. 340—24 **10 Claims**



An air space traffic simulator has inputs applied from azimuth indicating means, range finding means and altitude indicating means. The simulator comprises a shaft rotatable by a driving motor and carrying at least one set of angularly spaced vanes fixed thereto and extending

radially therefrom, a hollow cylindrical transparent enclosure preferably being provided for the vanes. Each vane carries a plurality of lamps arranged in rows and columns such that the height of each lamp represents a particular altitude of an aircraft relative to a reference plane and the radial position of each lamp represents a particular distance of the aircraft from a reference point. Disks are fixed to the shaft for rotation therewith, and each disk carries a first radial row of contacts with each contact, connected to first terminal of all the lamps in a corresponding column on a respective vane, and a second radial row of contacts with each contact connected to the second terminals of all the lamps in a corresponding row on the respective vane. A radially extending azimuth arm means is angularly adjustable about the axis of the shaft, and driving means are provided to adjust the azimuth arm means angularly in accordance with the azimuth of an aircraft to be monitored. The azimuth arm means carries a first contact member adjustable therealong and connected to one terminal of a source of potential, and carries a second contact member adjustable therealong and connected to the opposite terminal of the source of potential. Each contact member is engageable with the contacts of a respective one of the two radial rows. Each time the respective vane is rotated into alignment with the azimuth arm means, a respective lamp thereon is illuminated at a position corresponding to the distance and altitude of the monitored aircraft. Blocking diode means are associated with each lamp whereby only one lamp, at the intersection of a respective column and a respective row, can be illuminated at any one time.

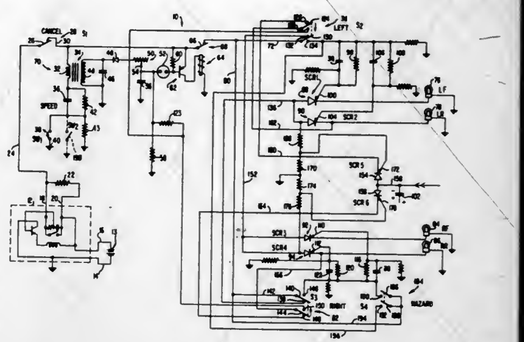
3,555,506
AUTOMOBILE AUTOMATIC TURN SWITCH REPOSITIONING
Charles R. Daws, 4422 Via Marina, Apt. 708, Marina Del Rey, Calif. 93933
Filed Oct. 5, 1966, Ser. No. 584,951
Int. Cl. B60q *1/00*
U.S. Cl. 340—56 **3 Claims**



An automatic directional signal cancelling system for automatically returning to its neutral, nonindicating position, a master turn switch. As the result of predetermined vehicle behavior, a signal is generated which triggers a disconnect switch thus decoupling the master turn switch from its source of potential.

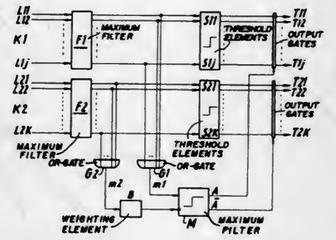
3,555,507
SELF-CANCELLING ELECTRONIC AUTO TURN SIGNAL SYSTEM
Benard Burson, Jr., Austin, Tex., assignor to Bursonics, Inc., Austin, Tex., a corporation of Texas
Filed May 19, 1967, Ser. No. 639,785
Int. Cl. B60q *1/00*
U.S. Cl. 340—62 **9 Claims**

Disclosed is an automotive turn signal system in which cancellation is effected electronically rather than mechanically. The turn signal lever arm is continuously biased to a neutral position and returns to this position as soon as it is released by the driver. Momentary actuation of the lever closes a holding circuit and the appropriate lights blink until automatically cancelled by a pulse count-



ing circuit. Cancellation time may be modified by vehicle speed. Hazard warning, manual cancellation, and adaptation to brake light switching are also disclosed.

3,555,508
CHARACTER IDENTIFICATION DEVICE ARRANGED TO IDENTIFY CHARACTERS OF DIFFERENT STYLES
Hanno Gillmann, Constance, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed July 31, 1968, Ser. No. 748,994
Claims priority, application Germany, Aug. 4, 1967, 1,549,923
Int. Cl. G06k *9/12*
U.S. Cl. 340—146.3 **5 Claims**

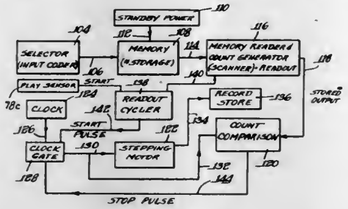


A device for identifying a character which is detected by a character reader, the character reader providing a plurality of output voltages the amplitude of each of which represents the degree of coincidence between the detected character and a respective nominal character. The device is arranged to identify characters of different types and is provided with several maximum filters each corresponding to one character type and each having a plurality of inputs connected to receive character reader voltages associated with that character type and a plurality of outputs each associated with one character of that type, each filter normally providing a signal at only one of its outputs. The device further includes maximum signal detecting means connected to the filters and having one output for each filter at which appears a signal proportional to the maximum voltage received by that filter, and comparison means for determining which of the maximum signal detecting means outputs contains the highest voltage and for permitting the passage of signals only from that filter associated with the highest maximum signal detecting means voltage.

3,555,509
NUMERICAL STORAGE PHONOGRAPH SELECTOR

Alvan Donald Arsem, Clarence, N.Y., assignor to The Wurlitzer Company, Chicago, Ill., a corporation of Illinois

Filed Jan. 22, 1968, Ser. No. 699,641
Int. Cl. G11b 5/00; H04q
U.S. Cl. 340—162 12 Claims

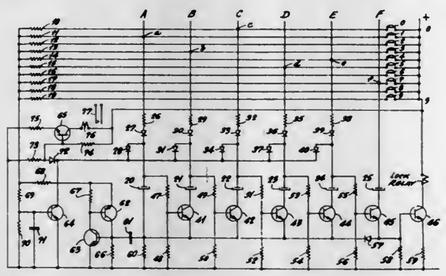


An automatic or coin-operated phonograph wherein selections are stored in a memory device of an electrical or electromagnetic nature having a numerical but not a positional relationship to the records in the phonograph, and having memory banks of lesser number than the record selections.

3,555,510
ELECTRONIC COMBINATION LOCK WITH DISCHARGE CONTROL CIRCUIT MEANS

Tore Gottfrid Hesselgren, Borensvagen 1, Johanneshov, Sweden

Filed Feb. 13, 1968, Ser. No. 705,116
Claims priority, application Sweden, Feb. 16, 1967, 2,200/67
Int. Cl. H04q
U.S. Cl. 340—164 8 Claims



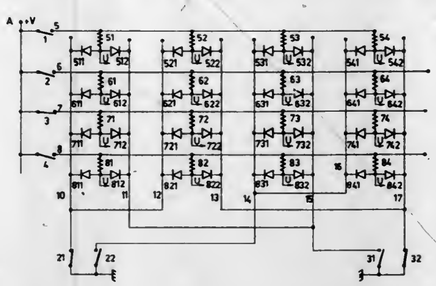
This specification describes an electric code lock including successive code steps, which are to be energized in a predetermined order for the release of the lock. Improper actuation of one code step results in resetting of all previously set steps and alarm.

3,555,511
SELECTION MATRIX FOR FIXED STORAGE SYSTEMS

Franco Filippazzi, Milan, Italy, assignor to General Electric Information Systems Italia S.p.A., Caluso, Turin, Italy, a corporation of Italy

Filed Feb. 27, 1968, Ser. No. 709,598
Claims priority, application Italy, Feb. 28, 1967, 13,132/67
Int. Cl. H04q 3/50
U.S. Cl. 340—166 6 Claims

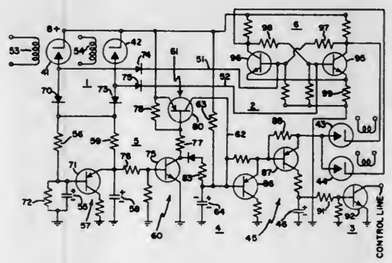
The invention relates to a matrix for selecting an output circuit by selectively switching one of a plurality of input lines to one terminal of an input circuit and selectively retaining all but one of a plurality of input lines to the other terminal of the input circuit, the input lines being bridged by impedance and rectifier elements and one of the output leads for each output circuit being taken at a point common to an impedance-rectifier element circuit.



3,555,512
TWO FREQUENCY REED DECODER AND SELECTIVE SIGNALLING DEVICE

William G. Mustain, Lynchburg, Va., assignor to General Electric Company, a corporation of New York

Filed Dec. 20, 1967, Ser. No. 692,171
Int. Cl. H04q 9/12
U.S. Cl. 340—171 6 Claims



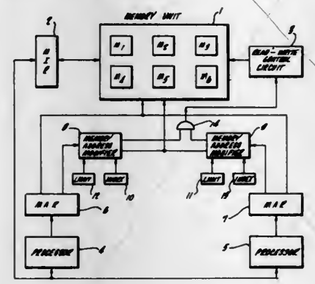
A selective signalling system uses two sequentially transmitted calling signals to actuate a receiver at the remote station to condition it to receive a message. A decoder in the receiver includes two networks, each containing a frequency-selective element responsive to one of the calling signal frequencies. The two networks are interconnected in such a manner as to minimize "falsing" due to noise simulating the calling frequencies. The first and second networks are interlocked so that the second network is operative to receive a calling signal for a limited time period after termination of the proper first calling signal. The second network is positively disabled by a biasing network which maintains a transistor switch in the second network in a nonconducting state. The appearance of the first signal disables the biasing network without enabling the second network. Upon termination of the first calling signal, the second network is conditioned to receive the second calling signal, and the biasing network remains inoperative or disabled for a fixed time-delay interval after the end of the first calling signal. If the calling signal of the second frequency is received during this time interval, the second network produces a control voltage which actuates the receiver and conditions it to receive the message being transmitted to it. Thus, the decoder is characterized by the fact that the second network is positively disabled

at all times except the fixed time interval after the appearance and termination of the calling signal of the first frequency. This insures that the decoder is very reliable and not susceptible to falsing due to the appearance of a noise burst or the like simulating the second calling signal.

3,555,513
MULTIPROCESSOR DIGITAL COMPUTER SYSTEM WITH ADDRESS MODIFICATION DURING PROGRAM EXECUTION

Erwin A. Hauck, Arcadia, and Jacob F. Vigil, West Covina, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Oct. 11, 1967, Ser. No. 674,451
Int. Cl. G06f 15/16, 15/40
U.S. Cl. 340—172.5 11 Claims

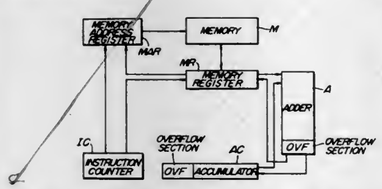


An addressable memory unit is shared by two processors, each including a source of memory addresses. The memory address values in the first and second processors are at least in part the same. In the course of the operation of the processors, the address values are coupled to the memory unit. The address values from one of the processors are modified by one constant amount and the address values from the other processor are modified by another constant amount to produce mutually exclusive address values. Preferably, the modified address values are compared with a limit value prior to the initiation of the memory read-write cycle. Most advantageously, the memory unit is divided into modules assigned to one or the other of the processors and only the portion of the memory address values designating the module are modified.

3,555,514
DIGITAL COMPUTER INSTRUCTION SEQUENCING TO CARRY OUT DIGITAL DIFFERENTIAL ANALYSIS

Mamoru Hosaka and Fumio Ando, Tokyo, and Masathugu Yoshitake, Yokohama, Japan, assignors to Hitachi, Ltd., Chiyoda, Tokyo, Japan, a corporation of Japan

Filed Dec. 6, 1967, Ser. No. 688,514
Claims priority, application Japan, Dec. 9, 1966, 41/80,354
Int. Cl. G06f 9/20
U.S. Cl. 340—172.5 6 Claims

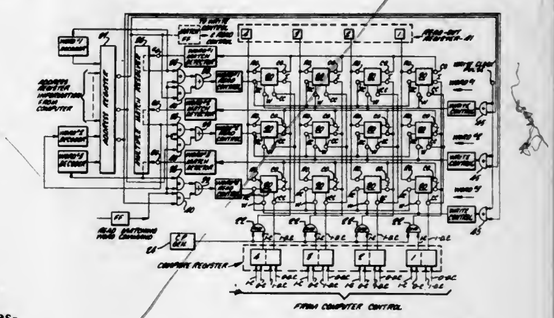


A digital computer for performing the arithmetic operations for the differential analysis of data in accordance with a stored program. In this digital computer, the arithmetic operations for the differential analysis are executed by special instructions which can be handled in a manner entirely similar to the handling of those instructions employed in a general purpose computer.

3,555,515
MEMORY SYSTEM HAVING ASSOCIATIVE CELLS FOR MARKING LOCATIONS

Edwin S. Lee III, Claremont, Calif., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Original application Nov. 8, 1962, Ser. No. 236,310, now Patent No. 3,417,265, dated Dec. 17, 1968. Divided and this application June 27, 1968, Ser. No. 740,660
Int. Cl. G11c 15/00
U.S. Cl. 340—172.5 6 Claims

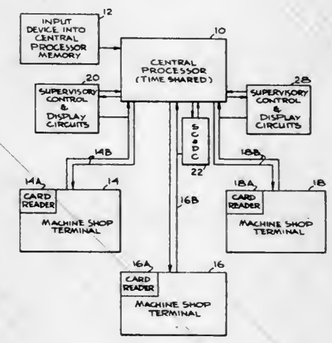


Apparatus for locating and writing in an empty memory location of an associative memory. An extra cell is added to each memory location to mark the location as full or empty.

3,555,516
SUPERVISORY SYSTEM FOR TIME-SHARED NUMERICAL CONTROL SYSTEM

Thomas Proctor, Lyndhurst, Ohio, assignor, by mesne assignments, to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin

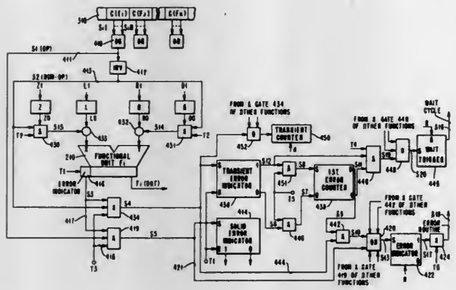
Continuation-in-part of application Ser. No. 709,466, Feb. 29, 1968. This application Aug. 26, 1968, Ser. No. 755,470
Int. Cl. G06f 15/46
U.S. Cl. 340—172.5 6 Claims



In a numerical control system of the type wherein a central processor provides control instructions on a time-shared basis to a plurality of remotely located numerically controlled machine tools, provision is made for

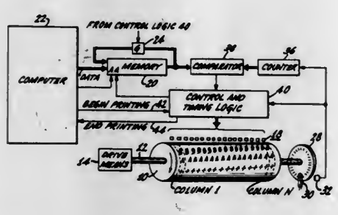
gathering data at the central processor from the various machine tool locations for the purpose of preventive maintenance.

3,555,517
EARLY ERROR DETECTION SYSTEM FOR DATA PROCESSING MACHINE
Harold F. Heath, Jr., Poughkeepsie, and Samir S. Husson, White Plains, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 30, 1968, Ser. No. 771,791
Int. Cl. G06f *11/12*
U.S. Cl. 340—172.5 **8 Claims**



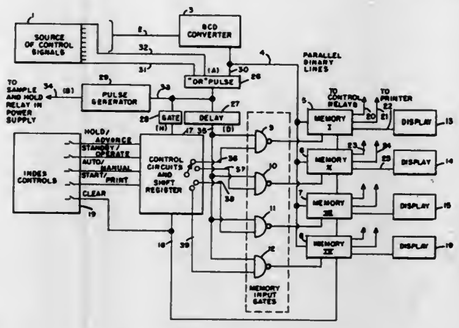
A system is provided for the detection of errors in a digital computer system during a machine cycle in which the units giving rise to the error are not actively contributing to the function being performed. If the error occurs in a nonoperational functional unit, a wait cycle routine may be entered which insures that the functional unit in which the error occurred will not be utilized by the computer system during the next cycle. The functional unit is again tested during the wait cycle and if found to be in error again, the error routine is entered.

3,555,518
RECORDING TRANSDUCER SELECTION LIMITER
Earl L. Nelson, Lake Park, Fla., assignor to RCA Corporation, a corporation of Delaware
Filed Jan. 28, 1969, Ser. No. 794,666
Int. Cl. B41j *9/38*
U.S. Cl. 340—172.5 **5 Claims**



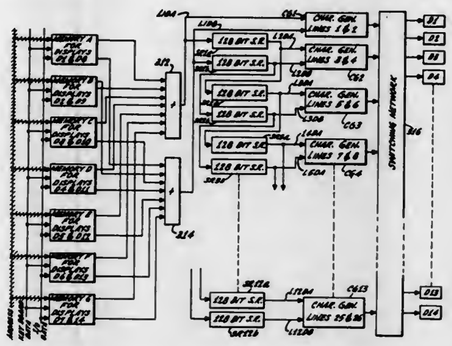
An arrangement for preventing recording transducers, each at a different position along a row, from being energized or actuated more than once during the recording of a line of characters. When a signal is generated to cause energization of a recording transducer, an indication of that event is stored and inhibits any reenergization of that transducer thereafter during recording of characters in the same line.

3,555,519
DIGITAL PROGRAMMING CONVERTER, REGISTER AND CONTROL SYSTEM
Sarkis Nercessian, Long Island City, N.Y., assignor to Forbro Design Corp., New York, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 764,083, Oct. 1, 1968. This application Mar. 18, 1969, Ser. No. 808,234
Int. Cl. G06f *5/00*
U.S. Cl. 340—172.5 **10 Claims**



The purpose of the present invention is to provide binary coded signals for controlling digitally programmable power supplies and for displaying the numerical value of such signals. Input signals may be parallel decimal or parallel binary (1–2–4–8) logic level signals (0 or 1). The input signals are accepted and processed a digit at a time. The system is particularly adapted to receive signals from a manual keyboard or other parallel presented signals which persist for a minimum predetermined time interval.

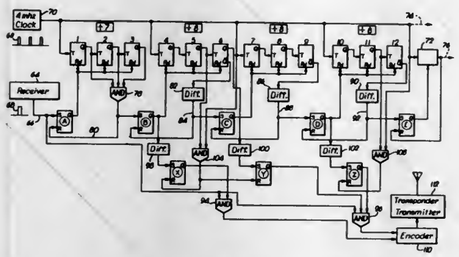
3,555,520
MULTIPLE CHANNEL DISPLAY SYSTEM
Walter Allen Helbig, Woodland Hills, and Walter Lee Ross, Simi, Calif., assignors to RCA Corporation, a corporation of Delaware
Filed Apr. 30, 1969, Ser. No. 820,553
Int. Cl. G06f *3/14, 13/02*
U.S. Cl. 340—172.5 **6 Claims**



A plurality of memories, each storing character codes for one or more television type displays and a plurality of character generators, each for producing the video signals for one television horizontal scan line. (A plurality of adjacent scan lines form one row on a display.) The character codes are extracted from the memories a group at a time in interlaced fashion. Each group of codes corresponds to one row of characters to be written on one

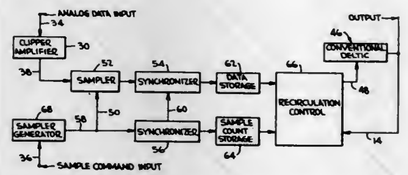
display. Each group of codes is applied to the character generators in succession and each character generator, during successive horizontal scan line intervals, applies successive groups of video signals, each group indicative of the same line on a different display, to the different displays.

3,555,521
DIGITAL DELAY REGISTER
William E. Mears, Kansas City, Kans., assignor to Wilcox Electric Company, Inc., Kansas City, Mo., a corporation of Kansas
Filed Dec. 15, 1967, Ser. No. 691,015
Int. Cl. G11c *19/00;* **H03k** *23/04*
U.S. Cl. 340—173 **17 Claims**



A digital register utilizes a series of stages, each including a storage flip-flop and a binary counter which is enabled by the flip-flop when the latter is placed in its information-storing state. When enabled, each counter counts a predetermined number of clock pulses and then returns the associated storage flip-flop to its standby state, and simultaneously transfers the timing information to the next subsequent stage by placing the storage flip-flop thereof in its information-storing state. The information transfer delay provided by each of the counters prevents the register from storing an input pulse which is spaced from a preceding pulse by less than a minimum duration of interest, thereby eliminating redundant storage stages.

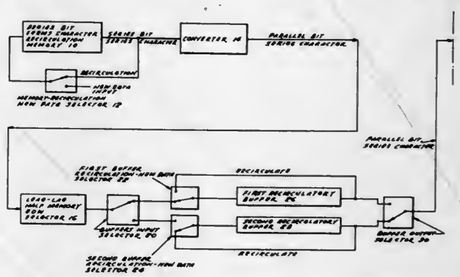
3,555,522
LOADING LOGIC CIRCUITRY FOR DELTIC MEMORY
Francis C. Martin, Jr., San Diego, Calif., assignor, by mesne assignments, to Ametek, Inc., New York, N.Y., a corporation of Delaware
Filed Jan. 3, 1968, Ser. No. 695,512
Int. Cl. G11c *21/00*
U.S. Cl. 340—173 **9 Claims**



Loading circuitry for the asynchronous sampling of analog information and the insertion of data pulses so derived into a Deltic (Delay Line Time Compressor) memory having a given data recirculation period and a recirculation rate fixed by an internal clock frequency. The analog data is periodically sampled at any desired rate and time completely independently of and in asynchronism with the given recirculation rate of the Deltic memory. Subsequent to each asynchronous sampling operation, the data pulse so provided is then synchronized with respect to the internal clock of the Deltic memory, stored, and inserted into the Deltic memory recirculation loop at a proper time interval.

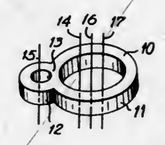
The loading circuitry of the instant invention accordingly allows external analog data to be sampled at virtually any time and at any rate up to twice the recirculation rate of the Deltic memory in a manner completely independent from the recirculation rate of the Deltic memory, thus increasing the utility of a Deltic system. Yet, the loading circuitry of the instant invention ensures that the actual insertion of the thus sampled data takes place at the desired time interval of the recirculation period.

3,555,523
INFORMATION STORAGE AND DISPLAY SYSTEM
Frank W. Sieracki and Thomas Coombe, Berlin, N.J., assignors to Ultrasonic Systems Corporation, a corporation of Delaware
Filed Mar. 28, 1969, Ser. No. 822,785
Int. Cl. G11c *21/00*
U.S. Cl. 340—173 **11 Claims**



Eight video monitors are supplied with display information from a common memory. The displays can but need not differ from each other in information content. Information recirculating in series-bit, series-character form is converted to parallel-bit, series-character format. Through use of switching apparatus, recirculation buffers and a dot matrix encoder, the parallel-bit, series-character information is encoded into the form of a dot matrix. During odd numbered memory cycles, a first group of four monitors is actuated, the monitors in this group being successively enabled. During even numbered memory cycles, a second group of the other four monitors is actuated, the monitors in this group also being successively enabled.

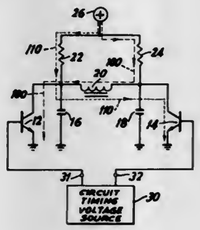
3,555,524
MAGNETIC LOGICAL MEMORY DEVICE
Evgeny Ivanovich Ilyashenko, Bolshaya Zjuzinskaya ulitsa 13, korp. 1, kv. 120; Vladimir Fedorovich Rudakov, Shmitovsky proezd 11-a, kv. 57; and Boris Sergeevich Bekin, Ulitsa Stanislavskogo 22, kv. 3, all of Moscow, U.S.S.R.
Filed Aug. 10, 1966, Ser. No. 571,523
Int. Cl. G11c *11/08;* **H03k** *19/166*
U.S. Cl. 340—174 **11 Claims**



A two-aperture memory device, made of magnetic material and provided with output signal, nondestructive interrogation, writing and destructive readout windings, to

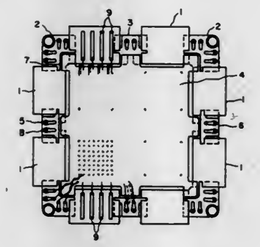
perform nondestructive interrogation using the reversible remanent component and to carry out in the interrogation the logical operations between stored and interrogated information; there being two cores arranged in one plane or in mutually perpendicular planes and having a common crosspiece portion, whereas the flux-path cross-sectional areas of the first core and of the second core are equal to the cross-sectional area of the common crosspiece portion.

3,555,525
BIPOLAR CURRENT GENERATOR
Arthur Rothbart, Bronx, N.Y., assignor to Edo Corporation, College Point, N.Y., a corporation of New York
Filed May 15, 1968, Ser. No. 729,205
Int. Cl. G11c *7/00;* **H03k** *4/48*
U.S. Cl. 340—174 **4 Claims**



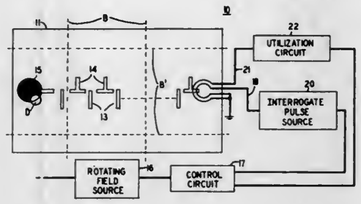
A double ended circuit arrangement for driving a magnetostrictive delay line includes an input driving coil connected in a low pass filter construction. Controlled switching elements are provided to direct current in alternating directions through the driving coil, with the current switching transients being exponential in form.

3,555,526
MEMORY PLANE WITH INTERCHANGEABLE COMPONENTS
Walter M. Moore, Saugerties, N.Y., assignor to Ferroxcube Corporation, Saugerties, N.Y., a corporation of Delaware
Filed Feb. 6, 1968, Ser. No. 703,294
Int. Cl. G11c *5/04, 7/04*
U.S. Cl. 340—174 **4 Claims**



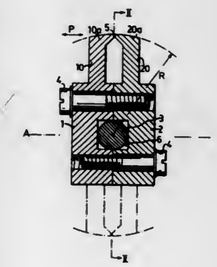
A core plane frame for magnetic core memories in which several basic frame components are incorporated for use with a plurality of magnetic core sizes to form a variety of frame sizes. The frame components are metal thereby providing a frame which is an excellent heat sink. Insulated terminals are supported thereon for soldering to terminals on adjacent frames when the frames are stacked to form memory arrays.

3,555,527
DOMAIN PROPAGATION ARRANGEMENT
Anthony J. Perneski, Martinsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Aug. 29, 1968, Ser. No. 756,210
Int. Cl. G11c *11/14, 19/00*
U.S. Cl. 340—174 **17 Claims**



A single wall domain can be made to divide into two by stretching the domain and by supplying a cutting field conveniently by moving one end of the domain along a path back towards the center of the domain. Input arrangements are described in which this operation is carried out in response to a magnetic field rotating in the plane of a sheet in which such domains are formed.

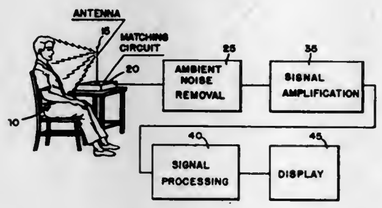
3,555,528
HEAD CONSTRUCTION FOR MULTICHANNEL MAGNETIC RECORDING AND REPRODUCING OF DATA
Nils Gustaf Erik Stemme, Prastgardsgatan 18, Goteborg, Sweden
Filed May 17, 1968, Ser. No. 730,173
Int. Cl. G11b *5/12, 5/28, 21/26*
U.S. Cl. 340—174.1 **4 Claims**



A magnetic multichannel head for recording and reproducing of digital data, has separate pole systems, for tracks on a magnetic record tape or similar medium. Each pole system has a single air-gap and two opposite salient poles. The magnetic core structure of the head is common to all pole systems and consists of two similar halves each including one of the two arrays of poles and consisting of an integral body. The two halves are screwed together into firm mechanical and magnetical contact such that the two poles of each pole system face one another across a single fine air-gap. The core structure has a through bore, preferably a bore of square or hexagonal cross-section. The bore extends parallel to the two arrays of poles and is symmetrical with respect to a plane of the joint area of the two halves and with the air-gaps. The magnetic head may be clamped onto a bar or rod coaxially extending through the bore, by tightening the two halves of the core structure. The axis of the bore and,

thus, of the rod (if any) is also the axis of curvature of the surface to be engaged by the magnetic tape so that said surface can be machined and polished by rotating the magnetic head around said axis with respect to a tool. Every one or every second of the individual poles is provided with a winding such that the two halves are identical and exchangeable. Said rod may serve as a fixture for machining the magnetic head and as a mounting element for the head in a magnetic recorder. The magnetic head forms a self-supporting compact unit even when not being clamped on the rod.

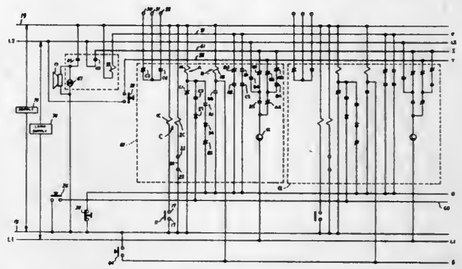
3,555,529
APPARATUS FOR MEASURING ELECTRIC FIELD RADIATION FROM LIVING BODIES
Charles G. Brown and Leo Thomas Rauterkus, Dayton, and Charles E. Walker, Mason, Ohio, assignors to Systems Research Laboratories, Inc., Dayton, Ohio, a corporation of Ohio
Filed Aug. 16, 1967, Ser. No. 660,991
Int. Cl. G08b *1/08*
U.S. Cl. 340—189 **5 Claims**



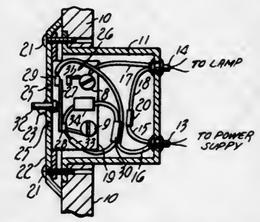
An antenna, electrically short in comparison to a wavelength to be received, is positioned in close proximity to a living body to receive the electric energy radiated therefrom in the frequency range of from 0 to 3 kHz. An impedance matching device is connected directly to the antenna to convert the received energy into electrical signals for processing. The ambient noise components are removed from these electrical signals, either by physically shielding the body undergoing test and the antenna, by employing a second similar antenna to receive the ambient noise but not the signal radiated from the body undergoing test and electrically combining the signals from both said antennas to eliminate the ambient noise components, or by employing a tuned filter, for those ambient noise components having a periodic waveform. The resultant electrical signals are amplified and processed to distinguish among the various signals radiated due to the bioelectric activity of the living body.

3,555,530
ANNUNCIATOR MODULE WITH RETURN TO NORMAL INDICATING FEATURE
Art Lee, Bloomington, Ill., assignor to General Electric Company, a corporation of New York
Filed Oct. 30, 1967, Ser. No. 679,017
Int. Cl. G08b *23/00*
U.S. Cl. 340—213.1 **23 Claims**

An annunciator module adapted for selective operation with either a normally open or a normally closed alarm contact for indicating both an abnormal condition of a variable and a return to normal condition of the variable. The module includes a first relay having two oppositely poled windings each energized through a separate pair of terminals with one pair of terminals adapted for association with a normally open alarm contact and the other pair of terminals for association with a normally closed alarm contact. When a normally open alarm contact is used, the other terminals are connected by a removable conductive link. The module includes a second relay controlled by the first relay, and a third relay, with all three relays controlling alarm means so that the alarm means is actuated both when the variable becomes abnormal and when the variable subsequently returns to normal. A function test switch controls the second relay to permit a function test of the second and third relays and the alarm means, and the first relay controls user's external information circuits. The alarm means includes an indicating light which is adapted for connection to a power source independent of the main power source for the module.



3,555,531
VISUAL FIRE WARNING SYSTEM
Liber J. Montone, Reading, Pa., assignor of forty percent to Thomas L. Crisman, Alexandria, Va.
Filed Oct. 10, 1968, Ser. No. 766,517
Int. Cl. G08b *17/06*
U.S. Cl. 340—228 **7 Claims**

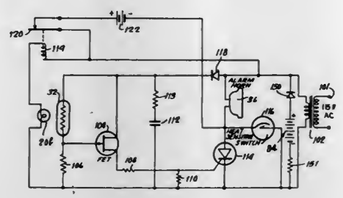


A fire warning system is mounted on the back of a light switch plate and includes a current actuated interrupter connected between the current supply and the light switch. A thermal sensitive switch is connected to the interrupter and light switch and normally shorts the interrupter so that the light and switch function normally. In an alarm condition, the thermal switch connects the light to the current source through the interrupter so that the light flashes on and off rapidly to provide a visual alarm and arouse any sleeping occupants of the room in danger of fire.

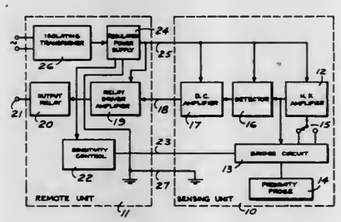
3,555,532
VAPOR OR PARTICLE DETECTION DEVICE
George S. White, Cedar Grove, N.J., and Richard E. Lewis, Yonkers, and Lincoln M. Zonn, New York, N.Y., assignors, by direct and mesne assignments, to Graham Stuart Corp., New York, N.Y., a corporation of Ohio
Continuation-in-part of application Ser. No. 585,782, Oct. 11, 1966. This application Oct. 29, 1968, Ser. No. 771,450
Int. Cl. G08b *17/10*
U.S. Cl. 340—237 **3 Claims**

A vapor, smoke or particle detection device of the type comprising a black-walled chamber containing a light source and a photoconductive cell, arranged to detect light

from the source when reflected from particles present in the chamber, and including a self-balancing control circuit for actuating an alarm when the detection signal from the photoconductive cell exceeds a given level. The sensitivity or threshold level of the alarm control circuit is maintained constant despite wide variations in the applied operating voltage by means of a voltage dividing bridge arrangement using an insulated-gate field effect transistor for operating the gate of a controlled rectifier which controls current flow to the alarm device. Also provided in combination are means for intermittently operating the light source for longer battery life, a high temperature detection element and a fail-safe mechanism for signalling when the device is inoperative.



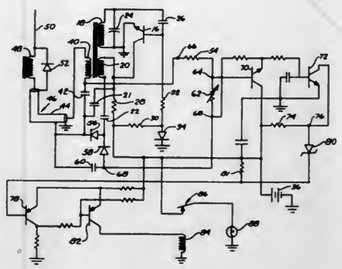
3,555,533
FAIL-SAFE PROXIMITY MEASURING SYSTEM
Abraham Edelman, 3524 Hull Ave., New York, N.Y.
Filed May 16, 1967, Ser. No. 638,814
Int. Cl. G08b *21/00*
U.S. Cl. 340—244 **4 Claims**



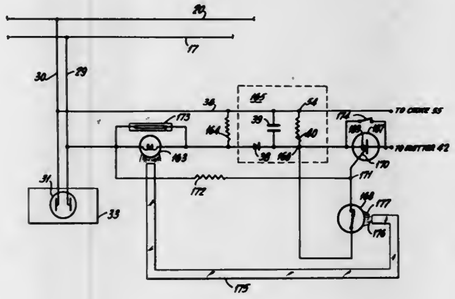
The following disclosure describes a proximity sensing system employing a capacitive probe unit connected in a bridge feedback circuit of an amplifier, so that unbalances of the bridge circuit control the oscillatory condition of the amplifier. The probe unit includes electronic circuits, and is connected by cables to a remote indicating, adjusting and power supply unit.

3,555,534
PROXIMITY DETECTOR WITH A SENSING PROBE
Artie E. Akers, San Diego, and Robert W. Schonle, Westminster, Calif., assignors to North American Rockwell Corporation, a corporation of Delaware
Filed Mar. 10, 1967, Ser. No. 622,240
Int. Cl. G08b *13/26*
U.S. Cl. 340—258 **1 Claim**

A proximity detector having preferably a single capacitive sensing probe in which the capacitance thereof changes with movement of matter within the capacitive field to change the voltage of the oscillating current in the probe. Since this voltage is also dependent on the voltage of the energizing source, means are provided to observe only relative changes between the voltages to produce an alarm when this phenomenon occurs.



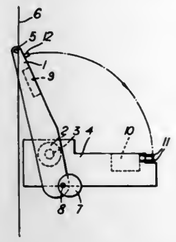
3,555,535
FAIL-SAFE LIGHT INTRUSION ALARM SYSTEM
Lance L. Henriques, New York, N.Y., assignor to Davis Foreman, Bronx, N.Y.
Applications June 9, 1964, Ser. No. 373,728, now Patent No. 3,388,389, and June 6, 1966, Ser. No. 570,104, now Patent No. 3,447,100. Divided and this application Sept. 13, 1968, Ser. No. 761,017
Int. Cl. G08b *13/18, 29/00*
U.S. Cl. 340—258 **1 Claim**



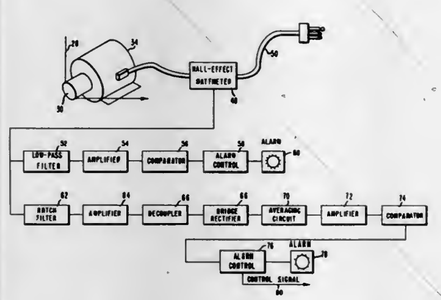
A fail-safe arrangement to prevent emission of false alarms in photoelectric intrusion-detection systems in cases of failure of light sources. Included is circuitry for rendering photoelectric intrusion detectors inactive when the light source fails and automatically indicating such inactivity.

3,555,536
YARN RUPTURE DETECTOR
Gabriel Ohayon, Rhone, France, assignor to Societe Rhodiaceta
Filed Dec. 18, 1967, Ser. No. 691,543
Claims priority, application France, Dec. 21, 1966, 88,385
Int. Cl. B65h *25/14;* **G08b** *21/00*
U.S. Cl. 340—259 **4 Claims**

A yarn rupture detector for use in a textile machine in which a lever carries a sensing arm which bears on the running yarn. The lever is urged from the detecting position towards an alarm position by a first force which decreases as the lever moves towards the alarm position. If the yarn ruptures, the lever moves beyond an equilibrium position and a magnetic force takes over to move the lever firmly to the alarm position.



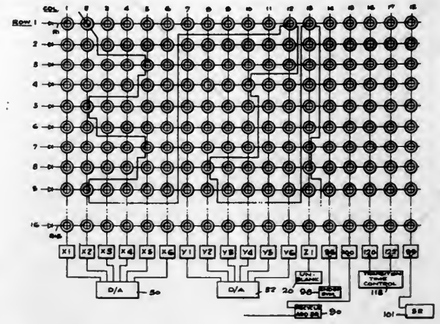
3,555,537
METHOD FOR MONITORING PROPERTIES OF POLYMER AND YARN PRODUCED THEREFROM
William Thomas Windley, Seaford, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 22, 1967, Ser. No. 692,902
Int. Cl. G08b *21/00*
U.S. Cl. 340—259 **6 Claims**



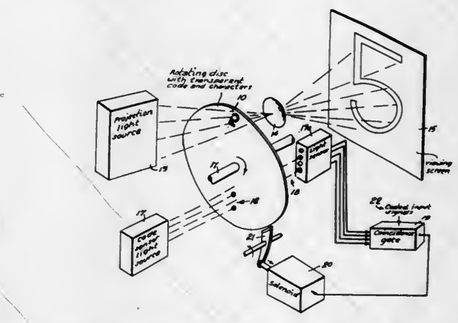
In a process for producing or modifying yarn from synthetic polymer wherein, under desired operating conditions, electrical power is utilized at an essentially constant level in at least one step of the process, a method for determining deviations in polymer and yarn properties from a desired level. Variations in the electrical power utilized, corresponding to deviations in process operating conditions, are detected, characterized and compared to known characteristics representative of desired operating conditions which have been correlated to desired polymer and yarn properties.

3,555,538
DISPLAY APPARATUS
Martin C. Henderson and Robert A. Koster, Canoga Park, Calif., assignors to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware
Filed Feb. 15, 1967, Ser. No. 616,368
Int. Cl. H01j *29/70*
U.S. Cl. 340—324 **15 Claims**

An apparatus for causing a display device, e.g., a cathode ray tube, to display symbols and words in response to digital input codes. The symbols are drawn by successively deflecting the tube beam toward selected points on a display matrix in accordance with information read, during successive time periods, from a memory into which pre-wired information is selectively written. The information read can also define beam transition time, symbol width, and unblanking.



3,555,539
ALPHA-NUMERIC DISPLAY DEVICE
William J. Richards, Long Beach, Calif. (USNATO, APO New York 09667)
Filed Jan. 3, 1968, Ser. No. 695,393
Int. Cl. G08f *5/36*
U.S. Cl. 340—324 **3 Claims**

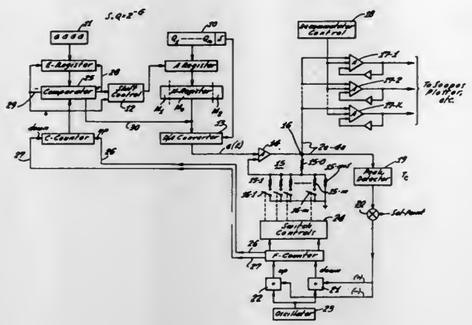


An alpha-numeric display device utilizing a rotating disk or drum having formed therein or thereon characters and coded patterns representing the characters including sensing means for recognizing the coded patterns and producing corresponding coded output signals which are coupled to an input of a coincidence circuit means. Another input of the coincidence circuit means is coupled to a source of coded input signals. When the coded output signals and coded input signals are identical, the coincidence circuit means functions to activate means for stopping the rotation of the disk or drum whereupon the character called for by the coded input signals is displayed.

3,555,540
DIGITAL-TO-ANALOG CONVERTER WITH SMOOTH RECOVERY
David Henry Hartke, Glendora, Calif., assignor to SDS Data Systems, Pomona, Calif., a corporation of California
Filed Aug. 8, 1966, Ser. No. 570,861
Int. Cl. H03k *13/04;* **G06g** *7/28*
U.S. Cl. 340—347 **20 Claims**

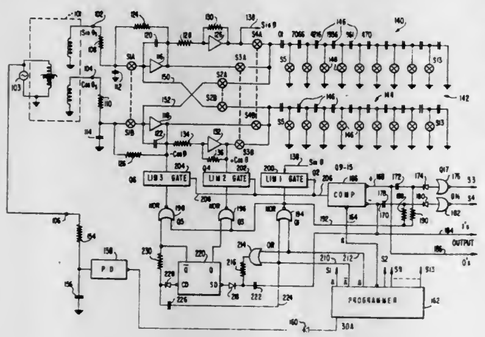
A floating point number digital-to-analog converter is disclosed in which he sequential mantissas are converted and exponent changes signalling mantissa jumps are used

to multiply or divide the mantissas to eliminate discontinuities. Subsequently the analog output is expanded or compressed by gradual gain change in the analog output. When a gain change limit has been reached, the gain is step-function changed in the reverse, concurring with a digital arithmetic step eliminating the previous one which



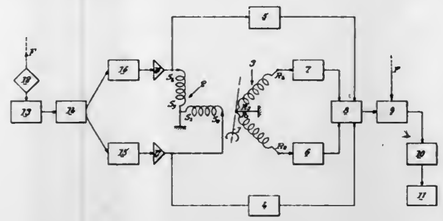
occurred when there was an exponent change. The gradual gain change is controlled by separate feedback through a fine resolution counter. As the gradual gain change is relatively slow, sudden signal "burst-outs" are not eliminated. The digital signal may be a multiplexed one, with demultiplexing occurring at the analog output.

3,555,541
ELECTRONIC ANGLE SIGNAL MODIFIER AND ENCODER
McKenny W. Egerton, Jr., Owings Mill, and Gerard B. Gilbert, Jr., Baltimore, Md., assignors, by mesne assignments, to The Bendix Corporation, a corporation of Delaware
Filed Oct. 21, 1966, Ser. No. 588,408
Int. Cl. G01b *7/30;* **G06g** *7/22;* **H03k** *13/02*
U.S. Cl. 340—347 **17 Claims**



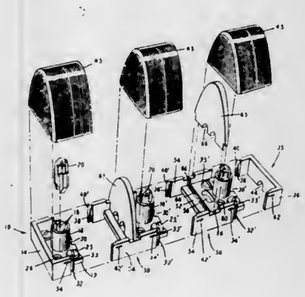
An electronic angle encoder which employs interconnected sine and cosine channels to convert a resolver or synchro analog angle signal into a binary digital signal. The input sine and cosine signals are stored in the encoder and subsequently changed in binarily diminishing steps toward a known reference level. After each step, the stored values are compared to a reference. The result of this comparison constitutes the digital representation of the original angle.

3,555,542
METHODS AND APPARATUS FOR DETERMINING THE ANGULAR POSITION OF A SHAFT
Maurice Guiot, Domont, France, assignor to Soclete d'Applications Generales d'Electricite et de Mecanique SAGEM, Paris, France
Filed Mar. 27, 1967, Ser. No. 626,187
Claims priority, application France, Apr. 6, 1966, 56,704
Int. Cl. G08c *9/04;* **H03k** *13/20*
U.S. Cl. 340—347 **12 Claims**



In order to determine the angular position of a shaft, use is made of a resolver having a stator and a rotor, the latter being connected with said shaft. The two-phase stator comprises two windings S_1S_2 and S_3S_4 forming each *n* pairs of poles to which are respectively applied two sinusoidal voltages of the same frequency and the same amplitude but at 90° to each other, obtained by frequency division from an oscillator of frequency F. The two-phase rotor comprises two windings R_1R_2 and R_3R_4 each forming *n* pairs of poles and measurement is made, by counting pulses of frequency F, of the algebraic sum of the phase differences betwen the voltages across the terminals of S_1S_2 and R_1R_2 on the one hand and S_3S_4 and R_3R_4 on the other hand, this sum being taken as the measurement of *n* times the double of the angle defining the position of the shaft.

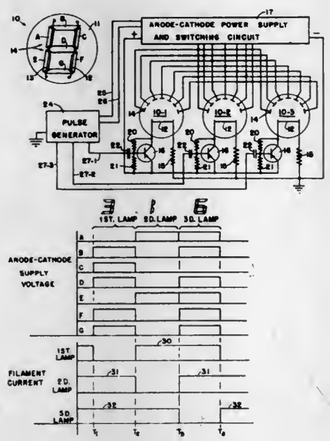
3,555,543
MODULAR VISUAL INDICATOR HAVING INTERLOCKING INDICATOR BASE MODULES
Harry P. Lynch, Greenfield, Ind., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Continuation of application Ser. No. 694,664, Dec. 29, 1967. This application Sept. 29, 1969, Ser. No. 863,681
Int. Cl. G08b *5/22*
U.S. Cl. 340—366 **10 Claims**



An illuminated visual indicator embodying a modular concept in which single and multiple indicators are assembled from standard components consisting of a pair

of interconnecting end base portions, an intermediate base portion connectable between the two end base portions, and a lens mountable on a pair of base portions. One of the end base portions comprises a lamp socket support and a wall encompassing a portion of the support while the other end base portion comprises a wall of a shape to encompass the remainder of the support whereby when the two are joined a complete base for a single indicator is formed. The intermediate base portion comprises a lamp socket support and a pair of walls on opposite sides of the support and is adapted to have an end base portion joined to each end thereof to form a complete base for a multiple indicator.

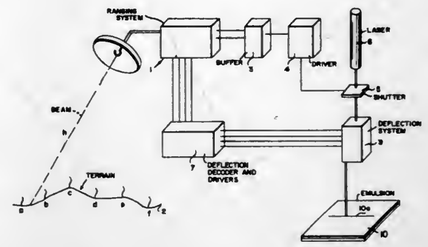
3,555,544
TIME-SHARING INDICATOR LAMP CONTROL CIRCUIT
Carl E. Atkins, Montclair, N.J., assignor to Wagner Electric Corporation, a corporation of Delaware
Filed Nov. 18, 1968, Ser. No. 776,430
Int. Cl. G09b *13/00*
U.S. Cl. 340—378 **6 Claims**



A control circuit is described for controlling the symbols displayed by a plurality of indicators each having a cathode and a plurality of phosphor-coated anodes. The control circuit is particularly adapted to control the showing of indicia when similar anodes in all the digit devices are connected to a common supply conductor. During the showing of any symbol, the electron-emitting filament is temporarily disconnected from its power supply by a series transistor. This type of control circuit is particularly adapted to the showing of digital information provided by a computer circuit.

3,555,545
SYSTEM OF RECORDING IN RADIATION SENSITIVE MEDIUM
Jerry L. Reynolds, Wappingers Falls, Rodman S. Schools, Poughkeepsie, and Glenn T. Sincerbox, Wappingers Falls, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 12, 1966, Ser. No. 564,620
Int. Cl. G01s *9/00;* **G02b** *5/12*
U.S. Cl. 343—5 **14 Claims**

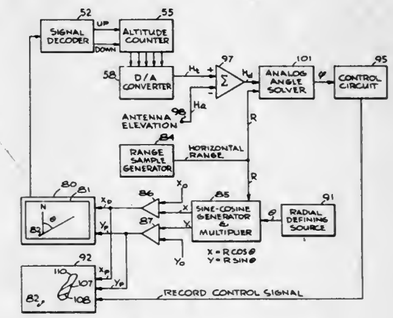
A beam of monochromatic light is directed successively to loci of a photosensitive emulsion having a reflective surface to form standing waves in the film and produce strata of sensitized surfaces by the process known as Lippmann photography. The intensity of the beam is controlled by a variable quantity, so that the amount of the sensitized constituent of the emulsion at each locus is dependent on the value of one quantity which controls the beam. Development of the emulsion removes the unsensitized constituent and causes shrinkage of the emulsion so that the thickness of the developed emulsion is



inversely proportional to the intensity of the light beam at each locus and is a measure of the value of the quantity.

This system and method may be used with a ranging system which scans the terrain from an elevated position, such as in an aircraft. The beam of the ranging system measures the distance of each point as by radar, the ranging system then controlling, the intensity of the light beam to record the distance values on the photosensitive emulsion.

3,555,546
ALTITUDE PROFILING APPARATUS
Sidney Bertram, Los Angeles, Calif., assignor to The Bunker-Ramo Corporation, Canoga Park, Calif., a corporation of Delaware
Filed Sept. 29, 1967, Ser. No. 671,856
Int. Cl. G06k *7/14*
U.S. Cl. 343—5 **3 Claims**

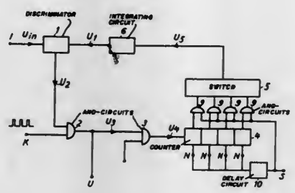


This invention consists of apparatus which utilizes a supplied chart in which data is stored in elementary regions, using one element of a multielement code to delineate the data quantum assigned to each elementary region. The equipment includes an arrangement with which the regions along any arbitrary defined path across the field of the chart are sensed to provide signals which are utilized to output the data profile along the selected path.

3,555,547
REFERENCE VOLTAGE REGULATOR IN A RADAR RECEIVER

Erik Ragnar Arvidsson, Lindome, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm Sweden, a corporation of Sweden

Filed Oct. 11, 1967, Ser. No. 674,522
Claims priority, application Sweden, Nov. 20, 1966, 16,356/66
Int. Cl. G01s 9/02
U.S. Cl. 343—7 4 Claims

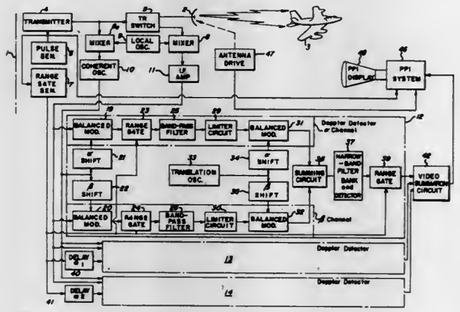


In a radar receiver a reference voltage is generated to provide a clip level for received signals. The signals which exceed the clip level are used to generate a pulse count whose value is a function of the time duration of passed signals during a portion of the period between two range pulses transmitted by the radar transmitter. A positive or negative signal is generated in accordance with whether or not the actual count value exceeds a given count value during the period. The signal so generated is integrated to provide the reference voltage for the next period.

3,555,548
MOVING TARGET INDICATING SYSTEM

Robert L. Wyckoff, Holliston, Mass., assignor to Raytheon Company, Waltham, Mass., a corporation of Delaware

Filed Feb. 17, 1961, Ser. No. 90,044
Int. Cl. G01s 9/44; G01r 23/00
U.S. Cl. 343—7.7 13 Claims

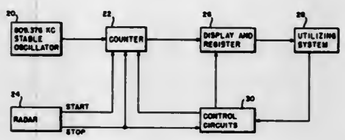


A coherent MTI radar system wherein a Doppler video signal is processed in a manner such that an indication is provided of whether a target is approaching or receding relative to the radar system. The processing is accomplished by forming two signals, the first of which is generated by mixing the Doppler video signal with a reference frequency signal, the second of which is generated by mixing the Doppler video signal with the quadrature phase component of the reference frequency signal. The two signals are filtered and an additional 90° phase shifter is added between the two signals. The two signals are then combined in a summing circuit and a subtracting circuit such that the signal produced by the summing/subtracting circuits provides an indication of an approaching or receding target.

3,555,549
RADAR RANGE INDICATING SYSTEM

Phillip L. Watkins, Rockville, and Frank D. Clarke, Camp Springs, Md., assignors to the United States of America as represented by the Secretary of the Navy

Filed July 17, 1968, Ser. No. 745,632
Int. Cl. G01f 5/02; G01s 9/06
U.S. Cl. 343—13 25 Claims

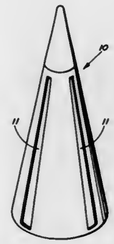


A radar range measuring system obtains target range by utilizing a digital counter which counts the cycles of a high frequency stable oscillator. The counter comprises a series of counting stages interconnected to a series of storage stages by a plurality of AND gates. The counter output indicates range in either a binary code or binary coded decimals in accordance with the position of a mode control switch which is connected to the AND gates.

3,555,550
JETTISONABLE ABSORBING ANTENNA SHIELD

Andrew W. Walters, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Feb. 24, 1959, Ser. No. 795,297
Int. Cl. H01q 17/00
U.S. Cl. 343—18 2 Claims



An electromagnetic wave shield is provided on a missile for shielding an antenna which receives a fuse detonation signal. This prevents accidental and premature detonation. The shield is stripped away by the force of the air when the missile reaches a predetermined velocity.

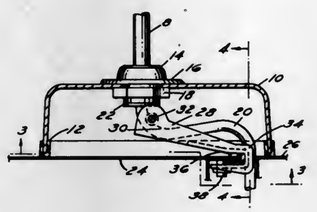
3,555,551
ANTENNA MOUNTING BRACKET

Ernst H. Gronlund, 2535 St. Clair River Drive, Algonac, Mich. 48001

Filed Sept. 9, 1968, Ser. No. 758,240
Int. Cl. H01q 1/32
U.S. Cl. 343—715 3 Claims

This disclosure relates to an antenna mounting bracket adapted particularly for use on an automobile and having a base support for an antenna whereby the antenna is carried by the base supported properly and securely in

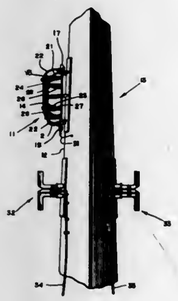
position. The supporting base for the antenna may be shiftably attached to a panel of the automobile body upon which it is mounted for movement to different positions thereon and without marring or defacing in any way the outer surface of the panel to which it is attached. The antenna supporting base is secured to a margin of the panel of the body which panel may be shiftable with respect to the body of the vehicle, as for example the lid of the trunk compartment of an automobile. The supporting base for the antenna is provided with novel securing mechanism including a lever having one end portion gripping the panel to which the base is attached and having another portion connected directly or indirectly with the supporting base. This lever is so mounted and arranged that any force exerted upon the base tending to detach the same in any way from the panel, is resisted so strongly by leverage reaction from the lever, that the base is held at all times firmly and securely in position upon the panel.



3,555,552
DUAL POLARIZED ANTENNA SYSTEM WITH CONTROLLED FIELD PATTERN

Andrew Alford, 120 Cross St., Winchester, Mass. 01890

Continuation-in-part of application Ser. No. 590,049, Oct. 27, 1966. This application Dec. 19, 1969, Ser. No. 886,565
Int. Cl. H01q 21/00
U.S. Cl. 343—726 3 Claims

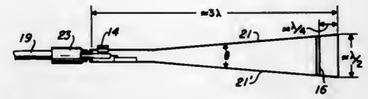


A directional antenna system provides both vertical and horizontal polarization. A spire near the top of a skyscraper carries a pair of vertically oriented dipoles on opposite corners. A power divider delivers more energy to one of the dipoles than to the other. The spire also carries a slotted ring antenna having fed directionalizing elements and coextensive with an extension of one of the dipoles to provide substantially the same horizontal directionality pattern for horizontally polarized energy as the vertically oriented dipoles provide for vertically polarized energy.

3,555,553
COAXIAL-LINE TO WAVEGUIDE TRANSITION FOR HORN ANTENNA

Jerry E. Boyns, San Diego, Calif., assignor to The United States of America as represented by the Secretary of the Navy

Filed Jan. 31, 1969, Ser. No. 795,512
Int. Cl. H01q 13/00; H01p 1/16
U.S. Cl. 343—776 5 Claims

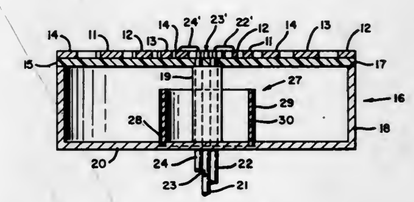


The invention relates to an antenna assembly for microwave usage which is characterized by a coaxial-line to waveguide transition. The antenna includes a rectangular waveguide section, a sectoral horn, and a transformer for providing impedance matching between the waveguide and the horn. The transition is accomplished by feeding to the end of the waveguide an E-plane loop, i.e., a loop parallel to the electric field plane in the waveguide. The end feeding of the waveguide results in a minimum vertical dimension of the overall device when the coaxial line is attached. The small vertical dimension is desirable in order to permit stacking of a required number of antennas in an array having limited space requirements between assembly inputs. The invention also features a wide band response.

3,555,554
CAVITY-BACKED SPIRAL ANTENNA WITH MODE SUPPRESSION

Samuel Chung-Shu Kuo, San Jose, Calif., assignor to Sylvania Electric Products Inc., a corporation of Delaware

Filed Mar. 3, 1969, Ser. No. 803,595
Int. Cl. H01q 1/36
U.S. Cl. 343—895 9 Claims



This planar unidirectional cavity-backed spiral antenna has a cylindrical resistance card in the cavity coaxial with the center conductor thereof to suppress modes of propagation of electromagnetic waves in the cavity other than the dominant mode.

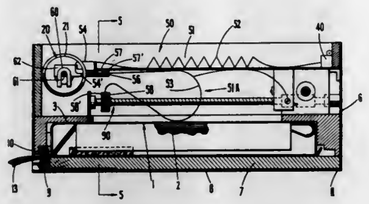
3,555,555
RECORDER USING FIBER OPTICS

Jack R. Lambert, Lexington, Mass., assignor, by mesne assignments, to Fibre-Optics Industries, Inc., Bedford, Mass., a corporation of Delaware

Filed June 20, 1968, Ser. No. 738,517
Int. Cl. A61b 5/08; G01d 9/12; G02b 5/14
U.S. Cl. 346—30 9 Claims

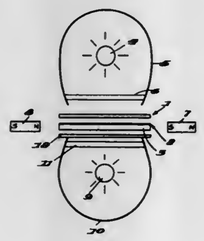
A recorder for visually recording on light sensitive film an input signal which quantitatively varies over a period of time. The input may comprise a form of spirograph in

which a variable flow of air rotates a shaft through a fan. The shaft in turn moves one end of a flexible optical fiber which is aligned with the ends of the flexible optical fibers in an array along one axis in response to the magnitude of the input signal. Light projected through the one fiber is selectively distributed to the array in response to the magnitude of the input signal. Simultaneously the other end



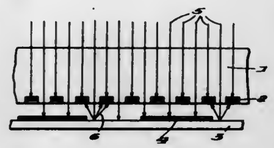
of the fiber array is moved along an orthogonally related axis over a selected time period by a motor drive so that the quantitative measure of the input information is measured in time relation by impinging the light from the fiber array onto the light sensitive film.

3,555,556
THERMOMAGNETIC RECORDING
George Raymond Nacci, Fairfax, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 636,729, May 8, 1967, which is a continuation-in-part of application Ser. No. 409,885, Nov. 9, 1964. This application Nov. 27, 1968, Ser. No. 779,393
Int. Cl. G01d *15/12;* **G11b** *5/62, 7/02*
U.S. Cl. 346—74 **50 Claims**



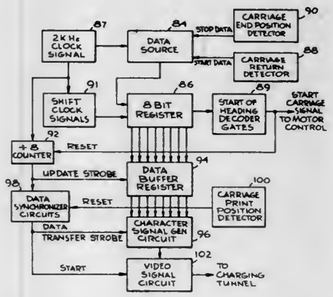
High quality thermomagnetic recording can be achieved by imaging a document onto a magnetic recording member with a flash of light. The magnetic recording member is composed of fine particles of hard magnetic material and is exposed under magnetic conditions such that a change of magnetic state occurs on heating. Preferably the recording member is premagnetized and imagewise demagnetized. The member can be thermally biased by a second flash of light.

3,555,557
REFLEX THERMOMAGNETIC RECORDING PROCESS
George Raymond Nacci, Fairfax, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of abandonded applications Ser. No. 410,007, Nov. 9, 1964; Ser. No. 636,728, May 8, 1967; and Ser. No. 682,234, Nov. 13, 1967. Continuation-in-part of application Ser. No. 636,955, May 8, 1967. This application Feb. 4, 1969, Ser. No. 796,490
Int. Cl. G01d *15/06, 15/08, 15/12*
U.S. Cl. 346—74 **16 Claims**



A process for thermomagnetic copying of documents using a semitransparent recording member containing a magnetic stratum which is premagnetized and placed in imaging relationship to the document. The assembly is exposed to light which passes through the recording member and is selectively reflected from the document so that the magnetic stratum is imagewise demagnetized.

3,555,558
INK DROP WRITING APPARATUS WITH DATA SYNCHRONIZING MEANS
David M. Sherman, La Grange, Ill., assignor to A. B. Dick Company, Chicago, Ill., a corporation of Illinois
Filed Jan. 21, 1969, Ser. No. 792,271
Int. Cl. G01d *15/18;* **B41j** *3/04*
U.S. Cl. 346—75 **6 Claims**



In an ink drop writing apparatus in which a reciprocating carriage carries ink drop emitting apparatus, which ink drops are emitted through an electric field toward paper, and in flight are deflected in accordance with video signals for producing intelligible information on said paper, means are provided, in accordance with this invention, for insuring that despite variables, such as different carriage start-up time and acceleration, a uniform lefthand margin is produced on the paper, and also that printing free from timing errors occurs.

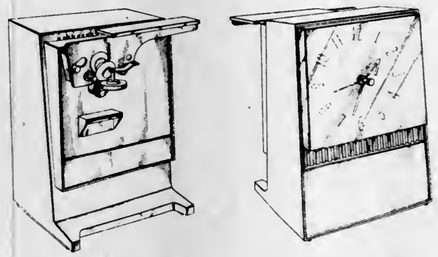
DESIGNS

JANUARY 12, 1971

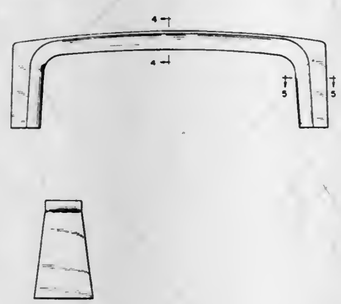
219,700
CARTRIDGE PRIMER SEATING TOOL
Richard J. Lee, Rte. 2, Hartford, Wis. 53027
Filed Jan. 26, 1970, Ser. No. 21,073
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D8—14



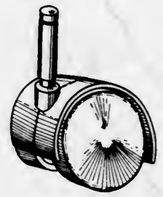
219,701
COMBINED CAN OPENER AND CLOCK
Harold Weiss, Fort Lee, N.J., assignor to Sunmade Electric Corp., New York, N.Y., a corporation of New York
Filed Feb. 13, 1970, Ser. No. 21,437
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D8—34



219,702
HANDLE OR SIMILAR ARTICLE
Stanley F. Korol, Mansfield, Ohio, assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 2, 1969, Ser. No. 16,555
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—166



219,703
CASTER
Bent Harlang, Sigridsvej 21, Hellerup, Denmark, and Jørgen Rasmussen, Gl. Holtegaard, Holte, Denmark
Filed Mar. 21, 1969, Ser. No. 16,384
Claims priority, application Denmark Sept. 23, 1968
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—226



219,704
HOSE STRAP
Theodore Ziaylek, Jr., P.O. Box 292, Yardley, Pa. 19068
Filed Sept. 12, 1969, Ser. No. 19,124
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—230



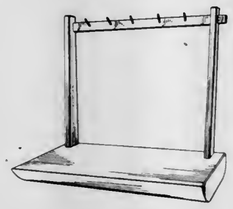
219,705
BRACKET FOR MOTORCYCLE HELMET OR SIMILAR ARTICLE
Billy W. Allen, 1407 Main St., De Soto, Tex. 75202
Filed Dec. 16, 1969, Ser. No. 20,522
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—254



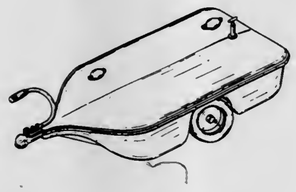
219,706
COMBINED BOTTLE AND DISPENSING CLOSURE THEREFOR
Albert J. Elias, Greenwich, Conn., assignor to Schering Corporation, Bloomfield, N.J., a corporation of New Jersey
Filed Sept. 26, 1969, Ser. No. 19,301
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—63



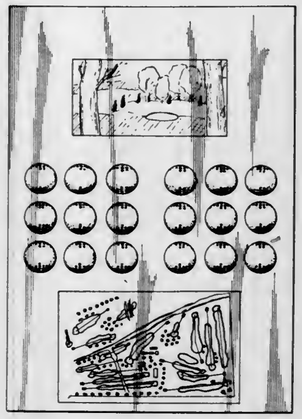
219,707
COMBINED MEAT AND CHEESE RACK AND CUTTING BLOCK
Robert L. Stuart, R.R. 3, Syracuse, Ind. 46567
Filed Aug. 8, 1969, Ser. No. 18,585
Term of patent 7 years
Int. Cl. D15—*99;* D6—*01*
U.S. Cl. D11—1



219,708
MOBILE HOLDING AND DUMPING CONTAINER FOR LIQUID WASTE AND SIMILAR MATERIALS
Calvin Lee Baker, 3242 Winton Road, Rochester, N.Y. 14623
Filed July 31, 1969, Ser. No. 18,494
Term of patent 14 years
Int. Cl. D12—*10*
U.S. Cl. D14—3



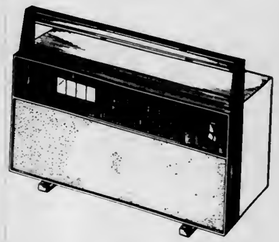
219,709
PLAQUE
Robert McDonald, Yardley, Pa., assignor to The Hibbert Company, Trenton, N.J., a corporation of New Jersey
Filed Jan. 21, 1970, Ser. No. 21,025
Term of patent 14 years
Int. Cl. D11—*99*
U.S. Cl. D29—23



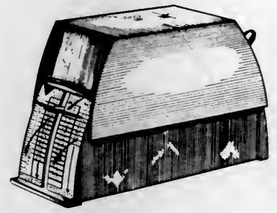
219,710
LIGHTING FIXTURE
Stig Åke Artur Edenberg, 9C Stensovagen, Kalmar, Sweden
Filed Jan. 8, 1970, Ser. No. 20,819
Term of patent 14 years
Int. Cl. D26—*02;* D20—*03;* D11—*01*
U.S. Cl. D48—20



219,711
ELECTRONIC THERMOMETER
Stephens M. Sato, San Diego, Calif., assignor to Ivac Corporation, San Diego, Calif., a corporation of California
Filed Dec. 15, 1969, Ser. No. 20,695
Int. Cl. D10—*09*
Term of patent 14 years
U.S. Cl. D52—7

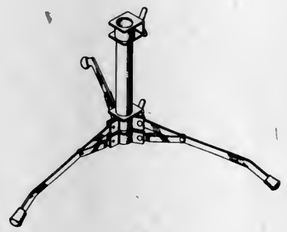


219,712
SCALE
Jack Fairchild Fleming, Boonton, N.J., assignor to Sterling Plastics Co., Mountainside, N.J., a corporation of New Jersey
Filed Sept. 11, 1969, Ser. No. 19,115
Term of patent 14 years
Int. Cl. D10—*99*
U.S. Cl. D52—10





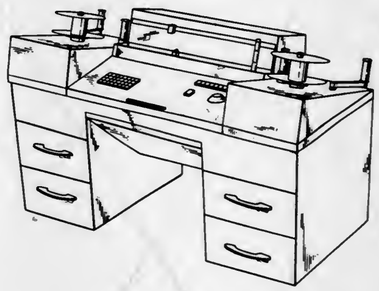
219,713
BOTTOM FOR DRUM STAND
Josephus B. Thompson, deceased, late of Covington, Ohio, by K. E. Stade, administrator, Covington, Ohio, assignor to Columbia Broadcasting System, Inc., New York, N.Y., a corporation of New York
Continuation of design applications Ser. No. 13,915 and Ser. No. 13,919, both Oct. 9, 1968. This application June 24, 1969, Ser. No. 18,397
Term of patent 14 years
Int. Cl. D17—*04*
U.S. Cl. D56—1



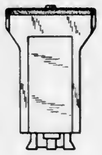
219,714
PAIR OF SPECTACLES
Bernard Crestin-Billet, Morez du Jura, France
Filed July 16, 1968, Ser. No. 12,793
Claims priority, application France Feb. 15, 1968
Term of patent 14 years
Int. Cl. D16—*08*
U.S. Cl. D57—1



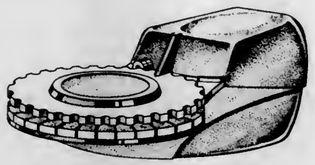
219,715
INSPECTION TABLE FOR COLOR PRINTS
Helmuth Stoklasa, Zurich, and Erich Binder, Regensdorf, Switzerland, assignors to Gretag Aktiengesellschaft, Regensdorf, Switzerland
Filed Apr. 23, 1969, Ser. No. 16,874
Term of patent 14 years
Int. Cl. D16—*07*
U.S. Cl. D61—1



219,716
CAMERA FLASH ATTACHMENT
Raymond A. Grosso, Troy, Mich., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed Jan. 26, 1970, Ser. No. 21,079
Term of patent 14 years
Int. Cl. D16—*07*
U.S. Cl. D61—1



219,717
TAPE EMBOSSING TOOL
Arnold R. Bone, Needham, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Dec. 9, 1969, Ser. No. 20,425
Term of patent 14 years
Int. Cl. D18—*99*
U.S. Cl. D64—10



219,718
TYPEWRITER
Richard H. Penney, New York, N.Y., assignor to Sperry Rand Corporation
Filed Mar. 30, 1970, Ser. No. 22,118
Term of patent 14 years
Int. Cl. D18—*01*
U.S. Cl. D64—11



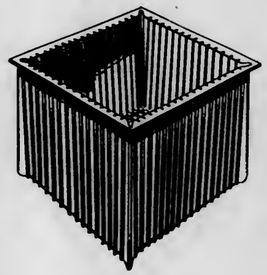
219,719
COMBINED PENCIL WELL AND SHARPENER
Jack Fairchild Fleming, Boonton, N.J., assignor to Sterling Plastics Co., Mountainside, N.J., a corporation of New Jersey
Filed Sept. 11, 1969, Ser. No. 19,113
Term of patent 7 years
Int. Cl. D19—*02*
U.S. Cl. D74—5



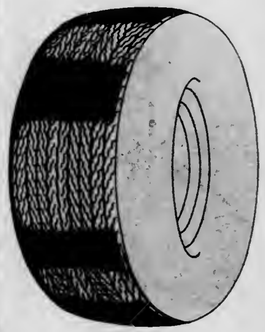
219,720
NESTABLE MOBILE CART DISPLAY
Melvin O. Maisak, Florissant, and William H. Fullington, Ballwin, Mo., assignors to Pet Incorporated, St. Louis, Mo., a corporation of Delaware
Filed June 11, 1969, Ser. No. 17,655
Term of patent 14 years
Int. Cl. D12—*02*; D6—*01*
U.S. Cl. D80—9



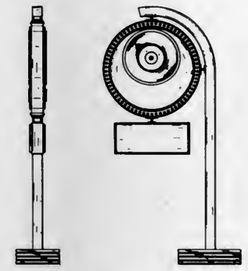
219,721
STORAGE CONTAINER
Edward W. Banel, 1023 Fiske St., Pacific Palisades, Calif. 90272
Filed Feb. 13, 1970, Ser. No. 21,439
Term of patent 14 years
Int. Cl. D3—*99*
U.S. Cl. D87—1



219,722
TIRE
Rush M. Johnson, Jr., Wadsworth, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Oct. 9, 1969, Ser. No. 19,487
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



219,723
ROADSIDE SIGN
Baron G. Roberts, Atlanta, Ga., assignor to Gold Platter, Inc., Macon, Ga., a corporation of Georgia
Filed Oct. 10, 1969, Ser. No. 19,500
Term of patent 14 years
Int. Cl. D20—*03*
U.S. Cl. D96—12



219,724
FOLDABLE COMB
Arthur Rogovin, 245 Rumsey Road, Yonkers, N.Y. 10701
Filed June 17, 1970, Ser. No. 23,532
Term of patent 14 years
Int. Cl. D28—*03*
U.S. Cl. D86—8



LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 12TH DAY OF JANUARY, 1971

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Aarons, Ralph, to Du Pont de Nemours, E. I., and Company. High surface area alumina coatings on catalyst supports. 3,554,929, Cl. 252-462.

Abbott, Earl: *See—*
Lickliter, Robert P.; Abbott, Earl; and Reeves, John F.,3,553,916.

Abe, Michio, to Tokai Cold Forming Co., Ltd. Method of making ball studs. 3,553,826, Cl. 29-527.2

Abercrombie, Bolling A.: *See—*
McMurry, Everett D.; and Abercrombie, Bolling A.,3,554,221.

Abercrombie, Lucas L. Power-operated load transporting device. 3,554,309, Cl. 180-8.

A.B.G. Hydraulics, Inc.: *See—*
Bernstein, Robert J., 3,554,211.

Abitibi Paper Company Ltd.: *See—*
Eynon, John E., 3,554,245.

Ablad, Bengt Arne Hjalmar: *See—*
Brandstrom, Arne Elof; Corrodi, Hans Rudolf; and Ablad, Bengt Arne Hjalmar,3,555,161.

Abrams, Alvin, to Irradiation Controls Inc. Situ recovery of petroleum-like hydrocarbons from underground formations. 3,554,283, Cl. 166-247.

Abson, Derek; and Taylor, Richard P., to Columbia Cellulose Company Limited. Production of cellulose esters. 3,554,775, Cl. 106-196.

ACF Industries, Incorporated: *See—*
Grover, George M.; and Coyle, Edward L., 3,554,183.
Rollins, Dallas W., 3,554,609.

Achelpohl, Fritz; and Schmedding, Herbert, to Windmoller & Holscher. Bag-making machine. 3,554,098, Cl. 93-8.

Achenbach, Karl: *See—*
Beschke, Helmut; Reinhardt, Helmut; and Achenbach, Karl,3,554,759.

Ackermann, Ernst: *See—*
Pfister, Rudolf, 3,554,042.

Acme-Cleveland Corporation: *See—*
Goss, Harold R., 3,554,271.

Adams, Cecil S.; and Russell, James S., to Adams, Incorporated. Stop motion devices. 3,555,218, Cl. 200-61.18

Adams, Frederick J., to Cam Gears Limited. Three point rack bar support for rack and pinion assembly. 3,554,048, Cl. 74-498.

Adams, Incorporated: *See—*
Adams, Cecil S.; and Russell, James S., 3,555,218.

Adams, Ronald E.: *See—*
Reinsma, Harold L.; and Adams, Ronald E.,3,554,588.

Addressograph-Multigraph Corporation: *See—*
Blanchette, Robert G., 3,554,161.
Granzow, Daniel B., Jr., 3,554,778.

Adelski, Hans-Joachim: *See—*
Ritter, Wilhelm; and Adelski, Hans-Joachim,3,554,335.

Adkins, David E.; and Hackman, Donald J., to American Gas Association, Inc. Directional control of earth boring apparatus. 3,554,302, Cl. 175-26.

Adkins, David E.; Harris, Jeremy M.; and Riley, George R., to American Gas Association, Inc. Optical auger guidance system. 3,554,301, Cl. 175-24.

AEG-Elotherm G.m.b.H.: *See—*
von Starck, Axel; and Schnake, Friedrich, 3,554,670.

Agfa-Gevaert Aktiengesellschaft: *See—*
Weyde, Edith; von Konig, Anita; von Rintelen, Harald; Wagner, Siegfried; and Metz, Hans-Jorg, 3,554,750.
Winkler, Alfred; Wagner, Karl; Engelsmann, Dieter; and Schroder, Rolf, 3,554,104.
Zahn, Wolfgang, 3,554,642.

Aghnides, Elie P. Aerator with variable proportioning. 3,554,451, Cl. 239-428.5

Agius, Jerome G., to Benrus Corporation. Tape transport capstan with filter. 3,554,420, Cl. 226-95.

Agneray, Louis; Clayer, Arlette; and Bruni, Maurice, to Societe de Recherches Techniques et Industrielles (S.R.T.I.). Method of continuous separation by countercurrent absorption in gaseous phase. 3,553,937, Cl. 55-60.

Ahrons, Richard W., to RCA Corporation. Self-correcting shift counter. 3,555,249, Cl. 235-92.

Aileo, Jackson Anthony, to Gentex Corporation. Retractable eye shield for protective helmet. 3,553,734, Cl. 2-10.

Air Preheater Company, Inc., The: *See—*
Goetschius, George K.; and Kent, Edmund J., 3,554,150.

Aishima, Itsuho: *See—*
Fujisaki, Yoshisato; Aishima, Itsuho; Fukuma, Noboru; Nakanishi, Atsuo; Matsui, Kenichi; Shima, Tsukasa; and Nakai, Schiyouzi,3,554,683.

Aishin Seiki Kabushiki Kaisha: *See—*
Noguchi, Masaaki; Sakakibara, Shigeru; and Sumiyoshi, Masaharu, 3,553,979.

Aisin Seiki Company Limited: *See—*
Kawabe, Tsuneo; Ishigami, Noriakira; and Ban, Masashi, 3,554,611.

Akers, Artie E.; and Schonle, Robert W., to North American Rockwell Corporation. Proximity detector with a sensing probe. 3,555,534, Cl. 340-256.

Akino, Tadaharu: *See—*
Maeda, Tsutomu; Watanabe, Kiyoshi; Akino, Tadaharu; Ito, Eiitsu; and Osada, Hisashi,3,555,464.

Aktiebolaget Astra: *See—*
Ekstrom, Bertil Ake; and Sjoberg, Berndt Olof Harald, 3,555,011.

Aktiebolaget Bofors: *See—*
Andersson, John-Erik; and Haggstrom, Rolf Paul, 3,554,025.

Aktiebolaget Fellingsbro Verkstader: *See—*
Landberg, Erik, 3,554,442.

Aktiebolaget Hakanssons Industrier: *See—*
Nordstedt, Hans Josef; and Delin, Lars Folke, 3,553,742.

Aktiebolaget Hassle: *See—*
Brandstrom, Arne Elof; Corrodi, Hans Rudolf; and Ablad, Bengt Arne Hjalmar, 3,555,161.

Aktiebolaget Kamyr: *See—*
Richter, Johan C. F. C., 3,554,864.

Aktiebolaget Svenska Metallverken: *See—*
Alfredsson, Karl Uno Torsten, 3,553,823.

Aktiebolaget Volvo: *See—*
Bergstrom, Carl Ingvar Andreas, 3,554,574.

Aktiengesellschaft Brown, Boveri & Cie: *See—*
Fischer, Wilfried; and Baukal, Werner, 3,554,808.
Isenberg, Arnold; Pabst, Wilfried; and Sandstede, Gerd, 3,554,811.
Meyer, Eugen, 3,555,329.

Aktieselskabet Niro Atomizer: *See—*
Thale, Allan; Hovstad, Olav B.; and Ivnas, Lennart, 3,554,453.

Akustische u. Kino-Gerate Gesellschaft m.b.H.: *See—*
Cech, Karl, 3,555,207.

ALBA-Werkzeugfabrik Lennartz & Co.: *See—*
Hiltebrand, Heinrich, 3,554,735.

Aldrich, Paul H., to Hercules Incorporated. Poly (amide-imides) from maleopimaric acid and diamines. 3,554,982, Cl. 260-78.

Alexander, William H., to Texsteam Corporation. Plug valve. 3,554,488, Cl. 251-317.

Alexeff, Alexander V.: *See—*
Rye, Grover W.; and Alexeff, Alexander V.,3,554,502.

Alexeff, Alexander V., to Alexeff-Snyder Enterprises, Inc. Web guiding apparatus. 3,554,423, Cl. 226-199.

Alexeff-Snyder Enterprises, Inc.: *See—*
Alexeff, Alexander V., 3,554,423.

Alford, Andrew. Dual polarized antenna system with controlled field pattern. 3,555,552, Cl. 343-726.

Alford, Paul D.: *See—*
Liberman, Harvey W.; Toppins, Charles R.; and Alford, Paul D.,3,554,120.

Alfredsson, Karl Uno Torsten, to Aktiebolaget Svenska Metallverken. Method for constructing light-metal frameworks for transport containers, and a framework constructed according to the method. 3,553,823, Cl. 29-471.1

Allan, Peter D.; and Huber, Mortimer J., to Motion Rotators, Inc., mesne. Electric motor and clutch. 3,555,317, Cl. 310-78.

Allegheny Ludlum Steel Corporation: *See—*
Harbaugh, Samuel S., 3,553,992.

Allemann, Adrian, to Hasler AG. Key-operated teleprinter. 3,555,186, Cl. 178-79.

Allen, James D.: *See—*
Stapp, Paul R.; and Allen, James D.,3,555,048.

Allen, John K., to RCA Corporation. Automatic degaussing circuit for TV having half-wave voltage doubler power supply. 3,555,343, Cl. 315-8.

Allen, Willis C.: *See—*
Mann, Kenneth M.; and Allen, Willis C.,3,554,545.

Allen-Bradley Company: *See—*
Dehn, William F., 3,555,215.
Pfister, Anthony C.; Krieger, Roland L.; and Drinan, Gary J., 3,555,355.
Proctor, Thomas, 3,555,516.

Allied Chemical Corporation: *See—*
Crescentini, Lamberto; and Winckhofer, Robert C., 3,555,056.
Du Bois, Robert J., 3,555,074.

Gerson, Herman; Bachmann, William Eugene; and Woodlock, Paul B., 3,554,776.
Moore, William Percy; Sansing, James Earl; and Novotny, Joseph, 3,554,728.
Reimschuessel, Herbert K.; Dege, Gerald J.; and Fuhrmann, Robert, 3,555,114.
Allitt, Bernard C., to Dunlop Company Limited, The. Molding apparatus. 3,553,789, Cl. 18-42.
Allmanna Svenska Elektriska Aktiebolaget: *See—*
Frank, Kjell, 3,555,397.
Monestam, Eskil, 3,553,994.
Persson, Erik, 3,555,270.
Persson, Erik; and Goliath, Karl Gunnar, 3,555,437.
Alpers, Frederick C., to United States of America, Navy. Optical fuzing system. 3,554,129, Cl. 102-70.2
Altamira, Anthony F.; and Daleda, Joseph, to Texaco Inc. Method for improving the sweep of underground reservoirs by exploiting individual reservoir segments. 3,554,282, Cl. 166-245.
Alter, Henry L.: *See—*
Ingulli, Alfred F.; and Alter, Henry L.,3,555,119.
Aman, Edward F.; and Rowell, Ivan W., said Aman assor. to said Rowell. Rotary weeding and edging attachment for rotary power source. 3,554,293, Cl. 172-13.
AMBAC Industries, Incorporated: *See—*
Terry, Stanley M., 3,555,327.
American Athletic Equipment Co.: *See—*
Sorenson, Bill W.; Kious, Dane R.; and Denhardt, Carl, 3,554,142.
Sorenson, Bill W., 3,554,585.
American Cyanamid Company: *See—*
Bauer, Victor John; Fanshawe, William Joseph; and Safir, Sidney Robert, 3,555,036.
Chang, Eugene Yue Chieh; and Kaizerman, Samuel, 3,554,872.
Grosso, Vicent Gerard; and Butterfield, Boydston Lewis, 3,555,087.
Mayell, Jaspal Singh, 3,555,084.
McGahren, William James; Mitscher, Lester Allen; and Porter, John Norman, 3,555,075.
Pazar, Charles Arnold; and Wiley, James Henry, 3,555,144.
Remers, William Alan; and Weiss, Martin Joseph, 3,555,037.
American Foods Machinery Corporation: *See—*
Pontecorvo, Nicholas E.; and Shaffer, Wilfred A., 3,554,765.
American Gage & Machine Company: *See—*
Sommer, Peter J., 3,553,892.
American Gas Association, Inc.: *See—*
Adkins, David E.; Harris, Jeremy M.; and Riley, George R., 3,554,301.
Adkins, David E.; and Hackman, Donald J., 3,554,302.
American Hoist & Derrick Company: *See—*
Thompson, Wallace M., 3,554,388.
American Home Products Corporation: *See—*
Diebold, James L.; and Wolf, Milton, 3,555,034.
Sallay, Stephen I., 3,555,044.
Shah, Harshavadan C.; Stein, Reinhardt P.; and Smith, Herchel, 3,555,054.
Stein, Reinhardt P.; Buzby, George C., Jr.; and Smith, Herchel, 3,555,015.
Sulkowski, Theodore S., 3,555,042.
American Machine & Foundry Company: *See—*
Casson, Charles F., 3,555,353.
Deck, Edwin L., 3,555,230.
Gianese, Goffredo, 3,553,925.
American Messer Corporation: *See—*
Markbreiter, Stephen J.; and Weiss, Irving, 3,553,972.
American Packaging Corporation: *See—*
Hoover, Lawrence E., 3,554,367.
American Products, Inc.: *See—*
Hornung, Michael C.; and Tasset, Everett J., 3,554,145.
American Standard Inc.: *See—*
Martin, Allan E.; and Shirley, Edmund C., 3,554,167.
American Sterilizer Company: *See—*
Lariccia, Anthony H., 3,554,871.
Ametek, Inc.: *See—*
Martin, Francis C., Jr., 3,555,522.
Amiet, Louis; and Soula, Jean-Claude, to Progil. Process of manufacturing aliphatic esters. 3,555,078, Cl. 260-491.
AMP Incorporated: *See—*
Cootes, Harold Edwin, 3,553,836.
Demler, Henry William, Sr., and Ziegler, George William, Jr., 3,553,835.
Long, Robert Alvin; and Over, William Roderick, 3,553,793.
Rider, George William, 3,553,814.
Teagno, Wladimiro, 3,555,486.
Amsden, Rollin M., Jr.: *See—*
Kneidl, Franz A.; and Amsden, Rollin M., Jr.,3,553,794.
Anaconda American Brass Company: *See—*
Palmer, Earl W.; Laigle, Roger E.; and Kabelka, Peter J., 3,553,831.
Anaconda Wire and Cable Company: *See—*
Fischer, Thomas L.; and Forrest, Stanley C., Jr., 3,555,430.
Anderson, Albert G.: *See—*
Cleghorn, Norman L.; and Anderson, Albert G.,3,554,242.
Anderson, Douglas W.: *See—*
Chapman, Dave; Anderson, Douglas W.; and Phalon, Joseph E.,3,554,399.
Anderson, Douglas W., to Chapman, Dave, Goldsmith & Yamasaki, Inc. Flexible intravenous container. 3,554,256, Cl. 150-8.
Anderson, Douglas W., to Dave Chapman Goldsmith & Yamasaki, Inc. Free-standing flexible package. 3,554,434, Cl. 229-55.
Anderson, John R.: *See—*
Kuo, Wen Ling; and Anderson, John R.,3,554,691.
Anderson, Norman G., to United States of America, Atomic Energy Commission. Multistation, single channel analytical photometer and method of use. 3,555,284, Cl. 250-218.
Anderson, Norman J., to Zurn Industries, Inc. Combination clutch and coupling. 3,554,341, Cl. 192-70.2
Anderson, Philip C.; Buhmann, Donald; and Hinkel, Norman, to Feed Service Corporation. Tenderometer. 3,554,018, Cl. 73-81.
Anderson, Ralph F.: *See—*
Anderson, Ralph F.; and Sorensen, Robert P., 3,553,930.
Anderson, Ralph F.; and Sorensen, Robert P., to Anderson, Ralph F. Packaging machine. 3,553,930, Cl. 53-77.
Anderson, Richard D., to Kimberly-Clark Corporation. Drafting frame. 3,553,792, Cl. 19-258.
Anderson, Ross, to Western Microwave Laboratories, Inc. Gyromagnetic device having a plurality of outwardly narrowing tapering members. 3,555,459, Cl. 333-1.1
Andersson, John-Erik; and Haggstrom, Rolf Paul, to Aktiebolaget Bofors. Force measuring device. 3,554,025, Cl. 73-141.
Ando, Fumio: *See—*
Hosaka, Mamoru; Ando, Fumio; and Yoshitake, Masathugu,3,555,514.
Ando, Satoshi; Tanaka, Yusaku; Kojima, Minoru; and Fujimura, Kyoichi, to Kanegafuchi Boscki Kabushiki Kaisha, and Snia Viscosa Societa Nazionale Industria Applicavioni Viscosa S.p.A. Method for preventing stickiness of fibres consisting of or comprising copolyamide. 3,554,980, Cl. 260-78.
Andoniev, Sergei Mikhailovich; Berman, Mark Nikolaevich; Zhitnik, Georgy Gavrilovich; Kondratiev, Evgeny Mikhailovich; Levitasov, Yakov Matveevich; Makarov, Konstantin Ivanovich; Pevny, Nikolai Ivanovich; Pokrass, Leonid Moiseevich; Pochtman, Alexandr Markovich; Robin, Mark Anisimovich; Tesner, Pavel Alexandrovich; Sheinfain, Felix Isaakovich; and Filipiev, Oleg Vladimirovich. Regenerative reverberatory predominantly open hearth, gas-fired furnace. 3,554,507, Cl. 263-15.
Andress, Harry J., Jr.; and Williams, Albert L., to Mobil Oil Corporation. Lubricating compositions containing alkylated polyhydroxy aromatic compounds. 3,554,945, Cl. 252-52.
Andress, Harry J., Jr.: *See—*
Gee, Paul Y. C.; and Andress, Harry J., Jr.,3,555,097.
Andrews, Dallas R., to RCA Corporation. Picture projection with sound. 3,554,637, Cl. 353-19.
Anglade, Carlos, Jr. Apparatus and method for packing articles in containers. 3,553,927, Cl. 53-26.
Angliker, Hans Joerg: *See—*
Peter, Richard; and Angliker, Hans Joerg,3,555,016.
Angstrohm Precision, Inc.: *See—*
Solow, Benjamin, 3,555,485.
Anjac Plastics, Inc.: *See—*
Mock, Donald E., 3,554,627.
Anker-Werke Aktiengesellschaft: *See—*
Luczkowski, Heinz, 3,555,305.
Anthony, Gene H.: *See—*
Jamison, Saunders E.; and Anthony, Gene H.,3,554,202.
Apiki, Sylvester K. Ball field and playing apparatus. 3,554,551, Cl. 273-95.
APL Corporation: *See—*
Marcus, Paul, 3,555,134.
Apparatebau Rothemuhle Brandt & Kritzler: *See—*
Kritzler, Gerhard, 3,554,273.
Apsit, Voldemar Voldemarovich; and Sushkevich, Viktor Alexeevich. Noncontact rotary converter. 3,555,322, Cl. 310-113.
Aquatech Corporation: *See—*
Sullivan, James P., 3,554,299.
A.R. Industries, Inc.: *See—*
Reckman, Albert C.; Barklage, Herman F.; and Shotwell, George T., 3,553,798.
Arai, Haruhiko: *See—*
Maruta, Iwao; Arai, Haruhiko; Iida, Akihiko; and Horin, Shoji,3,554,947.
Arakawa, Morimasa; Yamada, Bunjiro; Katanosaka, Akisato; and Kato, Kazuhiko, to Arakawa Rinsan Kagaku Kogyo Kabushiki Kaisha. Pressure-sensitive adhesives. 3,554,940, Cl. 260-5.
Arakawa Rinsan Kagaku Kogyo Kabushiki Kaisha: *See—*
Arakawa, Morimasa; Yamada, Bunjiro; Katanosaka, Akisato; and Kato, Kazuhiko, 3,554,940.
Archer, Sydney, to Sterling Drug Inc. Tertiary-amino-lower-alkoxy-9-benzylxanthenes and thioxanthenes. 3,555,043, Cl. 260-328.
Argereu, William. Method of making contact rolls. 3,555,140, Cl. 264-255.
Armistead, Fontaine C., to Texaco Development Corporation. Stabilized offshore platform. 3,553,968, Cl. 61-46.5
Armour and Company: *See—*
Ford, Paul L., 3,553,770.
Armour Pharmaceutical Company: *See—*
Enkoji, Takashi; and Levine, Edward M., 3,555,154.
Jones, John L.; and Rubino, Andrew M., 3,555,146.
Armstrong Cork Company: *See—*
Herweh, John E.; and Poshkus, Algirdas C., 3,554,938.
Messer, Donald Gene; and Nease, Herbert Dwight, 3,555,127.

Armstrong, Robert G.: *See—*
Pfaffman, George D.; and Armstrong, Robert G.,3,555,233.
Arndt, Wolfgang, to International Standard Electric Corporation. Circuit arrangement to check a section of a switching network. 3,555,208, Cl. 179-175.23
Arnelo, Anders Ingvar; and Arnelo, Nils August, to Essem Metotest AB. Method for grading and classifying debranched tree- trunks and similar roundwood according to the usefulness of the wood contained therein, and an apparatus for putting the method into effect. 3,554,249, Cl. 144-312.
Arnelo, Nils August: *See—*
Arnelo, Anders Ingvar; and Arnelo, Nils August,3,554,249.
Arnold, James T., to Varian Associates. Mass filter apparatus having an electric field the equipotentials of which are three dimensionally hyperbolic. 3,555,273, Cl. 250-41.9
Arnshav, Karl Sivert, to Dahlber, Frank, AB. Arrangement in pneumatic hand tools for inserting skid-preventing studs into vehicle tires. 3,553,816, Cl. 29-212.
Aro Corporation, The: *See—*
Fremstad, Viles K., 3,554,408.
Arrance, France C.; and Berger, Carl, to McDonnell Douglas Corporation. Inorganic separator and process for producing same. 3,554,814, Cl. 136-146.
Arrizaga, Carlos; and Gajardo, Anibal. Rotary multitubular kiln for roasting molybdenite and similar sulphides. 3,554,510, Cl. 263-34.
Arsem, Alvan Donald, to Wurlitzer Company, The. Numerical storage phonograph selector. 3,555,509, Cl. 340-162.
Artex Hobby Products, Inc.: *See—*
Woods, Lester E., 3,554,660.
Artfiber Corporation: *See—*
Modigliani, John Philip, 3,554,851.
Artiaga, Mariano V.; Storrie, Arthur; and Suzik, Brian P., to Kitchens of Sara Lee, Inc. Method and apparatus for de-pitting pit containing fruit material. 3,554,252, Cl. 146-18.
Artisan Industries Inc.: *See—*
Baird, James L.; and Monty, Leo J., 3,554,264.
Baird, James L.; and Monty, Leo J., 3,554,266.
Artsybashev, Oleg Ivanovich: *See—*
Mitskevich, Gennady Feodosievich; Guschin, Vladislav Yakovlevich; Vorontsov, Jury Nikolaevich; Boguslavsky, Vladimir Avramovich; Bela-Belov, Anatoly Mikhailovich; Rakhlis, Viktor Izralievich; Oktyabrev, Viktor Revoldovich; Artsybashev, Oleg Ivanovich; and Vakhomchik, Fedor Andreevich,3,555,471.
Arvidsson, Erik Ragnar, to Telefonaktiegolaget LM Ericsson. Referance voltage regulator in a radar receiver. 3,555,547, Cl. 343-7.
Asahi Kasei Kogyo Kabushiki Kaisha: *See—*
Fujisaki, Yoshisato; Aishima, Itsuho; Fukuma, Noboru; Nakanishi, Atsuo; Matsui, Kenichi; Shima, Tsukasa; and Nakai, Schiyouzi, 3,554,683.
Kominami, Naoya; Iwaisako, Toshiyuki; Tanaka, Kyugo; and Ohki, Kusuo, 3,554,901.
Asahi Kogaku Kogyo Kabushiki Kaisha: *See—*
Takahashi, Yasuo, 3,554,629.
Ash, John L.: *See—*
Hunkeler, Ernst J.; Ash, John L.; and DeWolf, Myron F.,3,554,079.
Ashland Oil & Refining Company: *See—*
Slagel, Robert C., 3,555,095.
Astatic Corporation, The: *See—*
Dvorsky, Alexander L., 3,555,206.
Aston, Bruno D. Device for dispensing and applying liquid materials. 3,554,657, Cl. 401-122.
Ateliers Belges Reunis S.A.: *See—*
Javet, Alain; and Torelli, Aldo, 3,554,800.
Ateliers des Charmilles S.A.: *See—*
Piguet, Pierre, 3,554,216.
Atkins, Carl E., to Wagner Electric Corporation. Capacity sensing means for automatic flushing systems and the like. 3,555,368, Cl. 317-146.
Atkins, Carl E., to Wagner Electric Corporation. Time-sharing indicator lamp control circuit. 3,555,544, Cl. 340-378.
Atlantic Richfield Company: *See—*
Sauer, Richard W., 3,554,950.
Attix, Frank H.; and West, Edward J., to United States of America, Navy. High thermal conductivity gas thermoluminescent dosimeter. 3,555,277, Cl. 250-71.
Atwood, George R.; and Dowling, Donald J. Magnetic susceptibility logging system with transmitter and receiver null coils. 3,555,409, Cl. 324-6.
Audesse, Emery G.: *See—*
Scoledge, Robert F.; Audesse, Emery G.; and Huston, Leroy S., Jr.,3,555,338.
Ault, Ealdo C.: *See—*
Parker, Winfred E.; Knight, Hogan B.; Koos, Ronald E.; Ault, Ealdo C.; and Ault, Waldo C.,3,555,057.
Ault, Waldo C.: *See—*
Parker, Winfred E.; Knight, Hogan B.; Koos, Ronald E.; Ault, Ealdo C.; and Ault, Waldo C.,3,555,057.
Auphan, Michel, to U.S. Philips Corporation, mesne. Heart stimulating device. 3,554,199, Cl. 128-421.
Austin, Clive J., to Austin, Luther, and Sons Limited. Boots and shoes. 3,553,858, Cl. 36-67.
Austin, George K., Jr. Amalgam condenser. 3,553,841, Cl. 32-56.
Austin, Irving G.; Greeven, Max V.; and Shaw, Steven A., to Garrett Corporation, The. Thermostatic valve. 3,554,440, Cl. 236-34.5
Austin, Luther, and Sons Limited: *See—*
Austin, Clive J., 3,553,858.
Avco Corporation: *See—*
Kreider, James F., 3,555,275.
Lambert, Vernon L.; and Gri, Norman J., 3,554,818.
Peterson, Arnold J., 3,555,308.
Avery, Howard W.: *See—*
Rauch, William T.; and Avery, Howard W.,3,554,004.
Axen, Rolf E. A. V.; Porath, Jerker O.; and Wide, Leif Edvin, to Pharmacia A.B. Method for the determination of proteins and polypeptides. 3,555,143, Cl. 424-1.
Axford, Kenneth L., to Weston Instruments, Inc. AC frequency to DC transducer. 3,555,441, Cl. 329-137.
Ayad, Kamal Naguib: *See—*
Long, Frank; and Ayad, Kamal Naguib,3,555,031.
Ayerst, McKenna & Harrison Limited: *See—*
Davis, Martin A., 3,555,018.
Baach, Hans: *See—*
Gloor, Karl; Baach, Hans; Jacubasch, Hans Dieter; Stein, Rudolf; and Erhard, Hans Dieter,3,555,240.
Babcock & Wilcox Company, The: *See—*
Stallkamp, Hubert G., 3,554,276.
Bach, David; Rothman, Walter; and Pascual, Carlos Manuel. Precast concrete rail construction. 3,554,495, Cl. 256-19.
Bachmann, Thomas H., to Chemetron Corporation. Discharge apparatus. 3,554,263, Cl. 159-6.
Bachmann, William Eugene: *See—*
Gerson, Herman; Bachmann, William Eugene; and Woodlock, Paul B.,3,554,776.
Bachtold, Fritz: *See—*
Herrmann, Fritz, 3,554,080.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See—*
Cadus, Anton; and Benker, Klaus, 3,554,937.
Reicheneder, Franz; and Fischer, Adolf, 3,555,026.
Strohmeyer, Max, 3,555,103.
Baessler, Lee R.: *See—*
Glassner, Harvey F.; Jorgensen, Clinton O.; and Baessler, Lee R.,3,554,187.
Bagley, Ferdinand A.: *See—*
Sienkiewicz, Boleslaw; and Bagley, Ferdinand A.,3,554,760.
Bahnson Company, The: *See—*
King, James F., Jr., 3,553,791.
Bailey Meter Company: *See—*
Kuwik, John J.; Stevenson, Thomas E.; and Yagoda, John J., 3,554,483.
Martin, John C., 3,555,405.
Bailey, Reginald John: *See—*
Kirk, Colin John; and Bailey, Reginald John,3,554,224.
Baird, James L.; and Monty, Leo J., to Artisan Industries Inc. Thin-film evaporator having improved apparatus for removing viscous material. 3,554,264, Cl. 159-6.
Baird, James L.; and Monty, Leo J., to Artisan Industries Inc. Method for removing viscous material. 3,554,266, Cl. 159-49.
Baird, William G., Jr., to Grace, W. R., & Co. Shrink packaging with compression chamber. 3,553,928, Cl. 53-30.
Baker, Brian; Beynon, Alan Anthony; and Husselby, Richard William, to Bristol Aerojet Limited. Thermocouples. 3,553,827, Cl. 29-573.
Baker, Denis W.; and Haydon, Brian R. J., to Dunlop Company Limited, The. Sealing members. 3,554,587, Cl. 287-100.
Baker, Nathan P. Dental amalgam crucible and carrier loader. 3,553,838, Cl. 32-1.
Baldwin-Lima-Hamilton Corporation: *See—*
Rogers, Richard E.; and Knapp, Rex C., 3,554,291.
Ball, Charles A. Shelf trim assembly. 3,554,383, Cl. 211-153.
Ball, Jeremy T.; and Mac Afee, James E., to Chrysler Corporation. Steering column and transmission control lock. 3,553,986, Cl. 70-252.
Ball, Jeremy T.; Wall, Thomas J.; and MacAfee, James E., to Chrysler Corporation. Steering column and transmission control lock. 3,553,987, Cl. 70-252.
Balla, John: *See—*
Cosgrove, James F.; and Balla, John,3,554,532.
Ballard, Louis M.; Beebe, Wayne M.; Kramer, David C.; and Rogers, Waldo I., to Moore Business Forms, Inc. Apparatus for embossing alpha-numeric characters. 3,553,787, Cl. 18-30.
Ballini, Giuliano; and Bujtar, Carlo, to Montecatini Edison S.p.A. Peroxyketals. 3,555,099, Cl. 260-610.
Bally, Adrianus Petrus: *See—*
Bloembergen, Rudolf H.; Buningh, Weigert C.; and Bally, Adrianus Petrus,3,554,689.
Bally Manufacturing Corporation: *See—*
Vedeen, Leonard I.; Lally, Joseph E.; and Seiden, Herman L., 3,554,547.
Ban, Masashi: *See—*
Kawabe, Tsuneo; Ishigami, Noriakira; and Ban, Masashi,3,554,611.
Bang, Mogens W., to Stackpole Carbon Company. Fine adjustment variable resistor. 3,555,484, Cl. 338-183.
Banziger, Walter: *See—*
Cogar, George R.; Sekse, Torkjell; Banziger, Walter; Ming, Joseph W.; and Horvath, Laszlo,3,555,306.

Barballe, Leon Jean; and Hermans, Maurice Joseph, to Centre Nationale de Recherches Metallurgiques. Charging device for a furnace. 3,554,393, Cl. 214-37.

Barber, John A.: *See—*
Nixon, Thomas E.; Barber, John A.; and Nagle, Floyd B.,3,554,552.

Bard, Charleton C.; and Vogt, Howard W., to Eastman Kodak Company. Silver halide nucleating compositions containing ionic boron hydrides. 3,554,748, Cl. 96-22.

Barker, James E.; and Robinson, Julian H., to Cities Service Company. Process for producing fluosilicates. 3,554,694, Cl. 23-88.

Barklage, Herman F.: *See—*
Reckman, Albert C.; Barklage, Herman F.; and Shotwell, George T.,3,553,798.

Barkouki, Moghazi F., to Mobark Instruments Corporation, mesne. Apparatus for scanning two sets of angularly disposed oblique tracks on a magnetic medium. 3,555,205, Cl. 179-100.2

Barnes, Robert E. Portable taping stool. 3,554;191, Cl. 128-82.

Baron, Robert R.: *See—*
Welch, Dean E.; and Baron, Robert R.,3,555,085.

Bartlett, Philip Lee, to Du Pont de Nemours, E. I., and Company. Perfluoroalkyl ether amido quaternary ammonium salts. 3,555,089, Cl. 260-561.

Barton, Bernard C., to Uniroyal, Inc. Method of minimizing degradation of polyester/rubber vulcanizates, and product thereof. 3,554,857, Cl. 161-231.

Bassett, Robert S.; and Norris, Richard O., to Cities Service Tankers Corporation. Process for burning oily residues in tankers. 3,554,713, Cl. 44-80.

Basu, Rabindra N., to Northern Electric Company Limited. Telephone interrupter failure detection circuit. 3,555,410, Cl. 324-28.

Bates, Stanley I.; and Girard, Gerald R., to Dow Chemical Company, The. Process for preventing gel formation during polymerization in tube reactor. 3,554,997, Cl. 260-94.2

Battelle Development Corporation, The: *See—*
Foster, Ellis L.; and Price, David E., 3,554,737.
Hackman, Donald J.; Harris, Jeremy M.; and Legue, Ronald L., 3,555,383.
Sabroff, Alvin M.; Fiorentino, Robert J.; and Richardson, Barry D., 3,553,996.

Battelle Memorial Institute, International Division: *See—*
Gentaz, Claude, 3,555,133.

Batter, John F., Jr.; and Stella, Joseph A., to Polaroid Corporation. Exposure system. 3,554,643, Cl. 355-65.

Bauer, Lawrence E., Jr.: *See—*
Berg, Jerry; and Bauer, Lawrence E., Jr.,3,554,014.

Bauer, Peter; and Jones, Robert N., to Bowles Engineering Corporation. Comparator amplifier. 3,554,206, Cl. 137-81.5

Bauer, Robert F.; Mc Neill, Robert C.; and Ledbetter, Jerry T., to Shell Oil Company, mesne. Underwater wells. 3,554,277, Cl. 166-0.6

Bauer, Victor John; Fanshawe, William Joseph; and Safir, Sidney Robert, to American Cyanamid Company. Cyclopropyl-1,2,4-oxadiazolylpyridines. 3,555,036, Cl. 260-296.

Bauer, Walter G.: *See—*
Page, John A.; and Bauer, Walter G.,3,554,113.

Baukal, Werner: *See—*
Fischer, Wilfried; and Baukal, Werner,3,554,808.

Bauman, Jack. Method of applying hair. 3,553,737, Cl. 3-1.

Baumanis, Bruno, to Molex Products Company. Right angle printed circuit board connector. 3,555,493, Cl. 339-176.

Baumanis, Bruno, to Molex Products Company. Printed circuit board connector. 3,555,494, Cl. 339-176.

Baumann, Hans G.: *See—*
Hermann, Curt; and Baumann, Hans G.,3,554,269.

Baumann, Peter; Zimmermann, Markus; Hafliger, Franz; and Gagneux, Andre R., to Geigy Chemical Corporation. Substituted alkanoic acids. 3,555,073, Cl. 260-468.

Baumgarten, Aaron, to Hycon Mfg. Company. Shutter device. 3,554,106, Cl. 95-57.

Baurmash, Leonard; Harwick, Burton T.; and Meyer, Jack T., to North American Rockwell Corporation. Radiation measurement instrument using scatter radiation. 3,555,274, Cl. 250-43.5

Baxter Laboratories, Inc.: *See—*
Feldman, Louis I., 3,555,159.
Goyke, Leonard F.; and Bottorff, Craig L., 3,554,580.
Shanbrom, Edward; and Kamienski, Edward P., Jr., 3,554,702.

Bayer, Karl-Heinz; and Waldmann, Hermann, to Siemens Aktiengesellschaft. Circuit arrangement for regulating the frequency of electrical power lines aboard a ship. 3,555,401, Cl. 322-32.

Bayer, Otto: *See—*
Thoma, Wilhelm; and Bayer, Otto,3,550,760.

Bechthold, Hans; and Stossel, Hans-Jurgen, to General Motors Corporation. Seal assembly for relatively rotatable members. 3,554,566, Cl. 277-153.

Beck, Henry Nelson, to Dow Chemical Company, The. Method of making polyolefin metal-organic chelate compositions and the resulting products. 3,554,996, Cl. 260-93.7

Beck, Thomas M.; and Mirviss, Stanley B., to Stauffer Chemical Company. Method for preparing hydroxyalkylamino-N,N-di (methylene phosphonates). 3,555,124, Cl. 260-970.

Becker, Franz, to Dynamit Nobel Aktiengesellschaft. Hand grenade with percussion detonation. 3,554,127, Cl. 102-64.

Becker, Klaus H., to United States of America, Atomic Energy Commission. Energy independent radiophotoluminescence dosimeter with good fading stability. 3,554,920, Cl. 252-301.4

Beckman Instruments, Inc.: *See—*
Robbins, John F. W., 3,554,226.
Silverman, David; and Wells, Robert R., 3,555,211.

Beckman, John H.: *See—*
Myles, Michael J.; Kupcikevicius, Vytautas; and Beckman, John H.,3,553,769.

Beckwith, Robert C.: *See—*
Hecker, Robert W., Jr.; and Beckwith, Robert C.,3,553,756.

Bee, Frederick. Building components. 3,554,494, Cl. 256-19.

Beebe, Wayne M.: *See—*
Ballard, Louis M.; Beebe, Wayne M.; Kramer, David C.; and Rogers, Waldo I.,3,553,787.

Beery, Jack, to Burroughs Corporation. Multiple voltage battery regulated power supply. 3,555,395, Cl. 320-46.

Beghi, Rene, to Societe des Grands Travaux de Marseille. Apparatus for drawing an anchor head on a rod or a tight cable. 3,554,492, Cl. 254-29.

Beider, Boris Davydovich: *See—*
Lepp, Vladimir Romanovich; Seviev, Jury Surenovich; Shapiro, Ilya Samuilovich; Beider, Boris Davydovich; and Persits, Lev Moiseevich,3,555,234.

Bekin, Boris Sergeevich: *See—*
Ilyashenko, Evgeny Ivanovich; Rudakov, Vladimir Fedorovich; and Bekin, Boris Sergeevich,3,555,524.

Bel Fuse Inc.: *See—*
Bernstein, Howard, 3,555,466.

Bela-Belov, Anatoly Mikhailovich: *See—*
Mitskevich, Gennady Feodosievich; Guschin, Vladislav Yakovlevich; Vorontsov, Jury Nikolaevich; Boguslavsky, Vladimir Avramovich; Bela-Belov, Anatoly Mikhailovich; Rakhlis, Viktor Izralievich; Oktyabrev, Viktor Revoldovich; Artsybashev, Oleg Ivanovich; and Vakhomchik, Fedor Andreevich,3,555,471.

Belden, Dallas J. B. Udder treatment apparatus. 3,554,166, Cl. 119-159.

Beldham, Victor E.; and Harvey, Richard F. Dental amalgam. 3,554,738, Cl. 75-134.

Bell & Howell Company: *See—*
Brubaker, Wilson M.; and Robinson, Charles F., 3,555,271.

Bell Aerospace Corporation: *See—*
Gross, George, 3,554,094.

Bell Canada: *See—*
Bowden, John E.; McLarty, Murray R.; and Zeller, Robert V., 3,554,493.

Bell Telephone Laboratories, Incorporated: *See—*
Bonfeld, Murray D.; and Moose, Louis F., 3,555,447.
Brown, William J., 3,555,366.
Brown, Wilmot E., Jr.; and Davis, Clarence C., 3,553,813.
Buchsbaum, Solomon J., 3,554,636.
Eubank, Carol H.; and Miller, Daniel L., 3,555,199.
Eubank, Carol H., 3,555,200.
Johnson, Bertrand H., 3,555,335.
Lynch, Harry P., 3,555,543.
Meacham, Larned A., 3,555,188.
Noll, A Michael, 3,555,191.
Perneski, Anthony J., 3,555,527.
Thommen, Werner, 3,555,181.
Townley, Ray C., 3,555,184.
Toy, Wing N., 3,555,255.
Toy, Wing N., 3,555,295.

Bellman, Robert H., to Corning Glass Works. System for determining the rate of change of pressure. 3,554,204, Cl. 137-81.5

Bellman, Robert H., to Corning Glass Works. Binary counter. 3,554,205, Cl. 137-81.5

Bellows, Alfred H., to Polaroid Corporation. Compact viewfinder with toric mirrors. 3,554,076, Cl. 88-1.5

Bellows-Valvair-Kamper GmbH: *See—*
Schlinke, Gunter, 3,554,671.

Bemberg, J. P., Aktiengesellschaft: *See—*
Ruck, Heinz; and Dunweg, Gustav, 3,553,774.

Bemis Company, Inc.: *See—*
Kimsey, Vale G., 3,554,437.

Benchley, Robert, Jr., to Trans-World Display Corporation. Pole support base, and display including it. 3,553,871, Cl. 40-145.

Bendix Corporation, The: *See—*
Egerton, Mc Kenny W., Jr.; and Gilbert, Gerard B., Jr., 3,555,541.
Gardner, William L., 3,554,721.
Longerich, Ernest P.; and Rudy, Erland W., 3,555,500.
Moss, Edward M., 3,555,491.
Rothfusz, Ralph W.; and Ritter, Markus H., 3,554,373.

Bendler, Hellmut: *See—*
Gawlick, Heinz; Bendler, Hellmut; Marondel, Guenther; and Siegelin, Werner,3,554,181.

Beneze, Heinz Wilhelm, to Firestone Tire & Rubber Company, The. Method of making tires. 3,555,141, Cl. 264-311.

Benham, Ronald C., to Dexter Corporation, The. Fast cure epoxy resin coating powders containing adducts of trimellitic anhydride and polyols. 3,555,111, Cl. 260-835.

Benker, Klaus: *See—*
Cadus, Anton; and Benker, Klaus,3,554,937.

Benner, Stanley George, to Johns-Manville Corporation. Metallic rotors for forming glass fibers. 3,554,719, Cl. 65-1.

Bennett, George A., to Selectro-Micro Company Limited. Film mounting and driving apparatus. 3,554,464, Cl. 242-200.

Bennett, Robert W.; and Blanding, Wendell S., to Corning Glass Works. Decal applying. 3,554,834, Cl. 156-230.

Benning, Calvin J., to Grace, W. R., & Co. Process for forming gelatin-formaldehyde foams. 3,555,132, Cl. 264-50.

Benno, Edward L. Apparatus for supporting a tube rotatable. 3,554,475, Cl. 248-55.

Benoit-Guyod, Jean-Louis Alain; and Boucherle, Andre-Louis, to Berthier, J., Laboratoires. Dipropylacetylanilides. 3,555,091, Cl. 260-562.

Benrus Corporation: *See—*
Agius, Jerome G., 3,554,420.

Bentley, Eric Herbert, to C.I.C. Engineering Limited. Injection moulding machine. 3,553,786, Cl. 18-30.

Berg, Alfred Sheldon. Feed distributing apparatus. 3,554,355, Cl. 198-36.

Berg, Arthur A.; and Kobnick, Werner. Gladhand construction. 3,554,230, Cl. 137-614.04

Berg, Jerry, to Branson Instruments Incorporated. Pulse-echo ultrasonic thickness gauge with error prevention circuit. 3,554,013, Cl. 73-67.7

Berg, Jerry; and Bauer, Lawrence E., Jr., to Branson Instruments Incorporated. Apparatus for measuring the thickness of a workpiece in a liquid temperature compensation. 3,554,014, Cl. 73-67.8

Berg, Robert H. Continous flow pipeline sampling orifice arrangement. 3,554,037, Cl. 73-422.

Berger, Carl: *See—*
Arrance, France C.; and Berger, Carl,3,554,814.

Bergh Bros. Co., Inc.: *See—*
Bergh, George G.; and Bergh, Robert G., 3,553,822.

Bergh, George G.; and Bergh, Robert G., to Bergh Bros. Co., Inc. Method of fabricating a covered box construction. 3,553,822, Cl. 29-445.

Bergh, Robert G.: *See—*
Bergh, George G.; and Bergh, Robert G.,3,553,822.

Bergmann, Oswald R.; Buchwald, Joseph; and Cowan, George R., to Du Pont de Nemours, E. I., and Company. Process for initiating explosive and charge thereof. 3,554,126, Cl. 102-24.

Bergstrom, Carl Ingvar Andreas, to Aktiebolaget Volvo. Arrangement in the suspension system of traction vehicles for semitrailers. 3,554,574, Cl. 280-104.

Berkey Photo, Inc.: *See—*
Michalski, Maksymilian A., 3,554,644.
Michalski, Maksymilian A., 3,555,352.

Berman, Mark Nikolaevich: *See—*
Andoniev, Sergei Mikhailovich; Berman, Mark Nikolaevich; Zhitnik, Georgy Gavrilovich; Kondratiev, Evgeny Mikhailovich; Levitasov, Yakov Matveevich; Makarov, Konstantin Ivanovich; Pevny, Nikolai Ivanovich; Pokrass, Leonid Moiseevich; Pochtman, Alexandr Markovich; Robin, Mark Anisimovich; Tesner, Pavel Alexandrovich; Sheinfain, Felix Isaakovich; and Filipiev, Oleg Vladimirovich,3,554,507.

Berner, Roland, to Nalco Chemical Company. Octadecylamine suspensions. 3,554,922, Cl. 252-392.

Bernstein, Howard, to Bel Fuse Inc. Capacitive-inductive network. 3,555,466, Cl. 333-76.

Bernstein, Robert J., to A.B.G. Hydraulics, Inc. Hydraulic valve and system. 3,554,211, Cl. 137-85.

Berry, Edward J.; and Lutzen, William C., to Ludell Mfg. Co. Washing machine. 3,553,982, Cl. 68-139.

Berthier, Daniel; and Max, Jacques, to Commissariat a l'Energie Atomique. Multicorrelator for analog signals employing pulse width-amplitude multiplication and operating in real time. 3,555,258, Cl. 235-181.

Berthier, J., Laboratoires: *See—*
Benoit-Guyod, Jean-Louis Alain; and Boucherle, Andre-Louis, 3,555,091.

Bertram, Ernst, & Wilhelm, Fabrik fototechn. Messgerate: *See—*
Schubert, Joachim, 3,555,363.

Bertram, Sidney, to Bunker-Ramo Corporation, The. Automatic mapping system having a mechanically and electronically controlled scanning means for providing faster response. 3,554,645, Cl. 356-2.

Bertram, Sidney, to Bunker-Ramo Corporation, The. Altitude profiling apparatus. 3,555,546, Cl. 343-5.

Beschke, Helmut; Reinhardt, Helmut; and Achenbach, Karl, to Deutsche Gold-und Silber-Scheideanstalt vormals Roessler. Stabilization of beer. 3,554,759, Cl. 99-48.

Bethlehem Steel Corporation: *See—*
Brown, James T., 3,554,134.
Seacrest, William G., 3,554,517.
Wald, Herbert; and Young, Harold K., 3,554,511.

Beutel, Henry V. Hand-held jump-over exercise rod with pivotal handle members. 3,554,539, Cl. 272-62.

Beutel, Ralph H.; Davis, Paul; and Schoenewaldt, Erwin F., to Merck & Co., Inc. Process for the preparation of heterocyclic nitriles. 3,555,021, Cl. 260-250.

Beutler, Hans, to United States of America, Atomic Energy Commission. Low temperature method for coating nuclear fuels with multiple carbon coatings. 3,554,783, Cl. 117-46.

Beyer, Hermann; and Schoppe, Gunter, to VEB Carl Zeiss Jena. Grooved object slide for interference microscope. 3,554,631, Cl. 350-94.

Beyer, Rolf R.: *See—*
Collings, Peter R.; and Beyer, Rolf R.,3,555,345.

Beynon, Alan Anthony: *See—*
Baker, Brian; Beynon, Alan Anthony; and Husselby, Richard William,3,553,827.

Bickel, Hans; Bosshardt, Rolf; Fechtig, Bruno; Menard, Enrico; Mueller, Johannes; and Peter, Heinrich, to Ciba Corporation. Derivatives of 7-acylamino-cephalosporanic acid. 3,555,017, Cl. 260-243.

Bickerdike, Robert Lewis; Bradshaw, Francis Julian; Hughes, Garyth; Mair, William Norman; and Ranson, Harry Christopher, to United Kingdom of Great Britain and Northern Ireland Minister of Technology in her Britannic Majesty's Government of the. Alloys and processes for their manufacture. 3,554,739, Cl. 75-135.

Bicking, John B.: *See—*
Cragoe, Edward J., Jr.; Bicking, John B.; and Shepard, Kenneth L.,3,555,024.

Bidard, Rene, to Compagnie Electro-Mecanique. Magneto-hydrodynamic device for converting in a reversible manner thermodynamic energy into electrical energy of the alternating current type. 3,555,312, Cl. 310-11.

Bildsoe, Jorgen S., to Seatech Engineering, Inc. Conveyor. 3,554,360, Cl. 198-189.

Billett, Ronald J. Friction welding apparatus. 3,554,846, Cl. 156-580.

Billett, Ronald J.; and West, Terence H., to FMC Corporation. Friction welding of plastic strapping. 3,554,845, Cl. 156-580.

Bilodeau, Paul J.: *See—*
Judd, Sebastian F.; and Bilodeau, Paul J.,3,554,316.

Bilow, Norman; and Miller, Leroy J., to Hughes Aircraft Company. Method of providing useful heat-setting aromatic polymer resinous compositions and products. 3,555,108, Cl. 260-823.

Biltbest Corporation: *See—*
Eisenberg, Morris M., 3,553,913.

Biltz, Harry A. Inventory control means. 3,553,854, Cl. 35-24.

Binks Manufacturing Company: *See—*
West, James A., 3,554,164.

Bio-Dynamics, Inc.: *See—*
Cottrell, William N., Jr., 3,554,701.

Birbanescu, Adrian; and Rusu, Tiberiu, to Comitetul de Stat Pentru Cultura Si Arta. Hydraulic filming or television camera crane. 3,554,317, Cl. 182-14.

Biscardi, Charles T. Guided gage for band saws. 3,554,244, Cl. 143-169.

Black and Decker Manufacturing Company, The: *See—*
Chambers, William W.; Rebold, Jerome I.; and Smith, Somers H., III, 3,554,248.

Black Clawson Company, The: *See—*
Romagano, Alfred P.; and Stevens, Arthur D., 3,553,776.

Black, Roy E., Jr.: *See—*
Schellens, Eugene P.; and Black, Roy E., Jr.,3,554,892.

Blackwell, Dana J., to Lewis Engineering Company. Magnetically operated indicator with U-shaped bearing frame. 3,555,419, Cl. 324-146.

Blackwell, Frederick Brian: *See—*
Pettit, Donald; Blackwell, Frederick Brian; and Carter, Alan Reginald,3,553,857.

Blair, Roy C.; and Pohl, Lawrence E., to United States of America, Atomic Energy Commission. Plugging compound collector. 3,554,374, Cl. 210-85.

Blake, Dale G.: *See—*
Gerber, Heinz Joseph; and Blake, Dale G.,3,553,842.

Blanchette, Robert G., to Addressograph-Multigraph Corporation. Developing apparatus. 3,554,161, Cl. 118-8.

Blanding, Wendell S.: *See—*
Bennett, Robert W.; and Blanding, Wendell S.,3,554,834.

Blasko, Michael J.: *See—*
Taylor, Kendrick C.; Hutchinson, Herman R.; Wagner, August Gilbert; and Blasko, Michael J.,3,554,268.

Bleackley, William J., to Canadian Patents and Development Limited, mesne. Waveguides. 3,555,232, Cl. 219-10.55

Bleibtreu, Alexander, to Maschinenfabrik Reinhausen Gebruder Scheubeck K.G. Tap-changing transformer system including vacuum switch units. 3,555,404, Cl. 323-43.5

Bleich, Donald D., to Controls Company of America. Lead attachment for dynamoelectric machine and method of making same. 3,555,316, Cl. 310-71.

Blekicki, Henry Thomas: *See—*
Moran, Raymond Michael, Jr.; and Blekicki, Henry Thomas,3,554,970.

Blick, John Oliver: *See—*
Ireland, Rainseford H., 3,555,209.

Blieske, Herbert: *See—*
Spauszus, Siegfried; Kohler, Wolfgang; Blieske, Herbert; and Vetter, Klaus-Peter,3,555,244.

Bloembergen, Rudolf H.; Buningh, Weigert C.; and Bally, Adrianus Petrus, to Shell Oil Company. Methods of removing carbon oxysulfide from gases. 3,554,689, Cl. 23-2.

Blomeyer, Friedrich; Bunge, Wilhelm; Mennicken, Gerhard; and Hebermehl, Reinhard, to Farbenfabriken Bayer Aktiengesellschaft. Polyester polyurethane lacquers from mixed phthalic acids. 3,554,951, Cl. 260-29.1

Blumel, Harald: *See—*
Emde, Hans; Kerrutt, Gunter; Weber, Heinrich; and Blumel, Harald,3,554,988.

Bobkowski, Vincent S. Batch processing apparatus. 3,553,897, Cl. 51-13.

Bobst, Gerhard, to Von Roll AG. Axial piston unit. 3,554,095, Cl. 92-57.

Bocknak, Gregory: *See—*
Snow, Robert J.; and Bocknak, Gregory,3,554,469.

Bodenseewerk Perkin-Elmer & Co. GmbH: *See—*
Paatzsch, Peter; and Tomoff, Toma, 3,554,654.

Bochm, Eugene G. Workpiece positioning apparatus. 3,553,908, Cl. 51-216.

Boggs, Le Roy R. Shaft alignment coupling. 3,554,589, Cl. 287-111.

Boguslavsky, Vladimir Avramovich: *See—*
Mitskevich, Gennady Feodosievich; Guschin, Vladislav Yakovlevich; Vorontsov, Jury Nikolaevich; Boguslavsky, Vladimir Avramovich; Bela-Belov, Anatoly Mikhailovich; Rukhlis, Viktor Izralievich; Oktyubrev, Viktor Revoldovich; Artsybashev, Oleg Ivanovich; and Vakhomchik, Fedor Andreevich,3,555,471.

Bolton-Emerson, Inc.: *See—*
Sjostrom, John W., 3,553,894.

Bonami, Ernest, to Swift & Company. Method and apparatus for bagging product. 3,553,924, Cl. 53-21.

Bonfeld, Murray D.; and Moose, Louis F., to Bell Telephone Laboratories, Incorporated. Signal reflector and circulator networks for synchronizing and combining the outputs of a plurality of oscillators. 3,555,447, Cl. 331-55.

Boone, Christopher B. Holders for cartridge fuse protectors for electric circuits. 3,555,481, Cl. 337-187.

Boor, John, Jr., to Shell Oil Company. Polyalkylated aromatic compounds as a heat stabilizer for olefin polymers. 3,554,963, Cl. 260-45.95

Boostrom, Roy E.; Mandell, Arman; and Malter, Lewis, to Sargent-Welch Scientific Company. Combination teaching aid and modular instrumental analysis system and components therefor. 3,554,648, Cl. 356-96.

Booth, Frank B.: *See—*
Olivier, Kenneth L.; Booth, Frank B.; and Mears, David E.,3,555,098.

Booth, Jack J. Purging liquid supply sensor. 3,555,221, Cl. 200-84.

Bordelon, James P. Mobile quick set-up self-contained orthodontic unit. 3,553,840, Cl. 32-22.

Borden Company, The: *See—*
Rosis, Constantine; Kline, Milton; Dickstein, Jack; and Wechsler, Harry C., 3,554,954.

Borden, Inc.: *See—*
Duchesneau, Eugene Alfred, Jr.; and Boudreau, Donald Francis, 3,554,953.
Hankinson, Cloyce L.; Linke, Ernest George; and Seleen, William Arvid, 3,554,772.

Borg-Warner Corporation: *See—*
Dockus, Kostas F.; and Zambrow, John L., 3,553,825.
Spokas, Romas B., 3,554,342.

Borner, Max, to Sulzer Brothers, Ltd. Apparatus for heating synthetic substance threads. 3,554,503, Cl. 263-3.

Borochoff, Eugene H.: *See—*
Craig, Theodore W.; and Borochoff, Eugene H.,3,554,762.

Bosch, Robert, G.m.b.H.: *See—*
von Lowis, 3,554,614.
Wahl, Josef; and Reichardt, Wolfgang, 3,554,169.

Bosshardt, Rolf: *See—*
Bickel, Hans; Bosshardt, Rolf; Fechtig, Bruno; Menard, Enrico; Mueller, Johannes; and Peter, Heinrich,3,555,017.

Boswell, David: *See—*
Ralph, Frank; Parmee, John Llewellin; Boswell, David; and Huntley, Frederick Ronald,3,555,461.

Bott, John A. Vehicle luggage rack. 3,554,416, Cl. 224-42.1

Bottomley, Charles Gregory; and Hunt, Oliver Larry, to Du Pont de Nemours, E. I., and Company. Low molecular weight polyurethanes containing N-t- butyl groups. 3,555,115, Cl. 260-858.

Bottorff, Craig L.: *See—*
Goyke, Leonard F.; and Bottorff, Craig L.,3,554,580.

Boucherle, Andre-Louis: *See—*
Benoit-Guyod, Jean-Louis Alain; and Boucherle, Andre-Louis,3,555,091.

Boudreau, Donald Francis: *See—*
Duchesneau, Eugene Alfred, Jr.; and Boudreau, Donald Francis,3,554,953.

Bourns, Inc.: *See—*
Brown, Richard V.; and Tweed, Donald G., 3,554,209.

Bouteville, Albert: *See—*
Laurentie, Michel; Bouteville, Albert; and Pennananec'h, Roger,3,555,231.

Boutonnet, Alexandre, to Societe Rhodiaceta. Support tube for windings of shrinkable filaments. 3,554,461, Cl. 242-118.11

Bowater-Scott Corporation Limited: *See—*
Murdoch, Ian Lindsay, 3,554,195.

Bowden, John E.; McLarty, Murray R.; and Zeller, Robert V., to Bell Canada. Rodding jet. 3,554,493, Cl. 254-134.3

Bowen, James H.: *See—*
Calvert, William L.; and Bowen, James H.,3,554,343.

Bowes, Emmerson, to Mobil Oil Corporation. Suppression of external activity of metal- containing zeolite catalysts. 3,554,900, Cl. 208-111.

Bowles Engineering Corporation: *See—*
Bauer, Peter; and Jones, Robert N., 3,554,206.

Bowling, Edward L., to Cornell-Dubilier Electric Corporation. Electrolytic capacitors having improved seal and vent. 3,555,370, Cl. 317-230.

Bowmar Instrument Corporation: *See—*
Sigl, Edward D., 3,554,439.

Boxboard Research and Development Association: *See—*
Wynstra, Carl J., 3,554,866.

Boyd, Harris S. Perforating strip for printing presses. 3,554,070, Cl. 83--678

Boyer, James A.; and Ruff, Donald O., to General Motors Corporation. Dual spark capacitor discharge iginition system. 3,554,178, Cl. 123-148.

Boyns, Jerry E., to United States of America, Navy. Coaxial-line to waveguide transition for horn antenna. 3,555,553, Cl. 343-776.

Bozanic, Donald A.; Mergerian, Dickron; and Minarik, Ronald W., to Westinghouse Electric Corporation. Variable bandwidth spin echo delay line. 3,555,407, Cl. 324-0.5

Bozarth, Theodore B., Jr.; and Hurd, Edward T. E., III, to Honeywell Inc. Constant current stabilized signal converter circuit. 3,555,402, Cl. 323-4.

Bozek, John S., to Continental Can Company, Inc. Non-flipping beer can end. 3,554,400, Cl. 220-54.

Bozeman, Paul P., Jr.; Morris, Herbert C.; and Woodle, Robert A., to Texaco Inc. Solvent dewaxing and deoiling process. 3,554,896, Cl. 208-31.

BP Chemicals (U.K.) Limited: *See—*
Brown, Christopher John, 3,554,931.

Bracken, Aubrey T.; Ray, Charles L.; and Schafer, Conrad B., to Libbey-Owens-Ford Company. Patterned glass sheet apparatus. 3,554,725, Cl. 65-185.

Bradshaw, Francis Julian: *See—*
Bickerdike, Robert Lewis; Bradshaw, Francis Julian; Hughes, Garyth; Mair, William Norman; and Ranson, Harry Christopher,3,554,739.

Brady, William I.: *See—*
Street, John N.; Brady, William I.; and McIntosh, Walter L.,3,554,109.

Bramer, Donald W.; and Clocksin, Paul P., to Graflex, Inc. Power pack for photographic flashlamp. 3,555,394, Cl. 320-1.

Brand, Paul M.; and Reich, Lawrence, to Lorbon Manufacturing Co., Inc. Long distance timer. 3,555,193, Cl. 179-7.1

Brandes, Roy H., to General Motors Corporation. Hot gas engine with accumulator type gas compressor. 3,554,672, Cl. 417-347.

Brandstrom, Arne Elof; Corrodi, Hans Rudolf; and Ablad, Bengt Arne Hjalmar, to Aktiebolaget Hassle. Para-alkenylphenoxy-hydroxy-isopropylamino- propane in the treating of cardiac and vascular diseases. 3,555,161, Cl. 424-330.

Branson Instruments Incorporated: *See—*
Berg, Jerry, 3,554,013.
Berg, Jerry; and Bauer, Lawrence E., Jr., 3,554,014.
Brech, Kilian H., 3,554,015.
Brech, Kilian H., 3,554,016.

Brast, Bernhard D.; and Ory, Raymond E., to Celanese Corporation. Recovery of copper and vanadium from a solution containing iron, 3,554,692, Cl. 23-22.

Braude, George L.; Cogliano, Joseph A.; and Lard, Edwin W., to Grace, W. R., & Co. Stable high expansion foam composition and process of foaming. 3,554,936, Cl. 260-2.5

Braude, George L.: *See—*
Sugarman, Nathan; and Braude, George L.,3,554,852.

Brauhut, Harold N. Spring whip. 3,554,546, Cl. 273-84.

Braun, Helmut W. M., to European Atomic Energy Community-Euratom. Manually operated wiping apparatus for taking wiped specimens from test surfaces. 3,554,039, Cl. 73-425.

Braun, Richard E., to International Business Machines Corporation. Magnetic scanning transducer. 3,555,204, Cl. 179-100.2

Braun, Warren L., to Television, Radio and Film Communication. Automatic telephone conference connector. 3,555,190, Cl. 179-1.

Braymer, Noel B., to Dana Laboratories, Inc. Frequency synthesizer. 3,555,446, Cl. 331-16.

Brech, Kilian H., to Branson Instruments Incorporated. Ultrasonic pulse-echo apparatus. 3,554,015, Cl. 73-67.9

Brech, Kilian H., to Branson Instruments Incorporated. Pulse-echo ultrasonic test apparatus with signal selection and storage means. 3,554,016, Cl. 73-67.9

Breed, David S. Dashpot timer having a cocked piston. 3,553,954, Cl. 58-1.

Breistein, Rasmus. Wall construction, particularly for load- bearing walls. 3,553,921, Cl. 52-593.

Brennan, George J.: *See—*
Spanel, Abram N.; and Brennan, George J.,3,554,147.

Brenner, Michael B.; and Weir-Jones, Iain. Leakage current sensor. 3,555,476, Cl. 336-73.

Brickell, Charles F.: *See—*
McIver, William; and Brickell, Charles F.,3,555,488.

Brickle, Donald J.; and Burling, James A., to Sybron Corporation. Separable lamp socket. 3,555,489, Cl. 339-88.

Bridwell, Harold C.: *See—*
Link, Howard; Bridwell, Harold C.; and Rowley, David S.,3,554,304.

Bright, Thomas John Robert. Mechanised storage systems and apparatus therefor. 3,554,389, Cl. 214-16.1

Brinduse, Paul, to Lynch Corporation. Wind damper assembly for glassware forming machines. 3,554,481, Cl. 251-31.

Brinker, John H., to Steelcraft Manufacturing Co., The. Folding doors. 3,554,267, Cl. 160-118.

Brinkmann, Karl-Heinz: *See—*
Opel, Detlef; and Brinkmann, Karl-Heinz,3,554,235.

Bristol Aerojet Limited: *See—*
Baker, Brian; Beynon, Alan Anthony; and Husselby, Richard William, 3,553,827.

British Columbia Research Council: *See—*
Murray, Francis E., 3,554,859.

British Insulated Callender's Cables Limited:*See—*
Hinds, Ronald, 3,553,951.

British Iron and Steel Research Association, The: *See—*
Rhydderch, Malvern John, 3,554,521.

British Titan Products Company Limited: *See—*
Lederer, Gerald; Rackham, John M.; and Hemphreys, John P., 3,554,777.

Britton, Leon R.; Johnson, Kurt T.; Kusch, Edward K.; and Williams, Bernhard O., to Seeburg Corporation of Delaware, The, mesne. Electrical switch and method of adjusting the same. 3,555,229, Cl. 200-166.

Brobeck, Von H.; and Zulick, Mike, to Goodyear Tire & Rubber Company, The. Concealed tire vent mold. 3,553,790, Cl. 18-42.

Brockway, Clifford E.: *See—*
Lee, Sung Chuel; and Brockway, Clifford E.,3,555,360.

Brodnyan, John G.: *See—*
Emmons, William D.; and Brodnyan, John G.,3,554,684.

Broemmlsiek, John C., to Drug Package, Incorporated. Dispensing container for roll labels. 3,554,847, Cl. 156-584.

Broggie, Roger E.; and Brundage, Bert W., to Wed Enterprises, Inc. Amusement ride system. 3,554,130, Cl. 104-75.

Brook Equipment Company: *See—*
Schwab, Charles J., 3,554,000.

Brown, Charles G.; Rauterkus, Leo Thomas; and Walker, Charles E., to Systems Research Laboratories, Inc. Apparatus for measuring electric field radiation from living bodies. 3,555,529, Cl. 340-189.

Brown, Christopher John, to BP Chemicals (U.K.) Limited. Pretreatment of catalyst used in the production of acrylic acid and acrolein. 3,554,931, Cl. 252-472.

Brown, Daniel L.: *See—*
Mc Rae, Wayne A.; Brown, Daniel L.; and McGriff, Stuart G.,3,554,895.

Brown, Edgar D., Jr., to General Electric Company. Dihalogenoethyl-substituted organosilicon compounds and use thereof. 3,555,062, Cl. 260-448.2

Brown, Jack T.; and Feduska, William, to Westinghouse Electric Corporation. Process for making sulfur iron active material for battery plates. 3,554,802, Cl. 136-25.

Brown, James T., to Bethlehem Steel Corporation. Cushioning system for container supports. 3,554,134, Cl. 105-366.

Brown, Joseph Drewitt: *See—*
Redford, Cyril Fitz-James; and Brown, Joseph Drewitt,3,553,866.

Brown, Richard V.; and Tweed, Donald G., to Bourns, Inc. Fluid diode. 3,554,209, Cl. 137-81.5

Brown, Walter, to North American Rockwell Corporation. Flowline connector. 3,554,579, Cl. 285-18.

Brown, William J., to Bell Telephone Laboratories, Incorporated. Monitor circuit. 3,555,366, Cl. 317-135.

Brown, Wilmot E., Jr.; and Davis, Clarence C., to Bell Telephone Laboratories, Incorporated, and Western Electric Company, Incorporated. Apparatus for connecting pairs of terminal twisted pair of insulated wires. 3,553,813, Cl. 29-203.

Brubaker, Wilson M.; and Robinson, Charles F., to Bell & Howell Company. Radio frequency mass analyzer of the non-uniform electric field type. 3,555,271, Cl. 250-41.9

Bruch, Walter, to Telefunken Patentverwertungsgesellschaft m.b.H. Synchronizing circuit for secam switch. 3,555,174, Cl. 178-5.4

Brudos, Curtis D.: *See—*
Rester, James C.; and Brudos, Curtis D.,3,555,195.

Brule C. E. & E., Inc.: *See—*
Sharpe, Patrick H., 3,553,943.

Brumlik, George C. Connector assemblies for models and the like. 3,554,584, Cl. 287-54.

Brun, Henri, to CSF-Compagnie Generale de Telegraphie Sans Fil. Optical resonance cells. 3,555,406, Cl. 324-0.5

Brundage, Bert W.: *See—*
Broggie, Roger E.; and Brundage, Bert W.,3,554,130.

Bruni, Maurice: *See—*
Agneray, Louis; Clayer, Arlette; and Bruni, Maurice,3,553,937.

Bruning, Armin M.; Kienast, Peter F.; Kemeny, George A.; and Hirayama, Chikara, to Westinghouse Electric Corporation. Cross flow arc heater apparatus and process for the synthesis of carbon, acetylene and other gases. 3,554,715, Cl. 48-197.

Brunner, Ben. Portable high-low LP gas torch. 3,554,679, Cl. 431-280.

Brunstrom, Gerald R.: *See—*
Dudley, Robert E., 3,554,470.

Brunswick Corporation: *See—*
Kiekhaefer, Elmer Carl, 3,554,172.

Bruyn, Charles D., 20% to Bruyn, James Henry. Air tool. 3,554,088, Cl. 91-411.

Bruyn, James Henry: *See—*
Bruyn, Charles D., 3,554,088.

Bryan, Roland Jennings, Jr., to Monsanto Company. Surface halogenation of shaped articles. 3,555,138, Cl. 264-210.

Buchanan, James L.; and Zelina, William B., to General Systems Inc. Commutation systems incorporating the energy logic concept. 3,555,399, Cl. 321-43.

Buchsbaum, Solomon J., to Bell Telephone Laboratories, Incorporated. Optical mode filter employing a colloidal suspension. 3,554,636, Cl. 350-311.

Buchwald, Joseph: *See—*
Bergmann, Oswald R.; Buchwald, Joseph; and Cowan, George R.,3,554,126.

Buckman Laboratories, Inc.: *See—*
Buckman, Stanley J.; Ross, Richard T.; Wienert, Lester A.; and Slawson, Harry D., 3,554,917.

Buckman, Stanley J.; Ross, Richard T.; Wienert, Lester A.; and Slawson, Harry D., to Buckman Laboratories, Inc. Finish remover composition. 3,554,917, Cl. 252-171.

Budd Company, The: *See—*
Deininger, Harry T., Jr., 3,554,029.
Eggert, Walter S., Jr., 3,554,320.
Jahnle, Herbert A., 3,554,711.
MacKinney, John J.; and Mattia, Michael, 3,554,875.
Mattia, Michael, 3,554,874.

Budnick, Diethard, to Zeiss, Carl-Stiftung. Method and apparatus for comparing two pulse sequences of different frequencies. 3,555,421, Cl. 324-161.

Buehrle, William E., Jr.; and Woodard, Gerald F., to Hazeltine Corporation, mesne. Antenna and acoustic horn apparatus. 3,555,422, Cl. 325-16.

Bugaenko, Boris Andreevich; Vladinets, Georgy Ivanovich; and Yantser, Jury Filippovich. Two-stage reducing gear for anchor chain arresters. 3,554,053, Cl. 74-626.

Bugg, Maurice W.: *See—*
Yoder, David J.; and Bugg, Maurice W.,3,554,764.

Buhmann, Donald: *See—*
Anderson, Philip C.; Buhmann, Donald; and Hinkel, Norman,3,554,018.

Buisson, Pierre R.; and Denegre, Georges C. Pressure detection and measuring devices. 3,554,035, Cl. 73-410.

Bujtar, Carlo: *See—*
Ballini, Giuliano; and Bujtar, Carlo,3,555,099.

Bullwinkel, Edward P.; and Selke, William A., to Kimberly-Clark Corporation. Capacitor having talc scavenger. 3,555,377, Cl. 317-259.

Bundschuh, John J., to Eastman Kodak Company. Cartridge. 3,554,462, Cl. 242-197.

Bunge, Wilhelm: *See—*
Blomeyer, Friedrich; Bunge, Wilhelm; Mennicken, Gerhard; and Hebermehl, Reinhard,3,554,951.

Buningh, Weigert C.: *See—*
Bloembergen, Rudolf H.; Buningh, Weigert C.; and Bally, Adrianus Petrus,3,554,689.

Bunker-Ramo Corporation, The: *See—*
Bertram, Sidney, 3,554,645.
Bertram, Sidney, 3,555,546.
Henderson, Martin C.; and Koster, Robert A., 3,555,538.
Irving, Robert, 3,555,285.

Burhans, Allison S.: *See—*
Sellers, Ralph F.; Smith, Samuel G., Jr.; and Burhans, Allison S.,3,555,050.

Burke, Lawrence A.: *See—*
Castillo, Herman B.; and Burke, Lawrence A.,3,554,446.

Burke, Oliver W., Jr. Wax formulations. 3,554,949, Cl. 260-28.5

Burling, James A.: *See—*
Brickle, Donald J.; and Burling, James A.,3,555,489.

Burnet, George, Jr.: *See—*
Madany, George H.; and Burnet, George, Jr.,3,554,731.

Burr, Alan Carleton, to Howe Folding Furniture, Incorporated. Folding table. 3,554,141, Cl. 108-132.

Burridge, Michael D., to Sylvania Electric Products, Inc. Portable test equipment with extendable display means. 3,554,021, Cl. 73-116.

Burroughs Corporation: *See—*
Beery, Jack, 3,555,395.
Gray, Robert L., 3,555,257.
Hauck, Erwin A.; and Vigil, Jacob F., 3,555,513.
Lee, Edwin S., III, 3,555,515.
Perkins, Cornelius C., 3,554,347.

Burson, Benard, Jr., to Bursonics, Inc. Self-cancelling electronic auto turn signal system. 3,555,507, Cl. 340-62.

Burson, Bob O., to Phelon, R. E., Company, Inc. Anti-reverse trigger for an ignition system. 3,554,179, Cl. 123-149.

Bursonics, Inc.: *See—*
Burson, Benard, Jr., 3,555,507.

Burt, William C., to Clair Manufacturing Co., Inc. Surface finishing machine. 3,553,901, Cl. 51-142.

Burton Delingpole & Company Limited: *See—*
Lowe, Jack G., 3,554,583.

Burzynski, Alfred J.; and Walmsley, Judith A., to Owens-Illinois, Inc. Hydrolysis of organic silicates to produce polymers and resins. 3,554,698, Cl. 23-182.

Buschmann, Gerhard; and Mewes, Erich, to VEB Chemiefaserkombinat Wilhelm-Pieck-Stadt Guben. Process and device for crimping and heath setting of yarns made from synthetic linear high polymers. 3,553,803, Cl. 28-1.6

Buss, Waldeen C., to Chevron Research Company. Platinum iridium. 3,554,902, Cl. 208-138.

Butterfield, Boydston Lewis: *See—*
Grosso, Vicent Gerard; and Butterfield, Boydston Lewis,3,555,087.

Butterworth Hydraulic Development Limited: *See—*
Butterworth, Philip, 3,554,085.

Butterworth, Philip, to Butterworth Hydraulic Development Limited. Fluid pressure operated motors. 3,554,085, Cl. 91-239.

Buynak, Eugene B.; and Hilleman, Maurice R., to Merck & Co., Inc. Mumps vaccine and its preparation. 3,555,149, Cl. 424-89.

Buysch, Han-Josef; Krimm, Heinrich; and Schnell, Hermann, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of α,α,αα'- tetra-methyl-xylylene-dicarbinols. 3,555,101, Cl. 260-618.

Buzby, George C., Jr.: *See—*
Stein, Reinhardt P.; Buzby, George C., Jr.; and Smith, Herchel,3,555,015.

Byrne, John F.: *See—*
Van Dorn, Warren G.; Byrne, John F.; and Greeno, Thomas M.,3,554,125.

Byrt, Graham Archie Bruce, to Thrissell, Masson Scott, Engineering Limited. Butt-splicing. 3,554,842, Cl. 156-505.

Cadus, Anton; and Benker, Klaus, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of expanded polyamides. 3,554,937, Cl. 260-2.5

Cahoon, John B., Jr., to Vesuvius Crucible Company. Stopper head for a ladle or similar receptacle. 3,554,490, Cl. 251-356.

Cahoy, Roger P.; and Coyne, Donald M., to Gulf Research & Development Company. Catalyst for manufacture of methacrylaldehyde. 3,554,927, Cl. 252-437.

Caillouet, James Jerry. Flavoring composition. 3,554,769, Cl. 99-140.

California Institute of Technology: *See—*
Tener, Wallis M., 3,555,483.

Callahan, Francis G., to Textile Rubber & Chemical Co., Inc. Method of making a tufted fabric. 3,554,824, Cl. 156-72.

Callahan Mining Corporation: *See—*
Pelley, Richard B.; Warner, James R.; and Herbert, George E., 3,554,237.

Callihan, Dale H., to Norwalk Thermostat Company. Bimetallic strip thermostat. 3,555,482, Cl. 337-360.

Calvert, William L.; and Bowen, James H., to Union Carbide Corporation. Motion detecting method and apparatus. 3,554,343, Cl. 192-127.

Calvesbert, James William: *See—*
Robinson, Alfred Alexander; and Calvesbert, James William,3,555,223.

Cam Gears Limited: *See—*
Adams, Frederick J., 3,554,048.

Camacho, Julian, to International Telephone and Telegraph Corporation, mesne. Vacuum switch with cylindrical guide means and annular field deflector means. 3,555,222, Cl. 200-144.

Cameron Iron Works, Inc.: *See—*
Rowe, Frederick G., 3,554,480.

Campagnuolo, Carl Joseph: *See—*
Villarroel, Fernando; and Campagnuolo, Carl Joseph,3,555,314.

Campbell, George T. R.; and Laskey, Norman V. Structural arrangement of large tankers. 3,554,152, Cl. 114-125.

Canada Valve Limited: *See—*
Fortune, Ronald; Mills, Ernest G.; and Woods, James Beverley, 3,554,160.

Canadian Patents and Development Limited: *See—*
Bleackley, William J., 3,555,232.

Canon, Jack Y. Means for supporting and aiming a hand-held device. 3,553,878, Cl. 42-94.

Carbonell, Robert J., to Standard Brands Incorporated. Coffee concentrate and process of producing the same. 3,554,761, Cl. 99-71.

Carborundum Company, The: *See—*
DeNatale, Alphonse R., 3,554,384.
Shaffer, Peter T. B.; and Whitney, Ellsworth D., 3,554,717.

Cardenaz, Mary L. Container for tissue specimens. 3,554,433, Cl. 229-51.

Cardiac Electronics Inc.: *See—*
Tatoian, George; and Ceier, Richard R., 3,554,198.

Caregnato, Cesare. Counterpoised self-balancing fluid-transfer swivel jointed rigid-piping connection. 3,554,231, Cl. 137-615.

Carinthia Elektrogerate Gesellschaft m.b.H., Firma: *See—*
Konig, Reinhard, 3,553,837.

Carlile, Alfred E., to Textron Inc., mesne. Plastic snap fastener. 3,553,796, Cl. 24-216.

Carlsen, Erling: *See—*
Carlsen, Henning Gunnar; and Carlsen, Erling,3,555,241.

Carlsen, Henning Gunnar; and Carlsen, Erling. Thermoprinting devices. 3,555,241, Cl. 219-216.

Carlson, Gerald J., to General Electric Company. Optical distance gage. 3,554,646, Cl. 356-4.

Carlson, Roy Henning Donald: *See—*
Malmstrom, Karl; and Carlson, Roy Henning Donald,3,554,441.

Carlton, Quinton H.: *See—*
Thornhill, Peter W.; and Carlton, Quinton H.,3,554,387.

Carmet Company: *See—*
Wilburn, Willard R., 3,554,306.

Carmody, John M., to Republic Packaging Corporation. Method for forming corner cushions. 3,555,137, Cl. 264-148.

Carre, Pierre; Tanguy, Pierre; and Le Boulbouech, Jean. Machine for making puff paste. 3,554,137, Cl. 107-4.

Carrier Corporation: *See—*
Carroll, Alexander A.; and Damratowski, Leonard P., 3,554,567.
Herb, Carl C., 3,554,112.
Osborne, William T., 3,553,974.
Traver, Darwin G.; and Honnold, Fred V., Jr., 3,554,111.

Carroll, Alexander A.; and Damratowski, Leonard P., to Carrier Corporation. Fluid seal. 3,554,567, Cl. 277-164.

Carson, William N., Jr., to General Electric Company. Sealed rechargeable battery having a sensing electrode. 3,554,804, Cl. 136-3.

Carswell, Donald D., Jr.: *See—*
Ditzler, James A.; Carswell, Donald D., Jr.; and Reisch, Kenneth E.,3,554,618.

Carter, Alan Reginald: *See—*
Pettit, Donald; Blackwell, Frederick Brian; and Carter, Alan Reginald,3,553,857.

Carter, Mary E., to FMC Corporation. Process of preparing polyesters from bis- hydroxyalkyl esters of aromatic dicarboxylic acids. 3,554,977, Cl. 260-75.

Carter, Mary E.; Price, John A.; and Mervine, Robert P., to FMC Corporation. Hexafluoro catalytic additives for first and second stage of direct esterification method of preparing polyesters. 3,554,978, Cl. 260-75.

Carter, Vernon. Animal feeder. 3,554,165, Cl. 119-18.

Casebolt, Ralph T.; and Rystad, Arnold O., to Sunset Industries, Inc., mesne. Adjustable door jamb. 3,553,891, Cl. 49-505.

Cashman, Robert W., to Saginaw Machine and Tool Company. Chuck construction. 3,554,565, Cl. 279-4.

Cassidy, Robert J. Fumigating apparatus. 3,554,687, Cl. 21-91.

Cassidy, Robert J. Fumigation apparatus. 3,554,688, Cl. 21-91.

Casson, Charles F., to American Machine & Foundry Company. Means effecting relay contact arc suppression in relay controlled alternating load circuits. 3,555,353, Cl. 317-11.

Castillo, Herman B.; and Burke, Lawrence A., to Eaton Yale & Towne Inc., mesne. Water dispensing apparatus. 3,554,446, Cl. 239-24.

Castilloux, Arthur. Variable rhythm metronome. 3,554,073, Cl. 84-484.

Castle, Raymond G.: *See—*
Cherry, Walter L.; and Castle, Raymond G.,3,555,212.
Cherry, Walter L.; and Castle, Raymond G.,3,555,213.

Caterpillar Tractor Company: *See—*
Fisher, George A.; and Smith, Roger M., 3,553,860.
Grant, Gerald E.; and Randour, Victor, 3,554,101.
Parks, John H.; and Miller, Robert H., 3,554,059.
Reinsma, Harold L.; and Adams, Ronald E., 3,554,588.

Caulton, Martin; Knight, Stanley P.; and De Stefano, Ralph, to RCA Corporation. Process for manufacturing microminiature electrical component mounting assemblies. 3,554,821, Cl. 156-3.

Cawley, Wesley D. Pneumatic-mechanical linear index system. 3,554,063, Cl. 77-64.

Cecchin, Gildo, to Motorola, Inc. Color demodulator. 3,555,176, Cl. 178-5.4

Cech, Karl, to Akustische u. Kino-Gerate Gesellschaft m.b.H. Earphone. 3,555,207, Cl. 179-156.

Ceier, Richard R.: *See—*
Tatoian, George; and Ceier, Richard R.,3,554,198.

Celanese Corporation: *See—*
Brast, Bernhard D.; and Ory, Raymond E., 3,554,692.
Grainger, Charles F., 3,554,933.
Jamison, Saunders E.; and Anthony, Gene H., 3,554,202.
Serle, Allan G., 3,553,785.

Central Dynamics, Ltd.: *See—*
Skrydstrup, Ole; and Larsen, Bjorn, 3,555,185.

Central Electricity Generating Board: *See—*
Smith, Carl A.; Looms, John Sidney Thomas; and Ely, Cyril Harold Arthur, 3,554,319.

Centre National de Recherches Metallurgiques: *See—*
Van Den Hove, Christian Marie; Lilet, Leonard; Cosse, Paul Andre; and Wybo, Maurice Augustin, 3,554,019.

Centre Nationale de Recherches Metallurgiques: *See—*
Barballe, Leon Jean; and Hermans, Maurice Joseph, 3,554,393.

Certus Maschinenbau GmbH: *See—*
Thoma, Ernst Erwin, 3,554,594.

Chamberlin, Robert S.; Davis, William A.; and Stevens, James E., to Chicago Bridge & Iron Company. Submerged oil storage structure. 3,553,969, Cl. 61-46.

Chambers, Charles D., to Geigy Chemical Corporation. Aerosol dispenser with spray nozzle at bottom thereof. 3,554,410, Cl. 222-193.

Chambers, William W.; Rebold, Jerome I.; and Smith, Somers H., III, to Black and Decker Manufacturing Company, The. Tire stand. 3,554,248, Cl. 144-288.

Chance, Richard D., to Kaiser Aluminum & Chemical Corporation. System and apparatus for quick quenching continuously heated strip. 3,554,513, Cl. 266-3.

Chandler Evans Inc.: *See—*
Wills, Donald F., 3,554,086.

Chaney, Preston E., to Sun Oil Company. Excavating method and apparatus. 3,554,602, Cl. 299-17.

Chang, Eugene Yue Chieh; and Kaizerman, Samuel, to American Cyanamid Company. Process for separation of 2,6-tolylene diisocyanate from isomeric mixtures. 3,554,872, Cl. 203-38.

Chapman, Dave, Goldsmith & Yamasaki, Inc.: *See—*
Anderson, Douglas W., 3,554,256.
Chapman, Dave; Anderson, Douglas W.; and Phalon, Joseph E., 3,554,399.

Chapman, Dave; Anderson, Douglas W.; and Phalon, Joseph E., to Chapman, Dave, Goldsmith & Yamasaki, Inc. Infant feeding unit. 3,554,399, Cl. 215-11.

Chapman, Dwain R., to Dow Corning Corporation. Carborane-siloxane polymers. 3,554,965, Cl. 260-46.5

Chapman, Dwain R., to Dow Corning Corporation. 1,1,3,3,5,5-Hexa-(trifluoropropyl)- trisiloxane-1,5 diol. 3,555,061, Cl. 260-448.2

Charrier, George O.; and Wolfe, Gene R., to Procter and Gamble Company, The. Rotary dryer drum having closed internal channels. 3,553,849, Cl. 34-124.

Cheadle, George D.: *See—*
Wood, Frederick C.; Reeg, Cloyd P.; Kelley, Arnold E.; and Cheadle, George D.,3,554,898.

Cheeseman, Ian Clifford; Lawrence, Charles Reginald; and Woolford, Thomas George Holmes, to United Kingdom of Great Britain and Northern Ireland, Minister of Technology in Her Britannic Majesty's Government of the. Reinforced plastic blades. 3,554,664, Cl. 416-90.

Chelyabinsky Traktorny Zavod: *See—*
Litvinov, Nikolai Alexandrovich; Pozin, Boris Mikhailovich; and Emelianenko, Vladimir Vasilievich, 3,554,616.

Chemagro Corporation: *See—*
Gier, Delta W.; and Wasleski, Daniel M., 3,555,160.

Chemetron Corporation: *See—*
Bachmann, Thomas H., 3,554,263.

Chemische Werke Huels A.G.: *See—*
Emde, Hans; Kerrutt, Gunter; Weber, Heinrich; and Blumel, Harald, 3,554,988.

Cherry Electrical Products Corporation: *See—*
Cherry, Walter L.; and Castle, Raymond G., 3,555,212.
Cherry, Walter L.; and Castle, Raymond G., 3,555,213.

Cherry, Walter L.; and Castle, Raymond G., to Cherry Electrical Products Corporation. Crossbar slider switch with improved shronding structure for actuator means. 3,555,212, Cl. 200-17.

Cherry, Walter L.; and Castle, Raymond G., to Cherry Electrical Products Corporation. Cross bar slide selector switch. 3,555,213, Cl. 200-17.

Chery, Walter V., to Textron Inc., mesne. Machine for coiling filamentary material. 3,553,782, Cl. 18-19.

Cheshire Incorporated: *See—*
Kirk, Harry V.; and Doane, James E., 3,554,843.

Chevron Research Company: *See—*
Buss, Waldeen C., 3,554,902.
Postlewaite, William R., 3,553,821.

Chicago Bridge & Iron Company: *See—*
Chamberlin, Robert S.; Davis, William A.; and Stevens, James E., 3,553,969.

Chicago Machinery Laboratory, Inc.: *See—*
Cosgrove, James F.; and Balla, John, 3,554,532.

Chicago Pneumatic Tool Company: *See—*
Judd, Sebastian F.; and Bilodeau, Paul J., 3,554,316.

Chicago Rawhide Manufacturing Co.: *See—*
Haley, William B., 3,554,081.

Chitayat, Anwar K., to OPTOmechanisms, Inc. Fiber optics image enhancement using electro- mechanical effects. 3,554,632, Cl. 350-96.

Chope, Henry Roy, to Industrial Nucleonics Corporation. Nonlinear controller. 3,553,991, Cl. 72-8.

Christensen Diamond Products Company: *See—*
Link, Howard; Bridwell, Harold C.; and Rowley, David S., 3,554,304.
Mabey, Donald H.; and Gledhill, Jack C., 3,554,606.

Christensen, Gary T. Lapidary tumbling barrel. 3,553,902, Cl. 51-164.

Christensen, Kenneth A., to Johnston, Marion, and Endicott, Gladys. Small boat with built-in safety features. 3,553,750, Cl. 9-6.

Christianson, William O., to Unidynamics/Phoenix. Binding post. 3,555,495, Cl. 339-203.

Christie, William C., to Goodyear Tire & Rubber Company, The. Control system for a tire grinding machine. 3,553,903, Cl. 51-165.

Chrysler Corporation: *See—*
Ball, Jeremy T.; and Mac Afee, James E., 3,553,986.
Ball, Jeremy T.; Wall, Thomas J.; and MacAfee, James E., 3,553,987.
Sarto, Jorma O., 3,554,175.

Chuan, Raymond L., to Susquehanna Corporation, The, mesne. Apparatus for maintaining vacuum conditions by molecular deplection of gas. 3,555,331, Cl. 313-7.

Ciba Corporation: *See—*
Bickel, Hans; Bosshardt, Rolf; Fechtig, Bruno; Menard, Enrico; Mueller, Johannes; and Peter, Heinrich, 3,555,017.
Moran, Raymond Michael, Jr.; and Blekicki, Henry Thomas, 3,554,970.

Ciba Limited: *See—*
Habermeier, Juergen; and Porret, Daniel, 3,554,968.
Hewitt, Maxwell James; Steinlin, Felix; and Grubenmann, Werner, 3,554,774.
Mueller, Willy; and Ronco, Karl, 3,555,004.
Peter, Richard; and Angliker, Hans Joerg, 3,555,016.
Ronco, Karl, 3,555,005.
Seitz, Karl, 3,555,027.

C.I.C. Engineering Limited: *See—*
Bentley, Eric Herbert, 3,553,786.

Cigan, John M.: *See—*
Fiorentino, Robert J.; Cigan, John M.; Sabroff, Alvin M.; and Jentgen, Richard L.,3,553,995.

C&I/Girdler, Inc.: *See—*
Mayland, Bertrand J.; and Trimarke, Carl Robert, 3,554,690.

Cincinnati Butcher' Supply Company, The: *See—*
Herzog, Raymond A., 3,553,767.

Cities Service Company: *See—*
Barker, James E.; and Robinson, Julian H., 3,554,694.

Cities Service Tankers Corporation: *See—*
Bassett, Robert S.; and Norris, Richard O., 3,554,713.

Claessens, Frank A., to Johns-Manville Corporation. Apparatus for forming asbestos-cement pipe. 3,554,865, Cl. 162-284.

Clair Manufacturing Co., Inc.: *See—*
Burt, William C., 3,553,901.

Clark, Charles W. Compartment and adjustable stool assembly. 3,554,626, Cl. 312-235.

Clark, Gaylord J. Brush structure and method of making same. 3,553,760, Cl. 15-182.

Clarke, Frank D.: *See—*
Watskins, Phillip L.; and Clarke, Frank D.,3,555,549.

Clarke, James W., Jr.; and Wilson, Worley C., Jr., to Data Research Corporation. Transducer controlled variable frequency wien-bridge oscillator. 3,555,448, Cl. 331-65.

Clawson, Lawrence G., to Dynatech Corporation. Dual circuit induction system. 3,554,174, Cl. 123-122.

Clayer, Arlette: *See—*
Agneray, Louis; Clayer, Arlette; and Bruni, Maurice,3,553,937.

Cleghorn, Norman L.; and Anderson, Albert G., to Western Filter Co., Inc. Method of forming a screen. 3,554,242, Cl. 140-107.

Clevite Corporation: *See—*
Turk, Victor J.; Junge, Charles H.; and Kingsbury, George R., 3,553,806.

Clocksin, Paul P.: *See—*
Bramer, Donald W.; and Clocksin, Paul P.,3,555,394.

Cluff, Edward F.; and Verbanc, John J., to Du Pont de Nemours, E. I., and Company. Clay-loaded elastomers. 3,554,960, Cl. 260-41.5

Cluff, John Verl. Spare tire lift and carrier. 3,554,397, Cl. 214-451.

Clyde Corporation, The: *See—*
Ginther, Gary D., 3,554,403.

Coerver, Leo E., Jr.; and Pizzarello, Frank A., to Hughes Aircraft Company. Method of producing an encapsulated inductor with a high value of permeability. 3,554,797, Cl. 117-227.

Cogar, George R.; Sekse, Torkjell; Banziger, Walter; Ming, Joseph W.; and Horvath, Laszlo, to Mohawk Data Sciences Corporation. Keyboard sprocket circuit. 3,555,306, Cl. 307-268.

Cogliano, Joseph A.: *See—*
Braude, George L.; Cogliano, Joseph A.; and Lard, Edwin W.,3,554,936.

Cohen, Bernard: *See—*
Mucenieks, Paul R.; and Cohen, Bernard,3,555,147.

Cohen, Joel B., to Shell Containers, Inc. Container with partition supporting means. 3,554,429, Cl. 229-15.

Cohen, Robert L., to Du Pont de Nemours, E. I., and Company. Hexaarylbiimidazole-carbocyanine dye compositions. 3,554,753, Cl. 96-90.

Cole, Edward N., to General Motors Corporation. Vehicular transmission pump drive. 3,554,056, Cl. 74-730.

Cole, Stephen F., Jr. Insulation modules for insulating wall surfaces. 3,553,920, Cl. 52-506.

Collings, Peter R.; and Beyer, Rolf R., to Westinghouse Electric Corporation. Radiation pickup device incorporating electron multiplication. 3,555,345, Cl. 315-11.

Collins Radio Company: *See—*
Williams, Winston F., 3,555,393.

Collins, William J. Device and method for sampling molten metal. 3,554,040, Cl. 73-425.4

Colomb, Henry O., Jr.; and Trecker, David J., to Union Carbide Corporation. Radiation cured norbornene polymers. 3,554,886, Cl. 204-159.12

Colombo, Umberto; Mini, Iti; and Sironi, Giuseppe, to Montecatini Edison S.p.A. Process obtaining sulfurous gases and magnetite or iron sponge from waste ferrous sulfate. 3,554,733, Cl. 75-1.

Colt's Inc.: *See—*
Sophinos, Nicholas; Fremont, Robert D.; and Gallini, Edward L., 3,553,843.

Columbia Cellulose Company Limited: *See—*
Abson, Derek; and Taylor, Richard P., 3,554,775.

Combustion Engineering, Inc.: *See—*
Piner, Dick H., Jr., 3,553,940.

Comitetul de Stat Pentru Cultura Si Arta: *See—*
Birbanescu, Adrian; and Rusu, Tiberiu, 3,554,317.

Commissariat a l'Energie Atomique: *See—*
Berthier, Daniel; and Max, Jacques, 3,555,258.

Commonwealth of Australia, Department of Supply, The: *See—*
Smith, Ian E.; and Metcalfe, Kenneth A., 3,555,378.

Compagnie de Saint-Gobain: *See—*
Crepet, Renee Michelle, 3,554,720.
Jochim, Friedrich; Peetz, Dieter; Karla, Heinz; and Luerssen, Hermann, 3,553,833.
Compagnie Electro-Mecanique: *See—*
Bidard, Rene, 3,555,312.
Compagnie Generale d'Automatisme:*See—*
Huret, Jacques, 3,554,674.
Compagnie Generale d'Electricite:*See—*
Peronneau, Pierre, 3,554,030.
Compleat Angler, Ltd., The: *See—*
Tarantino, Jon E., 3,554,590.
Concentric Engineering Company: *See—*
Goldkuhle, Werner P., 3,554,117.
Concrete Development Corporation: *See—*
Varnell, William R.; and Mitchell, Mance R., 3,554,941.
Conkle, Ellsworth V. Engine system for helicopter. 3,554,666, Cl. 416-125.
Conrad, Winthrop B., to Teleflex Incorporated. Motion transmitting remote control assembly. 3,554,050, Cl. 74-501.
Container Corporation of America: *See—*
Timpe, Winfried George, 3,554,858.
Contico International, Inc.: *See—*
Miller, Lester, 3,554,573.
Continental Can Company, Inc.: *See—*
Bozek, John S., 3,554,400.
McIntire, Harry H., 3,554,124.
Continental Oil Company: *See—*
Johnson, Wade M.; and Mussett, Harry L., 3,555,219.
Kerfoot, Oliver Carl; Marshall, David W.; Krehbiel, Delmar D.; and Groves, William L., Jr., 3,554,916.
Marshall, David W.; McCleskey, Jerry; and Feighner, George C., 3,554,695.
Ngy, Anthony J., 3,554,914.
Controle Bailey (Societe Anonyme): *See—*
Lejon, Jean C., 3,555,263.
Controls Company of America: *See—*
Bleich, Donald D., 3,555,316.
Cook, Melvin S., to Servo Corporation of America. Semiconductor detector and scanning device. 3,555,180, Cl. 178-7.1
Coombe, Thomas: *See—*
Sieracki, Frank W.; and Coombe, Thomas,3,555,523.
Cooper, Rutherford L., to Royer Foundry & Machine Co. Sand aerating device. 3,554,499, Cl. 259-182.
Cooper Tire & Rubber Company: *See—*
Waser, James D., 3,553,950.
Cootes, Harold Edwin, to AMP Incorporated. Method and apparatus for terminating cable. 3,553,836, Cl. 29-628.
Copeland Process Corporation: *See—*
Timpe, Winfried George, 3,554,858.
Cordis Corporation: *See—*
Ushakoff, Alexis E., 3,554,704.
Corll, James A. Child-safe actuating device for normally sealed containers. 3,554,366, Cl. 206-42.
Cornell, Robert J., to Uniroyal, Inc. Thermoplastic polyarylsulfone resin. 3,554,972, Cl. 260-49.
Cornell-Dubilier Electric Corporation: *See—*
Bowling, Edward L., 3,555,370.
Corning Glass Works: *See—*
Bellman, Robert H., 3,554,204.
Bellman, Robert H., 3,554,205.
Bennett, Robert W.; and Blanding, Wendell S., 3,554,834.
Hillman, Thomas F., 3,554,352.
Reas, Lewis F., 3,554,460.
Wilson, Richmond W., 3,554,723.
Corrodi, Hans Rudolf: *See—*
Brandstrom, Arne Elof; Corrodi, Hans Rudolf; and Ablad, Bengt Arne Hjalmar,3,555,161.
Cosgrove, James F.; and Balla, John, to Chicago Machinery Laboratory, Inc. Signature machines. 3,554,532, Cl. 270-54.
Cosse, Paul Andre: *See—*
Van Den Hove, Christian Marie; Lilet, Leonard; Cosse, Paul Andre; and Wybo, Maurice Augustin,3,554,019.
Cota, Marlo E.; and Williams, James H., to Motorola, Inc. Diffusion tube. 3,554,162, Cl. 118-48.
Cote, Lawrence, to Data Products Corporation. Disc file system. 3,555,286, Cl. 250-222.
Cotton Producers Institute: *See—*
Tolgyesi, William S., 3,554,686.
Cottrell, William N., Jr., to Bio-Dynamics, Inc. Uric acid test procedure. 3,554,701, Cl. 23-230.
Coughlin, Stephen A.: *See—*
Weaver, Galen K.; Shaffer, Howard A.; and Coughlin, Stephen A.,3,553,812.
Courtaulds Limited: *See—*
Hewitt, Maxwell James; Steinlin, Felix; and Grubenmann, Werner, 3,554,774.
Cowan, George R.: *See—*
Bergmann, Oswald R.; Buchwald, Joseph; and Cowan, George R.,3,554,126.
Cox, Jack E., to Gulf & Western Industrial Products Company, mesne. Sheet material handling apparatus. 3,554,533, Cl. 271-54.
Cox, Robert H.: *See—*
Kaplan, Leonard L.; and Cox, Robert H.,3,555,151.
Coyle, Edward L.: *See—*
Grover, George M.; and Coyle, Edward L.,3,554,183.
Coyle, Vincent E., to Singer-General Precision, Inc. Fluidic potentiometer. 3,554,229, Cl. 137-608.
Coyne, Donald M.: *See—*
Cahoy, Roger P.; and Coyne, Donald M.,3,554,927.
Craft, Donald W., to General Electric Company. Process and apparatus for distributing fluid inerts with respect to the electrodes of a fuel battery. 3,554,809, Cl. 136-86.
Cragoe, Edward J., Jr.; Bicking, John B.; and Shepard, Kenneth L., to Merck & Co., Inc. 1-(3-Aminopyrazinoyl) semicarbazides, 1-(3-aminopyrazinoyl) thiosemicarbazides, and method for their preparation. 3,555,024, Cl. 260-250.
Cragoe, Edward J., Jr.; and Shepard, Kenneth L., to Merck & Co., Inc. 1-(3-Aminopyrazinoyl)-3-substituted-3- thioisosemicarbazides and method for preparation. 3,555,023, Cl. 260-250.
Craig, Theodore W.; and Borochoff, Eugene H., to General Mills, Inc. Polyo carbonates in chemical leavening systems. 3,554,762, Cl. 99-92.
Crang, Terence Fursdon, to Vortair Engineering Limited. Refrigeration of mobile containers. 3,553,971, Cl. 62-5.
Crawley Machinery Co.: *See—*
Sarring, Ernest J., 3,554,359.
Crepet, Renee Michelle, to Compagnie de Saint-Gobain. Manufacture of optical plates. 3,554,720, Cl. 65-4.
Crescentini, Lamberto; and Wincklhofer, Robert C., to Allied Chemical Corporation. Novel amide and a novel diacyl derivative of a triaza alkane. 3,555,056, Cl. 260-404.5
Crisman, Thomas L.: *See—*
Montone, Liber J., 3,555,531.
Cromer, Charles F.; and Crookston, Ronald W., to Westinghouse Electric Corporation. Gas-blast circuit interrupters with lateral venting action. 3,555,227, Cl. 200-148.
Crookston, Ronald W.: *See—*
Cromer, Charles F.; and Crookston, Ronald W.,3,555,227.
Crossman, Richard L., to Goodyear Tire & Rubber Company, The. Automatic brake adjuster. 3,554,336, Cl. 188-196.
Croy, John E., to RCA Corporation. Bi-directional shift register. 3,555,433, Cl. 328-37.
CSF-Compagnie Generale de Telegraphic Sans Fil: *See—*
Fombonne, Paul, 3,555,458.
CSF-Compagnie Generale de Telegraphie Sans Fil: *See—*
Brun, Henri, 3,555,406.
Dumaire, Marc, 3,555,425.
Culbreth, Walter J.: *See—*
Slater, Jack D.; and Culbreth, Walter J.,3,554,730.
Cumine, Eric; and Graham, Charles H., said Graham assor. to said cumine. Container refrigerator. 3,553,976, Cl. 62-294.
Cuozzi, Concetta, to Munsingwear, Inc. Girdle with crotch insert. 3,554,200, Cl. 128-528.
Curless, William T., to Gulf Research & Development Company. Manufacture of low chloride potassium phosphate fertilizer. 3,554,729, Cl. 71-34.
Curran, William T., to Garrett Corporation, The. Navigation computer. 3,555,250, Cl. 235-150.27
Currie, Adam, to Prismo Universal Corporation, mesne. Portable plastic melter. 3,554,449, Cl. 239-135.
Curry, John D., to Procter & Gamble Company, The. Production of mono- and di-alkylphosphites. 3,555,125, Cl. 260-980.
Curtis, Lorin W., to Wagner Electric Corporation. Rear loading panel lamp assembly. 3,555,341, Cl. 313-318.
Curty, Inc.: *See—*
Johnson, Curt, 3,554,194.
Cushing, Donald S.: *See—*
Jenkins, Thomas E.; and Cushing, Donald S.,3,555,242.
Cutler, Richard G., to Messrs. Elastogran GmbH. Ball-and-socket joint. 3,554,586, Cl. 287-87.
Cutler-Hammer, Inc.: *See—*
Halvorson, John A.; Knasinski, Max S.; Risberg, Robert L.; and Serbiak, Richard P., 3,555,384.
Risberg, Robert L., 3,555,385.
Cyr, Joseph H.; and Mc Carty, Horace G., to Sperry Rand Corporation. Header control. 3,553,945, Cl. 56-23.
Dahlber, Frank, AB: *See—*
Arnshav, Karl Sivert, 3,553,816.
Dahlheimer, John Charles, to International Packings Corporation. Seal. 3,554,559, Cl. 277-37.
Daicel Ltd.: *See—*
Tanaka, Atsushi; Sawada, Hideo; Toba, Hirotaka; and Mikumo, Masatoshi, 3,555,121.
Daimler-Benz Aktiengesellschaft: *See—*
Deckert, Franz, 3,554,575.
Deutschmann, Herbert; Wahnschaffe, Jurgen; Rudert, Wolfgang; and Mader, Herbert, 3,554,322.
Gotz, Hans, 3,554,110.
Herschmann, Otto; Reisacher, Josef; Stockfisch, Heinz; and Gotz, Alfred, 3,554,171.
Dainippon Screen Seizo Kabushiki Kaisha (Dainippon Screen Manufacturing Company, Limited): *See—*
Shimada, Shoichi, 3,555,262.
Daiwa Seiko Kabshiki Kaisha: *See—*
Matsui, Joshio, 3,554,459.
Daleda, Joseph: *See—*
Altamira, Anthony F.; and Daleda, Joseph,3,554,282.

Dalton, Frank E. Track roller assembly. 3,554,620, Cl. 308-187.1
D'Altrui, Thomas N., to Midland Machine Corporation. Cantilever storage rack. 3,554,477, Cl. 248-245.
Daly, Bruce David; and Daly, Louise A. Crypt flower vase and mounting therefor. 3,553,888, Cl. 47-41.1
Daly, Louise A.: *See—*
Daly, Bruce David; and Daly, Louise A.,3,553,888.
Daly, Robert A., to Emhart Corporation. Glass feeding apparatus with orifice plate support frame and lifting means therefor. 3,554,726, Cl. 65-325.
Damratowski, Leonard P.: *See—*
Carroll, Alexander A.; and Damratowski, Leonard P.,3,554,567.
Dana Corporation: *See—*
Heid, Robert W., Jr., 3,554,568.
Dana Laboratories, Inc.: *See—*
Braymer, Noel B., 3,555,446.
Danfoss A/S: *See—*
Hansen, Gunnar Lyshoj, 3,554,675.
D'Aquin, George A. Lathe chuck aligning and mounting bar. 3,553,810, Cl. 29-200.
Darrow, William C.; Holmwood, Richard H.; Snyder, Keith A.; and Treiber, Walter C., to International Business Machines Corporation. Metallic surface fusion apparatus. 3,555,235, Cl. 219-76.
Dart Industries Inc.: *See—*
McCray, Ernest G., 3,554,995.
DASA Corporation: *See—*
Kuehnle, Manfred R.; and Kok, Jurgen, 3,555,201.
Dastoo, Minoo N., to Goodyear Tire & Rubber Company, The. Electrostatic printing material and method of its preparation. 3,554,747, Cl. 96-1.8
Data Products Corporation: *See—*
Cote, Lawrence, 3,555,286.
Data Research Corporation: *See—*
Clarke, James W., Jr.; and Wilson, Worley C., Jr., 3,555,448.
Datacopy Limited: *See—*
Firth, Donald, 3,554,779.
Daum, Wilhelm, deceased (by Daum, Martin Daum, Elisabeth Daum, Wilfried Daum, Irmgard, heirs); Nurnberg, Eberhard; and Sippel, Hans Joachim, to Merck, E., A.G. Coated confectionery. 3,554,767, Cl. 99-134.
Dauson, Samuel, to PPG Industries, Inc. Insulated curtain wall construction. 3,553,918, Cl. 52-395.
Dave Chapman Goldsmith & Yamasaki, Inc.: *See—*
Anderson, Douglas W., 3,554,434.
Davidson, Kenneth H.; and Thompson, William S., to Snorkel Fire Equipment Company. Hydraulically controlled nozzle. 3,554,452, Cl. 239-456.
Davidson Rubber Company, Incorporated: *See—*
Feuer, Seymour S.; Rhodes, Richard D., Jr.; and Torres, Allan F., 3,555,130.
Davies, David M. Trestle for flexible pipe. 3,554,474, Cl. 248-49.
Davis, Carlisle R., Jr., to General Motors Corporation. Valve stem seal assembly. 3,554,562, Cl. 277-149.
Davis, Charles F. Weight for boat anchor. 3,554,153, Cl. 114-210.
Davis, Clarence C.: *See—*
Brown, Wilmot E., Jr.; and Davis, Clarence C.,3,553,813.
Davis, Hal G. Sheet item package and dispenser. 3,554,370, Cl. 206-57.
Davis, Martin A., to Ayerst, McKenna & Harrison Limited. Thiazinopyridoindolone derivatives. 3,555,018, Cl. 260-243.
Davis, Parke, & Company: *See—*
L'Italien, Yvon Jean, 3,555,093.
Davis, Paul D., Jr.; and Neitzel, Edwin B., to Texas Instruments, Incorporated. Aerial drop telemetering sensor. 3,555,502, Cl. 340-15.5
Davis, Paul: *See—*
Beutel, Ralph H.; Davis, Paul; and Schoenewaldt, Erwin F.,3,555,021.
Davis, William A.: *See—*
Chamberlin, Robert S.; Davis, William A.; and Stevens, James E.,3,553,969.
Daws, Charles R. Automobile automatic turn switch repositioning. 3,555,506, Cl. 340-56.
Dawson, Robert M. Combination baby walker. 3,554,570, Cl. 280-7.1
Dayton Perforators, Inc.: *See—*
Gargrave, Robert J.; Randolph, Allan E., Sr.; and Holiga, Ludomin A., 3,554,060.
De Angelis, Milo; and Koch, Charles P. Automobile conveyor. 3,554,133, Cl. 104-172.
Debenedetto, Jose. Device for charging a container with gas under pressure. 3,554,225, Cl. 137-557.
Debrebant, Raymond Albert Alexandre: *See—*
Hermant, Marc Eugene; and Debrebant, Raymond Albert Alexandre,3,554,909.
Decatur Pump Company: *See—*
Oglesby, Paul L.; Reeves, Richard E.; and Haebich, William K., 3,554,661.
Deck, Edwin L., to American Machine & Foundry Company. Contact isolating means for multipoled switch devices. 3,555,230, Cl. 200-168.
Decker, Hanns, to Klockner-Humboldt-Deutz Aktiengesellschaft. Roll press. 3,553,775, Cl. 18-9.
Deckert, Franz, to Daimler-Benz Aktiengesellschaft. Wheel mounting for motor vehicles, especially for the front wheels of passenger motor vehicles. 3,554,575, Cl. 280-106.
Dege, Gerald J.: *See—*
Reimschuessel, Herbert K.; Dege, Gerald J.; and Fuhrmann, Robert,3,555,114.
Dehn, William F., to Allen-Bradley Company. Modular limit switch. 3,555,215, Cl. 200-47.
Deichelmann, Hermann, to Pfaudler-Werke AG. Method and apparatus for detecting faults in the enamel coating of a vessel having electrically conductive tantalum plugs wherein a passivating insulating layer is formed on the plugs. 3,555,414, Cl. 324-54.
Deininger, Harry T., Jr., to Budd Company, The. Ultrasonic testing of welds. 3,554,029, Cl. 73-67.5
de Jager, Evertt J., to Xomox Corporation. Vane-type actuator. 3,554,096, Cl. 92-125.
de Koning, Arie Adrianus; and de Koning, Kornelis Korstiaan Karel. Hydro-pneumatic spring element. 3,554,525, Cl. 267-64.
De Koning, Jan: *See—*
Van Der Veen, Romke; and De Koning, Jan,3,554,010.
de Koning, Kornelis Korstiaan Karel: *See—*
de Koning, Arie Adrianus; and de Koning, Kornelis Korstiaan Karel,3,554,525.
Delaney, Edward A.: *See—*
Nudenberg, Walter; Merrifield, Dudley B.; and Delaney, Edward A.,3,554,923.
Nudenberg, Walter; Merrifield, Dudley B.; and Delaney, Edward A.,3,554,998.
Delano, Roger A.: *See—*
Schofield, John Allan; and Delano, Roger A.,3,554,918.
Delbag-Luftfilter Gesellschaft mit beschrankter Haftung: *See—*
Wittemeier, Hans-Joachim; and Neumann, Gerhard Max, 3,553,941.
Delin, Lars Folke: *See—*
Nordstedt, Hans Josef; and Delin, Lars Folke,3,553,742.
Dell'Agnese, David E., to Modern Equipment Company. Scrap metal preheaters. 3,554,508, Cl. 263-15.
Delta Corporation: *See—*
Heldt, Michel P., 3,553,896.
Demag Aktiengesellschaft: *See—*
Hermann, Curt; and Baumann, Hans G., 3,554,269.
Kampf-Emden, Gerd; Horst, Heinz; and Klapdohr, Friedrich, 3,554,603.
Demkiw, Eugene. Front end loader. 3,554,396, Cl. 214-140.
Demler, Henry William, Sr.; and Ziegler, George William, Jr., to AMP Incorporated. Method of providing coaxial connections. 3,553,835, Cl. 29-628.
De Montebello, Roger L. Apparatus and method for forming a mold for lenticular sheet. 3,553,783, Cl. 18-19.
Dempsey, James F.: *See—*
Maloney, Richard P.; Kheghatian, Habet M.; and Dempsey, James F.,3,554,994.
Dempster Brothers, Inc.: *See—*
Liberman, Harvey W.; Toppins, Charles R.; and Alford, Paul D., 3,554,120.
DeNatale, Alphonse R., to Carborundum Company, The. Display stand. 3,554,384, Cl. 211-177.
Denegre, Georges C.: *See—*
Buisson, Pierre R.; and Denegre, Georges C.,3,554,035.
Denhardt, Carl: *See—*
Sorenson, Bill W.; Kious, Dane R.; and Denhardt, Carl,3,554,142.
Denkowski, Walter J., to King of Prussia Research and Development Corporation. Reverse locking clutch. 3,554,337, Cl. 192-8.
Dennis, Philip J., to Sylvania Electric Products, Inc. Circuit breaker. 3,555,478, Cl. 337-89.
Denny, Jere Robert; and Krishnaswamy, Deenahalli S., to Kennecott Copper Corporation. Apparatus for precipitating metal from a solution. 3,554,516, Cl. 266-22.
Dereich, John E., to Neville Chemical Company. Epoxy resin ink for printing on substrates such as glass. 3,554,943, Cl. 260-18.
DeRose, Ralph A.; and Dicius, Renualdas P., to International Telephone and Telegraph Corporation. Insulation stripping and wire wrapping equipment. 3,554,243, Cl. 140-124.
Des Roches, Wilbert J., to Des Roches-Hurlburt Industries, Inc. Dispenser for viscous material. 3,554,407, Cl. 222-95.
Des Roches-Hurlburt Industries, Inc.: *See—*
Des Roches, Wilbert J., 3,554,407.
Desoutter Brothers Limited: *See—*
Dobbie, Arthur Kenneth, 3,554,197.
Dessarts, Pierre, to Societe Anonyme Heurtey. Walking beam furnaces. 3,554,505, Cl. 263-6.
De Stefano, Ralph: *See—*
Caulton, Martin; Knight, Stanley P.; and De Stefano, Ralph,3,554,821.
Deutsche Edelstahlwerke Aktiengesellschaft: *See—*
Preyer, Gerhard, 3,554,514.
Deutsche Gold-und Silber-Scheideanstalt vormals Roessler: *See—*
Beschke, Helmut; Reinhardt, Helmut; and Achenbach, Karl, 3,554,759.
Deutschmann, Herbert; Wahnschaffe, Jurgen; Rudert, Wolfgang; and Mader, Herbert, to Daimler-Benz Aktiengesellschaft. Internal combustion engine crankcase with dry sump lubrication. 3,554,322, Cl. 184-6.
de Varda, Giuseppe, 70% to Montecatini Edison S.p.A. Electrolytic furnaces having multiple cells formed of horizontal bipolar carbon electrodes. 3,554,893, Cl. 204-244.

Devienne, Andre: *See—*
Mirtain, Henri; and Devienne, Andre, 3,554,261.
De Vries, William C.; and Johnson, Eldon L., to Mobil Oil Corporation. Method for the production of laminar thermoplastic films. 3,554,833, Cl. 156-229.
Dewey, Clyde G., to General Electric Company. Power system filter. 3,555,291, Cl. 307-105.
DeWolf, Myron F.: *See—*
Hunkeler, Ernst J.; Ash, John L.; and DeWolf, Myron F., 3,554,079.
Dexter Corporation, The: *See—*
Benham, Ronald C., 3,555,111.
Diamond Tool Associates: *See—*
Hinshaw, Meral W., 3,553,906.
Diaz-Compain, Jeronimo E. Apparatus for diffusion and lixiviation of sugar cane, beet-sugar or sweet sorghum. 3,554,799, Cl. 127-6.
Dicius, Renualdas P.: *See—*
DeRose, Ralph A.; and Dicius, Renualdas P., 3,554,243.
Dick, A.B., Company: *See—*
Sherman, David M.; ; Embler. Edward L.; and Proffitt, James R., Jr., 3,555,558.
Dickert, Joseph J., Jr.; and Rowe, Carleton N., to Mobil Oil Corporation. Phosphorodithioate salts as antiwear agents. 3,554,908, Cl. 252-32.7
Dickinson, Donald A., to Gilbert & Barber Manufacturing Company. Illuminated sign. 3,553,869, Cl. 40-130.
Dickinson, Robert E.; and Henson, William P., to Mobile Drilling Company, Inc. Kelly bar coupling. 3,553,980, Cl. 64-23.5
Dickinson, Theodore M., to General Electric Company. Self aligning electron beam welder. 3,555,347, Cl. 315-18.
Dickson, George Kenneth, to United Kingdom Atomic Energy Authority. Nuclear reactors systems of the direct cycle boiling water type. 3,554,869, Cl. 176-55.
Dickstein, Jack: *See—*
Rosis, Constantine; Kline, Milton; Dickstein, Jack; and Wechsler, Harry C., 3,554,954.
Didinger, George H., Jr., to Union Carbide Corporation. Production of graded reliability capacitors. 3,553,805, Cl. 29-25.42
Diebold, James L.; and Wolf, Milton, to American Home Products Corporation. Certain 5,6,7,8,-tetrahydro-1,6-naphthyridin-2-ol esters. 3,555,034, Cl. 260-295.
Dieffenbach, Harry A. Land track vehicle. 3,554,310, Cl. 180-9.24
Diehm, Kenneth F.; and Gruber, Lawrence H., to Trim-Master Corporation. Thread-cutting attachment for sewing machines. 3,554,149, Cl. 112-252.
Dieselman, Henry D.: *See—*
Schroeder, John B.; and Dieselman, Henry D., 3,555,332.
Dietrich, Roland: *See—*
Hackmann, Ernst-August; Dietrich, Roland; and Moraw, Roland, 3,554,752.
Di Laura, Arnold E. Golf tee of synthetic foam. 3,554,543, Cl. 273-33.
Dimitracopoulos, Panayotis Constantine. Small slide and film-strip projector. 3,554,638, Cl. 353-68.
Ditson, J D., to Ingersoll-Rand Company. Rock drill rod. 3,554,308, Cl. 175-395.
Ditzler, James A.; Carswell, Donald D., Jr.; and Reisch, Kenneth E., to Polymer Corporation, The. Railroad trucks. 3,554,618, Cl. 308-3.
Dixon Automatic Tool, Inc.: *See—*
Dixon, Paul H.; and Schmidt, Paul R., 3,555,266.
Dixon, Paul H.; and Schmidt, Paul R., to Dixon Automatic Tool, Inc. Facsimile transmitter and method of assembling the same. 3,555,266, Cl. 240-41.35
D'Muhala, Thomas F. Spray gun with replaceable cartridges. 3,554,450, Cl. 239-309.
Doane, James E.: *See—*
Kirk, Harry V.; and Doane, James E., 3,554,843.
Dobbie, Arthur Kenneth, to Desoutter Brothers Limited. Portable power operated saw. 3,554,197, Cl. 128-317.
Dock, Mortimer R. Material for expanding and assembling components used in the creation of bas-relief art. 3,554,848, Cl. 161-18.
Dockus, Kostas F.; and Zambrow, John L., to Borg-Warner Corporation. Method of bonding aluminum. 3,553,825, Cl. 29-487.
Dogadko, Peter: *See—*
Hufton, Arthur G.; and Dogadko, Peter, 3,554,177.
Dombay, Stephen, to Furniture Industry Research Association. Persulfate and hypochlorite treatment of dark or medium colored woods. 3,554,785, Cl. 117-57.
Dome, Peter; and Luscher, Jakob. Electronic timepiece. 3,553,957, Cl. 58-23.
Dompas, Leon E. D. Method of precompressing and erecting a modular structure. 3,553,923, Cl. 52-745.
Dorsett Industries, Inc.: *See—*
Dorsett, Loyd G., 3,553,852.
Dorsett, Loyd G., to Dorsett Industries, Inc. Method and apparatus for response discrimination. 3,553,852, Cl. 35-9.
Dougherty, Neal R., to Mead Corporation, The, mesne. Method and apparatus for orienting a polarizing filter. 3,554,105, Cl. 95-12.5
Dow Chemical Company, The: *See—*
Bates, Stanley I.; and Girard, Gerald R., 3,554,997.
Beck, Henry Nelson, 3,554,996.
Eilers, Louis H.; and Parks, Christ F., 3,554,287.
Hoekstra, John J., 3,555,094.
Johnston, Howard, 3,555,032.
Nixon, Thomas E.; Barber, John A.; and Nagle, Floyd B., 3,554,552.
Olstowski, Franciszek; Watson, John D., Sr.; and McMichael, Wallace T., 3,553,834.
Place, John; Weissenberg, Ulrich W.; and Goodenough, Robert D., 3,554,905.
Schrenk, Walter J., 3,555,128.
Seitz, Jerry T., 3,554,888.
Van Tilburg, Edgar John, 3,554,957.
Dow Corning Corporation: *See—*
Chapman, Dwain R., 3,554,965.
Chapman, Dwain R., 3,555,061.
Frye, Cecil L., 3,555,069.
Hampton, James F., 3,555,065.
Holbrook, George W., 3,555,068.
Johnson, Milton L., 3,554,910.
Le Grow, Gary E., 3,555,066.
Le Grow, Gary E., 3,555,067.
Plueddemann, Edwin P., 3,554,952.
Dowell, William T.: *See—*
McKelvy, William R., Jr.; Lamb, Douglas J.; and Dowell, William T., 3,554,083.
Dowling, Donald J.: *See—*
Atwood, George R.; and Dowling, Donald J., 3,555,409.
Doyle, John T.: *See—*
Johnston, Donald LeRoy; Dryden, Vernon W.; and Doyle, John T., 3,554,705.
Dresser Industries, Inc.: *See—*
Meripol, Robert B.; and Pumpelly, Robert C., 3,554,279.
Tucker, Andrew J., 3,554,280.
Drexel Institute of Technology: *See—*
Matcovich, Thomas J., 3,555,364.
Drexler, John J.: *See—*
Hallene, Alan M.; Holuba, Henry J.; Drexler, John J.; and Phillips, Richard S., 3,554,326.
Drinan, Gary J.: *See—*
Pfister, Anthony C.; Krieger, Roland L.; and Drinan, Gary J., 3,555,355.
Drug Package, Incorporated: *See—*
Broemmlsiek, John C., 3,554,847.
Drummond, John A., to Phillips Petroleum Company. Apparatus and process for controlling flow of mixed liquids to a wet pelleting process by control. 3,554,710, Cl. 23-314.
Drummond, Paul E.: *See—*
Fischer, Milton H.; Incho, Harry H.; Drummond, Paul E.; and Montgomery, Ronald E., 3,555,123.
Dryden, Vernon W.: *See—*
Johnston, Donald LeRoy; Dryden, Vernon W.; and Doyle, John T., 3,554,705.
Du Bois, Robert J., to Allied Chemical Corporation. Process for producing an insecticide. 3,555,074, Cl. 260-468.
Duchesneau, Eugene Alfred, Jr.; and Boudreau, Donald Francis, to Borden, Inc. Process for the production of polyvinyl halide. 3,554,953, Cl. 260-29.6
Duda, William L.; Kosanke, Kurt M.; Kulcke, Werner W.; and Max, Erhard, to International Business Machines Corporation. Optical logic device for position-encoding a light beam. 3,554,634, Cl. 350-160.
Dudley, Robert E., 1/3 to Tracey, Richard M., and 1/3 to Brunstrom, Gerald R. Airport. 3,554,470, Cl. 244-114.
Duffy, Michael C.; and Hudson, Richard L., to International Business Machines Corporation. Automatic impurity profiling machine. 3,554,891, Cl. 204-195.
Duffy, Richard J., to USM Corporation. Self-locking threaded element. 3,554,258, Cl. 151-7.
Dumaire, Marc, to CSF-Compagnie Generale de Telegraphie Sans Fil. Synchronization apparatus for two-way synchronous coded link. 3,555,425, Cl. 325-58.
Dunbar, Glenn G. Crane. 3,554,395, Cl. 214-138.
Dunkin, Albert, to Remington Arms Company, Inc., mesne. Pneumatic dump valve. 3,554,482, Cl. 251-74.
Dunkin, Albert, to Sybron Corporation. Low silhouetted dental chair or the like. 3,554,598, Cl. 297-330.
Dunlop Company Limited, The: *See—*
Allitt, Bernard C., 3,553,789.
Baker, Denis W.; and Haydon, Brian R. J., 3,554,587.
Dunstan, Phillip E. Toy aerodynamic wing. 3,553,884, Cl. 46-81.
Dunweg, Gustav: *See—*
Ruck, Heinz; and Dunweg, Gustav, 3,553,774.
Du Pont de Nemours, E. I., and Company: *See—*
Aarons, Ralph, 3,554,929.
Bartlett, Philip Lee, 3,555,089.
Bergmann, Oswald R.; Buchwald, Joseph; and Cowan, George R., 3,554,126.
Bottomley, Charles Gregory; and Hunt, Oliver Larry, 3,555,115.
Cluff, Edward F.; and Verbanc, John J., 3,554,960.
Cohen, Robert L., 3,554,753.
Evans, William L., 3,554,820.
Feehs, Richard H., 3,554,887.
Garth, Bruce H.; and Gumprecht, William H., 3,555,100.
Harden, John Charles; and Vassallo, Donald Arthur, 3,554,002.
Hull, Charles F., 3,554,976.
Hunt, Oliver Larry, 3,554,979.
Jenkin, William C., 3,554,880.
Lieberman, Erwin Paul, 3,554,786.

Maas, Keith Allan, 3,554,743.
Maas, Keith Allan, 3,554,744.
Moore, Earl P., Jr., 3,554,907.
Moore, Earl P., Jr., 3,554,912.
Nacci, George Raymond, 3,554,798.
Nacci, George Raymond, 3,555,556.
Nacci, George Raymond, 3,555,557.
Nagel, Herbert, 3,554,368.
Osborn, Robert Otto, 3,554,815.
Pye, Donald George, 3,554,379.
Resnick, Paul Raphael, 3,555,080.
Stalter, Neil J.; and McCullers, Otho S., 3,554,685.
West, Warren W., 3,554,716.
Windley, William Thomas, 3,555,537.
Dura Corporation: *See—*
Littmann, Joseph C., 3,554,045.
Duvall, William C.; and Tomcsak, Stephen L., to Goodyear Tire & Rubber Company, The. Shoring device. 3,554,135, Cl. 105-369.
Duve, Gunther: *See—*
Oberst, Hermann; Ebigt, Joachim; Duve, Gunther; and Schommer, Alfred, 3,554,855.
Dvorsky, Alexander L., to Astatic Corporation, The. Microphone diaphragm assembly. 3,555,206, Cl. 179-115.5
Dyla, John F., to Lodge-Cottrell Limited. Electro static precipitator having means to support the collecting electodes. 3,553,939, Cl. 55-112.
Dynamic Seals, Incorporated: *See—*
Schumacher, Roger R.; and Olson, William, 3,554,563.
Dynamit Nobel AG.: *See—*
Gawlick, Heinz; Bendler, Hellmut; Marondel, Guenther; and Siegelin, Werner, 3,554,181.
Dynamit Nobel Aktiengesellschaft: *See—*
Becker, Franz, 3,554,127.
Dynatech Corporation: *See—*
Clawson, Lawrence G., 3,554,174.
Eastman Kodak Company: *See—*
Bard, Charleton C.; and Vogt, Howard W., 3,554,748.
Bundschuh, John J., 3,554,462.
Gramza, Eugene P.; and Perry, Edmond S., 3,554,742.
Green, Gerald R., 3,554,883.
Harvey, Donald M., 3,554,103.
McConnell, Richard L.; and Meyer, Max F., Jr., 3,555,110.
Merrill, Stewart H., 3,554,746.
Pierson, Charles W., 3,555,297.
Quinn, Edwin K.; and Hawkins, Gary F., 3,554,990.
Robinson, Herbert T., 3,554,639.
Smith, Donald Arthur, 3,554,987.
Statman, Max; and Martin, Don S., 3,554,926.
Van Allan, James A., 3,554,745.
Eaton Yale & Towne Inc.: *See—*
Castillo, Herman B.; and Burke, Lawrence A., 3,554,446.
Ebigt, Joachim: *See—*
Oberst, Hermann; Ebigt, Joachim; Duve, Gunther; and Schommer, Alfred, 3,554,855.
Ebner, Emanuel C., to Foto-Cube, Inc. Interchangeable display. 3,553,872, Cl. 40-152.
Ecuer, John H., to Pan American Petroleum Corporation. Retrievable circulating valve insertable in a string of well tubing. 3,554,281, Cl. 166-155.
Edelman, Abraham. Fail-safe proximity measuring system. 3,555,533, Cl. 340-244.
Eden, Jamal S., to Goodrich, B. F., The. Oxidation catalyst containing molybdenum oxide, tellurium oxide and a vanadium phosphate. 3,554,928, Cl. 252-437.
Edo Corporation: *See—*
Rothbart, Arthur, 3,555,525.
Eeds, W. E.: *See—*
Yount, Nolen A., 3,554,307.
Egerton, Mc Kenny W., Jr.; and Gilbert, Gerard B., Jr., to Bendix Corporation, The. Electronic angle signal modifier and encoder. 3,555,541, Cl. 340-347.
Eggert, Walter S., Jr., to Budd Company, The. Ladder-slide apparatus. 3,554,320, Cl. 182-49.
Eholzer, Ulrich: *See—*
Ley, Kurt; Eholzer, Ulrich; Metzger, Karl-Georg; and Fritsche, Dieter, 3,555,025.
Ehrens, Henry; and Weiner, Sidney, to Sealed Unit Parts Co., Inc. Self-tapping valve. 3,554,217, Cl. 137-318.
Eichinger, Hans, to Hurth, Carl, Maschinen-und Zahnradfabrik. Drive mechanism for a steerable propeller. 3,554,155, Cl. 115-35.
Eicken, Henri. Detecting device for visual observation of a moving fabric. 3,554,656, Cl. 356-238.
Eidai Sangyo Kabushiki Kaisha: *See—*
Yamagishi, Iwao, 3,554,827.
Eilers, Louis H.; and Parks, Christ F., to Dow Chemical Company, The. Gelable composition, resulting gelled polymer composition and use thereof. 3,554,287, Cl. 166-295.
Einstein, Harry. Smoke density measuring device including means to periodically block a light from a portion of the field of view. 3,554,655, Cl. 356-204.
Eisenberg, Morris M., to Biltbest Corporation. Triple glazed insulating glass wood sash. 3,553,913, Cl. 52-172.
Ekstrom, Bertil Ake; and Sjoberg, Berndt Olof Harald, to Aktiebolaget Astra. Fluorine substituted α-azidobenzylpenicillins. 3,555,011, Cl. 260-239.1
Elders, Gerald W. Bit and block assembly. 3,554,605, Cl. 299-86.
Electronic Communications, Inc.: *See—*
Elliott, James W., 3,555,436.
Electronic Systems, Inc.: *See—*
Morris, Harold B., 3,555,503.
Elektrodenfabrik Oerlikon Buhrle AG: *See—*
Gloor, Karl; Baach, Hans; Jacubasch, Hans Dieter; Stein, Rudolf; and Erhard, Hans Dieter, 3,555,240.
Elermeyer, Walter. Second-highest redundant voltage selector. 3,555,290, Cl. 307-65.
Elineau, Hubert Jean, to Renard, R., et Fils. Conveyor, particularly for bars or similar objects. 3,554,363, Cl. 198-219.
Ellefson, Charles C. Pin knock-out device for roller chains. 3,553,960, Cl. 59-7.
Ellermeyer, Walter, to United States of America, Navy. High-speed AC/DC converter. 3,555,432, Cl. 328-26.
Elliott, George H.; and Roman, Leonard F. Crucible for holding molten semiconductor materials. 3,554,512, Cl. 263-48.
Elliott, James W., to Electronic Communications, Inc. Analog-to-digital converter with programmed characterizing function. 3,555,436, Cl. 328-144.
Ellis, James E., to United States of America, Interior. Seine tow bar. 3,553,879, Cl. 43-8.
Ely, Cyril Harold Arthur: *See—*
Smith, Carl A.; Looms, John Sidney Thomas; and Ely, Cyril Harold Arthur, 3,554,319.
Embler, Edward L.: *See—*
Sherman, David M.; ; Embler, Edward L.; and Proffitt, James R., Jr., 3,555,558.
Emde, Hans; Kerrutt, Gunter; Weber, Heinrich; and Blumel, Harald, to Chemische Werke Huels A.G. Vulcanizable unsaturated quaterpolymers. 3,554,988, Cl. 260-79.5
Emelianenko, Vladimir Vasilievich: *See—*
Litvinov, Nikolai Alexandrovich; Pozin, Boris Mikhailovich; and Emelianenko, Vladimir Vasilievich, 3,554,616.
Emhart Corporation: *See—*
Daly, Robert A., 3,554,726.
Raudat, John L., 3,554,353.
Revicki, Albert P., 3,553,929.
Stevenson, James F., 3,554,727.
Welch, Nicholas A.; and Ferrara, Joseph R., 3,553,877.
Emmons, William D.; and Brodnyan, John G., to Rohm and Haas Company. Articles containing non-conjugated alkenylguanamines polymers. 3,554,684, Cl. 8-116.2
Endesfelder, Helmut; Lentz, Klaus; Jando, Klaus; and Schulze, Klaus, to U.S. Philips Corporation, mesne. X-ray diagnostic apparatus for urological examinations. 3,555,276, Cl. 250-58.
Endicott, Gladys: *See—*
Christensen, Kenneth A., 3,553,750.
Energy Sciences, Inc.: *See—*
Hughes, Nathaniel, 3,554,443.
Engel, Peter H.; and Knechtel, Herbert, to Morris, Philips, Incorporated. Process for making candy containing freeze-dried fruit particles. 3,554,766, Cl. 99-134.
Engel, William T.; and Sonderland, Arthur C., to Kahle Engineering Co. Lamp bridge forming machine with wire cutting and guiding means. 3,554,241, Cl. 140-1.
Engelsmann, Dieter: *See—*
Winkler, Alfred; Wagner, Karl; Engelsmann, Dieter; and Schroder, Rolf, 3,554,104.
Engler, Alfred. Underwater gun. 3,553,876, Cl. 42-1.
English Electric Company Limited, The: *See—*
Robinson, Alfred Alexander; and Calvesbert, James William, 3,555,223.
English Numbering Machines Limited: *See—*
Gutman, Isaj, 3,554,372.
Engwall, Olof, to Svenska Maskinaktiebolaget Greiff. Paint spray gun. 3,554,445, Cl. 239-15.
Enkoji, Takashi; and Levine, Edward M., to Armour Pharmaceutical Company. Preparations containing 6-cycloalkylguanamines and methods for treating inflammatory conditions therewith. 3,555,154, Cl. 424-249.
Ennis, Philip James: *See—*
Williams, Keith Juxon; and Ennis, Philip James, 3,554,740.
Enshu Limited: *See—*
Sakamoto, Toemon, 3,554,240.
Ensor, Gordon Roy: *See—*
Long, Frank; and Ensor, Gordon Roy, 3,554,969.
Erhard, Hans Dieter: *See—*
Gloor, Karl; Baach, Hans; Jacubasch, Hans Dieter; Stein, Rudolf; and Erhard, Hans Dieter, 3,555,240.
Erico Products, Inc.: *See—*
Gelfand, Leonard, 3,554,270.
Ermenc, Eugene D.; and Smith, Marion F., to Panacon Corporation. Heat-resistant fibrous asbestos board with composite binder. 3,554,861, Cl. 162-153.
Ertelt, Henry R., to Esso Research and Engineering Company. Wax compositions with nitrogen-containing materials as antioxidants. 3,554,948, Cl. 260-28.
ESB Incorporated: *See—*
Feldhake, Ralph H., 3,554,813.
Essem Metotest AB: *See—*
Arnelo, Anders Ingvar; and Arnelo, Nils August, 3,554,249.
Essex International, Inc.: *See—*
Polkinghorn, Melvin W., 3,555,479.

Wood, Charles G., 3,555,220.
Esso Production Research Company: *See—*
Storfer, Stanley J., 3,555,006.
Esso Research and Engineering Company: *See—*
Ertelt, Henry R., 3,554,948.
Hochman, Jack M., 3,554,444.
Magee, Ellington M., 3,555,049.
Munson, Milam S. B.; and Field, Frank H., 3,555,272.
Estes, John H.; and Suggitt, Robert M., to Texaco Inc. Hydrocarbon conversion process with a catalyst activated with an organic chloride and oxygen. 3,555,107, Cl. 260-683.68
Ethyl Corporation: *See—*
Kleiman, Joseph P., 3,554,801.
Licke, George C., 3,554,712.
Shepherd, Lawrence H., Jr., 3,555,020.
E.T.M. Corporation: *See—*
Johnson, Gary L.; and Shryock, Robert M., 3,553,819.
Ettenhofer, Kurt L.; and Huff, Francis E., to United States of America, Navy. Acoustic target simulator. 3,555,165, Cl. 35-10.4
Eubank, Carol H., to Bell Telephone Laboratories, Incorporated. Fraud protected direct call telephone circuit. 3,555,200, Cl. 179-18.
Eubank, Carol H.; and Miller, Daniel L., to Bell Telephone Laboratories, Incorporated. Fraud protected preset telephone. 3,555,199, Cl. 179-18.
European Atomic Energy Community-Euratom: *See—*
Braun, Helmut W. M., 3,554,039.
Evans, William L., to Du Pont de Nemours, E. I., and Company. Capsensitive self-supporting explosive with crosslinked thermoset resin binder. 3,554,820, Cl. 149-19.
Ex-Cello-O Corporation: *See—*
Wohlman, Fred, Jr., 3,554,069.
Eynon, John E., to Abitibi Paper Company Ltd. Feller-Limber-buncher logging machine. 3,554,245, Cl. 144-3.
Fabwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See—*
Ribka, Joachim, 3,555,003.
Fairchild Hiller Corporation: *See—*
Lemont, Harold E., 3,554,662.
Falk Corporation, The: *See—*
Richardson, William S., 3,554,339.
Falk, Nels L.; and Val Verde, Emanuel, to Transco Inc. Freight retaining device. 3,554,136, Cl. 105-369.
Fanshawe, William Joseph: *See—*
Bauer, Victor John; Fanshawe, William Joseph; and Safir, Sidney Robert, 3,555,036.
Farbenfabriken Bayer Aktiengesellschaft: *See—*
Blomeyer, Friedrich; Bunge, Wilhelm; Mennicken, Gerhard; and Hebermehl, Reinhard, 3,554,951.
Buysch, Han-Josef; Krimm, Heinrich; and Schnell, Hermann, 3,555,101.
Ley, Kurt; Eholzer, Ulrich; Metzger, Karl-Georg; and Fritsche, Dieter, 3,555,025.
Schwarz, Hans-Helmut; and Immel, Otto, 3,555,059.
Senge, Ferdinand; and Schnell, Hermann, 3,555,070.
Thoma, Wilhelm; and Bayer, Otto, 3,550,760.
Wagner, Otto, 3,555,000.
Farbenfabriken Byer Atiengesellschaft: *See—*
Zirner, Joachim; and Kleb, Karl-Gustave, 3,555,081.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See—*
Hartwimmer, Robert; and Fitz, Herbert, 3,554,955.
Oberst, Hermann; Ebigt, Joachim; Duve, Gunther; and Schommer, Alfred, 3,554,855.
Ribka, Joachim; and Pretzer, Wolfgang, 3,555,002.
Faria, Sixdeniel; and Palumbo, Dominic T., to Sylvania Electric Products, Inc. Electric discharge device with phosphors. 3,555,337, Cl. 313-109.
Farnworth, Edwin; and Fischer, Eduard Friederich. Scraper apparatus for relatively rotatable surface. 3,554,608, Cl. 302-49.
Fast, Robert B.; Hreschak, Bohdan O.; and Spotts, Clyde E., to National Biscuit Company. Preparation of ready-to-eat cereal characterized by a honey-graham flavor. 3,554,763, Cl. 99-83.
Fatex: *See—*
Gabet, Michel, 3,554,239.
Faulcon, Armand, to Meyrat & Luisoni. Apparatus for tracing curvilinear paths on workpieces. 3,554,082, Cl. 90-15.
Fay, Elliott J.; and Ritter, Ralph K., to Omark Industries, Inc. Permanent arc shield. 3,555,238, Cl. 219-98.
Fechillas, Michael R., to Johnson & Johnson. Water dispersible nonwoven fabric. 3,554,788, Cl. 117-140.
Fechtig, Bruno: *See—*
Bickel, Hans; Bosshardt, Rolf; Fechtig, Bruno; Menard, Enrico; Mueller, Johannes; and Peter, Heinrich, 3,555,017.
Fedak, Daniel W.: *See—*
Karlyn, Albert A.; and Fedak, Daniel W., 3,553,864.
Federal Bearings Co., Inc., The: *See—*
Mc Allister, William D., 3,554,621.
Feduska, William: *See—*
Brown, Jack T.; and Feduska, William, 3,554,802.
Feed Service Corporation: *See—*
Anderson, Philip C.; Buhmann, Donald; and Hinkel, Norman, 3,554,018.
Feehs, Richard H., to Du Pont de Nemours, E. I., and Company. Photochemical apparatus and process. 3,554,887, Cl. 204-163.
Feighner, George C.: *See—*
Marshall, David W.; McCleskey, Jerry; and Feighner, George C., 3,554,695.
Feintool AG.: *See—*
Kunz, Otto, 3,554,065.
Feist, Wieland; and Schmidt, Ilrich, to VEB Carl Zeiss Jena. Indicator systems for angle-measuring intruments including an altitude circle. 3,554,652, Cl. 356-139.
Feldhake, Ralph H., to ESB Incorporated. Method for sealing an electrochemical cell. 3,554,813, Cl. 136-133.
Feldman, Jacob R., to General Foods Corporation. Carbohydrate fixed acetaldehyde. 3,554,768, Cl. 99-140.
Feldman, Louis I., to Baxter Laboratories, Inc. Antimicrobial composition and method of use. 3,555,159, Cl. 424-302.
Feller, John R., to General Electric Company. Fine particle magnetic material. 3,555,265, Cl. 204-10.
Fennell, Alfred H.: *See—*
Zwiacher, Wayne E.; Kaser, Louis D.; Johnson, Maurice V., Jr.; Fennell, Alfred H.; and Riddington, Fred W., 3,553,926.
Fenner, Ralph L., to Hygrometrix, Inc. Xeristat. 3,555,216, Cl. 200-61.04
Fenner, Ralph L., to Hygrometrix, Inc. Thaw alarm. 3,555,217, Cl. 200-61.04
Ferguson, James F.: *See—*
Worbois, Robert J.; Ferguson, James F.; and Wilson, Richard L., 3,554,615.
Ferrania, S.p.A.: *See—*
Rinauro, Giancarlo, 3,554,755.
Ferrara, Joseph R.: *See—*
Welch, Nicholas A.; and Ferrara, Joseph R., 3,553,877.
Ferroxcube Corporation: *See—*
Moore, Walter M., 3,555,526.
Feuer, Seymour S.; Rhodes, Richard D., Jr.; and Torres, Allan F., to Davidson Rubber Company, Incorporated. Forming pigmented integrally bonded coverings on articles of microcellular urethane foam. 3,555,130, Cl. 264-45.
Feuerbacher, David G.; and Sample, Thomas E., Jr., to Texaco Inc. Recovery of hydrocarbons from subterranean hydrocarbon-bearing formations. 3,554,286, Cl. 166-266.
Fiarman, Irwin S.: *See—*
Gehman, David R.; and Fiarman, Irwin S., 3,554,790.
Fibre-Optics Industries, Inc.: *See—*
Lambert, Jack R., 3,555,555.
Field, Frank H.: *See—*
Munson, Milam S. B.; and Field, Frank H., 3,555,272.
Field, George Francis; and Sternbach, Leo Henryk, to Hoffmann-La Roche Inc. Irradiated products of 3H-1,4-benzodiazepine 4-oxides. 3,555,022, Cl. 260-250.
Fields, Joseph E.; and Johnson, John H., to Monsanto Company. Crosslinked copolymer polyelectrolytes based on alpha, beta-ethylenically unsaturated acids. 3,554,985, Cl. 260-78.5
Fields, Roger Q., to Schlumberger Technology Corporation. Pressure wave noise filter. 3,555,504, Cl. 340-18.
Figlewicz, Raymond C.; and Karhan, Victor J., to Zenith Radio Corporation. Convergence apparatus. 3,555,473, Cl. 335-212.
Filipiev, Oleg Vladimirovich: *See—*
Andoniev, Sergei Mikhailovich; Berman, Mark Nikolaevich; Zhitnik, Georgy Gavrilovich; Kondratiev, Evgeny Mikhailovich; Levitasov, Yakov Matveevich; Makarov, Konstantin Ivanovich; Pevny, Nikolai Ivanovich; Pokrass, Leonid Moiseevich; Pochtman, Alexandr Markovich; Robin, Mark Anisimovich; Tesner, Pavel Alexandrovich; Sheinfain, Felix Isaakovich; and Filipiev, Oleg Vladimirovich, 3,554,507.
Filippazzi, Franco, to General Electric Information Systems Italia S.p.A. Selection matrix for fixed storage systems. 3,555,511, Cl. 340-166.
Filjukova, Ljudmila Petrovna: *See—*
Turetskaya, Raisa Anatolievna; Tsvanger, Tamara Alexandrova; Golubtsov, Sergei Alexandrovich; Luzganova, Margarita Andreevna; Pensky, Vadim Nikolaevich; Filjukova, Ljudmila Petrovna; and Pogorelov, Alexandr Georgievich, 3,555,064.
Fiorentino, Robert J.; Cigan, John M.; Sabroff, Alvin M.; and Jentgen, Richard L., to St. Joseph Lead Company. Extrusion process. 3,553,995, Cl. 72-42.
Fiorentino, Robert J.: *See—*
Sabroff, Alvin M.; Fiorentino, Robert J.; and Richardson, Barry D., 3,553,996.
Firestone Tire & Rubber Company, The: *See—*
Beneze, Heinz Wilhelm, 3,555,141.
Thomas, William J., 3,554,154.
Waters, Herbert; and Nichols, Sterling M., 3,555,139.
Webb, John, 3,554,259.
Firma Biedermann GmbH: *See—*
Hoffmann, Richard, 3,553,755.
Firth, Donald, to Datacopy Limited. Transfer compositions. 3,554,779, Cl. 117-36.3
Fischer, Adam, Jr., to RCA Corporation. Process for handling and mounting semiconductor dice. 3,554,832, Cl. 156-229.
Fischer, Adolf: *See—*
Reicheneder, Franz; and Fischer, Adolf, 3,555,026.
Fischer, Artur. Building block erection kit including detachable electric contact element. 3,553,883, Cl. 46-16.
Fischer, Eduard Friederich: *See—*
Farnworth, Edwin; and Fischer, Eduard Friederich, 3,554,608.

Fischer, Milton H.; Incho, Harry H.; Drummond, Paul E.; and Montgomery, Ronald E. Di-omega-alkynyl aryl (arylalkyl) phosphonates. 3,555,123, Cl. 260-956.
Fischer, Thomas L.; and Forrest, Stanley C., Jr., to Anaconda Wire and Cable Company, mesne. Television receiver converter. 3,555,430, Cl. 325-439.
Fischer, Wilfried; and Baukal, Werner, to Aktiengesellschaft Brown, Boveri & Cie. High-temperature fuel-cell battery. 3,554,808, Cl. 136-86.
Fischer, William K., to Uniroyal, Inc. Light stable polyurethanes. 3,554,962, Cl. 260-45.8
Fiscus, Dudley F.; and Sampietro, Achille C., to Ford Motor Company. Skid control sensing device. 3,554,613, Cl. 303-21.
Fisher, George A.; and Smith, Roger M., to Caterpillar Tractor Company. Gimbal and universal coupling lift cylinder mounting for scrapers. 3,553,860, Cl. 37-129.
Fiskeby Aktiebolag: *See—*
Thale, Allan; Hovstad, Olav B.; and Ivnas, Lennart, 3,554,453.
Fitz, Herbert: *See—*
Hartwimmer, Robert; and Fitz, Herbert, 3,554,955.
Fitzgerald, John J. Key control system. 3,553,988, Cl. 70-433.
Fitzgibbons, William O.: *See—*
Griffith, Russell K.; Zorska, Romanas; and Fitzgibbons, William O., 3,555,045.
Flanagan, Allan L., to Foxboro Company, The. Industrial process instrument for producing linearly-varying control signals. 3,555,296, Cl. 307-228.
Flangeklamp Corporation: *See—*
Lickliter, Robert P.; Abbott, Earl; and Reeves, John F., 3,553,916.
Fletcher, Gerald Matthew; Ghosh, Amal Kumar; and Wakim, Fahd G., to Itek Corporation. Process for producing photographic images with photosensitive materials and products produced thereby. 3,554,749, Cl. 96-27.
Flexico France: *See—*
Gutman, Isaj, 3,554,372.
Florio, Gerald C., Sr.: *See—*
Nielsen, James W.; and Florio, Gerald C., Sr., 3,555,452.
Florjancic, Peter. Hydraulic closing device particularly for injection molding machines. 3,554,087, Cl. 91-404.
Flory, Fritz: *See—*
Schenk, Rudolf; and Flory, Fritz, 3,554,170.
Flower Faraday Limited: *See—*
Woods, William F. C., 3,553,935.
Fluegel, Dale A., to Phillips Petroleum Company. Oscillator having voltage sensitive capacitors therein and calibration circuit means. 3,555,418, Cl. 324-120.
Flynn, Michael J.: *See—*
Wysocki, Kazmier; Flynn, Michael J.; Paitchell, Harold; and Keller, Ronald C., 3,554,841.
FMC Corpor-tion: *See—*
Mucenieks, Paul R.; and Cohen, Bernard, 3,555,147.
FMC Corporation: *See—*
Billett, Ronald J.; and West, Terence H., 3,554,845.
Carter, Mary E., 3,554,977.
Carter, Mary E.; Price, John A.; and Mervine, Robert P., 3,554,978.
Keay, Robert E.; and Keast, Russell R., 3,554,915.
Rauth, Glen E., 3,553,949.
Fogg, Clifford Cyril. Float controlled valves of cisterns. 3,553,740, Cl. 4-56.
Fombonne, Paul, to CSF-Compagnie Generale de Telegraphic Sans Fil. Side band generator. 3,555,458, Cl. 332-44.
Food Research Institute, Ministry of Agriculture and Forestry: *See—*
Suzuki, Shigeo; Kainuma, Keiji; Tanida, Koehi; and Oda, Tsuneo, 3,555,009.
Ford Motor Company: *See—*
Fiscus, Dudley F.; and Sampietro, Achille C., 3,554,613.
Galaniuk, Alexander H., 3,554,055.
Harvey, James E.; Irland, Max J.; and Lindberg, Victor L., 3,554,722.
Hideg, Laszlo, 3,554,500.
Sobkow, William J., 3,555,289.
Tsou, Ivan H., 3,554,925.
Ford, Paul L., to Armour and Company. Loin scribing guide. 3,553,770, Cl. 17-52.
Foreman, Davis: *See—*
Henriques, Lance L., 3,555,535.
Forlani, Franco; Minnaja, Nicola; and Sacchi, Giorgio, to General Electric Information Systems, Italia S.p.A. Integrated circuit matrix having parallel circuit strips. 3,555,365, Cl. 317-101.
Forrest, Stanley C., Jr.: *See—*
Fischer, Thomas L.; and Forrest, Stanley C., Jr., 3,555,430.
Fortune, Henry James, to Plessey Company, The. Gramophone turntables. 3,554,557, Cl. 274-39.
Fortune, Ronald; Mills, Ernest G.; and Woods, James Beverley, to Canada Valve Limited. Indicator posts for use in conjunction with valves. 3,554,160, Cl. 116-125.
Foster, Ellis L.; and Price, David E., to Battelle Development Corporation, The. Cast refractory alloy. 3,554,737, Cl. 75-134.
Foto-Cube, Inc.: *See—*
Ebner, Emanuel C., 3,553,872.
Fouche, Jean Clement Louis; and Poiget, Gilbert, to Rhone-Poulenc S.A. [2H]-1,4-Oxazine derivatives. 3,555,019, Cl. 260-244.
Fowler, Kenneth A., to United States of America, Army. Probe for detection of surface cracks in metals utilizing a hall probe. 3,555,412, Cl. 324-37.
Foxboro Company, The: *See—*
Flanagan, Allan L., 3,555,296.
Foxbro Design Corporation: *See—*
Nercessian, Sarkis, 3,555,519.
Frank, Kjell, to Allmanna Svenska Elektriska Aktiebolaget. Thyristor current converter with means for rapidly extinguishing the load current. 3,555,397, Cl. 321-5.
Franklin Electric Co., Inc.: *See—*
Schaefer, Edward J., 3,555,319.
Frazier, Bruce J.: *See—*
Mason, John F.; Frazier, Bruce J.; and Freeman, Norman L., Jr., 3,554,581.
Freeman, Norman L., Jr.: *See—*
Mason, John F.; Frazier, Bruce J.; and Freeman, Norman L., Jr., 3,554,581.
Freisberg, Karl-Otto: *See—*
Irmscher, Klaus; Kramer, Josef; Halpaap, Herbert; and Freisberg, Karl-Otto, 3,555,047.
Fremont, Robert D.: *See—*
Sophinos, Nicholas; Fremont, Robert D.; and Gallini, Edward L., 3,553,843.
Fremstad, Edna: *See—*
Fremstad, Viles K., 3,554,408.
Fremstad, Viles K., deceased0 (by Fremstad, Edna; administratrix), to Aro Corporation, The. Hot melt glue applicator. 3,554,408, Cl. 222-109.
Freudenberg, Carl, Kommanditgesellschaft: *See—*
Hartmann, Ludwig, 3,554,854.
Frey, Cleon F., to International Flasher Corporation. Sequential flasher control switch. 3,555,480, Cl. 337-140.
Freyling, Edward Nicholas, Jr.: *See—*
Gregson, Robert Ernest; and Freyling, Edward Nicholas, Jr., 3,555,357.
Frick, Wilhelm Ernst; and Wenger, Thomas, to Geigy Chemical Corporation. 2-Halogeno-benzimidazole derivatives. 3,555,040, Cl. 260-309.2
Friedman, Gerald I.: *See—*
Hunt, James G.; and Friedman, Gerald I., 3,553,829.
Frind, Gerhard; Hunziker, Rudolf; and Korte, Richard M., to General Electric Company. Arc chute for an air circuit breaker. 3,555,224, Cl. 200-144.
Frink, Russell E.: *See—*
Saffold, Thomas F.; and Frink, Russell E., 3,555,225.
Fritsch, Rudolf Paul, to Werner & Pfleiderer. Device for extruding plastic material. 3,553,777, Cl. 18-12.
Fritsche, Dieter: *See—*
Ley, Kurt; Eholzer, Ulrich; Metzger, Karl-Georg; and Fritsche, Dieter, 3,555,025.
Frost, C. L., & Son Inc.: *See—*
Frost, Ruben E., 3,553,765.
Frost, Ruben E., to Frost, C. L., & Son Inc. Replaceable carriage wheel assembly. 3,553,765, Cl. 16-107.
Frostick, Harold G., to United States Steel Corporation. Method and apparatus for hot rolling. 3,553,993, Cl. 72-11.
Frye, Cecil L., to Dow Corning Corporation. Spiroheterocyclic pentacoordinate silicon compounds. 3,555,069, Cl. 260-448.8
Frykberg, William C., to Tapecon, Inc. Shielding gasket. 3,555,168, Cl. 174-35.
Fuhrmann, Robert: *See—*
Reimschuessel, Herbert K.; Dege, Gerald J.; and Fuhrmann, Robert, 3,555,114.
Fuji Photo Film Co., Ltd.: *See—*
Kuroki, Motoharu; and Takagi, Akira, 3,553,848.
Matsukawa, Hiroharu, 3,554,781.
Fuji Shashin Film Kabushiki Kaisha: *See—*
Sekine, Jiro, 3,554,633.
Terashima, Yahachi; and Ohi, Reiichi, 3,554,756.
Fujii, Yuji: *See—*
Shimano, Keizo; and Fujii, Yuji, 3,554,334.
Fujimura, Kyoichi: *See—*
Ando, Satoshi; Tanaka, Yusaku; Kojima, Minoru; and Fujimura, Kyoichi, 3,554,980.
Fujisaki, Yoshisato; Aishima, Itsuho; Fukuma, Noboru; Nakanishi, Atsuo; Matsui, Kenichi; Shima, Tsukasa; and Nakai, Schiyouzi, to Asahi Kasei Kogyo Kabushiki Kaisha. Polyolefin composition excellent in dyeability. 3,554,683, Cl. 8-4.
Fujisawa, Akira, to United States of America, Army. Modulated laser device. 3,555,457, Cl. 332-7.51
Fukada, Kazuo; Sakata, Yoshiaki; Yamada, Yoshio; Mizuno. Masaaki; and Tanaka, Hiroaki, to Toyo Rubber Industry Co., Ltd., The. Method of forming moisture permeable self- sustaining and coating films. 3,555,129, Cl. 264-41.
Fukuma, Noboru: *See—*
Fujisaki, Yoshisato; Aishima, Itsuho; Fukuma, Noboru; Nakanishi, Atsuo; Matsui, Kenichi; Shima, Tsukasa; and Nakai, Schiyouzi, 3,554,683.
Fuller Company: *See—*
Kramer, Walter W.; and Koren, William, 3,553,847.
Fullmer, Fremont. Vehicle with freely rotating saucer. 3,554,538, Cl. 272-29.

Furbeck, Warren R.: *See—*
Lee, Charles A.; and Furbeck, Warren R.,3,553,845.
Furniture Industry Research Association: *See—*
Dombay, Stephen, 3,554,785.
Furukawa Denki Kogyo Kabushiki Kaisha: *See—*
Matsuba, Hironori, 3,555,413.
Furukawa Mining Co., Ltd.: *See—*
Tonooka, Kazuo; and Yokomatu, Kazuo, 3,554,515.
Gaberthuel, Werner: *See—*
Rothenbach, Theo; and Gaberthuel, Werner,3,554,351.
Gabet, Michel, to Fatex. Shuttleless loom weft control device. 3,554,239, Cl. 139-122.
Gachot, Jean. Between flange ball valve with composite annular seal. 3,554,484, Cl. 251-152.
Gagneux, Andre R.: *See—*
Baumann, Peter; Zimmermann, Markus; Hafliger, Franz; and Gagneux, Andre R.,3,555,073.
Gaines, William C., Jr. Door check. 3,553,764, Cl. 16-84.
Gajardo, Anibal: *See—*
Arrizaga, Carlos; and Gajardo, Anibal,3,554,510.
Galaniuk, Alexander H., to Ford Motor Company. Differential gear mechanism for an automotive vehicle driveline having a fixed differential housing and swing axles. 3,554,055, Cl. 74-713.
Gall, Kurt. Apparatus and method for processing photographic materials. 3,554,108, Cl. 95-93.
Gallini, Edward L.: *See—*
Sophinos, Nicholas; Fremont, Robert D.; and Gallini, Edward L.,3,553,843.
Gallo, Joseph Sabeto. Artificial stem for flowers. 3,553,889, Cl. 47-55.
Galter, Hellmut; and Stille, Volker, to Rheinstahl Henschel Aktiengesellschaft. Apparatus for compressing automobile bodies. 3,554,121, Cl. 100-232.
Gandrud, Ebenhard S. Chemical applicator and support means therefor. 3,554,409, Cl. 222-176.
Garcy Corporation: *See—*
Zurawski, Edward F., 3,555,268.
Garden, Murray, to Leeds & Northrup Company. Learning control of actuators in control systems. 3,555,252, Cl. 235-151.1
Gardner, Earl P., to Philco-Ford Corporation. Transistorized push-pull amplifier circuit utilizing dual bias supply. 3,555,442, Cl. 330-15.
Gardner, Reed P. Light fixture. 3,555,269, Cl. 240-146.
Gardner, William L., to Bendix Corporation, The. Method of making fiber optic bundles. 3,554,721, Cl. 65-4.
Gargrave, Robert J.; Randolph, Allan E., Sr.; and Holiga, Ludomin A., to Dayton Perforators, Inc. Die plates. 3,554,060, Cl. 76-107.
Garner, Oscar G., to General Cable Corporation. Apparatus for making coaxial cable with welded metal sheath. 3,553,811, Cl. 29-202.5
Garrett Corporation, The: *See—*
Austin, Irving G.; Greeven, Max V.; and Shaw, Steven A., 3,554,440.
Curran, William T., 3,555,250.
Kalman, Gabor P., 3,555,396.
Summer, James R.; MacLaughlin, Henry C.; and Melander, Clarence S., 3,554,344.
Garriott, Louis B., Jr.: *See—*
Morkoski, James; and Garriott, Louis B., Jr.,3,554,294.
Garst, Roger H.; and Henry, Joseph P., to Union Carbide Corporation. Polysulfite of 2,2,4,4-tetraalkylcyclobutane-1,3- diols. 3,554,986, Cl. 260-79.3
Garth, Bruce H.; and Gumprecht, William H., to Du Pont de Nemours, E. I., and Company. Decarbonylation of fluorinated acyl fluorides. 3,555,100, Cl. 260-615.
Gasser, Robert A. Guitar-like electronic musical instrument with plural manuals. 3,555,166, Cl. 84-1.01
Gatzi, Karl: *See—*
Weis, Claus Dieter; and Gatzi, Karl,3,555,092.
Gaubatz, Arthur William. Roller bearings. 3,554,622, Cl. 308-214.
Gavin, William: *See—*
Suckle, Benjamin W.; and Gavin, William,3,554,623.
Gawlick, Heinz; Bendler, Hellmut; Marondel, Guenther; and Siegelin, Werner, to Dynamit Nobel AG. Method for the rapid reaching and maintenance of a certain temperature level. 3,554,181, Cl. 126-263.
Gaylor, Robert B., Jr., to United States Steel Corporation. Tilting mount for window air conditioner. 3,554,476, Cl. 248-208.
Gebr. Bohler & Co.: *See—*
Rajakovics, Gundolf, 3,554,558.
Gee, Paul Y. C.; and Andress, Harry J., Jr., to Mobil Oil Corporation. Acylated styrenes. 3,555,097, Cl. 260-592.
Gehman, David R.: *See—*
Miller, Vernon F.; and Gehman, David R.,3,554,780.
Gehman, David R.; and Fiarman, Irwin S., to Rohm and Haas Company. Method of polishing floors with polish containing bidentate amino acid chelate of poly- valent metal and article. 3,554,790, Cl. 117-161.
Geigy Chemical Corporation: *See—*
Baumann, Peter; Zimmermann, Markus; Hafliger, Franz; and Gagneux, Andre R., 3,555,073.
Chambers, Charles D., 3,554,410.
Frick, Wilhelm Ernst; and Wenger, Thomas, 3,555,040.
Meisels, Alex; and Schott, Emilio, 3,555,035.
Priola, Michael Anthony, 3,554,732.
Schindler, Walter; and Schmid, Erich, 3,555,028.
Weis, Claus Dieter; and Rupf, Jurg, 3,555,086.
Weis, Claus Dieter; and Gatzi, Karl, 3,555,092.
Geisler, Charles H.; and Wiese, Joseph A., Jr., to Minnesota Mining & Manufacturing Company. Electromagnetic-sensitive recording medium. 3,554,794, Cl. 117-217.
Geisler, Robert R., to United States of America, Army. Method of making printed circuit assemblies. 3,554,877, Cl. 204-15.
Gelfand, Leonard, to Erico Products, Inc. Metal casting apparatus and method. 3,554,270, Cl. 164-108.
Gelle, Cecil S. Silage distributor. 3,554,610, Cl. 302-60.
General Alarm Corporation: *See—*
Hawkins, Paul Maddison, 3,554,593.
General Cable Corporation: *See—*
Garner, Oscar G., 3,553,811.
General Denshi Kogyo Kabushiki Kaisha: *See—*
Marukawa, Yujiro, 3,554,465.
General Electric Company: *See—*
Brown, Edgar D., Jr., 3,555,062.
Carlson, Gerald J., 3,554,646.
Carson, William N., Jr., 3,554,804.
Craft, Donald W., 3,554,809.
Dewey, Clyde G., 3,555,291.
Dickinson, Theodore M., 3,555,347.
Feller, John R., 3,555,265.
Frind, Gerhard; Hunziker, Rudolf; and Korte, Richard M., 3,555,224.
Hebert, Donald G., 3,554,349.
Holmes, William A.; and Mackenzie, Alfred D., 3,554,707.
Jenkins, Thomas E.; and Cushing, Donald S., 3,555,242.
Johnson, Brian K. A., 3,555,467.
Kennedy, Hugh W., Jr., 3,554,338.
Kotos, Peter, 3,555,354.
Lee, Art; and Manning, Ralph M., 3,555,214.
Lee, Art, 3,555,530.
Mustain, William G., 3,555,512.
Neelands, Lewis J., 3,555,298.
Nuckolls, Joe A., 3,555,302.
Rauch, William T.; and Avery, Howard W., 3,554,004.
Reader, Trevor D., 3,554,669.
Weinstock, Irwin B., 3,554,805.
General Electric Information Systems Italia S.p.A.: *See—*
Filippazzi, Franco, 3,555,511.
Forlani, Franco; Minnaja, Nicola; and Sacchi, Giorgio, 3,555,365.
General Foods Corporation: *See—*
Feldman, Jacob R., 3,554,768.
Sienkiewicz, Boleslaw; and Bagley, Ferdinand A., 3,554,760.
Yoder, David J.; and Bugg, Maurice W., 3,554,764.
General Instrument Corporation: *See—*
Stamm, Russell D., 3,554,041.
General Mills, Inc.: *See—*
Craig, Theodore W.; and Borochoff, Eugene H., 3,554,762.
Hum, Allen; Perttula, Harold V.; and Tsuchiya, Takuzo, 3,553,944.
Page, John A.; and Bauer, Walter G., 3,554,113.
General Motors Corporation: *See—*
Bechthold, Hans; and Stossel, Hans-Jurgen, 3,554,566.
Boyer, James A.; and Ruff, Donald O., 3,554,178.
Brandes, Roy H., 3,554,672.
Cole, Edward N., 3,554,056.
Davis, Carlisle R., Jr., 3,554,562.
Graham, Donald E.; and Leland, Robert W., 3,555,379.
Hagerman, Edward M., 3,555,120.
Harned, John L., 3,554,612.
Helms, Harold E., 3,554,663.
Lesser, Carl W., 3,554,180.
Michnay, Raymond P.; Moore, Charles R.; and Hause, Gilbert K., 3,554,057.
Pearce, Warren, Jr.; and Winger, James L., 3,555,496.
Potter, Carl R.; and Mooney, James J., Jr., 3,553,962.
Riehl, Wilhelm, 3,554,524.
Shea, James M., 3,554,223.
Stevens, Derek Norman, 3,553,761.
Stott, Thomas Charles Felix, 3,554,047.
Wagle, Joseph A., 3,554,668.
Wagle, Joseph Albert, 3,554,667.
Weinand, Louis H., 3,554,561.
Williams, Charles W., 3,553,978.
General Radio Company: *See—*
Westlake, Norman L., 3,555,256.
General Systems Inc.: *See—*
Buchanan, James L.; and Zelina, William B., 3,555,399.
General Tire & Rubber Company, The: *See—*
Slemmons, Charles O., 3,554,479.
Uelzmann, Heinz, 3,554,967.
Gentaz, Claude, to Battelle Memorial Institute, International Division. Method for producing pellets. 3,555,133, Cl. 264-82.
Gentex Corporation: *See—*
Aileo, Jackson Anthony, 3,553,734.
Karlyn, Albert A.; and Fedak, Daniel W., 3,553,864.
George, Donald K.: *See—*
Hervey, Laurence R. B.; and George, Donald K.,3,554,862.
Hervey, Laurence R. B.; and George, Donald K.,3,554,863.
George, Norman J., to George, P. D., Company, The. Polyamide-imide resins. 3,554,984, Cl. 260-78.
George, P. D., Company, The: *See—*
George, Norman J., 3,554,984.

Gerber & Co., G.m.b.H.: *See—*
Korsch, Alfred, 3,553,983.
Gerber, Heinz Joseph, to Gerber Scientific Instrument Company, The. Error correcting system and method for use with plotters, machine tools and the like. 3,555,254, Cl. 235-151.11
Gerber, Heinz Joseph; and Blake, Dale G., to Gerber Scientific Instrument Company, The. Digitizer with power assisted index member. 3,553,842, Cl. 33-1.
Gerber, Hermann, to Saia AG, Fabrik Elektrischer Apparate. Small synchronous motor. 3,555,323, Cl. 310-162.
Gerber Scientific Instrument Company, The: *See—*
Gerber, Heinz Joseph; and Blake, Dale G., 3,553,842.
Gerber, Heinz Joseph, 3,555,254.
Gerry, Martin E. Reversible vehicle wheel. 3,554,535, Cl. 301-63.
Gerson, Herman; Bachmann, William Eugene; and Woodlock, Paul B., to Allied Chemical Corporation. Novel perylenetetracarcarboxylic diimide compositions. 3,554,776, Cl. 106-288.
Getson, John Charles, to Stauffer-Wacker Silicone Corporation, mesne. In situ generation of unique particulate matter in organopolysiloxanes. 3,555,109, Cl. 260-825.
Geul, Herman R. Roller testing stand for motor vehicles. 3,554,022, Cl. 73-117.
Geul, Herman R. Roller testing stand for motor vehicles. 3,554,023, Cl. 73-117.
Gevaert-Agfa N.V.: *See—*
Willems, Jozef Frans; and Thiers, Robrecht Julius, 3,554,758.
Gewase Instruments Limited: *See—*
Turner, David, 3,554,031.
GHH-M.A.N. Technik Gesellschaft fur Anlagenbau m.b.H.: *See—*
Kunz, Gerhard, 3,554,376.
Ghosh, Amal Kumar: *See—*
Fletcher, Gerald Matthew; Ghosh, Amal Kumar; and Wakim, Fahd G.,3,554,749.
Gianese, Goffredo, to American Machine & Foundry Company. Cigarette packer. 3,553,925, Cl. 53-26.
Gibbs, Allen G., to LTV Ling Altec, Inc. Overload protection network for solid state amplifier. 3,555,358, Cl. 317-16.
Gier, Delta W.; and Wasleski, Daniel M., to Chemagro Corporation. Chloronitrophenyl esters of polycarboxylic acids as fungicides and nematocide. 3,555,160, Cl. 424-308.
Gilbert & Barber Manufacturing Company: *See—*
Dickinson, Donald A., 3,553,869.
Gilbert, Gerard B., Jr.: *See—*
Egerton, Mc Kenny W., Jr.; and Gilbert, Gerard B., Jr.,3,555,541.
Gillen, Edgar T., to Playground Corporation of America, mesne. Aboveground swimming pool construction. 3,553,744, Cl. 4-172.19
Gillette Company, The: *See—*
Malm, Curtis L.; and Loewenthal, Henry J., 3,554,658.
Gillmann, Hanno, to Telefunken Patentverwertungsgesellschaft m.b.H. Character identification device arranged to identify characters of different styles. 3,555,508, Cl. 340-146.3
Gilman, Bruce Calvin, to Ocean Systems, Inc. Dual pressure viewport assembly incorporating trapped gas self relieving features. 3,553,917, Cl. 52-308.
Ginsberg, Ernst; Hake, Oswald; Kirchner, Norbert; Uden, Edward; Zittlau, Helmut; and Schreihage, Wilhelm, to U.S. Philips Corporation. Semiconductor device with terminals adapted for mass fabrication. 3,555,371, Cl. 317-234.
Ginther, Gary D., to Clyde Corporation, The. Apparatus for delivering articles into a plurality of tubes. 3,554,403, Cl. 221-93.
Gipstein, Edward; and Hewett, William A., to International Business Machines Corporation. Polymeric photoconductors of N-vinylindole and their use in electrophotographic processes. 3,554,741, Cl. 96-1.
Girard, Gerald R.: *See—*
Bates, Stanley I.; and Girard, Gerald R.,3,554,997.
Girling Limited: *See—*
Harrison, Anthony W., 3,554,330.
Harrison, Anthony William, 3,554,332.
Hoenick, Hermannhans; Rath, Heinrich Bernhard; and Hess, Wolfgang, 3,554,333.
Gisser, Henry; and Petronio, Marco, to United States of America, Army. Friction reduction by copolymer of N-alkyl methacrylates and methacrylic acid in solution. 3,554,913, Cl. 252-56.
Gitson, Abraham. Method of making a mold and molding a bifocal lens. 3,555,126, Cl. 264-1.
Glantz, Milton: *See—*
Glantz, Samuel N.; and Glantz, Milton,3,554,257.
Glantz, Samuel N.; and Glantz, Milton. Compartmentalized bowling ball bags and stands therefor. 3,554,257, Cl. 150-52.
Glass, Robert Taylor. Stick conveyor and inserter for frozen confections. 3,554,138, Cl. 107-70.
Glassner, Harvey F.; Jorgensen, Clinton O.; and Baessler, Lee R., to Humetrics Corporation, mesne. Method and apparatus for automatically screening of electrocardiac signals. 3,554,187, Cl. 128-2.06
Glavis, Frank J.: *See—*
Zdanowski, Richard E.; and Glavis, Frank J.,3,554,942.
Gleason Works, The: *See—*
Hunkeler, Ernst J.; Ash, John L.; and DeWolf, Myron F., 3,554,079.
Gledhill, Jack C.: *See—*
Mabey, Donald H.; and Gledhill, Jack C.,3,554,606.
Gloor, Karl; Baach, Hans; Jacubasch, Hans Dieter; Stein, Rudolf; and Erhard, Hans Dieter, to Elektrodenfabrik Oerlikon Buhrle AG. Filled welding rod. 3,555,240, Cl. 219-146.
Gluck, Louis; and Siska, John G., to Kreisler Manufacturing Corporation, mesne. Tab stop for watchband tube end. 3,554,414, Cl. 224-4.
Goers, Walter E., to Pullman Incorporated. Reduction of foaming during acid regeneration. 3,554,697, Cl. 23-173.
Goetschius, George K.; and Kent, Edmund J., to Air Preheater Company, Inc., The. Method of forming heat exchange tubes. 3,554,150, Cl. 113-118.
Going, Louis H.; Mersfelder, Robert E.; and Schmitt, Robert O., to Procter & Gamble Company, The. Catalytically hydrogenating edible oils. 3,555,058, Cl. 260-409.
Goldberg, Gershon M., to Technical Operations, Incorporated. Ultrathin film solid electrolyte electrochemical devices and fabrication methods therefor. 3,554,795, Cl. 117-217.
Goldkuhle, Werner P., to Concentric Engineering Company. Apparatus for baling loose material. 3,554,117, Cl. 100-43.
Goliath, Karl Gunnar: *See—*
Persson, Erik; and Goliath, Karl Gunnar,3,555,437.
Golubtsov, Sergei Alexandrovich: *See—*
Turetskaya, Raisa Anatolievna; Tsvanger, Tamara Alexandrova; Golubtsov, Sergei Alexandrovich; Luzganova, Margarita Andreevna; Pensky, Vadim Nikolaevich; Filjukova, Ljudmila Petrovna; and Pogorelov, Alexandr Georgievich,3,555,064.
Goodell, Harry, to Rohr Corporation. Elevators and rotatory storage rack. 3,554,391, Cl. 214-16.4
Goodenough, Robert D.: *See—*
Place, John; Weissenberg, Ulrich W.; and Goodenough, Robert D.,3,554,905.
Goodman, Isaac; and Hurworth, Neville Robert, to Imperial Chemical Industries Limited. Polyesteramides prepared from caprolactone hexamethylene diamine and a mixture of isophthalic and terephthalic acids. 3,554,983, Cl. 260-78.
Goodman, Isaac: *See—*
Jones, Michael Edward Benet; and Goodman, Isaac,3,554,966.
Jones, Michael Edward Benet; and Goodman, Isaac,3,554,971.
Goodrich, B. F., The: *See—*
Eden, Jamal S., 3,554,928.
Goodwin, Ralph A.: *See—*
United States of America, National Aeronautics and Space Administration, Administrator, 3,554,647.
Goodyear Tire & Rubber Company, The: *See—*
Brobeck, Von H.; and Zulick, Mike, 3,553,790.
Christie, William C., 3,553,903.
Crossman, Richard L., 3,554,336.
Dastoo, Minoo N., 3,554,747.
Duvall, William C.; and Tomcsak, Stephen L., 3,554,135.
Keck, Max H., 3,554,975.
Miller, Donald E., 3,554,964.
Miller, Edwin C., 3,553,779.
Rye, Grover W.; and Alexeff, Alexander V., 3,554,502.
Swanson, Harry R., 3,554,262.
Woodhall, Edwin S., 3,553,778.
Gordon, Alfred J.: *See—*
Pepp, Frank M., Jr.; and Gordon, Alfred J.,3,553,985.
Gores, Kenneth W. Method and apparatus for positioning a dowel. 3,553,839, Cl. 32-11.
Goring, David A. I., to Pulp and Paper Research Institute of Canada. Surface modification of cellulose. 3,554,825, Cl. 156-76.
Gorman, Gerald W. Dynamic pressure seal devices. 3,554,569, Cl. 277-205.
Gorman, Marvin; and Hamill, Robert L., to Lilly, Eli, and Company. Nigericin for treating coccidiosis. 3,555,150, Cl. 424-122.
Goss, Harold R., to Acme-Cleveland Corporation. Molding assembly method. 3,554,271, Cl. 164-137.
Goto, Hirokazu, to Nippon Electric Company, Limited. Inter-station synchronization apparatus. 3,555,194, Cl. 179-15.
Gotz, Alfred: *See—*
Herschmann, Otto; Reisacher, Josef; Stockfisch, Heinz; and Gotz, Alfred,3,554,171.
Gotz, Hans, to Daimler-Benz Aktiengesellschaft. Ventilation system for passenger motor vehicle. 3,554,110, Cl. 98-2.
Goyke, Leonard F.; and Bottorff, Craig L., to Baxter Laboratories, Inc. Catheter adapter and process and assembly for its securance. 3,554,580, Cl. 285-260.
Grabowski, Thaddeus P. Game with magnetic projectile. 3,554,549, Cl. 273-94.
Grace, W. R., & Co.: *See—*
Baird, William G., Jr., 3,553,928.
Benning, Calvin J., 3,555,132.
Braude, George L.; Cogliano, Joseph A.; and Lard, Edwin W., 3,554,936.
Simons, Charles W., 3,555,122.
Stahly, Eldon E.; and Lard, Edwin W., 3,555,116.
Stahly, Eldon E.; and Lard, Edwin W., 3,555,117.
Sugarman, Nathan; and Braude, George L., 3,554,852.
Gracia Corporation, The: *See—*
Smith, Melvin William, 3,554,458.
Grad, Peter P.: *See—*
Rakov, Peter W.; and Grad, Peter P.,3,554,473.
Graf, Felix, to Reiter Machine Works, Ltd. Expandible mandrel for bobbins. 3,554,455, Cl. 242-46.4
Graflex, Inc.: *See—*
Bramer, Donald W.; and Clocksin, Paul P., 3,555,394.
Graham, Charles H.: *See—*
Cumine, Eric; and Graham, Charles H.,3,553,976.

Graham, Donald E.; and Leland, Robert W., to General Motors Corporation. System for operating two or more alternating current induction motors in parallel. 3,555,379, Cl. 318-101.

Graham Stuart Corporation: *See*—
White, George S.; Lewis, Richard E.; and Zonn, Lincoln M., 3,555,532.

Grainger, Charles F., to Celanese Corporation. Dyeable foamed polypropylene. 3,554,933, Cl. 260-2.5

Gramza, Eugene P.; and Perry, Edmond S., to Eastman Kodak Company. Electrophotographic element containing a barrier layer comprising block copolycarbonates. 3,554,742, Cl. 96-1.5

Grant, Gerald E.; and Randour, Victor, to Caterpillar Tractor Company. Support bearing for compactor cleaner bar frame. 3,554,101, Cl. 94-50.

Granzow, Daniel B., Jr., to Addressograph-Multigraph Corporation. Method for developing latent electroscopic images. 3,554,778, Cl. 117-17.5

Gray, Robert L., to Burroughs Corporation. Transfluxor logic circuits for performing the exclusive or, half adder and full adder operations. 3,555,257, Cl. 235-176.

Great Lakes Aluminum Fabricators, Inc.: *See*—
Pepp, Frank M., Jr.; and Gordon, Alfred J., 3,553,985.

Greeburger, George R.: *See*—
Koblin, Abraham; and Greeburger, George R.,3,554,005.

Green, Gerald R., to Eastman Kodak Company. Method of purifying aqueous silver nitrate solutions. 3,554,883, Cl. 204-109.

Green, Martin, to No-Limit Inventions Corporation. Climbing assembly for attachment to an A-frame. 3,554,540, Cl. 272-63.

Greenberg, Jacob; and Seitz, Thomas E., to United States of America, National Aeronautics and Space Administration. Heat activated cell with alkali anode and alkali salt electrolyte. 3,554,806, Cl. 136-6.

Greeno, Thomas M.: *See*—
Van Dorn, Warren G.; Byrne, John F.; and Greeno, Thomas M.,3,554,125.

Greenstein, Leon: *See*—
Lane, Curtis; and Greenstein, Leon,3,554,364.

Greeven, Max V.: *See*—
Austin, Irving G.; Greeven, Max V.; and Shaw, Steven A.,3,554,440.

Gregson, Robert Ernest; and Freyling, Edward Nicholas, Jr., to Motorola, Inc. Over-current protection for an alternating current circuit including automatic reset. 3,555,357, Cl. 317-16.

Gri, Norman J.: *See*—
Lamberi, Vernon L.; and Gri, Norman J.,3,554,818.

Griepentrog, Dal F., to RCA Corporation. Kinescope bias tracking circuits. 3,555,175, Cl. 178-5.4

Griepentrog, Dal F., to RCA Corporation. Plural operating mode automatic gain control system. 3,555,182, Cl. 178-7.3

Griffith, Russell K., to Standard Oil Company, The. Crystalline olefinic nitrile polymers and method for manufacturing same. 3,554,991, Cl. 260-88.7

Griffith, Russell K.; Zorska, Romanas; and Fitzgibbons, William O., to Standard Oil Company, The. 2-Substituted-1,3-dioxolane compounds and method for preparing same. 3,555,045, Cl. 260-340.9

Grimmeiss, Hermann Georg; and Simons, Peter Johannes Philippus Gerardus, to U.S. Philips Corporation, mesne. Solid state light emitting diode wherein output is controlled by controlling election population of an intermediate level with an auxiliary light source. 3,555,283, Cl. 250-217.

Grinbergs, Karlis E. Construction product with slotted panels and annular connectors. 3,554,382, Cl. 211-135.

Grody, Donald R. Sheet shingling apparatus. 3,554,534, Cl. 271-76.

Grohoski, Raymond J., to Timex Corporation. Watch indicator ring. 3,553,958, Cl. 58-91.

Gronlund, Ernst H. Antenna mounting bracket. 3,555,551, Cl. 343-715.

Grosko, John A., to United States Steel Corporation. Mechanism for connecting a receiving vessel with a bottom-pour vessel. 3,554,520, Cl. 266-34.

Gross, George, to Bell Aerospace Corporation. Piston rod locking mechanism. 3,554,094, Cl. 92-28.

Gross, Jenoe, to Solidyne, Inc. Power oscillator. 3,555,456, Cl. 331-97.

Gross, John H.: *See*—
Gross, John H.; and Gross, John H.,3,554,699.

Gross, John H.; and Gross, John H., to International Minerals & Chemical Corporation International Minerals & Chemical Corporation. Nitrosyl trifluoride Nitrosyl trifluoride. 3,554,699, Cl. 23-203.

Grosso, Vicent Gerard; and Butterfield, Boydston Lewis, to American Cyanamid Company. Terephthalamides. 3,555,087, Cl. 260-558.

Grover, George M.; and Coyle, Edward L., to ACF Industries, Incorporated. Heat pipe heating system for a railway tank car or the like. 3,554,183, Cl. 126-343.5

Groves, William L., Jr.: *See*—
Kerfoot, Oliver Carl; Marshall, David W.; Krehbiel, Delmar D.; and Groves, William L., Jr.,3,554,916.

Grubenmann, Werner: *See*—
Hewitt, Maxwell James; Steinlin, Felix; and Grubenmann, Werner,3,554,774.

Gruber, Carl L.: *See*—
United States of America,National Aeronautics and Space Administration, Administrator, 3,555,455.

Gruber, Francois R.: *See*—
McCarthy, Joseph V.; and Gruber, Francois R.,3,554,107.

Gruber, Lawrence H.: *See*—
Diehm, Kenneth F.; and Gruber, Lawrence H.,3,554,149.

Gruczelak, Norman P., to Texas Instruments, Incorporated. Station document reader. 3,555,247, Cl. 235-61.11

Gruendler Crusher & Pulverizer Co.: *See*—
Gruendler, William P., 3,554,454.

Gruendler, William P., to Gruendler Crusher & Pulverizer Co. Shredder and separator unit. 3,554,454, Cl. 241-73.

Grumbach, Alfred T. Locking device. 3,553,984, Cl. 70-99.

Gruner, Rolf; Sobottka, Dieter; and Moritz, Rolf, to Olympia Werke AG. Eddy current brake for use in business machines or the like. 3,555,321, Cl. 310-93.

Guest, Jack B.; and Guest, Kathleen E. Document sorting device. 3,554,381, Cl. 211-11.

Guest, Kathleen E.: *See*—
Guest, Jack B.; and Guest, Kathleen E.,3,554,381.

Guiot, Maurice, to Societe d'Applications Generales d'Electricite et de Mecanique SAGEM. Methods and apparatus for determining the angular position of a shaft. 3,555,542, Cl. 340-347.

Gujer, Hans. Method and means for continuously drying wet organic waster matter, particularly fresh sludge, through aerobic precomposting. 3,553,844, Cl. 34-9.

Gulf & Western Industrial Products Company: *See*—
Cox, Jack E., 3,554,533.

Gulf & Western Industries: *See*—
Henry, Donald E., 3,555,292.

Gulf Oil Corporation: *See*—
Schmid, Richard G., 3,554,404.

Gulf Research & Development Company: *See*—
Cahoy, Roger P.; and Coyne, Donald M., 3,554,927.
Curless, William T., 3,554,729.

Gulgazaryan, Karen Andranikovich: *See*—
Skibarko, Alexei Petrovich; and Gulgazaryan, Karen Andranikovich,3,555,281.

Gumprecht, William H.: *See*—
Garth, Bruce H.; and Gumprecht, William H.,3,555,100.

Gurbst, Herbert S., to Remco Industries, Inc. Selectively convertible chair-table. 3,554,597, Cl. 297-126.

Guschin, Vladislav Yakovlevich: *See*—
Mitskevich, Gennady Feodosievich; Guschin, Vladislav Yakovlevich; Vorontsov, Jury Nikolaevich; Boguslavsky, Vladimir Avramovich; Bela-Belov, Anatoly Mikhailovich; Rakhlis, Viktor Izralievich; Oktyabrev, Viktor Revoldovich; Artsybashev, Oleg Ivanovich; and Vakhomchik, Fedor Andreevich,3,555,471.

Gutman, Isaj, 50% to English Numbering Machines Limited, and 50% to Flexico France. Apparatus for orientating channelled objects. 3,554,372, Cl. 209-73.

Haas, Werner Carl: *See*—
Sweeney, Daniel Patrick; Haas, Werner Carl; and Powell, Harold R.,3,554,038.

Habermeier, Juergen; and Porret, Daniel, to Ciba Limited. Storage-stable hot-curable compositions of polyepoxides and acyl substituted ureas derivatives. 3,554,968, Cl. 260-47.

Habib, Henry N. Pubo-vaginal incontinence device. 3,554,184, Cl. 128-1.

Hackman, Donald J.: *See*—
Adkins, David E.; and Hackman, Donald J.,3,554,302.

Hackman, Donald J.; Harris, Jeremy M.; and Legue, Ronald L., to Battelle Development Corporation, The. Submersible electric motor for tool operation. 3,555,383, Cl. 318-221.

Hackmann, Ernst-August, to Kalle Aktiengesellschaft. Light-sensitive reproduction material. 3,554,754, Cl. 96-90.

Hackmann, Ernst-August; Dietrich, Roland; and Moraw, Roland, to Kalle Aktiengesellschaft. Light-sensitive reproduction material. 3,554,752, Cl. 96-90.

Hadley Company, Inc.: *See*—
Hadley, Wilfred N., 3,553,801.

Hadley, Wilfred N., to Hadley Company, Inc. Fabric treating apparatus. 3,553,801, Cl. 26-28.

Haebich, William K.: *See*—
Oglesby, Paul L.; Reeves, Richard E.; and Haebich, William K.,3,554,661.

Haener, Juan A., to Whittaker Corporation. Centrifugal method for producing hollow axially symmetric bodies. 3,555,142, Cl. 264-311.

Haeusler, Jochen, to Siemens Aktiengesellschaft. Apparatus and method for reducing the inverse effect of a Hall generator. 3,555,310, Cl. 307-309.

Hafliger, Franz: *See*—
Baumann, Peter; Zimmermann, Markus; Hafliger, Franz; and Gagneux, Andre R.,3,555,073.

Hagerman, Edward M., to General Motors Corporation. ABS resin having very high impact strength and high heat deflection temperature. 3,555,120, Cl. 260-880.

Hageseth, Gaylord T., to Research Corporation. Macroscopic scattering analyzer. 3,553,856, Cl. 35-19.

Haggstrom, Rolf Paul: *See*—
Andersson, John-Erik; and Haggstrom, Rolf Paul,3,554,025.

Hahn, Robert S.: *See*—
Price, Robert L.; and Hahn, Robert S.,3,554,062.

Hake, Oswald: *See*—
Ginsberg, Ernst; Hake, Oswald; Kirchner, Norbert; Uden, Edward; Zittlau, Helmut; and Schreihage, Wilhelm,3,555,371.

Haley, William B., to Chicago Rawhide Manufacturing Co. Seal unit and method of manufacturing. 3,554,081, Cl. 90-11.

Halfmann, Heinrich: *See*—
Strunk, Kurt; Halfmann, Heinrich; and Luhmann, Klaus,3,555,197.

Hall, Edgar D.: *See*—
United States of America,National Aeronautics and Space Administration, Administrator, 3,554,647.

Hall, Lemuel R., Sr. Umbrella support. 3,554,203, Cl. 135-20.

Hall, Lester G., to North American Rockwell Corporation. Shock absorber. 3,554,527, Cl. 267-1.

Hallberg, Frederick C., to United States of America, National Aeronautics and Space Administration. Turn-on transient limiter. 3,555,361, Cl. 317-20.

Hallene, Alan M.; Holuba, Henry J.; Drexler, John J.; and Phillips, Richard S., to Montgomery Elevator Company. Elevator door control. 3,554,326, Cl. 187-52.

Halliburton Company: *See*—
Mason, John F.; Frazier, Bruce J.; and Freeman, Norman L., Jr., 3,554,581.

Halpaap, Herbert: *See*—
Irmscher, Klaus; Kramer, Josef; Halpaap, Herbert; and Freisberg, Karl-Otto,3,555,047.

Halstead, Donald B. Tool for driving fasteners. 3,554,246, Cl. 144-32.

Halvorson, John A.; Knasinski, Max S.; Risberg, Robert L.; and Serbiak, Richard P., to Cutler-Hammer, Inc. Static shunt motor crane hoist control system with double-duty resistors. 3,555,384, Cl. 318-257.

Hamill, Robert L.: *See*—
Gorman, Marvin; and Hamill, Robert L.,3,555,150.

Hamilton, Charles R.: *See*—
Hoelzen, Warren R.; and Hamilton, Charles R.,3,554,128.

Hamilton, Harry M. Clutch and drive assembly for model vehicles. 3,553,886, Cl. 46-210.

Hammersley, David Alan; and Payne, John, to Monsanto Chemicals Limited. Rubber antioxidants. 3,554,959, Cl. 260-41.5

Hampton, James F., to Dow Corning Corporation. 1,2,3,5,5,7,7-Heptamethyl-1- trifluoropropyl-cyclotetrasiloxane. 3,555,065, Cl. 260-448.2

Hamu, Kaino J. Adjustable stretch frame for biaxially stressing sheet material. 3,553,862, Cl. 38-102.1

Hane, John R. Safety belt system. 3,554,577, Cl. 280-150.

Hankinson, Cloyce L.; Linke, Ernest George; and Seleen, William Arvid, to Borden, Inc. Method of pasteurizing flour. 3,554,772, Cl. 99-215.

Hanna, Daniel C.; and Richardson, James S., said Richardson assor. to said Hanna. Vehicle conveyor. 3,554,132, Cl. 104-172.

Hansen, Gunnar Lyshoj, to Danfoss A/S. Hydraulic rotary-pressure device. 3,554,675, Cl. 418-61.

Hansen, James P., to United States of America, Navy. Apparatus and techniques for generating variable delay pulses from paralleled avalanche transistors. 3,555,301, Cl. 307-246.

Hansford, Rowland C., to Union Oil Company of California. Hydrocracking process. 3,554,899, Cl. 208-111.

Hantzsch, Ralph E.: *See*—
McIntyre, Robert G.; Nichols, Browning, Jr.; and Hantzsch, Ralph E.,3,554,472.

Hantzsch, Ralph Eugene, to Unied States of America, Air Force. Shock absorbing adjustable bumper device for rotatably adjusting aircraft ejection seat catapult rocket devices. 3,554,471, Cl. 244-122.

Harbaugh, Samuel S., to Allegheny Ludlum Steel Corporation. System for automatically decelerating rolling mills. 3,553,992, Cl. 72-9.

Harden, John Charles; and Vassallo, Donald Arthur, to Du Pont de Nemours, E. I., and Company. Differential thermal analysis sample cell. 3,554,002, Cl. 73-15.

Harned, John L., to General Motors Corporation. Anti-lock brake control. 3,554,612, Cl. 303-21.

Harrington, Frederick G.; and Mullan, John E. Anchor for pliable sheet material. 3,553,942, Cl. 55-483.

Harris, Jeremy M.: *See*—
Adkins, David E.; Harris, Jeremy M.; and Riley, George R.,3,554,301.
Hackman, Donald J.; Harris, Jeremy M.; and Legue, Ronald L.,3,555,383.

Harris, Robert K.: *See*—
Waddle, Craig C.; and Harris, Robert K.,3,554,509.

Harris-Intertype Corporation: *See*—
Heigl, Carl H.; and Macey, Keith S., 3,554,531.

Harrison, Anthony William, to Girling Limited. Vehicle brakes. 3,554,332, Cl. 188-79.5

Harrison, Anthony W., to Girling Limited. Drum brakes. 3,554,330, Cl. 188-78.

Hartke, David Henry, to SDS Data Systems. Digital-to-analog converter with smooth recovery. 3,555,540, Cl. 340-347.

Hartley, David: *See*—
Hughes, Gordon Alan; Smith, Herchel; and Hartley, David,3,555,096.

Hartmann, Ludwig, to Freudenberg, Carl, Kommanditgesellschaft. Non-woven fabric. 3,554,854, Cl. 161-150.

Hartwimmer, Robert; and Fitz, Herbert, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Primers for coating surfaces with polytetrafluoroethylene and polytetrafluoroethylene dispersions containing such primers. 3,554,955, Cl. 260-29.6

Harvey, Donald M., to Eastman Kodak Company. Automatic exposure control system. 3,554,103, Cl. 95-10.

Harvey, Dyas N., Jr., to TRW Inc. Wide range voltage controlled oscillator. 3,555,469, Cl. 331-111.

Harvey, James E.; Irland, Max J.; and Lindberg, Victor L., to Ford Motor Company. Method of making a glass window structure. 3,554,722, Cl. 65-62.

Harvey, Richard F.: *See*—
Beldham, Victor E.; and Harvey, Richard F.,3,554,738.

Harwick, Burton T.: *See*—
Baurmash, Leonard; Harwick, Burton T.; and Meyer, Jack T.,3,555,274.

Hasegawa, Katsuji, to Kabushiki Kaisha Meinan Seisakusho. Pressure roller in a sanding device. 3,553,899, Cl. 51-141.

Hashimoto, Tadashi: *See*—
Ogasawara, Naoyuki; Hashimoto, Tadashi; Sugie, Mitsuru; and Nomura, Hiromi,3,555,463.

Hashioka, Tokuyasu, to Hope Kabushiki Kaisha. Safety ski heel binding. 3,554,572, Cl. 280-11.35

Hasler AG: *See*—
Allemann, Adrian, 3,555,186.

Hasseman, Walter, to Noce, James S., and Willey, William F., mesne. Fishing trap. 3,553,881, Cl. 43-105.

Hatabu, Kiyotada: *See*—
Ogura, Eiji; Hatabu, Kiyotada; and Nomura, Nobuki,3,555,102.

Hatton, William L., to Raytheon Company. Digital diversity reception system. 3,555,427, Cl. 325-306.

Hauck, Erwin A.; and Vigil, Jacob F., to Burroughs Corporation. Multi-processor digital computer system with address modification during program execution. 3,555,513, Cl. 340-172.5

Haughtington, Richard E.; and Shipley, Earl H., to United States Steel Corporation. Timer-indicator. 3,554,157, Cl. 116-129.

Hause, Gilbert K.: *See*—
Michnay, Raymond P.; Moore, Charles R.; and Hause, Gilbert K.,3,554,057.

Hauser, Alfred: *See*—
Sennewald, Kurt; Hauser, Alfred; and Winfried, Lork,3,555,082.

Hawkins, Gary F.: *See*—
Quinn, Edwin K.; and Hawkins, Gary F.,3,554,990.

Hawkins, Paul Maddison, to General Alarm Corporation. Automatic locking system. 3,554,593, Cl. 292-335.

Hayashi, Kikuo. Tilting game board with frusto-conical rolling member. 3,554,553, Cl. 273-110.

Hayashi, Naoichi; Takeuchi, Nobuhiro; and Sunagawa, Sakae, to Sankyo Co., Ltd. Capsule charging system. 3,554,412, Cl. 222-346.

Hayashi, Tsuento; Kinoshita, Hidejiro; and Iwahashi, Koji, to Messrs. Mitsubishi Jukogyo Kabushiki Kaisha. Corrosion resistant boiler tube for chemical recovery vapor generating unit. 3,555,236, Cl. 219-76.

Haydon, Brian R. J.: *See*—
Baker, Denis W.; and Haydon, Brian R. J.,3,554,587.

Hazeltine Corporation: *See*—
Buehrle, William E., Jr.; and Woodard, Gerald F., 3,555,422.

Heald Machine Company, The: *See*—
Price, Robert L.; and Hahn, Robert S., 3,554,062.

Heath, Harold F., Jr.; and Husson, Samir S., to International Business Machines Corporation. Early error detection system for data processing machine. 3,555,517, Cl. 340-172.5

Hebermehl, Reinhard: *See*—
Blomeyer, Friedrich; Bunge, Wilhelm; Mennicken, Gerhard; and Hebermehl, Reinhard,3,554,951.

Hebert, Donald G., to General Electric Company. High-speed printer having improved ribbon tensioning and reversing drive mechanism. 3,554,349, Cl. 197-154.

Hecker, Robert W., Jr.; and Beckwith, Robert C., to Loomis Machine Company. Dockboard. 3,553,756, Cl. 14-71.

Hedman, John Gunnar. Trailer and method for loading and unloading the same, in which only one workman need be used to carry out the method. 3,554,394, Cl. 214-38.

Heid, Robert W., Jr., to Dana Corporation. Piston and piston ring combination. 3,554,568, Cl. 277-170.

Heigl, Carl H.; and Macey, Keith S., to Harris-Intertype Corporation. Binder Assembly. 3,554,531, Cl. 270-53.

Heijnis, James W. I. Spinneret assembly. 3,553,773, Cl. 18-8.

Heil Co., The: *See*—
McKenzie, Bruce A.; Zachariah, Gerald L.; Peart, Robert M.; and Ohlgren, Raymond R., 3,553,846.

Heinz, Alfred, to Western Electric Company, Incorporated. Television system for checking mask registration. 3,555,172, Cl. 178-5.2

Helbig, Helmut: *See*—
Schmedding, Herbert; and Helbig, Helmut,3,554,828.

Helbig, Walter Allen; and Ross, Walter Lee, to RCA Corporation. Multiple channel display system. 3,555,520, Cl. 340-172.5

Heldt, Michel P., deceased0 (by Heldt, Odette; administratrix), to Delta Corporation. Spline lapping machine. 3,553,896, Cl. 51-34.

Heldt, Odette: *See*—
Heldt, Michel P.,3,553,896.

Hellermann, Paul, G.m.b.H.: *See*—
Kabel, Heinrich, 3,554,405.

Hellyer, James A.: *See*—
Wetzel, Thomas Andrew; and Hellyer, James A.,3,555,145.

Helm, Dietrich; and Janssen, Rainer, to Schering AG. Unsaturated polyamide resins. 3,554,944, Cl. 260-18.

Helms, Harold E., to General Motors Corporation. Cooled blade. 3,554,663, Cl. 416-90.

Hemphreys, John P.: *See—*
Lederer, Gerald; Rackham, John M.; and Hemphreys, John P.,3,554,777.

Henderson, Eulas W., to Phillips Petroleum Company. Carbon black furnace. 3,554,706, Cl. 23-259.5

Henderson, Martin C.; and Koster, Robert A., to Bunker-Ramo Corporation, The. Dispfay apparatus. 3,555,538, Cl. 340-324.

Hendrickson, Ray V. Traction device. 3,554,189, Cl. 128-71.

Hennessey, Lyle C. Leg lounger. 3,554,600, Cl. 297-439.

Henriques, Lance L., to Foreman, Davis. Fail-safe light intrusion alarm system. 3,555,535, Cl. 340-258.

Henry, Donald E., to Gulf & Western Industries, mesne. Zero switching network for a triac switching circuit. 3,555,292, Cl. 307-133.

Henry, Joseph P.: *See—*
Garst, Roger H.; and Henry, Joseph P.,3,554,986.

Henson, William P.: *See—*
Dickinson, Robert E.; and Henson, William P.,3,553,980.

Herb, Carl C., to Carrier Corporation. Ceiling air terminal. 3,554,112, Cl. 98-40.

Herbert, George E.: *See—*
Pelley, Richard B.; Warner, James R.; and Herbert, George E.,3,554,237.

Hercules Incorporated: *See—*
Aldrich, Paul H., 3,554,982.
Sloan, Martin F., 3,554,981.

Herfeld, Friedrich W. Heating and cooling mixer for preparing plastic material. 3,554,274, Cl. 165-65.

Herman, Andrew E.; and Kearney, James L., to Jetair, Inc. Particulate material distributing apparatus. 3,554,607, Cl. 302-28.

Hermann, Curt; and Baumann, Hans G., to Demag Aktiengesellschaft. Method of deforming and straightening a curved continuous casting strand. 3,554,269, Cl. 164-82.

Hermans, Maurice Joseph: *See—*
Barballe, Leon Jean; and Hermans, Maurice Joseph,3,554,393.

Hermant, Marc Eugene; and Debrebant, Raymond Albert Alexandre, to Societe Anonyme dite: Ugine Kuhlmann. Lubricant compositions. 3,554,909, Cl. 252-34.7

Herrmann, Fritz, to Bachtold, Fritz. Cutter mandrel. 3,554,080, Cl. 90-11.

Herrmann, Henry O., to Pennwalt Corporation. Controlled tilting apparatus for metallurigical furnace. 3,554,522, Cl. 266-36.

Herrmann, John F., to Singer Company, The. Key lock shift mechanism. 3,554,348, Cl. 197-107.

Herschmann, Otto; Reisacher, Josef; Stockfisch, Heinz; and Gotz, Alfred, to Daimler-Benz Aktiengesellschaft. Cylinder head of an air-cooled internal combustion engine. 3,554,171, Cl. 123-41.42

Herubel, Jean-Frederic, to Schlumberger, N., & Cie. Machine for boning forequarters of meat. 3,553,766, Cl. 17-1.

Hervey, Laurence R. B.; and George, Donald K., to Riegel Textile Corporation, mesne. Method for producing a fiber pulp sheet by impregnation with a long chain cationic debonding agent. 3,554,862, Cl. 162-158.

Hervey, Laurence R. B.; and George, Donald K., to Riegel Textile Corporation, mesne. Cellulose fiber pulp sheet impregnated with a long chain cationic debonding agent. 3,554,863, Cl. 162-158.

Herweh, John E.; and Poshkus, Algirdas C., to Armstrong Cork Company. Process of foaming resins using phosphorus- containing sulfonylhydrazides as blowing agents. 3,554,938, Cl. 260-2.5

Herzog, Raymond A., to Cincinnati Butcher' Supply Company, The. Hide peeler. 3,553,767, Cl. 17-21.

Hess, Wolfgang: *See—*
Hoenick, Hermannhans; Rath, Heinrich Bernhard; and Hess, Wolfgang,3,554,333.

Hesselgren, Tore Gottfrid. Electronic combination lock with discharge control circuit means. 3,555,510, Cl. 340-164.

Hesston Corporation: *See—*
White, Allen A., 3,553,948.

Hettick, George R.: *See—*
Little, Donald M.; and Hettick, George R.,3,553,936.

Hewett, William A.: *See—*
Gipstein, Edward; and Hewett, William A.,3,554,741.

Hewitt, Maxwell James; Steinlin, Felix; and Grubenmann, Werner, to Courtaulds Limited, and Ciba Limited. Process for the manufacture of colored structures from cellulose triacetate. 3,554,774, Cl. 106-193.

Hicks, William E. Call index for telephones. 3,553,875, Cl. 40-336.

Hideg, Laszlo, to Ford Motor Company. Carburetor idle system control. 3,554,500, Cl. 261-41.

Hilbers, Antonius Hubertus, to U.S. Philips Corporation, mesne. High frequency power transistor having crossing input and output leads. 3,555,375, Cl. 317-235.

Hildebrandt, Albert R., to Standard International Corporation. Electrical inductor and method of making the same. 3,555,477, Cl. 336-192.

Hilleman, Maurice R.: *See—*
Buynak, Eugene B.; and Hilleman, Maurice R.,3,555,149.

Hillman, Thomas F., to Corning Glass Works. Article handling. 3,554,352, Cl. 198-21.

Hiltebrand, Heinrich, to ALBA-Werkzeugfabrik Lennartz & Co. Wood working tool of chromium steel containing cobalt. 3,554,735, Cl. 75-126.

Hilti Aktiengesellschaft: *See—*
Oesterle, Helmut, 3,554,425.

Hilton, Ralph W., to United States of America, Army, mesne. Self-centering die system for precision extrusion of gun tubes. 3,553,998, Cl. 72-266.

Hinds, Ronald, to British Insulated Callender's Cables Limited. Tension regulated wrapping machine. 3,553,951, Cl. 57-3.

Hines, Marion E., to Microwave Associates, Inc. High power solid state microwave device. 3,555,444, Cl. 330-61.

Hings, Donald Lewes. Linear rolling motor. 3,555,380, Cl. 318-135.

Hinkel, Norman: *See—*
Anderson, Philip C.; Buhmann, Donald; and Hinkel, Norman,3,554,018.

Hinshaw, Meral W., to Diamond Tool Associates. Dual-action abrading tool. 3,553,906, Cl. 51-209.

Hiram Swank's Sons:*See—*
Swank, Albert M., 3,553,799.

Hirayama, Chikara: *See—*
Bruning, Armin M.; Kienast, Peter F.; Kemeny, George A.; and Hirayama, Chikara,3,554,715.

Hirayama, Kikuji; Nakano, Keiji; and Mitsui, Takeshi, to Onoda Cement Company, Limited. Method for separating and recovering hydrogen fluoride. 3,553,938, Cl. 55-71.

Hirohashi, Toshiyuki: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,555,014.

Hiroshashi, Toshiyuki: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hiroshashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; Kobayashi, Tsuyoshi; and Izumi, Takahiro,3,555,013.

Hirsbrunner, Peter. Wind instrument possessing at least three valves. 3,554,072, Cl. 84-390.

Hitachi, Ltd.: *See—*
Hosaka, Mamoru; Ando, Fumio; and Yoshitake, Masathugu, 3,555,514.
Hujita, Minoru, 3,555,307.
Kozawa, Tokinori, 3,555,303.
Seki, Susumu, 3,555,253.
Usuda, Koji, 3,555,374.

Hoch, Samuel, to Tennceo Chemicals, Inc. Organothio-, organocarboxy-, and organothio- organocarboxystannoxanes. 3,555,060, Cl. 260-429.7

Hochman, Jack M., to Esso Research and Engineering Company. Method and nozzle for injecting one fluid into another fluid. 3,554,444, Cl. 239-8.

Hodes, Harvey A.; Sobieski, James F.; and Zerner, Michael C., to United States of America, Army. Polymerizable mixtures. 3,554,882, Cl. 204-72.

Hoekstra, John J., to Dow Chemical Company, The. Preparation of 1,1'-(fluoroimino)bis(N,N,N',N',1- pentafluoromethanediamine). 3,555,094, Cl. 260-583.

Hoelzen, Warren R.; and Hamilton, Charles R., to United States of America, Navy. Safety-arming device for use in fuzes. 3,554,128, Cl. 102-70.2

Hoenick, Hermannhans; Rath, Heinrich Bernhard; and Hess, Wolfgang, to Girling Limited. Disc brake and multiple actuator therefor. 3,554,333, Cl. 188-152.

Hoenig, Ernst, to Staubli Ltd. Dobbies. 3,554,238, Cl. 139-68.

Hoesch Maschinenfabrik Deutschland AG: *See—*
Krausse, Rudolf, 3,554,682.

Hoffmann, Richard, to Firma Biedermann GmbH. Method of and apparatus for the insertion of eye- less passings of laces in the uppers of shoes. 3,553,755, Cl. 12-146.

Hoffmann-La Roche Inc.: *See—*
Field, George Francis; and Sternbach, Leo Henryk, 3,555,022.

Hogan, Robert J.: *See—*
Nolan, George J.; Hogan, Robert J.; and Pitzer, Emory W.,3,555,105.

Hoglund, Nils, to Tri-Ordinate Corporation. Back lash free power transfer mechanism. 3,554,044, Cl. 74-409.

Holan, George: *See—*
Samuel, Eva Lea; and Holan, George,3,555,158.

Holbrook, George W., to Dow Corning Corporation. B-Perfluoroalkylethyl phenylcyclotrisiloxanes. 3,555,068, Cl. 260-448.2

Holdinghausen, Paul, to Schenck, Carl, Maschinenfabrik G.m.b.H. Apparatus and method for indicating unbalance and controlling balancing of a body. 3,554,061, Cl. 77-5.

Holiga, Ludomin A.: *See—*
Gargrave, Robert J.; Randolph, Allan E., Sr.; and Holiga, Ludomin A.,3,554,060.

Holman, John L. M., to Trane Company, The. Absorption refrigeration apparatus including means cooling strong absorption solution. 3,553,977, Cl. 62-489.

Holmes, Norman C. Carrier for garment hangers. 3,554,418, Cl. 224-45.

Holmes, Stannard D. Remote control rear view mirror. 3,554,049, Cl. 74-501.

Holmes, William A.; and Mackenzie, Alfred D., to General Electric Company. Attitude insensitive gas generator. 3,554,707, Cl. 23-282.

Holmwood, Richard H.: *See—*
Darrow, William C.; Holmwood, Richard H.; Snyder, Keith A.; and Treiber, Walter C.,3,555,235.

Holuba, Henry J.: *See—*
Hallene, Alan M.; Holuba, Henry J.; Drexler, John J.; and Phillips, Richard S.,3,554,326.

Homesberger, Joseph L. Replaceable table top. 3,554,140, Cl. 108-90.

Honeywell Inc.: *See—*
Bozarth, Theodore B., Jr.; and Hurd, Edward T. E., III, 3,555,402.
Kizilos, Apostolos P., 3,554,208.
Rasmussen, Robert F.; and Taylor, John C., 3,554,084.
Rogers, Horton M., 3,555,388.
Shavit, Gideon, 3,555,251.
Tyler, Tommy N., 3,555,177.

Honnold, Fred V., Jr.: *See—*
Traver, Darwin G.; and Honnold, Fred V., Jr.,3,554,111.

Hooker Chemical Corporation: *See—*
Wilson, Bruce N., 3,555,118.

Hoover Company, The: *See—*
Luckner, Clark A., Jr., 3,554,043.

Hoover, Lawrence E., to American Packaging Corporation. Stand up display package. 3,554,367, Cl. 206-45.14

Hope Kabushiki Kaisha: *See—*
Hashioka, Tokuyasu, 3,554,572.

Horanoff, Eugene V., to United States of America, Navy. Pitch damping balance. 3,554,028, Cl. 73-147.

Hordis Bros., Inc.: *See—*
Hordis, Victor A., 3,553,910.

Hordis, Victor A., to Hordis Bros., Inc., mesne. Grinding apparatus. 3,553,910, Cl. 51-356.

Horigome, Toshinori, to Nippon Electric Company, Limited. Waveguide-slow wave structure impedance matching device. 3,555,462, Cl. 333-31.

Horin, Shoji: *See—*
Maruta, Iwao; Arai, Haruhiko; Iida, Akihiko; and Horin, Shoji,3,554,947.

Hormel, Geo A., & Company: *See—*
Leining, Lyndon R., 3,554,411.

Hornung, Michael C.; and Tasset, Everett J., to American Products, Inc. Seed and fertilizer metering apparatus. 3,554,145, Cl. 111-77.

Horry, William Thompson, to Waddington, John, Limited. Cartons. 3,554,432, Cl. 229-33.

Horst, Heinz: *See—*
Kampf-Emden, Gerd; Horst, Heinz; and Klapdohr, Friedrich,3,554,603.

Horton, Robert J. Apparatus for casting structural units for building construction. 3,553,797, Cl. 25-2.

Horvath, Joseph S. Spherical missile and launching means therefor. 3,554,078, Cl. 89-1.808

Horvath, Laszlo: *See—*
Cogar, George R.; Sekse, Torkjell; Banziger, Walter; Ming, Joseph W.; and Horvath, Laszlo,3,555,306.

Hosaka, Mamoru; Ando, Fumio; and Yoshitake, Masathugu, to Hitachi, Ltd. Digital computer instruction sequencing to carry out digital differential analysis. 3,555,514, Cl. 340-172.5

Hoskins, Thomas A., to International Business Machines Corporation. Drive coupling system. 3,554,640, Cl. 355-8.

Houston, Theodore T.: *See—*
Wilkinson, Gerald E. G.; and Houston, Theodore T.,3,554,696.

Hovstad, Olav B.: *See—*
Thale, Allan; Hovstad, Olav B.; and Ivnas, Lennart,3,554,453.

Howard, John; and McIntosh, Terence D., to ITT Rayonier Incorporated. Plicatyl hydrazide. 3,555,088, Cl. 260-559.

Howe Folding Furniture, Incorporated: *See—*
Burr, Alan Carleton, 3,554,141.

Hreschak, Bohdan O.: *See—*
Fast, Robert B.; Hreschak, Bohdan O.; and Spotts, Clyde E.,3,554,763.

Hu, Kwoh H., to United States of America, Army. Abrasion tester and method of testing abrasion resistance of flexible sheet material. 3,554,007, Cl. 73-7.

Hubbell, Harvey, Incorporated: *See—*
Lee, Sung Chuel; and Brockway, Clifford E., 3,555,360.
Morris, Alton R.; and McDonald, Thomas M., 3,555,359.

Huber, Mortimer J.: *See—*
Allan, Peter D.; and Huber, Mortimer J.,3,555,317.

Huddle, Thornton C.: *See—*
Rodgers, Elbert A.; Huddle, Thornton C.; and Knox, Kent B.,3,554,143.

Hudson, Harry W., to Twentieth Century Products Corporation. Toilet tank supply valve assembly. 3,554,219, Cl. 137-414.

Hudson, Richard L.: *See—*
Duffy, Michael C.; and Hudson, Richard L.,3,554,891.

Huff, Francis E.: *See—*
Ettenhofer, Kurt L.; and Huff, Francis E.,3,555,165.

Hufton, Arthur G.; and Dogadko, Peter, to Motorola, Inc. Electronic vacuum advance for an ignition system. 3,554,177, Cl. 123-148.

Hughes Aircraft Company: *See—*
Bilow, Norman; and Miller, Leroy J., 3,555,108.
Coerver, Leo E., Jr.; and Pizzarello, Frank A., 3,554,797.
Keene, Carl E., 3,554,876.

Hughes, Garyth: *See—*
Bickerdike, Robert Lewis; Bradshaw, Francis Julian; Hughes, Garyth; Mair, William Norman; and Ranson, Harry Christopher,3,554,739.

Hughes, Gordon Alan; Smith, Herchel; and Hartley, David, said Hughes and said Hartley assors. to said Smith. D-homo-gona-4,9-dienes and process. 3,555,096, Cl. 260-586.

Hughes, Nathaniel, to Energy Sciences, Inc. Phase-resonant streaming. 3,554,443, Cl. 239-4.

Hujita, Minoru, to Hitachi, Ltd. Flip-flop. 3,555,307, Cl. 307-279.

Hull, Charles F., to Du Pont de Nemours, E. I., and Company. Preparation of copolyesters. 3,554,976, Cl. 260-75.

Hull, Frederick C.: *See—*
Johnson, Edwin W.; and Hull, Frederick C.,3,554,791.

Hum, Allen; Perttula, Harold V.; and Tsuchiya, Takuzo, to General Mills, Inc. Separating apparatus. 3,553,944, Cl. 55-267.

Humetrics Corporation: *See—*
Glassner, Harvey F.; Jorgensen, Clinton O.; and Baessler, Lee R., 3,554,187.

Humiston, Homer A.; and Marshall, Fitz-Hugh B., to Westinghouse Electric Corporation. Optical imaging and ranging system. 3,555,178, Cl. 178-6.8

Humphries, Curtis L., to Mobil Oil Corporation. Process and apparatus for recovering condensable components from fluid streams. 3,554,904, Cl. 208-340.

Hundley, Floyd F. Tap chuck with overload release. 3,553,753, Cl. 10-129.

Hunkeler, Ernst J.; Ash, John L.; and DeWolf, Myron F., to Gleason Works, The. Chamfering means. 3,554,079, Cl. 90-1.4

Hunsdorf, William P. Constant torque adjustable speed motor. 3,555,315, Cl. 310-67.

Hunsdorf, William P. DC motor with rotating brush holder. 3,555,328, Cl. 310-177.

Hunt, James G.; and Friedman, Gerald I., to Nuclear Metals Division, Whittaker Corporation. Method of forming channel plates. 3,553,829, Cl. 29-592.

Hunt, Oliver Larry: *See—*
Bottomley, Charles Gregory; and Hunt, Oliver Larry,3,555,115.

Hunt, Oliver Larry, to Du Pont de Nemours, E. I., and Company. Polyetherurethanes containing N-t-butyl tertiary amine groups in the chain. 3,554,979, Cl. 260-77.5

Hunt-Wesson Foods, Inc.: *See—*
Lipsky, Marcus; Mahan, William J.; Mahan, Dorothy C., executrix; and Mahan, William J., deceased, 3,554,770.

Huntley, Frederick Ronald: *See—*
Ralph, Frank; Parmee, John Llewellin; Boswell, David; and Huntley, Frederick Ronald,3,555,461.

Hunziker, Rudolf: *See—*
Frind, Gerhard; Hunziker, Rudolf; and Korte, Richard M.,3,555,224.

Hurd, Edward T. E., III: *See—*
Bozarth, Theodore B., Jr.; and Hurd, Edward T. E., III,3,555,402.

Huret, Jacques, to Compagnie Generale d'Automatisme. Micropump for the dosaging of liquid, and container- filling line for same. 3,554,674, Cl. 417-475.

Hurletron Incorporated: *See—*
Lewallen, Bernard E., 3,554,123.

Hurth, Carl, Maschinen-und Zahnradfabrik: *See—*
Eichinger, Hans, 3,554,155.

Hurvitz, Hyman: *See—*
Weber, Joseph, 3,554,033.

Hurworth, Neville Robert: *See—*
Goodman, Isaac; and Hurworth, Neville Robert,3,554,983.

Husselby, Richard William: *See—*
Baker, Brian; Beynon, Alan Anthony; and Husselby, Richard William,3,553,827.

Husson, Samir S.: *See—*
Heath, Harold F., Jr.; and Husson, Samir S.,3,555,517.

Huston, Leroy S., Jr.: *See—*
Scoledge, Robert F.; Audesse, Emery G.; and Huston, Leroy S., Jr.,3,555,338.

Hutchinson, Herman R.: *See—*
Taylor, Kendrick C.; Hutchinson, Herman R.; Wagner, August Gilbert; and Blasko, Michael J.,3,554,268.

Hutson, Jearld L. Semiconductor bilateral switching device. 3,555,372, Cl. 317-234.

Hutzenlaub, Armin S. P.; and Winchenbach, Paul Gerhard, to Kampf, Erwin, Machinenfabrik. Winding shaft with plural bobbin carrying rings. 3,554,457, Cl. 242-56.9

Hycon Manufacturing Co.: *See—*
Richards, Chester L., Jr., 3,555,280.

Hycon Mfg. Company: *See—*
Baumgarten, Aaron, 3,554,106.

Hygrometrix, Inc.: *See—*
Fenner, Ralph L., 3,555,216.
Fenner, Ralph L., 3,555,217.

Hyman, Clifton E.; and Krembs, George M., to International Business Machines Corporation. Color cathode ray tube screens. 3,554,889, Cl. 204-181.

Hymer, Robert L., to United States of America, National Aeronautics and Space Administration. Audio signal processor. 3,555,192, Cl. 179-1.

Hymore, Frank J.: *See—*
Ritter, George F., Jr.; and Hymore, Frank J.,3,554,724.

I-T-E Imperial Corporation: *See—*
Myers, Felix E., 3,555,468.

Iguchi, Takashi: *See—*
Nitta, Tsuneharu; Kuito, Akio; Nagase, Kaneomi; Iguchi, Takashi; and Taki, Hiromitsu,3,555,376.

Iida, Akihiko: *See—*
Maruta, Iwao; Arai, Haruhiko; Iida, Akihiko; and Horin, Shoji,3,554,947.

Ikeda, Itsuo: *See—*
Okuno, Zenjiro; and Ikeda, Itsuo,3,554,946.
Ikoma, Toshiaki: *See—*
Yanai, Hisayoshi; Ikoma, Toshiaki; Sugeta, Takayuki; Matsukura, Yasuo; and Ohta, Kuniichi,3,555,282.
Ilyashenko, Evgeny Ivanovich; Rudakov, Vladimir Fedorovich; and Bekin, Boris Sergeevich. Magnetic logical memory device. 3,555,524, Cl. 340-174.
Image Systems, Inc.: *See—*
Irasek, Eugene H.; and Owens, Ben H., 3,555,248.
Immel, Otto: *See—*
Schwarz, Hans-Helmut; and Immel, Otto,3,555,059.
Imperial Chemical Industries Limited: *See—*
Goodman, Isaac; and Hurworth, Neville Robert, 3,554,983.
Jones, Michael Edward Benet; and Goodman, Isaac, 3,554,966.
Jones, Michael Edward Benet; and Goodman, Isaac, 3,554,971.
Lamb, Donald Charles, 3,554,992.
Mc Intosh, Bruce Murray, 3,553,952.
Inaba, Shigeho: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hiroshashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; Kobayashi, Tsuyoshi; and Izumi, Takahiro,3,555,013.
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,555,014.
Inariba, Tokuzo, to Kabshiki Kaisha Tokai Rika Denki Seisakusho. Miniature electric synchronous motor. 3,555,325, Cl. 310-162.
Incho, Harry H.: *See—*
Fischer, Milton H.; Incho, Harry H.; Drummond, Paul E.; and Montgomery, Ronald E.,3,555,123.
Industrial Nucleonics Corporation: *See—*
Chope, Henry Roy, 3,553,991.
Ingeniorsfirman Nils Weibull AB: *See—*
Ivstedt, Karl-Gustaf L., 3,554,392.
Ingenjorsfirma Stig Morenius AB: *See—*
Morenius, Stig Emil Uno, 3,555,288.
Ingersoll-Rand Company: *See—*
Ditson, J D., 3,554,308.
Spyridakis, Emanuel G.; and Ulbing, Otmar M., 3,554,091.
Ingram, Alvin R., to Sinclair-Koppers Company. Treatment of foam plastics to render them fire- resistant. 3,554,934, Cl. 260-2.5
Ingram, Charles J. Tying device. 3,554,844, Cl. 156-522.
Ingulli, Alfred F.; and Alter, Henry L., to Uniroyal, Inc. Thermoplastic resin blend of a polysulfone with. 3,555,119, Cl. 260-876.
International Business Machines Corporation: *See—*
Braun, Richard E., 3,555,204.
Darrow, William C.; Holmwood, Richard H.; Snyder, Keith A.; and Treiber, Walter C., 3,555,235.
Duda, William L.; Kosanke, Kurt M.; Kulcke, Werner W.; and Max, Erhard, 3,554,634.
Duffy, Michael C.; and Hudson, Richard L., 3,554,891.
Gipstein, Edward; and Hewett, William A., 3,554,741.
Heath, Harold F., Jr.; and Husson, Samir S., 3,555,517.
Hoskins, Thomas A., 3,554,640.
Hyman, Clifton E.; and Krembs, George M., 3,554,889.
Jenny, Frederick F.; and Thun, Rudolf E., 3,553,830.
Myers, Robert A.; and Pole, Robert V., 3,555,454.
Reynolds, Jerry L.; Schools, Rodman S.; and Sincerbox, Glenn T., 3,555,545.
International Business Machines Corpration: *See—*
Martin, Van Clifton, 3,555,348.
International Controls Corporation: *See—*
Vesco, Robert L., 3,554,487.
International Flasher Corporation: *See—*
Frey, Cleon F., 3,555,480.
International Harvester Company: *See—*
Koziara, Robert P., 3,553,808.
Morkoski, James; and Garriott, Louis B., Jr., 3,554,294.
International Lead Zinc Research Organization, Inc.: *See—*
Willemsens, Louis C., 3,555,038.
International Minerals & Chemical Corporation: *See—*
Gross, John H.; and Gross, John H., 3,554,699.
Gross, John H.; and Gross, John H., 3,554,699.
International Nickel Company, The: *See—*
Williams, Keith Juxon; and Ennis, Philip James, 3,554,740.
International Packings Corporation: *See—*
Dahlheimer, John Charles, 3,554,559.
International Standard Electric Corporation: *See—*
Arndt, Wolfgang, 3,555,208.
Ralph, Frank; Parmee, John Llewellin; Boswell, David; and Huntley, Frederick Ronald, 3,555,461.
Strunk, Kurt; Halfmann, Heinrich; and Luhmann, Klaus, 3,555,197.
International Telephone and Telegraph Corporation: *See—*
Camacho, Julian, 3,555,222.
DeRose, Ralph A.; and Dicius, Renualdas P., 3,554,243.
Malm, Marvin F., 3,555,424.
McIver, William; and Brickell, Charles F., 3,555,488.
Stepan, James Lawrence; and Welch, John Samuel, 3,555,198.
Tancred, William L.; and Richards, Joseph A., 3,554,051.
Ionics, Incorporated: *See—*
Mc Rae, Wayne A.; Brown, Daniel L.; and McGriff, Stuart G., 3,554,895.
Iowa State University Research Foundation, Inc.: *See—*
Madany, George H.; and Burnet, George, Jr., 3,554,731.
Irasek, Eugene H.; and Owens, Ben H., to Image Systems, Inc., mesne. Card-type storage item and clip. 3,555,248, Cl. 235-61.12
Ireland, Rainseford H., to Blick, John Oliver. Telephone security device. 3,555,209, Cl. 179-189.
Irland, Max J.: *See—*
Harvey, James E.; Irland, Max J.; and Lindberg, Victor L.,3,554,722.
Irmscher, Klaus; Kramer, Josef; Halpaap, Herbert; and Freisberg, Karl-Otto, to Merck, E., A.G. 3-Lower alkyl or alkoxy-6-hydroxy flavans and ester derivatives thereof. 3,555,047, Cl. 260-345.5
Irradiation Controls Inc.: *See—*
Abrams, Alvin, 3,554,283.
Irving, Robert, to Bunker-Ramo Corporation, The. Coded arrangement of photocells mounted on rigid body to determine position thereof. 3,555,285, Cl. 250-220.
Irwin, Arthur S., to TRW Inc. Bearing support. 3,554,619, Cl. 308-184.
Isberner, Dietmar R., to Orthopedic Equipment Company, Inc. Medullay space drill. 3,554,192, Cl. 128-83.
Isenberg, Arnold; Pabst, Wilfried; and Sandstede, Gerd, to Aktiengesellschaft Brown, Boveri & Cie. Oxide cathode material for primary fuel cells for high temperatures. 3,554,811, Cl. 136-120.
Ishida, Takuo: *See—*
Kishida, Etuji; and Ishida, Takuo,3,554,156.
Shimano, Keizo; and Ishida, Takuo,3,554,158.
Ishigami, Noriakira: *See—*
Kawabe, Tsuneo; Ishigami, Noriakira; and Ban, Masashi,3,554,611.
Ishihara, Nobuji: *See—*
Kigane, Koji; Ishihara, Nobuji; and Koga, Kazuo,3,554,789.
Ishizumi, Kikuo: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hiroshashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; Kobayashi, Tsuyoshi; and Izumi, Takahiro,3,555,013.
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,555,014.
Isom, Dalla's W. Football game. 3,554,548, Cl. 273-94.
Itek Corporation: *See—*
Fletcher, Gerald Matthew; Ghosh, Amal Kumar; and Wakim, Fahd G., 3,554,749.
McCarthy, Joseph V.; and Gruber, Francois R., 3,554,107.
Vyce, Joseph R., 3,554,650.
Ito, Eiitsu: *See—*
Maeda, Tsutomu; Watanabe, Kiyoshi; Akino, Tadaharu; Ito, Eiitsu; and Osada, Hisashi,3,555,464.
ITT Rayonier Incorporated: *See—*
Howard, John; and McIntosh, Terence D., 3,555,088.
Langille, Donald W., 3,555,046.
Quimby, George R., 3,554,884.
Ivanov, Ivan Petrovich: *See—*
Kolypaev, Nikolai Vasilievich; Vekke, Alexandr Ivanovich; Ivanov, Ivan Petrovich; Kravtsov, Lev Nikolaevich; and Shmukler, Iosif,3,554,066.
Ivnas, Lennart: *See—*
Thale, Allan; Hovstad, Olav B.; and Ivnas, Lennart,3,554,453.
Ivstedt, Karl-Gustaf L., to Ingeniorsfirman Nils Weibull AB. Arrangement in silos. 3,554,392, Cl. 214-17.
Iwahashi, Koji: *See—*
Hayashi, Tsuento; Kinoshita, Hidejiro; and Iwahashi, Koji,3,555,236.
Iwaisako, Toshiyuki: *See—*
Kominami, Naoya; Iwaisako, Toshiyuki; Tanaka, Kyugo; and Ohki, Kusuo,3,554,901.
Iwata, Saburo: *See—*
Kawana, Yoshiyuki; and Iwata, Saburo,3,555,373.
Izumi, Takahiro: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hiroshashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; Kobayashi, Tsuyoshi; and Izumi, Takahiro,3,555,013.
Jackoboice, Edward J.; and Kruizenga, Gerrit H., to Monarch Road Machinery Company. High speed hydraulic pump. 3,554,678, Cl. 418-206.
Jacubasch, Hans Dieter: *See—*
Gloor, Karl; Baach, Hans; Jacubasch, Hans Dieter; Stein, Rudolf; and Erhard, Hans Dieter,3,555,240.
Jahnle, Herbert A., to Budd Company, The. Mold of composite metal. 3,554,711, Cl. 29-197.
Jahrling, Horst. Shut-off device for water lines. 3,554,215, Cl. 137-271.
Jamison, Saunders E.; and Anthony, Gene H., to Celanese Corporation. Foamed cellulose tobacco felter rod. 3,554,202, Cl. 131-266.
Jando, Klaus: *See—*
Endesfelder, Helmut; Lentz,. Klaus; Jando, Klaus; and Schulze, Klaus,3,555,276.
Janssen, Rainer: *See—*
Helm, Dietrich; and Janssen, Rainer,3,554,944.
Jarrett, John L. Photographic slide file and viewer. 3,553,874, Cl. 40-158.
Javet, Alain; and Torelli, Aldo, to Ateliers Belges Reunis S.A. Boiling apparatus for continuous crystallization and method of operating said apparatus. 3,554,800, Cl. 127-16.

Jeffcoat, Charles B. Apron closure and object storing device. 3,553,735, Cl. 2-52.
Jeffee, Saul; and Weinschenk, Pedro Pablo, to Movielab, Inc. Apparatus and process for the liquid gate printing of a photographic film. 3,554,641, Cl. 355-30.
Jenkin, William C., to Du Pont de Nemours, E. I., and Company. Process for electroplating polyoxymethylene resins. 3,554,880, Cl. 204-30.
Jenkins, Thomas E.; and Cushing, Donald S., to General Electric Company. Dishwasher having improved heating means. 3,555,242, Cl. 219-335.
Jenny, Frederick F.; and Thun, Rudolf E., to International Business Machines Corporation. Method for making integrated circuit apparatus. 3,553,830, Cl. 29-574.
Jentgen, Richard L.: *See—*
Fiorentino, Robert J.; Cigan, John M.; Sabroff, Alvin M.; and Jentgen, Richard L.,3,553,995.
Jerrold Electronics Corporation: *See—*
Yastrov, Henry, 3,555,429.
Jetair, Inc.: *See—*
Herman, Andrew E.; and Kearney, James L., 3,554,607.
Jochim, Friedrich; Peetz, Dieter; Karla, Heinz; and Luerssen, Hermann, to Compagnie de Saint-Gobain. Heated glass structures. 3,553,833, Cl. 29-611.
Johansson, Rolf, to U.S. Philips Corporation. Damping device in electric switches. 3,555,470, Cl. 335-138.
Johns-Manville Corporation: *See—*
Benner, Stanley George, 3,554,719.
Claessens, Frank A., 3,554,865.
Johnson & Johnson: *See—*
Fechillas, Michael R., 3,554,788.
Johnson, Bertrand H., to Bell Telephone Laboratories, Incorporated. Electroluminescent displays. 3,555,335, Cl. 313-108.
Johnson, Brian K. A., to General Electric Company. Helical coil resonator having movable dielectric tuning element for varying capacitance. 3,555,467, Cl. 334-78.
Johnson, Curt, to Curty, Inc. Arm sling. 3,554,194, Cl. 128-94.
Johnson, Edwin W., to Westinghouse Electric Corporation. Welding electrode. 3,554,792, Cl. 117-205.
Johnson, Edwin W.; and Hull, Frederick C., to Westinghouse Electric Corporation. Covered welding electrode. 3,554,791, Cl. 117-205.
Johnson, Eldon L.: *See—*
De Vries, William C.; and Johnson, Eldon L.,3,554,833.
Johnson, Gary L.; and Shryock, Robert M., to E.T.M. Corporation. Method of using finger-held tools. 3,553,819, Cl. 29-407.
Johnson, John H.: *See—*
Fields, Joseph E.; and Johnson, John H.,3,554,985.
Johnson, Kenneth R.; and Lense, Robert F., to Riegel Paper Corporation. Packaging machine for forming and filling bags of different lengths and widths. 3,553,934, Cl. 53-183.
Johnson, Kurt T.: *See—*
Britton, Leon R.; Johnson, Kurt T.; Kusch, Edward K.; and Williams, Bernhard O.,3,555,229.
Johnson, Marvin M.: *See—*
Schiff, Sidney; Johnson, Marvin M.; and Streets, William L.,3,554,911.
Johnson, Maurice V., Jr.: *See—*
Zwiacher, Wayne E.; Kaser, Louis D.; Johnson, Maurice V., Jr.; Fennell, Alfred H.; and Riddington, Fred W.,3,553,926.
Johnson, Milton L., to Dow Corning Corporation. Organosilane mold lubricants. 3,554,910, Cl. 252-49.5
Johnson, Norman S., to Rex Chainbelt Inc. High strength adjustable quarter turn fastener. 3,554,075, Cl. 85-7.
Johnson, Richard Shaw, to Lever Brothers Company. Preparation of gelatinized carboxyalkyl starch derivatives. 3,555,008, Cl. 260-233.3
Johnson, Richard S., to Modine Manufacturing Company. Air-gas mixing device. 3,554,714, Cl. 48-180.
Johnson, Robert C., to M & L Industries, Inc. Motor housing. 3,555,320, Cl. 310-89.
Johnson, Wade M.; and Mussett, Harry L., to Continental Oil Company. Tilt switch. 3,555,219, Cl. 200-61.47
Johnson, Walter, Jr. Carpet binding and cutting apparatus. 3,554,148, Cl. 112-137.
Johnston, Donald LeRoy; Dryden, Vernon W.; and Doyle, John T., to Xerox Corporation. Chemical package. 3,554,705, Cl. 23-253.
Johnston, Howard, to Dow Chemical Company, The. Process for the manufacture of 2,3,4,5- tetrachloropyridine. 3,555,032, Cl. 260-290.
Johnston, Marion: *See—*
Christensen, Kenneth A., 3,553,750.
Jones, Charles H. Data card holder. 3,553,865, Cl. 40-10.
Jones, Faber B., to Phillips Petroleum Company. Thermoplastic epoxide resin compositions containing an inert diluent and process of making same. 3,554,956, Cl. 260-30.2
Jones, John L.; and Rubino, Andrew M., to Armour Pharmaceutical Company. Antiperspirant composition. 3,555,146, Cl. 424-47.
Jones, Michael Edward Benet; and Goodman, Isaac, to Imperial Chemical Industries Limited. Amorphous polyamides. 3,554,966, Cl. 260-47.
Jones, Michael Edward Benet; and Goodman, Isaac, to Imperial Chemical Industries Limited. Amorphous or weakly crystalline aromatic polyamides. 3,554,971, Cl. 260-47.
Jones, Norman F. High voltage connector. 3,555,487, Cl. 339-60.
Jones, Peter M.; and Read, Dennis, to Laporte Titanium Limited. Process and apparatus for heating titanium tetrachloride vapor. 3,554,708, Cl. 23-293.
Jones, Robert N.: *See—*
Bauer, Peter; and Jones, Robert N.,3,554,206.
Jones, Vercoe C., to Nutting Truck and Caster Company. Floor truck lock. 3,554,328, Cl. 188-5.
Jorgensen, Clinton O.: *See—*
Glassner, Harvey F.; Jorgensen, Clinton O.; and Baessler, Lee R.,3,554,187.
Joslin, Irwin L.: *See—*
Niedermeier, Fred P.; Joslin, Irwin L.; and Orth, Edward G.,3,554,312.
Judd, Sebastian F.; and Bilodeau, Paul J., to Chicago Pneumatic Tool Company. Detachable elastomer muffler for pneumatic percussive tools. 3,554,316, Cl. 181-36.
Julie, Loebe, to Julie Research Laboratories, Inc. Stabilized high power amplifier. 3,555,445, Cl. 330-98.
Julie Research Laboratories, Inc.: *See—*
Julie, Loebe, 3,555,445.
Junge, Charles H.: *See—*
Turk, Victor J.; Junge, Charles H.; and Kingsbury, George R.,3,553,806.
K-B Engineering Company: *See—*
Kice, Jack W.; and Vanderlip, Herbert D., 3,554,220.
Kabel, Heinrich, to Hellermann, Paul, G.m.b.H. Tool for binding cable harnesses. 3,554,405, Cl. 221-227.
Kabelka, Peter J.: *See—*
Palmer, Earl W.; Laigle, Roger E.; and Kabelka, Peter J.,3,553,831.
Kabshiki Kaisha Tokai Rika Denki Seisakusho: *See—*
Inariba, Tokuzo, 3,555,325.
Kabushiki Kaisha Fuji Kikai Seisakusho: *See—*
Seko, Kiyoshi, 3,553,933.
Kabushiki Kaisha Ichikawa Seisakusho: *See—*
Yamashita, Makoto; and Kushida, Masagoro, 3,554,582.
Kabushiki Kaisha Kawai Gakki Seisakusho: *See—*
Watanabe, Takashi, 3,555,497.
Kabushiki Kaisha Komatsu Seisakusho (Komatsu Mfg. Co. Ltd.): *See—*
Miyake, Hideo, 3,554,560.
Kabushiki Kaisha Meinan Seisakusho: *See—*
Hasegawa, Katsuji, 3,553,899.
Kabushiki Kaisha Ricoh: *See—*
Okuno, Zenjiro; and Ikeda, Itsuo, 3,554,946.
Kabushiki Kaisha Tokai Rika Denki Seisakusho: *See—*
Yamada, Toru; and Kitajima, Senjyo, 3,553,809.
Kage, Motokuni: *See—*
Ohta, Seizho; and Kage, Motokuni,3,554,526.
Kahle Engineering Co.: *See—*
Engel, William T.; and Sonderland, Arthur C., 3,554,241.
Kahle, Gerald R.: *See—*
Moberly, Charles W.; and Kahle, Gerald R.,3,554,993.
Kainuma, Keiji: *See—*
Suzuki, Shigeo; Kainuma, Keiji; Tanida, Koehi; and Oda, Tsuneo,3,555,009.
Kaiser Aluminum & Chemical Corporation: *See—*
Chance, Richard D., 3,554,513.
Slater, Jack D.; and Culbreth, Walter J., 3,554,730.
Kaiser, Franz S., to Robertshaw Controls Company. Motor protector. 3,555,356, Cl. 317-13.
Kaiser Industries Corporation: *See—*
Milliken, Clinton L., 3,554,356.
Kaizerman, Samuel: *See—*
Chang, Eugene Yue Chieh; and Kaizerman, Samuel,3,554,872.
Kalle Aktiengesellschaft: *See—*
Hackmann, Ernst-August; Dietrich, Roland; and Moraw, Roland, 3,554,752.
Hackmann, Ernst-August, 3,554,754.
Kalman, Gabor P., to Garrett Corporation, The. Self-starting power converter. 3,555,396, Cl. 321-2.
Kambayashi, Akira: *See—*
Kikkawa, Osamu; and Kambayashi, Akira,3,554,734.
Kamienski, Edward P., Jr.: *See—*
Shanbrom, Edward; and Kamienski, Edward P., Jr.,3,554,702.
Kammerer, Archer W., Jr., to Rotary Oil Tool Company, mesne. Reverse circulation expansible rotary drill bit with hydraulic lock. 3,554,305, Cl. 175-268.
Kampf-Emden, Gerd; Horst, Heinz; and Klapdohr, Friedrich, to Demag Aktiengesellschaft. Device for anchoring a tunnel driving device in a tunnel shaft. 3,554,603, Cl. 299-31.
Kampf, Erwin, Machinenfabrik: *See—*
Hutzenlaub, Armin S. P.; and Winchenbach, Paul Gerhard, 3,554,457.
Kanegafuchi Boseki Kabushiki Kaisha: *See—*
Ando, Satoshi; Tanaka, Yusaku; Kojima, Minoru; and Fujimura, Kyoichi, 3,554,980.
Kantrowitz, Adrian; and Tjonneland, Steinar, to United States of America, Health, Education and Welfare. Auxiliary ventricle. 3,553,736, Cl. 3-1.
Kao Soap Co., Ltd.: *See—*
Maruta, Iwao; Arai, Haruhiko; Iida, Akihiko; and Horin, Shoji, 3,554,947.
Kaplan, David. Back, shoulder and stomach support. 3,554,190, Cl. 128-78.

Kaplan, Ephraim H., to Velsicol Chemical Corporation. N-alkoxy sulfanilamides. 3,555,055, Cl. 260-397.7

Kaplan, Leonard L.; and Cox, Robert H., to Richardson-Merrell Inc. Long acting solid antacid. 3,555,151, Cl. 424-156.

Kappel, Frederick M.; and Pecis, John G., to Speakman Company. Mixing faucet. 3,554,232, Cl. 137-625.17

Karhan, Victor J.: *See—*
Figlewicz, Raymond C.; and Karhan, Victor J.,3,555,473.

Kariya, Susmu. Observation device for an electrolytic corrosion test system. 3,554,890, Cl. 204-194.

Karkhachev, Jury Georgievich: *See—*
Karpacheva, Susanna Mikhailovna; Karkhachev, Jury Georgievich; Muratov, Valerian Matveevich; and Raginsky, Leonid Solomonovich,3,554,380.

Karla, Heinz: *See—*
Jochim, Friedrich; Peetz, Dieter; Karla, Heinz; and Luerssen, Hermann,3,553,833.

Karlyn, Albert A.; and Fedak, Daniel W., to Gentex Corporation. Map holder. 3,553,864, Cl. 40-10.

Karohl, Jimmy G., to Perkin-Elmer Corporation, The. Chromatogram analyzer. 3,555,260, Cl. 235-183.

Karpacheva, Susanna Mikhailovna; Karkhachev, Jury Georgievich; Muratov, Valerian Matveevich; and Raginsky, Leonid Solomonovich. Device for preparing thick pulp. 3,554,380, Cl. 210-412.

Karpowicz, William. Pressure engine. 3,554,097, Cl. 92--136

Kaser, Louis D.: *See—*
Zwiacher, Wayne E.; Kaser, Louis D.; Johnson, Maurice V., Jr.; Fennell, Alfred H.; and Riddington, Fred W.,3,553,926.

Katanosaka, Akisato: *See—*
Arakawa, Morimasa; Yamada, Bunjiro; Katanosaka, Akisato; and Kato, Kazuhiko,3,554,940.

Kataoka, Hirohisa: *See—*
Katsumura, Tatsuo; Kataoka, Hirohisa; and Mizuno, Yutaka,3,555,148.

Kato, Kazuhiko: *See—*
Arakawa, Morimasa; Yamada, Bunjiro; Katanosaka, Akisato; and Kato, Kazuhiko,3,554,940.

Katsumura, Tatsuo; Kataoka, Hirohisa; and Mizuno, Yutaka, to Nitto Kasei Co., Ltd. Fungicides. 3,555,148, Cl. 424-78.

Kattner, Drich; Voelcker, Sven; Westram, Werner; and Nemeth, Manfred, to Siemens Aktiengesellschaft. Type lever support for typewriters and similar machines. 3,554,346, Cl. 197-42.

Katz, Jacob. Imidazoline surfactant having amphoteric properties. 3,555,041, Cl. 260-309.6

Katz, Marvin. Sliding door fastener. 3,554,592, Cl. 292-263.

Kawabe, Tsuneo; Ishigami, Noriakira; and Ban, Masashi, to Aisin Seiki Company Limited. Hydraulic brake pressure control assembly. 3,554,611, Cl. 303-6.

Kawana, Yoshiyuki; and Iwata, Saburo, to Sony Corporation. Semiconductor device. 3,555,373, Cl. 317-234.

Kearney, James L.: *See—*
Herman, Andrew E.; and Kearney, James L.,3,554,607.

Keast, Russell R.: *See—*
Keay, Robert E.; and Keast, Russell R.,3,554,915.

Keay, Robert E.; and Keast, Russell R., to FMC Corporation. Cleansing and sanitizing compositions. 3,554,915, Cl. 252-99.

Keck, Max H., to Goodyear Tire & Rubber Company, The. Polyesters modified with sulfophenylindan dicarboxylic acid and derivatives. 3,554,975, Cl. 260-75.

Keeler, Eugene R.; and Zatsky, Norman C., to Timex Corporation. Electronic watch. 3,553,955, Cl. 58-28.

Keene, Carl E., to Hughes Aircraft Company. Process for etching and electroplating a printed circuit. 3,554,876, Cl. 204-15.

Keller & Knappich GmbH: *See—*
Schoellhorn, Martin; and Schaffler, Georg, 3,554,119.

Keller, Ronald C.: *See—*
Wysocki, Kazmier; Flynn, Michael J.; Paitchell, Harold; and Keller, Ronald C.,3,554,841.

Kelley, Arnold E.: *See—*
Wood, Frederick C.; Reeg, Cloyd P.; Kelley, Arnold E.; and Cheadle, George D.,3,554,898.

Kellner, Jordan D., to United States of America, Atomic Energy Commission, mesne. Thermoelectric elements comprising bismuth bromide or bismuth chloride. 3,554,807, Cl. 136-83.

Kelly, Donald A. Closed bi-cycle tangential flow turbine. 3,553,963, Cl. 60-24.

Kemeny, George A.: *See—*
Bruning, Armin M.; Kienast, Peter F.; Kemeny, George A.; and Hirayama, Chikara,3,554,715.

Kennecott Copper Corporation: *See—*
Denny, Jere Robert; and Krishnaswamy, Deenahalli S.,3,554,516.

Kennedy, Howard V., to Texas Instruments, Incorporated. Infrared optical system utilizing circular scanning. 3,554,628, Cl. 350-1.

Kennedy, Hugh W., Jr., to General Electric Company. Two-directional rotation clutch assembly. 3,554,338, Cl. 192-48.92

Kent, Edmund J.: *See—*
Goetschius, George K.; and Kent, Edmund J.,3,554,150.

Keough, William R., 45% to Multifastener Company. Conveyor apparatus. 3,554,361, Cl. 198-194.

Kerfoot, Oliver Carl; Marshall, David W.; Krehbiel, Delmar D.; and Groves, William L., Jr., to Continental Oil Company. Viscosity modification of amine salts of linear alkylaryl sulfonates. 3,554,916, Cl. 252-152.

Kerlie, Walter L., to United States Steel Corporation. Furnace for producing steel continuously. 3,554,519, Cl. 266-34.

Kerrutt, Gunter: *See—*
Emde, Hans; Kerrutt, Gunter; Weber, Heinrich; and Blumel, Harald,3,554,988.

Kerth, William J. Welding machine with digital pulse control. 3,555,239, Cl. 219-125.

Key, Charles R.: *See—*
Mac Donald, Frank H.; and Key, Charles R.,3,555,499.

Kheghatian, Habet M.: *See—*
Maloney, Richard P.; Kheghatian, Habet M.; and Dempsey, James F.,3,554,994.

Kice, Jack W.,: *See—*
Kice, Jack W.; and Vanderlip, Herbert D., 3,554,220.

Kice, Jack W.; and Vanderlip, Herbert D., to Kice, Jack W., Kice, Russell W., Kice, James V., d/b/a K-B Engineering Company. High volume, rapid release discharge valve. 3,554,220, Cl. 137-489.3

Kice, James V.: *See—*
Kice, Jack W.; and Vanderlip, Herbert D., 3,554,220.

Kice, Russell W.,: *See—*
Kice, Jack W.; and Vanderlip, Herbert D., 3,554,220.

Kichline, Thomas P.; Stahlheber, Norman Earl; and Vetter, James L., to Monsanto Company. Alkali metal aluminum phosphate emulsifier composition and its preparation. 3,554,921, Cl. 252-351.

Kiekhaefer, Elmer Carl, to Brunswick Corporation. Reed block crankcase induction for two-cycle engines. 3,554,172, Cl. 123-73.

Kienast, Peter F.: *See—*
Bruning, Armin M.; Kienast, Peter F.; Kemeny, George A.; and Hirayama, Chikara,3,554,715.

Kienzle Apparate GmbH: *See—*
Spauszus, Siegfried; Kohler, Wolfgang; Blieske, Herbert; and Vetter, Klaus-Peter, 3,555,244.

Kigane, Koji; Ishihara, Nobuji; and Koga, Kazuo, to Teijin Limited. Process for the production of vapour permeable microporous structures and structures obtained by the process. 3,554,789, Cl. 117-161.

Kihara, Shiso; Nosaka, Hiroshi; and Koyama, Takuji, to Mitsubishi Jukogyo Kabushiki Kaisha. Automatic flow control valve. 3,554,222, Cl. 137-501.

Kikkawa, Osamu; and Kambayashi, Akira, to Nippon Kokan Kabushiki Kaisha. Steel alloy containing low chromium and copper. 3,554,734, Cl. 75-124.

Kilbourn, Dorwin L.: *See—*
Peacher, Teddy J.; and Kilbourn, Dorwin L.,3,555,339.
Peacher, Teddy J.; and Kilbourn, Dorwin L.,3,555,340.

Kilgore, Ronald V., to Vesuvius Crucible Company. Coated stopper head for controlling outflow of molten metal through the nozzle of a bottom pour receptacle. 3,554,489, Cl. 251-356.

Kimberly-Clark Corporation: *See—*
Anderson, Richard D., 3,553,792.
Bullwinkel, Edward P.; and Selke, William A., 3,555,377.

Kimsey, Vale G., to Bemis Company, Inc. Multiwall paper bag with rip cord. 3,554,437, Cl. 229-66.

King, James F., Jr., to Bahnson Company, The. Pneumatic cleaning apparatus for the lickerin section of carding machines. 3,553,791, Cl. 19-107.

King of Prussia Research and Development Corporation: *See—*
Denkowski, Walter J., 3,554,337.

King, Ralph W. Mass transfer media and method of operation. 3,554,501, Cl. 261-84.

King-Seeley Thermos Co.: *See—*
Linstead, Robert S., 3,553,887.

Kingsbury, George R.: *See—*
Turk, Victor J.; Junge, Charles H.; and Kingsbury, George R.,3,553,806.

Kinoshita, Hidejiro: *See—*
Hayashi, Tsuento; Kinoshita, Hidejiro; and Iwahashi, Koji,3,555,236.

Kious, Dane R.: *See—*
Sorenson, Bill W.; Kious, Dane R.; and Denhardt, Carl,3,554,142.

Kircher, Hartmann J., III, to Thiokol Chemical Corporation. Propellant feed system for rocket powerplants. 3,553,964, Cl. 60-39.14

Kirchner, Norbert: *See—*
Ginsberg, Ernst; Hake, Oswald; Kirchner, Norbert; Uden, Edward; Zittlau, Helmut; and Schreihage, Wilhelm,3,555,371.

Kirk, Colin John; and Bailey, Reginald John, to Martonair Limited. Fluid distribution valve. 3,554,224, Cl. 137-555.

Kirk, Harry V.; and Doane, James E., to Cheshire Incorporated. Addressing machine. 3,554,843, Cl. 156-521.

Kirk, William H. Positioning mechanism for machine tool. 3,554,046, Cl. 74-424.8

Kishida, Etuji; and Ishida, Takuo. Indicating system of operational state of parking brake for a bicycle. 3,554,156, Cl. 116-114.

Kitajima, Senjyo: *See—*
Yamada, Toru; and Kitajima, Senjyo,3,553,809.

Kitchens of Sara Lee, Inc.: *See—*
Artiaga, Mariano V.; Storrie, Arthur; and Suzik, Brian P., 3,554,252.

Kittleman, Edmund T.; and Zuech, Ernest A., to Phillips Petroleum Company. Rare earth metal halides with organoaluminums as olefin reaction catalysts. 3,554,924, Cl. 252-429.

Kizilos, Apostolos P., to Honeywell Inc. Supervisory apparatus. 3,554,208, Cl. 137-81.5

Kjellberg, Lars-Gunnar: *See—*
Leksell, Lars; Kjellberg, Lars-Gunnar; and Olofsson, Sven,3,554,186.

Klaiber, George Stanley, to Wurlitzer Company, The. Plastic piano action. 3,554,071, Cl. 84-237.

Klamp, Walter K.: *See—*
Shoemaker, Paul S.; and Klamp, Walter K.,3,554,260.

Klapdohr, Friedrich: *See—*
Kampf-Emden, Gerd; Horst, Heinz; and Klapdohr, Friedrich,3,554,603.

Kleb, Karl-Gustave: *See—*
Zirner, Joachim; and Kleb, Karl-Gustave,3,555,081.

Kleiman, Joseph P., to Ethyl Corporation. Method of removing manganese oxide deposits. 3,554,801, Cl. 134-3.

Klein, Harold T., to Robbins, James S., and Associates, Inc. Breakout apparatus for a sectional drill stem. 3,554,298, Cl. 173-164.

Kleysteuber, William K., to United States Steel Corporation. Rotary apparatus for feeding granular material into an evacuated receiver. 3,554,406, Cl. 222-30.

Kline, Milton: *See—*
Rosis, Constantine; Kline, Milton; Dickstein, Jack; and Wechsler, Harry C.,3,554,954.

Kline, Smith, & French Laboratories: *See—*
Loev, Bernard; and Macko, Edward, 3,555,030.

Klockner-Humboldt-Deutz Aktiengesellschaft: *See—*
Decker, Hanns, 3,553,775.

Klund, William E.: *See—*
Nye, Robert G.; Marciano, Joseph J.; Klund, William E.; and Prager, Roger H.,3,555,498.

Klupt, Carle D., 40% to Sack, Sylvan H. Game score cards. 3,554,159, Cl. 116-120.

Knapp, Edmund C.; Markhart, Albert H.; and Serlin, Irving, to Monsanto Company. Polyimide foams. 3,554,935, Cl. 260-2.5

Knapp, Rex C.: *See—*
Rogers, Richard E.; and Knapp, Rex C.,3,554,291.

Knapsack Aktiengesellschaft: *See—*
Sennewald, Kurt; Hauser, Alfred; and Winfried, Lork, 3,555,082.

Knasinski, Max S.: *See—*
Halvorson, John A.; Knasinski, Max S.; Risberg, Robert L.; and Serbiak, Richard P.,3,555,384.

Knecht, Fritz. Knife blade for machines producing sausage filling material. 3,554,254, Cl. 146-106.

Knechtel, Herbert: *See—*
Engel, Peter H.; and Knechtel, Herbert,3,554,766.

Knechtel, Wilhelm. Method of making a powder dispensing cylinder for an electrostatic powder fixing device. 3,553,832, Cl. 29-607.

Kneidl, Franz A.; and Amsden, Rollin M., Jr., to Stanley Works, The. Wireless strapping seal. 3,553,794, Cl. 24-23.

Knight, Hogan B.: *See—*
Parker, Winfred E.; Knight, Hogan B.; Koos, Ronald E.; Ault, Ealdo C.; and Ault, Waldo C.,3,555,057.

Knight, Hugh P. Folding ladder. 3,554,318, Cl. 182-24.

Knight, Stanley P.: *See—*
Caulton, Martin; Knight, Stanley P.; and De Stefano, Ralph,3,554,821.

Knorr-Bremse, G.m.b.H.: *See—*
Pollinger, Hans, 3,554,331.

Knox, Kent B.: *See—*
Rodgers, Elbert A.; Huddle, Thornton C.; and Knox, Kent B.,3,554,143.

Kobayashi, Tsuyoshi: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hiroshashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; Kobayashi, Tsuyoshi; and Izumi, Takahiro,3,555,013.
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,555,014.

Kober, Ehrenfpied H.; Schnabel, Wilhelm J.; and Steudler, Paul A., to Olin Corporation. Stabilization of tolylene diisocyanate. 3,555,072, Cl. 260-453.

Koblin, Abraham; and Greeburger, George R., to United States of America, Army. Continuous tape sampler. 3,554,005, Cl. 73-28.

Kobnick, Werner: *See—*
Berg, Arthur A.; and Kobnick, Werner,3,554,230.

Koch, Charles P.: *See—*
De Angelis, Milo; and Koch, Charles P.,3,554,133.

Koedam, Mijndert; and Wanmaker, Willem Lambertus, to U.S. Philips Corporation, mesne. Cadmium vapor discharge lamp containing a europium activated phosphor. 3,555,336, Cl. 313-109.

Koehring Company: *See—*
Premo, Charles N., 3,553,772.

Koga, Kazuo: *See—*
Kigane, Koji; Ishihara, Nobuji; and Koga, Kazuo,3,554,789.

Kohl, Arthur L., to North American Rockwell Corporation. Reverse osmosis module having spirally wrapped reverse osmosis membrane fabric. 3,554,378, Cl. 210-321.

Kohl, Gerald C. Cervical biopsy sampling instrument. 3,554,185, Cl. 128-2.

Kohler, Wolfgang: *See—*
Spauszus, Siegfried; Kohler, Wolfgang; Blieske, Herbert; and Vetter, Klaus-Peter,3,555,244.

Kojima, Minoru: *See—*
Ando, Satoshi; Tanaka, Yusaku; Kojima, Minoru; and Fujimura, Kyoichi,3,554,980.

Kok, Jurgen: *See—*
Kuehnle, Manfred R.; and Kok, Jurgen,3,555,201.

Kolypaev, Nikolai Vasilievich; Vekke, Alexandr Ivanovich; Ivanov, Ivan Petrovich; Kravtsov, Lev Nikolaevich; and Shmukler, Iosif. Hydraulic shears for cutting up moving ingots. 3,554,066, Cl. 83-316.

Kominami, Naoya; Iwaisako, Toshiyuki; Tanaka, Kyugo; and Ohki, Kusuo, to Asahi Kasei Kogyo Kabushiki Kaisha. Aromatization with a chromium-platinum- palladium catalyst. 3,554,901, Cl. 208-136.

Kondo, Kiyohire: *See—*
Nakajima, Isao; Suzuki, Miichiro; Yamaguchi, Makio; and Kondo, Kiyohire,3,555,063.

Kondratiev, Evgeny Mikhailovich: *See—*
Andoniev, Sergei Mikhailovich; Berman, Mark Nikolaevich; Zhitnik, Georgy Gavrilovich; Kondratiev, Evgeny Mikhailovich; Levitasov, Yakov Matveevich; Makarov, Konstantin Ivanovich; Pevny, Nikolai Ivanovich; Pokrass, Leonid Moiseevich; Pochtman, Alexandr Markovich; Robin, Mark Anisimovich; Tesner, Pavel Alexandrovich; Sheinfain, Felix Isaakovich; and Filipiev, Oleg Vladimirovich,3,554,507.

Konig, Reinhard, to Carinthia Elektrogerate Gesellschaft m.b.H., Firma. Cutter head for a dry shaver. 3,553,837, Cl. 30-34.1

Konishiuroku Photo Industry Co., Ltd.: *See—*
Kuwabara, Yoshimi; and Sugita, Sadao, 3,554,757.

Konstantinu, Ilias; and Wilcox, Merton F. Femur setting surgical device. 3,554,193, Cl. 128-92.

Konsultbyran Iko Aktiebolag: *See—*
Sohoel, Eivind Olav, 3,554,012.

Koos, Ronald E.: *See—*
Parker, Winfred E.; Knight, Hogan B.; Koos, Ronald E.; Ault, Ealdo C.; and Ault, Waldo C.,3,555,057.

Kopaska, Arnold F. Implement transport. 3,554,295, Cl. 172-398.

Koppers Company, Inc.: *See—*
Medney, Jonas, 3,554,839.

Kopsch, Paul J.; Turcus, Daniel, Jr.; and Ward, Donald Francis. Method of making a bullet. 3,553,804, Cl. 29-1.3

Koren, William: *See—*
Kramer, Walter W.; and Koren, William,3,553,847.

Korkisch, Johann: *See—*
Orlandini, Kent A.; and Korkisch, Johann,3,554,693.
Orlandini, Kent A.; and Korkisch, Johann,3,554,709.

Korsch, Alfred, to Gerber & Co., G.m.b.H. Textile treating device. 3,553,983, Cl. 68-177.

Korte, Richard M.: *See—*
Frind, Gerhard; Hunziker, Rudolf; and Korte, Richard M.,3,555,224.

Korth, Jurgen. Control valve assembly for a pneumatically operated fastener device. 3,554,233, Cl. 137-625.6

Kosanke, Kurt M.: *See—*
Duda, William L.; Kosanke, Kurt M.; Kulcke, Werner W.; and Max, Erhard,3,554,634.

Koster, Robert A.: *See—*
Henderson, Martin C.; and Koster, Robert A.,3,555,538.

Kostin, Vladimir Nikolaevich; Paramonov, Ivan Vasilievich; and Tsyganov, Viktor Vladimirovich. Method of processing ores and concentrates containing rare metals and a unit for effecting said method. 3,555,164, Cl. 13-9.

Kotala, James R.: *See—*
Shannon, Bill M.; and Kotala, James R.,3,555,293.

Kotlier, Jacob L.: *See—*
Stedman, Victor S., 3,554,321.

Kotos, Peter, to General Electric Company. Alternating current circuit breaker having a control for timing opening relative to the current wave. 3,555,354, Cl. 317-11.

Koyama, Takuji: *See—*
Kihara, Shiso; Nosaka, Hiroshi; and Koyama, Takuji,3,554,222.

Kozawa, Tokinori, to Hitachi, Ltd. Frequency converter circuit. 3,555,303, Cl. 307-260.

Kozelnicky, Edward D., to Western Electric Company, Incorporated. Process for eliminating icicle-like formations on soldered circuit substrates. 3,553,824, Cl. 29-487.

Koziara, Robert P., to International Harvester Company. Casting and machining of an internally ported and passaged cylinder head. 3,553,808, Cl. 29-156.7

Kramer, Charles M.; and Sober, Kenneth. Toothbrush. 3,553,759, Cl. 15-110.

Kramer, David C.: *See—*
Ballard, Louis M.; Beebe, Wayne M.; Kramer, David C.; and Rogers, Waldo I.,3,553,787.

Kramer, Josef: *See—*
Irmscher, Klaus; Kramer, Josef; Halpaap, Herbert; and Freisberg, Karl-Otto,3,555,047.

Kramer, Walter W.; and Koren, William, to Fuller Company. Fluidized bed reactor. 3,553,847, Cl. 34-57.

Krausse, Rudolf, to Hoesch Maschinenfabrik Deutschland AG. Charging arrangement. 3,554,682, Cl. 431-202.

Kravtsov, Lev Nikolaevich: *See—*
Kolypaev, Nikolai Vasilievich; Vekke, Alexandr Ivanovich; Ivanov, Ivan Petrovich; Kravtsov, Lev Nikolaevich; and Shmukler, Iosif,3,554,066.

Krebs, Daniel F.: *See—*
Schwartz, Joel M.; and Krebs, Daniel F.,3,554,673.

Krehbiel, Delmar D.: *See—*
Kerfoot, Oliver Carl; Marshall, David W.; Krehbiel, Delmar D ; and Groves, William L., Jr.,3,554,916.

Kreider, James F., to Avco Corporation. Specimen positioning apparatus for use with a back reflection X-ray camera. 3,555,275, Cl. 250-51.5

Kreisler Manufacturing Corporation: *See—*
Gluck, Louis; and Siska, John G., 3,554,414.

Krembs, George M.: *See—*
Hyman, Clifton E.; and Krembs, George M.,3,554,889.

Kress, Robert F.: *See—*
Lorenz, Eldon L.; and Kress, Robert F.,3,554,665.

Krieger, Friedrich, to Siemens Aktiengesellschaft. Method of applying a discrete layer of metallic substance over a metal pattern on an insulating carrier. 3,554,793, Cl. 117-212.

Krieger, Roland L.: *See—*
Pfister, Anthony C.; Krieger, Roland L.; and Drinan, Gary J.,3,555,355.

Krimm, Heinrich: *See—*
Buysch, Han-Josef; Krimm, Heinrich; and Schnell, Hermann,3,555,101.

Kring, Joseph R.; and Schraner, Josef F. Energy dissipating hydraulic systems. 3,554,528, Cl. 267-1.

Krishnaswamy, Deenahalli S.: *See—*
Denny, Jere Robert; and Krishnaswamy, Deenahalli S.,3,554,516.

Kritzler, Gerhard, to Apparatebau Rothemuhle Brandt & Kritzler. Elements for regenerative heat exchangers. 3,554,273, Cl. 165-10.

Kruizenga, Gerrit H.: *See—*
Jackoboice, Edward J.; and Kruizenga, Gerrit H.,3,554,678.

Kuehnle, Manfred R.; and Kok, Jurgen, to DASA Corporation. Electronic repertory dialer. 3,555,201, Cl. 179-90.

Kuhle, Erich. Laminated floor covering and method of making same. 3,554,850, Cl. 161-38.

Kuhlemann, Karl Heinrich, to Rehau-Plastiks G.m.b.H. Apparatus for forming a socket-shaped end on plastic pipes. 3,553,780, Cl. 18-19.

Kuito, Akio: *See—*
Nitta, Tsuneharu; Kuito, Akio; Nagase, Kaneomi; Iguchi, Takashi; and Taki, Hiromitsu,3,555,376.

Kulcke, Werner W.: *See—*
Duda, William L.; Kosanke, Kurt M.; Kulcke, Werner W.; and Max, Erhard,3,554,634.

Kuney, Samuel B., to Swiss Knitting Company. Apparatus for the spot shaping of knit fabric and resultant fabrics produced thereby. 3,553,981, Cl. 66-79.

Kunii, Kazushi: *See—*
Takamura, Akira; Kunii, Kazushi; Seharada, Saburo; and Nakatani, Hiroshi,3,554,327.

Kunz, Gerhard, to GHH-M.A.N. Technik Gesellschaft fur Anlagenbau m.b.H., mesne. Ion exchange apparatus for treating liquids. 3,554,376, Cl. 210-189.

Kunz, Otto, to Feintool AG. Precision cutting punching tool for precision punching of parts. 3,554,065, Cl. 83-124.

Kuo, Samuel Chung-Shu, to Sylvania Electric Products, Inc. Cavity backed spiral antenna with mode suppression. 3,555,554, Cl. 343-895.

Kuo, Wen Ling; and Anderson, John R., to Union Carbide Corporation. Gas purification process. 3,554,691, Cl. 23-2.

Kupcikevicius, Vytautas: *See—*
Myles, Michael J.; Kupcikevicius, Vytautas; and Beckman, John H.,3,553,769.

Kuroda, Takaji; Tagashira, Yoshimi; and Nomura, Hideo, to Nippon Electric Company, Limited. Microwave swtiching device empolying a reed switch element. 3,555,465, Cl. 333-73.

Kuroki, Motoharu; and Takagi, Akira, to Fuji Photo Film Co., Ltd. Drying apparatus for flexible supports. 3,553,848, Cl. 34-115.

Kurtz, Ronald C., to Westinghouse Air Brake Company. Hydraulic directional control valve device. 3,554,234, Cl. 137-625.64

Kusaka, Kunio; and Tsurumi, Kunihiro, to Tokushu Seiso Co., Ltd. High temperature corrosion-resistant austenitic steel. 3,554,736, Cl. 75-128.

Kusch, Edward K.: *See—*
Britton, Leon R.; Johnson, Kurt T.; Kusch, Edward K.; and Williams, Bernhard O.,3,555,229.

Kushida, Masagoro: *See—*
Yamashita, Makoto; and Kushida, Masagoro,3,554,582.

Kuwabara, Yoshimi; and Sugita, Sadao, to Konishiuroku Photo Industry Co., Ltd. Stabilized photographic silver halide composition. 3,554,757, Cl. 96-109.

Kuwik, John J.; Stevenson, Thomas E.; and Yagoda, John J., to Bailey Meter Company. Thrust limiting spring coupling. 3,554,483, Cl. 251-77.

Kviesitis, Boris, to UY Lactos Laboratories Inc. Phenothiazine compositions and methods of preparing same. 3,555,156, Cl. 424-247.

La Belle, Laurence T., to Miner Enterprises, Inc. Draft gear mechanism. 3,554,386, Cl. 213-22.

Laboratoires Jacques Logeais: *See—*
Maillard, Jacques Georges Albert, 3,555,033.

Lacroix, Arthur J., Jr., to Raybestos-Manhattan, Inc. Organic fiber-anthophyllite fiber sheet as a friction material. 3,554,860, Cl. 162-145.

Ladd, Frederick F., Jr.; and Nettleton, David L., to Mohawk Data Sciences Corporation. Asynchronous master-slave print system employing charging and discharging of a capacitor. 3,555,183, Cl. 178-35.

La Force, Richard C., to Sinclair Oil Corporation. Gravimeter. 3,554,034, Cl. 73-382.

Laigle, Roger E.: *See—*
Palmer, Earl W.; Laigle, Roger E.; and Kabelka, Peter J.,3,553,831.

Laine, Paavo J., to Oy Tampella AB. Relief and raising device arrangement in multi-nip calender. 3,554,118, Cl. 100-163.

Laing, Nikolaus. Method of making spherical bearings. 3,553,807, Cl. 29-149.5

Lallak, Stanley M. Tool for installing resilient seals. 3,553,817, Cl. 29-235.

Lally, Joseph E.: *See—*
Vedeen, Leonard I.; Lally, Joseph E.; and Seiden, Herman L.,3,554,547.

Lamb, Donald Charles, to Imperial Chemical Industries Limited. Polymerisation catalysts and uses thereof. 3,554,992, Cl. 260-91.1

Lamb, Douglas J.: *See—*
McKelvy, William R., Jr.; Lamb, Douglas J.; and Dowell, William T.,3,554,083.

Lambert, Jack R., to Fibre-Optics Industries, Inc. Recorder using fiber optics. 3,555,555, Cl. 346-30.

Lambert, Vernon L.; and Gri, Norman J., to Avco Corporation. Indium antomonide infrared detector and process for making the same. 3,554,818, Cl. 148-186.

Landberg, Erik, to Aktiebolaget Fellingsbro Verkstader. Valves. 3,554,442, Cl. 237-59.

Landry, Norman R., to RCA Corporation. Elimination of mode spikes in microwave ferrite phase shifters. 3,555,460, Cl. 333-24.1

Lane, Curtis; and Greenstein, Leon, to Lanex Importing Company. Control and cup-pushing assembly for dispensers. 3,554,364, Cl. 198-221.

Lanex Importing Company: *See—*
Lane, Curtis; and Greenstein, Leon, 3,554,364.

Lang, Armin, to Zahnradfabrik Friedrichshafen Aktiengesellschaft. Servosteering system. 3,554,089, Cl. 91-412.

Langille, Donald W., to ITT Rayonier Incorporated. Plicatin tetraacetate and process for its production. 3,555,046, Cl. 260-343.3

Lansing Research Corporation: *See—*
Littauer, Raphael M., 3,555,453.

Laporte Titanium Limited: *See—*
Jones, Peter M.; and Read, Dennis, 3,554,708.

Lard, Edwin W.: *See—*
Braude, George L.; Cogliano, Joseph A.; and Lard, Edwin W.,3,554,936.
Stahly, Eldon E.; and Lard, Edwin W.,3,555,116.
Stahly, Eldon E.; and Lard, Edwin W.,3,555,117.

Lariccia, Anthony H., to American Sterilizer Company. Strip for staining bacteria. 3,554,871, Cl. 195-127.

Larsen, Arild, to MacMillan Bloedel Limited. Apparatus for trimming articles of varying widths. 3,554,247, Cl. 144-117.

Larsen, Bjorn: *See—*
Skrydstrup, Ole; and Larsen, Bjorn,3,555,185.

Larson, Robert L. Cable connection insulator and seal. 3,555,171, Cl. 174-138.

Lasch, Frank J.; and Stemple, Andrew M., to Zenith Radio Corporation. Heartbeat frequency monitor. 3,554,188, Cl. 128-2.06

Laser Associates: *See—*
Rockwell, Albert M., Jr., 3,555,450.

Laskey, Norman V.: *See—*
Campbell, George T. R.; and Laskey, Norman V.,3,554,152.

Lassanske, George G., to Outboard Marine Corporation. Pressure backed piston rings. 3,554,564, Cl. 277-170.

Lathrop, Francis M., II, to M & J Valve Company, and M & J Development Company. Hydraulic valve operating system and apparatus. 3,553,965, Cl. 60-52.

Laurentie, Michel; Bouteville, Albert; and Pennananec'h, Roger. Process for welding butyl rubber. 3,555,231, Cl. 219-10.53

Lauth, Corliss, to Multifastener Corporation. Die casting apparatus and method for casting articles from molten material having a plurality of horizontally and vertically movable dies. 3,554,272, Cl. 164-319.

Lavin, Edward; and Serlin, Irving, to Monsanto Company. Process for the preparation of a polyimide foam. 3,554,939, Cl. 260-2.5

Lawrence, Charles Reginald: *See—*
Cheeseman, Ian Clifford; Lawrence, Charles Reginald; and Woolford, Thomas George Holmes,3,554,664.

Lawrence, James F., Jr. Rotary position indicator. 3,554,036, Cl. 74-421.

Laycock, Geoffrey, to Underground Mining Machinery Limited. Process for the production of aggregate coated with bituminous material. 3,554,498, Cl. 259-159.

Lear Siegler, Inc.: *See—*
Tersch, Richard W., 3,553,909.

Le Boulbouech, Jean: *See—*
Carre, Pierre; Tanguy, Pierre; and Le Boulbouech, Jean,3,554,137.

Ledbetter, Jerry T.: *See—*
Bauer, Robert F.; Mc Neill, Robert C.; and Ledbetter, Jerry T.,3,554,277.

Lederer, Gerald; Rackham, John M.; and Hemphreys, John P., to British Titan Products Company Limited. Production of pigmentary titanium dioxide. 3,554,777, Cl. 106-300.

Lee, Art, to General Electric Company. Annunciator module with return to normal indicating feature. 3,555,530, Cl. 340-213.1

Lee, Art; and Manning, Ralph M., to General Electric Company. Timing device. 3,555,214, Cl. 200-38.

Lee, Charles A.; and Furbeck, Warren R., to Southeastern Products, Inc., mesne. Method and apparatus for impregnating and drying material in a fibrous web. 3,553,845, Cl. 34-9.

Lee, Edwin S., III, to Burroughs Corporation. Memory system having associative cells for marking locations. 3,555,515, Cl. 340-172.5

Lee, Harry W., Jr., to Reynolds Metals Company. Method for making container means. 3,554,823, Cl. 156-69.

Lee, Sung Chuel; and Brockway, Clifford E., to Hubbell, Harvey, Incorporated. Phase controlled ground fault circuit interrupter. 3,555,360, Cl. 317-18.

Leeds & Northrup Company: *See—*
Garden, Murray, 3,555,252.

Le Fevre, William F., to White Motor Corporation. Cab support. 3,554,596, Cl. 296-28.

Le Grow, Gary E., to Dow Corning Corporation. Organo-lithium derivatives of alpha-silylmethyl sulfides. 3,555,066, Cl. 260-448.2

Le Grow, Gary E., to Dow Corning Corporation. Alpha (silylmethyl) sulfides and the corresponding siloxanes. 3,555,067, Cl. 260-448.2

Legue, Ronald L.: *See—*
Hackman, Donald J.; Harris, Jeremy M.; and Legue, Ronald L.,3,555,383.

Lehman, Charles L. Chisel-lister assembly. 3,554,296, Cl. 172-700.

Lehman, Charles L. Cultivator. 3,554,297, Cl. 172-741.

Leining, Lyndon R., to Hormel, Geo A., & Company. Adjustment mechanism for filler apparatus. 3,554,411, Cl. 222-255.

Leinonen, Leonard L., to Polaroid Corporation. Manufacturing photographic film packets. 3,554,838, Cl. 156-259.

Lejon, Jean C., to Controle Bailey (Societe Anonyme). Solid-state analog computing device for controlling a photo-resistor in non-linear relationship to input. 3,555,263, Cl. 235-194.

Leksell, Lars; Kjellberg, Lars-Gunnar; and Olofsson, Sven, to LKB Medical AB. Apparatus for ultrasonic echo-encephalography. 3,554,186, Cl. 128-2.

Leland, Robert W.: *See—*
Graham, Donald E.; and Leland, Robert W.,3,555,379.

Lemelson, Jerome H. Tool structures. 3,553,905, Cl. 51-206.

Lemelson, Jerome H. Tape cartridge and reader. 3,555,245, Cl. 235-61.11

Lemelson, Jerome H. Document reading apparatus. 3,555,246, Cl. 235-61.11

Lemont, Harold E., to Fairchild Hiller Corporation. Reverse velocity rotor and rotorcraft. 3,554,662, Cl. 416-1.

Lense, Robert F.: *See—*
Johnson, Kenneth R.; and Lense, Robert F.,3,553,934.

Lentz, Klaus: *See—*
Endesfelder, Helmut; Lentz, Klaus; Jando, Klaus; and Schulze, Klaus,3,555,276.

Leonard, Gordon C., to Meat Separator Corporation. Separation of materials having different specific gravities. 3,554,371, Cl. 209-3.

Lepp, Vladimir Romanovich; Seviev, Jury Surenovich; Shapiro, Ilya Samuilovich; Beider, Boris Davydovich; and Persits, Lev Moiseevich. Apparatus for plasma arc metal machining. 3,555,234, Cl. 219-69.

Lerner, Leonard J.: *See—*
Pan, Samuel C.; Semar, Joan; Principe, Pacifico A.; and Lerner, Leonard J.,3,554,870.

Lesser, Carl W., to General Motors Corporation. Valve stem seal. 3,554,180, Cl. 123-188.

Lever Brothers Company: *See—*
Johnson, Richard Shaw, 3,555,008.

Levine, Edward M.: *See—*
Enkoji, Takashi; and Levine, Edward M.,3,555,154.

Levitasov, Yakov Matveevich: *See—*
Andoniev, Sergei Mikhailovich; Berman, Mark Nikolaevich; Zhitnik, Georgy Gavrilovich; Kondratiev, Evgeny Mikhailovich; Levitasov, Yakov Matveevich; Makarov, Konstantin Ivanovich; Pevny, Nikolai Ivanovich; Pokrass, Leonid Moiseevich; Pochtman, Alexandr Markovich; Robin, Mark Anisimovich; Tesner, Pavel Alexandrovich; Sheinfain, Felix Isaakovich; and Filipiev, Oleg Vladimirovich,3,554,507.

Lewallen, Bernard E., to Hurletron Incorporated. Control of color densities and tones in multi- color printing. 3,554,123, Cl. 101-170.

Lewis Engineering Company: *See—*
Blackwell, Dana J., 3,555,419.

Lewis, Gerald F. Automatic marker buoys. 3,553,751, Cl. 9-9.

Lewis, Richard E.: *See—*
White, George S.; Lewis, Richard E.; and Zonn, Lincoln M.,3,555,532.

Lewis, William L. Control and power operating means for vehicle mounted tool. 3,554,292, Cl. 172-4.5

Ley, Kurt; Eholzer, Ulrich; Metzger, Karl-Georg; and Fritsche, Dieter, to Farbenfabriken Bayer Aktiengesellschaft. 2-Methyl-3-amidinoquinoxaline-1,4-di-N- oxides and their production. 3,555,025, Cl. 260-250.

Libbey-Owens-Ford Company: *See—*
Bracken, Aubrey T.; Ray, Charles L.; and Schafer, Conrad B., 3,554,725.

Miller, Alfred H.; Perry, Glenn; and Wheat, Lawrence C., 3,553,781.
Ritter, George F., Jr.; and Hymore, Frank J., 3,554,724.

Liberman, Harvey W.; Toppins, Charles R.; and Alford, Paul D., to Dempster Brothers, Inc. Stationary packer assemblies. 3,554,120, Cl. 100-229.

Liberson, Wladimir Theodore. Electromechanical prosthetic devices for the control of movements in handicapped individuals. 3,553,738, Cl. 3-1.1

Licentia Patent-Verwaltungs-G.m.b.H.: *See—*
Schimmelpfennig, Peter, 3,555,264.

Licke, George C., to Ethyl Corporation. Gasoline containing N-sulfinyl amine. 3,554,712, Cl. 44-74.

Lickliter, Robert P.; Abbott, Earl; and Reeves, John F., to Flangeklamp Corporation. Wall structure. 3,553,916, Cl. 52-281.

Lieberman, Erwin Paul, to Du Pont de Nemours, E. I., and Company. Method for preparing an element having a substrate coated with a pressure-insensitive, closed- microcelled composition. 3,554,786, Cl. 117-60.

Liebert, Karl-Heinz, to Zahnradfabrik Friedrichshafen Aktiengesellschaft. Booster steering control device. 3,553,966, Cl. 60-0.52

Liederbach, William H.; and Pessel, Leopold, to RCA Corporation. Metallization of titanate wafers. 3,554,796, Cl. 117-227.

Lilet, Leonard: *See—*
Van Den Hove, Christian Marie; Lilet, Leonard; Cosse, Paul Andre; and Wybo, Maurice Augustin,3,554,019.

Lilly, Eli, and Company: *See—*
Gorman, Marvin; and Hamill, Robert L., 3,555,150.

Limberg, Allen Le Roy, to RCA Corporation. Electrical circuits. 3,555,309, Cl. 307-297.

Lindberg, Victor L.: *See—*
Harvey, James E.; Irland, Max J.; and Lindberg, Victor L.,3,554,722.

Linde Aktiengesellschaft: *See—*
Wagner, Jakob, 3,554,849.

Lindemann, Robert F., to Tenneco Chemicals, Inc. Methods of protecting plants from fungi. 3,555,157, Cl. 424-270.

Lindner, Herbert, G.m.b.H.: *See—*
Stade, Gerhard, 3,553,893.

Link, Howard; Bridwell, Harold C.; and Rowley, David S., to Christensen Diamond Products Company. Retractable drill bits. 3,554,304, Cl. 175-259.

Linke, Ernest George: *See—*
Hankinson, Cloyce L.; Linke, Ernest George; and Seleen, William Arvid,3,554,772.

Linstead, Robert S., to King-Seeley Thermos Co. Toy vehicle window construction. 3,553,887, Cl. 46-223.

Lion Fat & Oil Co., Ltd.: *See—*
Marumo, Hideo; and Saitoh, Minoru, 3,555,079.

Lipsky, Marcus; Mahan, William J.; Mahan, Dorothy C., executrix; and Mahan, William J., deceased, to Hunt-Wesson Foods, Inc., mesne. Packaged food product. 3,554,770, Cl. 99-174.

L'Italien, Yvon Jean, to Davis, Parke, & Company. 2,α-Dimethyl-β-ethyl-β-(p-fluorophenyl)- ethylamines and the salts thereof. 3,555,093, Cl. 260-570.8

Lithoplate, Inc.: *See—*
Thomas, Daniel C., 3,554,751.

Littauer, Raphael M., to Lansing Research Corporation. Stabilization of lasers or the like. 3,555,453, Cl. 331-94.5

Little, Donald M.; and Hettick, George R., to Phillips Petroleum Company. Removal of sulfur dioxide and carbon dioxide from stack gases. 3,553,936, Cl. 55-40.

Littmann, Joseph C., to Dura Corporation. Momentary flexible overload release device for a motor drive. 3,554,045, Cl. 74-411.

Litton Industries, Inc.: *See—*
Price, Ralph E.; and Snyder, Glenn M., 3,553,907.

Litton Precision Products, Inc.: *See—*
Nielsen, James W.; and Florio, Gerald C., Sr., 3,555,452.

Litvinov, Nikolai Alexandrovich; Pozin, Boris Mikhailovich; and Emelianenko, Vladimir Vasilievich, to Chelyabinsky Traktorny Zavod. Running gear for an endless track tractor. 3,554,616, Cl. 305-14.

LKB Medical AB: *See—*
Leksell, Lars; Kjellberg, Lars-Gunnar; and Olofsson, Sven, 3,554,186.

Lloyd, Wayne B.: *See—*
United States of America,National Aeronautics and Space Administration, Administrator, 3,554,466.

Lock, Joseph H., to Mead Corporation, The. Fully enclosed carton for returnable items. 3,554,402, Cl. 220-115.

Lock, Joseph H., to Mead Corporation, The. Carton having article cushioning structure. 3,554,431, Cl. 229-28.

Lodge & Shipley Company, The: *See—*
Rowekamp, Edward F., 3,553,932.

Lodge-Cottrell Limited: *See—*
Dyla, John F., 3,553,939.

Lodige, Alois. Device for altering the immersion depth in fluids by means of a height-adjustable, immersible false bottom. 3,553,743, Cl. 4-172.13

Loev, Bernard; and Macko, Edward, to Kline, Smith, & French Laboratories. Muscle relaxant and analgesic compositions. 3,555,030, Cl. 260-289.

Loewenthal, Henry J.: *See—*
Malm, Curtis L.; and Loewenthal, Henry J.,3,554,658.

Logetronics, Inc.: *See—*
Street, John N.; Brady, William I.; and McIntosh, Walter L., 3,554,109.

Lok-Products Co.: *See—*
Sutter, Ormond S., 3,555,267.

Lomaglio, Francis Leo: *See—*
Manley, Charles G.; and Lomaglio, Francis Leo, 3,554,115.

Long, Frank; and Ayad, Kamal Naguib, to Monsanto Chemicals Limited. Halophenyl-pyridines. 3,555,031, Cl. 260-290.

Long, Frank; and Ensor, Gordon Roy, to Monsanto Chemicals Limited. Polyamide acids and polyimides prepared from a mixture of polycarboxylic acid anhydrides. 3,554,969, Cl. 260-47.

Long, Robert Alvin; and Over, William Roderick, to AMP Incorporated. Bundle tie. 3,553,793, Cl. 24-16.

Longerich, Ernest P.; and Rudy, Erland W., to Bendix Corporation, The. Sonar detection system. 3,555,500, Cl. 340-3.

Lonnemo, Kurt R., to Sperry Rand Corporation. Constant power regulator for hydraulic pumps. 3,554,093, Cl. 92-13.1

Loomis Machine Company: *See—*
Hecker, Robert W., Jr.; and Beckwith, Robert C., 3,553,756.

Looms, John Sidney Thomas: *See—*
Smith, Carl A.; Looms, John Sidney Thomas; and Ely, Cyril Harold Arthur, 3,554,319.

Lorbon Manufacturing Co., Inc.: *See—*
Brand, Paul M.; and Reich, Lawrence, 3,555,193.

Lorenz, Eldon L.; and Kress, Robert F., to Michigan Wheel Company. Flow through propeller. 3,554,665, Cl. 416-93.

Lovdahl, Robert A.: *See—*
Thomas, Vitas T.; and Lovdahl, Robert A., 3,554,529.

Lovegrove, Henry Joseph, to Sangamo Weston Limited. Synchronous motors with disklike rotor. 3,555,324, Cl. 310-162.

Lowe, Jack G., to Burton Delingpole & Company Limited. Couplers for scaffold tubes. 3,554,583, Cl. 187-53.5

LTV Ling Altec, Inc.: *See—*
Gibbs, Allen G., 3,555,358.

Lucas, Bernard J., to United States Steel Corporation. Fume-exhaust hood for electric furnace. 3,555,163, Cl. 13-1.

Lucas, Joseph, (Industries) Limited: *See—*
Skinner, Robert Thomas John, 3,554,207.

Lucka, Eugene R., to Reliance Electric Company. Non-contact displacement pickup employing coaxial signal coupling. 3,555,416, Cl. 324-61.

Luckett, Thomas J., Sr. Method of splicing a web of a running roll to the leading edge of a new roll. 3,554,829, Cl. 156-157.

Luckner, Clark A., Jr., to Hoover Company, The. Drive train for rotary floor conditioners. 3,554,043, Cl. 74-409.

Luczkowski, Heinz, to Anker-Werke Aktiengesellschaft. Pulse, generating circuit arrangement for producing pulses of different adjustable durations. 3,555,305, Cl. 307-265.

Ludell Mfg. Co.: *See—*
Berry, Edward J.; and Lutzen, William C., 3,553,982.

Ludwig, Jurgen: *See—*
Luther, Gunter; Ludwig, Jurgen; and Schulze, Martin, 3,554,873.

Luerssen, Hermann: *See—*
Jochim, Friedrich; Peetz, Dieter; Karla, Heinz; and Luerssen, Hermann, 3,553,833.

Luhmann, Klaus: *See—*
Strunk, Kurt; Halfmann, Heinrich; and Luhmann, Klaus, 3,555,197.

Lunstra, Roger W.: *See—*
Taylor, Sam S.; and Lunstra, Roger W., 3,553,946.

Luscher, Jakob: *See—*
Dome, Peter; and Luscher, Jakob, 3,553,957.

Luther, Gunter; Ludwig, Jurgen; and Schulze, Martin. Simplified extractive distillation process for obtaining aromatics of differing boiling-point ranges. 3,554,873, Cl. 203-51.

Luther, Lloyd S.: *See—*
Wiczer, Sol B.; and Luther, Lloyd S., 3,554,771.

Lutzen, William C.: *See—*
Berry, Edward J.; and Lutzen, William C., 3,553,982.

Luzganova, Margarita Andreevna: *See—*
Turetskaya, Raisa Anatolievna; Tsvanger, Tamara Alexandrova; Golubtsov, Sergei Alexandrovich; Luzganova, Margarita Andreevna; Pensky, Vadim Nikolaevich; Filjukova, Ljudmila Petrovna; and Pogorelov, Alexandr Georgievich, 3,555,064.

Lynch Corporation: *See—*
Brinduse, Paul, 3,554,481.

Lynch, Harry P., to Bell Telephone Laboratories, Incorporated. Modular visual indicator having interlocking indicator base modules. 3,555,543, Cl. 340-366.

Lyness, Warren I., to Procter & Gamble Company, The. Softening of textile materials. 3,554,784, Cl. 117-47.

Lyon Metal Products, Incorporated: *See—*
Schreyer, Kenneth D., 3,554,624.

M & J Development Company: *See—*
Lathrop, Francis M., II, 3,553,965.

M & J Valve Company: *See—*
Lathrop, Francis M., II, 3,553,965.

M & L Industries, Inc.: *See—*
Johnson, Robert C., 3,555,320.

Maas, Keith Allan, to Du Pont de Nemours, E. I., and Company. Electrophotographic reproduction process using linear polyamides as the photoconductor. 3,554,743, Cl. 96-1.5

Maas, Keith Allan, to Du Pont de Nemours, E. I., and Company. Electrophotographic reproduction material and process employing polyimide photoconductors. 3,554,744, Cl. 96-1.5

Mabey, Donald H.; and Gledhill, Jack C., to Christensen Diamond Products Company. Cutters for forming highway paint receiving grooves. 3,554,606, Cl. 299-89.

Mac Afee, James E.: *See—*
Ball, Jeremy T.; and Mac Afee, James E., 3,553,986.

MacAfee, James E.: *See—*
Ball, Jeremy T.; Wall, Thomas J.; and MacAfee, James E., 3,553,987.

Macaluso, Pat, to Stauffer Chemical Company. Method of bonding fibers. 3,554,826, Cl. 156-82.

Mac Donald, Frank H.; and Key, Charles R., to Texas Instruments, Incorporated. Method and system for determining reflectivity of the ocean bottom. 3,555,499, Cl. 340-3.

MacEwen, George E., to Phillips Petroleum Company. Gable top container. 3,554,430, Cl. 229-17.

Macey, Keith S.: *See—*
Heigl, Carl H.; and Macey, Keith S., 3,554,531.

Mackenzie, Alfred D.: *See—*
Holmes, William A.; and Mackenzie, Alfred D., 3,554,707.

MacKinney, John J.; and Mattia, Michael, to Budd Company, The. Method of fabricating a mandrel for electroforming. 3,554,875, Cl. 204-9.

Macko, Edward: *See—*
Loev, Bernard; and Macko, Edward, 3,555,030.

MacLaughlin, Henry C.: *See—*
Summer, James R.; MacLaughlin, Henry C.; and Melander, Clarence S., 3,554,344.

Maclean, Peter M.: *See—*
Shaw, Leslie E.; and Maclean, Peter M., 3,554,999.

MacMillan Bloedel Limited: *See—*
Larsen, Arild, 3,554,247.

Macri, Frank D. Golf training device. 3,554,555, Cl. 273-186.

Madany, George H.; and Burnet, George, Jr., to Iowa State University Research Foundation, Inc. Method for manufacturing ammonium nitrate containing mixed fertilizers. 3,554,731, Cl. 71-59.

Mader, Herbert: *See—*
Deutschmann, Herbert; Wahnschaffe, Jurgen; Rudert, Wolfgang; and Mader, Herbert, 3,554,322.

Maeda, Tsutomu; Watanabe, Kiyoshi; Akino, Tadaharu; Ito, Eiitsu; and Osada, Hisashi, to TDK Electronics Co., Ltd. Compact LCR component and method of making. 3,555,464, Cl. 333-70.

Magee, Brian Joseph. Firing unit for controlled rectifiers. 3,555,304, Cl. 307-262.

Magee, Ellington M., to Esso Research and Engineering Company. Vapor phase reaction of N_2F_4 with certain unsaturated organic compounds. 3,555,049, Cl. 260-347.7

Magerlein, Barney J., to Upjohn Company, The. 7-Deoxy-7-halo lincomycin D derivatives. 3,555,007, Cl. 260-210.

Magnaflux Corporation: *See—*
Mlot-Fijalkowski, Adolf, 3,554,020.

Mahan, Dorothy C., executrix: *See—*
Lipsky, Marcus; Mahan, William J.; Mahan, Dorothy C., executrix; and Mahan, William J., deceased, 3,554,770.

Mahan, William J.: *See—*
Lipsky, Marcus; Mahan, William J.; Mahan, Dorothy C., executrix; and Mahan, William J., deceased, 3,554,770.
Lipsky, Marcus; Mahan, William J.; Mahan, Dorothy C., executrix; and Mahan, William J., deceased, 3,554,770.

Maillard, Jacques Georges Albert, to Laboratoires Jacques Logeais. 5-(Piperidine-4-spiro) oxazolidin-2-ones. 3,555,033, Cl. 260-294.3

Mair, William Norman: *See—*
Bickerdike, Robert Lewis; Bradshaw, Francis Julian; Hughes, Garyth; Mair, William Norman; and Ranson, Harry Christopher, 3,554,739.

Majeske, Harry. Impact cushion. 3,553,749, Cl. 5-355.

Makarov, Konstantin Ivanovich: *See—*
Andoniev, Sergei Mikhailovich; Berman, Mark Nikolaevich; Zhitnik, Georgy Gavrilovich; Kondratiev, Evgeny Mikhailovich; Levitasov, Yakov Matveevich; Makarov, Konstantin Ivanovich; Pevny, Nikolai Ivanovich; Pokrass, Leonid Moiseevich; Pochtman, Alexandr Markovich; Robin, Mark Anisimovich; Tesner, Pavel Alexandrovich; Sheinfain, Felix Isaakovich; and Filipiev, Oleg Vladimirovich, 3,554,507.

Malavasi, Stuart H., to Ranco Incorporated. Burner control system. 3,554,680, Cl. 431-78.

Malm, Curtis L.; and Loewenthal, Henry J., to Gillette Company, The. Writing instrument construction. 3,554,658, Cl. 401-199.

Malm, Marvin F., to International Telephone and Telegraph Corporation. Means for allocating radio link channels in mobile telephone systems. 3,555,424, Cl. 325-53.

Malmstrom, Karl; and Carlson, Roy Henning Donald. Arrangement in central heating systems. 3,554,441, Cl. 237-56.

Maloney, Richard P.; Kheghatian, Habet M.; and Dempsey, James F., to Standard Oil Company, mesne. Process for altering the particle size distribution of alpha monoolefin polymers. 3,554,994, Cl. 260-93.7

Malter, Lewis: *See—*
Boostrom, Roy E.; Mandell, Arman; and Malter, Lewis, 3,554,648.

Mandell, Arman: *See—*
Boostrom, Roy E.; Mandell, Arman; and Malter, Lewis, 3,554,648.

Mangan, Joseph P., to North American Forwarding Corporation. Adapter for golf bag. 3,554,255, Cl. 150-1.5

Manley, Charles G.; and Lomaglio, Francis Leo, to Manley, Inc. Temperature responsive protective system for automatic popcorn poppers. 3,554,115, Cl. 99-238.3

Manley, Inc.: *See—*
Manley, Charles G.; and Lomaglio, Francis Leo, 3,554,115.

Mann, Kenneth M.; and Allen, Willis C. Baseball bat with a dog leg type handle. 3,554,545, Cl. 273-72.

Manning, Ralph M.: *See—*
Lee, Art; and Manning, Ralph M., 3,555,214.

Manning, Robert E., to Sandoz-Wander, Inc. Imidazo[1,2-C]thiazoles. 3,555,039, Cl. 12-.034/2/

Manz, Hans; and Widmer, Hans, to Maschinen Fabrik Oerlikon. Oil circuit breaker with quench chamber corrected to the high pressure side of a fluid pump. 3,555,279, Cl. 200-150.

Marathon Oil Company: *See—*
Ross, Rupert D., 3,554,288.
Webb, Thomas O., 3,554,289.

Marcher, Jorgen, to Nielsen, H., & Son Maskinfabrik A/S. Lifting magnet for sheet-formed objects of magnetisable material. 3,555,474, Cl. 335-289.

Marciano, Joseph J.: *See—*
Nye, Robert G.; Marciano, Joseph J.; Klund, William E.; and Prager, Roger H., 3,555,498.

Marcus, Paul, to APL Corporation. Method for forming plastic containers having thickened bottom rims. 3,555,134, Cl. 264-97.

Maremont Corporation: *See—*
Page, John D., 3,554,422.

Markbreiter, Stephen J.; and Weiss, Irving, to American Messer Corporation. Cryogenic recovery of hydrogen from ammonia synthesis gas. 3,553,972, Cl. 62-18.

Markhart, Albert H.: *See—*
Knapp, Edmund C.; Markhart, Albert H.; and Serlin, Irving, 3,554,935.

Maronde, Herbert, to Robot Foto und Electronic GmbH & Co., KG. Photographic monitoring device. 3,554,102, Cl. 95-1.1

Marondel, Guenther: *See—*
Gawlick, Heinz; Bendler, Hellmut; Marondel, Guenther; and Siegelin, Werner, 3,554,181.

Maroney, William J., to Ritter Pfaudler Corporation. Chemical feed controller. 3,554,212, Cl. 137-93.

Marquardt Corporation, The: *See—*
Weber, Peter E., 3,555,311.

Marsden, James G.; and Sterman, Samuel, to Union Carbide Corporation. Gamma-methacryloxy-alpha, beta-epoxy- propyltrimethoxysilane. 3,555,051, Cl. 260-348.

Marsh, Richard E.: *See—*
Munro, Harrison; Suding, Robert A.; and Marsh, Richard E., 3,553,989.
Suding, Robert A.; and Marsh, Richard E., 3,553,990.

Marshall, David W.: *See—*
Kerfoot, Oliver Carl; Marshall, David W.; Krehbiel, Delmar D.; and Groves, William L., Jr., 3,554,916.

Marshall, David W.; McCleskey, Jerry; and Feighner, George C., to Continental Oil Company. Disposal of spent aluminum chloride alkylation catalyst sludge. 3,554,695, Cl. 23-92.

Marshall, Fitz-Hugh B.: *See—*
Humiston, Homer A.; and Marshall, Fitz-Hugh B., 3,555,178.

Martin, Allan E.; and Shirley, Edmund C., to American Standard Inc. Boiler construction. 3,554,167, Cl. 122-225.

Martin, Don S.: *See—*
Statman, Max; and Martin, Don S., 3,554,926.

Martin, Francis C., Jr., to Ametek, Inc., mesne. Loading logic circuitry for deltic memory. 3,555,522, Cl. 340-173.

Martin, John C., to Bailey Meter Company. Movable core transformer transducer with compensated primary winding. 3,555,405, Cl. 323-51.

Martin, Keith Fraser: *See—*
Mercer, Frank Brian; and Martin, Keith Fraser, 3,554,853.

Martin, Van Clifton, to International Business Machines Corpration. Cathode ray tube screen protection system. 3,555,348, Cl. 315-20.

Martinez, Harvey F., to Milprint, Inc. Pouch with reinforced edge. 3,554,435, Cl. 229-55.

Martonair Limited: *See—*
Kirk, Colin John; and Bailey, Reginald John, 3,554,224.

Marukawa, Yujiro, to General Denshi Kogyo Kabushiki Kaisha. Tape drive unit for tape recorder. 3,554,465, Cl. 242-201.

Marumo, Hideo; and Saitoh, Minoru, to Lion Fat & Oil Co., Ltd. Preparation of amphoteric surface active agents. 3,555,079, Cl. 260-501.13

Maruoka, Hiroyuki: *See—*
Masaki, Kenji; and Maruoka, Hiroyuki, 3,554,173.

Maruta, Iwao; Arai, Haruhiko; Iida, Akihiko; and Horin, Shoji, to Kao Soap Co., Ltd. Method of preventing agglomeration of powdered urea-formaldehyde resins. 3,554,947, Cl. 260-21.

Maruyama, Isamu: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hiroshashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; Kobayashi, Tsuyoshi; and Izumi, Takahiro, 3,555,013.
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi, 3,555,014.

Masaki, Kenji; and Maruoka, Hiroyuki, to Nissan Motor Company. Apparatus for reducing hydrocarbon content of engine exhaust during deceleration of automobile. 3,554,173, Cl. 123-119.

Maschinen Fabrik Oerlikon: *See—*
Manz, Hans; and Widmer, Hans, 3,555,279.

Maschinenfabrik Reinhausen Gebruder Scheubeck K.G.: *See—*
Bleibtreu, Alexander, 3,555,404.
Matzl, Manfred; and Schweitzer, Ulrich, 3,555,403.

Mason, John F.; Frazier, Bruce J.; and Freeman, Norman L., Jr., to Halliburton Company. Seal assembly in a conduit connection. 3,554,581, Cl. 285-367.

Masu, Masanobu: *See—*
Yonemitsu, Eiichi; Nawata, Takanari; and Masu, Masanobu, 3,555,052.

Matcovich, Thomas J., to Drexel Institute of Technology, mesne. Microelectronic modules and assemblies. 3,555,364, Cl. 317-101.

Matsuba, Hironori, to Furukawa Denki Kogyo Kabushiki Kaisha. Partial discharge measuring means including discharge detecting circuits and a discharge detector connected thereto and including a selector circuit. 3,555,413, Cl. 324-54.

Matsui, Joshio, to Daiwa Seiko Kabshiki Kaisha. Fishing rod reel. 3,554,459, Cl. 242-84.21

Matsui, Kenichi: *See—*
Fujisaki, Yoshisato; Aishima, Itsuho; Fukuma, Noboru; Nakanishi, Atsuo; Matsui, Kenichi; Shima, Tsukasa; and Nakai, Schiyouzi, 3,554,683.

Matsukawa, Hiroharu, to Fuji Photo Film Co. Ltd. Method of producing pressure-sensitive recording papers. 3,554,781, Cl. 117-36.8

Matsukura, Yasuo: *See—*
Yanai, Hisayoshi; Ikoma, Toshiaki; Sugeta, Takayuki; Matsukura, Yasuo; and Ohta, Kuniichi, 3,555,282.

Matsushita Electric Industrial Co., Ltd.: *See—*
Nitta, Tsuneharu; Kuito, Akio; Nagase, Kaneomi; Iguchi, Takashi; and Taki, Hiromitsu, 3,555,376.

Mattel, Inc.: *See—*
Stewart, Ralph H., 3,554,556.

Mattia, Michael, to Budd Company, The. Method of electroforming vessels. 3,554,874, Cl. 204-9.

Mattia, Michael: *See—*
MacKinney, John J.; and Mattia, Michael, 3,554,875.

Matzl, Manfred; and Schweitzer, Ulrich, to Maschinenfabrik Reinhausen Gebruder Scheubeck K.G. Three phase tap-changing transformer system. 3,555,403, Cl. 323-43.5

Mauldin, Bennett E.; and Mauldin, John H. Asphalt rolling and packing machine. 3,554,100, Cl. 94-50.

Mauldin, John H.: *See—*
Mauldin, Bennett E.; and Mauldin, John H., 3,554,100.

Max, Erhard: *See—*
Duda, William L.; Kosanke, Kurt M.; Kulcke, Werner W.; and Max, Erhard, 3,554,634.

Max, Jacques: *See—*
Berthier, Daniel; and Max, Jacques, 3,555,258.

Maxon, Theodore, to Scientific Industries, Inc. Method for obtaining a known volume of liquid and absorption apparatus therefor. 3,554,700, Cl. 23-230.

Mayell, Jaspal Singh, to American Cyanamid Company. Oxalic acid manufacture. 3,555,084, Cl. 260-533.

Mayland, Bertrand J.; and Trimarke, Carl Robert, to C&I/Girdler, Inc. Apparatus and method for removing carbon dioxide from process gases. 3,554,690, Cl. 23-2.

Mc Allister, William D., to Federal Bearings Co., Inc., The. Combination cage and seal for antifriction bearings. 3,554,621, Cl. 308-187.2

McCarthy, Joseph V.; and Gruber, Francois R., to Itek Corporation. Photographic film processor. 3,554,107, Cl. 95-89.

Mc Carty, Horace G.: *See—*
Cyr, Joseph H.; and Mc Carty, Horace G., 3,553,945.

McCleskey, Jerry: *See—*
Marshall, David W.; McCleskey, Jerry; and Feighner, George C., 3,554,695.

Mc Clurg, William Christian, to United States of America, Army, mesne. Solid state analog computer-type calibrator for a radio interferometer. 3,555,261, Cl. 235-189.

McClusky, Stanley A. Means and method for sewing bags filled with discrete articles. 3,554,146, Cl. 112-11.

McConnell, Richard L.; and Meyer, Max F., Jr., to Eastman Kodak Company. Blends of alpha-monoolefin black copolymers with ethylene-acrylate or alkedyl carboxylate copolymers. 3,555,110, Cl. 260-876.

McCray, Ernest G., to Dart Industries Inc. Deashing solvent recovery process. 3,554,995, Cl. 260-93.7

McCullers, Otho S.: *See—*
Stalter, Neil J.; and McCullers, Otho S., 3,554,685.

McDonald, Thomas M.: *See—*
Morris, Alton R.; and McDonald, Thomas M., 3,555,359.

McDonnell Douglas Corporation: *See—*
Arrance, France C.; and Berger, Carl, 3,554,814.

McDougal, Donald E., to Offshore Systems Inc. Hydraulic latch. 3,553,795, Cl. 24-201.

McElvy, Howell T., to Phillips Petroleum Company. Machine for assembling insert into lid. 3,553,815, Cl. 29-208.

McFall, Thomas, to Westinghouse Electric Corporation. Single-ended incandescent projection lamp having dual series-connected filaments and an integral gripping cap. 3,555,342, Cl. 313-318.

McGahren, William James; Mitscher, Lester Allen; and Porter, John Norman, to American Cyanamid Company. Novel antifungal agents. 3,555,075, Cl. 260-468.
McGee, James Dwyer; and Smith, Robin Wyncliffe, to National Research Development Corporation. Vacuum tubes. 3,555,346, Cl. 315-16.
McGriff, Stuart G.: *See—*
Mc Rae, Wayne A.; Brown, Daniel L.; and McGriff, Stuart G.,3,554,895.
Mc Ilrath, William P., to Rex Chainbelt Inc. Ballast cribber. 3,553,859, Cl. 37-104.
McIntire, Harry H., to Continental Can Company, Inc. Protective device for lithographic press. 3,554,124, Cl. 101-233.
Mc Intosh, Bruce Murray, to Imperial Chemical Industries Limited. Process and apparatus for crimping yarns and product made thereby. 3,553,952, Cl. 57-34.
McIntosh Laboratory, Inc.: *See—*
Nestor ,ic, Mioljub R., 3,555,398.
McIntosh, Terence D.: *See—*
Howard, John; and McIntosh, Terence D.,3,555,088.
McIntosh, Walter L.: *See—*
Street, John N.; Brady, William I.; and McIntosh, Walter L.,3,554,109.
McIntyre, Robert G.; Nichols, Browning, Jr.; and Hantzsch, Ralph E., to United States of America, Air Force. Yaw control stabilization ejection seat. 3,554,472, Cl. 244-122.
McIver, William; and Brickell, Charles F., to International Telephone and Telegraph Corporation. Printed circuit board connector. 3,555,488, Cl. 339-75.
McKelvy, William R., Jr.; Lamb, Douglas J.; and Dowell, William T., to Monsanto Company. Automatic blade edging machine. 3,554,083, Cl. 90-21.
McKenzie, Bruce A.; Zachariah, Gerald L.; Peart, Robert M.; and Ohlgren, Raymond R., to Heil Co., The. Grain dryer. 3,553,846, Cl. 34-56.
McKibben, Richard K., to SWECO, Inc. Vibratory finishing apparatus and method. 3,553,900, Cl. 51-163.
McLarty, Murray R.: *See—*
Bowden, John E.; McLarty, Murray R.; and Zeller, Robert V.,3,554,493.
McLogan, Russell E., to Vaco Products Company. Detachable bit ratchet hand tool. 3,554,251, Cl. 145-75.
McMichael, Wallace T.: *See—*
Olstowski, Franciszek; Watson, John D., Sr.; and McMichael, Wallace T.,3,553,834.
McMurry, Everett D.; and Abercrombie, Bolling A., to McMurry Oil Tools, Inc. Method and apparatus for stabilizing fluid flow. 3,554,221, Cl. 137-501.
McMurry Oil Tools, Inc.: *See—*
McMurry, Everett D.; and Abercrombie, Bolling A., 3,554,221.
Mc Neill, Robert C.: *See—*
Bauer, Robert F.; Mc Neill, Robert C.; and Ledbetter, Jerry T.,3,554,277.
McPhail, Joe L., to P & S Rice Mills, Inc. Apparatus for introducing materials into or removing materials from a hermetically sealed vessel. 3,554,114, Cl. 99-237.
McPhar Geophysics Limited: *See—*
Robinson, William A., 3,555,408.
Mc Rae, Wayne A.; Brown, Daniel L.; and McGriff, Stuart G., to Ionics, Incorporated. Removal of acidic gases from gas streams. 3,554,895, Cl. 204-301.
McReynolds, Leo A., to Phillips Petroleum Company. Combustion engine system. 3,553,961, Cl. 60-13.
McVicar, James Marion, to United Aircraft Corporation. External load stabilizer. 3,554,468, Cl. 244-137.
Meacham, Larned A., to Bell Telephone Laboratories, Incorporated. Speech network for a telephone set employing an electromagnetic transducer. 3,555,188, Cl. 179-1.
Mead Corporation, The: *See—*
Dougherty, Neal R., 3,554,105.
Lock, Joseph H., 3,554,402.
Lock, Joseph H., 3,554,431.
Wood, Prentice J., 3,554,401.
Mears, David E.: *See—*
Olivier, Kenneth L.; Booth, Frank B.; and Mears, David E.,3,555,098.
Mears, William E., to Wilcox Electric Company, Inc. Digital delay register. 3,555,521, Cl. 340-173.
Meat Separator Corporation: *See—*
Leonard, Gordon C., 3,554,371.
Meates, Kevin F. Means for locking a wheel to a shaft and for securing a handle to the wheel. 3,553,882, Cl. 46-16.
Medney, Jonas, to Koppers Company, Inc. Filament winding apparatus. 3,554,839, Cl. 156-430.
Meisels, Alex; and Schott, Emilio, to Geigy Chemical Corporation. N-(Substituted pyridyl)linolamides and- linolenamides. 3,555,035, Cl. 260-295.
Melaerts, Wilfried J.: *See—*
Mommaerts, Henri A.; and Melaerts, Wilfried J.,3,554,974.
Melander, Clarence S.: *See—*
Summer, James R.; MacLaughlin, Henry C.; and Melander, Clarence S.,3,554,344.
Meldau, Robert F., to Phillips Petroleum Company. Production and upgrading of heavy viscous oils. 3,554,285, Cl. 166-258.
Melloni, Albert J. Electrical switching system. 3,554,176, Cl. 123-146.5
Melnick, Joseph L.: *See—*
Wallis, Craig; and Melnick, Joseph L.,3,555,001.
Menard, Enrico: *See—*
Bickel, Hans; Bosshardt, Rolf; Fechtig, Bruno; Menard, Enrico; Mueller, Johannes; and Peter, Heinrich,3,555,017.
Mendelsohn, Norbert Julius, to Merlin Moulded Rubber Manufacturers (Proprietary) Limited. Method of manufacturing uppers for footwear of the sandal type, and to uppers produced by such method. 3,553,754, Cl. 12-142.
Mennicken, Gerhard: *See—*
Blomeyer, Friedrich; Bunge, Wilhelm; Mennicken, Gerhard; and Hebermehl, Reinhard,3,554,951.
Mercer, Frank Brian; and Martin, Keith Fraser, to Plastic Textile Accessories Limited. Extruded plastic net made of non-cylindrical strands oriented at points remote from bonded areas. 3,554,853, Cl. 161-109.
Merck & Co., Inc.: *See—*
Beutel, Ralph H.; Davis, Paul; and Schoenewaldt, Erwin F., 3,555,021.
Buynak, Eugene B.; and Hilleman, Maurice R., 3,555,149.
Cragoe, Edward J., Jr.; and Shepard, Kenneth L., 3,555,023.
Cragoe, Edward J., Jr.; Bicking, John B.; and Shepard, Kenneth L., 3,555,024.
Merck, E., A.G.: *See—*
Daum, Wilhelm; Nurnberg, Eberhard; and Sippel, Hans Joachim, 3,554,767.
Irmscher, Klaus; Kramer, Josef; Halpaap, Herbert; and Freisberg, Karl-Otto, 3,555,047.
Mergerian, Dickron: *See—*
Bozanic, Donald A.; Mergerian, Dickron; and Minarik, Ronald W.,3,555,407.
Meripol, Robert B.; and Pumpelly, Robert C., to Dresser Industries, Inc. Packer and packer setting apparatus. 3,554,279, Cl. 166-121.
Merlin Moulded Rubber Manufacturers (Proprietary) Limited: *See—*
Mendelsohn, Norbert Julius, 3,553,754.
Merrifield, Dudley B.: *See—*
Nudenberg, Walter; Merrifield, Dudley B.; and Delaney, Edward A.,3,554,923.
Nudenberg, Walter; Merrifield, Dudley B.; and Delaney, Edward A.,3,554,998.
Merrill, Stewart H., to Eastman Kodak Company. Photoconductive elements containing haloarylketone- formaldehyde polymeric binders. 3,554,746, Cl. 96-1.6
Mersfelder, Robert E.: *See—*
Going, Louis H.; Mersfelder, Robert E.; and Schmitt, Robert O.,3,555,058.
Mervine, Robert P.: *See—*
Carter, Mary E.; Price, John A.; and Mervine, Robert P.,3,554,978.
Mescher, Harold E., to Pacific Scientific Company. Furnace sealing door. 3,554,144, Cl. 110-177.
Messer, Donald Gene; and Nease, Herbert Dwight, to Armstrong Cork Company. Method of cutting tile in register from a continuous sheet. 3,555,127, Cl. 264-40.
Messrs. Elastogran GmbH: *See—*
Cutler, Richard G., 3,554,586.
Messrs. Mitsubishi Jukogyo Kabushiki Kaisha: *See—*
Hayashi, Tsuento; Kinoshita, Hidejiro; and Iwahashi, Koji, 3,555,236.
Mesur-Matic Electronics Corporation: *See—*
Newell, Harold R., 3,554,058.
Metaframe Corporation: *See—*
Willinger, Allan H., 3,554,375.
Metcalfe, Kenneth A.: *See—*
Smith, Ian E.; and Metcalfe, Kenneth A.,3,555,378.
Metz, Hans-Jorg: *See—*
Weyde, Edith; von Konig, Anita; von Rintelen, Harald; Wagner, Siegfried; and Metz, Hans-Jorg,3,554,750.
Metzger, Karl-Georg: *See—*
Ley, Kurt; Eholzer, Ulrich; Metzger, Karl-Georg; and Fritsche, Dieter,3,555,025.
Mewes, Erich: *See—*
Buschmann, Gerhard; and Mewes, Erich,3,553,803.
Meyer & Wenthe, Inc.: *See—*
Priesmeyer, Charles; and Meyer, John W., 3,554,122.
Meyer, Eugen, to Aktiengesellschaft Brown, Boveri & Cie. Gearless drive for cement mill. 3,555,329, Cl. 310-218.
Meyer, Jack T.: *See—*
Baurmash, Leonard; Harwick, Burton T.; and Meyer, Jack T.,3,555,274.
Meyer, John W.: *See—*
Priesmeyer, Charles; and Meyer, John W.,3,554,122.
Meyer, Max F., Jr.: *See—*
McConnell, Richard L.; and Meyer, Max F., Jr.,3,555,110.
Meyrat & Luisoni: *See—*
Faulcon, Armand, 3,554,082.
Michalski, Maksymilian A., to Berkey Photo, Inc. Photographic printer. 3,554,644, Cl. 355-78.
Michalski, Maksymilian A., to Berkey Photo, Inc. Gas discharge lamp operating system. 3,555,352, Cl. 315-282.
Michigan Wheel Company: *See—*
Lorenz, Eldon L.; and Kress, Robert F., 3,554,665.

Michnay, Raymond P.; Moore, Charles R.; and Hause, Gilbert K., to General Motors Corporation. Transmission and control. 3,554,057, Cl. 74-732.
Microwave Associates, Inc.: *See—*
Hines, Marion E., 3,555,444.
Midland Machine Corporation: *See—*
D'Altrui, Thomas N., 3,554,477.
Midstates Steel and Wire Company: *See—*
Smith, Robert W., 3,554,116.
Mijich, Joseph T.: *See—*
Orkney, James Bruce; Mijich, Joseph T.; and Tyler, Donald W.,3,553,861.
Mikumo, Masatoshi: *See—*
Tanaka, Atsushi; Sawada, Hideo; Toba, Hirotaka; and Mikumo, Masatoshi,3,555,121.
Miles, F. G., Engineering Limited: *See—*
Walker, Francis Ian Victor, 3,554,024.
Milian, Gonzalo D., to Tenneco Chemicals, Inc. Method of controlling the alkalinity of alkali metal phenates. 3,554,265, Cl. 159-48.
Miller, Alfred H.; Perry, Glenn; and Wheat, Lawrence C., to Libbey-Owens-Ford Company. Apparatus for shaping thermoplastic sheets. 3,553,781, Cl. 18-19.
Miller, Daniel L.: *See—*
Eubank, Carol H.; and Miller, Daniel L.,3,555,199.
Miller, Donald E., to Goodyear Tire & Rubber Company, The. Stabilization systems for polymers. 3,554,964, Cl. 260-45.95
Miller, Edwin A., to Texas Instruments Incorporated. Composite layer material having an outer layer of copper and successive layer of stainless steel, low carbon steel and copper. 3,555,169, Cl. 174-36.
Miller, Edwin B. Taphole assembly for metallurgical furnaces. 3,554,523, Cl. 266-42.
Miller, Edwin C., to Goodyear Tire & Rubber Company, The. Tire repair mold. 3,553,779, Cl. 18-18.
Miller, Leroy J.: *See—*
Bilow, Norman; and Miller, Leroy J.,3,555,108.
Miller, Lester, to Contico International, Inc. Latch for securing a receptacle to a support frame. 3,554,573, Cl. 280-79.2
Miller, Omer E. Liquid treating apparatus. 3,554,377, Cl. 210-275.
Miller, Robert H.: *See—*
Parks, John H.; and Miller, Robert H.,3,554,059.
Miller, Vernon F.; and Gehman, David R., to Rohm and Haas Company. Removable protective coating for selective plating of surfaces. 3,554,780, Cl. 117-5.5
Milliken, Clinton L., to Kaiser Industries Corporation. Dispensing chute device. 3,554,356, Cl. 198-65.
Milliken, Donald B., to Teledyne, Inc., mesne. Transport mechanism. 3,554,635, Cl. 352-184.
Mills, Ernest G.: *See—*
Fortune, Ronald; Mills, Ernest G.; and Woods, James Beverley,3,554,160.
Millward, John David, to Rank Organisation Limited, The. Combined video signal limiter. 3,555,299, Cl. 307-235.
Milprint, Inc.: *See—*
Martinez, Harvey F., 3,554,435.
Minarik, Ronald W.: *See—*
Bozanic, Donald A.; Mergerian, Dickron; and Minarik, Ronald W.,3,555,407.
Miner Enterprises, Inc.: *See—*
La Belle, Laurence T., 3,554,386.
Ming, Joseph W.: *See—*
Cogar, George R.; Sekse, Torkjell; Banziger, Walter; Ming, Joseph W.; and Horvath, Laszlo,3,555,306.
Mini, Iti: *See—*
Colombo, Umberto; Mini, Iti; and Sironi, Giuseppe,3,554,733.
Minnaja, Nicola: *See—*
Forlani, Franco; Minnaja, Nicola; and Sacchi, Giorgio,3,555,365.
Minnesota Mining & Manufacturing Company: *See—*
Geisler, Charles H.; and Wiese, Joseph A., Jr., 3,554,794.
Minnesota Mining and Manufacturing Company: *See—*
Steindorf, Gordon A., 3,554,836.
Mintech Corporation: *See—*
Waddle, Craig C.; and Harris, Robert K., 3,554,509.
Minton, James W. Bed attachment. 3,553,747, Cl. 5-327.
Mirtain, Henri; and Devienne, Andre, to Uniroyal Englebert France S.A. Pneumatic tires. 3,554,261, Cl. 152-361.
Mirviss, Stanley B.: *See—*
Beck, Thomas M.; and Mirviss, Stanley B.,3,555,124.
Miskin, Richard B. Truck bed hoist with folding linkage. 3,554,601, Cl. 298-22.
Mitchell, Benedict S., Sr. Apparatus for indicating phase sequence. 3,555,417, Cl. 324-86.
Mitchell, Mance R.: *See—*
Varnell, William R.; and Mitchell, Mance R.,3,554,941.
Mitscher, Lester Allen: *See—*
McGahren, William James; Mitscher, Lester Allen; and Porter, John Norman,3,555,075.
Mitskevich, Gennady Feodosievich; Guschin, Vladislav Yakovlevich; Vorontsov, Jury Nikolaevich; Boguslavsky, Vladimir Avramovich; Bela-Belov, Anatoly Mikhailovich; Rakhlis, Viktor Izralievich; Oktyabrev, Viktor Revoldovich; Artsybashev, Oleg Ivanovich; and Vakhomchik, Fedor Andreevich, to Vsesojurny Nauchno-Issledovatelsky I Proektno Konstruktorsky Institut Electroapparatov. Automatic breaker with coil adjustable to effect current limiting or electrodynamic blowoff compensation. 3,555,471, Cl. 335-195.
Mitsubishi Denki Kabushiki Kaisha: *See—*
Shibagaki, Masao; and Onishi, Masayoshi, 3,554,092.
Mitsubishi Denki Kafshiki Kaisha: *See—*
Takamura, Akira; Kunii, Kazushi; Seharada, Saburo; and Nakatani, Hiroshi, 3,554,327.
Mitsubishi Edogawa Kagaku Kabushiki Kaisha: *See—*
Yonemitsu, Eiichi; Nawata, Takanari; and Masu, Masanobu, 3,555,052.
Mitsubishi Jukogyo Kabushiki Kaisha: *See—*
Kihara, Shiso; Nosaka, Hiroshi; and Koyama, Takuji, 3,554,222.
Mitsui, Takeshi: *See—*
Hirayama, Kikuji; Nakano, Keiji; and Mitsui, Takeshi,3,553,938.
Miyake, Hideo, to Kabushiki Kaisha Komatsu Seisakusho (Komatsu Mfg. Co. Ltd.). Sealing device serving concurrently as a thrust bearing device for a hinge joint of endless track links. 3,554,560, Cl. 277-92.
Miyasaka, Takao; Shimizu, Hidekazu; and Roop, Donald E., to Victor Company of Japan, Limited. Capacitor motor. 3,555,382, Cl. 318-221.
Mizuno, Masaaki: *See—*
Fukada, Kazuo; Sakata, Yoshiaki; Yamada, Yoshio; Mizuno, Masaaki; and Tanaka, Hiroaki,3,555,129.
Mizuno, Yutaka: *See—*
Katsumura, Tatsuo; Kataoka, Hirohisa; and Mizuno, Yutaka,3,555,148.
Mlot-Fijalkowski, Adolf, to Magnaflux Corporation. Method for the removal of excess penetrant and simultaneous development of color indications. 3,554,020, Cl. 73-104.
Mobark Instruments Corporation: *See—*
Barkouki, Moghazi F., 3,555,205.
Moberly, Charles W.; and Kahle, Gerald R., to Phillips Petroleum Company. Polymerization catalyst process and catalyst. 3,554,993, Cl. 260-93.7
Mobil Oil Corporation: *See—*
Andress, Harry J., Jr.; and Williams, Albert L., 3,554,945.
Bowes, Emmerson, 3,554,900.
De Vries, William C.; and Johnson, Eldon L., 3,554,833.
Dickert, Joseph J., Jr.; and Rowe, Carleton N., 3,554,908.
Gee, Paul Y. C.; and Andress, Harry J., Jr., 3,555,097.
Humphries, Curtis L., 3,554,904.
Teague, Henry E., 3,555,501.
Mobile Drilling Company, Inc.: *See—*
Dickinson, Robert E.; and Henson, William P., 3,553,980.
Mock, Donald E., to Anjac Plastics, Inc. Drawer trim structure. 3,554,627, Cl. 312-330.
Modern Equipment Company: *See—*
Dell'Agnese, David E., 3,554,508.
Modigliani, John Philip, to Artfiber Corporation. Glass reinforced foam structure and method of making the same. 3,554,851, Cl. 161-58.
Modine Manufacturing Company: *See—*
Johnson, Richard S., 3,554,714.
Moduler Inc.: *See—*
Passovoy, Alexander E., 3,553,915.
Moen, Walter K., to North American Rockwell Corporation. High temperature thermocouple containing conductors compositionally dissimilar. 3,554,816, Cl. 136-233.
Mohawk Data Sciences Corporation: *See—*
Cogar, George R.; Sekse, Torkjell; Banziger, Walter; Ming, Joseph W.; and Horvath, Laszlo, 3,555,306.
Ladd, Frederick F., Jr.; and Nettleton, David L., 3,555,183.
Molex Products Company: *See—*
Baumanis, Bruno, 3,555,493.
Baumanis, Bruno, 3,555,494.
Molins, Desmond Walter; and Rowlands, Tom, to Molins Machine Company Limited. Mechanical handling apparatus. 3,554,357, Cl. 198-85.
Molins Machine Company Limited: *See—*
Molins, Desmond Walter; and Rowlands, Tom, 3,554,357.
Salkeld, Peter John, 3,554,362.
Mommaerts, Henri A.; and Melaerts, Wilfried J. Elastomeric linear polyurethane filament formed with chain extension agent comprising dialkylene- triamine/aldehyde reaction product. 3,554,974, Cl. 260-72.
Monarch Road Machinery Company: *See—*
Jackoboice, Edward J.; and Kruizenga, Gerrit H., 3,554,678.
Monestam, Eskil, to Allmanna Svenska Elektriska Aktiebolaget. Method of cold-forging a tubular body. 3,553,994, Cl. 72-43.
Monsanto Chemicals (Australia) Limited: *See—*
Samuel, Eva Lea; and Holan, George, 3,555,158.
Monsanto Chemicals Limited: *See—*
Hammersley, David Alan; and Payne, John, 3,554,959.
Long, Frank; and Ensor, Gordon Roy, 3,554,969.
Long, Frank; and Ayad, Kamal Naguib, 3,555,031.
Monsanto Company: *See—*
Bryan, Roland Jennings, Jr., 3,555,138.
Fields, Joseph E.; and Johnson, John H., 3,554,985.
Kichline, Thomas P.; Stahlheber, Norman Earl; and Vetter, James L., 3,554,921.
Knapp, Edmund C.; Markhart, Albert H.; and Serlin, Irving, 3,554,935.
Lavin, Edward; and Serlin, Irving, 3,554,939.
McKelvy, William R., Jr.; Lamb, Douglas J.; and Dowell, William T., 3,554,083.
Morita, Eiichi, 3,554,973.

Opferkuch, Robert E., Jr.; and Stutz, Frank, 3,554,856.
Ponson, Lloyd J., 3,553,953.
Wallis, Craig; and Melnick, Joseph L., 3,555,001.
Wise, Raleigh Warren, 3,554,003.

Monsun-Tison AB: *See—*
Stenlund, Stig Gote, 3,554,214.

Montecatini Edison S.p.A.: *See—*
Ballini, Giuliano; and Bujtar, Carlo, 3,555,099.
Colombo, Umberto; Mini, Iti; and Sironi, Giuseppe, 3,554,733.
de Varda, Giuseppe, 3,554,893.

Montgomery Elevator Company: *See—*
Hallene, Alan M.; Holuba, Henry J.; Drexler, John J.; and Phillips, Richard S., 3,554,326.

Montgomery, Ronald E.: *See—*
Fischer, Milton H.; Incho, Harry H.; Drummond, Paul E.; and Montgomery, Ronald E.,3,555,123.

Montone, Liber J., 40 % to Crisman, Thomas L. Visual fire warning system. 3,555,531, Cl. 340-228.

Monty, Leo J.: *See—*
Baird, James L.; and Monty, Leo J.,3,554,264.
Baird, James L.; and Monty, Leo J.,3,554,266.

Moon, Clive D., to Phillips Petroleum Company. Iodine, chlorine or bromine stabilized olefin polymers. 3,554,961, Cl. 260-45.7

Moon, Malcolm W., to Upjohn Company, The. Controlling fungi and bacteria with 2,3-dialkyl-N (chaloalkyl)thio bicarbamimides. 3,555,152, Cl. 424-269.

Mooney, James J., Jr.: *See—*
Potter, Carl R.; and Mooney, James J., Jr.,3,553,962.

Moore, Alvin Edward: *See—*
Moore, Robert Fred; and Moore, Alvin Edward,3,553,922.

Moore Business Forms, Inc.: *See—*
Ballard, Louis M.; Beebe, Wayne M.; Kramer, David C.; and Rogers, Waldo I., 3,553,787.
Sebring, John P., 3,554,447.
Van Malderghem, Edmund G., 3,554,438.

Moore, Charles R.: *See—*
Michnay, Raymond P.; Moore, Charles R.; and Hause, Gilbert K.,3,554,057.

Moore, Donald E. Tee slot locator. 3,554,530, Cl. 269-301.

Moore, Earl P., Jr., to Du Pont de Nemours, E. I., and Company. Basic aluminum salt foams. 3,554,907, Cl. 252-3.

Moore, Earl P., Jr., to Du Pont de Nemours, E. I., and Company. Basic aluminum salt fire extinguishing compositions. 3,554,912, Cl. 252-3.

Moore, Loyd C., to United States of America, Navy. Image dissector for counteracting magnification due to range closure. 3,555,344, Cl. 315-11.

Moore, Martha E. Portable toilet tissue dispenser. 3,554,456, Cl. 242-55.2

Moore, Robert E., to Sun Oil Company. Bis-carbamates of alkyladmantanes. 3,555,077, Cl. 260-482.

Moore, Robert Fred; and Moore, Alvin Edward. Glued-laminae pile. 3,553,922, Cl. 52-595.

Moore, Walter M., to Ferroxcube Corporation. Memory plane with interchangeable components. 3,555,526, Cl. 340-174.

Moore, William Percy; Sansing, James Earl; and Novotny, Joseph, to Allied Chemical Corporation. Process for making non-hygroscopic ammonium phosphate. 3,554,728, Cl. 71-33.

Moose, Louis F.: *See—*
Bonfeld, Murray D.; and Moose, Louis F.,3,555,447.

Moran, Jack K. Continuous freezer. 3,553,973, Cl. 62-63.

Moran, Raymond Michael, Jr.; and Blekicki, Henry Thomas, to Ciba Corporation. Latent hardener for epoxy resins comprising dicyandiamide and an aminoalkyl glycol monoborate ester. 3,554,970, Cl. 260-47.

Moraw, Roland: *See—*
Hackmann, Ernst-August; Dietrich, Roland; and Moraw, Roland,3,554,752.

Morenius, Stig Emil Uno, to Ingenjorsfirma Stig Morenius AB. Photoelectric classifier using moveable curtain of radiation. 3,555,288, Cl. 250-236.

Morgan Adhesives Company: *See—*
Morgan, Burton D., 3,554,835.

Morgan, Burton D., to Morgan Adhesives Company. Slidable adhesive laminate and method of making. 3,554,835, Cl. 156-234.

Mori, Kazuo: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hiroshashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; Kobayashi, Tsuyoshi; and Izumi, Takahiro,3,555,013.
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,555,014.

Morita, Eiichi, to Monsanto Company. Modifying halogenated cycloalkenyl ketone containing alpha olefin polymers. 3,554,973, Cl. 260-66.

Moritz, Rolf: *See—*
Gruner, Rolf; Sobottka, Dieter; and Moritz, Rolf,3,555,321.

Morkoski, James; and Garriott, Louis B., Jr., to International Harvester Company. Reversing mechanism for two-way plows. 3,554,294, Cl. 172-223.

Morris, Alton R.; and McDonald, Thomas M., to Hubbell, Harvey, Incorporated. Circuit protective device. 3,555,359, Cl. 317-18.

Morris, Harold B., to Electronic Systems, Inc. Acceleration dependent phase control seismic exploration. 3,555,503, Cl. 340-17.

Morris, Herbert C.: *See—*
Bozeman, Paul P., Jr.; Morris, Herbert C.; and Woodle, Robert A.,3,554,896.

Morris, Philips, Incorporated: *See—*
Engel, Peter H.; and Knechtel, Herbert, 3,554,766.

Morrow, Robert C.; and Seigfried, Robert B. Compartment for the temporary use of travelers. 3,553,911, Cl. 52-28.

Moss, Edward M., to Bendix Corporation, The. Electrical connector. 3,555,491, Cl. 339-92.

Moss, Graham William. Analytical step indicator board. 3,554,703, Cl. 23-253.

Motion Rotators, Inc.: *See—*
Allan, Peter D.; and Huber, Mortimer J., 3,555,317.

Motorola, Inc.: *See—*
Cecchin, Gildo, 3,555,176.
Cota, Marlo E.; and Williams, James H., 3,554,162.
Gregson, Robert Ernest; and Freyling, Edward Nicholas, Jr., 3,555,357.
Hufton, Arthur G.; and Dogadko, Peter, 3,554,177.
Treadway, Ronald L., 3,555,294.

Movielab, Inc.: *See—*
Jeffee, Saul; and Weinschenk, Pedro Pablo, 3,554,641.

Mross, Carl P., to Royce, Robert E. Rapidly attachable spinner knob for automotive steering wheels. 3,554,052, Cl. 74-557.

Mucenieks, Paul R.; and Cohen, Bernard, to FMC Corpor-tion. Peroxydiphosphate neutralizer for hair waving. 3,555,147, Cl. 424-71.

Mueller Co.: *See—*
Smith, John J., 3,554,218.

Mueller, Johannes: *See—*
Bickel, Hans; Bosshardt, Rolf; Fechtig, Bruno; Menard, Enrico; Mueller, Johannes; and Peter, Heinrich,3,555,017.

Mueller, Willy; and Ronco, Karl, to Ciba Limited. Disazo pigments. 3,555,004, Cl. 260-181.

Mullan, John E.: *See—*
Harrington, Frederick G.; and Mullan, John E.,3,553,942.

Mullens, George O. Adjustable rubbish chute. 3,554,345, Cl. 193-33.

Multifastener Company: *See—*
Keough, William R., 3,554,361.

Multifastener Corporation: *See—*
Lauth, Corliss, 3,554,272.

Munakata, Tomohiko: *See—*
Nakanishi, Michio; Munakata, Tomohiko; and Tsumagari, Tatsumi,3,555,012.

Munck, Fredrik, to Munck International A/S. Safety bolt. 3,554,385, Cl. 212-15.

Munck International A/S: *See—*
Munck, Fredrik, 3,554,385.

Munro, Harrison; Suding, Robert A.; and Marsh, Richard E., to Pines Engineering Co., Inc. Tube bender with incremental tube measurement. 3,553,989, Cl. 72-8.

Munsingwear, Inc.: *See—*
Cuozzi, Concetta, 3,554,200.

Munson, Milam S. B.; and Field, Frank H., to Esso Research and Engineering Company. Process for chemical ionization for intended use in mass spectrometry and the like. 3,555,272, Cl. 250-41.9

Munz, Otto John. Three-dimensional television system. 3,555,349, Cl. 315-21.

Muratov, Valerian Matveevich: *See—*
Karpacheva, Susanna Mikhailovna; Karkhachev, Jury Georgievich; Muratov, Valerian Matveevich; and Raginsky, Leonid Solomonovich,3,554,380.

Murayama, Hiroshi: *See—*
Nakamura, Takeo; Murayama, Hiroshi; and Yamaguchi, Tatsuya,3,555,083.

Murdoch, Ian Lindsay, to Bowater-Scott Corporation Limited. Napkin for babies. 3,554,195, Cl. 128-284.

Murray, Francis E., to British Columbia Research Council. Process for recovery of sulphur from furnaced black liquor. 3,554,859, Cl. 162-30.

Mussett, Harry L.: *See—*
Johnson, Wade M.; and Mussett, Harry L.,3,555,219.

Mustain, William G., to General Electric Company. Two frequency reed decoder and selective signalling device. 3,555,512, Cl. 340-171.

Myers, Felix E., to I-T-E Imperial Corporation. Combined thermal-magnetic trip means for circuit breakers. 3,555,468, Cl. 335-36.

Myers, Robert A.; and Pole, Robert V., to International Business Machines Corporation. Electron beam addressed digital scanlaser. 3,555,454, Cl. 331-94.5

Myles, Michael J.; Kupcikevicius, Vytautas; and Beckman, John H., to Union Carbide Corporation. Stuffing apparatus. 3,553,769, Cl. 17-49.

Nacci, George Raymond, to Du Pont de Nemours, E. I., and Company. Magnetic recording members. 3,554,798, Cl. 117-235.

Nacci, George Raymond, to Du Pont de Nemours, E. I., and Company. Thermomagnetic recording. 3,555,556, Cl. 346-74.

Nacci, George Raymond, to Du Pont de Nemours, E. I., and Company. Reflex thermomagnetic recording process. 3,555,557, Cl. 346-74.

Nagano, Masahi: *See—*
Shimano, Keizo; and Nagano, Masahi,3,554,340.

Nagase, Kaneomi: *See—*
Nitta, Tsuneharu; Kuito, Akio; Nagase, Kaneomi; Iguchi, Takashi; and Taki, Hiromitsu,3,555,376.

Nagel, Herbert, to Du Pont de Nemours, E. I., and Company. Package and packaging method. 3,554,368, Cl. 206-46.

Nagle, Floyd B.: *See—*
Nixon, Thomas E.; Barber, John A.; and Nagle, Floyd B.,3,554,552.

Nakai, Schiyouzi: *See—*
Fujisaki, Yoshisato; Aishima, Itsuho; Fukuma, Noboru; Nakanishi, Atsuo; Matsui, Kenichi; Shima, Tsukasa; and Nakai, Schiyouzi,3,554,683.

Nakajima, Isao; Suzuki, Miichiro; Yamaguchi, Makio; and Kondo, Kiyohire, to Shin-etsu Chemical Co. Method for preparing siloxane-polyoxyalkylene copolymers. 3,555,063, Cl. 260-448.8

Nakamura, Takeo; Murayama, Hiroshi; and Yamaguchi, Tatsuya, to Tekkosha Co., Ltd. Process for the purification of lower fatty acids. 3,555,083, Cl. 260-533.

Nakanishi, Atsuo: *See—*
Fujisaki, Yoshisato; Aishima, Itsuho; Fukuma, Noboru; Nakanishi, Atsuo; Matsui, Kenichi; Shima, Tsukasa; and Nakai, Schiyouzi,3,554,683.

Nakanishi, Michio; Munakata, Tomohiko; and Tsumagari, Tatsumi, to Yoshitomi Pharmaceutical Industries, Ltd. Dibenzothiadiazocine derivatives. 3,555,012, Cl. 260-239.3

Nakano, Keiji: *See—*
Hirayama, Kikuji; Nakano, Keiji; and Mitsui, Takeshi,3,553,938.

Nakatani, Hiroshi: *See—*
Takamura, Akira; Kunii, Kazushi; Seharada, Saburo; and Nakatani, Hiroshi,3,554,327.

Nalco Chemical Company: *See—*
Berner, Roland, 3,554,922.

Nasvytis, Algirdas L. Transmission. 3,554,054, Cl. 74-682.

National Biscuit Company: *See—*
Fast, Robert B.; Hreschak, Bohdan O.; and Spotts, Clyde E., 3,554,763.

National Electro-Mechanical Systems, Inc.: *See—*
Ulrich, Thomas J., 3,555,387.

National Research Development Corporation: *See—*
McGee, James Dwyer; and Smith, Robin Wyncliffe, 3,555,346.

Nawata, Takanari: *See—*
Yonemitsu, Eiichi; Nawata, Takanari; and Masu, Masanobu,3,555,052.

Nease, Herbert Dwight: *See—*
Messer, Donald Gene; and Nease, Herbert Dwight,3,555,127.

Neelands, Lewis J., to General Electric Company. Analog to pulse duration converter. 3,555,298, Cl. 307-235.

Neitzel, Edwin B.: *See—*
Davis, Paul D., Jr.; and Neitzel, Edwin B.,3,555,502.

Nelson, Earl L., to RCA Corporation. Recording transducer selection limiter. 3,555,518, Cl. 340-172.5

Nemeth, Manfred: *See—*
Kattner, Drich; Voelcker, Sven; Westram, Werner; and Nemeth, Manfred,3,554,346.

Nercessian, Sarkis, to Foxbro Design Corporation. Digital programming converter, register and control system. 3,555,519, Cl. 340-172.5

Nerwer, Daniel, to Nord-Aviation Societe Nationale de Construction Aeronautiques. Method of piloting engines by lateral gaseous jets issuing from the main propulsive means and nozzle with a central obstructing device in particular in the application of said method. 3,554,448, Cl. 239-127.3

Nestorovic, Mioljub R., to McIntosh Laboratory, Inc. Rectifier power supply with surge reduction. 3,555,398, Cl. 321-16.

Nettleton, David L.: *See—*
Ladd, Frederick F., Jr.; and Nettleton, David L.,3,555,183.

Neumann, Gerhard Max: *See—*
Wittemeier, Hans-Joachim; and Neumann, Gerhard Max,3,553,941.

Neville Chemical Company: *See—*
Dereich, John E., 3,554,943.

Newell, Harold R., to Mesur-Matic Electronics Corporation. Step motor with pure fluid actuation. 3,554,058, Cl. 74-800.

Newton, Albert E.; and Rumball, Paul G., to USM Corporation. Push to fire explosive tools. 3,554,424, Cl. 227-8.

Ngy, Anthony J., to Continental Oil Company. Heat transfer oil. 3,554,914, Cl. 252-75.

Nichols, Browning, Jr.: *See—*
McIntyre, Robert G.; Nichols, Browning, Jr.; and Hantzsch, Ralph E.,3,554,472.

Nichols, Sterling M.: *See—*
Waters, Herbert; and Nichols, Sterling M.,3,555,139.

Nickel, Ronald W. Power actuator for packing door of refuse truck. 3,554,398, Cl. 214-503.

Nieberlein, Vernon A., to United States of America, Army. Method for depositing carbide compound. 3,554,782, Cl. 117-46.

Niedermeier, Fred P.; Joslin, Irwin L.; and Orth, Edward G., to Westinghouse Air Brake Company. Vehicle steering system. 3,554,312, Cl. 180-79.2

Nielsen, H., & Son Maskinfabrik A/S: *See—*
Marcher, Jorgen, 3,555,474.

Nielsen, James W.; and Florio, Gerald C., Sr., to Litton Precision Products, Inc. Laser apparatus. 3,555,452, Cl. 331-94.5

Niessen, Jorg: *See—*
Zapf, Gerhard; and Niessen, Jorg,3,554,677.

Nippon Electric Company, Limited: *See—*
Goto, Hirokazu, 3,555,194.
Horigome, Toshinori, 3,555,462.
Kuroda, Takaji; Tagashira, Yoshimi; and Nomura, Hideo, 3,555,465.
Ogasawara, Naoyuki; Hashimoto, Tadashi; Sugie, Mitsuru; and Nomura, Hiromi, 3,555,463.
Tsugita, Masanobu, 3,555,443.
Yanai, Hisayoshi; Ikoma, Toshiaki; Sugeta, Takayuki; Matsukura, Yasuo; and Ohta, Kuniichi, 3,555,282.

Nippon Gakki Seizo Kabushiki Kaisha: *See—*
Ohashi, Yoshio, 3,554,315.
Ohno, Junji, 3,555,228.

Nippon Kokan Kabushiki Kaisha: *See—*
Kikkawa, Osamu; and Kambayashi, Akira, 3,554,734.

Nippon Oil Company Limited: *See—*
Ohmori, Tadashi, 3,555,106.

Nischik, Herbert: *See—*
Von Sturm, Ferdinand; and Nischik, Herbert,3,554,812.

Nissan Motor Company: *See—*
Masaki, Kenji; and Maruoka, Hiroyuki, 3,554,173.

Nitta, Tsuneharu; Kuito, Akio; Nagase, Kaneomi; Iguchi, Takashi; and Taki, Hiromitsu, to Matsushita Electric Industrial Co., Ltd. Ohmic contact electrode to semiconducting ceramics and a method for making the same. 3,555,376, Cl. 317-238.

Nitto Kasei Co., Ltd.: *See—*
Katsumura, Tatsuo; Kataoka, Hirohisa; and Mizuno, Yutaka, 3,555,148.

Nixon, Thomas E.; Barber, John A.; and Nagle, Floyd B., to Dow Chemical Company, The. Frangible article composed of polystyrene and polyethylene waxes. 3,554,552, Cl. 273-105.4

No-Limit Inventions Corporation: *See—*
Green, Martin, 3,554,540.

Nobile, Alfred. Drill sharpening apparatus or the like. 3,553,898, Cl. 51-73.

Noce, James S.: *See—*
Hasseman, Walter, 3,553,881.

Noguchi, Masaaki; Sakakibara, Shigeru; and Sumiyoshi, Masaharu, to Toyota Jidosha Kogyo Kabushiki Kaisha, and Aishin Seiki Kabushiki Kaisha. Universal joint of uniform speed. 3,553,979, Cl. 64-21.

Nolan, George J.; Hogan, Robert J.; and Pitzer, Emory W., to Phillips Petroleum Company. Dehydrogenation. 3,555,105, Cl. 260-680.

Noland, Wayne B., to Woodford Manufacturing Company. Automatic locking dock plate. 3,553,757, Cl. 14-72.

Noll, A Michael, to Bell Telephone Laboratories, Incorporated. Pitch detector. 3,555,191, Cl. 179-1.

Nomura, Hideo: *See—*
Kuroda, Takaji; Tagashira, Yoshimi; and Nomura, Hideo,3,555,465.

Nomura, Hiromi: *See—*
Ogasawara, Naoyuki; Hashimoto, Tadashi; Sugie, Mitsuru; and Nomura, Hiromi,3,555,463.

Nomura, Nobuki: *See—*
Ogura, Eiji; Hatabu, Kiyotada; and Nomura, Nobuki,3,555,102.

Nord-Aviation Societe Nationale de Construction Aeronautiques: *See—*
Nerwer, Daniel, 3,554,448.

Nordstedt, Hans Josef; and Delin, Lars Folke, to Aktiebolaget Hakanssons Industrier. Device at the closet of an electric closet. 3,553,742, Cl. 4-130.

Norem, Stanley D., to Perkin-Elmer Corporation, The. Thermal gravimetric analysis apparatus. 3,554,001, Cl. 73-1.

Norris, Richard O.: *See—*
Bassett, Robert S.; and Norris, Richard O.,3,554,713.

North American Forwarding Corporation: *See—*
Mangan, Joseph P., 3,554,255.

North American Rockwell Corporation: *See—*
Akers, Artie E.; and Schonle, Robert W., 3,555,534.
Baurmash, Leonard; Harwick, Burton T.; and Meyer, Jack T., 3,555,274.
Brown, Walter, 3,554,579.
Hall, Lester G., 3,554,527.
Kohl, Arthur L., 3,554,378.
Moen, Walter K., 3,554,816.
Rothschild, Bill F., 3,554,878.

Northern Electric Company Limited: *See—*
Basu, Rabindra N., 3,555,410.
Singer, Fred J., 3,555,196.

Norwalk Thermostat Company: *See—*
Callihan, Dale H., 3,555,482.

Nosaka, Hiroshi: *See—*
Kihara, Shiso; Nosaka, Hiroshi; and Koyama, Takuji,3,554,222.

Novotny, Joseph: *See—*
Moore, William Percy; Sansing, James Earl; and Novotny, Joseph,3,554,728.

Nuckolls, Joe A., to General Electric Company. High-frequency control circuit. 3,555,302, Cl. 307-252.

Nuclear Metals Division, Whittaker Corporation: *See—*
Hunt, James G.; and Friedman, Gerald I., 3,553,829.

Nudenberg, Walter; Merrifield, Dudley B.; and Delaney, Edward A., to Texas-U.S. Chemical Company. Diene polymerization process and catalyst therefor. 3,554,923, Cl. 252-429.

Nudenberg, Walter; Merrifield, Dudley B.; and Delaney, Edward A., to Texas-U.S. Chemical Company. Diene polymerization process and catalyst therefor. 3,554,998, Cl. 260-94.3

NUKEM, Nuklear-Chemie und- Metallurgie Gesellschaft mit beschrankter Haftung: *See—*
Ploger, Friedrich; Roepenack, Horst; and Wegner, Klaus, 3,553,800.

Nurnberg, Eberhard: *See—*
Daum, Wilhelm; Nurnberg, Eberhard; and Sippel, Hans Joachim,3,554,767.

Nusstein, Georg, to Seidl, Georg, Firma. Injection molding apparatus provided with internal plasticizing capsule. 3,554,496, Cl. 259-4.

Nutting Truck and Caster Company: *See—*
Jones, Vercoe C., 3,554,328.

N.V. Ingenieurshureau voor Systemen en Octrooien 'Spanstaal': *See—*
Van der Veen, Romke, 3,554,009.
Van Der Veen, Romke; and De Koning, Jan, 3,554,010.
van der Veen, Romke, 3,554,011.

Nye, Robert G.; Marciano, Joseph J.; Klund, William E.; and Prager, Roger H., to United States of America, Navy. Sonar processor and display circuits. 3,555,498, Cl. 340-3.

Nylonge Corporation: *See—*
Teng, James; and Wang, Pao-Chi, 3,554,840.

Nystrom, Horace A., to Schlumberger Technology Corporation. Methods and apparatus for facilitating the descent of well tools through deviated well bores. 3,554,284, Cl. 166-250.

Nytronics, Inc.: *See—*
Suckle, Benjamin W.; and Gavin, William, 3,554,623.

Oak Electro/Netics Corporation: *See—*
Richardson, Lonnie J., 3,555,210.

Oberg, Charles G. Means of producing artistically variegated multicolored flock pictures. 3,553,855, Cl. 35-26.

Oberst, Hermann; Ebigt, Joachim; Duve, Gunther; and Schommer, Alfred, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Vibration damped sandwich systems having interlayers of a mixture of two externally plasticized copolymers capable of being cross-linked. 3,554,855, Cl. 161-165.

Ocean Systems, Inc.: *See—*
Gilman, Bruce Calvin, 3,553,917.

Oda, Tsuneo: *See—*
Suzuki, Shigeo; Kainuma, Keiji; Tanida, Koehi; and Oda, Tsuneo,3,555,009.

Oesterle, Helmut, to Hilti Aktiengesellschaft. Magazine feeding mechanism for an explosive charge operated setting tool. 3,554,425, Cl. 227-10.

Off, Joseph W. A.: *See—*
Reid, Orland B.; and Off, Joseph W. A.,3,554,354.

Offshore Systems Inc.: *See—*
McDougal, Donald E., 3,553,795.

Ogasawara, Naoyuki; Hashimoto, Tadashi; Sugie, Mitsuru; and Nomura, Hiromj, to TDK Electronics Co., Ltd., and Nippon Electric Company, Limited. Reciprocal microwave phase shifter having a plurality of longitudinal and transverse energizing conductors passing through the ferrimagnetic material. 3,555,463, Cl. 333-31.

Oglesby, Paul L.; Reeves, Richard E.; and Haebich, William K., to Decatur Pump Company. High temperature pump. 3,554,661, Cl. 415-112.

Ogura, Eiji; Hatabu, Kiyotada; and Nomura, Nobuki, to Omoda Cement Company, Limited. Method for producing a vinyl fluoride. 3,555,102, Cl. 260-653.4

Ohashi, Yoshio, to Nippon Gakki Seizo Kabushiki Kaisha. Loudspeaker. 3,554,315, Cl. 181-31.

Ohayon, Gabriel, to Societe Rhodiaceta. Yarn rupture detector. 3,555,536, Cl. 340-259.

Ohi, Reiichi: *See—*
Terashima, Yahachi; and Ohi, Reiichi,3,554,756.

Ohki, Kusuo: *See—*
Kominami, Naoya; Iwaisako, Toshiyuki; Tanaka, Kyugo; and Ohki, Kusuo,3,554,901.

Ohlgren, Raymond R.: *See—*
McKenzie, Bruce A.; Zachariah, Gerald L.; Peart, Robert M.; and Ohlgren, Raymond R.,3,553,846.

Ohmori, Tadashi, to Nippon Oil Company Limited. Process for selective hydrogenation of acetylenic hydrocarbons in a diolefinic hydrocarbon fraction, and catalyst therefor. 3,555,106, Cl. 260-681.5

Ohno, Junji, to Nippon Gakki Seizo Kabushiki Kaisha. Contact spring synchronizing switch assembly. 3,555,228, Cl. 200-166.

Ohta, Kuniichi: *See—*
Yanai, Hisayoshi; Ikoma, Toshiaki; Sugeta, Takayuki; Matsukura, Yasuo; and Ohta, Kuniichi,3,555,282.

Ohta, Seizho; and Kage, Motokuni, to Toyota Jidosha Kogyo Kabushiki Kaisha. Seat cushioning spring device. 3,554,526, Cl. 267-109.

Okamoto, Tadashi: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hiroshashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; Kobayashi, Tsuyoshi; and Izumi, Takahiro,3,555,013.
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,555,014.

O'Keeffe, James R.: *See—*
Watley, Lindell D.; and O'Keeffe, James R.,3,554,324.

Oktyabrev, Viktor Revoldovich: *See—*
Mitskevich, Gennady Feodosievich; Guschin, Vladislav Yakovlevich; Vorontsov, Jury Nikolaevich; Boguslavsky, Vladimir Avramovich; Bela-Belov, Anatoly Mikhailovich; Rakhlis, Viktor Izralievich; Oktyabrev, Viktor Revoldovich; Artsybashev, Oleg Ivanovich; and Vakhomchik, Fedor Andreevich,3,555,471.

Okuda, Osamu, to Sanyo Electric Co., Ltd. Pin-cushion correction apparatus for television receivers. 3,555,350, Cl. 315-24.

Okuno, Zenjiro; and Ikeda, Itsuo, to Kabushiki Kaisha Ricoh. Liquid developers for electrophotography containing a pigment coated with a copolymer. 3,554,946, Cl. 252-62.1

Oleo International Holdsings Limited: *See—*
Thornhill, Peter W.; and Carlton, Quinton H., 3,554,387.

Olin Corporation: *See—*
Kober, Ehrenfpied H.; Schnabel, Wilhelm J.; and Steudler, Paul A., 3,555,072.

Oliver, Ward H., to PCR, Inc., mesne. Process for preparing nitroso-substituted esters of fluorocarbon. 3,554,885, Cl. 204-158.

Olivier, Kenneth L.; Booth, Frank B.; and Mears, David E., to Union Oil Company of California. Hydroformylation. 3,555,098, Cl. 260-604.

Olofsson, Sven: *See—*
Leksell, Lars; Kjellberg, Lars-Gunnar; and Olofsson, Sven,3,554,186.

Olson, William: *See—*
Schumacher, Roger R.; and Olson, William,3,554,563.

Olstowski, Franciszek; Watson, John D., Sr.; and McMichael, Wallace T., to Dow Chemical Company, The. Method of making a heating carpet. 3,553,834, Cl. 29-611.

Olympia Werke AG: *See—*
Gruner, Rolf; Sobottka, Dieter; and Moritz, Rolf, 3,555,321.

Omark Industries, Inc.: *See—*
Fay, Elliott J.; and Ritter, Ralph K., 3,555,238.

Omholt, Ray E. Flooring systems. 3,553,919, Cl. 52-483.

Omoda Cement Company, Limited: *See—*
Ogura, Eiji; Hatabu, Kiyotada; and Nomura, Nobuki, 3,555,102.

Onishi, Masayoshi: *See—*
Shibagaki, Masao; and Onishi, Masayoshi,3,554,092.

Onoda Cement Company, Limited: *See—*
Hirayama, Kikuji; Nakano, Keiji; and Mitsui, Takeshi, 3,553,938.

Opal, Kenneth E., to Power Control Corporation. Direct current motor control system. 3,555,389, Cl. 318-345.

Opel, Detlef; and Brinkmann, Karl-Heinz, to Westinghouse Bremsen- und Apparatebau G.m.b.H. Control valve device having seal retaining means. 3,554,235, Cl. 137-625.69

Opferkuch, Robert E., Jr.; and Stutz, Frank, to Monsanto Company. Acrylic polymer as binders for pressboards and coatings. 3,554,856, Cl. 161-218.

OPTOmechanisms, Inc.: *See—*
Chitayat, Anwar K., 3,554,632.

Orkney, James Bruce; Mijich, Joseph T.; and Tyler, Donald W., said Tyler assor. to said Orkney and said Mijich. Flatwork ironer feeding mechanism and apparatus. 3,553,861, Cl. 38-2.

Orlandini, Kent A.; and Korkisch, Johann, to United States of America, Atomic Energy Commission. Separation of scandium from rare earth elements. 3,554,693, Cl. 23-22.

Orlandini, Kent A.; and Korkisch, Johann, to United States of America, Atomic Energy Commission. Selective ion-exchange separation of alkali metals. 3,554,709, Cl. 23-312.

Orth, Edward G.: *See—*
Niedermeier, Fred P.; Joslin, Irwin L.; and Orth, Edward G.,3,554,312.

Orthopedic Equipment Company, Inc.: *See—*
Isberner, Dietmar R., 3,554,192.

Ory, Raymond E.: *See—*
Brast, Bernhard D.; and Ory, Raymond E.,3,554,692.

Osada, Hisashi: *See—*
Maeda, Tsutomu; Watanabe, Kiyoshi; Akino, Tadaharu; Ito, Eiitsu; and Osada, Hisashi,3,555,464.

Osborn, Robert Otto, to Du Pont de Nemours, E. I., and Company. Thin, flexible thermoelectric device. 3,554,815, Cl. 136-203.

Osborne, William T., to Carrier Corporation. Refrigeration system. 3,553,974, Cl. 62-115.

Osheroff, Gene W. Fluid amplifier control device. 3,554,210, Cl. 137-81.5

Osial, Thaddeus A.; and Steinbruegge, Kenneth B., to Westinghouse Electric Corporation. Liquid cooled laser system. 3,555,449, Cl. 331-94.5

Ostberg, Jan-Erik. Apparatus for improving the reaction between two liquids of different specific gravities. 3,554,518, Cl. 266-34.

Outboard Marine Corporation: *See—*
Lassanske, George G., 3,554,564.

Over, William Roderick: *See—*
Long, Robert Alvin; and Over, William Roderick,3,553,793.

Overcashier, Robert H., to Shell Oil Company. Production of foamed thermoplastic. 3,554,932, Cl. 260-2.5

Overlie, Per T., to Warwick Electronics Inc. Limiter circuit. 3,555,300, Cl. 307-237.

Owens, Ben H.: *See—*
Irasek, Eugene H.; and Owens, Ben H.,3,555,248.

Owens, Walter K. Flushing mechanism for commodes. 3,553,739, Cl. 4-26.

Owens, Walter K. Commode flushing apparatus. 3,553,741, Cl. 4-67.

Owens-Corning Fiberglas Corporation: *See—*
Stalego, Charles J.; and Philipps, Samuel D., 3,554,718.

Owens-Illinois, Inc.: *See—*
Burzynski, Alfred J.; and Walmsley, Judith A., 3,554,698.
Plymale, Charles E., 3,554,787.
Sherman, David M.; ; Embler, Edward L.; and Proffitt, James R., Jr., 3,555,558.

Oy Tampella AB: *See—*
Lainc, Paavo J., 3,554,118.

P & S Rice Mills, Inc.: *See—*
McPhail, Joe L., 3,554,114.

Paatzsch, Peter; and Tomoff, Toma, to Bodenseewerk Perkin-Elmer & Co. GmbH. Single-beam photometer. 3,554,654, Cl. 356-180.

Pabst, Wilfried: *See—*
Isenberg, Arnold; Pabst, Wilfried; and Sandstede, Gerd,3,554,811.

Pacific Scientific Company: *See—*
Mescher, Harold E., 3,554,144.

Padalino, John W., to Whippany Electronics, Inc. Multivoice circuitry with vibrato for electronic musical instrument. 3,555,167, Cl. 84-1.19

Padgett, George R.: *See—*
Padgett, Raymond D., Jr.; and Padgett, George R.,3,553,762.

Padgett, Raymond D., Jr.; and Padgett, George R. Container. 3,553,762, Cl. 15-257.06

Page, John A.; and Bauer, Walter G., to General Mills, Inc. Apparatus for processing protein fiber. 3,554,113, Cl. 99-234.

Page, John D., to Maremont Corporation. Yarn processing apparatus. 3,554,422, Cl. 226-180.

Paige, Richard E. Talking book. 3,553,851, Cl. 35-8.

Paitchell, Harold: *See—*
Wysocki, Kazmier; Flynn, Michael J.; Paitchell, Harold; and Keller, Ronald C.,3,554,841.

Palmer, Charles E. Recloseable bag member. 3,554,436, Cl. 229-62.

Palmer, Earl W.; Laigle, Roger E.; and Kabelka, Peter J., to Anaconda American Brass Company. Manufacture of composite metal strips. 3,553,831, Cl. 29-599.

Palumbo, Dominic T.: *See—*
Faria, Sixdeniel; and Palumbo, Dominic T.,3,555,337.

Pan American Petroleum Corporation: *See—*
Ecuer, John H., 3,554,281.
Silverman, Daniel, 3,555,259.

Pan, Samuel C.; Semar, Joan; Principe, Pacifico A.; and Lerner, Leonard J., to Squibb, E. R., & Sons, Inc. Process for preparing estrololactone. 3,554,870, Cl. 195-51.

Panacon Corporation: *See—*
Ermenc, Eugene D.; and Smith, Marion F., 3,554,861.

Paramonov, Ivan Vasilievich: *See—*
Kostin, Vladimir Nikolaevich; Paramonov, Ivan Vasilievich; and Tsyganov, Viktor Vladimirovich,3,555,164.

Park-Ohio Industries, Inc.: *See—*
Pfaffman, George D.; and Armstrong, Robert G., 3,555,233.

Parker Industries, Inc.: *See—*
Parker, Shirley L., 3,554,576.

Parker, Shirley L., to Parker Industries, Inc. Vehicle undercarriage. 3,554,576, Cl. 280-112.

Parker, Winfred E.; Knight, Hogan B.; Koos, Ronald E.; Ault, Ealdo C.; and Ault, Waldo C., to United States of America, Agriculture. Aromatic esters of dimer acid. 3,555,057, Cl. 260-407.

Parkes, Ralph C. Machine for heat treating sheet material. 3,554,504, Cl. 263-3.

Parks, Christ F.: *See—*
Eilers, Louis H.; and Parks, Christ F.,3,554,287.

Parks, John H.; and Miller, Robert H., to Caterpillar Tractor Company. Variable governor control. 3,554,059, Cl. 74-860.

Parmee, John Llewellin: *See—*
Ralph, Frank; Parmee, John Llewellin; Boswell, David; and Huntley, Frederick Ronald,3,555,461.

Paschke, Wilbert A. Packaging device for ignition components. 3,554,369, Cl. 206-47.

Pascual, Carlos Manuel: *See—*
Bach, David; Rothman, Walter; and Pascual, Carlos Manuel,3,554,495.

Passovoy, Alexander E., to Moduler Inc. Apparatus and method for attaching wall panels to studs, and partition construction formed thereby. 3,553,915, Cl. 52-241.

Paul, William, to Phillips Petroleum Company. Stress relieving of molded plastic structures. 3,555,135, Cl. 264-98.

Payne, John: *See—*
Hammersley, David Alan; and Payne, John,3,554,959.

Pazar, Charles Arnold; and Wiley, James Henry, to American Cyanamid Company. Color coded jigsaw design tablet compressed from therapeutic extruded cylindrical granules of visibly different colors. 3,555,144, Cl. 424-2.

PCR, Inc.: *See—*
Oliver, Ward H., 3,554,885.

Peacher, Teddy J.; and Kilbourn, Dorwin L., to United States of America, Army. Electromagnetic pin restartable lamp. 3,555,339, Cl. 313-152.

Peacher, Teddy J.; and Kilbourn, Dorwin L., to United States of America, Army. Button short-arc gas lamp. 3,555,340, Cl. 313-184.

Pearce, Warren, Jr.; and Winger, James L., to General Motors Corporation. Male connector terminal and insulator. 3,555,496, Cl. 339-217.

Pearson, David L.; and Reid, Jon B., to Shell Oil Company. Process for selective dehalogenation of 2,2- dihaloalkyl-alkanoylacetamides. 3,555,090, Cl. 260-561.

Peart, Robert M.: *See—*
McKenzie, Bruce A.; Zachariah, Gerald L.; Peart, Robert M.; and Ohlgren, Raymond R.,3,553,846.

Pecis, John G.: *See—*
Kappel, Frederick M.; and Pecis, John G.,3,554,232.

Peetz, Dieter: *See—*
Jochim, Friedrich; Peetz, Dieter; Karla, Heinz; and Luerssen, Hermann,3,553,833.

Peffer, Robert J.; and Waybright, George C., to Sylvania Electric Products, Inc. Switching circuit for motor control in slide scanning systems. 3,555,390, Cl. 318-466.

Pelley, Richard B.; Warner, James R.; and Herbert, George E., to Callahan Mining Corporation. Insulated wire-reinforced flexible hose. 3,554,237, Cl. 138-122.

Pennananec'h, Roger: *See—*
Laurentie, Michel; Bouteville, Albert; and Pennananec'h, Roger,3,555,231.

Pennwalt Chemicals Corporation: *See—*
Sweeney, Daniel Patrick; Haas, Werner Carl; and Powell, Harold R., 3,554,038.

Pennwalt Corporation: *See—*
Herrmann, Henry O., 3,554,522.
Taylor, Kendrick C.; Hutchinson, Herman R.; Wagner, August Gilbert; and Blasko, Michael J., 3,554,268.

Pensky, Vadim Nikolaevich: *See—*
Turetskaya, Raisa Anatolievna; Tsvanger, Tamara Alexandrova; Golubtsov, Sergei Alexandrovich; Luzganova, Margarita Andreevna; Pensky, Vadim Nikolaevich; Filjukova, Ljudmila Petrovna; and Pogorelov, Alexandr Georgievich,3,555,064.

Pepp, Frank M., Jr.; and Gordon, Alfred J., to Great Lakes Aluminum Fabricators, Inc. Pivotal window latch. 3,553,985, Cl. 70-102.

Perkin-Elmer Corporation, The: *See—*
Karohl, Jimmy G., 3,555,260.
Norem, Stanley D., 3,554,001.
Schroeder, John B.; and Dieselman, Henry D., 3,555,332.

Perkins, Cornelius C., to Burroughs Corporation. System for automatically setting a position counter to effect agreement with the position of a traveling printing element. 3,554,347, Cl. 197-48.

Perneski, Anthony J., to Bell Telephone Laboratories, Incorporated. Domain propagation arrangement. 3,555,527, Cl. 340-174.

Peronneau, Pierre, to Compagnie Generale d'Electricite. Recording ultrasonic flowmeter for blood vessels. 3,554,030, Cl. 73-194.

Perreault, Donald A., to Xerox Corporation. FSK receiver for detecting a data signal with the same number of cycles of each carrier frequency. 3,555,428, Cl. 325-320.

Perry, Dan E.: *See—*
Robinson, Leroy E.; and Perry, Dan E.,3,554,419.

Perry, Edmond S.: *See—*
Gramza, Eugene P.; and Perry, Edmond S.,3,554,742.

Perry, Glenn: *See—*
Miller, Alfred H.; Perry, Glenn; and Wheat, Lawrence C.,3,553,781.

Persits, Lev Moiseevich: *See—*
Lepp, Vladimir Romanovich; Seviev, Jury Surenovich; Shapiro, Ilya Samuilovich; Beider, Boris Davydovich; and Persits, Lev Moiseevich,3,555,234.

Persson, Erik, to Allmanna Svenska Elektriska Aktiebolaget. Rail signal disturbance avoidance means. 3,555,270, Cl. 246-194.

Persson, Erik; and Goliath, Karl Gunnar, to Allmanna Svenska Elektriska Aktiebolaget. Method and means for suppressing an A.C. component of a given frequency in a pulsed D.C. current. 3,555,437, Cl. 328-165.

Perttula, Harold V.: *See—*
Hum, Allen; Perttula, Harold V.; and Tsuchiya, Takuzo,3,553,944.

Pessel, Leopold: *See—*
Liederbach, William H.; and Pessel, Leopold,3,554,796.

Peter, G. D., & Co. (Engineering) Limited: *See—*
Stretton, Henry Jackson, 3,553,890.

Peter, Heinrich: *See—*
Bickel, Hans; Bosshardt, Rolf; Fechtig, Bruno; Menard, Enrico; Mueller, Johannes; and Peter, Heinrich,3,555,017.

Peter, Richard; and Angliker, Hans Joerg, to Ciba Limited. Water-insoluble styrl dyestuffs. 3,555,016, Cl. 260-240.

Peterson, Arnold J., to Avco Corporation. Electronic circuit for electrochemical timer. 3,555,308, Cl. 307-293.

Petronio, Marco: *See—*
Gisser, Henry; and Petronio, Marco,3,554,913.

Pettit, Donald; Blackwell, Frederick Brian; and Carter, Alan Reginald, to Shoe and Allied Trades Research Association, The. Adhesion of elastomeric materials. 3,553,857, Cl. 36-32.

Petzetakis, Aristovoulos George. Flexible hose incorporating extensible conductive tape. 3,555,170, Cl. 174-47.

Pevny, Nikolai Ivanovich: *See—*
Andoniev, Sergei Mikhailovich; Berman, Mark Nikolaevich; Zhitnik, Georgy Gavrilovich; Kondratiev, Evgeny Mikhailovich; Levitasov, Yakov Matveevich; Makarov, Konstantin Ivanovich; Pevny, Nikolai Ivanovich; Pokrass, Leonid Moiseevich; Pochtman, Alexandr Markovich; Robin, Mark Anisimovich; Tesner, Pavel Alexandrovich; Sheinfain, Felix Isaakovich; and Filipiev, Oleg Vladimirovich,3,554,507.

Pfaffman, George D.; and Armstrong, Robert G., to Park-Ohio Industries, Inc. Method and apparatus for hardening gearteeth. 3,555,233, Cl. 219-10.59

Pfaudler-Werke AG: *See—*
Deichelmann, Hermann, 3,555,414.

Pfister, Anthony C.; Krieger, Roland L.; and Drinan, Gary J., to Allen-Bradley Company. Thermistor controlled overload protection circuit. 3,555,355, Cl. 317-13.

Pfister, Rudolf, to Ackermann, Ernst. Continuous regulatable drive. 3,554,042, Cl. 74-69.
Phalon, Joseph E.: *See—*
Chapman, Dave; Anderson, Douglas W.; and Phalon, Joseph E.,3,554,399.
Pharmacia A.B.: *See—*
Axen, Rolf E. A. V.; Porath, Jerker O.; and Wide, Leif Edvin, 3,555,143.
Phelon, R. E., Company, Inc.: *See—*
Burson, Bob O., 3,554,179.
Philco-Ford Corporation: *See—*
Gardner, Earl P., 3,555,442.
Philipps, Samuel D.: *See—*
Stalego, Charles J.; and Philipps, Samuel D.,3,554,718.
Phillips, Edward H. Template projected images reflected and colored by asymmetrical bodies each having an optical reflecting lens. 3,554,537, Cl. 272-10.
Phillips Petroleum Company: *See—*
Drummond, John A., 3,554,710.
Fluegel, Dale A., 3,555,418.
Henderson, Eulas W., 3,554,706.
Jones, Faber B., 3,554,956.
Kittleman, Edmund T.; and Zuech, Ernest A., 3,554,924.
Little, Donald M.; and Hettick, George R., 3,553,936.
MacEwen, George E., 3,554,430.
McElvy, Howell T., 3,553,815.
McReynolds, Leo A., 3,553,961.
Meldau, Robert F., 3,554,285.
Moberly, Charles W.; and Kahle, Gerald R., 3,554,993.
Moon, Clive D., 3,554,961.
Nolan, George J.; Hogan, Robert J.; and Pitzer, Emory W., 3,555,105.
Paul, William, 3,555,135.
Robinson, Leroy E.; and Perry, Dan E., 3,554,419.
Schiff, Sidney; Johnson, Marvin M.; and Streets, William L., 3,554,911.
Seefluth, Charles L., 3,554,506.
Shotton, James A.; and Stansbury, Roy E., 3,554,879.
Stapp, Paul R.; and Allen, James D., 3,555,048.
Windle, Tom J., 3,554,006.
Phillips, Richard S.: *See—*
Hallene, Alan M.; Holuba, Henry J.; Drexler, John J.; and Phillips, Richard S.,3,554,326.
Pierson, Charles W., to Eastman Kodak Company. Cooled ultrasonic transducer. 3,555,297, Cl. 310-8.9
Pietschmann, Helmut Richard, to Sybron Corporation. Longitudinally adjustable back-rest for dental chair and the like. 3,554,599, Cl. 297-353.
Piguet, Pierre, to Ateliers des Charmilles S.A. Valve, particularly suitable for pressure piping. 3,554,216, Cl. 137-315.
Pinchbeck, Peter H.: *See—*
Riley, Harry L.; and Pinchbeck, Peter H.,3,554,830.
Piner, Dick H., Jr., to Combustion Engineering, Inc. Precipitator. 3,553,940, Cl. 55-174.
Pines Engineering Co., Inc.: *See—*
Munro, Harrison; Suding, Robert A.; and Marsh, Richard E., 3,553,989.
Suding, Robert A.; and Marsh, Richard E., 3,553,990.
Piontelli, Roberto. Electrochemical process for the surface treatment of titanium, alloys thereof and other analogous metals. 3,554,881, Cl. 204-42.
Pitzer, Emory W.: *See—*
Nolan, George J.; Hogan, Robert J.; and Pitzer, Emory W.,3,555,105.
Pizzarello, Frank A.: *See—*
Coerver, Leo E., Jr.; and Pizzarello, Frank A.,3,554,797.
Place, John; Weissenberg, Ulrich W.; and Goodenough, Robert D., to Dow Chemical Company, The. Process for treating water with a polyhalide resin using a semipermeable membrane barrier. 3,554,905, Cl. 210-22.
Plastic Textile Accessories Limited: *See—*
Mercer, Frank Brian; and Martin, Keith Fraser, 3,554,853.
Playground Corporation of America: *See—*
Gillen, Edgar T., 3,553,744.
Plessey Company Limited, The: *See—*
Streeter, John H., 3,554,421.
Plessey Company, The: *See—*
Fortune, Henry James, 3,554,557.
Ploger, Friedrich; Roepenack, Horst; and Wegner, Klaus, to NUKEM, Nuklear-Chemie und- Metallurgie Gesellschaft mit beschrankter Haftung. Metal boat for sinter furnace. 3,553,800, Cl. 25-153.
Plueddemann, Edwin P., to Dow Corning Corporation. Aqueous dispersion of aminoalkyl silane- aldehyde reaction products. 3,554,952, Cl. 260-29.2
Plymale, Charles E., to Owens-Illinois, Inc. Glass article having dual scratch and abrasion resistant coating and method for producing same. 3,554,787, Cl. 117-72.
Pochtman, Alexandr Markovich: *See—*
Andoniev, Sergei Mikhailovich; Berman, Mark Nikolaevich; Zhitnik, Georgy Gavrilovich; Kondratiev, Evgeny Mikhailovich; Levitasov, Yakov Matveevich; Makarov, Konstantin Ivanovich; Pevny, Nikolai Ivanovich; Pokrass, Leonid Moiseevich; Pochtman, Alexandr Markovich; Robin, Mark Anisimovich; Tesner, Pavel Alexandrovich; Sheinfain, Felix Isaakovich; and Filipiev, Oleg Vladimirovich,3,554,507.
Pogorelov, Alexandr Georgievich: *See—*
Turetskaya, Raisa Anatolievna; Tsvanger, Tamara Alexandrova; Golubtsov, Sergei Alexandrovich; Luzganova, Margarita Andreevna; Pensky, Vadim Nikolaevich; Filjukova, Ljudmila Petrovna; and Pogorelov, Alexandr Georgievich,3,555,064.
Pohl, Lawrence E.: *See—*
Blair, Roy C.; and Pohl, Lawrence E.,3,554,374.
Poiget, Gilbert: *See—*
Fouche, Jean Clement Louis; and Poiget, Gilbert,3,555,019.
Poirier, Armand R., to Studebaker Corporation, mesne. Fuel cell designed for efficient stacking. 3,554,803, Cl. 136-86.
Pokrass, Leonid Moiseevich: *See—*
Andoniev, Sergei Mikhailovich; Berman, Mark Nikolaevich; Zhitnik, Georgy Gavrilovich; Kondratiev, Evgeny Mikhailovich; Levitasov, Yakov Matveevich; Makarov, Konstantin Ivanovich; Pevny, Nikolai Ivanovich; Pokrass, Leonid Moiseevich; Pochtman, Alexandr Markovich; Robin, Mark Anisimovich; Tesner, Pavel Alexandrovich; Sheinfain, Felix Isaakovich; and Filipiev, Oleg Vladimirovich,3,554,507.
Polaroid Corporation: *See—*
Batter, John F., Jr.; and Stella, Joseph A., 3,554,643.
Bellows, Alfred H., 3,554,076.
Leinonen, Leonard L., 3,554,838.
Pole, Robert V.: *See—*
Myers, Robert A.; and Pole, Robert V.,3,555,454.
Polkinghorn, Melvin W., to Essex International, Inc., mesne. Circuit breaker construction. 3,555,479, Cl. 337-91.
Pollinger, Hans, to Knorr-Bremse, G.m.b.H. Braking unit for railway vehicles. 3,554,331, Cl. 188-74.
Polymer Corporation, The: *See—*
Ditzler, James A.; Carswell, Donald D., Jr.; and Reisch, Kenneth E., 3,554,618.
Ponson, Lloyd J., to Monsanto Company. Bulked bonded yarn. 3,553,953, Cl. 57-140.
Pontecorvo, Nicholas E.; and Shaffer, Wilfred A., to American Foods Machinery Corporation. Preparation of plasticized cheese. 3,554,765, Cl. 99-115.
Porath, Jerker O.: *See—*
Axen, Rolf E. A. V.; Porath, Jerker O.; and Wide, Leif Edvin,3,555,143.
Porret, Daniel: *See—*
Habermeier, Juergen; and Porret, Daniel,3,554,968.
Porteous, John O., to Porteous, Loren A. Vapor compressor. 3,554,676, Cl. 418-61.
Porteous, Loren A.: *See—*
Porteous, John O., 3,554,676.
Porter, Clyde Robert; and Sember, Joseph Alexander, to Porter, P. L., Co. Hydraulic control assembley. 3,553,967, Cl. 60-54.5
Porter, John Norman: *See—*
McGahren, William James; Mitscher, Lester Allen; and Porter, John Norman,3,555,075.
Porter, P. L., Co.: *See—*
Porter, Clyde Robert; and Sember, Joseph Alexander, 3,553,967.
Poshkus, Algirdas C.: *See—*
Herweh, John E.; and Poshkus, Algirdas C.,3,554,938.
Postlewaite, William R., to Chevron Research Company. Method of removing a guide line from a guide post at an underwater well site. 3,553,821, Cl. 29-427.
Potter, Carl R.; and Mooney, James J., Jr., to General Motors Corporation. Hydrostatic displacement control system. 3,553,962, Cl. 60-19.
Powell, Harold R.: *See—*
Sweeney, Daniel Patrick; Haas, Werner Carl; and Powell, Harold R.,3,554,038.
Power, Bruce W. Hydraulic surface conditioning machine. 3,553,895, Cl. 51-8.
Power Control Corporation: *See—*
Opal, Kenneth E., 3,555,389.
Pozin, Boris Mikhailovich: *See—*
Litvinov, Nikolai Alexandrovich; Pozin, Boris Mikhailovich; and Emelianenko, Vladimir Vasilievich,3,554,616.
PPG Industries, Inc.: *See—*
Dauson, Samuel, 3,553,918.
Prager, Roger H.: *See—*
Nye, Robert G.; Marciano, Joseph J.; Klund, William E.; and Prager, Roger H.,3,555,498.
Pratt & Whitney Inc.: *See—*
Reuteler, Johann F., 3,555,392.
Premo, Charles N., to Koehring Company, mesne. Bead exhaust assembly for a molding machine. 3,553,772, Cl. 18-5.
Pretzer, Wolfgang: *See—*
Ribka, Joachim; and Pretzer, Wolfgang,3,555,002.
Preyer, Gerhard, to Deutsche Edelstahlwerke Aktiengesellschaft. Apparatus for uniformly inductively heating crankshafts. 3,554,514, Cl. 266-4.
Price, David E.: *See—*
Foster, Ellis L.; and Price, David E.,3,554,737.
Price, John A.: *See—*
Carter, Mary E.; Price, John A.; and Mervine, Robert P.,3,554,978.
Price, Ralph E.; and Snyder, Glenn M., to Litton Industries, Inc. Grinding machine for ring-like workpieces. 3,553,907, Cl. 51-215.
Price, Robert L.; and Hahn, Robert S., to Heald Machine Company, The. Machine tool. 3,554,062, Cl. 77-58.
Priesmeyer, Charles; and Meyer, John W., to Meyer & Wenthe, Inc. Plastic covered seal press. 3,554,122, Cl. 101-3.

Princeton Applied Research Corporation: *See—*
Ridgway, Stuart L., 3,554,649.
Principe, Pacifico A.: *See—*
Pan, Samuel C.; Semar, Joan; Principe, Pacifico A.; and Lerner, Leonard J.,3,554,870.
Priola, Michael Anthony, to Geigy Chemical Corporation. Weed killers and use thereof. 3,554,732, Cl. 71-93.
Prismo Universal Corporation: *See—*
Currie, Adam, 3,554,449.
Procter & Gamble Company, The: *See—*
Curry, John D., 3,555,125.
Going, Louis H.; Mersfelder, Robert E.; and Schmitt, Robert O., 3,555,058.
Lyness, Warren I., 3,554,784.
Wetzel, Thomas Andrew; and Hellyer, James A., 3,555,145.
Procter and Gamble Company, The: *See—*
Charrier, George O.; and Wolfe, Gene R., 3,553,849.
Proctor, Albert Edward. Flare stack tip. 3,554,681, Cl. 431-202.
Proctor, Thomas, to Allen-Bradley Company, mesne. Supervisory system for time-shared numerical control system. 3,555,516, Cl. 340-172.5
Proffitt, James R., Jr.: *See—*
Sherman, David M.; ; Embler, Edward L.; and Proffitt, James R., Jr.,3,555,558.
Progil: *See—*
Amiet, Louis; and Soula, Jean-Claude, 3,555,078.
Puchalski, Chester: *See—*
Shavel, John, Jr.; Strandtmann, Max von; and Puchalski, Chester,3,555,029.
Pullman Incorporated: *See—*
Goers, Walter E., 3,554,697.
Pulp and Paper Research Institute of Canada: *See—*
Goring, David A. I., 3,554,825.
Pumpelly, Robert C.: *See—*
Meripol, Robert B.; and Pumpelly, Robert C.,3,554,279.
Putkowski, Ladislao. Hot runner system for plastic injection molds. 3,553,788, Cl. 18-30.
Pye, Donald George, to Du Pont de Nemours, E. I., and Company. Desalination apparatus and process of manufacture using improved, acid grafted, nitrogenous membranes. 3,554,379, Cl. 210-321.
Quatse, Jesse T. Automatic telephone answering mechanism. 3,555,189, Cl. 179-1.
Quimby, George R., to ITT Rayonier Incorporated. Addition agent for the electrolyte used in the electrodeposition of lead. 3,554,884, Cl. 204-114.
Quinn, Edwin K.; and Hawkins, Gary F., to Eastman Kodak Company. Esters of 2-cyanopenta-2,4-dienoic acid and polymers thereof. 3,554,990, Cl. 260-88.7
Quinn, Frederic R., to Zyrotron Industries, Inc. Phase protection system for protecting a three-phase load. 3,555,362, Cl. 317-46.
Rackham, John M.: *See—*
Lederer, Gerald; Rackham, John M.; and Hemphreys, John P.,3,554,777.
Radovic, Zeljko, to Sybron Corporation. Automatic conveyor for container. 3,554,131, Cl. 104-165.
Raginsky, Leonid Solomonovich: *See—*
Karpacheva, Susanna Mikhailovna; Karkhachev, Jury Georgievich; Muratov, Valerian Matveevich; and Raginsky, Leonid Solomonovich,3,554,380.
Ragsdale, Charles W., to United States of America, Navy. Digital filter and pulse width discriminator. 3,555,438, Cl. 328-165.
Rajakovics, Gundolf, to Gebr. Bohler & Co. Sealed joint. 3,554,558, Cl. 277-18.
Rakhlis, Viktor Izralievich: *See—*
Mitskevich, Gennady Feodosievich; Guschin, Vladislav Yakovlevich; Vorontsov, Jury Nikolaevich; Boguslavsky, Vladimir Avramovich; Bela-Belov, Anatoly Mikhailovich; Rakhlis, Viktor Izralievich; Oktyabrev, Viktor Revoldovich; Artsybashev, Oleg Ivanovich; and Vakhomchik, Fedor Andreevich,3,555,471.
Rakov, Peter W.; and Grad, Peter P. Supporting base for reflectors and the like. 3,554,473, Cl. 248-44.
Ralph, Frank; Parmee, John Llewellin; Boswell, David; and Huntley, Frederick Ronald, to International Standard Electric Corporation. Artificial transmission line formed by coiling plural line foils and shorted screening foil. 3,555,461, Cl. 333-31.
Ranco Incorporated: *See—*
Malavasi, Stuart H., 3,554,680.
Randolph, Allan E., Sr.: *See—*
Gargrave, Robert J.; Randolph, Allan E., Sr.; and Holiga, Ludomin A.,3,554,060.
Randour, Victor: *See—*
Grant, Gerald E.; and Randour, Victor,3,554,101.
Rank Organisation Limited, The: *See—*
Millward, John David, 3,555,299.
Starr, Arthur Tisso; and Reeve, Thomas Charles, 3,555,439.
Ranson, Harry Christopher: *See—*
Bickerdike, Robert Lewis; Bradshaw, Francis Julian; Hughes, Garyth; Mair, William Norman; and Ranson, Harry Christopher,3,554,739.
Ranzi, Ubaldo. Electric motor having a starting friction coupling. 3,555,318, Cl. 310-78.
Rao, Durvasula V.; Sayigh, Adnan A. R.; and Ulrich, Henri, to Upjohn Company, The. Isocyanatostilbenes. 3,555,071, Cl. 260-453.
Rappaport, Richard A., to Sybron Corporation. Digital system. 3,555,381, Cl. 313-138.
Rasmussen, Robert F.; and Taylor, John C., to Honeywell Inc. Redundant force summing servo unit. 3,554,084, Cl. 91-3.
Rath, Heinrich Bernhard: *See—*
Hocnick, Hermannhans; Rath, Heinrich Bernhard; and Hess, Wolfgang,3,554,333.
Ratio Controls Corporation: *See—*
Roman, Terrance S., 3,555,243.
Rauch, William T.; and Avery, Howard W., to General Electric Company. Fluidic gas ratio meter. 3,554,004, Cl. 73-23.
Raudat, John L., to Emhart Corporation. Adjustable lane guides. 3,554,353, Cl. 198-30.
Rauterkus, Leo Thomas: *See—*
Brown, Charles G.; Rauterkus, Leo Thomas; and Walker, Charles E.,3,555,529.
Rauth, Glen E., to FMC Corporation. Apparatus for gathering crops from trees. 3,553,949, Cl. 56-329.
Ray, Charles L.: *See—*
Bracken, Aubrey T.; Ray, Charles L.; and Schafer, Conrad B.,3,554,725.
Raybestos-Manhattan, Inc.: *See—*
Lacroix, Arthur J., Jr., 3,554,860.
Raytheon Company: *See—*
Hatton, William L., 3,555,427.
Wyckoff, Robert L., 3,555,548.
RCA Corporation: *See—*
Ahrons, Richard W., 3,555,249.
Allen, John K., 3,555,343.
Andrews, Dallas R., 3,554,637.
Caulton, Martin; Knight, Stanley P.; and De Stefano, Ralph, 3,554,821.
Croy, John E., 3,555,433.
Fischer, Adam, Jr., 3,554,832.
Griepentrog, Dal F., 3,555,175.
Griepentrog, Dal F., 3,555,182.
Helbig, Walter Allen; and Ross, Walter Lee, 3,555,520.
Landry, Norman R., 3,555,460.
Liederbach, William H.; and Pessel, Leopold, 3,554,796.
Limberg, Allen Le Roy, 3,555,309.
Nelson, Earl L., 3,555,518.
Rester, James C.; and Brudos, Curtis D., 3,555,195.
Starger, Samuel L., 3,553,828.
Read, Dennis: *See—*
Jones, Peter M.; and Read, Dennis,3,554,708.
Reader, Trevor D., to General Electric Company. Electric-fluid energy converter. 3,554,669, Cl. 417-48.
Reas, Lewis F., to Corning Glass Works. One-piece reel. 3,554,460, Cl. 242-118.8
Rebold, Jerome I.: *See—*
Chambers, William W.; Rebold, Jerome I.; and Smith, Somers H., III,3,554,248.
Reckman, Albert C.; Barklage, Herman F.; and Shotwell, George T., to A.R. Industries, Inc. Apparatus for producing precast concrete members. 3,553,798, Cl. 25-41.
Redford, Cyril Fitz-James; and Brown, Joseph Drewitt. Film strip viewing box. 3,553,866, Cl. 40-63.
Reed, Rowland H. Adjustable trailer hitch. 3,554,578, Cl. 280-490.
Reeg, Cloyd P.: *See—*
Wood, Frederick C.; Reeg, Cloyd P.; Kelley, Arnold E.; and Cheadle, George D.,3,554,898.
Reeser, William O., Jr., to Varian Associates. Magnet employing probe positioning means pivotable into the gap. 3,555,472, Cl. 335-210.
Reeve, Thomas Charles: *See—*
Starr, Arthur Tisso; and Reeve, Thomas Charles,3,555,439.
Reeves, John F.: *See—*
Lickliter, Robert P.; Abbott, Earl; and Reeves, John F.,3,553,916.
Reeves, Richard E.: *See—*
Oglesby, Paul L.; Reeves, Richard E.; and Haebich, William K.,3,554,661.
Rehau-Plastiks G.m.b.H.: *See—*
Kuhlemann, Karl Heinrich, 3,553,780.
Reich, Lawrence: *See—*
Brand, Paul M.; and Reich, Lawrence,3,555,193.
Reichardt, Wolfgang: *See—*
Wahl, Josef; and Reichardt, Wolfgang,3,554,169.
Reicheneder, Franz; and Fischer, Adolf, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Halopyridazone derivatives. 3,555,026, Cl. 260-250.
Reid, Jon B.: *See—*
Pearson, David L.; and Reid, Jon B.,3,555,090.
Reid, Orland B.; and Off, Joseph W. A., to Singer Company, The. Device for turning fabric panels. 3,554,354, Cl. 198-33.
Reimschuessel, Herbert K.; Dege, Gerald J.; and Fuhrmann, Robert, to Allied Chemical Corporation. Polycaprolactam polymerized with diethanolamine. 3,555,114, Cl. 260-857.
Reinhardt, Helmut: *See—*
Beschke, Helmut; Reinhardt, Helmut; and Achenbach, Karl,3,554,759.
Reinsma, Harold L.; and Adams, Ronald E., to Caterpillar Tractor Company. Cartridge type hinge assembly. 3,554,588, Cl. 287-100.
Reisacher, Josef: *See—*
Herschmann, Otto; Reisacher, Josef; Stockfisch, Heinz; and Gotz, Alfred,3,554,171.

Reisch, Kenneth E.: *See—*
Ditzler, James A.; Carswell, Donald D., Jr.; and Reisch, Kenneth E.,3,554,618.
Reiter Machine Works, Ltd.: *See—*
Graf, Felix, 3,554,455.
Reliance Electric and Engineering Company, The: *See—*
Seed, Aniese E., 3,554,026.
Reliance Electric Company: *See—*
Lucka, Eugene R., 3,555,416.
Remco Industries, Inc.: *See—*
Gurbst, Herbert S., 3,554,597.
Remers, William Alan; and Weiss, Martin Joseph, to American Cyanamid Company. Certain 5,6,7,8-tetrahydro-β-carbolines. 3,555,037, Cl. 260-296.
Remington Arms Company, Inc.: *See—*
Dunkin, Albert, 3,554,482.
Renard, R., et Fils: *See—*
Elineau, Hubert Jean, 3,554,363.
Republic Packaging Corporation: *See—*
Carmody, John M., 3,555,137.
Research Corporation: *See—*
Hageseth, Gaylord T., 3,553,856.
Resnick, Paul Raphael, to Du Pont de Nemours, E. I., and Company. Sulfonic acids and their derivatives and methods of preparing same. 3,555,080, Cl. 260-513.
Rester, James C.; and Brudos, Curtis D., to RCA Corporation. Multiplex synchronizing circuit. 3,555,195, Cl. 179-15.
Reuteler, Johann F., to Pratt & Whitney Inc. Servo system utilizing pulse frequency proportional control. 3,555,392, Cl. 318-18.
Revicki, Albert P., to Emhart Corporation. Retracting carriage mechanism. 3,553,929, Cl. 53-61.
Revolt, Inc.: *See—*
Thompson, Jack M.; and Thompson, Michael J., 3,554,311.
Rex Chainbelt Inc.: *See—*
Johnson, Norman S., 3,554,075.
Mc Ilrath, William P., 3,553,859.
Reynolds, Jerry L.; Schools, Rodman S.; and Sincerbox, Glenn T., to International Business Machines Corporation. System of recording in radiation sensitive medium. 3,555,545, Cl. 343-5.
Reynolds Metals Company: *See—*
Lee, Harry W., Jr., 3,554,823.
Rheinstahl Henschel Aktiengesellschaft: *See—*
Galter, Hellmut; and Stille, Volker, 3,554,121.
Rhodes, Clifford A. Stackable wiring duct. 3,554,236, Cl. 138-117.
Rhodes, Richard D., Jr.: *See—*
Feuer, Seymour S.; Rhodes, Richard D., Jr.; and Torres, Allan F.,3,555,130.
Rhone-Poulenc S.A.: *See—*
Fouche, Jean Clement Louis; and Poiget, Gilbert, 3,555,019.
Rouault, Paul, 3,555,136.
Rhydderch, Malvern John, to British Iron and Steel Research Association, The. Treating or refining of metal. 3,554,521, Cl. 266-35.
Ribka, Joachim, to Fabwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Water-insoluble benzimidazolone containing monoazo dyestuffs. 3,555,003, Cl. 260-157.
Ribka, Joachim; and Pretzer, Wolfgang, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Water-insoluble benzimidazolone containing monoazo dyestuffs. 3,555,002, Cl. 260-157.
Richards, B. C., & Co., Pty. Ltd.: *See—*
Richards, Cecil Graham Francis, 3,554,485.
Richards, Cecil Graham Francis, to Richards, B. C., & Co., Pty. Ltd. Sealing assemblies for rotary ball valves. 3,554,485, Cl. 251-172.
Richards, Chester L., Jr., to Hycon Manufacturing Co. Automatic focus sensor and control. 3,555,280, Cl. 250-201.
Richards, Joseph A.: *See—*
Tancred, William L.; and Richards, Joseph A.,3,554,051.
Richards, William E.: *See—*
United States of America,National Aeronautics and Space Administration, Administrator, 3,555,455.
Richards, William J. Alpha-numeric display device. 3,555,539, Cl. 340-324.
Richardson, Barry D.: *See—*
Sabroff, Alvin M.; Fiorentino, Robert J.; and Richardson, Barry D.,3,553,996.
Richardson, James S.: *See—*
Hanna, Daniel C.; and Richardson, James S.,3,554,132.
Richardson, Lonnie J., to Oak Electro/Netics Corporation. Switch contact mounting for rotary switches. 3,555,210, Cl. 200-11.
Richardson, William S., to Falk Corporation, The. Overrunning positive and synchronized clutch. 3,554,339, Cl. 192-20.
Richardson-Merrell Inc.: *See—*
Kaplan, Leonard L.; and Cox, Robert H., 3,555,151.
Richter, Johan C. F. C., to Aktiebolaget Kamyr. Continuous digester with dual charging means. 3,554,864, Cl. 162-237.
Richter, Roy E. Motor vehicle wheel and cover assembly. 3,554,536, Cl. 301-108.
Rickey, James C. Stringed instrument music teaching device. 3,554,074, Cl. 84-485.
Riddington, Fred W.: *See—*
Zwiacher, Wayne E.; Kaser, Louis D.; Johnson, Maurice V., Jr.; Fennell, Alfred H.; and Riddington, Fred W.,3,553,926.
Rider, George William, to AMP Incorporated. Terminal applicator for terminals in strip form. 3,553,814, Cl. 29-203.
Ridgway, Stuart L., to Princeton Applied Research Corporation. Apparatus for slit illumination. 3,554,649, Cl. 356-100.
Riegel Paper Corporation: *See—*
Johnson, Kenneth R.; and Lense, Robert F., 3,553,934.
Riegel Textile Corporation: *See—*
Hervey, Laurence R. B.; and George, Donald K., 3,554,862.
Hervey, Laurence R. B.; and George, Donald K., 3,554,863.
Riehl, Wilhelm, to General Motors Corporation. Hydropneumatic suspension and damping devices having level regulation for use in motor vehicles. 3,554,524, Cl. 267-64.
Riley, George R.: *See—*
Adkins, David E.; Harris, Jeremy M.; and Riley, George R.,3,554,301.
Riley, Harry L.; and Pinchbeck, Peter H., to United Coke & Chemicals Company Limited. Production of graphite bodies. 3,554,830, Cl. 156-167.
Riley, Joseph J., to Taylor-Winfield Corporation, The. Control of movable platen of flash-butt welding machine. 3,555,237, Cl. 219-97.
Rinauro, Giancarlo, to Ferrania, S.p.A. Photographic emulsions containing chemical adjuvants dispersed in crystalloidal solvents. 3,554,755, Cl. 96-94.
Risberg, Robert L.: *See—*
Halvorson, John A.; Knasinski, Max S.; Risberg, Robert L.; and Serbiak, Richard P.,3,555,384.
Risberg, Robert L., to Cutler-Hammer, Inc. Static shunt motor crane hoist control system with anti-plugging control. 3,555,385, Cl. 318-258.
Ritter, George F., Jr.; and Hymore, Frank J., to Libbey-Owens-Ford Company. Method and apparatus for bending glass sheets. 3,554,724, Cl. 65-107.
Ritter, Markus H.: *See—*
Rothfusz, Ralph W.; and Ritter, Markus H.,3,554,373.
Ritter Pfaudler Corporation: *See—*
Maroney, William J., 3,554,212.
Ritter, Ralph K.: *See—*
Fay, Elliott J.; and Ritter, Ralph K.,3,555,238.
Ritter, Wilhelm; and Adelski, Hans-Joachim, to Siemens Aktiengesellschaft. Electromagnetically controlled friction clutch. 3,554,335, Cl. 188-171.
Robbins, James S., and Associates, Inc.: *See—*
Klein, Harold T., 3,554,298.
Robbins, John F. W., to Beckman Instruments, Inc. Valving for a stopped flow cell. 3,554,226, Cl. 137-559.
Roberts, Alvin M.: *See—*
Roberts, Kenneth E.; and Roberts, Alvin M.,3,553,752.
Roberts, Kenneth E.; and Roberts, Alvin M. Log-bundling apparatus and method. 3,553,752, Cl. 9-15.
Robertshaw Controls Company: *See—*
Kaiser, Franz S., 3,555,356.
Robin, Mark Anisimovich: *See—*
Andoniev, Sergei Mikhailovich; Berman, Mark Nikolaevich; Zhitnik, Georgy Gavrilovich; Kondratiev, Evgeny Mikhailovich; Levitasov, Yakov Matveevich; Makarov, Konstantin Ivanovich; Pevny, Nikolai Ivanovich; Pokrass, Leonid Moiseevich; Pochtman, Alexandr Markovich; Robin, Mark Anisimovich; Tesner, Pavel Alexandrovich; Sheinfain, Felix Isaakovich; and Filipiev, Oleg Vladimirovich,3,554,507.
Robinson, Alfred Alexander; and Calvesbert, James William, to English Electric Company Limited, The. Vacuum circuit interrupters with co-axial movable main and movable auxillary contacts. 3,555,223, Cl. 200-144.
Robinson, Charles F.: *See—*
Brubaker, Wilson M.; and Robinson, Charles F.,3,555,271.
Robinson, Herbert T., to Eastman Kodak Company. Slide tray for a slide projector. 3,554,639, Cl. 353-117.
Robinson, Julian H.: *See—*
Barker, James E.; and Robinson, Julian H.,3,554,694.
Robinson, Leroy E.; and Perry, Dan E., to Phillips Petroleum Company. Non-woven fabrics. 3,554,419, Cl. 225-93.
Robinson, William A., to McPhar Geophysics Limited. Method and means for airborne electromagnetic exploration utilizing the resultant transmitted electromagnetic field comprised of the primary field and secondary fields generated thereby in the aircraft. 3,555,408, Cl. 324-4.
Robot Foto und Electronic GmbH & Co., KG: *See—*
Maronde, Herbert, 3,554,102.
Rockwell, Albert M., Jr., to Laser Associates, mesne. Laser window having a metallic frame arranged to permit post optical grinding and polishing. 3,555,450, Cl. 331-94.5
Rodgers, Elbert A.; Huddle, Thornton C.; and Knox, Kent B. Method of and apparatus for thermolytic destructive distillation of carbonaceous materials, including the recovery of certain products therefrom. 3,554,143, Cl. 110-10.
Rodley, Frederick T. Process and apparatus for making shopping bag. 3,554,099, Cl. 93-8.
Roepenack, Horst: *See—*
Ploger, Friedrich; Roepenack, Horst; and Wegner, Klaus,3,553,800.
Rogers, Benjamin T., Jr., to United States of America, Atomic Energy Commission. Alignment telescope. 3,554,630, Cl. 350-10.
Rogers, Edward S.; and Sanford, Robert A., to Sinclair Oil Corporation. Supported bimetallic alloy catalysts having high surface areas. 3,554,930, Cl. 252-463.

Rogers, Horton M., to Honeywell, Inc. Motor speed control. 3,555,388, Cl. 318-332.
Rogers, Raymond J., to United States of America, Navy. Frequency synthesizer. 3,555,426, Cl. 325-184.
Rogers, Richard E.; and Knapp, Rex C., to Baldwin-Lima-Hamilton Corporation. Level and slope control for surfacing machines. 3,554,291, Cl. 172-4.5
Rogers, Waldo I.: *See—*
Ballard, Louis M.; Beebe, Wayne M.; Kramer, David C.; and Rogers, Waldo I.,3,553,787.
Rogers, William C. Aircraft antenna fittings. 3,553,912, Cl. 52-98.
Rohm and Haas Company: *See—*
Emmons, William D.; and Brodnyan, John G., 3,554,684.
Gehman, David R.; and Fiarman, Irwin S., 3,554,790.
Miller, Vernon F.; and Gehman, David R., 3,554,780.
Rohr Corporation: *See—*
Goodell, Harry, 3,554,391.
Rollins, Dallas W., to ACF Industries, Incorporated. Pneumatic outlet for a hopper. 3,554,609, Cl. 302-52.
Rolph, Donald L.; and Tristram, Ronald, to Singer Company, The. Tabulation and margin control structure. 3,554,350, Cl. 197-176.
Romagano, Alfred P.; and Stevens, Arthur D., to Black Clawson Company, The. Pelletizer die plate. 3,553,776, Cl. 18-12.
Roman, Leonard F.: *See—*
Elliott, George H.; and Roman, Leonard F.,3,554,512.
Roman, Terrance S., to Ratio Controls Corporation, mesne. Optical pyrometer. 3,555,243, Cl. 219-502.
Rommel, Reiner. Cable clamp. 3,553,999, Cl. 72-324.
Ronco, Karl, to Ciba Limited. Process for the manufacture of benzene azo naphthoic acid arylides pigments. 3,555,005, Cl. 260-204.
Ronco, Karl: *See—*
Mueller, Willy; and Ronco, Karl,3,555,004.
Roop, Donald E.: *See—*
Miyasaka, Takao; Shimizu, Hidekazu; and Roop, Donald E.,3,555,382.
Root, George R., to Root Manufacturing Company, Inc. Grass catcher for lawnmowers. 3,553,947, Cl. 56-202.
Root Manufacturing Company, Inc.: *See—*
Root, George R., 3,553,947.
Rorer, Donald R., to Stone Containers Corporation. Package-trimming apparatus for a skin-packaging machine. 3,553,931, Cl. 53-112.
Rosenberg, Edgar N. Deep submergence tunneling device. 3,554,300, Cl. 175-5.
Rosis, Constantine; Kline, Milton; Dickstein, Jack; and Wechsler, Harry C., to Borden Company, The. Process for preparing copolymer latexes. 3,554,954, Cl. 260-29.6
Rosner, Bette J. Folding tray. 3,554,139, Cl. 108-44.
Ross, Abe D. Seating construction and method of manufacture. 3,553,748, Cl. 5-345.
Ross, Richard T.: *See—*
Buckman, Stanley J.; Ross, Richard T.; Wienert, Lester A.; and Slawson, Harry D.,3,554,917.
Ross, Rupert D., to Marathon Oil Company. Stimulating low pressure natural gas producing wells. 3,554,288, Cl. 166-305.
Ross, Stephen T., to Smith, Kline & French Laboratories. 5-Alkenyl substituted-1,4-benzodiazepines. 3,555,010, Cl. 260-239.
Ross, Walter Lee: *See—*
Helbig, Walter Allen; and Ross, Walter Lee,3,555,520.
Rotary Oil Tool Company: *See—*
Kammerer, Archer W., Jr., 3,554,305.
Rothbart, Arthur, to Edo Corporation. Bipolar current generator. 3,555,525, Cl. 340-174.
Rothenbach, Theo; and Gaberthuel, Werner, to Schweizerische Industrie-Gesellschaft. Device for lining up objects. 3,554,351, Cl. 198-21.
Rothfusz, Ralph W.; and Ritter, Markus H., to Bendix Corporation, The. Magnetic document shifting method and apparatus. 3,554,373, Cl. 209-111.8
Rothman, Walter: *See—*
Bach, David; Rothman, Walter; and Pascual, Carlos Manuel,3,554,495.
Rothschild, Bill F., to North American Rockwell Corporation. Plating tin-lead alloy on printed circuits and electrolyte therefor. 3,554,878, Cl. 204-24.
Rouault, Paul, to Rhone-Poulenc S.A. Process for the production of a porous sheet. 3,555,136, Cl. 264-122.
Rowe, Carleton N.: *See—*
Dickert, Joseph J., Jr.; and Rowe, Carleton N.,3,554,908.
Rowe, Frederick G., to Cameron Iron Works, Inc. Blowout preventer. 3,554,480, Cl. 251-1.
Rowe, Oren E. Door restrainer. 3,554,591, Cl. 292-17.
Rowekamp, Edward F., to Lodge & Shipley Company, The. Case packer having floating guides. 3,553,932, Cl. 53-166.
Rowell, Ivan W.: *See—*
Aman, Edward F.; and Rowell, Ivan W.,3,554,293.
Rowell, Monte H. Ion-exchange compositions. 3,554,919, Cl. 252-179.
Rowlands, Tom: *See—*
Molins, Desmond Walter; and Rowlands, Tom,3,554,357.
Rowley, David S.: *See—*
Link, Howard; Bridwell, Harold C.; and Rowley, David S.,3,554,304.
Rowley, Donald G. Stethoscope. 3,555,187, Cl. 179-1.
Royce, Robert E.: *See—*
Mross, Carl P., 3,554,052.
Royer Foundry & Machine Co.: *See—*
Cooper, Rutherford L., 3,554,499.
Rubin, David, to United States of America, Navy. Analog video correlator for position fixing of an aircraft. 3,555,179, Cl. 178-6.8
Rubino, Andrew M.: *See—*
Jones, John L.; and Rubino, Andrew M.,3,555,146.
Ruck, Heinz; and Dunweg, Gustav, to Bemberg, J. P., Aktiengesellschaft. Spinning head for spinning bicomponent filaments. 3,553,774, Cl. 18-8.
Rudakov, Vladimir Fedorovich: *See—*
Ilyashenko, Evgeny Ivanovich; Rudakov, Vladimir Fedorovich; and Bekin, Boris Sergeevich,3,555,524.
Rudert, Wolfgang: *See—*
Deutschmann, Herbert; Wahnschaffe, Jurgen; Rudert, Wolfgang; and Mader, Herbert,3,554,322.
Rudolph, Ralph H., to Snaplite Displays, Inc. Illuminated display characters. 3,553,870, Cl. 40-130.
Rudy, Erland W.: *See—*
Longerich, Ernest P.; and Rudy, Erland W.,3,555,500.
Ruff, Donald O.: *See—*
Boyer, James A.; and Ruff, Donald O.,3,554,178.
Rumball, Paul G.: *See—*
Newton, Albert E.; and Rumball, Paul G.,3,554,424.
Rupf, Jurg: *See—*
Weis, Claus Dieter; and Rupf, Jurg,3,555,086.
Rusco Industries, Inc.: *See—*
Ware, William A., 3,554,651.
Russell, James S.: *See—*
Adams, Cecil S.; and Russell, James S.,3,555,218.
Rusu, Tiberiu: *See—*
Birbanescu, Adrian; and Rusu, Tiberiu,3,554,317.
Rye, Grover W.; and Alexeff, Alexander V., to Goodyear Tire & Rubber Company, The. Dryer or heater. 3,554,502, Cl. 263-3.
Rystad, Arnold O.: *See—*
Casebolt, Ralph T.; and Rystad, Arnold O.,3,553,891.
Sabroff, Alvin M.: *See—*
Fiorentino, Robert J.; Cigan, John M.; Sabroff, Alvin M.; and Jentgen, Richard L.,3,553,995.
Sabroff, Alvin M.; Fiorentino, Robert J.; and Richardson, Barry D., to Battelle Development Corporation, The. Extrusion of brittle materials. 3,553,996, Cl. 72-60.
Sacchi, Giorgio: *See—*
Forlani, Franco; Minnaja, Nicola; and Sacchi, Giorgio,3,555,365.
Sack, Sylvan H.: *See—*
Klupt, Carle D., 3,554,159.
Saffold, Thomas F.; and Frink, Russell E., to Westinghouse Electric Corporation. Fluid-flow circuit interrupter with arc-assisted piston action. 3,555,225, Cl. 200-148.
Safir, Sidney Robert: *See—*
Bauer, Victor John; Fanshawe, William Joseph; and Safir, Sidney Robert,3,555,036.
Sage Instruments, Inc.: *See—*
Schwartz, Joel M.; and Krebs, Daniel F., 3,554,673.
Saginaw Machine and Tool Company: *See—*
Cashman, Robert W., 3,554,565.
Saia AG, Fabrik Elektrischer Apparate: *See—*
Gerber, Hermann, 3,555,323.
Saitoh, Minoru: *See—*
Marumo, Hideo; and Saitoh, Minoru,3,555,079.
Sakakibara, Shigeru: *See—*
Noguchi, Masaaki; Sakakibara, Shigeru; and Sumiyoshi, Masaharu,3,553,979.
Sakamoto, Toemon, to Enshu Limited. Feeding device of filling yarn used for shuttleless loom. 3,554,240, Cl. 139-125.
Sakamoto, Yoshiyasu, to Sanyo Electric Co., Ltd., and Tokyo Sanyo Electric Co., Ltd. Refrigerator temperature and defrosting control. 3,553,975, Cl. 62-156.
Sakata, Yoshiaki: *See—*
Fukada, Kazuo; Sakata, Yoshiaki; Yamada, Yoshio; Mizuno. Masaaki; and Tanaka, Hiroaki,3,555,129.
Salkeld, Peter John, to Molins Machine Company Limited. Article-handling devices. 3,554,362, Cl. 198-210.
Sallay, Stephen I., to American Home Products Corporation. Hexahydro-naphthoquinone semicarbazones. 3,555,044, Cl. 260-340.7
Salsbury Laboratories: *See—*
Welch, Dean E.; and Baron, Robert R., 3,555,085.
Sampietro, Achille C.: *See—*
Fiscus, Dudley F.; and Sampietro, Achille C.,3,554,613.
Sample, Thomas E., Jr.: *See—*
Feuerbacher, David G.; and Sample, Thomas E., Jr.,3,554,286.
Samuel, Eva Lea; and Holan, George, to Monsanto Chemicals (Australia) Limited. 2-Trichloromethylbenzthiazoles as anthilmintics. 3,555,158, Cl. 424-270.
Sandoz-Wander, Inc.: *See—*
Manning, Robert E., 3,555,039.
Sandstede, Gerd: *See—*
Isenberg, Arnold; Pabst, Wilfried; and Sandstede, Gerd,3,554,811.
Sandstrom Products Company: *See—*
Sandstrom, Robert V., 3,554,958.
Sandstrom, Robert V., to Sandstrom Products Company. Protective coating and lubricant. 3,554,958, Cl. 260-30.4
Sanford, Robert A.: *See—*
Rogers, Edward S.; and Sanford, Robert A.,3,554,930.

Sangamo Weston Limited: *See—*
Lovegrove, Henry Joseph, 3,555,324.
Sankyo Co., Ltd.: *See—*
Hayashi, Naoichi; Takeuchi, Nobuhiro; and Sunagawa, Sakae, 3,554,412.
Sansing, James Earl: *See—*
Moore, William Percy; Sansing, James Earl; and Novotny, Joseph,3,554,728.
Sanyo Electric Co., Ltd.: *See—*
Okuda, Osamu, 3,555,350.
Sakamoto, Yoshiyasu, 3,553,975.
Sara, Raymond Vincent, to Union Carbide Corporation. Method of producing aluminum-carbon fiber composites. 3,553,820, Cl. 29-419.
Sargent-Welch Scientific Company: *See—*
Boostrom, Roy E.; Mandell, Arman; and Malter, Lewis, 3,554,648.
Sarring, Ernest J., to Crawley Machinery Co. Book transferring apparatus. 3,554,359, Cl. 198-103.
Sarto, Jorma O., to Chrysler Corporation. Evaporative emission control system. 3,554,175, Cl. 123-136.
Sattler, Frank A., to Westinghouse Electric Corporation. Blends of polymeric amide-imide-ester wire enamels, and conductors insulated therewith. 3,555,113, Cl. 260-841.
Sauer, Richard W., to Atlantic Richfield Company. Wax-polymer compositions. 3,554,950, Cl. 260-28.5
Saul, Sanford, to Triax Company, The. Warehouse system with automatic means to selectively transfer a single or plurality of articles. 3,554,390, Cl. 214-16.4
Savage, Conwell, to Westinghouse Electric Corporation. Motor control mechanism. 3,554,325, Cl. 187-29.
Sawada, Hideo: *See—*
Tanaka, Atsushi; Sawada, Hideo; Toba, Hirotaka; and Mikumo, Masatoshi,3,555,121.
Sayigh, Adnan A. R.: *See—*
Rao, Durvasula V.; Sayigh, Adnan A. R.; and Ulrich, Henri,3,555,071.
Sayles, David C., to United States of America, Army. Solid propellant composition containing a keteneimine as a crosslinking agent. 3,554,819, Cl. 149-19.
Schade, William J., Jr., to United States of America, Navy. Gaseous laser cooling system. 3,554,275, Cl. 165-156.
Schaefer, Edward J., to Franklin Electric Co., Inc. Submersible electric motor. 3,555,319, Cl. 310-87.
Schafer, Conrad B.: *See—*
Bracken, Aubrey T.; Ray, Charles L.; and Schafer, Conrad B.,3,554,725.
Schafer, Georg, Kugelfischer, & Co.: *See—*
Schenk, Rudolf; and Flory, Fritz, 3,554,170.
Schaffler, Georg: *See—*
Schoellhorn, Martin; and Schaffler, Georg,3,554,119.
Schellens, Eugene P.; and Black, Roy E., Jr., to Schellens True Corporation, mesne. Electrolytic machining and fixturing means. 3,554,892, Cl. 204-206.
Schellens True Corporation: *See—*
Schellens, Eugene P.; and Black, Roy E., Jr., 3,554,892.
Schenck, Carl, Maschinenfabrik G.m.b.H.: *See—*
Holdinghausen, Paul, 3,554,061.
Schenk, Rudolf; and Flory, Fritz, to Schafer, Georg, Kugelfischer, & Co. Carburetion control method for operating fuel injection spark-ignition internal combustion engines. 3,554,170, Cl. 123-32.
Schering AG: *See—*
Helm, Dietrich; and Janssen, Rainer, 3,554,944.
Schiff, Sidney; Johnson, Marvin M.; and Streets, William L., to Phillips Petroleum Company. Viscosity index improvers. 3,554,911, Cl. 252-59.
Schill, Hermann, to Siemens Aktiengesellschaft. Method for producing thin-foil strips. 3,554,831, Cl. 156-184.
Schimmelpfennig, Peter, to Licentia Patent-Verwaltungs-G.m.b.H. Searchlight apparatus. 3,555,264, Cl. 240-3.1
Schindler, Walter; and Schmid, Erich, to Geigy Chemical Corporation. Derivatives of 11-piperazinyl- and 11- hexahydrodiazepinyl-10,11-dihydrodibenzo-[b,f] thiepin-10-ol. 3,555,028, Cl. 260-268.
Schlapia, Harold A., Jr. Delay blowback mechanism for firearms. 3,554,077, Cl. 89-194.
Schlinke, Gunter, to Bellows-Valvair-Kamper GmbH. Device for adjusting the stroke of a variable displacement pump to maintain the product of pressure and volume per stroke constant. 3,554,671, Cl. 417-222.
Schlitz, Erwin: *See—*
Talebi, Abootaleb; and Schlitz, Erwin,3,555,326.
Schlumberger, N., & Cie:.*See—*
Herubel, Jean-Frederic, 3,553,766.
Schlumberger Technology Corporation: *See—*
Fields, Roger Q., 3,555,504.
Nystrom, Horace A., 3,554,284.
Schmedding, Herbert: *See—*
Achelpohl, Fritz; and Schmedding, Herbert,3,554,098.
Schmedding, Herbert; and Helbig, Helmut, to Windmoller & Holscher. Process for the manufacture of bonded plastic sacks employing an electrical field and an ionizable gas. 3,554,828, Cl. 156-156.
Schmermund, Alfred. Method of checking the ends of cigarettes for cavities in the tobacco filling. 3,555,287, Cl. 250-223.
Schmid, Erich: *See—*
Schindler, Walter; and Schmid, Erich,3,555,028.
Schmid, Richard G., to Gulf Oil Corporation. Apparatus for collating disc-like objects. 3,554,404, Cl. 221-95.
Schmidt, Erich A., 1/2 to Textron Inc., mesne. Attaching machine. 3,554,426, Cl. 227-18.
Schmidt, Ilrich: *See—*
Feist, Wieland; and Schmidt, Ilrich,3,554,652.
Schmidt, Paul R.: *See—*
Dixon, Paul H.; and Schmidt, Paul R.,3,555,266.
Schmitt, Robert O.: *See—*
Going, Louis H.; Mersfelder, Robert E.; and Schmitt, Robert O.,3,555,058.
Schnabel, Wilhelm J.: *See—*
Kober, Ehrenfpied H.; Schnabel, Wilhelm J.; and Steudler, Paul A.,3,555,072.
Schnake, Friedrich: *See—*
von Starck, Axel; and Schnake, Friedrich,3,554,670.
Schneider, George W., Jr., to Singer Company, The, mesne. Rotary fluid meter. 3,554,032, Cl. 73-257.
Schneider, Raymond T., to Wellman-Lord, Inc. Fluid mixing apparatus and method. 3,554,228, Cl. 137-599.
Schneidewind, Fred C. Apparatus for constructing a speaker enclosure. 3,554,314, Cl. 181-31.
Schnell, Hermann: *See—*
Buysch, Han-Josef; Krimm, Heinrich; and Schnell, Hermann,3,555,101.
Senge, Ferdinand; and Schnell, Hermann,3,555,070.
Schoellhorn, Martin; and Schaffler, Georg, to Keller & Knappich GmbH. Scrap baling press truck. 3,554,119, Cl. 100-215.
Schoenewaldt, Erwin F.: *See—*
Beutel, Ralph H.; Davis, Paul; and Schoenewaldt, Erwin F.,3,555,021.
Schoffmann, Rudolf, to Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft. Method of rolling bars cast in continuous casting plants. 3,553,997, Cl. 72-226.
Schofield, John Allan; and Delano, Roger A., to Union Carbide Corporation. Azeotropic composition. 3,554,918, Cl. 252-171.
Schommer, Alfred: *See—*
Oberst, Hermann; Ebigt, Joachim; Duve, Gunther; and Schommer, Alfred,3,554,855.
Schonle, Robert W.: *See—*
Akers, Artie E.; and Schonle, Robert W.,3,555,534.
Schools, Rodman S.: *See—*
Reynolds, Jerry L.; Schools, Rodman S.; and Sincerbox, Glenn T.,3,555,545.
Schoppe, Gunter: *See—*
Beyer, Hermann; and Schoppe, Gunter,3,554,631.
Schott, Emilio: *See—*
Meisels, Alex; and Schott, Emilio,3,555,035.
Schram, Douglas J. Bean bag toss target game. 3,554,550, Cl. 273-95.
Schraner, Josef F.: *See—*
Kring, Joseph R.; and Schraner, Josef F.,3,554,528.
Schreihage, Wilhelm: *See—*
Ginsberg, Ernst; Hake, Oswald; Kirchner, Norbert; Uden, Edward; Zittlau, Helmut; and Schreihage, Wilhelm,3,555,371.
Schrenk, Walter J., to Dow Chemical Company, The. Method for the controlled extrusion of multi- component synthetic resinous bodies. 3,555,128, Cl. 264-40.
Schreyer, Kenneth D., to Lyon Metal Products, Incorporated. Load bearing end panel construction. 3,554,624, Cl. 312-194.
Schroder, Rolf: *See—*
Winkler, Alfred; Wagner, Karl; Engelsmann, Dieter; and Schroder, Rolf,3,554,104.
Schroeder, Gerald L., to United States of America, Atomic Energy Commission. Potential alpha ray activity meter. 3,555,278, Cl. 250-83.3
Schroeder, John B.; and Dieselman, Henry D., to Perkin-Elmer Corporation, The. Apparatus for producing a high energy beam of selected metallic ions. 3,555,332, Cl. 313-63.
Schubert, Joachim, to Bertram, Ernst, & Wilhelm, Fabrik fototechn. Messgerate. Exposure control circuit for a photographic shutter. 3,555,363, Cl. 317-124.
Schulze, Klaus: *See—*
Endesfelder, Helmut; Lentz, Klaus; Jando, Klaus; and Schulze, Klaus,3,555,276.
Schulze, Martin: *See—*
Luther, Gunter; Ludwig, Jurgen; and Schulze, Martin,3,554,873.
Schumacher, Roger R.; and Olson, William, to Dynamic Seals, Incorporated. Hydraulic seal. 3,554,563, Cl. 277-124.
Schuurink, Fredrik Adolf. Dryer. 3,553,850, Cl. 34-133.
Schwab, Charles J., to Brook Equipment Company. Reverse stressing. 3,554,000, Cl. 72-453.
Schwartz, Harvey A., to Soss Manufacturing Company. Voltage testing instrument. 3,555,420, Cl. 324-149.
Schwartz, Herbert; and Weise, Rolf, to Timex Corporation. Double hairspring clamping device. 3,553,956, Cl. 58-28.
Schwartz, Hermann, to Siegfried Peyer. Apparatus for cutting a strand of material. 3,554,068, Cl. 83-561.
Schwartz, Joel M.; and Krebs, Daniel F., to Sage Instruments, Inc. Syringe pump. 3,554,673, Cl. 417-412.
Schwarz, Hans-Helmut; and Immel, Otto, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of -aminoalkane nitriles. 3,555,059, Cl. 260-465.2

Schwarz, Walter: *See—*
Smolka, Thomas G.; and Schwarz, Walter,3,554,571.
Schwarzkopf, August, to Windmoller & Holscher. Process and apparatus for manufacturing bags of plastics material having pressure or slide fastener strips joined by heat-sealing. 3,554,822, Cl. 156-66.
Schweitzer, Ulrich: *See—*
Matzl, Manfred; and Schweitzer, Ulrich,3,555,403.
Schweizerische Industrie-Gesellschaft: *See—*
Rothenbach, Theo; and Gaberthuel, Werner, 3,554,351.
Scientific Industries, Inc.: *See—*
Maxon, Theodore, 3,554,700.
Scoledge, Robert F.; Audesse, Emery G.; and Huston, Leroy S., Jr., to Sylvania Electric Products, Inc. Incandescent lamp. 3,555,338, Cl. 313-113.
Scott, Robert J., to United States of America, Army. Method of and apparatus for time adjustment of information. 3,555,203, Cl. 179-100.2
Scott, William W. Color stripping device. 3,554,163, Cl. 118-221.
Scutella, Joseph. Fail safe double action safety guard. 3,554,067, Cl. 83-397.
SDS Data Systems: *See—*
Hartke, David Henry, 3,555,540.
Seacrest, William G., to Bethlehem Steel Corporation. Shaft furnace shell cooling system. 3,554,517, Cl. 266-32.
Sealed Unit Parts Co., Inc.: *See—*
Ehrens, Henry; and Weiner, Sidney, 3,554,217.
Seaman, Louis, to Spoth, Faye. Exercise treadmill with convex surface. 3,554,541, Cl. 272-69.
Seasafe Transport AB: *See—*
Tornqvist, Bengt Wilhelm, 3,554,151.
Seatech Engineering, Inc.: *See—*
Bildsoe, Jorgen S., 3,554,360.
Sebring, John P., to Moore Business Forms, Inc. Continuous envelopes. 3,554,447, Cl. 229-69.
Seeburg Corporation of Delaware, The: *See—*
Britton, Leon R.; Johnson, Kurt T.; Kusch, Edward K.; and Williams, Bernhard O., 3,555,229.
Seed, Aniese E., to Reliance Electric and Engineering Company, The, mesne. Load cell. 3,554,026, Cl. 73-141.
Seefluth, Charles L., to Phillips Petroleum Company. Rapid heating of thick wall parison preforms. 3,554,506, Cl. 263-7.
Seharada, Saburo: *See—*
Takamura, Akira; Kunii, Kazushi; Seharada, Saburo; and Nakatani, Hiroshi,3,554,327.
Seiden, Freida B.: *See—*
Vedeen, Leonard I.; Lally, Joseph E.; and Seiden, Herman L.,3,554,547.
Seiden, Herman L.: *See—*
Vedeen, Leonard I.; Lally, Joseph E.; and Seiden, Herman L.,3,554,547.
Seidl, Georg, Firma: *See—*
Nusstein, Georg, 3,554,496.
Seiger, Harry W. Support device for helping a person out of bed. 3,553,746, Cl. 5-317.
Seigfried, Robert B.: *See—*
Morrow, Robert C.; and Seigfried, Robert B.,3,553,911.
Seitz, Jerry T., to Dow Chemical Company, The. Method of electropainting from an emulsion. 3,554,888, Cl. 204-181.
Seitz, Karl, to Ciba Limited. Water soluble pyrene fibre-reactive dyestuffs. 3,555,027, Cl. 260-256.5
Seitz, Thomas E.: *See—*
Greenberg, Jacob; and Seitz, Thomas E.,3,554,806.
Seki, Susumu, to Hitachi, Ltd. Numerical control system. 3,555,253, Cl. 235-151.11
Sekine, Jiro, to Fuji Shashin Film Kabushiki Kaisha. Switch circuit for motion picture camera. 3,554,633, Cl. 352-141.
Seko, Kiyoshi, to Kabushiki Kaisha Fuji Kikai Seisakusho. Automatic wrapping machine. 3,553,933, Cl. 53-180.
Sekse, Torkjell: *See—*
Cogar, George R.; Sekse, Torkjell; Banziger, Walter; Ming, Joseph W.; and Horvath, Laszlo,3,555,306.
Selden, Otto Carl. Key controlled pulse generator. 3,555,313, Cl. 310-15.
Selectro-Micro Company Limited: *See—*
Bennett, George A., 3,554,464.
Seleen, William Arvid: *See—*
Hankinson, Cloyce L.; Linke, Ernest George; and Seleen, William Arvid,3,554,772.
Selke, William A.: *See—*
Bullwinkel, Edward P.; and Selke, William A.,3,555,377.
Sellers, Ralph F.; Smith, Samuel G., Jr.; and Burhans, Allison S., to Union Carbide Corporation. Cycloaliphatic compounds. 3,555,050, Cl. 260-348.
Semar, Joan: *See—*
Pan, Samuel C.; Semar, Joan; Principe, Pacifico A.; and Lerner, Leonard J.,3,554,870.
Sember, Joseph Alexander: *See—*
Porter, Clyde Robert; and Sember, Joseph Alexander,3,553,967.
Senge, Ferdinand; and Schnell, Hermann, to Farbenfabriken Bayer Aktiengesellschaft. N-methylolsilylethers of urethanes. 3,555,070, Cl. 260-448.8
Sennewald, Kurt; Hauser, Alfred; and Winfried, Lork, to Knapsack Aktiengesellschaft. Process for isolating acrylic acid from the reaction gases obtained by oxidation of propylene or acrolein. 3,555,082, Cl. 260-526.
Sennheiser Electronic: *See—*
Warnke, Egon Fred, 3,555,202.
Serbiak, Richard P.: *See—*
Halvorson, John A.; Knasinski, Max S.; Risberg, Robert L.; and Serbiak, Richard P.,3,555,384.
Serle, Allan G., to Celanese Corporation. Apparatus for preventing molding defects. 3,553,785, Cl. 18-30.
Serlin, Irving: *See—*
Knapp, Edmund C.; Markhart, Albert H.; and Serlin, Irving,3,554,935.
Lavin, Edward; and Serlin, Irving,3,554,939.
Servo Corporation of America: *See—*
Cook, Melvin S., 3,555,180.
Seviev, Jury Surenovich: *See—*
Lepp, Vladimir Romanovich; Seviev, Jury Surenovich; Shapiro, Ilya Samuilovich; Beider, Boris Davydovich; and Persits, Lev Moiseevich,3,555,234.
Shaffer, Howard A.: *See—*
Weaver, Galen K.; Shaffer, Howard A.; and Coughlin, Stephen A.,3,553,812.
Shaffer, Peter T. B.; and Whitney, Ellsworth D., to Carborundum Company, The. Silicon carbide containing boron and nitrogen in solid solution. 3,554,717, Cl. 51-307.
Shaffer, Wilfred A.: *See—*
Pontecorvo, Nicholas E.; and Shaffer, Wilfred A.,3,554,765.
Shah, Harshavadan C.; Stein, Reinhardt P.; and Smith, Herchel, to American Home Products Corporation. Process for alkoxyalkylating a 3-hydroxy group in 13-alkylgona-(and 8-isogona)-1,3,5 (10)trienes and delta-6-, delta-7-, delta-8(9)-, delta-9(11) and delta 6,8(9)-dehydro derivatives thereof. 3,555,054, Cl. 260-397.
Shanbrom, Edward; and Kamienski, Edward P., Jr., to Baxter Laboratories, Inc. Apparatus for viewing particle producing reactions. 3,554,702, Cl. 23-253.
Shannon, Bill M.; and Kotala, James R., to Westinghouse Electric Corporation. Bus duct. 3,555,293, Cl. 307-147.
Shapiro, Ilya Samuilovich: *See—*
Lepp, Vladimir Romanovich; Seviev, Jury Surenovich; Shapiro, Ilya Samuilovich; Beider, Boris Davydovich; and Persits, Lev Moiseevich,3,555,234.
Sharpe, Patrick H., to Brule C. E. & E., Inc. Smoke and gas cleaning apparatus. 3,553,943, Cl. 55-223.
Shavel, John, Jr.; Strandtmann, Max von; and Puchalski, Chester, to Warner-Lambert Pharmaceutical Company. Azecino[2,1-a]tetrahydroisoquinolines and process for their production. 3,555,029, Cl. 260-286.
Shavit, Gideon, to Honeywell Inc. Optimizing system for a plurality of temperature conditioning apparatuses. 3,555,251, Cl. 235-151.
Shaw, Leslie E.; and Maclean, Peter M., to Shaw Pipe Protection Ltd. Method of making a shrink device. 3,554,999, Cl. 264-95.
Shaw Pipe Protection Ltd.: *See—*
Shaw, Leslie E.; and Maclean, Peter M., 3,554,999.
Shaw, Steven A.: *See—*
Austin, Irving G.; Greeven, Max V.; and Shaw, Steven A.,3,554,440.
Shea, James M., to General Motors Corporation. Pressure control valve assembly and method of calibration. 3,554,223, Cl. 137-539.
Sheen, Edwin M., to United States of America, Atomic Energy Commission. System for the suppression of transient noise pulses. 3,555,434, Cl. 328-109.
Sheetmaster Corporation: *See—*
Sjostrom, Robert L., 3,553,863.
Sheinfain, Felix Isaakovich: *See—*
Andoniev, Sergei Mikhailovich; Berman, Mark Nikolaevich; Zhitnik, Georgy Gavrilovich; Kondratiev, Evgeny Mikhailovich; Levitasov, Yakov Matveevich; Makarov, Konstantin Ivanovich; Pevny, Nikolai Ivanovich; Pokrass, Leonid Moiseevich; Pochtman, Alexandr Markovich; Robin, Mark Anisimovich; Tesner, Pavel Alexandrovich; Sheinfain, Felix Isaakovich; and Filipiev, Oleg Vladimirovich,3,554,507.
Shell Containers, Inc.: *See—*
Cohen, Joel B., 3,554,429.
Shell Oil Company: *See—*
Bauer, Robert F.; Mc Neill, Robert C.; and Ledbetter, Jerry T., 3,554,277.
Bloembergen, Rudolf H.; Buningh, Weigert C.; and Bally, Adrianus Petrus, 3,554,689.
Boor, John, Jr., 3,554,963.
Overcashier, Robert H., 3,554,932.
Pearson, David L.; and Reid, Jon B., 3,555,090.
Wilson, Joseph G., 3,554,903.
Winkler, DeLoss E., 3,555,112.
Shepard, Kenneth L.: *See—*
Cragoe, Edward J., Jr.; and Shepard, Kenneth L.,3,555,023.
Cragoe, Edward J., Jr.; Bicking, John B.; and Shepard, Kenneth L.,3,555,024.
Shepherd, Lawrence H., Jr., to Ethyl Corporation. Processes for making complex compounds of haloberyllium hydride with tertiary amines. 3,555,020, Cl. 260-247.
: *See—*
Sherman, David M.; ; Embler, Edward L.; and Proffitt, James R., Jr.,3,555,558.
Sherman, David M.; ; Embler, Edward L.; and Proffitt, James R., Jr., to Dick, A.B., Company Owens-Illinois, Inc. Ink drop writing apparatus with data synchronizing means Apparatus for compacting thermosetting material. 3,555,558, Cl. 18-4.

Sherwin, Richard N. Thyristor operated photosensitive control for lamp bank display. 3,555,351, Cl. 315-154.

Shibagaki, Masao; and Onishi, Masayoshi, to Toyo Kogyo Co., Ltd., and Mitsubishi Denki Kabushiki Kaisha. Ignition system for multi-cylinder rotary piston engine. 3,554,092, Cl. 92-8.07

Shima, Tsukasa: *See—*
Fujisaki, Yoshisato; Aishima, Itsuho; Fukuma, Noboru; Nakanishi, Atsuo; Matsui, Kenichi; Shima, Tsukasa; and Nakai, Schiyouzi,3,554,683.

Shimada, Shoichi, to Dainippon Screen Seizo Kabushiki Kaisha (Dainippon Screen Manufacturing Company, Limited). Apparatus for production of color separation records. 3,555,262, Cl. 235-193.

Shimano, Keizo. Hand brake for a bicycle. 3,554,329, Cl. 188-24.

Shimano, Keizo; and Fujii, Yuji. Hydraulic bicycle brake system. 3,554,334, Cl. 188-152.

Shimano, Keizo; and Ishida, Takuo. Indicating system of operational state of the parking brake for a bicycle. 3,554,158, Cl. 116-114.

Shimano, Keizo; and Nagano, Masahi. Free wheel for a bicycle. 3,554,340, Cl. 192-64.

Shimizu, Hidekazu: *See—*
Miyasaka, Takao; Shimizu, Hidekazu; and Roop, Donald E.,3,555,382.

Shin-etsu Chemical Co.: *See—*
Nakajima, Isao; Suzuki, Miichiro; Yamaguchi, Makio; and Kondo, Kiyohire, 3,555,063.

Shipley, Earl H.: *See—*
Haughtington, Richard E.; and Shipley, Earl H.,3,554,157.

Shirley, Edmund C.: *See—*
Martin, Allan E.; and Shirley, Edmund C.,3,554,167.

Shmukler, Iosif: *See—*
Kolypaev, Nikolai Vasilievich; Vekke, Alexandr Ivanovich; Ivanov, Ivan Petrovich; Kravtsov, Lev Nikolaevich; and Shmukler, Iosif,3,554,066.

Shoe and Allied Trades Research Association, The: *See—*
Pettit, Donald; Blackwell, Frederick Brian; and Carter, Alan Reginald, 3,553,857.

Shoemaker, Paul S.; and Klamp, Walter K., to Uniroyal, Inc. Glass cord reinforcement of elastomeric articles. 3,554,260, Cl. 152-359.

Shoemaker, William E.; and Wilson, Daivd W., to Signetics Corporation. Amplifier testing apparatus having a comparator for comparing the amplifier output signal with a pair of reference signals. 3,555,415, Cl. 324-57.

Shotton, James A.; and Stansbury, Roy E., to Phillips Petroleum Company. Electroplating metal shield on electrical cable. 3,554,879, Cl. 204-28.

Shotwell, George T.: *See—*
Reckman, Albert C.; Barklage, Herman F.; and Shotwell, George T.,3,553,798.

Shryock, Robert M.: *See—*
Johnson, Gary L.; and Shryock, Robert M.,3,553,819.

Shults, Gary W.; and Wierbicki, Eugen, to United States of America, Army. Process for inactivating enzymes in meat to be stabilized by radiation. 3,554,773, Cl. 99-217.

Shuman, Jack N. Appartus for forming plastic material. 3,553,784, Cl. 18-19.

Siegelin, Werner: *See—*
Gawlick, Heinz; Bendler, Hellmut; Marondel, Guenther; and Siegelin, Werner,3,554,181.

Siegfried Peyer: *See—*
Schwartz, Hermann, 3,554,068.

Siemens Aktiengesellschaft: *See—*
Bayer, Karl-Heinz; and Waldmann, Hermann, 3,555,401.
Haeusler, Jochen, 3,555,310.
Kattner, Drich; Voelcker, Sven; Westram, Werner; and Nemeth, Manfred, 3,554,346.
Krieger, Friedrich, 3,554,793.
Ritter, Wilhelm; and Adelski, Hans-Joachim, 3,554,335.
Schill, Hermann, 3,554,831.
Von Sturm, Ferdinand; and Nischik, Herbert, 3,554,812.

Sienkiewicz, Boleslaw; and Bagley, Ferdinand A., to General Foods Corporation. Method of agglomerating food powder. 3,554,760, Cl. 99-71.

Sieracki, Frank W.; and Coombe, Thomas, to Ultronic Systems Corporations. Information storage and display system. 3,555,523, Cl. 340-173.

Sigl, Edward D., to Bowmar Instrument Corporation. Internal pinion counter. 3,554,439, Cl. 235-139.

Signetics Corporation: *See—*
Shoemaker, William E.; and Wilson, Daivd W., 3,555,415.

Silverman, Daniel, to Pan American Petroleum Corporation. Electronic optical data processing system. 3,555,259, Cl. 235-181.

Silverman, David; and Wells, Robert R., to Beckman Instruments, Inc. Thumbwheel type rotary switch with improved manual lever operator. 3,555,211, Cl. 200-17.

Simon Engineering Dudley Limited: *See—*
Smith, Carl A.; Looms, John Sidney Thomas; and Ely, Cyril Harold Arthur, 3,554,319.

Simons, Charles W., to Grace, W. R., & Co. Mixture of a suspension resin of vinyl chloride and an organosol resin of vinyl chloride. 3,555,122, Cl. 260-899.

Simons, Peter Johannes Philippus Gerardus: *See—*
Grimmeiss, Hermann Georg; and Simons, Peter Johannes Philippus Gerardus,3,555,283.

Sincerbox, Glenn T.: *See—*
Reynolds, Jerry L.; Schools, Rodman S.; and Sincerbox, Glenn T.,3,555,545.

Sinclair Oil Corporation: *See—*
La Force, Richard C., 3,554,034.
Rogers, Edward S.; and Sanford, Robert A., 3,554,930.

Sinclair-Koppers Company: *See—*
Ingram, Alvin R., 3,554,934.

Singer Company, The: *See—*
Herrmann, John F., 3,554,348.
Reid, Orland B.; and Off, Joseph W. A., 3,554,354.
Rolph, Donald L.; and Tristram, Ronald, 3,554,350.
Schneider, George W., Jr., 3,554,032.

Singer, Fred J., to Northern Electric Company Limited. Telephone switching system with programmed auxiliary control for providing special services. 3,555,196, Cl. 179-18.

Singer-General Precision, Inc.: *See—*
Coyle, Vincent E., 3,554,229.

Sintermetallwerk Krebsoge GmbH: *See—*
Zapf, Gerhard; and Niessen, Jorg, 3,554,677.

Sippel, Hans Joachim: *See—*
Daum, Wilhelm; Nurnberg, Eberhard; and Sippel, Hans Joachim,3,554,767.

Sironi, Giuseppe: *See—*
Colombo, Umberto; Mini, Iti; and Sironi, Giuseppe,3,554,733.

Siska, John G.: *See—*
Gluck, Louis; and Siska, John G.,3,554,414.

Sjoberg, Berndt Olof Harald: *See—*
Ekstrom, Bertil Ake; and Sjoberg, Berndt Olof Harald,3,555,011.

Sjostrom, John W., to Bolton-Emerson, Inc. Apparatus and method for grinding notched knives. 3,553,894, Cl. 51-5.

Sjostrom, Robert L., to Sheetmaster Corporation. Fabric spreader. 3,553,863, Cl. 38-143.

Skibarko, Alexei Petrovich; and Gulgazaryan, Karen Andranikovich. Phototube with electrode disposed on outside of tube envelope for modulation purposes. 3,555,281, Cl. 250-211.

Skillen, Dawson C., to Textron, Inc. Servo controlled dimension stabilizer for machine tools. 3,554,064, Cl. 82-14.

Skinner, Robert Thomas John, to Lucas, Joseph, (Industries) Limited. Fluid switching device. 3,554,207, Cl. 137-81.5

Skrydstrup, Ole; and Larsen, Bjorn, to Central Dynamics, Ltd. Synchronizing pulse comparator circuitry. 3,555,185, Cl. 178-69.5

Slagel, Robert C., to Ashland Oil & Refining Company. Hydroxy aminimines. 3,555,095, Cl. 260-584.

Slater, Jack D.; and Culbreth, Walter J., to Kaiser Aluminum & Chemical Corporation. Carbamic ester process and fertilzer vales therein. 3,554,730, Cl. 71-34.

Slawson, Harry D.: *See—*
Buckman, Stanley J.; Ross, Richard T.; Wienert, Lester A.; and Slawson, Harry D.,3,554,917.

Slemmons, Charles O., to General Tire & Rubber Company, The. Device for attaching a travel distance measuring instrument to a wheeled vehicle. 3,554,479, Cl. 248-289.

Sloan, Martin F., to Hercules Incorporated. Poly(ester-imides) from maleopimaric acid and aminoalcohols. 3,554,981, Cl. 260-78.

Sly, Harold P., Jr., deceased0 (by Sly, Reda W.; executrix). Display device. 3,554,625, Cl. 312-234.

Sly, Reda W.: *See—*
Sly, Harold P., Jr.,3,554,625.

Smith, Carl A.; Looms, John Sidney Thomas; and Ely, Cyril Harold Arthur, to Simon Engineering Dudley Limited, and Central Electricity Generating Board. Structures. 3,554,319, Cl. 182-46.

Smith, Clarence M., to Westinghouse Electric Corporation. Combination terminal wiring device. 3,555,492, Cl. 339-95.

Smith, Donald Arthur, to Eastman Kodak Company. Compounds and photographic materials containing said compounds. 3,554,987, Cl. 14-.036/2/

Smith, George M., to Textron Inc. Magazine assembly for a fastener driving device. 3,554,428, Cl. 227-109.

Smith, Herchel: *See—*
Hughes, Gordon Alan; Smith, Herchel; and Hartley, David,3,555,096.
Shah, Harshavadan C.; Stein, Reinhardt P.; and Smith, Herchel,3,555,054.
Stein, Reinhardt P.; Buzby, George C., Jr.; and Smith, Herchel,3,555,015.

Smith, Ian E.; and Metcalfe, Kenneth A., to Commonwealth of Australia, Department of Supply, The. Charging xerographic images. 3,555,378, Cl. 317-262.

Smith, John J., to Mueller Co. Tamper-proof rotary plug valve. 3,554,218, Cl. 137-385.

Smith, Kline & French Laboratories: *See—*
Ross, Stephen T., 3,555,010.

Smith, Marion F.: *See—*
Ermenc, Eugene D.; and Smith, Marion F.,3,554,861.

Smith, Melvin William, to Gracia Corporation, The. Spinning reel. 3,554,458, Cl. 242-84.2

Smith, Robert W., to Midstates Steel and Wire Company. Pivoting gripper. 3,554,116, Cl. 100-31.

Smith, Robin Wyncliffe: *See—*
McGee, James Dwyer; and Smith, Robin Wyncliffe,3,555,346.

Smith, Roger M.: *See—*
Fisher, George A.; and Smith, Roger M.,3,553,860.

Smith, Samuel G., Jr.: *See—*
Sellers, Ralph F.; Smith, Samuel G., Jr.; and Burhans, Allison S.,3,555,050.

Smith, Somers H., III: *See—*
Chambers, William W.; Rebold, Jerome I.; and Smith, Somers H., III,3,554,248.

Smolka, Thomas G.; and Schwarz, Walter, to Wiener Metallwarenfabrik Smolka & Company. Ski binding. 3,554,571, Cl. 280-11.35

Snaplite Displays, Inc.: *See—*
Rudolph, Ralph H., 3,553,870.

Snia Viscosa Societa Nazionale Industria Applicavioni Viscosa S.p.A.: *See—*
Ando, Satoshi; Tanaka, Yusaku; Kojima, Minoru; and Fujimura, Kyoichi, 3,554,980.

Snorkel Fire Equipment Company: *See—*
Davidson, Kenneth H.; and Thompson, William S., 3,554,452.

Snow, Robert J.; and Bocknak, Gregory, to United Aircraft Corporation. High resolution control system. 3,554,469, Cl. 244-83.

Snyder, Edward, III: *See—*
Weinstein, Harold; and Snyder, Edward, III,3,553,853.

Snyder, Glenn M.: *See—*
Price, Ralph E.; and Snyder, Glenn M.,3,553,907.

Snyder, Keith A.: *See—*
Darrow, William C.; Holmwood, Richard H.; Snyder, Keith A.; and Treiber, Walter C.,3,555,235.

Sober, Kenneth: *See—*
Kramer, Charles M.; and Sober, Kenneth,3,553,759.

Sobieski, James F.: *See—*
Hodes, Harvey A.; Sobieski, James F.; and Zerner, Michael C.,3,554,882.

Sobkow, William J., to Ford Motor Company. Windshield wiper energization system. 3,555,289, Cl. 307-10.

Sobottka, Dieter: *See—*
Gruner, Rolf; Sobottka, Dieter; and Moritz, Rolf,3,555,321.

Societe Anonyme dite: Ugine Kuhlmann: *See—*
Hermant, Marc Eugene; and Debrebant, Raymond Albert Alexandre, 3,554,909.

Societe Anonyme Heurtey: *See—*
Dessarts, Pierre, 3,554,505.

Societe d'Applications Generales d'Electricite et de Mecanique SAGEM: *See—*
Guiot, Maurice, 3,555,542.

Societe de Recherches Techniques et Industrielles (S.R.T.I.): *See—*
Agneray, Louis; Clayer, Arlette; and Bruni, Maurice, 3,553,937.

Societe des Grands Travaux de Marseille: *See—*
Beghi, Rene, 3,554,492.

Societe Rhodiaceta: *See—*
Boutonnet, Alexandre, 3,554,461.
Ohayon, Gabriel, 3,555,536.

Sohoel, Eivind Olav, to Konsultbyran Iko Aktiebolag. Method and arrangement for determining the mechanical state of machines. 3,554,012, Cl. 73-67.2

Solidyne, Inc.: *See—*
Gross, Jenoe, 3,555,456.

Solow, Benjamin, to Angstrohm Precision, Inc. Thin film resistor. 3,555,485, Cl. 338-252.

Sommer, Peter J., to American Gage & Machine Company. Lapping machine with dressing mechanism. 3,553,892, Cl. 51-5.

Sonderland, Arthur C.: *See—*
Engel, William T.; and Sonderland, Arthur C.,3,554,241.

Sony Corporation: *See—*
Kawana, Yoshiyuki; and Iwata, Saburo, 3,555,373.

Sophinos, Nicholas; Fremont, Robert D.; and Gallini, Edward L., to Colt's Inc. Grenade launcher sight. 3,553,843, Cl. 33-58.

Sorensen, Robert P.: *See—*
Anderson, Ralph F.; and Sorensen, Robert P.,3,553,930.

Sorenson, Bill W., to American Athletic Equipment Co. Locking device for gymnastic apparatus or the like. 3,554,585, Cl. 287-58.

Sorenson, Bill W.; Kious, Dane R.; and Denhardt, Carl, to American Athletic Equipment Co. Adapter bracket. 3,554,142, Cl. 108-153.

Soss Manufacturing Company: *See—*
Schwartz, Harvey A., 3,555,420.

Soula, Jean-Claude: *See—*
Amiet, Louis; and Soula, Jean-Claude,3,555,078.

Southeastern Products, Inc.: *See—*
Lee, Charles A.; and Furbeck, Warren R., 3,553,845.

Span, Samuel; and Thum, Walter. Body manipulated loop device. 3,554,542, Cl. 273-1.

Spanel, Abram N.; and Brennan, George J., said Brennan assor. to said Spanel. Apparatus for metering and delivering yarn bits to tufting needles or other utilization devices. 3,554,147, Cl. 112-79.

Spauszus, Siegfried; Kohler, Wolfgang; Blieske, Herbert; and Vetter, Klaus-Peter, to Kienzle Apparate GmbH. Method and apparatus for the automatic evaluation of a bar graph record. 3,555,244, Cl. 235-61.6

Speakman Company: *See—*
Kappel, Frederick M.; and Pecis, John G., 3,554,232.

Sperberg, Lawrence A. Method of controlling tire durability, simulating climatic conditions, and control of oxidation rates in pneumatic tires. 3,554,027, Cl. 73-146.

Sperry Rand Corporation: *See—*
Cyr, Joseph H.; and Mc Carty, Horace G., 3,553,945.
Lonnemo, Kurt R., 3,554,093.

Spindle, Harvey E., to Westinghouse Electric Corporation. Contact indicating valve actuator for gas-operated circuit breakers. 3,555,226, Cl. 200-148.

Splickan, Donlon E. Container for fish and the like. 3,553,880, Cl. 43-55.

Spokas, Romas B., to Borg-Warner Corporation. Torque transmitting device. 3,554,342, Cl. 192-70.18

Spoth, Faye: *See—*
Seaman, Louis, 3,554,541.

Spotts, Clyde E.: *See—*
Fast, Robert B.; Hreschak, Bohdan O.; and Spotts, Clyde E.,3,554,763.

Sproll, Franz. Bed frame assembly. 3,553,745, Cl. 5-236.

Spyridakis, Emanuel G.; and Ulbing, Otmar M., to Ingersoll-Rand Company. Coupling and power control device. 3,554,091, Cl. 91-428.

Squibb, E. R., & Sons, Inc.: *See—*
Pan, Samuel C.; Semar, Joan; Principe, Pacifico A.; and Lerner, Leonard J., 3,554,870.
Stearns, Barbara, 3,555,155.
Stearns, Barbara, 3,555,162.

Srogi, Ladislaw G. Air space traffic simulator. 3,555,505, Cl. 340-24.

St. Joseph Lead Company: *See—*
Fiorentino, Robert J.; Cigan, John M.; Sabroff, Alvin M.; and Jentgen, Richard L., 3,553,995.

Stackpole Carbon Company: *See—*
Bang, Mogens W., 3,555,484.

Stade, Gerhard, to Lindner, Herbert, G.m.b.H. Method and apparatus for dressing grinding wheels. 3,553,893, Cl. 51-5.

Stahlheber, Norman Earl: *See—*
Kichline, Thomas P.; Stahlheber, Norman Earl; and Vetter, James L.,3,554,921.

Stahly, Eldon E.; and Lard, Edwin W., to Grace, W. R., & Co. Product and a method of improving the shelf life of uncured polyesters. 3,555,116, Cl. 260-864.

Stahly, Eldon E.; and Lard, Edwin W., to Grace, W. R., & Co. Product and a method of improving the shelf life of uncured polyesters. 3,555,117, Cl. 260-866.

Stalego, Charles J.; and Philipps, Samuel D., to Owens-Corning Fiberglas Corporation. Apparatus for feeding streams of heat-softened mineral material. 3,554,718, Cl. 65-1.

Stallkamp, Hubert G., to Babcock & Wilcox Company, The. Integral tube panel. 3,554,276, Cl. 165-168.

Stalter, Neil J.; and McCullers, Otho S., to Du Pont de Nemours, E. I., and Company. Textile bleaching process. 3,554,685, Cl. 8-111.

Stamm, Russell D., to General Instrument Corporation. Push button tuner. 3,554,041, Cl. 74-10.33

Stamm, Walter, to Stauffer Chemical Company. Modified halogen containing polymers. 3,554,989, Cl. 260-79.5

Standard Brands Incorporated: *See—*
Carbonell, Robert J., 3,554,761.

Standard International Corporation: *See—*
Hildebrandt, Albert R., 3,555,477.

Standard Oil Company: *See—*
Maloney, Richard P.; Kheghatian, Habet M.; and Dempsey, James F., 3,554,994.

Standard Oil Company, The: *See—*
Griffith, Russell K., 3,554,991.
Griffith, Russell K.; Zorska, Romanas; and Fitzgibbons, William O., 3,555,045.

Standard Tool & Manufacturing Company: *See—*
Zilahy, Zoltan E., 3,554,365.

Stanley, Maurice E., to Texaco Inc. Anti-foulant additive of N-containing methacrylate copolymers. 3,554,897, Cl. 208-48.

Stanley, Robert K., to Techniservice Corporation. Strand crimping. 3,553,802, Cl. 28-1.6

Stanley Works, The: *See—*
Kneidl, Franz A.; and Amsden, Rollin M., Jr., 3,553,794.

Stansbury, Roy E.: *See—*
Shotton, James A.; and Stansbury, Roy E.,3,554,879.

Stapp, Paul R.; and Allen, James D., to Phillips Petroleum Company. Hydroxymethyltetrahydropyran production. 3,555,048, Cl. 260-345.9

Starger, Samuel L., to RCA Corporation. Lead assembly structure for semiconductor devices. 3,553,828, Cl. 29-589.

Starr, Arthur Tisso; and Reeve, Thomas Charles, to Rank Organisation Limited, The. Electrical filters. 3,555,439, Cl. 328-167.

Statman, Max; and Martin, Don S., to Eastman Kodak Company. Catalyst for the hydration of olefins to alcohols. 3,554,926, Cl. 252-435.

Staubli Ltd.: *See—*
Hoenig, Ernst, 3,554,238.

Stauffer Chemical Company: *See—*
Beck, Thomas M.; and Mirviss, Stanley B., 3,555,124.
Macaluso, Pat, 3,554,826.
Stamm, Walter, 3,554,989.

Stauffer-Wacker Silicone Corporation: *See—*
Getson, John Charles, 3,555,109.

Stearns, Barbara, to Squibb, E. R., & Sons, Inc. Method of controlling insects. 3,555,155, Cl. 424-246.

Stearns, Barbara, to Squibb, E. R., & Sons, Inc. Method of controlling nematodes. 3,555,162, Cl. 424-331.

Stedman, Victor S., 1/2 to Kotlier, Jacob L. Extensible foot for ladders. 3,554,321, Cl. 182-201.

Steelcraft Manufacturing Co., The: *See—*
Brinker, John H., 3,554,267.
Steels & Busks Limited: *See—*
Steggles, David, 3,554,427.
Steggles, David, to Steels & Busks Limited. Rivetting machines. 3,554,427, Cl. 227-61.
Steigerwald, Karl Heinz. Laminated leather and process for producing the same. 3,554,837, Cl. 156-252.
Stein, Reinhardt P.; Buzby, George C., Jr.; and Smith, Herchel, to American Home Products Corporation. Process for the preparation of gona-1,3,5(10), 7-tetraenes. 3,555,015, Cl. 260-239.55
Stein, Reinhardt P.: *See—*
Shah, Harshavadan C.; Stein, Reinhardt P.; and Smith, Herchel,3,555,054.
Stein, Rudolf: *See—*
Gloor, Karl; Baach, Hans; Jacubasch, Hans Dieter; Stein, Rudolf; and Erhard, Hans Dieter,3,555,240.
Steinbruegge, Kenneth B.: *See—*
Osial, Thaddeus A.; and Steinbruegge, Kenneth B.,3,555,449.
Steindorf, Gordon A., to Minnesota Mining and Manufacturing Company. Transfer process. 3,554,836, Cl. 156-240.
Steinlin, Felix: *See—*
Hewitt, Maxwell James; Steinlin, Felix; and Grubenmann, Werner,3,554,774.
Stella, Joseph A.: *See—*
Batter, John F., Jr.; and Stella, Joseph A.,3,554,643.
Stemme, Nils Gustaf Erik. Head construction for multichannel magnetic recording and reproducing of data. 3,555,528, Cl. 340-174.1
Stemple, Andrew M.: *See—*
Lasch, Frank J.; and Stemple, Andrew M.,3,554,188.
Stenlund, Stig Gote, to Monsun-Tison AB. Valve device with relief action and suction action for hydraulic systems. 3,554,214, Cl. 137-270.
Stepan, James Lawrence; and Welch, John Samuel, to International Telephone and Telegraph Corporation. Identifier to determine the class of service to which a subscriber is entitled. 3,555,198, Cl. 179-18.
Sterling Drug Inc.: *See—*
Archer, Sydney, 3,555,043.
Sterman, Samuel: *See—*
Marsden, James G.; and Sterman, Samuel,3,555,051.
Sternbach, Leo Henryk: *See—*
Field, George Francis; and Sternbach, Leo Henryk,3,555,022.
Steudler, Paul A.: *See—*
Kober, Ehrenfpied H.; Schnabel, Wilhelm J.; and Steudler, Paul A.,3,555,072.
Stevens, Arthur D.: *See—*
Romagano, Alfred P.; and Stevens, Arthur D.,3,553,776.
Stevens, Derek Norman, to General Motors Corporation. Windscreen wiper systems. 3,553,761, Cl. 15-250.14
Stevens, James E.: *See—*
Chamberlin, Robert S.; Davis, William A.; and Stevens, James E.,3,553,969.
Stevenson, James F., to Emhart Corporation. Grounding circuit for auxiliary electrode in glass cob forming apparatus. 3,554,727, Cl. 65-327.
Stevenson, Thomas E.: *See—*
Kuwik, John J.; Stevenson, Thomas E.; and Yagoda, John J.,3,554,483.
Stewart, Ralph H., to Mattel, Inc. Talking learning puzzle. 3,554,556, Cl. 274-1.
Stille, Volker: *See—*
Galter, Hellmut; and Stille, Volker,3,554,121.
Stockfisch, Heinz: *See—*
Herschmann, Otto; Reisacher, Josef; Stockfisch, Heinz; and Gotz, Alfred,3,554,171.
Stokes, Roy E. Paint applicator roll with internal paint supply. 3,554,659, Cl. 401-197.
Stone & Webster Engineering Corporation: *See—*
Woebcke, Herman N., 3,554,168.
Stone Containers Corporation: *See—*
Rorer, Donald R., 3,553,931.
Storfer, Stanley J., to Esso Production Research Company. Polysaccharide polymer cyclic ketals. 3,555,006, Cl. 260-209.
Storrie, Arthur: *See—*
Artiaga, Mariano V.; Storrie, Arthur; and Suzik, Brian P.,3,554,252.
Stossel, Hans-Jurgen: *See—*
Bechthold, Hans; and Stossel, Hans-Jurgen,3,554,566.
Stott, Thomas Charles Felix, to General Motors Corporation. Selector mechanisms for change-speed gears. 3,554,047, Cl. 74-477.
Strandtmann, Max von: *See—*
Shavel, John, Jr.; Strandtmann, Max von; and Puchalski, Chester,3,555,029.
Strausser, William H. Pipestem. 3,554,201, Cl. 131-203.
Street, John N.; Brady, William I.; and McIntosh, Walter L., to Logetronics, Inc. Image monitoring and control system. 3,554,109, Cl. 95-89.
Streeter, John H., to Plessey Company Limited, The. Incremental tape drive. 3,554,421, Cl. 226-145.
Streets, William L.: *See—*
Schiff, Sidney; Johnson, Marvin M.; and Streets, William L.,3,554,911.
Stretton, Henry Jackson, to Peter, G. D., & Co. (Engineering) Limited. Power-operated door gear. 3,553,890, Cl. 49-32.
Strohmeyer, Max, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Preparation of cymenes. 3,555,103, Cl. 260-672.
Strunk, Kurt; Halfmann, Heinrich; and Luhmann, Klaus, to International Standard Electric Corporation. Guide-wire route searching network. 3,555,197, Cl. 179-18.
Studebaker Corporation: *See—*
Poirier, Armand R., 3,554,803.
Stutz, Frank: *See—*
Opferkuch, Robert E., Jr.; and Stutz, Frank,3,554,856.
Suckle, Benjamin W.; and Gavin, William, to Nytronics, Inc. Metal knock-down cabinet. 3,554,623, Cl. 312-7.
Suding, Robert A.; and Marsh, Richard E., to Pines Engineering Co., Inc. Tube bender pressure die interference control. 3,553,990, Cl. 72-8.
Suding, Robert A.: *See—*
Munro, Harrison; Suding, Robert A.; and Marsh, Richard E.,3,553,989.
Sugarman, Nathan; and Braude, George L., to Grace, W. R., & Co. Breathable laminate substantially nonpermeable to aerosols and dusts. 3,554,852, Cl. 161-82.
Sugden, David B. Vibrator systems and rock cutter type utilization mechanisms. 3,554,604, Cl. 299-34.
Sugerman, Gerald, to Sun Oil Company. Alkylation of C_9 methyl-substituted benzenes. 3,555,104, Cl. 260-671.
Sugeta, Takayuki: *See—*
Yanai, Hisayoshi; Ikoma, Toshiaki; Sugeta, Takayuki; Matsukura, Yasuo; and Ohta, Kuniichi,3,555,282.
Suggitt, Robert M.: *See—*
Estes, John H.; and Suggitt, Robert M.,3,555,107.
Sugie, Mitsuru: *See—*
Ogasawara, Naoyuki; Hashimoto, Tadashi; Sugie, Mitsuru; and Nomura, Hiromi,3,555,463.
Sugita, Sadao: *See—*
Kuwabara, Yoshimi; and Sugita, Sadao,3,554,757.
Sulkowski, Theodore S., to American Home Products Corporation. 2,3,5,9b-Tetrahydro-1H-imidazo[2,1-a]isoindol-5-ols. 3,555,042, Cl. 260-309.7
Sullivan, James P., to Aquatech Corporation. Well perforating tool. 3,554,299, Cl. 175-4.55
Sulzer Brothers, Ltd.: *See—*
Borner, Max, 3,554,503.
Sumitomo Chemical Company, Ltd.: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hiroshashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; Kobayashi, Tsuyoshi; and Izumi, Takahiro, 3,555,013.
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi, 3,555,014.
Sumiyoshi, Masaharu: *See—*
Noguchi, Masaaki; Sakakibara, Shigeru; and Sumiyoshi, Masaharu,3,553,979.
Summer, James R.; MacLaughlin, Henry C.; and Melander, Clarence S., to Garrett Corporation, The. Variable length inflatable escape slide. 3,554,344, Cl. 193-25.
Sun Oil Company: *See—*
Chaney, Preston E., 3,554,602.
Moore, Robert E., 3,555,077.
Sugerman, Gerald, 3,555,104.
Sunagawa, Sakae: *See—*
Hayashi, Naoichi; Takeuchi, Nobuhiro; and Sunagawa, Sakae,3,554,412.
Sunderman, Henry L. Folding boom for sprayer. 3,554,478, Cl. 248-278.
Sunkist Growers, Inc.: *See—*
Zwiacher, Wayne E.; Kaser, Louis D.; Johnson, Maurice V., Jr.; Fennell, Alfred H.; and Riddington, Fred W., 3,553,926.
Sunset Industries, Inc.: *See—*
Casebolt, Ralph T.; and Rystad, Arnold O., 3,553,891.
Superior Valve Company: *See—*
Yocum, William C., 3,554,227.
Sushkevich, Viktor Alexeevich: *See—*
Apsit, Voldemar Voldemarovich; and Sushkevich, Viktor Alexeevich,3,555,322.
Susquehanna Corporation, The: *See—*
Chuan, Raymond L., 3,555,331.
Sutter, Ormond S., to Lok-Products Co. Ventilated lighting fixture. 3,555,267, Cl. 240-47.
Suzik, Brian P.: *See—*
Artiaga, Mariano V.; Storrie, Arthur; and Suzik, Brian P.,3,554,252.
Suzuki, Miichiro: *See—*
Nakajima, Isao; Suzuki, Miichiro; Yamaguchi, Makio; and Kondo, Kiyohire,3,555,063.
Suzuki, Shigeo; Kainuma, Keiji; Tanida, Koehi; and Oda, Tsuneo, to Food Research Institute, Ministry of Agriculture and Forestry. Process for the production of starch derivatives. 3,555,009, Cl. 260-233.5
Svecharnik, David Veniaminovich. Single-phase A.C. non-commutator electric motor. 3,555,330, Cl. 310-266.
Svenska Maskinaktiebolaget Greiff: *See—*
Engwall, Olof, 3,554,445.

Swank, Albert M., to Hiram Swank's Sons. Kiln floor. 3,553,799, Cl. 25-132.
Swanson, Harry R., to Goodyear Tire & Rubber Company, The. Method and apparatus for folding tires. 3,554,262, Cl. 157-1.
Swartz, William. Illuminated sign. 3,553,868, Cl. 40-106.52
SWECO, Inc.: *See—*
McKibben, Richard K., 3,553,900.
Sweeney, Daniel Patrick; Haas, Werner Carl; and Powell, Harold R., to Pennwalt Chemicals Corporation. Sampling device for rotary cone vacuum dryer. 3,554,038, Cl. 73-424.
Swift & Company: *See—*
Bonami, Ernest, 3,553,924.
Swiss Knitting Company: *See—*
Kuney, Samuel B., 3,553,981.
Sybron Corporation: *See—*
Brickle, Donald J.; and Burling, James A., 3,555,489.
Dunkin, Albert, 3,554,598.
Pietschmann, Helmut Richard, 3,554,599.
Radovic, Zeljko, 3,554,131.
Rappaport, Richard A., 3,555,381.
Sylvania Electric Products, Inc.: *See—*
Burridge, Michael D., 3,554,021.
Dennis, Philip J., 3,555,478.
Faria, Sixdeniel; and Palumbo, Dominic T., 3,555,337.
Kuo, Samuel Chung-Shu, 3,555,554.
Peffer, Robert J.; and Waybright, George C., 3,555,390.
Scoledge, Robert F.; Audesse, Emery G.; and Huston, Leroy S., Jr., 3,555,338.
Wheeler, Robert C., 3,555,173.
Systems Research Laboratories, Inc.: *See—*
Brown, Charles G.; Rauterkus, Leo Thomas; and Walker, Charles E., 3,555,529.
Szczepanski, Harry. Permanently-magnetic ball with multiple polarity distributed over its surface. 3,555,475, Cl. 335-306.
Tagashira, Yoshimi: *See—*
Kuroda, Takaji; Tagashira, Yoshimi; and Nomura, Hideo,3,555,465.
Takagi, Akira: *See—*
Kuroki, Motoharu; and Takagi, Akira,3,553,848.
Takahashi, Yasuo, to Asahi Kogaku Kogyo Kabushiki Kaisha. Adapter lens for minimizing chromatic aberration in the infrared range. 3,554,629, Cl. 350-2.
Takamura, Akira; Kunii, Kazushi; Seharada, Saburo; and Nakatani, Hiroshi, to Mitsubishi Denki Kafshiki Kaisha. Elevator guiding device. 3,554,327, Cl. 187-95.
Takeuchi, Nobuhiro: *See—*
Hayashi, Naoichi; Takeuchi, Nobuhiro; and Sunagawa, Sakae,3,554,412.
Taki, Hiromitsu: *See—*
Nitta, Tsuneharu; Kuito, Akio; Nagase, Kaneomi; Iguchi, Takashi; and Taki, Hiromitsu,3,555,376.
Talebi, Abootaleb; and Schlitz, Erwin, to Teves, Alfred, G.m.b.H. Accelerometer for vehicular anti-skid system with sheathed rotor. 3,555,326, Cl. 310-168.
Tanaka, Atsushi; Sawada, Hideo; Toba, Hirotaka; and Mikumo, Masatoshi, to Daicel Ltd. Method for manufacturing high impact polyoxymethylene graft copolymers. 3,555,121, Cl. 260-887.
Tanaka, Hiroaki: *See—*
Fukada, Kazuo; Sakata, Yoshiaki; Yamada, Yoshio; Mizuno, Masaaki; and Tanaka, Hiroaki,3,555,129.
Tanaka, Kyugo: *See—*
Kominami, Naoya; Iwaisako, Toshiyuki; Tanaka, Kyugo; and Ohki, Kusuo,3,554,901.
Tanaka, Yusaku: *See—*
Ando, Satoshi; Tanaka, Yusaku; Kojima, Minoru; and Fujimura, Kyoichi,3,554,980.
Tancred, William L.; and Richards, Joseph A., to International Telephone and Telegraph Corporation. Decade counter or the like. 3,554,051, Cl. 74-527.
Tanguy, Pierre: *See—*
Carre, Pierre; Tanguy, Pierre; and Le Boulbouech, Jean,3,554,137.
Tanida, Koehi: *See—*
Suzuki, Shigeo; Kainuma, Keiji; Tanida, Koehi; and Oda, Tsuneo,3,555,009.
Tapecon, Inc.: *See—*
Frykberg, William C., 3,555,168.
Tarantino, Jon E., to Compleat Angler, Ltd., The. Ferrule for fishing rods and the like. 3,554,590, Cl. 287-127.
Tasset, Everett J.: *See—*
Hornung, Michael C.; and Tasset, Everett J.,3,554,145.
Tatoian, George; and Ceier, Richard R., to Cardiac Electronics Inc. Patient-isolating circuitry for cardiac pacing device. 3,554,198, Cl. 128-419.
Taylor, John C.: *See—*
Rasmussen, Robert F.; and Taylor, John C.,3,554,084.
Taylor, Kendrick C.; Hutchinson, Herman R.; Wagner, August Gilbert; and Blasko, Michael J., to Pennwalt Corporation. Vacuum melting furnace and method. 3,554,268, Cl. 164-65.
Taylor, Richard P.: *See—*
Abson, Derek; and Taylor, Richard P.,3,554,775.
Taylor, Sam, Equipment: *See—*
Taylor, Sam S.; and Lunstra, Roger W., 3,553,946.
Taylor, Sam S.; and Lunstra, Roger W., Equipment. Tractor mounted adjustable rotary highway mower. 3,553,946, Cl. 56-25.4
Taylor-Winfield Corporation, The: *See—*
Riley, Joseph J., 3,555,237.
Tazaki, Kazuo, to Tomy Kogyo Co., Ltd. Toy assembly. 3,553,885, Cl. 46-243.
TDK Electronics Co., Ltd.: *See—*
Maeda, Tsutomu; Watanabe, Kiyoshi; Akino, Tadaharu; Ito, Eiitsu; and Osada, Hisashi, 3,555,464.
Ogasawara, Naoyuki; Hashimoto, Tadashi; Sugie, Mitsuru; and Nomura, Hiromi, 3,555,463.
Teagno, Wladimiro, to AMP Incorporated, mesne. Electrical connectors. 3,555,486, Cl. 339-47.
Teague, Henry E., to Mobil Oil Corporation. Determining subsurface velocity and distinguishing between primaries and multiples by velocity filtering. 3,555,501, Cl. 340-15.5
Technical Operations, Incorporated: *See—*
Goldberg, Gershon M., 3,554,795.
Techniservice Corporation: *See—*
Stanley, Robert K., 3,553,802.
Tee-Pak, Inc.: *See—*
Wilmsen, George M., 3,553,768.
Tegtmeier, Roger. Lifting device. 3,554,491, Cl. 254-1.
Teijin Limited: *See—*
Kigane, Koji; Ishihara, Nobuji; and Koga, Kazuo, 3,554,789.
Tekkosha Co., Ltd.: *See—*
Nakamura, Takeo; Murayama, Hiroshi; and Yamaguchi, Tatsuya, 3,555,083.
Teledyne, Inc.: *See—*
Milliken, Donald B., 3,554,635.
Teleflex Incorporated: *See—*
Conrad, Winthrop B., 3,554,050.
Telefonaktiegolaget LM Ericsson: *See—*
Arvidsson, Erik Ragnar, 3,555,547.
Telefunken Patentverwertungsgesellschaft m.b.H.: *See—*
Bruch, Walter, 3,555,174.
Gillmann, Hanno, 3,555,508.
Television, Radio and Film Communication: *See—*
Braun, Warren L., 3,555,190.
Tener, Wallis M., to California Institute of Technology. Cryogenic liquid sensor. 3,555,483, Cl. 338-25.
Teng, James; and Wang, Pao-Chi, to Nylonge Corporation. Apparatus for the continuous production of cellulose sponge products. 3,554,840, Cl. 156-436.
Tenneco Chemicals, Inc.: *See—*
Hoch, Samuel, 3,555,060.
Lindemann, Robert F., 3,555,157.
Milian, Gonzalo D., 3,554,265.
Tennessee Corporation: *See—*
Wilkinson, Gerald E.G.; and Houston, Theodore T., 3,554,696.
Terashima, Yahachi; and Ohi, Reiichi, to Fuji Shashin Film Kabushiki Kaisha. Photographic silver halide light-sensitive color element containing 1,3,4-thiadiazoles. 3,554,756, Cl. 96-100.
Terry, Stanley M., to AMBAC Industries, Incorporated. Permanent magnet alternator with regulating means. 3,555,327, Cl. 310-168.
Tersch, Richard W., to Lear Siegler, Inc. Method of sharpening pot broach rings. 3,553,909, Cl. 51-323.
Tesner, Pavel Alexandrovich: *See—*
Andoniev, Sergei Mikhailovich; Berman, Mark Nikolaevich; Zhitnik, Georgy Gavrilovich; Kondratiev, Evgeny Mikhailovich; Levitasov, Yakov Matveevich; Makarov, Konstantin Ivanovich; Pevny, Nikolai Ivanovich; Pokrass, Leonid Moiseevich; Pochtman, Alexandr Markovich; Robin, Mark Anisimovich; Tesner, Pavel Alexandrovich; Sheinfain, Felix Isaakovich; and Filipiev, Oleg Vladimirovich,3,554,507.
Teves, Alfred, G.m.b.H.: *See—*
Talebi, Abootaleb; and Schlitz, Erwin, 3,555,326.
Texaco Development Corporation: *See—*
Armistead, Fontaine C., 3,553,968.
Texaco Inc.: *See—*
Altamira, Anthony F.; and Daleda, Joseph, 3,554,282.
Bozeman, Paul P., Jr.; Morris, Herbert C.; and Woodle, Robert A., 3,554,896.
Estes, John H.; and Suggitt, Robert M., 3,555,107.
Feuerbacher, David G.; and Sample, Thomas E., Jr., 3,554,286.
Stanley, Maurice E., 3,554,897.
Van Cleave, Robert A., Jr., 3,555,400.
Texas-U.S. Chemical Company: *See—*
Nudenberg, Walter; Merrifield, Dudley B.; and Delaney, Edward A., 3,554,923.
Nudenberg, Walter; Merrifield, Dudley B.; and Delaney, Edward A., 3,554,998.
Texas Instruments, Incorporated: *See—*
Davis, Paul D., Jr.; and Neitzel, Edwin B., 3,555,502.
Gruczelak, Norman P., 3,555,247.
Kennedy, Howard V., 3,554,628.
Mac Donald, Frank H.; and Key, Charles R., 3,555,499.
Miller, Edwin A., 3,555,169.
Wilcox, Donald L., 3,555,431.
Texsteam Corporation: *See—*
Alexander, William H., 3,554,488.
Textile Rubber & Chemical Co., Inc.: *See—*
Callahan, Francis G., 3,554,824.

Textron Inc.: *See—*
Carlile, Alfred E., 3,553,796.
Chery, Walter V., 3,553,782.
Schmidt, Erich A., 3,554,426.
Skillen, Dawson C., 3,554,064.
Smith, George M., 3,554,428.

Thule, Allan; Hovstad, Olav B.; and Ivnas, Lennart, to Aktieselskabet Niro Atomizer, and Fiskeby Aktiebolag. Method of shredding fibrous pulp. 3,554,453, Cl. 241-28.

Thayer, Inc.: *See—*
Thayer, Josephus J., 3,554,413.

Thayer, Josephus J., to Thayer, Inc. Bow-forming machine. 3,554,413, Cl. 223-46.

Thebado, Eugene A. High vacuum valve. 3,554,486, Cl. 251-204.

Theuwissen, Jan Hendrik, to U.S. Philips Corporation, mesne. Holder for storing a recorder-tape magazine. 3,554,463, Cl. 242-199.

Thiers, Robrecht Julius: *See—*
Willems, Jozef Frans; and Thiers, Robrecht Julius, 3,554,758.

Thiokol Chemical Corporation: *See—*
Kircher, Hartmann J., III, 3,553,964.

Thoma, Ernst Erwin, to Certus Maschinenbau GmbH. Pneumatically operated gripper for bottle transferring apparatus. 3,554,594, Cl. 294-90.

Thoma, Wilhelm; and Bayer, Otto, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of cyanamide dicarboxylic acid esters. 3,550,760, Cl. 260-479.

Thomas, Daniel C., to Lithoplate, Inc. Presensitized positive-working lithographic plate and method for making same. 3,554,751, Cl. 96-33.

Thomas, Vitas T.; and Lovdahl, Robert A., to Tomco, Inc. Retractable and swingable clamps. 3,554,529, Cl. 269-32.

Thomas, William J., to Firestone Tire & Rubber Company, The. Structure with anti-fouling surface. 3,554,154, Cl. 114-222.

Thommen, Werner, to Bell Telephone Laboratories, Incorporated. Automatic video level control employing iris and amplifier gain adjustments. 3,555,181, Cl. 178-7.2

Thompson, Earl R., to United Aircraft Corporation. Cast nickel-columbium-aluminum alloy. 3,554,817, Cl. 148-32.

Thompson, Jack M.; and Thompson, Michael J., to Revolt, Inc. Electrical vehicle. 3,554,311, Cl. 180-34.

Thompson, Michael J.: *See—*
Thompson, Jack M.; and Thompson, Michael J., 3,554,311.

Thompson, Stanley G., to United States of America, Atomic Energy Commission. Method of obtaining americium. 3,554,867, Cl. 176-16.

Thompson, Wallace M., to American Hoist & Derrick Company. Object stacker. 3,554,388, Cl. 214-6.

Thompson, William S.: *See—*
Davidson, Kenneth H.; and Thompson, William S., 3,554,452.

Thornhill, Peter W.; and Carlton, Quinton H., to Oleo International Holdsings Limited. Buffers and draw gear for railways, tramways and like vehicles. 3,554,387, Cl. 213-223.

Thorp, Arthur G., II, deceased0 (by Thorp, Ruth S.; administratrix), to Westinghouse Electric Corporation. Reactor internals lower radial support system. 3,554,868, Cl. 176-40.

Thorp, Ruth S.: *See—*
Thorp, Arthur G., II, 3,554,868.

Thrissell, Masson Scott, Engineering Limited: *See—*
Byrt, Graham Archie Bruce, 3,554,842.

Thum, Walter: *See—*
Span, Samuel; and Thum, Walter, 3,554,542.

Thun, Rudolf E.: *See—*
Jenny, Frederick F.; and Thun, Rudolf E., 3,553,830.

Thurman & Younkin, Inc.: *See—*
Younkin, James R., 3,555,391.

Thurston, William H.: *See—*
Zielke, Lawrence; and Thurston, William H., 3,554,653.

Timex Corporation: *See—*
Grohoski, Raymond J., 3,553,958.
Keeler, Eugene R.; and Zatsky, Norman C., 3,553,955.
Schwartz, Herbert; and Weise, Rolf, 3,553,956.

Timpe, Winfried George, to Copeland Process Corporation, and Container Corporation of America. Process for regeneration of white liquor with hydrogen sulfide recycle. 3,554,858, Cl. 162-30.

Tjonneland, Steinar: *See—*
Kantrowitz, Adrian; and Tjonneland, Steinar, 3,553,736.

Toba, Hirotaka: *See—*
Tanaka, Atsushi; Sawada, Hideo; Toba, Hirotaka; and Mikumo, Masatoshi, 3,555,121.

Tokai Cold Forming Co., Ltd.: *See—*
Abe, Michio, 3,553,826.

Tokushu Seiso Co., Ltd.: *See—*
Kusaka, Kunio; and Tsurumi, Kunihiro, 3,554,736.

Tokyo Denki Kabushiki Kaisha: *See—*
Yoshino, Tomiya, 3,555,369.

Tokyo Sanyo Electric Co., Ltd.: *See—*
Sakamoto, Yoshiyasu, 3,553,975.

Tolgyesi, William S., to Cotton Producers Institute. Cellulosic material having an improved balance between appearance and service properties. 3,554,686, Cl. 8-115.6

Tomco, Inc.: *See—*
Thomas, Vitas T.; and Lovdahl, Robert A., 3,554,529.

Tomcsak, Stephen L.: *See—*
Duvall, William C.; and Tomcsak, Stephen L., 3,554,135.

Tomoff, Toma: *See—*
Paatzsch, Peter; and Tomoff, Toma, 3,554,654.

Tomy Kogyo Co., Ltd.: *See—*
Tazaki, Kazuo, 3,553,885.

Tonooka, Kazuo; and Yokomatu, Kazuo, to Furukawa Mining Co., Ltd. Waste heat recovery apparatus for flash smelting furnace. 3,554,515, Cl. 266-13.

Toppins, Charles R.: *See—*
Liberman, Harvey W.; Toppins, Charles R.; and Alford, Paul D., 3,554,120.

Torelli, Aldo: *See—*
Javet, Alain; and Torelli, Aldo, 3,554,800.

Tornqvist, Bengt Wilhelm, to Scasafe Transport AB. Sea-going vessel equipped with two or more hulls. 3,554,151, Cl. 114-61.

Torres, Allan F.: *See—*
Feuer, Seymour S.; Rhodes, Richard D., Jr.; and Torres, Allan F., 3,555,130.

Towa Chikudenki Kabushiki Kaisha: *See—*
Yoshino, Tomiya, 3,555,369.

Townley, Ray C., to Bell Telephone Laboratories, Incorporated. Data character assembler. 3,555,184, Cl. 178-52.

Toy, Wing N., to Bell Telephone Laboratories, Incorporated. Error detection arrangement for data processing register. 3,555,255, Cl. 235-153.

Toy, Wing N., to Bell Telephone Laboratories, Incorporated. Parallel counter. 3,555,295, Cl. 307-224.

Toyo Kogyo Co., Ltd.: *See—*
Shibagaki, Masao; and Onishi, Masayoshi, 3,554,092.

Toyo Rubber Industry Co., Ltd., The: *See—*
Fukada, Kazuo; Sakata, Yoshiaki; Yamada, Yoshio; Mizuno, Masaaki; and Tanaka, Hiroaki, 3,555,129.

Toyota Jidosha Kogyo Kabushiki Kaisha: *See—*
Noguchi, Masaaki; Sakakibara, Shigeru; and Sumiyoshi, Masaharu, 3,553,979.
Ohta, Seizho; and Kage, Motokuni, 3,554,526.

Tracey, Richard M.: *See—*
Dudley, Robert E., 3,554,470.

Trane Company, The: *See—*
Holman, John L. M., 3,553,977.

Trans-World Display Corporation: *See—*
Benchley, Robert, Jr., 3,553,871.

Transco Inc.: *See—*
Falk, Nels L.; and Val Verde, Emanuel, 3,554,136.

Traver, Darwin G.; and Honnold, Fred V., Jr., to Carrier Corporation. Air conditioning terminal. 3,554,111, Cl. 98-40.

Treadway, Ronald L., to Motorola, Inc. Transistor-transistor logic circuits having improved voltage transfer characteristic. 3,555,294, Cl. 307-203.

Trecker, David J.: *See—*
Colomb, Henry O., Jr.; and Trecker, David J., 3,554,886.

Treiber, Walter C.: *See—*
Darrow, William C.; Holmwood, Richard H.; Snyder, Keith A.; and Treiber, Walter C., 3,555,235.

Tri-Ordinate Corporation: *See—*
Hoglund, Nils, 3,554,044.

Triax Company, The: *See—*
Saul, Sanford, 3,554,390.

Trim-Master Corporation: *See—*
Diehm, Kenneth F.; and Gruber, Lawrence H., 3,554,149.

Trimarke, Carl Robert: *See—*
Mayland, Bertrand J.; and Trimarke, Carl Robert, 3,554,690.

Tristram, Ronald: *See—*
Rolph, Donald L.; and Tristram, Ronald, 3,554,350.

TRW Inc.: *See—*
Harvey, Dyas N., Jr., 3,555,469.
Irwin, Arthur S., 3,554,619.
Witte, Robert S.; and Wood, Charles E., 3,555,451.

Tsou, Ivan H., to Ford Motor Company. Thermosetting resin and catalyst. 3,554,925, Cl. 252-429.

Tsuchiya, Takuzo: *See—*
Hum, Allen; Perttula, Harold V.; and Tsuchiya, Takuzo, 3,553,944.

Tsugita, Masanobu, to Nippon Electric Company, Limited. Structure of integrated circuit. 3,555,443, Cl. 330-38.

Tsumagari, Tatsumi: *See—*
Nakanishi, Michio; Munakata, Tomohiko; and Tsumagari, Tatsumi, 3,555,012.

Tsurumi, Kunihiro: *See—*
Kusaka, Kunio; and Tsurumi, Kunihiro, 3,554,736.

Tsvanger, Tamara Alexandrova: *See—*
Turetskaya, Raisa Anatolievna; Tsvanger, Tamara Alexandrova; Golubtsov, Sergei Alexandrovich; Luzganova, Margarita Andreevna; Pensky, Vadim Nikolaevich; Filjukova, Ljudmila Petrovna; and Pogorelov, Alexandr Georgievich, 3,555,064.

Tsyganov, Viktor Vladimirovich: *See—*
Kostin, Vladimir Nikolaevich; Paramonov, Ivan Vasilievich; and Tsyganov, Viktor Vladimirovich, 3,555,164.

Tucker, Andrew J., to Dresser Industries, Inc. Well packer and sealing elements therefor. 3,554,280, Cl. 166-134.

Turcus, Daniel, Jr.: *See—*
Kopsch, Paul J.; Turcus, Daniel, Jr.; and Ward, Donald Francis, 3,553,804.

Turetskaya, Raisa Anatolievna; Tsvanger, Tamara Alexandrova; Golubtsov, Sergei Alexandrovich; Luzganova, Margarita Andreevna; Pensky, Vadim Nikolaevich; Filjukova, Ljudmila Petrovna; and Pogorelov, Alexandr Georgievich. Method for the manufacture of phenyl and methylphenylchlorosilanes. 3,555,064, Cl. 260-448.2

Turk, Victor J.; Junge, Charles H.; and Kingsbury, George R., to Clevite Corporation. Bearing and method of making same. 3,553,806, Cl. 29-149.5

Turner, David, to Gewase Instruments Limited. Flow rate meter. 3,554,031, Cl. 73-210.

Turner, Jesse M. Pallet car and bottom board installation for handling molds. 3,554,358, Cl. 198-85.

Tweed, Donald G.: *See—*
Brown, Richard V.; and Tweed, Donald G., 3,554,209.

Twentieth Century Products Corporation: *See—*
Hudson, Harry W., 3,554,219.

Tyler, Donald W.: *See—*
Orkney, James Bruce; Mijich, Joseph T.; and Tyler, Donald W., 3,553,861.

Tyler, Tommy N., to Honeywell Inc. Video recorder having an adapter to receive and modify video input signals for application to a cathode-ray tube recording device. 3,555,177, Cl. 178-6.7

Uden, Edward: *See—*
Ginsberg, Ernst; Hake, Oswald; Kirchner, Norbert; Uden, Edward; Zittlau, Helmut; and Schreihage, Wilhelm, 3,555,371.

Uelzmann, Heinz, to General Tire & Rubber Company, The. Accelerated epoxy-amine resinous compositions catalyzed with-SH yielding material. 3,554,967, Cl. 260-47.

Ulbing, Otmar M.: *See—*
Spyridakis, Emanuel G.; and Ulbing, Otmar M., 3,554,091.

Ulrich, Henri: *See—*
Rao, Durvasula V.; Sayigh, Adnan A. R.; and Ulrich, Henri, 3,555,071.

Ulrich, Thomas J., to National Electro-Mechanical Systems, Inc. Motor drive system. 3,555,387, Cl. 318-331.

Ulsky, Carl M. Method and apparatus for sawing shingle and shake blanks. 3,554,250, Cl. 144-323.

Ultronic Systems Corporations: *See—*
Sieracki, Frank W.; and Coombe, Thomas, 3,555,523.

Umpleby, John L.: *See—*
Whitacre, Francis M.; and Umpleby, John L., 3,554,182.

Underground Mining Machinery Limited: *See—*
Laycock, Geoffrey, 3,554,498.

Unidynamics/Phoenix: *See—*
Christianson, William O., 3,555,495.

Unied States of America, Air Force: *See—*
Hantzsch, Ralph Eugene, 3,554,471.

Union Carbide Corporation: *See—*
Calvert, William L.; and Bowen, James H., 3,554,343.
Colomb, Henry O., Jr.; and Trecker, David J., 3,554,886.
Didinger, George H., Jr., 3,553,805.
Garst, Roger H.; and Henry, Joseph P., 3,554,986.
Kuo, Wen Ling; and Anderson, John R., 3,554,691.
Marsden, James G.; and Sterman, Samuel, 3,555,051.
Myles, Michael J.; Kupcikevicius, Vytautas; and Beckman, John H., 3,553,769.
Sara, Raymond Vincent, 3,553,820.
Schofield, John Allan; and Delano, Roger A., 3,554,918.
Sellers, Ralph F.; Smith, Samuel G., Jr.; and Burhans, Allison S., 3,555,050.

Union Oil Company of California: *See—*
Hansford, Rowland C., 3,554,899.
Olivier, Kenneth L.; Booth, Frank B.; and Mears, David E., 3,555,098.
Wood, Frederick C.; Reeg, Cloyd P.; Kelley, Arnold E.; and Cheadle, George D., 3,554,898.

Uniroyal Englebert France S.A.: *See—*
Mirtain, Henri; and Devienne, Andre, 3,554,261.

Uniroyal, Inc.: *See—*
Barton, Bernard C., 3,554,857.
Cornell, Robert J., 3,554,972.
Fischer, William K., 3,554,962.
Ingulli, Alfred F.; and Alter, Henry L., 3,555,119.
Shoemaker, Paul S.; and Klamp, Walter K., 3,554,260.

United Aircraft Corporation: *See—*
McVicar, James Marion, 3,554,468.
Snow, Robert J.; and Bocknak, Gregory, 3,554,469.
Thompson, Earl R., 3,554,817.

United Coke & Chemicals Company Limited: *See—*
Riley, Harry L.; and Pinchbeck, Peter H., 3,554,830.

United Kingdom Atomic Energy Authority: *See—*
Dickson, George Kenneth, 3,554,869.

United Kingdom of Great Britain and Northern Ireland Minister of Technology in her Britannic Majesty's Government of the: *See—*
Bickerdike, Robert Lewis; Bradshaw, Francis Julian; Hughes, Garyth; Mair, William Norman; and Ranson, Harry Christopher, 3,554,739.
Cheeseman, Ian Clifford; Lawrence, Charles Reginald; and Woolford, Thomas George Holmes, 3,554,664.
Weston, Raymond Charles, 3,555,423.

United States of America
Agriculture: *See—*
Parker, Winfred E.; Knight, Hogan B.; Koos, Ronald E.; Ault, Ealdo C.; and Ault, Waldo C., 3,555,057.

Air Force: *See—*
McIntyre, Robert G.; Nichols, Browning, Jr.; and Hantzsch, Ralph E., 3,554,472.

Army: *See—*
Fowler, Kenneth A., 3,555,412.
Fujisawa, Akira, 3,555,457.
Geisler, Robert R., 3,554,877.
Gisser, Henry; and Petronio, Marco, 3,554,913.
Hilton, Ralph W., 3,553,998.
Hodes, Harvey A.; Sobieski, James F.; and Zerner, Michael C., 3,554,882.
Hu, Kwoh H., 3,554,007.
Koblin, Abraham; and Greeburger, George R., 3,554,005.
Mc Clurg, William Christian, 3,555,261.
Nieberlein, Vernon A., 3,554,782.
Peacher, Teddy J.; and Kilbourn, Dorwin L., 3,555,339.
Peacher, Teddy J.; and Kilbourn, Dorwin L., 3,555,340.
Sayles, David C., 3,554,819.
Scott, Robert J., 3,555,203.
Shults, Gary W.; and Wierbicki, Eugen, 3,554,773.
Villarroel, Fernando; and Campagnuolo, Carl Joseph, 3,555,314.
Zaid, Melvin; and Wachtell, Stanley, 3,554,008.

Atomic Energy Commission: *See—*
Anderson, Norman G., 3,555,284.
Becker, Klaus H., 3,554,920.
Beutler, Hans, 3,554,783.
Blair, Roy C.; and Pohl, Lawrence E., 3,554,374.
Kellner, Jordan D., 3,554,807.
Orlandini, Kent A.; and Korkisch, Johann, 3,554,693.
Orlandini, Kent A.; and Korkisch, Johann, 3,554,709.
Rogers, Benjamin T., Jr., 3,554,630.
Schroeder, Gerald L., 3,555,278.
Sheen, Edwin M., 3,555,434.
Thompson, Stanley G., 3,554,867.
Woods, Robert O., 3,555,411.

Health, Education and Welfare: *See—*
Kantrowitz, Adrian; and Tjonneland, Steinar, 3,553,736.

Interior: *See—*
Ellis, James E., 3,553,879.

National Aeronautics and Space Administration, Administrator, with respect to an invention of:
Goodwin, Ralph A., and Hall, Edgar D. Spectroscope equipment using a slender cylindrical reflector as a substitute for a slit. 3,554,647, Cl. 356-76.
Lloyd, Wayne B. Bearing and gimbal lock mechanism and spiral flex lead module. 3,554,466, Cl. 244-1.
Gruber, Carl L., and Richards, William E. Method and apparatus for optical modulating a light signal. 3,555,455, Cl. 331-94.5

National Aeronautics and Space Administration: *See—*
Greenberg, Jacob; and Seitz, Thomas E., 3,554,806.
Hallberg, Frederick C., 3,555,361.
Hymer, Robert L., 3,555,192.
Wallace, Elvis D., 3,553,904.

Navy: *See—*
Alpers, Frederick C., 3,554,129.
Attix, Frank H.; and West, Edward J., 3,555,277.
Boyns, Jerry E., 3,555,553.
Ellermeyer, Walter, 3,555,432.
Ettenhofer, Kurt L.; and Huff, Francis E., 3,555,165.
Hansen, James P., 3,555,301.
Hoelzen, Warren R.; and Hamilton, Charles R., 3,554,128.
Horanoff, Eugene V., 3,554,028.
Moore, Loyd C., 3,555,344.
Nye, Robert G.; Marciano, Joseph J.; Klund, William E.; and Prager, Roger H., 3,555,498.
Ragsdale, Charles W., 3,555,438.
Rogers, Raymond J., 3,555,426.
Rubin, David, 3,555,179.
Schade, William J., Jr., 3,554,275.
Walters, Andrew W., 3,555,550.
Watskins, Phillip L.; and Clarke, Frank D., 3,555,549.
Winter, John E., 3,555,440.

United States Steel Corporation: *See—*
Frostick, Harold G., 3,553,993.
Gaylor, Robert B., Jr., 3,554,476.
Grosko, John A., 3,554,520.
Haughtington, Richard E.; and Shipley, Earl H., 3,554,157.
Kerlie, Walter L., 3,554,519.
Kleysteuber, William K., 3,554,406.
Lucas, Bernard J., 3,555,163.

Universal Helicar Company: *See—*
Yowell, Maurice A., 3,554,467.

Upjohn Company, The: *See—*
Magerlein, Barney J., 3,555,007.
Moon, Malcolm W., 3,555,152.
Rao, Durvasula V.; Sayigh, Adnan A. R.; and Ulrich, Henri, 3,555,071.

U.S. Philips Corporation: *See—*
Auphan, Michel, 3,554,199.
Endesfelder, Helmut; Lentz, Klaus; Jando, Klaus; and Schulze, Klaus, 3,555,276.
Ginsberg, Ernst; Hake, Oswald; Kirchner, Norbert; Uden, Edward; Zittlau, Helmut; and Schreihage, Wilhelm, 3,555,371.

Grimmeiss, Hermann Georg; and Simons, Peter Johannes Philippus Gerardus, 3,555,283.
Hilbers, Antonius Hubertus, 3,555,375.
Johansson, Rolf, 3,555,470.
Koedam, Mijndert; and Wanmaker, Willem Lambertus, 3,555,336.
Theuwissen, Jan Hendrik, 3,554,463.
Van De Goor, Johannes Antonius, 3,555,334.
van Moorselaar, Rudolf, 3,555,053.

Ushakoff, Alexis E., to Cordis Corporation. Biological assay cell. 3,554,704, Cl. 23-253.

USM Corporation: *See—*
Duffy, Richard J., 3,554,258.
Newton, Albert E.; and Rumball, Paul G., 3,554,424.

Usuda, Koji, to Hitachi, Ltd. Field effect semiconductor device having a protective diode. 3,555,374, Cl. 317-235.

UY Lactos Laboratories Inc.: *See—*
Kviesitis, Boris, 3,555,156.

Vaco Products Company: *See—*
McLogan, Russell E., 3,554,251.

Vakhomchik, Fedor Andreevich: *See—*
Mitskevich, Gennady Feodosievich; Guschin, Vladislav Yakovlevich; Vorontsov, Jury Nikolaevich; Boguslavsky, Vladimir Avramovich; Bela-Belov, Anatoly Mikhailovich; Rakhlis, Viktor Izralievich; Oktyabrev, Viktor Revoldovich; Artsybashev, Oleg Ivanovich; and Vakhomchik, Fedor Andreevich, 3,555,471.

Val Verde, Emanuel: *See—*
Falk, Nels L.; and Val Verde, Emanuel, 3,554,136.

Van Allan, James A., to Eastman Kodak Company. Electrophotographic composition and element. 3,554,745, Cl. 96-1.6

Van Cleave, Robert A., Jr., to Texaco Inc. High voltage regulator using impedance transfer characteristics of transistors. 3,555,400, Cl. 323-22.

Van De Goor, Johannes Antonius, to U.S. Philips Corporation, mesne. Magnetron cathode with graphite end shield. 3,555,334, Cl. 313-107.

van den Boorn, Hubertus Franciscus. Support structure for a light dome. 3,553,914, Cl. 52-200.

Van Den Hove, Christian Marie; Lilet, Leonard; Cosse, Paul Andre; and Wybo, Maurice Augustin, to Centre National de Recherches Metallurgiques. Determination of stress strain properties of metallic substances. 3,554,019, Cl. 73-89.

Van der Veen, Romke, to N.V. Ingenieurshureau voor Systemen en Octrooien 'Spanstaal'. Method and device for determining the quantity of dredging spoil to be paid. 3,554,009, Cl. 73-61.

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Van Der Veen, Romke; and De Koning, Jan, to N.V. Ingenieurshureau voor Systemen en Octrooien 'Spanstaal'. Method and suction dredging installations for conveying dredging spoil. 3,554,010, Cl. 73-61.

Vanderlip, Herbert D.: *See—*
Kice, Jack W.; and Vanderlip, Herbert D., 3,554,220.

Van Dorn, Warren G.; Byrne, John F.; and Greeno, Thomas M., to Xerox Corporation. Method of making a lithographic master and method of printing therewith. 3,554,125, Cl. 101-451.

Van Malderghem, Edmund G., to Moore Business Forms, Inc. Correspondence assembly. 3;554,438, Cl. 229-69.

van Moorselaar, Rudolf, to U.S. Philips Corporation. 13β-Alkyl-9β. 10α-pregnanes. 3,555,053, Cl. 260-397.3

Van Tilburg, Edgar John, to Dow Chemical Company, The. Solvent systems for copolymers of ethylene and acrylic acid. 3,554,957, Cl. 260-30.4

Varian Associates: *See—*
Arnold, James T., 3,555,273.
Reeser, William O., Jr., 3,555,472.

Varnell, William R.; and Mitchell, Mance R., to Concrete Development Corporation. Building material made of mixture of polyester resin and rice hulls. 3,554,941, Cl. 260-9.

Vasile, Paul. Combined slicing, dicing, coring and juicing apparatus. 3,554,253, Cl. 146-40.

Vassallo, Donald Arthur: *See—*
Harden, John Charles; and Vassallo, Donald Arthur, 3,554,002.

VEB Carl Zeiss Jena: *See—*
Beyer, Hermann; and Schoppe, Gunter, 3,554,631.
Feist, Wieland; and Schmidt, Ilrich, 3,554,652.

VEB Chemiefaserkombinat Wilhelm-Pieck-Stadt Guben: *See—*
Buschmann, Gerhard; and Mewes, Erich, 3,553,803.

Vedeen, Leonard I.; Lally, Joseph E.; and Seiden, Herman L., deceased0 (by Seiden, Freida B.; administrator), to Bally Manufacturing Corporation. Amusement game apparatus. 3,554,547, Cl. 273-85.

Vekke, Alexandr Ivanovich: *See—*
Kolypaev, Nikolai Vasilievich; Vekke, Alexandr Ivanovich; Ivanov, Ivan Petrovich; Kravtsov, Lev Nikolaevich; and Shmukler, Iosif, 3,554,066.

Velsicol Chemical Corporation: *See—*
Kaplan, Ephraim H., 3,555,055.
Watson, David L., 3,555,153.

Verbanc, John J.: *See—*
Cluff, Edward F.; and Verbanc, John J., 3,554,960.

Verdin, Sam M. Oil pollution control and fire extinguishing apparatus and method. 3,554,290, Cl. 169-2.

Vereinigte Osterreichische Eisen- und Stahlwerke Aktiengesellschaft: *See—*
Schoffmann, Rudolf, 3,553,997.

Vesco, Robert L., to International Controls Corporation, mesne. Rotary valve with pivotable seat. 3,554,487, Cl. 251-298.

Vesuvius Crucible Company: *See—*
Cahoon, John B., Jr., 3,554,490.
Kilgore, Ronald V., 3,554,489.

Vetter, James L.: *See—*
Kichline, Thomas P.; Stahlheber, Norman Earl; and Vetter, James L., 3,554,921.

Vetter, Klaus-Peter: *See—*
Spauszus, Siegfried; Kohler, Wolfgang; Blieske, Herbert; and Vetter, Klaus-Peter, 3,555,244.

Victor Company of Japan, Limited: *See—*
Miyasaka, Takao; Shimizu, Hidekazu; and Roop, Donald E., 3,555,382.

Vigil, Jacob F.: *See—*
Hauck, Erwin A.; and Vigil, Jacob F., 3,555,513.

Villarroel, Fernando; and Campagnuolo, Carl Joseph, to United States of America, Army. Plural reed reciprocating generator. 3,555,314, Cl. 310-15.

Vladinets, Georgy Ivanovich: *See—*
Bugaenko, Boris Andreevich; Vladinets, Georgy Ivanovich; and Yantser, Jury Filippovich, 3,554,053.

Voelcker, Sven: *See—*
Kattner, Drich; Voelcker, Sven; Westram, Werner; and Nemeth, Manfred, 3,554,346.

Vogt, Howard W.: *See—*
Bard, Charleton C.; and Vogt, Howard W., 3,554,748.

Von Behren, Norvell E., to Vonn & Company, Incorporated. Word selecting device and method. 3,553,867, Cl. 40-70.

von Konig, Anita: *See—*
Weyde, Edith; von Konig, Anita; von Rintelen, Harald; Wagner, Siegfried; and Metz, Hans-Jorg, 3,554,750.

von Lowis, to Bosch, Robert, G.m.b.H. Hydraulic braking arrangement. 3,554,614, Cl. 303-21.

Vonn & Company, Incorporated: *See—*
Von Behren, Norvell E., 3,553,867.

von Rintelen, Harald: *See—*
Weyde, Edith; von Konig, Anita; von Rintelen, Harald; Wagner, Siegfried; and Metz, Hans-Jorg, 3,554,750.

Von Roll AG: *See—*
Bobst, Gerhard, 3,554,095.

von Starck, Axel; and Schnake, Friedrich, to AEG-Elotherm G.m.b.H. Electromagnetic conveying trough for the transport of liquid metals. 3,554,670, Cl. 417-50.

Von Sturm, Ferdinand; and Nischik, Herbert, to Siemens Aktiengesellschaft. Fuel cell comprising asbestos diaphragms and nickel mesh electrolyte supports. 3,554,812, Cl. 136-86.

Vorontsov, Jury Nikolaevich: *See—*
Mitskevich, Gennady Feodosievich; Guschin, Vladislav Yakovlevich; Vorontsov, Jury Nikolaevich; Boguslavsky, Vladimir Avramovich; Bela-Belov, Anatoly Mikhailovich; Rakhlis, Viktor Izralievich; Oktyabrev, Viktor Revoldovich; Artsybashev, Oleg Ivanovich; and Vakhomchik, Fedor Andreevich, 3,555,471.

Vortair Engineering Limited: *See—*
Crang, Terence Fursdon, 3,553,971.

Vosteen, Robert E. Multifrequency signal detector. 3,555,435, Cl. 328-140.

Vsesojurny Nauchno-Issledovatelsky I Proektno Konstruktorsky Institut Electroapparatov: *See—*
Mitskevich, Gennady Feodosievich; Guschin, Vladislav Yakovlevich; Vorontsov, Jury Nikolaevich; Boguslavsky, Vladimir Avramovich; Bela-Belov, Anatoly Mikhailovich; Rakhlis, Viktor Izralievich; Oktyabrev, Viktor Revoldovich; Artsybashev, Oleg Ivanovich; and Vakhomchik, Fedor Andreevich, 3,555,471.

Vyce, Joseph R., to Itek Corporation. Focus sensor. 3,554,650, Cl. 356-121.

Wachtell, Stanley: *See—*
Zaid, Melvin; and Wachtell, Stanley, 3,554,008.

Waddington, John, Limited: *See—*
Horry, William Thompson, 3,554,432.

Waddle, Craig C.; and Harris, Robert K., to Mintech Corporation, mesne. Discharge grate for circular shaft kiln. 3,554,509, Cl. 263-29.

Wagle, Joseph A., to General Motors Corporation. Turbomachine rotor. 3,554,668, Cl. 416-220.

Wagle, Joseph Albert, to General Motors Corporation. Turbomachine rotor. 3,554,667, Cl. 416-217.

Wagner, August Gilbert: *See—*
Taylor, Kendrick C.; Hutchinson, Herman R.; Wagner, August Gilbert; and Blasko, Michael J., 3,554,268.

Wagner Electric Corporation: *See—*
Atkins, Carl E., 3,555,368.
Atkins, Carl E., 3,555,544.
Curtis, Lorin W., 3,555,341.
Yarmovsky, Max, 3,555,333.

Wagner, Jakob, to Linde Aktiengesellschaft. Automotive vehicle with auxiliary motive-power source. 3,554,849, Cl. 165-23.

Wagner, Karl: *See—*
Winkler, Alfred; Wagner, Karl; Engelsmann, Dieter; and Schroder, Rolf, 3,554,104.

Wagner, Otto, to Farbenfabriken Bayer Aktiengesellschaft. Plasminogen activator and isolation thereof from stromata of human erythrocytes. 3,555,000, Cl. 260-112.

Wagner, Siegfried: *See—*
Weyde, Edith; von Konig, Anita; von Rintelen, Harald; Wagner, Siegfried; and Metz, Hans-Jorg, 3,554,750.

Wahl, Josef; and Reichardt, Wolfgang, to Bosch, Robert, G.m.b.H. Fuel injection arrangement for internal combustion engines. 3,554,169, Cl. 123-32.

Wahnschaffe, Jurgen: *See—*
Deutschmann, Herbert; Wahnschaffe, Jurgen; Rudert, Wolfgang; and Mader, Herbert, 3,554,322.

Wakim, Fahd G.: *See—*
Fletcher, Gerald Matthew; Ghosh, Amal Kumar; and Wakim, Fahd G., 3,554,749.

Wald, Herbert; and Young, Harold K., to Bethlehem Steel Corporation. Bell-type furnace. 3,554,511, Cl. 263-40.

Waldmann, Hermann: *See—*
Bayer, Karl-Heinz; and Waldmann, Hermann, 3,555,401.

Walker, Charles E.: *See—*
Brown, Charles G.; Rauterkus, Leo Thomas; and Walker, Charles E., 3,555,529.

Walker, Francis Ian Victor, to Miles, F. G., Engineering Limited. Braking force trailer. 3,554,024, Cl. 73-121.

Wall, Thomas J.: *See—*
Ball, Jeremy T.; Wall, Thomas J.; and MacAfee, James E., 3,553,987.

Wallace, Arthur G. Fluid pressure actuated motor. 3,554,090, Cl. 91-496.

Wallace, Elvis D., to United States of America, National Aeronautics and Space Administration. Weld preparation machine. 3,553,904, Cl. 51-170.

Wallis, Craig; and Melnick, Joseph L., to Monsanto Company. Process for the fractionation of plasma and serum using water-insoluble polyelectrolytes containing diloweralkylaminoloweralkylimide groups. 3,555,001, Cl. 260-112.

Walmsley, Judith A.: *See—*
Burzynski, Alfred J.; and Walmsley, Judith A., 3,554,698.

Walters, Andrew W., to United States of America, Navy. Jettisonable absorbing antenna shield. 3,555,550, Cl. 343-18.

Wang, Pao-Chi: *See—*
Teng, James; and Wang, Pao-Chi, 3,554,840.

Wanmaker, Willem Lambertus: *See—*
Koedam, Mijndert; and Wanmaker, Willem Lambertus, 3,555,336.

Ward, Donald Francis: *See—*
Kopsch, Paul J.; Turcus, Daniel, Jr.; and Ward, Donald Francis, 3,553,804.

Ware, William A., to Rusco Industries, Inc., mesne. Screw calibration method and apparatus. 3,554,651, Cl. 358-138.

Wargo, Eva M. Sanitary belt. 3,554,196, Cl. 128-291.

Warner, James R.: *See—*
Pelley, Richard B.; Warner, James R.; and Herbert, George E., 3,554,237.

Warner-Lambert Pharmaceutical Company: *See—*
Shavel, John, Jr.; Strandtmann, Max von; and Puchalski, Chester, 3,555,029.

Warnke, Egon Fred, to Sennheiser Electronic. Microphone with a plurality of hand connectable control electrodes. 3,555,202, Cl. 179-100.1

Warwick Electronics Inc.: *See—*
Overlie, Per T., 3,555,300.

Waser, James D., to Cooper Tire & Rubber Company. Rake tine assembly. 3,553,950, Cl. 56-400.

Wasleski, Daniel M.: *See—*
Gier, Delta W.; and Wasleski, Daniel M., 3,555,160.

Watanabe, Kiyoshi: *See—*
Maeda, Tsutomu; Watanabe, Kiyoshi; Akino, Tadaharu; Ito, Eiitsu; and Osada, Hisashi, 3,555,464.

Watanabe, Takashi, to Kabushiki Kaisha Kawai Gakki Seisakusho. Electrical contact member. 3,555,497, Cl. 339-258.

Waters, Herbert; and Nichols, Sterling M., to Firestone Tire & Rubber Company, The. Method for melt spinning polycaprolactam into a low humidity environment. 3,555,139, Cl. 264-210.

Watley, Lindell D.; and O'Keeffe, James R. Grease injector fitment. 3,554,324, Cl. 184-105.

Watskins, Phillip L.; and Clarke, Frank D., to United States of America, Navy. Radar range indicating system. 3,555,549, Cl. 343-13.

Watson, David L., to Velsicol Chemical Corporation. Pesticidal compositions comprising benzamides and thiophosphonates and method of use. 3,555,153, Cl. 424-222.

Watson, Guido, to Westinghouse Electric Corporation. Off delay timer and internally generated auxiliary direct current voltage source for a controlled rectifier alternating current switch for use therein. 3,555,367, Cl. 317-142.

Watson, John D., Sr.: *See—*
Olstowski, Franciszek; Watson, John D., Sr.; and McMichael, Wallace T., 3,553,834.

Waybright, George C.: *See—*
Peffer, Robert J.; and Waybright, George C., 3,555,390.

Weaver, Galen K.; Shaffer, Howard A.; and Coughlin, Stephen A. Brazeable terminal body and apparatus for installing same inside a tube. 3,553,812, Cl. 29-203.

Weaver, Paul J. Machine tools slide assembly. 3,554,617, Cl. 308-3.

Webb, John, to Firestone Tire & Rubber Company, The. Tires. 3,554,259, Cl. 152-352.

Webb, Thomas O., to Marathon Oil Company. Use of micellar solution as an emulsion breaker. 3,554,289, Cl. 166-305.

Weber, Heinrich: *See—*
Emde, Hans; Kerrutt, Gunter; Weber, Heinrich; and Blumel, Harald, 3,554,988.

Weber, Joseph, 1/2 to Hurvitz, Hyman. Amplifier with feedback particularly useful with a gravity wave detector. 3,554,033, Cl. 73-382.

Weber, Peter E., to Marquardt Corporation, The. High pressure piezoelectric transducer. 3,555,311, Cl. 310-8.3

Wechsler, Harry C.: *See—*
Rosis, Constantine; Kline, Milton; Dickstein, Jack; and Wechsler, Harry C., 3,554,954.

Wed Enterprises, Inc.: *See—*
Broggie, Roger E.; and Brundage, Bert W., 3,554,130.

Wegner, Klaus: *See—*
Ploger, Friedrich; Roepenack, Horst; and Wegner, Klaus, 3,553,800.

Weinand, Louis H., to General Motors Corporation. Unidirectional pumping seal. 3,554,561, Cl. 277-134.

Weiner, Sidney: *See—*
Ehrens, Henry; and Weiner, Sidney, 3,554,217.

Weinschenk, Pedro Pablo: *See—*
Jeffee, Saul; and Weinschenk, Pedro Pablo, 3,554,641.

Weinstein, Harold; and Snyder, Edward, III. Teaching machine. 3,553,853, Cl. 35-9.

Weinstock, Irwin B., to General Electric Company. Sealed rechargeable battery having a sensing electrode. 3,554,805, Cl. 136-3.

Weir-Jones, Iain: *See—*
Brenner, Michael B.; and Weir-Jones, Iain, 3,555,476.

Weis, Claus Dieter; and Gatzi, Karl, to Geigy Chemical Corporation. Cycloalkyl N-[octohydro-1,2,4-methano- pentalenyl-(5)]oximecarbamates. 3,555,092, Cl. 260-566.

Weis, Claus Dieter; and Rupf, Jurg, to Geigy Chemical Corporation. Herbicidal N-octahydro-1,2,4 methenopentalenyl-(5)-ureas. 3,555,086, Cl. 260-553.

Weise, Rolf: *See—*
Schwartz, Herbert; and Weise, Rolf, 3,553,956.

Weismann, Victor P. Method for making reinforced modular foam panels. 3,555,131, Cl. 264-45.

Weiss, Irving: *See—*
Markbreiter, Stephen J.; and Weiss, Irving, 3,553,972.

Weiss, Martin Joseph: *See—*
Remers, William Alan; and Weiss, Martin Joseph, 3,555,037.

Weissenberg, Ulrich W.: *See—*
Place, John; Weissenberg, Ulrich W.; and Goodenough, Robert D., 3,554,905.

Welch, Dean E.; and Baron, Robert R., to Salsbury Laboratories. Nitro-trifluoromethylthiobenzamides. 3,555,085, Cl. 260-551.

Welch, John Samuel: *See—*
Stepan, James Lawrence; and Welch, John Samuel, 3,555,198.

Welch, Nicholas A.; and Ferrara, Joseph R., to Emhart Corporation. Safety lock for firearms. 3,553,877, Cl. 42-70.

Wellman-Lord, Inc.: *See—*
Schneider, Raymond T., 3,554,228.

Wells, Robert R.: *See—*
Silverman, David; and Wells, Robert R., 3,555,211.

Wenaas, Harold D. Chain link separator. 3,553,818, Cl. 29-256.

Wenger, Thomas: *See—*
Frick, Wilhelm Ernst; and Wenger, Thomas, 3,555,040.

Werner & Pfleiderer: *See—*
Fritsch, Rudolf Paul, 3,553,777.

Wernsing, William O. Electromechanical apparatus for detecting irregularities in a body. 3,554,017, Cl. 73-81.

West, Edward J.: *See—*
Attix, Frank H.; and West, Edward J., 3,555,277.

West, James A., to Binks Manufacturing Company. Powder spray system. 3,554,164, Cl. 118-302.

West, Terence H.: *See—*
Billett, Ronald J.; and West, Terence H., 3,554,845.

West, Warren W., to Du Pont de Nemours, E. I., and Company. Method of treating diamond powder. 3,554,716, Cl. 51-293.

Western Electric Company, Incorporated: *See—*
Brown, Wilmot E., Jr.; and Davis, Clarence C., 3,553,813.
Heinz, Alfred, 3,555,172.
Kozelnicky, Edward D., 3,553,824.

Western Filter Co., Inc.: *See—*
Cleghorn, Norman L.; and Anderson, Albert G., 3,554,242.

Western Gear Corporation: *See—*
Williams, Glynn H., 3,553,763.

Western Microwave Laboratories, Inc.: *See—*
Anderson, Ross, 3,555,459.

Westinghouse Air Brake Company: *See—*
Kurtz, Ronald C., 3,554,234.
Niedermeier, Fred P.; Joslin, Irwin L.; and Orth, Edward G., 3,554,312.
Worbois, Robert J.; Ferguson, James F.; and Wilson, Richard L., 3,554,615.

Westinghouse Bremsen-und Apparatebau G.m.b.H.: *See—*
Opel, Detlef; and Brinkmann, Karl-Heinz, 3,554,235.
Westinghouse Electric Corporation: *See—*
Bozanic, Donald A.; Mergerian, Dickron; and Minarik, Ronald W., 3,555,407.
Brown, Jack T.; and Feduska, William, 3,554,802.
Bruning, Armin M.; Kienast, Peter F.; Kemeny, George A.; and Hirayama, Chikara, 3,554,715.
Collings, Peter R.; and Beyer, Rolf R., 3,555,345.
Cromer, Charles F.; and Crookston, Ronald W., 3,555,227.
Humiston, Homer A.; and Marshall, Fitz-Hugh B., 3,555,178.
Johnson, Edwin W.; and Hull, Frederick C., 3,554,791.
Johnson, Edwin W., 3,554,792.
McFall, Thomas, 3,555,342.
Osial, Thaddeus A.; and Steinbruegge, Kenneth B., 3,555,449.
Saffold, Thomas F.; and Frink, Russell E., 3,555,225.
Sattler, Frank A., 3,555,113.
Savage, Conwell, 3,554,325.
Shannon, Bill M.; and Kotala, James R., 3,555,293.
Smith, Clarence M., 3,555,492.
Spindle, Harvey E., 3,555,226.
Thorp, Arthur G., II, 3,554,868.
Watson, Guido, 3,555,367.
Westlake, Norman L., to General Radio Company. Automatic electronic counter apparatus. 3,555,256, Cl. 235-156.
Weston Instruments, Inc.: *See—*
Axford, Kenneth L., 3,555,441.
Weston, Neil. Magnetic keeper for picture frames. 3,553,873, Cl. 40-156.
Weston, Raymond Charles, to United Kingdom of Great Britain and Northern Ireland, Minister of Technology in Her Britannic Majesty's Government of the. Modulation control circuits for delta-modulation telecommunication systems. 3,555,423, Cl. 325-38.
Westram, Werner: *See—*
Kattner, Drich; Voelcker, Sven; Westram, Werner; and Nemeth, Manfred,3,554,346.
Wetzel, Thomas Andrew; and Hellyer, James A., to Procter & Gamble Company, The. Aerosol antiperspirant composition. 3,555,145, Cl. 424-47.
Weyde, Edith; von Konig, Anita; von Rintelen, Harald; Wagner, Siegfried; and Metz, Hans-Jorg, to Agfa-Gevaert Aktiengesellschaft. Process for the production of photographic images. 3,554,750, Cl. 96-29.
Wheat, Lawrence C.: *See—*
Miller, Alfred H.; Perry, Glenn; and Wheat, Lawrence C.,3,553,781.
Wheeler, Robert C., to Sylvania Electric Products, Inc. Color killer circuit for television receivers. 3,555,173, Cl. 178-5.4
Wheelock, Lee A. Apparatus for automatic lubrication of chain link conveyors. 3,554,323, Cl.
Whippany Electronics, Inc.: *See—*
Padalino, John W., 3,555,167.
Whitacre, Francis M.; and Umpleby, John L. Liquid heater especially adapted for liquid submerged use. 3,554,182, Cl. 126-360.
White, Allen A., to Hesston Corporation. Sickle guard. 3,553,948, Cl. 56-307.
White, George S.; Lewis, Richard E.; and Zonn, Lincoln M., to Graham Stuart Corporation, mesne. Vapor or particle detection device. 3,555,532, Cl. 340-237.
White Motor Corporation: *See—*
Le Fevre, William F., 3,554,596.
Whitney, Ellsworth D.: *See—*
Shaffer, Peter T. B.; and Whitney, Ellsworth D.,3,554,717.
Whittaker Corporation: *See—*
Haener, Juan A., 3,555,142.
Wiczer, Sol B.; and Luther, Lloyd S. Solid gelated alcoholic foam. 3,554,771, Cl. 99-189.
Wide, Leif Edvin: *See—*
Axen, Rolf E. A. V.; Porath, Jerker O.; and Wide, Leif Edvin,3,555,143.
Widmer, Hans: *See—*
Manz, Hans; and Widmer, Hans,3,555,279.
Wiener Metallwarenfabrik Smolka & Company: *See—*
Smolka, Thomas G.; and Schwarz, Walter, 3,554,571.
Wienert, Lester A.: *See—*
Buckman, Stanley J.; Ross, Richard T.; Wienert, Lester A.; and Slawson, Harry D.,3,554,917.
Wierbicki, Eugen: *See—*
Shults, Gary W.; and Wierbicki, Eugen,3,554,773.
Wiese, Joseph A., Jr.: *See—*
Geisler, Charles H.; and Wiese, Joseph A., Jr.,3,554,794.
Wilburn, Willard R., to Carmet Company. Polygonal drill rod assembly. 3,554,306, Cl. 175-320.
Wilcox, Donald L., to Texas Instruments, Incorporated. All electronic VHF television tuner. 3,555,431, Cl. 325-465.
Wilcox Electric Company, Inc.: *See—*
Mears, William E., 3,555,521.
Wilcox, Merton F.: *See—*
Konstantinu, Ilias; and Wilcox, Merton F.,3,554,193.
Wiley, James Henry: *See—*
Pazar, Charles Arnold; and Wiley, James Henry,3,555,144.
Wilkinson, Gerald E. G.; and Houston, Theodore T., to Tennessee Corporation. Wet process phosphoric acid manufacture. 3,554,696, Cl. 23-165.
Willems, Jozef Frans; and Thiers, Robrecht Julius, to Gevaert-Agfa N.V. Photographic light-sensitive material. 3,554,758, Cl. 96-109.
Willemsens, Louis C., to International Lead Zinc Research Organization, Inc. Preparation of triorganolead compounds by ozonolysis. 3,555,038, Cl. 260-299.
Willey, William F.: *See—*
Hasseman, Walter, 3,553,881.
Williams, Albert L.: *See—*
Andress, Harry J., Jr.; and Williams, Albert L.,3,554,945.
Williams, Bernhard O.: *See—*
Britton, Leon R.; Johnson, Kurt T.; Kusch, Edward K.; and Williams, Bernhard O.,3,555,229.
Williams, Charles W., to General Motors Corporation. Composite propeller shaft construction and method of making. 3,553,978, Cl. 64-1.
Williams, Glynn H., to Western Gear Corporation. Caster and platform assembly. 3,553,763, Cl. 16-43.
Williams, James H.: *See—*
Cota, Marlo E.; and Williams, James H.,3,554,162.
Williams, Keith Juxon; and Ennis, Philip James, to International Nickel Company, The. Nickel-aluminum electrical resistance elements. 3,554,740, Cl. 75-170.
Williams, Robert A. Latch type pyrotechnic detonator circuit test probe. 3,555,490, Cl. 339-91.
Williams, Winston F., to Collins Radio Company. Remote tuning system for plurality of controlled units employing common tuning control and indicator. 3,555,393, Cl. 318-673.
Willinger, Allan H., to Metaframe Corporation, mesne. Aquarium filtration device. 3,554,375, Cl. 210-169.
Wills, Donald F., to Chandler Evans Inc. Digitally positioned actuator. 3,554,086, Cl. 91-376.
Wilmsen, George M., to Tee-Pak, Inc. Casing sizer. 3,553,768, Cl. 17-35.
Wilson, Bruce N., to Hooker Chemical Corporation. Unsaturated polyesters of nitrilotriacetic acid, a polyhydric alcohol and an unsaturated polycarboxylic acid. 3,555,118, Cl. 260-870.
Wilson, Daivd W.: *See—*
Shoemaker, William E.; and Wilson, Daivd W.,3,555,415.
Wilson, Joseph G., to Shell Oil Company. Catalytic cracking process. 3,554,903, Cl. 208-164.
Wilson, Richard L.: *See—*
Worbois, Robert J.; Ferguson, James F.; and Wilson, Richard L.,3,554,615.
Wilson, Richmond W., to Corning Glass Works. Method and apparatus for air cooling glass tube by vacuum means. 3,554,723, Cl. 65-86.
Wilson, Worley C., Jr.: *See—*
Clarke, James W., Jr.; and Wilson, Worley C., Jr.,3,555,448.
Winchenbach, Paul Gerhard: *See—*
Hutzenlaub, Armin S. P.; and Winchenbach, Paul Gerhard,3,554,457.
Wincklhofer, Robert C.: *See—*
Crescentini, Lamberto; and Wincklhofer, Robert C.,3,555,056.
Windle, Tom J., to Phillips Petroleum Company. Quick burst pipe tester. 3,554,006, Cl. 73-49.5
Windley, William Thomas, to Du Pont de Nemours, E. I., and Company. Method for monitoring properties of polymer and yarn produced therefrom. 3,555,537, Cl. 340-259.
Windmoller & Holscher: *See—*
Achelpohl, Fritz; and Schmedding, Herbert, 3,554,098.
Schmedding, Herbert; and Helbig, Helmut, 3,554,828.
Schwarzkopf, August, 3,554,822.
Winfried, Lork: *See—*
Sennewald, Kurt; Hauser, Alfred; and Winfried, Lork,3,555,082.
Winger, James L.: *See—*
Pearce, Warren, Jr.; and Winger, James L.,3,555,496.
Winkler, Alfred; Wagner, Karl; Engelsmann, Dieter; and Schroder, Rolf, to Agfa-Gevaert Aktiengesellschaft. Exposure control for photographic cameras. 3,554,104, Cl. 95-10.
Winkler, DeLoss E., to Shell Oil Company. Hydroxylated styrene butadiene block copolymers. 3,555,112, Cl. 260-836.
Winter, John E., to United States of America, Navy. Delay-line frequency discriminator. 3,555,440, Cl. 329-116.
Wise, Raleigh Warren, to Monsanto Company. Method of determining curing characteristics of an elastomer. 3,554,003, Cl. 73-15.6
Wisman, Franklin O., to Wood's, T. B, Sons Company. Control apparatus for motors and the like. 3,555,386, Cl. 318-317.
Wiswell, George C., Jr. Inflatable clamping device. 3,553,970, Cl. 61-54.
Witte, Robert S.; and Wood, Charles E., to TRW Inc. Laser cold cathode apparatus. 3,555,451, Cl. 331-94.5
Wittemeier, Hans-Joachim; and Neumann, Gerhard Max, to Delbag-Luftfilter Gesellschaft mit beschrankter Haftung. Filtering assembly including a multiplicity of interconnected plenum chambers. 3,553,941, Cl. 55-473.
Wodarczyk, Paul. Cam actuated replaceable cue stick tip assembly. 3,554,544, Cl. 273-70.
Woebcke, Herman N., to Stone & Webster Engineering Corporation. Furnace apparatus. 3,554,168, Cl. 122-510.
Wohlman, Fred, Jr., to Ex-Cello-O Corporation. Record member punch. 3,554,069, Cl. 83-571.
Wolf, Milton: *See—*
Diebold, James L.; and Wolf, Milton,3,555,034.
Wolf, Neil H. Extracting oil waste. 3,554,906, Cl. 210-23.
Wolfe, Gene R.: *See—*
Charrier, George O.; and Wolfe, Gene R.,3,553,849.

Wolff, Kevin M. Automobile carried camper. 3,554,395, Cl. 296-26.
Wood, Charles E.: *See—*
Witte, Robert S.; and Wood, Charles E.,3,555,451.
Wood, Charles G., to Essex International, Inc. Pressure switch. 3,555,220, Cl. 200-83.
Wood, Frederick C.; Reeg, Cloyd P.; Kelley, Arnold E.; and Cheadle, George D., to Union Oil Company of California. Recycle hydrocracking process for converting heavy oils to middle distillates. 3,554,898, Cl. 208-59.
Wood, Gary James. Reversible, rotatable brush. 3,553,758, Cl. 15-24.
Wood, Prentice J., to Mead Corporation, The. Article carrier. 3,554,401, Cl. 220-113.
Woodard, Gerald F.: *See—*
Buehrle, William E., Jr.; and Woodard, Gerald F.,3,555,422.
Woodford Manufacturing Company: *See—*
Noland, Wayne B., 3,553,757.
Woodhall, Edwin S., to Goodyear Tire & Rubber Company, The. Tire molding apparatus. 3,553,778, Cl. 18-17.
Woodle, Robert A.: *See—*
Bozeman, Paul P., Jr.; Morris, Herbert C.; and Woodle, Robert A.,3,554,896.
Woodlock, Paul B.: *See—*
Gerson, Herman; Bachmann, William Eugene; and Woodlock, Paul B.,3,554,776.
Woods, James Beverley: *See—*
Fortune, Ronald; Mills, Ernest G.; and Woods, James Beverley,3,554,160.
Woods, Lester E., to Artex Hobby Products, Inc. Fluid dispensing applicator. 3,554,660, Cl. 401-214.
Woods, Robert O., to United States of America, Atomic Energy Commission. Cold cathode magnetron ionization gauge with cathodes forming pole pieces for cylindrical magnet. 3,555,411, Cl. 324-33.
Wood's, T. B, Sons Company: *See—*
Wisman, Franklin O., 3,555,386.
Woods, William F. C., to Flower Faraday Limited, mesne. Wrapping machines. 3,553,935, Cl. 53-209.
Woods, William T. Bumper with spare tire carrier assembly. 3,554,415, Cl. 224-42.05
Woolford, Thomas George Holmes: *See—*
Cheeseman, Ian Clifford; Lawrence, Charles Reginald; and Woolford, Thomas George Holmes,3,554,664.
Worbois, Robert J.; Ferguson, James F.; and Wilson, Richard L., to Westinghouse Air Brake Company. Fluid pressure brake control valve apparatus. 3,554,615, Cl. 303-36.
Wurlitzer Company, The: *See—*
Arsem, Alvan Donald, 3,555,509.
Klaiber, George Stanley, 3,554,071.
Wybo, Maurice Augustin: *See—*
Van Den Hove, Christian Marie; Lilet, Leonard; Cosse, Paul Andre; and Wybo, Maurice Augustin,3,554,019.
Wyckoff, Robert L., to Raytheon Company. Moving target indicating system. 3,555,548, Cl. 343-7.7
Wynstra, Carl J., to Boxboard Research and Development Association. Cylinder papermaking apparatus. 3,554,866, Cl. 162-321.
Wysocki, Kazmier: *See—*
Wysocki, Kazmier; Flynn, Michael J.; Paitchell, Harold; and Keller, Ronald C., 3,554,841.
Wysocki, Kazmier; Flynn, Michael J.; Paitchell, Harold; and Keller, Ronald C., to Wysocki, Kazmier. Straight line labeling mechanism. 3,554,841, Cl. 156-455.
Xerox Corporation: *See—*
Johnston, Donald LeRoy; Dryden, Vernon W.; and Doyle, John T., 3,554,705.
Perreault, Donald A., 3,555,428.
Van Dorn, Warren G.; Byrne, John F.; and Greeno, Thomas M., 3,554,125.
Xomox Corporation: *See—*
de Jager, Evertt J., 3,554,096.
Yagoda, John J.: *See—*
Kuwik, John J.; Stevenson, Thomas E.; and Yagoda, John J.,3,554,483.
Yamada, Bunjiro: *See—*
Arakawa, Morimasa; Yamada, Bunjiro; Katanosaka, Akisato; and Kato, Kazuhiko,3,554,940.
Yamada, Toru; and Kitajima, Senjyo, to Kabushiki Kaisha Tokai Rika Denki Seisakusho. Forging method for producing a hollow body. 3,553,809, Cl. 29-159.2
Yamada, Yoshio: *See—*
Fukada, Kazuo; Sakata, Yoshiaki; Yamada, Yoshio; Mizuno, Masaaki; and Tanaka, Hiroaki,3,555,129.
Yamagishi, Iwao, to Eidai Sangyo Kabushiki Kaisha. Method of forming a decorative panel. 3,554,827, Cl. 156-85.
Yamaguchi, Makio: *See—*
Nakajima, Isao; Suzuki, Miichiro; Yamaguchi, Makio; and Kondo, Kiyohire,3,555,063.
Yamaguchi, Tatsuya: *See—*
Nakamura, Takeo; Murayama, Hiroshi; and Yamaguchi, Tatsuya,3,555,083.
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi, to Sumitomo Chemical Company, Ltd. Method for preparing benzodiazepine derivatives. 3,555,014, Cl. 260-239.3
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hiroshashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi; and Izumi, Takahiro, to Sumitomo Chemical Company, Ltd. Procedure for preparing 1,4-benzodiazepine-2-one derivatives. 3,555,013, Cl. 260-239.3
Yamamoto, Michihiro: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hiroshashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; Kobayashi, Tsuyoshi; and Izumi, Takahiro,3,555,013.
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,555,014.
Yamashita, Makoto; and Kushida, Masagoro, to Kabushiki Kaisha Ichikawa Seisakusho. Safety fitting attachment assembly emboding components with distortable thread means. 3,554,582, Cl. 287-20.5
Yanai, Hisayoshi; Ikoma, Toshiaki; Sugeta, Takayuki; Matsukura, Yasuo; and Ohta, Kuniichi, to Nippon Electric Company, Limited. Radiation sensitive switching system employing a semiconductor element. 3,555,282, Cl. 250-211.
Yantser, Jury Filippovich: *See—*
Bugaenko, Boris Andreevich; Vladinets, Georgy Ivanovich; and Yantser, Jury Filippovich,3,554,053.
Yarmovsky, Max, to Wagner Electric Corporation. Electron multiplier tube having combined supporting- cooling means. 3,555,333, Cl. 313-105.
Yastrov, Henry, to Jerrold Electronics Corporation. Master antenna distribution system. 3,555,429, Cl. 325-365.
Yocum, William C., to Superior Valve Company. Fail-safe shipping container for compressed fluids. 3,554,227, Cl. 137-588.
Yoder, David J.; and Bugg, Maurice W., to General Foods Corporation. Freeze-thaw resistant flour and starch thickener blend. 3,554,764, Cl. 99-101.
Yokomatu, Kazuo: *See—*
Tonooka, Kazuo; and Yokomatu, Kazuo,3,554,515.
Yonemitsu, Eiichi; Nawata, Takanari; and Masu, Masanobu, to Mitsubishi Edogawa Kagaku Kabushiki Kaisha. Process for preparing self-condensation products. 3,555,052, Cl. 260-396.
Yorty, Samuel W. Carrier device for garments on hangers. 3,554,417, Cl. 224-45.
Yoshino, Masao. Flow control valve. 3,554,213, Cl. 137-101.
Yoshino, Tomiya, to Towa Chikudenki Kabushiki Kaisha, and Tokyo Denki Kabushiki Kaisha. Condenser electrode with semi- permeable membrane surface. 3,555,369, Cl. 317-230.
Yoshitake, Masathugu: *See—*
Hosaka, Mamoru; Ando, Fumio; and Yoshitake, Masathugu,3,555,514.
Yoshitomi Pharmaceutical Industries, Ltd.: *See—*
Nakanishi, Michio; Munakata, Tomohiko; and Tsumagari, Tatsumi, 3,555,012.
Young, Garth L., Jr.: *See—*
Young, Virginia M.; and Young, Garth L., Jr.,3,553,959.
Young, Harold K.: *See—*
Wald, Herbert; and Young, Harold K.,3,554,511.
Young, Richard Owen. Loudspeaker systems. 3,554,313, Cl. 181-31.
Young, Virginia M.; and Young, Garth L., Jr. Hydraulic timer. 3,553,959, Cl. 58-144.
Younkin, James R., to Thurman & Younkin, Inc., mesne. Open loop single axes servo flight control system. 3,555,391, Cl. 318-580.
Yount, Nolen A., 3/8% to Eeds, W. E. Turbulent flow drill collar. 3,554,307, Cl. 175-323.
Yowell, Maurice A., to Universal Helicar Company. Counter-rotating rotor transmission for helicopters. 3,554,467, Cl. 244-17.19
Zachariah, Gerald L.: *See—*
McKenzie, Bruce A.; Zachariah, Gerald L.; Peart, Robert M.; and Ohlgren, Raymond R.,3,553,846.
Zahn, Wolfgang, to Agfa-Gevaert Aktiengesellschaft. Apparatus for reproducing images of color photographic negatives. 3,554,642, Cl. 355-38.
Zahnradfabrik Friedrichshafen Aktiengesellschaft: *See—*
Lang, Armin, 3,554,089.
Liebert, Karl-Heinz, 3,553,966.
Zaid, Melvin; and Wachtell, Stanley, to United States of America, Army, mesne. Pressure vessel apparatus. 3,554,008, Cl. 73-35.
Zajkowski, William. Earth piercing apparatus and method. 3,554,303, Cl. 175-62.
Zambrow, John L.: *See—*
Dockus, Kostas F.; and Zambrow, John L.,3,553,825.
Zane, Howard Y. F. Power hand grip for golf clubs etc.. 3,554,554, Cl. 273-165.
Zapf, Gerhard; and Niessen, Jorg, to Sintermetallwerk Krebsoge GmbH. Rotary piston engine. 3,554,677, Cl. 418-178.
Zaromb, Solomon. Metal-oxygen power source. 3,554,810, Cl. 136-86.
Zatsky, Norman C.: *See—*
Keeler, Eugene R.; and Zatsky, Norman C.,3,553,955.
Zdanowski, Richard E.; and Glavis, Frank J. Sealant or spackling composition containing unsaturated carboxylic acid copolymer salts. 3,554,942, Cl. 260-17.
Zeiss, Carl-Stiftung: *See—*
Budnick, Diethard, 3,555,421.
Zelina, William B.: *See—*
Buchanan, James L.; and Zelina, William B.,3,555,399.

Zeller, Robert V.: *See*—
Bowden, John E.; McLarty, Murray R.; and Zeller, Robert V.,3,554,493.
Zemel, Edward Saul. Protein quantitation plate for electrophoretic apparatus and method of making and using same. 3,554,894, Cl. 204-299.
Zenith Radio Corporation: *See*—
Figlewicz, Raymond C.; and Karhan, Victor J., 3,555,473.
Lasch, Frank J.; and Stemple, Andrew M., 3,554,188.
Zerner, Michael C.: *See*—
Hodes, Harvey A.; Sobieski, James F.; and Zerner, Michael C.,3,554,882.
Zhitnik, Georgy Gavrilovich: *See*—
Andoniev, Sergei Mikhailovich; Berman, Mark Nikolaevich; Zhitnik, Georgy Gavrilovich; Kondratiev, Evgeny Mikhailovich; Levitasov, Yakov Matveevich; Makarov, Konstantin Ivanovich; Pevny, Nikolai Ivanovich; Pokrass, Leonid Moiseevich; Pochtman, Alexandr Markovich; Robin, Mark Anisimovich; Tesner, Pavel Alexandrovich; Sheinfain, Felix Isaakovich; and Filipiev, Oleg Vladimirovich,3,554,507.
Ziegler, George William, Jr.: *See*—
Demler, Henry William, Sr.; and Ziegler, George William, Jr.,3,553,835.
Zielke, Lawrence; and Thurston, William H. Autocollimator. 3,554,653, Cl. 356-153.
Zilahy, Zoltan E., to Standard Tool & Manufacturing Company. Mechanically driven transfer system. 3,554,365, Cl. 198-232.
Zimmermann, Markus: *See*—
Baumann, Peter; Zimmermann, Markus; Hafliger, Franz; and Gagneux, Andre R.,3,555,073.
Zipperer, Manfred. Electronically controlled magnetic stirrer. 3,554,497, Cl. 259-102.
Zirner, Joachim; and Kleb, Karl-Gustave, to Farbenfabriken Byer Atiengesellschaft. Process for the production of N-cyclohexyl sulfamic acid. 3,555,081, Cl. 260-513.6
Zittlau, Helmut: *See*—
Ginsberg, Ernst; Hake, Oswald; Kirchner, Norbert; Uden, Edward; Zittlau, Helmut; and Schreihage, Wilhelm,3,555,371.
Zonn, Lincoln M.: *See*—
White, George S.; Lewis, Richard E.; and Zonn, Lincoln M.,3,555,532.
Zorska, Romanas: *See*—
Griffith, Russell K.; Zorska, Romanas; and Fitzgibbons, William O.,3,555,045.
Zuech, Ernest A.: *See*—
Kittleman, Edmund T.; and Zuech, Ernest A.,3,554,924.
Zulick, Mike: *See*—
Brobeck, Von H.; and Zulick, Mike,3,553,790.
Zurawski, Edward F., to Garcy Corporation. Fluorescent light fixture assembly. 3,555,268, Cl. 240-51.11
Zurn Industries, Inc.: *See*—
Anderson, Norman J., 3,554,341.
Zwiacher, Wayne E.; Kaser, Louis D.; Johnson, Maurice V., Jr.; Fennell, Alfred H.; and Riddington, Fred W., to Sunkist Growers, Inc. Method of boxing layers of articles such as fruit and the like. 3,553,926, Cl. 53-26.
Zyrotron Industries, Inc.: *See*—
Quinn, Frederic R., 3,555,362.

LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 12TH DAY OF JANUARY, 1971

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Alfrey, Turner, Jr., and W. G. Lloyd, to The Dow Chemical Co. Preparation of porous structures. Re. 27,026, 1–21–71, Cl. 260—2.5.
Best, Albert M.: *See*—
Kline, Charles M., and Best. Re. 27,030.
Burley, John W.: *See*—
Ely, Berten E., Jr., Burley, and Clement. Re. 27,028.
Clement, Ira T.: *See*—
Ely, Berten E., Jr., Burley, and Clement. Re. 27,028.
Cristofv, Cristjo and G. N.; said G. N. Cristofv assor. of ½ to J. H. Stover III. Means for artificially producing and controlling electric power field strengths and freely suspended ions in the atmosphere. Re. 27,027, 1–21–71, Cl. 128—190.
Cristofv, George N.: *See*—
Cristofv, Cristjo and G. N. Re. 27,027.
Dow Chemical Co., The: *See*—
Alfrey, Turner, Jr., and Lloyd. Re. 27,026.
Ely, Berten E., Jr., J. W. Burley, and I. T. Clement, by Pennsylvania Fluorocarbon Co. to Penntube Plastics Co. FEP-fluorocarbon tubing. Re. 27,028, 1–12–71, Cl. 138—118.
Herr, Theodore Z.: *See*—
Soddy, Thomas C., and Herr. Re. 27,029.
Karch, Walter C.: *See*—
Whiting, Harold E., Karch, and McFadden. Re. 27,024.
Kline, Charles M., and A. M. Best, to Sperry Rand Corp. Grain drying process and apparatus. Re. 27,030, 1–12–71, Cl. 34—33.
Lloyd, William G.: *See*—
Alfrey, Turner, Jr., and Lloyd. Re. 27,026.
McDonald, Louis, to United States of America, Atomic Energy Commission. Process of conditioning particulate materials with an organosilicon coating for use in organic explosives. Re. 27,025, 1–12–71, Cl. 149—7.
Mitsui Toatsu Chemical Inc.: *See*—
Okubo, Ichiro, and Tsujimoto. Re. 27,031.
Okubo, Ichiro, and M. Tsujimoto, to Mitsui Toatsu Chemical Inc. Method of optical brightening. Re. 27,031, 1–12–71, Cl. 117—33.5.
Pennsylvania Fluorocarbon Co.: *See*—
Ely, Berten E., Jr., Burley, and Clement. Re. 27,028.
Penntube Plastics Co.: *See*—
Ely, Berten E., Jr., Burley, and Clement. Re. 27,028.
Soddy, Thomas C., and T. Z. Herr, by Youngstown Steel Door Co. Door. Re. 27,029, 1–12–71, Cl. 49—220.
Sperry Rand Corp.: *See*—
Kline, Charles M., and Best. Re. 27,030.
Stover, Jordan H., III: *See*—
Cristofv, Cristjo and G. N. Re. 27,027.
Tsujimoto, Michihiro: *See*—
Okubo, Ichiro, and Tsujimoto. Re. 27,031.
United States of America
Atomic Energy Commission: *See*—
McDonald, Louis. Re. 27,025.
Whiting, Harold E., W. C. Karch, and D. B. McFadden. Three phase bimetal overload relay. Re. 27,024, 1–12–71, Cl. 317—46.
Youngstown Steel Door Co.: *See*—
Soddy, Thomas C., and Herr. Re. 27,029.

LIST OF PLANT PATENTEES

Armstrong, David L., to Armstrong Nurseries, Inc. Rose plant. 3,016, 1–12–71, Cl. 22.
Armstrong Nurseries, Inc.: *See*—
Armstrong, David L. 3,016.
Burkard Nurseries, Inc.: *See*
Scott, Paul L. 3,017.
Jackson & Perkins Co.: *See*—
Kordes, Reimer. 3,014.
Kordes, Reimer, to Jackson & Perkins Co. Rose plant. 3,014, 1–12–71, Cl. 12.
Powell, Lewis T. Peach tree. 3,015, 1–12–71, Cl. 43.
Scott, Paul L., to Burkard Nurseries, Inc. Felicia plant. 3,017, 1–12–71, Cl. 68.

LIST OF DESIGN PATENTEES

Allen, Billy W. Bracket for motorcycle helmet or similar article. 219,705, 1–12–71, Cl. D8—254.
Baker, Calvin L. Mobile holding and dumping container for liquid waste and similar materials. 219,708, 1–12–71, Cl. D14—3.
Banel, Edward W. Storage container. 219,721, 1–12–71, Cl. D87—1.
Binder, Erich: *See*—
Stoklasa, Helmuth, and Binder. 219,715.
Bone, Arnold R., to Dennison Mfg. Co. Tape embossing tool. 219,717, 1–12–71, Cl. D64—10.
Borg-Warner Corp.: *See*—
Korol, Stanley F. 219,702.
Columbia Broadcasting System, Inc.: *See*—
Thompson, Josephus B. 219,713.
Crestin-Billet, Bernard. Pair of spectacles. 219,714, 1–12–71, Cl. D57—1.
Dennison Mfg. Co.: *See*—
Bone, Arnold R. 219,717.
Edenberg, Stig A. A. Lighting fixture. 219,710, 1–12–71, Cl. D48—20.
Elias, Albert J., to Schering Corp. Combined bottle and dispensing closure therefor. 219,706, 1–12–71, Cl. D9—63.
Fleming, Jack F., to Sterling Plastics Co. Scale, 219,712, 1–12–71, Cl. D52—10.
Fleming, Jack F., to Sterling Plastics Co. Combined pencil well and sharpener. 219,719, 1–12–71, Cl. D74—5.
Fullington, William H.: *See*—
Maisak, Melvin O., and Fullington. 219,720.
Gold Platter, Inc.: *See*—
Roberts, Baron G. 219,723.
Goodrich, B. F., Co., The: *See*—
Johnson, Rush M., Jr. 219,722.
Gretag Aktiengesellschaft: *See*—
Stoklasa, Helmuth, and Binder. 219,715.
Grosso, Raymond A., to Minnesota Mining and Mfg. Co. Camera flash attachment. 219,716, 1–12–71, Cl. D61—1.
Harlang, Bent, and J. Rasmussen. Caster. 219,703, 1–12–71, Cl. D8—226.
Hibbert Co., The: *See*—
McDonald, Robert. 219,709.
Ivac Corp.: *See*—
Sato, Stephens M. 219,711.
Johnson, Rush M., Jr., to The B. F. Goodrich Co. Tire. 219,722, 1–12–71, Cl. D90—20.
Korol, Stanley F., to Borg-Warner Corp. Handle or similar article. 219,702, 1–12–71, Cl. D8—166.
Lee, Richard J. Cartridge primer seating tool. 219,700, 1–12–71, Cl. D8—14.
Maisak, Melvin O., and W. H. Fullington, to Pet Inc. Nestable mobile cart display. 219,720, 1–12–71, Cl. D80—9.
McDonald, Robert, to The Hibbert Co. Plaque. 219,709, 1–12–71, Cl. D29—23.
Minnesota Mining and Mfg. Co.: *See*—
Grosso, Raymond A. 219,716.
Penney, Richard H., to Sperry Rand Corp. Typewriter. 219,718, 1–12–71, Cl. D64—11.
Pet Inc.: *See*—
Maisak, Melvin O., and Fullington. 219,720.
Rasmussen, Jorgen: *See*—
Harlang, Bent., and Rasmussen. 219,703.
Roberts, Baron G., to Gold Platter, Inc. Roadside sign. 219,723, 1–12–71, Cl. D96—12.
Rogovin, Arthur. Foldable comb. 219,724, 1–12–71, Cl. D86—8.
Stade, D. E.: *See*—
Thompson, Josephus B. 219,713.
Sato, Stephens M., to Ivac Corp. Electronic thermometer. 219,711, 1–12–71, Cl. D52—7.
Schering Corp.: *See*—
Elias, Albert J. 219,706.
Sperry Rand Corp.: *See*—
Penney, Richard H. 219,718.
Sterling Plastics Co.: *See*—
Fleming, Jack F. 219,712.
Fleming, Jack F. 219,719.
Stoklasa, Helmuth, and E. Binder, to Gretag Aktiengesellschaft. Inspection table for color prints. 219,715, 1–12–71, Cl. D61—1.
Stuart, Robert L. Combined meat and cheese rack and cutting block. 219,707, 1–12–71, Cl. D11—1.
Sunmade Electric Corp.: *See*—
Weiss, Harold. 219,701.
Thompson, Josephus B., deceased, by D. E. Stade, administrator, to Columbia Broadcasting System, Inc. Bottom for drum stand. 219,713, 1–12–71, Cl. D56—1.
Weiss, Harold, to Sunmade Electric Corp. Combined can opener and clock. 219,701, 1–12–71, Cl. D8—34.
Ziaylek, Theodore, Jr. Hose strap. 219,704, 1–12–71, Cl. D8—230.

CLASSIFICATION OF PATENTS

ISSUED JANUARY 12, 1971

NOTE.—First number, class; second number, subclass; third number, patent number

2— 10 : 3,553,734	24— 23 : 3,553,794	43—105 : 3,553,881
52 : 3,553,735	201 : 3,553,795	44— 74 : 3,554,712
3— 1 : 3,553,736	216 : 3,553,796	80 : 3,554,713
3,553,737	25— 2 : 3,553,797	46— 16 : 3,553,882
.1 : 3,553,738	41 : 3,553,798	3,553,883
4— 26 : 3,553,739	132 : 3,553,799	81 : 3,553,884
56 : 3,553,740	153 : 3,553,800	210 : 3,553,886
67 : 3,553,741	26— 28 : 3,553,801	223 : 3,553,887
130 : 3,553,742	28— 1.6 : 3,553,802	243 : 3,553,885
172.13: 3,553,743	3,553,803	47— 41.1 : 3,553,888
.19: 3,553,744	29— 1.3 : 3,553,804	55 : 3,553,889
5—236 : 3,553,745	25.42: 3,553,805	48—180 : 3,554,714
317 : 3,553,746	149.5 : 3,553,806	197 : 3,554,715
327 : 3,553,747	3,553,807	49— 32 : 3,553,890
345 : 3,553,748	156.7 : 3,553,808	220 : RE.27,029
355 : 3,553,749	159.2 : 3,553,809	505 : 3,553,891
8— 4 : 3,554,683	197 : 3,554,711	51— 5 : 3,553,892
111 : 3,554,685	200 : 3,553,810	3,553,893
115.6 : 3,554,686	202.5 : 3,553,811	3,553,894
116.2 : 3,554,684	203 : 3,553,812	8 : 3,553,895
9— 6 : 3,553,750	3,553,813	13 : 3,553,897
9 : 3,553,751	3,553,814	34 : 3,553,896
15 : 3,553,752	208 : 3,553,815	73 : 3,553,898
10—129 : 3,553,753	212 : 3,553,816	141 : 3,553,899
12—142 : 3,553,754	235 : 3,553,817	142 : 3,553,901
146 : 3,553,755	256 : 3,553,818	163 : 3,553,900
13— 1 : 3,555,163	407 : 3,553,819	164 : 3,553,902
9 : 3,555,164	419 : 3,553,820	165 : 3,553,903
14— 71 : 3,553,756	427 : 3,553,821	170 : 3,553,904
72 : 3,553,757	445 : 3,553,822	206 : 3,553,905
15— 24 : 3,553,758	471.1 : 3,553,823	209 : 3,553,906
110 : 3,553,759	487 : 3,553,824	215 : 3,553,907
182 : 3,553,760	3,553,825	216 : 3,553,908
250.14: 3,553,761	527.2 : 3,553,826	293 : 3,554,716
257.06: 3,553,762	573 : 3,553,827	307 : 3,554,717
16— 43 : 3,553,763	574 : 3,553,830	323 : 3,553,909
84 : 3,553,764	589 : 3,553,828	356 : 3,553,910
107 : 3,553,765	592 : 3,553,829	52— 28 : 3,553,911
17— 1 : 3,553,766	599 : 3,553,831	98 : 3,553,912
21 : 3,553,767	607 : 3,553,832	172 : 3,553,913
35 : 3,553,768	611 : 3,553,833	200 : 3,553,914
49 : 3,553,769	3,553,834	241 : 3,553,915
52 : 3,553,770	628 : 3,553,835	281 : 3,553,916
18— 4 : 3,553,771	3,553,836	308 : 3,553,917
5 : 3,553,772	30— 34.1 : 3,553,837	395 : 3,553,918
8 : 3,553,773	32— 1 : 3,553,838	483 : 3,553,919
3,553,774	11 : 3,553,839	506 : 3,553,920
9 : 3,553,775	22 : 3,553,840	593 : 3,553,921
12 : 3,553,776	56 : 3,553,841	595 : 3,553,922
3,553,777	33— 1 : 3,553,842	745 : 3,553,923
17 : 3,553,778	58 : 3,553,843	53— 21 : 3,553,924
18 : 3,553,779	34— 9 : 3,553,844	26 : 3,553,925
19 : 3,553,780	3,553,845	3,553,926
3,553,781	33 : RE.27,030	3,553,927
3,553,782	56 : 3,553,846	30 : 3,553,928
3,553,783	57 : 3,553,847	61 : 3,553,929
3,553,784	115 : 3,553,848	77 : 3,553,930
30 : 3,553,785	124 : 3,553,849	112 : 3,553,931
3,553,786	133 : 3,553,850	166 : 3,553,932
3,553,787	35— 8 : 3,553,851	180 : 3,553,933
3,553,788	9 : 3,553,852	183 : 3,553,934
42 : 3,553,789	3,553,853	209 : 3,553,935
3,553,790	10.4 : 3,555,165	55— 40 : 3,553,936
19—107 : 3,553,791	19 : 3,553,856	60 : 3,553,937
258 : 3,553,792	24 : 3,553,854	71 : 3,553,938
21— 91 : 3,554,687	26 : 3,553,855	112 : 3,553,939
3,554,688	36— 32 : 3,553,857	174 : 3,553,940
23— 2 : 3,554,689	67 : 3,553,858	223 : 3,553,943
3,554,690	37—104 : 3,553,859	267 : 3,553,944
3,554,691	129 : 3,553,860	473 : 3,553,941
22 : 3,554,692	38— 2 : 3,553,861	483 : 3,553,942
3,554,693	102.1 : 3,553,862	56— 23 : 3,553,945
88 : 3,554,694	143 : 3,553,863	25.4 : 3,553,946
92 : 3,554,695	40— 10 : 3,553,864	202 : 3,553,947
165 : 3,554,696	3,553,865	307 : 3,553,948
173 : 3,554,697	63 : 3,553,866	329 : 3,553,949
182 : 3,554,698	70 : 3,553,867	400 : 3,553,950
203 : 3,554,699	106.52: 3,553,868	57— 3 : 3,553,951
230 : 3,554,700	130 : 3,553,869	34 : 3,553,952
3,554,701	3,553,870	140 : 3,553,953
253 : 3,554,702	145 : 3,553,871	58— 1 : 3,553,954
3,554,703	152 : 3,553,872	23 : 3,553,957
3,554,704	156 : 3,553,873	28 : 3,553,955
3,554,705	158 : 3,553,874	3,553,956
259.5 : 3,554,706	336 : 3,553,875	91 : 3,553,958
282 : 3,554,707	42— 1 : 3,553,876	144 : 3,553,959
293 : 3,554,708	70 : 3,553,877	59— 7 : 3,553,960
312 : 3,554,709	94 : 3,553,878	60— 13 : 3,553,961
314 : 3,554,710	43— 8 : 3,553,879	19 : 3,553,962
24— 16 : 3,553,793	55 : 3,553,880	24 : 3,553,963

60— 39.14: 3,553,964	73—425.4 : 3,554,040	96— 33 : 3,554,751
52 : 3,553,965	74— 10.33: 3,554,041	90 : 3,554,752
3,553,966	69 : 3,554,042	3,554,753
54.5 : 3,553,967	409 : 3,554,043	3,554,754
61— 46 : 3,553,969	3,554,044	94 : 3,554,755
.5 : 3,553,968	411 : 3,554,045	100 : 3,554,756
54 : 3,553,970	421 : 3,554,036	109 : 3,554,757
62— 5 : 3,553,971	424.8 : 3,554,046	3,554,758
18 : 3,553,972	477 : 3,554,047	98— 2 : 3,554,110
63 : 3,553,973	498 : 3,554,048	40 : 3,554,111
115 : 3,553,974	501 : 3,554,049	3,554,112
156 : 3,553,975	3,554,050	99— 48 : 3,554,759
294 : 3,553,976	527 : 3,554,051	71 : 3,554,760
489 : 3,553,977	557 : 3,554,052	3,554,761
64— 1 : 3,553,978	626 : 3,554,053	83 : 3,554,763
21 : 3,553,979	682 : 3,554,054	92 : 3,554,762
23.5 : 3,553,980	713 : 3,554,055	101 : 3,554,764
65— 1 : 3,554,718	730 : 3,554,056	115 : 3,554,765
3,554,719	732 : 3,554,057	134 : 3,554,766
4 : 3,554,720	800 : 3,554,058	3,554,767
3,554,721	860 : 3,554,059	140 : 3,554,768
62 : 3,554,722	75— 1 : 3,554,733	3,554,769
86 : 3,554,723	124 : 3,554,734	174 : 3,554,770
107 : 3,554,724	126 : 3,554,735	189 : 3,554,771
185 : 3,554,725	128 : 3,554,736	215 : 3,554,772
325 : 3,554,726	134 : 3,554,737	217 : 3,554,773
327 : 3,554,727	3,554,738	234 : 3,554,113
66— 79 : 3,553,981	135 : 3,554,739	237 : 3,554,114
68—139 : 3,553,982	170 : 3,554,740	238.3 : 3,554,115
177 : 3,553,983	76—107 : 3,554,060	100— 31 : 3,554,116
70— 99 : 3,553,984	77— 5 : 3,554,061	43 : 3,554,117
102 : 3,553,985	58 : 3,554,062	163 : 3,554,118
252 : 3,553,986	64 : 3,554,063	215 : 3,554,119
3,553,987	82— 14 : 3,554,064	229 : 3,554,120
433 : 3,553,988	83—124 : 3,554,065	232 : 3,554,121
71— 33 : 3,554,728	316 : 3,554,066	101— 3 : 3,554,122
34 : 3,554,729	397 : 3,554,067	170 : 3,554,123
3,554,730	561 : 3,554,068	233 : 3,554,124
59 : 3,554,731	571 : 3,554,069	451 : 3,554,125
93 : 3,554,732	678 : 3,554,070	102— 24 : 3,554,126
72— 8 : 3,553,989	84— 1.01: 3,555,166	64 : 3,554,127
3,553,990	.19: 3,555,167	70.2 : 3,554,128
3,553,991	237 : 3,554,071	3,554,129
9 : 3,553,992	390 : 3,554,072	104— 75 : 3,554,130
11 : 3,553,993	484 : 3,554,073	165 : 3,554,131
42 : 3,553,995	485 : 3,554,074	172 : 3,554,132
43 : 3,553,994	85— 7 : 3,554,075	3,554,133
60 : 3,553,996	88— 1.5 : 3,554,076	105—366 : 3,554,134
226 : 3,553,997	89— 1.808 3,554,078	369 : 3,554,135
266 : 3,553,998	194 : 3,554,077	3,554,136
324 : 3,553,999	90— 1.4 : 3,554,079	106—193 : 3,554,774
453 : 3,554,000	11 : 3,554,080	196 : 3,554,775
73— 1 : 3,554,001	3,554,081	288 : 3,554,776
7 : 3,554,007	15 : 3,554,082	300 : 3,554,777
15 : 3,554,002	21 : 3,554,083	107— 4 : 3,554,137
.6 : 3,554,003	91— 3 : 3,554,084	70 : 3,554,138
23 : 3,554,004	239 : 3,554,085	108— 44 : 3,554,139
28 : 3,554,005	376 : 3,554,086	90 : 3,554,140
35 : 3,554,008	404 : 3,554,087	132 : 3,554,141
49.5 : 3,554,006	411 : 3,554,088	153 : 3,554,142
61 : 3,554,009	412 : 3,554,089	110— 10 : 3,554,143
3,554,010	428 : 3,554,091	177 : 3,554,144
3,554,011	496 : 3,554,090	111— 77 : 3,554,145
67.2 : 3,554,012	92— 13.1 : 3,554,093	112— 11 : 3,554,146
.5 : 3,554,029	28 : 3,554,094	79 : 3,554,147
.7 : 3,554,013	57 : 3,554,095	137 : 3,554,148
.8 : 3,554,014	125 : 3,554,096	252 : 3,554,149
.9 : 3,554,015	136 : 3,554,097	113—118 : 3,554,150
3,554,016	93— 8 : 3,554,098	114— 61 : 3,554,151
81 : 3,554,017	3,554,099	125 : 3,554,152
3,554,018	94— 50 : 3,554,100	210 : 3,554,153
89 : 3,554,019	3,554,101	222 : 3,554,154
104 : 3,554,020	95— 1.1 : 3,554,102	115— 35 : 3,554,155
116 : 3,554,021	10 : 3,554,103	116—114 : 3,554,156
117 : 3,554,022	3,554,104	3,554,158
3,554,023	12.5 : 3,554,105	120 : 3,554,159
121 : 3,554,024	57 : 3,554,106	125 : 3,554,160
141 : 3,554,025	89 : 3,554,107	129 : 3,554,157
3,554,026	3,554,109	117— 5.5 : 3,554,780
146 : 3,554,027	93 : 3,554,108	17.5 : 3,554,778
147 : 3,554,028	96— 1 : 3,554,741	33.5 : RE.27,031
194 : 3,554,030	.5 : 3,554,742	36.3 : 3,554,779
210 : 3,554,031	3,554,743	.8 : 3,554,781
257 : 3,554,032	3,554,744	46 : 3,554,782
382 : 3,554,033	.6 : 3,554,745	3,554,783
3,554,034	3,554,746	47 : 3,554,784
410 : 3,554,035	.8 : 3,554,747	57 : 3,554,785
422 : 3,554,037	22 : 3,554,748	60 : 3,554,786
424 : 3,554,038	27 : 3,554,749	72 : 3,554,787
425 : 3,554,039	29 : 3,554,750	140 : 3,554,788

117–161 : 3,554,789	138–118 : RE.27,028	172– 4.5 : 3,554,291
3,554,790	122 : 3,554,237	3,554,292
205 : 3,554,791	139– 68 : 3,554,238	13 : 3,554,293
3,554,792	122 : 3,554,239	223 : 3,554,294
212 : 3,554,793	125 : 3,554,240	398 : 3,554,295
217 : 3,554,794	140– 1 : 3,554,241	700 : 3,554,296
3,554,795	107 : 3,554,242	741 : 3,554,297
227 : 3,554,796	124 : 3,554,243	173–164 : 3,554,298
3,554,797	143–169 : 3,554,244	174– 35 : 3,555,168
235 : 3,554,798	144– 3 : 3,554,245	36 : 3,555,169
118– 8 : 3,554,161	32 : 3,554,246	47 : 3,555,170
48 : 3,554,162	117 : 3,554,247	138 : 3,555,171
221 : 3,554,163	288 : 3,554,248	175– 4.55: 3,554,299
302 : 3,554,164	312 : 3,554,249	5 : 3,554,300
119– 18 : 3,554,165	323 : 3,554,250	24 : 3,554,301
159 : 3,554,166	145– 75 : 3,554,251	26 : 3,554,302
122–225 : 3,554,167	146– 18 : 3,554,252	62 : 3,554,303
510 : 3,554,168	40 : 3,554,253	259 : 3,554,304
123– 8.07: 3,554,092	106 : 3,554,254	268 : 3,554,305
32 : 3,554,169	148– 32 : 3,554,817	320 : 3,554,306
3,554,170	186 : 3,554,818	323 : 3,554,307
41.42: 3,554,171	149– 7 : RE.27,025	395 : 3,554,308
73 : 3,554,172	19 : 3,554,819	176– 16 : 3,554,867
119 : 3,554,173	3,554,820	40 : 3,554,868
122 : 3,554,174	150– 1.5 : 3,554,255	55 : 3,554,869
136 : 3,554,175	8 : 3,554,256	178– 5.2 : 3,555,172
146.5 : 3,554,176	52 : 3,554,257	.4 : 3,555,173
148 : 3,554,177	151– 7 : 3,554,258	3,555,174
3,554,178	152–352 : 3,554,259	3,555,175
149 : 3,554,179	359 : 3,554,260	3,555,176
188 : 3,554,180	361 : 3,554,261	6.7 : 3,555,177
126–263 : 3,554,181	156– 3 : 3,554,821	.8 : 3,555,178
343.5 : 3,554,183	66 : 3,554,822	3,555,179
360 : 3,554,182	69 : 3,554,823	7.1 : 3,555,180
127– 6 : 3,554,799	72 : 3,554,824	.2 : 3,555,181
16 : 3,554,800	76 : 3,554,825	.3 : 3,555,182
128– 1 : 3,554,184	82 : 3,554,826	35 : 3,555,183
2 : 3,554,185	85 : 3,554,827	52 : 3,555,184
3,554,186	156 : 3,554,828	69.5 : 3,555,185
.06: 3,554,187	157 : 3,554,829	79 : 3,555,186
3,554,188	167 : 3,554,830	179– 1 : 3,555,187
71 : 3,554,189	184 : 3,554,831	3,555,188
78 : 3,554,190	229 : 3,554,832	3,555,189
82 : 3,554,191	3,554,833	3,555,190
83 : 3,554,192	230 : 3,554,834	3,555,191
92 : 3,554,193	234 : 3,554,835	3,555,192
94 : 3,554,194	240 : 3,554,836	7.1 : 3,555,193
190 : RE.27,027	252 : 3,554,837	15 : 3,555,194
284 : 3,554,195	259 : 3,554,838	3,555,195
291 : 3,554,196	430 : 3,554,839	18 : 3,555,196
317 : 3,554,197	436 : 3,554,840	3,555,197
419 : 3,554,198	455 : 3,554,841	3,555,198
421 : 3,554,199	505 : 3,554,842	3,555,199
528 : 3,554,200	521 : 3,554,843	3,555,200
131–203 : 3,554,201	522 : 3,554,844	90 : 3,555,201
266 : 3,554,202	580 : 3,554,845	100.1 : 3,555,202
134– 3 : 3,554,801	3,554,846	.2 : 3,555,203
135– 20 : 3,554,203	584 : 3,554,847	3,555,204
136– 3 : 3,554,804	157– 1 : 3,554,262	3,555,205
3,554,805	159– 6 : 3,554,263	115.5 : 3,555,206
6 : 3,554,806	3,554,264	156 : 3,555,207
25 : 3,554,802	48 : 3,554,265	175.23: 3,555,208
83 : 3,554,807	49 : 3,554,266	189 : 3,555,209
86 : 3,554,803	160–118 : 3,554,267	180– 8 : 3,554,309
3,554,808	161– 18 : 3,554,848	9.24: 3,554,310
3,554,809	38 : 3,554,850	34 : 3,554,311
3,554,810	58 : 3,554,851	79.2 : 3,554,312
3,554,811	82 : 3,554,852	181– 31 : 3,554,313
3,554,812	109 : 3,554,853	3,554,314
133 : 3,554,813	150 : 3,554,854	3,554,315
146 : 3,554,814	165 : 3,554,855	36 : 3,554,316
203 : 3,554,815	218 : 3,554,856	182– 14 : 3,554,317
233 : 3,554,816	231 : 3,554,857	24 : 3,554,318
137– 81.5 : 3,554,204	162– 30 : 3,554,858	46 : 3,554,319
3,554,205	3,554,859	49 : 3,554,320
3,554,206	145 : 3,554,860	201 : 3,554,321
3,554,207	153 : 3,554,861	184– 6 : 3,554,322
3,554,208	158 : 3,554,862	15 : 3,554,323
3,554,209	3,554,863	105 : 3,554,324
3,554,210	237 : 3,554,864	187– 29 : 3,554,325
85 : 3,554,211	284 : 3,554,865	52 : 3,554,326
93 : 3,554,212	321 : 3,554,866	95 : 3,554,327
101 : 3,554,213	164– 65 : 3,554,268	188– 5 : 3,554,328
270 : 3,554,214	82 : 3,554,269	24 : 3,554,329
271 : 3,554,215	108 : 3,554,270	74 : 3,554,331
315 : 3,554,216	137 : 3,554,271	78 : 3,554,330
318 : 3,554,217	319 : 3,554,272	79.5 : 3,554,332
385 : 3,554,218	165– 10 : 3,554,273	152 : 3,554,333
414 : 3,554,219	23 : 3,554,849	3,554,334
489.3 : 3,554,220	65 : 3,554,274	171 : 3,554,335
501 : 3,554,221	156 : 3,554,275	196 : 3,554,336
3,554,222	168 : 3,554,276	192– 8 : 3,554,337
539 : 3,554,223	166– .6 : 3,554,277	20 : 3,554,339
555 : 3,554,224	85 : 3,554,278	48.92: 3,554,338
557 : 3,554,225	121 : 3,554,279	64 : 3,554,340
559 : 3,554,226	134 : 3,554,280	70.18: 3,554,342
588 : 3,554,227	155 : 3,554,281	.2 : 3,554,341
599 : 3,554,228	245 : 3,554,282	127 : 3,554,343
608 : 3,554,229	247 : 3,554,283	193– 25 : 3,554,344
614.04: 3,554,230	250 : 3,554,284	33 : 3,554,345
615 : 3,554,231	258 : 3,554,285	195– 51 : 3,554,870
625.17: 3,554,232	266 : 3,554,286	127 : 3,554,871
.6 : 3,554,233	295 : 3,554,287	197– 42 : 3,554,346
.64: 3,554,234	305 : 3,554,288	48 : 3,554,347
.69: 3,554,235	3,554,289	107 : 3,554,348
138–117 : 3,554,236	169– 2 : 3,554,290	154 : 3,554,349

197–176 : 3,554,350	214–503 : 3,554,398	244– 1 : 3,554,466
198– 21 : 3,554,351	215– 11 : 3,554,399	17.19: 3,554,467
3,554,352	219– 10.53: 3,555,231	83 : 3,554,469
30 : 3,554,353	.55: 3,555,232	114 : 3,554,470
33 : 3,554,354	.59: 3,555,233	122 : 3,554,471
36 : 3,554,355	69 : 3,555,234	3,554,472
65 : 3,554,356	76 : 3,555,235	137 : 3,554,468
85 : 3,554,357	3,555,236	246–194 : 3,555,270
3,554,358	97 : 3,555,237	248– 44 : 3,554,473
103 : 3,554,359	98 : 3,555,238	49 : 3,554,474
189 : 3,554,360	125 : 3,555,239	55 : 3,554,475
194 : 3,554,361	146 : 3,555,240	208 : 3,554,476
210 : 3,554,362	216 : 3,555,241	245 : 3,554,477
219 : 3,554,363	335 : 3,555,242	278 : 3,554,478
221 : 3,554,364	502 : 3,555,243	289 : 3,554,479
232 : 3,554,365	220– 54 : 3,554,400	250– 41.9 : 3,555,271
200– 11 : 3,555,210	113 : 3,554,401	3,555,272
17 : 3,555,211	115 : 3,554,402	3,555,273
3,555,212	221– 93 : 3,554,403	43.5 : 3,555,274
3,555,213	95 : 3,554,404	51.5 : 3,555,275
38 : 3,555,214	227 : 3,554,405	58 : 3,555,276
47 : 3,555,215	222– 30 : 3,554,406	71 : 3,555,277
61.04: 3,555,216	95 : 3,554,407	83.3 : 3,555,278
3,555,217	109 : 3,554,408	201 : 3,555,280
.18: 3,555,218	176 : 3,554,409	211 : 3,555,281
.47: 3,555,219	193 : 3,554,410	3,555,282
83 : 3,555,220	255 : 3,554,411	217 : 3,555,283
84 : 3,555,221	346 : 3,554,412	218 : 3,555,284
144 : 3,555,222	223– 46 : 3,554,413	220 : 3,555,285
3,555,223	224– 4 : 3,554,414	222 : 3,555,286
3,555,224	42.05: 3,554,415	223 : 3,555,287
148 : 3,555,225	.1 : 3,554,416	236 : 3,555,288
3,555,226	45 : 3,554,417	251– 1 : 3,554,480
3,555,227	3,554,418	31 : 3,554,481
150 : 3,555,279	225– 93 : 3,554,419	74 : 3,554,482
166 : 3,555,228	226– 95 : 3,554,420	77 : 3,554,483
3,555,229	145 : 3,554,421	152 : 3,554,484
168 : 3,555,230	180 : 3,554,422	172 : 3,554,485
203– 38 : 3,554,872	199 : 3,554,423	204 : 3,554,486
51 : 3,554,873	227– 8 : 3,554,424	298 : 3,554,487
204– 9 : 3,554,874	10 : 3,554,425	317 : 3,554,488
3,554,875	18 : 3,554,426	356 : 3,554,489
10 : 3,555,265	61 : 3,554,427	3,554,490
15 : 3,554,876	109 : 3,554,428	252– 3 : 3,554,907
3,554,877	229– 15 : 3,554,429	3,554,912
24 : 3,554,878	17 : 3,554,430	32.7 : 3,554,908
28 : 3,554,879	28 : 3,554,431	34.7 : 3,554,909
30 : 3,554,880	33 : 3,554,432	49.5 : 3,554,910
42 : 3,554,881	51 : 3,554,433	52 : 3,554,945
72 : 3,554,882	55 : 3,554,434	56 : 3,554,913
109 : 3,554,883	3,554,435	59 : 3,554,911
114 : 3,554,884	62 : 3,554,436	62.1 : 3,554,946
158 : 3,554,885	66 : 3,554,437	75 : 3,554,914
159.12: 3,554,886	69 : 3,554,438	99 : 3,554,915
163 : 3,554,887	3,554,447	152 : 3,554,916
181 : 3,554,888	235– 61.11: 3,555,245	171 : 3,554,917
3,554,889	3,555,246	3,554,918
194 : 3,554,890	3,555,247	179 : 3,554,919
195 : 3,554,891	.12: 3,555,248	301.4 : 3,554,920
206 : 3,554,892	.6 : 3,555,244	351 : 3,554,921
244 : 3,554,893	92 : 3,555,249	392 : 3,554,922
299 : 3,554,894	139 : 3,554,439	429 : 3,554,923
301 : 3,554,895	150.27: 3,555,250	3,554,924
206– 42 : 3,554,366	151 : 3,555,251	3,554,925
45.14: 3,554,367	.1 : 3,555,252	435 : 3,554,926
46 : 3,554,368	.11: 3,555,253	437 : 3,554,927
47 : 3,554,369	3,555,254	3,554,928
57 : 3,554,370	153 : 3,555,255	462 : 3,554,929
208– 31 : 3,554,896	156 : 3,555,256	463 : 3,554,930
48 : 3,554,897	176 : 3,555,257	472 : 3,554,931
59 : 3,554,898	181 : 3,555,258	254– 1 : 3,554,491
111 : 3,554,899	3,555,259	29 : 3,554,492
3,554,900	183 : 3,555,260	134.3 : 3,554,493
136 : 3,554,901	189 : 3,555,261	256– 19 : 3,554,494
138 : 3,554,902	193 : 3,555,262	3,554,495
164 : 3,554,903	194 : 3,555,263	259– 4 : 3,554,496
340 : 3,554,904	236– 34.5 : 3,554,440	102 : 3,554,497
209– 3 : 3,554,371	237– 56 : 3,554,441	159 : 3,554,498
73 : 3,554,372	59 : 3,554,442	182 : 3,554,499
111.8 : 3,554,373	239– 4 : 3,554,443	260– 2.5 : RE.26,026
210– 22 : 3,554,905	8 : 3,554,444	3,554,932
23 : 3,554,906	15 : 3,554,445	3,554,933
85 : 3,554,374	24 : 3,554,446	3,554,934
169 : 3,554,375	127.3 : 3,554,448	3,554,935
189 : 3,554,376	135 : 3,554,449	3,554,936
275 : 3,554,377	309 : 3,554,450	3,554,937
321 : 3,554,378	428.5 : 3,554,451	3,554,938
3,554,379	456 : 3,554,452	3,554,939
412 : 3,554,380	240– 3.1 : 3,555,264	5 : 3,554,940
211– 11 : 3,554,381	41.35: 3,555,266	9 : 3,554,941
135 : 3,554,382	47 : 3,555,267	17 : 3,554,942
153 : 3,554,383	51.11: 3,555,268	18 : 3,554,943
177 : 3,554,384	146 : 3,555,269	3,554,944
212– 15 : 3,554,385	241– 28 : 3,554,453	21 : 3,554,947
213– 22 : 3,554,386	73 : 3,554,454	28 : 3,554,948
223 : 3,554,387	242– 46.4 : 3,554,455	.5 : 3,554,949
214– 6 : 3,554,388	55.2 : 3,554,456	3,554,950
16.1 : 3,554,389	56.9 : 3,554,457	29.1 : 3,554,951
.4 : 3,554,390	84.2 : 3,554,458	.2 : 3,554,952
3,554,391	.21: 3,554,459	.6 : 3,554,953
17 : 3,554,392	118.11: 3,554,461	3,554,954
37 : 3,554,393	.8 : 3,554,460	3,554,955
38 : 3,554,394	197 : 3,554,462	30.2 : 3,554,956
138 : 3,554,395	199 : 3,554,463	.4 : 3,554,957
140 : 3,554,396	200 : 3,554,464	3,554,958
451 : 3,554,397	201 : 3,554,465	41.5 : 3,554,959

260– 41.5 : 3,554,960	260–448.8 : 3,555,063	269– 32 : 3,554,529
45.7 : 3,554,961	3,555,069	301 : 3,554,530
.8 : 3,554,962	3,555,070	270– 53 : 3,554,531
.85: 3,554,963	453 : 3,555,071	54 : 3,554,532
.95: 3,554,964	3,555,072	271– 54 : 3,554,533
46.5 : 3,554,965	465.2 : 3,555,059	76 : 3,554,534
47 : 3,554,966	468 : 3,555,073	272– 10 : 3,554,537
3,554,967	3,555,074	29 : 3,554,538
3,554,968	3,555,075	62 : 3,554,539
3,554,969	479 : 3,555,076	63 : 3,554,540
3,554,970	482 : 3,555,077	69 : 3,554,541
3,554,971	491 : 3,555,078	273– 1 : 3,554,542
49 : 3,554,972	501.13: 3,555,079	33 : 3,554,543
66 : 3,554,973	513 : 3,555,080	70 : 3,554,544
72 : 3,554,974	.6 : 3,555,081	72 : 3,554,545
75 : 3,554,975	526 : 3,555,082	84 : 3,554,546
3,554,976	533 : 3,555,083	85 : 3,554,547
3,554,977	3,555,084	94 : 3,554,548
3,554,978	551 : 3,555,085	3,554,549
77.5 : 3,554,979	553 : 3,555,086	95 : 3,554,550
78 : 3,554,980	558 : 3,555,087	3,554,551
3,554,981	559 : 3,555,088	105.4 : 3,554,552
3,554,982	561 : 3,555,089	110 : 3,554,553
3,554,983	3,555,090	165 : 3,554,554
3,554,984	562 : 3,555,091	186 : 3,554,555
.5 : 3,554,985	566 : 3,555,092	274– 1 : 3,554,556
79.3 : 3,554,986	570.8 : 3,555,093	39 : 3,554,557
3,554,987	583 : 3,555,094	177 : 3,555,328
.5 : 3,554,988	584 : 3,555,095	218 : 3,555,329
3,554,989	586 : 3,555,096	266 : 3,555,330
88.7 : 3,554,990	592 : 3,555,097	124 : 3,554,563
3,554,991	604 : 3,555,098	134 : 3,554,561
91.1 : 3,554,992	610 : 3,555,099	149 : 3,554,562
93.7 : 3,554,993	615 : 3,555,100	153 : 3,554,566
3,554,994	618 : 3,555,101	164 : 3,554,567
3,554,995	653.4 : 3,555,102	170 : 3,554,564
3,554,996	671 : 3,555,104	3,554,568
94.2 : 3,554,997	672 : 3,555,103	205 : 3,554,569
3,554,998	680 : 3,555,105	279– 4 : 3,554,565
112 : 3,555,000	681.5 : 3,555,106	280– 7.1 : 3,554,570
3,555,001	683.68: 3,555,107	11.35: 3,554,571
157 : 3,555,002	823 : 3,555,108	3,554,572
3,555,003	825 : 3,555,109	79.2 : 3,554,573
181 : 3,555,004	835 : 3,555,111	104 : 3,554,574
204 : 3,555,005	836 : 3,555,112	106 : 3,554,575
209 : 3,555,006	841 : 3,555,113	112 : 3,554,576
210 : 3,555,007	857 : 3,555,114	150 : 3,554,577
233.3 : 3,555,008	858 : 3,555,115	490 : 3,554,578
.5 : 3,555,009	864 : 3,555,116	285– 18 : 3,554,579
239 : 3,555,010	866 : 3,555,117	260 : 3,554,580
.1 : 3,555,011	870 : 3,555,118	367 : 3,554,581
.3 : 3,555,012	876 : 3,555,110	287– 20.5 : 3,554,582
3,555,013	3,555,119	53.5 : 3,554,583
3,555,014	880 : 3,555,120	54 : 3,554,584
.55: 3,555,015	887 : 3,555,121	58 : 3,554,585
240 : 3,555,016	899 : 3,555,122	87 : 3,554,586
243 : 3,555,017	956 : 3,555,123	100 : 3,554,587
3,555,018	970 : 3,555,124	3,554,588
244 : 3,555,019	980 : 3,555,125	111 : 3,554,589
247 : 3,555,020	261– 41 : 3,554,500	127 : 3,554,590
250 : 3,555,021	84 : 3,554,501	292– 17 : 3,554,591
3,555,022	263– 3 : 3,554,502	263 : 3,554,592
3,555,023	3,554,503	335 : 3,554,593
3,555,024	3,554,504	294– 90 : 3,554,594
3,555,025	6 : 3,554,505	296– 26 : 3,554,595
3,555,026	7 : 3,554,506	28 : 3,554,596
256.5 : 3,555,027	15 : 3,554,507	297–126 : 3,554,597
268 : 3,555,028	3,554,508	330 : 3,554,598
286 : 3,555,029	29 : 3,554,509	353 : 3,554,599
289 : 3,555,030	34 : 3,554,510	439 : 3,554,600
290 : 3,555,031	40 : 3,554,511	298– 22 : 3,554,601
3,555,032	48 : 3,554,512	299– 17 : 3,554,602
294.3 : 3,555,033	264– 1 : 3,555,126	31 : 3,554,603
295 : 3,555,034	40 : 3,555,127	34 : 3,554,604
3,555,035	3,555,128	86 : 3,554,605
296 : 3,555,036	41 : 3,555,129	89 : 3,554,606
3,555,037	45 : 3,555,130	301– 63 : 3,554,535
299 : 3,555,038	3,555,131	108 : 3,554,536
306.7 : 3,555,039	50 : 3,555,132	302– 28 : 3,554,607
309.2 : 3,555,040	82 : 3,555,133	49 : 3,554,608
.6 : 3,555,041	95 : 3,554,999	52 : 3,554,609
.7 : 3,555,042	97 : 3,555,134	60 : 3,554,610
328 : 3,555,043	98 : 3,555,135	303– 6 : 3,554,611
340.7 : 3,555,044	122 : 3,555,136	21 : 3,554,612
.9 : 3,555,045	148 : 3,555,137	3,554,613
343.3 : 3,555,046	210 : 3,555,138	3,554,614
345.5 : 3,555,047	3,555,139	36 : 3,554,615
.9 : 3,555,048	255 : 3,555,140	305– 14 : 3,554,616
347.7 : 3,555,049	311 : 3,555,141	307– 10 : 3,555,289
348 : 3,555,050	3,555,142	65 : 3,555,290
3,555,051	266– 3 : 3,554,513	105 : 3,555,291
396 : 3,555,052	4 : 3,554,514	133 : 3,555,292
397.3 : 3,555,053	13 : 3,554,515	147 : 3,555,293
.4 : 3,555,054	22 : 3,554,516	203 : 3,555,294
.7 : 3,555,055	32 : 3,554,517	224 : 3,555,295
404.5 : 3,555,056	34 : 3,554,518	228 : 3,555,296
407 : 3,555,057	3,554,519	235 : 3,555,298
409 : 3,555,058	3,554,520	3,555,299
429.7 : 3,555,060	35 : 3,554,521	237 : 3,555,300
448.2 : 3,555,061	36 : 3,554,522	246 : 3,555,301
3,555,062	42 : 3,554,523	252 : 3,555,302
3,555,064	267– 64 : 3,554,524	260 : 3,555,303
3,555,065	3,554,525	262 : 3,555,304
3,555,066	109 : 3,554,526	265 : 3,555,305
3,555,067	116 : 3,554,527	268 : 3,555,306
3,555,068	126 : 3,554,528	279 : 3,555,307

307–293 : 3,555,308	323– 4 : 3,555,402	340– 62 : 3,555,507
297 : 3,555,309	22 : 3,555,400	146.3 : 3,555,508
309 : 3,555,310	43.5 : 3,555,403	162 : 3,555,509
308– 3 : 3,554,617	3,555,404	164 : 3,555,510
3,554,618	51 : 3,555,405	166 : 3,555,511
184 : 3,554,619	324– .5 : 3,555,406	171 : 3,555,512
187.1 : 3,554,620	3,555,407	172.5 : 3,555,513
.2 : 3,554,621	4 : 3,555,408	3,555,514
214 : 3,554,622	6 : 3,555,409	3,555,515
310– 8.3 : 3,555,311	28 : 3,555,410	3,555,516
.9 : 3,555,297	33 : 3,555,411	3,555,517
11 : 3,555,312	37 : 3,555,412	3,555,518
15 : 3,555,313	54 : 3,555,413	3,555,519
3,555,314	3,555,414	3,555,520
67 : 3,555,315	57 : 3,555,415	173 : 3,555,521
71 : 3,555,316	61 : 3,555,416	3,555,522
78 : 3,555,317	86 : 3,555,417	3,555,523
3,555,318	120 : 3,555,418	174 : 3,555,524
87 : 3,555,319	146 : 3,555,419	3,555,525
89 : 3,555,320	149 : 3,555,420	3,555,526
93 : 3,555,321	161 : 3,555,421	3,555,527
113 : 3,555,322	325– 16 : 3,555,422	.1 : 3,555,528
162 : 3,555,323	38 : 3,555,423	189 : 3,555,529
3,555,324	53 : 3,555,424	213.1 : 3,555,530
3,555,325	58 : 3,555,425	228 : 3,555,531
168 : 3,555,326	184 : 3,555,426	237 : 3,555,532
177 : 3,555,327	306 : 3,555,427	244 : 3,555,533
320 : 3,555,328	320 : 3,555,428	258 : 3,555,534
365 : 3,555,329	3,555,429	3,555,535
439 : 3,555,330	259 : 3,555,536	
465 : 3,555,431	3,555,537	
194 : 3,554,624	324 : 3,555,538	
234 : 3,554,625	3,555,539	
235 : 3,554,626	347 : 3,555,540	
330 : 3,554,627	3,555,541	
313– 7 : 3,555,331	144 : 3,555,436	3,555,542
63 : 3,555,332	165 : 3,555,437	366 : 3,555,543
105 : 3,555,333	3,555,438	378 : 3,555,544
107 : 3,555,334	167 : 3,555,439	343– 5 : 3,555,545
108 : 3,555,335	329–116 : 3,555,440	3,555,546
109 : 3,555,336	137 : 3,555,441	7 : 3,555,547
3,555,337	330– 15 : 3,555,442	.7 : 3,555,548
113 : 3,555,338	38 : 3,555,443	13 : 3,555,549
152 : 3,555,339	61 : 3,555,444	18 : 3,555,550
184 : 3,555,340	98 : 3,555,445	715 : 3,555,551
318 : 3,555,341	331– 16 : 3,555,446	726 : 3,555,552
3,555,342	55 : 3,555,447	776 : 3,555,553
315– 8 : 3,555,343	65 : 3,555,448	895 : 3,555,554
11 : 3,555,344	94.5 : 3,555,449	346– 30 : 3,555,555
3,555,345	3,555,450	74 : 3,555,556
16 : 3,555,346	3,555,451	3,555,557
18 : 3,555,347	3,555,452	75 : 3,555,558
20 : 3,555,348	3,555,453	350– 1 : 3,554,628
21 : 3,555,349	3,555,454	2 : 3,554,629
24 : 3,555,350	3,555,455	10 : 3,554,630
154 : 3,555,351	97 : 3,555,456	94 : 3,554,631
282 : 3,555,352	111 : 3,555,469	96 : 3,554,632
317– 11 : 3,555,353	332– 7.51: 3,555,457	160 : 3,554,634
3,555,354	3,555,458	311 : 3,554,636
13 : 3,555,355	333– 1.1 : 3,555,459	352–141 : 3,554,633
20 : 3,555,356	24.1 : 3,555,460	184 : 3,554,635
16 : 3,555,357	31 : 3,555,461	353– 19 : 3,554,637
3,555,358	3,555,462	68 : 3,554,638
18 : 3,555,359	3,555,463	117 : 3,554,639
3,555,360	70 : 3,555,464	355– 8 : 3,554,640
20 : 3,555,361	73 : 3,555,465	30 : 3,554,641
46 : RE.27,024	76 : 3,555,466	38 : 3,554,642
3,555,362	334– 78 : 3,555,467	65 : 3,554,643
101 : 3,555,364	335– 36 : 3,555,468	78 : 3,554,644
3,555,365	138 : 3,555,470	356– 2 : 3,554,645
234 : 3,555,371	195 : 3,555,471	4 : 3,554,646
3,555,372	210 : 3,555,472	76 : 3,554,647
3,555,373	212 : 3,555,473	96 : 3,554,648
235 : 3,555,374	289 : 3,555,474	100 : 3,554,649
3,555,375	306 : 3,555,475	121 : 3,554,650
238 : 3,555,376	336– 73 : 3,555,476	138 : 3,554,651
259 : 3,555,377	192 : 3,555,477	139 : 3,554,652
3,555,379	337– 89 : 3,555,478	153 : 3,554,653
91 : 3,555,479	180 : 3,554,654	
140 : 3,555,480	204 : 3,554,655	
187 : 3,555,481	238 : 3,554,656	
360 : 3,555,482	401–122 : 3,554,657	
255 : 3,555,483	197 : 3,554,659	
183 : 3,555,484	199 : 3,554,658	
252 : 3,555,485	214 : 3,554,660	
338– 25 : 3,555,483	339– 47 : 3,555,486	415–112 : 3,554,661
60 : 3,555,487	416– 1 : 3,554,662	
75 : 3,555,488	90 : 3,554,663	
88 : 3,555,489	3,554,664	
91 : 3,555,490	93 : 3,554,665	
92 : 3,555,491	125 : 3,554,666	
95 : 3,555,492	217 : 3,554,667	
176 : 3,555,493	220 : 3,554,668	
3,555,494	417– 48 : 3,554,669	
203 : 3,555,495	50 : 3,554,670	
217 : 3,555,496	222 : 3,554,671	
258 : 3,555,497	347 : 3,554,672	
340– 3 : 3,555,498	412 : 3,554,673	
3,555,499	475 : 3,554,674	
3,555,500	418– 61 : 3,554,675	
15.5 : 3,555,501	3,554,676	
3,555,502	178 : 3,554,677	
17 : 3,555,503	206 : 3,554,678	
18 : 3,555,504	424– 1 : 3,555,143	
24 : 3,555,505	2 : 3,555,144	
56 : 3,555,506	47 : 3,555,145	

424– 47 : 3,555,146	424–122 : 3,555,150	424–247 : 3,555,156	424–270 : 3,555,158	424–330 : 3,555,161	431–202 : 3,554,681
71 : 3,555,147	156 : 3,555,151	249 : 3,555,154	302 : 3,555,159	331 : 3,555,162	3,554,682
78 : 3,555,148	222 : 3,555,153	269 : 3,555,152	308 : 3,555,160	431– 78 : 3,554,680	280 : 3,554,679
89 : 3,555,149	246 : 3,555,155	270 : 3,555,157			

CLASSIFICATION OF DESIGNS

D 8– 14 : 219,700	D 8–254 : 219,705	D29– 23 : 219,709	D56– 1 : 219,713	D64– 10 : 219,717	D86– 8 : 219,724
34 : 219,701	D 9– 63 : 219,706	D48– 20 : 219,710	D57– 1 : 219,714	11 : 219,718	D87– 1 : 219,721
166 : 219,702	D11– 1 : 219,707	D52– 7 : 219,711	D61– 1 : 219,715	D74– 5 : 219,719	D90– 20 : 219,722
226 : 219,703	D14– 3 : 219,708	10 : 219,712	219,716	D80– 9 : 219,720	D96– 12 : 219,723
230 : 219,704					

CLASSIFICATION OF PLANTS

P. – 12 : 3,014	P. – 22 : 3,016	P. – 43 : 3,015	P. – 68 : 3,017

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

Alabama..... 1
Alaska..... 2
American Samoa..... 3
Arizona..... 4
Arkansas..... 5
California..... 6
Canal Zone..... 7
Colorado..... 8
Connecticut..... 9
Delaware..... 10
District of Columbia..... 11
Florida..... 12
Georgia..... 13
Guam..... 14
Hawaii..... 15
Idaho..... 16
Illinois..... 17
Indiana..... 18
Iowa..... 19
Kansas..... 20
Kentucky..... 21
Louisiana..... 22
Maine..... 23
Maryland..... 24
Massachusetts..... 25
Michigan..... 26
Minnesota..... 27
Mississippi..... 28
Missouri..... 29
Montana..... 30
Nebraska..... 31
Nevada..... 32
New Hampshire..... 33
New Jersey..... 34
New Mexico..... 35
New York..... 36
North Carolina..... 37
North Dakota..... 38
Ohio..... 39
Oklahoma..... 40
Oregon..... 41
Pennsylvania..... 42
Puerto Rico..... 43
Rhode Island..... 44
South Carolina..... 45
South Dakota..... 46
Tennessee..... 47
Texas..... 48
Utah..... 49
Vermont..... 50
Virginia..... 51
Virgin Islands..... 52
Washington..... 53
West Virginia..... 54
Wisconsin..... 55
Wyoming..... 56
U.S. Air Force..... 57
U.S. Army..... 58
U.S. Navy..... 59

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

3,555,348	6 : 3,554,078	6 : 3,554,651	6 : 3,555,271	9 : 3,553,871	10 : 3,554,379
1 : 3,553,904	3,554,079	3,554,653	3,555,273	3,553,877	3,554,685
3,554,769	3,554,094	3,554,657	3,555,274	3,553,929	3,554,753
3,554,782	3,554,106	3,554,658	3,555,280	3,553,968	3,554,786
3,554,819	3,554,128	3,554,659	3,555,285	3,553,970	3,554,798
3,554,885	3,554,129	3,554,676	3,555,290	3,554,013	3,554,907
3,555,339	3,554,130	3,554,702	3,555,331	3,554,014	3,554,912
3,555,340	3,554,144	3,554,705	3,555,344	3,554,015	3,554,929
4 : 3,553,759	3,554,146	3,554,741	3,555,396	3,554,016	3,554,960
3,554,162	3,554,154	3,554,751	3,555,415	3,554,086	3,554,981
3,554,196	3,554,176	3,554,765	3,555,430	3,554,141	3,554,982
3,554,433	3,554,187	3,554,770	3,555,432	3,554,219	3,555,077
3,555,294	3,554,209	3,554,797	3,555,440	3,554,292	3,555,080
3,555,357	3,554,226	3,554,807	3,555,446	3,554,353	3,555,089
3,555,495	3,554,242	3,554,814	3,555,450	3,554,410	3,555,100
6 : RE.27,025	3,554,246	3,554,816	3,555,451	3,554,420	3,555,272
3,553,735	3,554,275	3,554,844	3,555,459	3,554,428	3,555,537
3,553,737	3,554,277	3,554,845	3,555,469	3,554,436	3,555,556
3,553,740	3,554,278	3,554,846	3,555,472	3,554,450	3,555,557
3,553,746	3,554,300	3,554,867	3,555,483	3,554,468	11 : 3,554,466
3,553,747	3,554,305	3,554,876	3,555,485	3,554,469	3,554,647
3,553,748	3,554,309	3,554,878	3,555,498	3,554,482	3,555,455
3,553,750	3,554,323	3,554,898	3,555,500	3,554,555	12 : 3,553,739
3,553,758	3,554,345	3,554,899	3,555,506	3,554,598	3,553,741
3,553,760	3,554,356	3,554,902	3,555,513	3,554,607	3,553,863
3,553,763	3,554,378	3,554,919	3,555,515	3,554,726	3,553,875
3,553,787	3,554,391	3,554,932	3,555,520	3,554,727	3,553,876
3,553,797	3,554,408	3,554,996	3,555,522	3,554,761	3,553,912
3,553,819	3,554,417	3,555,032	3,555,534	3,554,766	3,553,949
3,553,821	3,554,440	3,555,098	3,555,538	3,554,817	3,553,953
3,553,862	3,554,443	3,555,108	3,555,539	3,554,860	3,553,973
3,553,873	3,554,458	3,555,112	3,555,540	3,554,892	3,554,083
3,553,891	3,554,471	3,555,131	3,555,546	3,554,903	3,554,172
3,553,895	3,554,472	3,555,142	3,555,550	3,554,962	3,554,189
3,553,897	3,554,512	3,555,166	3,555,553	3,554,972	3,554,193
3,553,900	3,554,527	3,555,171	3,555,554	3,555,071	3,554,194
3,553,906	3,554,535	3,555,179	8 : 3,554,052	3,555,072	3,554,228
3,553,915	3,554,536	3,555,187	3,554,509	3,555,084	3,554,293
3,553,926	3,554,541	3,555,195	3,554,570	3,555,119	3,554,370
3,553,959	3,554,545	3,555,205	3,554,666	3,555,254	3,554,495
3,553,967	3,554,556	3,555,211	3,555,090	3,555,260	3,554,577
3,553,984	3,554,578	3,555,216	3,555,177	3,555,261	3,554,622
3,553,988	3,554,579	3,555,217	3,555,204	3,555,332	3,554,696
3,553,998	3,554,590	3,555,222	3,555,286	3,555,359	3,554,699
3,554,021	3,554,595	3,555,239	3,555,492	3,555,360	3,554,704
3,554,036	3,554,617	3,555,248	9 : 3,553,794	3,555,392	3,554,805
3,554,051	3,554,620	3,555,250	3,553,811	3,555,419	3,554,894
3,554,064	3,554,627	3,555,257	3,553,831	10 : 3,554,002	3,554,949
3,554,069	3,554,635	3,555,267	3,553,842	3,554,232	3,555,193
3,554,077	3,554,645	3,555,269	3,553,864	3,554,368	3,555,203

12 : 3,555,298
3,555,315
3,555,328
3,555,388
3,555,448
3,555,480
3,555,518
13 : 3,554,358
3,554,371
3,554,388
3,554,401
3,554,402
3,554,431
3,554,730
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A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

U.S. DEPARTMENT OF COMMERCE

Official Gazette of the United States Patent Office

January 12, 1971 Volume 882 Number 2

TRADEMARKS

NOTICES

Separation of the Patent and Trademark Sections of the Official Gazette

Effective February 2, 1971, the OFFICIAL GAZETTE will be separated into two parts to be known as the *Patent Official Gazette* and the *Trademark Official Gazette*. The subscription prices for these publications are as follows:

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Dec. 29, 1970.

WILLIAM E. SCHUYLER, JR.,
Commissioner of Patents.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 109,742. (See Reg. No. 425,967.)

Reg. No. 109,743. (See Reg. No. 425,967.)

Reg. No. 425,967 (EKCO), American Home Products Corporation, Kitchen and household tools and utensils—namely, food choppers, ice picks, scoops, can openers, spoons, turners, peeling and coring tools, egg beaters, culinary forks, knife sharpeners, vegetable mashers, dough blenders, plate scrapers, ladles, food servers, spatulas, knives, base metal table flatware; **Reg. No. 109,742**, same, Ekco Products Company, Metallic bowls, pans, pots, kettles, and cake stands; funnels; strainers, mugs, dippers, jelly moulds, spoons, hooks, and metal dough-troughs; **Reg. No. 109,743**, same, Dough cutters, jaggers, mixers, dividers, and markers, dough and confectionery ornamenting instruments, culinary knives and scrapers, sifters, strainers, egg-beaters, cake-fillers, iron mortars, bakers' peels, rolling-pins, scoops; candy shears, hammers, and hatchets; ice shavers, breakers, and tongs; shovels, ice-cream dishers and

CONDITION OF TRADEMARK APPLICATIONS AS OF OCTOBER 31, 1970

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	23,607
Date of oldest new application	September 17, 1969
Date of oldest amended application (filing date)	March 31, 1967

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISION, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application: New	Oldest Application: Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 8, 9, 10, 11, 17, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	12-24-69	3-31-67
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	12-16-69	12-11-67
(III) C. R. FOWLER, Classes 12, 16, 19, 21, 23, 26, 31, 34, 35, 36, 44	2-26-70	10-30-67
(IV) M. E. ABRAMSON, Classes 13, 14, 20, 22, 24, 25, 29; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	9-17-69	1-26-68
Renewals (All Classes)	9-21-70	----------
Sec. 12(c) Publications (All Classes)	10-6-70	----------

Applications filed during the month of October 1970—2,802

Registrations Issued ---------- 353—No. 905,696 to No. 906,048
Renewals Issued ---------- 140

THE TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

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molds, and oven hoes and pokers; **Reg. No. 641,028,** same, Glassware including beverage making and serving pitchers, drinking vessels, and mixing bowls for beater and bowl sets; **Reg. No. 648,136,** same, Hand carts for handling, transporting, storing, and displaying meats, produce, and other products; **Reg. No. 658,933,** same, Receptacles for handling, shipping, storing, and displaying meats, produce, and other products, to wit, trays, lugs, and similar containers, racks for storage of items such as culinary knives, kitchen tools, cups, dishes, pan covers, and bowls; **Reg. No. 432,093,** same, American Home Products Corporation, Kitchen strainers, base metal bake pan, and cooking hollow ware; **Reg. No. 622,156** (ETERNA), Ekco Products Company, Culinary tools—namely, paring knives, utility knives, french cook's knives, butcher knives, roast slicing knives, steak slicing knives, and ham and bread slicing knives, vegetable mashers, spoons, turners, forks, whips, scoops, spatulas and ladles; and flatware—namely, table knives and forks, soup spoons, teaspoons, tablespoons, iced tea spoons, butter knives, and sugar shells, of base metal, **filed** Sept. 4, 1970, D.C., S.D.N.Y., Doc. 70–3867, *American Home Products Corp.* v. *Sanyei New York Corp.* Notice of dismissal, Oct. 7, 1970.

Reg. No. 432,093. (See Reg. No. 425,967.)

Reg. No. 622,156. (See Reg. No. 425,967.)

Reg. No. 641,028. (See Reg. No. 425,967.)

Reg. No. 648,136. (See Reg. No. 425,967.)

Reg. No. 658,933. (See Reg. No. 425,967.)

Reg. No. 717,683 (ALLSTATE), Allstate Life Insurance Company, Underwriting of the following types of insurance; life, annuity, accident, and health, **filed** Oct. 21, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c2626, *Allstate Insurance Company* v. *Allstate Leasing Corporation.*

Reg. No. 724,946 (THE GREATEST SHOW ON EARTH), Ringling Bros.-Barnum & Bailey Combined Shows, Inc., Entertainment services in the nature of a circus; **Reg. No. 724,947** (THE GREATEST SHOW ON EARTH AND DESIGN), same; **Reg. No. 787,963** (THE GREATEST SHOW ON EARTH), Entertainment services in the nature of a series of television programs, **filed** Oct. 9, 1970, D.C., S.D.N.Y., Doc. 70–C–4891, *Ringling Bros. Barnum & Bailey Combined Shows Inc.* v. *Chandris America Lines Inc.*

Reg. No. 724,947. (See Reg. No. 724,946.)

Reg. No. 768,015 (REPRESENTATION OF LABORATORY EQUIPMENT), American Medical Technologists, Indicating membership in applicant, **filed** May 9, 1967, D.C., S.D. Fla. (Miami), Doc. 67–498–C–EC, *American Medical Technologists* v. *Florida Professional Academy, Inc., Jack N. Alvard, Lee Wilcoxon and Jose M. Gutierrez.* Final judgment, the defendant Florida Professional Academy, Inc. is permanently enjoined from the use of the plaintiff's tradename, American Medical Technologists. The suit is dismissed with prejudice in favor of the individual defendants, Dec. 26, 1967.

Reg. No. 787,963. (See Reg. No. 724,946.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.106.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 313,156. Brake-O International, Inc., Dallas, Tex. Filed Nov. 27, 1968.

BRAKE-O

Class 19—Vehicles

For Automotive Brake Drums, Automotive Brake Shoes, Automotive Shock Absorbers (Int. Cl. 12).
First use at least as early as June 30, 1967.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Internal Combustion Engine Mufflers (Int. Cl. 7).
First use at least as early as July 31, 1968.

SN 317,742. Glass Containers Corporation, Fullerton, Calif. Filed Jan. 28, 1969.

MORE THAN JUST A BOTTLE

Class 100—Miscellaneous

For Packaging Engineering, Package Design, and Product and Process Development (Int. Cl. 42).

Class 101—Advertising and Business

For Marketing Analysis in the Field of Glass Containers (Int. Cl. 35).

First use February 1964.

SN 333,861. American Chemical & Refining Company, Inc., Waterbury, Conn. Filed July 30, 1969.

ACR

Class 6—Chemicals and Chemical Compositions

For Solutions for Electroplating Metal and Addition Agents Therefor—Namely, Electrolyte, Brightener, Metal Salts, and Wetting Agent Formulations (Int. Cl. 1).
First use June 11, 1968; 1950 as to ACR.

Class 14—Metals and Metal Castings and Forgings

For Metal and Metal Alloys—Namely, Gold, Platinum, Palladium, Silver, Rhenium, and Rhodium in the Form of Powder, Ingots, Foil and Electrodes (Int. Cl. 6).
First use on or before Aug. 20, 1968.

Class 21—Electrical Apparatus, Machines, and Supplies

For Equipment for Electroplating and Reclaiming Metals—Namely, Rectifiers, Ion Exchange Columns, and Electrolytic Recovery Cells (Int. Cl. 9).
First use on or before Aug. 20, 1968

Class 31—Filters and Refrigerators

For Filters, and Treatment of Metallic Solutions and Dispersions (Int. Cl. 11).
First use on or before Aug. 21, 1968.

Class 100—Miscellaneous

For Consulting Engineering Services Relative to Electroplating and to Metal Reclamation (Int. Cl. 42).
First use on or before Oct. 28, 1968.

Class 106—Material Treatment

For Metal Reclamation Services (Int. Cl. 40).
First use on or before June 11, 1968.

SN 339,914. The Milgo Idab Corporation, Miami, Fla. Filed Oct. 6, 1969.

mi

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Counter Stackers, Pile Turners, Tying Machines, Wrapping Machines, Belt Conveyors, Roller Conveyors, and Wire Conveyors (Int. Cl. 7).

Class 26—Measuring and Scientific Appliances

For Counters and Totalizers for Printing Presses and Newspaper Handling Machines (Int. Cl. 9).

First use December 1967.

SN 350,544. Textron Inc., Providence, R.I. Filed Feb. 5, 1970.

BITTER LEMON

No claim is made to the word "Lemon" apart from the mark. Owner of Reg. No. 874,839.

Class 51—Cosmetics and Toilet Preparations

For Toiletries—Namely, Shaving Cream, Personal Deodorant, and After Shower Tonic (Int. Cls. 3 and 5).
First use Sept. 21, 1968.

Class 52—Detergents and Soaps

For Shower Foam and Toilet Soap (Int. Cl. 3).
First use Sept. 14, 1968.

SN 351,362. Regal Ware, Inc., Kewaskum, Wis. Filed Feb. 16, 1970.

REGAL

Owner of Reg. Nos. 528,672, 881,989, and others.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Cooking and Food Serving Utensils Made Primarily of Metal—Namely, Percolators (Non-Electric), Pitchers, Tea Kettles, Party Bowls and Snack Bowls, Trays, Food Caddy, Casserole Pots, Roasters, Sauce Pans, Open Fry Pans, Chicken Fryers, Dutch Ovens, Griddles, Egg Poachers, Double Boilers, Bun Warmers (Non-Electric), Mixing Bowls, Storage Bowls, Baking Pans, Cookie Sheets, Kettles, Combination Cookers, Popcorn Poppers (Non-Electric), Stackable Food Containers for Cooking, Carrying and Serving Food and Optional Plastic Insulated Carrying Bag, Cake Covers, Cake Pans, Tubular Cake Pans, Pie Plates, Muffin Pans, Bread and Loaf Pans, Pizza Pans, Angel Cake Pans, Broilers (Non-Electric) and Racks, and Covers for All of the Same (Int. Cl. 21).
First use October 1945.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electrical Goods—Namely, Urns, Percolators, Frying Pans, Broilers, Griddles, Heated Pots, and Popcorn Poppers (Int. Cl. 11).
First use in 1954.

SN 357,549. Green Lawns, Inc., Belleville, Ill. Filed Apr. 22, 1970.



Class 100—Miscellaneous

For Spraying Grounds, Trees and Shrubs—Namely, Tree Feeding, the Spraying of Trees With Pesticides, and the Spraying of Lawns With Pesticides, Fertilizers, and Herbicides (Int. Cl. 42).
First use Feb. 1, 1970; about the year 1960 as to the term "Green Lawns."

Class 101—Advertising and Business

For Assisting Others in Establishing and Carrying on Businesses in the Spraying of Grounds, Trees and Shrubs (Int. Cl. 35).
First use on or about Feb. 27, 1970.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.
[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 329,078. Hygrade Seed Company, Inc., Fredonia, N.Y. Filed June 4, 1969.

HYGRADE

For Vegetable and Flower Seeds (Int. Cl. 31).
First use in about August 1921.

Class 4—Abrasives and Polishing Materials

SN 345,973. One Stop, Incorporated, Los Angeles, Calif. Filed Dec. 11, 1969.



The drawing is lined for the color red.
For Floor Wax, Oil Polish, and Tile Sealing Compounds Comprising Acrylic Polymer Sealers for Application to Resilient-Type Tile Floor Coverings To Form a Clear Coating Thereon (Int. Cl. 3).
First use Sept. 15, 1969.

Class 6—Chemicals and Chemical Compositions

SN 334,422. Mysore Sugandhi Dhoop Factory, Bombay, India. Filed July 3, 1969.

THREE ROSES

For Indian Incense (Int. Cl. 3).
First use October 1952; in commerce October 1952.

SN 339,501. Conklin Company, Inc., Minneapolis, Minn. Filed Oct. 2, 1969.



For Additive for Cooling Systems of Internal Combustion Engines, said Additive Having Sealing, Cleaning, Lubricating, and Rust and Corrosion Prevention Properties (Int. Cl. 1).
First use on or about Dec. 7, 1955.

SN 339,995. Denver Chemical Manufacturing Company, Stamford, Conn. Filed Oct. 7, 1969.

CONFIDELLE

For Laboratory Diagnostic Reagent Screen Test for Pregnancy (Int. Cl. 1).
First use Sept. 30, 1969.

SN 345,691. Thetford Corporation, Ann Arbor, Mich. Filed Dec. 8, 1969.

AQUA THAW

Owner of Reg. No. 836,578.
For Anti-Freeze for Use in Water and Sanitation Systems in Recreational Vehicles, Boats, and Camping Equipment (Int. Cl. 1).
First use Sept. 4, 1969.

SN 347,864. Neumann-Buslee & Wolfe, Inc., Des Plaines, Ill. Filed Jan. 7, 1970.

NBW

For Essential Oils and Aromatic Chemicals for Use in the Manufacture of Perfumes, Flavors, Fragrances, Colors, and Cosmetics (Int. Cl. 1).
First use Jan. 2, 1924.

SN 349,740. American Cholesterol Products, Inc., Edison, N.J. Filed Jan. 27, 1970.

Amerchol

Owner of Reg. Nos. 530,644 and 843,500.
For Chemical Preparations for Use in the Manufacture of Cosmetics and Pharmaceuticals—Namely, Liquid, Solid and Semi-Solid Multi-Sterol Extracts, Acetylated Lanolin Alcohols, Cholesterol, Isopropyl Lanolate, Acidolized Lanolin, Acetylated Lanolin, Lanolin Polyunsaturate, Chemically Combined Selected Lanolin Alcohol and Castor Oil Components, Water Soluble Lanolin and Lanolin Components, Viscous Liquid Lanolin, Lanolin Wax Fraction, Lanolin Quaternary Reaction Product (Int. Cl. 1).
First use at least as early as Sept. 27, 1962.

SN 355,850. Allied Chemical Corporation, New York, N.Y. Filed Apr. 3, 1970.

NACCOPRINT

Owner of Reg. Nos. 153,804, 752,334, and others.
For Dyestuffs (Int. Cl. 2).
First use Dec. 12, 1969.

SN 355,888. Irving Landsman, d.b.a. Landsman Exterminating Service d.b.a. Central Exterminating and Chemical Co., Yonkers, N.Y. Filed Apr. 3, 1970.

ROACH BAN-D

For Insecticidal Spray (Int. Cl. 5).
First use Mar. 1, 1965.

SN 357,131. A. E. Staley Manufacturing Company, Decatur, Ill. Filed Apr. 16, 1970.

STA-TAPE

For Industrial Starch (Int. Cl. 1).
First use Jan. 20, 1970.

SN 357,778. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Apr. 23, 1970.

CURB

For Corrosion Inhibitor (Int. Cl. 2).
First use Mar. 18, 1970.

SN 357,848. Pennwalt Corporation, Philadelphia, Pa. Filed Apr. 24, 1970.

PENNWHITE

For Fabric Whitener for Laundries (Int. Cl. 3).
First use Sept. 29, 1969.

SN 359,983. The Upjohn Company, Kalamazoo, Mich. Filed May 18, 1970.

BO-CAP

For Fungicide—Protectant for Seeds (Int. Cl. 5).
First use Mar. 18, 1970.

Class 8—Smokers' Articles, Not Including Tobacco Products

SN 342,741. Gulton Industries, Inc., Metuchen, N.J. Filed Nov. 5, 1969.

GULTON

Owner of Reg. No. 644,673.
For Cigarette Lighters (Int. Cl. 34).
First use Nov. 27, 1967.

Class 10—Fertilizers

SN 330,386. J. M. Huber Corporation, Borger, Tex. Filed June 18, 1969.



The lining on the drawing represents the colors red and green.
For Peat Moss for Use as a Garden Mulch (Int. Cl. 1).
First use Feb. 13, 1969.

Class 12—Construction Materials

SN 316,819. Ranco Industrial Products Corporation, Cleveland, Ohio. Filed Jan. 16, 1969.

CRETITE

For Latex Adhesive for Bonding New Concrete to Old (Int. Cl. 19).
First use on or about Jan. 7, 1958.

SN 325,007. Cominco Ltd., Montreal, Quebec, Canada. Filed Apr. 21, 1969.

DECRALOY

For Protective and Decorative Metallic Coatings on Sheet Metal and on Fabricated Articles—Namely, Zinc-Coated Steel Products, Particularly Ceiling and Wall Tile, Panels, Decorative and Coloured Metallic Surfaces for Architectural Adornment, Murals, Montages, Collages, Mosaics, Sculptures, Light and Space Modulators, Blinds Screens and Partitions (Int. Cl. 6).
First use Feb. 24, 1969; in commerce on or about Feb. 24, 1969.

SN 329,110. Meta-Mold Aluminum Company, Cedarburg, Wis. Filed June 4, 1969.

META-MOLD

Owner of Reg. No. 749,290.
For Aluminum Decorative Panels, and Particularly Such Panels for Interfitting Engagement To Form Screens or Partitions, and Supporting Fittings and Parts Therefor (Int. Cl. 6).
First use Mar. 2, 1962.

SN 336,609. The Rubberoid Company Limited, London, England. Filed Aug. 28, 1969.

HYLOAD

Owner of British Reg. No. 846,988, dated Mar. 27, 1963.
For Fexible Non-Metallic Material in Sheet or Strip Form for Use in Building or Construction To Provide a Damp-Proof Course in Brickwork, Masonry or Concrete Walls (Int. Cl. 19).

SN 343,298. Johns-Manville Corporation, New York, N.Y. Filed Nov. 12, 1969.

CERA-PAK

For High Temperature Refractory Fiber Insulation (Int. Cl. 17).
First use at least as early as June 1965.

SN 343,301. Johns-Manville Corporation, New York, N.Y. Filed Nov. 12, 1969.

FACESPAN

For Asbestos-Cement Panels (Int. Cl. 19).
First use at least on or about Sept. 26, 1969.

SN 348,937. Wade H. Griffin, d.b.a. Heritage Fences, Fowler, Ohio. Filed Jan. 19, 1970.

HERITAGE

For Wooden Fences (Int. Cl. 19).
First use Mar. 7, 1961.

SN 350,321. Thermoproof Glass Company, Detroit, Mich. Filed Feb. 2, 1970.

SOL·R·PROOF

For Insulating Glass Units for Construction Purposes (Int. Cl. 19).
First use Jan. 20, 1970.

SN 351,944. Inland-Ryerson Construction Products Company, Milwaukee, Wis. Filed Feb. 20, 1970.

INRYCO

Owner of Reg. No. 591,863.
For Metal Floor Deck and Roof Deck (Int. Cl. 6).
First use Sept. 9 1969.

SN 354,631. Johns-Manville Corporation, New York, N.Y. Filed Mar. 19, 1970.

LIFE SAFETY

For Thermal and Acoustical Insulation; Thermal Insulating Felts and Blankets; and Duct Liners (Int. Cl. 17).
First use at least on or about Oct. 3, 1967.

SN 354,756. XL, Inc., Cresco, Pa. Filed Mar. 20, 1970.



For Modular Houses (Int. Cl. 19).
First use Feb. 5, 1970.

SN 370,022. General Refractories Company, Philadelphia, Pa. Filed Sept. 8, 1970.

GENREX

For Refractory Brick (Int. Cl. 19).
First use Aug. 7 1970.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 325,849. The Edro Corporation, East Berlin, Conn. Filed Apr. 29, 1969.

ISO-PORT

For Support Mountings for Commercial Washing Machines (Int. Cl. 6).
First use on or about Apr. 25, 1969.

SN 336,706. Olin Corporation, New York, N.Y., by change of name from Olin Mathieson Chemical Corporation, New York, N.Y. Filed Aug. 29, 1969.



For Fasteners Including Pins, Bolts, Studs, Screws Rivets and Plugs Designed To Be Driven or Set Into or Through Metal, Concrete, Masonry, Wood, or the Like (Int. Cl. 6).
First use on or about Mar. 1, 1968.

SN 336,877. Standard Pressed Steel Co., Jenkintown, Pa. Filed Sept. 2, 1969.

STRESSLOC

For Thread Fasteners (Int. Cl. 6).
First use Aug. 8, 1969.

SN 339,227. P. L. Robertson Manufacturing Company Limited, Rexdale Ontario, Canada. Filed Sept. 29, 1969.

ROBERTSON

For Fasteners—Namely, Cap Screws, Wood Screws, Stove Bolts, Machine Screws, Lockwashers, Acorn Nuts, Socket Screws, Sheet Metal Screws (Int. Cl. 6).
First use at least as early as 1949; in commerce at least as early as 1949.

SN 341,048. Midland-Ross Corporation, Cleveland, Ohio, Filed Oct. 17, 1969.

TORQLESS

For Conduit Couplings (Int. Cl. 6).
First use Aug. 29, 1969.

SN 342,866. Edward A. Huthmacher, Houston, Tex. Filed Nov. 6, 1969.

THERMOBUBBLE

For Swaged Thermowell Pipe Fitting (Int. Cl. 6).
First use Oct. 1, 1969.

SN 343,642. Air Industries Corporation, Garden Grove, Calif. Filed Nov. 17, 1969.

R_X

For Bolts and Rivets (Int. Cl. 6).
First use Sept. 8, 1969.

SN 346,891. Grizzly Corporation, Jacksonville, Ill. Filed Dec. 22, 1969.



For Traction Devices for Vehicles—Namely, Chains, Connectors and Traction Cleats, and Cable Ring Slings (Int. Cl. 12).
First use Mar. 19, 1966.

SN 347,334. Fexrammer Corp., Charlotte, N.C., by change of name from Sileps, Inc., Charlotte, N.C. Filed Dec. 29, 1969.



For Threaded and Nail Type Studs (Int. Cl. 6).
First use Apr. 14, 1960.

SN 352,061. Anvil Products, Inc., Allison Park, Pa. Filed Feb. 24, 1970.

ANVILETS

Owner of Reg. No. 592,653.
For Pipe Fittings (Int. Cl. 6).
First use Feb. 11, 1970.

SN 352,764. Business Builders International, Inc., Chicago, Ill. Filed Mar. 2, 1970.

HANDI-SCREEN

For Kitchen Utensil Having a Wire Mesh Mounted in a Frame and Used, for Example as a Pan Cover, a Steamer or a Strainer (Int. Cl. 21).
First use Jan. 10, 1970.

SN 355,740. Continental Testing Laboratories, Inc., Fern Park, Fla. Filed Apr. 2, 1970.

FLEX-SEAT

For Pipe Unions and Pipe Flanges (Int. Cl. 6).
First use Dec. 31, 1969.

SN 355,886. Keystone Consolidated Industries, Inc., Peoria, Ill. Filed Apr. 3, 1970.

ECONO TRADING

For Hardware for Cabinets, Chests, Refrigerators, Ranges, Bathroom, Household and Office Furniture, Chair Hardware, Casters and Glides; Window, Door and Builders' Hardware and Accessories, and General Hardware—Namely, Knobs, Pulls, Handles, Backplates, Escutcheons, Hinges, Screws, Bolts, Nuts, Rivets, Washers and Other Fasteners and Supports (Int. Cl. 6).
First use Jan. 26, 1970.

SN 356,203. Keystone Consolidated Industries, Inc., Peoria, Ill. Filed Apr. 7, 1970.

etc.

For Hardware for Cabinets, Chests, Refrigerators, Ranges, Bathroom, Household and Office Furniture, Chair Hardware, Casters and Glides; Window, Door and Builders' Hardware and Accessories, and General Hardware—Namely, Knobs, Pulls, Handles, Backplates, Escutcheons, Hinges, Screws, Bolts, Nuts, Rivets, Washers and Other Fasteners and Supports (Int. Cl. 6).
First use Jan. 26, 1970.

SN 357,544. Typhoon Industries, Inc., North Lindenhurst, N.Y. Filed Apr. 21, 1970.

NEVER BEFORE FENCE

Applicant disclaims the word "Fence" apart from the mark as shown.
For Chain Link Fence With Opaque Covering To Provide Privacy (Int. Cl. 6).
First use Apr. 1, 1970.

SN 360,539. Corlok Corporation, Culver City, Calif., assignee of Corsair Industries, Inc., Culver City, Calif. Filed May 22, 1970.

CORLOK

For Multi-Purpose Fastener Devices (Int. Cl. 6).
First use May 5, 1970.

SN 361,707. Eaton Yale & Towne Inc., Cleveland, Ohio. Filed June 4, 1970.

APOLLO

For Door Openers and Closers (Int. Cl. 6).
First use November 1969.

SN 361,852. The H. B. Ives Company, New Haven, Conn. Filed June 5, 1970.

WEATHER-TITE

Owner of Reg. No. 528,546.
For Letter Box Plates (Int. Cl. 6).
First use Apr. 5, 1948.

SN 363,103. Sno-Trik Company, Solon, Ohio. Filed June 18, 1970.

SNO-TRIK

Owner of Reg. Nos. 846,119 and 880,853.
For Valves (Int. Cl. 6).
First use June 24, 1969.

SN 365,297. Illinois Tool Works Inc., Chicago, Ill. Filed July 15, 1970.

HI-LO

For Threaded Fasteners (Int. Cl. 6).
First use Jan. 15, 1963.

SN 365,872. Turbotec, Incorporated, South Windsor, Conn. Filed July 22, 1970.

ORNAMET

For Ornamental Tubing (Int. Cl. 6).
First use February 1970.

Class 14—Metals and Metal Castings and Forgings

SN 324,163. The Auto-Soler Company, Atlanta, Ga. Filed Apr. 10, 1969.

THREDLOK

For Wire Prepared in Spools or Coils for Use in Fastener Forming and Inserting Machines (Int. Cl. 6).
First use July 29, 1968.

SN 340,486. American Metal Climax, Inc., d.b.a. Amax Metal Powders, New York, N.Y. Filed Oct. 13, 1969.

INFILOY

For Copper Alloy Powder for Infiltrant Use (Int. Cl. 6).
First use Oct. 8, 1969.

SN 356,931. Aluminum Company of America, Pittsburgh, Pa. Filed Apr. 15, 1970.

PORCENEL

For Coated Aluminum Sheet Including Porcelain Enamel Aluminum Sheet for Conversion Into Cooking Utensils (Int. Cl. 6).
First use at least as early as Nov. 1, 1969.

Class 19—Vehicles

SN 328,453. Ski-Tow Manufacturing Co., Elkhart, Ind. Filed May 27, 1969.



For All-Terrain Vehicles and Camping Trailers (Int. Cl. 12).
First use April 1969.

SN 337,990. Transportation Technology, Inc., Warren, Mich. Filed Sept. 15, 1969.

TRANS TECH

For Motor Vehicles Supported by Air Cushion Devices for Propulsion Over Rails, Tracks or Guideways for Carrying Passengers or Cargo (Int. Cl. 12).
First use July 30, 1969.

SN 345,694. Transportation Technology, Inc., Madison Heights, Mich. Filed Dec. 8, 1969.



For Motor Vehicles Supported by Air Cushion Devices for Propulsion Over Rails, Tracks or Guideways for Carrying Passengers or Cargo, and Air Cushion Devices for Such Vehicles (Int. Cl. 12).
First use Nov. 17, 1969.

SN 346,129. Thrall Car Manufacturing Company, Chicago Heights, Ill. Filed Dec. 12, 1969.

THRALL-DOOR CAR

Applicant disclaims the word "Car" apart from the mark as shown, without relinquishing any common law rights.
For Railroad Freight Car (Int. Cl. 12).
First use Apr. 10, 1967.

SN 346,714. Bird Engineering Inc. and Bird Automotive Inc. (joint venture), Omaha, Nebr. Filed Dec. 19, 1969.
Owner of Reg. No. 868,134.

BIRD

For Vehicles Such as Motor Bikes, Bodies for Motored Racing Carts, Small Gasoline Engined Propelled Automobiles, Motored Fun Buggies, Motored Dune Buggies, One Piece Insert Bodies for Vehicles, Off-Road Motored Recreational Vehicles, Complete Vehicle Frame and Body Kits and Kit Plans (Int. Cl. 12).
First use April 1960

SN 354,029. Sentry Hardware Corporation, Cleveland, Ohio. Filed Mar. 13, 1970.

SENTRY

Owner of Reg. Nos. 764,970, 880,336, and others.
For Wheelbarrows and Garden Carts (Int. Cl. 12).
First use at least as early as Nov. 1, 1963.

SN 355,135. Kimco Auto Products, Inc., Memphis, Tenn. Filed Mar. 26, 1970.

KIMGOLD

For Brake Shoes (Int. Cl. 12).
First use 1956.

Class 21—Electrical Apparatus, Machines, and Supplies

SN 283,669. Kenoah Enterprises, Inc., St. Petersburg, Fla. Filed Oct. 30, 1967.



For Automatic Headlight Controls (Int. Cl. 9).
First use Mar. 5, 1966.

SN 320,958. KEV Electronics Corp., Wilmington, Mass. Filed Mar. 6, 1969.



The drawing is lined for the color red, but no claim is made as to color.
For Developing, Manufacturing and Selling Semiconductors, VHF Tuning Diodes, Switching Diodes, Microwave Transistors, and Diodes for Tuning Applications and Microwave Applications (Int. Cl. 9).
First use Oct. 11, 1968.

SN 326,989. International Marine, Redondo Beach, Calif. Filed May 9, 1969.

CHEMCAST

For Radio Frequency Electronic Waveguide (Int. Cl. 9).
First use July 1, 1968.

SN 329,756. Pye Limited, Cambridge, England. Filed June 11, 1969.



Owner of British Reg. No. B789,813, dated Apr. 20, 1959; and U.S. Reg. Nos. 430,720, 646,026, 749,847, and others.
For Fixed, Mobile and Portable Radio-Telephone Equipment, Both Remote and Extension Controlled—Namely, Radio Telephones, Base Stations, Transmitters and Receivers for Both Radio and Microwave Frequencies, Link Transmitters, Link Receivers, Ancillary Equipment for Link Use, Remote Control Equipment, Amplifiers, Convertors, Power Supply Units, Loud Hailers, Battery Chargers, Unit Chargers, Generators, Radio Concentrators, Marker Beacons, Signalling Adaptor Panels, Automatic Station Selectors, Data Modems, On-Frequency Repeaters, Paging Devices, and Selective Calling Devices (Int. Cl. 9).

SN 330,706. Beukers Laboratories, Inc., Hauppauge, N.Y. Filed June 23, 1969.

BEWCO

For Electrical Components—Namely, Filters, Receivers, and Frequency References (Int. Cl. 9).
First use Feb. 14, 1965.

SN 331,143. Basler Electric Company, Highland, Ill. Filed June 27, 1969.



For Magnetic Components Including Transformers, Reactors, Chokes, Filters and Coils; Load Banks, Power Supplies; Generator Set Control Devices Including Generator Voltage Regulators, Generator Exciter Regulators, Series Boost Option Assemblies, Manual Voltage Control Assemblies and Underfrequency Overvoltage Assemblies; Electric Relays Including Reverse Power Relays, Synchronous Motor Pullout Relays and Overcurrent Protective Relays; Automatic Synchronizers; Electric Motor Speed Controls for Constant and Variable Speed Motors; Battery Chargers; Electric Generator Control Systems, Static Power Systems and Uninterrupted Power Systems; and Electrical Assemblies and Subassemblies Including Circuit Board Assemblies, Transformer, Rectifier Assemblies, Control Assemblies, Sensing Assemblies, Power Amplifier Assemblies, Heat Sink Assemblies and Static variable Voltage Devices (Int. Cl. 9).
First use October 1961.

SN 343,343. Voltaic International Corporation, Dallas, Tex. Filed Nov. 12, 1969.

VOLT-A-LITE

For Electrical Control Elements Relating to the Variable Intensity Controls for Lamps by Means Such as Solid State Controls or Rheostats (Int. Cl. 9).
First use Oct. 21, 1969.

SN 346,820. Sterling Electronics Corporation, Houston, Tex. Filed Dec. 22, 1969.



For Hi-Fidelity-Stereo Speakers (Int. Cl. 9).
First use at least as early as about Nov. 14, 1969.

SN 348,164. Melude S.A., Fribourg, Switzerland. Filed Jan. 9, 1970.



Owner of Swiss Reg. No. 239,560, dated June 2, 1969.
For Electrical Lighting Equipment—Namely, Fluorescent Tubes, Fluorescent Panels, Light Bulbs, Lamps, and Lampshades (Int. Cl. 11).

SN 354,032. Mayer D. Silvera, Kings Point, N.Y. Filed Mar. 13, 1970.

KINGSPOINT

For Transistor Radios (Int. Cl. 9).
First use Mar. 2, 1970.

SN 355,282. Westinghouse Electric Corporation, Bloomington, Ind. Filed Mar. 27, 1970.

TRI-VAC

For Electric Capacitors (Int. Cl. 9).
First use on or about Feb. 16, 1970.

SN 355,901. RJ Communication Products, Inc., Phoenix, Ariz. Filed Apr. 3, 1970.



For Cable Television Receiving Equipment—Namely, Line Taps, Amplifiers, Co-Axial Connectors, and Unidirectional Couplers; Microwave Components and Systems—Namely, Isolators, Circulators, Hybrids, and Transmitter-Combiners (Int. Cl. 9).
First use Nov. 15, 1966.

SN 356,039. Chicago Magnet Wire Corp., Elk Grove Village, Ill. Filed Apr. 6, 1970.

VAR-TEMP

For Insulation Coated Wire (Int. Cl. 9).
First use Jan. 23, 1970.

SN 358,919. RCA Corporation, New York, N.Y. Filed May 6, 1970.

SELECTAVISION

For Television Sets (Int. Cl. 9).
First use Apr. 29, 1970.

SN 360,600. United Filtration Corporation, Chicago, Ill. Filed May 22, 1970.

DELTA-LARM

Owner of Reg. Nos. 325,200, 765,010, and 796,675.
For Electric Alarms and Electric Alarm Systems for Protection Against Burglary, Fire, Smoke, Equipment Malfunction, and the Like (Int. Cl. 9).
First use Oct. 1, 1966.

SN 361,296. Electro Swivel Co., Jupiter, Fla. Filed June 1, 1970.

WHIRLY-PLUG

For Electric Swivel Connectors (Int. Cl. 9).
First use June 1, 1970.

SN 365,012. Porta Systems Corp., Roslyn, N.Y. Filed July 13, 1970.



The mark comprises the stylized letters "P" and "S" and design.
For Electrical Switching Systems and Apparatus, Power Distribution Modules and Electrical Switches (Int. Cl. 9).
First use Mar. 2, 1970.

SN 365,204. Timex Corporation, Waterbury, Conn. Filed July 14, 1970.

TIMEX

For Batteries for Horological Goods Including Electric Watches (Int. Cl. 9).
First use Nov. 6, 1960.

SN 370,509. Interdynamics, Inc., Brooklyn, N.Y. Filed Sept. 14, 1970.

HIDE-A-TENNA

For Automobile Antennas (Int. Cl. 9).
First use July 14, 1970.

Class 22—Games, Toys, and Sporting Goods

SN 316,762. Mr. Bem, Inc., New York, N.Y. Filed Jan. 16, 1969.



The drawing is lined for red, yellow, blue and green, but color is not claimed as a feature of the mark.
For Educational Toys and Games (Int. Cl. 28).
First use Feb. 15, 1967.

SN 330,113. Dart Industries Inc., d.b.a. Seamless Rubber Company, Los Angeles, Calif. Filed June 13, 1969.



For Athletic Balls—Namely, Basketballs (Int. Cl. 28).
First use May 27, 1969.

SN 331,350. Creme Lure Company, Tyler, Tex. Filed June 30, 1969.



For Artificial Fishing Lures, Plastic Worms, Slip Sinkers, Hooks, Jig Head Skirts, Spinners, Artificial Salmon Eggs and Artificial Herring Cuts and Strips (Int. Cl. 28).
First use on or about June 18, 1969.

SN 334,928. Jantzen Inc., Portland, Oreg. Filed Aug. 11, 1969.





Owner of Reg. Nos. 418,710, 851,501, and others.
For Sporting Goods—Namely, Swim Fins, Face Masks, Snorkels, and Goggles (Int. Cl. 9).
First use May 21, 1969.

SN 337,113. Western Publishing Company, Inc., Racine, Wis. Filed Sept. 4, 1969.



Applicant disclaims its exclusive rights in the word "Simulations" apart from the mark as shown.
For Series of Boxed Simulation or Educational Games, and Equipment, and Apparatus Necessary to the Play Thereof, Sold as Units Primarily for Classroom Instruction (Int. Cl. 28).
First use July 1, 1969.

SN 339,860. Creative Merchandisers, Inc., Chicago, Ill. Filed Oct. 6, 1969.



For Kaleidoscopes (Int. Cl. 9).
First use Aug. 26, 1969.

SN 340,617. A. G. Spalding & Bros. Inc., Chicopee, Mass. Filed Oct. 13, 1969.

UNI-FORM

Owner of Reg. No. 516,726.
For Inflatable Game Balls (Int. Cl. 28).
First use Nov. 1, 1959.

SN 340,728. Jas. D. Easton, Inc., Van Nuys, Calif. Filed Oct. 21, 1969.

XX75

For Arrow Shafts (Int. Cl. 28).
First use August 1956.

SN 344,909. Topper Corporation, Elizabeth, N.J. Filed Nov. 28, 1969.

GLORI

Owner of Reg. No. 837,062.
For Doll (Int. Cl. 28).
First use Nov. 4, 1969.

SN 348,583. Rawlings Sporting Goods Company, St. Louis, Mo. Filed Jan. 14, 1970.



For Athletic Protective Equipment—Namely, Football Shoulder Pads, Hip Pads, Thigh Guards, Blocking Pads and Rib Cushions (Int. Cl. 28).
First use Nov. 5, 1969.

SN 348,768. Dynamic Enterprises, Inc., Great Falls, Mont. Filed Jan. 16, 1970.

GOTCHA

For Equipment Sold as a Unit for Playing a Parlor Game Comprising a Playing Board and Cards (Int. Cl. 28).
First use Dec. 12, 1969.

SN 349,353. Richard M. Hobson, d.b.a. Hobson & Co., Phoenix, Ariz. Filed Jan. 22, 1970.

DOMINION

For Gameboard and Pieces of Playing a Game (Int. Cl. 28).
First use July 15, 1969.

SN 350,403. Pressman Toy Corporation, New York, N.Y. Filed Feb. 3, 1970.

HI SPOT

For Equipment Sold as a Unit for Use in Playing a Parlor-Type Board Game (Int. Cl. 28).
First use Feb. 15, 1969.

SN 350,424. Monogram Models, Inc., Morton Grove, Ill. Filed Feb. 4, 1970.



For Toy Automobile and Model Kit for Making the Same (Int. Cl. 28).
First use Jan. 10, 1967.

SN 352,315. Aurora Plastics Corporation, West Hempstead, N.Y. Filed Feb. 25, 1970.



Owner of Reg. No. 676,921.
For Automobiles, Trucks, Buses and Airplanes, Kits for Assembly of Toy Models of Ships, Vehicles, Dolls, Games, Made of Plastic, Wood, Metal, or Similar Materials (Int. Cl. 28).
First use Jan. 15, 1970.

SN 353,706. Polaroid Corporation, Cambridge, Mass. Filed Mar. 11, 1970.

POLAROID

Owner of Reg. Nos. 540,179, 730,072, and others.
For Accessories Sold as a Unit for Playing Party Games and Picture-Taking Games (Int. Cl. 28).
First use Oct. 29, 1968.

SN 359,674. Eldon Industries, Inc., Hawthorne, Calif. Filed May 14, 1970.

CAP'N PADDLES

For Toy Duck (Int. Cl. 28).
First use Mar. 12, 1970.

SN 360,518. Mattel, Inc., Hawthorne, Calif. Filed May 22, 1970.

LADY CRIMSON

For Toy Set Comprising a Cup and Saucer and a Doll (Int. Cl. 28).
First use Feb. 17, 1970.

SN 360,519. Mattel, Inc., Hawthorne, Calif. Filed May 22, 1970.

LADY LACE

For Toy Set Comprising a Cup and Saucer and a Doll (Int. Cl. 28).
First use Feb. 17, 1970.

SN 360,520. Mattel, Inc., Hawthorne, Calif. Filed May 22, 1970.

LADY LAVENDER

For Toy Set Comprising a Cup and Saucer and a Doll (Int. Cl. 28).
First use Feb. 17, 1970.

SN 360,521. Mattel, Inc., Hawthorne, Calif. Filed May 22, 1970.

LADY SILVER

For Toy Set Comprising a Cup and Saucer and a Doll (Int. Cl. 28).
First use Feb. 17, 1970.

SN 365,017. The United States Playing Card Company, Cincinnati, Ohio. Filed July 13, 1970.

SPORTSMAN

For Playing Cards (Int. Cl. 16).
First use June 17, 1970; 1881 as to "Sportsman's."

SN 365,372. Air Inflated Products, Inc., New Orleans, La. Filed July 15, 1970.

SPACE WALK

For Large Air Inflated Bouncing and Jumping Amusement Devices (Int. Cl. 28).
First use at least as early as October 1966.

SN 365,497. Mattel, Inc., Hawthorne, Calif. Filed July 13, 1970.

BIRTHDAY GIRLS

No claim of exclusive right is made to the word "Girls" apart from the mark.
For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use June 9, 1970.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

SN 302,428. Lionello Rossi, Rome, Italy. Filed July 10, 1968.

RIGEL

Priority claimed under Sec. 44(d) on Italian application filed Jan. 30, 1968; Reg. No. 230,271, dated Aug. 26, 1968.
For Truck Mounted Cement Conveyor Mixer (Int. Cl. 7).

SN 336,276. Bliss & Laughlin Industries Incorporated, Oak Brook, Ill. Filed Aug. 12, 1969.

DYNA-LIFT

For Cranes (Int. Cl. 7).
First use Apr. 25, 1969.

SN 340,298. Robert D. Williams, La Canada, Calif. Filed Oct. 9, 1969.

HULA-WASH

"Wash" is disclaimed apart from its use in the mark.
For Vehicle Washing Apparatus (Int. Cl. 7).
First use July 10, 1968.

SN 344,747. Tourpac AG, Zug, Switzerland. Filed Nov. 26, 1969.

TOURVAC

Priority claimed under Sec. 44(d) on Swiss Reg. No. 241,243, dated Sept. 10, 1969.
For Vacuum Packaging Machines and Parts Thereof (Int. Cl. 7).

SN 348,211. Foley Manufacturing Company, Minneapolis, Minn. Filed Jan. 12, 1970.



Owner of Reg. No. 527,046.
For Masher-Ricer-Strainer-Colanders, Forks, Flour Sifters, Hand Operated Food Choppers, Can Openers, Saw Retoothers, Saw Filers for Hand, Band and Circular Saws, and Lawn Mower Sharpeners (Int. Cls. 8 and 21).
First use April 1947.

SN 348,556. MSL Industries, Inc., Chicago, Ill. Filed Jan. 14, 1970.

VARI-TOOL

For Portable Electric Drill With Adaptable Chuck and Attachments Therefor (Int. Cl. 7).
First use March 1969.

SN 348,641. Baker Perkins Limited, Peterborough, England. Filed Jan. 15, 1970.

RIBBON-FLO

For Continuous Foundry Sand Mixers and Parts Therefor (Int. Cl. 7).
First use Dec. 27, 1962.

SN 349,497. Nease Chemical Company, Inc., State College, Pa. Filed Jan. 23, 1970.

ORBITAL

For Food Processing Mixer (Int. Cl. 7).
First use Dec. 5, 1969.

SN 349,808. Air Rake Manufacturing Corporation, Chicopee, Mass. Filed Jan. 28, 1970.

SUPER RAKE

Owner of Reg. Nos. 785,167 and 875,837.
For Yard Cleaning Equipment—Namely, Power Blowers and Vacuums for Collecting Leaves, Grass Clippings, Blossoms, Seeds, Sand, and Other Debris (Int. Cl. 7).
First use Nov. 25, 1969.

SN 349,810. Air Rake Manufacturing Corporation, Chicopee, Mass. Filed Jan. 28, 1970.

PERSONAL HANDYMAN

For Yard Cleaning Equipment—Namely, Power Blowers and Vacuums for Collecting Leaves, Grass Clippings, Blossoms, Seeds, Sand and Other Debris (Int. Cl. 7).
First use Jan. 9, 1970.

SN 353,045. Dresser Industries, Inc., Dallas, Tex. Filed Mar. 4, 1970.

LIQUI-PASS

For Impellers for Blowers, Compressors and Vacuum Pumps and Parts for the Foregoing (Int. Cl. 7).
First use Feb. 25, 1969.

SN 353,314. The Merrow Machine Company, Hartford, Conn. Filed Mar. 6, 1970.



For Sewing Machines and Attachments Therefor (Int. Cl. 7).
First use Apr. 25, 1969.

SN 353,796. Tapeler Corporation, Newton, Mass. Filed Mar. 11, 1970.



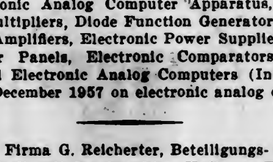
For Machine for Applying Pressure Sensitive Tape (Int. Cl. 7).
First use May 2, 1969.

SN 356,612. The Black Clawson Company, Hamilton, Ohio. Filed Apr. 13, 1970.

VERTI-FORMA

For Paper Making Machines and Components and Parts Thereof (Int. Cl. 7).
First use Sept. 3, 1969.

SN 357,264. Appliance Plating Co., Inc., d.b.a. Appliance Industries, Harbor City, Calif. Filed Apr. 20, 1970.



For Automobile and Boat Parts—Namely, Carburetor Components, Engine Manifolds, Motor Mounts and Engine Headers (Int. Cls. 7 and 12).
First use Feb. 27, 1970.

SN 369,647. Towle Manufacturing Company, d.b.a. Carvel Hall, Newburyport, Mass. Filed Sept. 2, 1970.

OAKDALE

For Cutlery—Namely, Steak Sets and Carving Sets (Int. Cl. 8).
First use Aug. 7, 1970, on steak sets.

Class 24 — Laundry Appliances and Machines

SN 331,050. Lovell Manufacturing Company, Erie, Pa. Filed June 26, 1969.

LOVELL

For Clothes Wringers and Parts Thereof (Int. Cl. 7).
First use 1929.

Class 26 — Measuring and Scientific Appliances

SN 268,567. Reliance Electric Company, Ann Arbor, Mich., by merger into Applied Dynamics, Inc., Ann Arbor, Mich. Filed Apr. 7, 1967.

APPLIED DYNAMICS

For Electronic Analog Computer Apparatus, Comprising Electronic Multipliers, Diode Function Generators, Electronic Operational Amplifiers, Electronic Power Supplies, Coefficient Potentiometer Panels, Electronic Comparators, Electronic Limiters, and Electronic Analog Computers (Int. Cl. 9).
First use December 1957 on electronic analog computers.

SN 313,409. Firma G. Reicherter, Beteiligungs- und Verwaltungsgesellschaft mit beschrankter Haftung, Esslingen am Neckar, Germany. Filed Dec. 2, 1968.

ELASTICOMETER

For Spring Testing Machines (Int. Cl. 9).
First use in 1938; in commerce in 1938.

SN 325,055. M. & J. Valve Company, Houston, Tex. Filed Apr. 21, 1969.



For Fluid Turbine Meters and Electronic Flow Registering Meters and Component Parts Thereof (Int. Cl. 9).
First use Mar. 6, 1968.

SN 326,172. International Telephone and Telegraph Corporation, New York, N.Y. Filed May 2, 1969.

ALFASKOP

For Data Display Terminal (Int. Cl. 9).
First use Jan. 31, 1969.

SN 326,549. Research Equipment Company, Inc., Bryan, Tex. Filed May 6, 1969.



For Laboratory Caging Equipment —Namely, Animal Cages (Int. Cl. 9).
First use Sept. 1, 1963.

SN 333,613. Stromberg Datagraphix, Inc., San Diego, Calif. Filed July 25, 1969.

Datagraphix

For Information Storage and Retrieval Equipment—Namely, Computer-Output-Microfilm Recorders, Microfilm and Microfiche Viewers, Microfilm-to-Hardcopy Printers, Microfilm Duplicators, Silver Film Processors, Computer Display Terminals, and Parts and Associated Equipment Therefor (Int. Cl. 9).
First use June 30, 1969.

SN 333,767. Stromberg Datagraphix, Inc., San Diego, Calif. Filed July 28, 1969.

DATAGRAPHIX

For Information Storage and Retrieval Equipment—Namely, Computer-Output-Microfilm Recorders, Microfilm and Microfiche Viewers, Microfilm-to-Hardcopy Printers, Microfilm Duplicators, Silver Film Processors, Computer Display Terminals, and Parts and Associated Equipment Therefor (Int. Cl. 9).
First use June 30, 1969.

SN 335,980. Sharp Kabushiki Kaisha, Abeno-ku, Osaka, Japan, by change of name from Hayakawa Denki Kogyo Kabushiki Kaisha, d.b.a. Hayakawa Electric Co., Ltd., Osaka, Japan. Filed Aug. 22, 1969.

MICRO COMPET

Applicant disclaims the term "Micro" apart from the mark as shown. Owner of U.S. Reg. No. 861,352.
For Electronic Desk Calculators (Int. Cl. 9).
First use on Mar. 19, 1969; in commerce on Mar. 19, 1969.

SN 336,759. Beckman Instruments, Inc., Fullerton, Calif. Filed Sept. 2, 1969.

AUTOLAM

For Flame Absorption and Emission Burners for Spectroscopic Analysis (Int. Cl. 9).
First use Mar. 28, 1969.

SN 338,535. Carl-Zeiss-Stiftung, d.b.a. Carl Zeiss, Heidenheim (Brenz), Wurttemberg, Germany. Filed Sept. 22, 1969.

TESSOVAR

Owner of German Reg. No. 773,934, dated Jan. 24, 1962.
For Photomacrographic Equipment and Component Parts Thereof—Namely, Photographic Cameras, Projectors, Enlargers, as Well as Their Objectives and Lenses, Lens Carriers, Lens Shutters and Attachment Lenses (Int. Cl. 9).
First use May 14, 1969; in commerce May 14, 1969.

SN 345,826. I/O Systems, Inc., Natick, Mass. Filed Dec. 10, 1969.

TRANSPLOT

For Controllers Having Electronic Circuitry Which Receives Input Signals From Computers or Other Source of Digital Information and Convert the Signals to an Analog Form Suitable To Serve as Input Drive Signals for Two-Axes Plotters, and Plotter Subsystems Composed of Such Controllers and Two-Axes Plotters (Int. Cl. 9).
First use on or before Oct. 8, 1969.

SN 347,636. Photophysics, Inc., Mountain View, Calif., assignee of Photophysics Data Systems, Inc., Mountain View, Calif. Filed Jan. 2, 1970.

PHOTOPHYSICS

For Cathode Ray Tube Data Terminal and Hard Copy Printer (Int. Cl. 9).
First use Nov. 19, 1969.

SN 347,850. Dicomed Corporation, Minneapolis, Minn. Filed Jan. 7, 1970.

DICOMED

For Cathode Ray Storage Tube Direct View Display Utilizing a Computer and Digital Storage or a Digitizer To Convert the Picture Into Numbers for Binary Transmission Either Directly or Over Telephone Lines for Image Display (Int. Cl. 9).
First use Nov. 29, 1969.

SN 349,645. Isco Optische Werke GmbH, Gottingen, Germany. Filed Jan. 26, 1970.

NOVOKIPTAR

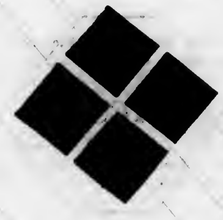
Owner of German Reg. No. 696,563, dated Feb. 21, 1956; and U.S. Reg. Nos. 624,960, 653,409, and 653,410.
For Optical and Photographic Apparatus and Devices and Parts Thereof—Namely, Photographic and Cinematographic Objectives, Projector and Enlarger Objectives (Int. Cl. 9).

SN 349,895. Sharp Electronics Corporation, Carlstadt, N.J. Filed Jan. 28, 1970.



The mark consists of a world globe design comprised of mathematical symbols and numerals.
For Electronic Calculators (Int. Cl. 9).
First use July 1968.

SN 350,308. Sibata Chemical App. Mfg. Co., Ltd., Taito-ku, Tokyo, Japan. Filed Feb. 2, 1970.



SIBATA

For Digital Dust Indicators for Environmental Testing (Int. Cl. 9).
First use May 5, 1962; in commerce June 10, 1969.

SN 350,928. Ernst Leitz, G.m.b.H., Wetzlar/Lahn, Germany. Filed Feb. 9, 1970.

METALLUX

For Microscopes (Int. Cl. 9).
First use September 1966; in commerce November 1966.

SN 352,810. Glenco Scientific, Inc., Houston, Tex. Filed Mar. 2, 1970.



For Scientific Glassware, Syringes, and Chromatography Columns Used in a Laboratory (Int. Cl. 9).
First use Feb. 15, 1960.

SN 353,281. Carl-Zeiss-Stiftung, d.b.a. Carl Zeiss, Heidenheim (Brenz), Wurttemberg, Germany. Filed Mar. 6, 1970.

UMBRAMATIC

Owner of German Reg. No. 864,790, dated Oct. 4, 1969; and U.S. Reg. No. 615,724.
For Spectacles, Spectacle Lenses Including Tinted Lenses (Int. Cl. 9).
First use Feb. 18, 1970; in commerce Feb. 18, 1970.

SN 353,582. Sona Labs, Inc., Brooklyn, N.Y. Filed Mar. 9, 1970.

SONA LABS, Inc.

Applicant disclaims the words "Labs Inc." apart from the mark as a whole.
For Marine Depth Finders (Int. Cl. 9).
First use July 1, 1969.

SN 355,808. United Telecontrol Electronics, Inc., Asbury Park, N.J. Filed Apr. 2, 1970.

MESA

For Core Memories for Computers (Int. Cl. 9).
First use Aug. 22, 1969.

SN 359,904. Rutherford Research, Inc., Roscoe, Ill. Filed May 15, 1970.

AKRA-PAK

For Filling Machines for Dispensing Predetermined Measured Amounts of Slurry, Liquid, and Dry Materials in Every Operation (Int. Cl. 9).
First use Oct. 27, 1969.

SN 361,817. Birdsboro Corporation, Birdsboro, Pa. Filed June 5, 1970.

B

For Ingot Weighing Machinery (Int. Cl. 9).
First use July 1, 1969.

Class 27 — Horological Instruments

SN 352,528. Societe des Fabriques de Spiraux Reunies, La Chaux-de-Fonds, Switzerland. Filed Feb. 26, 1970.

SR SPIRAUX REUNIS ISOVAL

For Watches, Clocks, Watch and Clock Springs, Watch and Clock Movements.
First use 1939; in commerce 1959.

Class 29 — Brooms, Brushes, and Dusters

SN 361,157. Pfizer Inc., New York, N.Y. Filed May 28, 1970.

THE BRUSH-ERY

For Brushes Used in Applying Make-Up (Int. Cl. 21).
First use May 11, 1970.

Class 31 — Filters and Refrigerators

SN 338,071. Wilevco, Inc., Newton, Mass. Filed Sept. 16, 1969.

CRYOLATOR

For Refrigerating Heat Exchangers for Cooling Batter Used in the Breaded Foods Industry (Int. Cl. 11).
First use Aug. 2, 1968.

SN 343,320. Mini-Kool Incorporated, Ann Arbor, Mich. Filed Nov. 12, 1969.

mini kool

For Refrigerators (Int. Cl. 11).
First use Jan. 6, 1969.

SN 357,630. Parker-Hannifin Corporation, Cleveland, Ohio. Filed Apr. 22, 1970.

ROSAEN

For Oil Strainers (Int. Cl. 7).
First use 1957.

Class 34 — Heating, Lighting, and Ventilating Apparatus

SN 263,565. Messer Griesheim G.m.b.H., Frankfurt am Main, Germany. Filed Jan. 30, 1967.

Owner of German Reg. No. 800,918, dated Feb. 24, 1965.
For Welding Equipment—Namely, Gas, Laser and Electric Welding Machines and Parts Thereof and Controls Therefor, and Gas and Laser Cutting Machines and Parts Thereof and Controls Therefor; Welding and Cutting Materials and Supplies, Namely Solders, Metallic Powders, Fluxes, Welding Wires, Welding Rods, Welding Electrodes, Spot Welding Tongs and Resistance Welding Transformer; Power Sources for Welding and Cutting Equipment (Int. Cls. 1, 6, 7, and 9).

SN 325,476. Eutectic Corporation, Flushing, N.Y. Filed Apr. 24, 1969.

LEADER IN RESEARCH
LEADER IN SERVICE
EUTECTIC
WORLD LEADER
IN MAINTENANCE WELDING

The words "Leader in Research," "Leader in Service," "World Leader" and "In Maintenance Welding" are each disclaimed apart from the mark as shown.
For Alloys in Various Forms Suitable for Welding, Brazing, Soldering and Hard Surface Operations (Int. Cl. 6).
First use February 1968.

SN 328,730. Robertshaw Controls Company, Richmond, Va. Filed May 29, 1969.

INSTANTROL

For Temperature Regulator of the Mechanical or Hydraulic Type for Instantaneous Fluid Heaters (Int. Cl. 9).
First use June 1959.

SN 355,122. Energy Conversion Systems, Inc., Albuquerque, N. Mex. Filed Mar. 26, 1970.

THERMAL magic

Applicant disclaims the term "Thermal" appearing as part of the mark apart from the mark as a whole.
For Cooking Device Utilizing the Heat-Pipe Principle Which Device Is Inserted Into the Interior of the Food Being Cooked (Int. Cl. 11).
First use Dec. 15, 1969.

SN 355,292. Foster Wheeler Corporation, Livingston, N.J. Filed Mar. 24, 1970.

FOSTER WHEELER

Owner of Reg. No. 875,638.
For Steam Generators and Parts Thereof (Int. Cl. 11).
First use as early as 1927.

SN 357,065. Fireplace Distributors, Inc., d.b.a. National Fireplace Fabricators, Inc., Seattle, Wash. Filed Apr. 16, 1970.

ATHENA

For Wood-Burning Fireplaces (Int. Cl. 11).
First use August 1968.

SN 357,066. Fireplace Distributors, Inc., d.b.a. National Fireplace Fabricators, Inc., Seattle, Wash. Filed Apr. 16, 1970.

VENUS

For Wood-Burning Fireplaces (Int. Cl. 11).
First use August 1968.

SN 358,272. The G. S. Blodgett Company, Inc., Burlington, Vt. Filed Apr. 29, 1970.

Zephaire

For Ovens Designed Particularly for Use in Commercial Cooking (Int. Cl. 11).
First use Oct. 1, 1963.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 339,879. The General Tire & Rubber Company, Akron, Ohio. Filed Oct. 6, 1969.

WT-70

For Pneumatic Tires (Int. Cl. 12).
First use September 1969.

SN 342,462. International Buyers Corporation, Pineville, N.C. Filed Nov. 3, 1969.

LANCER DYNA-KNIGHT

For Pneumatic Tires for Automobiles (Int. Cl. 12).
First use Sept. 23, 1969.

SN 342,463. International Buyers Corporation, Pineville, N.C. Filed Nov. 3, 1969.

LANCER ESQUIRE

For Pneumatic Tires for Automobiles (Int. Cl. 12).
First use Sept. 23, 1969.

SN 342,464. International Buyers Corporation, Pineville, N.C. Filed Nov. 3, 1969.

LANCER KNIGHT

For Pneumatic Tires for Automobiles (Int. Cl. 12).
First use Sept. 23, 1969.

SN 342,465. International Buyers Corporation, Pineville, N.C. Filed Nov. 3, 1969.

LANCER SUPER DEEP LUG

The words "Deep Lug" are disclaimed apart from the mark as shown, without relinquishing any rights therein under the common law.
For Pneumatic Tires Used on Trucks (Int. Cl. 12).
First use Sept. 23, 1969.

SN 342,466. International Buyers Corporation, Pineville, N.C. Filed Nov. 3, 1969.

LANCER SUPER CROSS BAR

The words "Cross Bar" are disclaimed apart from the mark as shown, without relinquishing any rights therein under the common law.
For Pneumatic Tires Used on Trucks (Int. Cl. 12).
First use Sept. 23, 1969.

SN 342,468. International Buyers Corporation, Pineville, N.C. Filed Nov. 3, 1969.

LANCER TALLADEGA 170

For Pneumatic Tires Used on Automobiles (Int. Cl. 12).
First use Sept. 23, 1969.

SN 348,528. The General Tire & Rubber Company, Akron, Ohio. Filed Jan. 14, 1970.

RADIAL WT-70 GRIPPER

The terms "Radial" and "Gripper" are disclaimed apart from the mark as shown.
For Pneumatic Tires (Int. Cl. 12).
First use Dec. 5, 1969.

SN 360,552. The Firestone Tire & Rubber Company, Akron, Ohio. Filed May 22, 1970.

STELCOR

Owner of Reg. No. 746,931.
For Resilient Vehicle Tires (Int. Cl. 12).
First use May 5, 1970.

SN 360,553. The Firestone Tire & Rubber Company, Akron, Ohio. Filed May 22, 1970.

TWIN-TRAC

Owner of Reg. No. 807,817.
For Resilient Vehicle Tires (Int. Cl .12).
First use May 11, 1970.

SN 360,729. Delta Tire Corporation, Houston, Tex. Filed May 25, 1970.

DURASTEEL

For Non-Metallic Tires (Int. Cl. 12).
First use Apr. 9, 1970.

SN 360,977. The Kelly-Springfield Tire Company, Cumberland Md. Filed May 27, 1970.

MILEMARK

For Tires (Int. Cl. 12).
First use Apr. 28, 1970.

SN 361,321. Hewitt-Robins Incorporated, Stamford, Conn. Filed June 1, 1970.

INTRA-FLOAT

For Single Point Mooring Hoses (Int. Cl. 17).
First use Apr. 9, 1970.

SN 362,422. H. H. Shingle Company, Camden, N.J. Filed June 11, 1970.

VEETHANE

For Power Transmission Belts and Conveyor Belts (Int. Cl. 7).
First use Mar. 17, 1969.

SN 362,907. Huhn Seal Company Limited, Montreal, Quebec, Canada. Filed June 17, 1970.

CARBOSEAL

For Mechanical Seals and Packings for Use in Moving Machine Elements (Int. Cl. 17).
First use July 20, 1966; in commerce Oct. 21, 1969.

Class 36 — Musical Instruments and Supplies

SN 356,310. Dictaphone Corporation, Rye, N.Y. Filed Apr. 6, 1970.

DICTABELT

Owner of Reg. Nos. 66,997, 534,650, and others.
For Sound Recording Media—Namely, Continuous Loop Blank Records for Recording Dictation, and Continuous Loop Pre-Recorded Records (Int. Cl. 9).
First use Apr. 10, 1951.

SN 371,030. Ru Delle Associates, Inc., Winchester, Mass. Filed Sept. 18, 1970.



For Guitars, Banjos, and Electric Organs (Int. Cl. 15).
First use at least as early as June 26, 1970.

Class 38 — Prints and Publications

SN 298,911. American Animal Hospital Association, Elkhart, Ind. Filed May 23, 1968.

OMNIBOOK

For Reference Book Containing Information on Animal Hospital Management and Operation, Including Surgical and Medical Techniques (Int. Cl. 16).
First use Apr. 20, 1968.

SN 338,642. Topco Associates, Inc., Skokie, Ill. Filed Sept. 19, 1969.

ALICE ADAMS

For Services in Connection With Promoting the Sale of Food Products, Counseling With Regard to Preparation of Food, Etc. (Int. Cl. 16).
First use Apr. 12, 1968.

SN 345,690. Tee & See Golf Sequence Photos, Inc., New York, N.Y. Filed Dec. 8, 1969.



For Printed Brochures and Leaflets Having Sequence Photographs of Golf Swing Analyses (Int. Cl. 16).
First use Nov. 17, 1969.

Class 44 — Dental, Medical, and Surgical Appliances

SN 300,084. Walter E. Jordan, d.b.a. Delta Laboratories, Des Plaines, Ill. Filed June 10, 1968.

UROSET

For Disposable Kit for Collection of Clean Mid-Stream Urinary Specimens Which Includes Plastic Tray, Underpad, Cleaning Solution, Plastic Gloves, Rayon Balls and Specimen Container (Int. Cl. 10).
First use on or before Apr. 3, 1968.

SN 347,066. Johnson & Johnson, New Brunswick, N.J. Filed Dec. 24, 1969.

CIDEMATIC

Owner of Reg. No. 733,222.
For Cleansing, Disinfecting, and Sterilizing Appliance (Int. Cl. 11).
First use Aug. 8, 1969.

SN 347,613. Biomedical Development Corporation, Perth Amboy, N.J., by change of name from Medical Development Corporation, Perth Amboy, N.J. Filed Jan. 2, 1970.

AUTO-PAP

For Device for Collecting Vaginal Specimens (Int. Cl. 9).
First use Aug. 15, 1969.

SN 348,838. Horizon Industries Limited, Bronx, N.Y. Filed Jan. 19, 1970.

THOROSET

For Apparatus and Accessories for Pumping Fluids From the Body, Including a Pump for Fluid in the Chest Cavity (Int. Cl. 10).
First use Feb. 23, 1969.

SN 353,040. Dentsply International Inc., York, Pa. Filed Mar. 4, 1970.

BIOWAX

Owner of Reg. Nos. 42,060, 565,182, and 745,903.
For Dental Waxes and Wax Compositions for Use in Making Wax Patterns of Intra-Oral Prosthetic Devices (Int. Cl. 5).
First use Jan. 16, 1970.

SN 358,189. Etablissements Georges Beaumont, Migennes, France. Filed Apr. 28, 1970.

AIROX

For Medical Oxygen-Therapy and Reanimation Apparatus; Respirators, Pulmonary Ventilators and Mucosity Suction Exhausters; Medical Incubators (Int. Cl. 10).
First use January 1960; in commerce on or about Dec. 1, 1969.

Class 45 — Soft Drinks and Carbonated Waters

SN 344,095. Cott Corporation, New Haven, Conn. Filed Nov. 20, 1969.

ENERGADE

For Soft Drinks and Syrups and Concentrates for Making the Same (Int. Cl. 32).
First use Oct. 31, 1969.

Class 46 — Foods and Ingredients of Foods

SN 297,036. Charles J. Commander II, New Orleans, La. Filed May 1, 1968.

BAYOU BURGERS

Applicant disclaims "Burgers" apart from the mark as shown.
For Take-Out Foods—Namely, Burger Sandwiches (Int. Cl. 29).
First use May 1, 1966.

SN 297,037. Charles J. Commander II, New Orleans, La. Filed May 1, 1968.

HULA BURGERS

Applicant disclaims "Burgers" apart from the mark as shown.
For Take-Out Foods—Namely, Burger Sandwiches (Int. Cl. 29).
First use May 1, 1966.

SN 333,755. L. D. Schreiber Cheese Co., Inc., Green Bay, Wis. Filed July 28, 1969.



For Cheese (Int. Cl. 29).
First use June 14, 1965.

SN 342,308. Pedro Hnos. Sociedad Anonima, Industrial, Comercial, Inmobiliaria, Financiera y Agropecuaria, Buenos Aires, Argentina. Filed Oct. 31, 1969.



Owner of Argentine Reg. No. 540,034, dated Oct. 14, 1964.
For Fresh, Canned, Frozen and Prepared Cooked Meat Products—Namely, Frankfurters, Sausages, Corned Beef, Corned Mutton and Fancy Meats, Fresh and Canned Fruits, Canned Vegetables and Cooked and Canned Fish (Int. Cl. 29).

SN 345,026. Robt. R. & R. W. Smith Limited, London, England. Filed Dec. 1, 1969.



Owner of British Reg. Nos. 542,086, dated June 7, 1933; 566,092, dated Jan. 30, 1936; 701,311, dated Sept. 18, 1951; 746,975, dated Oct. 14, 1955; 792,249, dated June 17, 1959; and 811,085, dated Sept. 22, 1960.
For Canned Meats, Lard, Canned Fish, Tea, Coffee, Cocoa, and Chocolate for Making Beverages (Int. Cls. 29 and 30).
First use at least as early as June 1933, on canned meats; in commerce November 1952.

SN 346,828. Alfie's Fish & Chips, Inc., Houston, Tex. Filed Dec. 22, 1969.



Without relinquishing any of its common law rights, applicant disclaims the words "Old Time Pies" apart from the mark as shown. Owner of Reg. No. 889,184.
For Pies (Int. Cl. 30).
First use at least as early as Mar. 21, 1969.

SN 351,866. Cerola Fare Limited, London, England. Filed Feb. 20, 1970.

CEROLA MAJIPAK

Owner of British Reg. Nos. 918,253 and 918,254, dated Dec. 6, 1967.
For Beef Curry With Rice, Lamb Curry With Rice, Paella With Prawns and Rice, Jambalaya, and Spaghetti Bolognese (Int. Cl. 30).

SN 352,547. J. Weingarten, Inc., Houston, Tex. Filed Feb. 26, 1970.

JANET WENTWORTH

The mark is fictitious and is not the name of a particular living individual.
For Foods, viz., Ice Milk of Various Flavors and Cookies (Int. Cl. 30).
First use at least as early as May 27, 1966.

SN 358,509. National Biscuit Company, New York, N.Y. Filed May 1, 1970.

JONNIE

For Biscuits (Int. Cl. 30).
First use Mar. 30, 1901.

SN 359,885. Mille Lacs M P Company, Onamia, Minn. Filed May 15, 1970.

BAVARIAN RICE

Applicant disclaims the word "Rice."
For Seasoned Rice (Int. Cl. 30).
First use Jan. 15, 1968.

SN 366,542. The Merchants Company, Hattiesburg, Miss. Filed July 29, 1970.



For Wisconsin Cheese (Int. Cl. 29).
First use September 1949.

Class 51—Cosmetics and Toilet Preparations

SN 289,225. White Cross Stores, Inc., d.b.a. Health Cross, Monroeville, Pa. Filed Jan. 19, 1968.

'OPIUM DEN'

For Toilet Preparations—Namely, After Shave Lotions (Int. Cl. 3).
First use Mar. 20, 1967.

SN 311,427. Yardley of London, Inc., New York, N.Y. Filed Nov. 5, 1968.

ENGLISH EYELINER

Applicant disclaims the word "Eyeliner" apart from the mark as shown.
For Eye Make-Up (Int. Cl. 3).
First use Feb. 11, 1965.

SN 342,163. Helgren Laboratories, Ltd., Wilmington, Del. Filed Oct. 30, 1969.

RAQUEL

For Women's Cosmetics, More Particularly Perfumes, Night Creams, Colognes, Facial Masks, Foundation Makeup, Bath Oils, Throat and Eye Oils, and Hormone Skin Creams (Int. Cl. 3).
First use on or about Aug. 27, 1969.

SN 342,419. Helene Curtis Industries, Inc., Chicago, Ill. Filed Nov. 3, 1969.

HEAVENLY

Owner of Reg. No. 614,076.
For Hair Spray (Int. Cl. 3).
First use on or about Oct. 7, 1969.

SN 343,651. Berman & Pokrass Co., Washington, D.C. Filed Nov. 17, 1969.



For Dentifrices (Int. Cl. 3).
First use at least as early as Sept. 19, 1969.

SN 349,323. John H. Breck, Inc., Wayne, N.J. Filed Jan. 22, 1970.

SILK 'N HOLD

Owner of Reg. Nos. 890,224 and 890,225.
For Hair Conditioner and Hair Spray (Int. Cl. 3).
First use Dec. 23, 1969.

SN 353,249. Carter-Wallace, Inc., New York, N.Y. Filed Mar. 6, 1970.

GUARDIAN ANGEL

For Personal Deodorants (Int. Cl. 5).
First use Nov. 12, 1969.

SN 353,518. Lander Co., Inc., New York, N.Y. Filed Mar. 9, 1970.

DIXIE PEACH

For Hair Pomade, Brilliantine, Face Powder, Mascara, Eye Liner, Lip Rouge, Make-Up Base, Lipstick, Personal Deodorant, Pressing Oil, and Hair Conditioner (Int. Cls. 3 and 5).
First use 1927, on hair pomade, brilliantine and face powder.

SN 353,769. Lander Co., Inc., New York, N.Y. Filed Mar. 11, 1970.



For Hair Pomade, Brilliantine, Face Powder, Mascara, Eye Liner, Lip Rouge, Make-Up Base, Lipstick, Personal Deodorant, Pressing Oil, and Hair Conditioner (Int. Cls. 3 and 5).
First use Nov. 18, 1969; 1927, on hair pomade, brilliantine, and face powder.

SN 354,291. Cenco Medical/Health Supply Corporation, Chicago, Ill. Filed Mar. 17, 1970.

SANI-WASH

For Towelettes Impregnated With Skin Refresher Preparation (Int. Cl. 3).
First use at least as early as June 30, 1964.

SN 358,138. Carter-Wallace, Inc., New York, N.Y. Filed Apr. 28, 1970.

DRY RUN

Applicant disclaims any exclusive rights to the word "Dry" apart from the mark as shown.
For Anti-Perspirant Foot Spray (Int. Cl. 5).
First use Mar. 31, 1970.

SN 358,141. Carter-Wallace, Inc., New York, N.Y. Filed Apr. 28, 1970.

KISSERS

For Mouthwash and Breath Freshener (Int. Cl. 3).
First use Mar. 31, 1970.

SN 358,142. Carter-Wallace, Inc., New York, N.Y. Filed Apr. 28, 1970.

NO MEAN FEET

Applicant disclaims rights to the word "Feet" apart from the mark as shown.
For Anti-Perspirant Foot Spray (Int. Cl. 5).
First use Mar. 31, 1970.

SN 358,143. Carter-Wallace, Inc., New York, N.Y. Filed Apr. 28, 1970.

SATURDAY SHINE

For Denture Cleanser and a Denture Adhesive (Int. Cl. 3).
First use Mar. 31, 1970.

SN 362,601. Instantizers, Inc., d.b.a. Prestige Products, Pasadena, Calif. Filed June 15, 1970.



The mark is shaded to show black and silver coloring.
For Hair Dressing and Hair Conditioner (Int. Cl. 3).
First use Oct. 31, 1967.

SN 363,608. British-American Tobacco Company Limited, London, England. Filed June 25, 1970.

STIMULUS

For Night Cream and Foundation Make-Up Base (Int. Cl. 3).
First use on or prior to Sept. 30, 1967; in commerce on or prior to Sept. 30, 1967.

SN 370,668. Carter-Wallace, Inc., New York, N.Y. Filed Sept. 15, 1970.

DEHYDROCLENE

For Dehydroacetic Acid Incorporated as an Ingredient in a Personal Deodorant (Int. Cl. 5).
First use Aug. 3, 1970.

Class 52 — Detergents and Soaps

SN 349,299. Armour-Dial, Inc., Chicago, Ill. Filed Jan. 22, 1970.

TUBBLES

For Toilet Soap (Int. Cl. 3).
First use on or prior to Dec. 30, 1969.

SN 362,310. Columbian Rope Company, Auburn, N.Y. Filed June 11, 1970.

ENVIROCLEAN

For Detergents for General Household, Automotive, Industrial, and Marine Cleaning and Washing (Int. Cl. 3).
First use at least as early as June 8, 1970.

SN 362,317. Columbian Rope Company, Auburn, N.Y. Filed June 11, 1970.

N-VIRO-GENT

For Detergents for General Household, Automotive, Industrial, and Marine Cleaning and Washing (Int. Cl. 3).
First use at least as early as June 8, 1970.

SERVICE MARKS

Class 100 — Miscellaneous

SN 253,200. Ponderosa, Inc., Washington, D.C., by change of name and mesne assignment from Ponderosa Franchise System, Inc., Kokomo, Ind. Filed Aug. 26, 1966.

PONDEROSA STEAK HOUSE

Applicant disclaims use of the words "Steak House" apart from the mark.
For Restaurant Services (Int. Cl. 42).
First use Oct. 14, 1965.

SN 315,360. George Washington Ate Here, Inc., Indianapolis, Ind. Filed Dec. 30, 1968.

GEORGE WASHINGTON ATE HERE

For Restaurant Services (Int. Cl. 42).
First use Dec. 13, 1968.

SN 315,906. The General Board of Evangelism of the United Methodist Church, Nashville, Tenn. Filed Jan. 6, 1969.



For Aiding in the Establishment of Telephone Counseling Centers the Purpose of Which Is To Provide a Listener to Human Beings With a Problem (Int. Cl. 42).
First use March 1967.

SN 318,015. Agatha Corporation, Cincinnati, Ohio. Filed Jan. 31, 1969.

AGATHA

For Environmental Services—Namely, Advice and Consultation in Preventing Pollution and Promoting Industrial and Commercial Hygiene (Int. Cl. 42).
First use Feb. 5, 1968.

SN 322,653. United States Leasing Corporation, San Francisco, Calif. Filed Mar. 24, 1969.

COST ANALYZER

For Leasing of Industrial Equipment, Machinery and Fixtures (Int. Cl. 42).
First use Jan. 14, 1969.

SN 323,959. John W. Magill, Pasadena, Calif. Filed Apr. 8, 1969.

Air Plex

The word "Air" is disclaimed apart from the mark as shown.
For Engineering Services—Namely, the Designing of Airports (Int. Cl. 37).
First use Mar. 21, 1969.

SN 329,272. Royal Coach Incorporated, Dallas, Tex. Filed June 5, 1969.

BY JOVE, WE'VE GOT IT

For Hotel, Motel, and Restaurant Services (Int. Cl. 42).
First use at least as early as October 1966.

SN 330,433. Business Personnel Consultants, Inc., Philadelphia, Pa. Filed June 18, 1969.



For Providing Technical, Professional and Scientific Personnel as Advisory Consultants (Int. Cl. 42).
First use Feb. 1, 1967.

SN 334,621. Sav-On Beauty Salons, Inc., Trenton, N.J. Filed Aug. 6, 1969.

SAV-ON BEAUTY

Applicant disclaims the word "Beauty" apart from the mark as shown.
For Beauty Salon Services (Int. Cl. 42).
First use Apr. 4, 1968.

SN 337,467. Service Corporation International, Houston, Tex. Filed Sept. 9, 1969.

SCI

For Providing Funeral Home, Cemetery and Crematorium Services (Int. Cl. 42).
First use Apr. 23, 1969.

SN 337,602. George Webb Corporation, Brookfield, Wis. Filed Sept. 10, 1969.



The name "George Webb" is of a deceased individual.
For Restaurant Services (Int. Cl. 42).
First use on or about June 1, 1965.

SN 337,861. William J. Mandelbau, Morton Colby and Daniel R. Herbst (partnership), Valley Stream, N.Y. Filed Sept. 15, 1969.

GROOMOBILE

For Animal Grooming Service (Int. Cl. 42).
First use Sept. 10, 1969.

SN 339,184. Holly Grills, Inc., Grand Rapids, Mich. Filed Sept. 29, 1969.



Applicant disclaims any rights to the word "Steak" apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use on or about Apr. 16, 1969.

SN 342,273. K Catering, Inc., Dallas, Tex. Filed Oct. 31, 1969.



For Nightclub Services (Int. Cl. 42).
First use on or about Apr. 5, 1968.

SN 342,274. K Catering, Inc., Dallas, Tex. Filed Oct. 31, 1969.

the LOSERS

For Nightclub Services (Int. Cl. 42).
First use on or about Apr. 5, 1968.

SN 343,224. Northern States Power Company, Minneapolis, Minn. Filed Nov. 12, 1969.



The design feature of the electric cord is disclaimed apart from the mark as shown.
For Consulting Services in the Field of Home and Industrial Electric Heating—Namely, Estimating Heating Needs and Cost of Installation and Operation (Int. Cl. 42).
First use January 1969.

SN 350,728. Envirofood, Inc., d.b.a. Blum's, Orange, Calif. Filed Feb. 6, 1970.

BLUM'S

Owner of Reg. Nos. 536,970 and 544,773.
For Restaurant Services (Int. Cl. 42).
First use about 1907.

SN 357,036. Marriott Corporation, Washington, D.C. Filed Apr. 16, 1970.



The pictorial representation of a hamburger is hereby disclaimed apart from the mark as shown, however, applicant waives none of its common law rights thereto. Owner of Reg. Nos. 561,430, 574,742, and others.
For Restaurant Services (Int. Cl. 42).
First use at least as early as 1967.

SN 358,676. Telmar Communications Corp., New York, N.Y. Filed May 4, 1970.

LEM

For Marketing Research Services—Namely, Provide Demographic or Geographic Statistics for Use in the Analysis of the Effect of Advertising by Subscribers (Int. Cl. 42).
First use Oct. 14, 1969.

SN 362,189. The Chase Manhattan Bank, National Association, New York, N.Y. Filed June 10, 1970.

CHASE MANHATTAN BANK'S CORP/PLAN

Owner of Reg. Nos. 717,319 and others.
For Computer Time-Sharing Services (Int. Cl. 42).
First use June 1, 1970.

SN 362,190. The Chase Manhattan Bank, National Association, New York, N.Y. Filed June 10, 1970.

TIME/LINE

For Computer Time-Sharing Services (Int. Cl. 42).
First use June 1, 1970.

SN 363,712. Ralph E. Manns Company, Wilmington, Calif. Filed June 26, 1970.

OPTIMETRICS

For Engineering and Contracting Services in the Fields of Optimal and Adaptive Control Systems, Flight Dynamics, Computer Hardware and Software, Systems Engineering, Aircraft Avionics, Navigation Guidance, Modern Automatic Control Theory, Solid State Technology, Electro-Optical Devices and Lasers, Radar Systems, Advanced Sensors and Instrumentation Systems, Displays and Controls Operations Analysis and Cost Effectiveness Studies (Int. Cl. 42).
First use Mar. 25, 1970.

SN 364,205. Sonesta International Hotels Corporation, Boston, Mass. Filed July 2, 1970.

SONESTA INTERNATIONAL HOTELS CORPORATION

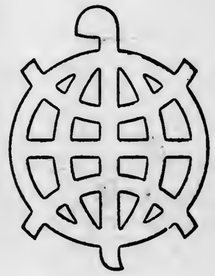
For Hotel, Motor Hotel, Restaurant and Bar Services (Int. Cl. 42).
First use June 1, 1970.

SN 364,335. Mr. T's Rental, Inc., Wichita, Kans. Filed July 6, 1970.

MR. T'S

For Leasing of Household Appliances and Furniture (Int. Cl. 42).
First use July 1, 1962.

SN 365,394. International Turtle Clubs, Inc., El Segundo, Calif. Filed July 16, 1970.



For Restaurant and Nightclub Services (Int. Cl. 42).
First use Apr. 15, 1970.

Class 101 — Advertising and Business

SN 242,519. Ultronic Systems Corp., Moorestown, N.J., assignee of Ultronic Systems Corp., Pennsauken, N.J. Filed Apr. 1, 1966.



For Gathering Information—Namely, Stock Market Data, Credit Data, Inventory Data and Like Business Data; Processing and Storing the Gathered Data; Providing Both Proximate and Remote Displays of Said Data Both on a Continuing Basis and in Response to Specific Interrogations (Int. Cl. 35).
First use 1961.

SN 306,543. American Express Company, New York, N.Y. Filed Sept. 4, 1968.

EXPRESSPHONE

Owner of Reg. No. 838,067.
For Credit Checking Services (Int. Cl. 35).
First use Sept. 29, 1967.

SN 315,405. ICS Industries, Inc., Kansas City, Mo., by change of name and assignment from Financial House Tax Service, Inc., Kansas City, Mo. Filed Dec. 30, 1968.

financial house
TAX MASTERS

Owner of Reg. No. 755,695.
For Income Tax Services (Int. Cl. 35).
First use Nov. 29, 1968.
Subj. to Intf. with SN 329,512.

SN 322,395. International Dairy Queen, Inc., Minneapolis, Minn., assignee of American Dairy Queen Corporation, Minneapolis, Minn. Filed Mar. 21, 1969.



For Distributorship Services—Namely, Distribution of Food Items and Restaurant Supplies to Others (Int. Cl. 35).
First use December 1958.

SN 323,489. United Flight Centers, Incorporated, Detroit, Mich. Filed Apr. 2, 1969.

UNIFLIGHT

For Business Services and Assistance Rendered by Applicant to Fixed Base Operators Engaged in Supplying Goods and Services in the Field of General Aviation (Int. Cl. 35).
First use Feb. 7, 1969.

SN 324,664. J. Walter Thompson Company, New York, N.Y. Filed Apr. 16, 1969.

deltakos

For Advertising, Marketing and Public Relations Services in the Fields of Science and Medicine (Int. Cl. 35).
First use Feb. 25, 1969.

SN 324,665. J. Walter Thompson Company, New York, N.Y. Filed Apr. 16, 1969.

JWT
deltakos

For Advertising, Marketing, and Public Relations Services in the Fields of Science and Medicine (Int. Cl. 35).
First use Feb. 25, 1969.

SN 327,074. Towne Properties, Inc., Cincinnati, Ohio. Filed May 12, 1969.

TOWNE PROPERTIES

The word "Properties" is disclaimed apart from the mark as shown.
For Real Estate Development and Management for Others (Int. Cl. 35).
First use June, 1961.

SN 332,886. Fotomat Corporation, La Jolla, Calif. Filed July 18, 1969.

DRIVE THRU, SEE WHAT DEVELOPS!

Owner of Reg. No. 861,726.
For Retail Drive-In Photographic Supply Store Services (Int. Cl. 35).
First use September 1967.

SN 334,863. Realty Mart, Inc., Baton Rouge, La. Filed Aug. 8, 1969.

REALTY MART

Applicant disclaims the wording "Realty Mart" apart from the mark as shown.
For General Real Estate Agency Services (Int. Cl. 35).
First use Feb. 6, 1968.

SN 338,031. Alfred Angelo, Inc., Philadelphia, Pa. Filed Sept. 16, 1969.

BRIDE-ARAMA

For Rendering Technical Assistance in the Establishment and Management of Retail Businesses Dealing With the Sale of Clothing and Accessories for Brides and Female Members of a Bridal Party (Int. Cl. 35).
First use Aug. 26, 1969.

SN 338,443. Strawbridge & Clothier, Philadelphia, Pa. Filed Sept. 19, 1969.

BICENTENNIAL SHOP

Applicant disclaims the term "Shop" apart from the mark as shown.
For Retail Furniture and Giftware Outlet Services Rendered in a Department Store (Int. Cl. 35).
First use Aug. 27, 1969.

SN 343,198. Warrior Investments, Inc., Tuscaloosa, Ala. Filed Nov. 10, 1969.

SOUL STAMP

For Promotion of the Sale of Goods and Services of Others Through the Issuance and Redemption of Trading Stamps (Int. Cl. 35).
First use Mar. 3, 1969.

SN 343,274. Gifts From Around the World, Inc., Dallas, Tex. Filed Nov. 12, 1969.



For Retail Gift Shop Services (Int. Cl. 35).
First use at least as early as Feb. 23, 1969.

SN 347,295. Management Systems, Inc., Portland, Oreg. Filed Dec. 29, 1969.

C.I.C.

For Providing Computerized Customer Inventory Informational Control Services to Automobile Dealers and Salesmen and Direct Customer Mail Advertising Services in Connection Therewith (Int. Cl. 35).
First use Mar. 15, 1968.

SN 347,478. Compuscan, Inc., Leonia, N.J. Filed Dec. 31, 1969.

COMPUSCAN

For Microfilming Printed, Typewritten and Graphic Material, Scanning and Recording the Microfilmed Material on Magnetic Tape for Others (Int. Cl. 35).
First use November 1968.

SN 369,045. Giant Stores Corp., Lowell, Mass. Filed Aug. 26, 1970.



For Retail Department Store Services (Int. Cl. 35).
First use Aug. 6, 1970.

SN 369,629. Brills, Inc., Milwaukee, Wis. Filed Sept. 2, 1970.

BELOW THE BELT

For Retail Clothing Store Services (Int. Cl. 35).
First use July 30, 1970.

Class 102 — Insurance and Financial

SN 262,030. Harris Trust and Savings Bank, Chicago, Ill. Filed Jan. 6, 1967.



The drawing is lined for the color blue. The words "Charge-It" and "Bank" are disclaimed apart from the mark as shown. Owner of Reg. No. 692,559.
For Extending Credit Card Services to Others (Int. Cl. 36).
First use Nov. 8, 1966.

SN 322,427. Financial Enterprises, Inc., Cleveland, Ohio. Filed Mar. 21, 1969.



Applicant Disclaims the words "Creative Financial Planning" apart from the mark as shown.
For Financial Services—Namely, the Services of Advising Others in Matters of Personal and Family Finances, Family Financial Record Keeping, Investment, Financial Management and Planning (Int. Cl. 36.)
First use Apr. 24, 1968.

SN 326,009. Uslife Corporation, New York, N.Y., by change of name from Uslife Holding Corp., New York, N.Y. Filed Apr. 30, 1969.

DOUBLE DUTY DOLLARS

For Financial Planning Services Providing for the Joint Purchase of Both Life Insurance and Mutual Fund Shares With a Single Payment Feature (Int. Cl. 36).
First use Dec. 5, 1968.

SN 349,928. Montgomery Ward & Co., Incorporated, Chicago, Ill. Filed Jan. 29, 1970.

CHARG-ALL

For The Extension of Credit to Customers (Int. Cl. 36).
First use Mar. 31, 1950.

Class 103 — Construction and Repair

SN 318,921. Irving R. Rothman, d.b.a. Quality-In-Manufacturing Company, Greenville, S.C. Filed Feb. 11, 1969.

QUALITY-IN

For Custom Manufacturing of Clothes (Int. Cl. 37).
First use October 1968.

SN 333,949. The Siggins Corporation, Kansas City, Mo. Filed July 30, 1969.



The words and Wording "Wash," "Wax," "Dry," and "Car Wash" are disclaimed apart from the mark as shown. Owner of Reg. No. 869,176.
For Automobile Washing Services (Int. Cl. 37).
First use on July 10, 1968.

SN 347,461. Anthony D. Scarcia, d.b.a. Allied Maintenance & Painting Co., Bethlehem, Pa. Filed Dec. 31, 1969.



For Commercial Painting and Acoustical Spray Service (Int. Cl. 37).
First use Nov. 30, 1967.

SN 351,804. Bergmann's Laundry, Inc., Washington, D.C. Filed Feb. 18, 1970.



For Laundry, Dry Cleaning and Rug Cleaning Services (Int. Cl. 37).
First use at least as early as Jan. 1, 1960.

SN 351,812. Leather Products, Inc., Bronx, N.Y. Filed Feb. 19, 1970.

SUEDE-LIFE

For Dry Cleaning Services Specializing in Cleaning Leather and Suede Goods (Int. Cl. 37).
First use Nov. 1, 1969.

Class 105 — Transportation and Storage

SN 330,122. Faith Tours, Inc., Rockville Centre, N.Y. Filed June 16, 1969.



The design of the airplane and the term "Tours" are disclaimed apart from the mark as shown.
For Travel Agency Services—Namely, Organization and Arranging of Planned Tours Including Arranging Reservations for Travel and Hotel and Motel, and Resort Accommodations; and Arranging and Conducting Tours for Individuals and Groups (Int. Cl. 39).
First use May 1, 1969.

SN 338,282. McGettigan's Travel Bureau, Inc., Washington, D.C. Filed Sept. 18, 1969.



The Latin phrase "Et Ecce Transimus" when translated means "away you go."
For Travel Agency Services (Int. Cl. 39).
First use July 1959.

SN 344,382. Interstate Motor Freight System, Grand Rapids, Mich. Filed Nov. 24, 1969.



The drawing is lined for the color red.
For Motor Freight Carrier Services (Int. Cl. 39).
First use on or about Mar. 28, 1960.

Class 107 — Education and Entertainment

SN 346,078. Flora Pacifica, Honolulu, Hawaii. Filed Dec. 12, 1969.



The drawing is lined for the colors gold, green, and brown, but not limited to any particular color combination.
For Organizing and Conducting Ethno-Botanical Expositions (Int. Cl. 41).
First use September 1969.

SN 368,965. Bankers Management & Services, Inc., Dallas, Tex. Filed Aug. 25, 1970.

EVERYDAY PEOPLE

For Entertainment Services—Namely, Musical Entertainment Services Rendered by a Vocal and Instrumental Group (Int. Cl. 41).
First use Apr. 27, 1970.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

905,696. LIFEGUARD. Zenith Industries, Inc. MULTIPLE CLASS (Classes 1, 3, 13, 26, 31, 34, and 50). SN 271,303. Pub. 8–18–70. Filed 5–11–67.

905,697. KINEX. Philip G. Whitman, Inc. MULTIPLE CLASS (Classes 1, 37, and 42). SN 294,103. Pub. 6–30–70. Filed 3–25–68.

905,698. KRIMSON QUEEN. B. L. Cobia, Inc. SN 337,012. Pub. 10–27–70. Filed 9–4–69.

905,699. SPENLITE. Textron Inc. SN 337,375. Pub. 10–27–70. Filed 9–8–69.

905,700. MISCELLANEOUS DESIGN. Harrelson Rubber Company. SN 341,388. Pub. 10–27–70. Filed 10–22–69.

905,701. WELL-SET. Wellman, Inc. SN 343,018. Pub. 10–27–70. Filed 11–7–69.

905,702. CABELEC. Cabot Corporation. SN 343,797. Pub. 10–27–70. Filed 11–13–69.

905,703. XYLODENE. The Firestone Tire & Rubber Company. SN 347,401. Pub. 7–28–70. Filed 12–30–69.

905,704. HALVORSON AND DESIGN. Halvorson Incorporated. SN 359,105. Pub. 10–27–70. Filed 5–7–70.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

905,696. (See Class 1 for this trademark.)

Class 6 — Chemicals and Chemical Compositions

905,705. M DESIGN. Malsbary Manufacturing Company. MULTIPLE CLASS (Classes 6, 13, 19, 21, 23, 24, 34, 35, and 52). SN 258,441. Pub. 10–27–70. Filed 11–14–66.

905,706. SNOBOY AND DESIGN. Abraham F. Moore, d.b.a. A. F. Moore & Company. SN 271,062. Pub. 3–31–70. Filed 5–9–67.

905,707. SYLOID. W. R. Grace & Co. SN 324,587. Pub. 10–27–70. Filed 4–15–69.

905,708. SANI-PINE. Sani Pine Products Co., Inc. MULTIPLE CLASS (Classes 6 and 52). SN 331,477. Pub. 10–27–70. Filed 7–1–69.

905,709. NEUSOL. Stauffer Chemical Company. SN 334,632. Pub. 6–16–70. Filed 8–6–69.

905,710. SEQUA-SOL AND DESIGN. Great Lakes Biochemical Co., Inc. SN 335,224. Pub. 10–27–70. Filed 8–13–69.

905,711. Q-PEX. Conversion Chemical Corporation. SN 337,784. Pub. 10–27–70. Filed 9–12–69.

905,712. HYDROXYOL. Malmstrom Chemical Corp. SN 340,407. Pub. 7–14–70. Filed 10–10–69.

905,713. VERONA. Verona Corporation. SN 342,682. Pub. 10–27–70. Filed 11–4–69.

905,714. DMS AND DESIGN. American Cyanamid Company. SN 346,833. Pub. 10–27–70. Filed 12–22–69.

905,715. SUPERASE. Pfizer Inc., by change of name from Chas. Pfizer & Co., Inc. SN 351,002. Pub. 10–27–70. Filed 2–10–70.

905,716. HUSH. Colgate-Palmolive Company. SN 355,177. Pub. 10–27–70. Filed 3–27–70.

905,717. PERMACIDE. Summit Chemical Co. SN 355,845. Pub. 10–27–70. Filed 4–3–70.

905,718. BACTURCULT. Denver Chemical Manufacturing Company. SN 357,275. Pub. 10–27–70. Filed 4–20–70.

905,719. HASTEN. The Upjohn Company. SN 358,395. Pub. 10–27–70. Filed 4–30–70.

905,720. SERCO SER AND DESIGN. S. E. Rykoff & Co. SN 359,309. Pub. 10–27–70. Filed 5–11–70.

905,721. TEMPEST. Olin Corporation. MULTIPLE CLASS (Classes 6 and 34). SN 360,401. Pub. 10–27–70. Filed 5–21–70.

Class 7 — Cordage

905,722. TUFF-TIE. Package Containers, Inc. SN 359,795. Pub. 11–3–70. Filed 5–15–70.

Class 8 — Smokers' Articles, Not Including Tobacco Products

905,723. PRIVILEG. Efka-Werke Fritz Kiehn GmbH. MULTIPLE CLASS (Classes 8 and 17). SN 327,373. Pub. 10–27–70. Filed 5–15–69.

Class 10 — Fertilizers

905,724. RHODO-BLOOM. Pacific Agro Company. SN 328,197. Pub. 8–25–70. Filed 5–23–69.

Class 12 — Construction Materials

905,725. IMPERIAL AND DESIGN. Biltbest Corporation. SN 304,200. Pub. 10–27–70. Filed 8–2–68.

905,726. HALECORE. Halecore, Inc. SN 310,094. Pub. 10–27–70. Filed 10–21–68.

905,727. MACCOFLEX. SCM Corporation. SN 312,334. Pub. 10–27–70. Filed 11–15–68.

905,728. ROLL 'N SEAL. The Flintkote Company, by merger into Harry T. Campbell Sons' Corporation. SN 320,028. Pub. 9–22–70. Filed 2–25–69.

905,729. SULF-O-POZ. G. & W. H. Corson, Incorporated. SN 327,002. Pub. 10–27–70. Filed 5–12–69.

905,730. PAM. Hillsdale Industries, Inc. SN 328,699. Pub. 10–27–70. Filed 5–29–69.

905,731. PATE. Pate Manufacturing Company. SN 331,526. Pub. 10–27–70. Filed 7–1–69.

905,732. BLUE BIRD. Republic Mobile Homes Corporation. SN 334,373. Pub. 10–27–70. Filed 8–4–69.

905,733. DUCHESS. Republic Mobile Homes Corporation. SN 334,374. Pub. 10–27–70. Filed 8–4–69.

905,734. STB. Saskatchewan Timber Board. SN 336,188. Pub. 10–27–70. Filed 8–25–69.

905,735. TRIFAB 450. American Metal Climax, Inc. SN 337,145. Pub. 10–27–70. Filed 9–5–69.

905,736. GREEN-OX. A. P. Green Refractories Co. SN 342,262. Pub. 10–27–70. Filed 10–31–69.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

905,696. (See Class 1 for this trademark.)

905,705. (See Class 6 for this trademark.)

905,737. MAGNICATOR AND DESIGN. Bray Manufacturing Company. SN 315,037. Pub. 10–27–70. Filed 12–23–68.

905,738. STRAPNAIL. Ray Laboratories, Inc., d.b.a. Wood Connector Products. SN 325,779. Pub. 10–27–70. Filed 4–28–69.

905,739. EARTH MOUNT. Earth Mount, Inc. SN 326,640. Pub. 10–27–70. Filed 5–7–69.

905,740. PLAST-ELL. Trend Products, Inc. SN 327,427. Pub. 10–27–70. Filed 5–15–69.

905,741. AQUAMETER. American Standard Inc. SN 340,487. Pub. 8–18–70. Filed 10–13–69.

905,742. TRAKPOWER. Trakpower, Inc. SN 342,379. Pub. 10–27–70. Filed 11–3–69.

905,743. MC CANNA "800." Mills-McCanna Company. SN 345,821. Pub. 10–27–70. Filed 12–10–69.

905,744. MC CANNALOK. Hills-McCanna Company. SN 345,822. Pub. 10–27–70. Filed 12–10–69.

905,745. PUD-L-SCOOP. Simer Pump Company. SN 357,293. Pub. 10–27–70. Filed 4–20–70.

Class 14—Metals and Metal Castings and Forgings

905,746. CU-PHOS. Univertical Corporation. SN 292,730. Pub. 10–29–68. Filed 3–7–68.

905,747. ALCOLOY. Olin Corporation, by change of name from Olin Mathieson Chemical Corporation. SN 328,576. Pub. 12–2–69. Filed 5–28–69.

905,748. ERMALEX. Erie Malleable Iron Co. SN 338,141. Pub. 10–27–70. Filed 9–17–69.

Class 15—Oils and Greases

905,749. RIPPLE-GLOW. Gibson Greeting Cards, Inc. SN 331,370. Pub. 10–27–70. Filed 6–30–69.

905,750. AMOTONE. The American Oil Company. SN 339,292. Pub. 10–27–70. Filed 9–30–69.

905,751. PENNFIELD AND DESIGN. Pennfield Oil Co. SN 354,972. Pub. 10–27–70. Filed 3–24–70.

905,752. MISCELLANEOUS DESIGN. Occidental Petroleum Corporation. SN 355,430. Pub. 10–27–70. Filed 3–30–70.

905,753. OXY AND DESIGN. Occidental Petroleum Corporation. SN 355,431. Pub. 10–27–70. Filed 3–30–70.

905,754. SNOW ZONE. Ashland Oil Inc. SN 356,006. Pub. 10–27–70. Filed 4–6–70.

905,755. BARDAHL 2 AND DESIGN. Bardahl Manufacturing Corporation. SN 356,472. Pub. 10–27–70. Filed 4–10–70.

905,756. PARADE AND DESIGN. Hunt Oil Company. SN 360,230. Pub. 10–27–70. Filed 5–19–70.

905,757. SAVEWAY. Sure Oil and Chemical Corporation. SN 360,596. Pub. 9–1–70. Filed 5–22–70.

Class 16—Protective and Decorative Coatings

905,758. DAMPNEY. The Dampney Company. SN 345,748. Pub. 10–27–70. Filed 12–10–69.

905,759. EXTING. Touraine Paints, Inc. SN 350,012. Pub. 9–1–70. Filed 1–29–70.

Class 17—Tobacco Products

905,723. (See Class 8 for this trademark.)

905,760. EDGEWORTH ETC. AND DESIGN. Larus & Brother Company, d.b.a. House of Edgeworth. SN 327,030. Pub. 10–27–70. Filed 5–12–69.

905,761. WAYSIDE ETC. AND DESIGN. John Chapman Limited. SN 334,306. Pub. 9–15–70. Filed 8–4–69.

905,762. BULL'S EYE. Taylor Brothers, Inc. SN 358,523. Pub. 9–1–70. Filed 5–1–70.

Class 18—Medicines and Pharmaceutical Preparations

905,763. MISCELLANEOUS DESIGN. Chap Stick Company. SN 261,571. Pub. 10–13–70. Filed 12–28–66.

905,764. NOVAG. Laboratorios Ferrer S.L. SN 323,324. Pub. 9–1–70. Filed 4–1–69.

905,765. NUTRILYSIN. Byk-Gulden, Inc. SN 332,080. Pub. 7–28–70. Filed 7–9–69.

905,766. KLOR-LYTE. Mead Johnson & Company. SN 337,063. Pub. 10–27–70. Filed 9–4–69.

905,767. STEPS. The Dow Chemical Company. SN 341,374. Pub. 10–27–70. Filed 10–22–69.

905,768. SPARKLE. Maybelline Co. SN 341,477. Pub. 10–27–70. Filed 10–22–69.

905,769. ESCOT. S. J. Tutag & Company. SN 342,084. Pub. 10–27–70. Filed 10–29–69.

905,770. PINO. Mrs. William Harrison Jackson, d.b.a. Quality Distributing Company. SN 344,383. Pub. 8–18–70. Filed 11–24–69.

905,771. BRICANYL. Aktiebolaget Astra. SN 348,488. Pub. 10–27–70. Filed 1–14–70.

905,772. PEACE AND QUIET. Carter-Wallace, Inc. SN 348,722. Pub. 5–26–70. Filed 1–16–70.

905,773. VIT-ER-GY. Foremost-McKesson, Inc., d.b.a. McKesson Laboratories. SN 348,926. Pub. 10–27–70. Filed 1–19–70.

Class 19—Vehicles

905,705. (See Class 6 for this trademark.)

905,774. TRAILPACER AND DESIGN. Impala Industries Limited. SN 305,450. Pub. 6–16–70. Filed 8–19–68.

905,775. SUNFILTER. Visionade Mfg. Corp. SN 311,957. Pub. 10–27–70. Filed 11–12–68.

905,776. SWING-LINE. Howard A. Ellenberger, d.b.a. Swing-Line Seat Company. SN 328,286. Pub. 6–2–70. Filed 5–26–69.

905,777. CASITAS. The Commodore Corporation. SN 333,098. Pub. 10–27–70. Filed 7–22–69.

905,778. CAPEWOOD. The Commodore Corporation, d.b.a. Safeway Mobile Homes. SN 333,533. Pub. 10–27–70. Filed 7–25–69.

905,779. CAP AND DESIGN. The Columbus Auto Parts Company. SN 337,269. Pub. 8–11–70. Filed 9–8–69.

905,780. MILREMO. Societe des Etablissements Andre Bertin. MULTIPLE CLASS (Classes 19 and 35). SN 348,230. Pub. 10–27–70. Filed 1–12–70.

905,781. SLING-CHOP. Euglo Corporation. SN 348,277. Pub. 10–27–70. Filed 1–12–70.

905,782. ROVER AND DESIGN. The Rover Company Limited. SN 348,584. Pub. 10–27–70. Filed 1–14–70.

905,783. POGO POLO. Persons-Majestic Mfg. Company. SN 348,680. Pub. 10–27–70. Filed 1–15–70.

905,784. M AND TRIANGLE DESIGN. Toyo Kogyo Co., Ltd. SN 349,146. Pub. 10–27–70. Filed 1–21–70.

905,785. 747. The Boeing Company. SN 350,803. Pub. 10–27–70. Filed 2–9–70.

905,786. SANTEE. American Photocopy Equipment Company. SN 350,853. Pub. 10–27–70. Filed 2–9–70.

905,787. GERIM JET. Gerim Manufacturing Company. SN 355,389. Pub. 10–27–70. Filed 3–30–70.

905,788. THE LAKE-LANDER. Dan H. Patten, d.b.a. Midwestern Products. SN 365,458. Pub. 10–27–70. Filed 7–16–70.

905,789. HOBIE CAT. Coast Catamaran Corp. SN 365,673. Pub. 10–27–70. Filed 7–20–70.

Class 21—Electrical Apparatus, Machines, and Supplies

905,705. (See Class 6 for this trademark.)

905,790. HYDROTHERM. Hydrotherm, Inc. SN 104,032. Pub. 8–22–61. Filed 9–7–60.

905,791. HYDROTHERM. Hydrotherm, Inc. SN 104,033. Pub. 8–22–61. Filed 9–7–60.

905,792. SCIENCE FAIR. Tandy Corporation, d.b.a. Radio Shack, by merger from Radio Shack Corporation. SN 274,089. Pub. 9–8–70. Filed 6–16–67.

905,793. MERCAP. Brunswick Corporation. MULTIPLE CLASS (Classes 21 and 23). SN 289,638. Pub. 10–27–70. Filed 1–26–68.

905,794. A THE MARK OF QUALITY AND DESIGN. Alpha Products, Inc. SN 305,299. Pub. 10–27–70. Filed 8–16–68.

905,795. KINK-LOC. P. R. Mallory & Co. Inc. SN 312,911. Pub. 10–27–70. Filed 11–22–68.

905,796. 1090. Reliance Electric Company, assignee of The Reliance Electric and Engineering Company, Haughton Elevator Company Division. SN 315,444. Pub. 10–27–70. Filed 12–30–68.

905,797. PFLUEGER PHANTOM AND DESIGN. Shakespeare Company, assignee of Pflueger Corporation. MULTIPLE CLASS (Classes 21 and 22). SN 319,016. Pub. 10–27–70. Filed 2–13–69.

905,798. SOUND-CONDITIONER AND DESIGN. Musi-Cloud, Inc. SN 319,341. Pub. 10–27–70. Filed 2–17–69.

905,799. GUITAR DESIGN. Kaman Corporation. MULTIPLE CLASS (Classes 21 and 36). SN 322,129. Pub. 10–27–70. Filed 3–19–69.

905,800. HYDRATUBE. Interpace Corporation, by merger and change of name from Lapp Insulator Company, Inc. SN 325,879. Pub. 8–25–70. Filed 4–29–69.

905,801. N AND DESIGN. The Nippert Company, by change of name from The Nippert Electric Products Company. SN 328,191. Pub. 10–27–70. Filed 5–23–69.

905,802. I INTECH AND DESIGN. Intech Incorporated. SN 333,717. Pub. 7–28–70. Filed 7–28–69.

905,803. AUTO-AMP. Hills-McCanna Company, assignee of Ramcon Corporation. SN 336,713. Pub. 10–27–70. Filed 8–29–69.

905,804. BIG M. Essex International, Inc., d.b.a. Marlboro Automotive Products. SN 337,158. Pub. 10–27–70. Filed 9–5–69.

905,805. BOSTON GEAR. Murray Company of Texas, Inc., d.b.a. Boston Gear Works. SN 338,165. Pub. 10–27–70. Filed 9–17–69.

905,806. VN20. American Enka Corporation. SN 338,532. Pub. 10–27–70. Filed 9–22–69.

905,807. KMG. Telephone Sales & Service Co., Inc. SN 340,439. Pub. 10–27–70. Filed 10–10–69.

905,808. LANDMARK. Electric Time Company, Inc. SN 346,688. Pub. 10–27–70. Filed 12–19–69.

905,809. SE AND DESIGN. Sterling Electronics Corporation. SN 351,263. Pub. 10–27–70. Filed 2–13–70.

905,810. POLYTHERM. Cerro Corporation. SN 356,622. Pub. 10–27–70. Filed 4–13–70.

905,811. PHONEPLEX. Phonplex Corporation, assignee of Instrument Systems Corporation. SN 356,879. Pub. 10–27–70. Filed 4–14–70.

905,812. COMP·EX. Scientific Resources Corporation. SN 357,426. Pub. 10–27–70. Filed 4–20–70.

905,813. PLASCOLUME. The Edwin F. Guth Company. SN 357,828. Pub. 10–27–70. Filed 4–24–70.

905,814. ULTRA-MATE. The Bunker-Ramo Corporation. SN 357,950. Pub. 10–27–70. Filed 4–27–70.

905,815. IDENTI-TABS. Fedtro, Inc. SN 361,924. Pub. 10–27–70. Filed 6–8–70.

905,816. CARTER. Carter Motor Company. SN 363,609. Pub. 10–27–70. Filed 6–25–70.

Class 22—Games, Toys, and Sporting Goods

905,797. (See Class 21 for this trademark.)

905,817. D DIPLOMAT/THE PLAYERS CHOICE AND DESIGN. Diplomat Sales Company, Incorporated. SN 324,052. Pub. 10–27–70. Filed 4–9–69.

905,818. THE TALKING TABLE. Don D. Reichert and Melvin Yenney (joint owners). SN 327,051. Pub. 10–27–70. Filed 5–12–69.

905,819. FANNY FARMER. Fanny Farmer Candy Shops, Inc. MULTIPLE CLASS (Classes 22 and 46). SN 327,188. Pub. 10–27–70. Filed 5–14–69.

905,820. TORK. Kinetic Objects, Inc. SN 329,733. Pub. 10–27–70. Filed 6–11–69.

905,821. MARKLIN AND DESIGN. Gebr. Marklin & Cie, GmbH. SN 332,936. Pub. 10–27–70. Filed 7–18–69.

905,822. LOONEY BIRDS. Topps Chewing Gum, Incorporated. SN 335,903. Pub. 10–27–70. Filed 8–21–69.

905,823. TWISTEE BY TOTSY. Totsy Manufacturing Co., Inc. SN 342,551. Pub. 10–27–70. Filed 11–3–69.

905,824. ROLIT·A·WAY. Winger Enterprises, Inc. SN 342,568. Pub. 10–27–70. Filed 11–3–69.

905,825. DRAGON WAGON. Mattel, Inc. SN 344,293. Pub. 10–27–70. Filed 11–24–69.

905,826. MINI-PALS. The Art Award Company, Inc. SN 344,312. Pub. 10–27–70. Filed 11–24–69.

905,827. TOURNAMENT-MASTER. Tournament - Master Courts, Incorporated. SN 344,746. Pub. 10–27–70. Filed 11–26–69.

905,828. TOWPATH. Gilbert Sporting Goods Distributors, Inc. SN 347,261. Pub. 10–27–70. Filed 12–29–69.

905,829. FLIP'N FLY-IT. Rainbow Crafts, Inc. SN 352,305. Pub. 10–27–70. Filed 2–25–70.

905,830. DAZZLE DUST. Mattel, Inc. SN 353,623. Pub. 10–27–70. Filed 3–10–70.

905,831. DRAG ELIMINATOR. Mattel, Inc. SN 354,354. Pub. 10–27–70. Filed 3–18–70.

905,832. SMESS. Parker Brothers, Inc. SN 355,188. Pub. 10–27–70. Filed 3–27–70.

905,833. BABY TENDER LOVE. Mattel, Inc. SN 355,978. Pub. 10–27–70. Filed 4–6–70.

905,834. BABY TENDERNESS. Mattel, Inc. SN 355,979. Pub. 10–27–70. Filed 4–6–70.

905,835. THISAWAY THATAWAY. Mattel, Inc. SN 364,724. Pub. 10–27–70. Filed 7–9–70.

905,836. CHICKYBOO. Mattel, Inc. SN 364,726. Pub. 10–27–70. Filed 7–9–70.

905,837. CATHY. Mattel, Inc. SN 364,993. Pub. 10–27–70. Filed 7–13–70.

905,838. CATHY CAN DO. Mattel, Inc. SN 364,994. Pub. 10–27–70. Filed 7–13–70.

905,839. RRRUMBLERS. Mattel, Inc. SN 365,001. Pub. 10–27–70. Filed 7–13–70.

905,840. MOTOCROSS. Mattel, Inc. SN 365,002. Pub. 10–27–70. Filed 7–13–70.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

905,705. (See Class 6 for this trademark.)

905,793. (See Class 21 for this trademark.)

905,841. RAILKO. Railko Limited. SN 273,110. Pub. 10–27–70. Filed 6–5–67.

905,842. HC HART·CARTER. Hart-Carter Company. MULTIPLE CLASS (Classes 23 and 31). SN 307,057. Pub. 9–1–70. Filed 9–11–68.

905,843. ROMAXE. Beaconway Fabrics Inc., by merger into Beaconway Stores, Inc. SN 313,486. Pub. 3–31–70. Filed 12–3–68.

905,844. ADS AND DESIGN. Anker-Werke AG. MULTIPLE CLASS (Classes 23, 26, and 37). SN 321,144. Pub. 8–18–70. Filed 3–10–69.

905,845. HOOKER HEADERS AND DESIGN. Hooker Headers, Inc. SN 336,696. Pub. 10–27–70. Filed 8–29–69.

905,846. BOSTON GEAR. Murray Company of Texas, Inc., d.b.a. Boston Gear Works. SN 338,166. Pub. 10–27–70. Filed 9–17–69.

905,847. BECKER B AND DESIGN. Becker Drills Limited. SN 346,209. Pub. 10–27–70. Filed 12–15–69.

905,848. ALBANY DESIGN. Albany International, Inc. SN 347,571. Pub. 8–11–70. Filed 1–2–70.

905,849. KUIK SHOR AND DESIGN. Water Works Supply Co., Inc., d.b.a. Water Works Supply & Mfg. Co. SN 348,372. Pub. 10–27–70. Filed 1–12–70.

905,850. GP. McNeil Corporation. SN 351,713. Pub. 8–25–70. Filed 2–18–70.

905,851. GOODYEAR AND DESIGN. The Goodyear Tire & Rubber Company. SN 356,075. Pub. 10–27–70. Filed 4–6–70.

905,852. DUMORE. The Dumore Company. SN 357,061. Pub. 10–27–70. Filed 4–16–70.

905,853. SK SILENT KNIGHT AND DESIGN. Silent Knight Automotive Inc. SN 357,126. Pub. 10–27–70. Filed 4–16–70.

905,854. EEL DESIGN. Electric Eel Manufacturing Company, Inc. SN 357,346. Pub. 10–27–70. Filed 4–20–70.

905,855. FIDEL-I-SEAL. International Paper Company. SN 357,365. Pub. 10–27–70. Filed 4–20–70.

Class 24 — Laundry Appliances and Machines

905,705. (See Class 6 for this trademark.)

Class 25 — Locks and Safes

905,856. COMPU LOCK. Eaton Yale & Towne Inc., assignee of Digital Identification Systems, Inc. SN 344,280. Pub. 10–27–70. Filed 11–24–69.

Class 26 — Measuring and Scientific Appliances

905,696. (See Class 1 for this trademark.)

905,844. (See Class 23 for this trademark.)

905,857. HYDROTHERM. Hydrotherm, Inc. SN 104,030. Pub. 2–14–61. Filed 9–7–60.

905,858. CHEMITRON. Chemetron AG, assignee, by mesne assignment, of Peter Willems. SN 157,662. Pub. 9–22–64. Filed 3–5–63.

905,859. POLACOPY. Polaroid Corporation. SN 220,023. Pub. 1–24–67. Filed 5–28–65.

905,860. KODAK AND DESIGN. Eastman Kodak Company. SN 295,518. Pub. 10–27–70. Filed 4–12–68.

905,861. "TRIPLE 05" DIAL CALIPER AND DESIGN. Karl A. Nelse, Inc. SN 305,752. Pub. 10–27–70. Filed 8–22–68.

905,862. DURESIST. Carl Haas. SN 319,819. Pub. 10–27–70. Filed 2–24–69.

905,863. SENSO-MATIC. Economics Laboratory, Inc. SN 321,912. Pub. 10–27–70. Filed 3–17–69.

905,864. METALVISTA. Artoptic International Corp. SN 322,036. Pub. 10–27–70. Filed 3–18–69.

905,865. G AND DESIGN. G.V.W. Corporation. SN 328,048. Pub. 8–18–70. Filed 5–22–69.

905,866. SCRIPTO-FAX. Scripto, Inc. SN 329,637. Pub. 10–27–70. Filed 6–10–69.

905,867. AQUACELL. Plastics in Optics, Inc. SN 331,647. Pub. 10–27–70. Filed 7–2–69.

905,868. O.K. Otto Klein. SN 331,763. Pub. 10–27–70. Filed 7–3–69.

905,869. SM DESIGN. Crounse Corporation, d.b.a. Shelton Metrology Laboratory. SN 335,210. Pub. 10–27–70. Filed 8–13–69.

905,870. COPYPROOF. Gevaert-Agfa N.V. SN 339,565. Pub. 10–27–70. Filed 10–2–69.

905,871. QUANTI-PLATE. Kallestad Laboratories, Inc. SN 339,724. Pub. 10–27–70. Filed 10–3–69.

905,872. VIRGIN KISSMETER. Paco Enterprises. SN 343,156. Pub. 9–22–70. Filed 11–10–69.

905,873. EIP. EIP, Inc. SN 344,354. Pub. 10–27–70. Filed 11–24–69.

905,874. CADET. Wm. Ainsworth, Inc. SN 350,198. Pub. 6–16–70. Filed 2–2–70.

905,875. KEYMATIC. Keymatic Data Systems Corp. SN 351,379. Pub. 10–27–70. Filed 2–16–70.

905,876. MONITEMP. Monitemp Corp. SN 351,507. Pub. 10–27–70. Filed 2–16–70.

905,877. C A N D O. Programmed Instructions, Inc. SN 351,625. Pub. 10–27–70. Filed 2–17–70.

905,878. NS AND DESIGN. National Sonics Corporation. SN 353,320. Pub. 10–27–70. Filed 3–6–70.

905,879. TDS. Bangor Punta Operations, Inc. SN 353,585. Pub. 10–13–70. Filed 3–9–70.

905,880. MISCELLANEOUS DESIGN. Addmaster Corporation. SN 354,699. Pub. 10–27–70. Filed 3–20–70.

905,881. LENKER AND DESIGN. Lenker Manufacturing Company, Inc. SN 357,101. Pub. 10–27–70. Filed 4–16–70.

905,882. PANAC. Matsushita Electric Industrial Co., Ltd. SN 357,732. Pub. 10–27–70. Filed 4–23–70.

905,883. PANASONIC. Matsushita Electric Industrial Co., Ltd. SN 357,733. Pub. 10–27–70. Filed 4–23–70.

905,884. FRICO AND DESIGN. Fuel Research & Instrument Co. SN 361,927. Pub. 10–27–70. Filed 6–8–70.

905,885. CIRCLE AND MALE DESIGN. Dunn Products, Inc. MULTIPLE CLASS (Classes 26, 39, and 44). SN 364,844. Pub. 10–27–70. Filed 7–10–70.

905,886. LEUPOLD. Leupold & Stevens, Inc. SN 365,646. Pub. 10–27–70. Filed 7–20–70.

Class 27 — Horological Instruments

905,887. S SONOMATIC AND DESIGN. Cyma Watch Co. S.A. SN 305,209. Pub. 7–28–70. Filed 8–15–68.

Class 29 — Brooms, Brushes, and Dusters

905,888. WESTMORE. House of Westmore, Inc. MULTIPLE CLASS (Classes 29, 40, 44, and 51). SN 327,900. Pub. 10–27–70. Filed 5–21–69.

Class 31 — Filters and Refrigerators

905,696. (See Class 1 for this trademark.)

905,842. (See Class 23 for this trademark.)

905,889. D AND DESIGN. Lykes-Pasco Packing Company. SN 341,826. Pub. 10–27–70. Filed 10–27–69.

Class 32 — Furniture and Upholstery

905,890. SNUGGLE FLUFF. Principle Business Enterprises, Inc. SN 339,038. Pub. 4–21–70. Filed 9–26–69.

905,891. SUN VALLEY SLEEPER AND DESIGN. Everton Mattress Factory, Inc. SN 352,626. Pub. 7–21–70. Filed 2–27–70.

Class 34 — Heating, Lighting, and Ventilating Apparatus

905,696. (See Class 1 for this trademark.)

905,705. (See Class 6 for this trademark.)

905,721. (See Class 6 for this trademark.)

905,892. HYDROTHERM. Hydrotherm, Inc. SN 85,227. Pub. 5–16–61. Filed 11–13–59.

905,893. HYDRO HEAT. Hydrotherm, Inc. SN 164,624. Pub. 9–1–64. Filed 3–14–63.

905,894. 600 PLUS. Air Reduction Company, Incorporated. SN 322,243. Pub. 10–27–70. Filed 3–20–69.

905,895. BUDDY-LITE AND DESIGN. Ronson Corporation. SN 345,375. Pub. 10–27–70. Filed 12–4–69.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

905,705. (See Class 6 for this trademark.)

905,780. (See Class 19 for this trademark.)

905,896. SUP-R-THANE. C. R. Daniels, Inc. SN 333,805. Pub. 10–27–70. Filed 7–29–69.

905,897. KMS 300. S. S. Kresge Company. SN 349,189. Pub. 10–27–70. Filed 1–21–70.

905,898. FITZ-RITE. The Fitzgerald Manufacturing Company. SN 349,736. Pub. 10–27–70. Filed 1–27–70.

905,899. SPEED TRACK. Sonic Distributors, Inc. SN 366,007. Pub. 10–27–70. Filed 7–23–70.

Class 36 — Musical Instruments and Supplies

905,799. (See Class 21 for this trademark.)

905,900. M AND DESIGN. Vsesojuznoje Exportno-Importnoje Objedinenije "Mezhdunarodnaja Kniga" USSR. SN 270,827. Pub. 12–10–68. Filed 5–5–67.

905,901. UNICORDER. Standard Radio Corporation. SN 332,634. Pub. 10–27–70. Filed 7–15–69.

905,902. MINI-8. Tenna Corporation. SN 352,262. Pub. 10–27–70. Filed 2–24–70.

Class 37 — Paper and Stationery

905,697. (See Class 1 for this trademark.)

905,844. (See Class 23 for this trademark.)

Class 39 — Clothing

905,885. (See Class 26 for this trademark.)

905,903. ANGEL BABY. The Dorsey Company, d.b.a. The Angel Baby Co. SN 339,663. Pub. 7–14–70. Filed 10–3–69.

905,904. LITTLE-ME. Maidenform, Inc. SN 344,511. Pub. 5–12–70. Filed 11–25–69.

905,905. ACT YOUNG. Jeanne West Fashions, Inc. SN 349,410. Pub. 8–11–70. Filed 1–22–70.

Class 40 — Fancy Goods, Furnishings, and Notions

905,888. (See Class 29 for this trademark.)

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

905,697. (See Class 1 for this trademark.)

905,906. LUV-RUG. Jerome H. Pennock. SN 325,914. Pub. 9–23–69. Filed 4–30–69.

905,907. GENO. Deering Milliken, Inc. SN 348,077. Pub. 5–26–70. Filed 1–9–70.

905,908. SMART SET. E. T. Barwick Industries, Inc. SN 352,713. Pub. 10–20–70. Filed 3–2–70.

Class 44 — Dental, Medical, and Surgical Appliances

905,885. (See Class 26 for this trademark.)

905,888. (See Class 29 for this trademark.)

905,909. DYNATHIGH. Dynatone Electronics Corporation. SN 330,917. Pub. 10–27–70. Filed 6–25–69.

905,910. DENTILLIUM. Stainless Foundry & Engineering, Inc. SN 340,837. Pub. 10–27–70. Filed 10–15–69.

905,911. SAN-T-BELT. Beltx Corporation. SN 354,799. Pub. 10–27–70. Filed 3–23–70.

905,912. HERNIA-FLEX. Surgical Developments Limited. SN 355,544. Pub. 10–27–70. Filed 3–31–70.

905,913. OCTAVE. Beltone Electronics Corporation. SN 355,613. Pub. 10–27–70. Filed 4–1–70.

905,914. WEBER SKYLIGHT. The Weber Dental Manufacturing Company. SN 355,928. Pub. 10–27–70. Filed 4–3–70.

905,915. CLAIROL. Clairol Incorporated. SN 358,942. Pub. 10–27–70. Filed 5–6–70.

Class 45 — Soft Drinks and Carbonated Waters

905,916. INDIAN GEM. Sales Producers Associates, Inc., d.b.a. Gem Canning Co. MULTIPLE CLASS (Classes 45 and 46). SN 305,161. Pub. 10–27–70. Filed 8–14–68.

905,917. LEMONSODA AND DESIGN. Fonti Levissima S.p.A., by merger from S.A.G.A. Societa Acque Gasate ed Affini S.p.A., d.b.a. S.A.G.A. S.p.A. SN 307,793. Pub. 7–21–70 Filed 8–19–68.

905,918. BLITZ. The Coca-Cola Company. SN 357,903. Pub. 7–28–70. Filed 4–27–70.

Class 46 — Foods and Ingredients of Foods

905,819. (See Class 22 for this trademark.)

905,916. (See Class 45 for this trademark.)

905,919. LAY'S. Frito-Lay, Inc. (Delaware corporation), assignee of Frito-Lay, Inc. (Texas corporation). SN 140,938. Pub. 6-25-63. Filed 3-28-62.

905,920. GOREN'S. Goren Foods Company. SN 294,388. Pub. 10-27-70. Filed 3-28-68.

905,921. MARY ANNE. Oates Bros. Fruit & Produce Co. SN 300,102. Pub. 7-14-70. Filed 6-10-68.

905,922. VICTORY-V. Fryer & Company (Nelson) Limited. SN 307,996. Pub. 10-7-69. Filed 9-23-68.

905,923. CHAS. GOODLIGHT & SONS, LTD. Dunkin' Donuts Incorporated, d.b.a. Chas. Goodlight & Sons, Ltd. SN 323,439. Pub. 10-27-70. Filed 4-2-69.

905,924. COOL 'N LITE. Continental Coffee Company. SN 325,583. Pub. 6-2-70. Filed 4-25-69.

905,925. CAPTAIN VICTORY. The Quaker Oats Company. SN 327,326. Pub. 10-28-69. Filed 5-15-69.

905,926. HOMBRES. The Quaker Oats Company. SN 327,330. Pub. 12-30-69. Filed 5-15-69.

905,927. D AND DESIGN. SCM Corporation, d.b.a. Durkee Famous Foods. SN 327,682. Pub. 10-27-70. Filed 5-19-69.

905,928. MENU. L. D. Schreiber Cheese Co., Inc. SN 335,612. Pub. 10-27-70. Filed 8-18-69.

905,929. HILLSIDE HOUSE. National Tea Co. SN 336,216. Pub. 10-27-70. Filed 8-22-69.

905,930. MISCELLANEOUS DESIGN. William J. Mandelbaum, Morton Colby, and Daniel R. Herbst (partnership). SN 337,857. Pub. 10-27-70. Filed 9-15-69.

905,931. ULTRAPET. William J. Mandelbaum, Morton Colby, and Daniel R. Herbst (partnership). SN 337,860. Pub. 10-27-70. Filed 9-15-69.

905,932. BIPPY. Candy Corporation of America, assignee of Mason, Au & Magenheimer Confy. Mfg. Co., Inc. SN 338,799. Pub. 7-28-70. Filed 9-24-69.

905,933. CHEF-WAY. Arkansas Grain Corporation. SN 339,987. Pub. 10-27-70. Filed 10-7-69.

905,934. HONEY BEAR DESIGN. Carson International Inc., d.b.a. Honey Bear Farm. SN 340,772. Pub. 10-27-70. Filed 10-15-69.

905,935. SWEET BIPPIES. SCM Corporation, d.b.a. Durkee Famous Foods. SN 343,757. Pub. 10-27-70. Filed 11-17-69.

905,936. MR. PURE AND DESIGN. Home Juice Co. SN 344,861. Pub. 10-27-70. Filed 11-28-69.

905,937. CASTLE VILLAGE. A & A Food Products Corp. SN 345,579. Pub. 10-27-70. Filed 12-8-69.

905,938. RICH'S CATERING. Louis Rich Foods, Inc. SN 346,403. Pub. 10-27-70. Filed 12-16-69.

905,939. UNI-RACE. Unilab Research Corporation. SN 347,359. Pub. 10-27-70. Filed 12-29-69.

905,940. COLUMBIA FARMS AND DESIGN. Peter D. Congedo, d.b.a. Columbia Farms and P. Congedo & Sons. SN 347,394. Pub. 10-27-70. Filed 12-30-69.

905,941. MOORE BROS. Moore Bros. Wholesale Meats, Inc. SN 348,816. Pub. 10-27-70. Filed 12-18-69.

905,942. GUZZLER'S. Dr. Thomas A. Cresswell, d.b.a. Research Processing and Distributing Company. SN 350,232. Pub. 10-27-70. Filed 2-2-70.

905,943. RING PACK AND DESIGN. J. S. Danenberg, d.b.a. Danny Danenberg. SN 350,816. Pub. 10-27-70. Filed 2-9-70.

905,944. WORLD TRAVELER. Houston Foods, Inc. SN 350,912. Pub. 10-27-70. Filed 2-9-70.

905,945. VEGETABLE SKALLOPS. Worthington Foods, Inc. SN 351,637. Pub. 10-27-70. Filed 2-17-70.

905,946 DIDDLY DOO. TV Time Foods, Inc. SN 352,683. Pub. 8-18-70. Filed 2-27-70.

905,947. BRAUN'S. ITT Continental Baking Company, d.b.a. Braun Baking Company. SN 353,004. Pub. 10-27-70. Filed 3-4-70.

905,948. OLD HEIDELBERG CHEESE AND DESIGN. Kolb-Lena Cheese Co. SN 354,352. Pub. 6-16-70. Filed 3-18-70.

905,949. EARLY ORANGE. The Coca-Cola Company. SN 356,550. Pub. 10-27-70. Filed 4-13-70.

905,950. NANCE'S. Barrington Foods, Inc. SN 361,643. Pub. 10-27-70. Filed 6-4-70.

905,951. AMSTAR. American Sugar Company. SN 365,860. Pub. 10-27-70. Filed 7-22-70.

905,952. AMSTAR. American Sugar Company. SN 365,861. Pub. 10-27-70. Filed 7-22-70.

905,953. AMSTAR. American Sugar Company. SN 365,862. Pub. 10-27-70. Filed 7-22-70.

Class 47 — Wines

905,954. CRACKLING-DUCK. Weibel, Inc., d.b.a. Weibel Champagne Vineyards. SN 353,939. Pub. 10-27-70. Filed 3-12-70.

Class 48 — Malt Beverages and Liquors

905,955. PRIMO. Jos. Schlitz Brewing Company, d.b.a. Hawaii Brewing Co. SN 300,539. Pub. 11-12-68. Filed 6-17-68.

Class 49 — Distilled Alcoholic Liquors

905,956. DESTILERIA HUASTECA AND DESIGN. Destileria Huasteca, S.A. SN 330,725. Pub. 7-14-70. Filed 6-23-69.

Class 50 — Merchandise Not Otherwise Classified

905,696. (See Class 1 for this trademark.)

905,957. FLEX-O-LINE. General Steel Industries, Inc., d.b.a. Flex-O-Lite Division. SN 311,863. Pub. 6-3-69. Filed 11-12-68.

905,958. FLEX-O-LANE. General Steel Industries, Inc., d.b.a. Flex-O-Lite Division. SN 311,864. Pub. 6-3-69. Filed 11-12-68.

905,959. FLEX-O-LITE. General Steel Industries, Inc., d.b.a. Flex-O-Lite Division. SN 315,549. Pub. 5-27-69. Filed 1-2-69.

905,960. KALLIROSCOPE. Kalliroscope Corporation. SN 331,212. Pub. 10-27-70. Filed 6-27-69.

Class 51 — Cosmetics and Toilet Preparations

905,888. (See Class 29 for this trademark.)

905,961. HAIR COLOR SO NATURAL ONLY HER HAIR DRESSER KNOWS FOR SURE. Clairol Incorporated. SN 145,045. Pub. 2-11-64. Filed 5-21-62.

905,962. GOLDEN SAND. Borden, Inc., assignee, by mesne assignment, of Armour and Company. SN 288,168. Pub. 9-10-68. Filed 1-5-68.

905,963. COMPLETE. Carter-Wallace, Inc. SN 319,224. Pub. 6-24-69. Filed 2-17-69.

905,964. COMPLEET. Carter-Wallace, Inc. SN 319,225. Pub.

905,965. MISCELLANEOUS DESIGN. Yanagiya Honten Co., Ltd. SN 324,258. Pub. 10-27-70. Filed 4-10-69. 6-24-69. Filed 2-17-69.

905,966. BOND STREET. Yardley of London, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 327,098. Pub. 10-27-70. Filed 5-13-69.

905,967. STILPLIS 7 JOURS. Perma. SN 332,132. Pub. 10-27-70. Filed 7-9-69.

905,968. SOUL-MATE. Helene's Formula, Inc. SN 334,325. Pub. 10-27-70. Filed 8-4-69.

905,969. SYNTRESS. The Casan Company. SN 335,429. Pub. 4-28-70. Filed 8-15-69.

905,970. GRANDE MARQUE. Textron Inc. SN 336,955. Pub. 10-27-70. Filed 9-3-69.

905,971. NOMISOL. Nomisol Products (Proprietary) Limited. SN 337,082. Pub. 7-21-70. Filed 9-4-69.

905,972. PARLAY. DEP Corporation. SN 351,115. Pub. 10-27-70. Filed 2-11-70.

905,973. JEX. Faberge, Incorporated. SN 351,613. Pub. 10-27-70. Filed 2-17-70.

905,974. PARLAIR. Union Carbide Corporation. SN 352,742. Pub. 10-27-70. Filed 3-2-70.

905,975. PAST AND PRESENT. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 355,831. Pub. 10-27-70. Filed 4-3-70.

905,976. ROMAN BRIO. Pfizer Inc., by change of name from Chas. Pfizer & Co., Inc. SN 357,790. Pub. 10-27-70. Filed 4-24-70.

905,977. PRETTY MOUTH. Pfizer Inc. SN 359,974. Pub. 10-27-70. Filed 5-18-70.

905,978. TANDY. American Home Products Corporation. SN 360,620. Pub. 9-1-70. Filed 5-25-70.

Class 52 — Detergents and Soaps

905,705. (See Class 6 for this trademark.)

905,708. (See Class 6 for this trademark.)

905,966. (See Class 51 for this trademark.)

905,975. (See Class 51 for this trademark.)

905,979. GOLDEN SAND. Borden, Inc., assignee, by mesne assignment, of Armour and Company. SN 288,169. Pub. 9-10-68. Filed 1-5-68.

905,980. PRESCO-CHEM ETC. AND DESIGN. Earl J. Liester, d.b.a. Presco-Chem Products. SN 322,467. Pub. 10-27-70. Filed 3-21-69.

905,981. BOUTIQUE BRIGHT. The Drackett Company. SN 336,780. Pub. 10-27-70. Filed 9-2-69.

905,982. NOMISOL. Nomisol Products (Proprietary) Limited. SN 337,083. Pub. 7-21-70. Filed 9-4-69.

905,983. NODOR. Frederick C. Bersworth. SN 339,416. Pub. 10-27-70. Filed 10-1-69.

905,984. BASIC D. Shaklee Products. SN 341,855. Pub. 10-27-70. Filed 10-27-69.

905,985. CONDITIONOL. Clairol Incorporated. SN 341,913. Pub. 10-27-70. Filed 10-28-69.

905,986. SEA-2. Travaco Laboratories, Inc. SN 344,748. Pub. 10-27-70. Filed 11-26-69.

905,987. SAN-E-BLU. Ramrod-Polytran, Inc. SN 345,499. Pub. 10-27-70. Filed 12-5-69.

905,988. WATERSILK. Zsa Zsa Limited. SN 345,524. Pub. 10-27-70. Filed 12-5-69.

905,989. NAMIZYME. National Milling and Chemical Company. SN 345,845. Pub. 10-27-70. Filed 12-10-69.

905,990. MILACRON. Cincinnati Milacron Inc., by change of name from The Cincinnati Milling Machine Company. SN 346,725. Pub. 7-21-70. Filed 12-19-69.

905,991. LIQUIK-2. Birko Chemical Corporation. SN 346,846. Pub. 10-27-70. Filed 12-22-69.

905,992. KICK THE BUCKET. Noxell Corporation. SN 352,851. Pub. 10-27-70. Filed 3-2-70.

905,993. BUFF. Armour-Dial, Inc. SN 356,360. Pub. 10-27-70. Filed 4-9-70.

905,994. BUFFER ZONE. Armour-Dial, Inc. SN 356,364. Pub. 10-27-70. Filed 4-9-70.

905,995. BRUSH KONTROL. Mark Allen Co. SN 362,585. Pub. 10-27-70. Filed 6-15-70.

Service Marks

Class 100 — Miscellaneous

905,996. AUTO-SEPTIC. The Scott & Fetzer Company. SN 307,405. Pub. 10-27-70. Filed 9-16-68.

905,997. MOBY DICK'S A WHALE OF A MEAL AND DESIGN. Moby Dick's Fish & Chips, Inc. SN 307,851. Pub. 10-27-70. Filed 9-20-68.

905,998. THE CHICKEN COOP. The Chicken Coop, Inc. SN 334,046. Pub. 9-22-70. Filed 7-31-69.

905,999. DELTA FISH SHACK AND DESIGN. Chanel Catfish Development Corp. SN 338,539. Pub. 10-27-70. Filed 9-22-69.

906,000. DATA PROCESSING INTERNATIONAL AND DESIGN. D.P.I. Incorporated. MULTIPLE CLASS (Classes 100 and 101). SN 340,312. Pub. 10-27-70. Filed 10-10-69.

Class 101 — Advertising and Business

906,000. (See Class 100 for this trademark.)

906,001. TELEGIFT AND DESIGN. Telegift Incorporated, assignee, by mesne assignment, of Telegift, Incorporated. SN 296,730. Pub. 7-7-70. Filed 3-24-69.

906,002. VARIDOT. Rigby Printing Company. SN 297,092. Pub. 10-27-70. Filed 5-1-68.

906,003. TACO BOY AND DESIGN. Taco Boy, Inc. SN 299,595. Pub. 10-27-70. Filed 6-3-68.

906,004. AM FC AND DESIGN. American Medical Facilities Corporation. SN 302,907. Pub. 10-27-70. Filed 7-17-68.

906,005. IPI. Industrial Premiums, Incorporated. SN 312,890. Pub. 10-27-70. Filed 11-22-68.

906,006. EDGE SET AND DESIGN. Mike Holofcener's Edge Set, Inc. SN 315,629. Pub. 10-27-70. Filed 12-27-68.

906,007. CR DESIGN. Computer Response Corporation. SN 318,756. Pub. 10-27-70. Filed 2-10-69.

906,008. INTERACCESS. Interaccess Corp. SN 320,347. Pub. 10-27-70. Filed 2-28-69.

906,009. METRO-MART. American Metro-Marts Corporation. SN 320,411. Pub. 10-27-70. Filed 3-3-69.

906,010. "PRINCESS SOYA." American Soybean Association. SN 330,980. Pub. 10-27-70. Filed 6-25-69.

906,011. WELSH PHARMACY AND DESIGN. C. Robert Welsh, d.b.a. Welsh Pharmacy. SN 332,542. Pub. 10-27-70. Filed 7-14-69.

906,012. THE FIRST AMERICANS. Glendinning Companies, Inc. SN 333,398. Pub. 10-27-70. Filed 7-24-69.

906,013. ACTIONCARD AND DESIGN. The Miller Publishing Company. SN 335,045. Pub. 8-11-70. Filed 8-11-69.

906,014. CALLSEARCH. McGraw-Hill, Inc., d.b.a. McGraw-Hill Information Systems Co. SN 336,831. Pub. 10-27-70. Filed 9-2-69.

906,015. DATA SEARCH. Sales Consultants of Columbus, Ohio, Inc. SN 336,949. Pub. 10-27-70. Filed 9-3-69.

906,016. POWERVISION. Victor Video, Inc. SN 337,110. Pub. 10-27-70. Filed 9-4-69.

906,017. MISTER CHAUFFEUR AND DESIGN. Auto Driveaway Company. SN 353,815. Pub. 10-27-70. Filed 3-12-70.

906,018. DOLLAR SIGN DESIGN. Graphic Advertising, Inc. SN 361,929. Pub. 10–27–70. Filed 6–8–70.

906,019. CALL-A-CAREER. Service Specialists, Ltd. SN 365,273. Pub. 10–27–70. Filed 7–15–70.

Class 102 — Insurance and Financial

906,020. MISCELLANEOUS DESIGN. Travelers Express Company, Inc. SN 337,106. Pub. 10–27–70. Filed 9–4–69.

906,021. SYNERCON. Synercon Corporation. SN 339,404. Pub. 10–27–70. Filed 10–1–69.

Class 103 — Construction and Repair

906,022. GIANT WASH. Giant Wash, Inc. SN 310,227. Pub. 2–17–70. Filed 10–22–68.

906,023. SERVAIR AND DESIGN. Servair Incorporated. SN 337,697. Pub. 10–27–70. Filed 9–11–69.

906,024. OVENBRITE. Robert Hajicek, d.b.a. Ovenbrite. SN 347,739. Pub. 10–27–70. Filed 1–5–70.

906,025. S AND FEMALE DESIGN. Robert Hajicek, d.b.a. Ovenbrite. SN 347,740. Pub. 10–27–70. Filed 1–5–70.

906,026. OVENBRITE AND DESIGN. Robert Hajicek, d.b.a. Ovenbrite. SN 347,741. Pub. 10–27–70. Filed 1–5–70.

Class 105 — Transportation and Storage

906,027. NORWEGIAN CARIBBEAN LINES. Klosters Rederi A/S. SN 305,090. Pub. 10–27–70. Filed 7–17–68.

906,028. TIA AND DESIGN. Trans International Airlines, Inc. SN 310,153. Pub. 10–27–70. Filed 10–21–68.

906,029. ADMIRAL TRAVEL AND MARINER'S FLAG DESIGN. Admiral Travel Service, Inc. SN 320,413. Pub. 10–27–70. Filed 3–3–69.

906,030. SERVAIR AND DESIGN. Servair Incorporated. SN 337,698. Pub. 10–27–70. Filed 9–11–69.

906,031. MC GUIRE TERMINAL COMPANY. General American Transportation Corporation. SN 346,815. Pub. 10–27–70. Filed 12–22–69.

Class 106 — Material Treatment

906,032. PRESCAP. Monie S. Hudson, d.b.a. Hudson Research. SN 328,989. Pub. 10–27–70. Filed 6–3–69.

906,033. AMERFLEX. American Waterproofing Corp. SN 337,505. Pub. 10–27–70. Filed 9–10–69.

Class 107 — Education and Entertainment

906,034. FLYING PUSSYCAT DESIGN. Fly Without Fear, Inc. SN 343,468. Pub. 10–27–70. Filed 11–14–69.

906,035. IAT. Control Data Corporation. SN 352,018. Pub. 10–27–70. Filed 2–24–70.

Collective Membership Marks

Class 200

906,036. CEC. Consulting Engineers Council. SN 358,899. Pub. 10–27–70. Filed 5–6–70.

906,037. NATIONAL COLLEGIATE ATHLETIC ASSOCIATION AND DESIGN. The National Collegiate Athletic Association. SN 365,867. Pub. 10–27–70. Filed 7–22–70.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 1 — Raw or Partly Prepared Materials

906,038. Clean Water, Inc., Toms River, N.J. SN 329,688. Filed P.R. 6–11–69; Am. S.R. 10–5–70.

SORBENT TYPE C

For Dry Fibrous Material for Use as an Oil Absorbent Material To Absorb Oil Slick From Water Surfaces, To Absorb Oil Waste From Industrial Discharges and for Use as a Filtering Agent and Sweeping Compound (Int. Cl. 4).
First use Feb. 12, 1969.

Class 19 — Vehicles

906,039. Cobia Boats, Inc., Sanford, Fla., by change of name from Southern Fiber Glass Products, Inc., Sanford, Fla. SN 320,092. Filed P.R. 2–25–69; Am. S.R. 10–8–70.

MOBILE MINI-YACHT

For Houseboats (Int. Cl. 12).
First use Jan. 15, 1969.

Class 21 — Electrical Apparatus, Machines, and Supplies

906,040. Topp Electronics, Inc., Miami, Fla., by change of name from Topp Import & Export, Inc., Miami, Fla. SN 291,108. Filed P.R. 2–14–68; Am. S.R. 3–28–69.

WAKE UP TO STEREO

For Clock Stereo Radios (Int. Cl. 9).
First use Jan. 18, 1968.

906,041. Republic Wire & Cable Corporation, Pico Rivera, Calif. SN 292,421. Filed P.R. 3–4–68; Am. S.R. 9–16–70.

SUPER DUCT

For Electrical Wiring and Cable, and Particularly for Elevator Hatch Cable (Int. Cl. 9).
First use Nov. 15, 1966.

Class 34 — Heating, Lighting, and Ventilating Apparatus

906,042. Trubroil Corporation, Oak Park, Ill. SN 323,157. Filed P.R. 3–28–69; Am. S.R. 7–8–70.

TRUBROIL

For Rotary Ovens for Preparation of Food, Principally But Not Necessarily Exclusively for Commercial and Institutional Use (Int. Cl. 11).
First use Mar. 4, 1969.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

906,043. Goshen Rubber Co., Inc., Goshen, Ind. SN 283,521. Filed P.R. 10–27–67; Am. S.R. 10–27–70.

V-HICULAR

For Rubber Sealing Rings (Int. Cl. 17).
First use 1964.

906,044. The Jetzon Tire & Rubber Co., Inc., Montgomeryville, Pa. SN 337,172. Filed P.R. 9–5–69; Am. S.R. 9–30–70.

TIFFANY

For Pneumatic Tires (Int. Cl. 12).
First use July 28, 1969.

Class 46 — Foods and Ingredients of Foods

906,045. Libby, McNeill & Libby, Chicago, Ill. SN 292,588. Filed P.R. 3–6–68; Am. S.R. 10–14–70.

BEER SNACKS

For Canned Meat (Int. Cl. 29).
First use Dec. 20, 1967.

906,046. Roush Bakery Products Co., Inc., Sacramento, Calif. SN 332,630. Filed P.R. 7–15–69; Am. S.R. 9–30–70.

INSTANT-BAKE

For Bread (Int. Cl. 30).
First use Feb. 27, 1969.

Class 51 — Cosmetics and Toilet Preparations

906,047. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 331,219. Filed P.R. 6–27–69; Am. S.R. 9–29–70.

MIX SIX

For Eye Shadow Assortment Box (Int. Cl. 3).
First use June 2, 1969.

906,048. Merle Norman Cosmetics, Inc., Los Angeles, Calif. SN 331,222. Filed P.R. 6–27–69; Am. S.R. 9–29–70.

HARDLY PEACH

For Lipstick (Int. Cl. 3).
First use June 2, 1969.

TRADEMARK REGISTRATIONS RENEWED

79,904. EDCO. Cl. 26 (Int. Cl. 16). 10–18–10.
80,503. SLEEPMETER. Cl. 27 (Int. Cl. 14). 12–27–10.
80,651. MIDOL. Cl. 18 (Int. Cl. 5). 1–17–11.
80,778. URODONAL. Cl. 18 (Int. Cl. 5). 1–31–11.
269,663. "SWIFT'S LA PRIMERA" ETC. AND REPRESENTATION OF SMALL BOY. Cl. 46 (Int. Cl. 29). 4–15–30.
272,584. "FROMM" AND DESIGN. Cl. 1 (Int. Cl. 18). 7–8–30.
272,779. "MOONLIGHT." Cl. 46 (Int. Cl. 31). 7–15–30.
276,541. "FOR GOODNESS SAKE." Cl. 46 (Int. Cl. 30). 10–21–30.
277,187. SOL-U-SAN. Cl. 52 (Int. Cl. 3). 11–11–30.
277,265. LASCO. Cl. 35 (Int. Cl. 12). 11–11–30.
277,278. SOL-U-NESE. Cl. 52 (Int. Cl. 3). 11–11–30.
277,836. FLAMINGTO. Cl. 12 (Int. Cl. 19). 11–25–30.
278,920. "CP CHICAGO PNEUMATIC" AND DESIGN. Cl. 21 (Int. Cls. 7 and 9). 1–6–31.
278,921. "CP CHICAGO PNEUMATIC" AND DESIGN. Cl. 15 (Int. Cl. 4). 1–6–31.
279,235. "IL GALLO" ETC. AND DESIGN. Cl. 46 (Int. Cl. 30). 1–13–31.
280,083. ANVITA. Cl. 18 (Int. Cl. 5). 2–10–31.
280,104. MYLIN. Cl. 18 (Int. Cl. 5). 2–10–31.
280,127. "TIGERWELD" AND REPRESENTATION OF PARALLEL LINES. Cl. 21 (Int. Cl. 9). 2–10–31.
280,422. CHORE GIRL. Cl. 4 (Int. Cl. 3). 2–17–31.
280,480. ETERNATIME. Cl. 27 (Int. Cl. 14). 2–17–31.
280,517. MISSIMPLICITY. Cl. 39 (Int. Cl. 25). 2–17–31.
280,617. "CP CHICAGO PNEUMATIC" AND DESIGN. Cl. 35 (Int. Cl. 17). 2–24–31.
280,756. SUNBEAM. Cl. 21 (Int. Cls. 7, 9, and 14). 2–24–31.
280,892. BOND-OST. Cl. 46 (Int. Cl. 29). 3–3–31.
281,047. SAXON-TEX AND DESIGN. Cl. 39 (Int. Cl. 25). 3–10–31.
527,177. LADIES' CHOICE. Cl. 17 (Int. Cl. 34). 7–4–50.
528,066. EL MOROCCO. Cl. 46 (Int. Cl. 30). 7–25–50.
529,164. RAYTHEON AND DESIGN. Cl. 26 (Int. Cl. 9). 8–15–50.
531,036. ENCORE. Cl. 17 (Int. Cl. 34). 9–19–50.
444,467. FAVORITE. Cl. 37 (Int. Cl. 16). 4–10–51.
531,810. ORCHIDS. Cl. 37 (Int. Cl. 16). 10–10–50.
532,072. ASPREY. Cl. 32 (Int. Cl. 20). 10–17–50.
532,152. STONES. Cl. 50 (Int. Cl. 20). 10–17–50.
532,253. STEEL WHEN YOU WANT IT. Cl. 12 (Int. Cl. 6). 10–17–50.
532,385. RECORDAK. Cl. 26 (Int. Cls. 1 and 9). 10–24–50.
532,502. POOR RICHARD'S. Cl. 38 (Int. Cl. 16). 10–24–50.
532,547. TEL-E-TYME. Cl. 39 (Int. Cl. 25). 10–24–50.
532,570. MATCHLESS. Cl. 8 (Int. Cl. 34). 10–24–50.
532,644. CRYSTAL. Cl. 46 (Int. Cl. 29). 10–31–50.
532,657. STAB-L-FLOW. Cl. 34 (Int. Cl. 11). 10–31–50.
537,711. BRUNSWICK. Cl. 22 (Int. Cl. 28). 10–31–50.
532,801. WEAVER. Cl. 26 (Int. Cl. 9). 10–31–50.
532,852. MOUNTAIN LEAF. Cl. 17 (Int. Cl. 34). 10–31–50.
532,871. LIQUI-COLOR. Cl. 51 (Int. Cl. 3). 10–31–50.
532,894. TRI-VI-SOL. Cl. 46 (Int. Cl. 5). 10–31–50.
533,016. PARTY AND DESIGN. Cl. 46 (Int. Cl. 30). 11–7–50.
533,078. STAIN-X. Cl. 52 (Int. Cl. 3). 11–7–50.
533,128. OVULINDEX. Cl. 44 (Int. Cl. 9). 11–7–50.
533,175. SLIGHTLY WICKED. Cl. 51 (Int. Cl. 3). 11–7–50.
533,187. DRYFOL. Cl. 12 (Int. Cl. 17). 11–7–50.
533,276. ROWE. Cl. 23 (Int. Cl. 9). 11–14–50.

533,282. SMOOTHSET. Cl. 12 (Int. Cl. 19). 11–14–71.
533,407. BLANK SHIELD (DESIGN). Cl. 1 (Int. Cl. 1). 11–14–50.
533,545. COMSTOCK. Cl. 46 (Int. Cl. 29). 11–21–50.
533,566. BOSTON. Cls. 13 and 19 (Int. Cls. 6 and 12). 11–21–50.
533,579. HYLOY. Cl. 13 (Int. Cls. 6 and 8). 11–21–50.
533,605. FEATURA. Cl. 39 (Int. Cl. 25). 11–21–50.
533,654. E-Z. Cl. 39 (Int. Cl. 25). 11–21–50.
533,672. OILS AND BARREL DESIGN. Cl. 15 (Int. Cl. 4). 11–21–50.
533,773. ENDURA AND DESIGN. Cl. 27 (Int. Cl. 14). 11–21–50.
533,785. USCOSET. Cl. 6 (Int. Cl. 1). 11–21–50.
533,806. COCKLETONE. Cl. 37 (Int. Cl. 16). 11–21–50.
533,819. MOUNTAIN-TESTED AND DESIGN. Cl. 35 (Int. Cl. 12). 11–21–50.
533,841. TERRA-TONE. Cl. 16 (Int. Cl. 1). 11–28–50.
533,985. MISCELLANEOUS DESIGN. Cl. 26 (Int. Cl. 9). 11–28–50.
534,000. COMARK. Cl. 42 (Int. Cl. 24). 11–28–50.
534,013. MISCELLANEOUS DESIGN. Cl. 1 (Int. Cl. 31). 11–28–50.
534,068. JET. Cl. 39 (Int. Cl. 25). 11–28–50.
534,097. T–4–L. Cl. 18 (Int. Cl. 5). 11–28–50.
534,199. BALLYMENA. Cl. 39 (Int. Cl. 25). 12–5–50.
534,316. CHARLES II. Cl. 28 (Int. Cls. 8 and 14). 12–5–50.
534,317. MARY II. Cl. 28 (Int. Cls. 8 and 14). 12–5–50.
534,318. MODERN CLASSIC. Cl. 28 (Int. Cls. 8 and 14). 12–5–50.
534,319. MOUNT VERNON. Cl. 28 (Int. Cls. 8 and 14). 12–5–50.
534,320. WILLIAM & MARY. Cl. 28 (Int. Cls. 8 and 14). 12–5–50.
534,324. AMERICAN VICTORIAN. Cl. 28 (Int. Cls. 8 and 14). 12–5–50.
534,476. MENNER'S. Cl. 46 (Int. Cl. 29). 12–5–50.
534,538. A JOHNSON'S WAX PRODUCT AND DESIGN. Cl. 4 (Int. Cl. 3). 12–12–50.
534,561. VIS-O-PAK. Cl. 22 (Int. Cl. 28). 12–12–50.
534,642. SHEER MAGIC. Cl. 39 (Int. Cl. 25). 12–12–50.
534,668. EXETER. Cl. 46 (Int. Cl. 29). 12–12–50.
534,737. WARNER & SWASEY. Cl. 23 (Int. Cl. 7). 12–12–50.
534,870. BRYANT. Cl. 39 (Int. Cl. 25). 12–19–50.
534,999. MASLAND. Cl. 42 (Int. Cl. 27). 12–19–50.
535,008. SUP-R-GLOSS AND DESIGN. Cl. 4 (Int. Cl. 3). 12–19–50.
535,022. RADELIN. Cl. 44 (Int. Cl. 10). 12–19–50.
535,296. WHIZ AND DESIGN. Cl. 6 (Int. Cls. 1 and 5). 12–26–50.
535,283. STIM-U-PLANT. Cl. 10 (Int. Cl. 1). 12–26–50.
535,355. HIGHLAND INN AND DESIGN. Cl. 49 (Int. Cl. 33). 12–26–50.
535,768. MISCELLANEOUS DESIGN. Cl. 12 (Int. Cl. 19). 1–2–51.
535,804. LA BELLE. Cl. 42 (Int. Cl. 26). 1–2–51.
535,841. DRIAIRE. Cl. 23 (Int. Cl. 7). 1–2–51.
535,961. ROLL O MATIC. Cl. 23 (Int. Cl. 7). 1–9–51.
535,979. KNIGHT AND DESIGN. Cl. 46 (Int. Cl. 30). 1–9–51.
535,982. RANGER. Cl. 23 (Int. Cl. 8). 1–9–51.
535,989. RED LINER. Cl. 23 (Int. Cl. 8). 1–9–51.
536,044. PENN DYNAFAN. Cl. 34 (Int. Cl. 11). 1–9–51.
536,059. RAJAH. Cl. 23 (Int. Cl. 8). 1–9–51.
536,149. GORHAM. Cl. 28 (Int. Cls. 8 and 14). 1–9–51.
536,541. CHECKER. Cl. 29 (Int. Cl. 16). 1–16–51.
536,579. GOODMAN'S. Cl. 46 (Int. Cl. 30). 1–16–51.
536,644. KAM-KING. Cl. 46 (Int. Cl. 29). 1–16–51.
536,924. CHROME–A–10. Cl. 6 (Int. Cl. 1). 1–23–51.
537,043. KODAGRAPH. Cl. 50 (Int. Cl. 17). 1–30–51.
537,237. DIAFUSE. Cl. 34 (Int. Cl. 11). 2–6–51.
537,378. BRIGHTWOOD. Cl. 44 (Int. Cl. 10). 2–6–51.
537,395. PEERLESS. Cl. 44 (Int. Cl. 10). 2–6–51.
537,521. GEMS OF INDUSTRY. Cl. 23 (Int. Cl. 8). 2–13–51.
537,557. DETREX. Cl. 2 (Int. Cl. 6). 2–13–51.
537,678. OUTLINE (DESIGN). Cl. 26 (Int. Cl. 9). 2–13–51.
537,679. C-HAND (DESIGN). Cl. 26 (Int. Cl. 9). 2–13–51.
537,841. METHASPEC AND DESIGN. Cl. 26 (Int. Cl. 9). 2–13–51.
537,994. "FLO." Cl. 46 (Int. Cls. 29 and 32). 2–20–51.
538,045. AUNT LEAH'S. Cl. 46 (Int. Cl. 29). 2–20–51.
538,046. PLAY BOY AND DESIGN. Cl. 39 (Int. Cl. 24). 2–20–51.
538,118. C-O-C-S. Cl. 6 (Int. Cl. 5). 2–20–51.
538,219. SPRAINT. Cl. 16 (Int. Cl. 2). 2–20–51.
538,232. FARMDALE. Cl. 46 (Int. Cl. 31). 2–20–51.
538,246. PURITAN. Cl. 39 (Int. Cl. 25). 2–20–51.
538,369. EARLI-BEST. Cl. 46 (Int. Cl. 31). 2–20–51.
538,403. NO-NEEDA SUGAR. Cl. 46 (Int. Cl. 31). 2–20–51.
538,639. EDUCATOR. Cl. 26 (Int. Cl. 9). 2–27–51.
538,681. PEERLESS. Cl. 50 (Int. Cl. 20). 2–27–51.
538,805. BULOVA AND DESIGN. Cl. 27 (Int. Cl. 14). 2–27–51.
538,852. CARBOTEX. Cl. 6 (Int. Cl. 31). 3–6–51.
538,999. AMBER-GLAS. Cl. 31 (Int. Cl. 11). 3–6–51.
539,015. SPEED UP. Cl. 6 (Int. Cl. 3). 3–6–51.
539,027. KANK–A. Cl. 18 (Int. Cl. 5). 3–6–51.
539,062. VOLAN. Cl. 5 (Int. Cl. 1). 3–6–51.
539,522. ANKELURE. Cl. 39 (Int. Cl. 25). 3–20–51.
539,574. WHITE MULE. Cl. 39 (Int. Cl. 25). 3–20–51.
539,742. BAR FOR MEN. Cl. 46 (Int. Cl. 30). 3–20–51.
539,801. CRESCENT. Cl. 23 (Int. Cl. 7). 3–27–51.
539,849. CLEAN-O-MATIC. Cl. 46 (Int. Cl. 24). 3–27–51.
539,902. NUVATROL. Cl. 21 (Int. Cl. 9). 3–27–51.
540,142. CREST. Cl. 19 (Int. Cl. 12). 3–27–51.
540,150. HUFFY. Cl. 19 (Int. Cl. 12). 3–27–51.
540,193. ELDAJON. Cl. 23 (Int. Cl. 16). 3–27–51.
540,242. HOLD-N-MOLD. Cl. 39 (Int. Cl. 25). 3–27–51.
540,280. TROY. Cl. 46 (Int. Cl. 31). 4–3–51.

TRADEMARK REGISTRATIONS CANCELED

Section 8

The following registrations issued Nov. 24, 1964

780,483. EZ-AWAY. Cl. 1.
780,484. DELAKINS. Cl. 1.
780,488. SPEC-TIER. Cl. 1.
780,490. THE HIDDEN TRAVELER. Cl. 3.
780,494. UPS. Cl. 5.
780,496. BLACK PANTHER AND DESIGN. Cl. 6.
780,499. BLACK PANTHER. Cl. 6.
780,504. FLUOROPHENE. Cl. 6.
780,508. ZINGRO. Cl. 6.
780,509. MARS AND DESIGN. Cl. 6.
780,511. GUARDIAN ANGEL. Cl. 6.
780,512. SUPER SOL. Cl. 6.
780,513. TRUE TONE AND DESIGN. Cl. 6.
780,514. TRUE TONE AND DESIGN. Cl. 6.
780,521. GARDEN MINT. Cl. 6.
780,523. PL AND DESIGN. Cl. 6.
780,529. CULL. Cl. 6.
780,533. SODA-SIL. Cl. 6.
780,535. SANTOMEZ. Cl. 6.
780,537. APOCHROMOUNT. Cl. 6.
780,541. MR. THRIFTY AND DESIGN. Cl. 10.
780,545. SIMO. Cl. 18.
780,546. ESTERGEL. Cl. 18.
780,547. PLETE. Cl. 18.
780,551. VIVA VIAL AND DESIGN. Cl. 18.
780,557. GROTESQUE FIGURE. Cl. 18.
780,560. UNIVERSAL. Cl. 19.
780,563. SEALFLEX. Cl. 21.
780,564. ELECTROMATIC. Cl. 21.
780,565. YORKLITE. Cl. 21.
780,566. D/N UNITROL AND DESIGN. Cl. 21.
780,570. CHECKERS 4. Cl. 22.
780,571. HELPING YOU KEEP AMERICA FIT ETC. AND DESIGN. Cl. 22.
780,575. MOOCHER-BOOSTER. Cl. 22.
780,577. FLIP HIT V BAT AND DESIGN. Cl. 22.
780,580. BIG LOO. Cl. 22.
780,581. THE INFORMER. Cl. 22.
780,583. TRACTION TANNED. Cl. 22.
780,587. LEGALITE. Cl. 22.

780,588. Q-BOWL. Cl. 22.
780,592. "TEENA ROSSINI." Cl. 22.
780,593. KEAHONI. Cl. 22.
780,597. SE-KUR. Cl. 22.
780,600. CRASH-OUT. Cl. 22.
780,603. FLAMMER. Cl. 22.
780,604. ABCD. Cl. 22.
780,608. SIMCO AND DESIGN. Cl. 23.
780,616. AJ. Cl. 28.
780,618. GOLD CAP. Cls. 29 and 40.
780,622. AMBI-DEX. Cl. 37.
780,629. HSS AND DESIGN. Cl. 38.
780,631. IMAGE. Cl. 38.
780,633. SEAL OF MOC OF AMERICA APPROVAL AND DESIGN. Cl. 38.
780,636. MARQUEE AND DESIGN. Cl. 38.
780,639. GOOF-OFF KIT. Cl. 38.
780,641. HAN-D-WAY. Cl. 38.
780,644. WARD'S AUTOMOTIVE WEEK. Cl. 38.
780,653. LA MAURICE AND DESIGN. Cl. 40.
780,655. STEAM-SHIP BRAND AND DESIGN. Cl. 42.
780,658. IDAHO KING. Cl. 46.
780,666. WOODACRE FARM. Cl. 46.
780,674. FB. Cl. 46.
780,677. OLD PLANTATION. Cl. 46.
780,678. PL AND DESIGN. Cl. 46.
780,687. GLENDORA HOME. Cl. 46.
780,701. T & O. Cl. 50.
780,703. SHOWER BABY BY JEANNE. Cl. 50.
780,704. THRIFT-RITE. Cl. 50.
780,705. GPI TENDER. Cl. 51.
780,706. CLASSICS IN FRAGRANCE. Cl. 51.
780,708. CUPID'S DANCE. Cl. 51.
780,710. MAGIC FORM. Cl. 51.
780,714. LEGZURIE. Cl. 51.
780,721. QUINTET. Cl. 51.
780,723. LOGO AND TEST TUBE DESIGN. Cl. 52.
780,730. MYFIN. Cl. 52.
780,731. NO-TRIK. Cl. 52.
780,732. DRAW AND DESIGN. Cl. 52.
780,740. STAR OF THE NORTH AND DESIGN. Cl. 102.
780,746. THE CRESCENDOES. Cl. 107.
780,748. SHOWTIME D.C. Cl. 107.
780,749. ARW ETC. AND DESIGN. Cl. 200.
780,758. NO WASTE WITH PASTE. Cl. 4.
780,760. SANSTONE. Cl. 12.
780,765. STUDENT RESPONSE MONITOR. Cl. 26.
780,766. COMPACT. Cl. 26.
780,768. DE LUXE HANDI-DIAL CALIPER. Cl. 26.
780,770. IT DANCES DUST AWAY. Cl. 29.
780,772. KNIT-A-ROBE. Cl. 39.
780,773. SIBLEY'S HIGHLAND PARK ETC. AND DESIGN. Cl. 39.
780,777. COPPER CLOUD. Cl. 51.
780,779. FLASHING AMBER. Cl. 51.

Section 18

793,741. ARISE. Cl. 46. 8–3–65.
856,399. ELECTRO-GUARD AND DESIGN. Cl. 21. 9–10–68.
883,238. DT DESIGN. Cl. 21. 12–3–69.

INDEX OF REGISTRANTS

JANUARY 12, 1971

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

A & A Food Products Corp., Bronx, N.Y. 905,937, pub. 10–27–70. Cl. 46.
AMF Inc., New York, N.Y. 532,570, ren. 1–12–71. Cl. 8.
Acme Markets, Inc., Philadelphia, Pa. 538,232, ren. 1–12–71. Cl. 46.
Acme Markets, Inc., Philadelphia, Pa. 539,015, ren. 1–12–71. Cl. 6.
Acme-Cleveland Corp., Cleveland, Ohio. 535,961, ren. 1–12–71. Cl. 23.
Addmaster Corp., San Gabriel, Calif. 905,880, pub. 10–27–70. Cl. 26.
Admiral Travel Service, Inc., Philadelphia, Pa. 906,029, pub. 10–27–70. Cl. 105.
Ainsworth, Wm. Inc., Denver, Colo. 905,874, pub. 6–16–70. Cl. 26.
Air Reduction Co., Inc., New York, N.Y. 905,894, pub. 10–27–70. Cl. 34.
Air-Conditioning & Refrigeration Wholesalers, Cleveland, Ohio. 780,749, canc. Cl. 200.
Aircraft Armaments, Inc., Cockeysville, Md. 780,765, canc. Cl. 26.
Aktiebolaget Astra, Sodertalje, Sweden. 905,771, pub. 10–27–70. Cl. 18.
Albany International, Inc., Albany, Oreg. 905,848, pub. 8–11–70. Cl. 23.
Alfol, Inc., Charlotte, N.C. 533,187, ren. 1–12–71. Cl. 12.
Allen, Mark Co., Detroit, Mich. 905,995, pub. 10–27–70. Cl. 52.
Alpha Products, Inc., Chicago, Ill. 905,794, pub. 10–27–70. Cl. 21.
Amchem Products, Inc., Ambler, Pa. 780,529, canc. Cl .6.
American Air Filter Co., Inc., Louisville, Ky. 538,999, ren. 1–12–71. Cl. 31.
American Cyanamid Co., Wayne N.J. 905,714, pub. 10–27–70. Cl. 6.
American Enka Corp., Enka, N.C. 905,806, pub. 10–27–70. Cl. 21.
American Home Products Corp., New York, N.Y. 905,978, pub. 9–1–70. Cl. 51.
American Medical Facilities Corp., St. Louis, Mo. 906,004, pub. 10–27–70. Cl. 101.
American Metal Climax, Inc., New York, N.Y. 905,735, pub. 10–27–70. Cl. 12.
American Metro-Marts Corp., Greenville, S.C. 906,009, pub. 10–27–70. Cl. 101.
American Oil Co., The, Chicago, Ill. 905,750, pub. 10–27–70. Cl. 15.
American Photocopy Equipment Co., Evanston, Ill. 905,786, pub. 10–27–70. Cl. 19.
American Soybean Association, Black Hawk, Iowa. 906,010, pub. 10–27–70. Cl. 101.
American Standard Inc., New York, N.Y. 905,741, pub. 4–18–70. Cl. 13.
American Sugar Co., New York, N.Y. 905,951–3, pub. 10–27–70. Cl. 16.
American Waterproofing Corp., New Haven, Mo. 906,033, pub. 10–27–70. Cl. 106.
Anker-Werke AG, Bielefeld, Germany. 905,844, pub. 8–18–70. Multiple Class (Classes 23, 26 and 37).
Arkansas Grain Corp., Stuttgart, Ark. 905,933, pub. 10–27–70. Cl. 46.
Armour and Co., Chicago, Ill. 532,644, ren. 1–12–71. Cl. 46.
Armour & Co., *See*—
Borden, Inc.
Armour-Dial, Inc., Chicago, Ill. 905,993–94, pub. 10–27–70. Cl. 52.
Art Award Co., Inc., The, North Bergen, N.J. 905,826, pub. 10–27–70. Cl. 22.
Artoptic International Corp., New York, N.Y. 905,864, pub. 10–27–70. Cl. 26.
Ashland Oil Inc., Ashland, Ky. 905,754, pub. 10–27–70. Cl. 15.
Asprey & Co., Ltd., London, England. 532,072, ren. 1–12–71. Cl. 32.
Associated Dry Goods, Inc., New York, N.Y. 780,773, canc. Cl. 39.
Auto Driveaway Co., Chicago, Ill. 906,017, pub. 10–27–70. Cl. 101.
Avon Products, Inc., New York, N.Y. 905,975, pub. 10–27–70. Multiple Class (Classes 51 and 52).
Babcock & Wilcox Co., The, New York, N.Y. 533,282, ren. 1–12–71. Cl. 12.
Banjor Punta Operations, Inc., Greenwich, Conn. 905,879, pub. 10–13–70. Cl. 26.
Bardahl Mfg. Corp., Seattle, Wash. 905,755, pub. 10–27–70. Cl. 15.
Barrington Foods, Inc., Honeoye Falls, N.Y. 905,950, pub. 10–27–70. Cl. 46.
Barwick, E. T. Industries, Inc., Chamblee, Ga. 905,908, pub. 10–20–70. Cl. 42.
Beaconway Stores, Inc. : *See*—
Mass. 905,843, pub. 3–31–70. Cl. 23.
Beaconway Stores, Inc.,*See*—
Beaconway Fabrics Inc.
Becker Drills Ltd., Calgary, Alberta, Canada. 905,847, pub. 10–27–70. Cl. 23.
Beltone Electronics Corp., Chicago, Ill. 905,913, pub. 10–27–70. Cl. 44.
Beltx Corp., St. Louis, Mo. 905,911, pub. 10–27–70. Cl. 44.
Bersworth, Frederick C., East Orange, N.J. 905,983, pub. 10–27–70. Cl. 52.
Berube, J. Maurice, San Francisco, Calif. 780,653, canc. Cl. 40.
Beta Engineering Corp., Los Angeles, Calif. 780,603, canc. Cl. 22.
Big D Chemical Co., d.b.a. Le Fevre Products Co., Oklahoma City, Okla. 780,708, canc. Cl. 51.
Biltbest Corp., St. Genevieve, Mo. 905,725, pub. 10–27–70. Cl. 12.
Biological Research, Inc., Bridgeton, Mo. 780,537, canc. Cl. 6.
Birko Chemical Corp., Denver, Colo. 905,991, pub. 10–27–70. Cl. 52.
Blacher, George J., Pasadena, Calif. 540,193, ren. 1–12–71. Cl. 23.
Boeing Co., The, Seattle, Wash. 905,785, pub. 10–27–70, Cl. 19.
Borden, Inc., New York, N.Y. 533,545, ren. 1–12–71. Cl. 46.
Borden, Inc., New York, N.Y. 534,476, ren. 1–12–71. Cl. 46.
Borden, Inc., New York, N.Y., from Armour & Co., Chicago, Ill. 905,962, pub. 9–10–68. Cl. 51.
Borden, Inc., New York, N.Y. from Armour & Co., Chicago, Ill 905,979, pub. 9–10–68. Cl. 52.
Boston Metal Sales Corp., Cambridge, Mass. 533,566, ren. 1–12–71. Multiple Class. (Classes 13 and 19).
Bray Mfg. Co., Long Beach, Calif. 905,737, pub. 10–27–70. Cl. 13.
Brunswick Corp., Chicago, Ill. 537,711, ren. 1–12–71. Cl. 22.
Brunswick Corp., Chicago, Ill. 905,793, pub. 10–27–70. Multiple Class (Classes 21 and 23.
Bruss, Harvey H., Milwaukee, Wis. 780,731, canc. Cl. 52.
Bulova Watch Co., Inc., Flushing, L.I., N.Y. 538,805, ren. 1–12–71. Cl. 27.
Bunker-Ramo Corp., The, Oak Brook, Ill. 905,814, pub. 10–27–70. Cl. 21.
Butler County Mushroom Farm, Inc., West Winfield, Pa. 272,-779, ren. 1–12–71. Cl. 46.
Byk-Gulden, Inc., Hicksville, N.Y. 905,765, pub. 7–28–70. Cl. 18.
Cabot Corp., Boston, Mass. 905,702, pub. 10–27–70. Cl. 1.
Campbell, Harry T., Sons' Corp. : *See*—
The Flintkote Co.
Candy Corp. of America, Brooklyn N.Y., from Au Mason & Magenheimer Confy. Co., Inc. 905,932, pub. 7–28–70. Cl. 46.
Carl Haas, Schramberg, Germany. 905,862, pub. 10–27–70. Cl. 26.
Carson International Inc., d.b.a. Honey Bear Farm, Itasca, Ill. 905,934, pub. 10–27–70. Cl. 46.
Carter Motor Co., Chicago, Ill. 905,816, pub. 10–27–70. Cl. 21.
Carter-Wallace, Inc., New York, N.Y. 905,772, pub. 5–26–70. Cl. 18.
Carter-Wallace, Inc., New York, N.Y. 905,963–4, pub. 6–24–69. Cl. 51.
Casan Co., The, Dallas, Tex. 905,969, pub. 4–28–70. Cl. 51.
Central Citrus Co., Tempe, Ariz. 538,403, ren. 1–12–71. Cl. 46.
Cerro Corp., New York, N.Y. 905,810, pub. 10–27–70. Cl. 21.
Chanel Catfish Development Corp., Greenwood, Miss. 905,999, pub. 10–27–70. Cl. 100.
Chap Stick Co., Lynchburg, Va. 905,763, pub. 10–13–70. Cl. 18.
Chapman, John Ltd., Johannesburg, Transvaal, Republic of South Africa. 905,761, pub. 9–15–70. Cl. 17.
Chemetron AG, Spielhof, Glarus, Switzerland, from Peter Willems, Lucerne, Switzerland. 905,858, pub. 9–22–64. Cl. 26.
Chemetron Corp., Chicago, Ill. 532,657, ren. 1–12–71. Cl. 34.
Chemical Products Corp., Cartersville, Ga. 780,533, canc. Cl. 6.
Chicago Pneumatic Tool Co., New York, N.Y. 278,920–21, ren. 1–12–71. Cl. 21.
Chicago Pneumatic Tool Co., New York, N.Y. 280,617, ren. 1–12–71. Cl. 35.
Chicken Coop, Inc., The, Hartford, Conn. 905,998, pub. 9–22–70. Cl. 100.
Cincinnati Milacron Inc., from The Cincinnati Milling Machine Co., Cincinnati, Ohio. 905,990, pub. 7–21–70. Cl. 52.
Clairol Inc., New York, N.Y. 905,915, pub. 10–27–70. Cl. 44.
Clairol Inc., New York, N.Y. 905,961, pub. 2–11–64. Cl. 51.
Clairol Inc., New York, N.Y. 905,985, pub. 10–27–70. Cl. 52.
Clean Water, Inc., Toms River, N.J. 906,038. Cl. 1.
Coahoma Chemical Co., Inc., Clarksdale, Miss. 780,496, canc. Cl. 6.
Coahoma Chemical Co., Inc., Clarksdale, Miss. 780,499, canc. Cl. 6.
Coast Catamaran Corp., Capistrano Beach, Calif. 905,789, pub. 10–27–70. Cl. 19.
Cobia, B. L., Inc., Winter Garden, Fla. 905,698, pub. 10–27–70. Cl. 1.
Cobia Boats, Inc., from Southern Fiber Glass Products, Inc., Sanford, Fla. 906,039. Cl. 19.
Coca-Cola Co., The, Atlanta, Ga. 905,918, pub. 7–28–70. Cl. 45.
Coca-Cola Co., The, Atlanta, Ga. 905,949, pub. 10–27–70. Cl. 46.
Colgate-Palmolive Co., New York, N.Y. 905,716, pub. 10–27–70. Cl. 6.
Collette Toy Novelty Co., Inc., Brooklyn, N.Y. 780,604, canc. Cl. 22.
Colonial Knife Co., Inc., Providence, R.I. 535,982, ren. 1–12–71. Cl. 23.

Columbus Auto Parts Co., The, Columbus, Ohio. 905,779, pub. 8–11–70. Cl. 19.
Commodore Corp., The, Omaha, Nebr. 905,777–8, pub. 10–27–70. Cl. 19.
Computer Response Corp., Washington, D.C. 906,007, pub. 10–27–70. Cl. 101.
Concel Inc., New York, N.Y. 531,810, ren. 1–12–71. Cl. 37.
Congedo, Peter D., d.b.a. Columbia Farms & P. Congedo & Sons, Ellicott City, Md. 905,940, pub. 10–27–70. Cl. 46.
Conroy & Turse Co., Fort Lauderdale, Fla. 780,618, canc. Multiple Class (Classes 40 and 29).
Consulting Engineers Council, Washington, D.C. 906,036, pub. 10–27–70. Cl. 200.
Continental Coffee Co., Chicago, Ill. 905,924, pub. 7–2–70. Cl. 46.
Control Data Corp., Minneapolis, Minn. 906,035, pub. 10–27–70. Cl. 107.
Conversion Chemical Corp., Rockville, Conn. 905,711, pub. 10–27–70. Cl. 6.
Cooper, Leo M., d.b.a. Puritan Uniform Co., New York, N.Y. 538,246, ren. 1–12–71. Cl. 39.
Corona-College Heights Orange & Lemon Association, Claremont, Calif. 780,687, canc. Cl. 46.
Corson, G. & W. H. Inc., Plymouth Meeting, Pa. 905,729, pub. 10–27–70. Cl. 12.
Cotham Industries, Inc., Norwalk, Calif. 780,577, canc. Cl. 22.
Cresswell, Thomas A., Dr., d.b.a. Research Processing & Distributing Co., Saginaw, Mich. 905,942, pub. 10–27–70. Cl. 46.
Crest Mfg. Co., The, Southfield, Mich. 540,142, ren. 1–12–71. Cl. 19.
Crounse Corp., d.b.a. Shelton Metrology Laboratory, Paducah, Ky. 905,869, pub. 10–27–70. Cl. 26.
Curtis, Helene Industries, Inc., d.b.a. Lentheric, Chicago, Ill. 780,706, canc. Cl. 51.
Cutler-Hammer, Inc., Milwaukee, Wis. 537,678–9, ren. 1–12–71. Cl. 26.
Cyma Watch Co. S.A., La Chaux-de-Fonds, Switzerland. 905,887, pub. 7–28–70. Cl. 27.
DEP Corp., Los Angeles, Calif. 905,972, pub. 10–27–70. Cl. 51.
D.P.I. Inc., Clifton, N.J. 906,000, pub. 10–27–70. Multiple Class (Classes 100 and 101).
Dampney Co., The, Boston, Mass. 905,758, pub. 10–27–70. Cl. 19.
Danenberg, J. S., d.b.a. Danny Danenberg, El Centro, Calif. 905,943, pub. 10–27–70. Cl. 46.
Daniels, C. R., Inc., Daniels, Md. 905,896, pub. 10–27–70. Cl. 35.
Da-Tel Research Co., Montrose, Colo. 883,238, canc. Cl. 21.
Davis, Frank D., Los Angeles, Calif. 780,513–4, canc. Cl. 6.
Deb Mfg. Co., Farmington, N. Mex. 780,593, canc. Cl. 22.
Decca Records Inc., New York, N.Y. 780,636, canc. Cl. 38.
Deering Milliken, Inc., New York, N.Y. 905,907, pub. 5–26–70. Cl. 42.
Dell, Samuel M., & Co., Inc., Baltimore, Md. 536,541, ren. 1–12–71. Cl. 29.
Deltec International Ltd., Chicago, Ill. 534,668, ren. 1–12–71. Cl. 46.
Denver Chemical Mfg. Co., Stamford, Conn. 905,718, pub. 10–27–70. Cl. 6.
Destileria Huasteca, S.A., Mexico City, Mexico. 905,956, pub. 7–14–70. Cl. 49.
Detrex Chemical Industries, Inc., Detroit, Mich. 537,557, ren. 1–12–71. Cl. 2.
Diamond International Corp., New York, N.Y. 537,378, ren. 1–12–71. Cl. 44.
Diamond International Corp., New York, N.Y. 537,395, ren. 1–12–71. Cl. 44.
Diamond International Corp., New York, N.Y. 538,681, ren. 1–12–71. Cl. 50.
Dietzgen, Eugene Co., Chicago, Ill. 79,904, ren. 1–12–71. Cl. 26.
Digital Identification Systems, Inc.: *See*—
Eaton Yale & Towne Inc.
Diplomat Sales Co., Inc., Los Angeles, Calif. 905,817, pub. 10–27–70. Cl. 22.
Ditta Frugone & Preve S.p.A., Genoa, Italy. 279,235, ren. 1–12–71. Cl. 46.
Dorsey Co., The, d.b.a. The Angel Baby Co. 905,903, pub. 7–14–70. Cl. 39.
Dow Chemical Co., The, Midland, Mich. 905,767, pub. 10–27–70. Cl. 187.
Drackett Co., The, Cincinnati, Ohio. 780,758, canc. Cl. 4.
Drackett Co., The, Cincinnati, Ohio. 780,770, canc. Cl. 29.
Drackett Co., The, Cincinnati, Ohio. 905,981, pub. 10–27–70. Cl. 52.
Dri Aire Inc., South Norwalk, Conn. 535,841, ren. 1–12–71. Cl. 23.
Dumore Co., The, Racine, Wis. 905,852, pub. 10–27–70. Cl. 23.
Dunbar-Nunn Corp., Anabeim, Calif. 780,566, canc. Cl. 21.
Dunkin' Donuts, Inc., d.b.a. Chas. Goodlight & Sons, Ltd., Boston, Mass. 905,923, pub. 10–27–70. Cl. 46.
Dunn Products, Inc., Chicago, Ill. 905,885, pub. 10–27–70. Multiple Class (Classes 26, 39 and 44).
Du Pont de Nemours, E. I., & Co., Wilmington, Del. 539,062, ren. 1–12–71. Cl. 5.
Du Pont de Nemours, E. I. & Co., Wilmington, Del. 780,484, canc. Cl. 1.
Dura Corp., Southfield, Mich. 532,801, ren. 1–12–71. Cl. 26.
Dweck, Salim S., New York, N.Y. 780,655, canc. Cl. 42.
Dynatone Electronics Corp., New York, N.Y. 905,909, pub. 10–27–70. Cl. 44.
EIP, Inc. Santa Clara, Calif. 905,873, pub. 10–27–70. Cl. 26.
E–Z Mills, Inc., New York, N.Y. 533,654, ren. 1–12–71. Cl. 39.
Eagle-Picher Co., The, Cincinnati, Ohio. 780,508, canc. Cl. 6.
Earlibest Orange Assn., Inc., Exeter, Calif. 538,369, ren. 1–12–71. Cl. 46.
Earth Mount, Inc., Monroeville, Ind. 905,739, pub. 10–27–70. Cl. 13.
Eastman Kodak Co., Rochester, N.Y. 532,385, ren. 1–12–71. Cl. 26.
Eastman Kodak Co., Rochester, N.Y. 537,043, ren. 1–12–71. Cl. 50.
Eastman Kodak Co., Rochester, N.Y. 905,860, pub. 10–27–70. Cl. 26.
Eaton Yale & Towne Inc., Cleveland, Ohio, from Digital Identification Systems, Inc., Anaheim, Calif. 905,856, pub. 10–27–70. Cl. 25.
Economics Laboratory, Inc., St. Paul, Minn. 905,863, pub. 10–27–70. Cl. 26.
Edea Group, The, Larchmont, N.Y. 780,639, canc. Cl. 38.
Efka-Werke Fritz Kiehn GmbH., Trossingen, Wurttemberg, Germany. 905,723, pub. 10–27–70. Multiple Class (Classes 8 and 17.
Electric Eel Mfg. Co., Inc., Springfield, Ohio. 905,854, pub. 10–27–70. Cl. 23.
Electric Machinery Mfg. Co., Minneapolis, Minn. 780,563, canc. Cl. 21.
Electric Time Co., Inc., Natick, Mass. 905,808, pub. 10–27–70. Cl. 21.
Ellen & Co., Denver, Colo. 532,871, ren. 1–12–71. Cl. 51.
Ellenberger, Howard A., d.b.a. Swing-Line Seat Co., Fort Wayne, Ind. 905,776, pub. 6–2–70. Cl. 19.
El Morocco International Ltd., New York, N.Y. 528,066, ren. 1–12–71. Cl. 46.
Endura Time Corp., New York, N.Y. 533,773, ren. 1–12–71. Cl. 27.
Erie Malleable Iron Co., Erie, Pa. 905,748, pub. 10–27–70. Cl. 14.
Eskimo Pie Corp., Richmond, Va. 535,979, ren. 1–12–71. Cl. 46.
Essex International, Inc., Fort Wayne, Ind. 905,804, 10–27–70. Cl. 21.
Euglo Corp., Chicago, Ill. 905,781, pub. 10–27–70. Cl. 19.
Evans, Glen L., Inc., Caldwell, Idaho. 534,561, ren. 1–12–71. Cl. 22.
Evans, L. B., Son Co., Wakefield, Mass. 532,547, ren. 1–12–71. Cl. 39.
Everton Mattress Factory, Inc., Twin Falls, Idaho. 905,891, pub. 7–21–70. Cl. 32.
FMC Corp., New York, N.Y. 538,118, ren. 1–12–71. Cl. 6.
Faberge, Inc., New York, N.Y. 905,973, pub. 10–27–70. Cl. 51.
Fanny Farmer Candy Shops, Inc., Cambridge, Mass. 905,819. pub. 10–27–70. Multiple Class (Classes 22 and 46).
Fedtro, Inc., Rockville Centre, N.Y. 905,815, pub. 10–27–70. Cl. 21.
Fendrich Industries, Inc., Evansville, Ind. 538,046, ren. 1–12–71. Cl. 39.
Ferry-Morse Seed Co., Mountain View, Calif. 534,013. ren. 1–12–71. Cl. 1.
Firestone Tire & Rubber Co., The, Akron, Ohio. 905,708, pub. 7–28–70. Cl. 1.
Fitzgerald Mfg. Co., The, Torrington, Conn. 905,898, pub. 10–27–70. Cl. 35.
Flintkote Co., The, from Harry T. Campbell Sons' Corp., Towson, Md. 905,728, pub. 9–22–70. Cl. 12.
Florida Steel Corp., Tampa, Fla. 532,253, ren. 1–12–71. Cl. 12.
Florigold Growers, Inc., Tampa, Fla. 537,994, ren. 1–12–71. Cl. 46.
Fly Without Fear, Inc., Flushing, N.Y. 906,034, pub. 10–27–70. Cl. 107.
Fonti Levissima- S.P.A., from S.A.G.A. Societa Acque Gasate ed Affini, S.p.A., d.b.a. S.A.G.A. S.p.A., Milan, Italy. 905,917, pub. 7–21–70. Cl. 45.
Foremost-McKesson, Inc., New York, N.Y. 905,773, pub. 10–27–70. Cl. 18.
Franklin, Herbert D., Chicago, Ill. 780,490, canc. Cl. 3.
Frigikar Corp., Dallas, Tex. 780,560, canc. Cl. 19.
Frito-Lay, Inc., from Frito-Lay, Inc., Dallas, Tex. 905,919, pub. 6–25–63. Cl. 46.
Fritzsche Brothers, Inc., New York, N.Y. 780,521, canc. Cl. 6.
Fromm Bros., Inc., Hamburg, Wis. 272,584, ren. 1–12–71. Cl. 1.
Frye, John A., Shoe Co., Inc., Marlboro, Mass. 534,068, ren. 1–12–71. Cl. 39.
Fryer & Co. (Nelson) Ltd., Nelson, England. 905,922, pub. 10–7–69. Cl. 46.
Fuel Research & Instrument Co., Chicago, Ill. 905,884, pub. 10–27–70. Cl. 26.
G.V.W. Corp., Dearborn Heights, Mich. 905,865, pub. 8–18–70. Cl. 26.
Gale Products, Inc., Baltimore, Md. 780,705, canc. Cl. 51.
Gebr. Marklin & Cie. GmbH, Goppingen, Wurttemberg, Germany. 905,821, pub. 10–27–70. Cl. 22.
Geeting & Fromm, Inc., Chicago, Ill. 535,355, ren. 1–12–71. Cl. 49.
General American Transportation Corp., Chicago, Ill. 906,031, pub. 10–27–70. Cl. 105.
General Baking Co., New York, N.Y. 780,677, canc. Cl. 46.
General Cable Corp., New York, N.Y. 280,422, ren. 1–12–71. Cl. 4.
General Mills, Inc., Minneapolis, Minn. 793,741, canc. Cl. 46.
General Steel Industries, Inc., d.b.a. Flex-o-Lite Division, St. Louis, Mo. 905,957–9, pub. 6–3–69. Cl. 50.
General Time Corp., Phoenix, Ariz. 80,503, ren. 1–12–71. Cl. 27.
Gerald Products, Inc., Philadelphia, Pa. 856,399, canc. Cl. 21.
Gerim Mfg. Co., Hudson, Iowa. 905,787, pub. 10–27–70. Cl. 19.
Gevaert-Agfa N.V., Mortsel, Belgium. 905,870, pub. 10–27–70. Cl. 26.
Geyer, John Arthur, Co., Inc., Bedford, N.H. 539,027, ren. 1–12–71. Cl. 18.
Giant Wash, Inc., Wichita, Kans. 906,022, pub. 2–17–70. Cl. 103.
Gibson Greeting Cards, Inc., Cincinnati, Ohio. 905,749, pub. 10–27–70. Cl. 15.
Gilbert, James A., St. Louis, Mo. 780,746, canc. Cl. 107.

Gilbert Sporting Goods Distributors, Inc., Cincinnati, Ohio. 905,828, 10–27–70. Cl. 22.
Glendinning Companies, inc., Westport, Conn. 906,012, pub. 10–27–70. Cl. 101.
Goodman, A. & Sons, Inc., Long Island City, N.Y. 536,579, ren. 1–12–71. Cl. 46.
Goodyear Tire & Rubber Co., The, Akron, Ohio. 905,851, pub. 10–27–70. Cl. 23.
Goren Doods Co., East Boston, Mass. 905,920, pub. 10–27–70. Cl. 46.
Goshen Rubber Co., Inc., Goshen, Ind. 906,043. Cl. 35.
Gossard, H. W., Co., The, Chicago, Ill. 280,517, ren. 1–12–71. Cl. 39.
Grace, W. R., & Co., New York, N.Y. 905,707, pub. 10–27–70. Cl. 6.
Grandma Cookie Co., Portland, Oreg. 276,541, ren. 1–12–71. Cl. 46.
Graphic Advertising, Inc., Miami, Fla. 906,018, pub. 10–27–70. Cl. 101.
Great Lakes Biochemical Co., Inc., Milwaukee, Wis. 905,710, pub. 10–27–70. Cl. 6.
Green, A. P., Refractories Co., Mexico, Mo. 905,736, pub. 10–27–70. Cl. 12.
Gulf Oil Corp., Pittsburgh, Pa. 780,541, canc. Cl. 10.
Guth, Edwin F., Co., The, St. Louis, Mo. 905,818, pub. 10–27–70. Cl. 21.
Hajicek, Robert, d.b.a. Ovenbrite, Westmont, Ill. 906,024–27, pub. 10–27–70. Cl. 103.
Halecore, Inc., Los Angeles, Calif. 905,726, pub. 10–27–70. Cl. 12.
Halvorson Inc., Duluth, Minn. 905,704, pub. 10–27–70. Cl. 1.
Hammermill Paper Co., Erie, Pa. 533,806, ren. 1–12–71. Cl. 37.
Harrelson Rubber Co., Asheboro, N.C. 905,700, pub. 10–27–70. Cl. 1.
Harris, A. W., Oil Co., East Providence, R.I. 533,672, ren. 1–12–71. Cl. 15.
Hart-Carter Co., Minneapolis, Minn. 905,842, pub. 9–1–70. Multiple Class (Classes 23 and 31).
Helene's Formula, Inc., San Rafael, Calif. 905,968, pub. 10–27–70. Cl. 51.
Helme Products, Inc., New York, N.Y. 527,177, ren. 1–12–71. Cl. 17.
Higley Chemical Co., The, Dubuque, Iowa. 533,078, ren. 1–12–71. Cl. 52.
Higley Chemical Co., The, Dubuque, Iowa. 533,841, ren. 1–12–71. Cl. 16.
Hillsdale Industries, Inc., Hillsdale, Mich. 905,730, pub. 10–27–70. Cl. 12.
Hills-McCanna Co., Carpentersville, Ill. 905,743–4, pub. 10–27–70. Cl. 13.
Hills-McCanna Co., from Ramcon Corp., Carpentersville, Ill. 905,803, pub. 10–27–70. Cl. 21.
Hollingshead, R. M., Corp., Camden, N.J. 535,296, ren. 1–12–71. Cl. 6.
Holophane Co., Inc., New York, N.Y. 537,237, ren. 1–12–71. Cl. 34.
Home Juice Co., Melrose Park, Ill. 905,936, pub. 10–27–70. Cl. 46.
Hooker Headers, Inc., Ontario, Calif. 905,845, pub. 10–27–70. Cl. 23.
House of Westmore, Inc., New York, N.Y. 905,888, pub. 10–27–70. Multiple Class (Classes 29, 40, 44 and 51).
House of Worsted-Tex, Inc., Philadelphia, Pa. 281,047, ren. 1–12–71. Cl. 39.
Houston Foods, Inc., Chicago, Ill. 905,944, pub. 10–27–70. Cl. 46.
Hudson, Monie S., d.b.a. Hudson Research, Spartanburg, S.C. 906,032, pub. 10–27–70. Cl. 106.
Huffman Mfg. Co., The, Miamisburg, Ohio. 540,150, ren. 1–12–71. Cl. 19.
Hunt Oil Co., Dallas, Tex. 905,756, pub. 10–27–70. Cl. 15.
Huntington Laboratories, Inc., Huntington, Ind. 277,187, ren. 1–12–71. Cl. 52.
Huntington Laboratories, Inc., Huntington, Ind. 277,278, ren. 1–12–71. Cl. 52.
Hydrotherm, Inc., Northvale, N.J. 905,790–1, pub. 9–22–61. Cl. 21.
Hydrotherm, Inc., Northvale, N.J. 905,857, pub. 2–14–61. Cl. 26.
Hydrotherm, Inc., Northvale, N.J. 905,892–3, pub. 5–16–61. Cl. 34.
ITT Continental Baking Co., d.b.a. Braun Baking Co., Rye, N.Y. 905,947, pub. 10–27–70. Cl. 46.
Impala Industries Ltd., Richmond, British Columbia, Canada. 905,774, pub. 6–16–70. Cl. 19.
Industrial Premiums, Inc., New York, N.Y. 906,005, pub. 10–27–70. Cl. 101.
Instrument Systems Corp.: *See*—
Phonplex Corp.
Intech Inc., Santa Clara, Calif. 906,802, pub. 7–28–70. Cl. 21.
Interaccess Corp., Palo Alto, Calif. 906,008, pub. 10–27–70. Cl. 101.
International Paper Co., New York, N.Y. 905,855, pub. 10–27–70. Cl. 23.
International Playtex Corp., New York, N.Y. 540,242, ren. 1–12–71. Cl. 39.
Interpace Corp., Parsippany, N.J., from Lapp Insulator Co., Inc., Leroy, N.Y. 905,800, pub. 8–25–70. Cl. 21.
Jackson, Mrs. William Harrison, d.b.a. Quality Distributing Co., Orange City, Fla. 905,770, pub. 8–18–70. Cl. 18.
Jaffe, A., & Son, Inc., New York, N.Y. 780,616, canc. Cl. 28.
Jenkins, George O., Co., Bridgewater, Mass. 780,488, canc. Cl. 1.
Jetzon Tire & Rubber Co., Inc., Montgomeryville, Pa. 906,044. Cl. 35.
Johnson, S. C., & Son, Inc., Racine, Wis. 534,538, ren. 1–12–71. Cl. 4.
Kaiser Cement & Gypsum Corp., Oakland, Calif. 535,768, ren. 1–12–71. Cl. 12.
Kallestad Laboratories, Inc., Minneapolis, Minn. 905,871, pub. 10–27–70. Cl. 26.
Kalliroscope Corp., Cambridge, Mass. 905,960, pub. 10–27–70. Cl. 50.
Kaman Corp., Bloomfield, Conn. 905,799, pub. 10–27–70. Multiple Class (Classes 21 and 36).
Kaywood Products Corp., Jackson, Mich. 535,989, ren. 1–12–71. Cl. 23.
Keefe, Edward F., d.b.a. Linacre Laboratories, New York, N.Y. 533,128, ren. 1–12–71. Cl. 44.
Keeney, Paul E., Portland, Oreg. 533,579, ren. 1–12–71. Cl. 13.
Kent & Thanet Casinos Ltd., Kent, England. 780,587, canc. Cl. 22.
Keymatic Data Systems Corp., Bay Shore, N.Y. 905,875, pub. 10–27–70. Cl. 26.
Kinetic Objects, Inc., San Rafael, Calif. 905,820, pub. 10–27–70. Cl. 22.
King Candy Co., Fort Worth, Tex. 539,742, ren. 1–12–71. Cl. 46.
Kinney & Co., Inc., Columbus, Ind. 780,547, canc. Cl. 18.
Klayman, Louis H., d.b.a. Farmer's Best Foods, Tyler, Tex. 780,674, canc. Cl. 46.
Klein, Otto, New York, N.Y. 905,868, pub. 10–27–70. Cl. 26.
Klein, William, d.b.a. American Mercantile Co., San Francisco, Calif. 536,644, ren. 1–12–71. Cl. 46.
Klosters Rederi A/S, New York, N.Y. 906,027, pub. 10–27–70. Cl. 105.
Kolb-Lena Cheese Co., Lena, Ill. 905,948, pub. 6–16–70. Cl. 46.
Kreiss, Sidney J., Inc., New York, N.Y. 539,522, ren. 1–12–71. Cl. 39.
Kresge, S. S., Co., Detroit, Mich. 905,897, pub. 10–27–70. Cl. 35.
Laboratories Ferrer S.L., Barcelona, Spain. 905,764, pub. 9–1–70. Cl. 18.
Laher Spring & Electric Car Corp., Oakland, Calif. 277,265, ren. 1–12–71. Cl. 35.
Laher Spring & Electric Car Corp., Oakland, Calif. 533,819, ren. 1–12–71. Cl. 35.
Lancaster Valite, Inc., Lancaster, Pa. 780,483, canc. Cl. 1.
Lane, Ltd., New York, N.Y. 532,852, ren. 1–12–71. Cl. 17.
Lapp Insulator Co., Inc.: *See*—
Interpace Corp.
Larousse, Inc., New York, N.Y. 780,714, canc. Cl. 51.
Larus & Brother Co., d.b.a. House Of Edgeworth, Richmond, Va. 905,760, pub. 10–27–70. Cl. 17
Lazzaretto, John M., d.b.a. A. O. Schmidt Co., San Francisco, Calif. 280,083, ren. 1–12–71. Cl. 18.
Lectro-Stik Co., Chicago, Ill. 780,494, canc. Cl. 5.
Lenker Mfg. Co., Inc., Sunbury, Pa. 905,881, pub. 10–27–70. Cl. 26.
Leupold & Stevend, Inc., Portland, Oreg. 905,886, pub. 10–27–70. Cl. 26.
Libby, McNeill & Libby, Chicago, Ill. 906,045. Cl. 46.
Litton Business Systems, Inc., New York, N.Y. 538,639, ren. 1–12–71. Cl. 26.
Lykes-Pasco Packing Co., Dade City, Fla. 905,889, pub. 10–27–70. Cl. 31.
Macaroni, Anthony Co., Inc., Los Angeles, Calif. 533,016, ren. 1–12–71. Cl. 46.
Maidenform, Inc., New York, N.Y. 905,904, pub. 5–12–70. Cl. 39.
Mallory, P. R., & Co., Inc., Indianapolis, Ind. 905,795, pub. 10–27–70. Cl. 21.
Malmstrom Chemical Corp., Linden, N.J. 905,712, pub. 7–14–70. Cl. 6.
Malsbary Mfg. Co., Oakland, Calif. 905,705, pub. 10–27–70. Multiple Class (Classes 6, 13, 19, 21, 23, 24, 34, 35, and 52).
Mandelbaum, William J., Morton Colby, & Daniel R. Herbst, Valley Stream, N.Y. 905,930–1, pub. 10–27–70. Cl. 46.
Mantz, Ernest G., d.b.a. Earnest G. Mantz Associates, Dallas, Tex. 780,631, canc. Cl. 38.
Markham, Jean Anne, Canoga Park, Calif. 780,703, canc. Cl. 50.
Mars Products Corp., Tampa, Fla. 780,509, canc. Cl. 6.
Martha Maid Mfg. Co., Chicago, Ill. 780,772, canc. Cl. 39.
Marx, Louis & Co. Inc., New York, N.Y. 780,580, canc. Cl. 22.
Masland, C. H. & Sons, Carlisle, Pa. 534,999, ren. 1–12–71. Cl. 42.
Mason, Au & Magenheimer Confy. Co., Inc.: *See*—
Candy Corp. of America.
Maury-Young Co., Boston, Mass. 780,730, canc. Cl. 52.
Matsushita Electric Industrial Co., Ltd., Kadoma-shi, Osaka Prefecture, Japan. 905,852–3, pub. 10–27–70. Cl. 26.
Mattel, Inc., Hawthorne, Calif. 905,825, pub. 10–27–70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 905,830–1, pub. 10–27–70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 905,833–40, pub. 10–27–70. Cl. 22.
Maybelline Co., Chicago, Ill. 905,768, pub. 10–27–70. Cl. 18.
McGraw-Hill, Inc., d.b.a. McGraw-Hill Information Systems Co., New York, N.Y. 906,014, pub. 10–27–70. Cl. 101.
McNeil Corp., Akron, Ohio. 905,850, pub. 8–25–70. Cl. 23.
Mead Johnson & Co., Evansville, Ind. 532,894, ren. 1–12–71. Cl. 46.
Mead Johnson & Co., Evansville, Ind. 905,766, pub. 10–27–70. Cl. 18.
Means, F. W., & Co., Chicago, Ill. 539,849, ren. 1–12–71. Cl. 46.
Meinhardt Diamond Tool Co., Chicago, Ill. 537,521, ren. 1–12–71. Cl. 23.
Merck & Co., Inc., Rahway, N.J. 780,546, canc. Cl. 18.
Met Provisions, Inc., Jamaica, N.Y. 780,666, canc. Cl. 46.
Middletown Co., The, Chicago, Ill. 780,721, canc. Cl. 51.
Mimin, McCambridge Co., The, Riverdale, Md. 280,104, ren. 1–12–71. Cl. 18.
Mike Holofcener's Edge Set, Inc., Timonium, Md. 906,006, pub. 10–27–70. Cl. 101.

Milewski, Walter C., Camp Hill, Pa. 780,600, canc. Cl. 22.
Miller, Herman, Inc., Zeeland, Mich. 780,701, canc. Cl. 50.
Miller Publishing Co., The, Minneapolis, Minn. 906,013, pub. 8–11–70. Cl. 101.
Minit Spray Corp., Des Plaines, Ill. 538,219, ren. 1–12–71. Cl. 16.
Minnesota Mutual Life Insurance Co., The, St. Paul. Minn. 780,740, canc. Cl. 102.
Minser, William D., d.b.a. Minser Tackle Co., Port Angeles, Wash. 780,575, canc. Cl. 22.
Moby Dick's Fish & Chips, Inc., Costa Mesa, Calif. 905,997, pub. 10–27–70. Cl. 100.
Monitemp Corp., Santa Monica, Calif. 905,876, pub. 10–27–70. Cl. 26.
Monsanto Co., St. Louis, Mo. 780,535, canc. Cl. 6.
Moore, Abraham F., d.b.a. A.F. Moore & Co. Shrewsbury, Mass. 905,706, pub. 3–31–70. Cl. 6.
Moore Bros. Wholesale Meats, Inc., Brooklyn, N.Y. 905,941, pub. 10–27–70. Cl. 46.
Murray Co. of Texas, Inc., d.b.a. Boston Gear Works, Pittsburgh, Pa. 905,805, pub. 10–27–70. Cl. 21.
Murray Co. of Texas, Inc., d.b.a. Boston Gear Works, Pittsburgh, Pa. 905,846, pub. 10–27–70. Cl. 23.
Musi-Cloud, Inc., Palos Park, Ill. 905,798, pub. 10–27–70. Cl. 21.
Nagi, Joseph, Jr., Scarsdale, N.Y. 780,588, canc. Cl. 22.
National Collegiate Athletic Association, The, Kansas City, Mo. 906,037, pub. 10–27–70. Cl. 200.
National Milling & Chemical Co., Philadelphia, Pa. 905,989, pub. 10–27–70. Cl. 52.
National Sonics Corp., Farmingdale, N.Y. 905,878, pub. 10–27–70. Cl. 26.
National Tea Co., Chicago, Ill. 905,929, pub. 10–27–70. Cl. 46.
Neise, Karl A., Inc., Woodside, N.Y. 780,768, canc. Cl. 26.
Neise, Karl A., Inc., Woodside, N.Y. 905,861, pub. 10–27–70. Cl. 26.
Nethercutt Laboratories, d.b.a. Cosgenic Labs, Hollywood, Calif. 780,777, canc. Cl. 51.
Nippert Co., The, from The Nippert Electric Products Co., Delaware, Ohio. 905,801, pub. 10–27–70. Cl. 21.
Nippert Electric Products Co., The: *See*—
The Nippert Co.
Nomisol Products (Proprietary) Ltd., Spartan, Kempton Park, Republic of South Africa. 905,971, pub. 7–21–70. Cl. 51.
Nomisol Products (Proprietary) Ltd., Kempton Park, Republic of South Africa. 905,982, pub. 7–21–70. Cl. 52.
Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 906,047–8. Cl. 51.
Noxell Corp., Baltimore, Md. 905,992, pub. 10–27–70. Cl. 52.
Noxzema Chemical Co., The, Baltimore, Md. 780,779, canc. Cl. 51.
Oates Bros. Fruit & Produce Co., St. Louis, Mo. 905,921, pub. 7–14–70. Cl. 46.
Occidental Petroleum Corp., Los Angeles, Calif. 905,752–3, pub. 10–27–70. Cl. 15.
Olga Co., Van Nuys, Calif. 534,642, ren. 1–12–71. Cl. 39.
Olin Corp., Stamford, Conn. 905,721, pub. 10–27–70. Multiple Class (Classes 6 and 34).
Olin Corp., from Olin Mathieson Chemical Corp., East Alton, Ill. 905,747, pub. 12–2–69. Cl. 14.
Olin Mathieson Chemical Corp.: *See*—
Olin Corp.
Olin Mathieson Chemical Corp., NewYork, N.Y. 780,557, canc. Class 18.
Olive Heights Citrus Association, Olive, Calif. 540,280, ren. 1–12–71. Cl. 46.
Ore-Ida Foods, Inc., Antario, Oreg. 780,658, canc. Cl. 46.
Pacific Agro Co., Seattle, Wash. 905,724, pub. 8–25–70. Cl. 10.
Package Containers, Inc., Portland, Oreg. 905,722, pub. 11–3–70. Cl. 7.
Paco Enterprises, Christiansted, Virgin Islands. 905,872, pub. 9–22–70. Cl. 26.
Parfumerie L.T. Piver S.A., Paris, France. 780,710, canc. Cl. 51.
Parker Bros, Inc., Salem, Mass. 905,832, pub. 10–27–70. Cl. 22.
Pate Mfg. Co., Addison, Ill. 905,731, pub. 10–27–70. Cl. 12.
Patten, Dan H., d.b.a. Midwestern Products, Salt Lake City, Utah. 905,788, pub. 10–27–70. Cl. 19.
Penn Ventilator Co., Inc., Philadelphia, Pa. 536,044, ren. 1–12–71. Cl. 34.
Pennfield Oil Co., Omaha, Nebr. 905,751, pub. 10–27–70. Cl. 15.
Pennock, Jerome H., Palm Beach, Fla. 905,906, pub. 9–23–69. Cl. 42.
Perma, Paris, France. 905,967, pub. 10–27–70. Cl. 51.
Persons-Majestic Mfg. Co., Worcester, Mass. 905,783, pub. 1027–70. Cl. 19.
Peter Willems: *See*—
Chemetron AG
Pfizer, Chas., & Co., Inc., New York, N.Y. 780,523, canc. Cl. 6.
Pfizer, Chas., & Co., Inc., New York, N.Y. 780,678, canc. Cl. 46.
Pfizer, Chas., & Co., Inc.: *See*—
Pfizer Inc.
Pfizer Inc., from Chas. Pfizer & Co., Inc., New York, N.Y. 905,715, pub. 10–27–70. Cl. 6.
Pfizer Inc., New York, N.Y. 905,976–7, pub. 10–27–70. Cl. 51.
Pflueger Corp.: *See*—
Shakespeare Co.
Phillips Petroleum Co., Bartlesville, Okla. 533,407, ren. 1–12–71. **Cl. 1.**
Phonplex Corp., from Instrument Systems Corp., Huntington, N.Y. 905,811, pub. 10–27–70. Cl. 21.
Plastics In Optics, Inc., Carolina, Puerto Rico. 905,867, pub. 10–27–70. Cl. 26.
Polaroid Corp., Cambridge, Mass. 905,859, pub. 1–24–67. Cl. 26.
Pomerantz, A., & Co., Philadelphia, Pa. 532,502, ren. 1–12–71. Cl. 38.
Powers & Co., Inc., Detroit, Mich. 780,644, canc. Cl. 38.
Premium Club of America, Inc., The, d.b.a. Mail Order Club of America, Chicago, Ill. 780,633, canc. Cl. 38.
Presco-Chem Products, d.b.a. Earl J. Liester, Colorado Springs, Colo. 905,980, pub. 10–27–70. Cl. 52.
Principle Business Enterprises, Inc., Waterville, Ohio. 905,-890, pub. 4–21–70. Cl. 32.
Program Aids Co., Inc., The., Mount Vernon, N.Y. 780,571, canc. Cl. 22.
Programmed Instructions, Inc., Tampa, Fla. 905,877, pub. 10–27–70. Cl. 26.
Pur-O-Zone Chemical Co., Inc., Lawrence, Kans. 535,008, ren. 1–12–71. Cl. 4.
Quaker Oats Co., The, Chicago. Ill. 905,925–6, pub. 10–28–69. Cl. 46.
Radiant Mfg. Corp., Morton Grove, Ill. 780,766, canc. Cl. 26.
Radio Shack Corp., *See*—
Tandy Corp.
Railko Ltd., Loudwater, High Wycombe, England. 905,841, pub. 10–27–70. Cl. 23.
Rainbow Crafts, Inc., Cincinnati, Ohio. 905,829, pub. 10–27–70. Cl. 22.
Rajah Co., The, Newark, N.J. 536,059, ren. 1–12–71. Cl. 23.
Ramcon Corp., The: *See*—
Hills-McCanna Co.
Ramrod-Polytran, Inc., Burlingame, Calif. 905,987, pub. 10–27–70. Cl. 52.
Rank Organisation Ltd., The, London, England. 533,985, ren. 1–12–71. Cl. 26.
Rawlinga Sporting Goods Co., St. Louis, Mo. 780,583, canc. Cl. 22.
Ray Laboratories, Inc., d.b.a. Wood Connector Products, Palatine, Ill. 905,738, pub. 10–27–70. Cl. 13.
Raytheon Co., Lexington. Mass. 529,164, ren. 1–12–71. Cl. 26.
Reichert, Don D., and Melvin Yenney, Scottsbluff, Nebr. 905,-818, pub. 10–27–70. Cl. 22.
Reliance Electric Co., Cleveland, Ohio, from The Reliance Electric & Engineering Co., Toledo, Ohio. 905,796, pub. 10–27–70. Cl. 21.
Reliance Electric & Engineering Co., The: *See*—
Reliance Electric Co.
Republic Mobile Homes Corp., Laurens, S.C. 905,732–3, pub. 10–27–70. Cl. 12.
Republic Wire & Cable Corp., Pico Rivera, Calif. 906,041. Cl. 21.
Revere Knitting Mills, Inc., Wakefield, Mass. 534,870, ren. 1–12–71. Cl. 39.
Rich, Louis, Foods, Inc., West Liberty, Iowa. 905,938, pub. 10–27–70. Cl. 46.
Rigby Printing Co., Kansas City, Mo. 906,002, pub. 10–27–70. Cl. 101.
Riverton Lime & Stone Co., Inc., Riverton, Va. 277,836, ren. 1–12–71. Cl. 12.
Robertshaw, William R., d.b.a. Robertshaw & Co., Phoenix, Ariz. 780,732, canc. Cl. 52.
Rogers, Lunt & Bowlen Co., d.b.a. Lunt Silver-Smiths, Greenfield, Mass. 534,316–20, ren. 1–12–71. Cl. 28.
Rogers, Lunt & Bowlen Co., d.b.a. Lunt Silver-Smiths, Greenfield, Mass 534,324, ren. 1–12–71. Cl. 28.
Ronson Corp., Woodbridge, N.J. 905,895, pub. 10–27–70. Cl. 34.
Rosenberg, Sam, Inc., New York, N.Y. 535,804, ren. 1–12–71. Cl. 42.
Ross Products, Inc., New York, N.Y. 780,592, canc. Cl. 22.
Roush Bakery Products Co., Inc., Sacramento, Calif. 906,046. Cl. 46.
Rover Co. Ltd., The, Solihull, England. 905,782, pub. 10–27–70. Cl. 19.
Rowe International Inc., Whippany, N.J. 533,276, ren. 1–12–71. Cl. 23.
Rykoff, S. E., & Co., Los Angeles, Calif. 905,720, pub. 10–27–70. Cl. 6.
S.A.G.A. Societa Acque Gasate ed Affini, S.p.A.: *See*—
Fonti Levissima-S.P.A.
SCM Corp., Cleveland, Ohio. 905,727, pub. 10–27–70. Cl. 12.
SCM Corp., d.b.a. Durkee Famous Foods, Cleveland, Ohio. 905,927, pub. 10–27–70. Cl. 46.
SCM Corp., d.b.a. Durkee Famous Foods, Cleveland, Ohio. 905,935, pub. 10–27–70. Cl. 46.
S. E. & M. Vernon, Inc., New York, N.Y. 780,622, canc. Cl. 37.
Sales Consultants of Columbus, Columbus, Ohio. 906,015, pub. 10–27–70. Cl. 101.
Sales Producers Associates, Inc., d.b.a Gem Canning Co., Kansas City, Kans. 905,916, pub. 10–27–70. Multiple Class (Classes 45 and 46).
Sams, Howard W., & Co., Inc., Indianapolis, Ind. 780,629, canc. Cl. 38.
Sani Pine Products Co., Inc., Great Neck, N.Y. 905,708, pub. 10–27–70. Multiple Class (Classes 6 and 52).
Saskatchewan Timber Board, Prince Albert, Saskatchewan, Canada. 905,734, pub. 10–27–70. Cl. 12.
Sauerman Bros., Inc., Bellwood, Ill. 539,801, ren. 1–12–71. Cl. 23.
Schlitz, Jos., Brewing Co., d.b.a. Hawaii Brewing Co., Milwaukee, Wis. 905,955, pub. 11–12–68. Cl. 48.
Schoeneman, J., Inc., Owings Mills, Md. 534,199, ren. 1–12–71. Cl. 39.
Schreiber, L. D., Cheese Co., Inc., Green Bay, Wis. 905,928, pub. 10–27–70. Cl. 46.
Scientific Resources Corp., Montgomeryville, Pa. 905,812, pub. 10–27–70. Cl. 21.
Scott & Fetzer Co., The, Toledo, Ohio. 905,996, pub. 10–27–70. Cl. 100.

Scripto, Inc., Atlanta, Ga. 905,866, pub. 10–27–70. Cl. 26.
Servair Inc., East Boston, Mass. 906,023, pub. 10–27–70. Cl. 103.
Servair Inc., East Boston, Mass. 906,030, pub. 10–27–70. Cl. 105.
Service Specialists, Ltd., Oklahoma City, Okla. 906,019, pub. 10–27–70. Cl. 101.
Shakespeare Co., Kalamazoo, Mich., from Pflueger Corp., Akron, Ohio. 905,797, pub. 10–27–70. Multiple Class (Classes 21 and 22).
Shaklee Products, Hayward, Calif. 905,984, pub. 10–27–70. Cl. 52.
Sheehan, Timothy P., d.b.a. Sweedish Food Products, Chicago, Ill. 280,892, ren. 1–12–71. Cl. 46.
Silent Knight Automotive Inc., Billings, Mont. 905,853, pub. 10–27–70. Cl. 23.
Simer Pump Co., Minneapolis, Minn. 905,745, pub. 10–27–70. Cl. 13.
Simpson Timber Co., Seattle, Wash. 780,760, canc. Cl. 12.
Singer Co., The, New York, N.Y. 780,608, canc. Cl. 23.
Smestad, Leonard E., Dawson, Minn. 780,641, canc. Cl. 38.
Societe Anonyme Pour l'Expansion des Marques de Fabrique et de Commerce, Calombes, France. 80,778, ren. 1–12–71. Cl. 18.
Societe Des Etablissements Andre Bertin, Blangy, Pas-de-Calais, France. 905,780, pub. 10–27–70. Multiple Class (Classes 19 and 35).
Sonic Distributors, Inc., Southfield, Mich. 905,899, pub. 10–27–70. Cl. 35.
Sorbol Co., The, Mechanicsburg, Ohio. 534,097, ren. 1–12–71. Cl. 18.
Specialty Foods, Inc., Lakewood, N.J. 538,045, ren. 1–12–71. Cl. 46.
Spitzer and Gross, Mamaroneck, N.Y. 780,511, canc. Cl. 6.
Stainless Foundry & Engineering, Inc., Milwaukee, Wis. 905,-910, pub. 10–27–70. Cl. 44.
Stamford Chemical Co., The, Stamford, Conn. 780,723, canc. Cl. 52.
Standard Radio Corp., Kanagawa, Japan. 905,901, pub. 10–27–70. Cl. 36.
Stanley Home Products, Inc., Westfield, Mass. 533,175, ren. 1–12–71. Cl. 51.
Stauffer Chemical Co., New York, N.Y. 905,709, pub. 6–16–70. Cl. 6.
Stecker Chemicals, Inc., Ho-Ho-Kus, N.J. 780,504, canc. Cl. 6.
Sterling Drug Inc., New York, N.Y. 80,651, ren. 1–12–71. Cl. 18.
Sterling Electronics Corp., Houston, Tex. 905,809, pub. 10–27–70. Cl. 21.
Still, W. M., & Sons, Ltd., London, England. 780,564, canc. Cl. 21.
Stim-U-Plant Laboratories, Inc., Columbus, Ohio. 535,283, ren. 1–12–71. Cl. 10.
Stone Industrial Corp., Washington, D.C. 532,152, ren. 1–12–71. Cl. 50.
Summit Chemical Co., Baltimore, Md. 905,717, pub. 10–27–70. Cl. 6.
Sunbeam Corp., Chicago, Ill. 280,480, ren. 1–12–71. Cl. 27.
Sunbeam Corp., Chicago, Ill. 280,756, ren. 1–12–71. Cl. 21.
Sure Oil & Chemical Corp., Worcester, Mass. 905,757, pub. 9–1–70. Cl. 15.
Surgical Developments Ltd., Walton-on-Thames, Surrey, England. 905,912, pub. 10–27–70. Cl. 44.
Swift & Co., Chicago, Ill. 269,663, ren. 1–12–71. Cl. 46.
Synercon Corp., Nashville, Tenn. 906,021, pub. 10–27–70. Cl. 102.
TV Time Foods, Inc., Chicago, Ill. 905,946, pub. 8-18-70. Cl. 46.
Taco Boy, Inc., Oklahoma City, Okla. 906,003, pub. 10–27–70. Cl. 101.
Tandy Corp., d.b.a. Radio Shack, from Radio Shack Corp., Boston, Mass. 905,792, pub. 9–8–70. Cl. 21.
Taylor Bros, Inc., Winston-Salem, N.C. 905,762, pub. 9–1–70. Cl. 17.
Tel-Ads, Inc., Washington, D.C. 780,748, canc. Cl. 107.
Telegift Inc., from Telegift, Inc., Salt Lake City, Utah. 906,-001, pub. 7–7–70. Cl. 101.
Telephone Sales & Service Co., Inc., New York, N. Y. 905,807, pub. 10–27–70. Cl. 21.
Tenna Corp., Cleveland, Ohio. 905,902, pub. 10–27–70. Cl. 36.
Texas Calcium Corp., Houston, Tex. 538,852, ren. 1–12–71. Cl. 6.
Textron Inc., Providence, R.I. 536,149, ren. 1–12–71. Cl. 28.
Textron Inc., Providence, R.I. 905,699, pub. 10–27–70. Cl. 1.
Textron Inc., Providence, R.I. 905,970, pub. 10–27–70. Cl. 51.
Topo Electronics, Inc., from Topp Import & Export, Inc., Miami, Fla. 906,040. Cl. 21.
Topps Chewing Gum, Inc., Brooklyn, N.Y. 905,822, pub. 10–27–70. Cl. 22.
Totsy Mfg. Co., Inc., Holyoke, Mass. 905,823, pub. 10–27–70. Cl. 22.
Touraine Paints, Inc., Everett, Mass. 905,759, pub. 9–1–70. Cl. 16.
Tournament-Master Courts, Inc., Darien, Conn. 905,827, pub. 10–27–70. Cl. 22.
Toyo Kogyo Co., Ltd., Hiroshima-ken, Japan. 905,784, pub. 10–27–70. Cl. 19.
Trakpower, Inc., Portland, Oreg. 905,742, pub. 10–27–70. Cl. 13.
Trans International Airlines, Inc., Oakland, Calif. 906,028, pub. 10–27–70. Cl. 105.
Travaco Laboratories, Inc., Chelsea, Mass. 905,986, pub. 10–27–70. Cl. 52.
Travelers Express Co., Inc., Minneapolis, Minn. 906,020, pub. 10–27–70. Cl. 102.
Trend Products, Inc., Houston, Tex. 905,740. pub. 10–27–70. Cl. 13.
Trubroil Corp., Oak Park, Ill. 906,042. Cl. 34.
Tuttag, S. J., & Co., Detroit, Mich. 905,769, pub. 10–27–70. Cl. 18.
Unilab Research Corp., Berkeley, Calif. 905,939, pub. 10–27–70. Cl. 46.
Union Carbide Corp., New York, N.Y. 905,974, pub. 10–27–70. Cl. 51.
United Conveyor Corp., Chicago, Ill. 539,902, ren. 1–12–71. Cl. 21.
United Merchants & Mfg., Inc., New York, N.Y. 534,000, ren. 1–12–71. Cl. 42.
U.S. Industries, Pennaco Division, New York, N.Y. 533,605, ren. 1–12–71. Cl. 39.
U.S. Oil Co., East Providence, R.I. 533,785, ren. 1–12–71. Cl. 6.
United States Plywood Corp., New York, N.Y. 780,704, canc. Cl. 50.
United States Radium Corp., Morristown, N.J. 535,022, ren. 1–12–71. Cl. 44.
United States Steel Corp., Pittsburgh, Pa. 280,127, ren. 1–12–71. Cl. 21.
United States Tobacco Co., Greenwich, Conn. 531,036, ren. 1–12–71. Cl. 17.
Univertical Corp., Detroit, Mich. 905,746, pub. 10–29–68. Cl. 14.
Upjohn Co., The, Kalamazoo, Mich. 905,719, pub. 10–27–70. Cl. 6.
Verona Corp., Union, N.J. 905,713, pub. 10–27–70. Cl. 6.
Video, Victor, Inc., Highland Park, Mich. 906,016, pub. 10–27–70. Cl. 101.
Visionade Mfg. Corp., Brooklyn, N.Y. 905,775, pub. 10–27–70. Cl. 19.
Vittorio Molina, Novara, Italy. 780,545, canc. Cl. 18.
Viva Laboratories, Inc., Horsham, Pa. 780,551, canc. Cl. 18.
Vsesojuznoje Exportno-Importnoje Objedinenije "Mezhdunarodnaja Kniga" USSR, Moscow, Russia. 905,900, pub. 12–10– 68. Cl. 36.
Walk, J. C., & Co., St. Louis, Mo. 780,570, canc. Cl. 22.
Warner & Swasey Co., The, Cleveland, Ohio. 534,737, ren. 1–12–71. Cl. 23.
Wasley, Roy E., d.b.a. Golf Informer, Portland, Oreg. 780,581, canc. Cl. 22.
Watchemoket Optical Co., Inc., Providence, R.I. 537,841, ren. 1–12–71. Cl. 26.
Water Works Supply Co., Inc., d.b.a. Water Works Supply & Mfg. Co., Union City, Calif. 905,849, pub. 10–27–70. Cl. 23.
Weber Dental Mfg. Co., The, Canton, Ohio. 905,914, pub. 10–27–70. Cl. 44.
Weibel, Inc., d.b.a. Weibel Champage Vineyards, Mission San Jose, Calif. 905,954, pub. 10–27–70. Cl. 47.
Wellman, Inc., Boston, Mass. 905,701, pub. 10–27–70. Cl. 1.
Wells Lamont Corp., Chicago, Ill. 539,574, ren. 1–12–71. Cl. 39.
Welsh, C. Robert, d.b.a. Welsh Pharmacy, Ocean City, Md. 906,011, pub. 10–27–70. Cl. 101.
West, Jeanne, Fashions, Inc., Chicago, Ill. 905,905, pub. 8–11–70. Cl. 39.
West Penn Screen Service, Inc., Pittsburgh, Pa. 780,512, canc. Cl. 6.
Westab Inc., Dayton, Ohio. 444,467, ren. 1–12–71. Cl. 37.
Whitman, Philip G., Inc., New York, N.Y. 905,697, pub. 6–30–70. Multiple Class (Classes 1, 37, and 42).
Wilson Sporting Goods Co., River Grove, Ill. 780,597, canc. Cl. 22.
Winger Enterprises, Inc., Sarasota, Fla. 905,824, pub. 10–27–70. Cl. 22.
Worthington Foods, Inc., Worthington, Ohio. 905,945. pub. 10–27–70. Cl. 46.
Wright Chemical Corp., Chicago, Ill. 536,924, ren. 1–12–71. Cl. 6.
Yanagiya Honten Co., Ltd., Kamakura, Kanagawa, Japan. 905,965, pub. 10–27–70. Cl. 51.
Yardley of London, Inc., New York, N.Y. 905,966, pub. 10–27–70. Multiple Class (Classes 51 and 52).
York Lighting, Inc., York, Pa. 780,565, canc. Cl. 21.
Zenith Industries, Inc., New York, N.Y. 905,696, pub. 8–18–70. Multiple Class (Classes 1, 3, 13, 26, 31, 34, and 50).
Zsa Zsa Ltd., New York, N.Y., 905,988, pub. 10–27–70. Cl. 52.

U.S. GOVERNMENT PRINTING OFFICE: 0—1971

A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

U.S. DEPARTMENT OF COMMERCE

Official Gazette of the United States Patent Office

January 19, 1971 Volume 882 Number 3

PATENTS
NOTICES

Board of Appeals Decisions Rendered in the Month of December 1970

Examiner affirmed	154
Examiner affirmed in part	16
Examiner reversed	32
Total	202

Certificates of Correction for the Issue of Jan. 19, 1971

Re. 26,969	3,516,774	3,530,681	3,536,162
3,427,364	3,516,778	3,531,154	3,536,238
3,433,156	3,518,191	3,531,279	3,536,753
3,435,240	3,518,511	3,531,430	3,536,897
3,449,418	3,519,429	3,532,650	3,536,935
3,450,838	3,519,710	3,533,424	3,537,022
3,468,664	3,519,869	3,533,988	3,537,146
3,471,778	3,520,280	3,534,067	3,537,177
3,475,493	3,521,546	3,534,098	3,537,332
3,478,540	3,523,060	3,534,124	3,537,694
3,482,002	3,526,090	3,534,452	3,537,710
3,499,373	3,527,580	3,534,856	3,537,727
3,500,097	3,527,583	3,534,987	3,537,945
3,504,907	3,528,548	3,535,122	3,538,217
3,505,885	3,528,954	3,535,458	3,538,235
3,510,775	3,529,196	3,535,496	3,538,340
3,512,322	3,529,293	3,535,523	3,538,407
3,514,796	3,529,773	3,535,805	3,538,707
3,515,719	3,529,953	3,535,811	3,539,627
3,516,571	3,530,071	3,536,136	3,539,658
3,516,574			

Separation of the Patent and Trademark Sections of the Official Gazette

Effective February 2, 1971, the OFFICIAL GAZETTE will be separated into two parts to be known as the *Patent Official Gazette* and the *Trademark Official Gazette*. The subscription prices for these publications are as follows:

Patent Official Gazette:
- $89.00 per year
- 22.25 additional for foreign mailing
- 2.00 per single copy

Trademark Official Gazette:
- $17.00 per year
- 4.25 additional for foreign mailing
- .40 per single copy

Also effective February 2, 1971, the OFFICIAL GAZETTE will no longer contain "Decisions in Patent and Trademark Cases." Decisions of the type heretofore found in the "Decisions in Patent and Trademark Cases" are published by non-Federal organizations such as, for example, the Bureau of National Affairs, Inc., 1231 25th St. NW., Washington, D.C. 20037, and West Publishing Co., 50 Kellogg Blvd., St. Paul, Minn. 55102.

Finally, the "Decisions Leaflet" of the OFFICIAL GAZETTE will no longer be supplied as a separate subscription item after January 26, 1971. According to present plans, however, both the PATENT OFFICIAL GAZETTE and the TRADEMARK OFFICIAL GAZETTE will have identical "Patent Office Notices" sections containing notices of the various types heretofore published in the Gazette decision leaflet and Trademark Section. Those notices of particular interest to Patent Office employees will be accumulated and published approximately every fourth week, and distributed separately to employees.

WILLIAM E. SCHUYLER, Jr.,
Commissioner of Patents.

Dec. 29, 1970.

Dedications

2,982,577.—*Anthony W. Serio*, Elmira, N.Y. HANDLE APPARATUS. Patent dated May 2, 1961. Dedication filed Sept. 28, 1970, by the assignee, *Youngstown Steel Door Company*.

Hereby dedicates the entire term of said patent to the Public.

3,010,688.—*Anthony W. Serio*, Elmira, N.Y. COMBINED HOLDER AND STAND. Patent dated Nov. 28, 1961. Dedication filed Sept. 28, 1970, by the assignee, *Youngstown Steel Door Company*.

Hereby dedicates the entire term of said patent to the Public.

3,047,186.—*Anthony W. Serio*, Elmira, N.Y. VENT KNOB. Patent dated July 31, 1962. Dedication filed Sept. 28, 1970, by the assignee, *Youngstown Steel Door Company*.

Hereby dedicates the entire term of said patent to the Public.

3,089,943.—*Anthony W. Serio*, Elmira, N.Y. FULLY IMMERSIBLE ELECTRIC FRYING PAN. Patent dated May 14, 1963. Dedication filed Sept. 28, 1970, by the assignee, *Youngstown Steel Door Company*.

Hereby dedicates the entire term of said patent to the Public.

New Applications Received During September 1970

Patents	8413
Designs	494
Plant Patents	4
Reissues	41
Total	8952

Issue—January 19, 1971

Patents	1825	No. 3,555,559 to No.	3,557,383, incl.
Designs	40	No. 219,725 to No.	219,764, incl.
Plant Patents	4	No. 3,018 to No.	3,021, incl.
Reissues	6	No. 27,032 to No.	27,037, incl.
Total	1875		

3,114,484.—*Anthony W. Serio*, Elmira, N.Y. POURING TOP ASSEMBLY FOR FLUID CONTAINERS. Patent dated Dec. 17, 1963. Dedication filed Sept. 28, 1970, by the assignee, *Youngstown Steel Door Company*.

Hereby dedicates the entire term of said patent to the Public.

3,174,424.—*Anthony W. Serio*, Elmira, N.Y. BEVERAGE BREWING APPARATUS. Patent dated Mar. 23, 1965. Dedication filed Sept. 28, 1970, by the assignee, *Youngstown Steel Door Company*.

Hereby dedicates the entire term of said patent to the Public.

3,182,584.—*Anthony W. Serio*, Elmira, N.Y. BEVERAGE BREWING APPARATUS. Patent dated May 11, 1965. Dedication filed Sept. 28, 1970, by the assignee, *Youngstown Steel Door Company*.

Hereby dedicates the entire term of said patent to the Public.

3,240,348.—*Anthony W. Serio*, Elmira, N.Y. STRAINER APPARATUS. Patent dated Mar. 15, 1966. Dedication filed Sept. 28, 1970, by the assignee, *Youngstown Steel Door Company*.

Hereby dedicates the entire term of said patent to the Public.

3,306,505.—Anthony W. Serio, Elmira, N.Y. POURING TOP ASSEMBLY FOR CONTAINERS. Patent dated Feb. 28, 1967. Dedication filed Sept. 28, 1970, by the assignee, *Youngstown Steel Door Company*.

Hereby dedicates the entire term of said patent to the Public.

3,407,641.—*William M. Jones*, Big Flats, N.Y. METHOD OF FORMING STUDS. Patent dated Oct. 29, 1968. Dedication filed Sept. 28, 1970, by the assignee, *Youngstown Steel Door Company*.

Hereby dedicates the entire term of said patent to the Public.

3,438,082.—*William M. Jones*, Big Flats, and *William A. Morris*, Elmira, N.Y. DETACHABLE HANDLE. Patent dated Apr. 15, 1969. Dedication filed Sept. 28, 1970, by the assignee, *Youngstown Steel Door Company*.

Hereby dedicates the entire term of said patent to the Public.

Department of Commerce

PATENT OFFICE

[37 CFR Part 1]

EXTENSIONS OF TIME TO FILE APPEAL BRIEFS

NOTICE OF PROPOSED RULE MAKING

Notice is hereby given that pursuant to the authority contained in section 6 of the Act of July 19, 1952 (66 Stat. 793, 35 U.S.C. 6), the Patent Office proposes to revise § 1.192 of Title 37, Code of Federal Regulations.

Interested persons are invited to submit their objections, recommendations, suggestions and other comments relating to the proposed changes to the Commissioner of Patents, Washington, D.C. 20231 on or before February 19, 1971, on which date a hearing will be held at 2:30 p.m., e.s.t., in Room 8C06 of Building 2. 2011 Jefferson Davis Highway, Arlington, Va. All persons wishing to be heard orally at the hearing are requested to notify the Commissioner of Patents of their intended appearance. Any written comments or suggestions may be inspected by any person upon written request a reasonable time after the closing date for submitting comments.

The Patent Office is planning to change the time at which jurisdiction of an appealed application passes from the Examining Corps to the Board of Appeals and the manner in which appeals are processed. After this change is effected, records of appealed cases would no longer be kept by the Board of Appeals until after a reply brief is filed or the time for filing has expired. Therefore, the authority to grant extensions of time for filing appeal briefs should no longer be restricted to the Board of Appeals and the proposed revision removes this limitation.

Revised § 1.192 will read as follows:

§ 1.192 *Appellant's brief.*

(a) The appellant shall, within 2 months from the date of the appeal, or within the time allowed for response to the action appealed from, if such time is later, file a brief, accompanied by the requisite fee, of the authorities and arguments on which he will rely to maintain his appeal, including a concise explanation of the invention which should refer to the drawing by reference characters, and a copy of the claims involved, at the same time indicating if he desires an oral hearing. Two extra copies of the brief are required if an oral hearing is requested. Upon a showing of sufficient cause, the time for filing the brief may be extended to a date not later than 2 months after the original expiration date. Any longer or further extensions must be sought from the Commissioner. All requests for extensions must be filed prior to the expiration of the period sought to be extended.

(b) On failure to file the brief, accompanied by the requisite fee, within the time allowed, the appeal shall stand dismissed.

WILLIAM E. SCHUYLER, Jr.
Commissioner of Patents.

Approved: Dec. 24, 1970.

RICHARD O. SIMPSON,
Acting Assistant Secretary for Science and Technology.

[F.R. Doc. 70-17567; Filed, Dec. 30, 1970; 8:46 a.m.]

Published in 35 F.R. 20010, Dec. 31, 1970

[37 CFR Part 1]

DISCOVERY DURING INTERFERENCE PROCEEDINGS

NOTICE OF PROPOSED RULE MAKING

Notice is hereby given that, pursuant to the authority contained in section 6 of the Act of July 19, 1952 (66 Stat. 793; 35 U.S.C. 6), the Patent Office proposes to amend Title 37 of the Code of Federal Regulations by revising §§ 1.245 and 1.251 and by adding a new § 1.287.

All persons are invited to present their views, objections, recommendations, or suggestions in connection with the proposed changes to the Commissioner of Patents, Washington, D.C. 20231 on or before February 19, 1971, on which date a hearing will be held at 9 a.m., e.s.t., in Room 8C06, Building 2, 2011 Jefferson Davis Highway, Arlington, Va. All persons wishing to be heard orally at the hearing are requested to notify the Commissioner of Patents of their intended appearance. Any written comments or suggestions may be inspected by any person upon written request a reasonable time after the closing date for submitting comments.

The proposed amendments provide for discovery in interference proceedings during a period set for preparation for testimony. Under the amendments, the Board of Patent Interferences will maintain control over the scope and extent of discovery and the time alloted to discovery.

The amendments are intended to incorporate into interference proceedings the general principles embodied in the discovery provisions of the Federal Rules of Civil Procedure. However, they are designed, at the same time, to retain the advantages of an administrative proceeding, and also to take into account the basic ways in which an interference proceeding differs from conventional litigation.

The proposed amendments involve the following features:

1. The designation of a specific period for discovery and other preparation for the taking of testimony;

2. A provision requiring that, by a specified time in the period for preparation for testimony, a party who intends to take testimony serve on the other party or parties copies of documents and a list of things upon which he intends to rely, and a list of persons whose testimony he intends to take; and also authorizing the Board of Patent Interferences, upon motion by a party, to order additional discovery where the interest of justice so requires; and

3. Provision for sanctions by the Board of Patent Interferences where there is noncompliance with a requirement or an order by the Board for discovery;

The text of amended §§ 1.245 and 1.251 would read as follows:

§ 1.245 *Extensions of time.*

Extensions of time in any case not otherwise provided for may be had by stipulation of the parties, subjected to approval, or on motion duly brought, sufficient cause being shown for such extension. A motion not timely made may be considered upon a showing of sufficient cause as to why such motion was not timely presented.

§ 1.251 *Assignment of times for discovery and taking testimony.*

(a) A period for preparation for testimony will be set in which all parties should complete discovery and other preparatory activities.

(b) Times will be assigned in which the junior party shall complete his testimony in chief, and in which the other party shall complete the testimony on his side, and a further time in which the junior party may take rebutting testimony, but he shall take no other testimony. If there be more than two parties to the interference, the times for taking testimony will be so arranged that each shall have an opportunity to prove his case against prior parties and to rebut their evidence, and also to meet the evidence of junior parties.

(c) Times for preparation of testimony, for compliance with § 1.287(a) and for taking of testimony will ordinarily be assigned in notices sent to the parties after motions under § 1.231 have been disposed of or, if no such motions have been filed, after the close of the motion period (§ 1.231).

(d) Testimony shall be taken during the times assigned in accordance with §§ 1.271 to 1.286.

(e) The date for final hearing will ordinarily be set in separate notices.

The text of new § 1.287 would read as follows:

§ 1.287 *Discovery.*

(a) Subject to paragraph (b) of this section, each party must, by the date set, not earlier than 15 days after the beginning of the period for preparation for testimony, serve on each opposing party who is entitled to take testimony, or who is senior to him, a copy of each document in his possession, custody, or control and upon which he intends to rely, a list of and a proffer of reasonable access to things in his possession, custody, or control and upon which he intends to rely, and a list giving the names and addresses of all persons whom he intends to call as witnesses and indicating the relationship of each such person to the invention in issue.

(b) Compliance with paragraph (a) of this section need not be made by a party who relies solely upon the filing date of a patent application in this or any other country, or by a junior party who is not allowed to take testimony in chief because of the dates alleged in his preliminary statement or his failure to file or serve a perliminary statement.

(c) Upon motion brought by a party during the period for preparation for testimony, and upon a showing that the interest of justice so requires, the Board of Patent Interferences may order additional discovery within the scope of the discovery rules of the Federal Rules of Civil Procedure, specifying the terms and conditions of such additional discovery. An order by the Board granting or denying a motion under this paragraph shall not be subject to review prior to a decision awarding priority.

(d) A party will not be permitted to rely on any document or thing in his possession, custody or control, or on any witness, not listed and served by that party as required by paragraph (a) of this section, except upon timely motion accompanied by the proposed additional documents or lists together with a showing of sufficient cause as to why they were not served by the date set pursuant to paragraph (a) of this section. Any failure to comply with an order under the provisions of paragraph (c) of this section may be considered by the Board of Patent Interferences as basis for applying appropriate restrictions against the party failing to comply, for holding certain facts to have been established, and in an appropriate case for awarding priority against him, or for taking such other action as may be deemed appropriate.

(e) Except by agreement of the parties, discovery will not be permitted prior to the period set for preparation for testimony.

WILLIAM E. SCHUYLER, Jr.
Commissioner of Patents.

Approved: Dec. 24, 1970.

RICHARD O. SIMPSON,
Acting Assistant Secretary for Science and Technology.

[F.R. Doc. 70-17566; Filed, Dec. 30, 1970; 8:46 a.m.]

Published in 35 F.R. 20011, Dec. 31, 1970

[37 CFR Parts 1, 3]

CONFLICTING CLAIMS

NOTICE OF PROPOSED RULE MAKING

Notice is hereby given that pursuant to the authority contained in section 6 of the Act of July 19, 1952 (66 Stat. 793, 35 U.S.C. 6), the Patent Office proposes to amend §§ 1.78 and 1.321 and add a new § 3.53.

Interested persons are invited to submit their objections, recommendations, suggestions, and other comments relating to the proposed changes to the Commissioner of Patents, Washington, D.C. 20231 on or before February 19, 1971, on which date a hearing will be held at 1 p.m., e.s.t., Room 8C06 of Building 2, 2011 Jefferson Davis Highway Arlington, Va. All persons wishing to be heard orally at the hearing are requested to notify the Commissioner of Patents of their intended appearance. Any written comments or suggestions may be inspected by any person upon written request a reasonable time after the closing date for submitting comments.

The proposed rule changes are intended to provide: (1) a basis for requiring a determination of priority without an interference by the common owner of a plurality of applications, or patents and applications, containing conflicting claims, and (2) a basis for requiring inclusion of a common ownership clause in all terminal disclaimers filed to obviate a double patenting rejection.

The determination of priority under proposed § 1.78(c) between commonly owned applications by the common owner without interference proceedings will generally result in savings to both the owner and the Patent Office.

The proposed revision of § 1.321 and proposed new § 3.53 brings into the rules a current procedure not based on rule. This provision would prevent harassment of an alleged infringer by multiple parties due to subsequent different ownership of multiple patents granted as the result of filing a terminal disclaimer to overcome a double patenting rejection.

The language of proposed § 3.53 is substantially the form which met with the approval of the Court of Customs and Patent Appeals in footnote 5 of In re Griswold, 365 F. 2d 834; 150 USPQ 805; 53 CCPA 1565.

§ 1.78 [*Amended*]

It is proposed that § 1.78 be amended by deleting from paragraph (b) the expression "or owned by the same party," and by adding a new paragraph (c) which reads:

(c) Where two or more applications, or applications and a patent naming different inventors and owned by the same party, contain conflicting claims, the assignee may be called upon to state which named inventor is the prior inventor. If no statement of prior inventorship is filed, the inventor named in the application having the earliest filing date, or lowest serial number if filed the same day, will be presumed to be the prior inventor.

It is further proposed that § 1.321 be revised to read as follows:

§ 1.321 *Statutory disclaimer.*

A disclaimer under 35 U.S.C. 253 must identify the patent and the claim or claims which are disclaimed, and be signed by the person making the disclaimer, who shall state therein the extent of his interest in the patent. A disclaimer not a disclaimer of a complete claim or claims may be refused recordation. A notice of the disclaimer is published in the Official Gazette and attached to the printed copies of the specification. In like manner any patentee or applicant may disclaim or dedicate to the public the entire term, or any terminal part of the term, of the patent, granted or to be granted. A terminal disclaimer, when filed in an application

to obviate a double patenting rejection, must include a provision that any patent granted on that application shall expire immediately if it ceases to be commonly owned with the application or patent which formed the basis for the rejection. See § 1.21 for fee.

Finally, it is proposed that a new § 3.53 be added to read as follows:

§ 3.53 Terminal disclaimers in application.

To the Commissioner of Patents:

Your petitioner, _____, residing at _____ in the county of _____ and State of _____ represents that he is (here state exact interest of the disclaimant and, if he is an assignee, set out the liber and page or reel and frame where the assignment is recorded) of application No. _____, filed on the ____ day of _____, 19__ for _____. Your petitioner, _____, hereby disclaims the terminal part of any patent granted on the above identified application, which would extend beyond the expiration date of Patent No. _____ and hereby agrees that any patent so granted on the above identified application shall be enforceable only for and during such period that the legal title to said patent shall be the same as the legal title to U.S. Patent No. _____, this agreement to run with any patent granted on the above identified application and to be binding upon the grantee, its successors or assigns.

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents.

Approved: Dec. 24, 1970.

RICHARD O. SIMPSON,
Acting Assistant Secretary for Science and Technology.

[F.R. Doc. 70-17565; Filed, Dec. 30, 1970; 8:46 a.m.]

Published in 35 F.R. 20011, Dec. 31, 1970

Patent Suits

Notices under 35 U.S.C. 290; Patent Act of 1952

2,594,256, C. E. Compton, MINING MACHINE HEAD; **2,760,255,** same, SCREW CONVEYOR AND MANUFACTURE THEREOF; **2,784,955,** same, ROTARY MINING MACHINE CUTTER HEAD WITH REAR HELICALLY EXTENDING TRANSVERSE OPENING; **2,719,708,** same, PAN GUIDEWAY FOR ROTARY MINING HEAD, **filed** Dec. 21, 1964, D.C., N.D. W. Va. (Fairmont), Doc. 803-F, *Charles E. Compton, Joy Manufacturing Company and Polan Industries, Inc.* v. *Metal Products, Inc.* Patents valid and infringed; defendants enjoined and restrained; counterclaim for declaratory judgment dismissed, Aug. 3, 1970.

2,719,708. (See 2,594,256.)

2,760,255. (See 2,594,256.)

2,784,955. (See 2,594,256.)

2,808,626, J. H. Sassano, OUTSIDE SLIDING WINDOW SHUTTER; **3,452,477,** same, EXTERIOR SLIDING WINDOW SHUTTERS, **filed** Aug. 28, 1970, D.C., S.D. Fla. (Miami), Doc. 70-1257-C-JE, *Weather Control Shutters, Inc. and John H. Sassano* v. *Bernardo Aluminum Fabricators, Inc.*

2,967,119, R. P. Gutterman, ULTRASONIC PROCESS AND APPARATUS, **filed** Oct. 19, 1970, D.C. Del. (Wilmington), Doc. 3997, *Lipsner-Smith Corporation* v. *Clean Air, Inc.*

3,027,507, O. Hubner, POWER PACK MEANS FOR ELECTRICAL APPLIANCE, **filed** Sept. 18, 1964, D.C., S.D.N.Y., Doc. 64-C-2866, *Otto Hubner* v. *Sunbeam Corporation.* Notice of settlement and final decree, ordered patent is invalid; complaint dismissed with prejudice, Oct. 15, 1970.

3,048,668, E. M. Weiss, TRANSDUCER SUSPENSION SYSTEM, **filed** Oct. 14, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c2553, *Beltone Electronics Corp.* v. *Otto Butz, doing business as Otto Butz Lab. of Audio Aids and North American Phillips Co.*

3,068,484, Moehlenpah and Pallme, APPARATUS FOR FABRICATING WOOD STRUCTURES; **3,069,684,** same, **filed** Aug. 13, 1970, D.C., E.D. Mich. (Detroit), Doc. 35242, *Hydro-Air Engineering, Inc.* v. *Truswal Systems, Inc., J & H Hydraulic Co., and Jack N. Schmitt.*

3,069,684. (See 3,068,484.)

3,090,605, Copeland and Neier, FEED MIXER, **filed** Oct. 13, 1970, D.C. Colo. (Denver), Doc. C-2632, *Hydraulics Unlimited Mfg. Co.* v. *B/J Manufacturing Co., Inc., et al.*

3,117,823, L. I. Pickert, FLUID PRESSURE BRAKE SYSTEM, **filed** July 5, 1969, D.C., S.D.N.Y., Doc. 69-C-2928, *Sloan Valve Company* v. *General Signal Corporation.* Stipulation of voluntary dismissal pursuant to Rule 41(a)(2) FRCP, Oct. 19, 1970.

3,141,872, Natta, Pino and Mazzanti,, POLYMERIZATION CATALYST AND STEREOSPECIFIC POLYMERIZATION OF PROPYLENE THEREWITH, **filed** Oct. 13, 1970, D.C., W.D. Tex. (Pecos), Doc. MO-70-CA-85, *Montecatini Edison S.p.A.* v. *El Paso Natural Gas Products Co., Dart Industries, Inc.*

3,226,953, Good and Good, TWO-FEED KNITTING MACHINE, **filed** Sept. 29, 1970, D.C., W.D.N.C. (Statesville), Doc. 626, *Daniel H. Good and David S. Good* v. *Dave Baer Hosiery Mill, Inc.*

3,308,491, W. R. Spence, CUSHION STRUCTURE, **filed** Oct. 13, 1970, D.C., S.D.N.Y., Doc. 70-C-4470, *Stryker Corp.* v. *Ortho Industries, Inc.*

3,314,353, J. V. Knab, VENTILATED FLOOR MODULAR SYSTEM; **3,323,437,** same, FILTER SYSTEM; **3,465,666,** same, CLEANROOM FILTERING METHOD, **filed** Aug. 11, 1970, D.C., W.D. Mich. (Grand Rapids), Doc. CA-6243, *James V. Knab and CleanFlo Corporation* v. *Walter Kidde & Co., Inc.* Pursuant to the terms in agreement dated Aug. 11, 1970, defendant owner of the aforesaid patents, Aug. 19, 1970.

3,323,437. (See 3,314,353.)

3,335,092, K. E. Perry, OVEN CLEANER AND METHOD OF USING THE SAME, **filed** Dec. 21, 1967, D.C., N.D. Ill. (Chicago), Doc. 67c2190, *Shelco, Inc.* v. *Boyle Midway, Inc., American Home Products Corp.* Final judgment, that claims 1-6, 14, 16-19, 26 and 28-32 of patent invalid; defendants first counterclaim seeking a declaration of invalidity upheld, Oct. 19, 1970.

3,343,179. (See D. 203,435.)

3,384,858, G. Johnson, LAMPHOLDER FOR FLUORESCENT LAMPS, **filed** Sept. 23, 1970, D.C., S.D.N.Y., Doc. 70-C-4131, *Kulka Electric Corp.* v. *Supro Lux Manufacturing Co., Inc. et ano.*

3,452,477. (See 2,808,626.)

3,465,666. (See 3,314,353.)

Re. 26,492, Caveney and Moody, BINDER STRAP TOOL, **filed** Sept. 8, 1970, D.C., N.D. Ill. (Chicago), Doc. 70c2210, *Panduit Corp.* v. *Burndy Corporation, Burndy Midwest Inc. and JSG Electric Co.*

Re. 26,520. (See D. 203,435.)

D. 203,435, Sellars and King, INFANT'S TRAINING CHAIR; **Re. 26,520,** same, TRAINING CHAIR; **3,343,179,** same; **D. 204,447,** Sellars, King and Spilman, INFANT'S TRAINING CHAIR, **filed** Feb. 10, 1969, D.C., N.D. Ohio (Cleveland), Doc. C69-98, *Hamilton Cosco, Inc.* v. *Century Products, Inc.* (Amended complaint), Aug. 3, 1970.

D. 204,447. (See D. 203,435.)

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner
F. H. BRONAUGH, Deputy Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF DECEMBER 29, 1970

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	5-23-69
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	4-01-69
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	9-24-69
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	11-03-69
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	2-07-69
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—N. ANSHER, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	3-02-70
SECURITY, GROUP 220—R. L. CAMPBELL, Director. Ordnance, Firearms and Ammunition; Radar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	6-04-69
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	10-01-69
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	12-01-69
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	8-12-69
DESIGNS, GROUP 290—R. L. CAMPBELL, Director. Industrial Arts; Household, Personal and Fine Arts.	3-06-70
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	12-01-69
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—D. J. STOCKING, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	9-02-69
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	9-29-69
HEAT, POWER AND FLUID ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vaporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission; Fluid Handling; Lubrication; Joint Packing.	1-09-70
CONSTRUCTIONS, SUPPORTS, TEXTILES, CLEANING, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures; Centrifugal Separations; Cleaning; Coating; Pressing; Agitating; Foods: Textiles; Apparel and Shoes; Sewing Machines; Winding and Reeling.	11-20-69

Total number of pending applications (excluding Designs)	183,445
Total number of Design applications pending	2,590

Expiration of patents: The patents within the range of numbers indicated below expire during January 1971, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,664,562 to 2,667,636, inclusive
Plant Patents	Numbers 1,238 to 1,247, inclusive

REISSUES

JANUARY 19, 1971

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates additions made by reissue.

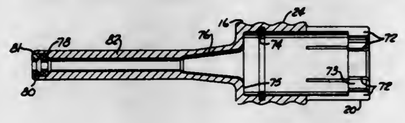
27,032
SURGICAL CUTTING TOOL

Robert M. Hall, Santa Barbara, Calif., assignor to R. M. Hall Corporation, Santa Barbara, Calif., a corporation of Pennsylvania

Original No. 3,384,085, dated May 21, 1968, Ser. No. 380,171, July 3, 1964. Application for reissue May 27, 1969, Ser. No. 848,364

Int. Cl. A61b *17/32*

U.S. Cl. 128—305 **9 Claims**



An outboard tool support attachment is provided for a rotary surgical cutting tool assembly. Such assembly has a manually graspable housing containing a controllable turbine motor to drive at high speed a rotary spindle projecting from a nose portion of the housing, the outer end of the spindle being provided with a coaxial socket to receive and rotate a longitudinally short cutting tool. The attachment includes a detachable mounting grip at one end for engagement with the nose portion of the housing, and at the other end it is provided with an outboard antifriction bearing assembly having inner and outer races, the inner race being adapted to rotatably support a longitudinally extensive cutting tool having one end received in the coaxial socket, whereby the cutting tool may be rotated at high speed without objectionable whipping action. Several types of outboard tool support attachments, and several types of longitudinally extensive cutting tools are disclosed for a variety of surgical operations. Certain of the outboard tool support attachments include a bar extension at the projecting end extending parallel to the axis to expose a coextensive portion of the cutting tool, and one of the bar extensions is characterized by a head on the projecting end thereof and with an opening therein to receive the end of the cutting tool.

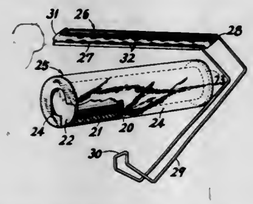
27,033
HYGROSCOPIC HAIR CURLER

Heihachi Mitsumoto, 20 Nishi Oi 4–13, Shinagawa-ku, Tokyo, Japan

Original No. 3,415,255, dated Dec. 10, 1968, Ser. No. 464,755, June 17, 1965. Application for reissue July 22, 1969, Ser. No. 848,761

Int. Cl. A45d *2/02*

U.S. Cl. 132—39 **9 Claims**



A hair curling device consisting af a cylindrical roller having a flanged spool-shaped core on the shank of which a layer of hygroscopic material is disposed, filling the space between the flanges of the core. A cover of fabric or other suitable fibrous material surrounds the core to retain the hygroscopic material. A roller-embracing clip is used with the device to retain rolled-up wet hair strands on the roller and to allow moisture to be absorbed from the hair strands by the hygroscopic material so that the strands will retain a curled configuration after they are dry.

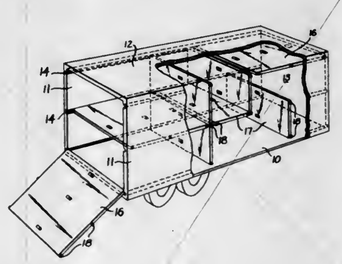
27,034
LADING SEPARATING APPARATUS

Frank A. Bezlaj, Western Springs, Ill., assignor to Unarco Industries, Inc., a corporation of Illinois

Original No. 3,352,595, dated Nov. 14, 1967, Ser. No. 488,601, Sept. 20, 1965. Application for reissue July 25, 1969, Ser. No. 858,900

Int. Cl. B60p *7/14*

U.S. Cl. 296—24 **11 Claims**



A lading separating means for storage spaces in railroad cars, trailers and the like is provided having vertically spaced horizontal tracks on the side walls of the compartments and including panels positioned between opposed walls of the compartment and having spaced pins at the ends of the panels to both support and latch the panels in the tracks. An arrangement of tracks and panels provides that the panels are mountable horizontally or vertically.

27,035
FEED SAVER FOR AUTOMATIC FEED APPARATUS

Robert L. Van Huis, Zeeland, Mich., assignor, by mesne assignments, to U.S. Industries, Inc., New York, N.Y., a corporation of Delaware

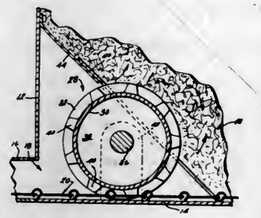
Original No. 3,272,400, dated Sept. 13, 1966, Ser. No. 426,154, Jan. 18, 1965. Application for reissue Aug. 13, 1968, Ser. No. 768,205

Int. Cl. B65g *47/18*

U.S. Cl. 222—318 **16 Claims**

A feed saver apparatus for returning unused feed to a hopper, the apparatus featuring a cylindrical compacting element located at least partially within a feed hopper and at a predetermined height above the level of incoming unused feed, means such as the feed chain for driving the compacting element in a rotary manner so as to compact returning unused feed which is at a height above

the predetermined height of the compacting element. Means are provided for moving the compacted returning feed upward into the hopper and for effectively shielding



the upper and rear portions of the compacting element so as to prevent feed in the hopper from returning to the trough upstream from the hopper.

27,036
SINGLE HANDLE FAUCET VALVE

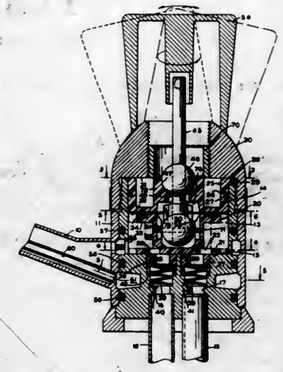
Larry J. Miller, 3810 Shoals, Drayton Plains, Mich. 48020

Original No. 3,372,710, dated Mar. 12, 1968, Ser. No. 537,257, Mar. 17, 1966, which is a continuation-in-part of Ser. No. 456,311, May 17, 1965. Application for reissue Sept. 19, 1969, Ser. No. 866,418

Int. Cl. F16k *19/00*

U.S. Cl. 137—636.3 **37 Claims**

The single handle faucet valve disclosed herein comprises a body defining a chamber having a flat wall surface with hot and cold water inlets extending through the surface. A control disc with a complementary flat surface is provided in contact with the flat wall surface of the chamber and has spaced openings therein movable into and out of registry with the inlet openings. A sealing member is provided adjacent the control member and sealing means on the control member are interposed between the sealing member and control member. A lever is journalled for rotation in the sealing member and has an end thereof interconnected with the control member. Means are provided for limiting the movement of the lever to a



reciprocating motion in a single plane at an angle to the flat surface of the chamber.

27,037
PROCESS FOR THE PRODUCTION OF EXTRA LOW CARBON STAINLESS STEEL

William Bleloch, Parktown, Johannesburg, Transvaal, Republic of South Africa, assignor to Rand Mines Limited, Johannesburg, Transvaal, Republic of South Africa

No Drawing. Original No. 3,300,302, dated Jan. 24, 1967, Ser. No. 355,895, Mar. 30, 1964. Application for reissue Dec. 10, 1968, Ser. No. 783,443

Claims priority, application Republic of South Africa, Apr. 1, 1963, 63/1,393

Int. Cl. C22c *39/20, 39/26, 39/44*

U.S. Cl. 75—130.5 **8 Claims**

The production of a low carbon stainless steel wherein a reductant is introduced with iron ore slag into a ladle, the contents being reladled to complete the reaction, separating the steel from the slag and adding the necessary alloying elements which yield a stainless steel.

PLANT PATENTS

GRANTED JANUARY 19, 1971

Illustrations for plant patents are usually in color and therefore it is not practicable to reproduce the drawing.

3,018
ROSE PLANT
Eugene S. Boerner, deceased, late of Benton, N.Y., by Lincoln Rochester Trust Company, Rochester, N.Y., and Roger L. Boerner, Milwaukee, Wis., executors, assignors to Jackson & Perkins Company, Newark, N.Y., a corporation of New York
Filed Dec. 20, 1968, Ser. No. 785,816
Int. Cl. A01h *5/00*
U.S. Cl. Plt.—11 **1 Claim**

1. A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of an upright and floriferous plant habit, distinctive and attractive foliage, with oval leaflets having a long pointed tip, well formed and high-centered glooms, and a distinctive and attractive pink flower color which is generally Dawn Pink when viewed from a distance.

3,019
FELICIA PLANT
Paul L. Scott, Duarte, Calif., assignor to Burkard Nurseries, Inc., Pasadena, Calif., a corporation of California
Filed Jan. 2, 1969, Ser. No. 788,665
Int. Cl. A01h *5/00*
U.S. Cl. Plt.—68 **1 Claim**

A Felicia characterized by large flower heads containing rich blue ray flowers freely produced on a robust plant.

3,020
ROSE PLANT
Dorothy S. Whisler, Shafter, Calif., assignor, by mesne assignments, to Gro-Plant Industries, Inc., Monticello, Fla., a corporation of Florida
Filed Jan. 15, 1969, Ser. No. 791,529
Int. Cl. A01h *5/00*
U.S. Cl. Plt.—20 **1 Claim**

1. A new and distinct variety of rose plant of the hybrid tea class, substantially as herein shown and described, characterized particularly as to novelty by the unique combination of a vigorous, basal branching and slightly spreading plant habit, moderately glossy foliage, generally in compounds of 7 leaflets, which is dark green when mature, but green-bronze when young, with new growth having a pronounced bronze-green cast, long and strong flowering stems, a free flowering habit, with the blooms usually borne singly and only occasionally in clusters of 2 blooms per stem, straight thorns throughout the plant, often slightly inclined downward but not hooked or recurved, said thorns being reddish bronze when fully mature, and the plant having few prickles anywhere and no hairs, attractive, large, ovoid, pointed buds of Signal Red color, very bright, high-centered and attractive open blooms of good petalage and Vermillion color, with a stable bloom pigment that finishes Geranium Lake in color without any magenta tones, petals of good substance and long life, said petals sometimes being irregularly notched at the apex and dropping cleanly as the bloom finishes, large yellow anthers of moderate number, which are held up by red filaments, arranged in a precise whorl around the pistils, said pistils being moderate in number and bunched together in the center of the bloom, ovaries which are all enclosed in the receptacle and being only reluctantly fertile, if fertile at all, with sepals which are persistant and recurve, and a moderate tea flower fragrance.

3,021
LINDEN TREE
Alton K. Manbeck, New Knoxville, Ohio, assignor to A. K. Manbeck & Sons Nurseries, Inc., New Knoxville, Ohio, a corporation of Ohio
Filed Apr. 18, 1969, Ser. No. 817,584
Int. Cl. A01h *5/12*
U.S. Cl. Plt.—51 **1 Claim**

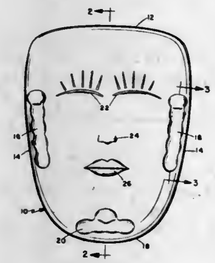
1. A new and distinct variety of linden tree, substantially as herein shown and described, characterized particularly as to novelty by its general similarity to the species botanically known as *Tilia cordata*, but being distinguished from varieties typical of said species by the unique combination of a substantially pyramidal habit of growth, with a semi-horizontal and a very even branching habit around the leader of the tree, leaves of smaller size and a more glossy appearance than those typical of the aforementioned species, and a more abundant blooming habit ranging from 3 to 4 times as many blooms as is typical for said species, giving the tree and appearance resembling a flowering crab when viewed from a distance.

PATENTS

GRANTED JANUARY 19, 1971

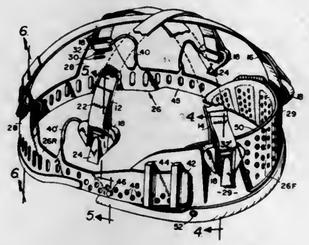
GENERAL AND MECHANICAL

3,555,559
HAIR SPRAY GUARD
Mary Louise Hundhausen, 3851 Basilone St., San Diego, Calif. 92110
Filed Feb. 25, 1969, Ser. No. 802,155
Int. Cl. A61f *9/60*
U.S. Cl. 2—11 **1 Claim**



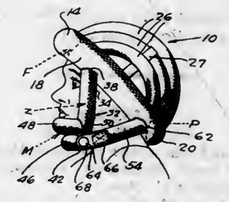
The one piece, hand-held guard masks all or part of the face when using hair spray and has a configuration which indicates the proper orientation and psychologically assists in repetitive, proper positioning of the guard. Multiple hand holds of special design facilitate holding the guard by either hand while manipluating the spray.

3,555,560
SUSPENSION SYSTEM FOR SAFETY HAT
Herbert A. Raschke, Greenbrae, Calif., assignor to E. D. Bullard Company, Sausalito, Calif.
Filed Jan. 16, 1969, Ser. No. 791,671
Int. Cl. A42b *1/10;* **A63b** *71/10*
U.S. Cl. 2—3 **4 Claims**



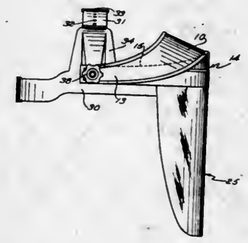
A suspension system for a safety hat having a head band that is connected to the hat at four points only, but has provisions for connecting at six points in the hat the strips that traverse the crown of the head of the wearer of the hat and space the wearer's head from the hat. The parts of the suspension system are provided in unitary assembly so that all parts of the suspension system will remain together, even when the suspension system is not installed in a hat shell.

3,555,561
PROTECTIVE HELMET
Harry B. Neis, P.O. Box 738, Parsons, Kans. 67357
Filed Apr. 25, 1969, Ser. No. 819,143
Int. Cl. A42b *1/08*
U.S. Cl. 2—3 **2 Claims**



A protective helmet to prevent head injuries employs a series of bands and straps and is arranged to encase the head of the wearer providing protection at those areas most likely to receive serious injury. The helmet embodies tubular or other resilient bands and straps.

3,555,562
FACE SHIELD MOUNTING
George T. Patton, Jr., Barrington, R.I., assignor to Welsh Manufacturing Company, a corporation of Rhode Island
Filed Feb. 24, 1969, Ser. No. 801,258
Int. Cl. A42b *1/00*
U.S. Cl. 2—10 **3 Claims**

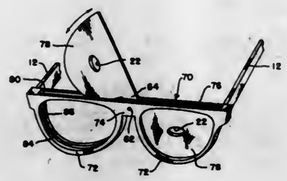


A face shield and its mounting means both formed flat and shipped in flat knocked down condition and then assembled and bent into curved shape which bending holds the face shield in its mounting so it may be positioned on a head support.

3,555,563
GOLFER'S EYEGLASSES
Oscar A. Grossman, 42 Franklin Ave., Pearl River, N.Y. 10965
Filed Aug. 29, 1968, Ser. No. 756,232
Int. Cl. A61f *9/02*
U.S. Cl. 2—14 **4 Claims**

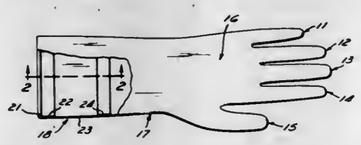
An improved pair of eyeglasses, particularly suitable for use by golfers, in which an opaque lens is provided

having a restrictive sight aperture defined therein, whereby the wearer's head, when addressing the ball preparatory to



swinging, is prevented from straying laterally or vertically, i.e., keeping his eyes directly on the ball.

3,555,564
RUBBER GLOVE
Earle Miskell and Lawrence Povlacs, Dothan, Ala., assignors to Akwell Industries, Incorporated, Dothan, Ala., a corporation of Ohio
Filed Sept. 12, 1969, Ser. No. 857,495
Int. Cl. A41d *19/00*
U.S. Cl. 2—168 **10 Claims**



A molded surgical glove or the like of thin, elastic, rubber or rubber-like material has spaced circumferential bands about the cuff portion adjacent its open end that are thicker and, therefore, more resistant to stretching than the material of the remainder of the glove body. When the cuff portion of the glove is pulled over the end of a loose, bulky sleeve, a ring of bunched-up sleeve material is trapped and maintained between the two thickened bands and prevents the cuff portion from slipping and working down off the sleeve toward the wearer's hand. If a terminal bead is formed about the open cuff end of the glove, it may serve as the endmost one of the spaced thickened bands, or be adjacent or contiguous thereto, or be substantially spaced therefrom.

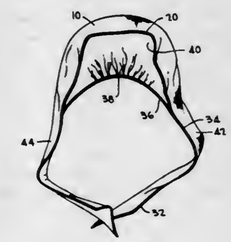
3,555,565
NURSE'S SURGICAL CAP
Harold Zimmon, Los Altos Hills, and Dee L. Strom, Sunnyvale, Calif. (both % Zimmon & Company, Inc., 215 O'Neill Ave., Belmont, Calif. 94002)
Filed June 30, 1967, Ser. No. 650,521
Int. Cl. A42b *1/16*
U.S. Cl. 2—198 **1 Claim**

A one-piece cap completely covers the hair regardless of extreme variations of hair style. The blank from which the cap is fabricated has an enlarged main body portion and an integral band portion having laterally extending ties. An elastic is fastened around the perimeter of the main body portion, gathering the same together in a snood-like pouch. The cap is applied by inserting the hair at the back of the neck into the snood-like pouch and drawing the cap up over the top of the head and down over the forehead, then drawing the band back to envelope the hair at the sides of the head, thus completely covering the hair, and tying the ends of the ties behind the back of the head. Adjustability for height of the cap is



achieved by the band, which may extend down over the forehead or be folded up either entirely or partially. Alternatively, the elongated ties may be replaced with binding tape.

3,555,566
HEAD COVERING
Lillian L. Gettinger, 2509 Shelley Dale Drive, Baltimore, Md. 21207
Continuation of application Ser. No. 666,200, Sept. 7, 1967. This application May 14, 1969, Ser. No. 827,099
Int. Cl. A42b *1/16*
U.S. Cl. 2—204 **2 Claims**



A head covering adaptable for use as a hood or as a scarf, and the blank from which the head covering is made. The blank is generally elongate with a substantially linear first edge, a second edge which includes a generally semi-circular central portion between two substantially linear portions, and two end portions. The blank is folded along its longitudinal axis and stitched, leaving a centrally located hood opening. The rear of the hood is shirred to form a pocket which encloses the coiffure.

3,555,567
CONVERTIBLE GARMENT
Victor Owen, Montreal, Quebec, Canada, assignor to Melvin Winer, Teaneck, N.J.
Filed June 9, 1969, Ser. No. 831,538
Claims priority, application Canada, Dec. 12, 1968, 37,698
Int. Cl. A41b *13/06*; A41d *11/06*
U.S. Cl. 2—69.5 **6 Claims**

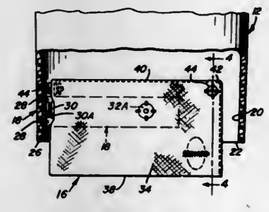
A convertible child's garment having a body portion and two separate leg portions extending from the body portion. A detachable panel member is attached to and extends up the inner side of one leg portion to the crotch area of the garment and down the inner side of the other

leg portion. The panel is attached by fastening means which permit the garment, with the attached panels, to



form separate leg enclosures, and with the panel removed, to form a single leg enclosure.

3,555,568
DETACHABLE AND REVERSIBLE FRENCH CUFF
Charles W. Humphrey, P.O. Box 121, Boca Raton, Fla. 33432
Filed Sept. 17, 1968, Ser. No. 760,153
Int. Cl. A41b *7/04*
U.S. Cl. 2—124 **4 Claims**



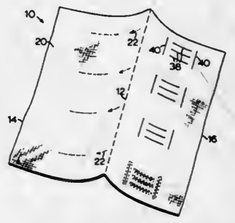
A prefabricated self-contained launderable cuff preferably but not necessarily, a reversible French cuff, is detachably connectible at will to a fabric or equivalent adapter strip. This strip is equipped with snap-fasteners to which companion snap-fasteners on the cuff are cooperatively connectible. A portion of the cuff protrudes beyond the coat sleeve and gives the impression that a wearer of a short sleeve shirt is actually wearing a long sleeve shirt.

3,555,569
WEARING APPAREL
Glyn Owen Jones, 62 Lillie Road, Fulham, London, England
Continuation of application Ser. No. 698,971, Jan. 18, 1968. This application Dec. 2, 1969, Ser. No. 876,196
Int. Cl. A41f *9/02, 19/00*
U.S. Cl. 2—221 **18 Claims**



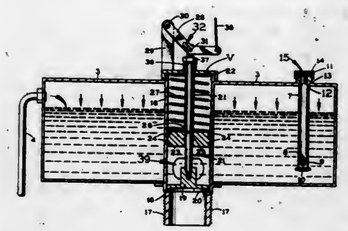
The invention provides a waistbelt or waistband of such a shape as to follow a geodesic circuit on the body of the wearer, whereby the tension in the belt or band is always in a plane perpendicular to the surface of the body. The desired shape is attained by lateral curves in an inelastic belt or band, or by inbuilt variations of elasticity across an elastic belt or band. In a preferred form, a belt when laid flat has arched portions corresponding to the front and back of the waist, and straight or inverted arched portions corresponding to the sides; when worn, the arched portions are generally horizontal and the side portions are arched over the hips.

3,555,570
GARMENT COMPONENT HAVING BOUND BUTTONHOLES AND METHOD OF MAKING SAME
Ella Georgina Heagle, 1412 Prospect Ave. SW., Calgary, Alberta, Canada
Filed July 23, 1969, Ser. No. 844,069
Int. Cl. A41f *1/02*
U.S. Cl. 2—266 **9 Claims**



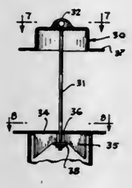
A fabric border strip containing bound buttonholes partially completed, so that the border strip can be attached to a garment panel. The strip is centrally folded and has one or more buttonhole tabs stitched centrally to the edges of one or more buttonholes cut into the strip adjacent one side of the central fold. The portion of the strip on the other side of the central fold has three parallel stitched slits of which the centre one is aligned with the buttonhole, and two further stitched slits perpendicular to the parallel slits and adjacent either end thereof.

3,555,571
HYDRAULIC FLUSHING APPARATUS FOR DISCHARGING FLUID FROM A CONTAINER AND AUTOMATICALLY REFILLING SAME
James W. Gibbs, 8027 W. 14th Ave., Hialeah, Fla., and John L. Gibbs, 14820 Miami Lake Way E., Miami, Fla.
Filed Jan. 21, 1969, Ser. No. 792,707
Int. Cl. E03d *3/04*
U.S. Cl. 4—31 **5 Claims**



A closed container for receiving and retaining a predetermined quantity of pressurized water including a cylinder with an aperture opening into the tank and a flushing valve at the lower portion of the cylinder. A piston in said cylinder above said aperture for upward movement by pressure for compressing a spring when the container is filled with pressurized water for aiding the rapid discharge of water from the cylinder when the flushing valve is opened.

3,555,572
FLUSH TANK VALVE
Thomas Thomas, 1110 Breezy Meadow Lane, Spencer, Iowa 51301
Filed Jan. 6, 1969, Ser. No. 796,264
Int. Cl. E03d *1/34*
U.S. Cl. 4—57 **2 Claims**



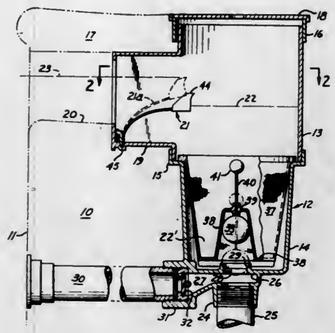
A flush valve for toilet water tanks which comes as a unit and can be installed by setting it over the drain pipe and connecting to the lift lever. The valve contains weights to hold the device in place and a buoyant sealing cup associated with a stem which operates in a sleeve.

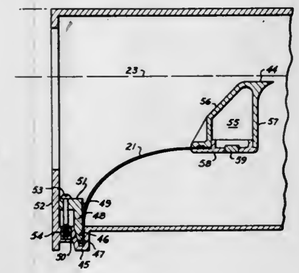
3,555,573
SWIMMING POOL COVER
Lloyd S. Turner, 50 Chestnut St., Los Gatos, Calif. 95030
Filed July 12, 1968, Ser. No. 744,575
Int. Cl. E04h *3/19*
U.S. Cl. 4—172.12 **11 Claims**



A swimming pool cover is made by pouring a liquid material such as a solution vinyl onto the surface of the water, and allowing the liquid material to spread out into a thin layer over the entire surface and harden into an impervious pliable membrane. A peripheral edge member is formed to reinforce the edges of the cover, and to prevent the liquid membrane material from bonding to the sides of the pool, by first attaching a strip of vinyl on other compatible material to the sides of the swimming pool at the water line. The liquid membrane material will then bond to the strip rather than to the pool sides. Alternatively a rope or tube of vinyl or other compatible material may be floated upon the surface and positioned along the sides of the pool to provide an edge member. Openings at the water line such as recirculation ports at the sides of the swimming pool may be spanned by special members by the rope or vinyl edge member to prevent the liquid membrane material from spreading into the openings. Ropes or other lines may be attached to the edge member or to a special block which are thereafter bonded to the membrane material to secure the pool cover to the pool sides. Vents or other openings may be provided by floating annular rings on the water prior to the pouring and spreading of the liquid membrane material over the surface. Pool covers of various thicknesses may be made by using various amounts of liquid membrane material.

3,555,574
SPRING LOADED WEIR FOR POOL SKIMMERS
David A. Stanwood, West Covina, Calif., assignor to Swimquip, Inc., Elmonte, Calif., a corporation of California
Filed Aug. 7, 1969, Ser. No. 848,154
Int. Cl. E04h *3/20*
U.S. Cl. 4—172.17 **5 Claims**



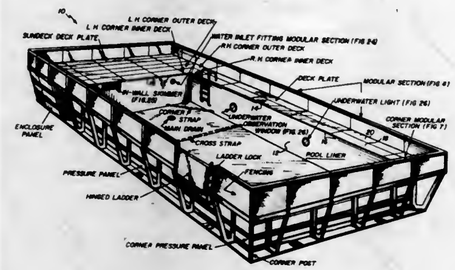


The disclosure shows a spring loaded weir in a skim tank system used in a swimming pool, through which water is circulated to a filter. The weir comprises a sheet of spring material such as leaf spring fixed at its lower edge at the bottom of the throat leading into the skim tank from the pool, and is provided at its upper free edge with a lip member which is of a density and dimension to cause it to float at the surface of the water when there is no water flowing through the tank. When water flows from the pool to the tank, as when a circulating pump is turned on, the weir is bent down so that water can flow over the lip into the tank.

3,555,575
MODULAR SWIMMING POOL ASSEMBLY
Julius Donald Schwarz, Teaneck, George E. Dokes, Hillsdale, and Charles J. Kriss, Upper Saddle River, N.J., assignors to Hendon Construction Company, Little Ferry, N.J., a corporation of New Jersey
Filed Dec. 21, 1967, Ser. No. 692,406
Int. Cl. E04h *3/16*
U.S. Cl. 4—172.19 **8 Claims**

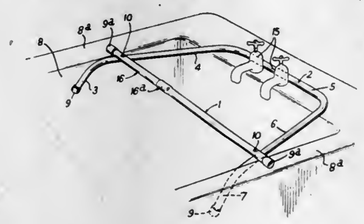
A swimming pool assembly of a modular construction for ease of assembly in an infinite variety of sizes and shapes in installations above ground, below ground or partially in the ground, and in a construction in which

modular sections include means providing for the accurate alignment and positioning of outrigger post assemblies and deck plates, with the post assemblies being invertible to provide a broader base channel assembly to effect a greater distribution of weight of the pool assembly. The modular pool assembly includes a modular section to provide underwater lighting; a modular section including an underwater observation window; a modular



section including a water inlet fitting for introducing water into the pool portion of the assembly; a modular section including a combination in-wall skimmer and outlet at a predetermined level; a modular section to provide an underwater speaker; and modular sections including a plurality of tubes for circulating steam or hot water under pressure of a pump around the perimeter of the sidewalls of the pool assembly to provide for a rapid heating of the pool water.

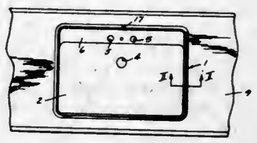
3,555,576
BATHERS' HAND-GRIP
Francis James Coakley, Morton Towers, 1500 Bay Road, Apt. 750, Miami Beach, Fla. 33139
Filed Aug. 8, 1968, Ser. No. 751,129
Int. Cl. A47k *3/12*
U.S. Cl. 4—185 **8 Claims**



A hand-grip for use by bathers is constituted by a flexible elongated tubular anchoring portion having a retainer for engagement behind the taps of a bath tub and two legs at each end thereof for engagement against opposed portions of the side wall of the bath tub, and a cross-bar connected transversely to the legs and compressible and extensible along its length.

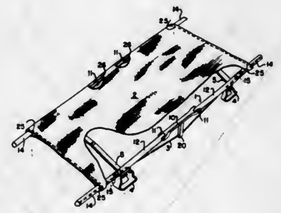
3,555,577
SEALING AND TRIM RING FOR SINK
Herbert D. Drain, 272 Indian Trail Road, Algonquin, Ill. 60102
Filed Oct. 3, 1968, Ser. No. 764,713
Int. Cl. E03c *1/18*
U.S. Cl. 4—187 **10 Claims**

A trim ring for disposition around the lateral extending lip at the top of a sink seated in an aperture in a countertop to seal off the point of engagement between the lip or rim of the sink and the countertop, provide a pleasing appearance, and which trim ring is locked to



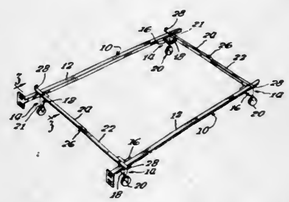
the edge of the aperture in the countertop when a portion of the rings is merely pressed into position.

3,555,578
LIGHTWEIGHT FOLDING LITTER
Benjamin D. Pile, Bayside, N.Y. (411 Lakewood Circle, Apt. A1002, Colorado Springs, Colo. 80910)
Filed Sept. 9, 1968, Ser. No. 758,267
Int. Cl. A61g *1/00*
U.S. Cl. 5—82 **3 Claims**



This invention is a lightweight folding litter having longitudinal cable supports. The litter is especially adapted for field use because it is light and folds into a compact package. The litter comprises longitudinal sections hinged in the center with separable tubing handles. The handles are carried by the cable supports so that when the litter is folded the handles separate from the hinged center sections, but remain a part of the folded package being joined thereto by the cable supports.

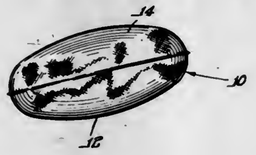
3,555,579
FOLDING BED FRAME
Allan E. Harris, Winnetka, Ill., assignor to Harris-Hub Company, Inc., a corporation of Illinois
Filed Sept. 25, 1968, Ser. No. 762,409
Int. Cl. A47c *19/00*
U.S. Cl. 5—176 **3 Claims**



A folding bed frame made of a pair of spaced side rails, and end rail portions pivotally mounted on the side rails, and movable thereon between a folded position

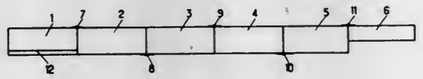
adjacent the associated side rail and an extended position normal thereto. Each of the end rail portions in their extended positions are secured by a clamp or other means to an opposite end rail portion mounted on the other side rail to form a complete end rail. Brackets for restraining lateral movement of a box spring on the bed frame are mounted at an end of each end rail portion to overlie and extend laterally outward of the side rails when the end rail portions are in extended position, and to occupy a laterally retracted position when the end rail portions are in folded position.

3,555,580
PILLOW AND METHOD OF MAKING SAME
Arnold L. Willis, Chicago, Ill., assignor to MSL Industries, Inc., a corporation of Minnesota
Filed Dec. 18, 1967, Ser. No. 691,424
Int. Cl. A47g *9/00*
U.S. Cl. 5—337 **4 Claims**



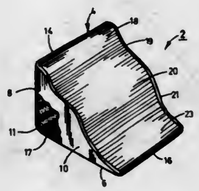
A pillow, or a pillow-like article such as a cushion, which in its preferred form comprises a pillow tick, or other covering, with a batt enclosed therein, the batt being formed of a web of intermingled, resilient fibers which is rolled upon itself and has interposed between successive convolutions thereof for at least a portion of the length of the web a thin, flexible sheet of a cellular or foamed material such as polyurethane foam. By varying the length of the sheet of foamed material and its position in the batt, the degree of softness or firmness of the pillow or cushion can be selectively controlled. In making the batt for the pillow or cushion, the web of intermingled fibers, in sheet form, and the sheet of foamed material are placed in superimposed relation to one another and rolled up together in "jelly roll" like fashion. The thusly formed batt is then enclosed in a pillow tick or other covering in accordance with any of various known practices.

3,555,581
MATTRESS
Charles Friant, Rue Max Jacob, Quimper, France
Filed June 26, 1968, Ser. No. 740,296
Claims priority, application France, July 31, 1967, 116,352
Int. Cl. A47c *27/22*
U.S. Cl. 5—357 **1 Claim**



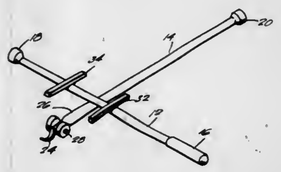
The invention relates to a material comprising several panels of cellular material connected to each other in a hinged manner on their opposite corners placed diagonally, so that when opened out the hinges of the panels are alternately on the top and underneath the mattress, the panel of one of the ends of the mattress being able to be thinner than the others and the panels of the other end of the mattress able to comprise a rigid panel.

3,555,582
THERAPEUTIC DEVICE
Warren S. Radford, 12306 Miles Ave., Cleveland, Ohio 44105
Filed Sept. 26, 1968, Ser. No. 762,677
Int. Cl. A61g *7/06*
U.S. Cl. 5—338 **10 Claims**



A therapeutic device for supporting a portion of the human body when disposed in a reclining or semi-reclining position including a generally wedge-shaped body. The body includes an upper surface which extends angularly between support surfaces which are disposed in generally perpendicular relation to one another. The angular disposition of the upper surface is greater with respect to one support surface than with respect to the other support surface enabling the human body to be disposed in a semi-reclining or generally reclining position, respectively and adapted to position and support the respective parts of the body in predetermined relative position, providing maximum comfort and improved posture.

3,555,583
TIRE TOOL
Canellen K. Mousel, Edison, Nebr. 68936
Filed Feb. 13, 1968, Ser. No. 705,082
Int. Cl. B25f *1/00;* **B60c** *25/00*
U.S. Cl. 7—1 **1 Claim**



A tire tool comprising a cross arrangement of two perpendicularly disposed components used as a handle and turning arms, as well as a wrench, respectively; small lengths of crosspieces arranged along one of the components and parallel to each other and symmetrically disposed about the other component, for supporting a tire when being mounted upon a wheel base of an automobile, and a skid and hook element for sliding in skidding relation along the ground or into the slot between the hub cap and the wheel, including a hook element to pull the hub cap from the wheel. The device also includes a pair of roller wheels mounted near the skid-hook element for sliding the tire into engagement with the mounting wheel or rim of the automobile.

3,555,584
DYEING HUMAN HAIR WITH (2'-HYDROXYETHYL) - 1 - AMINO - 2 - NITRO - (2' - HYDROXYETHYL)-4-METHYLAMINOBENZENE
Gregoire Kalopissis, Paris, and Andrée Bugant, Boulogne-sur-Seine, France, assignors to Societe Anonyme dite: L'Oreal
No Drawing. Filed Nov. 18, 1965, Ser. No. 508,568
Claims priority, application Luxembourg, Nov. 19, 1964, 47,386
Int. Cl. A61k *7/12*
U.S. Cl. 8—10.1 **4 Claims**

The invention relate to dyeing human hair with an aqueous composition containing (2'-hydroxyethyl)-1-amino-2-nitro-(2' - hydroxyethyl)-4-methylaminobenzene, preferably at room temperature.

3,555,585
PROCESS FOR FORMING CELLULOSE HALF-ACID ESTERS
John Anthony Cuculo, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed May 3, 1968, Ser. No. 726,574
Int. Cl. D06m *13/34*
U.S. Cl. 8—116.2 **13 Claims**

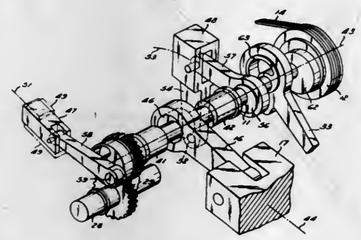
The process of forming cellulose half-acid esters which comprises contacting a carbamyl substituted organic acid with cellulose and heating to react said acid with said cellulose to form said half-acid ester; said acid being further characterized as having the carbon atom of the carboxylic group and the carbamyl carbon atom joined by a chain of 2 to 3 carbon atoms.

Also disclosed is the improvement in the production of nonwoven fabrics of regenrated cellulosic fibers to yield fabrics that easily distintegrate in turbulent water and also have adequate in-use integrity for use as disposable devices for absorbing body fluids which comprises treating the fibers of the fabric with a carbamyl substituted organic acid as described above and then converting the fibers of the fabric to a high swelling alkali metal salt form.

ERRATUM

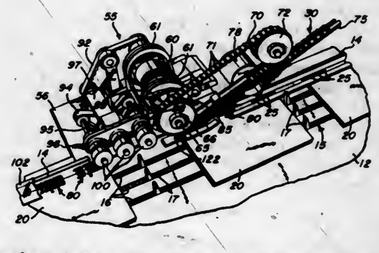
For Class 8—168 see:
Patent No. 3,556,715

3,555,586
FORGING MACHINE
Robert E. Wisebaker, Tiffin, Ohio, assignor to The National Machinery Company, Tiffin, Ohio, a corporation of Ohio
Filed Nov. 29, 1968, Ser. No. 780,153
Int. Cl. B21k *1/44;* **B21j** *9/10, 13/00*
U.S. Cl. 10—12.5 **12 Claims**



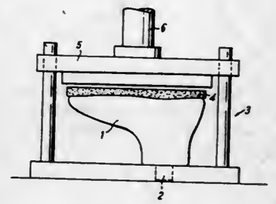
A combined machine is disclosed for forming threaded articles from rod or wire stock. The machine includes a progressive header operable to upset blanks and a reciprocating thread roller operable to thread the blanks. The header includes a crank and pitman driven reciprocating slide and the threader includes a crank and pitman driven thread rolling slide. A reciprocating balancing mass is provided on the machine on the side opposite from the thread rolling slide. The drives for the forming slide, thread rolling slide, and reciprocating mass are arranged so that the thread rolling slide and reciprocating mass cooperate to provide substantially complete dynamic balance of the acceleration forces of the forming slide. The crank shaft is provided with rotating eccentric masses arranged so that the rotating masses are also dynamically balanced to a substantial extent. Because substantially complete dynamic balancing is provided, the machine may operate at higher speeds without damaging vibration.

3,555,587
METHOD AND APPARATUS FOR BINDING PACKETS OF SHEET MATERIAL
Paul E. Seaborn, Los Gatos, Calif., assignor to Westab Inc., Dayton, Ohio, a corporation of Ohio
Filed Nov. 12, 1968, Ser. No. 774,984
Int. Cl. B42c *19/08*
U.S. Cl. 11—1 **12 Claims**



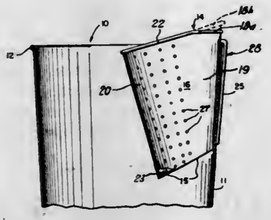
A packet of sheets having spaced perforations adjacent one edge are bound while the packet is fed along a predetermined path by successively inserting a plurality of strips of binding elements into the perforations. Each binding strip is fed by a drive system including a high speed electrical clutch-brake unit which is controlled by a circuit including a photocell for sensing perforations within the packet and a photocell actuated counter for counting the binding elements.

3,555,588
MANUFACTURE OF INDIVIDUAL FOOTWEAR
Philip R. Cooper, Newton Harcourt, England, assignor to Seak Limited, London, England, a British company
Filed June 16, 1969, Ser. No. 833,549
Claims priority, application Great Britain, Dec. 19, 1968, 60,306
Int. Cl. A43d *9/00*
U.S. Cl. 12—142 **4 Claims**



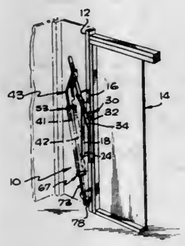
Footwear conforming intimately to the foot of the wearer are made by shaping upper and bottom components, and subsequently assembling and bonding them together, on a last which is a casting of the wearer's foot.

3,555,589
MOP WRINGER ATTACHMENT FOR PAILS, ETC.
Leo Quimby, 802 S. Crockett, Rusk, Tex. 75785
Filed Dec. 22, 1969, Ser. No. 886,831
Int. Cl. A47l *13/58*
U.S. Cl. 15—260 10 Claims



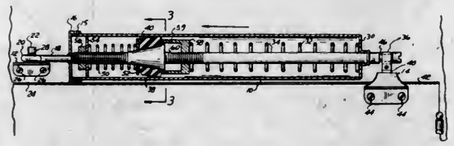
A mop wringing attachment for pails and the like which may be firmly and readily supported on and easily removed from the pail, which wringer is so proportioned and constructed as to readily receive the wet mop and to direct the down thrust exerted on the mop toward the bottom center of the receptacle as the mop is wrung out to avoid sliding, tilting or tipping of the receptacle when the mop is placed in the wringer and a twisting action imparted thereto to effect removal of water from the mop. The wringer also has a structure designed to hold the free ends of the mop strands as the mop is twisted to assure a wringing action along the full length of the strands and at the same time prevent the strands from contacting liquid in the container during wringing.

3,555,590
HARDWARE AND DEVICES FOR ADJUSTING THE SPRING TENSION IN A COUNTERBALANCE HINGING SYSTEM
William Halopoff, Monterey Park, Calif., assignor to Holmes Hardware & Sales Co., Los Angeles, Calif., a co-partnership
Filed Sept. 20, 1968, Ser. No. 761,260
Int. Cl. B25b *27/00*; E05f *1/12*
U.S. Cl. 16—1 9 Claims



An overhead garage door hinging system having a spring fastener for adjustably coupling counterbalance springs to a power arm. The spring fastener includes a pair of side plates between which the power arm is pivotably mounted through one of a plurality of holes in the power arm. A plurality of openings are so spaced along the side plates that each of the openings are aligned with a different one of the holes in the power arm at one position of the hinging system; whereby the points of attachment of the springs to the power arm may be changed without disconnecting the springs. The counterbalance springs are connected to the garage structure by means including a spring-connecting member and a slotted mounting bracket which are adapted for accommodating a tension-adjusting tool for repositioning the connecting member, and therefore adjusting the tension of the springs. A spring spreader, having spring-connection lugs mounted on a shaft so as to convert rotational motion of the shaft into linear displacement of the lugs, is provided for conveniently installing the counterbalance springs. A mounting member positioning tool is further provided for releasably engaging one leg of a mounting bracket of the hinging system, so that the garage door may be detached and reinstalled without disconnecting the springs from the system.

3,555,591
FRICTION-TYPE DOOR CHECK
Nash P. Sogolan, 1417 21st St., Detroit, Mich. 48216
Filed June 25, 1968, Ser. No. 739,886
Int. Cl. E05f *3/16*
U.S. Cl. 16—49 3 Claims

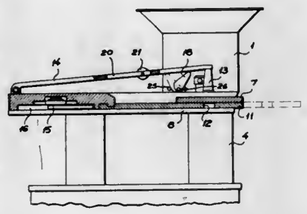


A door check formed of a tubular housing with springs, a friction retarding element, and a cone-shaped wedge therein in which one end of the housing is pivotally held to the door frame. A rod extending from the other end is pivotally attached to the door. As the door is opened the spring is readily compressed, and as the door is released the spring automatically closes the door and at the same time forces the wedge into the friction element which bears against the inner surface of the housing retarding the closing of the door. A second spring is provided for maintaining the friction retarding element against the wedge during the opening of the door.

ERRATUM

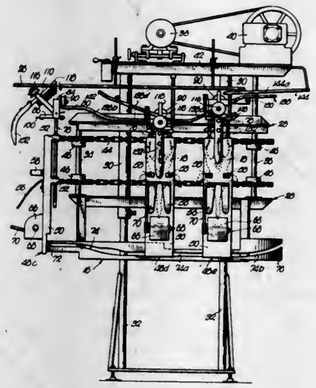
For Class 16—105 see:
Patent No. 3,555,612

3,555,592
MACHINE FOR FORMING AND DISPENSING A PLASTIC MATERIAL
Odd Anhanger, Trelleborg, Sweden, assignor to Square Company Aktiebolag, Malmo, Sweden, a company of Sweden
Filed Apr. 11, 1968, Ser. No. 720,727
Int. Cl. A22c *7/00*
U.S. Cl. 17—32 5 Claims



A machine for forming and dispensing a plastic material is provided with a feed screw for feeding material from a container into a cylinder wherein is reciprocable a plunger for dispensing under pressure material fed into the cylinder, the plunger more or less interrupting the communication between the container and the cylinder when dispensing material from the cylinder.

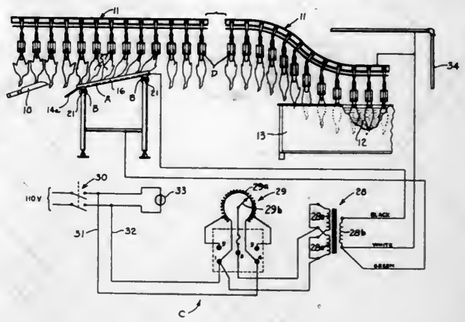
3,555,593
METHOD OF EVISCERATING POULTRY
Donald J. Scheier, Kansas City, Mo., assignor to Gordon Johnson Company, Kansas City, Mo., a corporation of Missouri
Filed Jan. 26, 1968, Ser. No. 700,907
Int. Cl. A22c *21/06*
U.S. Cl. 17—45 2 Claims



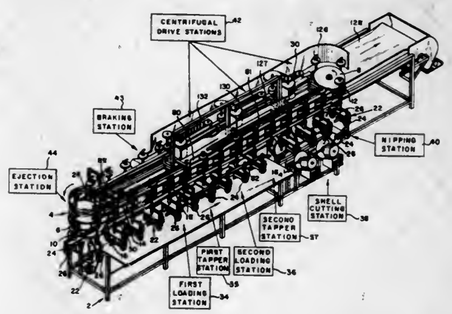
In the automatic evisceration of poultry the viscera is displaced from the body cavity of the bird, through an access opening cut at the vent, by pressure on the viscera away from the breast and by dragging the viscera along the backbone. Maximum pressure is applied initially to loosen the lungs whereupon the pressure is reduced so that the heart exerts a pull on the lungs by virtue of interconnecting veins. The entire operation takes place while the birds are advanced continuously by an overhead conveyor from which they are suspended by their legs. A series of bird-receiving carriages travel around a loop in timed relation to the conveyor, and each carriage has a viscera-removing spoon that enters the cavity on an arc which conforms to the configuration of the breast. After slight withdrawal of the spoon across the lungs, a latch is automatically released to remove the tension of a spring on the spoon. At the completion of the operation, a second latch is released to remove the tension of a second spring, causing the spoon to swing clear and permitting the eviscerated bird to continue along the conveyor line for successive processing operations.

3,555,594
METHOD FOR PROCESSING POULTRY
Edwin F. Grouver, 110 Wells Drive, Athens, Ga. 30601; Guy T. Reid, Rte. 1, Colbert, Ga. 30628; John H. Wood, 145 Herman St., and Rodger H. Pharr, 229 Davis Estate Road, both of Athens, Ga. 30601; and Charles A. Mize, Watkinsville, Ga. 30677
Original application Sept. 18, 1968, Ser. No. 760,449, now Patent No. 3,474,490, dated Oct. 28, 1969. Divided and this application Oct. 6, 1969, Ser. No. 871,165
Int. Cl. A22c *21/00*
U.S. Cl. 17—52 1 Claim

In a poultry processing line an insulated elongated electrode plate means over which the poultry is dragged after killing, and means establishing an electrical potential across the poultry when received on the elongated electrode plate means sufficient to relax the poultry, but insufficient to damage the poultry, said means establishing an electrical potential including a variable voltage transformer means.



3,555,595
CRAB MEAT SEPARATING APPARATUS
Calvert B. Tolley, Wingate, Md. 21675
Filed June 24, 1968, Ser. No. 739,495
Int. Cl. A22c *29/00*
U.S. Cl. 17—71 17 Claims

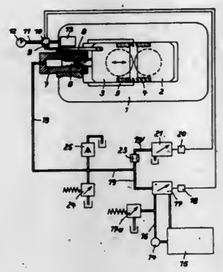


Apparatus for centrifugally removing crab meat from crab bodies, characterized by the provision of endless conveyor means for transporting rotor means successively to crab loading station means, shell cutting station means, core nipping station means, and centrifugal separating station means. During centrifuging, the rotors are operated at successively higher speeds to remove first the larger and then the smaller crab meat portions.

3,555,596
ROLL ADJUSTMENT SYSTEM FOR PLASTICS CALENDERS
Uwe Thieme, Willich, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a company of Germany
Filed July 23, 1968, Ser. No. 746,880
Claims priority, application Germany, Aug. 14, 1967, Sch 41,148
Int. Cl. B30b *3/04*
U.S. Cl. 18—2 6 Claims

Hydraulic means for adjusting the roll gap of calenders, rolling mills and the like for rolling synthetic materials, in which the bearings of the adjustable roll are connected

with a control member, which cooperates with a microswitch having two reversing contacts adjustable to different distances from the roll stand, which controls a valve

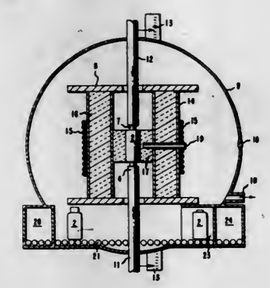


regulating the supply of pressure liquid to the hydraulic adjusting means, and means, preferably adjustable along a spindle, for indicating the position of the microswitch.

3,555,597
APPARATUS FOR HOT PRESSING REFRACTORY MATERIALS

Geoffrey W. Meadows, Kennett Square, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Continuation-in-part of application Ser. No. 594,643, Oct. 17, 1966, which is a continuation-in-part of application Ser. No. 500,609, Oct. 22, 1965. This application Aug. 5, 1968, Ser. No. 750,360
Int. Cl. B30b *11/32*
U.S. Cl. 18—4 **3 Claims**

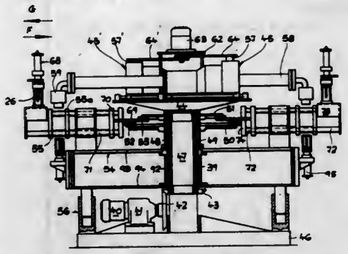


This disclosure relates to apparatus useful in the preparation of formed refractory bodies by the rapid and repetitive hot pressing of refractory materials wherein oxygen-sensitive refractory materials are rapidly hot-pressed by a repetitive procedure in which a refractory material is loaded into reusable shells. The loaded shells positioned in a repetitive sequence are introduced into a housing containing an atmosphere essentially free of oxygen in turn positioned in a preheated susceptor and heated to from 500 to 2500° C. When the refractory material has reached the desired temperature, a pressure of from 200 to 30,000 pounds per square inch is applied for a sufficient time to compact the refractory material to at least 95% of theoretical density. The shell is then immediately withdrawn from the susceptor and the refractory material is rapidly cooled in an atmosphere essentially free of oxygen, before or after being removed from the shell.

3,555,598
APPARATUS FOR BLOW MOLDING OF PLASTIC ARTICLES

Gottfried Mehnert, Berlin-Marlendorf, Germany, assignor to Conduco A.G., Zug, Switzerland

Filed Jan. 17, 1968, Ser. No. 698,523
Claims priority, application Germany, Jan. 28, 1967, M 72,576
Int. Cl. B29d *23/03*
U.S. Cl. 18—5 **16 Claims**

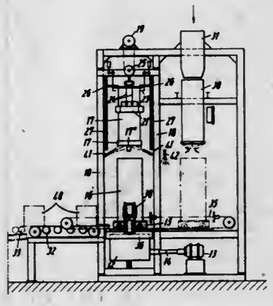


A blow molding apparatus wherein one or more extrusion nozzles travel along a circular path about a vertical axis and supply parisons to open-and-shut blow molds in a series of mold units installed adjacent to the circular path and cooperating with blowing and calibrating units to convert parisons into bottles or analogous hollow plastic articles. The drive which moves the nozzle or nozzles also transmits motion to parts of the mold units and blowing units so that the operation of such units is synchronized with movements of the nozzles which travel continuously and extrude continuous tubular or otherwise configurated blanks of plasticized material. Requisite lengths are severed from such blanks to form parisons which are received between the mold sections in the mold units and are converted into hollow articles in response to injection of compressed gas or in response to evacuation of air from the cavities which receive the parisons.

3,555,599
APPARATUS FOR SHAPING OF GRANULAR SUBSTANCES

Gottfried Weinhold, Norf-Derikum, Germany, assignor to Vereinigte Aluminium-Werke Aktiengesellschaft, Bonn, Germany

Original application Oct. 13, 1967, Ser. No. 675,209. Divided and this application June 18, 1969, Ser. No. 834,364
Claims priority, application Germany, Oct. 14, 1966, V 32,125; July 1, 1967, K 62,705
Int. Cl. B29c *3/00*
U.S. Cl. 18—5 **10 Claims**



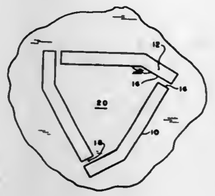
A form is adapted to accommodate a quantity of granular material and is suspended on a plurality of springs for movement in a plurality of directions, including a

pair of mutually opposite directions. At least two imbalanced masses are mounted on the form for rotation in mutually opposite directions. Drive means rotates the imbalanced masses in said directions so that the vibratory stresses transmitted by the rotating masses to the form, and tending to cause movement of the same in the plurality of directions, are balanced whereby the form performs movements only in the mutually opposite directions.

3,555,600
SPINNERET FOR PRODUCING HOLLOW FILAMENTS

Maurice S. Moore, 3204 Randall St., Hopewell, Va. 23860

Filed Dec. 1, 1967, Ser. No. 687,170
Int. Cl. D01d *3/00*
U.S. Cl. 18—8 **4 Claims**

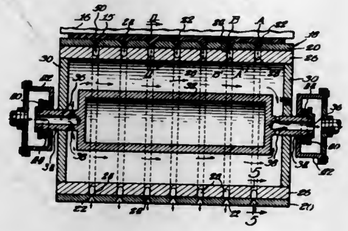


A spinneret for spinning hollow filaments having a maximum amount of open space in relation to the outer dimensions of said filaments. The filaments are extruded from a group of three slots having a dog-leg portion at one end facing into the opposite end of an adjacent slot. The polymer occluding area defined by the arrangement of the slots forms substantially an equilateral triangle. Filaments melt spun from this spinneret have a sharply defined inner and outer triangular cross section.

3,555,601
APPARATUS FOR CONTINUOUSLY FORMING CONICAL SHAPED CLEATS ON A THERMOPLASTIC SHEET

Harold Price, 2364 S. Ashland Ave., Glencoe, Ill. 60022

Filed July 30, 1968, Ser. No. 748,665
Int. Cl. B29d *7/10*
U.S. Cl. 18—10 **5 Claims**

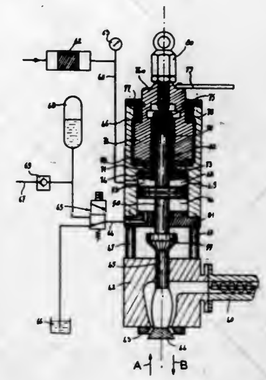


The invention comprises a machine for forming in a continuous manner a thermoplastic sheet with spaced conical-shaped cleats whereby as the hot thermoplastic sheet engages the roller containing the rows of conical cavities the thermoplastic material will enter the conical cavities and displace the air in said cavities and vent the air to an annular channel which is alined with each row of conical cavities, and from said annular channel the displaced air will be vented to the atmosphere through passage of the air from the uncovered conical cavities of said roller.

3,555,602
DEVICE FOR CONTROLLING OPENING AND CLOSING MOVEMENTS OF AN ADJUSTABLE EXTRUSION DIE

Jacques Bourgeois, Lyon, France, assignor to "Elco" Société d'Exploitation Lesieur, Cotelle et Foucher, Paris, France

Filed June 7, 1968, Ser. No. 735,301
Claims priority, application France, June 12, 1967, 48,769
Int. Cl. B29d *23/04*
U.S. Cl. 18—14 **5 Claims**

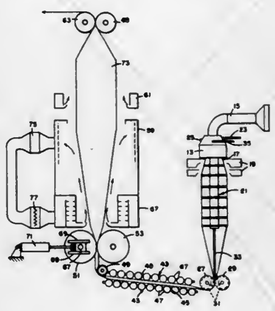


In an extrusion machine having a die with an adjustable mandrel for extruding hollow articles, a system is provided for adjusting the position of the mandrel. The system comprises a double acting piston and cylinder, the piston of which is connected to the mandrel and which is urged into a position where the die has a maximum opening, means for quickly closing the die by forcing the piston away from said position and screw means associated with the piston for adjusting the degree of maximum opening and closing of the die.

3,555,603
TUBULAR FILM MANUFACTURING APPARATUS

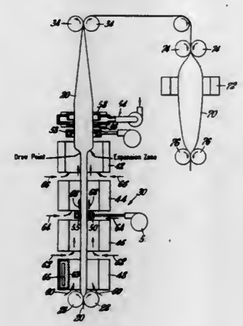
Harold A. Haley, Media, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Aug. 30, 1968, Ser. No. 756,626
Int. Cl. B29d *23/05, 23/10*
U.S. Cl. 18—14 **8 Claims**



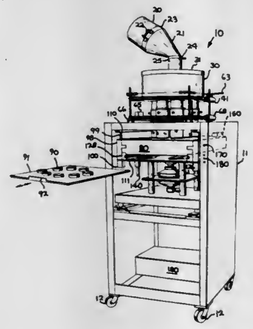
Apparatus for introducing a gaseous medium into an advancing, continuous tubular film of thermoplastic polymeric material for use in expanding and orienting the same.

3,555,604
BIAXIAL ORIENTATION
Heinz Erich Pahlke, Worth, Ill., assignor to Union Carbide Corporation, a corporation of New York
Original application Mar. 12, 1965, Ser. No. 439,312, now Patent No. 3,456,044, dated July 15, 1969. Divided and this application Dec. 5, 1968, Ser. No. 798,839
Int. Cl. B29d *23/04*
U.S. Cl. 18—14 **5 Claims**



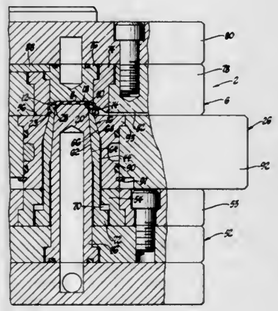
Apparatus for biaxially orienting thermoplastic tubing comprises a radiant heater system, means for passing tubing upwardly through said heater system and for isolating a bubble of fluid within the tubing in its upward travel. The radiant heater system comprises a plurality of stacked heaters spaced apart providing for access of coolant fluid to the tubing in its upward passage and between heaters a conduit for directing high velocity coolant fluid upwardly against the tubing is provided.

3,555,605
APPARATUS FOR COMPACTING PARTICULATE MATERIAL
William J. Angelotti, 4820 Roslindale 16509; James R. Proffitt, Jr., 3440 Breezeway 16506; Nathaniel R. Reyburn, 4810 Wolf Road 16505; and Louis L. San Frotello, 109 Elk St., all of Erie, Pa.
Filed Nov. 30, 1966, Ser. No. 598,064
Int. Cl. B30b *11/00, 15/30*
U.S. Cl. 18—16 **5 Claims**



An apparatus for volumetrically measuring and compacting a thermosetting plastic resin such as melamine. An apparatus employing a high frequency low amplitude vibration in a horizontal direction and a low frequency high amplitude vibration in a vertical direction to effect compaction of a melamine powder. A method of measuring a powdered melamine by a volumetric chamber, delivering the melamine to a vibration chamber so that it forms a specific configuration suitable for optimum compaction under biaxial vibration.

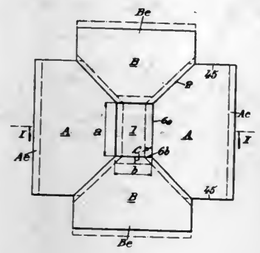
3,555,606
MOLDING APPARATUS FOR MAKING ONE-PIECE PLASTIC CAPS FOR CONTAINERS
Peter Hedgewick, Windsor, Ontario, Canada, assignor to Reflex Corporation of Canada Limited, Windsor, Ontario, Canada
Filed Sept. 16, 1968, Ser. No. 759,911
Int. Cl. B29c *11/00*
U.S. Cl. 18—2 **25 Claims**



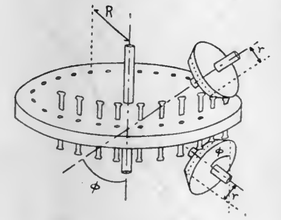
Molding apparatus for molding a one-piece plastic cap including a first mold portion with a cavity for defining the outer surface of the base and outer surface of a peripheral flange of the cap. A second mold portion projects into the cavity for defining the inner surfaces of the base and flange, and is formed with notches to define inwardly projecting lugs on the flange of the cap. The notches each have a surface extending upwardly and outwardly. The second mold portion comprises a plurality of core members which cooperate to define an annular slot for defining an axially extending flexible web for the cap. The core members are separable from each other to release the web from confinement. When the first mold portion is removed from the second mold portion, and the core members are separated from each other, a third mold portion strips the cap from the remaining core member by flexibly forcing the lugs from the notches.

3,555,607
APPARATUS FOR GENERATING HIGH PRESSURES
Raymond Epain, Antony, Boris Vodar, Issy-les-Moulineaux, and Christiane Susse, Bellevue, France, assignors to Centre National de la Recherche Scientifique, Paris, France
Filed Aug. 17, 1967, Ser. No. 661,357
Claims priority, application France, Aug. 22, 1966, 73,789
Int. Cl. B25c *3/00*
U.S. Cl. 18—16 **6 Claims**

The apparatus comprises a plurality of wedges having surface delimiting, at least in part, a closed space in which some material is placed to be compressed. The wedges are contiguous with each other along contact faces, and are able to move relative to each other by sliding of these contact faces on each other, to reduce the volume of the closed space. The wedges mutually support each other along these contact faces. The contact faces of each wedge diverge towards the exterior of the apparatus by a distance sufficiently large so that the exterior portions of these wedges which are not mutually supported have dimensions sufficient to withstand the stresses applied during operation.



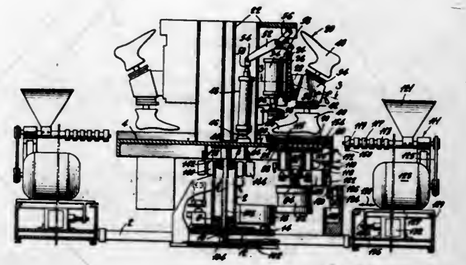
3,555,608
APPARATUS FOR PRODUCING MOLDED ARTICLE
Hideyuki Maekawa, Osaka-shi, Teruo Sakamoto, Hirakata-shi, and Yasuo Shimada, Kyoto-shi, Japan, assignors of one-half each to Shionogi & Co., Ltd., Osaka, and Kabushiki Kaisha Kikusui Seisakusho, Nakagyo-ku, Nyoto, Japan
Filed Oct. 12, 1967, Ser. No. 674,904
Claims priority, application Japan, Oct. 12, 1966, 41/67,315
Int. Cl. B29c *3/00*
U.S. Cl. 18—20 **2 Claims**



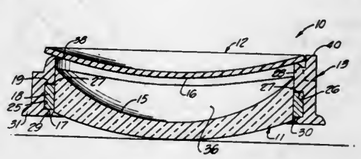
Loci including elliptic curves, along which punches are periodically transferred by which they are axially and reciprocatively moved with respect to die cavities are employed for effective production of molded articles, the loci being brought on by employing compressing rollers having shapes of conical frustum and being mounted obliquely on the body of the machine.

3,555,609
INJECTION MOLDING APPARATUS
William Chu, Cooksville, Ontario, Canada, and Guy Rudolf, Vernon, France, assignors to Bata Shoe Company, Inc., Belcamp, Md.
Filed Oct. 31, 1967, Ser. No. 679,495
Int. Cl. B29f *1/00*
U.S. Cl. 18—30 **13 Claims**

An injection molding apparatus having a plurality of molding units embodying a sole mold movable from a first position defining a first molding cavity to a second position defining a second molding cavity. Mechanism is provided for bringing successive molding units into communcation with a first injector and thereafter with a second injector, with the first injector introducing a molding material into the first molding cavity through a single channel in the sole mold and the second injector introducing a second molding material into the second molding cavity through the same channel. The sole mold is moved from its first to its second position during travel of the molding units from the first injector to the second injector.



3,555,610
GASKET RING
Donald R. Reiterman, Sierra Madre, Calif., assignor to Armorlite Lens Company, Inc., Burbank, Calif., a corporation of California
Original application Feb. 19, 1968, Ser. No. 706,717. Divided and this application Dec. 15, 1969, Ser. No. 885,054
Int. Cl. B24c *5/00;* **B29d** *11/00*
U.S. Cl. 18—34 **6 Claims**

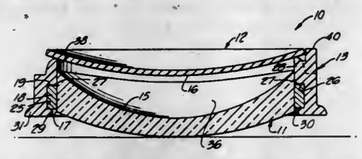


A gasket ring of resilient elastomeric material for use with upper and lower mold members to cast plastic optical elements. The gasket is contoured to embrace and seat over an annular support carried by the lower mold member with the lower edge of its inner side wall seated against and having line contact with the upper edge of the annular support. The upper edge of the gasket is shaped to have line contact with the lower surface of the upper mold member.

3,555,611
MOLD FOR CASTING OPTICAL ELEMENTS AND THE LIKE
Donald R. Reiterman, Sierra Madre, Calif., assignor to Armorlite Lens Company, Inc., Burbank, Calif., a corporation of California
Original application Feb. 19, 1968, Ser. No. 706,717. Divided and this application Dec. 15, 1969, Ser. No. 885,055
Int. Cl. B29c *5/00;* **B29d** *11/00*
U.S. Cl. 18—39 **6 Claims**

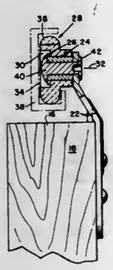
A mold member for casting plastic optical elements and utilizing an accurately prepared ring of rigid material fixed to its periphery for multiple functions including

a protective bumper and guard for the mold, an anchor for a sealing gasket and as a seal engaging surface for



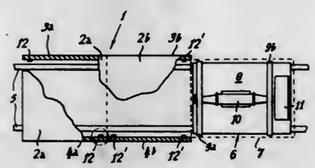
a mold gasket. The ring also facilitates the handling of the mold members during cleaning and use generally.

3,555,612
GUIDE ROLLER ASSEMBLY
Jerome C. Procton, 5000 Manning Drive, Greensboro, N.C. 27410
Filed Sept. 25, 1967, Ser. No. 670,057
Int. Cl. E05d *13/02*
U.S. Cl. 16—105 1 Claim



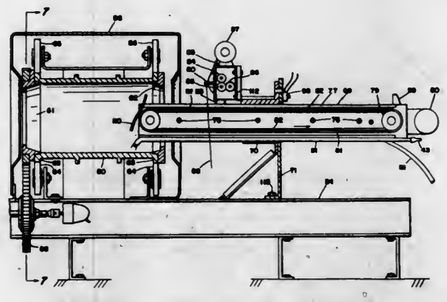
A self-lubricating roller assembly in which a plastic guide roller is rotatably mounted on an annular plastic axle member with the roller and axle member being cooperatively secured together by means of a flanged pin limiting axial displacement of the axle member and roller with the assembly being mounted on a support.

3,555,613
ROTATIONAL MOULDING APPARATUS
Aubrey Joseph Westbrook, Ladyacre, Kilwinning, and Ian David MacKnight Thomson, Irvine, Scotland, assignors to Plastic Rotational Mouldings Limited, London, England, a British company
Filed July 22, 1968, Ser. No. 746,354
Claims priority, application Great Britain, July 26, 1967, 34,311/67
Int. Cl. B29c *1/16, 5/04*
U.S. Cl. 18—26 4 Claims



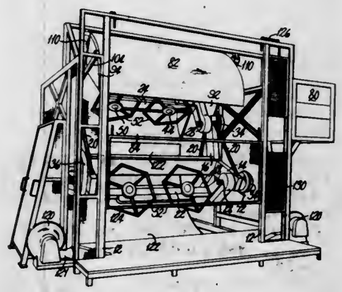
This invention relates to a rotational moulding apparatus comprising a heating station defined by a roof and two side walls, a track extending between the side walls from a position at least to one side of the station, a bogie movable along the track, from a heating position between the side walls to a second position outside the heating station, mould rotating means for supporting a hollow mould over the bogie and rotating the same about two axes, means for supplying a flowable heating medium to the heating station and an upstanding panel on the bogie disposed so that in the heating position thereof it defines part of the boundary walls of the heating station.

3,555,614
TUBE FORMING APPARATUS
Arthur J. Wiltshire, Cleveland, Ohio, assignor to Structural Fibers, Inc., Chardon, Ohio, a corporation of Ohio
Original application June 22, 1964, Ser. No. 376,918.
Divided and this application Nov. 18, 1968, Ser. No. 801,888
Int. Cl. B28b *21/32*
U.S. Cl. 18—26 8 Claims



A tube forming apparatus is disclosed which includes a rotatable molding chamber and a means for feeding a continuous fiber filament into the molding chamber at a predetermined feed rate which is less than the surface speed of the molding chamber to deposit the fiber filament onto the inner surface of the molding chamber in a predetermined pattern. A conveyor means distributes chopped fibers over the coiled continuous filament, and a thermosetting resin is supplied to the molding chamber to impregnate the continuous fiber filament and the chopped fibers.

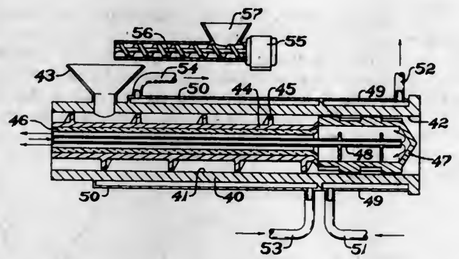
3,555,615
ROTATIONAL MOULDING MACHINES
John Edward Orme, Hayway, Rushden, England, assignor to USM Corporation, Flemington, N.J., a corporation of New Jersey
Filed Aug. 8, 1968, Ser. No. 751,146
Int. Cl. B26c *5/04*
U.S. Cl. 18—26 7 Claims



The invention relates to a machine for making articles of plastics material by rotational moulding. The machine has a number of mould carriers on which hollow moulds can be mounted. The mould carriers are supported in

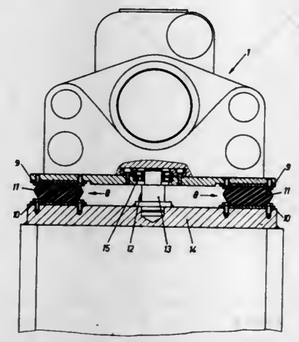
the machine in such a way that they can be rotated about a plurality of axes so that plastics material charged into a mould on a mould carrier can be caused to flow over the interior surface of the mould. The machine has door members which are arranged for swinging movement so that they can be moved into and out of operative positions in which they close an oven in which the moulds are heated by hot air.

3,555,616
APPARATUS FOR EXTRUDING THERMOPLASTIC MATERIALS
Clarence E. Parks, Bay Village, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Aug. 7, 1967, Ser. No. 658,716
Int. Cl. B29b *1/10, 3/00, 5/02*
U.S. Cl. 18—30 2 Claims



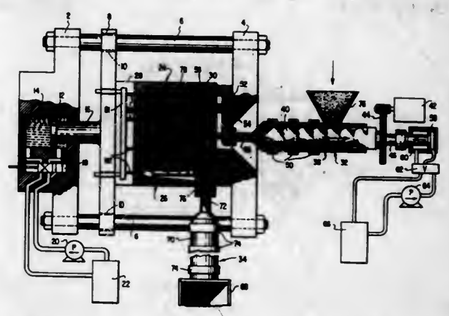
An extruder having controlled drive means for the feeding material to be worked to a torpedo which torpedo is independently controlled in its speed to provide controlled working of the material to be extruded. Provision is made for controlling the temperature of the extruder and torpedo.

3,555,617
INJECTION MOLDING APPARATUS
Karl-Heinz Wessel and Klaus Scheikowski, Hannover, Germany, assignors to Herr Friedrich Stubbe
Filed Mar. 4, 1968, Ser. No. 710,283
Claims priority, application Germany, Mar. 3, 1967, St 26,579
Int. Cl. B29f *1/00*
U.S. Cl. 18—30 8 Claims



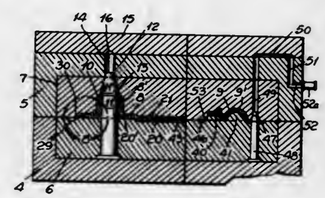
An injection molding apparatus for polymeric materials having a plurality of molds each of which receives, in turn, an injection of the polymeric material from an injection nozzle, wherein there is provided a novel aligning means including corresponding concave-convex means on the molds and on the injection nozzle for self-alignment, flexible supporting means for the injection nozzle to allow the nozzle to move slightly in the self-aligning process, and abutting means for preventing axial movement of the nozzle during the injection step.

3,555,618
PLASTIC MOLDING APPARATUS
Frank W. Cooper, Mc Candless Township, Pa., assignor, by mesne assignments, to Cities Service Company, a corporation of Delaware
Original application Dec. 3, 1965, Ser. No. 511,386.
Divided and this application Jan. 27, 1969, Ser. No. 810,895
Int. Cl. B29f *1/00*
U.S. Cl. 18—30 5 Claims



Apparatus for injection molding embossed plastic articles is disclosed herein. The apparatus is characterized by a mold assembly comprising a first mold for forming the base article and a second mold for molding the embossed design thereon, with both molds being mounted on a movable platen. Each mold comprises a core and a plurality of radially movable segments in the form of arcuate wedges with tapered surfaces and cooperating with sloping shoulders on the mold assembly so that by movement of the movable platen the segments can either be moved inwardly to form the mold cavities or outwardly to release the articles. A fixed platen having a molten plastic injection means is mounted in spaced relationship with and opposite the mold assembly. A fixedly mounted hydraulic cylinder acts to move the movable platen towards and away from the fixed platen.

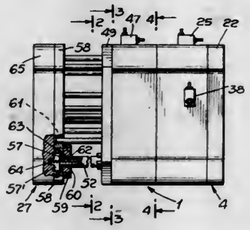
3,555,619
MOLD FOR PRESSURE INJECTED MOLTEN MATERIAL HAVING CAVITY WITH PERIPHERAL VENT
Harry R. Bucy, 625 S. Glenwood Place, Burbank, Calif. 91506
Filed Oct. 17, 1967, Ser. No. 675,897
Int. Cl. B29f *1/022*
U.S. Cl. 18—42 11 Claims



A separable mold for pressure injected molten material characterized by the fact that the meeting faces of the mold halves adjacent to the periphery thereof are

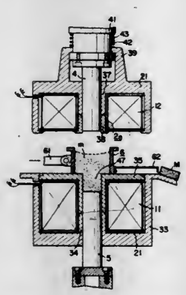
uninterrupted and by the fact that each cavity in the mold is separately vented by means including a groove in communication with atmosphere which substantially peripherally surrounds the cavity and is connected to the cavity by a longitudinally co-extensive narrow space between the groove and the cavity of such limited depth that only the air and gas displaced by the entering material can flow from the cavity into the groove and thence to atmosphere.

3,555,620
MOLD FOR PRESSURE INJECTED MATERIAL VENTED THROUGH EJECTOR PIN GUIDES
Harry R. Bucy, 625 S. Glenwood Place, Burbank, Calif. 91506
Filed Oct. 17, 1967, Ser. No. 675,968
Int. Cl. B29c
U.S. Cl. 18—42 **20 Claims**



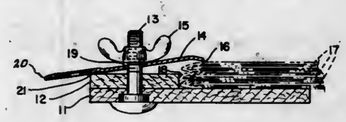
A mold for pressure injected materials generally similar to the mold disclosed in the co-pending application of applicant, Ser. No. 496,368 filed Oct. 15, 1965, now Pat. No. 3,357,057, granted Dec. 2, 1967, in which the mold cavity or cavities is maintained in an evacuated condition while being filled with the injected molten material, the mold of the present invention being further characterized by achievement of cavity and other evacuating by means disposed remote from the mold and by an added utility of the ejector pin guiding bores as a cavity evacuating instrumentality.

3,555,621
COMPACTING APPARATUS FOR MAGNETIC POWDERS
El Hara, Urawa-shi, Japan, assignor to Tamagawa Kikai Kinzoku Kabushiki Kaisha, Tokyo-to, Japan
Filed Apr. 15, 1968, Ser. No. 721,494
Claims priority, application Japan, Apr. 22, 1967, 42/25,668, 42/25,669; Apr. 26, 1967, 42/26,796; Aug. 8, 1967, 42/50,805; Aug. 24, 1967, 42/54,329
Int. Cl. B30b *11/04*
U.S. Cl. 18—16.5 **17 Claims**



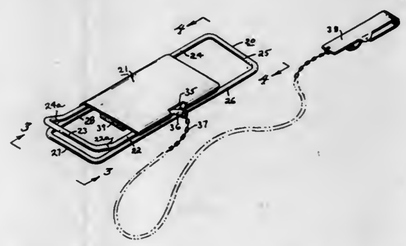
A compacting apparatus for magnetic powder, wherein the magnetic powder is molded under pressure while particles thereof are oriented in the desired direction by the action of magnetic flux, is divided into separable upper and lower sections so as to facilitate charging of the magnetic powder into the mold cavity and removal of molded magnets.

3,555,622
HOLDER FOR NEWSPAPERS OR THE LIKE
Fay F. Christian, 116 W. Market St., Mount Carroll, Ill. 61053
Filed July 2, 1969, Ser. No. 838,482
Int. Cl. B42f *1/00*
U.S. Cl. 24—67 **7 Claims**



A newspaper holder comprises a base strip and an overlying strip. Three clips are mounted on the upper surface of the overlying strip and urged into gripping engagement with the fold of a newspaper by a nut and bolt arrangement. The clip is loosely mounted on the bolt so that it may be swung 90° to provide a guide for aligning the fold of the newspaper against an aligning edge and for temporarily retaining it in place while the other clips are being tightened.

3,555,623
MONEY CLIP
Patrick T. Cocchiaraley, 350 Wayland Road, Cherry Hill, N.J. 08034
Filed Apr. 1, 1968, Ser. No. 717,825
Int. Cl. A44b *21/00*
U.S. Cl. 24—81 **11 Claims**

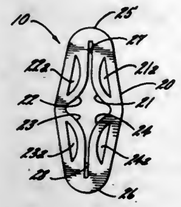


A paper money clip made of a length of spring wire in the form of a rectangular cylindrical helix of less than two turns but more than one turn with the helical pitch equal to the diameter of the spring wire. A slip-on carrier plate is detented to spaced parallel runs of the helix and closes a portion of the central cross-section of the helix, the detent also providing a connection point for a securing chain. A resilient pad is secured to the paper money facing surface of the carrier plate and functions with the plate to retain coins, and in the absence of the latter presses directly against the outermost piece of paper money to provide additional holding friction therefor.

3,555,624
SANITARY NAPKIN FASTENER
Anthony S. Koehn, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Filed Apr. 8, 1969, Ser. No. 815,273
Int. Cl. A44b *21/00;* **A61f** *13/16*
U.S. Cl. 24—73 **8 Claims**

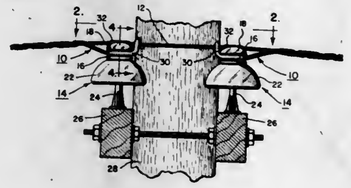
A one-piece fastener for securing the tab of a sanitary napkin to an undergarment. The fastener comprises a thin flat member made of resilient plastic and forming

a large central opening for receiving portions of the two materials to be fastened, and a pair of narrowly elongated slots on opposite sides of the central opening for receiving and frictionally gripping the materials to be fastened. A pair of apertures are formed on opposite sides of each slot to permit flexing movement of the side



edges of the slots when the materials to be fastened are pulled into the slots, with the natural resilience of the plastic material urging the sides of the slots back toward their original positions to frictionally grip the materials pulled into the slots. The fasteners may be temporarily joined in sets of two to facilitate packaging. They may also be provided in continuous strips.

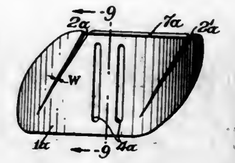
3,555,625
DOUBLE SUPPORT LINE TIE
Jerome C. Hoban, Parma Heights, Ohio, assignor to Preformed Line Products Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 25, 1968, Ser. No. 715,699
Int. Cl. F16g *11/00*
U.S. Cl. 24—131 **1 Claim**



An appliance and method for fastening an electrical conductor, etc., to a mounting device is disclosed. The appliance is U-shaped with the bight portion preferably bent perpendicular to the legs and with the terminal segments of each leg being helically preformed to cooperatively encircle and grip the conductor. The conductor is positioned in a guide recess of a transverse cap of the mounting device and the appliance assembled thereto by inserting the bight portion over the conductor adjacent one side of the mounting device with the legs extending along opposed sides of a reduced diameter neck of the mounting device that underlies the cap. The installation is completed by wrapping the helically preformed leg segments about the conductor thereby captivating the legs beneath the mounting device cap to firmly retain the conductor in the guide recess. Other features are disclosed.

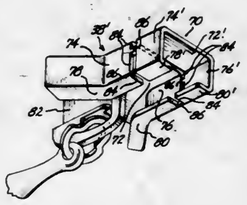
3,555,626
BELT AND BUCKLE ARRANGEMENT
Kinji Terada, 40 Miyamarucho, Wakamatsu-ku, Kitakyushu, Fukuoka Prefecture, Japan
Filed Apr. 24, 1968, Ser. No. 723,720
Int. Cl. A44b *11/02*
U.S. Cl. 24—198 **4 Claims**

Belt and buckle arrangement comprises longitudinally oriented buckle body with fastening structure for fixedly securing one end of bolt to buckle body. Oblique slotted opening at one end of buckle body is constructed and arranged to releasably receive free end portion of longitudinally oriented belt, and oblique opening has closed



end toward and against which free end of longitudinally oriented belt is urged when that belt is inserted into oblique slotted opening and tightened.

3,555,627
INSTALLATION OF SEAM TYPE ZIPPERS
Robert B. Howell, 2115 Madrona Point Drive, Bremerton, Wash. 98310
Filed Oct. 17, 1968, Ser. No. 768,466
Int. Cl. A44b *19/26, 19/32, 19/36*
U.S. Cl. 24—205.1 **6 Claims**

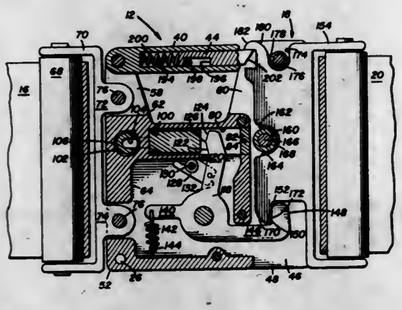


An extension of lipped channel form extends endwise of the straight channel end portion of the slider of a seam type zipper and is attached to the slider proper by means of a plurality of splice strips separated from each other by serrations. A pliers-like tool is used to both sever the extension from the slider and to crimp it onto certain of the fastener elements, to thereafter serve as a stop member for the slider.

3,555,628
RELEASE MECHANISM
George M. Brown, St. Petersburg, Fla., assignor to Sauna International, Inc., Miami, Fla., a corporation of Florida
Filed Apr. 18, 1969, Ser. No. 817,321
Int. Cl. A44b *11/25, 17/00*
U.S. Cl. 24—205.17 **7 Claims**

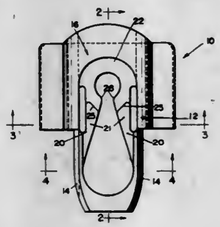
A release mechanism for positively manually securing an aircraft pilot's shoulder harness, lap belt and canopy lanyard to aircraft ejection apparatus. The invention allows separation of the pilot from the ejection apparatus and deployment of the canopy subsequent to ejection. Alternatively, the invention is specifically designed to permit manual separation of the pilot and canopy from the ejection apparatus. The invention utilizes a single rotatable hub which may be inertially balanced. One leg extending from the hub is adapted for retaining a lap belt securely in position. Another leg is adapted for positive pivotal motion by the automatic ejection apparatus in order to release the lap belt subsequent to an ejection operation. The dog is thereby rotated to disengage the lap belt. The shoulder harness is secured to a spring loaded plunger which engages on the lug, release of the shoulder harness

occurring simultaneously upon release of the lap belt lug. The canopy lanyard is secured to the release mechanism by a manually insertable locking pin. In operation the pin cooperates with the dog for retaining the lap belt lug



until release thereof. For manual operation, removal of the lanyard pin enables manual release of the lap belt lug from the dog, such release further disengaging the spring loaded plunger whereby the shoulder straps are released.

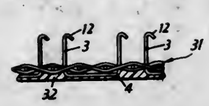
3,555,629
NO-HOLE FASTENING DEVICE
Heinrich Overhoff and Dieter Jünemann, Lorrach, Baden, Germany, assignors to A. Raymond, Baden, Germany, a firm
Filed Aug. 22, 1968, Ser. No. 754,630
Claims priority, application Germany, Aug. 31, 1967, R 35,828; Oct. 6, 1967, R 36,070
Int. Cl. A44b *17/00*
U.S. Cl. 24—224 **2 Claims**



This is a fastening device for a trim member engageable with a headed stud which is fastened to a support. The fastener includes a keyhole slot which provides two flexible legs which are spaced for part of their length from the walls of a recess. The keyhole slot has an engagement portion and a lead-in portion connected by a narrow neck, the engagement portion being defined by a circumference greater than 300°.

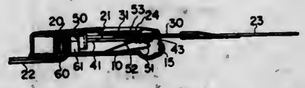
3,555,630
FASTENER MEMBERS
Joseph Rowland Wylde, Stoke-on-Trent, England, assignor, by mesne assignments, to Velcro S.A., Nyon, Switzerland, a corporation of Switzerland
Original application Nov. 15, 1966, Ser. No. 594,421. Divided and this application Aug. 13, 1968, Ser. No. 775,213
Int. Cl. A44b *21/00*
U.S. Cl. 24—204 **10 Claims**

A separable fastener of the hook and loop type wherein a series of hook-like members on one surface are adapted to engage a series of loop-like members on another surface, said hook and loop-like members being each formed from a filament passing through a woven member and being subsequently deformed into hook-like or



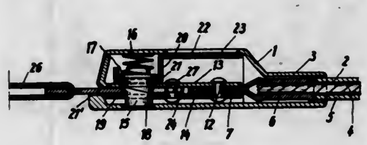
loop-like configuration, the hook-like members when formed resembling staples with deformed free ends.

3,555,631
BUCKLE DEVICE OF SAFETY BELT
Masahiko Inoue, Toyota-shi, Japan, assignor to Toyota Jidosha Kogyo Kabushiki Kaisha, Toyota-cho, Toyota-shi, Aichi-ken, Japan, a corporation of Japan
Filed Mar. 25, 1969, Ser. No. 810,236
Claims priority, application Japan, May 11, 1968, 43/31,217
Int. Cl. A44b *11/26*
U.S. Cl. 24—230 **6 Claims**



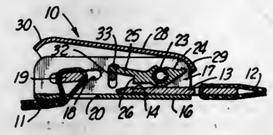
A safety belt buckle device with a flat latch member having an engageable opening which enters a case with an end opening to receive the latch member and a top opening for a push button. Contained in the case is a latch plate with one plate end rotatably supported by the case and the other end having a cam-like projection for engagement with the engageable opening of the latch member. Disposed around the latch member is a spring means having a first spring biasing the entering latch member to the locking position, a second spring biasing the latch plate to a locking position and a third spring with a spring projection passing through said top opening. This third spring includes push button means which will unlock the cam-like projection from the engageable opening.

3,555,632
SAFETY BELT CLASP
Stig Martin Lindblad, P.O. Box 2, Tarkgatan 16, Vargarda, Sweden
Filed Sept. 26, 1968, Ser. No. 762,829
Claims priority, application Germany, Oct. 6, 1967, 1,557,478
Int. Cl. A44b *11/26*
U.S. Cl. 24—230 **6 Claims**



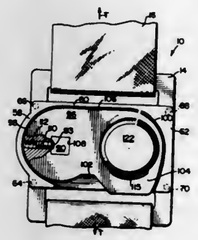
A safety belt clasp is formed of a clasp housing connected with one of the pull members of the belt and has connected with the further pull member and adapted to be pushed into the housing, the tongue being formed with a slot and, on being pushed into the housing, lifting the retaining pawl against the spring pressure until it snaps into its locking position and retains the tongue, whereas it is once again released when the retaining pawl is lifted by means of a manipulating means.

3,555,633
SAFETY BELT BUCKLE
Korchinski Nicholas Paul, Pasadena, Calif., assignor to Eon Corporation, Los Angeles, Calif., a corporation of California
Filed Aug. 15, 1968, Ser. No. 752,955
Int. Cl. A44b *11/29*
U.S. Cl. 24—230 **2 Claims**



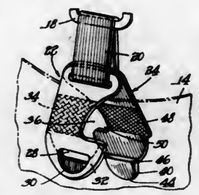
A safety seat belt buckle having a base plate and a cover plate movably secured together, having means for connecting one end of a seat belt to the buckle and a latch for releasably connecting the other end thereto, the latch being actuated by lifting either end of the cover plate relative to the base plate.

3,555,634
RELEASABLE COUPLING
George M. Brown, St. Petersburg, Fla., assignor to Sauna International, Inc., Miami, Fla., a corporation of Florida
Filed Sept. 27, 1968, Ser. No. 763,249
Int. Cl. A44b *11/00*
U.S. Cl. 24—230 **12 Claims**



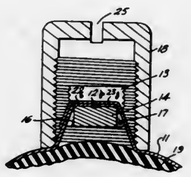
A coupling especially suited for releasably connecting the riser of a canopy or parachute to a harness and including male and female coupling members, the female coupling member being provided with a locking pin for fixedly securing the male coupling member in a locked position within the female coupling member, the invention further including a lever arm mounted for pivotal movement on the female coupling member and fixedly secured to the locking pin, the lever arm carrying a plunger mounted for pivotal movement to one end of a rocker arm carried by the lever arm, the other end of said rocker arm carrying a depending locating dowel which registers with a first aperture provided in the female coupling member in order to maintain the lever arm in a first position on a female coupling member, an operator of the device unlocking and permitting separation of the coupling members by depressing the plunger and causing the rocker arm to disengage the locating dowel from the first aperture, thereby permitting the operator to manually pivot the lever arm to a second position and cause rotation of the locking pin in order to unlock and allow withdrawal of the male coupling member from the female coupling member, the locating dowel upon such pivotal motion of the lever arm registering with a second aperture provided on the female coupling member for retaining the lever arm in said second position until disengagement of the male coupling member from the female coupling member is completed.

3,555,635
GARTER
John B. Swierenga, 977 S. Shore Drive, Holland, Mich. 49423
Filed Dec. 16, 1966, Ser. No. 602,351
Int. Cl. A41f *11/04*
U.S. Cl. 24—245 **21 Claims**



A garter for ladies' hosiery consisting of two substantially flat plates and a flexible loop passing through the plates. Each of the plates having a gripping portion between its respective ends and a finger recess adjacent to its respective gripping portion to allow ready access to the gripping portion of the other plate. One of said plates having a lock portion at one end and a guide step for guiding a second lock portion of the other plate into locking engagement with the first-mentioned lock portion.

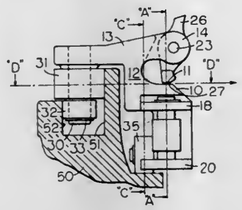
3,555,636
ADJUSTABLE SIZE HOSE CLAMP
George L. Turner, Hickory Corners, Mich., assignor to American Stamping Co., Battle Creek, Mich., a corporation of Michigan
Filed July 2, 1969, Ser. No. 838,597
Int. Cl. B65d *63/00*
U.S. Cl. 24—278 **10 Claims**



This hose clamp is of an adjustable size which will fit a range of hose sizes thus making it more universal in use than single size hose clamps. The ends of the hose clamp strap overlap each other, with one end fastened to the top of an externally threaded side grooved floating nut, while the other end is shiftable across the anchored first end to vary the hose clamp diameter to fit the size of the hose to be gripped on a male member within the hose end. With the strap mounted in preliminary clamping position one the hose end, an elongated internally threaded nut is engaged with the upper end of the floating nut so that by rotating the internally threaded nut it will move the floating nut upward into same and with it the end portions of the strap above the floating nut to tighten

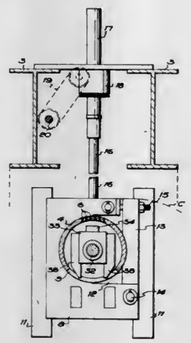
the strap on the hose, following which the free end of the strap may be broken off to leave the hose clamp in anchored position.

3,555,637
TENTERING CLIP AND CHAIN
Frederick Hyatt, Providence, R.I., assignor to Bevis Industries, Inc., Providence, R.I., a corporation of Florida
Filed Apr. 16, 1968, Ser. No. 721,752
Int. Cl. D06c *3/04*
U.S. Cl. 26—62 **7 Claims**



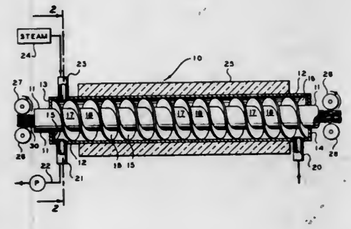
This invention relates to tenter clips pivotally connected to form a tentering chain and specifically to a structure wherein the bite line of the jaw upon the plate is in a vertical plane passing through the pivot point of adjacent clips; adjacent clips being directly connected through a pivot pin, and adjacent clip bodies being tapered forward and aft of the vertical plane passing through the pivot pin to permit relative movement between adjacent clips.

3,555,638
MACHINE FOR PRODUCING ENDLESS NEEDLED FELTS
Brendan O'Byrne, Batley, England, assignor to William Bywater Limited, Leeds, England
Filed May 5, 1969, Ser. No. 821,860
Claims priority, application Great Britain, May 4, 1968, 21,244/68
Int. Cl. D04h *18/00*
U.S. Cl. 28—4 **4 Claims**



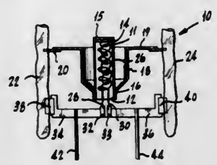
In a needling machine for producing endless needled felt, particularly in the form of sleeves or tubes of comparatively small diameter, there is provided a needle bed and draw roller assembly including a curved needle bed with an internal draw roller mounted between supports as that this assembly can be opened at one end to apply a foundation sleeve over the bed and roller from that end and remove it also at that end after needling, the roller and bed being relatively adjustable towards and away from one another to permit each sleeve to be applied and removed and to tension the sleeve for needling. The machine also includes provision for moving the roller bodily out of the bed wholly or partially to deal with longer sleeves; provision for adjusting the bed and roller assembly vertically relative to the needle board; and provision for suspending the bed and roller assembly including its end supports from screw jacks mounted on the upper part of the machine frame.

3,555,639
YARN HEATING TUBE AND METHOD
Hans van Doornewaard, Greenville, S.C., assignor to Phillips Fibers Corporation, a corporation of Delaware
Filed Mar. 3, 1969, Ser. No. 803,849
Int. Cl. D02j *13/00*
U.S. Cl. 28—62 **9 Claims**



A fluid permeable conduit is positioned within a second conduit and separated therefrom by helically inclined vane members, forming two separate helically shaped fluid passageways. A heating fluid is introduced into one passageway under elevated pressure, while the pressure in the other passageway is reduced. The yarn to be heated is passed through the fluid permeable conduit.

3,555,640
METHOD OF MOUNTING A HEATER IN A TUBULAR CATHODE
Carl L. Lundvall II, Willow Street, Pa., assignor to RCA Corporation, a corporation of Delaware
Filed Sept. 24, 1968, Ser. No. 762,085
Int. Cl. H01j *9/18, 9/36*
U.S. Cl. 29—25.16 **4 Claims**



Method of mounting a heater in a tubular cathode having a closed end in such a way as to assure a uniformity in the positions of the heaters in several cathodes and to prevent chipping and loss of the insulating coating on the heater during the mounting operation. The method involves attaching the arms of a U-shaped tab member uniformly to uncoated portions of the heater legs to provide a convenient manual engagement means and to restrain the legs from flaring outwardly into engagement with a sharp edge of the open end of the sleeve through which

the legs are extended in forming a heater-cathode assembly. After the heater and a portion of the legs thereof of the heater-tab assembly have been inserted in the cathode, the arms of the U-shaped tab member are welded to heater support structures mounted on two glass rods, and the transverse portion of the tab member is removed.

3,555,641
TRIMMING TOOL FOR CARTRIDGE CASES
Richard J. Lee, R.R. 2, Hartford, Wis. 53027
Filed Aug. 15, 1968, Ser. No. 752,864
Int. Cl. B23p *15/22*
U.S. Cl. 29—1.32 **6 Claims**



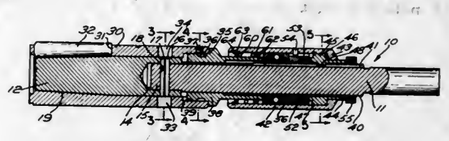
A self-aligning trimming tool for trimming the end of a spent center firing cartridge case to a standard usable length, comprising a single, rotatable cutting tool adapted to receive a plurality of trimmer guides which are sized to be inserted into various caliber cartridge cases. The trimmer guides include a narrow pin portion at the end opposite attachment to the cutting tool for automatically aligning it in the cartridge to be trimmed.

3,555,642
METHOD OF PRODUCING AN IMPREGNATED ELECTRICAL CAPACITOR
Horst Hagedorn, Munich, Germany, assignor to Siemens Aktiengesellschaft, Erlangen, Germany, a corporation of Germany
No Drawing. Filed July 15, 1969, Ser. No. 841,972
Claims priority, application Germany, July 22, 1968, 1,764,704
Int. Cl. H01g *13/00*
U.S. Cl. 29—25.42 **7 Claims**

A method of producing an electrical capacitor (A.C.) by controlling the rate of impregnation by a dielectric impregnating agent (i.e., an oil) into a dielectric film (paper or plastic) of an electrical capacitor by subjecting the dielectric film to a heat tempering procedure (at about 100 to 150° C.) to decrease the swelling capacity of the dielectric while simultaneously increasing the absorption thereof prior to impregnation at room temperature. After impregnation, the dielectric films are re-tempered to distribute the impregnating agent within the dielectric film and expand the film to eliminate any air space within the capacitor.

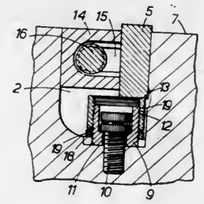
3,555,643
ROLLER BURNISHING TOOL
Eldo K. Koppelmann, Cumberland, R.I., assignor to Madison Industries, Inc., a corporation of Rhode Island
Filed Nov. 19, 1968, Ser. No. 777,008
Int. Cl. B24b *39/04*
U.S. Cl. 29—90 **6 Claims**

A roller burnishing tool having a common adjustable housing with a shank extension therefor and with a mandrel and cage body which will be interchangeable to change the size of the part to be burnished. The body of



the tool includes a release spring means that serves also as the spring loading for the adjustment means.

3,555,644
CUTTING TOOLS
Frank Owen, Huddersfield, England, assignor to Murex Limited, Rainham, Essex, England
Filed Apr. 22, 1968, Ser. No. 722,875
Claims priority, application Great Britain, May 1, 1967, 20,009/67
Int. Cl. B26d *1/12*
U.S. Cl. 29—105 **12 Claims**



The invention provides a cutting tool head in which removable cutting inserts (particularly blades) can be positioned with sufficient accuracy to provide fine quality surface finishes without the need for special grinding operations. The new cutting tool head comprises a body which is slotted to receive the removable cutting insert, and the cutting tool head comprises a first member and a second member, the first member being seated in the slot and being screw threaded, the second member being complementarily screw threaded and mating with the first member and having a bearing surface to abut a lateral edge of the cutting insert, whereby relative screw motion of the first member and the second member adjusts the projection of the cutting insert from the body.

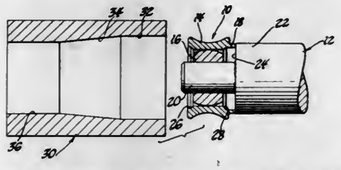
ERRATUM

For Class 29—148.4 see:
Patent No. 3,556,741

3,555,645
METHOD OF MAKING SPHERICAL BEARINGS
William A. Kuhn, Santa Ana, Calif., assignor to Lear Siegler, Inc., Santa Monica, Calif., a corporation of Delaware
Filed Nov. 29, 1968, Ser. No. 779,855
Int. Cl. B23p *11/00*
U.S. Cl. 29—149.5 **7 Claims**

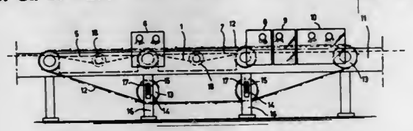
The invention herein described constitutes an improvement in a method of the type used for the manufacture of spherical bearings and wherein an assembly of an inner spherical ball element surrounded by a cylindrical race member is forced by a ram through the tapered bore of

a swaging die to thereby swage the race member radially inwardly into conformity with the spherical surface of the inner ball member. In accordance with the invention there is positioned against the end of the ram an annulus of malleable material which serves as a spacer between



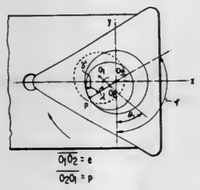
the end of the ram and that portion of the race member which is swaged radially inwardly into conformity with the inner ball member. This inhibits ram wear by eliminating the galling and metal fatigue induced by contact between the ram and that portion of the race being swaged radially inwardly.

3,555,646
PROCESS FOR MANUFACTURING TIMEPIECE DIALS IN SERIES
Roger Uebelhardt, Bienne, Switzerland, assignor to Cadral S.A., Bienne, Switzerland, a company of Switzerland
Filed Feb. 9, 1968, Ser. No. 704,448
Claims priority, application Switzerland, Feb. 13, 1967, 2,151/67
Int. Cl. B23p *13/00*
U.S. Cl. 29—177 **10 Claims**



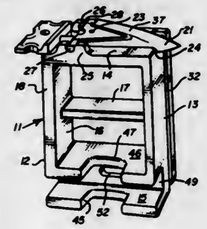
Timepiece dials are formed from a strip of material which is advanced step-by-step in a lengthwise direction through a sequence of operating stations at each of which an operation is performed in the production of the dials. The dials are then successively cut from the strip and positioned in a packing container.

3,555,647
PINNED THROWAWAY INSERT AND HOLDER THEREFOR WITH MULTIPLE SURFACE RESTRICTIONS
Yasuo Ohtsu, Itami-shi, Japan, assignor to Sumitomo Electric Industries, Ltd., Osaka, Japan
Filed Sept. 17, 1968, Ser. No. 760,330
Claims priority, application Japan, Sept. 17, 1967, 42/59,507
Int. Cl. B23p *19/00*
U.S. Cl. 29—200 **2 Claims**



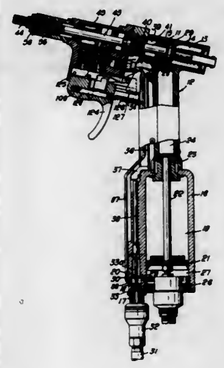
A throwaway insert provided with a hole, and a recesed holder for receiving the same which employs an eccentrically rotatable pin portion positioned within the hole carried by the throwaway insert allowing the insert to be clamped to the holder by rotating the eccentric pin portion while employing two restricting surfaces to properly locate the insert with respect to the holder recess.

3,555,648
REPAIR ANVIL
Rhinhold J. Zeeb, Lesterville, S. Dak. 57040
Filed Dec. 4, 1968, Ser. No. 780,968
Int. Cl. B23p *19/00*
U.S. Cl. 29—200 **7 Claims**



A portable repair anvil for the parts of a cutter bar assembly comprising a block provided with a novel arrangement of slots and channels which serve as receptacles for parts of the cutter bar assembly for repair thereof. The block has broad flat external faces which give firm support while disposing a selected one of the receptacles in a stable upright manner during parts repair and hammering thereon.

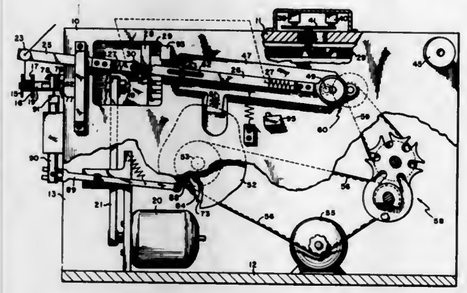
3,555,649
ADAPTOR FOR PNEUMATICALLY OPERATED PULLING TOOL
Robert M. Rigot, Granada Hills, and Winston F. Harrington, Tujunga, Calif., assignors to Aerpat A.G., Zug, Switzerland, a company of Switzerland
Filed Oct. 7, 1968, Ser. No. 765,539
Int. Cl. B23p *19/00, 19/04*
U.S. Cl. 29—200 **10 Claims**



The invention relates to an adaptor for converting a pneumatically operated pulling tool (e.g., of the type used for placing blind breakstem rivets) into a tool which can place internally threaded anchor socket fasteners which require a threaded pulling mandrel to be screwed into and unscrewed out of the fastener. The adaptor comprises a high-speed reversible air turbine mounted directly on the threaded mandrel shaft, valves controlling the

turbine, and a single trigger mechanism, which automatically actuates both the turbine valves and the pulling trigger of the pull gun. When the adaptor trigger is pressed and released, the following actions recur in sequence: (1) the mandrel screws into the fastener; (2) the mandrel is pulled to place the fastener, and then released again; (3) the mandrel is unscrewed from the fastener.

3,555,650
COIL WINDING MACHINE
Roy C. Johnston, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 16, 1968, Ser. No. 768,061
Int. Cl. H05k *13/00*
U.S. Cl. 29—203 **8 Claims**

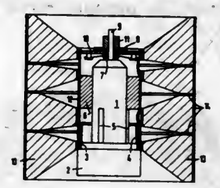


A coil winding machine for winding a coil of wire around a preformed bobbin, with the ends of the coil being wound around two bobbin supported metal terminals. The machine includes a spindle to rotate the bobbin, and a plurality of cams and a Geneva movement to control and to give a plurality of modes of operation to an arm which guides the wire, a wire gripping arrangement and a wire cutting arrangement.

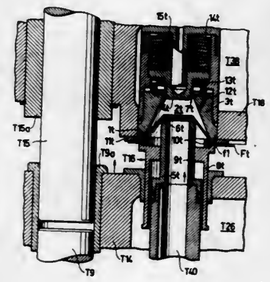
A feature of this coil winding machine is a lever system having a plurality of modes of operation for guiding wire to the bobbin, so that the wire can be directed to level wind the coil and also to wrap the terminals. Another feature is a wire cutting arrangement coordinated with the terminal wrapping arrangement to sever the wire ends at the terminals leaving no tag ends of wire. The coil winding machine is adapted to wind coils of various sizes as well as to properly space wires of different diameters.

3,555,651
APPARATUS FOR PRODUCING THE STATOR OF A DC MINIATURE MOTOR
Hans-Peter Latussek and Werner Dittrich, Nuremberg, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Original application July 5, 1966, Ser. No. 562,755, now Patent No. 3,413,715, dated Dec. 3, 1968. Divided and this application May 24, 1968, Ser. No. 739,971
Claims priority, application Germany, July 13, 1965, S 98,153
Int. Cl. B21d *26/14;* **H02k** *15/00*
U.S. Cl. 29—205 **6 Claims**

Apparatus for producing the stator of a miniature motor comprises an assembly mandrel. A centering ring is coaxially positioned around the stem of the mandrel and supported on the centering rim of the mandrel. An annular stator magnet is coaxially positioned around the stem of the mandrel. The stator magnet is supported on the mandrel in spaced relation from the centering ring by a lateral support affixed to the mandrel. A bearing plate having a bearing mounted therein is coaxially positioned at the end of the stem of the mandrel opposite the end of the centering rim. A tubular housing is coaxially positioned around the ring, the magnet and the plate, and is crimped between and around each of the ring, the magnet and the plate to hold them in position.



3,555,652
ASSEMBLING APPARATUS FOR MAKING CONTAINERS
Rolf Lennart Ignell, Lund, Sweden, assignor to Sobrefina SA, Fribourg, Switzerland, a company of Sweden
Continuation-in-part of abandoned application Ser. No. 584,390, Oct. 5, 1966. This application June 25, 1968, Ser. No. 745,072
Claims priority, application Sweden, Oct. 8, 1965, 13,103/65; May 6, 1966, 6,233/66
Int. Cl. B23p *19/04*
U.S. Cl. 29—208 **26 Claims**

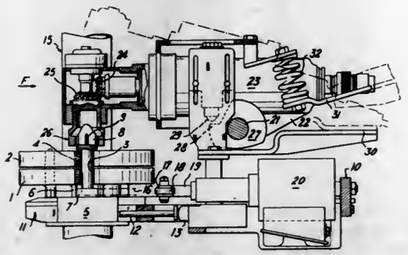


Apparatus for manufacturing containers in which a blank of plastic material is given the desired shape and is then inserted into a supporting sleeve. The apparatus also provides for the formation of two separate plastic parts which are welded together before insertion in the sleeve and further provides for continuous multiple automatic steps for forming pluralities of each of the plastic parts, the welding thereof and the insertion thereof in a plurality of sleeves.

3,555,653
REMOTE-MANIPULATION TOOL
Marcel Bergeret, Pierre-Benite, Louis Borrel, Hermillon, and Marius Simeone, Pierre-Benite, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed May 8, 1968, Ser. No. 727,475
Claims priority, application France, May 24, 1967, 107,724
Int. Cl. B23p *19/04;* **B23q** *7/10*
U.S. Cl. 29—211 **3 Claims**

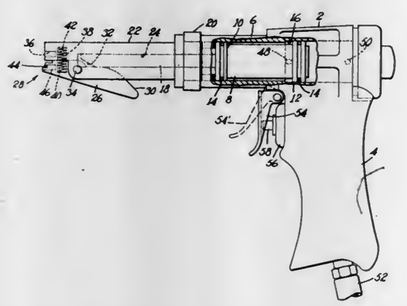
A remote-manipulation tool whereby two diametrically opposite fastening bolts of two cooperating flanges may be simultaneously positioned then tightened or slackened, comprising a frame provided with slideways for its

setting on said flanges, two magazines in which said bolts are placed one above the other, two ejector levers for causing the lowermost bolt of each magazine to slide towards two diametrically opposite recesses of said flanges



and two identical pivotal and remotely operable arms each provided at one end with a screwing head driven by a motor and adapted to engage over the nut of each bolt.

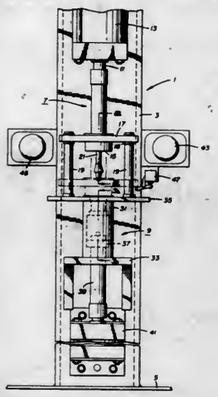
3,555,654
CLIP SETTING TOOLS
Engelbert A. Meyer, Union Lake, Mich., assignor to Warren Fastener Corporation, Mount Clemens, Mich., a corporation of Michigan
Filed June 10, 1968, Ser. No. 735,791
Int. Cl. B23p *19/02*
U.S. Cl. 29—230 **2 Claims**



A hand-held power tool for driving a retaining clip into fastening engagement with a stud, the tool comprising means for engaging the stud, means proximate to the stud engaging means for engaging the clip, and power means for moving the clip engaging means relative to the stud engaging means whereby to drive the clip into engagement with the stud.

3,555,655
BUSHING ASSEMBLY MACHINE
John T. Drompp, Logansport, Ind., assignor to The General Tire & Rubber Company, a corporation of Ohio
Filed Mar. 25, 1968, Ser. No. 715,809
Int. Cl. B23p *19/02*
U.S. Cl. 29—235 **12 Claims**

Resilient bushings, of the type wherein a molded annular elastomeric insert is held under radial compression between a pair of concentric, axially aligned sleeves, are assembled with an apparatus utilizing a mandrel assembly and a nesting assembly axially aligned with one another. The entire mandrel assembly is vertically movable and comprises an elongated mandrel one end of which is connected to a piston that is vertically movable within a first pneumatic or hydraulic cylinder independently of the remainder of the mandrel assembly. The free end or head of the mandrel consists of a tapered tip, joined to a flared, frusto-conical skirt, the juncture forming an abutment shoulder. The nesting assembly contains a nest to hold the outer metal sleeve and a positioning pin to locate the inner sleeve in axial alignment with but below said outer sleeve. During assembly, the insert is placed

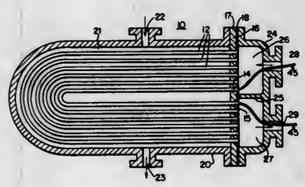


on top of the outer sleeve after which the mandrel assembly moves downwardly to urge the head of the mandrel through the annulus within said insert and to force the insert into the outer sleeve. The tip of the mandrel comes to rest in the inner sleeve with the shoulder abutting the end of the sleeve after which the mandrel and inner sleeve are simultaneously drawn upwardly into the insert and the mandrel removed to complete the assembly.

ERRATUM

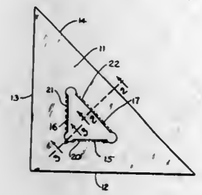
For Class 29—256 see:
Patent No. 3,556,742

3,555,656
METHOD OF EXPLOSIVELY PLUGGING A LEAKY METAL TUBE IN A HEAT EXCHANGER TUBE BUNDLE
Francis X. Brown, Broomal, and Samuel W. Wismer, Jr., Springfield, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 25, 1967, Ser. No. 641,381
Int. Cl. B22d *19/10;* **B23p** *7/00*
U.S. Cl. 29—401 **4 Claims**



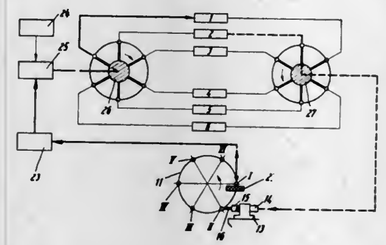
This invention provides an explosive plugging device for insertion into a leaky metal tube of a heat exchanger bundle to plug the tube by explosive welding and a method of explosively welding a metallic plugging device having an explosive charge to a metal tube by detonating the charge with a detonation initiator to peripherally expand the plug into welding association with the tube.

3,555,657
METHOD OF MANUFACTURING A DRAFTING TRIANGLE
Gregory S. Dolgorukov, Ferndale, Mich. (407 Fisher Bldg., Detroit, Mich. 48202)
Original application Dec. 19, 1963, Ser. No. 331,800, now Patent No. 3,375,589. Divided and this application Feb. 16, 1968, Ser. No. 706,085
Int. Cl. B23q *17/00*
U.S. Cl. 29—407 **5 Claims**



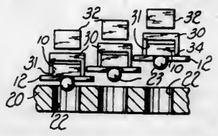
A method of manufacturing a drafting triangle from acrylic sheet plastic by sawing a triangular piece of predetermined size from a plastic sheet, milling the sides to provide square guiding surfaces and cutting the edges at approximately a 45° angle to the top and bottom triangle surfaces at a depth of approximately .005 of an inch.

3,555,658
METHOD AND APPARATUS FOR MONITORING AND REDUCING TOLERANCES OF WORKPIECES IN MULTIPLE-SPINDLE MACHINE TOOLS
Hans-Gerold Möbius, Bielefeld, Karl-Wilhelm Kuckelsberg, Babenhausen, and Klaus Lange, Brockhagen, Germany, assignors to Werkzeugmaschinenfabrik Gildemeister & Comp. Akt.-Ges., Bielefeld, Germany
Filed Feb. 23, 1968, Ser. No. 707,855
Claims priority, application Germany, Mar. 2, 1967, W 43,470
Int. Cl. B23q *17/00*
U.S. Cl. 29—407 **17 Claims**



A multiple spindle machine tool wherein a cross slide at one of several working stations carries an adjustable tool which is adjusted in automatic response to signals produced by a monitoring device provided at another station to determine the tolerances of successive workpieces and to produce signals when the tolerance of a workpiece deviates from a desired tolerance. Signals are stored and are utilized to adjust the tool when a spindle which carried a defective workpiece during the preceding cycle places a fresh workpiece into registry with the adjustable tool during the next-following cycle.

3,555,659
METHOD AND APPARATUS FOR SEPARATING COMPACT ARRAYS OF ARTICLES
Jaroslav Mracek, Trenton, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Nov. 18, 1968, Ser. No. 776,498
Int. Cl. B23p *19/02;* **H05k** *13/00*
U.S. Cl. 29—421 **17 Claims**

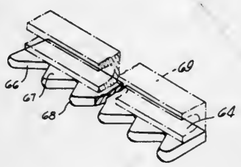


Methods and apparatus are provided for separating and handling a compact array of microminiature articles, e.g. beam lead devices, in such a manner as to maintain the original, precise orientation. The devices are placed over paramagnetic slugs and are removed selectively from the array by attracting desired slugs towards the devices with a magnetic field to lift selected devices from the array.

ERRATUM

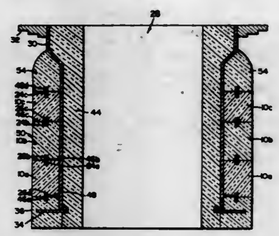
For Class 29—429 see:
Patent No. 3,556,743

3,555,660
METHOD OF AND APPARATUS FOR TRANSFERRING ARTICLES FROM A WORKHOLDER TO A HANDLING RACK
Robert B. Bankes, Reading, and Werner F. Esselunn, Wyomissing, Pa., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Oct. 30, 1968, Ser. No. 771,943
Int. Cl. B23p *19/00;* **H05k** *13/04*
U.S. Cl. 29—429 **11 Claims**



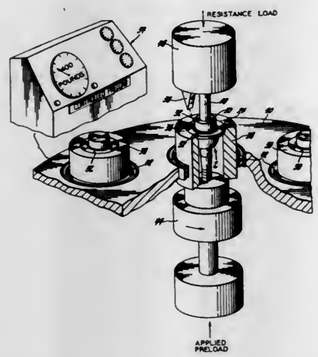
Lower jaw members of pairs of upper and lower opposed jaw members are moved relative to said upper jaw members and through slots in a carrier holding a plurality of diodes having leads depending therefrom to grasp an overlay strip and moves the overlay strip away from the diodes. A slotted magnetic camming bar is moved into engagement with the leads to space and hold the leads in alignment with apertures in a handling rack. The handling rack is manipulated to move the leads into the apertures and then to slide the diodes along the slotted openings and off the carrier.

3,555,661
REFRACTORY SUPPORT
Robert A. Rawlings, Weirton, W. Va., assignor to National Steel Corporation, a corporation of Delaware
Filed July 2, 1968, Ser. No. 741,919
Int. Cl. B23p *19/00, 15/16*
U.S. Cl. 29—431 6 Claims



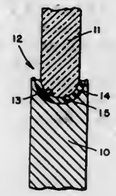
A method of supporting refractory elements on the exterior of a degassing apparatus nozzle by forming a radially extending support around the exterior of the lower portion of the nozzle and encasing the support and the lower end of the nozzle in a refractory ring. Refractory elements having upper and lower transverse surfaces with parallel slots therein are emplaced in courses around the nozzle with the slots oriented to form continuous annular grooves. Retaining rings are placed in the slots to key the respective courses to one another and hold the refractories against the tubular nozzle.

3,555,662
METHOD OF MANUFACTURING UNIFORM PRE-LOAD BALL JOINT ASSEMBLIES
Thomas C. Powell, Saginaw, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 6, 1968, Ser. No. 726,911
Int. Cl. B23k *29/00;* B23p *11/02, 19/00*
U.S. Cl. 29—436 3 Claims



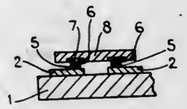
A ball and socket assembly in which precision bearing engagement is accomplished by forming the socket of two telescoping halves arranged in surrounding relation with the ball. During assembly, the halves are subjected to an externally applied force which is sustained while the halves are secured together by a continuous circumferential bond which seals the telescoping juncture and maintains the preload after removal of the externally applied force.

3,555,663
METHOD OF MAKING AN ANNULAR GLASS-TO-METAL JOINT
Willis R. Forman, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Dec. 9, 1968, Ser. No. 782,304
Int. Cl. B21d *39/02*
U.S. Cl. 29—463 2 Claims



A glass-to-metal joint for use under extreme pressure wherein the abutting glass edge is ground to a radius equal to one-half the thickness of the glass, fire-polished, and fitted into a mating groove provided in a reinforced plastic band attached to the edge of the metal element. This structure is used in joining a glass hemisphere to a steel cylinder in a submersible.

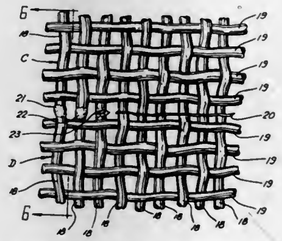
3,555,664
BONDING ELECTRICAL CONDUCTORS
Kenneth Charles Arthur Bingham, Chalfont St. Peter, and Alan George Albert Gillingham, St. Albans, England, assignors to International Computers and Tabulators Limited, London, England, a British company
Filed Apr. 19, 1968, Ser. No. 722,663
Claims priority, application Great Britain, Apr. 29, 1967, 19,849/67
Int. Cl. B23k *21/00*
U.S. Cl. 29—470.1 5 Claims



A method of bonding is described, particularly suitable for bonding the conductors of an integrated circuit module, for example, to a set of conductors supported on a substrate. In conventional techniques a module is compression welded to a pattern of protuberances formed on a set of conductors, and it is frequently found that under normal manufacturing tolerances a high proportion of weld failures may be expected. The present disclosure envisages the formation of pillars of a soft, readily deformable material, such as a tin/lead eutectic, between the conductors so that during compression welding the pillars are deformed under the welding pressure, thus enabling all the conductors to make good electrical contact with their respective pillars, despite any discrepancies in height that may exist as between the pillars. The use of an oxidizable material, such as the tin/lead eutectic as noted above, could result in the formation of an oxide layer which would prevent a good electrically conductive bonding being established, and in this case it is proposed to form a layer of an oxidation-resistant material, such as gold, over any exposed contacting surface of a

pillar. This layer, besides being itself resistant to oxidation preferably also presents a hard surface to the conductor to which it is to be bonded and the welding pressure is sufficient to ensure that this surface breaks through any oxide layer present on the surface of the conductor, a feature of importance where the conductor is, for example, of aluminium.

3,555,665
METHOD OF JOINING ENDS OF WARP WIRES IN A WIRE CLOTH BELT
Charles Kelley, Jr., Woodbridge, Conn., assignor to McCluskey Wire Co., Inc., New Haven, Conn.
Filed June 28, 1968, Ser. No. 741,055
Int. Cl. B23k *31/02*
U.S. Cl. 29—471.3 6 Claims



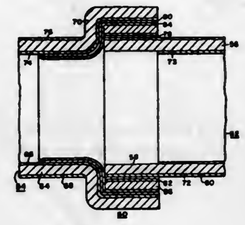
There is provided a method of joining warp ends in a wire cloth belt employing the use of a metal carrier strand in a direction across the warp interposed between corresponding ones of opposing warp ends, heating a brazing alloy in proximity to the carrier to cause it to flow along the carrier between the warp ends, the carrier having a higher melting point but substantially below the melting point of the warp, and subsequently applying heat to the carrier to melt it out without generating sufficient heat in the warp ends to damage the latter.

3,555,666
METHOD OF DIFFUSION BONDING OF METALS
Seong Kwan Rhee, Livonia, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Filed Jan. 25, 1968, Ser. No. 700,539
Int. Cl. B23k *1/20, 31/02*
U.S. Cl. 29—488 14 Claims



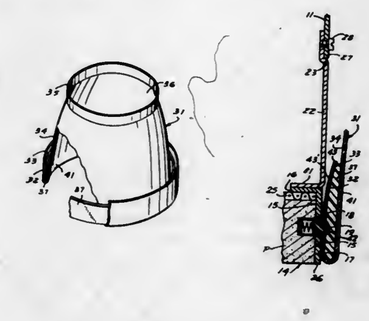
A method for solid state diffusion bonding of two bodies of metal such as the laminas of a fluidic device wherein the surfaces are prepared by removing the surface oxides and then covered with a self-removable substance having a low solubility of oxygen and a low diffusion rate of oxygen such as alcohols, glycerine, glycols, polybutenes, acrylic resins, lacquers and polystyrenes to prevent oxidation of the surfaces. While the surfaces are still covered by this oxidation-preventing substance, the bodies of metal are assembled and placed in a vacuum furnace for bonding.

3,555,667
HIGH TEMPERATURE, ELECTRICALLY CONDUCTIVE HERMETIC SEALS
William G. Carlson, Murrysville, Christy J. Moratis, Pittsburgh, and William A. English, Export, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Sept. 14, 1965, Ser. No. 487,226. Divided and this application Oct. 8, 1968, Ser. No. 765,889
Int. Cl. B23k *31/02*
U.S. Cl. 29—492 5 Claims



Structural members are joined together by a high temperature, electrically conductive hermetic seal comprising an outer layer of platinum having intimate contact with, and good adhesion to, one of the structural members to be joined together, an inner layer of platinum having intimate contact with, and good adhesion to, the other structural member to be joined together, a layer of a metal whose initial composition before formation of the seal is gold or 18 percent by weight of nickel and the remainder gold centrally disposed between, joined to, and alloyed with the inner and outer layers of platinum by respective intermediate metal layers comprising gold.

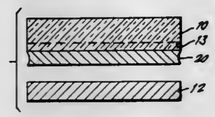
3,555,668
METHOD OF FORMING A BOWL-SHAPED REFLECTOR
Stanley Dorsky, Somerset, Mass., assignor to Aluminum Processing Corp., Fall River, Mass., a corporation of Massachusetts
Original application Aug. 8, 1966, Ser. No. 570,965, now Patent No. 3,375,368, dated Mar. 26, 1968. Divided and this application Feb. 8, 1968, Ser. No. 704,172
Int. Cl. B21d *39/00;* B23p *11/00*
U.S. Cl. 29—510 1 Claim



This invention relates to the art of lighting fixtures and more particularly to a bowl shaped reflector having a mouth with a reversely bent rim extending outwardly therefrom, a band of deformable resilient material being

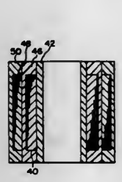
positioned between said rim and the body of said reflector, said rim having an indentation on the outer surface thereof.

3,555,669
PROCESS FOR SOLDERING SILICON WAFERS TO CONTACTS
William H. Tarn, Culver City, Calif., assignor to International Rectifier Corporation, El Segundo, Calif., a corporation of California
Filed Dec. 15, 1967, Ser. No. 690,860
Int. Cl. B01j *17/00;* **H01l** *7/02*
U.S. Cl. 29—589 **3 Claims**



A pure aluminum disc is alloyed to an N-type silicon wafer until a silicon-aluminum eutectic is reached, resulting in a soft, gap-free alloy which is readily alloyed to a conductive contact plate.

3,555,670
METHODS OF CONSTRUCTING ELECTRICAL TRANSFORMERS
Frank R. Zickar, Sharon, and Paul Voytik, Sharpsville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Original application Nov. 4, 1965, Ser. No. 506,350. Divided and this application Sept. 21, 1967, Ser. No. 669,549
Int. Cl. H01f *7/06*
U.S. Cl. 29—605 **8 Claims**

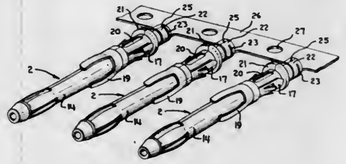


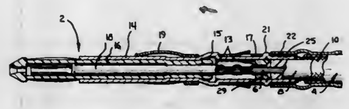
Methods of constructing electrical transformers having coils formed of electrically conductive strip or foil, and encapsulated in a cast solid insulation system. The strip or foil is coated with an adhesive prior to winding the coils, and the adhesive is set prior to encapsulation of the coils, to stabilize their dimensions.

3,555,671
LAYER THERMISTORS AND METHOD FOR THEIR MANUFACTURE
John Aizicovici, Boulogne-Billancourt, France, assignor to Societe le Carbone Lorraine, Paris, France, a French body corporate
No Drawing. Filed June 19, 1967, Ser. No. 647,188
Claims priority, application France, July 1, 1966, 67,773
Int. Cl. H01c *7/04*
U.S. Cl. 29—612 **1 Claim**

A method of manufacturing a layer thermistor which permits precise determination of its ohmic value comprising the steps of coating a refractory substrate with a thin semi-conductive layer having a high temperature coefficient, baking said layer, measuring the ohmic value of said layer, and adjusting said ohmic value to a predetermined value by cutting a thread into said layer while maintaining the temperature of said layer substantially constant.

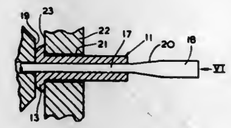
3,555,672
HIGH SPEED SEMIAUTOMATIC TERMINATION OF COAXIAL CABLE
Michael Francis O'Keefe, Mechanicsburg, Glendon Henry Schwalm, Camp Hill, Robert Stanley Stull, Mechanicsburg, and Coey William Fritz, York, Pa., assignors to AMP Incorporated, Harrisburg, Pa.
Continuation-in-part of applications Ser. No. 678,909, Ser. No. 679,115, and Ser. No. 679,148, all filed Oct. 30, 1967. This application Oct. 29, 1968, Ser. No. 771,542
Int. Cl. H02g *1/12;* **H01r** *43/04;* **B23p** *19/04*
U.S. Cl. 29—628 **10 Claims**





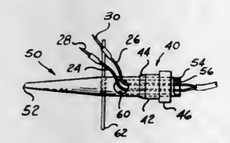
A method and apparatus is disclosed for automatic and rapid termination of coaxial connectors to coaxial cable. Each of a series of coaxial connectors are joined together by a carrier strip formed of the sheet metal from which the outer contact portion of each connector is made. Each connector includes an inner contact member having a rear ferrule portion positioned by a dielectric insert within the outer contact portion. The outer contact portion includes access ports leading to the inner contact ferrule portion to permit the insertion of crimping dies therein to crimp the ferrule portion to the inner conductor of a coaxial cable. The crimp ports of each connector are precisely positioned by the carrier strip for machine feeding in a crimping apparatus. Such apparatus includes a first set of indenter dies driven automatically to enter the crimp ports of a given connector and grip but not crimp the ferrule portion therein while the connector is severed from the carrier strip. The severed connector is held by the indenter dies in a proper position for cable attachment. At a separate stripping apparatus, a crimping ferrule is automatically positioned relative to a cable stripping aperture so as to be loaded onto such cable as the cable is inserted for stripping. The cable stripping apparatus then operates to strip portions of the cable exposing the cable inner conductor and the cable outer conductor for termination to a connector. The stripping station also at this time separates the outer conductor of the cable from the dielectric sheath of the cable to facilitate insertion of the cable outer conductor over a rear portion of the connector. The stripped and separated cable having a ferrule loaded thereon is manually inserted into and over the gripped connector held in a proper position by indenter dies. The ferrule is then displaced forwardly to overlie the cable outer conductor and a rear portion of the connector and the indenter dies and additional dies are driven to crimp the connector to terminate inner and outer conductive portions thereof to inner and outer conductive portions of the cable.

3,555,673
ELECTRICAL CONNECTOR SOCKET
Frederick Arthur Summerlin, Harpenden, England, assignor, by mesne assignments, to Aerpat A.G., Zug, Switzerland, a Swiss company
Original application Dec. 11, 1967, Ser. No. 689,582. Divided and this application Mar. 18, 1969, Ser. No. 817,227
Claims priority, application Great Britain, Dec. 16, 1966, 56,541
Int. Cl. H02g *15/00*
U.S. Cl. 29—629 **3 Claims**



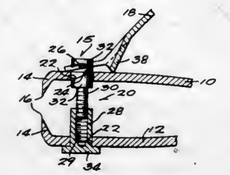
An electrical connector socket, for mating with a pin of circular cross-section, comprises a tubular member of substantially elliptical internal cross-section, such that the diameter of the pin is intermediate the internal major and minor diameters of the socket. The socket may be manufactured and installed by drawing a die or former (such as the mandrel of a blind-riveting tool), having a substantially elliptical cross-section, through a tubular member.

3,555,674
TOOL AND METHOD OF USING THE SAME FOR INSERTING LEADS THROUGH RESILIENT GROMMETS
Jackson A. Aileo and James J. Petruzella, Carbondale, Pa., assignors to Gentex Corporation, New York, N.Y., a corporation of Delaware
Filed May 17, 1968, Ser. No. 730,084
Int. Cl. H01r *9/00;* **B23p** *11/02, 19/04*
U.S. Cl. 29—630 **8 Claims**



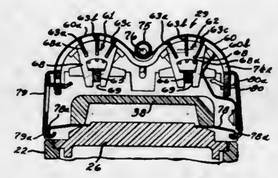
A tool and method of using the same for facilitating the operation of passing electrical leads through resilient grommets which are used to conduct the leads in soundtight relationship through the wall of a sound attenuating helmet earcup. The tool is an elongated tapered body having an axial bore extending from its larger end to a point intermediate the ends of the body, at which point a slanted wall leads outwardly to an opening in the side of the body. In use of the device, the grommet is slid over the body from its smaller end to a point beyond the side wall opening. The leads are then inserted into the bore until the plugs on the ends of the lead are guided out through the side opening by the slanted wall. The grommet is then slipped off the enlarged end of the body and onto the leads. A removable pin extending across the longitudinal axis of the body may be employed to facilitate the operation just described. The body may be lubricated to assist in sliding the grommet thereon. After the grommet has been slipped off the body onto the leads, the leads are passed through the cup wall opening and the grommet is pushed into the opening to complete the assembly.

3,555,675
ADJUSTABLE FINGERNAIL AND TOENAIL CLIPPER
Prokop J. Jurena, 5430 W. Forest Home Ave., Milwaukee, Wis. 53220
Filed June 10, 1968, Ser. No. 735,830
Int. Cl. A45d *29/02*
U.S. Cl. 30—28 **7 Claims**



Disclosed herein is a clipper having a pair of spring leaves joined at one end with curved sharpened complementary edges at the other end and an adjustable stud interconnecting the spring leaves to selectively vary the distance between the sharpened edges, the stud having a hook-shaped upper end to receive the cross bar of an actuating lever having an upset central portion bearing on one of the leaf springs whereby actuation of the lever will open and close the sharpened edges.

3,555,676
ELECTRIC DRY SHAVER
Charles L. Bauer, Columbia, S.C., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois
Original application May 27, 1966, Ser. No. 553,393, now Patent No. 3,401,453. Divided and this application Mar. 22, 1968, Ser. No. 715,248
Int. Cl. B26b *19/04*
U.S. Cl. 30—43.92 **7 Claims**



Electric shaver or other appliance having a pair of parallel oscillating shafts of rectangular cross section. Each of these shafts drives a separate cutter or other driven member. A power unit is provided having motor means with a drive projection movable toward and away from the parallel shafts. A unitary bifurcated connecting rod interconnects the projection and the two parallel shafts. This connecting rod is sufficiently resilient to permit flexing so that no binding occurs. Spring means in the shape of a short handled multi-tined fork having the handle portion secured to the rectangular shafts bias the cutters into shearing engagement with the perforated comb. The comb is defined by two joined arcuate perforated sections.

3,555,677
WIRE CUTTING TOOL
Anthony J. Cusato, 22 Maplewood Road, Closter, N.J. 07624
Filed Mar. 1, 1968, Ser. No. 709,691
Int. Cl. B26b *13/00*
U.S. Cl. 30—134 **5 Claims**

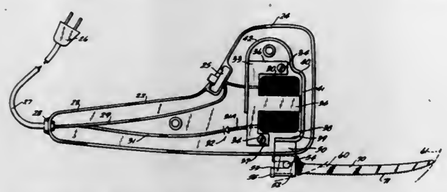
A plier-type wire cutting tool particularly for use in orthodontics, the jaws of the tool disposed for shear cutting of wires. The cutting tool in its jaw members is disposed to mate and to provide opposing and extending shelf

portions disposed adjacent the shear portions of the jaws, the spacing apart of the shelf portions is disposed so as to receive the cut extending portion of wire to retain the cut wire in a gripped condition between the shelf portions as



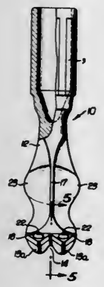
the tool is removed from the mouth and/or until the jaws are opened. A notch may be provided in one of the jaws so that the wire may be gripped by the shelf portions absent a shear cutting action.

3,555,678
ELECTRIC CULINARY DEVICE
Robert Agulnick, Shorewood, and Leonard B. Secklin, Milwaukee, Wis., assignors to General Appliance Corporation, Milwaukee, Wis., a corporation of Wisconsin
Continuation of application Ser. No. 475,074, July 27, 1965. This application Jan. 23, 1968, Ser. No. 699,907
Int. Cl. B26b *7/00*
U.S. Cl. 30—166 **19 Claims**



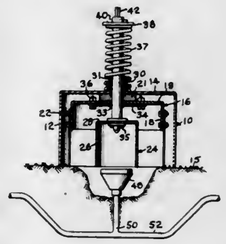
Disclosed herein is an electric culinary device having an electric coil mounted on a core with the coil intermittently energized to oscillate a flat armature mounted on a stiff spring through a short arc and a work piece secured to a mounted bracket on the armature with the unsupported portion of the work piece free to move with the armature.

3,555,679
SCRAPER TOOL
George Edward Sheridan, 119 W. 64th St., Inglewood, Calif. 90302
Filed Sept. 12, 1968, Ser. No. 759,398
Int. Cl. B27g *17/04*; **B26g** *3/00*
U.S. Cl. 30—172 **8 Claims**



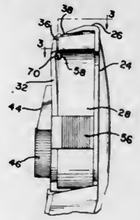
The invention provides an improved tool for scraping metallic work edges, the tool having a head terminal to which is detachably secured invertible opposed equilateral triangular inserts made of tungsten carbide and defining between them scraping edges which are interchangeable to a total of twelve because of the detachability and invertability of the inserts.

3,555,680
TRIM AROUND SPRINKLER HEAD TOOL
Clancy B. Ford, 16901 Schoolcraft St., Van Nuys, Calif. 91406
Filed Jan. 8, 1968, Ser. No. 696,164
Int. Cl. B26b *29/00*
U.S. Cl. 30—276 **3 Claims**



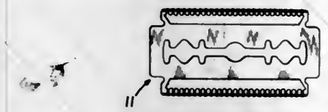
A grass cutter has three concentric cups, the outermost and innermost cups engaging a lawn surface and a sprinkler head, respectively, to guide and limit cutting depth. The intermediate cup with blades thereon is vertically movable and rotated by a shaft externally engageable with a power drill.

3,555,681
ADJUSTABLE RIBBON-TYPE RAZOR
Leopold K. Kuhnl, Stratford, Conn., assignor to Eversharp, Inc., Milford, Conn., a corporation of Delaware
Filed May 8, 1968, Ser. No. 727,624
Int. Cl. B26b *21/26*
U.S. Cl. 30—346.5 **5 Claims**



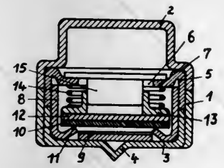
An adjustable ribbon-type razor in which adjusting means is provided for moving the guard of the blade disposed beneath the blade inwardly and outwardly of the blade edge to vary the blade-to-guard distance. Preferably, the blade guard is formed as a part of a cover plate which covers the front edge of the magazine body. Various adjusting means, including sliding bars having ramps thereon, rotatable discs having ramp or cam means thereon, and rotatable eccentric bars or cams are provided, in combination with the manual control or finger tab means thereon for moving the magazine cover toward and away from the remainder of the body, thereby moving the guard associated therewith closer or farther away from the blade edge. Preferably, the combined cover and guard assembly is attached to the magazine body at a point spaced apart from the edge of the bridge which supports the razor blade, and the inherent stiffness of the cover provides resistance to movement which is caused by actuating the adjustment means. Indicia are provided for displaying the relative position of the adjusting means or the control means associated therewith.

3,555,682
GUARDED RAZOR BLADE
Tibor S. Laszlo, Richmond, Va., assignor to Philip Morris Incorporated, Richmond, Va., a corporation of Virginia
Filed Feb. 3, 1969, Ser. No. 796,035
Int. Cl. B26b *29/00*
U.S. Cl. 30—346.56 **6 Claims**



A razor blade having a self-contained permanently attached guard comprising a thin flexible sheet with a row of aligned holes and intervening lands, the holes and lands being looped over the blade cutting edge and the sheet being secured to the opposed blade surfaces, the sheet having an outer surface of low coefficient of friction material, and the holes, and lands having specified dimensions and relationships, the blade being capable of use in a simple holder without other guard means but also advantageously embodied in a razor combination including a guard bar with an increased blade edge exposure over that of a conventional similar type razor employing a naked blade.

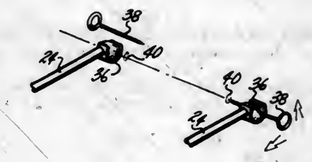
3,555,683
DENTAL PROSTHESIS WITH A VALVE AND VACUUM CHAMBER
Dragutin Ivan Gregorovic, 1 Quai Marcellis, Liege, Belgium, and Georges L. E. R. Feroumont, 58 Rue Xhavee, Mons-lez-Liege, Belgium
Filed Oct. 24, 1967, Ser. No. 677,652
Claims priority, application Belgium, Oct. 26, 1966, 688,932
Int. Cl. A61c *13/24*
U.S. Cl. 32—3 **1 Claim**



A dental prosthesis with a valve and vacuum chamber is characterised in that the valve is made of rust-proof material and has a rigid outer member and a movable assembly with a stopper for preventing penetration of foreign bodies and a seal for maintaining the vacuum, the stopper and the seal being applied against respective seatings by spring means and that the vacuum chamber is of smaller cross-section in the portions thereof lying within the extension of the incisor and canine teeth than it is in the portions thereof located opposite the molars.

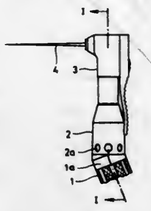
3,555,684
FACE BOW
Lloyd Baum, 11460 Aster St., Loma Linda, Calif. 92354
Filed Mar. 19, 1969, Ser. No. 808,542
Int. Cl. A61c *9/00*
U.S. Cl. 32—20 **4 Claims**

A face bow for recording the positional relationship between a dental patient's teeth and his jaw hinge axis comprising a crossbar and adjustable side arms fastenable to the crossbar so as to extend away therefrom, on opposite sides of the patient's face, to termination near the ends of his jaw hinge axis. At their rear, the side arms have open-sided pockets into which dental compound can be packed. The face bow includes two pointers which can be heated and worked into packet compound in the side arm



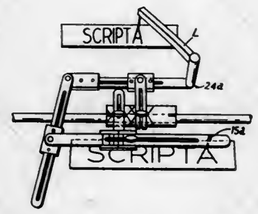
pockets until their points are positioned on the skin at the ends of the patient's jaw hinge axis.

3,555,685
DENTAL ANGLE HANDPIECE FOR ROOT CANAL TREATMENT
Hans Loge, Biberach an der Riss, Germany, assignor to Kaltenbach & Voigt, Biberach an der Riss, Germany
Filed Nov. 6, 1968, Ser. No. 773,707
Claims priority, application Germany, Nov. 8, 1967, 1,566,243
Int. Cl. A61c *3/08*
U.S. Cl. 32—57 **5 Claims**



Dental apparatus includes a head part and comprises drive mechanism for imparting oscillating movement to a canal instrument or tool. The drive mechanism includes a wobble plate rotatable by the drive shaft of an angle handpiece and is adapted to impart axial displacement alternately to two push rods, the latter engaging transverse surfaces of a drive sleeve in such a manner that the continuous rotary motion of the drive shaft is converted to impart oscillating movement to the drive sleeve.

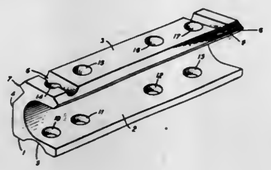
3,555,686
TRACING MACHINE
Leon Raoul Hatem, 1 Allee de Colmar, 93 Rosny-sous-Bois, France
Filed May 5, 1969, Ser. No. 821,736
Claims priority, application France, May 8, 1968, 150,908
Int. Cl. B43l *13/10*
U.S. Cl. 33—23 **1 Claim**



A pattern reproducing device which changes only the height of copied matter without distortion of other di-

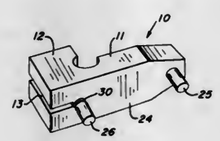
mensions by selection of critical ratios of length of particular pantographic arms actuating a pattern follower and reproducer.

3,555,687
FIREARM MOUNTING FOR SIGHTING DEVICE
Jack Joseph, Valley Brook Road, Long Valley, N.J. 07853
Continuation-in-part of application Ser. No. 803,713, Mar. 3, 1969. This application Feb. 24, 1970, Ser. No. 13,758
Int. Cl. F41g *1/38*
U.S. Cl. 33—50 3 Claims



A substantially C-shaped elongated mounting assembly is disclosed for fastening a telescopic sight to a gun. The assembly has a partially enclosed aperture which serves in sighting along metallic or barrel sights.

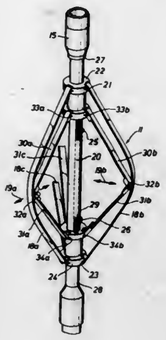
3,555,688
MASON'S GUIDE LINE HOLDER
Thomas C. Smathers, Clarion, Pa., assignor to Summit Products Company, Uniontown, Pa., a partnership
Filed July 2, 1969, Ser. No. 838,616
Int. Cl. B44d *3/00*
U.S. Cl. 33—86 3 Claims



A multiple use mason's guide line holder constructed and arranged to engage both an end corner and a location other than an end corner of a masonry structure which is being built is disclosed.

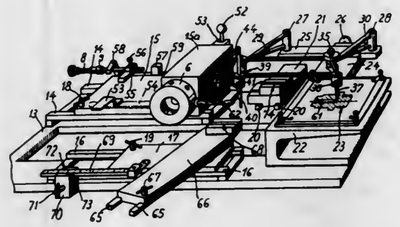
3,555,689
CENTRALIZING AND WELL-CALIPERING APPARATUS FOR WELL TOOLS
Walter E. Cubberly, Jr., Houston, Tex., assignor to Schlumberger Technology Corporation, New York, N.Y., a corporation of Texas
Filed Dec. 19, 1968, Ser. No. 785,154
Int. Cl. E21b *47/08*
U.S. Cl. 33—178 12 Claims

The particular embodiments disclosed herein as representative of the present invention are directed to new and improved apparatus for centralizing well tools and for measuring the diameters of well bores. In particular, the disclosed embodiments each employ a plurality of outwardly-bowed upright springs spaced circumferentially around a body and adapted to contact the wall surfaces of a well bore and correspondingly flex laterally inwardly and outwardly in unison as the apparatus encounters diametrical changes in a well bore for maintaining the tool concentrically positioned therein. Independent inward flexural movements of less than all of the bowed springs are prevented, however, by movement-responsive means uniquely adapted to equilaterally position the wall-engaging portions of the bowed springs for accurately



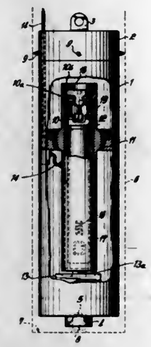
centralizing the tool body in a well bore. In an alternative embodiment of the invention, means are further provided to produce signals representative of the flexural movements of the bowed springs for deriving diametrical measurements of a well bore.

3,555,690
MACHINE-TOOL SIMULATOR
Maurice Matthey, Geneva, Switzerland, assignor to Tarex S.A., Geneva, Switzerland, a firm
Filed May 10, 1968, Ser. No. 728,227
Claims priority, application Switzerland, May 12, 1967, 6,793
Int. Cl. B27g *23/00*
U.S. Cl. 33—185 19 Claims



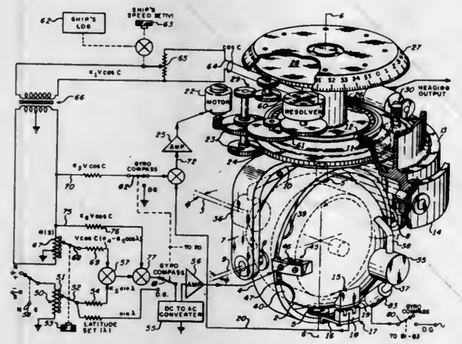
In a machine-tool simulator by means of which a machine tool can be preset, movable elements for representing at least some of the movable parts of the machine and which are designed to carry out movements identical to those of the corresponding machine parts; means for determining the various positions occupied by the said elements and adapted to furnish information for presetting the machine; a table for receiving a drawing of the component for whose machining the machine tool is to be set up; a pantograph device carrying on the one hand a needle designed to be placed at an arbitrary point on the drawing and on the other hand an index indicating the position, on the machine, at which there will be located that point on the workpiece which corresponds to the point on the drawing at which the said needle is located.

3,555,691
CLINOMETRIC PENDULUM APPARATUS
Hans-Dieter Jacoby, Berlin, Germany, assignor to Continental Elektroindustrie Aktiengesellschaft Askania Werke, Berlin, Germany, a corporation of Germany
Filed Jan. 22, 1968, Ser. No. 699,422
Claims priority, application Germany, Jan. 28, 1967, C 15,625
Int. Cl. E21b *47/02*; G01c *9/16*
U.S. Cl. 33—205 4 Claims



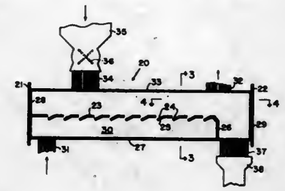
A clinometric pendulum is provided with a pendulum body suspended vertically by two pairs of spaced normally straight flexible wires of round cross section.

3,555,692
SPEED, LATITUDE AND ACCELERATION COMPENSATION OF A BALLISTIC GYROCOMPASS
Albert K. Aberle, Ednam Forest, and Richard J. Arthur, Charlottesville, Va., and Richard G. Brugger, Hempstead, N.Y., assignors to Sperry Rand Corporation, a corporation of Delaware
Filed June 7, 1968, Ser. No. 735,443
Int. Cl. G01c *19/38*
U.S. Cl. 33—226 10 Claims



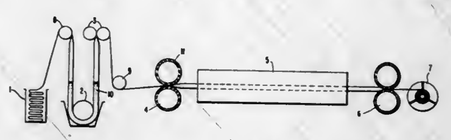
A gyrocompass of the type having mechanical ballistic and damping means of fixed parameters wherein electrical compensating controls are applied in such a manner that the steady-state settled azimuthal speed error is made to be identical with the ballistic deflection error regardless of latitude whereby to eliminate oscillatory resettling after speed and/or course changes, the configuration also providing automatic acceleration compensation by modifying the "fixed" latitude compensation.

3,555,693
METHOD AND APPARATUS FOR TREATING PIECES OF MATERIAL BY MICROWAVES
Rudolph E. Futer, Oakland, Calif., assignor to Bangor Punta Operations, Inc., Hayward, Calif., a corporation of New York
Filed Sept. 27, 1968, Ser. No. 763,130
Int. Cl. B01k *5/00*
U.S. Cl. 34—1 16 Claims



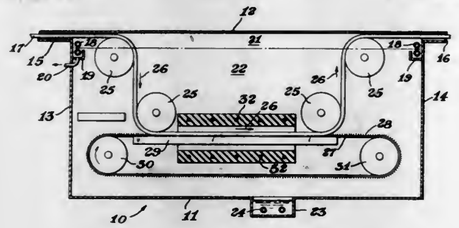
Pieces of material, e.g., from a few microns to several centimeters in diameter, are treated by microwaves, e.g., to dry or heat it or produce some other change therein, by passing microwaves through a microwave-confining chamber, such as a wave guide, having inlet and outlet openings, introducing the pieces from an air jet table on which the pieces are propelled by gas into the inlet opening, conveying the pieces through the chamber on an internal table and out through the outlet opening onto a discharge jet table, and sweeping the pieces after having received at least some microwave energy with gas while maintaining a separation between the pieces of at least one diameter to remove surface phenomena, such as moisture and heat, to disrupt the boundary layer at the surfaces of the pieces. The internal table can be a jet table, whereby the pieces are gas-propelled and swept with gas while within the chamber; or the internal table may be passive and imperforate, whereby the pieces are gas-propelled and swept on the discharge table. In the latter case preferably a series of chambers is provided. The gas current is formed by supplying gas under pressure to the underside of each jet table, which has passages extending therethrough and directed to emit gas jets having major flow components parallel to and along the table.

3,555,694
PROCESS FOR PREPARING REGENERATED CELLULOSE TUBES TO BE USED AS SAUSAGE CASINGS FOR THEIR LENGTHWISE SHIRRING ON A SHIRRING MANDREL
Wolfgang Klendauer, Wiesbaden, Günter Gerigk, Oberursel, Taunus, and Erwin Kindl, Wiesbaden-Biebrich, Germany, assignors to Kalle Aktiengesellschaft Wiesbaden-Biebrich, Germany, a corporation of Germany
Filed Nov. 20, 1968, Ser. No. 777,393
Claims priority, application Germany, Nov. 22, 1967, 1,632,112
Int. Cl. F26b *7/00*
U.S. Cl. 34—7 4 Claims



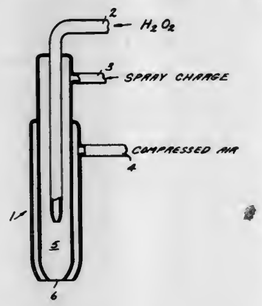
This invention relates to a process for preparing a regenerated cellulose tube, having a water content in excess of 20 percent by weight, for shirring which comprises applying a lubricant to the interior of the tube and drying the tube to a water content of 14 to 20 percent by weight.

3,555,695
METHOD FOR REMOVING VOLATILE SOLVENTS FROM DEEP-NAP FABRICS
James L. Dunn, Jr., Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 21, 1969, Ser. No. 826,521
Int. Cl. B01k 5/00
U.S. Cl. 34—1 3 Claims



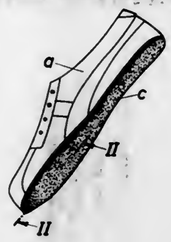
The present invention relates to a novel method for removing volatile solvents and/or carriers from deep-nap or deep-pile fabrics such as rugs, carpets, velours and the like. The method comprises introducing a volatile-solvent-wetted fabric into a zone of vapors of the volatile-solvent, contacting the pile or nap with a plurality of metal pins which are heated, maintaining said pins at a predetermined temperature at or above the boiling point of said solvent, maintaining said fabric pile and said pins in contact for a time sufficient to vaporize the solvent from the interior of said pile, removing said pins from contact with said pile, and withdrawing said fabric from said zone of vapors.

3,555,696
PROCESS FOR THE PRODUCTION OF ALKALI PERBORATES AND PERCARBONATES
Horst Pistor, Rheinfelden, and Hubert Schuster, Karsau-Beuggen, Germany, assignors to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler, Frankfurt am Main, Germany
Filed July 23, 1969, Ser. No. 844,067
Claims priority, application Germany, Aug. 13, 1968, 1,792,273; Dec. 14, 1968, 1,814,744
Int. Cl. F26b 3/00
U.S. Cl. 34—9 8 Claims



Alkali perborates and percarbonates are spray dried by a process wherein the spray charge contains only the stable base components and the active oxygen carrier is directly led into the spray charge before the atomization and the mixture is then sprayed and dried in a spray tower.

3,555,697
SPORT SHOE
Rudolf Dassler, Herzogenaurach, Germany, assignor to Puma-Sportschuhfabriken Rudolf Dassler KG, Herzogenaurach, Germany, a company of Germany
Filed Sept. 9, 1968, Ser. No. 758,226
Claims priority, application Germany, Sept. 20, 1967, 1,685,696
Int. Cl. A43b 23/38; A43c 15/00
U.S. Cl. 36—2.5 4 Claims

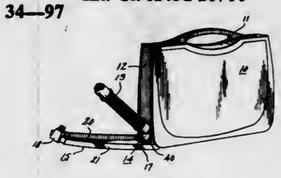


A heelless sport shoe, particularly a track shoe, having a resilient sole covered with a multitude of antiskid elements in the form of spaced apart resilient protrusions.

3,555,698
METHOD AND DEVICE FOR PREPARING A FAST DISSOLVING POWDER
Geert de Boer, Lippenhuizen, Netherlands, assignor to Machinenfabriek Stork-Volma N.V., Gorredijk, Netherlands
Filed Nov. 25, 1968, Ser. No. 778,665
Claims priority, application Netherlands, Dec. 1, 1967, 6716430
Int. Cl. F26b 3/00
U.S. Cl. 34—22 4 Claims

A method and a device for preparing a fast dissolving (milk) powder by feeding a conventional powder into a previously moistened gas stream, flowing through a conduit and by subsequently mixing a warm drying gas into the powder/gas mixture, thereby maintaining a turbulent flow pattern throughout the conduit.

3,555,699
HAIR DRYER WITH COLLAPSIBLE HOSE STORAGE MEANS
Thomas F. Nelson, Stratford, Conn., assignor to General Electric Company, a corporation of New York
Filed Feb. 10, 1969, Ser. No. 797,754
Int. Cl. A45d 20/00
U.S. Cl. 34—97 6 Claims



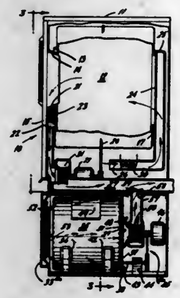
The disclosure herein concerns hair dryers and a means for retaining expandable flexible air hoses used with hair dryers in compressed condition to provide easy efficient storage of such hoses.

3,555,700
ROLL FOR PAPERMAKING MACHINERY
Joseph Robert Wagner, Norristown, Pa., assignor to Huyck Corporation, Stamford, Conn., a corporation of New York
Filed Aug. 15, 1967, Ser. No. 660,623
Int. Cl. F26b 13/00
U.S. Cl. 34—116 3 Claims



This invention is directed toward means for removing the moist air which tends to collect in tent-like pockets in the dryer section of a papermaking machine. Such removal is accomplished by providing guide rolls which have a plurality of grooves therein to supply fresh air into these pockets and force the moist air out. The construction of the grooves is such as to reduce substantially, if not eliminate entirely, the tendency of a dryer fabric to creep or "walk" off the machine rolls.

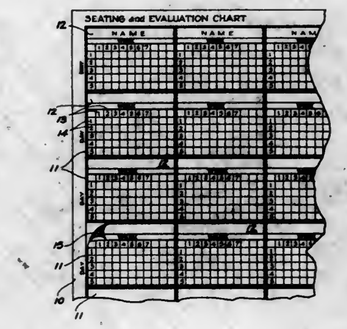
3,555,701
LAUNDRY APPARATUS
James R. Hubbard, Moorestown, N.J., assignor to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed May 15, 1969, Ser. No. 824,820
Int. Cl. F26b 11/04
U.S. Cl. 34—133 13 Claims



A laundry dryer including a pair of compartments for fabrics to be dried, means for moving heated air through the compartments, and air flow control means selectively operable either to effect air flow through one of the compartments, while preventing air flow through the other compartment, or to cause air to flow through both compartments simultaneously. One compartment comprises a first vented rotatable drum of conventional, larger size for tumbling fabrics to be dried, and the other compartment is disposed below the one compartment and includes both a stationary region and a second rotatable drum of lesser size than the first, within either or both of which fabrics and articles may be placed to dry.

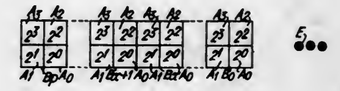
3,555,702
CLASSROOM SEATING CHART WITH MOVABLE ELEMENTS
Sara Louise Van Kirk, Youngstown, Ohio (P.O. Box 15454, Phoenix, Ariz. 85018)
Filed May 13, 1968, Ser. No. 728,693
Int. Cl. G09b 1/00
U.S. Cl. 35—7 7 Claims

A classroom seating chart consisting of a base sheet and a plurality of individual chart like units removably affixed thereto and capable of receiving desirable indicia. Each of the chart like units has a self-adhering material removably affixing it to the base sheet so that each unit



may be removed to an alternate location or removed from the base sheet as the student seating and location varies in the classroom in which the seating chart is used.

3,555,703
EQUIPMENT FOR TEACHING MATHEMATICS
Georges Papy and Frederique Papy, nee Lenger, Brussels, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 26, 1968, Ser. No. 786,949
Claims priority, application Netherlands, Dec. 29, 1967, 6717885
Int. Cl. G09b 19/02
U.S. Cl. 35—30 8 Claims

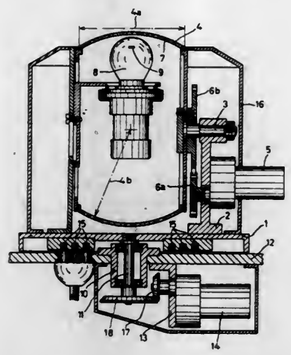


Equipment for teaching mathematics including means with a plurality of areas and a plurality of elements which represent each a magnitude and are each selectively positionable on said areas; said plurality of areas represent powers of a same radix R and said elements each represent one of the values from 1 to R—1.

3,555,704
CLOUD PROJECTOR
Kurt Schrumpf, Oberkochen, and Franz Busch, Heidenheim, Germany, assignors to Carl Zeiss-Stiftung, doing business as Carl Zeiss, Heidenheim (Brenz), Wurttemberg, Germany, a German corporation
Continuation of application Ser. No. 616,232, Feb. 15, 1967. This application Jan. 29, 1970, Ser. No. 7,360
Claims priority, application Germany, Feb. 17, 1966, Z 10,434
Int. Cl. G09b 27/00
U.S. Cl. 35—42.5 3 Claims

A cloud projector is provided with transparent equatorial belt or ring carrying a picture of the clouds to be

projected. This ring which forms a part of a spherical shell is rotatable about its horizontal axis and is supported



by a base structure which is rotatable about a vertical axis passing through the center of said spherical shell.

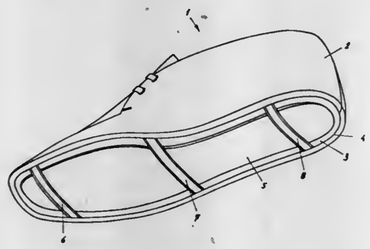
ERRATUM

For Class 36—2.5 see:
Patent No. 3,555,697

3,555,705
FOOTWEAR

Otto Eder, Ternitz, and Oskar Kawan, Wimpassing, Austria, assignors to Semperit Osterreichisch-Amerikanische Gummiwerke Aktiengesellschaft, Vienna, Austria, a corporation of Austria

Filed July 29, 1969, Ser. No. 845,705
Claims priority, application Austria, July 30, 1968, A 7,435/68
Int. Cl. A43b *00/00*; A43d *29/00*
U.S. Cl. 36—2.5 **5 Claims**



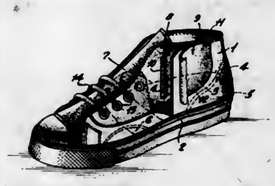
Footwear with an inner sole, an outer sole and an intermediate sole has holding means acting to hold the intermediate sole in predetermined position adjacent the inner sole prior to the mounting of the outer sole.

3,555,706
ATHLETIC FOOTWEAR PARTICULARLY BASKETBALL SHOES

Thomas A. Edmonds, Abingdon, Md., assignor to Bata Shoe Company, Inc., Belcamp, Md.

Filed Dec. 3, 1968, Ser. No. 780,730
Int. Cl. A43b *00/00*; A61f *5/00*
U.S. Cl. 36—2.5 **4 Claims**

Athletic footwear and more particularly basketball shoes in which a rubber or plastic out sole is suitably secured to a canvas upper and the quarters of the upper are provided with cushioned padding for effectively protecting the ankle area of the wearer. A pre-molded footbed in-

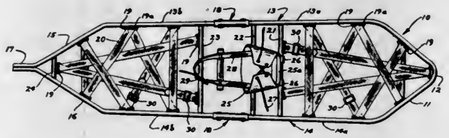


sole having an instep gore is inserted after the assembly of the upper and outsole.

3,555,707
COLLAPSIBLE SNOWSHOE

Walter B. Sharratt, Rte. 1, Box 701M, and John Sayen, Rte. 1, Box 701, both of Mound, Minn. 55364

Filed June 20, 1969, Ser. No. 835,160
Int. Cl. A63c *13/00*
U.S. Cl. 36—4.5 **8 Claims**

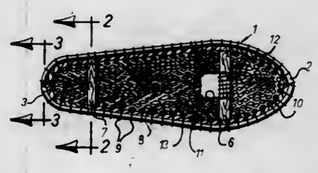


A collapsible snow shoe wherein hinge members are provided along the longitudinally extending framework thereof to permit the same to be folded; the hinge structure permitting folding of the frame into substantially side by side relationship and the hinge being designed to be receivable into the framework with means associated therewith to provide additional strength at the hinge points to prevent collapsing of the shoe when the same is being normally used.

3,555,708
SNOW SHOE

Marcel Goupil, Sherbrooke, Quebec, Canada, assignor to Canadian Lacrosse Mfg. Inc., Sherbrooke, Quebec, Canada

Filed Feb. 20, 1969, Ser. No. 801,122
Int. Cl. A63c *13/00*
U.S. Cl. 36—4.5 **9 Claims**

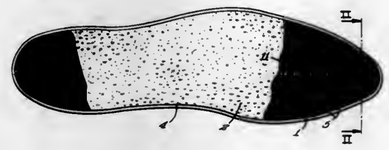


A snow shoe in which the web is made of a slit and expanded raw hide sheet instead of interwoven lacing, thereby considerably diminishing the cost of production and also resulting in a light weight snow shoe.

3,555,709
CUSHION INSOLE

Milo L. Raffaelli, Sr., Chicago, Ill., assignor to The Scholl Mfg. Co. Inc., Chicago, Ill., a corporation of New York

Filed Feb. 25, 1969, Ser. No. 801,969
Int. Cl. A43b *13/40*
U.S. Cl. 36—44 **1 Claim**

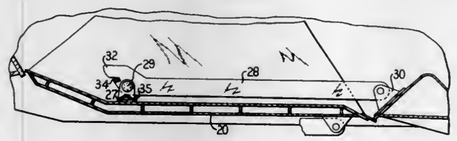


The laminated cushion insoles made either for free disposition in an article of footwear or secured in an article of footwear during manufacture thereof as an inner sole.

3,555,710
CLEANER BLADE FOR SCRAPER BOWL HAVING PIVOTED FLOOR-TYPE EJECTOR

Victor H. Erickson, San Mateo, and Roy J. Barnes, Pleasanton, Calif., and Ernest W. Wagner, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed July 23, 1968, Ser. No. 746,789
Int. Cl. E02p *3/62*
U.S. Cl. 37—129 **5 Claims**

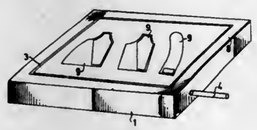


In the bowl of an earthmoving scraper in which the ejection of the bowl contents is accomplished by pivoting the floor of the bowl toward a vertical plane, a cleaner blade supported to rest by gravity on the bowl floor and restrained against movement with the floor so that moving the floor causes the blade to traverse its surface and thus clean therefrom sticky earth which tends to adhere to the floor.

3,555,711
PRESS FOR THE PRESSING OF WEARING APPAREL OR PARTS THEREOF

Vagn Elliot Mikkelsen, Kastrup, Denmark, assignor to A/S Norva Maskinfabrik, Copenhagen, Denmark

Filed Dec. 2, 1968, Ser. No. 780,392
Claims priority, application Denmark, Dec. 6, 1967, 6,107/67
Int. Cl. A43j *51/00*
U.S. Cl. 38—71 **5 Claims**

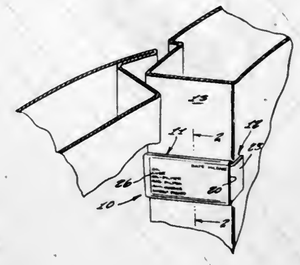


A press for textile goods comprising a pressing table and a frame upon which is mounted a foil e.g. of glass fibre armoured silicone rubber and means for obtaining a vacuum between the table and the foil when the latter is disposed against the table with the textile goods between them.

3,555,712
MOISTURE PROOF OIL AND LUBE PLASTIC TAB HOLDER

Laurencia Yargeau, 4 Pond St., Hyde Park, Mass. 02136

Filed Aug. 21, 1967, Ser. No. 662,162
Int. Cl. G09f *3/18*
U.S. Cl. 40—16 **3 Claims**

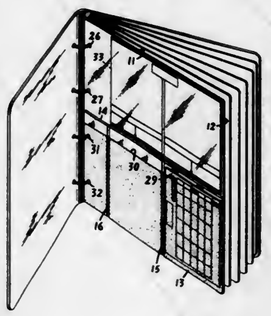


A card and a card holder securable on the door jamb of an automotive vehicle for purpose of recording thereupon the maintenance service periodically made upon the vehicle.

3,555,713
MICROFICHE HOLDER

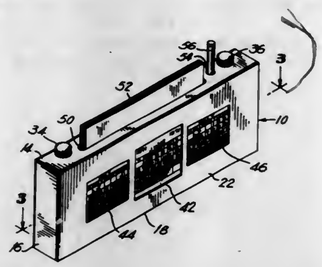
Donald K. Leinbach, New York, N.Y., assignor to University Music Editions, Inc., New York, N.Y., a corporation of New York

Filed Apr. 28, 1969, Ser. No. 819,852
Int. Cl. G09f *1/10*
U.S. Cl. 40—104.19 **11 Claims**



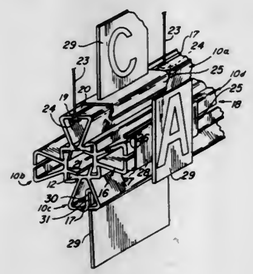
A microfiche folder for use in a loose-leaf ring binder comprising sheets of flexible, transparent material joined together to form a page-like structure having a plurality of pockets; at least one of the said pockets having an opening at the top edge for the easy removal therefrom of the microfiche. Another pocket, containing a card with a written description of the contents of the microfiche pocket and readily visible through the transparent pocket cover, has an opening directed toward the ring holes such that when the holder is engaged in the binder the rings will form a barrier for retaining the card therein.

3,555,714
DESK CALENDAR
Irving Smith, Flushing, N.Y. (% Arrow Art Finishers, 1201 Evergreen Ave., Bronx, N.Y. 10472)
Filed June 2, 1969, Ser. No. 829,555
Int. Cl. G09d *3/06*
U.S. Cl. 40—117 **8 Claims**



A desk calendar is provided in which a calendar strip positioned within a casing has imprinted thereon a series of monthly calendar blocks. The calendar blocks are selectively viewable in groups of three successive months (present, past and future) through windows positioned in the outer surface of the casing. Each calendar block has an associated yearly indicium which is blocked from view by the "past" and "future" windows but is exposed through the "present" window.

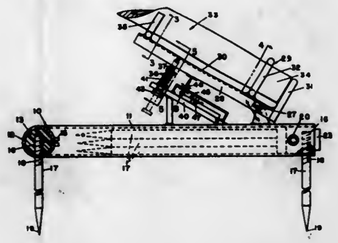
3,555,715
MODULAR DISPLAY DEVICE
Irving Wardell Shell, 442 Wellington Ave., Chicago, Ill. 60657
Filed Mar. 20, 1969, Ser. No. 808,753
Int. Cl. G09f *7/02*
U.S. Cl. 40—140 **10 Claims**



A modular display device capable of extrusion and adapted for use alone or in interlocking arrangement with like devices to create a base assembly for supporting display advertising materials in vertical and horizontal dispositions.

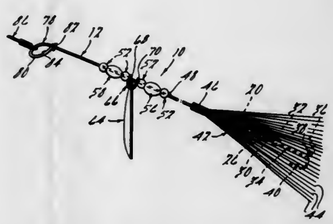
3,555,716
FISHING POLE HOLDER
Josiah H. Long, Wilbert W. Long, and Henry H. Long, Spokane, Wash. (all of 5019 Harvard Road, Otis Orchards, Wash. 99027)
Filed Sept. 26, 1968, Ser. No. 762,710
Int. Cl. A01k *97/10, 97/12*
U.S. Cl. 43—17 **9 Claims**

A fishing pole holder having a frame adapted to be fixed in a level position and having a pole holder hinged thereon for relative movement and held in equilibrium between its movement limits by an adjustable tensioning means, there being a movement sensing indicator adapted



to be actuated when the pole holder moves from its position of equilibrium.

3,555,717
ARTIFICIAL FISHING LURE
William E. Gautsche, Jr., Dowagiac, Mich., assignor to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 24, 1968, Ser. No. 770,269
Int. Cl. A01k *85/00*
U.S. Cl. 43—42.17 **2 Claims**



An artificial fishing lure comprising an elongated, substantially rigid body member having eyelet means at both ends thereof with a fishhook secured to one eyelet and a line secured to the other eyelet. A first weight means is secured to the body means adjacent to the fishhook eyelet and a bucktail extends rearwardly to substantially surround the fishhook and first weight means. A spinner is mounted on the body member intermediate the length thereof for longitudinal sliding movement against a stop means on the body member. A second weight means comprising spaced portions is disposed on opposite sides of the spinner with beads located on opposite sides of the second weight portions. The first and second weight means are about equal in weight to longitudinally balance the body member. The line eyelet is offset from the axis of the body member to prevent torque produced upon rotation of the spinner from twisting the line.

3,555,718
FISHHOOK EXTRACTOR
George R. Montgomery, 1152 Okeechobee Road, West Palm Beach, Fla. 33401
Filed May 9, 1969, Ser. No. 823,391
Int. Cl. A01k *97/00*
U.S. Cl. 43—53.5 **9 Claims**

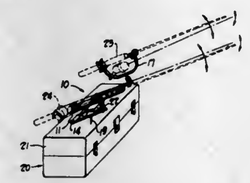
Handle means terminating in bifurcated semi-circular arms, having coplanar longitudinal axes, the arms being adapted to track a fish line and its connected fishhook

shank therebetween and to abut against the fishhook bight, whereby a turning movement of the handle means about its longitudinal axis twists and disengages the fishhooks from the mouth of a fish; and means projecting laterally



from the distal end of each arm and from sides thereof substantially perpendicular to said plane, and engageable with the fishhook to effect the withdrawal thereof from the mouth of a fish.

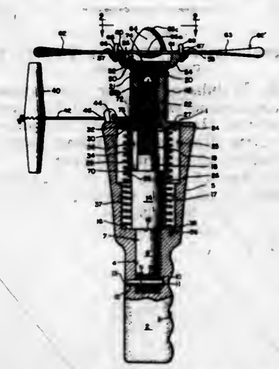
3,555,719
FISHING ROD HOLDING ATTACHMENT FOR A TACKLE BOX
Newton R. Butler, 3532 E. 154th St., Cleveland, Ohio 44120
Filed Apr. 21, 1969, Ser. No. 817,743
Int. Cl. A01k *97/10*
U.S. Cl. 43—54.5 **2 Claims**



A bracket arm is hingedly mounted on the lid of a tackle box for vertical movement relative to the lid, and a platform, having spaced clips for releasably anchoring a fishing rod thereto, is tiltably mounted on the bracket for both vertical and horizontal movement relative to the bracket.

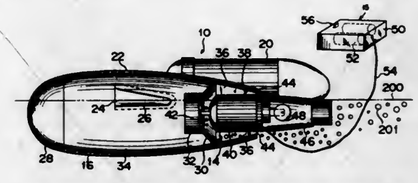
3,555,720
FLYING PROPELLER TOY
Frank Dattilo, 847 S. Hannah Ave., Forrest Park, Ill. 60130
Filed Mar. 24, 1969, Ser. No. 809,503
Int. Cl. A63h *27/00*
U.S. Cl. 46—83 **10 Claims**

A toy comprising a handle, a threaded post on the upper end of the handle, a spool threaded upon the post and carrying a propeller releasably locked thereon for rotation therewith attendant to an operator pulling a string wound about the spool. Rotation of the spool winds up a return spring connected between the handle and spool and threads the spool down onto the post which causes the post to project through the top of the spool to release and eject the propeller from the spool. The handle has a guide for the string which cooperates with the rotation of the spool and its ascent along the post as effected by unwinding of the spring to evenly wind the string in a helical pattern onto the spool. The string is anchored to the upper end of the spool and the guide is adjacent to the lower end of the spool. An air chamber formed between the post and spool forming a dash-pot to reduce end shock loading on the toy and string and to



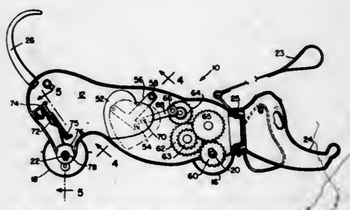
force cooling air through the threads of the plastic toy to increase its longevity.

3,555,721
TOY WATER JET PLANE
Hideto Furuoka, Tokyo, Japan, assignor to Gakken Company Limited, Tokyo, Japan, a corporation of Japan
Filed July 11, 1968, Ser. No. 744,168
Claims priority, application Japan, Oct. 9, 1967, 42/85,786
Int. Cl. A63h *23/06*
U.S. Cl. 46—95 **3 Claims**



The present invention relates to a toy water jet plane comprising a toy body floating on the water into which air and water are concurrently introduced through a fluid passageway penetrating therethrough, and a jetting means consisting of a motor and screw for stirring air and water to form air bubbles and ejecting bubble-carrying water streams rearward of the fluid passageway thereby to cause the entire toy to travel over the water surface.

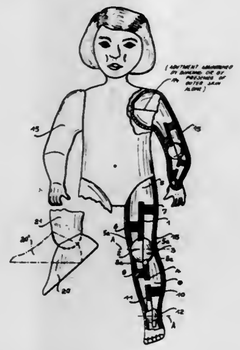
3,555,722
TRANSPARENT DOG HEART PULL TOY
William R. McLain and George W. Dunbar, Nashville, Tenn., assignors to Kusan, Inc., Nashville, Tenn., a corporation of Kentucky
Filed Mar. 18, 1969, Ser. No. 806,854
Int. Cl. A63h *11/10*
U.S. Cl. 46—103 **7 Claims**



A pull or push toy simulating a living creature or character having mechanism to impart to the toy the lifelike

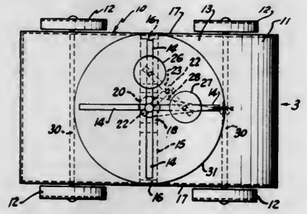
movements of the simulated creature or character and being constructed to expose moving interior parts of the creature.

3,555,723
DOLL WITH SKIN-COVERED ARTICULATED SKELETON
Heinz Kopsch, Weinheim an der Bergstrasse, Günther Wilbring, Leutershausen, and Paul Fay and Wilhelm Hanf, Viernheim, Hesse, Germany, assignors to Schildkrot AG vorm. Rheinische Gummi- und Celluloid-Fabrik, Mannheim-Neckarau, Germany
Filed Apr. 15, 1968, Ser. No. 721,524
Claims priority, application Germany, Apr. 14, 1967, Sch 40,544
Int. Cl. A63h *3/20*
U.S. Cl. 46—161 **14 Claims**



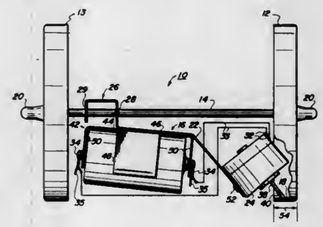
A jointed doll includes a plurality of articulated skeleton portions including frame and shell sections which together define the outline of a body. The frame sections may include hinged joints and are surrounded by associated shell sections, the latter being formed of half sections. A discrete skin of resilient material tightly surrounds the skeleton portions to conceal the same and protect the same against the intrusion of contaminants while permitting full freedom of relative movement for the articulated skeleton portions. The skin may be relied upon to keep the shell section half sections assembled, or they may be bonded.

3,555,724
WHEELED TOY
Bruce M. Wallace, Largo, Fla.
(12709 Sebring Blvd., Tampa, Fla. 33618)
Filed Aug. 23, 1968, Ser. No. 754,837
Int. Cl. A63h *11/10*
U.S. Cl. 46—205 **6 Claims**



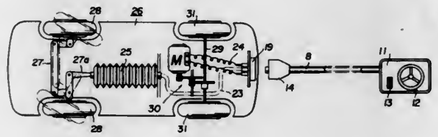
This invention consists of a hollow horizontally disposed body supported by a plurality of wheels. The aforesaid body has a flat deck in the center of which is located four elongated openings at right angles to one another. The openings, all of which are of the same length, form a cross when viewed from the top. The aforesaid hollow body is provided with rotatable mechanism that projects in part up through the elongated openings. The upwardly projecting parts terminate in two horizontally disposed and spaced platforms. The projecting parts move through the elongated openings in a cruciform motion when the aforesaid mechanism is rotated by pulleys and a belt is adapted to be rotated by some of the wheels as the invention is horizontally moved on a flat surface. The mechanism can also be rotated by any other desired means. A clear plastic cover is placed on the top of the aforesaid flat deck over the elongated openings and over the aforesaid platforms which may or may not contain vertically disposed figurines.

3,555,725
SELF-TRAVELING WHEEL
John B. Orfei, Revere, and John H. Walters, Lexington, Mass., assignors, by mesne assignments, to Xerox Corporation, Rochester, N.Y.
Filed Oct. 2, 1968, Ser. No. 764,480
Int. Cl. A63h *17/00*
U.S. Cl. 46—206 **4 Claims**



A self-traveling wheel comprising at least two opposed wheels, each wheel having an internal flange, with a connecting axle pinchedly received at the center of each wheel and drive means, for example a battery and an electric motor, said drive means freely suspended pivotally from said axle with the drive shaft of said drive means resting by at least part of the weight of the drive means on the internal flange of one of the wheels, to advance the device.

3,555,726
HOLLOW CORD FOR EFFECTING REMOTE CONTROL OF TOYS
Kisaburo Okuma, Saitama-ken, Japan, assignor to Okumasiesakujo Co., Ltd.
Filed Apr. 16, 1968, Ser. No. 721,711
Claims priority, application Japan, Feb. 15, 1968, 43/9,662
Int. Cl. A63h *33/26*
U.S. Cl. 46—243 **6 Claims**



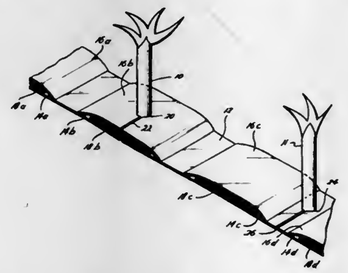
A hollow cord for pneumatically and electrically effecting remote control of movable toys comprising a narrow tubular member formed of polyvinyl chloride or other soft synthetic resin material, and at least one circuit of conductor members formed integrally with and embedded in said narrow tubular member. The tubular member and the conductor members can be plugged in a

socket mounted on an object to be controlled, such as a movable toy or the like, so that a driving mechanism on said object can be controlled both electrically and pneumatically.

3,555,727
FROST PREVENTATIVE FOR CROPS
Fred M. Jaquith, Caldwell, Idaho, assignor of twenty-five percent to Clarence Virgill West, Boise, Idaho
No Drawing. Filed Jan. 30, 1970, Ser. No. 7,238
Int. Cl. A01g *13/00*
U.S. Cl. 47—2 **15 Claims**

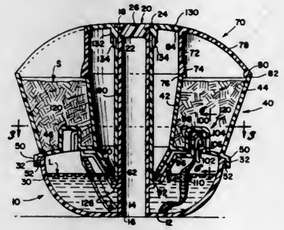
Molasses, preferably beet sugar molasses, is employed as a frost protectant for plants, preferably fruit trees. The sugar beet molasses application also provides food for foliage growth. Preferably there is included a formulation for increasing the pollination of fruit.

3,555,728
MULCH
Ralph Tobias Herns, 309 Angleton Road, Lake Jackson, Tex. 77566
Continuation of application Ser. No. 651,238, July 5, 1967. This application Nov. 26, 1969, Ser. No. 880,351
Int. Cl. A01g *7/00*
U.S. Cl. 47—9 **3 Claims**



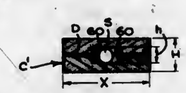
A mulch is described comprising an elongated sheet of flexible, waterproof material having pockets spaced apart along the sheet. The sheet is placed on the ground adjacent or around the plants to be protected by the mulch and weights, such as old newspapers, are inserted into the pockets to hold the mulch in place.

3,555,729
PLANT RECEPTACLE
Challoner R. Chute, 918 Rugby Road, Charlottesville, Va. 22903
Filed Jan. 17, 1969, Ser. No. 791,911
Int. Cl. A01g *27/00*
U.S. Cl. 47—38.1 **10 Claims**



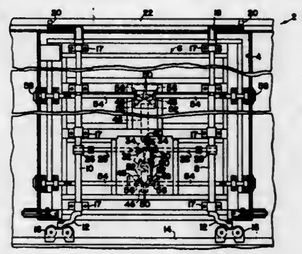
A base portion is adapted to receive liquid and includes an integral upwardly extending tubular portion. An intermediate portion is locked onto the base portion and defines a space for receiving soil. An upper portion is supported on said intermediate portion. A wetting support means includes a tubular portion surrounding said first tubular portion and carries a plurality of wicks which are disposed within a downwardly facing channel means defined by said intermediate portion. This channel means has spaced holes formed therein which are adapted to be selectively aligned or misaligned with the wicks for controlling the amount of wetting of the soil.

3,555,730
SEED CAPSULE AND METHOD OF MAKING SAME
Edwin H. Brink, San Jose, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Feb. 6, 1969, Ser. No. 799,149
Int. Cl. A01c *1/06*
U.S. Cl. 47—57.6 **3 Claims**



One embodiment of seed capsule is formed by preparing a charge of seed bed material, such as vermiculite and a binder, compressing the charge to a predetermined compression value to form a lower capsule segment in the form of a relatively thin cylindrical member, forming an indent or pocket in the upper surface of the segment, placing a seed in the indent, depositing a second charge of material over the lower segment to cover the seed, compressing the second charge substantially to said predetermined compression value to form an upper capsule segment, and finally exerting pressure on both said upper and said lower segments to intimately join said segments into a single capsule form. In another embodiment, a seed capsule is formed by separately forming two capsule segments, placing a seed in indentations formed between the segments, and securing the segments together in spaced relation over most of their confronting area to provide vent passages to the seed chamber.

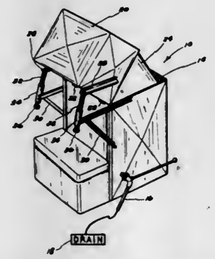
3,555,731
RATCHET LOCK
Irving D. Ross, Jr., Barrington, Ill., assignor to The Youngstown Steel Door Company, Cleveland, Ohio, a corporation of Ohio
Continuation-in-part of application Ser. No. 744,960, July 16, 1968. This application Aug. 30, 1968, Ser. No. 756,467
Int. Cl. E05f *11/54*; **E05b** *65/06*
U.S. Cl. 49—210 **11 Claims**



This invention relates to plug doors for railroad cars of the type adapted to move laterally in and out of the door frame and to roll sideways along the car on appropriate rails parallel with the wall of the car. The door has two vertical pipes having cranks on either end. The cranks on the lower ends of the pipes are mounted on elements which bear on the rails. Attached to each pipe is a clevis and each clevis is actuated by a rod which extends perpendicular to both the juxtaposed pipe and clevis. The

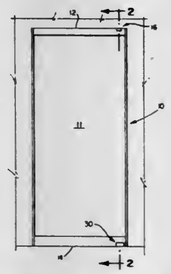
rods are attached to a gear segment disposed near the center of the door. A pinion threadedly engaged around a manually operated shaft moves forward or back on the threads of the shaft to drive the segment. During rotation of the shaft to withdraw the door from the door opening, the pinion will move in a direction to clamp a toothed wheel between it and a flange fixed to the shaft. The toothed wheel is disposed in engagement with a pawl and the pawl is so disposed as (1) to allow the clamped toothed wheel to rotate in a direction with the pinion to open the door and (2) to prevent rotation of the wheel in a direction to close the door. When the flange, wheel and pinion are frictionally engaged, the pawl prevents rotation of the wheel toward closed position and the door is prevented by this ratchet lock from moving toward the railroad car side due to any extraneous forces. Upon initial rotation in the opposite direction to close the door, the three clamped elements separate to break the clamp.

3,555,732
COUNTERBALANCED COVER ARRANGEMENT
Thomas B. Ballard, 2550 Mulberry Drive, Southfield, Mich. 48075
Original application Sept. 22, 1967, Ser. No. 669,786, now Patent No. 3,452,763. Divided and this application May 8, 1969, Ser. No. 822,989
Int. Cl. E05f 1/10
U.S. Cl. 49—386 **5 Claims**



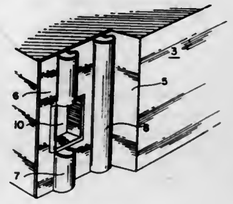
A housing having a cover that must be lifted in order to open the housing, and a spring for counterbalancing a portion of the cover's weight.

3,555,733
COMBINED HINGE AND GLASS DOOR UNIT
William J. Horgan, Jr., Pittsburgh, Pa., assignor to Blumcraft of Pittsburgh, Pittsburgh, Pa., a firm of Pennsylvania
Filed Apr. 30, 1969, Ser. No. 820,541
Int. Cl. E05d 7/08
U.S. Cl. 49—388 **14 Claims**



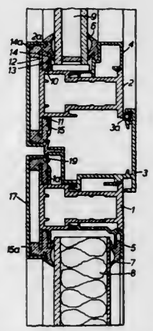
A hinge for use with glass doors having solid frames includes a hinge element for a pivotal hinge of the type used where the door is pivoted at top and bottom, which element is adjustable in two directions to provide means for correcting misalignment in hanging the door.

3,555,734
CLOSURE SEALING APPARATUS
Parker W. Hirtle, Lexington, Mass., and Frederick Richard Ashby, Carmel, N.Y., assignors to Bolt Beranek and Newman Inc., Cambridge, Mass., a corporation of Massachusetts, and U.S. Plywood-Champion Papers, Inc., New York, N.Y., a corporation of New York
Filed Apr. 7, 1969, Ser. No. 813,850
Int. Cl. E06b 7/23
U.S. Cl. 49—484 **7 Claims**



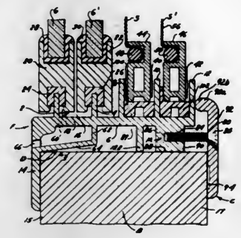
Closure sealing apparatus employing a gasket having a stiff backing strip and parallel resilient bubbles or loops integral therewith. The gasket may be mounted upon the frame surrounding the periphery of the closure with the bubbles projecting from the backing strip in the direction of closing of the closure, and mounted upon the bottom of the closure with the bubbles projecting in the direction of opening of the closure. Contact of the frame-mounted bubbles and the closure is restricted to the periphery of the closure. When the frame is provided with a latch cutout, one of the bubbles may be interrupted but not the other. Bevelling of the closure edges facilitates closing and opening of the closure while retaining a good seal.

3,555,735
WINDOW AND DOOR FRAMEWORKS
Rudolf Welkert, 17 Gerberstrasse, 321 Elze, Germany
Filed Feb. 11, 1969, Ser. No. 798,425
Claims priority, application Germany, Feb. 13, 1968, 1,684,112
Int. Cl. E06b 3/00
U.S. Cl. 49—501 **1 Claim**



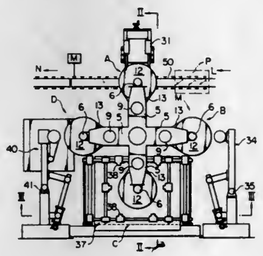
A window frame is made up of integral profiled bar members and the outer face of each bar is covered with a shield having a trapped air space, which prevents heat transfer through the frame.

3,555,736
FRAME ASSEMBLY
Charles H. Koch, Jr., Glenside, and Norman M. McGinnis, Philadelphia, Pa., assignors to Young Windows, Inc., Conshohocken, Pa., a corporation of Pennsylvania
Continuation of application Ser. No. 700,266, Jan. 24, 1968. This application June 23, 1969, Ser. No. 835,596
Int. Cl. E06b 1/14, 1/68, 7/12
U.S. Cl. 49—504 **2 Claims**



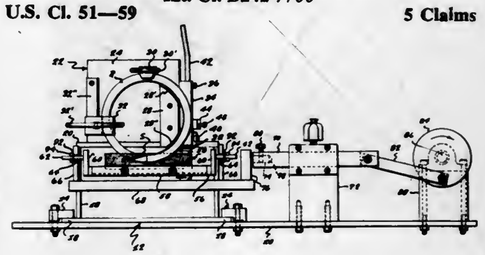
A vehicle frame assembly for holding slidable glass and screen housing members is provided with improved means for disposing of water which accumulates in the frame channel that is exposed to the atmosphere. The floor of the channel is provided with a water runoff slot beneath which there is positioned a duct for receiving water flowing through the slot. The duct has a bottom wall which is inclined downwardly toward the exterior side of the frame so that water will drain from the duct through an opening provided in said exterior side. There is also described a clamp or trim which is L-shaped in crosssection and which is attached directly to the frame. The clamp functions to hold the frame in the body of the vehicle in a manner such that it is unnecessary to insert fastening elements in the body itself.

3,555,737
APPARATUS FOR TREATING GLASS SHEETS
Osamu Terakado, Kawasaki, and Kiyoshi Imamura, Mukomachi, Japan, assignors to Nippon Safety Glass Co. Ltd., Kawasaki, Japan
Filed June 3, 1969, Ser. No. 829,852
Claims priority, application Japan, June 10, 1968, 43/39,382
Int. Cl. B24b 7/00
U.S. Cl. 51—5 **5 Claims**



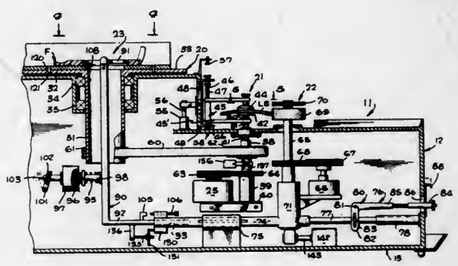
An apparatus for treating glass sheets, which comprises in combination rotary carrier means, and a loading and unloading station, a scoring station, a breaking-off station and an edge-working station arranged circumferentially of said rotary carrier means, and which is operative in such a manner that a parent glass sheet picked up by said carrier means at the loading and unloading station is intermittently shifted to the scoring station, the breaking-off station, the edge-working station and back to the loading and unloading station in sequence incident to the intermittent rotation of said rotary carrier means, while being carried by said carrier means, whereby the glass sheet is successively worked at said respective working stations according to the profile of a template provided at each station and delivered from the apparatus as a finished glass sheet.

3,555,738
MEANS FOR LAPPING SPLIT WORKPIECES
Frank W. Neal and Robert L. Snyder, Charlotte, N.C., assignors to R. H. Bouligny, Inc., Charlotte, N.C., a corporation of North Carolina
Filed Mar. 28, 1969, Ser. No. 812,579
Int. Cl. B24b 7/00
U.S. Cl. 51—59 **5 Claims**



Apparatus is provided by which opposing faces of a split workpiece may be lapped readily to a face-to-face fit. The workpiece is held by the apparatus in a fixed position with a lapping blade inserted between the opposing faces of the split and reciprocated. The lapping blade is shaped so that upon insertion it contacts the respective faces of the split in a relation that corresponds to the face-to-face fit desired; and the blade is arranged for reciprocation so that it is always free to find an aligned position between the opposing faces being lapped, and so that it is always pulled during the reciprocation.

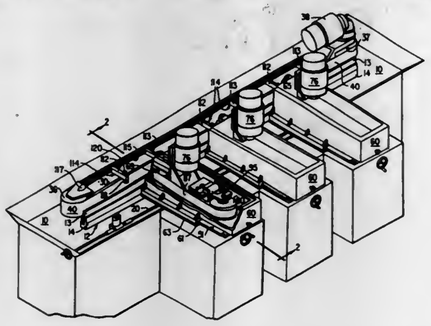
3,555,739
MACHINE FOR SHAPING, SIZING AND FINISHING THE EDGE OF A LENS BLANK
Ezra H. Novak, 2685 La Cienega Blvd., Los Angeles, Calif. 90034
Filed Sept. 16, 1968, Ser. No. 762,168
Int. Cl. B24b 9/14
U.S. Cl. 51—101 **11 Claims**



A machine having a rotatable lens blank holder and a rotatable table to accommodate a spectacle frame with motor-driven mechanism for rotating these in synchronism and a motor-driven grinding wheel movable toward and away from the axis of rotation of the holder, a tracing assembly adapted to follow the spectacle frame lens

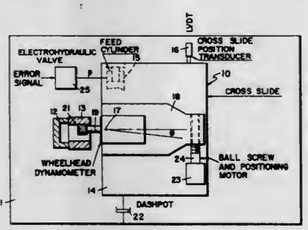
opening and operatively connected to the grinding wheel to limit movement of the latter toward the holder, and means for momentarily operating the motor-driven mechanism for the rotary table and holder upon movement of the grinding wheel toward the holder to a predetermined spacing therefrom.

3,555,740
BAR GRINDER
Brian M. Schaller and Robert L. Schaller, Camillus, N.Y., assignors to Sundstrand-Engelberg Inc., a corporation of Delaware
Filed Mar. 17, 1969, Ser. No. 807,525
Int. Cl. B24b *21/04, 7/12*
U.S. Cl. 51—138 **7 Claims**



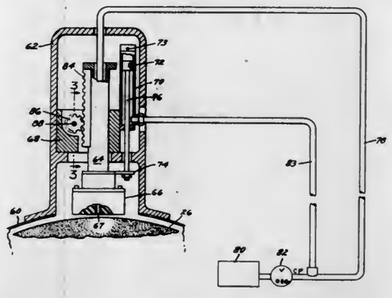
Bars are ground in the machine by being advanced along a horizontally disposed work rest past a grinding head. The bars are advanced by a conveyor having a platen extending along one side of the work rest. Power means is provided for moving the grinding head toward and from the conveyor to move the grinding head element into and out of grinding engagement with the advancing bars. Sensors are provided for effecting movement of the head, whereby an area of predetermined length is ground on each bar in a preselected area. The conveyor platen may be tiled to grind the bars on a bevel, and the grinding head is tiltable for grinding relatively narrow bevels along the top and bottom edges of the bars.

3,555,741
GRINDING MACHINE
Robert S. Hahn, Northboro, Mass., assignor to The Heald Machine Company, Worcester, Mass., a corporation of Delaware
Filed Mar. 4, 1968, Ser. No. 710,363
Int. Cl. B24b *49/00*
U.S. Cl. 51—165 **4 Claims**



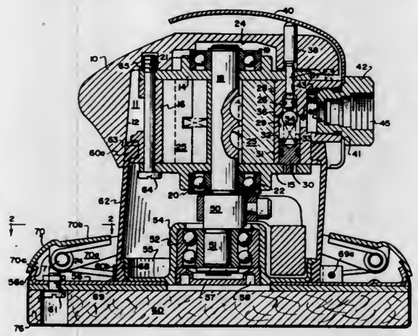
This invention relates to a grinding machine and, more particularly, to apparatus for generating a surface of revolution by the abrasive method including a proximity gage mounted in the wheelhead of the machine and generating a signal indicative of grinding force.

3,555,742
PART SIZING GRINDING MACHINE CONTROL SYSTEM
Donald R. Stewart and Ellis D. Kane, Detroit, Mich.; said Kane assignor to said Stewart, Detroit, Mich., doing business as Stewart Instrument Company, Detroit, Mich.
Original application Apr. 26, 1966, Ser. No. 545,363, now Patent No. 3,517,460, dated June 30, 1970. Divided and this application Jan. 31, 1969, Ser. No. 795,522
Int. Cl. B24b *49/00*
U.S. Cl. 51—165 **6 Claims**



The disclosure is a grinding machine control system including a grinding wheel which is movably advanced toward a workpiece during a grinding operation by operation of an electric motor. The object is to automatically stop the advance of the grinding wheel so as to grind a workpiece to a predetermined desired size. To this end a settable stop member is provided and is movable by the motor which is in turn controlled by a control system which responds to wear of both the wheel and the workpiece.

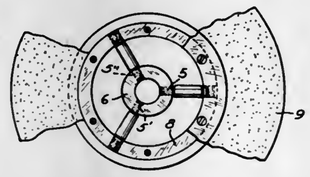
3,555,743
POWER SANDER
William L. Geiger, Chicago, Ill., assignor to Skil Corporation, Chicago, Ill., a corporation of Delaware
Filed Apr. 15, 1968, Ser. No. 721,406
Int. Cl. B24b *23/00*
U.S. Cl. 51—170 **3 Claims**



A housing member, which serves as a handle for the power sander, includes a downwardly opening cavity having a substantially continuous tapered wall surface. A pneumatic motor is received within this cavity, the motor housing or frame defining a substantially continuous surface in spaced, confronting and coextensive relation with the tapered surface. A resilient sleeve or boot

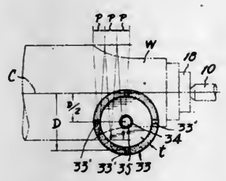
has a flange at the upper end thereof received between these surfaces and securely wedged therebetween by fastening means which engage the housing member and the motor housing for drawing the latter up into the cavity. The lower end of this resilient sleeve is clamped to the rigid backing plate of the sanding pad assembly by a pair of ring members, one of these ring members being secured to the rigid backing plate. The drive shaft of the motor mounts eccentric means which are connected to the backing plate for imparting orbital vibratory motion to the sanding pad assembly upon operation of the motor. Opposite ends of a sheet of sandpaper are secured to the sanding pad assembly by spring-biased clamps, these clamps being configured and arranged such that a pulling force on the sandpaper tends to increase the clamping forces.

3,555,744
METHOD OF GRINDING
Loring Coes, Jr., Princeton, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
Original application Nov. 29, 1966, Ser. No. 597,637, now Patent No. 3,427,754, dated Feb. 18, 1969. Divided and this application July 2, 1968, Ser. No. 766,344
Int. Cl. B24b *1/00*
U.S. Cl. 51—281 **5 Claims**



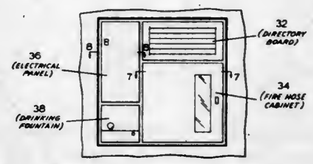
This invention relates generally to an improved grinding method and particularly to a method for intermittently changing the eccentricity of grinding wheels during the grinding process.

3,555,745
PROCESS FOR GRINDING A CYLINDRICAL ARTICLE
Minoi Ueda, Yamato, Japan, assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York
Filed Oct. 31, 1967, Ser. No. 679,422
Claims priority, application Japan, Nov. 2, 1966, 41/71,941
Int. Cl. B24b *1/00*
U.S. Cl. 51—289 **1 Claim**



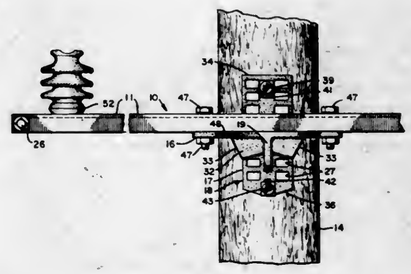
A process for grinding or cutting a workpiece into a cylindrical article comprising the steps of rotatably supporting said workpiece at the opposite ends of its axis by spaced, opposed, aligned support means mounted on a machine table that is movably supported on a stationary base support; moving a cup-shaped, wheel-type grinder or cutter attached to a carriage-supported rotational spindle toward a grinding position in which the axis of the cutter is disposed at right angles to and above or below the line connecting the axes of the opposed, aligned support means; and advancing said table in the longitudinal direction of the machine so as to feed the workpiece with a predetermined pitch and a grinding or cutting machine for carrying out said grinding process.

3,555,746
WALL MOUNTABLE EQUIPMENT SYSTEM
Rimas Jonas Geleziunas, Toronto, Ontario, Canada (43 Saintfield Ave., Don Mills, Ontario, Canada)
Filed Dec. 23, 1968, Ser. No. 786,128
Int. Cl. A47b *47/02;* **G12b** *9/10*
U.S. Cl. 52—27 **7 Claims**



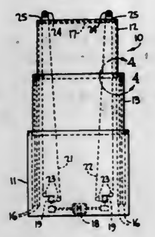
Apparatus for wall mounting electrical, architectural and mechanical equipment units in a coordinated manner, comprising a frame having a border member, and a plurality of cross members dividing the frame into a number of square or rectangular equipment openings, one for each equipment unit. Each cross member has a front face of predetermined width, and the equipment openings all have sides selected from the lengths consisting of 8, 16, 32 and 80 inches, less in each case said predetermined width. This enables location of units such as drinking fountains at the correct height for use, facilitates interchangeability of units, coordinates the units with the height of a standard 7-foot door, and enables rapid frame construction for various unit selections using one simple jig.

3,555,747
LIGHTWEIGHT CROSSARM ASSEMBLIES
Edwin C. S. Taylor, New Haven, Conn., assignor to MIF Industries, Inc., Branford, Conn.
Filed June 12, 1969, Ser. No. 832,725
Int. Cl. E04h *12/24*
U.S. Cl. 52—40 **9 Claims**



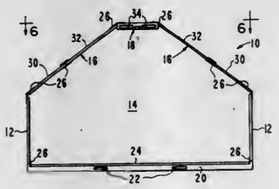
Lightweight prefabricated modular utility pole crossarms, constructed from transversely-extending structural shapes combined with shelf-type pole gains, assembled at the factory or at the site to form sturdy, rigid, unitary and esthetically pleasing crossarms for utility pole line construction.

3,555,748
INTERLOCK SYSTEM FOR SLIDING SECTIONS
Gangolf Ernest Herman, Downsview, Ontario, Canada, assignor to Dominion Aluminum Fabricating Limited, Toronto, Ontario, Canada, a corporation of Canada
Filed May 26, 1969, Ser. No. 827,807
Int. Cl. E04b *1/38, 1/343*
U.S. Cl. 52—67 **11 Claims**



An extensible and retractable building structure comprising a number of units each in relative telescoping, interlocking relationship during full extension and full retraction, each unit being capable of interlocking successively with its adjacent unit during movement both toward full extension and full retraction, and each unit being capable of releasing successively during movement within its adjacent unit toward full retraction.

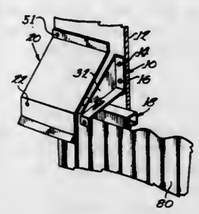
3,555,749
COLLAPSIBLE HOUSING
James B. Aitken, Walnut Creek, Calif., assignor to Instant Structures, Inc., Albany, Calif.
Filed Nov. 14, 1968, Ser. No. 775,669
Int. Cl. B65d *9/12;* **E04b** *1/343*
U.S. Cl. 52—70 **6 Claims**



A collapsible housing formed from a number of hingedly interconnected, generally rigid walls wherein the walls are arranged for movement relative to each other from respective collapsed positions with the walls in a stack to expanded positions with the walls arranged to form the housing. The housing has an end wall which moves into an operative position closing one end of the housing when the latter is expanded. Another end wall can be used to close the opposite end of the housing. The invention is suitable for use as a cargo container for airplanes.

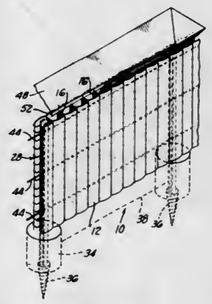
3,555,750
TROLLEY RAIL BRACKET
George Banse, Sterling, Ill., assignor to National Manufacturing Co., Sterling, Ill., a corporation of Illinois
Filed June 19, 1968, Ser. No. 738,210
Int. Cl. E04d *13/00*
U.S. Cl. 52—97 **8 Claims**

The brackets that support the trolley rails for a sliding door each include a narrow vertical plate to be bolted to a wall. The vertical plate has a ledge integrally formed with its bottom edge and bent orthogonally therefrom and has a cross brace integrally formed with a side edge and bent outwardly and orthogonally therefrom. A horizontal plate is formed integrally with the bottom side of the cross brace and is bent upward and orthogonal thereto



to rest upon the ledge of the vertical plate. The horizontal plate has a slot for the mounting of a track member by bolts and a downwardly turned tab at its end, which tab includes an aperture for fastening a flashing to the tab.

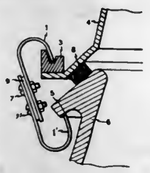
3,555,751
EXPANSIBLE CONSTRUCTION FORM AND METHOD OF FORMING STRUCTURES
Robert M. Thorgusen, 9029 Hollywood Hills Road, Hollywood, Calif. 90046
Continuation-in-part of application Ser. No. 476,446, Aug. 2, 1965. This application Aug. 16, 1968, Ser. No. 756,728
Int. Cl. E04b *2/40, 2/86;* **E02d** *17/06*
U.S. Cl. 52—127 **35 Claims**



A form is disclosed including collapsible-extensible side members with rigid, transverse connecting elements disposed between the side members providing, in the extended position, a self-sustaining structure attachable to pilasters mounted in non-ferrous support structures driven into the ground. The transverse connecting elements may be coupled to the side members by non-corrodible fasteners to prevent corrosion of the transverse elements which will typically be made of steel. The transverse elements also function as reinforcing in the final, poured structure.

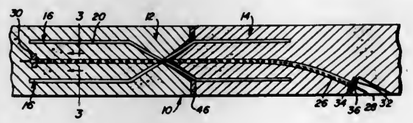
A method of forming a wall structure is also disclosed in which spaced supports are driven into the ground, upright pilasters are attached to the supports, and collapsible-extensible side members, disposed in predetermined, spaced relation with each other by means of a collapsible-extensible frame means, are extended to span the distance between the pilasters and the frame means is attached thereto. Cementitious material is then poured between the side members and allowed to set, at least the frame means providing reinforcing within the cementitious material.

3,555,752
MOUNTING ARRANGEMENT FOR A SKYLIGHT
Pierre Emmanuel E. J. Bogaert, 20 Chalet du Dijk, Wemmel, Belgium
Filed Dec. 5, 1968, Ser. No. 781,379
Claims priority, application Belgium, Jan. 25, 1968, 709,859/68
Int. Cl. B65d *45/16;* **E04d** *13/03;* **E04h** *7/18*
U.S. Cl. 52—200 **8 Claims**



A skylight is fastened to a base defining an upwardly directed opening in a roof structure by means of C-shaped clamps, each assembled from two identical J-shaped jaws, screws passing through longitudinal slots in the longer legs of the jaws, and nuts on the screws. The free end of one jaw is received in a recess of a receptacle fixedly attached to the rim of the skylight, and the free end of the other jaw abuts against the underside of a rim on the base, the two free ends being offset transversely of the common direction of elongation of the longer legs to exert a torque on the skylight in a direction to hold the same down.

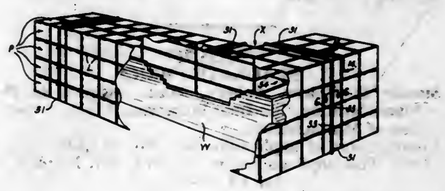
3,555,753
CONCRETE SLAB JOINT CONSTRUCTION
Charles R. Magadini, 1133–A E. Missouri Ave., Phoenix, Ariz. 85014
Filed Sept. 9, 1968, Ser. No. 758,469
Int. Cl. E04b *5/32;* **E04c** *2/04*
U.S. Cl. 52—227 **11 Claims**



A construction for joints between concrete slabs that allows the adjacent slabs to shrink without cracking the slabs or destroying wall structures or other devices that might be rigidly mounted to such slabs. The joint is so designed that it is reinforced and self-supporting and allows other construction work to continue while the normal shrinkage is taking place.

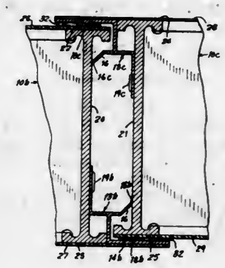
3,555,754
PORTABLE SHELTER ASSEMBLY FOR PROTECTION FROM BAD WEATHER AND COMPONENTS THEREOF
Ronald E. Kellogg, Fremont, Nebr., assignor to Kelly Klosure, Inc., Fremont, Nebr., a corporation of Nebraska
Filed Sept. 16, 1968, Ser. No. 762,205
Int. Cl. E04b *1/40, 2/28*
U.S. Cl. 52—282 **8 Claims**

A self-supporting shelter is made up of structurally strong light transmitting panels which can be assembled in many different combinations by means of special quickly detachable fasteners and related supports. The



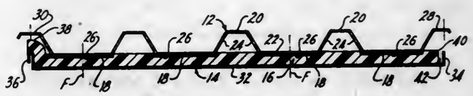
fasteners comprise a member having a notched head and an exposed handle.

3,555,755
OVERLAP JOINT FOR TRANSLUCENT WALL PANELS
George P. Reed III, Manchester, N.H., assignor to Kalwall Corporation, Manchester, N.H., a corporation of New Hampshire
Filed Nov. 20, 1968, Ser. No. 784,512
Int. Cl. E04b *7/00;* **E04d** *1/16, 3/38*
U.S. Cl. 52—308 **5 Claims**



This invention relates to a joint structure in the nature of a channel for receiving, locating and maintaining the abutting edges of an adjacent translucent wall panel. The overlap character of this joint provides for the first time, insofar as known to me, a weather-tight seal for translucent building panels.

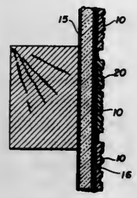
3,555,756
INSULATING BUILDING PANEL UNIT
Bernard E. Curran, Sewickley, Rodney W. Gartner, Coraopolis, and Robert G. Lindner, Bridgeville, Pa., assignors to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 12, 1968, Ser. No. 720,909
Int. Cl. E04b *2/06;* **E04c** *2/20, 2/24*
U.S. Cl. 52—309 **1 Claim**



An insulated building panel unit consisting of a metal liner sheet, a layer of foamed plastics material self-adhered to the liner sheet and a facing sheet adhesively secured to the layer of foamed plastics material. Selected regions of the surface of the foamed plastics material are modified to provide essentially flat surfaces for adhesive

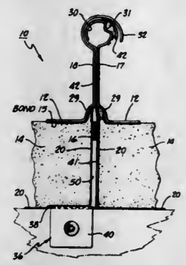
bonding with essentially flat surfaces of the facing sheet. A method is described for making the present insulated building panel unit.

3,555,757
SIMULATED BRICK
Stanley C. Volent, Auburn, Mass., assignor to Dacor Manufacturing Co., Inc., Worcester, Mass., a corporation of Massachusetts
Continuation of application Ser. No. 663,648, Aug. 28, 1967. This application Apr. 8, 1969, Ser. No. 816,162
Int. Cl. E04f *13/18*
U.S. Cl. 52—309 **3 Claims**



This invention has to do with a simulated brick formed of plastic, a method for making the brick, and a wall structure incorporating the brick and simulated mortar. The brick has sharp edge portions penetrating the mortar and engages a board backing element.

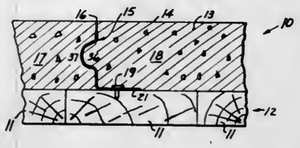
3,555,758
PANEL AND SEALED JOINT STRUCTURE
Richard C. Schroter, Orinda, Calif., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed July 2, 1969, Ser. No. 838,614
Int. Cl. E04c *2/20;* **E04d** *3/362, 1/28*
U.S. Cl. 52—309 **16 Claims**



An improved composite building panel provided with a unique joint sealing strip of selected resiliency, compressibility and liquid and vapor impermeability for use in sealing a panel provided with such strip to another building panel as well as the overall improved joint structure formed by the aforesaid pair of panels during emplacement of the panels in a building structure.

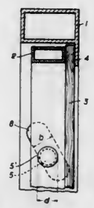
3,555,759
DIVIDER FOR LIGHT-WEIGHT AGGREGATE BALCONY FLOORS
Henry Kamberg, 4303 Lincoln Blvd., Venice, Calif. 90291, and Jack K. Wood, 6705 S. Wooster Ave., Los Angeles, Calif. 90056
Filed July 25, 1969, Ser. No. 844,838
Int. Cl. E04b *1/16, 15/14*
U.S. Cl. 52—378 **4 Claims**

A divider for light-weight aggregate floors of the class having a wood substrate (subfloor) comprising a unitary extended metal strip with a reference upright axis relative to the substrate. An example of such a floor is a balcony. The divider has an attachment flange intended to be attached to the wooden substrate and extends upwardly from the attachment flange so as to include in the following order from the base, a spacer segment, a first flat ramp segment sloping away from the spacer segment, a curved key segment, a second flat ramp segment, the flat ramp segments forming an open dihedral between them facing toward the axis, and a flat terminal segment. Radius



segments interconnect the previously recited segments. The curvatures of the various radii and of the key segment minimize stress concentrations in the concrete and the flat ramp segments give greater effectiveness of the divider over the relatively large expansions and contractions encountered with the use of light-weight aggregate. This enables a straight, accurately-located crack to be formed in the light-weight aggregate while still keying the two adjacent sections of aggregate together to prevent their vertical separation.

3,555,760
PREFABRICATED WALLS
Heinz Wastian, Zieglergasse 57, Vienna, Austria
Filed Sept. 10, 1968, Ser. No. 758,755
Int. Cl. E04c *2/26, 2/38*
U.S. Cl. 52—476 **3 Claims**

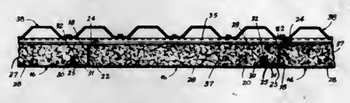


Prefabricated walls provided with external frames and internal frames with the latter frames being capable of installation in the former, whereby a panel assembled in the external frame, can be forced against a stop carried by the external frame.

3,555,761
WALL CONSTRUCTION
John D. Rosebrough, R.R. 3, Box 25AB, Chesterfield, Mo. 63017
Filed Apr. 3, 1968, Ser. No. 723,346
Int. Cl. E04b *2/28, 2/60;* **E04c** *2/08*
U.S. Cl. 52—478 **5 Claims**

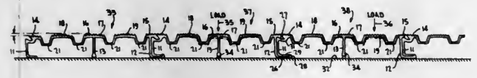
A no-girt wall module, wall and method of factory constructing the module, the module including a structural

member and channel panel welded together to form a unit, the Z member being disposed in the panel with one return flange welded to a side of the channel substantially midway of both, the wall comprising a plurality of factory-made modules secured together, the method comprising so



welding the elements for out-of-sight disposition of the weld. A wall retainer clip permitting deflection of a related roof truss and the like is of elongated form and has an offset portion receiving the Z for relative movement.

3,555,762
FALSE FLOOR OF INTERLOCKED METAL SECTIONS
Nicholas Joseph Costanzo, Jr., Rockville, Md., assignor to Aluminum Plastic Products Corporation, a corporation of Maryland
Filed July 8, 1968, Ser. No. 743,084
Int. Cl. F04c *1/30*
U.S. Cl. 52—588 **26 Claims**



A false flooring includes a plurality of interlocking metal modules, each having a pair of outer legs adapted to be connected to engage existing flooring and a center leg which engages an existing flooring in response to a load being imparted to the upper module surface. Between each of the outer legs and the center legs, there are provided first, second and third arms having upwardly deflected arcs. The third arm is connected to the first and second arms by a pair of channels, having sloping side walls and a downward extent considerably less than the length of the legs.

3,555,763
METHOD OF FORMING WALLS WITH PREFABRICATED PANELS
David E. Bloxom, Fort Worth, Tex., assignor to Speed Fab-Crete Corporation, International, Fort Worth, Tex.
Filed Nov. 25, 1968, Ser. No. 778,582
Int. Cl. B23p *11/02;* **B28b** *7/36;* **E04b** *1/24*
U.S. Cl. 52—745 **16 Claims**

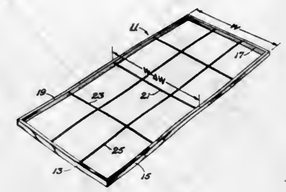
This specification discloses a method of forming walls characterized by:

(a) preparing a plurality of outer metallic skeletal panel frames, each being prepared by joining metallic channels at the periphery of the panel frames, bowing the channels in at the center of the sides to effect a dimension in width at the center less than the width at the top and bottom of the panel frames, and affixing metal reinforcing bars between opposite channel sides of the panel frames;

(b) preparing a bed for each of the panel frames by forming a horizontal surface larger in dimension than the panel frame and covering the horizontal surface with a hydrophobic bond breaker;

(c) placing a skeletal panel frame on the bed and pouring a lightweight concrete slurry within the panel frame to produce a prefabricated panel having the metallic channel at its periphery;

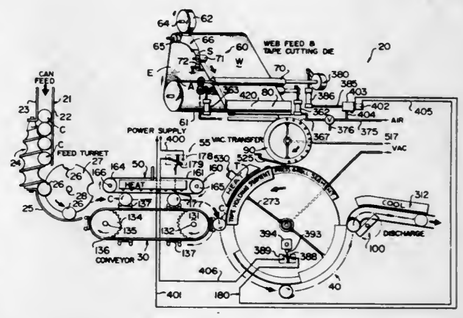
(d) removing the prefabricated panel from the bed and positioning it on a foundation adjacent a second of the plurality of the panels and joining the metallic channels at the periphery of the adjacent panels; and



(e) effecting a moisture-proof joint between the adjacent panels by filling the space between the metallic channels of the joints with a material that will sealingly expand and contract.

Specific methods of completing the joint between the panels to effect a more finished and better appearing joint are also described herein.

3,555,764
APPARATUS AND METHOD FOR SECURING CLOSURES TO CONTAINER BODIES
Daniel J. Dowling, Chicago, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Feb. 1, 1967, Ser. No. 613,273
Int. Cl. B65b *61/18;* **B65c** *9/02*
U.S. Cl. 53—14 **34 Claims**



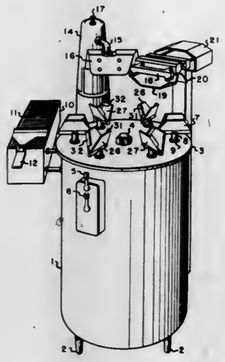
This invention relates to a novel apparatus for and method of securing closures to container bodies, and is particularly directed to a novel apparatus for securing a closure to a container body by means of a relatively narrow securing strip which is applied against and about adjoining peripheral wall portions of the closure and container body. This invention also features a device for attaching a grip portion to the securing strip.

3,555,765

METHOD OF PRODUCING FILLING AND CLOSING TETRAHEDRAL PACKAGES AND A DEVICE FOR CARRYING OUT THE METHOD

Lars Malte Roland Wettlen, Lomma, Sweden, assignor to AB Tetra Pak, Lund, Sweden, a Swedish company

Continuation of application Ser. No. 456,447, May 17, 1965. This application Mar. 15, 1968, Ser. No. 713,542
Claims priority, application Sweden, May 28, 1964, 6,463/64
Int. Cl. B65b 3/00, 7/06, 43/26
U.S. Cl. 53—29 4 Claims



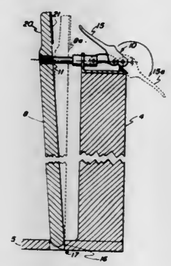
A machine which sequentially rotates a number of holders with package blanks from an opening station to a material filling station wherein the package blanks are filled. Then the filled package blanks are rotated to a heat sealing station whereat the filled package blanks are formed into filled tetrahedron packages.

3,555,766

DISPENSER FOR NESTED AND CUFFED BAGS

Hsue C. Tsien, Livingston, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

Filed May 9, 1969, Ser. No. 823,317
Int. Cl. B65b 67/12
U.S. Cl. 53—29 12 Claims



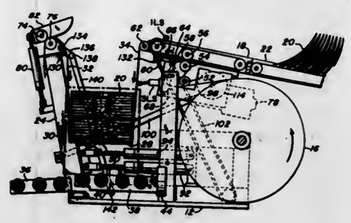
A dispenser for nested and cuffed flexible bags comprising a basket-like frame including base and side members with stationary and movable rods oppositely disposed on the base member. The flexible bags are loaded onto the dispenser by placing the cuffed end of the bag over the stationary movable rods while the movable rods are disposed toward the stationary rods. The bags are placed in position for loading of groceries by moving the movable rods so that they are disposed away from the stationary rods.

3,555,767

BOXING METHOD AND APPARATUS

Harold W. Huffman, Hamilton, Ohio, assignor to The Hamilton Tool Company, Hamilton, Ohio, a corporation of Ohio

Filed Nov. 21, 1968, Ser. No. 777,582
Int. Cl. B65b 5/00, 35/50
U.S. Cl. 53—37 29 Claims



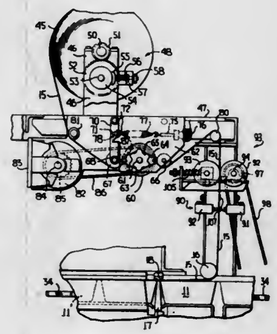
The boxing machine receives accordian folded paper in stacks from a folding machine, and includes means for forming a paper sling by which a stack is automatically lowered into an open shipping box or carton; the sling after use as such, is severed from a roll of paper carried by the boxing machine, and is deposited, with the stack, into the shipping box for subsequent use as a sling in effectively removing the stack from the shipping box.

3,555,768

METHOD AND APPARATUS FOR HANDLING AND REGISTERING WEBS FOR FORMING PACKAGES

John M. Miller, Mount Vernon, Ohio, assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Feb. 26, 1968, Ser. No. 708,000
Int. Cl. B65b 7/16, 57/04; B31b 49/00
U.S. Cl. 53—39 21 Claims



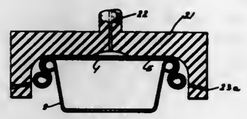
Methods and apparatus for forming filled packages from a first web having fill pockets thereon and a second cover web having markings for registration with the pockets are disclosed herein. The pocketed and marked webs are brought together and intermittently or step-by-step advanced in the formation of packages and tensioning of the marked cover web is employed to effect registration of the markings thereon with the pocks of the further web. Abrupt tension changes in the marking bearing cover web, commonly resultant from the step-by-step advancing of such web, are reduced by feeding the cover web in synchronism with the advancing of both webs and at a point preceding the application of the cover web to the pocketed web.

3,555,769

CLOSURE AND METHOD AND APPARATUS FOR MAKING SAME

Martin M. Sternau, 67—50B 188th St., Fresh Meadows, Flushing, N.Y. 11358

Division of application Ser. No. 366,784, May 12, 1964, now Patent No. 3,402,874, which is a continuation of applications Ser. No. 591,628, June 15, 1956, and Ser. No. 653,227, Apr. 16, 1957. This application July 5, 1968, Ser. No. 810,856
The portion of the term of the patent subsequent to Oct. 3, 1984, has been disclaimed
Int. Cl. B65b 7/28
U.S. Cl. 53—42 3 Claims



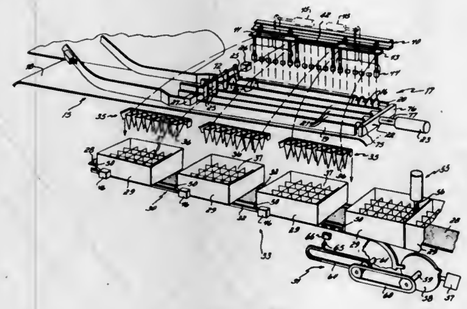
A method of forming a cover on a container and simultaneously sealing the cover to the container. A sheet of heat shrinkable plastic material is placed over the mouth of the container and the temperature of the central portion is reduced while heat is applied to a portion of the film extending beyond the rim of the container, thereby selectively shrinking the film around the rim. Apparatus for performing the method is also disclosed.

3,555,770

CASE PACKER

Edward F. Rowekamp, Cincinnati, Ohio, assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio

Filed Jan. 28, 1969, Ser. No. 794,610
Int. Cl. B65b 57/10, 21/20
U.S. Cl. 53—61 7 Claims



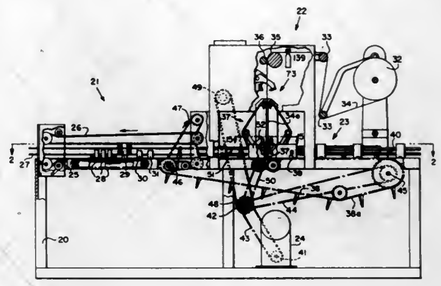
A case packer in which files of abutting articles are conveyed parallel to a conveyor carrying spaced-apart cases, the cases and articles are stopped, and a plurality of lifting heads, one for each case, are moved transversely between the articles and the cases to lift the articles and deposit them in the cases. The lifting heads are moved longitudinally with respect to each other to vary the spacing of the lifting heads between the article pick-up position and the case deposit position.

3,555,771

BUNDLING MACHINE

Howard E. Mathes, Harlan Township, Warren County, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Oct. 15, 1968, Ser. No. 767,738
Int. Cl. B65b 57/12, 13/00
U.S. Cl. 53—73 11 Claims



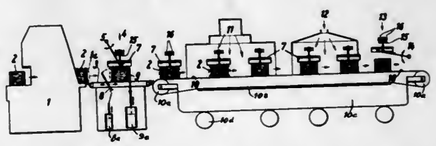
A machine for bundling individual articles into groups, which machine includes one or more of the following features (1) a system whereby groups of articles are sequentially clamped between clamps and released to automatically arrange the articles into 2, 3, 4 or more article groupings, (2) a system whereby wrappers are fed so that their narrow dimension is the cutoff length, (3) a system whereby a wrapper is brought to rest against fixed stops before it is folded around the articles to be bundled, and (4) a cutoff knife comprising a four bar linkage in which one pivot point can be shifted to shorten the effective length of one bar of the linkage and render the knife inactive.

3,555,772

APPARATUS FOR PACKAGING NEWSPAPER STACKS

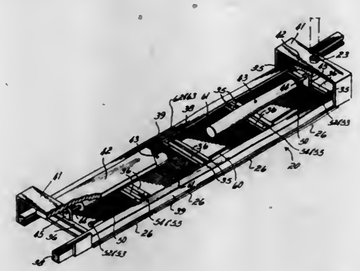
Karl Eugen Kammer, Monchen-Gladbach, Germany, assignor to Vertec-Gesellschaft fur Verpackungstechnik m.b.H. & Co., Monchen-Gladbach, Germany

Filed Aug. 15, 1968, Ser. No. 784,964
Claims priority, application Germany, Aug. 18, 1967, 1,586,331
Int. Cl. B65b 61/00, 53/06
U.S. Cl. 53—124 7 Claims



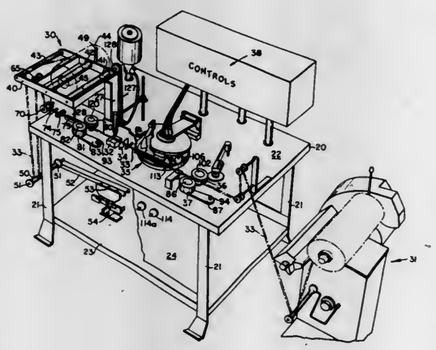
Stacks of newspapers are carried on conveyor means to a wrapping station for covering the stacks with plastic foil, then to a depositing station where a weight having openings therein is placed on the upper side of each stack, further to a heating station, thereafter to a cooling station if desired, and finally to a pick-up station where weights are removed from the stacks for return to the depositing station.

3,555,773
FOUR-HEAD CARRIAGE FOR CASE PACKER
Edward F. Rowekamp, Cincinnati, Ohio, assignor to The Lodge & Shipley Company, Cincinnati, Ohio, a corporation of Ohio
Filed June 23, 1969, Ser. No. 835,491
Int. Cl. B65b 21/20
U.S. Cl. 53—166 12 Claims



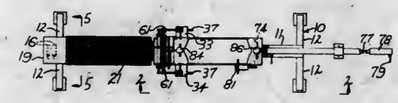
A case packer in which an article conveyor runs parallel to case conveyor and a four-head transfer carriage lifts abutting articles from the conveyor, spreads apart, and deposits the articles into four spaced cases.

3,555,774
FEEDING, PROPELLING, AND TENSIONING SYSTEM FOR TAPE IN A SEED-TAPE MANUFACTURING MACHINE
Burnie M. Craig, Pasadena, Calif., assignor, by mesne assignments, to Union Carbide Corporation, New York, N.Y., a corporation of New York
Filed July 5, 1968, Ser. No. 742,604
Int. Cl. B65b 9/06
U.S. Cl. 53—180 16 Claims



In a seed-tape manufacturing machine, the tape is propelled by a main drive roller beyond the seed-dispensing station and driven by main drive means, with a main idler roller urged toward the main drive roller, the tape between them. A secondary drive roller and secondary idler roller precede the seed-dispensing station and are driven so that their peripheral speed is slower, at a fixed fraction of the speed of the main drive roller, so that the tape is stretched as it passes from the secondary rollers to the main rollers.

3,555,775
APPARATUS FOR INCASING PRODUCT
Allen G. McMillan, Rte. 1, Munford, Ala. 36268
Filed July 1, 1969, Ser. No. 838,063
Int. Cl. B65b 9/16
U.S. Cl. 53—181 8 Claims



Product incasing apparatus having support carrying tubular casing for longitudinal movement along outer surface of support with passageway through support for passing casing. Twist applied to casing in spaced relation to leading end thereof prior to movement of casing into passageway, leaving outwardly projecting end which engages leading portion of casing upon movement of product into engagement with casing and through passageway to draw casing into passageway.

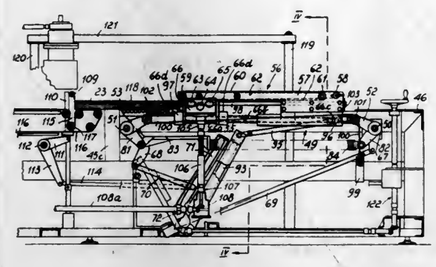
3,555,776
MACHINE FOR FORMING A TRAY AROUND A GROUP OF ARTICLES
Biagio J. Nigrelli, Northbrook, Wendell E. Standley, Lake Forest, and Andre Sprogis, Chicago, Ill., assignors to Johns-Nigrelli-Johns, Inc., Skokie, Ill., a corporation of Illinois
Original application May 4, 1966, Ser. No. 547,493, now Patent No. 3,454,149. Divided and this application Mar. 12, 1969, Ser. No. 816,870
Int. Cl. B65b 11/08
U.S. Cl. 53—196 6 Claims

A machine for advancing a rectangular group of articles positioned on a flat blank, such blank having a bottom panel, foldable side wall panels and foldable leading and trailing end wall panels. The end wall panels have inwardly foldable corner flaps. Folding means are arranged to travel with the blank for folding the end walls upward. Other folding means swing the corner flaps inward. Additional folding means fold the side walls upward to be attached to the corner flaps.

3,555,777
FEEDING AND FIRST FOLDING UNIT IN A WRAPPING MACHINE
Vittorio Gentili, Via Dante 17, Bologna, Italy
Filed June 9, 1969, Ser. No. 831,461
Claims priority, application Italy, June 11, 1968, 1,664/68
Int. Cl. B65b 11/08
U.S. Cl. 53—209 6 Claims

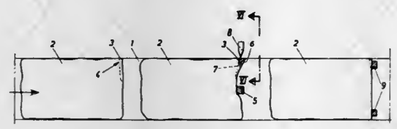
Feeding and primary folding unit for a machine for wrapping piles of plate-like articles. The feeding part of

the unit comprises a conveyor belt which carries the piles to be wrapped until these abut against a stop member. Subsequently the piles are pushed laterally with respect to the conveyor belt by a pusher which transfers them onto the free end of a paper tape unwound from a bobbin. The pile and the paper tape are then gripped by a pincer member and drawn in the primary folding part of the



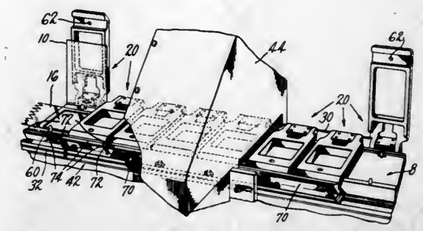
unit. After cutting of a wrapping sheet from said tape the wrapping of the pile takes place. For this purpose a carriage is provided which firstly bends upwardly the portion of the wrapping sheet not engaged by the pile and then, advancing on the pile, lays it there on.

3,555,778
APPARATUS FOR CLOSING VALVE BAGS
Erik Gunnar Kapare, Goteborg, Sweden, assignor to Billeruds Aktiebolag, Saffle, Sweden, a corporation of Sweden
Filed Feb. 7, 1969, Ser. No. 797,453
Claims priority, application Sweden, Feb. 9, 1968, 1,714/68
Int. Cl. B65b 7/02
U.S. Cl. 53—371 4 Claims



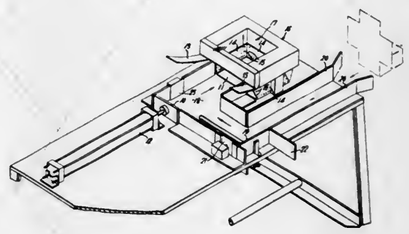
The present invention relates to an apparatus for closing a valve on valved bags which are fed on a conveyor with the valved end first as seen in the feeding direction with the valve opening turned to one side, said apparatus comprising a stop adapted to be inserted into the movement path of the bags, said stop adapted, when in inserted position, to constitute an abutment for the front end of the bags at a place at some distance from the opening end of the valve so as to expose the valve opening, and a device for spraying a binding agent into the valve opening. The main feature of the invention is to be seen in a carriage adapted to be moved back and forth above and parallel to the conveyor, said carriage provided with said stop and said spraying device for the binding agent and said carriage adapted to be moved with a speed in forward direction which is somewhat lower than the speed of the conveyor.

3,555,779
PACKAGING MACHINE
Russel A. Nemer, St. Louis, Mo., assignor, by mesne assignments, to International Inpak Incorporated, New York, N.Y., a corporation of Delaware
Filed Aug. 1, 1968, Ser. No. 749,398
Int. Cl. B65b 51/10
U.S. Cl. 53—373 4 Claims



A packaging machine including package blank holding jigs each having a hinged cover which is held closed by a yieldable strip as the jigs are fed along a defined path.

3,555,780
SEALING OF CARTONS
John Anthony Rogers, Swindon, England, assignor to The Metal Box Company Limited, London, England, a British company
Filed Jan. 5, 1968, Ser. No. 696,073
Int. Cl. B65b 7/20, 51/20
U.S. Cl. 53—375 7 Claims

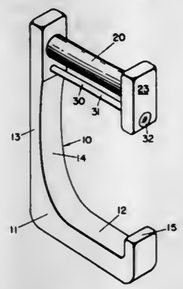


Overlying closure portions of a carton which are to be sealed by heat-sealable material applied thereto are held in spaced angular relationship while high temperature air is applied to the heat-sealable material to effect softening thereof, after which the portions are pressed together to seal one to the other.

3,555,781
SAFETY STIRRUP
George E. Osborn, 1401 W. 1st Ave., Spokane, Wash. 99204
Filed Feb. 24, 1969, Ser. No. 801,330
Int. Cl. B68c 3/00
U.S. Cl. 54—49 8 Claims

A C-shape safety stirrup having an open side for easy removal of one's foot therethrough wherein the stirrup bar is attached to the free end of an L-shape stirrup body

for hanging the stirrup from a stirrup strap; which strap is confined by a removable bar keeper constructed and

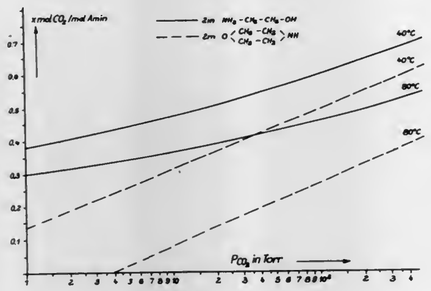


arranged to releasably lock the stirrup bar against unwanted removal from the shank.

3,555,782
PROCESSES OF REMOVING ACIDIC COMPONENTS FROM GASES

Hans Deringer, Essen, Germany, assignor to Heinrich Koppers, Gesellschaft mit beschrankter Haftung, Essen, Germany

Filed Dec. 30, 1968, Ser. No. 787,766
Claims priority, application Germany, Jan. 4, 1968, 1,719,490
Int. Cl. B01d *19/00*
U.S. Cl. 55—48 **14 Claims**



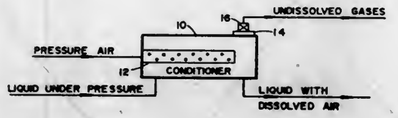
The acidic components present in gases such as CO_2, H_2S and HCN are removed by subjecting the gases to a wash treatment with a solution of morpholine or a C-substituted morpholine so as to absorb at least part of said acidic components.

3,555,783
PROCESS AND APPARATUS FOR TREATING LIQUIDS AND GASES

Derald E. Grimshaw, Denver, Colo., assignor to Environmental Services, Inc., York, Pa., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 757,253, Sept. 4, 1968. This application Nov. 20, 1969, Ser. No. 878,378
Int. Cl. B01f *3/04*
U.S. Cl. 55—48 **9 Claims**

A process and apparatus for treating liquid and separating gases which utilizes the principle of different gases having different solubility rates in a given liquid or solution and including the steps of introducing into a stream of liquid moving continuously between inlet and discharge means within a closed container completely filled with said liquid, a single gas or a mixture of two or more different gases under pressure at a rate which causes the liquid to be placed under pressure and become substantially saturated or super-saturated by either the single gas or the more readily dissolved gas of a mixture thereof at the pressures imposed upon the liquid, whereby said

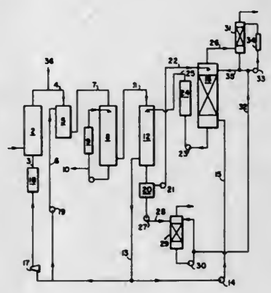


gas is dissolved in the liquid in greater quantities than would occur under atmospheric pressure, and simultaneously permitting undissolved amounts of such single gas or the least soluble gas in a mixture thereof to discharge relatively freely to atmosphere from the stream of liquid and thereby produce a gas-enriched liquid from which at least a small amount of the dissolved gas will be released therefrom when the pressure upon said liquid is reduced, the amount of said released gas depending upon the pressure imposed upon the liquid, while absorbing said gas, and the subsequent lower pressure.

3,555,784
SEPARATING AMMONIA FROM OFFGAS OBTAINED IN THE SYNTHESIS OF MELAMINE

Rudolf Mohr, Lampertheim, Germany, assignor to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

Filed Dec. 2, 1968, Ser. No. 780,357
Claims priority, application Germany, Dec. 1, 1967, 1,670,290
Int. Cl. B01d *19/00*
U.S. Cl. 55—70 **4 Claims**

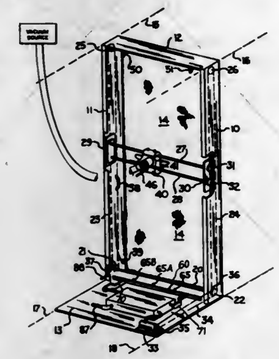


To separate ammonia from offgas obtained in the synthesis of melamine from urea, the offgas, after melamine has been separated, is treated with a melt which contains ammonium nitrate and/or ammonium thiocyanate and/or urea. Temperatures which are between the boiling point of ammonia and the decomposition temperature of ammonium carbamate are maintained in the treatment.

3,555,785
METHOD AND MEANS FOR EFFICIENTLY CLEANING A GAS FILTER

James E. Wooldridge, Louisville, Ky., Ralph M. Leach, Jeffersonville, Ind., and Oscar A. Wurtenberg, Louisville, Ky., assignors, by mesne assignments, to Wehr Corporation, Milwaukee, Wis., a corporation of Wisconsin

Filed Feb. 2, 1968, Ser. No. 702,621
Int. Cl. B01d *46/04*
U.S. Cl. 55—96 **8 Claims**



A filter cleaning method and apparatus employing a vacuum cleaning head carried over the filter surface by a reciprocating carriage. The cleaning head is shiftable stepwise along the carriage to predetermined indexed positions during engagement with a shifting means which is detached from the carriage. During each step of its cycle of movement the head makes a passage along the filter from one end of the same to the other end of the filter and back to the first-mentioned end. Remotely controlled means effects the actuation of the shifting means.

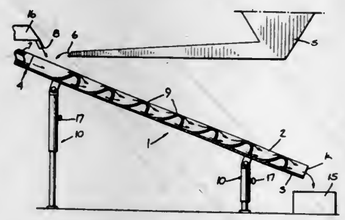
ERRATA

For Classes 55—131 thru 55—177 see:
Patent Nos. 3,555,818 thru 3,555,820

3,555,786
CORRUGATED REACTOR

Linden Wayne Cochran, Basking Ridge, N.J., assignor to Multi-Minerals Limited, Toronto, Ontario, Canada, a corporation of Canada

Filed Feb. 6, 1969, Ser. No. 797,173
Int. Cl. B01d *19/00*
U.S. Cl. 55—196 **6 Claims**

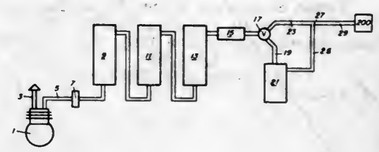


The invention relates to an apparatus in which the contaminants resulting from the method of producing phosphoric acid are removed as volatile compounds by having the reactants flow over a corrugated surface. A gas sparging stream is introduced through outlets in the corrugations, and the corrugated surface is heated to aid in the removal of the volatilized contaminants.

3,555,787
AIR PURIFYING AND HUMIDITY CONTROL SYSTEM

Eduard M. Lustig, Fort Valley, Ga., assignor to Catalytic Engineering & Manufacturing Corporation, Fort Valley, Ga., a corporation of Georgia

Filed Aug. 26, 1968, Ser. No. 755,176
Int. Cl. B01d *53/04*
U.S. Cl. 55—179 **6 Claims**

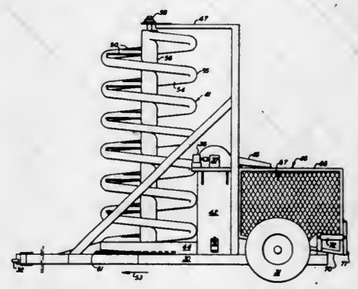


A system for purifying compressed air or other gas including a mechanical filter for removing larger particles from the air and a series of chemical filters for removing water and oil vapors and molecular contaminants down to a diameter of two angstroms. The resultant air is ultradry, and unsuited for use in breathing apparatus and the like while in this condition. A proportioning valve channels a selected portion of the ultradry air to a saturator, and this water-laden air is then mixed with the remainder of the ultradry air to produce a resultant air stream having the desired moisture content. A special valve is provided to permit the accurate regulation of moisture content required.

3,555,788
MOBILE FRUIT HARVESTER

Joseph P. Stine, P.O. Box 2513, Orlando, Fla. 32802

Filed July 7, 1967, Ser. No. 651,792
Int. Cl. A01g *19/00*
U.S. Cl. 56—328 **31 Claims**



A mobile fruit harvester with a spiral or similarly shaped structure having a plurality of fruit picking devices which are rotated about a vertical axis adjacent an orange tree or other fruit bearing plant, whereby the fruit is removed from the tree at various levels and rolls down the spiral structure under the picking devices to a place where it is discharged into a receptacle. The fruit picking device includes a substantially horizontal piece extending from the periphery of the spiral structure inwardly. The piece has a plurality of slots to receive the stems of oranges and surfaces are provided on both sides under each slot to hold the orange when, due to movement of the device, the orange is separated

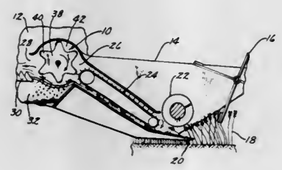
from its stem by the stem being pulled at its calyx against the end of the slot or other obstruction in the slot which acts as a fulcrum for this purpose and disposes the calyx as the most likely area along the stem for separation to take place.

3,555,789
REINFORCING METAL CORDS
Pietro Terragna, Figline Valdarno, Italy, assignor to Pirelli, Societa per Azioni, Milan, Italy
Filed Feb. 10, 1969, Ser. No. 798,194
Claims priority, application Italy, Feb. 12, 1968, 12,640/68
Int. Cl. D02g *3/48*; D07b *1/10*
U.S. Cl. 57—145 **3 Claims**



Metal cords for use as reinforcing members in elastomeric articles, such as automobile tires, hoses, etc., comprising a multiple-wire core strand surrounded by a plurality of multiple-wire outer strands.

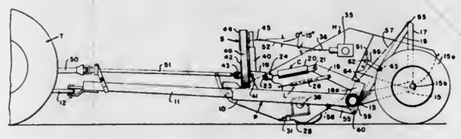
3,555,790
AERODYNAMIC GRAIN HANDLING SYSTEM
Graeme R. Quick, Ames, Iowa, assignor to Iowa State University Research Foundation, Ames, Iowa, a corporation of Iowa
Filed Aug. 5, 1968, Ser. No. 750,158
Int. Cl. A01d *41/10*
U.S. Cl. 56—21 **8 Claims**



A device for accelerating the movement of grain from the pickup unit on a combine to the threshing cylinder and therethrough wherein forced air is employed and the threshing cylinder includes aerodynamic bars which function to draw the material into the cylinder and blow the material therefrom while performing the threshing operation. A source of air may be placed under the header to direct air through a return venturi duct onto the grain moving up the header platform towards the threshing cylinder.

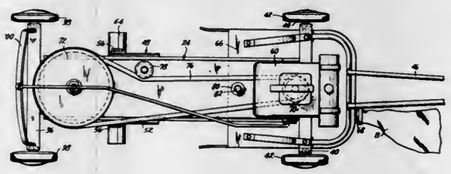
The threshing cylinders conventionally used function only to perform the threshing operation and do little to move the grain therethrough or to draw the grain into the threshing cylinder or to forcibly eject it therefrom. Consequently the threshing cylinder will frequently become choked and require cleaning for it to return to normal operation. Furthermore, numerous mechanical conveying devices have been employed for moving the grain from the cutting means on the header to the threshing cylinder but these are all relatively slow and inefficient and are subject to the usual mechanical breakdown.

3,555,791
DRIVE SYSTEM FOR PULL-TYPE MOWER-CONDITIONER MACHINE
Horace G. McCarty, Henry N. Lausch, and Bruce D. Schwalm, Leola, Pa., assignors to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed July 26, 1968, Ser. No. 747,901
Int. Cl. A01d *43/10*
U.S. Cl. 56—23 **17 Claims**



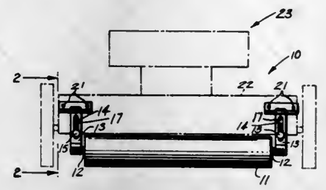
The invention relates to a trail type agricultural hay harvesting machine of the mower-conditioner-windrower type having a main, wheeled frame extending and towable in a fore-and-aft direction, a header sub-frame unit pivotally mounted on the main frame, and receiving its implement drives from an improved drive system embodied therewith. Strategic design and embodiment of a pivotally mounted belt-drive unit and a fixed length universal drive shaft on the main frame, together with other drive line components provides a continuously effective drive system, resulting in the elimination or substantial reduction of angular acceleration and other torque load factors, irrespective of the various header positions.

3,555,792
POWER OPERATED LAWN TREATING DEVICE
Albert H. Tietjen, 515 Colonial Way, and Albert G. Heidtman, 565 Colonial Way, both of Reno, Nev. 89502
Filed Apr. 17, 1968, Ser. No. 722,057
Int. Cl. A01d *35/26*
U.S. Cl. 56—25.4 **5 Claims**



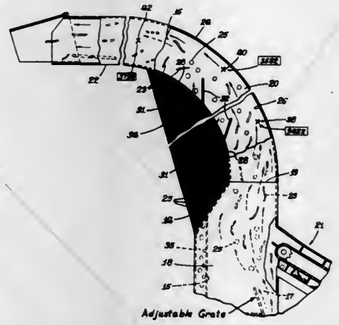
A power operated lawn treating device wherein a rake is slidably mounted and wherein a power means reciprocably slides the rake between a forward and a rearward position to thus collect dead grass and other debris upon the lawn. The rake is provided with a convex forward surface and a concave rear surface so that the raking action takes place only as the rake is moved from its forward to its rearward position and so that the rake automatically cleans itself as it moves from its rearward to its forward position.

3,555,793
GUARD FOR ROTARY LAWNMOWERS
Howard C. Chapman, 623 E. 3rd St., Hastings, Minn. 55033
Filed Dec. 4, 1968, Ser. No. 780,986
Int. Cl. A01d *73/00*
U.S. Cl. 56—25.4 **1 Claim**



A roller and an adjustable mount for securement to the rear of a lawnmower. This device serves to protect the operator from flying objects that may be thrown rearward from the lawnmower.

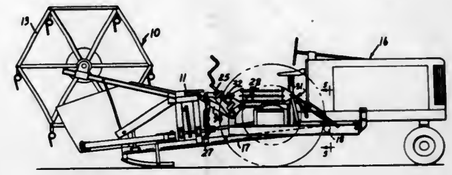
3,555,794
COTTON HARVESTER WITH PNEUMATIC GREEN BOLL SEPARATOR
Wyatt T. Gable, Jr., and Charles G. Barfield, Memphis, Tenn., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 1, 1968, Ser. No. 741,678
Int. Cl. A01d *45/18*; B07d *11/00*
U.S. Cl. 56—30 **12 Claims**



A cotton harvester employing a staged separator including a curving pneumatic delivery conduit through which a laminal air stream is blown, and the conduit having louver-like baffles on the inside turn of the conduit which induces a separating acceleration of the air stream thereby conducing separation of the lint cotton from heavier green bolls which drop out of the air flow.

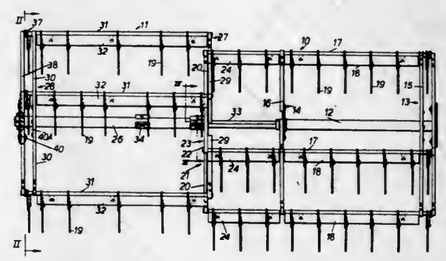
3,555,795
SUPPORT APPARATUS FOR HARVESTING EQUIPMENT
Horace D. Hume, % H. D. Hume Co., Mendota, Ill. 61342, and Byron M. Novak, 1580 Tonti St., La Salle, Ill. 61301
Filed Dec. 6, 1968, Ser. No. 781,882
Int. Cl. A01d *67/00*
U.S. Cl. 56—208 **3 Claims**

A support apparatus for push-type harvesting equipment that is spring counterbalanced so as to "float" in contact with the field surfaces or in close proximity thereto. The harvesting equipment, in the form of a sickle bar and reel, is supported forwardly of a tractor vehicle frame by two transverse header bars which extend longitudinally under a substantial part of the vehicle frame. The forward end of each header bar is fixed to the harvester apparatus. The rear ends of the header bars are movably connected to the vehicle frame about a swivel



connection that permits one end of the header to move vertically relative to the other. A center stabilizing connection between the harvesting apparatus and vehicle frame prevents lateral movement of the harvesting apparatus. Adjustable spring counterbalance supports and hydraulically operated lifting devices are provided for proper elevational control of the harvester equipment.

3,555,796
TELESCOPIC COMBINE REEL
Alois Baumeister, Kassel, Germany, assignor to Massey-Ferguson G.m.b.H., Kassel, Germany, a corporation of Germany
Filed May 15, 1969, Ser. No. 824,800
Claims priority, application Great Britain, May 30, 1968, 25,858/68
Int. Cl. A01d *57/04*
U.S. Cl. 56—221 **9 Claims**

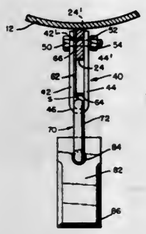


A combine header has a telescopic reel movable between extended and contracted conditions. The reel is in two portions each of which comprises spaced spiders interconnected by cross bars. The inner spiders overlap to limit movement to the extended condition. The reel portions are annularly offset so that the bars are staggered to facilitate telescoping. One of the reel portions has a central hexagonal shaft received by spaced rollers on the hollow central shaft of the other reel portion to provide both a driving and telescopic connection.

3,555,797
FLAIL ASSEMBLY
John W. Haun, Charles T. Hoyt, and Joseph F. Prem, Brillion, Wis., assignors to Brillion Iron Works, Inc., Division of Beatrice Foods Co., Brillion, Wis., a corporation of Delaware
Filed July 8, 1968, Ser. No. 743,061
Int. Cl. A01d *55/20*
U.S. Cl. 56—294 **4 Claims**

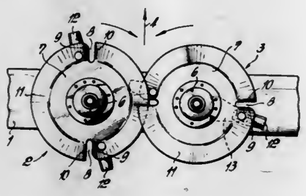
A flail assembly includes a plurality of generally U-shaped bracket members secured thereto. A generally

ring-shaped support member is swingably supported by the bight portion of each U-shaped bracket member, these support members each carrying a knife means. Each bracket member is detachably secured to the rotor, and the detachable securing means also secures a re-



tainer plate in place within the bracket member. The retainer plate is generally L-shaped in cross-sectional configuration and includes a long leg and a short leg, the short leg spanning the central space of the bracket member and preventing improper displacement of the support member.

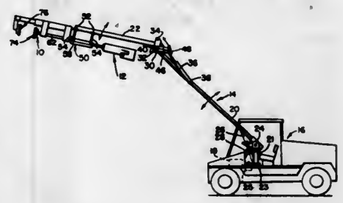
3,555,798
MOWING APPARATUS
Wolfgang Eder, Wolfenbuttel, Germany, assignor to Gebruder Welger, Wolfenbuttel, Germany
Filed Aug. 12, 1968, Ser. No. 751,882
Claims priority, application Germany, Sept. 2, 1967, 1,582,502
Int. Cl. A01d *55/20*
U.S. Cl. 56—295 **3 Claims**



The invention relates to a mowing apparatus having a pair of blades which rotate about a vertical axis. The peripheral portions of the blade have a helical periphery. The periphery of each blade has two opposed slits and the helical periphery rises from the edge of one slit to the edge of the opposed slit. A knife is affixed to the disc periphery adjacent to a slit at the lower helical portion. The blades overlap so that at the moment the helical edges of the adjacent blades are on the same horizontal plane, the helical edge of one blade rides in a slot on the adjacent blade.

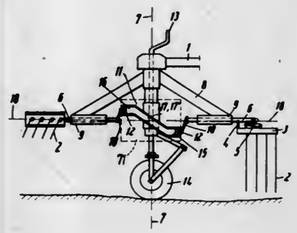
3,555,799
TREE SHAKING MECHANISM
William A. Gerrans, Colusa, Calif., assignor to Farmhand, Inc., Hopkins, Minn., a corporation of Delaware
Filed Sept. 29, 1967, Ser. No. 671,745
Int. Cl. A01g *19/00*
U.S. Cl. 56—328 **4 Claims**

A tree shaking mechanism including a tree-engaging clamp suspended for vibration adjacent the outer extremity of an articulated boom capable of up and down and lateral adjustment on a mobile support to enable the



clamp to be brought into gripping engagement with any one of a selected number of limbs on the tree to be shaken.

3,555,800
CENTRIFUGAL HAY RAKE
Walter W. Stoll, 12 Akazienstrasse, 315 Peine, Niedersachsen, Germany, and Hans Hoffinger, Peine, Niedersachsen, Josef Heinen, Broistedt-Rosenhagen, Niedersachsen, Florens Coester, Hannover-Ricklingen, Niedersachsen, and Albrecht Zuhlsdorff, Lengede, Niedersachsen, Germany; said Hoffinger, Heinen, Coester, and Zuhlsdorff assignors to said Stoll
Filed May 21, 1968, Ser. No. 730,750
Claims priority, application Germany, May 22, 1967, St 26,908; Austria, May 19, 1968, A 2,708/68
Int. Cl. A01d *79/02*
U.S. Cl. 56—370 **7 Claims**

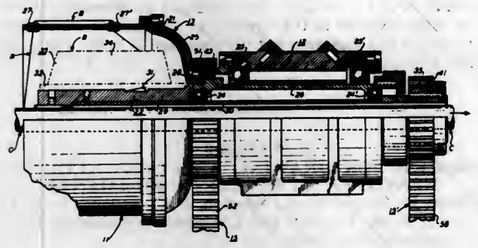


The tine oscillating mechanism of a centrifugal hay rake oscillates the tines through an angle not exceeding about 90 degrees, and the carrier which sweeps the tines in a circular path parallel to the ground may be rotated in either direction. The cam follower mechanism is adapted to be altered for the opposite rotational directions of the carrier so that the full oscillation of the tines is used in raking and the tines always sweep backward with respect to the circular motion imparted to them by the carrier.

3,555,801
HIGH SPEED BINDER MACHINE
Joseph William Scher, Short Hills, N.J., assignor to Weber & Scher Mfg. Co., Inc., Newark, N.J., a corporation of New Jersey
Filed Sept. 20, 1968, Ser. No. 761,176
Int. Cl. B65h *81/08*
U.S. Cl. 57—18 **5 Claims**

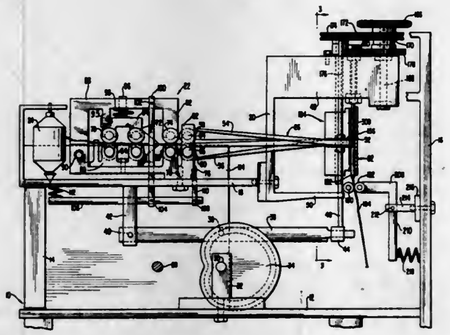
In a machine for the high speed winding of binder about a cable, a tension control system which comprises structural features so as to automatically compensate for the difference in speed of rotation of the binder head and

the binder cop i.e. binder cop diameter to precisely maintaining constant binder application tension and by auto-



matically detecting binder break or binder run out, to stop the machine before cable damage occurs.

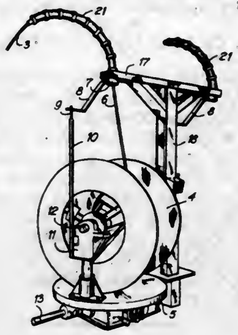
3,555,802
OPEN END ROVING, SPINNING, AND SPINNING AND TWISTING MACHINES
Daniel W. Maxham, Rte. 3, Austell, Ga. 30001
Continuation-in-part of application Ser. No. 788,216, Dec. 31, 1968. This application Dec. 8, 1969, Ser. No. 883,226
Int. Cl. D01h *7/00, 1/12*
U.S. Cl. 57—58.89 **22 Claims**



An open end roving, spinning, and spinning and twisting machine in which a twist belt or twist drum or twist drums cooperates with an elongate twist needle along the length of which drafted lengths of fibrous material are delivered sequentially so that the fibrous material will be loaded and wound upon the twist needle and then passed to delivery rolls for removing the fibrous material as a continuous length from the twist needle while imparting twist thereto.

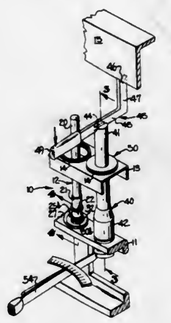
3,555,803
MACHINES FOR LAYING CABLE STRANDS
Daniel Pourtier, 14 Avenue du 11 Novembre, Saint-Maur, Val-de-Marne, France
Filed May 24, 1968, Ser. No. 731,849
Claims priority, application France, Aug. 29, 1967, 119,260
Int. Cl. D01h *1/00*
U.S. Cl. 57—59 **8 Claims**

A guide for a cable strand laying machine is formed, at a location where a rotating cable strand undergoes change in direction, as a plurality of contoured hollow guide-sleeves through which the strand passes, the sleeves being coupled together for common rotation and individually supported in respective angular positions in a curved guide duct. The first sleeve is driven substantially



synchronously with the rotation imparted to the strand and the sleeves are successively driven from the first sleeve. The coupling between the individual sleeves may be by tongue and groove connection.

3,555,804
DEVICE FOR PLUMBING AND CENTERING A ROTATABLE SPINDLE WITHIN A SPINNING RING
Bennie M. Murph, Hickory, N.C., assignor to Shuford Mills, Inc., Hickory, N.C., a corporation of North Carolina
Filed Apr. 25, 1969, Ser. No. 819,310
Int. Cl. D01h *7/10;* **B25b** *27/00*
U.S. Cl. 57—132 **13 Claims**



A device for plumbing and centering a rotatable spindle within a spinning ring capable of traversing movement along the spindle to facilitaate mounting of the spindle on a spindle rail of a spinning frame with the spinning ring concentrically encircling the spindle, including an elongated tubular body of uniform cross section throughout a major portion of the length thereof and adapted to be co-axially mounted upon the spindle, and an alignment bushing having an aperture therein of substantially the same cross section as the cross section of the major portion of the tubular body and having said tubular body matingly received therein, said bushing being adapted to be mounted for traversing movement with the spinning ring with the aperture therein disposed concentrically with the spinning ring.

3,555,805
FILAMENTS OF A SYNTHETIC ORGANIC POLYMER

Peter R. Thomas, Pontypool, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

Filed Sept. 14, 1966, Ser. No. 579,273
Claims priority, application Great Britain, Sept. 14, 1965, 39,122/65
Int. Cl. D01f *1/02, 7/04;* **D02g** *3/02*
U.S. Cl. 57—140 **25 Claims**

A polyamide yarn is described comprising at least one polyamide filament which has an as-spun molecular orientation exhibiting an X-ray deffraction pattern of concentric rings in which the orientation factor of the inner ring minus the orientation factor of the outer ring is greater than 0.2. The orientation in the as-spun polyamide filament is obtained by the addition of a small amount of a polyamide nucleating agent in finely divided particle size prior to spinning into a filament. The polymeric nucleating agent is preferably a polyamide having a higher melting point than the melt holding temperature of the filament forming polyamide.

ERRATUM

For Class 57—145 see:
Patent No. 3,555,789

3,555,806
POROUS NYLON FIBER RODS

John P. Knudsen, Raleigh, William C. Mallonee, Chapel Hill, and Robert E. Martin, Wilson, N.C., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

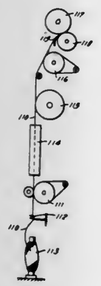
No Drawing. Filed Dec. 18, 1968, Ser. No. 784,844
Int. Cl. D02g *3/36*
U.S. Cl. 57—153 **6 Claims**

Porous nylon fiber rods adaptable for use as a wick in fiber point pens include a plurality of continuous lengths of substantially parallel nylon fibers which are autogenously bonded together along selected contiguous fiber surfaces. The fiber rod is twisted helically about its central axis and has a density of from about 1.00 to about 0.60 gms./cm.^{3} which provides the rod with a series of interconnecting liquid conducting passageways.

3,555,807
METHOD OF TREATING YARN

Walter Parker, Wilmslow, England, assignor to Ernest Scragg & Sons Limited, Macclesfield, Cheshire, England

Filed June 8, 1967, Ser. No. 644,657
Int. Cl. D02g *1/02*
U.S. Cl. 57—157 **14 Claims**

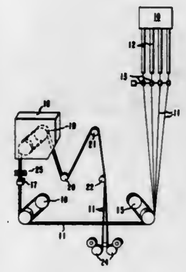


The invention relates to a method of treating a tensioned yarn which advances in a predetermined direction. The method comprises the steps of engaging successive portions of the yarn, and simultaneously twisting and advancing the respective engaged yarn portions at a rate requisite for obtaining a tension in the yarn which downstream of the respective thus engaged yarn portion is in the range of 0.10 to 0.17 gram per denier, and which upstream of the thus engaged yarn portion is in the range of 0.07 to 0.14 gram per denier.

3,555,808
PROCESS FOR DRAWING AND CONTINUOUSLY HEAT-SETTING SYNTHETIC FILAMENTS

Joseph D. Gutmann, Jr., Kinston, N.C., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Oct. 9, 1968, Ser. No. 766,131
Int. Cl. D02g *3/02*
U.S. Cl. 57—157 **7 Claims**

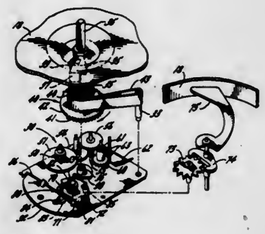


An improved process for drawing and continuously heat-setting filaments of synthetic, melt-spinnable polymers involves increasing the coherency of the filament bundle during such processing by false-twisting in the drawing zone.

3,555,809
LONG RINGING KITCHEN TIMER

Eugene M. Michael, Spring Valley, Ill., assignor to General Time Corporation, Stamford, Conn., a corporation of Delaware

Filed Dec. 13, 1968, Ser. No. 783,572
Int. Cl. G04f *3/02*
U.S. Cl. 58—21.13 **7 Claims**

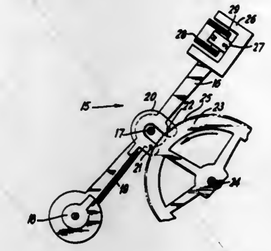


A kitchen timer in which the indicator knob is attached to a main shaft which also has secured thereto the drive spring and a cam. The cam de-clutches the gong drive train while the interval is being timed and engages the gong train at the end of the interval.

3,555,810
HOROLOGICAL INDEXING DEVICE

Heinz, Meitinger, Pforzheim, Germany, assignor to Timex Corporation, Waterbury, Conn., a corporation of Connecticut

Filed Dec. 29, 1969, Ser. No. 888,596
Int. Cl. G04c *3/00, 3/04;* **G04b** *15/00*
U.S. Cl. 58—23 **15 Claims**

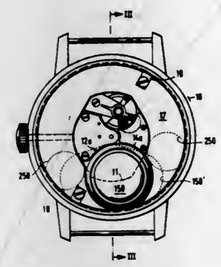


A horological instrument includes a mechanical oscillator. The mechanical oscillator is connected to a cantilevered flat spring which carries indexing means, such as jewels or pins. The indexing means progresses an index wheel.

3,555,811
BATTERY-POWERED WRIST WATCH

Kurt von Zeppelin and Günther Scholz, Schramberg, Wurttemberg, Germany, assignors to Messrs. Gebruder Junghans G.m.b.H., Schramberg, Wurttemberg, Germany, a corporation of Germany

Filed Dec. 27, 1968, Ser. No. 787,501
Claims priority, application Germany, Dec. 29, 1967, 1,673,761
Int. Cl. G04c *3/00;* **G04b** *19/24, 37/00*
U.S. Cl. 58—23 **1 Claim**



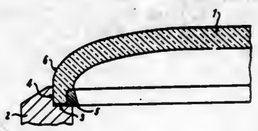
Battery powered wrist watch having a case with a clockwork movement mounted therein and an open space between the periphery of the movement and the sides of the case for a battery cell. A collar surrounds the movement which securely holds the latter in the case.

3,555,812
FLUIDTIGHT AND TAMPER-PROOF TIMEPIECE CASE

Ervin Piquerez, Bassecourt, Switzerland

Filed Dec. 20, 1968, Ser. No. 785,548
Claims priority, application Switzerland, Dec. 27, 1967, 18,201/67
Int. Cl. G04b *37/08*
U.S. Cl. 58—90 **2 Claims**

Timepiece case in which the bottom and/or the crystal are driven in suitable hollows in the middle and wherein the said bottom or said crystal have a shape which resists all grasping aimed at removing them from their housing,

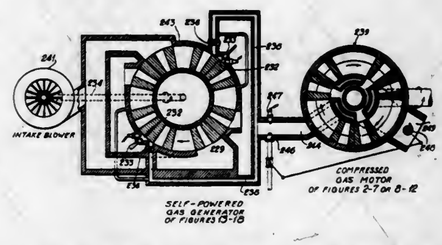


the opening of the case requiring the making of at least one notch to allow the removal of the bottom or of the crystal.

3,555,813
ROTARY PISTON DEVICES

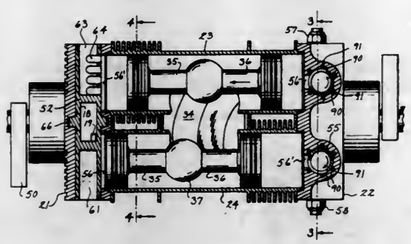
Charles Bancroft, 178 Ferris Hill Road, New Canaan, Conn. 06840

Original application Aug. 5, 1968, Ser. No. 750,084. Divided and this application Nov. 21, 1969, Ser. No. 878,773
Int. Cl. F01k *23/00;* **F04c** *1/00;* **F02b** *53/00*
U.S. Cl. 60—11 **9 Claims**



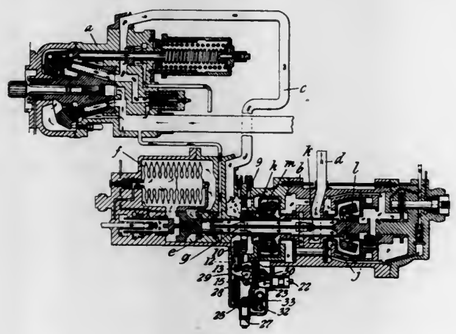
A self-contained power system particularly suitable for use as a vehicle drive system consisting of a self-powered and self-regulating gas generator of the rotary piston type delivering hot compressed gas for any desired purpose, such as the powering of compressed gas motors which may also be of the rotary piston type, capable of individually driving each wheel of a vehicle. Both the compressed gas motors and the gas generator incorporate rotating sets of vane pistons moving in an annular chamber, and alternately accelerating and decelerating while moving around the annular chamber. The rotating sets of accelerating and decelerating pistons are controlled by their engagement with connecting members mounted for planetary orbital rotation within the stator housings of these devices. At least one of these connecting members is engaged with at least one central crankshaft for controlling this orbital rotation and delivering torque to or from the device, while one or more other connecting members are "floating" connecting members engaged only with the piston sets, and not connected directly with other connecting members or crankshafts or with the stator housing. The gas generator incorporates a unique compressed gas bleed feature providing self-regulating operation for efficient delivery of compressed gas at a predetermined pressure level. The compressed gas motor devices incorporate simple reversing means and means for automatic adjustment of port openings and closings for most efficient operation at any given pressure, as well as simple speed reducer means functioning to reduce the high rotational velocity of the crankshafts in these gas motors to more useful output velocities for such purposes as driving the wheels of a moving vehicle. Other useful features of these rotary piston devices include positive lubrication means for drawing oil from an oil sump during operation, splashing it over the moving parts during operation, but returning it to a sump in which it is retained when the device is not in operation.

3,555,814
INTERNAL COMBUSTION ENGINES
Arthur L. Morsell III, 8820 SE. 63rd St., Mercer Island, Wash. 98040
Filed Nov. 26, 1968, Ser. No. 778,966
Int. Cl. F02g 3/02; F02b 75/26
U.S. Cl. 60—39.6 8 Claims



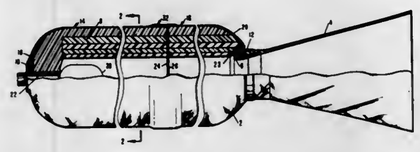
The engine has a rotating valve rod journalled in the cylinder head across the tops of two cylinders containing reciprocating pistons, one being a compression cylinder and the other an expansion cylinder; passageways including an intake chamber in the valve rod direct intake gases to the compression cylinder when the valve rod is in one position of rotation, and passageways including an exhaust chamber in the valve rod are adapted to exhaust gases from the expansion cylinder when the valve rod is in another position of rotation. An intermediate transfer chamber in the valve rod has a first port located for communication with the compression cylinder when the valve rod is in a predetermined position of rotation and has a second port located for communication with the expansion cylinder when the valve rod is in another predetermined position of rotation.

3,555,815
SPEED CONTROL APPARATUS FOR GAS TURBINE ENGINES
Joseph Lewis Bloom, Bale d'Urfe, Quebec, Canada, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed July 22, 1968, Ser. No. 746,483
Int. Cl. F02c 9/08
U.S. Cl. 60—39.28 5 Claims



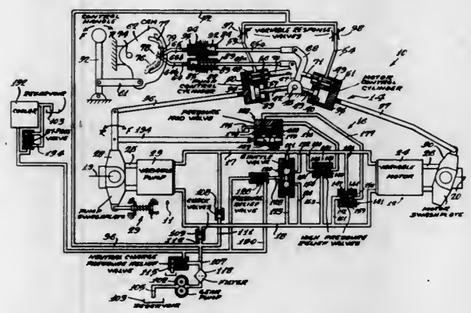
Apparatus for controlling the supply of fuel to a gas turbine engine including means for controlling a spring acting against a governor lever, with the spring acting against a lever which is fulcrummed against a cam which is manually operable and the lever being fulcrummed on a part whereby the setting of the spring can be varied to vary the speed at which the engine is governed.

3,555,816
ROCKET MOTOR
John A. Leasure, Jr., and John H. Main, Salt Lake City, Utah, and Richard Winer, Cumberland, Md., assignors to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
Filed Apr. 20, 1961, Ser. No. 104,469
Int. Cl. F42b 1/02
U.S. Cl. 60—39.47 5 Claims



1. A gas-generating device having in combination:
(a) a substantially tubular casing having a fore section and an aft section telescoped together,
(b) means bonding said telescoped sections,
(c) a composite internal-burning solid propellant charge within the casing,
(d) said charge comprising generally cylindrical fore and aft abutting charge sections,
(e) means for bonding said charge sections, each said section of which consists essentially of a plurality of coaxial layers of propellant having decreased burning rates in radial progression, and
(f) said coaxial layers of said fore charge section having the outermost layer of propellant extending substantially traversely across a forward end of the said fore charge section.

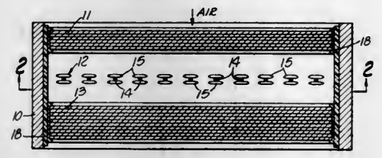
3,555,817
ACCELERATION AND DECELERATION PRESSURE RELIEF VALVES
Melvin M. Hann, deceased, late of Ottawa, Ill., by Helen J. Hann, executrix, Ottawa, Ill., assignor to Sundstrand Corporation, a corporation of Delaware
Filed Nov. 4, 1968, Ser. No. 773,982
Int. Cl. F15b 15/18
U.S. Cl. 60—53 7 Claims



A hydrostatic transmission including a reversible hydraulic pump and a hydraulic motor with first and second conduits interconnecting the pump and motor in closed

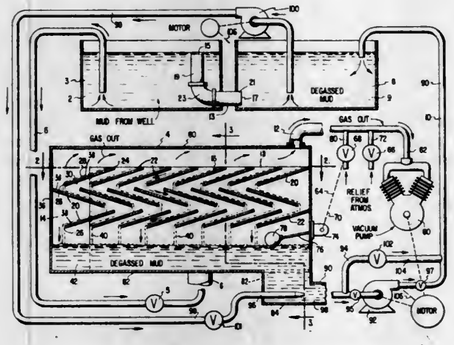
circuit fashion, including a pressure relief valve for each conduit and a modulated pilot valve for varying the pressure relief setting of the relief valves in response to displacement changes of the pump.

3,555,818
ELECTROSTATIC PRECIPITATOR
Blaine H. Vlier, 1012 E. Wilson Ave., Glendale, Calif. 91206
Filed Apr. 22, 1968, Ser. No. 723,166
Int. Cl. B03c 3/00
U.S. Cl. 55—131 3 Claims



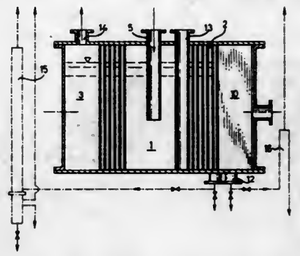
A precipitator for electrostatically removing dust and other contaminants from air passing through it. The precipitator comprises a pair of mechanical filters positioned on either side of an ionizing grid, an electric field being established between the grid and the mechanical filters. The grid may be in the nature of a plurality of vertical wires or rods to which short horizontal pointed elements are fastened. These pointed elements ionize the air to charge the contaminants passing therethrough, the charge on the contaminants causing them to be attracted to the mechanical filters. The potential between the screen and the filters is D.C. with a low ripple factor.

3,555,819
BAFFLE STRUCTURE AND FLOW DISTRIBUTOR FOR A DEGASSING APPARATUS
Gerald E. Burnham, Sr., 2000 W. St. Mary Blvd., Lafayette, La. 70501
Filed May 17, 1968, Ser. No. 730,124
Int. Cl. B01d 19/00
U.S. Cl. 55—170 12 Claims



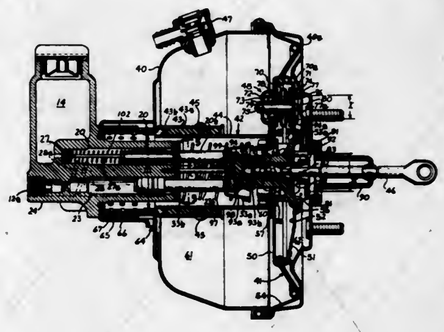
An apparatus for use in the degassification of drilling mud including a vacuum tank having a new and improved baffle arrangement comprised of a pair of baffle means on opposed sides of an elongated mud overflow container, each of said baffle means being comprised of a plurality of baffle layers, said layers being made up of individual baffle plates extending transversely of said elongated container and being spaced longitudinally of said container.

3,555,820
DECANTING APPARATUS
Gerhard Cramer, Frankfurt am Main, and Gunter Heck and Egon Malow, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany
Filed June 3, 1969, Ser. No. 829,860
Claims priority, application Germany, June 21, 1968, 1,767,836
Int. Cl. B01d 19/00
U.S. Cl. 55—177 4 Claims



A decanting apparatus with heat exchanger and quiescent chambers is described. The inlet chamber is connected via a product chamber of a spiral heat exchanger to a discharge chamber disposed round the heat exchanger, the said product chamber being narrow as compared to its height and being arranged in several turns round the inlet chamber.

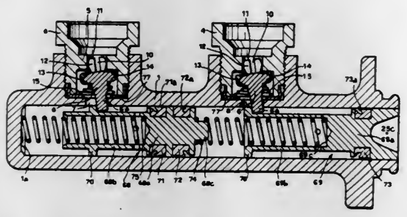
3,555,821
POWER UNIT FOR HYDRAULIC BRAKE SYSTEMS
Edward A. Rockwell, 167 Ashdale Place, Los Angeles, Calif. 90049
Original application Apr. 5, 1966, Ser. No. 540,308, now Patent No. 3,442,080. Divided and this application Sept. 18, 1968, Ser. No. 800,297
Int. Cl. F01b 19/00; F15b 9/10; F16d 31/00
U.S. Cl. 60—54.5 18 Claims



A power unit for a brake system including a casing having a power wall movable within the casing in response to differential pressures across the wall for actuating the piston of a master cylinder. The power wall is formed by a pair of opposed pressure plates which are mounted on a supporting member, and a reaction mechanism is mounted within the supporting member. The two pressure plates form a fluid chamber within the power wall. For the purpose of controlling the differential pressure across the wall, a valve is mounted within the wall and offset from

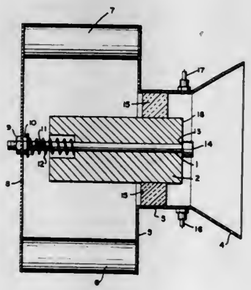
the longitudinal axis of the unit, with the valve being operated by a lever extending laterally from a longitudinal control member.

3,555,822
MASTER CYLINDERS
Enrico Rivetti, Turin, Italy, assignor to Fiat Societa per Azioni, Turin, Italy, an Italian joint-stock company
Filed Feb. 13, 1969, Ser. No. 799,004
Claims priority, application Italy, Feb. 17, 1968, 50,552/68; Feb. 4, 1969, 50,430/69
Int. Cl. F15b *7/08*; F17k *47/00*
U.S. Cl. 60—54.6 **3 Claims**



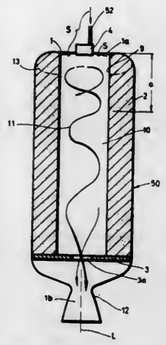
A master cylinder for fluid pressure braking systems having at least one valve device arranged inside a hollow plug screwed into a cup shaped boss formed on the cylinder body. The inside of the valve device is connected through a hole with a compression chamber defined at least at one end by a piston slidable inside the cylinder. The said valve device comprises an annular valve seat formed inside the hollow plug and a valve member constantly urged against said seat by a biassing spring. The valve member has an extension protruding inside the hole connecting the boss with the respective compression chamber, and the piston carries means, which may be integral therewith, which act on the extension so as to open the passage through the valve seat when the said piston is held in its inoperative position under the action of reaction spring means.

3,555,823
SOLID PROPELLANT ELECTRIC ROCKET
William J. Guman, Commack, N.Y., assignor to Fairchild Hiller Corporation, Hagerstown, Md., a corporation of Maryland
Filed Nov. 17, 1967, Ser. No. 683,888
Int. Cl. H05h *1/00*
U.S. Cl. 60—202 **10 Claims**



An electric rocket for space applications in which a solid fluorocarbon propellant is depolymerized, converted into a plasma and magneto-hydrodynamically accelerated by an electric discharge.

3,555,824
GAS GENERATOR CONSTRUCTION AND A METHOD OF OPERATING A COMBUSTION CHAMBER
Wilhelm G. Buse, Egmating, German Munding, Kochendorf, and Heinrich Weigelt, Degmarn, Germany, assignors to Messerschmitt-Bolkow Gesellschaft mit beschrankter Haftung, Munich, Germany
Filed Nov. 22, 1968, Ser. No. 778,205
Claims priority, application Germany, Nov. 25, 1968, 1,626,071, 1,626,072
Int. Cl. F02k *9/04*
U.S. Cl. 60—220 **18 Claims**

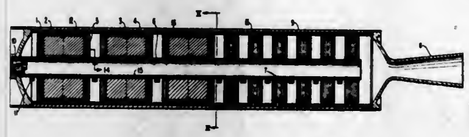


A rocket combustion engine or gas generator comprises a cylindrical housing which terminates in a thrust nozzle at one end for the discharge of generated gases and which includes an opposite closed end for directing a propellant component, namely, a liquid oxygen or an oxygen carrier into the combustion chamber. The combustion chamber is lined with a solid fuel which is advantageously designed as a central burner or a combination central and end burner. The solid fuel defines a central passage for the flow of combustion gases or generated gases which are advantageously confined for passage through a central opening of a plate adjacent the discharge thrust gas nozzle. The oxygen is introduced in a manner such that it whirls along the interior wall of the combustion chamber, and for this purpose it may be introduced by a turbulence nozzle member or by introdirection in a tangential manner into a prechamber which leads into the closed end of the combustion chamber. A solid fuel is designed as a cylinder which abuts against the closed end wall and which rests on a ring plate located adjacent the nozzle or opposite end. The end adjacent the nozzle may advantageously be formed in a curved manner so that the oxygen may flow in a whirling stream in a smooth manner against the end wall thereof. Combustion takes place hypergolically or if the propellant components are not of a type to react hypergolically then an additional mixture to promote hypergolic reaction and ignition with the oxygen is introduced.

3,555,825
DUAL SOLID FUEL PROPELLANT ROCKET ENGINE
Heinz Dilchert, Steyerberg, Germany, assignor to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany
Filed Jan. 16, 1969, Ser. No. 791,692
Claims priority, application Germany, Jan. 16, 1968, 1,626,079
Int. Cl. F02k *9/06*
U.S. Cl. 60—250 **17 Claims**

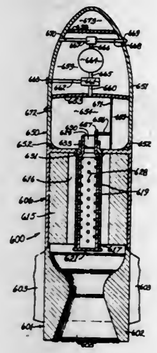
The engine is provided with a plurality of propellant charges, some of which have booster propellant defining their total burning surface and sustaining propellant,

where others have only booster propellant. The charges are annular to surround a central tube having radial apertures communicating with the burning surfaces for conducting the exhaust centrally to a common nozzle means for accommodating the ignition boosters to transfer the ignition from a central ignition charge located at the end of the tube opposite from the nozzle means. Preferably the charges having both booster and sustainer propellant



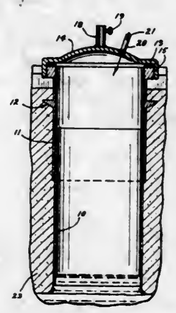
are identical and the charges having only booster propellant are identical, with each having a central band mounted between adjacent thin wall tubes along the interior surface of the combustion chamber for determining the axial uniform spacing of the charges. The charges preferably have means insulating their annular inner and outer cylindrical surfaces so that they are dual axially spaced end burners.

3,555,826
INVERSE HYBRID ROCKET
Donald Perry Bennett, Jr., Diamond Bar, Calif., assignor of one-half to Martin E. Gerry, Santa Ana, Calif.
Continuation-in-part of application Ser. No. 611,188, Nov. 14, 1966, which is a continuation-in-part of application Ser. No. 480,080, Aug. 16, 1965. This application Dec. 30, 1968, Ser. No. 787,789
Int. Cl. F02k *9/02, 7/10*
U.S. Cl. 60—251 **10 Claims**



An inverse hybrid rocket where a fluid fuel reacts hypergolically in a combustion chamber with a non-fluid oxidizer to produce energy in the form of high temperature gases as reaction products, and a mechanism through which the reaction products are ejected to provide power or thrust to the rocket. Several exemplary embodiments are disclosed, one of the embodiments incorporating a two-part coaxial injector mechanism for controlling metering of the fuel to the combustion chamber. The injector mechanism has the capability of ejecting an inner part of the two-part injector when a control device for controlling fuel metering rotates the inner part of the injector a full semicircular distance, thereby disposing of the remaining fuel in ignited form over a predetermined geographical area at the termination of flight of the rocket. Other applications of the rocket include propelling a vehicle, driving a turbo generator, providing aircraft propulsive power and preventing flame-out of an air-breathing jet engine.

3,555,827
METHOD AND APPARATUS FOR PREVENTING ICE FISHING HOLES FROM FREEZING CLOSED WHEN NOT IN USE
Calvin D. Herr, 2941 Fremont Ave. N., Minneapolis, Minn. 55411
Filed May 12, 1969, Ser. No. 823,737
Int. Cl. E02b *1/00*
U.S. Cl. 61—1 **10 Claims**



This invention relates to apparatus adapted to force the water down to the bottom of a fishing hole to prevent the same from freezing up when not in use and this invention also relates to the method of keeping the fishing hole free of ice by maintaining air pressure therein when not in use.

3,555,828
METHOD FOR PREVENTING WATER LOSS FROM RESERVOIRS AND CHANNELS
Herbert Goldstein, Elizabeth, Henry T. Ingram, Roselle, and Robert J. Kufrin, Rocky Hill, N.J., assignors to Witco Chemical Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed June 18, 1968, Ser. No. 737,849
Int. Cl. E02b *5/02*
U.S. Cl. 61—1 **11 Claims**

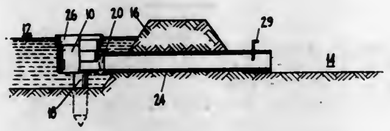
Inhibiting water loss due to seepage into earth or soil substrata surfaces of water catchment reservoirs or channels by applying a liquid elastomeric coating composition over said soil strata surfaces, and then curing said coating composition to form a continuous, thin cohesive membrane which inhibits water loss from the body of water due to seepage into the soil substrata surfaces.

3,555,829
OVERFLOW DISCHARGE OUTLETS AND IRRIGATION SYSTEMS INCORPORATING THE SAME
Neil William Trewhella, Kyneton, Victoria, Australia, assignor to The State Rivers and Water Supply Commission, Armadale, Victoria, Australia, a body corporate of Victoria
Filed Sept. 23, 1968, Ser. No. 761,634
Claims priority, application Australia, Sept. 26, 1967, 27,713/67; May 17, 1968, 37,970/68
Int. Cl. E02b *9/02*
U.S. Cl. 61—17 **4 Claims**

Improved overflow discharge outlets which are especially suitable for the discharge of water from irrigation channels.

The outlet comprises a body formed with an upstanding passage having its upper end defined by a horizontal

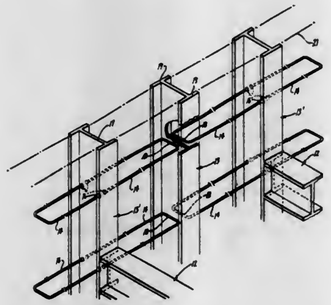
overflow lip which may extend either completely or only partly about the passage for the inflow of water into the latter from the channel. The overflow lip is preferably formed by the upper edge of a vertically adjustable upward extension of the body.



Water is discharged from a lower part of the passage through an opening in the body, and the rate of flow through this opening is restricted by a valve, baffle or other means to prevent wastage of water if the level of the water in the channel should rise excessively above the level of the overflow lip.

One form of the outlet is adapted to be arranged within a channel while another form is adapted to be arranged in a channel bank to close a gap formed therein.

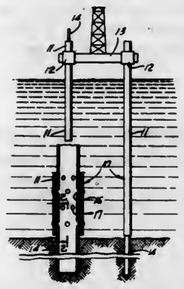
3,555,830
CONCRETE WALL STRUCTURE AND METHOD
Philip J. York, Mill Valley, Calif., assignor to J. H. Pomeroy & Co. Inc., San Francisco, Calif., a corporation of Washington
Filed Jan. 27, 1969, Ser. No. 793,985
Int. Cl. E02d *5/20, 17/04*
U.S. Cl. 61—39 **10 Claims**



A concrete wall structure and method characterized by portions of a wale disposed internally of the wall. The wale is formed by preparing a soldier beam with laterally extending reinforcing elements and then carrying the reinforcing elements into a trench defined between upstanding soldier beams. Tremie-poured concrete is then placed in the trench.

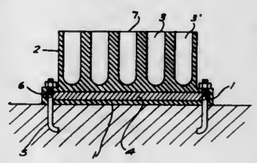
3,555,831
COMPOSITE FOUNDATION MEMBER AND METHOD
Ivo C. Pogonowski, Houston, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Sept. 16, 1968, Ser. No. 759,964
Int. Cl. E02b *17/00;* **E02d** *21/00;* **B21d** *39/04*
U.S. Cl. 61—46.5 **9 Claims**

The invention relates to a foundation element or member of an offshore platform normally positioned in an anchoring medium to elevate the platform a predetermined distance above said medium. The foundation element comprises a first or outer casing disposed in a generally upright position and being operably or fixedly connected at the upper end to the platform. The opposed lower end of the foundation element comprises a pile or similar member adapted to be forcefully imbedded



in the anchoring medium. The latter member is guidably positioned in the casing and is fastened to the casing at a peripheral interlocking joint to form the two concentric members into a unitary body.

3,555,832
FENDER
Jiro Narabu, Shibuya-ku, Tokyo, Japan, assignor to Seibu Gomu Kagaku Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan
Filed Sept. 26, 1968, Ser. No. 762,820
Claims priority, application Japan, Apr. 10, 1968, 43/28,550
Int. Cl. E02b *3/20*
U.S. Cl. 61—48 **5 Claims**



The present invention relates to a fender constructed by boring a rubber plate having a base fixture with a large number of holes at appropriate intervals running in the direction from a contact surface of the plate to a fitting surface, said fender to be fitted to the wharf side or ship's side for the purpose of protecting the ship's hull.

3,555,833
PILES SUITABLE FOR SUBSIDENCE CONDITIONS
Juan J. Correa, Av. Lindavista 229, Mexico City, Mexico
Filed Aug. 1, 1969, Ser. No. 846,771
Int. Cl. E02d *5/52*
U.S. Cl. 61—53 **6 Claims**

A telescopic pile suitable for supporting a foundation on soils undergoing consolidation processes and in general for subsidence conditions, comprising a solid elongated lower member, vertically arranged and bearing on a firm stratum, and a hollow elongated member telescopically mounted over the top of said solid member and containing a fill of gravel or other granular material bearing on top of said solid member and exerting a positive inner friction on the inner walls of said hollow member, the top of said hollow member being arranged to support a foundation built on the surface of the soil.

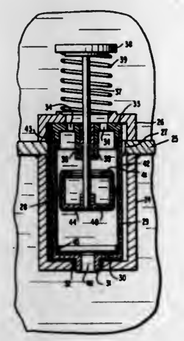
The bearing capacity of the above described pile is derived from positive skin friction as well as from point

resistance. The former is developed through friction between the upper hollow section of the pile and the surrounding soil and the latter is due to the reaction of the



firm stratum on the lower tip of the solid member of the pile. The load is transmitted to the tip through friction between the upper hollow section and the gravel or said fill.

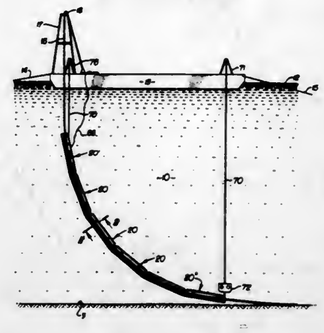
3,555,834
DEEP SUBMERSIBLE POWER UNIT
Clement Walker Weston, Jr., Box 53252, New Orleans, La. 70150
Filed May 6, 1969, Ser. No. 822,225
Int. Cl. B63c *11/00*
U.S. Cl. 61—69 **11 Claims**



A power unit for drilling or for operating a manipulator or like means at substantially unlimited depths in the ocean. The unit is filled with a fluid and has means exposed to ambient sea pressure to maintain at all times a positive pressure differential inside of the unit to thereby assure the exclusion of sea water from the unit.

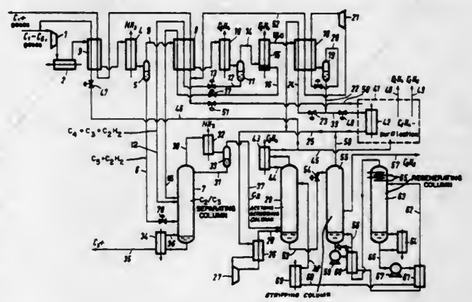
3,555,835
SUSPENDED PIPE LAYING STRINGER FOR LAYING PIPELINES IN UNLIMITED DEPTHS OF WATER
Richard H. Smith, Huntington Beach, Calif., assignor to Healy Tibbitts Construction Co., Long Beach, Calif., a corporation of California
Filed Aug. 16, 1968, Ser. No. 753,144
Int. Cl. F16l *1/00;* **B63b** *35/04*
U.S. Cl. 61—72.3 **5 Claims**

A suspended pipe laying system for laying a continuous jointed pipeline on the bottom of a body of relatively deep water which consists of a plurality of separate shoes jointed together by means of connections which can be adjusted by a power means from the surface so that the shoes can be set in a selected angular relationship whereby all of the shoes acting together establish an arc which extends from a location adjacent the bottom to a location adjacent the floating station from which successive lengths



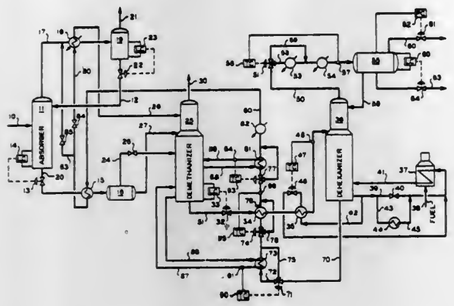
of pipe are joined together to make the pipeline. Movable guides are provided on the shoes so that the pipe, when it is fed downwardly from the floating station, is fed in an arc which does not overstress or damage the pipelines during the course of laying.

3,555,836
PROCESS AND APPARATUS FOR THE SEPARATION OF HYDROCARBONS WITH SIMULTANEOUS PRODUCTION OF ACETYLENE
Walter Schramm, Munich, Germany, assignor to Linde Aktiengesellschaft, Hoellriegelskreuth, Germany
Filed Feb. 9, 1968, Ser. No. 704,487
Claims priority, application Germany, Feb. 13, 1967, L 55,729
Int. Cl. F25j *1/00, 3/00*
U.S. Cl. 62—9 **12 Claims**



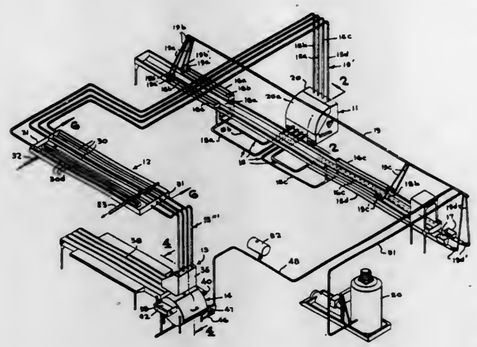
A process and apparatus for separating acetylene-rich gaseous mixture consisting essentially of C_1- to C_5-hydrocarbons and inert gases. The mixture is passed through a plurality of preliminary cooling stages of decreasing temperature to condense out the higher hydrocarbons and fractions of acetylene at each stage. The major portion of the C_2-hydrocarbons, including the remaining acetylene, is condensed out in a low temperature cooling stage. The condensates are further separated in separating and low temperature scrubbing steps to produce acetylene-free and acetylene-enriched fractions. Engine expansion of the methane and inert gases and throttle expansion of a liquid fraction is utilized to produce a portion of the refrigeration required for the separation processes.

3,555,837
TEMPERATURE CONTROL OF FLUID SEPARATION SYSTEMS
William A. McClintock, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Feb. 1, 1968, Ser. No. 702,379
Int. Cl. F25j *3/08*
U.S. Cl. 62—17 **6 Claims**



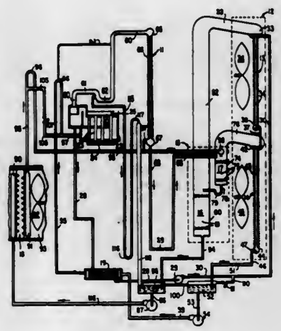
Heavy constituents are removed from a gas stream by means of an absorber. The rich oil from the absorber is stripped in two distillation columns connected in series. The kettle product from the second column is passed in heat exchange relationship with fluid in the first column, the kettle product from the first column, and the rich oil from the absorber. Fluid from the lower region of the second column is passed in heat exchange relationship with the feed to the second column. Temperatures of several of the process streams are maintained constant by adjusting flows through the heat exchangers in response to temperature measurements.

3,555,838
GIBLET PUMPING AND CHILLING METHOD AND APPARATUS
William F. Morris, Jr., 801 Fayetteville St., Raleigh, N.C. 27602
Filed Jan. 17, 1969, Ser. No. 791,950
Int. Cl. F25d *25/04*
U.S. Cl. 62—63 **12 Claims**



A method and apparatus for pumping and chilling giblets wherein the different types of giblets are conveyed through enclosed conduit circuits, each circuit for a different type of giblet, from a harvesting station to a packaging station, by depositing the giblets in a stream of chilled water circulating through each of the circuits to propel the giblets therethrough, subjecting the water and giblets to heat exchange with a coolant during movement through the circuitry, separating the giblets from the water, and recirculating the water through the circuits.

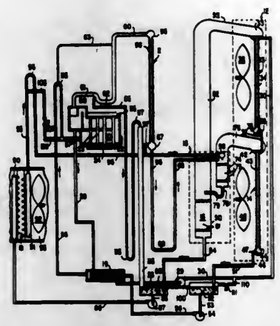
3,555,839
VARIABLE VAPOR PRESSURE ABSORPTION REFRIGERATION SYSTEMS
Louis H. Leonard, Jr., De Witt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Dec. 18, 1968, Ser. No. 784,725
Int. Cl. F25b *15/06*
U.S. Cl. 62—101 **16 Claims**



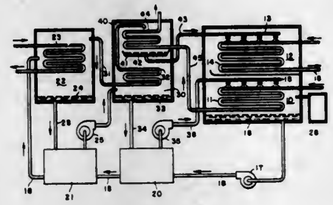
A heating and cooling system employing a two-stage adiabatic evaporator and a two-stage absorber having a counter-flow relationship with the evaporator. A vapor pressure control passage is provided which dilutes the refrigerant passing to the evaporator with absorbent solution to lower the vapor pressure of the refrigerant upon a drop in ambient absorber temperature. The vapor pressure control passage also passes diluted refrigerant to a weak solution passage where it mixes with weak solution to the generator, resulting in an increase in the concentration and vapor pressure of the refrigerant in the evaporator upon a rise in ambient absorber temperature. Heating passage means is provided to mix absorbent solution and refrigerant, which is heated in a generator to supply heating at a desired location.

3,555,840
REFRIGERANT CONDENSATE DILUTION IN ABSORPTION REFRIGERATION SYSTEMS
Louis H. Leonard, Jr., De Witt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Dec. 18, 1968, Ser. No. 784,726
Int. Cl. F25b *15/06*
U.S. Cl. 62—101 **12 Claims**

A heating and cooling system employing a two-stage adiabatic evaporator and a two-stage absorber having a counterflow relationship with the evaporator. A vapor pressure control passage is provided for controlling the vapor pressure of the refrigerant in the evaporator under low ambient operating conditions. A heating passage is provided to mix absorbent solution and refrigerant which is heated in the generator to supply heating at a desired location. A refrigerant condensate solution passage is provided to dilute the refrigerant condensate in the condenser liquid header with diluted refrigerant during periods of low ambient temperature operation in the cooling mode.



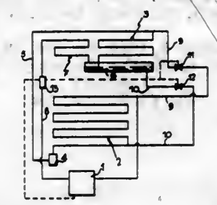
3,555,841
ARSENIC TRIOXIDE CORROSION INHIBITOR FOR ABSORPTION REFRIGERATION SYSTEM
Robert J. Modahl, Galesville, and Paul J. Lynch, La Crosse, Wis., assignors to The Trane Company, La Crosse, Wis., a corporation of Wisconsin
Filed July 15, 1968, Ser. No. 744,913
Int. Cl. F25b *15/00*
U.S. Cl. 62—114 **12 Claims**



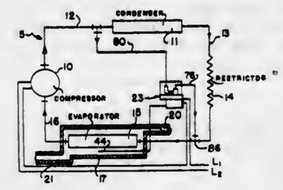
Evolution of hydrogen and corrosion of iron and copper construction materials in a closed, substantially anaerobic refrigeration system of an absorption refrigeration machine is successfully controlled by addition of an arsenic trioxide inhibitor to the lithium bromide absorbent solution. The absorbent solution is maintained at a basicity of from 0.1 N to 0.5 N based on a 60% lithium bromide solution.

3,555,842
DEFROSTING DEVICE FOR COMPRESSION REFRIGERATING MACHINE
Vilhelm Frederik Herman Bodcher, Blackatorp-Killeberg, Sweden
Filed Feb. 4, 1969, Ser. No. 804,345
Claims priority, application Belgium, Jan. 26, 1968, 53,846
Int. Cl. F25d *21/02*
U.S. Cl. 62—140 **10 Claims**

Defrosting apparatus for a refrigerating unit is provided with a compressor, condenser and evaporator connected in series. A defrosting by-pass arrangement is connected to the evaporator and condenser so that upon the detection of frost on the evaporator, by a suitable device, there is effected a closed flow path between the evaporator and condenser, which by-passes the compressor. The compressor is stopped during the entire defrosting period.

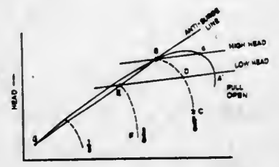


3,555,843
WATER CHILLING UNIT CONTROL
Russell E. Cook, Columbus, Ohio, assignor to Ranco Incorporated, Columbus, Ohio, a corporation of Ohio
Filed July 23, 1969, Ser. No. 843,993
Int. Cl. F25b *41/00*
U.S. Cl. 62—196 **2 Claims**



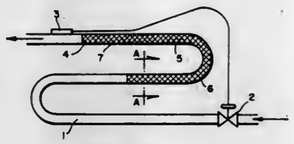
An electric motor powered compressor-condenser-evaporator type water cooler refrigerating system is controlled by a switch and valve actuated by a power element responsive to water temperature adjacent the evaporator, the valve bypassing progressively larger proportions of refrigerant around the evaporator during a cooling cycle to gradually reduce the cooling efficiency of the evaporator. This control prevents short cycling of the system and effects rapid unloading of head pressure.

3,555,844
ANTI-SURGE COMPRESSOR CAPACITY CONTROL
Joseph E. Fleckenstein, Red Lion, Frank A. Kimpel and Leo J. Ormanoski, York, and Herman E. Paetow, Manchester, Pa., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Jan. 2, 1969, Ser. No. 789,112
Int. Cl. F25b *41/04*
U.S. Cl. 62—217 **3 Claims**



Apparatus for controlling the operation of a centrifugal compressor by deriving a signal from the high side of the system and using such signal to reset the control point which limits closing of the PRV and initiates bypassing discharge gas. At lower capacity, the system operates close to the surge line assuring maximum economy.

3,555,845
FORCED-FLOW EVAPORATOR FOR COMPRESSION REFRIGERATION EQUIPMENT
Zbigniew Ryszard Huelle, Sonderborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Sept. 5, 1968, Ser. No. 757,648
Claims priority, application Germany, Sept. 6, 1967, 1,601,023
Int. Cl. F25b *41/04*
U.S. Cl. 62—225 6 Claims



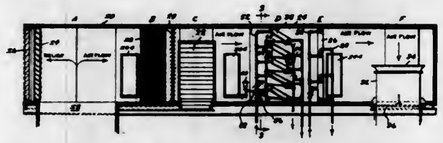
The invention relates to a forced-flow evaporator assembly for compression type refrigerating equipment. In connection with preventing refrigerant in liquid form from passing from the evaporator to the compressor, the evaporator tubing is provided with liquid absorbing means which comprise a capillary system. The liquid absorbing means is formed with a gauze fabric which occupies less than one-half the cross-sectional area of the tubing.

3,555,846
AIR-CONDITIONED VEHICLE CAB
Charles L. Harbeck, Pewaukee, and Raymond N. Sellon, Shorewood, Wis., assignors to Stolper Industries, Inc., Menomonee Falls, Wis., a corporation of Wisconsin
Filed Dec. 13, 1968, Ser. No. 783,570
Int. Cl. B60h *3/04*
U.S. Cl. 62—244 11 Claims

Alternate arrangements are provided for introducing air from the rear of a vehicle cab, filtering such air at the rear of the cab and passing such air forwardly between the cab roof and ceiling, or through a duct along the sides of the space between the roof and ceiling toward air-condition means over the drivers' compartment at the front of the cab. The "air-conditioning means" comprises any arrangement for heating, cooling or ventilating or pressurizing the cab either through direct use of such external air or by recirculating cab air.

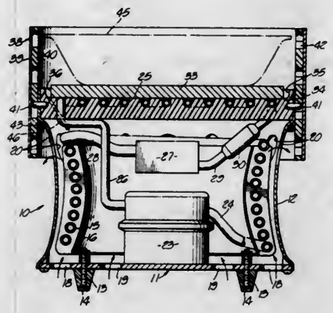
3,555,847
COOLING MEANS FOR AN AIR CONDITIONING SYSTEM
James T. McCarter, 228 McSwain Drive, Greenville, S.C. 29607
Filed Mar. 28, 1969, Ser. No. 811,326
Int. Cl. F25d *21/14*
U.S. Cl. 62—286 17 Claims

A plurality of finned cooling coil units are arranged in a vertical series in an air conditioning system with the cooling coil units inclined for compactness, to accommodate a high air flow velocity and, for effective discharge of condensation. A drip pan is disposed under each cooling coil unit and serves as a movable baffle to provide selective bypassing of the units and, when desired, to



cover the units to prevent air flow therethrough, for which purpose the drip pans include a layer of heat insulating material that prevents substantial heat transfer between the circulating air and the covered units.

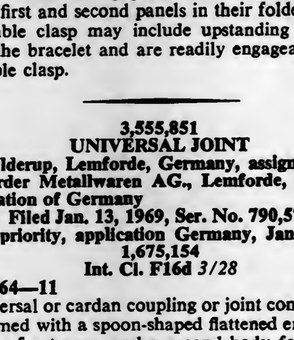
3,555,848
SELF-CONTAINED PORTABLE COOLER FOR FOOD RECEPTACLES
Sarah A. Johnson, P.O. Box 69, West Covina, Calif. 94590
Filed Sept. 9, 1968, Ser. No. 758,551
Int. Cl. F25d *3/08*
U.S. Cl. 62—457 6 Claims



A self-contained, readily-portable cooler for serving-type food receptacles which cooler is adapted to be placed on a dining table during meal time and stored on a shelf between meals. The cooler houses a complete small mechanical refrigeration unit, the evaporator of which is arranged to support a food receptacle and preferably is embraced by means for trapping cool air about the sides of the receptacle. The air-trapping means is retractable for storage and adjustable to different heights when in use.

3,555,849
PURGING ABSORPTION REFRIGERATION SYSTEMS
William W. Bell, Jr., Marcellus, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Dec. 18, 1968, Ser. No. 784,728
Int. Cl. F25b *43/04*
U.S. Cl. 62—475 7 Claims

A heating and cooling system having an absorption refrigeration mode of operation. A heating passage is provided for mixing absorbent and refrigerant together, the mixture being heated in the generator and passed through a heat exchanger in the heating mode of operation. Relatively noncondensible gases are passed from the absorber to the generator from which they pass to the condenser. A condensate trap is provided to prevent the escape of noncondensible gases from the condenser through the condensate passage. A condensate dilution passage is provided with a liquid trap to prevent the escape of noncondensible gases from the condenser through the condensate dilution passage. The generator is provided with a



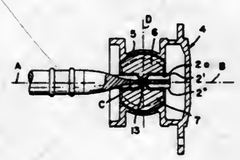
liquid trap operating on the heating cycle to prevent escape of noncondensible gases from the generator. A purge unit is provided to withdraw uncondensed gases from the condenser and discharge them from the system.

3,555,850
SLIDABLE CLASP WITH LATCHING ACTION FOR FOLDABLE CONNECTOR, AND CLASP-BRACELET COMBINATION
Salvatore Bello, Cliffside Park, N.J., assignor to Jacoby-Bender, Inc., Woodside, N.Y., a corporation of New York
Filed Jan. 15, 1969, Ser. No. 791,335
Int. Cl. A44c *5/24*
U.S. Cl. 63—3 14 Claims

A slidable clasp is carried on a first panel of a folding connector of the type adapted to be secured to the ends of a bracelet or the like. When a second panel is folded over the first panel, the slidable clasp is moved into a position in which it engages the second panel, thereby to latch the first and second panels in their folded condition. The slidable clasp may include upstanding parts which straddle the bracelet and are readily engageable to move the slidable clasp.

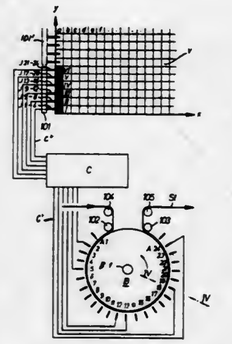
3,555,851
UNIVERSAL JOINT
Jürgen Ulderup, Lemforde, Germany, assignor to Firma Lemforder Metallwaren AG., Lemforde, Germany, a corporation of Germany
Filed Jan. 13, 1969, Ser. No. 790,575
Claims priority, application Germany, Jan. 13, 1968, 1,675,154
Int. Cl. F16d *3/28*
U.S. Cl. 64—11 16 Claims

A universal or cardan coupling or joint comprises a first body formed with a spoon-shaped flattened end portion in the form of a tongue and a second body formed with a cylindrical seat lying transverse to the rotation axis of the second body. A bearing comprising two elongated bearing members of semicircular cross section or a single member of circular section is received in this seat and defines a flattened-section channel, retaining the flattened end portion between its flat surfaces. The outside of the bearing is formed with a ridge fitting a circumferential groove in the seat while the flattened end is formed with



grooves on its opposite faces which receive respective bumps on the flat faces of the bearing members. These ridges and bumps constitute mating formations which serve to center the first body in the bearing and to center the bearing in the seat of the second body.

3,555,852
METHOD AND APPARATUS FOR RECORDING A PROGRAM REPRESENTING A SAMPLE PATTERN
Hans Joachim Stock, Freiburg im Breisgau, Gerhard Schmidt, Stuttgart-Vaihingen, and Johannes Schunack, Berlin-Lichterfeld, Germany, assignors to Franz Morat GmbH, Stuttgart-Vaihingen, Germany
Filed Dec. 12, 1966, Ser. No. 601,179
Claims priority, application Germany, Dec. 11, 1965, M 67,609
Int. Cl. D04b *37/02*
U.S. Cl. 66—1 9 Claims

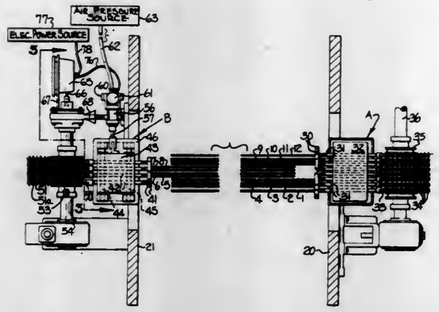


Information regarding color or other distinguishable characteristics of areas of a sample pattern is automatically transformed into recordings on a record carrier which represent by the position thereof the different characteristics of the areas of the sample pattern when read-out during the operation of a textile machine controlled by the record carrier.

3,555,853
GUIDE CONTROL MEANS FOR RASCHEL KNITTING MACHINE
Walter L. Diehl and Frank P. Trumpio, Gastonia, N.C., assignors to Cocker Machine & Foundry Company, Lowell, N.C., a corporation of North Carolina
Continuation-in-part of application Ser. No. 681,800, Nov. 9, 1967. This application Feb. 2, 1968, Ser. No. 702,628
Int. Cl. D04b *23/02*
U.S. Cl. 66—87 12 Claims

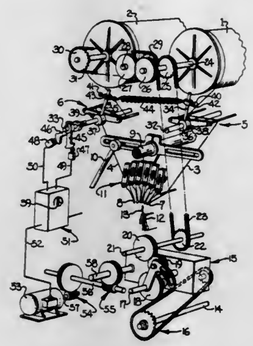
Main pattern control means is provided for imparting patterning motions to certain of the guide bars and an

auxiliary pattern control means is provided for imparting patterning motions to the remaining guide bars. The main and auxiliary pattern control means cooperate to at times cause the guide bars to feed the yarns to single groups of adjacent needles of the front and rear needle



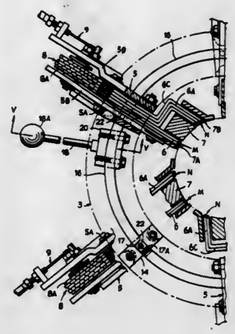
beds and to knit a plurality of relatively large single tubes. At other times, the control means cooperate to feed the yarns to pairs of groups of adjacent needles of the front and rear needle beds and to knit pairs of closely spaced fabric tubes as continuations of each large tube.

3,555,854
WARP KNITTING MACHINE
Marius Antoine Perrier, Lyon, France, assignor to Jean Gusken, Viersen-Dulken, Germany
Filed May 5, 1969, Ser. No. 821,887
Claims priority, application Germany, May 3, 1968, 1,760,324
Int. Cl. D04b *23/02*
U.S. Cl. 66—87 **6 Claims**



The front and rear thread tension "seesaws," which operate with the respective front and rear sets of warp threads of a two-needle bed Raschel knitting machine, are connected together by a tension spring so that uniform tension is maintained on each set of warp threads during swinging movements of the thread guides across the needle beds. This tension spring connection provides tension compensation between the front and rear sets of warp threads by creating a constant exchange of kinetic energy between the respective tension seesaws while the loading of the spring remains substantially unchanged.

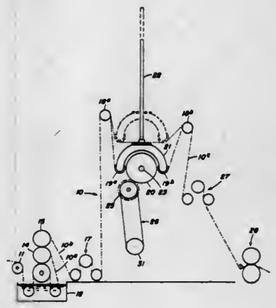
3,555,855
CIRCULAR KNITTING MACHINE
Giorgio Billi, Florence, Italy, assignor to G. Billi & C. S.p.A., Florence, Italy, an Italian corporate body
Filed Sept. 18, 1968, Ser. No. 760,542
Int. Cl. D04b *15/58*
U.S. Cl. 66—138 **7 Claims**



A circular knitting machine having a plurality of yarn guides at each feed, said machine being characterized by the use of a single control mechanism for selectively operating the yarn guides of two adjacent feeds whereby the number of feeds is double the number of control mechanisms. This makes it possible to employ twelve feeds on a 4" needle cylinder which is barely able to accommodate eight feeds of the conventional construction wherein the yarn guides at each feed are operated by a separate control mechanism corresponding to said feed.

The machine also includes means for simultaneously raising all of the yarn guides and their controlling mechanism from their lower, operating, to an upper inoperative position.

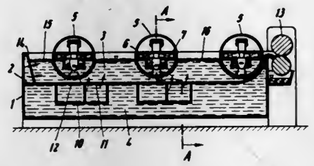
3,555,856
APPARATUS FOR DEVELOPING A PATTERN ON A SURFACE OF A TEXTILE MATERIAL
Sumner Henry Williams, Short Hills, N.J., and Joseph Reid Ellis, Easton, Pa., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 7, 1967, Ser. No. 614,520
Int. Cl. D06c *23/00;* **D06p** *7/00*
U.S. Cl. 68—13 **6 Claims**



A method and apparatus for producing contrasting effects such as colored designs and patterns in or on materials permeated with solutions of dyes, pigments or

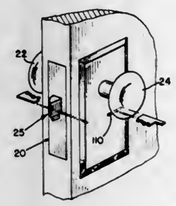
chemicals by contacting the material with a heated die having the desired pattern. The elevated temperatures of the heated die cause flash evaporation of the moisture in the material, whereby the products migrate to, and are intensified at the heated contacted surfaces.

3,555,857
APPARATUS FOR THE WET-TREATMENT OF LOOSE TEXTILE MATERIAL
Hans Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to Vepa AG, Basel, Switzerland
Filed Oct. 8, 1968, Ser. No. 765,780
Claims priority, application Germany, Oct. 20, 1967, 1,685,521; Oct. 30, 1967, 1,685,522
Int. Cl. D06f *29/00, 35/00*
U.S. Cl. 68—22 **12 Claims**



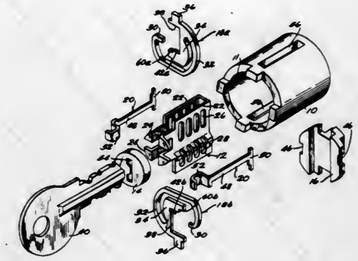
The present disclosure relates to an apparatus for the wet-treatment of loose textile material which comprises at least one liquid container containing a treatment liquid and provided with a perforated intermediate bottom which divides the container into a treatment zone and a lower dirt-settling zone, at least one conveying element subjected to a suction draft disposed in the treatment zone and at least partially immersed in the treatment liquid, means for introducing the material to be treated to the treatment liquid, at least one distribution box disposed in the settling zone below the intermediate bottom and in the vicinity of the conveying element for distributing the treatment liquid over the entire working width of the conveying element and outlet means for removing the loose textile material from the treatment liquid.

3,555,858
CHANGEABLE LOCK
Paul D. Owen, 539 Highland Ave. 27403; Charles R. Hilemn, 1302 New Garden Road 27410; and James Carroll Velvin, Jr., 604 Dogwood Lane 27410, all of Greensboro, N.C.
Filed Feb. 23, 1968, Ser. No. 707,602
Int. Cl. E05b *25/00, 29/00*
U.S. Cl. 70—384 **3 Claims**



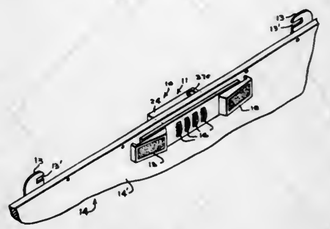
A changeable lock for use with a lever or knob-operated door utilizing a comparing device with which changeable and mateable slugs and keys are compared. When a compatible slug and key are sensed, the bolt of the door is displaced as the doorknob is turned by a camming device. The lock may be opened from the inside by moving the interior doorknob without comparing the key and slug.

3,555,859
CYLINDER LOCK
Nathan L. Berkowitz, 4762 N. Cumberland Blvd., Milwaukee, Wis. 53211
Continuation-in-part of application Ser. No. 658,831, Aug. 7, 1967. This application Nov. 12, 1968, Ser. No. 778,915
Int. Cl. E05b *15/14*
U.S. Cl. 70—340 **21 Claims**



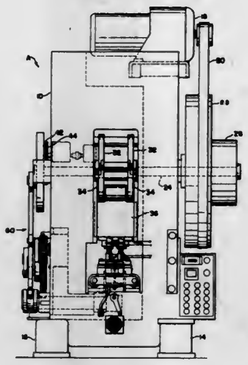
A lock mechanism comprising a cylindrical shell having a tumbler engaging means thereon and adapted to receive a plug member therein for relative rotational movement with respect to the shell. The plug is adapted to carry a plurality of tumbler members which move into and out of locking engagement with the shell in response to insertion and withdrawal of a key to thus permit relative rotation of plug in shell when the key is inserted and to restrain such movement when the key is withdrawn.

3,555,860
SLIDE ROD TYPE COMBINATION LOCK AND LATCH STRUCTURE
Wallace E. Atkinson, Petersburg, Va., assignor to Long Manufacturing Co., Inc., Petersburg, Va., a corporation of Virginia
Filed Sept. 3, 1968, Ser. No. 757,073
Int. Cl. E05b *37/02, 5/52*
U.S. Cl. 70—312 **15 Claims**



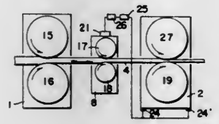
A combination lock and latching mechanism, formed of a center lock unit having plural, coaxial dial wheels and a stack of hubs therefor which are axially movable to decouple them from the dial wheels for changing the combination, a tiltable fence bar, a pair of overlapping slide plates which are locked and released by the fence bar and slide rods coupled to the slide plates and to push-buttons and having latch hooks on their outer ends for latching engagement with keepers.

3,555,861
AUTOMATIC COINING PRESS
William Staecker, Jr., Collaroy, New South Wales, Australia, assignor, by mesne assignments, to Gulf + Western Industrial Products Company, Grand Rapids, Mich., a corporation of Delaware
Filed Mar. 11, 1968, Ser. No. 712,154
Int. Cl. B21j 9/02
U.S. Cl. 72—4 8 Claims



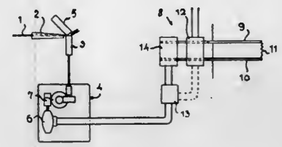
An improved press particularly adapted for coining operations and including an improved feed mechanism driven from the main press drive and provided with means which permit each blank to be struck two or more times. Additionally, the feed mechanism is arranged to eliminate the need for lost motion connections and provide continuous smooth feed motion.

3,555,862
APPARATUS FOR CONTINUOUSLY ROLLING STEEL
Yamata Yoshino, Kanichi Kishikawa, and Katsuyoshi Tanaka, Kitakyushu, Japan, assignors to Nippon Steel Corporation, Tokyo, Japan, a corporation of Japan
Continuation-in-part of application Ser. No. 554,447, June 1, 1966. This application Jan. 24, 1969, Ser. No. 814,869
Int. Cl. B21b 37/00
U.S. Cl. 72—10 3 Claims



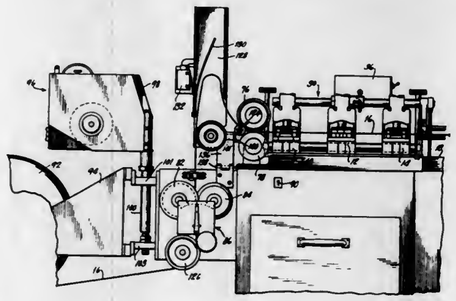
A continuous steel rolling mill apparatus. Between each pair of a plurality of rolling mills along the rolling line is provided an adjusting rolling mill. A small capacity D.C. motor is coupled to each adjusting mill and supplies only sufficient power to the rolls thereof to overcome the inertia and bearing friction. An adjusting device is provided on each adjusting rolling mill for adjusting the screw down position in response to the condition of the material between the rolling mills. The adjusting rolling mill performs light load rolling for controlling the tension and the thrust acting on the rolled material so that it is either small or zero, thereby eliminating bad effects on the section of the rolled material. Detecting means can be provided for detecting the tension and thrust on the material between the rolling means, such detecting means being coupled to the adjusting device for setting the screw down position in response to the detected condition.

3,555,863
CONTROL AND ADJUSTING APPARATUS
Lars Erik Svensson, Tullinge, and Nils Lennart Wahlström, Monsteras, Sweden, assignors to AB Industrifjadrar, Monsteras, Sweden
Filed June 11, 1968, Ser. No. 736,097
Int. Cl. B21f 3/00
U.S. Cl. 72—12 1 Claim



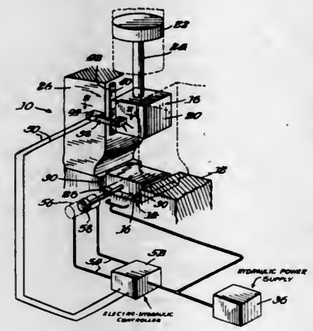
A control and adjusting apparatus in spring coiling machines is disposed after the spring coiling means. The apparatus can serve as a sorting device which functions also as an adjusting apparatus for the coiling means by causing, when coming across a faulty spring, a pulse to actuate the coiling means in a sense correcting the fault. The sensing means of the control apparatus operate with both an "external" and an "internal" measuring range, which implies that a pulse for adjusting the coiling means is delivered already when the predetermined "internal" boundary values are exceeded. Even if a lag occurs the coiling means will therefore be adjusted before the fault of the spring reaches a value such that the "external" boundary values involving sorting out of the spring, are exceeded.

3,555,864
SLAT ACCESSORY MACHINE
Herman E. Wegner, Riverside, Calif., assignor to Alcan Aluminum Corporation, Cleveland, Ohio, a corporation of New York
Filed Sept. 27, 1968, Ser. No. 763,106
Int. Cl. B21b 37/00; B21d 43/28; B23p 19/04
U.S. Cl. 72—14 15 Claims



A 2" venetian blind slat machine has means for feeding a pre-crowned 2" metal strip through a pair of feed rolls which draw the strip from a coil thereof and drive it into an accumulator loop and also, if necessary, correct its bow. The crowned strip is fed through three aligned, readily replaceable cutting dies, one of which cuts the strip into predetermined lengths, and the other two punch rout holes into the ends of adjacent slats. A pivoted adjunct containing crowning rolls for a narrower strip, e.g. a 1" strip, for example, is mounted ahead of the cutting dies so that it can be swung into position and latched in line with the dies to crown a flat strip of the narrower width which is fed into the cutting dies, now being cutting dies adapted to the narrower strip, replacing the 2" cutting dies.

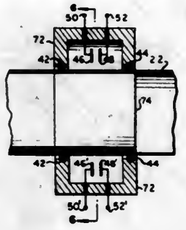
3,555,865
FORGING APPARATUS AND METHOD
Edmund J. Sebastian, 6563 Shabbona Road, Indian Head Park, Ill. 60525
Filed Apr. 17, 1967, Ser. No. 631,323
Int. Cl. B21j 7/46
U.S. Cl. 72—21 7 Claims



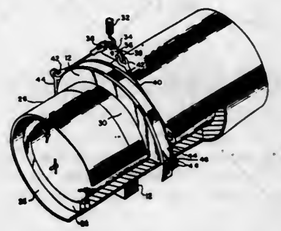
In forging materials between a movable ram and a die assembly on an anvil, providing a continuous load absorbing hydrodynamic liquid film between the die assembly and the anvil to reduce detrimental stress conditions. Detecting misalignment of the ram by photocell sensing means and controlling a hydraulic cylinder which slidably adjusts the position of the die assembly on the anvil into alignment with the ram.

3,555,866
ELECTROPNEUMATIC AND ELECTROHYDRAULIC RE-FORMING OF TUBING AND THE LIKE
Donald J. Roth, Chicago Heights, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Original application Mar. 19, 1965, Ser. No. 441,017. Divided and this application July 3, 1969, Ser. No. 839,002
Int. Cl. B21d 26/12
U.S. Cl. 72—56 21 Claims

Disclosed herein are apparatus and method for the electropneumatic and electrohydraulic re-forming and the like of members such as, for examples, container bodies and the like. The force generated for performing the re-forming is created through the application of electrical energy to a pair of electrodes positioned within a chamber to provide an electrical discharge within such chamber. The electrical discharge creates a plasma bubble between the electrodes and such bubble continues to grow as continued power is supplied to the electrodes. Also disclosed are apparatus and method for severing and flanging members using similarly developed force. The force so created drives the wall of the member or workpiece against an adjacent die to perform the desired operation or operations.



3,555,867
METHOD AND APPARATUS FOR PRECISION SIZING AND JOINING OF LARGE DIAMETER TUBES
Robert J. Schwinghamer and J D Bennight, Huntsville, Ala., assignors to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Original application June 27, 1969, Ser. No. 637,882, now Patent No. 3,507,034. Divided and this application June 27, 1969, Ser. No. 837,377
Int. Cl. B21d 26/14
U.S. Cl. 72—56 17 Claims

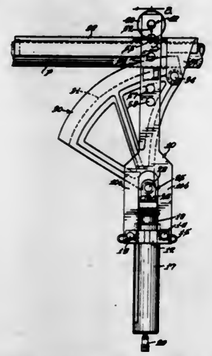


A method and apparatus for portable high precision magnetomotive bulging, constricting, and joining of large diameter tubes. The method allows decremental, very accurate changing of the diameter of very large tubes, as well as high quality joints obtained by either bulging or constricting overlapping ends of two tubes. The apparatus consists of a magnetomotive coil positioned either inside or outside of the tube and a non-conducting mandrel (or forming die) on the other side. The magnetomotive coil has square conductors which are recessed, and thus separated by an air gap, from the tube. The constricting coil has a split metal sleeve for withstanding hoop stress. The tube (workpiece) is insulated from the coil by a thin plastic sleeve. The power supply is an electrically floating system.

3,555,868
PIPE BENDER
Kenneth L. Hagemeyer, Rockford, Ill., assignor to Greenlee Bros. & Co., a corporation of Delaware
Filed July 18, 1968, Ser. No. 745,730
Int. Cl. B21d 7/02
U.S. Cl. 72—154 9 Claims

A pipe bender utilizing a curved bending shoe operated by a hydraulic ram which causes pivotal movement of the bending shoe while a pipe is held in the shoe by a follow bar engaging a backup roller, including a readily removable means for quickly mounting the backup roller in different positions in the form of a shaft providing a

bearing surface for rotatably supporting the roller together with eccentric shaft end portions which prevent



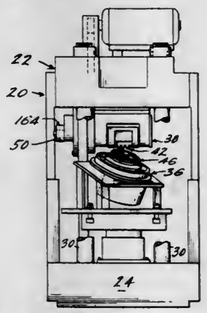
shaft rotation during bending and means on the end portions to locate the shaft axially.

3,555,869
METHOD OF MANUFACTURING ELECTRICALLY WELDED PIPES
Shigeo Kojima, Kawasaki-shi, Japan, assignor to Nippon Kokan Kabushiki Kaisha
Filed Aug. 19, 1968, Ser. No. 753,687
Claims priority, application Japan, Aug. 25, 1967, 42/54,213
Int. Cl. B21b *15/00*
U.S. Cl. 72—177 6 Claims



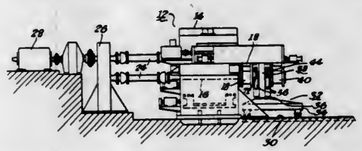
A pre-treated steel strip is subjected to a working strain of 0.3 to 2.0% and is then concurrently formed into a pipe-shaped (or tubular) configuration while the strain is still being applied. The method will produce high quality electric-resistance welded pipe from continuous metal blanks or strips.

3,555,870
GEAR FORMING
Albert F. Tremblay, Toledo, Ohio, assignor to Kent-Owens Machine Company, Toledo, Ohio, a corporation of Ohio
Filed Mar. 29, 1968, Ser. No. 717,329
Int. Cl. B21j *9/02*
U.S. Cl. 72—216 4 Claims



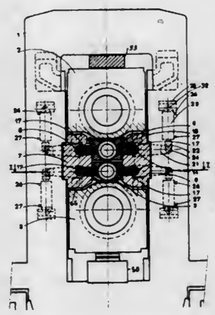
Gears having the teeth extending at angles to the axis of the gear and to the roots of the gear teeth are roll formed. The roll forming is particularly adaptable to hypoid gears in which the teeth not only are at such angles but also curve from one end to the other. The roll forming tool and the gear are positioned so that the tool bisects the angle between adjacent teeth. The tool also can be curved to enable the curved teeth to be formed by using a simple, straight rolling motion of the tool.

3,555,871
ROLL CHANGING DEVICE
Joseph Hlafcsak, Pittsburgh, Pa., assignor to Mesta Machine Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 1, 1968, Ser. No. 772,722
Int. Cl. B21b *31/08*
U.S. Cl. 72—239 9 Claims



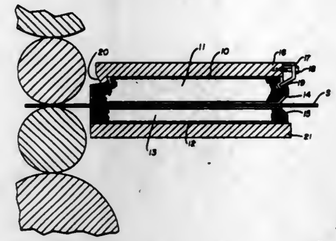
I disclose a roll changing device for use in withdrawing and replacing the rolls of a roll straightener and the like, said device comprising a support housing, means for releasably clamping a plurality of said rolls in a predetermined array on one side of said housing, means for releasably clamping a like number of said rolls in an identical array on another side of said housing, and means for presenting said housing sides successively to said straightener so that the rolls on the straightener can be simultaneously clamped and withdrawn therefrom and so that replacement rolls supported on said device can be simultaneously positioned on said straightener.

3,555,872
DEVICE ALLOWING FOR THE VARIATION OF THE STRESSES ON THE OPERATING CHOCKS IN MULTICYLINDRICAL ROLLERS
Lucien Robert Bournez, Paris, and Robert Fabre, La Garenne-Colombes, France, assignors to Société Nouvelle Spidem, Paris, France, a corporation of France
Filed July 1, 1968, Ser. No. 741,719
Claims priority, application France, June 29, 1967, 112,534
Int. Cl. B21b *31/32*
U.S. Cl. 72—245 18 Claims



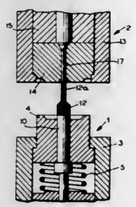
Device allowing for the variation of the stresses exerted upon the working chocks of rollers, with the aid of jacks disposed outside the support housing of the said rollers and means for transmitting the stresses to the chocks by means of appropriate axles and actuating arms connected to the jacks.

3,555,873
DISTORTABLE ROLLING MILL ENTRY GUIDES
Grant A. Oakes, R.D. 4, Cortland, Ohio 44410, and Vincent B. Cetrone, 8569 Sleepy Hollow Drive, Warren, Ohio 44484
Filed Apr. 3, 1969, Ser. No. 813,071
Int. Cl. B21b *39/20*
U.S. Cl. 72—250 7 Claims



A rolling mill entry guide including horizontal support members positioned above and below the pass line of the rolling mill and supporting distortable readily removable oppositely disposed elongated wiping members arranged side by side in closely spaced relation.

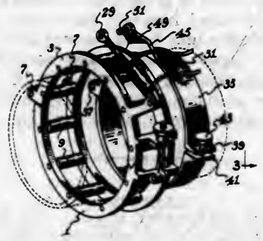
3,555,874
TOOL ARRANGEMENT FOR THE PRODUCTION OF IMPACT EXTRUDED ARTICLES
Hans Kuhn, Basel, Switzerland, assignor to F. B. Hatebur A.G.
Filed Mar. 28, 1968, Ser. No. 716,798
Claims priority, application Netherlands, Mar. 29, 1967, 6704471
Int. Cl. B21c *35/00*
U.S. Cl. 72—257 4 Claims



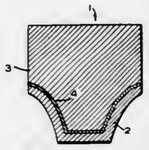
The specification provides a punch and die for the impact extrusion of articles of partly reduced cross-section in which both the punch and die are provided with axially aligned bores in which ejectors can reciprocate. The ejectors are initially retracted from the facing surfaces of the punch and die so that cavities are formed in each, the slug being insetred in the larger cross-section of these two cavities. After deformation of the slug the two ejectors operate to release the finished article.

3,555,875
PIPE END SWAGING DEVICE
Julius Clark, 313 W. Boston, Broken Arrow, Okla. 74012
Filed May 13, 1968, Ser. No. 728,565
Int. Cl. B21d *31/00*
U.S. Cl. 72—292 6 Claims

For swaging pipe ends preparatory to forming a pipe joint, a collar with swaging rollers is placed over the pipe end and a clamping band is fixedly secured to an adjacent portion of the pipe. A fluid motor acts between the collar and the clamping band to roll the collar about the pipe end with a stroke greater than the distance between swaging rollers. The collar can be progressively tightened down on the pipe end.

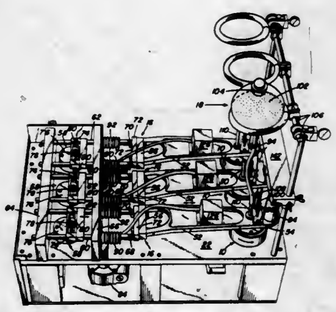


3,555,876
LAMINATED MOLDING TOOL MADE OF A COMPOSITE METAL
Herbert A. Jahnle, Havertown, Pa., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed Dec. 23, 1968, Ser. No. 785,878
Int. Cl. B21c *3/16*
U.S. Cl. 72—476 8 Claims



A laminated molding tool especially adapted for punch molding comprising a molding surface layer of nickel intimately bonded to a supporting substrate comprising an alloy of aluminum, copper and, optionally silicon, which substrate imparts rigidity and strength to the molding surface layer.

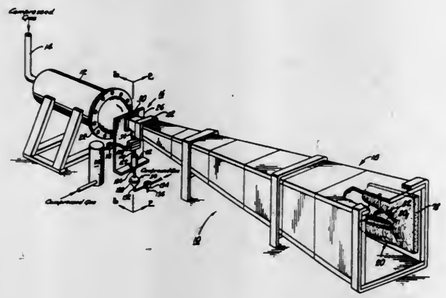
3,555,877
ABRASION TESTING APPARATUS AND METHOD
Jack Horstmann Thelin, Somerville, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Oct. 18, 1968, Ser. No. 768,805
Int. Cl. G01n *3/56*
U.S. Cl. 73—7 7 Claims



The apparatus and method disclosed are for testing the abrasion resistance of materials, particularly elastomers such as rubber. A pair of samples of the materials

to be tested are mounted respectively to a rotating table and a reciprocating arm of the apparatus. The samples are placed in face-to-face contact and respectively rotated and reciprocated to provide the desired abrasive action. At predetermined intervals the samples are separated and an abrasive introduced between their contacting surfaces to accelerate abrasion. The operation of the apparatus is automatically controlled by an electromechanical system and the apparatus may be constructed to simultaneously perform a plurality of tests.

3,555,878
SONIC BOOM PRESSURE WAVE SIMULATION METHOD AND APPARATUS
Simon Slutsky, Franklin Square, and Antonio Ferri, Rockville Centre, N.Y.; said Slutsky assignor to General Applied Science Laboratories, Inc., Westbury, N.Y.
Filed July 21, 1967, Ser. No. 659,551
Int. Cl. G01m *9/00*
U.S. Cl. 73—12 **17 Claims**



Pressure waves closely simulating "sonic boom" waves are produced by regulating the mass flow rate of a gas from a pressurized source in accordance with a mathematical function derived from the general flow equations describing the gas flow. The resulting pressure waves are transmitted to a test station in substantially spherical form by means of a diverging conduit whose walls are substantially straight in the direction of wave travel. In one embodiment of the invention, the mass flow rate is regulated in accordance with the time-integral of the pressure wave desired by varying the exit area of a sonic nozzle which is supplied with compressed gas at a supercritical pressure. The effects of unwanted reflected waves can be eliminated by providing a vacuum source in combination with the pressure source. Traveling pressure waves closely simulating traveling sonic boom waves are produced in all embodiments of the invention.

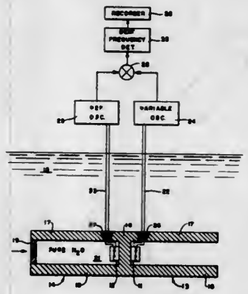
3,555,879
THERMAL TESTING PROBE
Rudi M. Schroeer and Thomas A. Garmhausen, Dayton, Ohio, assignors to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana
Original application Oct. 9, 1964, Ser. No. 402,841, now Patent No. 3,369,389, dated Feb. 20, 1968. Divided and this application Sept. 15, 1967, Ser. No. 667,990
Int. Cl. G01n *25/00*
U.S. Cl. 73—15 **21 Claims**

A thermal testing probe comprising a housing having a heat source and a plurality of sensing elements mounted therein. The sensing elements are mounted in said housing to project outwardly therefrom to sense the heat transmitted through a work-piece from a localized area on said work-piece heated by said heat source. Means



are provided in the housing for shielding said sensing elements from the heat developed by said heat source.

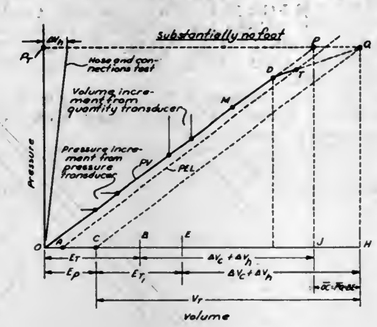
3,555,880
LIQUID DENSITY MEASURING SYSTEM
Arthur C. Menius, Jr., Raleigh, N.C., and Harry Thomas Bentley III, Tullahoma, Tenn., assignors to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Apr. 12, 1967, Ser. No. 630,415
Int. Cl. G01n *9/00*
U.S. Cl. 73—32 **13 Claims**



Disclosed is a system for measuring the density of a liquid in response to changes in the resonant frequency of a piezoelectric crystal. First and second piezoelectric crystals are positioned in proximity to each other and approximately at the same depth below the liquid surface. One of the crystals is loaded by the liquid being monitored while the second crystal is positioned in a body of reference fluid that is coupled with the liquid being monitored so that the difference in resonant frequencies of the crystals is indicative only of the density of the monitored liquid. The difference in the resonant frequencies of the two crystals is derived by driving the crystals with oscillators, the outputs of which feed a mixer that drives a frequency meter.

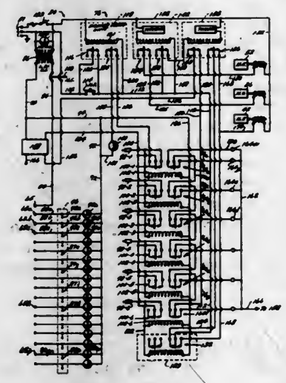
3,555,881
NON-DESTRUCTIVE TESTING METHOD
William M. Ayers, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed June 11, 1969, Ser. No. 832,090
Int. Cl. G01n *3/00*; G01m *5/00*
U.S. Cl. 73—37 **9 Claims**

A method for testing pressure vessels by the "direct expansion" method is provided. In this method a graphic record of pressure and volume is made during the introduction of the pressurizing fluid. The rise in pressure is a function of the volume of fluid introduced. In turn, the stress to strain relationship of vessel material is proportional respectively to the pressure and volume injected up to the elastic limit. The introduction of the fluid is terminated temporarily before the proportional (linear elastic) limit of the material comprising the vessel is reached. A reference line is then drawn on the graph paral-



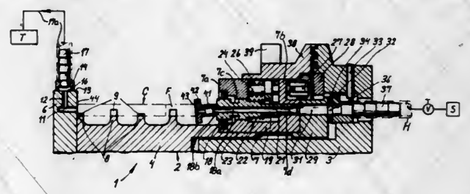
lel to the linear portion of the previous graphic record extending beyond the temporary termination point, and offset a distance calculable to the permissible permanent expansion specified for the test. Subsequently, the introduction of the fluid is started again and the test terminated when the graphic plot of pressure versus volume intersects the reference line or when intersection appears imminent. According to this method, the vessel testing is non-destructive and safer.

3,555,882
PNEUMATIC-ELECTRICAL FLUID GAUGING DEVICE
Bernie E. Robinson, Oak Creek, Wis., assignor to Milwaukee Valve Company, Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed June 2, 1969, Ser. No. 829,669
Int. Cl. G01b *13/00*
U.S. Cl. 73—37.5 **40 Claims**



A pneumatic-electrical air gauging device including a manometer, gauging orifice means, a pneumatic circuitry therewith and having solenoid actuated valves therein, and electrical circuitry for providing a cycle for testing wherein variation from a nominal dimension in an object is determined. The coils of the valves are actuated in accordance with circuits provided in the electrical circuitry to open and close portions of the pneumatic system at proper intervals in connection with the testing. Signalling means circuits are operatively associated with electrical connections (leg contacts) at spaced intervals along the sensing leg of the manometer for visual indication of the change in pressure occurring in the pneumatic circuit as a result of leakage at the gauging orifice means, and which indication determines such variation. Circuit means are provided for pre-setting a range of movement of the manometer liquid over a desired length of its sensing leg, and which pre-setting circuit means are operatively associated with the signalling means circuits. Cycle terminating means are provided whether or not the manometer liquid rises to a pre-set level limit. An additional timer unit is utilized for delaying actual testing of an article in order that fluid flow in the pneumatic system is continuous to the gauging orifice means before such testing begins. Means are also provided for utilizing the results of the testing, which results are in effect recorded or retained in the device, upon termination of the cycle, for a system external to the device.

3,555,883
METHOD AND APPARATUS FOR TESTING OF CIGARETTES OR THE LIKE
Uwe Heitmann, Hamburg, Germany, assignor to Hauni-Werke Korber & Co. KG, Hamburg, Germany
Filed June 20, 1969, Ser. No. 835,103
Claims priority, application Germany, June 25, 1968, 1,757,883
Int. Cl. G01m *3/02*
U.S. Cl. 73—41 **20 Claims**

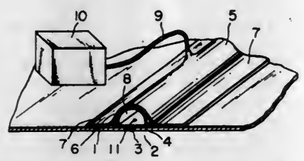


A testing conveyor for cigarettes, particularly filter cigarettes, wherein the rotor is formed with axially parallel peripheral flutes for cigarettes which are caused to move sideways past a testing station where a stream of testing gas is passed through their wrappers. The ends of wrappers are sealed during travel past the testing station by pairs of annular sealing faces at least one of which is provided on a tiltable sealing element sharing the movement of the rotor and capable of changing the inclination of its sealing face so that the latter is moved into the plane of the adjoining end surface of the wrapper. In this way, the tiltable sealing element can properly seal an end surface whose plane is not exactly normal to the axis of the cigarette.

3,555,884
METHOD OF TESTING AIRTIGHTNESS OF HERMETICALLY SEALED TANKS
Katsuro Yamamoto and Takuya Hatano, Tokyo, Kuniyoshi Obata, Kawasaki, Tohru Satoh, Yokohama, and Shinji Nakagawa, Kasukabe, Japan, assignors to Bridgestone Liquefied Gas Company Limited, Tokyo, Japan
Filed Dec. 27, 1968, Ser. No. 787,532
Int. Cl. G01m *3/20*
U.S. Cl. 73—40.7 **3 Claims**

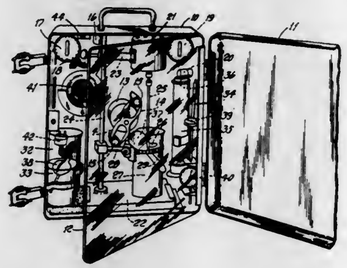
Method of testing airtightness of hermetically sealed tanks is disclosed wherein a gas permeable strip impregnated with a detecting substance is arranged on that portion of a wall plate of a hermetically sealed tank which

includes defects and a gas to be detected introduced in a space present at the side of the wall plate opposite to said strip is caused to leak through said wall portion including defects. The detecting substance reacts with the gas to be



detected and becomes changed, for instance, in color whereby the leakage of gas through said wall plate is detected by observing the change of the detecting substance.

3,555,885
FIRE-FIGHTING FOAM PORTABLE TEST KIT
Carmelo Morales, Brooklyn, and John J. D'Ambrosio, Maspeth, N.Y., and Ira Wilder, Fair Lawn, N.J., assignors to the United States of America as represented by the Secretary of the Navy
Filed July 14, 1969, Ser. No. 841,469
Int. Cl. G01n *33/00*
U.S. Cl. 73—61.1 **3 Claims**



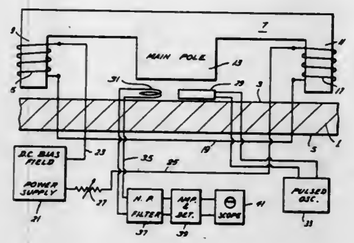
A portable test kit for evaluating the condition of fire-fighting foam including a carrying case having a clear plastic inner door, a centrifuge mounted in the case, timing devices, a mixer, a strainer, assorted beakers, and related equipment. A microswitch is mounted in the case so that the centrifuge cannot be operated unless the clear plastic inner door is closed.

3,555,886
NONGRAVIMETRIC MASS DETERMINATION SYSTEM
William E. Thornton, San Antonio, Tex., assignor to the United States of America as represented by the Secretary of the Air Force
Filed May 20, 1968, Ser. No. 730,461
Int. Cl. G01g *3/16*
U.S. Cl. 73—67.2 **4 Claims**



A non-gravimetric mass measurement system having a support structure for holding a mass to be "weighed" attached to an oscillating spring assembly. A device for indicating precisely when the oscillating mass crosses point of zero displacement produces a signal which is sent to a counter for determining the time period. A substantially frictionless air bearing serves to restrain the motion of the oscillating mass to a single axis under zero gravity conditions in space while serving to support the weight on earth.

3,555,887
APPARATUS FOR ELECTROACOUSTICALLY INSPECTING TUBULAR MEMBERS FOR ANOMALIES USING THE MAGNETOSTRICTIVE EFFECT AND FOR MEASURING WALL THICKNESS
Fenton M. Wood, Sugarland, Tex., assignor to American Machine & Foundry Company, New York, N.Y., a corporation of New Jersey
Filed Sept. 19, 1967, Ser. No. 668,793
Int. Cl. G01n *9/24, 29/00*
U.S. Cl. 73—67.5 **4 Claims**

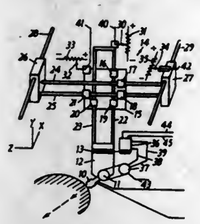


An electroacoustical inspection apparatus is provided for making wall thickness measurements and/or for discovering and locating anomalies. This apparatus includes generally means for establishing a DC magnetic field in the wall of an inspected member, pulsing means for varying this field at a high frequency to produce an acoustic wavefront in the wall (or alternately, creating in an appropriate modulating means located near the wall a high frequency, high power magneic field directed toward the wall), and sensing means for detecting the variations in the established magnetic field affected by the magnetostrictive effect of the wall by the wavefront. Included in the preferred embodiment of the pulsing means is a transmitting transducer comprising a series of coils in which a traveling wave is generated by a cyclical or pulsed wave source. By such action, the angle of incidence of the entering wavefront may be established as well as the propagation direction through the material being examined for wall thickness and for flaws. Suitable detecting and indicating means connected to the sensing means may be provided to detect variations in the magnetic field which are caused by high frequency reflected mechanical vibrations which are an indication of back surface reflections and of the presence of flaws. Suitable calibration means, such as an oscilloscope or phase comparator, is provided to measure the travel time and magnitude of the returning wave as a measure of wall thickness of the inspected member or flaw location.

3,555,888
ULTRASONIC DETECTION APPARATUS
Thomas Graham Brown, The Bungalow, Bankhead Farm, Aberdour, Scotland
Filed Apr. 15, 1968, Ser. No. 726,274
Claims priority, application Great Britain, Apr. 14, 1967, 17,304/67
Int. Cl. G01n *29/00*
U.S. Cl. 73—67.8 **5 Claims**

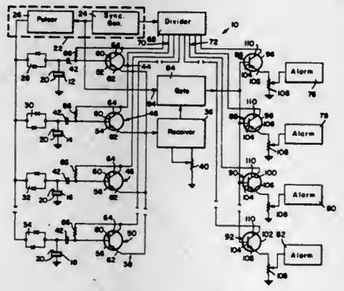
An ultrasonic detection apparatus, particularly for medical diagnostic purposes has a transducer system located within a probe which can undergo three coordinate

translational movements and two rotatory movements. Means are provided for resolving these movements into components along the three axes to control time base



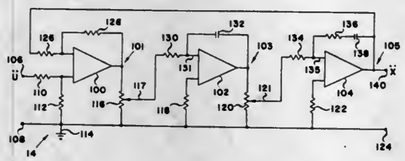
circuits for displaying echoes from tissue interfaces on a cathode ray tube or tubes and to control a selecting means by which echoes are selected for display from a particular plane section of the body under examination.

3,555,889
ULTRASONIC INSPECTION APPARATUS
Frederick G. Weighart, Brookfield, Conn., assignor to Automation Industries, Inc., Los Angeles, Calif., a corporation of California
Filed June 7, 1967, Ser. No. 644,196
Int. Cl. G01n *29/04*
U.S. Cl. 73—67.9 **2 Claims**



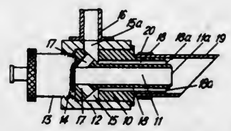
A plurality of transducers are adapted to be coupled to a workpiece at a plurality of different locations. All transducers are simultaneously energized by a transmitter and sequentially gated to a receiver.

3,555,890
MULTICHANNEL SHOCK SPECTRUM ANALYZER
Irving T. Goldwater, San Jose, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Aug. 19, 1968, Ser. No. 753,451
Int. Cl. G01n *23/16*
U.S. Cl. 73—71.4 **4 Claims**



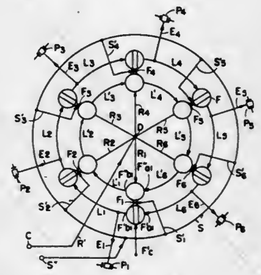
The invention herein disclosed is a multi-channel shock spectrum analyzer for automatically measuring and displaying a plurality of analytical values derived from the spectrum of a shock transient which has been applied to a test structure. A shock transient may be introduced to the test structure with an electrodynamic shake table, upon which the test structure may be mounted or any other apparatus capable of producing a suitable shock transient. The analyzer includes a plurality of analog computer channels each programmed to a specified frequency such that the apparatus covers a wide range of frequencies simultaneously. The outputs of each analyzer element is stored in analog memories The output signals from the memory circuits provide a display of the shock transient spectrum over a frequency range for the structure under dynamic testing.

3,555,891
ULTRASONIC JET PROBES
Richard Lewis, Higham Ferrers, Ireland, assignor to Stewarts and Lloyds Limited
Filed Aug. 11, 1967, Ser. No. 660,054
Claims priority, application Great Britain, Aug. 24, 1966, 38,063/66
Int. Cl. G01n *29/04*
U.S. Cl. 73—71.5 **5 Claims**



An ultrasonic jet probe which uses a jet of liquid which provides a path for ultrasound between an ultrasonic generator and an article under test has a main liquid passageway aligned with the generator and auxiliary liquid passages for discharging liquid adjacent the liquid discharged from the main passageway, the passageways being arranged so that the ultrasound is transmitted only along the main passage. Different arrangements for the passageways and a flexible sleeve extending the outlets of the passageways for forming a reservoir of liquid between the probe and the test article are described.

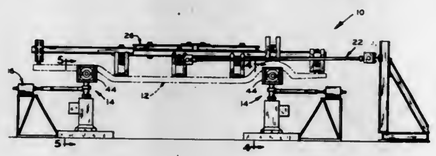
3,555,892
VIBRATION FORCE EXCITING METHOD AND APPARATUS
Akio Hizume, Shuji Oyagi, and Shigeho Tanaka, Nagasaki, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan
Filed May 26, 1969, Ser. No. 827,532
Int. Cl. B06b *1/06*
U.S. Cl. 73—71.5 **7 Claims**



A method of simulating accurately the vibration modes of a rotary body, such as a vaned turbine rotor, having radially projecting elements subjected, during rotation of

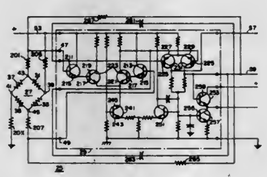
the body, to vibration from one or more vibration exciting sources comprises, while maintaining the rotary body stationary, applying sequentially and successively, to each projecting element, a vibration force having a frequency of $n_1 \cdot n_2$ wherein n_1 is the rated r.p.m., of the rotary body and n_2 is the number of vibration exciting forces effective on a projecting element during each revolution. The application of the vibration force is shifted from one element to the next succeeding element at phase difference of $1/n_1 \cdot n_3$ where n_3 is the number of projecting elements. The apparatus includes a number of flip-flop circuits equal to the number of projecting elements, and each associated with a respective piezo-electric element secured on a respective projecting member. The flip-flop circuits are triggered in sequence to apply the vibration forces to the elements sequentially and successively.

3,555,893
LATERAL AND STEERING FORCE INDUCING MECHANISM
James W. Holzman, Grosse Ile, Mich., assignor to Dana Corporation, Toledo, Ohio, a corporation of Virginia
Filed Sept. 25, 1968, Ser. No. 762,466
Int. Cl. G01m *5/00*
U.S. Cl. 73—71.7 **9 Claims**



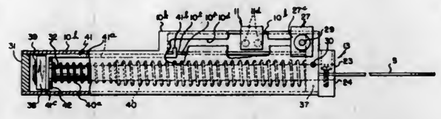
This invention provides a means for producing simulated road induced lateral displacement to a vehicle frame under test and also provides for the simulation of steering forces for this same test frame.

3,555,894
STRAIN GAUGE TRANSDUCER APPARATUS
Walter V. Bratkowski, McKeesport, and Paul F. Pittman, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 25, 1966, Ser. No. 544,739
Int. Cl. G01b *7/16*
U.S. Cl. 73—88.5 **1 Claim**



There is disclosed strain or vibration determining apparatus in which the transducer responsive to strain (**27**, FIGS. 1, 1A, 2, 2A) or to vibration (**131**, FIGS. 6 and 7) is structurally integrated with a monolithic amplifier (**29**, FIGS. 1, 1A, 2, 2A; **149**, FIG. 7). Precision of measurement is thus materially improved because the conductors between the gauge and the amplifier are short.

3,555,895
ROLL SETTING COMBINATION AND METHOD
Harry P. Schmidt, Jackson Heights, N.Y., assignor to The J. E. Doyle Company, a corporation of Ohio
Filed June 21, 1968, Ser. No. 739,020
Int. Cl. G01l *1/04*
U.S. Cl. 73—141 **15 Claims**



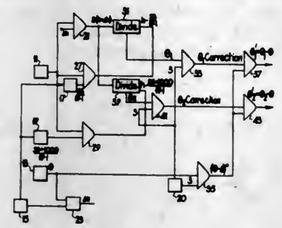
A test device for tension setting printing press and like rollers, comprising a test shim strip inserted between the rollers, a spring restrained slide assembly in a hand manipulatable housing and carrying a strip gripping jaw assembly; parallel housing slots respectively for a friction snubbed marker slide encountered and advanced by the jaw slide upon tension applied to the strip and a lockable slide presettable to indicate a desired tension by coincidence of the slide positions. For long rollers, respective shim strips inserted near opposite roll ends are releasably engageable by an element gripped in the jaw assembly for expeditious alternate tension measurement upon the strips left in place as adjustments are alternately made at opposite roller ends.

3,555,896
STRESS DETECTOR AND LOCATOR FOR WELL PIPE
Preston C. Roberts, Bourg, La., assignor to Great Southern Oil Tool Co., Inc., a corporation
Filed Jan. 15, 1969, Ser. No. 791,240
Int. Cl. E21b *49/00*
U.S. Cl. 73—151 **18 Claims**



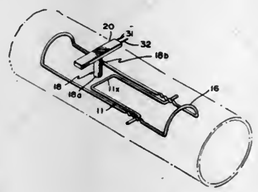
The stuck point of a pipe string in a well bore is located by applying axial or torsional stress to the upper end of the pipe string and monitoring strain at different test depths within the bore hole. Strain is measured by an inductance unit sensing small displacements between a pair of anchoring assemblies mechanically anchored by one-way wedging devices to the pipe at each test depth, while the pipe string is under stress. The anchoring assemblies interconnected by the inductance unit, are suspended by a cable within the pipe string, the lowermost anchoring assembly carrying other tools for removal of pipe sections from the string at or above the stuck point.

3,555,897
LANDING APPROACH AIDS
George Robin Sleight, Coxheath, near Maidstone, Kent, England, assignor to Elliott Brothers (London) Limited, London, England, a British company
Filed June 27, 1969, Ser. No. 837,170
Claims priority, application Great Britain, June 29, 1968, 31,189/68
Int. Cl. G01c *21/06*
U.S. Cl. 73—178 **2 Claims**



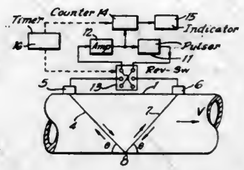
The invention relates to an airborne landing approach aid for an aircraft in which a symbol parallel to and depressed with respect to the horizon is presented on a head-up display. When the aircraft is remote from the touchdown point of a runway the line is depressed by the glide scope angle, normally 3°, with respect to the horizon. To allow for errors introduced by the distance between the pilot and the main landing gear of the aircraft the angle of depression of the symbol varies with distance from the touchdown point of the runway so that it is the landing gear, and not the pilot's eyes, which track down the glide scope.

3,555,898
GAS LOW PRESSURE LOW FLOW RATE METERING SYSTEM
T. O. Paine, Deputy Administrator of the National Aeronautics and Space Administration, with respect to an invention of Robert T. McDonald and Robert J. Fagot, both of Los Angeles, Calif., and James A. Roman, Vancouver, Wash.
Filed Sept. 30, 1968, Ser. No. 763,729
Int. Cl. G01f *1/00*
U.S. Cl. 73—194 **8 Claims**



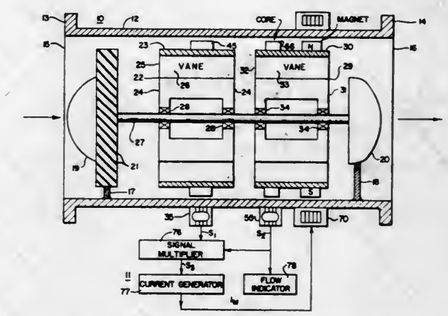
A gas low pressure, low flow rate meter finding particular application in respiration rate studies, is disclosed. It includes a tubular member connected in the path of air or oxygen, supplied to a user from an appropriate source. An exciter wire is located in the tubular member. As each burst of air or oxygen, inhaled by the user, first passes through the tubular member, turbulance is produced about the exciter wire resulting in an acoustic signal or tone. The tone propagates through an acoustic tube to a microphone which is located outside the tubular member. The microphone produces an electrical signal which is conditioned prior to being recorded or displayed.

3,555,899
ULTRASONIC FLOW QUANTITY MEASURING SYSTEM
Miaki Yamamoto and Shin Amano, Tokyo, Japan, assignors to Tokyo Keiki Seizosho Company, Ltd., Tokyo, Japan, a corporation of Japan
Filed Oct. 24, 1967, Ser. No. 677,656
Claims priority, application Japan, Nov. 1, 1966, 41/72,060
Int. Cl. G01p *5/00*
U.S. Cl. 73—194 **2 Claims**



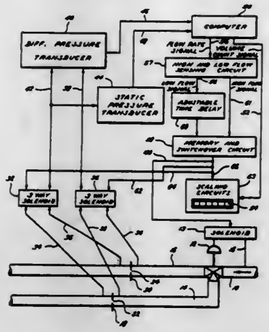
An apparatus for ultrasonically measuring the quantity of flow of a liquid in a conduit. Means for producing two ultrasonic propagation paths between opposite side walls of the conduit, the means for propagating said paths being disposed in a plane containing two parallel longitudinal straight lines and with inclinations in a mutually supplementary relation to said two lines. The apparatus includes means for propagating ultrasonic waves in both directions forth and back in each of the two paths aforesaid. Flow is determined by measuring the propagation speeds in the downstream and upstream directions and calculating the average value of the differences between said different speeds. One can, and preferably does, provide the ultrasonic waves in one path by reflection of the ultrasonic waves in the other path.

3,555,900
FLOW METER
Douglas M. Bauer and Clement F. Taylor, Danvers, Mass., assignors to General Electric Company, a corporation of New York
Filed Dec. 5, 1968, Ser. No. 781,442
Int. Cl. G01f *1/06, 1/12*
U.S. Cl. 73—194 **16 Claims**



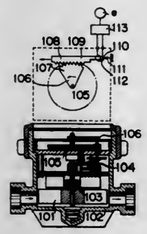
A mass flowmeter system of the angular momentum type comprising swirl generating means, a speed turbine and a reaction turbine restrained by an electromagnetic torque motor. The reaction turbine is maintained in a balanced condition by a control loop into which turbine speed and position signals are introduced to control the torque motor current and torque. In this manner automatic compensation for changes in swirl velocity is obtained permitting direct measurement of mass flow rate without need for maintaining constant swirl velocity. Both analog and digital control and indicating systems are disclosed.

3,555,901
METHOD OF AND APPARATUS FOR MEASURING VARYING FLUID FLOW
Leroy C. Delatorre and Gilbert H. Tausch, Houston, Tex., assignors to Camco, Incorporated, Houston, Tex., a corporation of Texas
Filed Sept. 27, 1968, Ser. No. 763,134
Int. Cl. G01f *1/00*; G01p *5/14*
U.S. Cl. 73—197 5 Claims



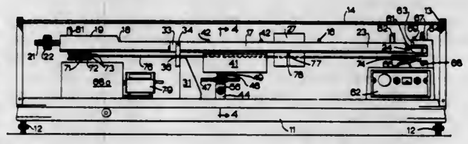
A dual meter line having a fluid flow computer and switchover controls in which the measurement system in response to flow rates automatically directs the flow of fluids to be measured through a low or high rate meter line metering orifice where the flow parameters are measured and monitored by the computer which computes the fluid volume. First and second metering lines, connected to a pipeline having different sized measuring orifices therein wherein the fluid flow is directed to one of the metering lines when the flow rate is below a predetermined amount, and a measurement system measures the fluid flow variables in said one line and a flow computer computes the fluid volume, and when the flow rate increases above a predetermined amount the fluid is switched to the second metering line and the flow variables are measured across the second orifice, the flow measurements transmitted to the flow computer in which the counter scale is automatically changed to correlate with the size of the orifice in the second line.

3,555,902
FLOW METER
Hajime Onoda and Akihumi Yahiro, Tokyo, Japan, assignors to Kimmon Manufacturing Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Sept. 11, 1968, Ser. No. 759,143
Claims priority, application Japan, Mar. 9, 1968, 43/18,160
Int. Cl. G01f *1/06*
U.S. Cl. 73—229 4 Claims



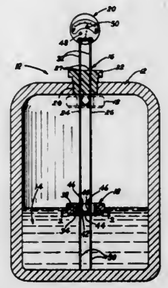
This flow meter includes means for dynamically converting the flow of a fluid passing through a path provided therein to the revolution of a geared rotary crank shaft of a measuring section; a pulse generator having an induction coil, movable magnet core and rapidly reciprocating member associated with the magnet core and urged by the resilient action of a spring; means for intermittently engaging the reciprocating member with the geared rotary crank shaft so as to accumulate, while the reciprocating member is interlocked with the geared crank shaft. Kinetic energy is produced resulting from the rotation of the geared crank shaft in the reciprocating member in accordance with the increasing magnitude of said shaft rotation against the spring action and the kinetic energy is produced at the moment said interlocking is released, producing pulses. A counter measures the pulses supplied by the generator.

3,555,903
INSTRUMENT FOR GAUGING LIQUID DEPTH, AND THE LIKE
Eugene A. Glassey, Camarillo, Calif. (% Exactel Instrument Co., Division of Statham Instruments, Inc., 2230 Statham Blvd., Oxnard, Calif. 93030)
Continuation-in-part of application Ser. No. 615,716, Feb. 13, 1967. This application Aug. 4, 1969 Ser. No. 847,344
Int. Cl. G01f *23/14*
U.S. Cl. 73—302 7 Claims



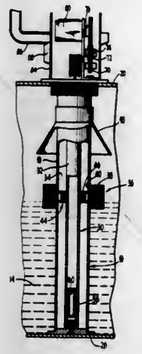
An instrument to gauge liquid depth and quantity and the weight of snow pack by purge bubble principle or other means. Pressure, which is a function of the depth, quantity or weight, is applied to a bellows which in turn is applied to a beam balance. The poise of the balance is driven along the beam by a reversible electric motor and a wire running over pulleys located adjacent the beam. The motor is energized by electrical contacts associated with the beam.

3,555,904
FLUID QUANTITY INDICATING SYSTEM
Paul E. Lenker, Davenport, Iowa, assignor to The Bendix Corporation, a corporation of Delaware
Filed Mar. 24, 1969, Ser. No. 809,782
Int. Cl. G01f *23/10*
U.S. Cl. 73—313 5 Claims



A fluid quantity indicating system having a vessel containing a known cryogenic fluid, a thermocouple suitably extending into said fluid in said vessel, an electrical measuring device connected to said thermocouple externally of said vessel, and a shorting device responsive to said fluid quantity to cause said electrical measuring device to indicate the quantity of fluid. The system provides, fluid quantity indications without the normal requirement for an external source of electrical power.

3,555,905
APPARATUS FOR MEASURING LIQUID IN A TANK
Clayton A. George, Fremont, Calif. (30971 Union City Blvd., Union City, Calif. 94587)
Filed May 21, 1969, Ser. No. 826,583
Int. Cl. G01f *23/12*
U.S. Cl. 73—321 1 Claim



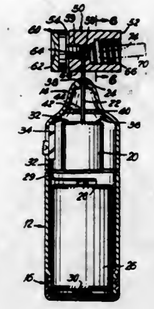
A fluid measuring device for determining the quantity of liquid in a tank. The device includes a probe member which is inserted into the tank. Slidably mounted on the probe is a float containing a magnet, the float position being determined by the liquid level in the tank. Within the probe is a vertically movable magnetic element whose vertical position is controlled by the exteriorly positioned float. Movement of this element causes selective causes selective rotation of gear members connected to a potentiometer or similar read out device.

3,555,906
CLINICAL THERMOMETER
Waldemar A. Ayres, 401 Park Ave., Rutherford, N.J. 07070
Filed Apr. 28, 1969, Ser. No. 819,637
The portion of the term of the patent subsequent to Sept. 30, 1986, has been disclaimed
Int. Cl. G01k *5/22*
U.S. Cl. 73—371 11 Claims



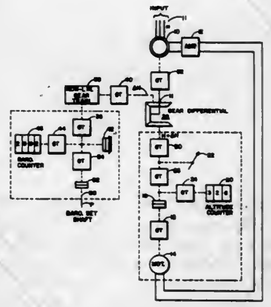
A maximum reading, constriction-type clinical thermometer, having a thermal responsive liquid medium within its bore and a short section or "slug" of a second liquid medium which is nonmissible with the first liquid. The second liquid is dyed or otherwise provided with a prominent color thereby to provide ease in readability as the second liquid, in contact with and supported by the first liquid, is caused to move in response to a temperature increase sensed by the first liquid. The temperature reading is provided by the column head of the second liquid.

3,555,907
CLINICAL THERMOMETER ROTARY SHAKEDOWN DEVICE
Joel A. Marcus, 68—61 Yellowstone Blvd., Forest Hills, N.Y. 11375
Filed Mar. 25, 1969, Ser. No. 810,239
Int. Cl. G01k *5/06*
U.S. Cl. 73—373 11 Claims



A threaded bore in a sleeve can be selectively engaged by the projecting apices of a triangular transversely disposed thin substantially flat head on the back of a standard clinical thermometer. The sleeve is rotatably driven about an axis perpendicular to the length of the bore by a motor mounted in a housing which includes a suitable energy source and a control (off-on) switch. A counterbalance weight on the sleeve opposite the threaded bore stabilizes the spinning sleeve and thermometer to avoid excessive wobbling and vibration. As the thermometer spins, the level of mercury thread therein is lowered, the mercury being forced by centrifugal action through the maximum temperature recording trap into the bulb at the head of the thermometer.

3,555,908
ALTITUDE INDICATOR
Gregory J. Ganley, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Mar. 3, 1969, Ser. No. 803,753
Int. Cl. G01l *7/20*
U.S. Cl. 73—384 5 Claims



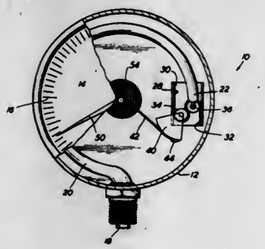
A servoed altitude indicator with means for correcting the altitude indication as a function of local barometric

pressure. The correction factor is generated by a pair of eccentric gears which approximate an equation of the form

$$\Delta H = K_1\left(1-\frac{P}{K_2}\right)K_3$$

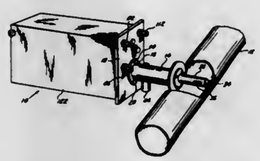
where K_1, K_2, and K_3 are constants, ΔH is the altitude correction in feet, and P is the local barometric pressure in inches of mercury.

3,555,909
METER MOVEMENT
Robert S. Harrah, 4108 Dupont, Houston, Tex. 77021
Filed May 24, 1968, Ser. No. 731,950
Int. Cl. G01l 7/04
U.S. Cl. 73—411 19 Claims



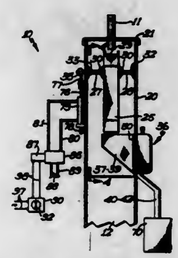
In meter movements wherein a pointer moves across a scale in response to relatively small deflections of a Bourdon tube, bellows or the like, improved means comprising motion transferring means operatively connected to the transducer and connected to the pointer wherein the pointer is rotated relative to the scale by operation of a frictionless and gearless mechanism converting the transverse movement of the transducer to rotation of the pointer.

3,555,910
SAMPLING APPARATUS
John E. Spence, Carlisle, and Andrew Clark Elbert, Des Moines, Iowa, assignors to Quality Control Equipment Company, Inc., Des Moines, Iowa, a corporation of Iowa
Filed June 16, 1969, Ser. No. 833,318
Int. Cl. G01n
U.S. Cl. 73—422 6 Claims



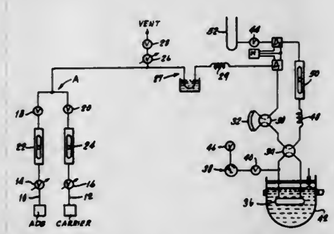
Apparatus to periodically withdraw sample amounts of free flowing material from a continuous stream of such material for purposes of testing said samples. Such materials may be in a pressurized or non-pressurized tube, conduit or chute and the sample is obtained by extending a sample gathering apparatus into the tube or conduit capable of intercepting a portion of the moving material and then retracting the sample. The removal of the sample from the sampling device is accomplished by a controlled blast of air under pressure to move the material into an appropriate sample collecting container. This sampling apparatus is usable with free flowing granular material such as grain and the like and also with fluids.

3,555,911
SAMPLER SPLITTER VALVE
Ray R. Cordell, Hopkins, and James L. Morgan, Jr., St. Louis Park, Minn., assignors of fifty percent each to Gustafson Manufacturing Company, Hopkins, Minn., and International-Stanley Corporation, Omaha, Nebr.
Filed Sept. 20, 1968, Ser. No. 761,137
Int. Cl. G01n 1/02
U.S. Cl. 73—423 7 Claims



A splitter valve for a material sampler for the purpose of dividing a sample into a pre-determined number of parts and in pre-determined sizes depending upon the size of sampling tubes and the operation of the valve. The valve has a pivotally mounted spout member which oscillates between predetermined limits above a sample manifold. A plurality of compartments in the manifold are connected to supply tubes which convey the material deposited therein to separate collecting containers. A fluid operated linear actuator for imparting oscillatory movement to the spout is also disclosed.

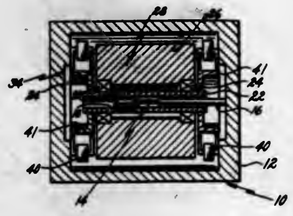
3,555,912
INCREMENTAL METHOD FOR SURFACE AREA AND PORE SIZE DETERMINATION
Seymour Lowell, Albertson, N.Y., assignor to Quantachrome Corporation, Greenvale, N.Y., a corporation of New York
Filed Aug. 4, 1969, Ser. No. 847,368
Int. Cl. G01n 15/08
U.S. Cl. 73—432 2 Claims



An apparatus for precisely measuring the surface of solids, particularly those in particulate form. In essence, the measuring technique involves the flowing of two gases which are mixed in known proportions and are allowed to flow through a cooled sample cell containing a powder sample (adsorbent). One of the gases (adsorbate) is adsorbed on the powder and the resulting change in concentration is detected.

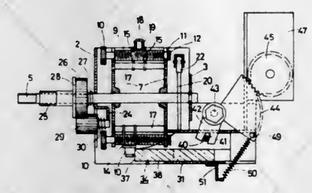
The improvement is characterized in that the relative pressure of the adsorbate is varied in slight increments whereby the entire isotherm can be obtained, but the variation is achieved by varying the flow rates of the individual gases while holding the total pressure always substantially at atmospheric.

3,555,913
APPARATUS FOR CORRECTING MASS UNBALANCE IN A GYRO
Robert F. Martin, Elma, and Edward J. Harrison, Newfane, N.Y., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 16, 1969, Ser. No. 791,745
Int. Cl. G01c 19/24
U.S. Cl. 74—5.4 5 Claims



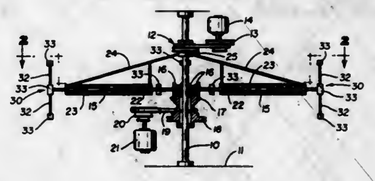
A gyro mechanism having a magnetic mass balancer located therein. The magnetic mass balancer being capable of adjustment externally of the gyro mechanism and thereby finding utility on floated as well as unfloated gyros.

3,555,914
CHANNEL SELECTION ASSEMBLY
Hirozo Mase, Tokyo, Japan, assignor to Mie Seisakusho Kabushiki Kaisha, Unoki Ohta-ku, Tokyo, Japan
Filed May 6, 1969, Ser. No. 822,108
Claims priority, application Japan, Feb. 17, 1969, 44/11,096
Int. Cl. F16h 35/18
U.S. Cl. 74—10.6 2 Claims



A channel selection assembly is provided which is adapted to be used as a tuner for UHF band television. The assembly includes a drum-shaped carrier constituted by a pair of plates mounted on a switching shaft, and a plurality of threaded members each associated with separate channel are mounted on the carrier for rotation. A U-shaped member threadably engages each threaded member and is adapted to move thereon when the latter rotates. A roller rotatably carried by each U-shaped member, upon rotation of the shaft, engages the tapering side edge of an axially slidable cam urged in one direction and shifts the cam to move tuning components to their desired channel position. Tuning positions of different channels are preset by the members, which additionally provide fine adjustment and allow for substantial change of channel frequencies.

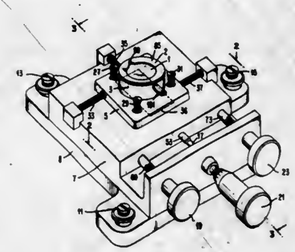
3,555,915
DIRECTIONAL FORCE GENERATOR
Hersey W. Young, Jr., Arvada, Colo., assignor to Cannon Aeronautical Center, Cheyenne, Wyo., a corporation of Wyoming
Filed Dec. 11, 1967, Ser. No. 689,596
Int. Cl. F16h 27/04
U.S. Cl. 74—84 8 Claims



A directional force generator comprising mechanism which utilizes centrifugal and gyratory action for moving a wheeled vehicle, boat or aircraft, on which the generator is mounted, in a predetermined direction, without other propelling or lifting means.

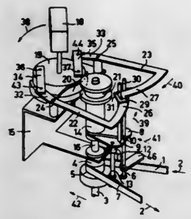
The mechanism comprises one or more rotated shafts swingable about a rotated main shaft, each swingable shaft being provided on its outer end with a head having one or more pivotally mounted weighted arms movable independently of each other. When the head is simultaneously rotated by the swingable shaft about the axis of the swingable shaft and bodily moved in a circular path around the main shaft, both centrifugal and gyratory influences function to cause the pivotally mounted arms to move out of an angularly balanced plane of rotation into an angularly unbalanced and constantly changing plane of rotation. The natural forces which resist movement of the rotating arms out of their balanced plane of rotation result in moving the generator, and mechanism on which it is mounted, in predetermined directions depending on the direction of rotation of the swingable shafts and heads.

3,555,916
POSITIONING DEVICE
William G. Santy, New Canaan, Conn., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 15, 1969, Ser. No. 791,313
Int. Cl. F16h 27/02
U.S. Cl. 74—89.15 18 Claims



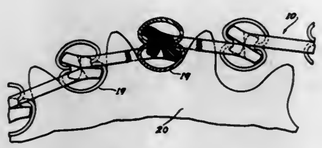
A micropositioning device is provided which permits X direction and rotational positioning of a positioning plate through utilization of a pair of wedge shaped cams. The pair of cams are capable of effecting first and second forces at spaced points on the positioning plate. With both forces present rotational positioning is obtained while with one force present translational positioning is obtained. Movement in the Y direction is effected through micrometer spindle movement.

3,555,917
BELT SHIFTING DEVICE
Friedrich Louzil and Gerhard Habelt, Vienna, Austria, assignors to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Feb. 14, 1969, Ser. No. 799,285
Claims priority, application Austria, Feb. 19, 1968, A 1,528/68
Int. Cl. F16h *7/22*
U.S. Cl. 74—242.3 **8 Claims**



A device for catching and shifting a flat belt between axially arranged pulleys for use in a recording and/or playback apparatus. Control member rollers positioned adjacent the belt are attached to movable shafts for catching the belt and removing same from the pulley. A rotatable disc having a guide path (cam) operationally connected with the control member rollers shifts the belt to another pulley.

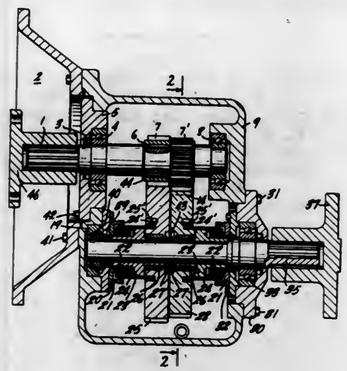
3,555,918
DETACHABLE CHAIN
Wilfrid H. Bendall, 19 N. Broad St., Pawcatuck, Conn. 02891
Filed Dec. 2, 1969, Ser. No. 881,557
Int. Cl. F16g *13/02*
U.S. Cl. 74—249 **9 Claims**



A detachable chain for transmitting power between toothed sprockets. The chain has apertured links which assemble with overlapping end portions, each having projecting edge portions in rolling bearing contact with like portions of adjacent links. The links are detachably interconnected by spring clip members which engage the teeth of drive sprockets.

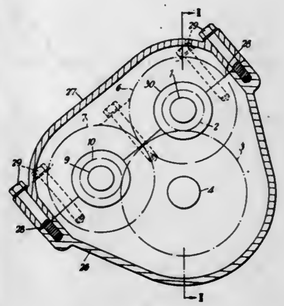
3,555,919
COMBINED MARINE BOX
Benjamin R. Odell, Buenos Aires, Argentina, assignor to Tuman S.C.A., Buenos Aires, Argentina, a corporation of Argentina
Filed Sept. 11, 1968, Ser. No. 759,016
Claims priority, application Argentina, Sept. 13, 1967, 209,711
Int. Cl. F16d *11/06, 13/04;* **F16h** *3/14*
U.S. Cl. 74—355 **4 Claims**

A transmission for marine use comprises offset input and output shafts, forward and reverse gear trains having output gears which are journaled to the output shaft, and an electromagnetic clutch associated with each gear train. Each clutch includes a coil spring fastened to the respective output gear, a knurled clutch sleeve affixed to the output shaft, and an electromagnetic coil, which upon energization constricts and locks the coil spring to the



clutch sleeve so that the rotation of the respective output gear is transmitted to the output shaft.

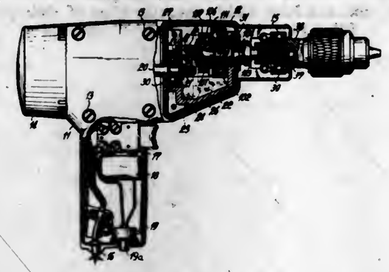
3,555,920
MARINE GEARBOXES
Henry Edward Merritt, Claverdon, England, assignor to P.R. Motors Limited, Warwickshire, England, a company of Great Britain
Filed Feb. 14, 1969, Ser. No. 799,407
Int. Cl. F16h *3/08*
U.S. Cl. 74—356 **8 Claims**



A gear box comprising three parallel shafts mounted in a casing that can be separated along a joint face that is coplanar with the rotational axes of two of said shafts, one of which is the input shaft, and the third of the three shafts being the output shaft and having its rotational axes offset from said plane.

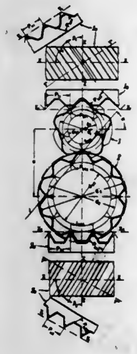
3,555,921
TOOL WITH VARIABLE GEAR
Dieter Gotsch, Plattenhardt, and Alfred Hettich, Echterdingen, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed Mar. 27, 1968, Ser. No. 716,600
Claims priority, application Germany, Apr. 27, 1967, B 92,272
Int. Cl. F16h *3/08;* **B23q** *5/00*
U.S. Cl. 74—371 **4 Claims**

A housing encloses an electromotor having a drive shaft. A gear arrangement comprises a plurality of gears which are driven by the drive shaft, and two additional gear wheels which are continuously driven by the remaining gears at differential speeds and which are mounted freely rotatably on a rotatable output shaft for rotation with reference to the same. A control arrangement is



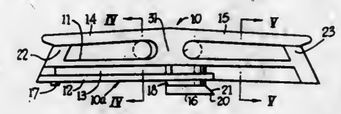
associated with the gears and permits, at the will of the user of the tool, coupling of either one or the other of the two gear wheels with the output shaft so that the same is rotated by the respective gear in response to being coupled thereto.

3,555,922
HIGH EFFICIENCY, REVERSIBLE OR IRREVERSIBLE GEAR PAIRS WITH PARALLEL AXES SUITABLE TO PROVIDE HIGH GEAR RATIOS, WITH SMALL CENTER DISTANCE
Roberto Preti, Naples, Italy, assignor to H.S.G. S.p.A., Naples, Italy
Filed Feb. 7, 1969, Ser. No. 797,502
Claims priority, application Italy, Feb. 21, 1968, 832,341/68
Int. Cl. F16h *55/04*
U.S. Cl. 74—458 **7 Claims**



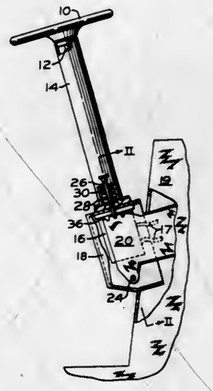
Gear pairs with parallel axes consisting of internal or external toothed gears with straight, or helical or double-helical teeth with involute transverse tooth profile, each of said gears and any number of teeth thereof satisfying the conditions as follows: (a) the normal (or transverse) base width is greater than, or at least equal, to the normal (or transverse) base pitch; (b) a real or imaginary cylindrical surface exists—which is, by definition, the reference cylinder of the considered gear—whereon the normal (or transverse) tooth thickness will be equal to the normal (or transverse) pitch; (c) the usable flank which is the active flank of the tooth is the entire flank, and the entire flank lies on an involute helicoid.

3,555,923
CLIP FOR LOCATING AND GUIDING TWO RODS IN A RATTLE FREE MANNER OVER A SUPPORT
Clifford A. Seckerson, Iver Heath, England, assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed Jan. 30, 1969, Ser. No. 795,160
Claims priority, application Great Britain, Jan. 31, 1968, 4,972/68
Int. Cl. G05g *11/00*
U.S. Cl. 74—490 **6 Claims**



A unitary clip for locating and guiding two movable rod-like members across a support surface, the clip comprising a body portion formed with means projecting from one side for attaching the clip non-rotatably in a non-circular aperture in the support and generally T-shaped rod-engaging means projecting from the other side of the body portion for engaging the two rods, the rod engaging means comprising a stem and two resilient oppositely extending arms each of which overlies the body portion for clamping a rod thereagainst, and including in a preferred embodiment a pair of upstanding lugs at each end of the body portion which act as stops to retain the rods against lateral movement off the body portion of the clip.

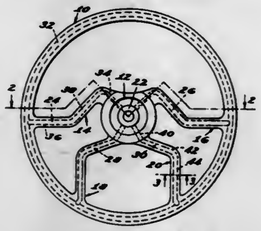
3,555,924
ADJUSTABLE STEERING WHEEL
Oscar A. Scheffler, Jr., Wheaton, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill.
Filed Nov. 25, 1968, Ser. No. 778,608
Int. Cl. B62d *1/18*
U.S. Cl. 74—493 **1 Claim**



A steering wheel which is adjustable to and away from a vehicle operator's station to adapt it to the requirements of different drivers, in which a pivot point is provided

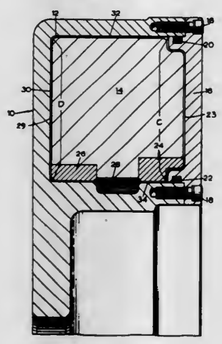
below the lower end of the steering column and locking means for holding the wheel in different positions is provided at a readily accessible point.

3,555,925
STEERING WHEEL
Robert C. Bowser, Dearborn Heights, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Sept. 27, 1968, Ser. No. 763,235
Int. Cl. B62d 1/04
U.S. Cl. 74—552 5 Claims



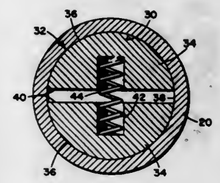
An energy absorbing steering wheel for a motor vehicle having a rim portion, a hub portion and a plurality of spokes interconnecting the two portions. Each of the spokes has a substantial non-radial portion set at an angle to an adjacent portion of the spoke.

3,555,926
VISCOUS TORSIONAL VIBRATION DAMPER
Geoffrey Moorhouse, Huddersfield, and Derek Mason, Bradford, England, assignors to Holset Engineering Company Limited, Turnbridge, Huddersfield, Yorkshire, England
Filed July 17, 1968, Ser. No. 745,420
Claims priority, application Great Britain, Aug. 15, 1967, 37,356/67
Int. Cl. F16f 15/10
U.S. Cl. 74—574 3 Claims



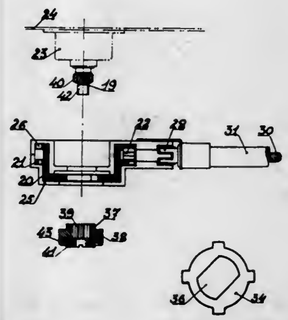
The present invention provides a viscous torsional vibration damper of the type adapted for mounting, for example on the crank shaft of an internal combustion engine. The damper comprises an annular housing and an inertia member concentrically located within a chamber in the housing. The housing has internal axially spaced transverse chamber faces that have substantially equal axially projected areas thereby preventing uneven pressure distribution between the faces that could cause distortion of the housing.

3,555,927
TORSIONAL VIBRATION DAMPER
William F. Plume, Marlton, N.J., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Feb. 14, 1969, Ser. No. 799,174
Int. Cl. F16f 15/10
U.S. Cl. 74—574 4 Claims



A torsional vibration damper for a rotatable shaft or shaft-like member of the type used in applications where the drive for the shaft-like member is located at one end and the other end is free (not connected to other shafts or masses). The shaft-like member may be an extruder screw. The shaft-like member has a concentric counter bore extending inwardly from one end thereof. The damper comprises a pair of elongated elements disposed in the bore on opposite sides of the axis of rotation of the shaft-like member and yieldable biasing means disposed between the elements for urging the latter part and into frictional engagement with the internal surfaces of the bore.

3,555,928
ELECTRICAL WINDOW REGULATOR
Paul Boyriven, Paris, France, assignor to Compagnie Industrielle de Mecanismes, Courbevoie, France
Filed Mar. 12, 1969, Ser. No. 806,390
Claims priority, application France, Dec. 31, 1968, 182,538
Int. Cl. F16h 35/00
U.S. Cl. 74—625 4 Claims



This disclosure relates to a device for permitting the electrical operation as well as the mechanical operation of a window regulator having a driving axle for raising and lowering a window. Such device comprises a speed reducing mechanism coupled to said axle and including a toothed disc mounted coaxially with the axle and a

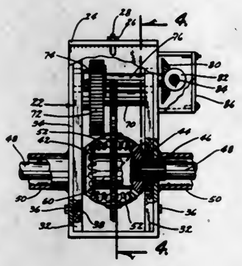
pinion coupled to said disc. The speed reducing mechanism is coupled to the axle through a ring connected to the toothed disc and a removable sleeve interconnecting the ring and the axle whereby the sleeve may be removed to permit manual operation of the axle by means of an auxiliary handle. The pinion of the speed reducing mechanism is driven by a flexible cable connected to an electric motor through a speed reducer mounted on the shaft of the electric motor.

3,555,929
EXTENDED ROOT FLEXSPLINES
John D. Hoesfeld, Peabody, Mass., assignor to USM Corporation, Flemington, N.J., a corporation of New Jersey
Filed Aug. 2, 1968, Ser. No. 749,861
Int. Cl. F16h 1/04
U.S. Cl. 74—640 1 Claim



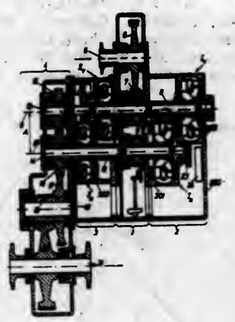
A flexspline, the member carrying a circumferential wave and meshing with a coaxial circular spline to provide a harmonic drive type actuator, is given a novel, improved configuration much less susceptible to localized stresses at root sections of its teeth. This new flexspline permits greater radial deflection without excessive concentrated stresses, hence provides greater fatigue life and a lower practical limit of the drive ratios obtainable with harmonic drive actuators.

3,555,930
TRANSMISSION UNIT
James G. Boyd, 960 17th St. NE., Mason City, Iowa 50401
Filed Feb. 26, 1969, Ser. No. 802,564
Int. Cl. F16h 1/40
U.S. Cl. 74—713 8 Claims



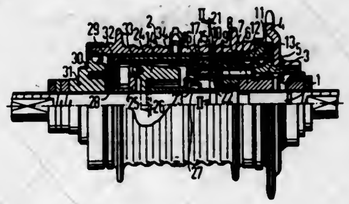
A transmission and differential mounted on a pair of nonmetallic support plates removably received within a housing having side walls in mating engagement with the plates. Two pairs of beveled gears are provided and a sprocket gear embraces one pair of bevel gears about their common axis of rotation is in turn connected to a power source through a reverse gear arrangement. The other pair of bevel gears are connected with output wheel shafts.

3,555,931
HYDRODYNAMIC TRANSMISSION
Erich Polzer, Heidenheim, Germany, assignor to Voith Getriebe KG, Heidenheim, Germany
Filed Oct. 14, 1968, Ser. No. 767,313
Claims priority, application Germany, Oct. 18, 1967, 1,650,888
Int. Cl. F16h 47/00
U.S. Cl. 74—718 5 Claims



A transmission with at least one pair of converters, in which the converters of each pair are offset with regard to each other in axial direction by at least the axial structural length of one converter and are in radial direction so close to each other that when viewed in axial direction the converters overlap each other, the converters of each pair of converters having a unitary common self-supporting housing in which the blades, bearings, and other pertaining parts are mounted.

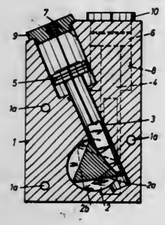
3,555,932
MULTIPLE-SPEED BICYCLE HUB
Hans Joachim Schwerdhöfer, Schweinfurt am Main, Germany, assignor to Fichtel & Sachs AG, Schweinfurt am Main, Germany
Filed July 2, 1969, Ser. No. 838,425
Claims priority, application Germany, July 16, 1968, 1,775,206
Int. Cl. F16h 5/42
U.S. Cl. 74—752 9 Claims



In a multiple-speed hub which is shifted from one transmission ratio to another by engagement and disengagement of a free-wheeling coupling connecting a transmission member with the hub shell, the coupling includes a ratchet rim on the shell and a pawl assembly on the transmission member. A pivot pin in the transmission member carries a pawl and a rocker spring-biased to a relative position in which the pawl is near the ratchet rim. A torsion spring interposed between the rocker and the transmission member and abutments which limit relative angular movement of the pawl and the rocker normally hold

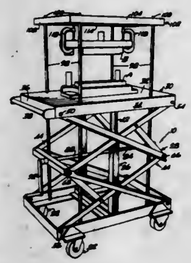
the pawl out of engagement with the ratchet rim. A centrifugal speed governor pivots the rocker, and thereby the entire pawl assembly, into an operative position in which the pawl drivingly engages the ratchet rim. The biasing spring permits the hub shell to overtravel the pawl in the operative position of the assembly.

3,555,933
ADJUSTABLE HOLDER FOR TOOLS AND WORKPIECES
Hans Scharfen, Buderich, Germany, assignor to Paul Forkardt Kommanditgesellschaft, Dusseldorf, Germany
Filed Dec. 30, 1968, Ser. No. 787,931
Claims priority, application Germany, Dec. 29, 1967, 1,602,776
Int. Cl. B23q *17/18*
U.S. Cl. 74—816 **6 Claims**



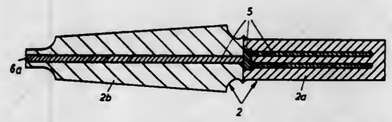
An indexing head for tools, workpieces, or abutments primarily for use on machine tools and including a main body having a bore in which a bearer spindle is rotatably mounted and capable of being locked in various specific angular positions. Two push rods, one behind the other and in two planes at right angles to the longitudinal center line of the spindle, are movable under fluid pressure in opposite directions. The push rods have end faces at an acute angle to their longitudinal center lines and each acting on the corners and side faces of polygonal sections of said bearer spindle. Side faces of the polygonal spindle sections are offset from each other by one-half of the indexing angle.

3,555,934
DIE SUPPORTING WORK TABLE
Peter John Merino, 1744 SW. 4th St., Miami, Fla. 33135
Filed Mar. 4, 1968, Ser. No. 710,000
Int. Cl. B21k *5/20*
U.S. Cl. 76—4 **6 Claims**



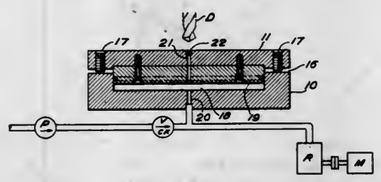
A work table particularly adapted for use by tool makers when finishing dies and mating cooperating die halves in which the work table includes a first support member having means to clamp one die half for mating with a second die half supported on an intermediate support member, which intermediate support member is reciprocable toward and away from first member by means of a machine screw whereby mating of the respective dies can be accurately and readily "tried" to facilitate hand finishing of the dies as well as providing a truck for readily transporting and storing finished dies.

3,555,935
METHOD OF PRODUCING DRILLS AND SIMILAR TOOLS, AND TOOLS, ESPECIALLY DRILLS, MADE ACCORDING TO SAID METHOD
Richard Dorrenberg, Dusseldorf-Oberkassel, Germany, assignor to Rohde & Dorrenberg, Dusseldorf-Oberkassel, Germany
Filed May 7, 1968, Ser. No. 727,148
Claims priority, application Germany, May 9, 1967, R 45,966
Int. Cl. B21k *5/02*
U.S. Cl. 76—108 **12 Claims**



A method of producing tools, especially drills, with straight or twisted grooves or flutes according to which the raw tool is provided with at least one longitudinal passage means in that section of the tool which is to become the cutting section, said longitudinal passage means being filled with filling material having a melting temperature above the deforming temperature but less than the hardening temperature of the raw material from which the tool is made. The cutting section of the raw tool is subsequently heated to deforming temperature and the approximate cross-section of the finished tool is produced in a chipless manner by rolling or extrusion pressing. Finally, the filling material is melted and removed from the longitudinal passage means whereupon the tool is finish machined. The invention also covers a tool composed of two sections welded together and produced in the above manner.

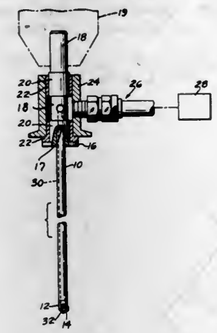
3,555,936
CHIP BREAKERS
William G. Burge, 955 Seven Hill Ranch Road, Walnut Creek, Calif. 94598
Filed May 21, 1969, Ser. No. 826,391
Int. Cl. B23b *47/34*
U.S. Cl. 77—63 **4 Claims**



A chip breaker for drilling operations wherein the contact between the drill and the work piece is maintained by a sub-base and a superimposed table which

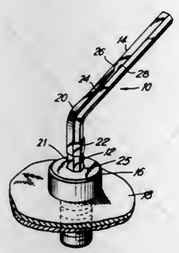
are held slightly apart by hydraulic pressure. Intermittent release of the pressure allows the base and the table to come together, thereby momentarily interrupting the cutting action of the drill and breaking the chip.

3,555,937
DIAMOND DRILL
William F. Nicodemas, Greensburg, Pa., assignor to Kennametal Inc., Latrobe, Pa.
Filed May 17, 1968, Ser. No. 729,961
Int. Cl. B23b *51/06*
U.S. Cl. 77—68 **5 Claims**



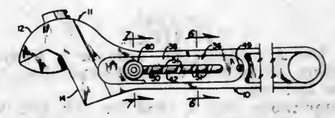
Drilling tool having a hollow carbide shank with steel head fixed to one end and a diamond cutting element fixed in the steel head with a passage through the steel head so suction or pressure can be applied to the hollow sank to remove ground off material from the bore being made by the tool.

3,555,938
TORQUE INDICATING WRENCH
William J. Busch, Jr., Warminster, Pa., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennnsylvania
Filed Apr. 4, 1968, Ser. No. 718,745
Int. Cl. B25b
U.S. Cl. 81—52.4 **4 Claims**



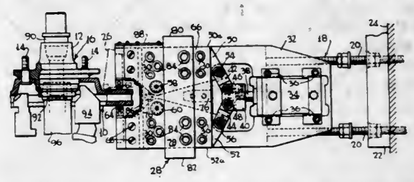
A hex key wrench is provided with a torque indicating device which is attached to the bolt engaging leg of the wrench and has an indicating arm positioned to lie along the other leg of the wrench. When tightening torque is applied to the bolt, the non-engaging leg deflects slightly and, since the indicating arm remains substantially stationary, the relative movement between them provides a visual indication of the magnitude of the torque applied.

3,555,939
ADJUSTABLE OPEN END WRENCH
Kenneth F. Halls, Broomfield, Colo., assignor, by mesne assignments, to Eugene E. Petersen, Omaha, Nebr.
Continuation-in-part of application Ser. No. 614,850, Feb. 9, 1967. This application Jan. 10, 1968, Ser. No. 735,160
Int. Cl. B25b *13/16*
U.S. Cl. 81—165 **7 Claims**



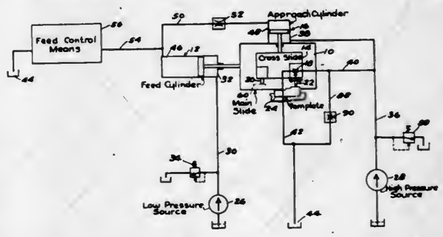
An open ended wrench has a slidable jaw which is manipulated by a finger-driven actuating member in a side cavity formed along a limited extent of the handle portion for lateral insertion of the actuating member and bearings for driving connection of the actuating member with the gear or screw for the slidable jaw, and a cover plate is detachably connected over the cavity to aid in supporting the preassembled actuating member and bearings in place with a control button on the cover plate to rotatably drive the actuating member.

3,555,940
GROOVING UNIT
William C. Cooper, Royal Oak, Mich., assignor to The Budd Company, Philadelphia, Pa., a corporation of Pennsylvania
Filed May 26, 1969, Ser. No. 827,642
Int. Cl. B23b *5/02*
U.S. Cl. 82—2 **6 Claims**



A vertical nipper type grooving unit for attaching to a brake disk straddle facing machine to sequentially machine a precision groove on each face of a finished brake disk.

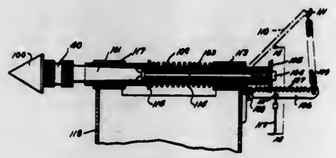
3,555,941
TRACER CONTROL CIRCUIT WITH SIZING MEANS
Sylvester R. Cudnohufsky, 1290 Lake Angelus Shore Drive, Pontiac, Mich. 48055
Filed Apr. 25, 1969, Ser. No. 819,364
Int. Cl. B23b *3/28*; B23q *35/22*
U.S. Cl. 82—14 **17 Claims**



A size control arrangement in a hydraulic tracer control circuit for a machine tool such as a lathe. The tracer control circuit includes a tracer control valve that is variably

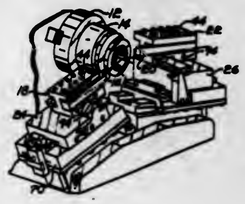
restricted by a template engaging stylus so as to balance the forces at opposite ends of the cutting tool actuating cylinder and thereby position the cutting tool or tools in a predetermined position relative to the work. A bypass passageway around the tracer valve includes a manually adjustable restrictor for varying the amount of pressure fluid diverted around the tracer valve to thereby vary the position of the cutting tool relative to the work.

3,555,942
TAILSTOCK
James L. Otstot, Carlisle, Pa., assignor to Carlisle Tire and Rubber, Division of Carlisle Corporation, a corporation of Delaware
Original application Dec. 8, 1964, Ser. No. 416,796, now Patent No. 3,438,831, dated Apr. 15, 1969. Divided and this application Jan. 8, 1969, Ser. No. 789,821
Int. Cl. B23b *23/00*
U.S. Cl. 82—31 1 Claim



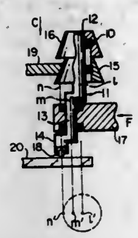
The present machine is for forming convolutions of one or more strands of material around and along an extended tubular member supported and rotated by a quickly detachable selectively driven and automatically stopped mandrel on the machine and includes means for guiding said strand material to said tubular member in coordination with the rotation of said mandrel, feeds at least one of said strands at a predetermined rate while automatically compensating for any variations in the feeding speed of the strand as well as maintaining a constant tension on the strand being fed, feeds a tape around and over the strand and exposed areas of said tubular member at a proper angle and at controlled speeds to give a uniform spiral pitch and overlapping of the edges of said tape to form a wire reinforced hose and includes a carriage driven in coordination with said mandrel carrying said strands and tape, means for feeding a liquid to the periphery of the tubular member prior to the tape thereon, means for providing a cast to one of said strands and means for preventing said cast strand from pulling out of said casting means.

3,555,943
CROSS SLIDE CUTTER BLOCK ASSEMBLY
Michael W. Papp, Cleveland, Ohio, assignor to The Warner & Swasey Company, Cleveland, Ohio, a corporation of Ohio
Filed June 27, 1968, Ser. No. 740,577
Int. Cl. B23b *29/08*
U.S. Cl. 82—37 8 Claims



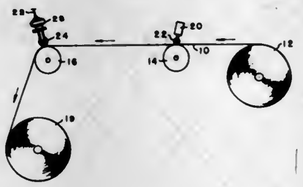
An improved cross slide cutter block assembly includes a clamp assembly for engaging a dovetail portion of a cross slide to hold a cutter block against movement relative to the cross slide. The clamp assembly is operated between clamping and release conditions by an actuator mounted in a top portion of the cutter block where it is readily accessible to an operator.

3,555,944
DEVICE FOR SCORING GLASS SHEETS
Kiyoshi Imamura, Kyoto-fu, Japan, assignor to Nippon Safety Glass Co., Ltd., Kanagawa-ken, Japan
Filed Apr. 24, 1969, Ser. No. 818,898
Claims priority, application Japan, May 2, 1968, 43/29095
Int. Cl. B26d *3/08*
U.S. Cl. 83—12 3 Claims



A device for scoring glass sheets by following the profile of an outer periphery of a template for the purpose of breaking the glass sheets. The device comprises an integrally and stepwise-formed shaft means including a center shaft, an intermediate offset shaft, and a third offset shaft forming the longitudinally lowest part and radially outermost part of the shaft means, and a cutter means mounted at the lower end of the third shaft. The intermediate shaft is urged in a direction to keep the center shaft in operative engagement with the template. A follower roller means can be mounted on the center shaft to facilitate the engagement with the template.

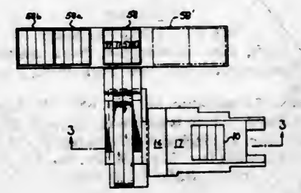
3,555,945
CUTTER METHOD AND APPARATUS
William P. Warthen, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of South Carolina
Filed Aug. 8, 1969, Ser. No. 848,464
Int. Cl. B23d *19/04*
U.S. Cl. 83—56 7 Claims



This invention is directed to a method and apparatus to automatically increase the pressure on the cutting blade of a score cutter upon the detection of an area of increased thickness in the material approaching the cutter to be cut.

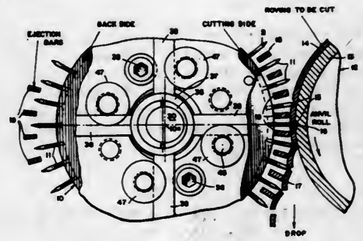
3,555,946
SHEAR STACKER APPARATUS
William L. Addis, Glassboro, N.J., assignor to Owens-Illinois, Inc., a corporation of Ohio
Original application Aug. 1, 1967, Ser. No. 657,674. Divided and this application Jan. 6, 1970, Ser. No. 852
Int. Cl. B65h *29/26, 29/60*
U.S. Cl. 83—89 6 Claims

The present invention relates to apparatus for scroll-shearing strips from a sheet of metal stock imprinted with coatings, such as blanked circular areas for the manufacture of metal caps from sheared strips. The sheets are successively sheared into multiple strips and the strips are oriented and fed to bins all in the same orientation. The feeding of the strips to the bins and orientation thereof is accomplished by gravity feed of the sheared strips by position of the shear point of the sheet to a corresponding conveyor means which



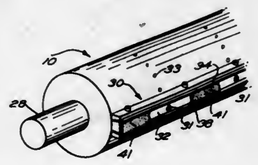
automatically orients the strips it receives and dispenses the strips into a bin so that the strips are piled in all bins in like orientation.

3,555,947
ROVING CUTTER WITH EJECTION BARS
Morris Fram, 9765 Shadow Island Drive, Sunland, Calif.
Filed July 31, 1968, Ser. No. 749,057
Int. Cl. B26d *1/56, 7/18*
U.S. Cl. 83—116 1 Claim



A glass roving cutter with a rotatable cutter wheel having a plurality of axial cutting blades spaced at close intervals about its periphery and projecting outwardly therefrom, an anvil roll defining therewith a roving cutting nip and an endless arrangement of axial ejection bars capable of movement within the spacings between the cutting blades but inwardly recessed from the cutting edges thereof at the nip and thereafter moving out of the spacings to eject the cuttings from the blades; said ejection bars preferably being eccentrically mounted on cutter wheel shaft.

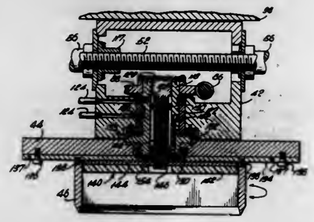
3,555,948
ROTARY CUTTING MEANS FOR COLLATING MACHINE
Carl A. E. Olson, 59 Vine St., East Providence, R.I.
Filed Nov. 29, 1968, Ser. No. 780,130
Int. Cl. B26d *1/36*
U.S. Cl. 83—116 4 Claims



A rotary cutter for use in a collating machine which rotary cutter may be adjusted to accurately cut the web coming

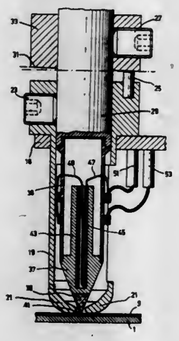
from the collating machine to the size of the form that is printed on the web without the need for any further operation on the printed material, such as trimming or the like.

3,555,949
DIE CUTTING PRESSES
Ernest H. Treff, Port Washington, N.Y., assignor to F. L. Smithe Machine Co., Inc., New York, N.Y., a corporation of New York
Continuation of application Ser. No. 680,599, Sept. 18, 1967, now abandoned, which is a division of application Ser. No. 444,960, Apr. 2, 1965, now Patent No. 3,370,492. This application Dec. 5, 1969, Ser. No. 878,997
Int. Cl. B26d 7/16; B26f 1/40
U.S. Cl. 83—125 4 Claims



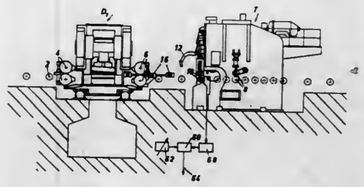
An ejector assembly for the cutting die of envelope blank forming machinery in which an hydraulically operated double-acting piston operates to rotate the die and ejector plate as a unit, the latter being capable of rotational movement of 360°. Stationary conduits are connected to a source of pressurized fluid for the piston so that the latter may be selectively raised or lowered.

3,555,950
APPARATUS FOR CUTTING A DRAWING IN A LAYER OF SYNTHETIC MATERIAL
Thomas Gerardus Gijsbers, Leopold Michael Lambert Joseph Leblans, and Henricus Petrus Cornelis Daniels, Emmasingel, Eindhoven, Netherlands, assignors to U. S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed June 9, 1969, Ser. No. 831,474
Claims priority, application Netherlands, June 8, 1968, 6808110
Int. Cl. B26d 7/10
U.S. Cl. 83—171 8 Claims



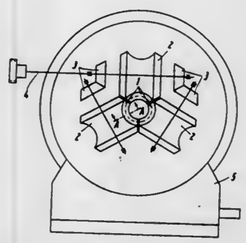
In manufacturing patterns such as photomasks, contours are cut in a foil by means of a cutting tool, after which the material of the foil situated inside or outside the contours is removed. According to the invention, a cutter is used which is preferably rotationally symmetrical, the cutting part of which extends at right angles to the plane of the foil and is heated during cutting of the foil to facilitate the cutting operation. Any contours may be cut by means of this tool which is insensitive to the direction of cutting.

3,555,951
SHEARING LINE FOR EDGE-TRIMMING AND CUTTING METAL SHEETS AND PLATES
Karl Wilhelm Greis, Saint Ingbert-Saar, and Everard Henri Sigal, Alschbach, Blieskastel-Saar, Germany, assignors to Moeller & Neumann G.m.b.H., Ensheimer Str. Germany
Filed Mar. 20, 1969, Ser. No. 808,829
Claims priority, application Germany, Mar. 20, 1968, 1,752,006
Int. Cl. B23d 31/00; B26d 5/26
U.S. Cl. 83—208 11 Claims



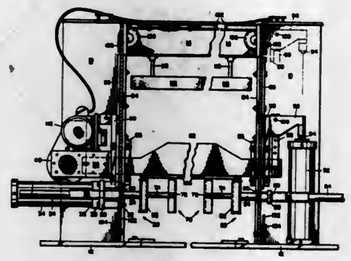
A shearing line for metal sheets and plates comprises opposite continuously driven straight-knife edge-trimming shears D1, D2 followed by crosscut shears moving with a rolling cut. The stepwise advancement of the sheets along the edge-trimming shears and through the crosscut shears may be reduced so as to cut any desired partial length.

3,555,952
HAMMER SHEARS FOR ROLLED STOCK MOVING AT HIGH SPEED
Kurt W. Gruber, Monchengladbach, Germany, assignor to Mannesmann-Meer A. G., Monchengladbach-Karmannsstrasse, Germany, a corporation of Germany
Filed June 13, 1968, Ser. No. 736,751
Claims priority, application Germany, June 13, 1967, M74,361
Int. Cl. B23d 25/12; B26d 1/56
U.S. Cl. 83—310 6 Claims



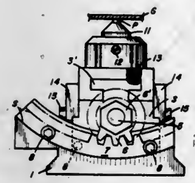
A hammer shear assembly for severing fast moving tubular rolled stock has a plurality of at least three rolls each mounting an arcuate concave hammer knife, and drive means that drive the rolls in such timed relationship that all the knives will approximately simultaneously engage the rolled stock for severing.

3,555,953
ROLL SPLITTER
Gerald A. Irwin, Fort Edward, N.Y., assignor to Sandy Hill Corporation, Hudson Falls, N.Y.
Filed Aug. 1, 1968, Ser. No. 749,485
Int. Cl. B26d 3/28, 7/02
U.S. Cl. 83—460 1 Claim



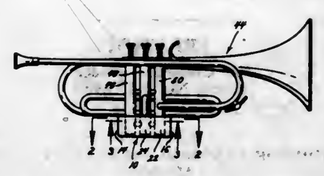
A splitter for splitting a roll of paper along a radius thereof or a stack of sheets of steel or aluminum along any vertical sectional line through the stack comprising, a frame adapted to receive the roll or stack therewithin in fixed relationship thereto, a mounting bar supported by the frame and adaptable for horizontal reciprocation relative to the roll or stack, means for raising and lowering the bar relative to the frame, a knife mounted on the mounting bar, oscillatory means integral with the mounting bar, and a motor for driving the oscillatory means and for reciprocating the knife for the cutting of the roll or stack.

3,555,954
ADJUSTABLE MOUNTING DEVICE
Burton L. Payne, Webster, Ward K. Darron, Rush, and Peter M. Zuris, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Aug. 26, 1968, Ser. No. 755,340
Int. Cl. B26d 1/00
U.S. Cl. 83—699 1 Claim



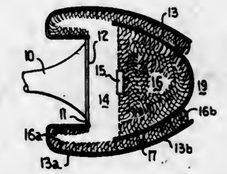
An adjustable mounting device for a cutting tool is described. The device is comprised of elements which are angularly adjustable about orthogonal axes which intersect at a common point. The tip of the cutting tool is mounted in the device to substantially coincide with the common point of intersection so that the position of the tip remains substantially stationary when angular adjustments are made.

3,555,955
ATTACHMENT FOR WIND INSTRUMENT
Joseph R. Sahaida, 1475 Stallion, St. Louis, Mo.
Filed Aug. 28, 1969, Ser. No. 853,798
Int. Cl. G10d 7/10
U.S. Cl. 84—397 7 Claims



A cuplike attachment is releasably securable to one of the valve housings of a wind instrument to intercept and hold oil, saliva and other liquids that otherwise could drip onto the musician's clothing.

3,555,956
ACOUSTO-ELECTRICAL TRANSDUCER FOR WIND INSTRUMENT
Daniel W. Martin, Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Aug. 9, 1968, Ser. No. 751,521
Int. Cl. G10d 9/06
U.S. Cl. 84—400 12 Claims



The bell of a brass wind instrument emits sound into a first enclosure providing, at the bell, a relatively small open cavity containing a microphone, the remainder of the enclosure being filled with highly absorptive acoustical material. A highly resistive or absorptive long and narrow acoustical path exists around the outside of the first enclosure, extending from the small open front cavity to a rear opening to the atmosphere, and is formed by a second enclosure spaced from and surrounding the first enclosure.

3,555,957
SETTING BOLT OR SETTING NAIL CONSTRUCTION
Werner Hermle, Schaan, Liechtenstein, assignor to Hilti, A. G., Schaan, Liechtenstein
Filed Apr. 5, 1968, Ser. No. 719,117
Claims priority, application Germany, Apr. 20, 1967, H62495
Int. Cl. F16b 15/00, 19/14, 39/00
U.S. Cl. 85—10 1 Claim



A bolt or nail for an explosive powder-driven or power-driven bolt setting tool for setting the nails in metallic materi-

als such as iron and steel sheets includes a bolt body having a shank portion in the form of a truncated cone of small pitch angle extending over the entire shank length. The shank is advantageously provided with a knurled surface over at least a portion of its length. The end face of the bolt body is either planar, concave or convex, or conical with an angle of aperture of preferably 120°. The ratio of the shank length to the shank diameter is within the range of approximately 3:1 to 1:1, and preferably about 2:1.

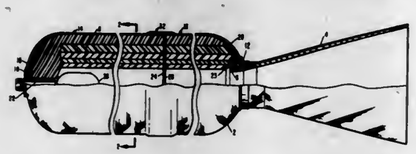
ERRATUM

For Class 85—80 see:
Patent No. 3,555,960

3,555,958
METHOD FOR THE MANUFACTURE OF A ROCKET MOTOR

John A. Leasure, Jr., John H. Main, Salt Lake City, Utah, and Richard Winer, Cumberland, Md., assignors to Hercules Incorporated, a corporation of Delaware

Original application Apr. 20, 1961, Ser. No. 104,469. Divided and this application May 5, 1965, Ser. No. 486,248
Int. Cl. F02k 9/04
U.S. Cl. 86—1 4 Claims

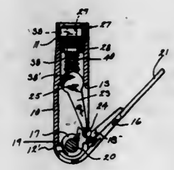


Method for the manufacture of a rocket motor having a glass-filament wound casing involving the steps of forming the motor in at least two sections and providing for telescopic engagement of the casing of each section, providing abutting surface for the propellant charge, inhibiting the abutting surfaces, telescopically engaging the casing of each section and bonding the inhibited and abutting surfaces of the propellant charge, and peripherally bonding the casing to form a unitary motor.

3,555,959
CARTRIDGE PRIMER

Richard J. Lee, Rte. 2, Hartford, Wis. 53027

Filed Apr. 22, 1968, Ser. No. 723,103
Int. Cl. F42b 33/10; B23p 11/00
U.S. Cl. 86—37 1 Claim

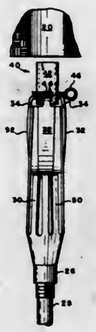


A small, portable hand tool is provided for installing new primers in used cartridges or shotgun shells to permit the reloading of said cartridges or shells on the shooting range or in the field, said tool having a hand lever action providing a desired "feel" when inserting a new primer to control the seating pressure for reliable firing, and said tool being designed to have a variety of cartridge holders interchangeably mounted thereon to permit the reloading of cartridge cases and shells of differing sizes and styles.

3,555,960
SELF-EXPANDING SHELL FOR ENGAGEMENT IN MINE ROOF

Claude C. White, 3912 Cahaba Road, Birmingham, Ala.

Filed Apr. 4, 1969, Ser. No. 813,656
Int. Cl. F16b 13/04
U.S. Cl. 85—80 8 Claims

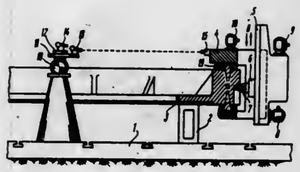


A self-expanding shell for engagement in a mine roof including a lower tubular section connected to a mine roof bolt, an upper resilient and expandable portion embodying a plurality of like, inherently resilient segments which, when expanded form a cone-shape member, the upper terminals of selected segments being extended to provide hook members, and a restraining member for holding the segments in overlapped, compressed condition, until inserted in a mine roof opening, the restraining member including a tubular member having a series of openings adapted to receive and hold the hook member, and a pin engageable with the tubular member for preventing accidental disengagement of the segment hook members from the tubular member.

3,555,961
TOOTH-CUTTING MACHINE

Vladimir Ivanovich Vitushkin, ul. B. Sadovaya 60, kv.30; Viktor Evseevich Koire, ul. Sotsialisticheskaya 46, kv.21; Semen Albertovich Pevzner, per. Nauchny 4, kv.11; Alexandr Konstantinovich Sidorenko, ul. Parizhskoi Kommuny 29, kv.6; Evgeny Alexandrovich Matsegora, ul. Katerinicha 14, kv.6, and Vladimir Iosifovich Eskin, ul. Sotsialisticheskaya 48, kv.6, Kramatorsk, U.S.S.R.

Filed Oct. 23, 1968, Ser. No. 770,028
Int. Cl. B23f 1/06, 23/08
U.S. Cl. 90—1 2 Claims

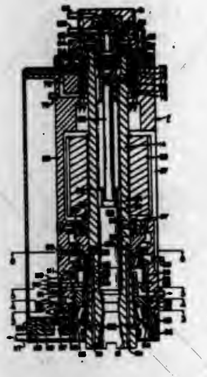


A machine for cutting spur gear teeth includes a workpiece supporting a power head for adjustable movement. A tool carriage is mounted on the power head and a motor drive is provided to move the power head. An indexing device is supporting on the workpiece and includes at least one optical signal source. A receiver is arranged on the power head and is coupled with the motor drive for imparting indexing movement to the power head.

3,555,962
MACHINE TOOL

Heinz K. Wolf, Willoughby Hills, and Alan G. Alexander, Mentor, Ohio, assignors to The New Britain Machine Company, Cleveland, Ohio, a corporation of Connecticut

Filed June 3, 1968, Ser. No. 734,105
Int. Cl. B23b 1/06; B16n 39/02
U.S. Cl. 90—11 4 Claims

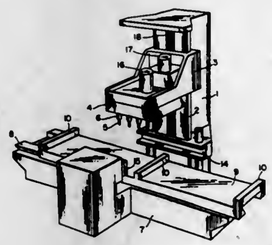


A machine tool having a power driven rotatable tool spindle and an oil distribution and lubrication system for supplying oil to the bearings and tool spindle and preferably stabilizing the bearings, spindle and spindle housing at a predetermined operating temperature range.

3,555,963
REMOVABLE HEAD FOR A MACHINE TOOL

Donald J. Evans, Waynesboro, Va., assignor to General Electric Company, a corporation of New York

Filed Oct. 1, 1968, Ser. No. 764,119
Int. Cl. B23c 1/00; B23b 39/00, 39/16
U.S. Cl. 90—11 9 Claims

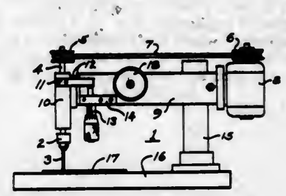


An automatic spindle transfer machine of the type known as boring, tapping, drilling, reaming, turning or milling machine, is provided with a removable spindle toolholder. A conveyor or transfer mechanism is used to convey to and away from the work station the worked and unworked parts. Suitable pallets for different toolholders are provided which enable the transfer mechanism to remove a spindle toolholder from the machine and to substitute a new toolholder suitable for another operation. The organization of several production lines using this toolholder removing technique is described.

3,555,964
INSULATION STRIPPING DEVICE

Lawrence T. Fleming, 625 S. Oak Knoll Ave., Pasadena, Calif. 91106

Filed Oct. 18, 1968, Ser. No. 768,860
Int. Cl. B23c 3/00; B23b 51/00; B26d 1/12
U.S. Cl. 90—14 4 Claims

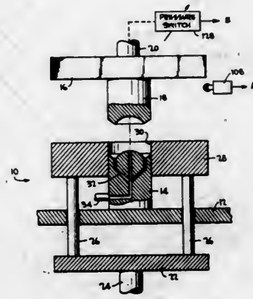


A device strips circular areas of insulation to expose the flat conductors in flexible printed circuits, flat electrical cables, multilayer circuit boards and the like, to permit making electrical connections thereto. The basic principle of operation resembles that of an end mill or drilling machine. The new machine employs rotating cutters of novel shape which cut more readily through insulating films and sheets than through metals such as copper, and the machine has a precision depth stop. Both features prevent cutting through the thin foil conductors. The depth stop may be set so that the cutter penetrates the foil by a small fraction of its thickness, exposing a clean metal surface for soldering. The bottom of the cut is visible during the cutting operation.

3,555,965
APPARATUS FOR CONTROLLING PRESSURE IN A HYDRAULIC MACHINE

Adolf F. Weiss, Easton, Pa., assignor to Alpha Press Company, Alpha, N.J., a corporation of New Jersey

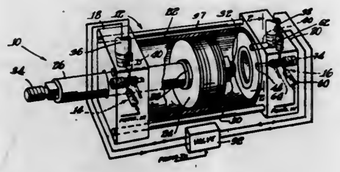
Filed Jan. 23, 1968, Ser. No. 699,959
Int. Cl. F15b 21/02
U.S. Cl. 91—35 7 Claims



Apparatus for controlling the hydraulic pressure in a hydraulic machine, such as a hydraulic press, for enabling the hydraulic pressure to be incrementally increased. A flow control device is provided in the hydraulic circuit of the machine and when the movable member of the machine reaches a predetermined position, it actuates the flow control device. The flow control device initially operates intermittently, with each intermittent operation serving to move a movable member incrementally toward a hydraulic flow blocking position and hence increasing the hydraulic pressure by an incremental amount. Preferably, this is accomplished by an intermittently operated motor which drives a cam that, in turn, moves a valve member toward a flow blocking or closed position. When the hydraulic pressure reaches a preselected amount, the flow control device is operated continuously until the hydraulic pressure reaches a maximum, whereupon no further pressure increase takes place. Once the hydraulic

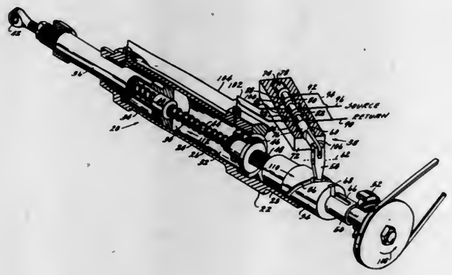
machine has performed its cycle of operations, the flow control device is restored to its original or initial position, ready for a new machine cycle.

3,555,966
AIR CYLINDER WITH PILOT VALVE IN HEAD
Ignazio James Conigilo, Chicago, Ill., assignor to Mead Specialties Co., Inc., a corporation of Illinois
Continuation of application Ser. No. 750,998, July 18, 1968, now abandoned, which is a continuation of application Ser. No. 570,075, Aug. 3, 1966, now abandoned. This application Dec. 8, 1969, Ser. No. 880,468
Int. Cl. F01l 25/06
U.S. Cl. 91—306 **5 Claims**



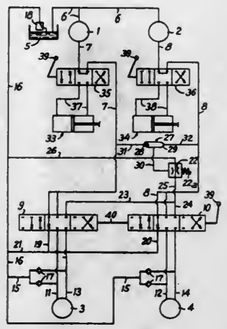
A fluid control arrangement including a cylinder having a pair of spaced heads joined by a hollow body in which a piston is mounted for reciprocal movement. A valve unit is provided in a valve bore integrally formed within at least one of the heads of the cylinder. The valve unit includes a spring-biased reciprocable valve member having a valve operator integrally formed therewith and extending into the hollow body so as to be in actuatable relation with the piston. A pair of conduit openings extend into the valve bore, and, depending upon the positioning of the valve member in the bore due to the operation of the piston, communicate with or are blocked from each other.

3,555,967
CLOSED LOOP SERVOACTUATOR
Howard M. Geyer, Dayton, Ohio, assignor to General Electric Company, a corporation of New York
Filed Jan. 23, 1969, Ser. No. 793,347
Int. Cl. G05b 6/06
U.S. Cl. 91—368 **3 Claims**



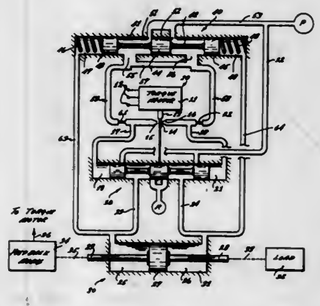
An actuator having an integral position servo is disclosed in which the input and feedback means comprise a rotatable input shaft, a feedback shaft which rotates in response to axial translation of the actuator piston, and a rotatable and translatable cylindrical member having a groove on its surface which is engaged with the operating lever of a servovalve, the cylindrical member being translatable in response to either of said input and said feedback shafts to operate the servovalve.

3,555,968
HYDRAULIC POWER TRANSMISSION
Pierre A. Praddaude, Crepy-en-Valois, France, assignor to Societe Anonyme Poclain Le Plessis-Belleville, Oise, France, a company of France
Filed Apr. 17, 1969, Ser. No. 817,106
Claims priority, application France, Apr. 19, 1968, 148,738
Int. Cl. F15b 11/16, 13/09
U.S. Cl. 91—412 **2 Claims**



An hydraulic power transmission for a vehicle, such as is used in the building and civil engineering industries, comprises two sets of receivers each supplied by a pump, wherein a speed limiter is disposed in the common return line of the receiver circuits and is piloted, via a shuttle valve, by whichever is the higher of the pump delivery pressures, whereby the receiver set temporarily being supplied on reduced delivery is free to be driven whereas the two receiver sets can, if need be, have their movements braked. This arrangement enables the same pumps which supply the wheel driving motors of the vehicle, to also drive an actuator without the disturbing consequence which has been prevalent hitherto, of one of the receiver sets braking the other.

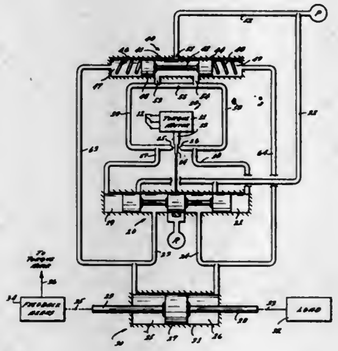
3,555,969
SERVOVALVE HAVING DYNAMIC LOAD ADAPTIVE RESPONSE WHILE MAINTAINING STATIC PERFORMANCE UNAFFECTED
Naren M. Shah, Santa Monica, Calif., assignor to Bell Aerospace Corporation, a corporation of Delaware
Filed Aug. 8, 1968, Ser. No. 751,233
Int. Cl. F15b 9/07
U.S. Cl. 91—461 **9 Claims**



Disclosed is an electromagnetic hydraulic servovalve which receives input signals to control a pilot stage which in turn positions a power valve responsively thereto. The positioning of the power valve controls the flow of fluid under pressure

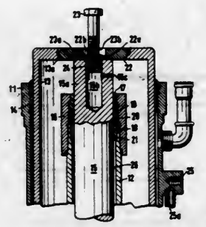
from a source thereof to an actuator which in turn positions the load connected thereto. An intermediate stage of amplification may be inserted between the pilot stage and the power valve if such is desired. A pressure regulator is inserted between the source of fluid under pressure and the input to the pilot stage and/or the intermediate stage of the servovalve. The pressure regulator is responsive only to absolute load changes and in accordance therewith has the differential pressure appearing across the actuator applied to the pressure regulator. In response to a static or dynamic load condition a pressure drop directly proportional to the amount of the pressure difference appearing across the actuator is caused to occur in the fluid applied to the input stages (the pilot or intermediate stage). By regulating the pressure applied to the input stages, the velocity of movement of the power valve and subsequently the acceleration of the actuator ram are controlled. The fluid pressure to the power valve is not subjected to the pressure regulation by the pressure regulator, hence the static performance of the system is maintained.

3,555,970
PRESSURE REGULATOR FOR SERVO VALVE HAVING DYNAMIC LOAD ADAPTIVE RESPONSE
Roger D. Borgeson, Granada Hills, and Naren M. Shan, Santa Monica, Calif., assignors to Bell Aerospace Corporation, a corporation of Delaware
Filed Aug. 8, 1968, Ser. No. 751,234
Int. Cl. F15b 9/07
U.S. Cl. 91—461 **2 Claims**



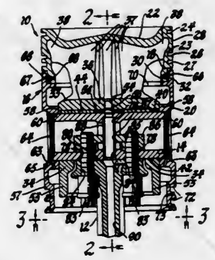
Disclosed is an electromagnetic hydraulic servo valve which receives input signals to control a pilot stage which in turn positions a power valve responsively thereto. The positioning of the power valve controls the flow of fluid under pressure from a source thereof to an actuator which in turn positions the load connected thereto. An intermediate stage of amplification may be inserted between the pilot stage and the power valve if such is desired. A pressure regulator is inserted between the source of fluid under pressure and the input to the pilot stage and/or the intermediate stage of the servo valve. The pressure regulator is responsive only to the load and in accordance therewith has the differential pressure appearing across the actuator applied to the pressure regulator. In response to a static or dynamic load condition a pressure drop directly proportional to the amount of the pressure difference appearing across the actuator is caused to occur in the fluid applied to the input stages (the pilot or intermediate stage). By regulating the pressure applied to the input stage, the velocity of movement of the power valve, and subsequently the acceleration of the actuator ram are controlled. The fluid pressure to the power valve is not subjected to the pressure regulation by the pressure regulator, hence the static performance of the system is maintained.

3,555,971
HIGH PRESSURE LIFT DEVICE FOR POWER VEHICLES AND THE LIKE
Hermann Schroder, Halver, Westphalia, Germany, assignor to Messrs, Markisches Werk Gesellschaft mit beschrankter Haftung, Halver, Westphalia, Germany, a corporation of Germany
Filed Aug. 2, 1968, Ser. No. 749,698
Claims priority, application Germany, Aug. 12, 1968, 1,756,579
Int. Cl. F01l 11/02
U.S. Cl. 92—113 **6 Claims**



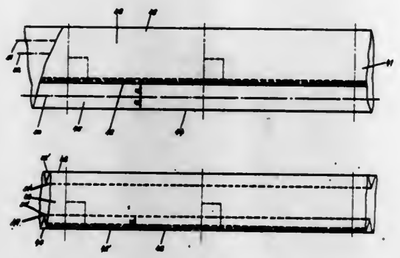
Equipment for the release of air pressure from the high pressure cylinder of a hydraulic lift system is disclosed with use of a restricted passageway permitting air to escape but retaining sufficient pressure from hydraulic fluid to effectively bleed only the air from the system automatically.

3,555,972
CROSSHEAD PISTON
Kenneth L. Hulsing, Plymouth, Mich.; assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Dec. 23, 1968, Ser. No. 786,207
Int. Cl. F16j 1/14
U.S. Cl. 92—157 **3 Claims**



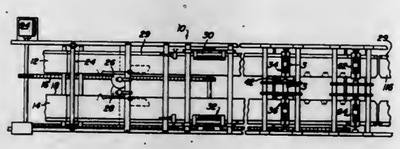
In a preferred embodiment, a crosshead type piston for an internal combustion engine has a skirt member formed separately from the head member and both are independently connected with the piston pin. The head member carries the compression rings in a ring belt section integrally depending from the crown section, both of which are formed integrally with a piston pin receiving section. The latter section positively connects the head member to the piston pin and includes a saddle portion with a recess in load transmitting relationship with the piston pin so as to transfer downward combustion and inertia loads to a major portion of the piston pin upper surface. Oil distribution means provide for cooling the piston crown and lubricating the pin surfaces, and seal means between the head and skirt prevent excessive leakage of the cooling oil to the cylinder walls. A number of other features are included.

3,555,973
TUBE-MAKING MACHINE FOR MANUFACTURING VALVED AND GUSSETED SACKS FROM PLASTIC MATERIAL
Kurt Rochla, Lengerich, Germany, assignor to Windmoller & Holscher
Filed Sept. 14, 1965, Ser. No. 487,277
Claims priority, application Germany, Dec. 28, 1964, W38257
Int. Cl. B31b *1/84, 45/00;* B31f *1/00*
U.S. Cl. 93—8 3 Claims



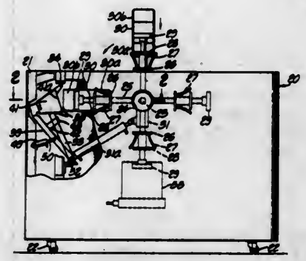
Process and apparatus are disclosed for manufacturing valved and gusseted sacks of plastic material commencing with a flat web of plastic and initially overlapping its edges and heat sealing to form a tube. A plurality of valved patches at spaced locations are sealed to the edge of one side of the web before the tube is formed and are joined to the other edge of the web during the formation of the heat-sealed seam. Thereafter, the tube is flattened with the heat-sealed seam spaced from both edges but closer to one. Finally, gussets are formed in the side edges of the tube in such a way that the heat-sealed seam lies at an outer gusset fold.

3,555,974
METHOD AND APPARATUS FOR MAKING PLASTIC BAGS
Francis A. Davis Jr., Lansdale, Pa., assignor to Paramount Packaging Corporation, Chalfont, Pa., a corporation of Delaware
Filed Nov. 14, 1968, Ser. No. 775,748
Int. Cl. B31b *1/00*
U.S. Cl. 93—8 9 Claims



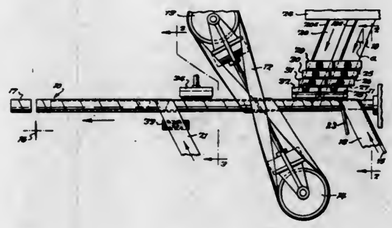
Shaped gusset bags of heavy gauge material are made by separately welding a generally V-shaped notch in the top and bottom sections of the gusset, providing a short slit in the notches, providing pairs of transverse seam welds which intersect the notch welds, and then cutting along the notch welds and between the transverse seam welds. In another embodiment, the notch is welded and cut out at one station and then moved to a second station wherein the material is cut and welded transversely.

3,555,975
APPARATUS AND METHOD FOR AUTOMATICALLY FORMING AND SEALING PLIABLE CONTAINERS
Bernard C. Barnes, 3643 N. Durfee Road, Apt. C, El Monte, Calif.
Filed Mar. 4, 1968, Ser. No. 710,238
Int. Cl. B31b *1/02*
U.S. Cl. 93—44.1 22 Claims



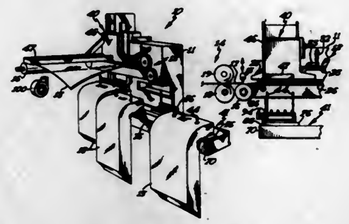
This invention relates to a simple apparatus and method for automatically sealing pliable containers, particularly plastic-coated paper-base containers, by consecutively partially prefolding inwardly at least one end of the container by use of movable folding means comprised of converging crimping and spanking elements and sealing at least one of said crimped ends by compressing said end between a movable anvil and a stationary sealing head, the latter having a face comprised of a pressure land and a plurality of elevated sealing ribs superimposed thereon so as to apply a uniform sealing force to predetermined positions in the interior of the container end while simultaneously applying a continuous pressure to the interior folds of said container end. The sealing head also provides a means for uniformly and positively aligning the container thereon.

3,555,976
METHOD AND APPARATUS FOR PRODUCING SPIRAL WOUND CONTAINER
Charles I. Carter, and Rupert O. Rogers, Mobile, Ala., assignors to International Paper Company, New York, N.Y., a corporation of New York
Filed Jan. 14, 1969, Ser. No. 791,016
Int. Cl. B31c *3/04, 11/00;* B31b *1/64*
U.S. Cl. 93—80 9 Claims



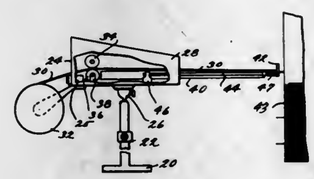
A method and apparatus for producing spiral wound containers in which a plurality of plies, coated on at least one surface with a thermoplastic coating, are spirally wound onto a mandrel, heated and adhesively secured with the thermoplastic coatings to form a spirally wound tube and the spirally wound tube is cut into can length units, the ends of the can length units are moistened and flared and can ends are attached.

3,555,977
WICKET LOADER
Robert W. Saumsiegle, East Providence, R.I., assignor to G. T. Schjeldahl Company, Northfield, Minn., a corporation of Minnesota
Filed Apr. 13, 1967, Ser. No. 630,703
Int. Cl. B31b *1/98;* B65g *61/00;* B65h *31/26*
U.S. Cl. 93—93 4 Claims



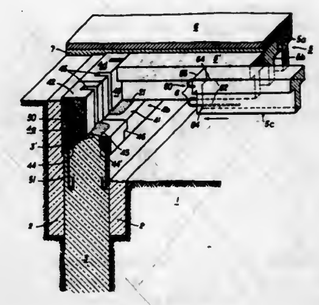
Apparatus for receiving and loading a stack of film articles uniformly and in superimposed relationship upon a wicket or other support with retaining means being provided for forming a stack of said film articles, the apparatus being arranged in combination with conveying means arranged to sequentially deliver articles fabricated from said material along a certain directional axis, and including handling and stacking means for the articles. The apparatus includes means to deliver the articles to a discharge station, the discharge station having means for retaining the articles in generally captive relationship, pickup means adjacent the discharge station and including traveling guide means for intermittently releasably retaining an edge surface portion of said thin plastic sheet material for transporting the retained article to a sheet article stacking means. The sheet article stacking means comprises a shoe adapted for reciprocatory up and down motion, the shoe being arranged to strike said sheet article, remove it from the pickup means, and stack it upon a receiver. The receiver is arranged to move the individual superimposed stacked articles intermittently from said receiving zone.

3,555,978
SHEET COUNTER AND TAB INSERTER
Edward J. McCool, Philadelphia, Pa., assignor to American Type Founders Co., Inc., Franklin, Tenn., a corporation of Delaware
Filed Apr. 26, 1968, Ser. No. 724,518
Int. Cl. B65h *33/04*
U.S. Cl. 93—93 5 Claims



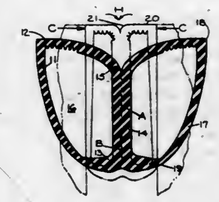
Apparatus for placing markers such as paper tabs between stacked articles to segregate them into counted groups and more specifically an improved portable sheet counter and tab inserter for automatically counting and dividing stacks of paper sheets into counted groups by placing a strip of paper atop the stack and then cutting the strip to form a tab whereby the length of the tab is precise and readily adjustable and the time delay between the placing of the strip and the cutting of the strip to form the tab can be simply and easily altered.

3,555,979
ROAD SUPPORT STRUCTURE
Christian Veder, Alberstrasse 8, Graz, Austria
Filed Sept. 10, 1968, Ser. No. 758,789
Claims priority, application Austria, Sept. 13, 1967, A8389/67
Int. Cl. E01c *9/00*
U.S. Cl. 94—4 7 Claims



A support device for covering an excavation with a minimum interruption of the flow of vehicular traffic over the excavation including opposed support walls having fixedly secured thereto prefabricated L-shaped support members and prefabricated T-shaped support beams extending between opposed support members and fixedly secured thereto. The support members and the support beams both have reinforcing rod projections which are inserted into soft cement so as to form a permanent and strong supporting structure.

3,555,980
SEALING INSERTS FOR JOINTS IN CONCRETE
Donald F. Dreher, P.O. Box 56, East Brookfield, Mass.
Original application Aug. 16, 1966, Ser. No. 572,716, now Patent No. 3,394,640. Divided and this application July 26, 1968, Ser. No. 747,865
Int. Cl. E01c *11/10*
U.S. Cl. 94—18 10 Claims

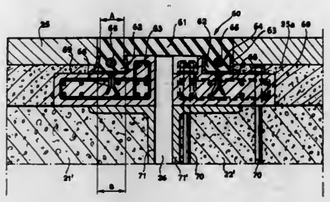


An elastomeric insert for sealing a variant joint space in concrete pavement, extruded with the operative ordinates upset in such manner as to cause deflection when compressed in the joint space with the top surfaces aligned horizontally and converging into the vertical plane of symmetry, the inboard portions thereof together with a supporting stem being motionable vertically as the joint space diminishes or enlarges ambiently, the stem being load-supported by an opposing substructure. Also disclosed are means for controlling the described vertical motion relative to changes in joint width, for reinforcing portions of inserts of this general type including X-metal strip, and for overlaying the exposable surfaces of such inserts.

3,555,981
EXPANSION JOINT FOR ROAD OR BRIDGE SPAN SECTIONS

Ettore Vitali, Milan, Italy, assignor to Societa' Applicazioni Gomma Antivibranti Saga, S.p.A., Milan, Italy, an Italian Joint Stock Company

Filed July 31, 1968, Ser. No. 749,169
Claims priority, application Italy, Sept. 6, 1967, 20173A/67
Int. Cl. E01c 11/10
U.S. Cl. 94—18 5 Claims

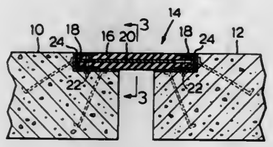


An expansion joint for interconnecting road bridge spans comprises a resilient (rubber) strip having dovetail section edge flanges which are fitted into dovetail channel elements, mountable on respective adjoining span sections, by backward bending of the strip to deform the beads. After fitting, the beads are rigidified by insertion of a bar or cable to prevent their release from the channel elements.

3,555,982
EXPANSION JOINT SEAL

Joseph D. George, 1263 Royal York Road, Islington, Ontario, Canada

Filed Aug. 13, 1968, Ser. No. 752,342
Int. Cl. E01c 11/10
U.S. Cl. 94—18 5 Claims



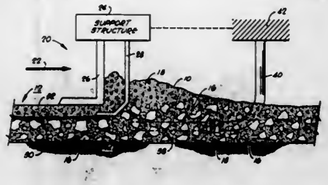
This invention relates to an expansion joint seal of the type commonly used in sealing adjacent deck panels of a bridge, although it could be used in any case where a seal for an expansion joint between two panels is required. The seal consists essentially of an elastomer strip with transversely extending holes adapted to receive load-bearing bars in sliding relation so that as the panels expand and contract, the elastomer can follow the expansion and contraction and slide relative to the load-bearing bars. The particular advantage of the construction is that the elastomer moves with respect to the bar for substantially the full extent of the width of the seal so that the elastomer is stressed over substantially its full width as the joint expands and contracts.

3,555,983
PAVING GROUT CONTROL DEVICE

George W. Swisher, Jr., Oklahoma City, and Don W. Smith, Edmond, Okla., assignors to CMI Corporation, a corporation of Oklahoma

Filed Aug. 2, 1968, Ser. No. 749,701
Int. Cl. E01c 19/48
U.S. Cl. 94—46 13 Claims

Apparatus for conditioning paving material which includes coarse aggregate in suspension, the apparatus consisting of a comblike structure which is immersed to a predetermined depth in the paving material to coact with finishing or operating elements. The comblike structure may take the form of a screen plate having a plurality of evenly spaced vertical slots,

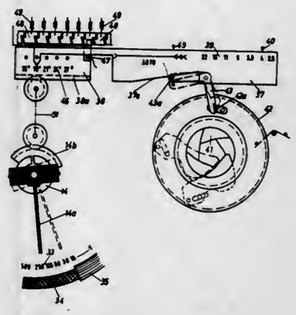


which screen plate may be adjustably positioned along the leading edge of paving material finishing elements of selected roadway construction equipment.

3,555,984
PHOTOGRAPHIC CAMERA HAVING AN ELECTRONIC EXPOSURE TIMING DEVICE

Waldemar T. Rentschler, Calmbach, Black Forest, Germany, assignor to Prontor-Werk Alfred Gauthier G.m.b.H., Calmbach, Black Forest, Germany

Filed Dec. 1, 1966, Ser. No. 598,388
Claims priority, application Germany, Dec. 4, 1965, P38,278
Int. Cl. G03b 7/08, 9/06
U.S. Cl. 95—10 4 Claims

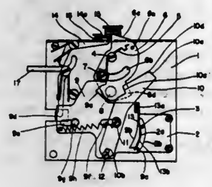


Electronic circuit means, including a light responsive device, is provided to adjust camera exposure time automatically. The particular circuit parameters under which the electronic circuit means operates can be preselected by manual positioning of two setting members. A first of these setting members controls by its position the size of the shutter aperture. A second of these setting members controls by its position which of a set of resistors is connected in the electronic circuit means and it also controls by its position the zero setting of a meter having a scale showing exposure time. The first and second setting members are interconnected at a distance from one another determined by film sensitivity. After initial positioning of the interconnected setting members, the electronic circuit means automatically adjusts exposure time as a function of light intensity.

3,555,985
SINGLE-BLADE SHUTTER CAMERA WITH AN EXPOSURE METER INTERLOCKING MECHANISM

Hiroshi Ueda, Nara, and Hideo Takeuchi, Gamagori, Japan, assignors to Minolta Camera Kabushiki Kaisha, Minami-ku, Osaka, Japan

Filed Dec. 28, 1967, Ser. No. 694,311
Claims priority, application Japan, Dec. 29, 1966, Feb. 24, 1967, Oct. 7, 1967, 42/356;42/15,578;42/85,548
Int. Cl. G03b 7/14, 9/10
U.S. Cl. 95—10 4 Claims

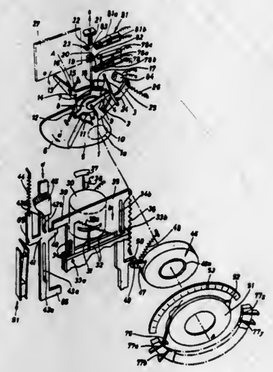


A camera with a built-in exposure meter having a single-blade shutter, comprising an exposure meter interlocking mechanism including first and second members, each having a notch to form a lens aperture in a cooperative manner. The first member has a cam surface engageable with the pointer of the exposure meter to sense the position thereof, to control the shutter speed by mechanical engagement of an abutment member of the shutter blade with the first member. The momentum of the first member is regulated by the engagement of the cam surface with the pointer, while the displacement of the second member is adapted to be responsive to the momentum of the first member, so that the lens aperture is also controlled by the position of the pointer.

3,555,986
EXPOSURE CONTROL FOR PHOTOGRAPHIC CAMERAS

Gunter Pawlik, Munich, Germany, assignor to AGFA-Gevaert Aktiengesellschaft, Leverkusen, Germany

Filed May 20, 1968, Ser. No. 730,393
Claims priority, application Germany, May 24, 1967, A55802
Int. Cl. G03b 7/12, 9/06, 9/58
U.S. Cl. 95—10 15 Claims

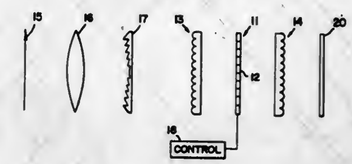


An exposure control for photographic cameras wherein the exposure time is selected by the operator and the aperture size is determined automatically as a function of scene brightness and as a function of selected exposure time. The shutter (5,6) is closed by a delay circuit (79,80) with a delay which depends on the resistance of a selected one (75a) of a set of fixed resistors (75a—75z). The selected resistor is first connected by hand into the circuit of the exposure meter (30) for the diaphragm (46) to influence the aperture size in dependency of the desired exposure time, and the same selected resistor is thereupon automatically connected in the delay circuit on operation of the shutter release (41) to effect closing of the shutter.

3,555,987
FOCAL PLANE SHUTTER SYSTEM

Iben Browning, Sunnyvale, Calif. (745 Distel Drive, Los Alto, Calif. 94022)

Filed Feb. 7, 1968, Ser. No. 703,646
Int. Cl. G03b 9/56
U.S. Cl. 95—53 10 Claims

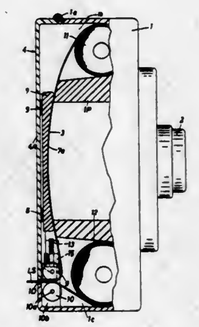


A focal plane shutter system is disclosed wherein an electrically controlled high-speed ceramic lattice shutter array is interposed between first and second lens mosaics whereby light from an object incident on the first lens mosaic through a field lens is focused in the form of a plurality of image fragments on the ceramic lattice shutter array for high-speed shuttering and selective transmission therethrough and wherein the selectively transmitted light is focused by the second lens mosaic to form a reconstituted image on a film plane. The second lens mosaic may be eliminated and the film plane placed immediately adjacent the ceramic lens shutter array when light from an object incident on the first lens mosaic is focused to a plurality of intense spots representative of the image rather than to a plurality of image fragments.

3,555,988
APPARATUS FOR IMAGE-TRANSFER PHOTOGRAPHY

Karl Wagner, Ottobrunn, Germany, assignor to AGFA-Gevaert Aktiengesellschaft, Leverkusen, Germany

Filed May 14, 1968, Ser. No. 728,997
Claims priority, application Germany, May 19, 1967, A55756
Int. Cl. G03d
U.S. Cl. 95—89 12 Claims



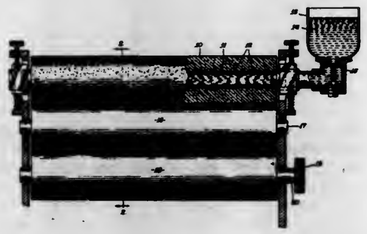
A camera for image-transfer photography having a movably mounted first presser roller on the cover of the camera housing which is engaged by cams during movement

of the cover to closed position for shifting the first pressure roller in a direction toward a second presser roller which is mounted in the body of the housing. The second presser roller or the cams are biased by springs to insure that at least one of the presser rollers will yield when the negative and positive webs are being withdrawn from the housing upon completion of an exposure and when the thickness of the laminated structure passing between the rollers increases.

3,555,989
DIAZOTYPE DEVELOPER MATERIALS AND THE PRODUCTION AND USE THEREOF

Loren E. Sheiffo, Palatine, Ill., assignor to Addressograph-Multigraph Corporation, Mount Prospect, Ill., a corporation of Delaware

Original application July 18, 1966, Ser. No. 566,164, now Patent No. 3,490,908. Divided and this application Sept. 2, 1969, Ser. No. 869,986
Int. Cl. G03d *3/00*
U.S. Cl. 95—89 4 Claims

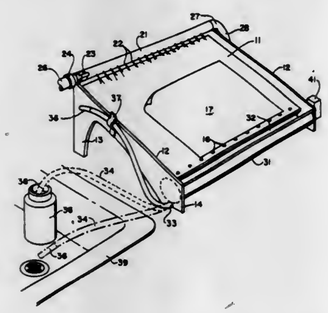


A liquid-carrying roller useful for applying controlled amounts of a diazo-developing liquid which is released in response to removal of the liquid from the surface of the roller. The roller is made of a porous solid resin such as polyethylene. The pores have an average diameter from 10 to 75 microns and contain an organic amine having a boiling point in the range from 105° to 250° and a pK value less than 4.70.

3,555,990
APPARATUS FOR PROCESSING PHOTOGRAPHIC PRINTS

Egon A. Dittman, 854 El Pintado Road, Danville, Calif. 94526, and Marvin H. Lincer, 750 Sargent Road, Concord, Calif. 94520

Filed Apr. 29, 1968, Ser. No. 724,760
Int. Cl. G03d *3/02*
U.S. Cl. 95—95 2 Claims

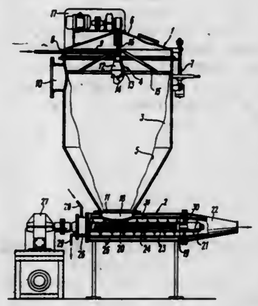


Apparatus for photographic development of either color or black-and-white prints using standard developing chemicals. An inclined platen receives the photographic paper. At the top of the platen is a transverse tube formed with spray holes, at the bottom a trough collecting liquid running off the lower end of the platen; sides of the platen retain the chemicals thereon. The trough has a discharge hose for draining chemicals into containers for reuse or rinse water into the sink and also a pump for recirculating chemicals through the tube. The tube has a valve and water connection to rinse water at one end and a connection to the pump at the other.

3,555,991
INSTALLATION FOR CONTINUOUS PRODUCTION OF EDIBLE FATS, MOSTLY BUTTER AND MARGARINE

Vasily Vasilievich Strakhov, Moscow; Jury Nikolaevich Kuzmin, Khimki Moskovskoi oblasti; Alexandr Eliseevich Krikunov; Nikolai Ivanovich Tombaev; Iosif Borisovich Gisin; Anatoly Grigorievich Agafonov; Mikhail Pavlovich Zaitsev; Eda Grigorievna Shender; Vladimir Pavlovich Prityko; Maria Lukyanovna Makeeva, Moscow, and Anatoly Mikhailovich Soloviev, Kalach Voronezhskoi oblasti, U.S.S.R.

Filed Mar. 10, 1969, Ser. No. 805,740
Claims priority, application U.S.S.R., Mar. 16, 1968, 1225561
Int. Cl. A23d *5/001*
U.S. Cl. 99—244 3 Claims



An installation for continuous production of edible fats, mostly butter and margarine, wherein a device for cooling fat emulsion is essentially a chamber accommodating a multinozzle disperser adapted to adequately spread the fat emulsion throughout the chamber volume, and a flexible receptacle for the partially finished product, said disperser being located inside said receptacle, and the augers of a worm press are heated.

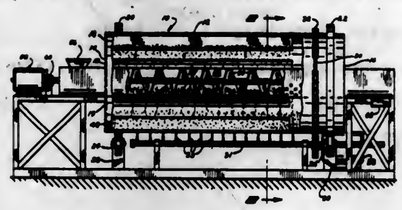
3,555,992
APPARATUS FOR HEATING, COOLING OR PUFFING FOOD PRODUCTS IN A DRY STATE

Edward L. Fritzberg, Minneapolis, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware

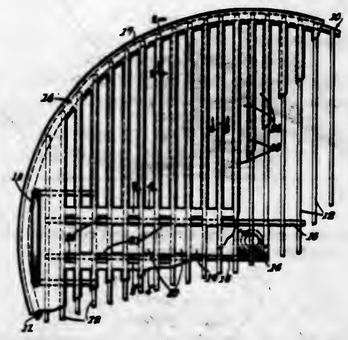
Filed Oct. 31, 1968, Ser. No. 772,251
Int. Cl. A47j *35/00*
U.S. Cl. 99—345 8 Claims

Apparatus for cooling, dry blanching or dry puffing food products, particularly snack items by contact with a dry granular heat exchange medium such as salt contained in a heat treatment chamber composed of a cylinder mounted for rotation on a horizontal axis and provided on its interior with pockets or scoops which as the cylinder rotates elevates a solid granular heat treating medium such as hot salt to the top of the cylinder where as the scoop becomes inverted it is dumped into a centrally located longitudinally extending auger conveyor composed of a trough within which is mounted a flighted auger. The trough is provided with perforations big enough to allow the salt to fall to the bottom of the cylinder. Food pieces placed in the trough are transferred through the cylinder under the stream of cascading salt which accomplishes the required heat treatment. Potato

chips are prepared by blanching slices for 20 minutes in water at 180° F., drying them to 10 percent moisture and passing them through the apparatus at 375°F for 15 seconds.



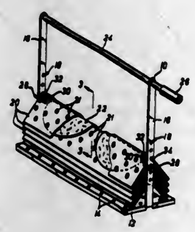
food-supporting wires thereof and so conforming to said wires as to provide for ample broiling heat for items of food disposed thereupon while also keeping drippings from said food reaching most of the wires of the grill.



3,555,993
TORTILLA FRYING APPARATUS

Vidal Garcia, 835 E. 4th St., Brownsville, Tex. 78520

Filed May 6, 1968, Ser. No. 726,893
Int. Cl. A23p *1/00*; A47j *37/12*
U.S. Cl. 99—426 7 Claims



In one exemplary embodiment, an apparatus for frying tortillas to form crisp shells for tacos, tostadas and the like is provided, having a base member and a space-apart pair of upright members fixed thereto with a rod transversely attached to the outer ends of the upright members for providing a means of handling the apparatus. A plurality of inverted V-shaped forming members and tortillas are alternately placed to form an upright stack resting on the base member and a disposed between the upright members for engagement therewith. Sliding bolt latches disposed adjacent the ends of the topmost forming member engage apertures in the upright members to lock the stack of forming members and interspersed tortillas in place between the upright members during the frying process.

3,555,994
DISPOSABLE GRILL COVER

Joseph S. Nemetz, 8738-1/2 Artesia Blvd., Bellflower, Calif. 90706, and Leland E. Bewick, 10928 S. Woodruff Ave., Downey, Calif. 90241

Filed Sept. 30, 1968, Ser. No. 763,724
Int. Cl. A47j *37/07*
U.S. Cl. 99—444 6 Claims

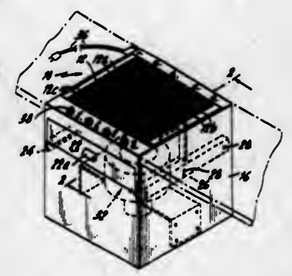
A disposable drippings-shedding cover for the grill of a barbecue, formed to fit over and removably connect with the

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3,555,995
ELECTRIC GRILL

Victor M. Berger, 200—17 50th Ave., Bayside, N.Y. 11364

Filed Feb. 20, 1969, Ser. No. 801,085
Int. Cl. A47j *37/00*
U.S. Cl. 99—446 2 Claims



A cooking unit having a horizontally oriented electric grill serving as a food cooking surface and an exhaust blower located beneath the grill which not only effectively removes visible smoke and odors but also contributes to prompt removal of food drippings and the like from the cooking surface to a remote location at which the reduced temperature is such as to minimize the possibility of fat fires or the like due to ignition of these drippings.

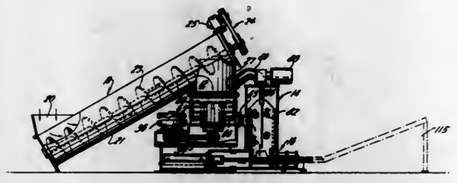
3,555,996
METHOD AND APPARATUS FOR REDUCING THE VOLUME OF WASTE MATERIALS

Steven Schwarz, South Orange, and William Wiley Miner, Jr., Hightstown, N.J., assignors to SFM Corporation, Union, N.J., a corporation of New Jersey

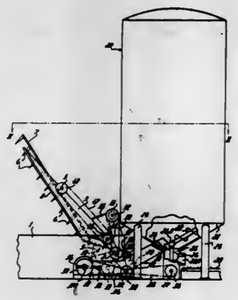
Filed June 23, 1969, Ser. No. 835,339
Int. Cl. B30b *13/00*, *15/08*
U.S. Cl. 100—39 7 Claims

Apparatus and method of reducing in volume waste material comprising comminuting the waste material in a pulverizer and delivering to an extruder-compacter through a precompaction feed chute in which a positive delivery air flow delivers the comminuted material to the extruder-compacter. The air flow is likewise used to recycle air to the pulverizer to assist in positively delivering waste material to the

pulverizer. Fluff in the precompaction feed chute is scraped and compacted by a tamper for delivery to the extruder-compacter without impeding the air flow and collection of waste material in the feed chute is eliminated.

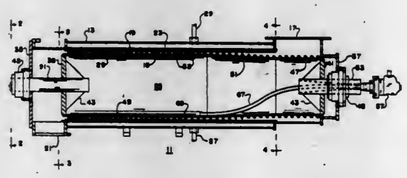


3,555,997
CROP STORE
Cornelis Van der Lely, Bruschenrain 7, Zug, Switzerland
Filed Mar. 8, 1967, Ser. No. 621,541
Claims priority, application Netherlands, Aug. 24, 1966, Mar. 11, 1966, Sept. 2, 1966, Apr. 29, 1966, Dec. 6, 1966, 6,611,881;6,603,156;6,612,380;6,605,770;6,617,098
Int. Cl. B65g *3/10*; B30b *15/30*, *15/32*
U.S. Cl. 100—66 23 Claims



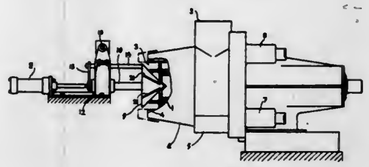
The invention relates to a crop store and to a mechanism for loading same. The crop store may have a movable wall and pressure indicating means. Also more than one compartment can be included in the crop store. The loading mechanism is compressing means, preferably a rotatable screw conveyor or a reciprocating piston, which communicates with the crop store via a supply channel.

3,555,998
STEAM JACKETED SCREW COMPACTION CONVEYOR
Edgar N. Meakin, 372 Roblar Ave., Hillsborough, Calif.
Filed May 27, 1968, Ser. No. 732,366
Int. Cl. B30b *3/00*
U.S. Cl. 100—93 9 Claims



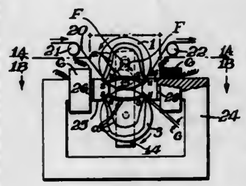
A steam jacketed screw compaction conveyor comprising a housing having a cylindrical bore with longitudinal ridges secured to the walls of the bore and an impeller body rotatably supported in the bore of the housing and having a multiplicity of helical blades surrounding the impeller body.

3,555,999
DEVICE FOR DEWATERING MUD, SLUDGE OR FIBRE SUSPENSIONS
Tad Glowacki, Hembergavagen 3, Taby, Sweden
Filed Oct. 17, 1968, Ser. No. 768,298
Claims priority, application Sweden, Nov. 10, 1967, 15446/67
Int. Cl. B30b *15/32*
U.S. Cl. 100—148 5 Claims



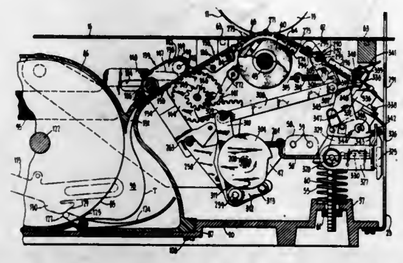
A dewatering device for mud, sludge or fibre suspensions having a feeder screw mounted for rotation in a perforated drum in which the feeder screw feeds the mass to be dewatered from an inlet opening to an annular outlet opening having a conical flow regulator for defining the effective size of the outlet opening, and including means for imparting rotational movement of the flow regulator about the axis of the drum against the rotational direction of the feeder screw during a portion of the cycle of screw rotation.

3,556,000
MAGNETIC CALENDER
Leslie Ethel Goodwin; Jean Max Rowe, Wilmington, Del., and Nathaniel Convers Wyeth, Rosedale, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 462,961, June 10, 1965, now Patent No. 3,413,915, dated Dec. 3, 1968. This application Dec. 8, 1967, Ser. No. 689,087
Int. Cl. B30b *3/04*
U.S. Cl. 100—169 7 Claims



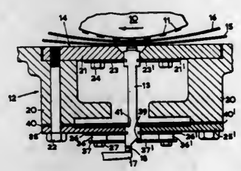
A magnetic calender for sheet material incorporating a pair of ferromagnetic pressure applicators, at least one of which is a roll journaled for rotation about its longitudinal axis, defining between them a material-receiving nip, the applicators being mounted for free movement with respect to one another in a direction varying the opening of the nip, and paired magnetic means having pole faces of opposite polarity disposed symmetrically adjacent the peripheries of the pressure applicators in angularly offset locations from the nip developing components of force urging the pressure applicators towards one another.

3,556,001
TAPE FEED MECHANISM FOR POSTAGE METERING MACHINES
Mel E. Kinney, Castro Valley, and Nathaniel F. Howthorne, Alameda, Calif., assignors to The Singer Company, a corporation of New Jersey
Filed Jan. 31, 1969, Ser. No. 795,471
Int. Cl. B41l *47/46*; B41f *13/56*
U.S. Cl. 101—92 17 Claims



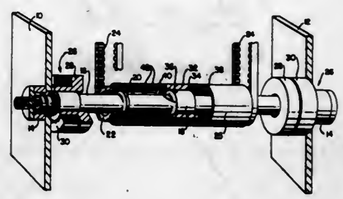
A tape mechanism for a postage metering machine providing a substantially straight path of travel for the tape which is under the cyclic control of a series of cams on a single shaft. Following the initiation of a tape printing operation, the tape is moved from a supply roll to effect operation of the meter for the printing of a properly positioned postmark thereon. Upon completion of the printing phase of the operation and the movement of the tape by the print drum, the tape is advanced further and is severed to provide a printed strip, or stamp, which is dispensed selectively in a moistened or nonmoistened condition. The tape supply is then retracted to an initial position and the value selection mechanism for the meter is automatically cleared, if desired.

3,556,002
HAMMER BLOCK ASSEMBLY FOR LINE PRINTER
Cecil Bragg, Staffordshire, England, assignor to English Electric Computers Limited, London, England, a British Company
Filed June 27, 1968, Ser. No. 740,530
Claims priority, application Great Britain, June 27, 1967, 29,536/67
Int. Cl. B41j *9/10*
U.S. Cl. 101—93 4 Claims



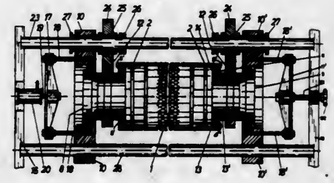
This invention relates to a hammer block assembly in a line printer. The assembly supports a line of hammers aligned for printing transversely across a web of paper moved longitudinally through the printer, the hammers extending perpendicularly to the paper. Each hammer is retained at four points laterally and longitudinally, longitudinal retention being achieved by straight-edged bar means which extend across the whole width of the printer, and lateral retention being achieved by comb means attached to the respective bar means. The bar and comb means are each accurately dimensioned in only one dimension. Stop means and spring means are provided to retain the hammers in their rest position. The comb means at the ends of the hammers remote from the paper are arranged to retain the hammers on only one side giving effectively only three-point retention laterally.

3,556,003
PRINT DRUM MOUNTING MEANS AND INTERMITTENT DRIVE MEANS THEREFOR
Melvin A. Soderstrom, Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Sept. 27, 1968, Ser. No. 763,118
Int. Cl. B41j *1/34*, *23/14*; B23j *11/02*
U.S. Cl. 101—93 1 Claim



A printing drum is connected to a shaft in such a manner as to withstand the severe stresses created in the connection therebetween when the drum is operated in a mode of intermittent rotary motion. A hardened external contacting surface on the shaft is plated with a layer of copper, and a hardened internal contacting surface on the drum is shrink-fitted on said external contacting surface to form said connection.

3,556,004
DEVICE ON ROTARY PRINTING MACHINES
Mathias Mitter, and Karl Mayer, Klagenfurt, Austria, assignors to Johannes Zimmer, Klagenfurt, Austria
Filed May 23, 1968, Ser. No. 731,550
Claims priority, application Austria, May 26, 1967, May 26, 1967, 4885;4889
Int. Cl. B41l *13/06*
U.S. Cl. 101—116 19 Claims

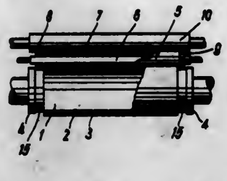


A device for a screen printing machine for exchangeably receiving and longitudinally stretching a rotary screen having end pieces. Rotary heads are arranged on the frame of the machine on both sides for connection to the end pieces. One of the rotary heads is adjustable in the longitudinal direction of the screen. Connecting means for the endpieces and rotary heads are provided essentially perpendicular to the axis of the screen for releasably coupling the end pieces and rotary heads. Such connecting means of the endpieces extend radially and the cooperating connecting means of the rotary heads also extend radially so that, when mounting the rotary screen on the rotary heads transversely to the screen axis, the connecting means are movable in axial direction for engaging over the cooperating connecting means. Means are provided for force-locking the connection by axial displacement of one of said rotary heads.

3,556,005
DAMPENING DEVICE FOR A ROTARY PRINTING PRESS

Werner Koch, Gotzenhain Uber Langen, Germany, assignor to Roland Offsetmaschinenfabrik Faber & Schleicher AG., Offenbach am Main, Germany, a German company

Filed Mar. 19, 1968, Ser. No. 714,272
Claims priority, application Germany, Apr. 15, 1967, R45776
Int. Cl. B41l 23/00
U.S. Cl. 101—147 7 Claims

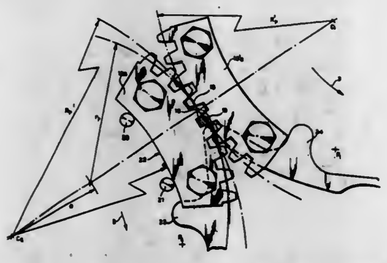


There is disclosed a dampening device for a rotary printing press, particularly for an offset rotary printing press, the dampening roller of which device applies moisture uniformly and constantly to the plate cylinder of the press, irrespective of the specific properties and dimensions of the coacting components of the device as may be present or develop during operation. For this purpose the dampening roller is frictionally driven by a coacting roller and engaged by this roller only at peripheral areas which are not in contact with ink-coated printing surfaces on the plate cylinder. Said peripheral areas are in the form of two circumferential collars or ribs at opposite ends of the ink-coated area of the plate cylinder.

3,556,006
ROTARY SHEET TRANSFER MEMBERS HAVING ENGAGEABLE TOOTHED SECTORS IN PROXIMITY TO SHEET GRIPPERS

Paolo Papa, and Federico Cappetti, Turin, Italy, assignors to Societa' Nebiolo S.p.A., Turin, Italy

Filed May 20, 1968, Ser. No. 730,546
Claims priority, application Italy, Oct. 14, 1967, 53353-A/67
Int. Cl. F16h 55/18; B65h 5/12
U.S. Cl. 101—232 9 Claims

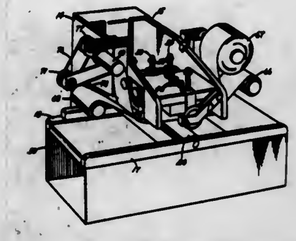


A printing press comprises a plurality of gripper carrying rotary impression and transfer cylinders play which paper sheet to be printed are transferred. Each cylinder has a pair of lateral discs and each disc has mounted thereon a toothed sector adapted to cooperate with the toothed sector mounted on one of the lateral discs of a cooperating cylinder during each step of exchange of a sheet. The sectors of each cooperating pairs thereof being preferably different in pitch radii and being so made as to have one pair of elements only, namely one tooth and a pair of teeth, respectively which intermesh without play during the said step of exchange. The remaining teeth having variable play during interengagement of the sectors, growing with the distance from the above said elements.

3,556,007
DATA RECORDING SYSTEM

Erwin F. C. Schulze, Novelty, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware

Filed Mar. 22, 1968, Ser. No. 715,374
Int. Cl. B41f 3/26
U.S. Cl. 101—250 8 Claims

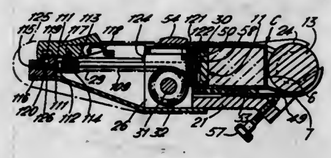


A printing recorder which has only the function of providing a rolling compression upon an assembly of printing devices and print receiving forms. The assembly is totally separable and is provided in size and configuration to accommodate the needs of the form. Several extensions of the invention provide for separate document creation, and/or combinations with machine reading to transmit information to a remote computer.

3,556,008
INK CONTAINER MOUNT WITH SELECTIVELY OPERATIVE SPRINGS FOR EXPELLING INK

Henry A. Branfield, Chesham, and Harold R. Balding, Hornsey, England, assignors to A. B. Dick Company, Niles, Ill., a corporation of Illinois

Filed Feb. 10, 1969, Ser. No. 797,728
Claims priority, application Great Britain, Feb. 16, 1968, 9550/67
Int. Cl. B41f 31/08
U.S. Cl. 101—350 16 Claims



A device for mounting a disposable ink-filled cartridge on a duplicating machine and for applying pressure to the ink in the cartridge to expel it gradually on to a first inking roller of the machine. The device is adjustable for use with inks of varying viscosities in that the means for pressurizing the ink comprises a number of springs which act individually and are each able to be selectably locked in nonoperative conditions, so that a suitable combination of springs may be made operative depending on the nature of the ink.

3,556,009
DELAY INITIATORS

Donald N. Thatcher, Newark, Del., assignor to E. I. duPont de Nemours and Company, Wilmington, Del., a corporation of Delaware

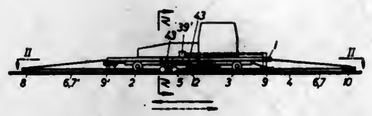
Filed Aug. 19, 1968, Ser. No. 753,478
Int. Cl. C06c 1/00; C06b 9/04
U.S. Cl. 102—28 13 Claims

In delay initiators used to initiate detonating explosives, a delay composition which comprises a metal salt of trinitrotoluene.

3,556,010
MOBILE TRACK CORRECTION APPARATUS

Franz Plasser and Josef Theurer, Johannesgasse 3, Vienna, Austria

Filed Nov. 15, 1968, Ser. No. 776,008
Claims priority, application Austria, Nov. 23, 1967, A10614/67
Int. Cl. E01b 33/06
U.S. Cl. 104—7 24 Claims

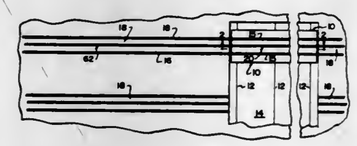


In a mobile track grading or lining machine, the track correction assembly, which moves the track into a corrected position determined by a reference system means which indicates the actual and desired track positions, the track correction assembly is mounted forwardly of the reference system means at a variable distance therefrom, the assembly and/or the reference system means being mounted for movement in the direction of track elongation.

3,556,011
RAILWAY CAR HANDLING MECHANISM

Wallace J. Saxonmeyer, Park Forest, Ill., assignor to Whiting Corporation, a corporation of Illinois

Filed July 11, 1968, Ser. No. 743,996
Int. Cl. B61j 1/10, 1/12
U.S. Cl. 104—48 10 Claims

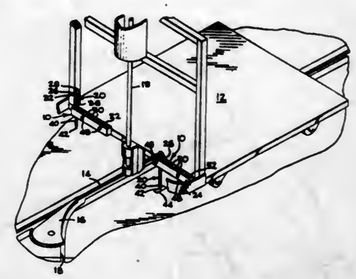


The mechanism includes a transfer table movably situated in a pit and having a track segment which can be aligned with a section of railway track extending to the pit, a sled assembly mounted on a first guide track extending parallel to the track section, a table sled mounted on a second guide track supported by the table and extending parallel to the track segment, and a motor on the table for reciprocating the table sled. The sled assembly has a coupling element on one end thereof closest to the pit and a plurality of railway car engaging arms on, and spaced along, the sled assembly for simultaneously engaging and advancing a plurality of uncoupled railway cars located on the track section when the sled assembly is moved toward the pit. A coupling member is mounted on one end of the table sled and can extend beyond one end of the table to engage the coupling element for moving the sled assembly to move railway cars onto the transfer table when the table sled is reciprocated by the motor through a stroke length at least equal to the length of one railway car.

3,556,012
MAGNETIC PROBE FOR TOW TRUCKS

Bert B. Parshall, Wood Dale, Ill., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware

Filed May 20, 1969, Ser. No. 826,110
Int. Cl. B61j 3/00
U.S. Cl. 104—88 4 Claims



A magnetic switch actuating apparatus for use in a tow truck system includes two horizontal probe mounting members disposed on either side of the tow pin of a truck at the front end of the truck. A series of vertical apertures through the mounting members are provided to receive the switch actuating probes which consist of a double shouldered handle portion secured to the upper end of a magnet supporting spring. The magnet which is disposed proximate the surface of the floor serves to actuate a magnetically responsive reed switch beneath the floor to open a diverting switch and divert the truck from a main slot of the tow truck system to a preselected shunt slot. Smaller diameter holes in the probe supporting members provide elevated inoperative positions for the probes when not in use.

3,556,013
FLUID MOTOR POWERED RAILWAY CAR

Harold H. Kruer, Fort Mitchell, Ky.; Melvin A. Raney, Cincinnati, Ohio, and Clifford L. Elmore, Loveland, Ohio, assignors to Precision Welder & Flexopress Corporation, Cincinnati, Ohio, a corporation of Ohio

Filed May 31, 1968, Ser. No. 733,565
Int. Cl. B61b 13/12; B61c 7/02, 8/00
U.S. Cl. 104—157 7 Claims

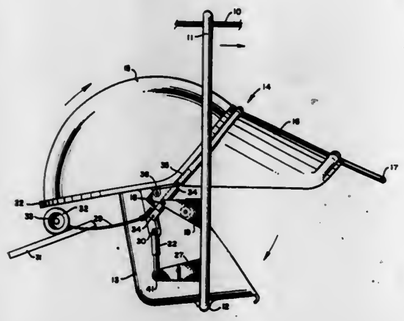


A railway system for transporting a workpiece between work stations including a movable workpiece-supporting carriage having a fluid motor and a fluid tank connected to the motor for enabling the motor to propel the carriage along a guide interconnecting the work stations, and one or more tank rechargers located at one or more of the work stations and/or at one or more points intermediate the work stations which are in fluid supplying relationship to the tank of a carriage located proximate the recharger for recharging fluid tanks as their associated carriages travel along the carriage guide from one work station to another.

3,556,014
AUTOMATIC OPENING AND CLOSING MEANS FOR A SKI LIFT CHAIR

Henry A. Rudkin, Jr., Fairfield, Conn., assignor to Rudkin-Wiley Corporation, Seymour, Conn., a corporation of Connecticut

Filed Feb. 7, 1969, Ser. No. 797,483
Int. Cl. B61b 11/00, 7/10
U.S. Cl. 104—173 13 Claims

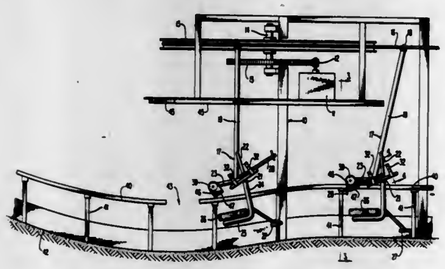


A protective cover for a ski lift chair is automatically opened and closed. The protective cover is attached to a leaf spring lever which abruptly contacts and moves along a surface of a plank causing the protective cover to be opened and closed.

3,556,015
SKI LIFT

David R. Pender, 1018 Marion St., Columbia, S.C. 29201

Continuation-in-part of application Ser. No. 769,559, Oct. 22, 1968, now abandoned. This application Apr. 10, 1969, Ser. No. 815,057
Int. Cl. B61b 11/00, 7/10
U.S. Cl. 104—173 12 Claims

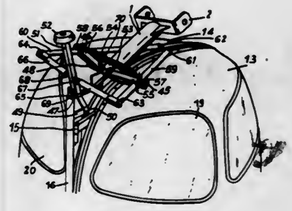


Saddle-type seats for skiers are mounted and demounted from the rear with the aid of approach and exit chutes or slopes. Each seat has an individual backrest readily swingable to use and nonuse positions and further has means to support ski poles after the skier has mounted the seat. Hand railings to assist in mounting and demounting also form stabilizing tracks for the seat units at the critical mounting and demounting zones, and curbings parallel to the hand railings are provided for engagement by ski poles in one hand of the skier at the mounting and demounting zones.

3,556,016
TELPHER CAR

Jean Pomagalski, La Tronche, and Francis Tauzin, Veyrins, France, assignors to Jean Pomagalski S. A., Fontaine, France, a corporation of France and Signa Plastique, Veyrins, France, a corporation of France

Filed Oct. 11, 1968, Ser. No. 766,819
Claims priority, application France, Dec. 5, 1967, 131.059
Int. Cl. B61b 3/00, 7/00
U.S. Cl. 105—150 3 Claims

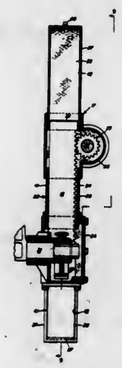


A telpher car including a mechanism for controlling the automatic opening and closing of the shell-like doors which is composed of an actuating roller fixed to a rigid control lever disposed outside of the car and adapted to be actuated by fixed ramps, symmetrical linkage means connecting said control lever to said doors and to a plate rigid with the frame of the car, said linkage means being adapted, by means of a tension spring, to automatically maintain the shell-like doors in their opened or closed position and, during the opening or closing operation of the doors, has to clear a dead center position.

3,556,017
FLUID DAMPENED HOPPER DOOR ACTUATING ASSEMBLY

Walter L. Floehr, Toledo, Ohio, assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Nov. 14, 1967, Ser. No. 682,891
Int. Cl. B61d 7/18, 7/28; F16f 9/00
U.S. Cl. 105—251 13 Claims

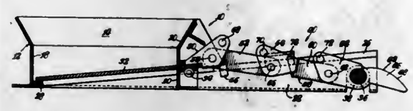


A railway hopper car having a plurality of hoppers at each side of its center sill, a pair of oppositely opening, longitudinally hinged doors for closing four pairs of doors in unison and a door-actuating motor hydraulically cushioning the opening against the load of the doors and lading in the hoppers.

3,556,018
LINKAGE OPERATING MECHANISM FOR SLIDING GATE

Worrell M. Danielson, Evergreen Park, Ill., assignor to Enterprise Railway Equipment Company, Chicago, Ill., a corporation of Delaware

Filed June 5, 1968, Ser. No. 734,720
Int. Cl. B61d 7/02, 7/20, 7/26
U.S. Cl. 105—282 4 Claims

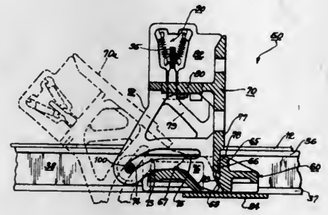


Operating mechanism for a gate slidable between closed and open positions relative to the discharge opening of a hopper outlet assembly. The operating mechanism includes a rotatable shaft, and force transmitting linkage means connected between the shaft and the gate and serving to slide the gate to open position upon rotation of the shaft in one direction and to closed position upon rotation of the shaft in the other direction. Reaction means is carried by the force transmitting means, and projection means rotatable with the shaft is engageable with the reaction means to initiate sliding movement of the gate toward closed position upon rotation of the shaft in said other direction.

3,556,019
RAILROAD CAR SUPPORT AND SECUREMENT STRUCTURE INCLUDING A COLLAPSIBLE SUPPORT PEDESTAL

Phillip D. Schwiebert, Glencoe, and Edward S. Steck, Chicago, Ill., assignors to MacLean Lock Nut Company, Mundelein, Ill., a corporation of Delaware

Filed Nov. 25, 1968, Ser. No. 778,517
Int. Cl. B60p 7/08; B65j 1/22
U.S. Cl. 105—366 19 Claims



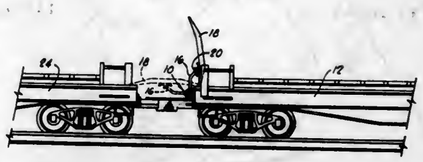
Railroad car support and securement structure for carrying box containers upon collapsible pedestals each including a base received and retained within an anchor track and a standard joined to the base for swinging movement relative thereto between alternate dispositions erect over the track or retracted flat against flanges thereof, respectively. Interlock means are provided on the standard member for engagement with the track to secure the pedestal at a desired erect disposition.

3,556,020
BRIDGE PLATE LIFTING DEVICE

Robert M. Akers, 1301 E. Reno, Oklahoma City, Okla.

Continuation-in-part of application Ser. No. 694,147, Dec. 28, 1967, now abandoned. This application Feb. 19, 1969, Ser. No. 800,686
Int. Cl. B61d 47/00; E01d 15/00
U.S. Cl. 105—458 10 Claims

Apparatus for counterbalancing a bridge plate hinged to a supporting structure, such as the end of a railroad flat car. The lifting force is provided by a helical spring positioned in a tubular housing mounted in fixed position on the supporting structure. One end of the helical spring is anchored to the housing and the opposite end of the helical spring is anchored to a shaft journaled in the housing. The lifting arm

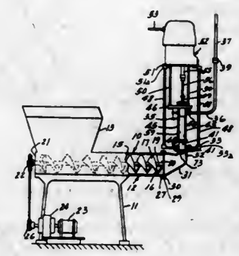


which engages the bridge plate is adjustably secured on one end of the shaft in such a manner that the spring may be wound to the desired tension before mounting the lifting arm on the shaft by simply turning the shaft with a wrench or the like.

3,556,021
METHOD FOR EXTRUDING CANDY FILLINGS HAVING A HIGH PERCENTAGE OF SOLIDS

Anthony J. Rossi, 40 Kashey St., Clifton, N.J. 07013

Filed Apr. 25, 1968, Ser. No. 724,120
Int. Cl. A23g 1/70
U.S. Cl. 107—54 8 Claims



Method and apparatus for extruding high solid content candy fillings to size in which the candy filling is deposited into the hopper of a worm-type extruder and is reduced and pressurized by this extruder and is then picked up by a high-pressure high-viscosity piston pump in communication with a reducer, and ejected by the piston pump under high pressure to the final size of the filling. A Teflon-lined high-pressure hose is connected with the discharge end of the pump. A heavy-duty pipe is connected with the discharge end of the hose, and may be formed at its discharge end to shape the filling to a desired size.

3,556,022
MOLDING AND PACKAGING CANDY

Sven Birger Westin, Skarsgatan 74, Goteborg, Sweden

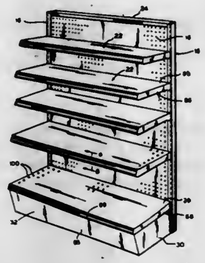
Filed July 1, 1968, Ser. No. 741,309
No Drawing. Filed July 1, 1968, Ser. No. 741,309
Int. Cl. A23g 1/20
U.S. Cl. 107—54 7 Claims

Confectionery articles, for example, chocolate, are moulded in an open mould consisting of recesses in a sheet, provided with at least one folding line. In the simplest form one line extends transversely across the sheet and the recesses are arranged symmetrically on either sides thereof. Each recess corresponds to one half of the finished article and the recesses in one part of the sheet are filled first and permitted to set, at least partially. Thereafter the recesses in the other part of the sheet are filled and the first part is swung 180° to make the fillings therein rest upon the fillings in the other part of the sheet. When the confectionery material has set the two halves of each article are bonded together.

3,556,023
DISPLAY RACK

Howard J. Marschak, Evanston, Ill. (865 W. North Ave., Chicago, Ill. 60622)

Filed May 2, 1968, Ser. No. 726,165
Int. Cl. A47f 3/06
U.S. Cl. 108—1 13 Claims



A display rack formed of components or parts which may be readily set up, attached and interlocked to each other without the use of tools or nuts, bolts or other extraneous fastening elements. The parts of the display rack interlock by the proper positioning of the parts in their proper relationship. The parts include tie members or bracing bars interlocked with upright members. A panel cap or top cover member interlocks with the upright members and a base which includes a kick plate interlocks with side members which also interlock with the upright members.

3,556,024
METHOD OF REDUCING HALOGEN EMISSIONS FROM THE INCINERATION OF HALOGEN-CONTAINING PLASTICS

William R. Fuller, North Hollywood; Barrie H. Bieler, Walnut Creek, and David C. Morgan, Clayton, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed June 27, 1969, Ser. No. 837,352
Int. Cl. F23g 7/00
U.S. Cl. 110—1 7 Claims

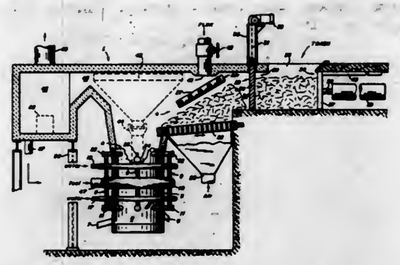
The present invention is a method for reducing the amount of halogen emitted during the incineration of halogen-containing plastics. The method involves applying an alkali to the plastic before it is burned. The method can reduce the emission of halogen by greater than 75 percent when properly employed.

3,556,025
INCINERATOR FOR REFUSE

Carl A. Holley, Glenshaw, Pa., assignor to Ferro-Tech Industries, Inc., Pittsburgh, Pa., a corporation of Delaware

Filed Aug. 4, 1969, Ser. No. 847,375
Int. Cl. F23g 5/00
U.S. Cl. 110—8 15 Claims

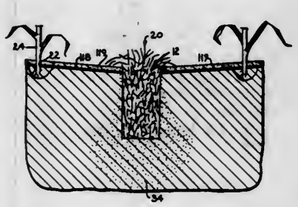
A vertical shaft incinerator and a continuous method of refuse disposal for refuse-containing garbage, glass and metallics. The vertical shaft incinerator contains three portions into which air is fed: a hearth portion, which supports a coke bed, having water-jacketed walls and a discharge port for molten metal and slag; an overlying intermediate portion for combustion of combustible but difficult-to-burn materials; and an initial combustion portion of larger cross section than the intermediate portion having a movable grate offset from the intermediate portion for burning readily combustible material. Refuse and preferably a flux material are charged to the grate and carried to the intermediate portion where coke is added and the mixture descends to the hearth portion where molten metal and slag are formed and removed, with off- gases passed upwardly through the mixture used to preheat air fed to the various portions of the incinerator.



3,556,026
FARMING METHOD

Richard K. Houston, Kansas City, Mo., assignor to Agrecology, Incorporated, Kansas City, a corporation of Missouri

Continuation-in-part of application Ser. No. 651,212, July 5, 1967, now abandoned. This application Sept. 22, 1969, Ser. No. 859,621
Int. Cl. A01c 5/00
U.S. Cl. 111—1 12 Claims



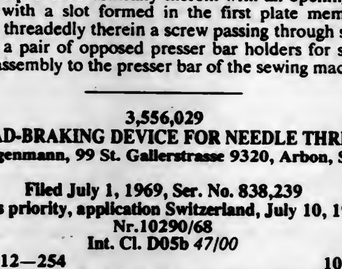
A farming method to conserve available rainfall comprising the forming of a plurality of elongated, spaced-apart, open-top slots in the soil surface and the construction of laterally extending, moisture transfer retarding barriers adjacent the slots to force rainfall from the adjacent field area into the slots. The slots are mulched to the top to minimize moisture loss through evaporation. The moisture transfer retarding barriers are formed by working the soil surface to enhance crusting, treating the soil with chemicals which congeal the soil, or by placement of water impervious sheet material.

3,556,027
SOIL TREATMENT WITH LIQUID ANHYDROUS AMMONIA

William L. Ammann, Argonia, Kans. 67004

Original application July 21, 1966, Ser. No. 566,996, now Patent No. 3,372,658, dated Mar. 12, 1968. Divided and this application Mar. 8, 1968, Ser. No. 711,782
Int. Cl. A01c 23/02
U.S. Cl. 111—1 3 Claims

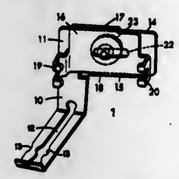
A method of subsurface injection of anhydrous ammonia fertilizer wherein liquid is conducted from a source of liquid ammonia traversed over a field to a subsurface injection unit from which the ammonia is discharged, with the ammonia being maintained under a sufficient pressure throughout substantially its entire travel to the injector unit to hold the same substantially entirely in its liquid state during such travel. Such method of injection substantially reduces the eventual evaporation of the ammonia from producing a refrigerating effect upon injection apparatus, and by primarily restricting any refrigerating effect to the subsoil the possibility of loss of ammonia to the atmosphere is further reduced. Apparatus suitable for the practice of the method includes a plurality of spaced injector units connected by individual conduits to a manifold, such manifold having communication with the liquid contents of a supply vessel by way of a single conduit provided with a pressure regulator, filter and shutoff valve. Each of the individual conduits is provided immediately adjacent its respective injector unit with a control valve which is normally closed, the arrangement being such that ammonia is supplied to the individual control valves as a liquid under a regulated pressure that is sufficient to maintain the same in a liquid state. Each of the control valves is provided with fluid pressure actuated means for opening such valves, and all of such means are connected by a common conduit to a master control valve, and the latter is such that the common conduit can be selectively vented and placed in communication with a source of fluid pressure, which can be the vapor space at the top of the ammonia storage vessel.



3,556,028
PRESSER FOOT FOR SEWING MACHINES

Kiichi Yoshikawa, Toyonaka-shi, Osaka-fu, Japan, assignor to Yoshida Kogyo Kabushiki Kaisha, Tokyo, Japan

No Drawing. Filed Mar. 10, 1969, Ser. No. 805,448
Claims priority, application Japan, Mar. 27, 1968, 43/24172
Int. Cl. D05b 27/12
U.S. Cl. 112—240 6 Claims



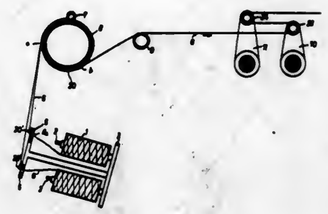
A zipper foot assembly compatible with both household and industrial sewing machines including a foot having a longitudinal fastener element guide groove and a plurality of needle-receiving recesses, a first plate member formed integrally with and extending upright from one end of the foot, and a second plate member slidably mounted on and detachable from the first plate member. The second plate member is provided centrally therein with an opening which registers with a slot formed in the first plate member for receiving threadedly therein a screw passing through said slot and with a pair of opposed presser bar holders for securing the foot assembly to the presser bar of the sewing machine.

3,556,029
THREAD-BRAKING DEVICE FOR NEEDLE THREADS

Oskar Eigenmann, 99 St. Gallerstrasse 9320, Arbon, Switzerland

Filed July 1, 1969, Ser. No. 838,239
Claims priority, application Switzerland, July 10, 1968, Nr.10290/68
Int. Cl. D05b 47/00
U.S. Cl. 112—254 10 Claims

A brake drum has a row of reversing thread guides by which threads are doubled-up on the peripheral brake surface of the drum to form open loops. When the brake drum is turned, the circumferential lengths of the brake surface portion engaged by the legs of the open loops are varied so that the brake force acting on the threads can be adjusted as required for the operations of needles to which the threads are supplied.



3,556,030
HIGH BULK YARNS

Philip J. Stevenson, Durham, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Dec. 19, 1968, Ser. No. 785,254
Int. Cl. B32b 7/08
U.S. Cl. 112—400 7 Claims



A high density bulked yarn having a bulk density of less than 0.050 g./cm.^{3} is formed by stitching a matt comprised of bulkable synthetic continuous filaments to form a plurality of bulkable synthetic continuous filaments to form a plurality of aligned seams by cutting the matt between the seams to form individual yarns and subsequently bulking the synthetic filaments locked in the seams by contacting the yarns with a heated fluid. Upon being bulked, the synthetic filaments curl to cover the seam.

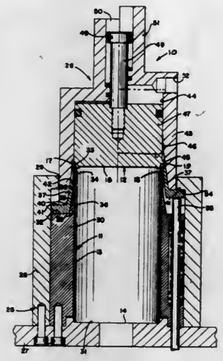
3,556,031
METHOD AND APPARATUS FOR SEALING A CLOSURE TO A CAN BODY

Henry E. Frankenberg, Berwyn, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed July 15, 1968, Ser. No. 744,963
Int. Cl. B21d 51/34
U.S. Cl. 113—30 8 Claims

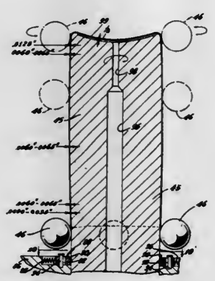
A method and apparatus for double seaming a can end closure to a can body by the application of a linearly movable force applying means to simultaneously apply vertical and horizontal forces tangentially to the curled end of a rim of the closure positioned on the open flanged end of the container. The chuck wall of the cover is held to restrain the latter and the container body against inboard bending during the application of the simultaneously applied forces. The simultaneously applied vertical and horizontal forces are applied to the rim progressively downwardly and inwardly relative to the container wall to further bend the rim and the underlying flanged end. During the progressive bending the rim curled end is restrained against downward movement to retain the free edge thereof facing generally inwardly and upwardly. The downward restraining of the rim is discontinued

when the free end is in close proximity to the container wall. The flange end at the same time is bent downwardly to form



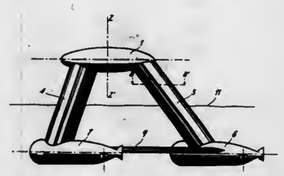
a hook and clinched by the rim whereupon the application of a horizontal squeezing force folds the rim and clinched hook to form a double seam.

3,556,032
METHOD OF FABRICATING CAN BODIES
Ermal C. Fraze, Dayton, Ohio, assignor to Dayton Reliable Tool & Mfg. Company, Dayton, Ohio, a corporation of Ohio
Filed May 23, 1968, Ser. No. 731,593
Int. Cl. B21d *51/00*
U.S. Cl. 113—120 **17 Claims**



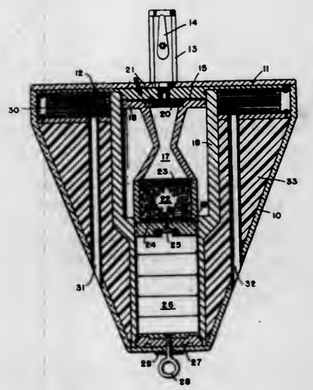
To produce a cylindrical can body with an integral bottom wall, a sheet metal blank of an initial thickness substantially greater than the desired wall thickness of the can body is formed into a cup of the diameter desired for the can body but of an axial dimension substantially less than the desired axial dimension of the can body. The bottom of the cup is thinned to the desired final thickness by placing the cup on a mandrel and applying rolling means such as ball means to the bottom wall, the rolling means being directed in a spiral pattern of progressively increasing radius beginning at the center of the bottom wall to thin the bottom wall by a rolling action that displaces surplus metal radially to the outer circumference of the cup. Then the cylindrical wall of the cup is thinned and thereby extended to the desired final axial dimension by similar rolling means in cooperation with a second mandrel, the rolling means being directed along a helical path around the cylindrical wall of the cup.

3,556,033
SEMI-SUBMERSIBLE FLOATING STRUCTURE WITH DYNAMIC POSITIONING
Guy Bonnafous, Le Pecq, France, assignor to Institut Francais Du Petrole, Des Carburants Et Lubrifiants, Rueil-Malmaison, Hauts de Seine, France
Continuation-in-part of application Ser. No. 710,226, Mar. 4, 1968, now abandoned. This application Aug. 1, 1969, Ser. No. 846,866
Int. Cl. B63b *35/00, 35/44*
U.S. Cl. 114—0.5 **10 Claims**



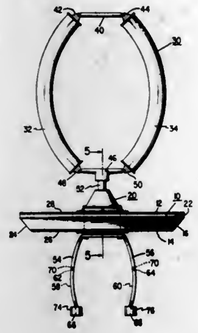
This semisubmersible structure for offshore drilling operations includes profiled caissons located at the apices of a regular polygon having at least three sides, these caissons having a common direction of orientation, parallel to an axis of symmetry of the polygon and being interconnected by cross-bracing members, an aerial part supported by columns integral with said caissons. This structure is characterized in that the aerial part is a hollow structure having a flattened aerodynamic shape, substantially of revolution around a vertical axis.

3,556,034
PREPACKAGED BUOYANCY SYSTEM
Donald Miller, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 26, 1968, Ser. No. 779,166
Int. Cl. B63c *7/10*
U.S. Cl. 114—54 **1 Claim**



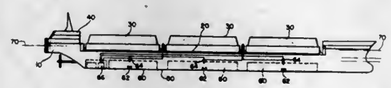
A prepackaged buoyancy system incorporating a hydrazine gas generator between upper and lower portions of a lifting assembly which are separably connected by a fabric airtight bag such that when the hydrazine generator produces a gas the upper portion is caused to separate from the lower portion to produce a gas filled lifting device.

3,556,035
SAILING VESSEL
Ernest W. Schlieben, Morrisville, Pa., assignor to RCA Corporation, a corporation of Delaware
Filed Jan. 28, 1969, Ser. No. 794,589
Int. Cl. B63b *35/00, 1/26*
U.S. Cl. 114—39 **14 Claims**



A sailing vessel is provided which includes an improved sail and an improved hydrofoil. The sail and the hydrofoil are each rigid and each has streamlined cross sections.

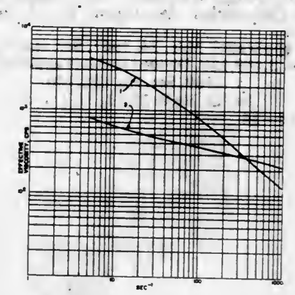
3,556,036
DEEP SEA CARGO VESSEL
Paul S. Wells, 619 1st St., Mount Vernon, Wash. 98273
Filed Dec. 11, 1968, Ser. No. 782,881
Int. Cl. B63b *35/44, 25/00*
U.S. Cl. 114—43.5 **6 Claims**



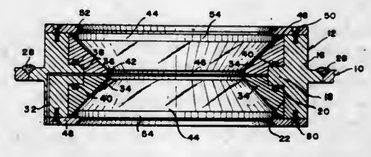
The invention provides a deep-draft, seagoing, cargo vessel having an exposed top cargo deck adapted to receive a plurality of shallow-draft, cargo barges for transport. The vessel is adapted to be partially submersed to submerge its cargo deck to a depth sufficient to enable cargo barges to be floated into or out of storage position relative to the cargo deck. The vessel is provided with constant tension winches adapted to position the cargo barges into storage position relative to the cargo deck and to maintain their position until the vessel is resurfaced and the cargo barges are firmly seated on the cargo deck for transport.

3,556,037
BALLAST FLUID
John P. Sloan, Jr., and Bion L. Laubscher, Houston, Tex., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Jan. 23, 1969, Ser. No. 793,474
Int. Cl. B63b *43/06*
U.S. Cl. 114—125 **14 Claims**

Waterborne vessels are ballasted using a composition containing water, barite, and at least one of attapulgite, sepiolite, and chrysotile asbestos. The ballasting composition optionally contains at least one of polymer such as carboxymethylcellulose, a bacteriostatic agent, a corrosion inhibitor, and an alkalizer.

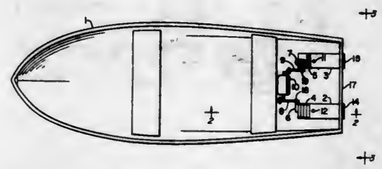


3,556,038
VIEW PORT MOUNTING FRAME AND METHOD OF MAKING SAME
Russell C. Wolfe, 6317 La Grange Lane, Baltimore, Md.
Filed Mar. 25, 1969, Ser. No. 810,228
Int. Cl. B63b *19/08*
U.S. Cl. 114—173 **14 Claims**



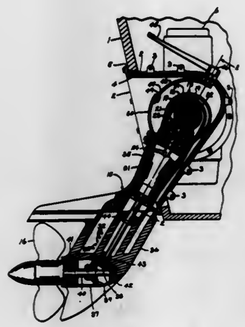
A transparent view port mounting frame for a vessel comprising an annular mounting ring with means for securing it to an opening in a vessel or hull and separable conical ring members disposed within said annular ring with sealing means for providing a fluidtight seal between the conical rings and the mounting ring, and transparent window means seated on said conical rings with clamp ring means secured to said mounting ring to properly secure said conical rings and said window means as an integral unit.

3,556,039
PROPULSION DEVICE
Albert P. Sfredda, 2106 Iris Place, Bethlehem, Pa. 18018
Filed Nov. 27, 1968, Ser. No. 779,465
Int. Cl. B63h *11/04*
U.S. Cl. 115—14 **7 Claims**



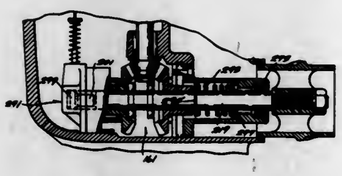
A manually powered and/or motorized fluid reaction propulsion device having fluid receiving chambers with fluid displacement mechanisms connected to the upper portions of the chambers for effecting a continuous intake and thrust-producing expulsion of sea water through openings in the rear ends of the chambers.

3,556,040
SLANT STERN DRIVE
Charles D. Strang, Waukegan, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Original application Mar. 24, 1967, Ser. No. 625,689, now Patent No. 3,489,120. Divided and this application Aug. 19, 1969, Ser. No. 852,156
Int. Cl. B63b 25/42, 5/12, 1/14
U.S. Cl. 115—34 5 Claims



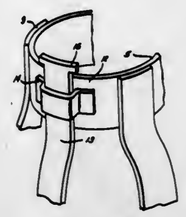
Disclosed herein is a stern drive unit including a support, a power shaft mounted on the support and extending horizontally adjacent to the stern, a housing mounted on and extending from the support for pivotal movement about the axis of the power shaft, a drive shaft carried by said housing and extending normal to the power shaft and a reversing clutch connecting the power shaft and the drive shaft and including an actuating shaft extending axially through the power shaft.

3,556,041
EXHAUST SYSTEM FOR MARINE PROPULSION DEVICE
William J. Shimanckas, Waukegan, Ill., assignor to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Original application Mar. 30, 1967, Ser. No. 627,116, now Patent No. 3,467,051, dated Sept. 16, 1969. Divided and this application Jan. 21, 1969, Ser. No. 833,826
Int. Cl. B63h 21/14, 1/20
U.S. Cl. 115—34 8 Claims



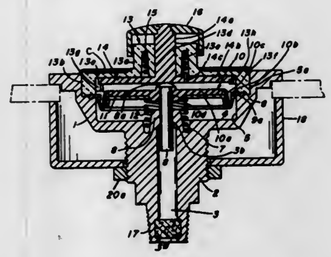
Disclosed herein is a marine propulsion lower unit which is arranged to afford exhaust gas discharge during forward drive through a discharge outlet at the rear of a propeller hub, and when operating under conditions other than in forward drive, to provide underwater exhaust gas discharge upstream from the exhaust gas discharge outlet at the rear of the propeller.

3,556,042
CENTERING DEVICE
William N. Laughlin, Lafayette, La., assignor to Mark Tool Co., Inc., Lafayette, La., a corporation of Texas
Filed Aug. 16, 1966, Ser. No. 572,757
Int. Cl. E21b 17/10
U.S. Cl. 166—241 9 Claims



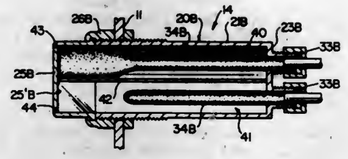
A centering device is provided for centering a well casing in a well or a drill string within a casing which comprises two spaced collars connected by outwardly bowed strips which act as springs to centralize the casing or drill string. Additionally, means are provided to restrict the movement of the collars apart so that the resilient strips always maintain an outwardly bowed shape and hence keep the member being centered spring resistent and restrict the movement of the collars apart so that the casing or drill string does not bear against the walls of the space in which it is desirably centered.

3,556,043
FILTER GAUGE
Louis L. Vayda, Pittsburgh, Pa., assignor to Ambac Industries, Inc., a corporation of New York
Filed Dec. 16, 1968, Ser. No. 783,896
Int. Cl. G01l 19/12
U.S. Cl. 116—70 4 Claims



This invention relates to gauges for recording the clogging of conventional air filters and for displaying a suitable signal indicating the need for replacement of the filter. The gauge may be mounted upon the filter housing or in the case of internal combustion engines in the combustion air intake to the engine. The gauge includes a housing portion receiving a suitable spring--loaded deflectable diaphragm one face of which is exposed to suction pressure from within the combustion air intake and the opposite face of the diaphragm mounts a bearing member abutting a spring-loaded rotatable signal member, whereby deflection of the diaphragm due to increased suction pressure in the said air intake releases the spring-loaded signal member for rotation to display a signal indicating the need to replace the air filter. An alternate form of construction includes electrical contacts on the signal member whereby rotation thereof closes an electrical circuit to display the filter change signal at a position remote from the gauge.

3,556,044
INDICATING MEANS
Rudolph J. Egresits, Conshohocken, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Apr. 15, 1969, Ser. No. 816,345
Int. Cl. G01l 19/12
U.S. Cl. 116—70 12 Claims



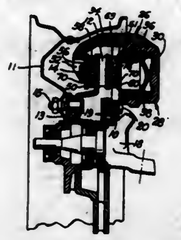
An indicating device comprising a housing means having a viewable end means and an expandible element disposed in the housing means, the expandible element having a fixed end and a movable end normally tending to be spaced from the viewable end means of the housing means so as to be in a nonindicating position thereof. Pneumatic means are provided for causing a pressure differential to act across the movable end of the expandible element to expand the element and cause the movable end thereof to move into the viewable end means of the housing means so as to be in an indicating position thereof.

3,556,045
STEERING WHEEL POSITION INDICATOR
Theodore M. Williams, 847 Daytona Ave., Holly Hill, Fla.
Filed Nov. 12, 1969, Ser. No. 875,772
Int. Cl. B60q 1/42
U.S. Cl. 116—31 6 Claims



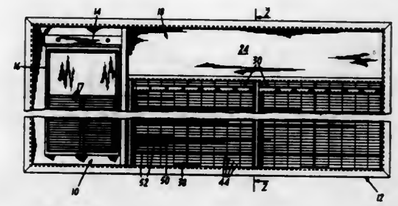
An indicating device mounted on a stationary steering post having a wheel frictionally engaging the steering wheel hub and rotated by rotation of the steering wheel for turning a pointer to indicate the position of a boat rudder or the steerable wheels of a wheeled vehicle, to enable the operator to know in advance the initial direction of movement of the vehicle or boat. The indicating device is constructed for application to a steering post and steering wheel hub without any modification of said parts and is capable of being readily adjusted without detachment from the steering post, to center the pointer when the vehicle or boat is traveling in a straight forward direction or on a true course, respectively.

3,556,046
BRAKE LINING WEAR INDICATOR
Edward K. Dombeck, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Nov. 21, 1968, Ser. No. 777,762
Int. Cl. G01d 21/00
U.S. Cl. 116—114 4 Claims



This invention relates to a device providing a warning signal to the vehicle operator when the brake lining has worn a predetermined amount.

3,556,047
INFORMATION DISPLAYING DEVICE
George W. Wassell, Westport, Conn., assignor to Wassell Organization, Inc., Westport, Conn., a corporation of Delaware
Continuation-in-part of application Ser. No. 499,157, Oct. 21, 1965, now abandoned. This application Feb. 10, 1969, Ser. No. 801,238
Int. Cl. G09f 5/00
U.S. Cl. 116—135 21 Claims

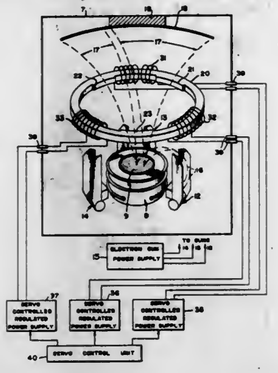


An information displaying device of the type useful in charting various data embodying a plurality of elongated data displaying elements retained in place on a mounting frame by spring-loaded holding strips which grip the ends of the display elements, by individual springs carried by the display elements, or by flanges formed on the mounting frame. The device also includes indicator pegs received by rows of holes in the display elements, the holes being formed by piercing to leave annular flanges that grip the pegs but are not subject to the problem of shaving material from the pegs. A flexible cord is associated with each indicator peg and is retractable when not in use into the space beneath the display elements; in one form of the device a spring mechanism is secured to the mounting frame to facilitate retracting of the cord.

3,556,048
VACUUM EVAPORATOR WITH ELECTROMAGNETIC ION STEERING
T. O. Paine, Deputy Administrator of the National Aeronautics and Space Administration in Respect to an Invention of Robert E. Frazer, La Cavada, Calif.
Filed Sept. 5, 1968, Ser. No. 757,625
Int. Cl. C23c 13/08
U.S. Cl. 118—49.5 9 Claims

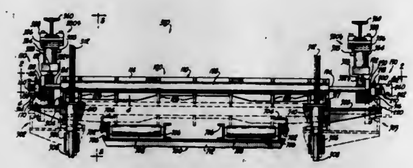
An apparatus for vaporizing material in a high vacuum chamber is disclosed. The apparatus includes an electromag-

netic arrangement comprising a plurality of coils. The coils are controllably energized to produce a rotating magnetic



field in the path of the vaporized material or ions to controllably steer them to selected points of the chamber's inner surface.

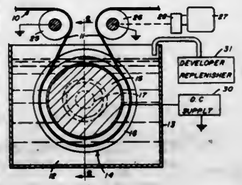
3,556,049
CLEANING AND OILING SYSTEM FOR MOLDING APPARATUS
William P. Hidden, Wenham, and Robert E. Hunt, Andover, Mass., assignors to Arthur D. Little, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Apr. 16, 1968, Ser. No. 721,808
Int. Cl. B05c *11/00*
U.S. Cl. 118—72 **13 Claims**



A system for cleaning and lubricating the cavity of a mold to prepare the mold for receiving a fresh charge of concrete mix or the like. The system embodying the features of the present invention includes means for thoroughly cleaning the end portions, bottom wall and sidewalls of the mold which define the mold cavity, to loosen the dust and debris contaminating the mold cavity; means to collect substantially all of the contaminating dust and other debris and to remove the same from the entire mold cavity; and means for lubricating the interior surfaces of the mold cavity to assure that a fresh charge of concrete mix or the like will not adhere to the interior surfaces of the mold cavity. In the preferred form of the invention the end wall portions, the bottom wall, and the sidewalls of the mold are separately cleaned by successive operations, and means are provided to simultaneously collect and remove the major portion of the dust and debris loosened from the interior surfaces of the mold cavity during each separate wall-cleaning operation.

3,556,050
LIQUID DEVELOPMENT APPARATUS
William Trachtenberg; Gene H. Robinson, and Orville C. Rodenberg, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed June 24, 1968, Ser. No. 739,326
Int. Cl. B05b *5/00*
U.S. Cl. 118—637 **2 Claims**

A liquid developer is contained in a receptacle and a carrier having a latent electrostatic image thereon is guided through the liquid developer together with a development electrode for a distance sufficient to give a developed image of optimum density. In the several embodiments of the invention disclosed and described, the carrier is maintained in spaced relation to the development electrode and both are

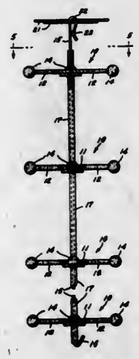


moved substantially in synchronism so that the developer therebetween is moved therewith at substantially the same linear speed as the carrier. By this arrangement with which the liquid developer is moved, a high degree of density uniformity and solid area coverage is obtained to provide an image of optimum density.

3,556,051
METHODS OF FOSTERING ANIMALS
John Gerard Noonan, P. O. Box 5234, Dunedin, New Zealand
Filed Nov. 10, 1969, Ser. No. 875,561
Claims priority, application New Zealand, Nov. 19, 1968, 154533
Int. Cl. A01k *67/00*
U.S. Cl. 119—1 **6 Claims**

A means of reducing the tendency of nonhuman foster mother animals to reject the young animal to be fostered by temporarily destroying or reducing to an ineffective level the foster mother's sense of smell using a nasal preparation with a local anesthetic in a liquid carrier having a substantial portion of a lower alcohol therein.

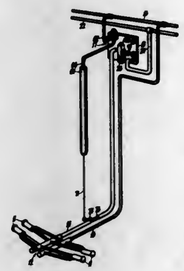
3,556,052
METHOD AND MEANS FOR GROWING OYSTERS
Luther H. Blount, Poppasquash Road, Bristol, R.I. 02809
Filed Apr. 1, 1969, Ser. No. 812,087
Int. Cl. A01k *61/00*
U.S. Cl. 119—4 **15 Claims**



An oyster cultch made of plastic, stiff wire, or any other suitable material, in which crossed arms are provided which are coated with a material which repels the oyster spats. The outer ends of the arms are provided with members of any suitable shape on which the spats will adhere and grow. This member should be of a calcium carbonate concentrate or be coated therewith. The ends of the arms being spaced from each other, it provides room for optimum growth. The spider

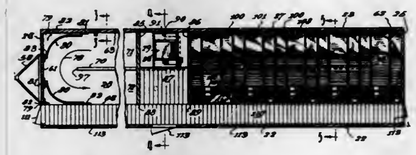
members with the crossed arms are strung on rigid wire strings in spaced relation, the spacing being provided by plastic tubing between the spiders. A rectangular float is used to suspend the strings. Each float comprises a frame with a 12 inch ×12 inch wire mesh. One string is suspended at each intersection. Room is thus provided for the optimum flow of water borne nutrients and for large even growth of the oysters. The spacing of the spiders and the strings insures that each oyster is in its own cube of space and that all the cubes of spaces are equal.

3,556,053
MILKING MACHINES
John Neville Padman, Howlong Road, Albury, New South Wales, and Donald Hadden Cummins, Leneva, Wodonga, Victoria, Australia
Filed Aug. 12, 1968, Ser. No. 751,906
Int. Cl. A01j *07/00*
U.S. Cl. 119—14.08 **9 Claims**



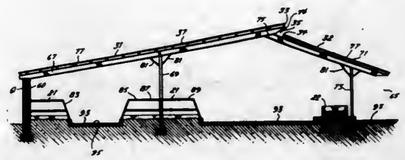
Apparatus for removing teat cups from milking animals wherein teat cup removing means are operated in response to milk flow detecting means which comprises a flow control means separate and apart from the teat cups, and a flow rate sensing means operable with said flow control means to sense a falling of the milk below a predetermined quantity. Means are actuated in response to the sensing means for closing a flexible milk line and to thereafter apply tension to such milk line to remove the teat cups.

3,556,054
MOVABLE ANIMAL HOUSE
Lyle J. Honegger, Fairbury; N. Keith Newtson, Forrest, and Joseph S. Stevenson, Fairbury, Ill., assignors to Thrive Center, Inc., Chicago, Ill., a corporation of Illinois. by mesne assignment
Filed July 1, 1968, Ser. No. 741,543
Int. Cl. A01k *01/00*; **F24f** *07/06*
U.S. Cl. 119—16 **11 Claims**



House for swine, cattle, poultry, etc., with facilities for feeding, watering and sheltering. Moyable from site to site. Self-contained oxidation ditch and aeration device for treating animal manure. Vapors generated during aeration of contents of oxidation tank are prevented from dispersing into animal housing area. Accumulation of sludge in corner of rectangular oxidation tank is prevented.

3,556,055
BUILDING FOR ANIMALS
Caleb M. Wenger, Lancaster Pike and Cardinal Drive, R.D. 1, Quarryville, Pa.
Filed Mar. 21, 1969, Ser. No. 809,234
Int. Cl. F24f *07/00*; **E04b** *07/02*; **A01k** *01/00*
U.S. Cl. 119—16 **10 Claims**



The animals' bedding stalls are under a 10° downwardly northerly sloping two-thirds of the main roof; the feeding portion is under a 20° downwardly southerly sloping one-third of the main roof. The highest edge of the northwardly sloping portion overhangs the highest edge of the southwardly sloping portion, leaving a permanent opening in between, approximately 18 inches across. The building's south end is permanently open in contrast to the other ends. The roof is fluted in the north-south direction, and vents are openable under the roof at the north end.

3,556,056
CLAMSHELL TROPICAL FISH FEEDER
Glenn O. Baker, 1224 N. Home Road, R.R. 3, Mansfield, Ohio
Filed Jan. 14, 1969, Ser. No. 790,971
Int. Cl. A01k *61/02*
U.S. Cl. 119—51 **1 Claim**

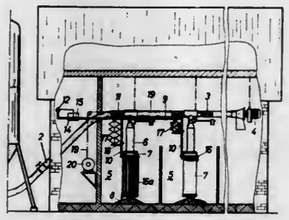


A device for feeding fish in a home aquarium, having a symmetric base with floral leaves and coral. An open clamshell at the bottom on top of the base provides a feeding area for fish, the food being placed in the flower portion of the device at the top.

3,556,057
ANIMAL FEEDING SYSTEM
Paul Icking, Burlo, Westphalia, Germany, assignor to Gebr. Schmeing, Weseke, Kreis Borken, Germany
Filed Mar. 4, 1969, Ser. No. 804,136
Claims priority, application Germany, Mar. 5, 1968, 1,632,997
Int. Cl. A01k *05/00*, *39/00*, *07/02*
U.S. Cl. 119—51.5 **10 Claims**

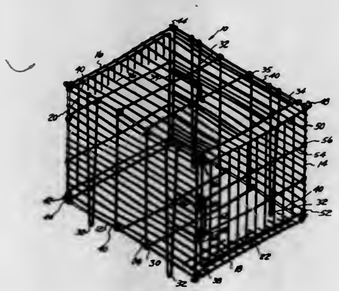
An arrangement for feeding animals, particularly pigs, includes an endless conveyor which is arranged to withdraw feed from a silo and to deliver it to one or more vertical dosing chutes. The dry feed is dropped downwardly by the chute into a bin or sty and a liquid such as water is added to the dry feed in quantities to control feed dust and to insure that feed is moist enough to be palatable. The liquid feed is characterized by a connection between a main liquid feed conduit

and one or more spray pipes arranged around the discharge of the vertical chute to provide the correct amount of liquid such as water to the feed as it is discharged at a feeding station. In order to insure that the correct amount of liquid is fed to the feed which is being discharged, the quantity of liquid which is discharged is regulated to correspond to the



quantity of feed which is discharged. The quantity of liquid which is discharged, in one embodiment, is regulated by a collapsible container which collapses during the discharge of water therefrom to the feed and which, when fully collapsed, discontinues further feeding of liquid. Another embodiment includes a measuring valve connected in the feed line to provide the desired liquid feedout.

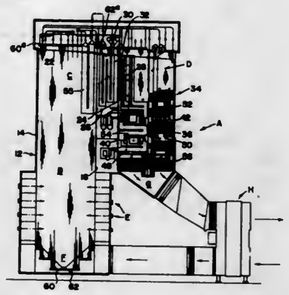
3,556,058
COLLAPSIBLE WIRE GRILLE CAGE
Leonard Smiler, 3915 Fenkill Ave., Southfield, Mich.
Filed Jan. 28, 1969, Ser. No. 794,487
Int. Cl. A01k *01/00*
U.S. Cl. 119—17 **2 Claims**



A collapsible cage or pen for small animals formed from six wire grille panels having detachable hinging means that allow the cage to be separated into two pieces of three hinged sections each. Each piece is composed of a side panel having an end and a top or bottom panel hinged to it. The end and top or bottom panels are folded over forming two pieces no larger in rectangular area than the side panel.

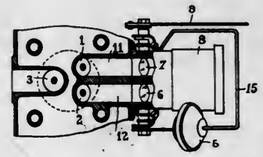
3,556,059
TWO-PASS FURNACE CIRCUIT ARRANGEMENT FOR ONCE-THROUGH VAPOR GENERATOR
Walter P. Gorzegno, Florham Park; William D. Stevens, North Caldwell, and Jan L. Friedrich, Pompton Plains, N.J., assignors to Foster Wheeler Corporation, Livingston, N.J., a corporation of New York
Filed Jan. 28, 1969, Ser. No. 794,629
Int. Cl. F22d *7/00*
U.S. Cl. 122—406 **14 Claims**

A supercritical forced flow, once-through vapor generator comprising a radiantly heated rectangular furnace enclosure including a lower high-absorption burner zone and an upper gas exit, the generator further comprising a convection heat transfer area in gas flow communication with said gas exit. The periphery of the furnace enclosure at least in the lower high-absorption burner zone is comprised of two upflow fluid passes in series, the first fluid pass comprising opposed front and rear wall panels of the enclosure and the second fluid pass comprising opposed sidewall panels of the enclosure, the



enclosure being designed to limit the supercritical fluid enthalpy pickup therein by utilizing the maximum permissible flue gas temperature at said gas exit for the fuel fired.

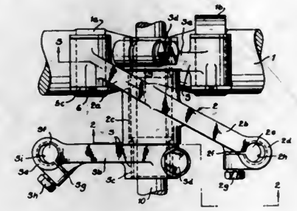
3,556,060
INDUCTION SYSTEM OF INTERNAL COMBUSTION ENGINE
Edmond Henry-Biabaud, Paris, France, assignor to Societe Anonyme Andre CITROEN, Paris, France, a French body corporate
Filed Nov. 14, 1967, Ser. No. 682,924
Claims priority, application France, Dec. 8, 1966, 86,659
Int. Cl. F02n *13/06*; F02d *39/02*
U.S. Cl. 123—75 **2 Claims**



A cylinder of an internal combustion engine is provided with an exhaust valve and two inlet valves one of which is controlled in motion to increase the torque at low speed and is fed through an induction passage controlled by a butterfly valve responsive to an accelerator pedal while the other is controlled in motion to increase the power output at high speed and is fed through another induction passage controlled by a butterfly valve automatically responsive to suction in the first-mentioned induction passage. At no time are the first mentioned inlet valve and exhaust valve opened simultaneously.

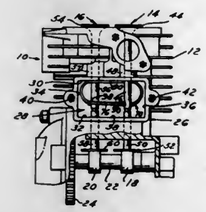
3,556,061
ROCKER ARM FOR OVERHEAD VALVES
Ernst Schmidt, and Jullus Liebel, Nurnberg, Germany, assignors to Maschinenfabrik Augsburg-Nurnberg, Aktiengesellschaft, Nurnberg, Germany
Filed Jan. 27, 1969, Ser. No. 794,106
Int. Cl. F01l *1/18, 1/04*
U.S. Cl. 123—90.27 **1 Claim**

A rocker arm assembly for overhead valves is composed of one rocker arm mounted on a tubular portion of a second rocker arm extending at a right angle to the camshaft, flat-faced cam followers on one end of each rocker arm, and a



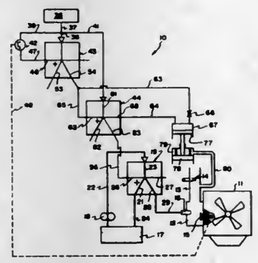
flat-faced ball movably mounted on the other end of each arm and engaged with a valve stem.

3,556,062
VALVE SPRING MECHANISM FOR INTERNAL COMBUSTION ENGINES
Edward Shermeister, Sheboygan, Wis., assignor to Tecumseh Products Company, a corporation of Michigan
Filed Nov. 14, 1968, Ser. No. 775,659
Int. Cl. F01l *3/10*; F16f *13/00*
U.S. Cl. 123—90.65 **10 Claims**



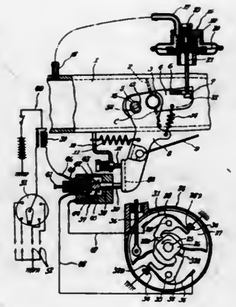
A valve mechanism for an internal combustion engine wherein at least one, but preferably both, of the inlet and exhaust valves of the engine are biased into tracking relation with their associated cams by a single split loop or hairpin-type valve spring.

3,556,063
FUEL SYSTEM
John J. Tuzson, Evanston, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed June 25, 1969, Ser. No. 836,555
Int. Cl. F02d *11/08*; F02n *39/00*; F02d *3/00*
U.S. Cl. 123—103 **6 Claims**



A fuel system including fluid logic elements, meters fuel to an internal combustion engine in intermittent pulses of timed duration. The frequency of the pulses is related to engine speed and the time duration of each pulse is related to the instantaneous engine load.

3,556,064
AIR POLLUTION PREVENTIVE DEVICE FOR SPARK-IGNITION-TYPE INTERNAL COMBUSTION ENGINES
Tasuku Date, Tokyo; Shuichi Yamazaki, Iruma-gun, Saitama-ken; Nobuyuki Togashi, Tokyo; Toshio Shioya, Ohmiya-shi; Tomoki Kikuraku, Iruma-gun, Saitama-ken; Norimitsu Kurihara, and Akira Ishizuya, Kitaadachi-gun, Saitama-ken, Japan, assignors to Honda Giken Kogyo Kabushiki Kaisha, Tokyo, Japan
Filed Apr. 1, 1969, Ser. No. 811,749
Claims priority, application Japan, Apr. 4, 1968, Apr. 6, 1968, Apr. 8, 1968, Oct. 14, 1968, Nov. 21, 1968, 43/21,813; 43/22,395; 43/22,842; 43/88,860; 43/84,838
Int. Cl. F02p *5/04*; F02d *31/00*
U.S. Cl. 123—117 **9 Claims**

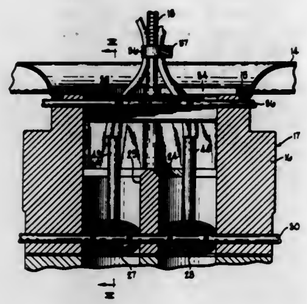


A device is provided for an internal combustion engine to prevent air pollution thereby and the device comprises a throttle-valve-actuating member connected to a throttle valve vacuum actuator operable by increase in intake vacuum on the downstream side of a throttle valve. The vacuum actuator is releasably connected to the valve-actuating member so as to maintain driving engagement with the actuating member only when the throttle valve is nearly closed. An operating member of the throttle valve, controlled by an accelerator pedal, is pivotably interconnected with the throttle-valve-actuating member via a lost motion connection of limited clearance so that when the throttle valve is in nearly closed condition, the actuating member is operable by the vacuum actuator upon increase in intake vacuum to open the throttle valve while allowing the operating member of the throttle valve to remain in inoperative position. With the operating member remaining in its inoperative position; a further device acts to retard the ignition timing of the engine.

3,556,065
DEVICES AND METHODS FOR FORMING AIR-FUEL MIXTURES
Wilmer C. Jordan, 2414 N. 76th Court, Elmwood Park, Ill.
Continuation-in-part of application Ser. No. 653,073, July 13, 1967, which is a continuation-in-part of application Ser. No. 457,427, May 20, 1965. This application Jan. 15, 1969, Ser. No. 792,227
Int. Cl. F02m *31/12*
U.S. Cl. 123—122 **9 Claims**

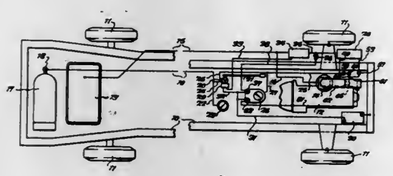
Devices and methods in which liquid fuel droplets are supplied into a mixing region of a flowing air stream and in which a heating element, preferably electrical, is used to propagate radiant heat into the fuel droplets with a controlled amount of heat being applied approximately equal to that required to substantially completely vaporize the liquid

fuel droplets. Specific features relate to the mounting of the heating elements and to the use of an elongated tubular or



flat element between a venturi section and a throttle valve, or an annular element below the throttle valve.

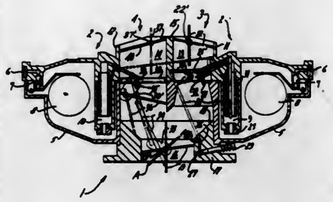
3,556,066
ENGINE HORSEPOWER INCREASING SYSTEM
Hugh J. Muirhead, 4611 Townline Road, Ransomville, N.Y., and Gerald L. Muirhead, Hackettstown, N.J.; and Gerald L. Muirhead assignor to said Hugh J. Muirhead
Filed Oct. 29, 1968, Ser. No. 771,447
Int. Cl. F02m *71/00, 13/06*
U.S. Cl. 123—127 **8 Claims**



A system for selectively increasing the horsepower of an internal combustion engine having a carburetor for receiving fuel and air for mixing, including an oxygen tank, a conduit arrangement including a valve for selectively supplying oxygen to the engine, a fuel pump, a metering valve in communication with the fuel pump for supplying supplemental fuel to the engine in proportion to the oxygen supplied to the engine, a mixer for mixing the supplemental fuel and oxygen and injecting this mixture into the normal air supplied to the engine, and a signal for indicating if an excessive amount of supplemental fuel and oxygen is being supplied to the engine.

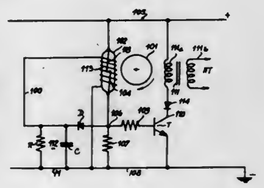
3,556,067
HIGH AIR VELOCITY CARBURETOR
Stephen Woods, Harper Woods, Mich. (14155 Shadywood Drive, Apt. 63, Plymouth, Mich. 48170)
Continuation-in-part of application Ser. No. 629,488, Apr. 10, 1967, now abandoned. This application Apr. 9, 1969, Ser. No. 822,828
Int. Cl. F02m *13/06*
U.S. Cl. 123—119 **5 Claims**

A carburetor utilizing high air velocities, and having primary and secondary venturi circuits. The secondary circuit begins to function in response to the primary throttle position, with both circuits fully operating to supply fuel from the "pickup point" to wide open throttle. The primary circuit is



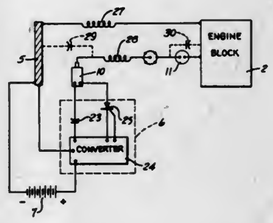
designed to provide maximum manifold depressions of a high order at certain engine speeds.

3,556,068
DEVICE FOR CONTROLLING THE IGNITION IN AN INTERNAL COMBUSTION ENGINE
Bernard Varaut, Dravell, France, assignor to Compagnie Des Compteurs, Paris, France, a company of France
Filed Feb. 14, 1969, Ser. No. 799,416
Claims priority, application France, Feb. 27, 1968, 141,337
Int. Cl. F02p *5/08*
U.S. Cl. 123—148 **3 Claims**



The device for controlling the ignition in an internal combustion engine comprises a circuit controlled by an electromagnetic switch coupled with the rotation of the motor and connected to the ignition coil thereof, said magnetic switch having a maintenance circuit altering the opening of the switch in dependency of the speed of the engine.

3,556,069
SOLID-STATE IGNITION SYSTEM FOR OUTBOARD MOTORS
Floyd M. Minks, Campbellsport, Wis., assignor to Brunswick Corporation, Chicago, Ill., a corporation of Delaware
Continuation of application Ser. No. 539,532, Apr. 1, 1966, now abandoned. This application May 30, 1968, Ser. No. 731,689
Int. Cl. F02p *11/00*
U.S. Cl. 123—143 **4 Claims**

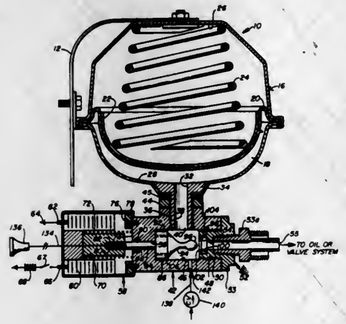


An outboard motor includes a cowl and frame vibrationally isolated from the engine. A capacitor discharge ignition circuit includes a capacitor connected to a battery

through a charging circuit and to the distributor and thereby the spark plugs through a silicon controlled rectifier and pulse transformer. The system components are housed within a metal box which is secured and grounded to the cowl frame. The common or ground side of a battery is directly connected to the grounded cowl frame and the positive side is connected directly to the charging circuit and to the starter. A relatively substantial jumper lead interconnects the cowl frame to the engine block. The transformer is suitably mounted within the outboard motor and connected to the ignition system by suitable leads and to the spark plugs through the usual distributor.

In operation, any high voltage transients developed between the cowl frame and the engine block are not impressed across the ignition system.

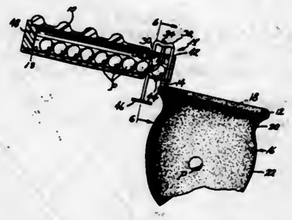
3,556,070
SOLENOID VALVE PRE-OILER
Clifton R. Holcomb, 540 South Sandusky, Tulsa, Okla.
Filed Dec. 30, 1968, Ser. No. 787,893
Int. Cl. F01m *1/12, 1/16*
U.S. Cl. 123—196 **8 Claims**



A preliminary lubricating device for internal combustion engines is described in which lubricant is stored under pressure during off periods of the engine to be released upon closing of the starting circuit so that lubricant will flow immediately to parts of the engine which normally do not receive lubrication until the conventional lubricating system has built up pressure. A pressurizable reservoir is in communication with the lubricating system of the engine and flow of lubricant into and from the reservoir is controlled by a paraboloidal piston acting in a valve controlled by a solenoid which in turn is actuated by an electrical system of the starter circuit. The paraboloidal surface of the piston assists in moving the piston to an open position in the valve body in reaction to the flow of lubricant in two directions through the valve body.

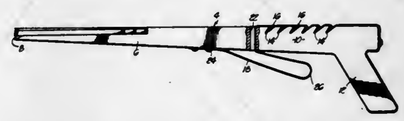
3,556,071
ELASTIC TYPE PROJECTILE PROJECTING DEVICE
Duane L. Udesen, 324 N. 60th St. East, Duluth, Minn.
Filed Sept. 18, 1968, Ser. No. 760,405
Int. Cl. F41b *7/00*
U.S. Cl. 124—16 **7 Claims**

A projectile shooting device having an elastic receiver with an open mouth connected to a ring, the ring being connected to a hollow handle closed at one end and open at the other end with the handle connected at its open end to the ring. A mechanism for releasing projectiles one at a time, which are stored in the hollow handle, into the elastic receiver for



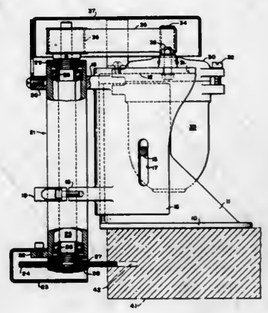
shooting by drawing back the receiver together with a projectile and releasing the same.

3,556,072
MULTIPLE LOAD RUBBERBAND GUN
Gilbert B. Levin, 1910 Corinth Ave. Apt. 4, Los Angeles, Calif. 90025
Filed Feb. 5, 1969, Ser. No. 796,748
Int. Cl. F41b *7/02*
U.S. Cl. 124—19 **1 Claim**



An elastic band gun toy having on its upper rearward portion elastic band engaging and retaining means in multiple permitting the stretching of a plurality of elastic bands between the front end of the gun and the retaining means, and a length of flexible material having both ends anchored and being slack to permit portions thereof to be associated with the elastic band retaining means. The flexible material serving as a trigger which when suitably pulled will successively displace portions thereof and successive elastic bands.

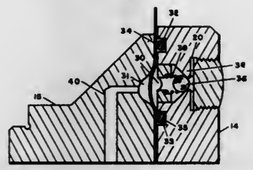
3,556,073
SLOT-SAWING TOOL
Langdon I. Garrison, Henniker, N.H., assignor to The John Swenson Granite Co., Inc., Concord, N.H., a corporation of New Hampshire
Filed Apr. 25, 1968, Ser. No. 724,195
Int. Cl. B28d *1/04;* **B24b** *23/00*
U.S. Cl. 125—14 **5 Claims**



A portable, power operated, slot-sawing tool having a work engaging base with an upright post equipped with an adjusta-

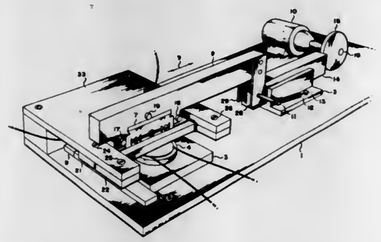
ble carrier and a spindle assembly in offset relation to the carrier and provided with a rotary saw.

3,556,074
HYDRAULICALLY TENSIONED SAW ASSEMBLY
Conrad J. Nelke, and John P. Brucker, Scottsdale, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Nov. 21, 1968, Ser. No. 777,856
Int. Cl. B28d *1/04*; B24d *5/00, 7/00*
U.S. Cl. 125—15 **9 Claims**



An hydraulically tensioned annular saw assembly is described wherein the annular saw blade having an ID cutting edge is clamped between first and second annular support elements. The support elements each contain a circumferential recess therein. The recesses are in substantial registration on opposing sides of the blade when the blade is clamped. A channel is formed in one of the support elements and extends into the recess therein. A fluid is contained in the channel and corresponding recess. The application of pressure to the fluid results in a uniform tensioning of the saw blade. The blade is retensioned by varying the fluid pressure.

3,556,075
PHOTOCELL SCORING TOOL
Ulysses Stanford Arwine, Burbank, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.
Filed Feb. 26, 1968, Ser. No. 708,064
Int. Cl. B24b *3/46*; B28d *1/06*
U.S. Cl. 125—16 **7 Claims**



A precision scoring tool is described for cutting through the exposed surface of a photocell or similar structure so as to divide the photosensitive layer into electrically isolated sections. A very thin blade is reciprocated across the surface while being immersed in an abrasive slurry. This action results in an extremely narrow cut which will divide the surface into a pair of sections along a line having a high order of straightness. Means are provided to control the geometry and depth of the cut.

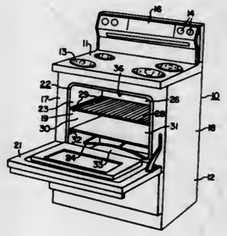
3,556,076
PORTABLE BARBECUE GRILL
Ronald B. Stewart, Freeport, Ill., assignor to King-Seeley Thermos Co., Ann Arbor, Mich., a corporation of Delaware
Filed Jan. 17, 1969, Ser. No. 791,898
Int. Cl. A47j *37/00*; F24b *3/00*; F24c *1/16*
U.S. Cl. 126—9 **22 Claims**

A portable folding barbecue grill assembly comprising a brazier adapted to operatively support burning barbecue fuel; a pair of generally inverted U-shaped support legs each comprising a pair of spaced parallel support sections and a generally horizontally extending intermediate section, and a plurality of hook-shaped support brackets fixedly secured to the underside of the brazier and adapted to detachably



receive and support the intermediate sections of the support legs, the support brackets and legs being arranged relative to the lower side of the brazier such that the intermediate leg sections are engageable with the undersurface thereof so as to releasably maintain the legs operatively engaged with the support brackets.

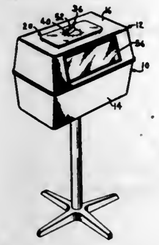
3,556,077
SELF-CLEANING COOKING APPARATUS OF THE CATALYTIC TYPE
Carl W. Tilus, Mansfield, Ohio, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 9, 1969, Ser. No. 790,087
Int. Cl. A21b *1/00*
U.S. Cl. 126—19 **5 Claims**



Cooking apparatus having a self-cleaning oven of the catalytic type. The oven is characterized by the provision of structure within the oven for minimization of heavily soiled areas which render the catalytic cleaning process ineffective. The structure above referred to, also increases the period of effectiveness of the oven as a self-cleaning unit.

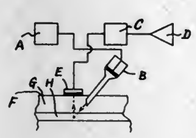
3,556,078
BARBECUE GRILL
Robert L. McGaughey, Harrison, Ark., assignor to Southern Precision Industries, Inc., Harrison, Ark., a corporation of Arkansas
Filed July 11, 1969, Ser. No. 841,005
Int. Cl. A47j *37/00*; F23l *13/00*; F24b *11/00*
U.S. Cl. 126—25 **10 Claims**

A barbecue grill cover having a top opening covered by a planar weather shield spaced vertically above the top of the body. Spaced apart, semicircular barrier walls integral with



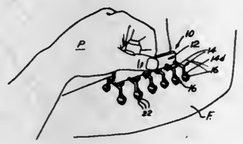
the shield define an air passage into the grill and a rotatable damper projecting through the shield regulates the passage.

3,556,079
METHOD OF PUNCTURING A MEDICAL INSTRUMENT UNDER GUIDANCE OF ULTRASOUND
Haruo Omizo, Izumi-Otsu, Japan (11, Sukematsucho-2-chome Izumi-Otsu City, Prefecture of Osaka)
Filed Apr. 3, 1968, Ser. No. 718,474
Claims priority, application Japan, May 16, 1967, 42/31058
Int. Cl. A61b *5/10*; A61h *1/00*
U.S. Cl. 128—2 **5 Claims**



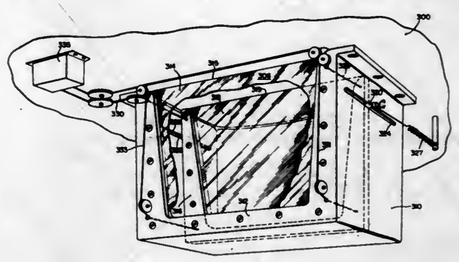
A method of inserting a medical instrument under guidance of ultrasound, which is characterized by transmitting an ultrasonic beam toward the internal parts of the human body, receiving backscattered waves which have changed their frequency in accordance with the Doppler effect caused by the movement of a part of the internal parts, and utilizing the backscattered waves as a guide to insert a medical instrument such as a puncture needle so that the instrument can approach or reach or puncture the part easily.

3,556,080
SKIN ALLERGY TESTING DEVICE
Gary L. Hein, Decatur, Ill., assignor to Lincoln Laboratories, Inc., Decatur, Ill., a corporation of Indiana
Filed Apr. 8, 1968, Ser. No. 719,318
Int. Cl. A61b *5/00, 17/20*
U.S. Cl. 128—2 **7 Claims**



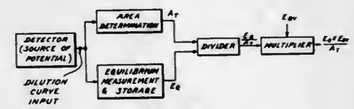
A device for effecting multiple skin tests simultaneously on spaced portions of the skin of a nonplanar part of the human body is provided by a plurality of multiple-point pressure puncture heads each connected by an individual, relatively flexible, arm to a relatively rigid handle. In one form of device the points on the heads may be dipped into antigenic material. In a second form, each head has antigenic material preassembled on the multiple-point heads.

3,556,081
BREAST HOLDER FOR MAMMOGRAPH
Henry S. Jones, New Canaan, Conn., assignor to Holotron Corporation, Wilmington, Del., a corporation of Delaware
Filed May 20, 1968, Ser. No. 730,344
Int. Cl. A61b *6/04*
U.S. Cl. 128—2 **6 Claims**



An apparatus for holding a female breast immobilized extended away from the chest cavity and flattened to allow examination by passing radiation through the breast. Two flexible sheets transparent to radiation are drawn together on the breast under examination by an apparatus which provides for controlling the angle between the two sheets.

3,556,082
METHOD AND APPARATUS FOR MEASUREMENT OF CARDIAC OUTPUT
Charles E. McCullough, Austin, Tex., assignor to Columbia Scientific Industries Corporation, Austin, Tex., a corporation of Texas, by mesne assignments
Filed Aug. 19, 1965, Ser. No. 480,855
Int. Cl. A61b *5/02*
U.S. Cl. 128—2.05 **22 Claims**

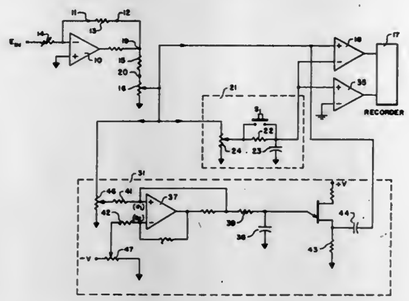


A method and apparatus for determining the true cardiac output from a detected dilution curve having an exponential decay by integrating the area under the curve up to a predetermined point approximately where the detected equilibrium level differs from the true level; detecting the level and the slope of the natural logarithm of the curve at that point; combining the level and slope at the point to obtain a value equal to the area under an exponential curve representative of an extrapolated "true" curve; adding the two area signals to obtain the total area under the curve representing the true dilution and combining the total area signal with signals representative of the equilibrium level and blood volume to obtain the desired signal.

3,556,083
APPARATUS FOR MEASUREMENT OF ELECTRODERMAL PHENOMENA
James A. Grichnik, Park Ridge, and Joel J. Schmutzer, Oak Park, Ill., assignors to Beckman Instruments, Inc., a corporation of California
Filed May 2, 1968, Ser. No. 725,994
Int. Cl. A61f *5/05*
U.S. Cl. 128—2.1 **7 Claims**

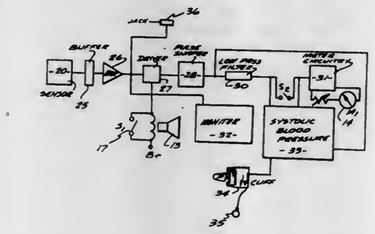
An operational amplifier applies either constant voltage or constant current to a subject in order to provide an output voltage directly proportional to the subject's conductance or resistance for recording together with superimposed sharp pulses produced by a voltage-to-time interval converter, the time interval between successive pulses being proportional to

the average basal electrodermal phenomena, basal resistance or basal conductance. Means for automatically suppressing



the average basal electrodermal phenomena from the signal being recorded is provided.

3,556,084
MEDICAL PULSE ANALYZING APPARATUS
Carl A. Budde, Los Angeles County, Calif. (8427 Balboa Blvd., Northridge, Calif. 91324)
Filed Nov. 29, 1967, Ser. No. 686,675
Int. Cl. A61b *5/02*
U.S. Cl. 128—2.05 **3 Claims**



The pulse analyzing apparatus disclosed herein includes a means for sensing the arterial pulse rate of a patient and generating an electrical signal in response to the presence of each pulse which is introduced to an indicating means via a circuit network comprising a driver, pulse shaper and low pass filter. Audible means are selectively coupled to the driver for producing a clicking sound indicating the pulse rate while meter circuitry is coupled to the low pass filter for providing a visual indication thereof. The pulse monitoring means is coupled to the indicator means at the output of the amplifier for rapidly providing evidence of pending circulatory disorder or failure in the form of visually displaying cardiac stroke/volume simultaneously with the display of pulse rate. Means are provided for measuring and displaying systolic blood pressure including switch means for selectively coupling the indicator across the low pass filter. This measuring means includes the use of a conventional occluding cuff.

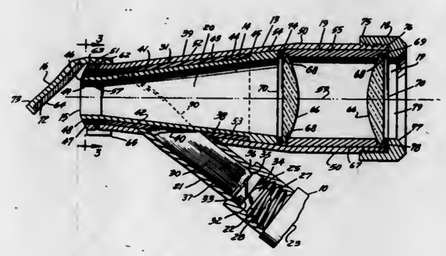
3,556,085
OPTICAL VIEWING INSTRUMENT
Nagashige Takahashi, Tokyo, Japan, assignor to Olympus Optical Company, Ltd., Tokyo
Filed Feb. 26, 1968, Ser. No. 708,242
Int. Cl. A61b *1/06;* **G02b** *5/14*
U.S. Cl. 128—6 **13 Claims**

Microscope adapted to be inserted into the spaces in a living body for direct examination of the interior surfaces thereof and having a magnifying objective lens system, a fiber optical viewing system, eyepiece means for observing the magnified image formed on the rear end surface of said fiber optical viewing system by transmitting the image of the object focused on the forward end surface of said fiber optical viewing system at high degree of magnification by means of said objective lens system through said fiber optical viewing system to the rear end surface thereof, and fiber optical illuminating system, wherein an optical means having



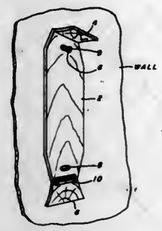
inclined forward end surface is located in front of said magnifying objective lens system so that the optical means easily penetrates into the part to be examined by the microscope, the image of the object contacting the inclined forward end surface of said optical means being focused by means of said objective lens system on the forward end surface of said fiber optical viewing system at high degree of magnification.

3,556,086
ILLUMINATING STOMATOSCOPE
Thomas E. Gordon, 1410 N. Westmoreland Drive, Orlando, Fla. 32803
Filed Oct. 23, 1967, Ser. No. 677,456
Int. Cl. A61b *1/06, 1/26*
U.S. Cl. 128—22 **11 Claims**



A diagnostic instrument of the stomatoscope type has a body portion provided with a viewing passage. The lens assembly is housed in the body portion at the viewing end of the passage, and the body portion has an outer casing and an inner shell that are coaxially arranged and spaced apart at the object end of the passage to provide facing walls for housing the distal end portion of an optical fiber bundle that is arranged to provide an annular light-emitting surface at the object end of the passage. The bundle extends through a sidewall aperture in the casing, and the proximal end is housed in an attached hollow arm to which a handle carrying a light source is attachable. The casing walls are generally conical to facilitate orienting the fibers in the space by an air stream technique and the shell has a radial flange at its viewing end which seats against the inside casing wall during the process of assembling the body. The shell and casing are secured together along with the fibers by hardened plastic material that fills the space between the walls and apportions the hollow arm. The annular light-emitting surface is provided with a convex or conical contour that refracts emitted light toward the viewing axis and a mirror assembly for lateral vision and light reflection is rotatably adjustable about the viewing axis and detachably mounted on the body.

3,556,087
DEVICE AND METHOD FOR TREATING CARDIAC ARREST
Stephen C. Finestone, 2 Lear Drive, and Joseph Katz, 305 Surry Place, Pittsburgh, Pa. 15235
Filed June 27, 1968, Ser. No. 740,679
Int. Cl. A61h *1/00*
U.S. Cl. 128—24 **5 Claims**



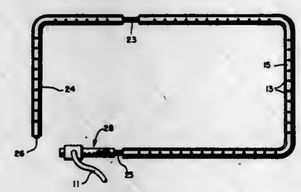
A device for use in treating cardiac arrest including a board adapted to be placed under the chest of a patient and having a pair of legs adapted to be brought into firm engagement with longitudinally extending frame members of a bed. It further discloses, as a method for treating cardiac arrest without removing a patient from a bed, the use of such a board.

3,556,088
THERAPEUTIC CHAIR
Ida M. Leonardini, J. 20999 East Highway 26, Linden, Calif.
Filed July 1, 1968, Ser. No. 741,610
Int. Cl. A61h *1/00*
U.S. Cl. 128—33 **8 Claims**



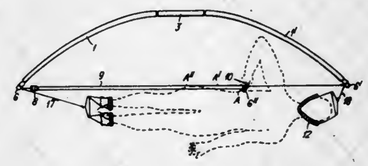
A lounge-type chair, particularly adapted for rest and therapeutic purposes, which includes means to impart high frequency vibrations to the chair and consequently to the occupant, and which means also produces audible music to relax, soothe, and entertain such occupant.

3,556,089
HYDROTHERAPY CONDUIT FOR BATHTUB
James L. Frazier, and Sara J. Frazier, 1041 W. Vine Drive, Fort Collins, Colo. 80521
Filed Aug. 23, 1968, Ser. No. 754,878
Int. Cl. A61h *9/00*
U.S. Cl. 128—66 **11 Claims**



A hydrotherapy device in the form of a conduit shaped to lie on the bottom and generally around the sides of a bathtub filled with water. It is coupled by a flexible hose to an external source of air, such as the exhaust outlet of a tank-type vacuum cleaner, in order to eject streams of air into the water through a plurality of apertures located around the conduit. The walls of the conduit are resiliently very flexible to enable it to be folded upon itself for purposes of storage. The conduit preferably is of semicircular cross-section and desirably includes an additional manually removable conduit coupled between its sides. Also desirably included on the underside of the conduit is a magnetic material or the like for removably securing the conduit to the bottom of the tub.

3,556,090
TRACTION APPARATUS
Edmond Pierre Robert Viel, Cite Industrielle Ducos, Noumea, New Caledonia
Filed Apr. 29, 1968, Ser. No. 725,023
Claims priority, application France, Jan. 25, 1968, P.V.137,369
Int. Cl. A61h *1/02*
U.S. Cl. 128—75 **10 Claims**



A traction apparatus for the attachment thereto of traction elements capable of being fastened to parts of the body of a patient, the apparatus comprising a substantially rodlike member having two elastic and flexible elongated elements of considerable tensile strength, said elongated elements being interconnected with or without a tubular connector between them, the apparatus further comprising a manually adjustable tensioning device connected between the free ends of said elongated elements.

3,556,091
FOOT CORRECTIVE DEVICE FOR REPLACING THE FUNCTION OF WEAKENED INTRINSIC MUSCULATURE
Armen Charles Haig, Bronxville, N.Y., assignor to Arthur Jacob, Riverdale, Bronx, N.Y., a part interest
Filed Sept. 7, 1967, Ser. No. 666,023
Int. Cl. A61f *5/00*
U.S. Cl. 128—81 **4 Claims**

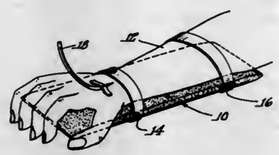


A foot-corrective device for augmenting weakened intrinsic musculature of the toes. The device employs one or more flexible loops positioned around a corresponding number of toes, the loops being connected to a supporting portion which is anchored either to a rearwardly disposed part of the foot or to the shoe, whereby a downward and rearward pull is applied to the proximal phalanx of the engaged toe or toes to produce the actions and effects normally accomplished by the short intrinsic muscles, to wit, the flattening of the toes, the elevation of the metatarsal heads and the relatively even distribution of weight-bearing stresses to the toes and the metatarsal heads.

3,556,092
FOREARM SUPPORT BOARD FOR INTRAVENOUS INJECTIONS

Melvin I. Eisenberg, Highland Park, Ill. (2908 W. Lunt, Chicago, Ill. 60645)

Filed Apr. 17, 1969, Ser. No. 816,971
Int. Cl. A61f 5/04
U.S. Cl. 128—87 5 Claims

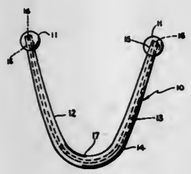


A disposable forearm support board for supporting an arm hand and fingers for intravenous feeding or the like. The arm board includes a flat substantially rigid core member of suitable width and length to fit comfortably the underside of the forearm and hand of a patient, the core member being immediately encased on all sides by an envelope sealed around the core member, the envelope comprising confronting panels of material sealed at their periphery and at least one of which comprises a cushioning material most advantageously polyurethane foam or similar material.

3,556,093
SPEECH AID DEVICE

Clifford F. Quick, Wallaceton, Pa., assignor to Micro Wave Voice Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 18, 1968, Ser. No. 768,686
Int. Cl. A61f 5/58
U.S. Cl. 128—137 2 Claims



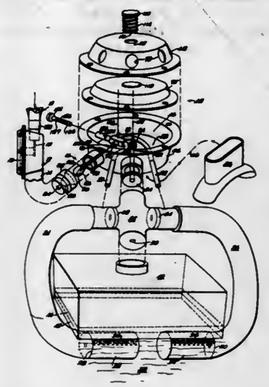
Two balls are connected by a deformable wire. The wire is malleable but capable of retaining the shape into which it is formed and is preferably covered with a soft plastic. The ends of the wire have a press fit in sockets in the balls and can be cut to a length such that, when the wire is U-shaped, the balls can be inserted under the sides of the tongue at the back of the mouth, the base of the U of the wire lying against the back of the lower front teeth.

3,556,094
UNDERWATER BREATHING DEVICE

Albert Boatwright, 10020 SW. 213 St., Miami, Fla. 33157

Filed Jan. 2, 1969, Ser. No. 788,418
Int. Cl. A62b 7/04; B01d 47/02
U.S. Cl. 128—142.2 19 Claims

An underwater breathing device to reduce the occurrence of caisson disease (bends), oxygen poisoning, and nitrogen narcosis in divers descending or ascending in the sea. The device provides, on demand of the diver or on a bleed basis, a correctly stabilized, pressurized and proportioned combination of gases to provide for favorable underwater breathing. In the device, the carbon dioxide exhaled by a diver is mixed with a mixture of gases released and the mixture is then bubbled through ambient water to remove the carbon dioxide prior to entry into a storage tank, the contents of which are pressurized to ambient water pressure. A supply of the mixture is then passed to a breathing chamber, from the storage

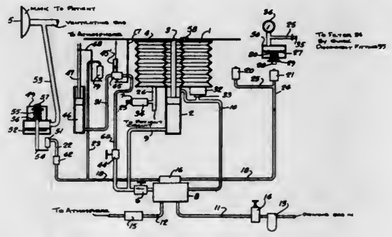


tank, on each demand of the diver with said storage tank supply simultaneously being replenished with the gas mixture.

3,556,095
AUTOMATIC INTERMITTENT POSITIVE PRESSURE VENTILATOR

Aaron Ismach, New York, N.Y., assignor to United States of America as represented by the Secretary of the Army

Filed Feb. 13, 1969, Ser. No. 799,002
Int. Cl. A61m 17/00; A62b 7/00, 7/04
U.S. Cl. 128—145.8 15 Claims



This invention concerns itself with improvements in a medical ventilator which is disclosed in my U.S. Patent No. 3,251,359. In particular, a spill valve, a timing cylinder and a variety of pneumatic components with connecting circuitry are added to the existing circuitry of my prior medical ventilator enabling the ventilator to be employed both in a rebreathing system (as in a closed circuit anesthesia system) and a nonrebreathing system, and as an assister or as a controller during the ventilating process.

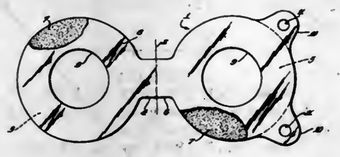
The invention described herein may be manufactured and used by or for the Government for governmental purposes without the payment to me of any royalty thereon.

3,556,096
CUSHIONING AND PROTECTIVE SURGICAL BANDAGE

John D. Fuller, and Decia M. Fuller, Santa Cruz, Calif., assignors to The Scholl Mfg. Co., Inc., Chicago, Ill., a corporation of New York

No Drawing. Filed Sept. 27, 1968, Ser. No. 763,082
Int. Cl. A61f 13/00
U.S. Cl. 128—171 12 Claims

A cushioning and protective surgical bandage for disposition adjacent a dressing and capable of maintaining specific dressing fixation over a decubitus ulcer, pressure ulcer, bed-

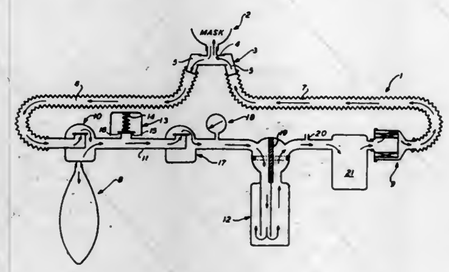


sore, and other afflictions suffered by a bedridden patient, although other uses will by apparent to one skilled in the art.

3,556,097
DISPOSABLE ANESTHESIA-BREATHING CIRCUIT UNIT

Dean R. Wallace, Madison, Wis., assignor to Air Reduction Company, New York, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 748,524, July 29, 1968, now abandoned. This application Sept. 25, 1969, Ser. No. 860,869
Int. Cl. A61m 17/00
U.S. Cl. 128—188 19 Claims



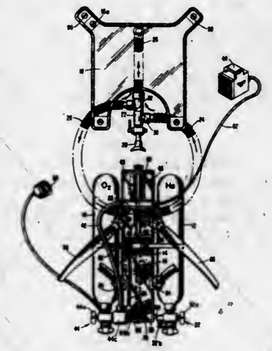
This application discloses an anesthesia gas delivery system to be coupled between an anesthesia machine and a patient so as to form part of a complete breathing circuit. This system includes conduits coupled to an intermediate connector which, in turn, is applied to the patient using a face mask forming a part of the system or an endotracheal tube. It further includes a breathing bag to be connected at the appropriate place in an anesthesia machine. In order that the system may be disposable after single patient use and to provide for patient safety, there is included a filter for removing harmful particles from gas circulating in the system. In addition, all elements in the system are arranged to be electrically conductive or antistatic to avoid the danger of explosion.

3,556,098
APPARATUS FOR CONTROLLING ENVIRONMENTAL CONDITIONS, SUITABLE FOR USE UNDERWATER

John W. Kanwisher, Box 53, Woods Hole, Mass., and Walter A. Starch II, Box 592, Big Pine Key, Fla.

Filed Dec. 4, 1968, Ser. No. 780,961
Int. Cl. A62b 7/02
U.S. Cl. 128—142 8 Claims

The subject of the invention described in the following specification relates to the problem of maintaining a safely breathable oxygen-containing atmosphere. Thus, the invention is especially useable under abnormal environmental conditions where it is necessary to provide and control an atmosphere suitable therein. The disclosed illustrative embodiment is a self-contained closed circuit-type underwater breathing apparatus for diver use. A plurality of oxygen sensor cells, preferably at least three, each thermistor temperature compensated, are exposed to the gas stream in the system, each providing a current resulting in voltage drop across the thermistor, directly related to oxygen concentration which voltages then are amplified and electronically processed to operate oxygen supply means, which is a solenoid valve, whereby oxygen partial pressure is constantly maintained within a predetermined range. In the processing, the amplified voltages are electronically mathematically averaged and processed to deliver a single control signal to the solenoid. The system is adjusted at atmospheric pressure to provide one-half atmosphere oxygen partial pressure at a selected voltage level, e.g. about 2.4 volts average amplified cell voltage. As the quantity of oxygen thereafter varies in use by the diver, the average voltage varies linearly and the solenoid acts responsively thereto. Each amplified cell output is also connected into an alarm circuitry so that should any cell (or two or more) provide a voltage corresponding to oxygen partial pressure below or above a predetermined safe oxygen range, an audible alarm is sounded as a warning that something is wrong in the system. Separate visual oxygen partial pressure indicators are connected into the circuitry at the electronic amplification stages so that the diver may observe the individual indications provided by each of the sensor cells and, thereupon, determine the emergency remedial steps necessary to be taken. In the exemplary three-sensor system, the probability of simultaneous or close timewise malfunctioning of more than one sensor or its directly associated circuitry is extremely low — so low that in practical use it may reasonably be taken as zero. Consequently, the diver, while of course, recognizing the remote possibility of such a plural maloccurrence, may, and, in practice will,



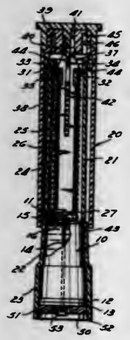
presume any two similar partial pressure indicators correctly to reflect the actual internal conditions of the system — unless, of course, his own understanding of the particular situation might rarely permit a different conclusion. Contemplating most importantly such a single maloccurrence (thereupon resulting in an alarm sounding and indications from the meters that one of the voltage inputs is spurious) the design of the system, involving as it does the aspect of solenoid valve control by the average voltage, is such that the electronic circuitry responds to limit, or stabilize, the effect of the spurious voltage input upon the average voltage. This is accomplished via transistor clipping circuitry and an associated regulated voltage source. Thereupon a nonvarying voltage, which is not outside the selected range for acceptable and safe oxygen partial pressure, constantly appears in the average voltage. Accordingly, the effective average voltage is then within the safe range and continues effectively to operate and to maintain a suitable oxygen partial pressure as long as the signals from the remaining cells are developed and delivered and they themselves are a correct measure of the oxygen partial pressure actually in the system. The system contemplates also an adjunctive, separate and exteriorly attachable sensor-indicator means by which the system may be further verified whereby the security of the diver is much enhanced. The system includes inert gas supply means which may be manually or automatically operated for supplying the remaining gas volume and pressure necessary for breathing underwater. By these and other means, the safety for the diver is enormously increased and the purpose of his dive can be accomplished under a minimum of constraint.

3,556,099
HYPODERMIC SYRINGE ASSEMBLY
Francis J. Knight, Piscataway, and Barbara A. Konopka, Branchburg Township, Somerville, N.J., assignors to Johnson & Johnson, a corporation of New Jersey
Filed May 27, 1968, Ser. No. 732,410
Int. Cl. A61m 05/22, 05/24
U.S. Cl. 128—218 7 Claims



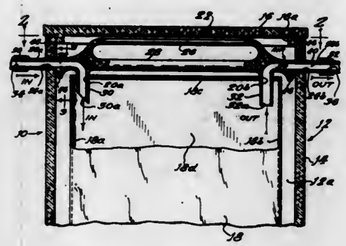
A hypodermic syringe assembly comprising a disposable injection unit and a reusable plunger unit adapted to cooperate for dispensing medicament from an elongated cartridge positioned in the injection unit. The disposable injection unit comprises a hub structure, a double pointed needle extending through the hub, and elongated and resilient guides extending rearwardly of the hub to form a barrel for receiving the cartridge. The guides are radially flexible with respect to one another at the rear end of the barrel. The reusable plunger unit comprises a plug having means to simultaneously circumferentially engage the interior and exterior of the barrel at its rear end. The plug is adapted to fit inside the barrel and be locked in circumferential and axial engagement therewith. An elongated plunger is axially movable through said plug and has piston engaging means at its forward end and retracting means at its rear end. The plunger unit also includes flange means for cooperating with the plug to hold the rear ends of the guides in a fixed radial position when the plunger is locked in position in the barrel.

3,556,100
AMPOULE APPLICATOR
Alfred A. Hurschman, Hudson, Ohio, assignor to Ampoules, Inc., Hudson, Ohio, a corporation of Ohio
Filed Aug. 2, 1968, Ser. No. 749,676
Int. Cl. A61m 05/20, 05/28
U.S. Cl. 128—218 9 Claims



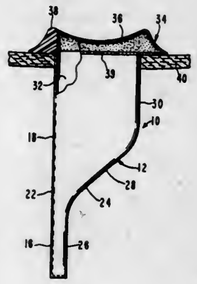
An applicator for hypodermic ampoules having one end for receiving a hypodermic ampoule and another end for housing and retaining a spring-biased plunger in a cocked or ready-to-fire position. An outer sleeve is provided with a camming surface which releases the cocked plunger upon axial movement of the outer sleeve relative to the inner housing. Interference surfaces are provided between the overlapping outer and inner sleeves so that a predetermined force must be applied to the outer sleeve to perform the firing operation. The camming surface and interference surfaces provide means spacing the major portion of the outer housing from the inner housing. The major portion of the inner housing which is overlapped by the outer housing is substantially free of surface-to-surface sliding contact with the outer housing. A removable snap-in washer is provided at the lower end of the applicator to retain the hypodermic ampoule therein and to permit the ampoule to be removed for periodic inspection or replacement. The spring-biased plunger is stamped from a flat sheet and has a bent end portion for applying force to the ampoule.

3,556,101
SURGICAL SUCTION ASSEMBLY
Steven G. Economou, Wilmette, Ill., assignor to Hollister Incorporated, a corporation of Illinois
Filed Feb. 7, 1969, Ser. No. 797,585
Int. Cl. A61m 1/00
U.S. Cl. 128—277 14 Claims



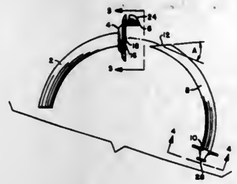
A suction bottle assembly for medical-surgical use including a generally rigid chamber, a disposable liner bag for insertion in the chamber, a cover enclosing the chamber and a handle assembly for supporting the liner bag, the handle incorporating inlet and outlet conduits for connecting the interior of the bag to an area to be drained and also connecting the interior of the bag to a source of suction, characterized by a third inlet means in one of the conduit passages normally in the interior of the chamber for equalizing the pressure in the interior of the chamber to prevent collapse of the generally flexible liner bag.

3,556,102
FEMALE URINARY DEVICE
Ray D. Davis, 174 Pepper Drive, Los Altos, Calif. 94022
No Drawing. Filed Jan. 15, 1968, Ser. No. 697,707
Int. Cl. A61f 5/44
U.S. Cl. 128—295 2 Claims



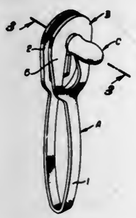
A female urinary device comprising a tubular body defining a fluid reservoir and provided with structure at one end with insertion within a vaginal cavity whereby the body is mounted in fluid communication therewith. The opposite end of the body is adapted to be coupled to a receptacle and the body is shaped to define a fluid reservoir. Means is provided to maintain the structure at least partially inserted within the cavity to thereby dispose the body in an operative position.

3,556,103
TRACHEOTOMY INSTRUMENT
Edward J. Calhoun, 578 Hunt Lane, Manhasset, N.Y., and Karoly G. Pinter, 1626 S. Jefferson Davis Parkway, New Orleans, La.
No Drawing. Filed Mar. 15, 1968, Ser. No. 713,353
Int. Cl. A61b 17/34
U.S. Cl. 128—347 4 Claims



A novel tracheotomy instrument adapted to be used in emergency situations comprising an arcuate trocar with a flange at one end, a concentrically arranged hollow, arcuate cannula having a flange abutting the trocar flange at one end and a beveled knife edge extending from the trocar at the opposite end.

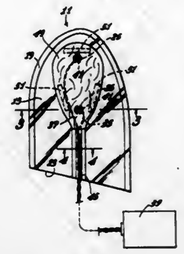
3,556,104
PACIFIER
Cynthia K. Janklow, 310-A N. Huntington Ave., Monterey Park, Calif. 91754
Filed July 29, 1968, Ser. No. 748,495
Int. Cl. A61j 17/00
U.S. Cl. 128—360 8 Claims



A pacifier for infants in which a nipplelike mouthpiece is removably secured to a support by engagement between a post on which the mouthpiece is disposed and a clamp or holder which engages the mouthpiece and holds the same on the post to prevent removal of the mouthpiece by an infant. Such a pacifier in which the post has an enlarged end disposed in the mouthpiece to provide a shoulder under which the mouthpiece is clamped. Such a pacifier in which the post and clamp are integrally formed at the ends of a strap, which strap forms an enlarged handle for facilitating holding of the pacifier, the handle being composed of flexible material and also serving as a teething ring.

3,556,105
ELECTRICAL STIMULATOR AND MITTEN
Lillian B. Shepard, 3311 Bagley Ave., Los Angeles, Calif.
Filed May 24, 1968, Ser. No. 731,953
Int. Cl. A61n 1/32
U.S. Cl. 128—417 5 Claims

An electrical stimulator of the type which applies a low frequency oscillating current to selected regions of the body to cause periodic contraction and release of the muscle tissue through which the current flows. In a preferred form, the stimulator includes an intermediate ply sandwiched between two outer plies and defining a hand receiving enclosure therewith. A pair of spaced contacts are mounted on one of the outer plies and a pair of conductors extend along one face of such ply and are connected, respectively, to the contacts. The conductors are connectable to a source of oscillating electrical current and are retained against such face of the ply by suitable means. Preferably, an absorbent pad



covers both of the contacts and spans the space therebetween so that when the pad is soaked with a conductive fluid, a conductive path between the contacts is provided.

3,556,106
COMBINATION UNDERGARMENT
Leonard A. Rosner, Great Neck, N.Y. (c/o Glamorise Foundations, Inc. 135 Madison Ave. New York, N.Y. 10016)
Filed Nov. 25, 1968, Ser. No. 778,669
Int. Cl. A41c 3/08
U.S. Cl. 128—454 5 Claims



A feminine undergarment consisting of an upper brassiere member and a lower torso member such as a slip or a girdle. The brassiere member and torso member have lower and upper edges, respectively, stitched together along approximately one-half their circumference. The remaining portions of these edges are free and mutually overlapped. An elastic band is provided at the free upper edge portion of the torso member and is secured at its ends to the brassiere member. The bra member is split along a vertical line medially of its free lower edge portion, so that sections of the brassiere member at opposite sides of the split may be opened. Separable and adjustable means connect the openable sections together.

3,556,107
SELF-SUPPORTING GARMENT
Phyllis A. Brumfield, San Jose, Calif., assignor to Bernard A. Meany, Stamford, Conn., a part interest and Renee Baum, San Jose, Calif., a part interest
Filed July 10, 1968, Ser. No. 743,814
Int. Cl. A41c 1/14
U.S. Cl. 128—465 7 Claims

Feminine wearing apparel comprising a "backless" bathing suit top, or a brassiere, which can be slipped on, or off. The lower portion of the apparel has a resilient, open sided, elliptical shaped member threaded through it. Both the right and

left upper portion of the apparel have resilient members threaded through them also. These resilient members grip the

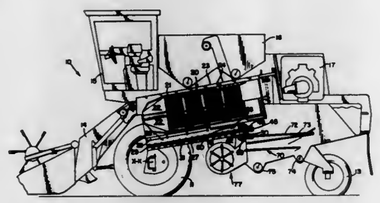


wearer's body so as to cover the wearer's breasts while exposing a maximum area of her back.

3,556,108
COMBINE GRAIN CLEANER

William H. Knapp, Davenport, Iowa, Richard A DePauw, East Moline, and Caroll Q. Gochanour, Moline, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware

Filed Dec. 16, 1968, Ser. No. 784,054
Int. Cl. A01f *12/32*
U.S. Cl. 130—27 9 Claims



A grain pan and cleaning system for a self-propelled combine in which the grain pan is dimensioned to fit between the combine drive wheels and in which the cleaning system which is located rearwardly of the drive wheels extends transversely beyond the grain pan. The device also includes means for distributing the material from the relative narrow swath of the grain pan to the relative wide swath of the cleaning system.

3,556,109
METHOD OF MAKING A SMOKING PRODUCT OF OXIDIZED CELLULOSIC MATERIALS CONTAINING ASHING INGREDIENTS

Theodore S. Briskin and Geoffrey R. Ward, Beverly Hills, Calif., assignors to Sutton Research Corporation, Los Angeles, Calif., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 595,622, Nov. 21, 1966, Ser. No. 674,994, Oct. 12, 1967. This application July 17, 1968, Ser. No. 745,348
Int. Cl. A24b *15/00*; D06m *01/00*
U.S. Cl. 131—2 17 Claims

A smoking product formed of cellulosic material and processed to incorporate ash-forming ingredients by treatment of the cellulosic material with a salt forming composition in which the cation is a heavy metal, preferably calcium, magnesium, barium or strontium, and the anion is an organic acid group, preferably oxalic, pivalic, tannic, glycolic, diglycolic or lactic, preferably with subsequent oxidation of the treated cellulose.

3,556,110
METHOD FOR PRODUCING A SMOKING PRODUCT OF CELLULOSIC MATERIAL

Theodore S. Briskin, and Geoffrey R. Ward, Beverly Hills, Calif., assignors to Sutton Research Corporation, Los Angeles, Calif., a corporation of Delaware

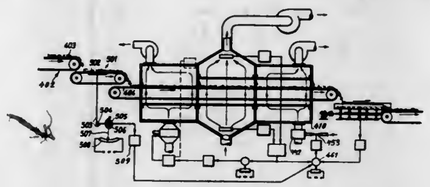
No Drawing. Continuation-in-part of application Ser. No. 595,622, Nov. 21, 1966, Ser. No. 674,994, Oct. 12, 1967. This application July 17, 1968, Ser. No. 745,369
Int. Cl. A24b *15/00*; D06m *01/14*
U.S. Cl. 131—2 14 Claims

The preparation of a smoking product of oxidized cellulosic material treated with a dilute solution of an organic acid to fix heavy metal ions by formation of a thermally stable salt followed by the removal of excess acid and reintroduction of an amount of fixing acid up to 1 percent by weight of the cellulosic material for subsequent fixing of heavy metal ions remaining in the cellulosic material or subsequently released therein.

3,556,111
METHOD AND APPARATUS FOR CONDITIONING TOBACCO OR THE LIKE

Waldemar Wochnowski, Hamburg-Volksdorf, Germany, assignor to Hauni-Werke Korber & Co. KG., Hamburg-Bergedorf, Germany

Filed Jan. 10, 1968, Ser. No. 696,818
Claims priority, application Germany, Jan. 24, 1967, H61642
Int. Cl. A24b *03/12*, *09/00*
U.S. Cl. 131—135 20 Claims



A stream of Burley tobacco is relieved of nitrogen by intensive heating so that its moisture content drops below an optimum moisture content for further processing. A valve which regulates the admission of moisture to successive increments of the thus heated stream is regulated in dependency on the results of measurements of the moisture content downstream of the point of moisture admission and in dependency on the extent of differences between the thus determined moisture content and the optimum moisture content. The valve can be further regulated in dependency on variations of parameters which influence the moisture content of tobacco upstream of the point of moisture admission, such as changes in the weight of successive increments of the stream and changes in the drop of temperature of air which is used to cool the stream after the intensive heating but prior to moistening. The temperature drop may also be used to simultaneously regulate the intensity of the heating.

3,556,112
METHOD OF MAKING SLICED PUFFED STEMS FOR A CIGARETTE FILLER

Roger Zygmunt de la Burde, Ikeja, Nigeria, and Leon Johnson Harris, Jr., Covington, Va., assignors to Philip Morris, Incorporated, New York, N.Y., a corporation of Virginia

No Drawing. Continuation of application Ser. No. 514,720, Dec. 17, 1965, now abandoned. Continuation-in-part of application Ser. No. 749,908, July 24, 1968, now abandoned. This application Apr. 10, 1969, Ser. No. 815,205
Int. Cl. A24b *03/18*, *07/00*
U.S. Cl. 131—140 6 Claims

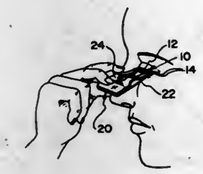
A method for producing a filler for tobacco products from tobacco stems is tobacco stems is disclosed, which method involves puffing tobacco stems, slicing the puffed stems in a

plane substantially parallel to said stem axes and incorporating said sliced tobacco stem in a tobacco product. The sliced stems measure from .002 inch to .060 inches in thickness and as strips measure less than one square inch in area.

3,556,113
APPLICATOR FOR ARTIFICIAL EYELASHES

Roland W. Frieder, 5555 S. Everett Ave., Chicago, Ill.

Filed Oct. 25, 1968, Ser. No. 770,770
Int. Cl. A45d *2/00*
U.S. Cl. 132—31 4 Claims

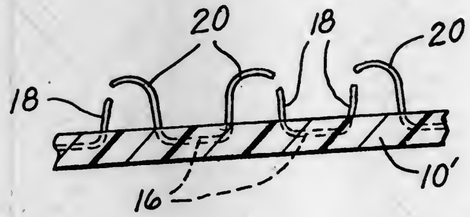


An eyelash applicator for assisting in the attachment of an artificial eyelash to the human eyelid and having individually operable and releasable clamping jaws which support the artificial eyelash at spaced points and in such a manner as to facilitate correct placement thereof to the eyelid.

3,556,114
HAIR CURLER

Serge M. Simon, Paris, France, assignor to H. Goodman & Sons, Inc., New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 558,080, June 16, 1962, now abandoned, which is a continuation of application Ser. No. 346,831, Feb. 24, 1964, now abandoned. This application Nov. 18, 1966, Ser. No. 595,440
Int. Cl. A45d *2/00*
U.S. Cl. 132—40 11 Claims



Hair curlers are described which are formed of a plastic-base ribbon having parallel rows of monofilament upstanding hooks extending from embedded portions in the base. The ribbon is arranged as a helix to form a cylinder, with its abutting helical edges fused together, being self-supporting and self-sufficient as a complete unit needing no pins or clips to retain the hair wound on the curler. The overhang portions of the hooks extend at a slant angle to the hair as it is wound on the curler, promoting easy deflection of each hook by the hair, followed by reengagement of the hair by the hooks. The helical distribution of the hooks on the curler avoids empty zones or bands about the curler that could otherwise receive wound hair without retention.

3,556,115
COIFFURE PROTECTOR

Ann L. Benson, 1320 S. 75th St. Apt. 10, Omaha, Nebr.

Filed Nov. 8, 1967, Ser. No. 681,399
Int. Cl. A45d *8/40*
U.S. Cl. 132—49 4 Claims

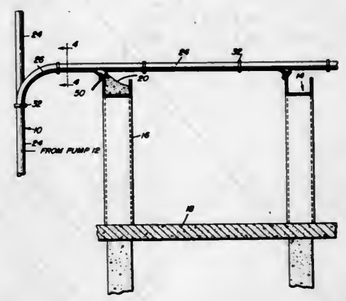


This invention pertains to a coiffure protector formed from tulle netting or the like; having a stiffening material affixed to or encased in the sides to maintain the shape thereof, padding encased or affixed to the back to prevent the hair riding up, an adjustable band for varying the size of the opening and means for holding the protector in place on the head of the wearer.

3,556,116
APPARATUS AND METHOD FOR DELIVERING CONCRETE AND SIMILAR MATERIAL TO A SELECTED POINT OF USE

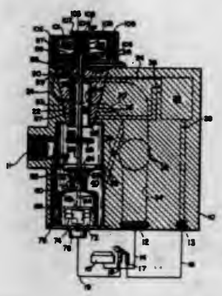
Benjamin F. Allen, Box 362, Monticello, Minn. 55362

Filed July 30, 1968, Ser. No. 748,673
Int. Cl. E04g *21/04*; F04b *41/00*
U.S. Cl. 137—1 8 Claims



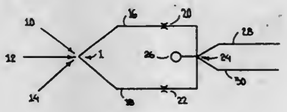
This invention is both an apparatus and a method for delivering concrete and similar material from a material pump to any one of a plurality of points of use. It consists of a number of pipe sections connected to the material pump and leading over each point of use. Each pipe section over a point of use is provided with a downwardly, forwardly extending gate release valve, wherein one gate valve is opened at a time, while maintaining the other gate valves in closed position, so that the material is selectively delivered to one point of use at a time, and when sufficient material has been so delivered, such valve is closed and another valve is opened, so that the material is then delivered to the next selected point of use. The area of the selected point of use is enlarged by providing a chute or spout having its entrance mouth held about or encompassing the gate valve, being supported thereabout by a support extending over the delivery pipe at the valve area, the chute or spout having a movable discharge end which may be provided by making the spout or chute of flexible material, such as a suitable flexible plastic or fabric, or combination thereof.

3,556,117
UNITARY PRESSURE REGULATOR AND FLOW CONTROL DEVICE
Jay R. Katchka, Long Beach, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed June 7, 1967, Ser. No. 644,343
Int. Cl. F23q 9/12
U.S. Cl. 137—66 **12 Claims**



A fluid flow control device having a manually operated valve, a manually resettable automatic safety valve means upstream of the manually operated valve, and pressure regulating means utilizing the same valve member as the safety valve means. The pressure regulating means includes a regulating chamber and diaphragm in the manually operated valve means and a balancing chamber and diaphragm in the safety valve means.

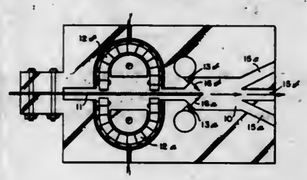
3,556,118
FLUIDIC SHIFT REGISTER
Charles J. Ahern, Sidney, N.Y., assignor to The Bendix Corporation, a corporation of Delaware
Filed May 10, 1968, Ser. No. 728,179
Int. Cl. F15c 1/12
U.S. Cl. 137—81.5 **4 Claims**



A shift register employing a three input AND element, the outputs of which may be used as controls of a conventional fluidic flip-flop. By using the three element AND gate, the power levels of the controls will be sufficiently high to switch the flip-flop in the presence of the trigger signal and will not be sufficient in the absence of the trigger. Additional power sources are, therefore, unnecessary.

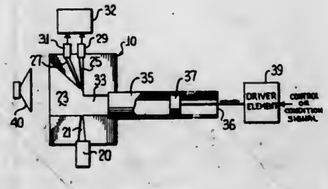
3,556,119
ELECTRO-FLUERIC VALVE
Dewey P. Ankeney, China Lake, Calif., assignor to the United States of America as represented by the Secretary of the Navy
Filed May 22, 1969, Ser. No. 826,944
Int. Cl. F15c 3/00
U.S. Cl. 137—81.5 **5 Claims**

A flueric device for channeling fluids into one of three outlet passageways in response to an electrical command. A chamber having three outlet channels is bisected by a metal leaf which is responsive to an electromagnetic command. Two fluid inputs at right angles to each other supply fluid input to the chamber. When no current is applied to the electromagnetic control of the metal leaf, fluid exits only from the center channel. If the electromagnetic control causes the



leaf to bend toward one side of the chamber or the other, fluid will exit via one of the side channels or the other.

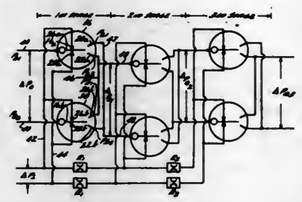
3,556,120
CONDITION RESPONSIVE PURE FLUID OSCILLATOR
Peter Bauer, Germantown, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed Feb. 14, 1968, Ser. No. 705,345
Int. Cl. F15c 1/08
U.S. Cl. 137—81.5 **17 Claims**



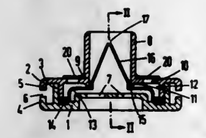
A condition responsive pure fluid oscillator comprising a power nozzle for issuing a power stream, at least one output passage for selectively receiving the power stream, and a hollow control tube aligned generally perpendicular to the power stream flow. Standing waves are produced in the control tube in response to the power stream flowing past the tube mouth. The standing waves produce pressure differentials causing the power stream to oscillate, the frequency of oscillation being adjustable by means of a movable piston within the control tube. The position of the piston in the control tube is made responsive to an external control. The device may serve as a displacement transducer when clearance is provided between the wall of the control tube and the piston, the piston thereby varying the output frequency as a function of its position along the longitudinal axis of the control tube. The oscillator may be employed as a pneumatic eye sensing element whereby the piston is removed and a sensing stream is directed into the control tube from a location external to the oscillator, the oscillator oscillating or not as a function of the presence or absence of the sensing stream at the control tube.

3,556,121
FLUERIC MULTIPLIER
Thomas F. Urbanosky, Cincinnati, Ohio, assignor to General Electric Company, a corporation of New York
Filed Dec. 2, 1968, Ser. No. 780,348
Int. Cl. F15c 1/14, 4/00
U.S. Cl. 137—81.5 **8 Claims**

A flueric multiplier stage is disclosed which comprises two fluid amplifiers whose power streams are respectively connected to opposite sides of a first pressure differential signal and whose control ports are connected in parallel across a second pressure differential signal. The output receivers of the fluid amplifiers are cross-connected such that the left receiver of the first amplifier is connected to the right receiver of the second amplifier, the structure described being adapted to provide a push-pull output signal which is proportional to the product of two push-pull input signals. Circuits incorporating the basic multiplier stage are also disclosed, as are circuits in which the output is restricted to respond to a singularly directional input.



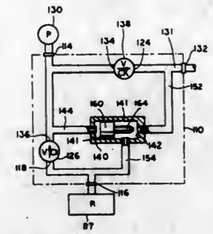
3,556,122
VALVE FOR ARTIFICIAL RESPIRATION APPARATUS
Asmund Sigurd Laerdal, Stavanger, Norway
This application Mar. 26, 1969, Ser. No. 812,557, which is a continuation of Ser. No. 464,098, June 15, 1965, abandoned. Claims priority, application Norway, June 15, 1964, 153,649
Int. Cl. A61m 16/00; F16k 15/16
U.S. Cl. 137—102 **9 Claims**



A valve for an artificial respiration apparatus formed by a tubular member and wall members extending radially therefrom and forming an annular chamber at one end of the tubular member. A diaphragm is secured within the annular chamber and extends across the tubular member, within the tubular member the diaphragm has a wedge-shaped configuration with a slot at its end. Exhaust openings are provided through the wall members. When the valve is used in administering oxygen to a person, the slit in the diaphragm opens permitting the oxygen to flow therethrough. However, when the person exhales, the slit in the diaphragm is closed and the exhaled air passes between the diaphragm and the tubular member into the annular chamber and then out through the exhaust openings. The exhaust openings are provided with covers at the exterior of the valve so that air can only pass outwardly.

3,556,123
INTERNAL SYSTEM RELIEF VALVE
Roy B. Smith, Washington Court House, Ohio, assignor to Transportation Specialists, Inc., Columbus, Ohio, a corporation of Ohio
Filed Dec. 6, 1968, Ser. No. 781,919
Int. Cl. G05d 11/00
U.S. Cl. 137—107 **18 Claims**

A valve, comprising passageways drilled in a solid body and moving parts therein, is disclosed for use in relieving the pressure in a lubrication system after lubricant has been forced into the system under pressure. The valve has a central hole through it formed by a bore and an oppositely directed counter bore which intersect to make a shoulder. A disc is positioned at the shoulder to function as a check valve. A piston pump is connected to the counterbore. A passageway having a check valve connects the counterbore with the lubrication distribution system for supplying lubricant to the system. A return and relief passageway is provided between the distribution system and the bore, which bore is connected to a lubricant reservoir. A cylinder containing a piston is connected to the system by suitable passageways. The piston is pressure-actuated and is connected to a blocking means which blocks the return and relief passageways when lubricant is supplied into the distribution system under pressure but permits return of excess lubricant to the reservoir through the return passageways, after pump pressures cease. The residual pressure in the system causes this excess lubricant to be exhausted from the system and returned to the reservoir.



3,556,124
VALVE FOR INSTANT HOT WATER SYSTEM
Robert A. Walton, Rochester, N.Y., assignor to W. F. Products Corp., Fishers, N.Y., a corporation of New York
Filed Aug. 21, 1968, Ser. No. 754,171
Int. Cl. F24h 9/12
U.S. Cl. 137—112 **7 Claims**

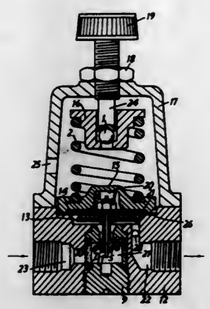


An instant hot water system has a return line from the far end of the hot water supply line back to the cold water inlet of the water heater. At the junction between the return line and the cold water supply line, there is a piston valve which closes the return line when cold water flows into the heater to replace hot water drawn off. The piston valve member, spring pressed to a position normally closing the cold water inlet and opening the connection to the return line, is of molded plastic material.

3,556,125
PRESSURE REGULATING VALVES
Dennis Stephen Dowdall, Morden, Surrey, England, assignor to Telektron Limited, West Molesey, Surrey, England
Filed Mar. 21, 1969, Ser. No. 809,084
Claims priority, application Great Britain, Mar. 26, 1968, 14525/68
Int. Cl. G05d 16/06
U.S. Cl. 137—116.3 **8 Claims**

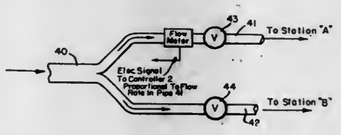
The invention provides a pressure-regulating valve which is usable, for example to obtain a controlled reduction in fluid pressure or as a position transmitter. The valve of the invention comprises a first chamber **21** and a second chamber **20** separated by a flexible diaphragm **14**. The periphery of the diaphragm can separate from ledge **26** and a dished member **15** so as to allow loss of air or other gas from either of the chambers. The member **15** is biased against the diaphragm

14 by a spring (bias member 2,) which can be varied in compression. A moving valve member 7 is attached to the diaphragm and seats on member 5. A duct 8 in the valve



member 7 provides fluid connection between the inlet port 23 and the first chamber 20. When member 7 lifts from seat member 5 fluid passes from the inlet to outlet port 22 via chamber 21.

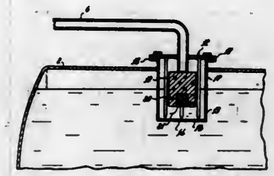
3,556,126
PIPELINE VALVE CONTROL SYSTEM
Lawrence E. Oswald, Ferriday, La., assignor to Ashland Oil & Refining Company, Houston, Tex., a corporation of Kentucky
Filed Nov. 19, 1968, Ser. No. 776,887
Int. Cl. G05d *11/13*
U.S. Cl. 137—118 7 Claims



A flow control system for regulating the flow in two output pipes which divide the flow of a single input pipe as the input flow varies so as to maintain the flow in one of the output pipes at an adjustable predetermined level. The electrical control system employs two electromagnetic valves of a complementary nature, i.e., one opens with an increasing signal while the other closes with an increasing signal. Depending on the magnitude of the demand and the magnitude of the input flow, one valve is held open as the other valve is controlled to satisfy the demand. A relay in the circuit senses the conditions of the valves and chooses which valve is to be controlled and which is to remain stationary.

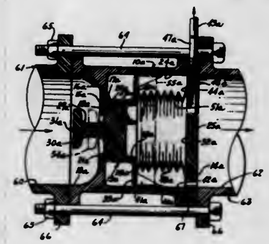
3,556,127
DEVICES FOR DISTRIBUTING LIQUID
Ian Archie MacKinnon, Streetsville, Ontario, Canada, assignor to Lely Ltd., Burlington, Ontario, Canada
Filed Apr. 22, 1968, Ser. No. 723,015
Claims priority, application Netherlands, Apr. 21, 1967, 6705601
Int. Cl. A01c *23/04*
U.S. Cl. 137—205 7 Claims

According to the present invention, there is provided a device for distributing liquid comprising a container with which one end of a duct is connected through which air can be withdrawn from the container to draw liquid into the container, and a safety mechanism disposed between said end of the duct and the interior of the container for preventing overfilling of the container, the safety mechanism comprising a guide means around said end of the duct and inside which a



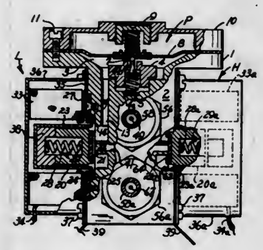
float is provided that can be urged, by liquid drawn into the container, into a position in which it closes the duct.

3,556,128
PRESSURE BALANCED REGULATING VALVE WITH FLARED COMPRESSION DISC
Paul J. Scaglione, 30180 Richmond Hill Drive, Farmington, Mich. 48024
Filed Apr. 30, 1969, Ser. No. 820,563
Int. Cl. F16k *31/143*; G05d *27/00*
U.S. Cl. 137—219 9 Claims



A pressure balanced regulating valve capable of providing two stages of flow in one regulating valve structure. One stage provides low flow and, as the flow demand increases, a second or larger stage flow automatically comes into operation. The valve includes a high-pressure inlet passage and an outlet passage connected through a valve opening that is closed by a valve member provided with a compression disc that is spaced apart from the valve member so as to always be positioned in the high pressure inlet passage when the valve member is in both the open and closed positions to provide the valve member with a positive constant thrust pressure.

3,556,129
TWO-STAGE FLUID FUEL CONTROL VALVE
Richard J. Brown, 8758 Edgehill Road, Mentor, Ohio
Filed Apr. 27, 1967, Ser. No. 634,244
Int. Cl. F23n *1/00*
U.S. Cl. 137—271 3 Claims



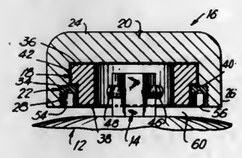
This disclosure relates to a control valve for metering liquid fuel to a burner. It includes a pressure regulator that receives liquid at superatmospheric pressure and delivers it to a first solenoid-operated valve, and under certain conditions, also to a second and similar solenoid-operated valve. A filter and metering orifice assembly is located downstream from the first valve and meters the flow of fuel for a "low fire" stage of operation. Under said certain conditions, some of the liquid passing the first solenoid valve is channeled to the second solenoid valve and passes thence through a second and similar filter-orifice assembly (in parallel flow relationship to the first filter-orifice); this second stream may pass directly from the control valve to the burner or may be caused to join the liquid flowing from the "low fire" stage and flow in a single stream to the burner. Means are incorporated for easily removing, replacing and servicing the filter-orfice assemblies without disturbing other parts of the valve and for converting the valve from the single to the multiple outlet arrangement. Thermostatically controlled electrical heating means are also built into the valve.

3,556,130
ROTARY VALVE MOUNTING ASSEMBLY
Richard N. King, Jr., Natick, Mass., assignor to Waters Associates, Inc., Framingham, Mass.
Filed Sept. 24, 1968, Ser. No. 761,983
Int. Cl. F16l *5/00*
U.S. Cl. 137—343 13 Claims



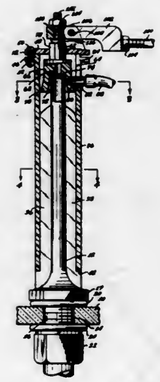
An improved mounting assembly supports a rotary stream-switching valve of the type having a housing and a rotor. The rotor includes a shaft and a sealing member having stream diverting grooves. The mounting assembly supports the entire valve from the valve shaft through a bushing slidably engaging over the shaft. One end of the bushing is attached to a bracket which can be secured to a suitable base. Engagement between projections on the housing and elements of the bracket prevents the housing from rotating when the valve shaft is turned to accomplish the desired stream switching. However, when sideways thrusts are imparted to the valve shaft, the valve housing is free to cock or shift with respect to the mounting so that there is no relative movement between the shaft and the housing as would tend to deform or damage the sealing member.

3,556,131
PROTECTION DEVICE FOR FIRE HYDRANTS
Raul Ralph Diaz, Brooklyn, N.Y., assignor to Sota Angelo, Brooklyn, N.Y.
Filed Aug. 29, 1968, Ser. No. 756,214
Int. Cl. F16k *35/06*
U.S. Cl. 137—382.5 1 Claim



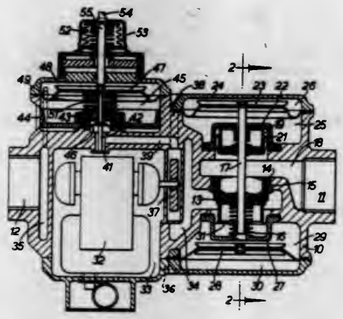
A device is provided for preventing the unauthorized operation of fire hydrants by concealing the hexagonal member or nut which permits the operation of the fire hydrant and permitting only a limited access thereto. The nut is concealed by connecting thereto a first member which is fixed thereon both axially and rotatably and by supporting on this first member a freely rotatable member which conceals the first member and prevents a rotative force from being applied to the nut. A special wrench is provided which enables authorized engagement of the nut through the limited access which is provided.

3,556,132
BALL COCK VALVE
Fay O. Suffron, Los Angeles, and Theodore J. Zanias, Anaheim, Calif., assignors to American Metal Products Corp., Los Angeles, Calif., a corporation of California
Filed Oct. 2, 1968, Ser. No. 764,387
Int. Cl. F16k *31/26*
U.S. Cl. 137—437 3 Claims



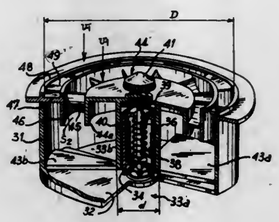
The invention is an improved ball cock valve having an antisiphon feature, and improved refill tube feature. The ball cock valve is a float-operated valve, the valve comprising a member with a downwardly extending skirt within which is a sealing disc which closes or seats on the upper end of an inflow pipe. The valve member operates within the upper end of a sleeve or cylindrical member around the inflow pipe. The skirt of the valve member below the seat has a transverse bore and an extending tube which moves vertically with the valve member in an axial slot in the sidewall of the said sleeve, this tube being connected to a tube which is the refill tube that leads to the overflow pipe in the flush tank in which the ball cock valve is used. The area or space around the valve member in the upper end of the sleeve or cylinder is open to atmosphere and provides an air gap preventing siphoning or backflow, that is, it provides an antisiphoning feature. The pressure of water flowing in through the inflow pipe and impinging against the valve seat and reversing in direction inside the skirt of the valve member produces a pressure which assures a flow of water into the refill tube for refilling the toilet bowl after flushing.

3,556,133
CONTROL FOR GAS APPLIANCES
Alan Launchbury, Birmingham, England, assignor to Sperryn & Company Limited, Birmingham, England, a British Company
Filed July 8, 1968, Ser. No. 743,208
Int. Cl. F16k *31/145*
U.S. Cl. 137—492.5 1 Claim



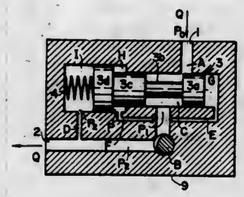
A valve head in a gas valve through which gas is supplied to a gas-fired appliance is actuated by a diaphragm exposed on one side to liquid pressure generated by a centrifugal pump driven by an electric motor.

3,556,134
FLUID FLOW REGULATOR FOR USE IN THE VENTILATION DUCTS OF DWELLINGS
Pierre Charles Jardinier, Gournay-sur-Marne, and Jack Paul Robert Simonnot, La Varenne, France, assignors to Societe D'Etudes et De Recherches De Ventilation Et D'Aeraulique, Val de Marne, France, a corporation of France
Filed Dec. 22, 1967, Ser. No. 692,937
Claims priority, application France, Jan. 5, 1967, PV 120,405
Int. Cl. F16k *31/16*
U.S. Cl. 137—499 4 Claims



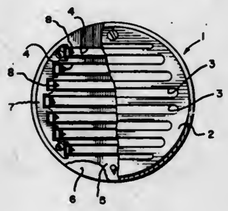
The disclosure of the present invention pertains to a regulator for maintaining a substantially constant and preset fluid flow in a ventilation duct of dwellings in which is employed a flap valve actuated by an airscrew, means for segregating the respective turbulence fields of the valve and airscrew to avoid interaction between the turbulences phenomena produced by the airscrew and the valve whereby irrespective of the valve position an airflow of constant rate applies a constant torque to the airscrew and spring means are used to tend to move the flap valve to its fully open position.

3,556,135
AUTOMATIC FLOW CONTROL VALVE
Takuji Koyama, Kobe-shi, and Hiroshi Nosaka, Akashi-shi, assignors to Mitsubishi Jukogyo Kabushsiki Kaisha, Tokyo, Japan
Filed July 8, 1969, Ser. No. 839,813
Claims priority, application Japan, July 10, 1968, 43/47795
Int. Cl. G05d *7/00*
U.S. Cl. 137—501 4 Claims



An automatic flow control valve is formed of a housing defining a valve chamber and a valve body axially displaceable within the valve chamber. The juxtaposed surfaces of the valve chamber and valve body form a flow passageway through the valve and are arranged to avoid any sudden changes in the cross-sectional flow area. The juxtaposed surfaces have a frustoconical shape converging in the direction of flow of a pressurized fluid through the valve. The valve body and the valve chamber cooperate to form a number of separate chambers which receive pressurized fluid for balancing the counteracting forces on the valve for regulating flow through it.

3,556,136
FLUID-CONTROL VALVE
Kenneth H. White, Painted Post, N.Y., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 644,141, June 7, 1967, now abandoned. This application Mar. 19, 1969, Ser. No. 828,426
Int. Cl. F16k *15/02*
U.S. Cl. 137—512.1 3 Claims

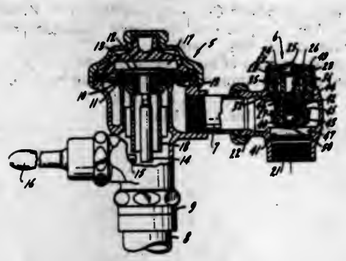


A channel valve having Teflon inserts on the guides to prevent wear and scoring of the guides and the valve members which move within them.

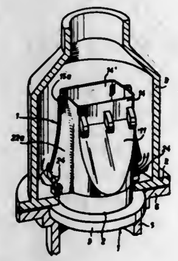
3,556,137
CONTROL VALVES
Henry R. Billeter, Deerfield, and Axel B. Nelson, Mount Prospect, Ill., assignors to Sloan Valve Company, a corporation of Illinois
Filed May 15, 1969, Ser. No. 824,993
Int. Cl. F16k *15/18, 17/30, 31/50*
U.S. Cl. 137—543.15 13 Claims

This control valve associated with flush valves in plumbing systems serves as a check valve which under certain conditions prevents the flush valve from operating unintentionally and causing flooding. The control valve has a loose valve plug which is spring pressed towards its seat and is arranged

to shut off the water flow as well as throttle the flow through the flush valve. The control valve therefore serves three purposes: as a shutoff valve, as a check valve to prevent back flow, and as a throttle valve, all in a single unit.

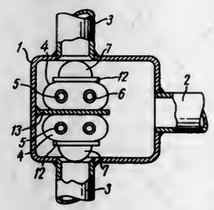


3,556,138
NONRETURN VALVES
Nicola D'Urso, Turin, Italy, assignor to A.M.I.S. Apparecchi E Macchine Idrauliche Speciali S.p.A., Turin, Italy, an Italian Joint-Stock Company
Filed July 30, 1968, Ser. No. 748,801
Int. Cl. F16k *15/00*
U.S. Cl. 137—512.15 6 Claims



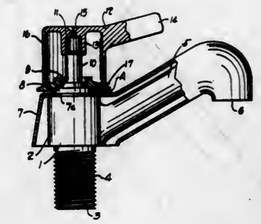
A nonreturn valve for liquids has a tapered end formed by flexible inclined walls terminating in a slit which is defined between two flexible lips. A continuous raised rib is formed on the internal surface of one of the lips and makes linear sealing contact with a corresponding face of the other lip inwardly of the slit effectively to cut off flow through the slit upon closure of the valve.

3,556,139
SHUTOFF VALVE FOR HYDRAULIC SYSTEMS
Nikolai Vasilievich Yalovega, Skhodnya, ul. Michurina, 6, kv. 19, Moskovskaya, U.S.S.R.
Filed Dec. 13, 1968, Ser. No. 783,547
Int. Cl. F16k *37/00, 31/145*
U.S. Cl. 137—554 16 Claims



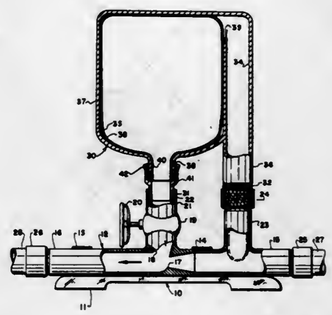
A shutoff valve for a hydraulic system comprises a hermetic body having an inlet and an outlet for the medium handled by the system. Inside the body is a closing member adapted to open and close the outlet and an elongated pliable chamber with resilient walls is connected to the closing member. The chamber is supplied with a working medium, preferably a compressed gas under pressure and the chamber has an oval shape and is installed so that it acts on the closing member in the direction of the smaller axis of the chamber. The chamber may contain transmitters therein for indicating the position of the chamber walls in order to effect automatic control of the supply of the working medium into the chamber.

3,556,140
FAUCET CONSTRUCTION AND MEANS FOR PREVENTING SOIL ACCUMULATION AND INCRUSTATION THEREON
William E. Politz, Delphi, Ind., assignor to Stephen A. Young, Monticello, Ind.
Filed Oct. 8, 1968, Ser. No. 765,816
Int. Cl. F16k *21/00*; E03c *1/04*
U.S. Cl. 137—359 1 Claim



The disclosure of this invention involves the provision of several instrumentalities to prevent the accumulation of soil and incrustation around the control means and openings in shells or the like through which such means pass, in order to provide a cleaner appearance of the faucet in which the means are incorporated without substantially changing the construction thereof by the provision of a plastic member which, in effect, sheds soil and water carrying such soil away from and outwardly from the opening on to broader surfaces of the faucet which may thereby be easily wiped and maintained in clean, neat condition.

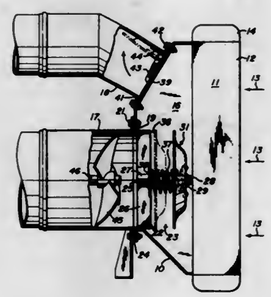
3,556,141
FLUID-OPERATED DISPENSING DEVICE
Hobart M. Hind, 2604 Bruce Ave, Panama City, Fla.
Filed Dec. 16, 1968, Ser. No. 783,897
Int. Cl. G05d *11/00*
U.S. Cl. 137—564.5 3 Claims



This invention relates to a device for feeding liquid fertilizer to a flowing stream of water. The fertilizer container is flexible and is placed in a housing having a pressure connec-

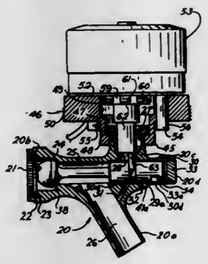
tion upstream of a metering venturi. The metering venturi causes a pressure drop in the fluid stream to cause the fertilizer to be ejected into the stream due to the pressure differential through an adjustable metering valve.

3,556,142
FAN PROTECTION VALVE
Le Roy J. Sabin, Xenia, and Paul R. Hughes, Englewood, Ohio, assignors to United Aircraft Products, Inc., Dayton, Ohio, a corporation of Ohio
Filed May 13, 1969, Ser. No. 824,068
Int. Cl. F16k *17/30*; F01b *25/00*
U.S. Cl. 137—565 **7 Claims**



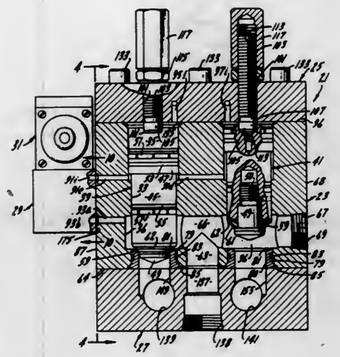
Apparatus in a heat transfer system or the like. The open end of a duct normally supplied with air at high flow rates is controlled by a valve biased to a position of minimum restriction. Under conditions of high airflows, a created pressure difference moves the valve toward a position of maximum restriction. A fan, located in the duct to induce air flow in the absence of the normal supply, is protected thereby from damage caused by excessive windmilling.

3,556,143
BEER-DISPENSING FAUCET
Francis G. Nally, 5201 W. 65th Place, Mission, Kans.
Filed Aug. 5, 1968, Ser. No. 750,089
Int. Cl. B67d *3/00*
U.S. Cl. 137—589 **3 Claims**



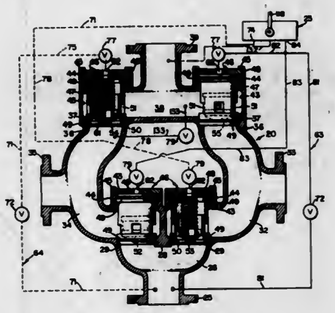
A beer-dispensing faucet; a beer-dispensing faucet designed for automatic operation by a solenoid so automatic equipment may be used to dispense the beer from the faucet without the bartender utilizing a hand lever.

3,556,144
DIRECTIONAL CONTROL VALVE AND METHOD OF MAKING
Anthony Bickers, Hales Corners, and Philip T. Delmer, Milwaukee, Wis., assignors to Nordberg Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin
Continuation-in-part of application Ser. No. 777,314, Nov. 20, 1968, now abandoned. This application Nov. 10, 1969, Ser. No. 875,390
Int. Cl. F16k *11/20*
U.S. Cl. 137—596.15 **17 Claims**



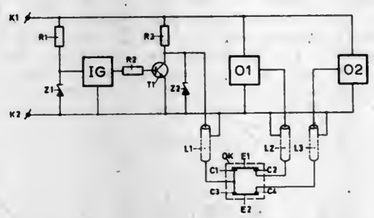
A directional control valve having double-acting differential poppets located in a valve body controlled by one or more pilot valves. The pilot valves control pilot fluid to and through a multiplicity of pilot fluid control passages. A porting pattern for the control passages is predetermined and coordinated to the pilot valve selected so that multiplicity of functions of the control valve may be acquired.

3,556,145
FLUID MOTOR SUPPLY AND CONTROL VALVE
Harry Sugden, Jr., Statesboro, Ga., assignor to Rockwell Manufacturing Company, Pittsburgh, Pa., a corporation of Pennsylvania
Original application May 10, 1968, Ser. No. 728,295. Divided and this application July 16, 1969, Ser. No. 871,041
Int. Cl. F16k *11/10*
U.S. Cl. 137—596.15 **5 Claims**



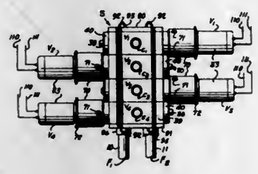
A fluid motor four-way fluid pressure responsive control valve for determining the direction and rate of flow of the motive fluid in response to the positioning of a manually operable double poppet pilot valve selectively operable to controllably vent the downstream side of selected inlet chamber and outlet chamber fluid pressure responsive valves to predetermine the direction and rate of flow of the motive fluid to the fluid motor.

3,556,146
LIQUID DISPENSING DEVICE AUTOMATICALLY OPERATED BY PROXIMITY OF A HAND THERETO
Johannes Groen, Loenen Vecht, Netherlands, assignor to N. V. Metaalwarenfabriek "Venlo", Venlo, Netherlands
Filed Mar. 13, 1969, Ser. No. 806,946
Int. Cl. E03c *1/04*; F16k *19/00*
U.S. Cl. 137—606 **16 Claims**



A liquid dispensing device, in particular for hospitals and clinics, whereby the supply of hot or cold water to a wash bowl or the like may be controlled without touching any valves by hand. The water supply is regulated by an electromagnetic valve controlled by a proximity detector operating as a variable voltage divider. The proximity detector is fed with a high frequency signal and delivers an output voltage which may be influenced by putting the hand near the proximity detector. Separate proximity detectors for controlling the supply of hot and cold water, respectively, are mounted on the outlet pipe of the wash bowl in such manner that they may be actuated either separately or simultaneously, so that hot, cold or tepid water may be supplied as desired.

3,556,147
VALVE DEVICE
Phillip S. Sizer, Dallas, and Thomas L. Elliston, Hurst, Tex., assignors to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware
Filed Jan. 30, 1968, Ser. No. 701,672
Int. Cl. F16d *1/00*
U.S. Cl. 137—608 **15 Claims**



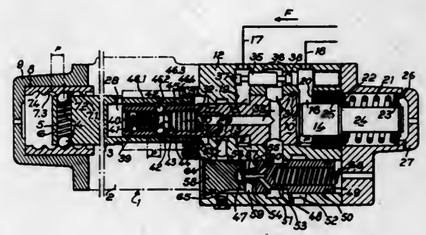
A valve device having pressure-balanced spaced annular valve members movably mounted on an operator rod and movable relative to spaced valve seats in a valve body bore communicating with a central flow passage between the seats and a pair of flow passages spaced outwardly of the seats. The rod shifts each valve member individually relative to its seat for selectively communicating the central flow passage with either of the outwardly spaced flow passages, depending upon the direction of longitudinal movement of the rod. The valve is used singly or is assembled in stacked relationship with a plurality of identical valves with the outwardly spaced flow passages aligned and in communication with each other defining a pair of separate common flow passages extending the length of the stack. Each valve in the stack is individually operable to communicate its central flow passage with either of the common flow passages of the stack. The valve stack is especially useful for selectively communicating separate conduit lines leading to each of the individual valves with either of two conduit lines connected into the common flow passages of the stack.

3,556,148
DOUBLE COUNTERBALANCED MARINE LOADING ARM
Peter J. Bily, Sunset Beach, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed July 11, 1968, Ser. No. 744,172
Int. Cl. F16l *3/00*, *31/00*
U.S. Cl. 137—615 **22 Claims**



A fluid-transferring apparatus of the double counterbalanced marine loading arm type, including an inboard arm section mounted upon an upstanding riser section for pivotal movement about a first generally horizontal axis and a generally vertical axis, an outboard arm section connected to the inboard arm section for pivotal movement about a second generally horizontal axis, a primary system for counterbalancing both inboard and outboard arm sections about the first generally horizontal axis, a secondary system of the pantograph type with sheaves, chains and rods for counterbalancing the outboard arm section about the second generally horizontal axis, a support and guide system for the pantograph chains and rods, and removable elements in the arm and riser sections for providing access to the packings of the swivel joint couplings between these sections without having to disconnect these sections from each other.

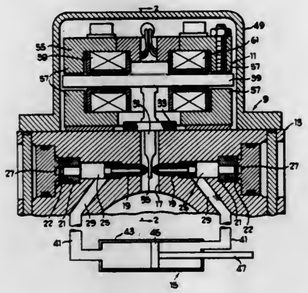
3,556,149
DEVICE FOR SELECTING AUTOMATICALLY ONE FROM AT LEAST THREE HYDRAULIC RECEIVER CIRCUITS
Michel L. Ribier, Bruges, Gironde, France, assignor to Derruppe S.A., Le Bouscat-Bordeaux(Gronde), France, a French company
Filed June 2, 1969, Ser. No. 829,232
Int. Cl. F16k *31/363*
U.S. Cl. 137—624.18 **3 Claims**



This invention relates to devices for automatically selecting one hydraulic receiver circuit from at least three such circuits in a programmed order. According to the invention, the piston of an actuating jack is extended by two rods projecting from each side thereof and this assembly is interposed

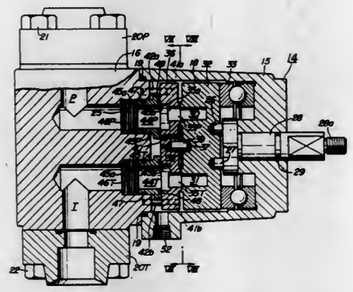
between two stops so that its travel in the two directions is limited to a length proportional to the step of the movable element of a distributor. One of these rods is connected to a resilient return member and the second of said two rods contains a step by step device for connecting it momentarily with the movable element of the distributor. The step by step device comprises a coupling piston slidably mounted in the cylinder of the second rod and also comprises at least one coupling member guided freely along a substantially radial direction.

3,556,150
ELECTRO HYDRAULIC SERVOVALVE
Donald A. King, Camarillo, Calif., assignor to Borg Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed May 12, 1969, Ser. No. 823,877
Int. Cl. F16k *31/04*; H02k *33/12*
U.S. Cl. 137—625.4 **8 Claims**



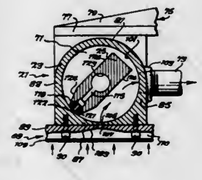
An electrohydraulic servovalve including a signal responsive torque motor having at least one high energy permanent magnet providing a magnetic flux field. A flux field shunt is affixed to the magnet to compensate for the effects of temperature on servovalve operating characteristics to ensure a consistent hydraulic output function in relation to a given input signal over a wide range of operating temperatures.

3,556,151
SLIDING PLATE-TYPE DIRECTIONAL CONTROL VALVE
Kengi Masuda, Suita-shi, Japan, assignor to Daikin Kogyo Co., Ltd., Osaka, Japan, a corporation of Japan
Filed July 25, 1968, Ser. No. 747,539
Claims priority, application Japan, Aug. 17, 1967, Dec. 4, 1967, 42/52,837; 42/77,800
Int. Cl. F16k *11/06*
U.S. Cl. 137—625.21 **7 Claims**



A sliding plate-type directional control valve which is so designed that none of the ports in communication with respective operating elements in a fluid circuit become communicated with the valve bore during the transitional period of fluid supply changing-over operation of a sliding member in the valve bore, and which can be converted into directional control valves of various functions by merely modifying the sliding member, said sliding plate-type directional control valve comprising a port member having the ports P, T, A, B bored therethrough, the sliding member, a floating plate interposed between said port member and said sliding member, and sets of a sealing member and a spring mounted in said floating plate or said port member or between said floating plate and said port member in such a manner that said sealing member be urged against said floating plate or said port member, whereby a fluid leakage through the gap between said port member and said floating plate is prevented and simultaneously said floating plate and said sliding member are held in plane contact preventing a fluid leakage through the gap therebetween.

3,556,152
ROTARY VALVE
Ernst Daniel Nystrand, Green Bay, Wis., assignor to International Paper Company, New York, N.Y., a corporation of New York. by mesne assignments
Original application July 11, 1967, Ser. No. 652,507, now Patent No. 3,473,800. Divided and this application Oct. 24, 1968, Ser. No. 798,514
Int. Cl. F16k *11/08*
U.S. Cl. 137—625.21 **1 Claim**

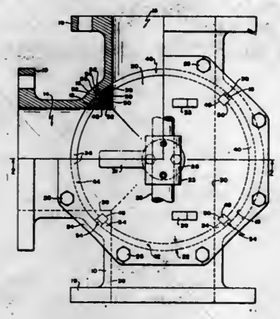


In a system for transporting limp flexible articles, a device is provided for controlling application of suction pressure to hold an article on a movable conveyor, and application of an above atmospheric pressure to accurately expel and deposit the article on a receiver. The control device includes a valve body having an interior cylindrical bore in which a vane is mounted for turning movement about the longitudinal axis of the bore. The bore is connected to a vacuum pump which applies a suction force through an opening in the valve body to hold the sheets on a mesh belt carrier. The suction force is effective until the vane turns to cover the opening and thereby effectively seals the opening to the suction force. Substantially simultaneously, a positive pressure air passageway in the vane is aligned with the opening and the positive air pressure ejects the article to the receiver. The vane extends to and in sealing engagement with the bore wall of the valve body so that the positive pressure is ineffective until the vane is aligned with the opening.

3,556,153
ROTOR VALVE
David J. Barbuto,, Belmont, Mass., assignor to Quality Controls Company, Inc., Malden, Mass., a corporation of Massachusetts
Filed Dec. 24, 1968, Ser. No. 786,579
Int. Cl. F16k *5/04*
U.S. Cl. 137—625.47 **4 Claims**

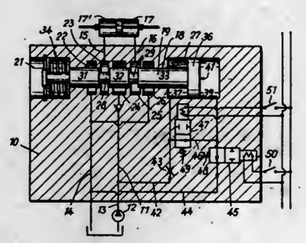
A rotor valve having a straight, cylindrical rotor disposed within a cylindrical rotor chamber, the rotor being sealed within the chamber by a plurality of arcuate sealing segments which are retained in the annular clearance between the rotor and its chamber. The arcuate segments extend the full length of the rotor and are retained about and for rotation in unison with the rotor by means of lengthwise extending

slender keys or ribs circumferentially spaced about the rotor. The keys protrude radially into the clearance to engage and



separate adjacent lengthwise edges of adjacent sealing segments.

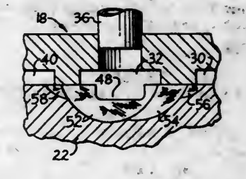
3,556,154
ELECTROHYDRAULIC CONTROL ARRANGEMENT
Manfred Kramer, Fellbach-Lindle, Germany, assignor to Robert Bosch GmbH., Stuttgart, Germany, a limited liability company of Germany
Filed Jan. 30, 1969, Ser. No. 795,273
Claims priority, application Germany, Apr. 24, 1968, 1750358
Int. Cl. F16k *11/07*
U.S. Cl. 137—625.64 **4 Claims**



An electrohydraulic control valve has a slider spool valve body to connect, or disconnect a double-acting hydraulic power device from a source, or a drain, respectively; a spring maintains the spool valve in centered position. The spool valve is further provided with a double-acting control piston having faces of unequal size, slidable in a chamber, and electromagnetic on-off valves interconnect the piston chambers formed by the two sides of the double faced piston, with the and drain of the hydraulic pressure fluid respectively, to shift the position of the control piston and hence of slider.

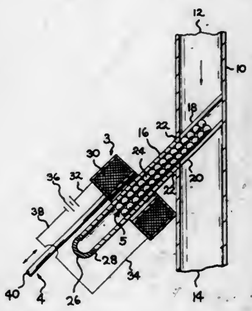
3,556,155
VARIABLE FLOW-MODULATED VALVE
Orcenith D. McWilliams, Morris, and John B. Waggoner, Joliet, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Jan. 24, 1969, Ser. No. 793,683
Int. Cl. F16k *11/07*, *5/10*; F15d *1/04*
U.S. Cl. 137—625.69 **10 Claims**

A control valve particularly adapted to vehicle steering by hydraulic pressure wherein source pressure is communicated through slots in a spool valve to a hydraulic steering motor and which slots of various size and configuration are arranged to provide slow or gradual steering upon initial turning of a steering wheel and more rapid steering as turning of the wheel progresses. The slot configuration also insures that the lines in the steering system between the valve and the



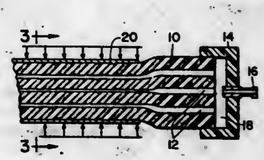
motor are constantly fully charged with hydraulic fluid to prevent the undesirable results of air in the system.

3,556,156
MAGNETICALLY ACTUATED VALVE
Forney Fuller, Jr., P.O. Box 24151, New Orleans, La.
Filed Aug. 28, 1967, Ser. No. 663,884
Int. Cl. F15d *1/10*; F16k *31/06*
U.S. Cl. 138—43 **6 Claims**



A magnetically actuated valve for constricting the flow of fluid through a fluid conduit wherein the valve is provided with tube means which extend laterally from the fluid conduit and contain fluid flow constricting elements which are magnetically driven into fluid flow constricting position within the fluid conduit to achieve an infinite variation between minimum and maximum flow conditions.

3,556,157
LINEAR FLUID RESTRICTOR HAVING A VARIABLE COEFFICIENT OF RESTRICTION AND METHOD FOR MAKING THE SAME
Herbert M. Eckerlin, Raleigh, N.C., and Lawrence W. Langley, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Nov. 22, 1968, Ser. No. 778,220
Int. Cl. F15d *1/02*
U.S. Cl. 138—46 **5 Claims**



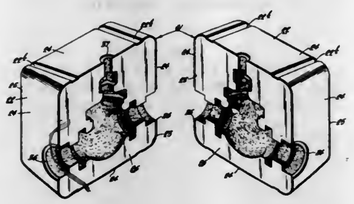
A fluid flow restrictor having a resilient compressible body containing one or more fluid conductive passages is disclosed. The passages are of sufficient length with respect to

their cross-sectional areas to insure laminar fluid flow therein when the body is in either a compressed or uncompressed state. The coefficient of restriction of the restrictor can be varied over a range of values, without altering the linearity of the fluid volume flow-to-pressure drop relationship thereof, by placing the body in various stages of compression.

3,556,158
INSULATOR FOR PIPE ACCOUTERMENTS AND THE LIKE

Marvin Schneider, 656 Lindley Ave., Glenside, Pa. 19038

Filed Apr. 26, 1967, Ser. No. 633,802
Int. Cl. F16l *59/02*
U.S. Cl. 138—156 **10 Claims**

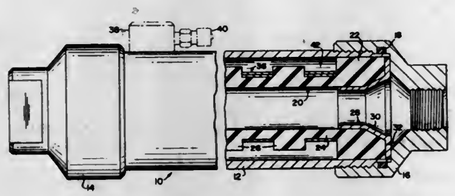


This patent deals with insulators formed of a pair of blanks. Each blank comprises a rigid outer shell with one open face, and interiorly of the shell is a block or insert of a novel polyurethane foam. The blanks are particularly adapted for insulating pipe accouterments such as valves, flanges, traps, etc. in which the accouterment being insulated acts as a die for forming the foam to substantially conform to the contour of the accouterment.

3,556,159
SURGE CUSHIONING APPARATUS FOR PRESSURE SYSTEMS

William J. Bleasdale, P.O. Box 15012-South Gate, Sarasota, Fla. 33579

Filed May 6, 1969, Ser. No. 822,133
Int. Cl. F16l *55/04*
U.S. Cl. 138—30 **8 Claims**



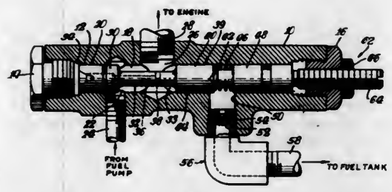
This apparatus includes a container means connectable to the liquid source or system to receive pressure liquid therefrom, and a continuous flexible diaphragm secured to the container means in sealed engagement therewith to form a chamber sealed from the liquid system, which diaphragm has spaced areas of different resilient strengths.

3,556,160
MULTIFUEL COMPENSATOR

Fred W. Link; Wayne H. Vandesteeg, Columbus, Ind., and Donald D. Carrell, Lakewood, Ohio, assignors to Cummins Engine Company, Inc., Columbus, Ind., a corporation of Indiana

Filed Jan. 26, 1968, Ser. No. 700,802
Int. Cl. F15d *1/02*
U.S. Cl. 138—46 **10 Claims**

A fuel flow compensator for automatically varying the rate of fuel flow through the compensator to an engine as a function of viscosity of the fuel to maintain a substantially con-



stant power output from the engine when changing between high- and low-viscosity fuels while the engine is in operation.

3,556,161
STRUCTURES OF POLYTETRAFLUOROETHYLENE RESINS AND THEIR MANUFACTURE

Robert Roberts, Palmyra, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

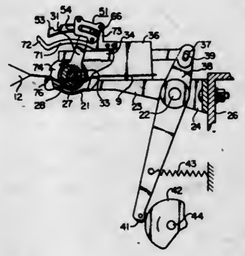
Continuation-in-part of application Ser. No. 94,129, Mar. 8, 1961, and Ser. No. 209,759, July 13, 1962, both abandoned. This application Aug. 30, 1965, Ser. No. 483,875
Int. Cl. B29d *27/00*; F16l *9/12*
U.S. Cl. 138—141 **34 Claims**

A sheet comprising per 100 parts by volume 0—39 parts liquid capable of wetting polytetrafluoroethylene and 61—100 parts complementally of solid material comprising 5—100 volume percent polytetrafluoroethylene resin and 0—95 volume percent complementally of particulate solid filler, said sheet having a volume shrinkage of less than 39 percent on drying and heat-treating, further characterized in that the polytetrafluoroethylene resin is present substantially entirely in the form of discrete lamellae less than 10 microns thick, which lamellae are molecularly oriented parallel to the faces of said structure and have a molecular orientation as determined by an A X-ray ratio of from 1 to 0.4 and a B X-ray ratio of from 0.7 to 0.05.

3,556,162
APPARATUS FOR FORMING REINFORCED SELVAGES OF A FABRIC USABLE IN COMBINATION WITH A SHUTTLELESS LOOM

Toemon Sakamoto, Shizuoka-ken, Japan, assignor to Enshu Limited, Shizuoka, Japan, a company of Japan

Filed Oct. 17, 1968, Ser. No. 768,297
Claims priority, application Japan, Oct. 20, 1967, May 20, 1968, 42/67,547;43/33,916
Int. Cl. D03d *47/40*
U.S. Cl. 139—122 **5 Claims**



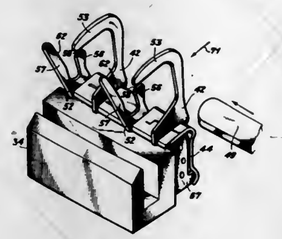
An improved apparatus for forming reinforced selvages of a fabric on a shuttleless loom. A filling yarn inserted into a warp sheds from a given supply source by a reciprocating inserting carrier is positively cut by a cutting apparatus at a position slightly inside the selvage simultaneously with a positive restriction of yarn supply and the cut end of the yarn

which remains is woven into the selvage. Cutting operation of the apparatus at a given moment is caused by a revolution of a programming cam synchronized with the crankshaft revolution. Fly back of a cut end of the yarn can be prevented by a warp yarn depresser disposed to the apparatus.

3,556,163
GUIDE FOR WEFT-PICKING MEANS IN A LOOM

Erwin Pfarrwaller, Winterthur, Switzerland, and Anton Xaver Inglin, Zuchwil, Switzerland, assignors to Sulzer Brothers, Ltd., Winterthur, Switzerland, a corporation of Switzerland

Filed Dec. 6, 1968, Ser. No. 781,850
Int. Cl. D03d *49/60, 47/00*
U.S. Cl. 139—188 **9 Claims**

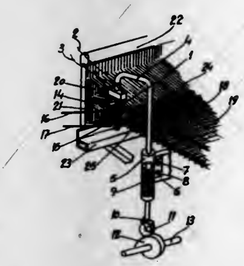


The guide is constructed of a plurality of guide elements which are individually shaped to provide at least one of the total number of guide surfaces forming the guide path for the picking means. The individual guide elements are spaced apart in alternating manner so that the weft-picking means contacts a minimum of guide surfaces in passing through the guide.

3,556,164
PROCESS AND APPARATUS FOR SEVERING FLAT THERMOPLASTIC WEFTS IN LOOMS HAVING A FIXED WEFT SUPPLY

Ramon Balaguer Golobart, Calle Valls & Taberner 11, Barcelona, Spain

Filed Sept. 13, 1968, Ser. No. 759,714
Claims priority, application Spain, Sept. 13, 1967, 345,382
Int. Cl. D03d *49/70*
U.S. Cl. 139—302 **1 Claim**

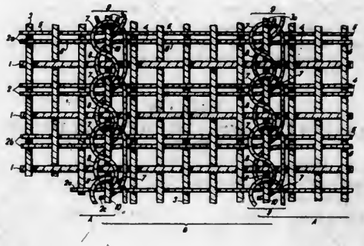


A vertically movable thermoelectric element is employed to sever thermoplastic weft filaments in a loom.

3,556,165
FABRIC HAVING INTEGRAL AND SECTIONAL WEFT THREADS, AND LOOM FOR MAKING THE SAME

Josef Zmatlik, Prague, Miloslav Jisa, Liberec, and Jaromir Sedlecky, Josef Matejka, Josef Mohelnicky, and Bohumil Milichovsky, Prague, Czechoslovakia, assignors to Statni Vyzkummy Ustav Textilni, Liberec, Czechoslovakia

Filed Dec. 23, 1968, Ser. No. 786,862
Claims priority, application Czechoslovakia, Dec. 22, 1967, PV9122/67
Int. Cl. D03d *25/00*
U.S. Cl. 139—383 **15 Claims**

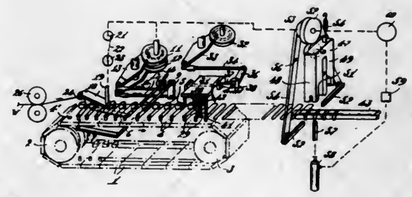


A fabric is woven of warp threads crossing integral and sectional weft threads which alternate. The integral weft threads extend across the entire fabric and are inserted by first weft inserting means, while each sectional weft thread includes a plurality of aligned double weft elements which are inserted into warp shed sections, respectively, by a plurality of weft inserting needles, and preferably tied by a knitting needle.

3,556,166
WIRE-BENDING APPARATUS

William E. Whitney, Belmont, Mass., assignor to Comstock & Wescott, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed Oct. 31, 1968, Ser. No. 772,158
Int. Cl. B21f *1/04, 45/16*
U.S. Cl. 140—71 **6 Claims**



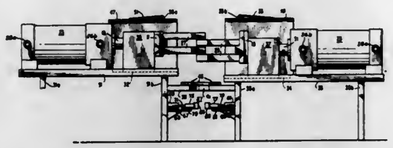
For forming binders for looseleaf books with wire bent back and forth in a series of loops in a zigzag formation, apparatus comprising means for feeding the formation lengthwise along a predetermined path, first means disposed along said path for bending the free end of each loop transversely of its plane, and second means for then bending the tips of the loops on each side of the zigzag formation inwardly toward the tips on the other side of the formation.

3,556,167
APPARATUS AND METHOD FOR MEASURING STRAND
Charles R. Nippert, Sr., Allentown, Pa., assignor to Bethlehem Steel Corporation, a corporation of Delaware
Filed Sept. 19, 1967, Ser. No. 668,782
Int. Cl. B21f *11/00*
U.S. Cl. 140—1 8 Claims



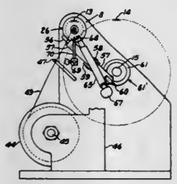
Wire strand is fabricated and subsequently severed into measured lengths of strand at locations determined on a wire of the strand during fabrication by passing the wire between rearwardly urged tension rolls, around a measuring wheel, and between unidirectional tension rolls.

3,556,168
APPARATUS FOR APPLYING FITTINGS TO STRAND ENDS
Stephen R. Baker, Oley, and Harry D. Kremer, Bethlehem, Pa., assignors to Bethlehem Steel Corporation, a corporation of Delaware
No Drawing. Filed Nov. 13, 1967, Ser. No. 682,465
Int. Cl. B21f *15/02*
U.S. Cl. 140—113 4 Claims



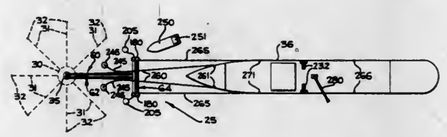
Opposed dies having diverging intercalated or interlocking fingers extending from their faces are arranged for movement toward and away from each other under the influence of pneumatic pistons. A broomed end of a strand having a clamp secured a predetermined distance from the end is positioned vertically between the dies so that as the dies move toward each other the broomed ends of the wires are bundled together into pseudo strand form by the intercalated fingers and then held by the dies while an end fitting is slipped over the end of the strand. The dies are then opened and the fitting is slid down over the strand to rest upon the face of the clamp in predetermined alignment for securing to the strand.

3,556,169
APPARATUS FOR COILING LAMP FILAMENT SUPPORTS
Joe B. Yoder, Mayfield Heights, Ohio, assignor to General Electric Company, a corporation of New York
Filed Feb. 13, 1969, Ser. No. 798,979
Int. Cl. B21f *15/04*, *45/00*
U.S. Cl. 140—71.6 4 Claims



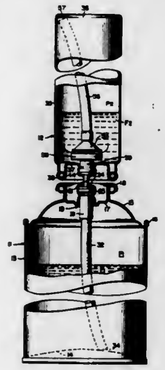
The apparatus comprises a coiling spindle having an axial passageway for periodic movement therethrough of a filament containing a mandrel. The free end of a supply of support wire is temporarily clamped in a slot at the periphery of the spindle which has a die at its end face such that, upon rotation of the spindle, the wire is coiled first around the periphery thereof and then around a generally spiral track in said end face and then down between turns of the filament. A reversing finger member then urges the wire back in the opposite direction to form a locking overwind which is then severed from the supply of support wire. A pressure finger member is then pressed against the outer helical turns on the spindle to partially set the turns and minimize opening or offsetting thereof relative to the filament.

3,556,170
MOORING AND FLUID-TRANSFERRING METHOD
Peter J. Bily, Sunset Beach, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Original application Jan. 10, 1964, Ser. No. 336,906, now Patent No. 3,472,293. Divided and this application July 7, 1969, Ser. No. 839,362
Int. Cl. B63b *21/50*
U.S. Cl. 141—1 6 Claims



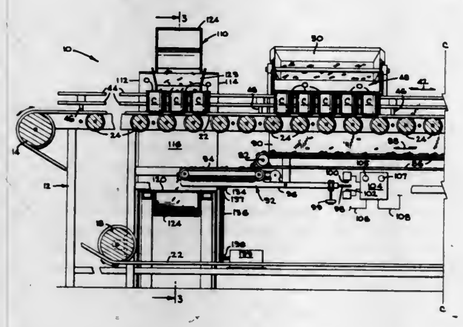
An apparatus and method for mooring a floating marine vessel from a single offshore point, and for transferring fluid between the vessel and an onshore location. The apparatus includes an elongate rigid fluid-conducting conduit pivotally anchored at one end to the ocean floor, and connecting at the other end to a pallet that is raised and secured to the hull of the vessel, and articulated loading arms to conduct fluid from the pallet to the vessel's manifolds. The method includes aligning the vessel with the conduit, raising and securing the pallet to the vessel's hull, and connecting the loading arms to the manifolds.

3,556,171
METHOD AND APPARATUS FOR TRANSFERRING THE CONTENTS OF AEROSOL TYPE CONTAINERS
William Jerome Gangwisch, and John James Kehoe, Highland Park, N.J., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware
Filed Nov. 18, 1968, Ser. No. 776,466
Int. Cl. B65b *1/04*, *3/04*
U.S. Cl. 141—3 6 Claims



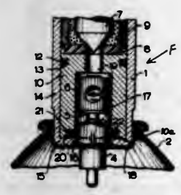
A relatively large aerosol-type container contains compatible liquid ingredients of a formulation such as a hair spray blend and a charge of inert gas under pressure. A small aerosol-type container contains an incompatible or unstable mixture forming liquid ingredient at a pressure higher than the total pressure within the large container. This latter ingredient may be any other ingredient such as a perfume desirably segregated until the time of use. The containers are coupled together with the valves of both held open so that the small container ingredient is transferred into mixture with the ingredients in the large container. Then the small container is purged of any remaining gas, and the containers are recoupled to transfer perfumed mixture into the small container which can be used in the conventional manner by the consumer. The small container has a passage in its housing between the interior of the container and that of the valve that is automatically closed while the container is upright and opened while the container is inverted.

3,556,172
METHOD OF AND APPARATUS FOR FILLING CONTAINERS
Samuel A. Mencacci, Wilrijk, Antwerp, Belgium, assignor to International Machinery Corporation, St. Niklaas-Waas, Belgium, a Belgian Corporation.
Filed June 20, 1968, Ser. No. 738,638
Int. Cl. B65b *1/20*
U.S. Cl. 141—11 7 Claims



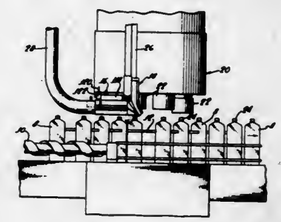
Containers are filled with a particulate product at a filling station and spillage of the produce is collected, conveyed to a point upstream from the filling station, and directed to flow towards the open ends of empty containers at a rate insufficient to fill a single container before that container is conveyed out of range for filling with spillage.

3,556,173
FILLING HEAD FOR PRESSURIZED FLUID
Hans Grothoff, Valbert/Westfalen, Germany, assignor to Carl Gisbert Siebel, Duesseldorf, Germany, by mesne assignments
Filed July 3, 1968, Ser. No. 743,270
Claims priority, application Germany, July 5, 1967, 1,551,620
Int. Cl. B65b *31/00*
U.S. Cl. 141—20 11 Claims



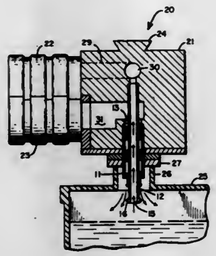
A filling head for admitting a pressurized fluid into a container having a projecting inlet portion. A sleeve member communicates at its rear end with a source of pressurized fluid and at its front end is provided with a radially inwardly extending annular flange. An insert is fluid-tightly received in the front end portion and has a recess facing the opening of the flange. The recess may be placed into communication with the source of pressurized fluid. The insert has an annular front face abutting against the flange and the recess includes a wider forward portion adjacent the front face and a narrower rearward portion dimensioned to accommodate the inlet portion. The forward portion is bounded by an inner annular surface and a circumferential surface extending therefrom to the front face and the surfaces define with the flange a radially inwardly open groove. An annular sealing member of elastically deformable material is received in the groove and the inlet portion of the container to be filled will extend through the annular sealing member into the recess. A plurality of kerfs are provided at least in the annular surface and communicating with the recess so that, when pressurized fluid is admitted into the latter, some of this pressurized fluid will enter into the kerfs and elastically compress the sealing member into sealing engagement with the inlet portion of the container to be filled.

3,556,174
APPARATUS FOR EXCHANGING ATMOSPHERE IN THE HEADSPACE OF A CONTAINER
Walter P. Gibble, La Habra, Calif., and Frank R. Holmes, Long Beach, Calif., assignors to Hunt-Wesson Foods, Inc., a corporation of Delaware
Continuation-in-part of application Ser. No. 589,952, Oct. 27, 1966, now abandoned. This application Dec. 21, 1967, Ser. No. 692,441
Int. Cl. B65b *31/04*
U.S. Cl. 141—69 25 Claims



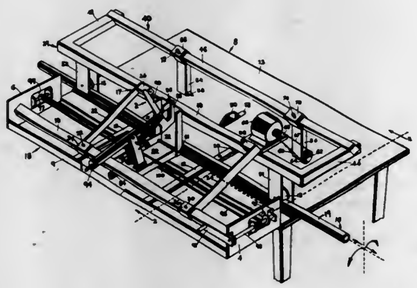
Apparatus for removing contaminant or reactive headspace gases from bottles or other containers. The apparatus provides means for directing a downward flow of cryogenic inert gas into the path of container movement. Frosting of the upper portion of the container and of the apparatus is prevented by means of enclosing the cold gas flow with a peripheral blanket of ambient anhydrous inert gas. The various embodiments of the apparatus of this invention provide means for directing the central flow of inert gas in the form of a jet or a direct stream of the gas. In one embodiment of the apparatus of this invention a nozzle is provided for directing a jet of cryogenic gas directly into the path of gas flow and means are provided for forming a puff of cryogenic gas around the jet. In this embodiment a heating mechanism is mounted on the nozzle to prevent frost formation thereon. In another embodiment means are provided for directing a central flow of cryogenic inert gas downwardly and for surrounding this cryogenic inert gas with a peripheral flowing blanket of ambient substantially dry inert gas to prevent frosting. This peripheral flow of ambient inert gas surrounds the central flow of cryogenic inert gas and substantially isolates the central flow from the atmospheric air. The apparatus may also be provided with a sloping rear wall for accommodating a cap chute and with means for purging reactive gases from the cap immediately prior to positioning the cap on the container and sealing thereof.

3,556,175
LIQUID FILLING APPARATUS
Alby H. Wolf, Minneapolis; Darreld L. Schreader, Inver Grove Heights, and Edward G. Schaumburg, Oakdale Village, Minn., assignors to Gould-National Batteries, Inc., St. Paul, Minn., a corporation of Delaware
Filed Nov. 12, 1968, Ser. No. 774,914
Int. Cl. B65b 3/04
U.S. Cl. 141—285 6 Claims



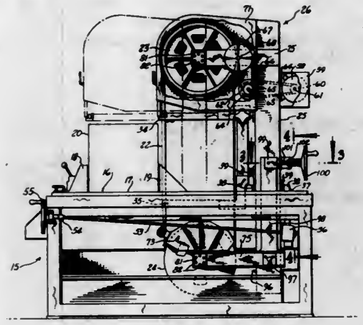
A liquid filling apparatus having an annular passage for supplying liquid and a cylindrical center tube for discharging the excess liquid.

3,556,176
COPYING DEVICE
James H. Harding, Hammond, Ill.
Filed May 16, 1969, Ser. No. 825,192
Int. Cl. B23b 3/28
U.S. Cl. 142—11 10 Claims



A wood-turning copying device to be used in combination with a cutting saw for duplicating the design of a wood-turning pattern which includes a frame for mounting to a table of a circular saw, a wheeled carriage capable of moving horizontally along and pivotally about a track mounted longitudinally across the frame, a finger copying assemblage mounted to the rear section of the carriage for tracing a pattern design held by two adjustable extensions extending from the frame and two opposing revolving centers mounted to the front section of the carriage for holding therebetween a wood piece in cutting contact with the cutting saw, the nature of the cut being in direct response to the tracing action of the finger assemblage.

3,556,177
TILTABLE HEAD BAND SAW MACHINE
Charles E. Cleland, Minneapolis, Minn., assignor to Continental Machines, Inc., Sarage, Minn., a corporation of Minnesota
Filed Nov. 28, 1967, Ser. No. 686,223
Int. Cl. B27b 13/04
U.S. Cl. 143—24 10 Claims



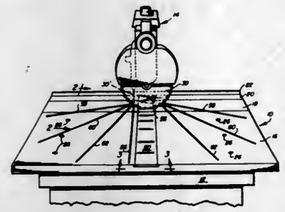
Turning of a hand wheel at the front of a vertical head band saw machine tilts the column thereof on coaxial trunnions which are journaled in bearings on the rear of the saw carriage. The upper and lower saw pulleys are disposed in the plane containing the column tilt axis, with their axles normal to said plane and supported at zones equidistant therefrom by column carried arms that embrace each pulley. One end portion of each axle is detachable to enable a saw band to be trained over its pulley. A motor drives the upper pulley, and band tension is adjusted by bodily movement of the lower pulley, which is weighted to act as a flywheel.

3,556,178
MACHINE FOR DIVIDING WOODEN PARTS INTO INDIVIDUAL CHANNEL-SHAPED ELEMENTS
Walter Witschnig, Hofsteigasse 26, Schwarzach, Vorarlberg, Austria
Filed July 9, 1968, Ser. No. 743,352
Claims priority, application Austria, July 13, 1967, 6562
Int. Cl. B27b 5/12
U.S. Cl. 143—85 24 Claims



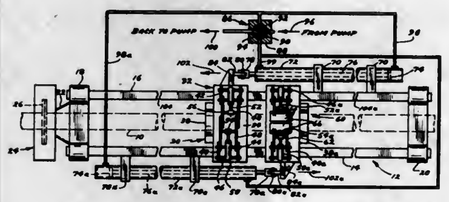
A machine for dividing wooden bodies into channel-shaped elements characterized by the use of a pair of guide ledges on a support surface to fit in each kerf to guide said bodies through said machine and kerf filling elements corresponding to the shape of the kerf cut by the preceding saw cylinder and loading means to urge said bodies toward said support surface.

3,556,179
SAW TABLE FOR RADIAL ARM SAW
David Alexander Haile, Marinette, Wis., assignor to Rodman Industries, Inc., St. Paul, Minn., a corporation of Minnesota, by mesne assignments
Filed July 19, 1968, Ser. No. 746,129
Int. Cl. B27b 27/04
U.S. Cl. 143—132 9 Claims



A saw table for a radial arm saw of relatively high density sawable material is provided with an insert of relatively low density material in such a position as to be cut by the saw when in its several rip positions. Additionally, the several segments of the table are provided with cooperating tongues and grooves to maintain the segments flat.

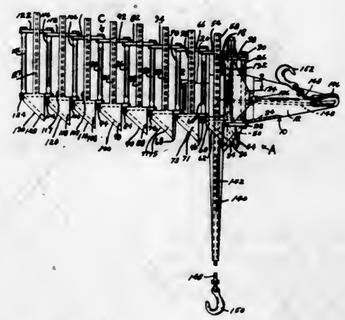
3,556,180
APPARATUS FOR PROCESSING FELLED TREES
James F. Jones, Roscoe, Ill., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin.
Filed Aug. 30, 1968, Ser. No. 756,644
Int. Cl. A01g 23/02
U.S. Cl. 144—2 2 Claims



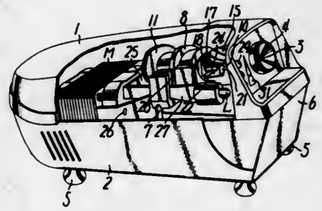
A grapple and delimbing head travel in opposite directions. The grapple feeds or advances a felled tree in the direction of a shear mechanism and the delimbing head moves in an opposite direction to remove the branches from the tree.

3,556,181
DEVICE FOR DELIMBING FELLED TREES
Eino J. Jouppi, Isabella, Minn.
Filed July 25, 1968, Ser. No. 747,707
Int. Cl. A01g 23/02
U.S. Cl. 144—2 12 Claims

A main frame having an extension together with a flexible carriage connected at the inner end to the main frame and having a multiplicity of cutting blades carried thereby and cable means carried by the main frame and the extension for holding the carriage substantially encompassing a felled tree in intimate and pressing contact whereby the blades sever limbs of a tree pulled through the carriage together with means for anchoring the holding means.



3,556,182
ELECTRIC PENCIL SHARPENER
Satoshi Tanigami, Tokyo, Japan, assignor to Elm Industry Company, Limited, Tokyo, Japan, a corporation of Japan
Filed Apr. 21, 1969, Ser. No. 817,793
Claims priority, application Japan, Apr. 23, 1968, 43/32754
Int. Cl. B43l 23/06
U.S. Cl. 144—28.5 3 Claims

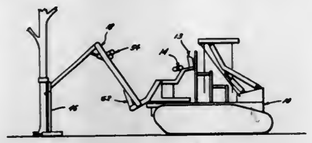


An electric pencil sharpener comprises a cylindrical cutter and a rotary shaft having a pencil-feeding hole. A slider is disposed at the rear inner portion of the hole and connected with a rod extending through an axial hole in the rear portion of the shaft and adapted to be moved in axial direction integrally with the slider. The rear end of the rod projecting from the shaft is kept in contact with a pivoted operation plate. As the plate is moved backward by the point of pencil lead which is being sharpened, a lamp on the arm of the plate is moved upward. The degree of sharpness of the lead is indicated by the position of upwardly moving light which can be inspected through windows in the front panel.

3,556,183
TREE HARVESTER
Thomas N. Busch, Daphne, Ala., and Cyrus E. Hoadley, Olla, La., assignors to The Youngstown Sheet and Tube Company, Youngstown, Ohio, a corporation of Ohio.
Filed May 25, 1968, Ser. No. 739,766
Int. Cl. A01g 23/02
U.S. Cl. 144—34 14 Claims

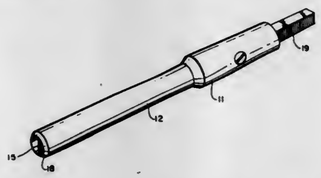
This patent discloses a tree harvester in which the tree is engaged by an articulating boom, felled by a fell shear on the

boom and fed into a buck shear on the machine which bucks the tree into sections which are stored in a sling on the



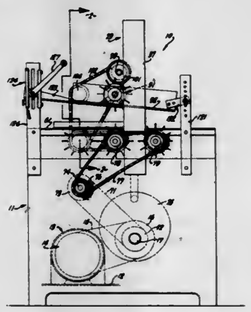
machine. After the sling is filled, the machine deposits the sections at a pickup location.

3,556,184
SHOCKPROOF SAFETY SCREWDRIVER
Theodore R. Wagner, 257 Lansing St., Aurora, Colo. 80010
Filed Nov. 8, 1968, Ser. No. 774,322
Int. Cl. B25b *15/00*
U.S. Cl. 145—50 **4 Claims**



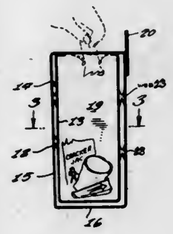
The metallic tool to be protected against electrical shock in its use has a square inner end having a loose working fit in a square bore in the inner end of the plastic protective tubular body, and a coiled compression spring is caged between the inner end of the bore and the head on the blade. The spring is given a preload compression and subjected to further compression by a square drive shank of plastic material assembled behind the square head in the bore and retained by a crosspin extending transversely through a slot in the shank and mounted in the body. The blade is normally in retracted position in the body and arranged to be centered with respect to the work by entering it in the forward end of the bore, the blade being then pressed forward for connection with the work.

3,556,185
MEAT SLICING MACHINE
Alfred Lykkeberg, 2507-22nd Ave., San Francisco, Calif.
Filed Jan. 29, 1969, Ser. No. 795,112
Int. Cl. B26d *1/06, 4/46*
U.S. Cl. 146—153 **6 Claims**



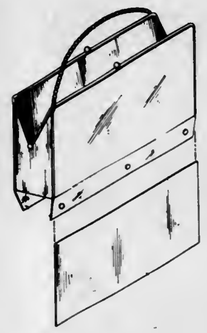
An improved machine for the simultaneous multiple cutting of meat into slices incorporating in addition to a multiplicity of movable blades or saws a plurality of spiked rollers for the feeding of chunks of meat which may include bone into such blades or saws. The invention is particularly adapted for easy feeding and removal of meat and ready cleaning of the machine without the necessity of removing any portions thereof.

3,556,186
INFLATABLE BAG
Gerard Besthorne, Winfield Park, N.J. (Box 376 Tennert Road, Morganville, N.J. 07751)
Filed Oct. 18, 1968, Ser. No. 768,870
Int. Cl. B65d *31/02*
U.S. Cl. 150—1 **3 Claims**



An inflatable trash bag which may be designed for use in the home, automobile, office or hospital, the bag comprising an inner liner of nonexpandable material and an outer shell of expandable material so to form an airtight air space therebetween, the bag including an air valve so to inflate the air space between the liner and shell and thus make the bag rigid, and the bag including a top wall comprised of a single sheet of expandable material having a central slot for receiving refuse therethrough, and the bag including a tab having an opening for the purpose of hanging upon a securing hook.

3,556,187
LADIES HANDBAGS
Elizabeth J. Speakes, 4901 Seminary Road, Alexandria, Va.
Filed Sept. 25, 1968, Ser. No. 762,577
Int. Cl. A45c *3/06*
U.S. Cl. 150—28 **1 Claim**



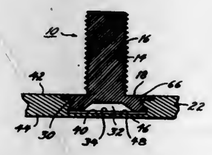
A ladies handbag having a transparent covering and removable decorative panels inserted between the covering and sides of the handbag.

3,556,188
CREDIT CARD HOLDER
Philip S. Thomas, 11655 Fox Hall Lane, Florissant, Mo.
Filed Apr. 4, 1969, Ser. No. 813,419
Int. Cl. A45c *11/18*
U.S. Cl. 150—39 **11 Claims**



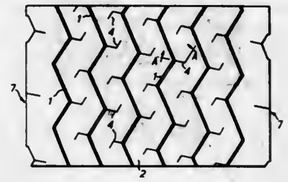
The credit card holder includes a string of independent, transparent envelopes interconnected by flexible tapes. The tape arrangement permits the envelopes to hang vertically and by rotating the upper end envelope laterally through a half turn, each of the successive depending envelopes is rotated in sequence so that front and rear faces are juxtaposed throughout the string. The tape arrangement also permits the folding of the envelopes into a compact, closed condition in which each envelope may be rotated about a common end and the faces of each envelope may thereby be viewed consecutively. A cover holds the envelopes together in the folded condition and facilitates manipulation of the upper end envelope in the vertically extended condition.

3,556,189
STUD
Richard B. Ernest, Richboro, Pa., assignor to Penn Engineering & Manufacturing Corporation, Danboro(Doylestown), Pa., a corporation of Delaware
Filed Apr. 16, 1969, Ser. No. 817,620
Int. Cl. F16b *39/00*
U.S. Cl. 151—41.73 **13 Claims**



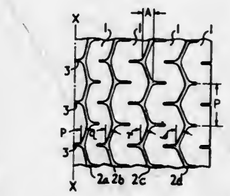
A fastener or the like is secured to a thin panel having a blind hole between its surfaces. The fastener or the like includes a head and a shank, the head including a first annular flange and a second annular flange of smaller radial extent than said first annular flange and defining with said first annular flange an undercut groove into which panel material is displaced by the first annular flange upon assembly to the panel sheet. The blind hole has an open end portion large enough to receive the second annular flange and has its opposite end portion closed by a part of the panel. The head has a recess juxtaposed with the part of said sheeted material closing the blind hole.

3,556,190
PNEUMATIC TIRES
John M. Riches, Castle Bromwich, near Birmingham, England, assignor to The Dunlop Company Limited, London, England, a British Company
Filed Apr. 10, 1968, Ser. No. 720,190
Claims priority, application Great Britain, Apr. 21, 1967, 18351/67
Int. Cl. B60c *11/06*
U.S. Cl. 152—209 **4 Claims**



A pneumatic tire provided with a plurality of generally circumferentially-extending grooves all of which are narrow in width, and some of which are provided along the bases thereof with bulbous channels to increase the tread stability and reduce the rate of tread wear without impairing the tread drainage capacity.

3,556,191
PNEUMATIC TIRES
Iain C. Mills, Birmingham, England, assignor to The Dunlop Company Limited, London, England, a British company
Filed Mar. 8, 1968, Ser. No. 711,653
Claims priority, application Great Britain, Mar. 17, 1967, 12616/67
Int. Cl. B60c *11/06*
U.S. Cl. 152—209 **15 Claims**

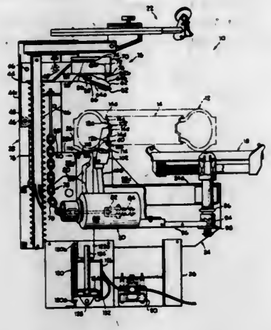


A tread pattern for a low squat (wide oval) pneumatic tire to assist in the rapid removal of water from the contact area of the tire tread on the road surface comprising a series of zigzag grooves arranged such that the various parameters associated with water flow capacity (drainage) e.g. rib width, groove width etc. provide progressively decreased capacity from the midcircumferential plane to the shoulder of the tire.

3,556,192
TIRE CHANGING STAND
Elmer J. Strang, and Billy L. Sorenson, Fort Dodge, Iowa, assignors to The Coats Company, Inc., a corporation of Iowa
Filed Dec. 13, 1968, Ser. No. 783,615
Int. Cl. B06c *25/06*
U.S. Cl. 157—1.28 **13 Claims**

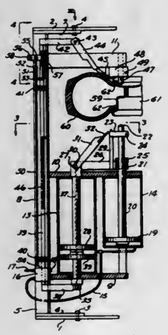
A tire changing stand of the type having a base with a rotatable rim holding table on one end of the base and an upright column on the other end of the base having a movable bead breaker shoe for loosening beads from a wheel rim resting partially on the table, characterized by the provision

of a second movable bead breaker shoe positioned opposite the first movable bead breaker for loosening opposite beads



of a tire sidewall away from a rim bead seat and by means associated with the upper bead breaker shoe for holding the rim against forces exerted by the lower bead breaker shoe.

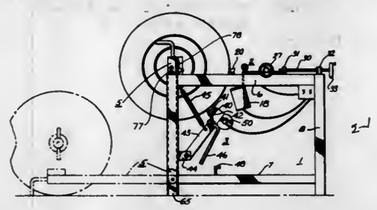
3,556,193
DEVICE FOR LOOSENING THE BEADS OF TIRES FROM A WHEEL RIM
Victor Duquesne, 42-44 Quellinstr, Antwerp, Belgium
Filed Jan. 23, 1968, Ser. No. 699,847
Claims priority, application Belgium, Feb. 3, 1967, 46489
Int. Cl. B06c *25/06*
U.S. Cl. 157—1.28 **7 Claims**



The present device is for separating the beads of a tire from a wheel rim and after one side of the rim is attached to a fixed jaw, a mobile jaw grips the opposite side of the rim whereby the rim is held between both jaws and pressure plates are brought to bear on both sides of the tire near the beads for pressing the tire beads from the rim.

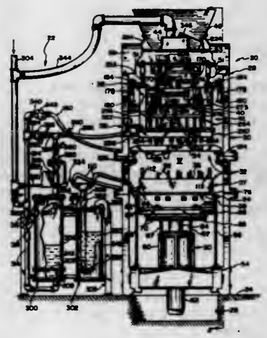
3,556,194
TIRE TRUING DEVICE
John Farrington, 1204 W. Marshall Blvd., San Bernardino, Calif. 92405
Filed May 26, 1969, Ser. No. 827,523
Int. Cl. B29h *21/08*
U.S. Cl. 157—13 **6 Claims**

A tire truing machine capable of use in truing a tire either on a car or off of a car has a removable carriage and lift that carries a bearing block into which a shaft supporting a tire may enter as the carriage and lift is lifted off the floor into its upright position and locked in place in the machine. The



machine is operable from either side to facilitate truing of tires on either side of an automobile.

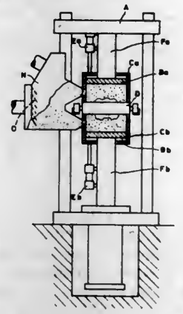
3,556,195
APPARATUS AND METHOD FOR MAKING FOUNDRY SAND ARTICLES
Robert S. Lund, Elmhurst, Ill., assignor to Pettibone Mulliken Corporation, Chicago, Ill., a corporation of Delaware
Filed June 14, 1968, Ser. No. 737,162
Int. Cl. B22c *9/12*
U.S. Cl. 164—16 **12 Claims**



Apparatus for making foundry sand articles such as sand cores includes a mold box having separable box sections defining a mold cavity therebetween, a sand magazine for filling the mold cavity to form a molded article therein, gas manifolds for supplying gas to the mold cavity and exhausting gas therefrom to harden the molded article, stripper pins associated with the gas manifolds and insertable through the manifolds and the mold box sections for stripping the molded article from the sections, and relative movement means for disposing the sand magazine and the gas manifolds alternately adjacent the mold box, for separating the mold box sections, and for inserting the stripper pins through the manifolds and the mold box sections.

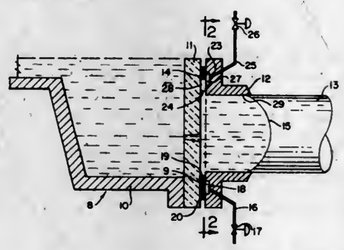
A method of making foundry sand articles in a mold box having separable box sections defining a mold cavity therebetween includes the steps of positioning a sand magazine adjacent to the mold box in communication with the mold cavity, blowing sand containing a hardenable binder from the magazine into the mold cavity to form a molded article therein, separating the mold box and the magazine, positioning gas manifolds adjacent to the mold box sections in communication with the mold cavity, blowing a gaseous hardening agent from a gas manifold into the mold cavity preferably at progressively increasing pressure to thereby harden the molded article while exhausting gas to another manifold, separating the mold box sections, and removing the molded article from the mold box by inserting stripper pins through the gas manifolds and the mold box sections.

3,556,196
METHOD FOR AUTOMATIC PRODUCTION AND TRANSPORTATION OF FLASKLESS SAND MOULDS IN METAL CASTING
Eugen Buhler, Weg zur Walk 96, Burtenbach, Kreis, Germany
Filed Aug. 19, 1968, Ser. No. 753,640
Claims priority, application Germany, Aug. 18, 1967, Apr. 27, 1968, 1,583,526;1,758,245
Int. Cl. B22c *17/00*
U.S. Cl. 164—38 **12 Claims**



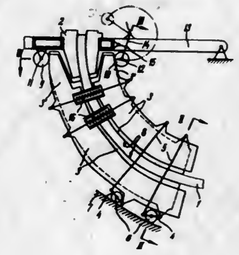
In a method for producing and conveying horizontally divided flaskless sand molds, the molding sand is pneumatically introduced into mold frame cavities formed above and below a laterally moving match plate having a pattern on both sides and terminated by vertically moving mold frames and vertically moving press dies cooperating with said mold frames. The molding sand is pressed by a corresponding relative movement between said press dies and match plate, after which the match plate is separated from the mold halves by a corresponding relative movement between the press dies and the mold frame on one hand, and the match plate on the other. The match plate is then moved laterally into its rest position and the mold is closed, if necessary, after the insertion of cores. The finished closed mold rests on the bottom press die which is substantially flush with the upper edge of the lower mold frame, and is then displaced laterally from the molding position by the match plate as it returns from its rest position. The ejected finished mold is added to a mold train, and the finished mold is at least supported on two sides by supporting means.

3,556,197
APPARATUS FOR LUBRICATING A MOLTEN METAL MOLD
John J. Foye, Spokane, Wash., assignor to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 666,655, Sept. 11, 1967, now abandoned. This application Feb. 5, 1968, Ser. No. 703,151
Int. Cl. B22d *11/12*
U.S. Cl. 164—268 **7 Claims**



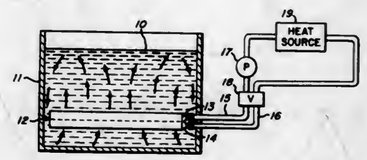
Improved lubrication of an open-ended mold assembly for casting of molten metal into a solidified metal body. The mold assembly includes a mold surface and has a capillary gap in communication therewith. Lubricant is admitted in controlled amounts to the capillary gap to at least one predetermined location thereof in order to effect improved lubrication about the mold surface during casting of molten metal.

3,556,198
DEVICE FOR WITHDRAWING INGOT FROM MOULD OF RADIAL TYPE APPARATUS FOR CONTINUOUS CASTING OF METAL
Vitayl Maximovich Niskovskikh, Ulitsa Festivalnaya, 21, kv. 60; Evgeny Jukhimovich Gelfenbein, Ulitsa 40 Let Oktyabrya, 28, kv. 51, and Vladlen Georgievich Bogomazov, Ulitsa Sotsialisticheskaya 7, kv. 27, Sverdlovsk, U.S.S.R.
Filed Feb. 23, 1968, Ser. No. 707,516
Claims priority, application U.S.S.R., Mar. 6, 1967, 1,140,009
Int. Cl. B22d *11/12*
U.S. Cl. 164—282 **5 Claims**



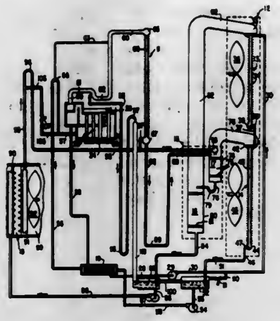
Device for withdrawing an ingot from a mould in a radial-type apparatus for continuous casting of metal including drawbars combined by rows into at least two assemblies embracing the ingot from opposite faces with means for moving the drawbars up and down. Means actuate the drawbars and effect release and gripping of the ingot by the drawbars. Rollers contact the upper portion of each row of each drawbar assembly and guide the drawbars during their up and down movement with the help of the actuating means and provide removal of the upper portion of the drawbars from the ingot.

3,556,199
FREE CONVECTION COOLING METHOD AND APPARATUS
Raymond S. De Groote, Centerville, Ohio, assignor to United Aircraft Products, Inc., Dayton, Ohio, a corporation of Ohio
Filed May 13, 1968, Ser. No. 728,412
Int. Cl. F28d *15/00, 1/02*
U.S. Cl. 165—1 **3 Claims**



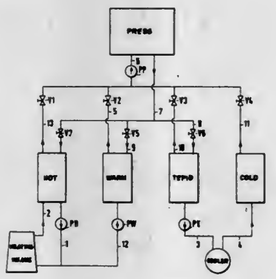
A system of heat transfer utilizing free convection flow of a coolant to lower the temperature of a circulating heated transport fluid, a heat exchanger submerged in a coolant bath being constructed and arranged to obtain the greatest possible temperature-density differential between the circulating transport fluid and environmental coolant productive of strong natural convection currents.

3,556,200
HEATING AND COOLING SYSTEM
Louis H. Leonard, Jr., Dewitt, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Filed Dec. 18, 1968, Ser. No. 784,724
Int. Cl. F25b *15/06, 29/00*
U.S. Cl. 165—2 **4 Claims**



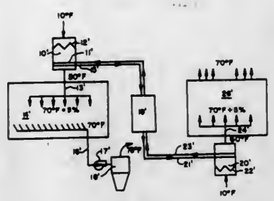
An absorption refrigeration system having a cooling and a heating mode of operation. A generator, an air cooled condenser, a two-stage air cooled absorber, a two-stage adiabatic evaporator and an air conditioning fan coil unit are connected to provide cooling. The system has means for automatically adjusting the concentration of refrigerant and absorbent in accordance with low ambient absorber temperatures. A heating mode of operation is provided wherein absorbent solution is heated in the generator and passed through the fan coil unit back to the generator to supply heat to a space being conditioned.

3,556,201
METHOD AND APPARATUS FOR HEATING AND COOLING PRESSES AND THE LIKE
Wolfgang Sander, Altlussheim, Germany, assignor to Konus-Kessel Gesellschaft fur Warmetechnik m.b.H. & Co. KG, Hockenheim, Germany
Filed Mar. 25, 1969, Ser. No. 810,119
Claims priority, application Germany, Mar. 25, 1968, 1,778,068
Int. Cl. F25b *13/00*
U.S. Cl. 165—2 **17 Claims**



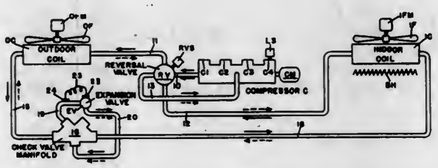
A press or the like, to be heated and cooled alternately, is connected with a circulatory system for supplying either heating or cooling fluid to the press. Heating fluid leaving the press, during a certain period of the heating of the press, is used for subsequent cooling of the press, while cooling fluid leaving the press, during a certain period of cooling of the press, is subsequently used for heating the press. The heating and cooling fluid preferably is a liquid, such as an oil.

3,556,202
AIR CONDITIONING SYSTEM
William F. Stockford, and Joseph M. Gamewell, Salisbury, N.C., assignors to Gamewell Mechanical, Inc., Salisbury, N.C., a corporation of North Carolina
Filed Apr. 25, 1969, Ser. No. 827,455
Int. Cl. F24f *3/14*
U.S. Cl. 165—3 **14 Claims**



The present invention is directed to a practical system for providing year around air conditioning for a manufacturing plant wherein large quantities of air must be exhausted, approximately one-half of which is contaminated with a solid contaminant and one-half of which is contaminated with a fumous contaminant, said portions being exhausted from diverse manufacturing areas. Such contaminated air can neither be recirculated within the area from which it is exhausted, nor can it be used in another area without further treatment. The plant according to the present invention may be heated in the winter and cooled in the summer by a single refrigeration/heating unit which operates much more efficiently than heretofore by the utilization of a heat reclaiming device whereby the incoming air is precooled by the exhaust air in the summer and preheated by the exhaust air in the winter. In addition, the system is enhanced by a cyclone-type dust collector including a rotary drum filter therein which effectively removes the solid contaminants from the air stream and reintroduces the cleansed air for recirculation.

3,556,203
TEMPERATURE CONTROL SYSTEM
William K. Kyle, Staunton, Va., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 17, 1969, Ser. No. 807,610
Int. Cl. F25b *29/00*
U.S. Cl. 165—29 **12 Claims**

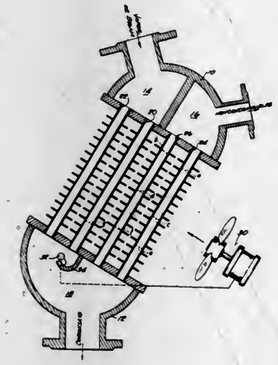


A heat pump is controlled during air heating operation by a two-stage thermostat having its switches biased towards open positions. When the first stage switch closes, it starts the compressor of the heat pump, and adjusts the reversal valve of the heat pump to its heat position so that the indoor coil of the heat pump operates as a condenser coil to heat indoor air. When the second stage switch closes, it turns on a booster air heater, and removes the bias, moving the closing temperature of the second stage switch up to that of the first stage switch.

The heat pump is controlled during air cooling operation by a second two-stage thermostat. When the first stage switch of the second thermostat closes, it starts the compressor with one cylinder unloaded. The indoor coil operates as an

evaporator coil to cool the indoor air. When the switch of the second stage of the second thermostat closes, it loads the unloaded compressor cylinder, and biases the switches of the second thermostat towards closed positions, moving the closing temperature of the second stage switch of the second thermostat down to that of the first stage switch of the second thermostat.

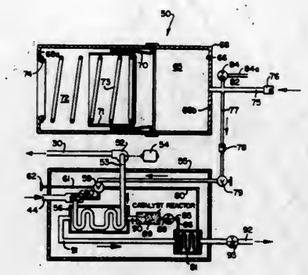
3,556,204
AIR COOLED SURFACE CONDENSER
Manfred F. Dehne, Mequon, Wis., assignor to Perfex Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed May 26, 1969, Ser. No. 827,837
Int. Cl. B60h *1/00*
U.S. Cl. 165—39 **6 Claims**



An air-cooled surface condenser has a supply of cooling air which is varied in accordance with the temperature of the condensate to thereby diminish the possibilities of freezeup at below normal ambient temperatures. The condenser has at least two downflow tubes and one reflux tube with the tubes so arranged that the cooling air travels first over the reflux tube and then sequentially over the first and second downflow tubes, and with the tubes being of such dimensions that condensate is formed in the reflux tube. With this arrangement the air supply can be varied in response to drop in condensate temperature at the first downflow tube and thus assure that the air, before reaching those portions of the first downflow tube where condensate has formed, has a temperature which has been elevated by the latent heat of condensation within the reflux tube.

3,556,205
UNDERWATER HEAT GENERATOR
Van Ness Harwood, Jr., Amherst, N.Y., assignor to The Aro Corporation, Bryan, Ohio, a corporation of Delaware
Filed Dec. 2, 1968, Ser. No. 780,431
Int. Cl. F28b *13/00*
U.S. Cl. 165—46 **12 Claims**

The fuel used is concentrated hydrogen peroxide which has high energy content and has a simple decomposition into water and oxygen. It is stored in an expulsion tank and responsive to control temperature is fed through a warmup heat exchanger to a catalyst reactor where it breaks down into steam and hot oxygen. This passes through a main heat exchanger where it heats a heat transfer medium being recirculated by a pump through the apparatus being served and then again passes through the warmup heat exchanger to preheat the incoming hydrogen peroxide fuel. In a more complex form, the hot water or steam and hot oxygen drive a turbine motivating the pump; the water is removed from the oxygen to permit the latter to be used for breathing purposes;



and a substantially constant buoyance is maintained by an oxygen filled bellows in the expulsion tank.

3,556,206
HOT AIR RADIATOR
Felix P. Trijonis, 6 White Oak Ave, Plainville, Conn. 06062
Filed Oct. 7, 1968, Ser. No. 765,573
Int. Cl. F28f *7/00*
U.S. Cl. 165—80 **2 Claims**

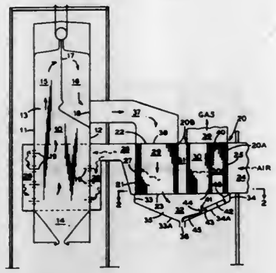


A radiator attachment for conduits conducting heating fluids is provided having an extended heat transfer surface in the form of helically wound fins forming channels to conduct ambient air in heat transfer relation to the heating fluid. The radiator attachment is formed of split plates that enclose the conduit and are held together thereabout by a threadless connector.

3,556,207
DRAINABLE SHIELD FOR HEAT EXCHANGERS
Edward J. Piaskowski, Massillon, Ohio, and Edward W. Kreider, Wadsworth, Ohio, assignors to The Babcock & Wilcox Company, New York, N.Y., a corporation of New Jersey
Filed Nov. 13, 1968, Ser. No. 775,251
Int. Cl. F28f *13/00*
U.S. Cl. 165—135 **8 Claims**

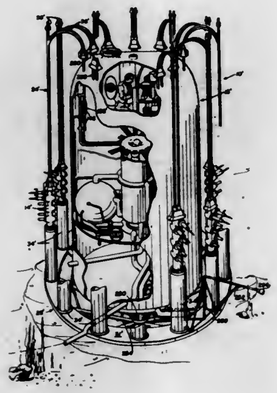
A drainable shield for protecting the metal casing of a hopper from the quenching effect of condensate formed at the cold end section of a heat exchanger used in conjunction with a steam-generating unit. The drainable shield forms a water-shielding cover over the hopper casing and collects the

condensate for discharge through the hopper drain. Flue gases are allowed to flow above as well as below the shield



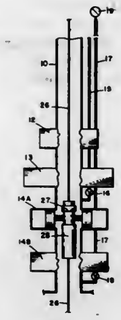
thereby insuring that all of the hopper casing will be maintained at substantially the same operating temperature.

3,556,208
UNDERWATER PRODUCTION SATELLITE
James T. Dean, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
Filed June 27, 1968, Ser. No. 740,521
Int. Cl. E21b *7/12, 33/035*
U.S. Cl. 166—.5 **2 Claims**



This specification discloses a method for the production of subaqueous deposits of fluid minerals through a subsea satellite system. The wells are drilled in a circular pattern through a template on the marine bottom serving also as base upon which the satellite body is installed. The production and control passages of each of the wells are connected to production equipment within the satellite body by separate connector units, independently lowered into place from a surface vessel, to form portions of fluid paths between the passages within the subsea wellheads and the production equipment within the shell of the satellite. Such an installation permits production through the satellite, installed on the template base, after only one of the wells has been drilled and completed.

3,556,209
RETRIEVABLE WIRELINE LUBRICATOR AND METHOD OF USE
Carl E. Reistle, III, Chatsworth, Calif., and Joseph A. Burkhardt, Chatsworth, Calif., assignors to Esso Production Research Company
Filed Apr. 30, 1969, Ser. No. 820,422
Int. Cl. E21b *33/035*
U.S. Cl. 166—.5 **6 Claims**



A lubricator for use in running well tools suspended from a wireline in wells where the wellhead and blowout preventers are submerged and connected to a floating vessel by a marine conductor pipe. The lubricator includes a stuffing box connected to a tubular member. The stuffing box is arranged on the wireline above the connection of the wireline and a well tool suspended therefrom to provide a pressure seal around the wireline and the tubular member surrounds the wireline. The stuffing box and tubular member are lowered on the wireline into a well until the tubular member is positioned adjacent to a blowout preventer. The blowout preventer is closed on the tubular member to prevent vertical movement of the lubricator and to effect a pressure seal around the tubular member. The well tool is then lowered into the well and wireline well work is carried out. Thereafter, the blowout preventer is opened and the lubricator is pulled to the floating vessel as the wireline and well tool attached thereto are retrieved.

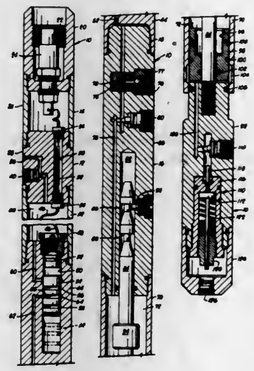
3,556,210
DEEP SEA WELL DRILLING STRUCTURE
Vincent C. Johnson, 10377 Tennessee Ave., Los Angeles, Calif. 90064
Filed May 8, 1969, Ser. No. 823,074
Int. Cl. E21b *7/12, 33/035*
U.S. Cl. 166—.5 **8 Claims**



An underwater well head encasement wherein a long tubular caisson rests on a base on the ocean floor and is provided

with a housing at the top located 100 to 200 feet below the water surface. Hollow diagonal tubes brace the caisson in upright position. Drill guides extend from a chamber in the housing downwardly through the base to accommodate a number of well drilling operations. A closure for the casing is lifted off during the drilling and setting of casings. The closure is replaced after this and a diver can enter the chamber through a manhole and there work on the floor of the housing for installing and manipulating the well head equipment under conditions where the chamber may be either full of water or with the water evacuated.

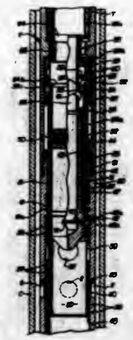
3,556,211
FLUID SAMPLER
Floyd O. Bohn, Houston, Tex., and Forrest V. Porter, Yucca Valley, Calif., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Dec. 9, 1968, Ser. No. 782,045
Int. Cl. E21b *47/00*
U.S. Cl. 166—63 **10 Claims**



A retrievable tool arranged to be moved through a well bore and adapted for taking a sample of fluid contained in the well bore at any selected depth therein. The tool includes a first chamber containing a compressible gas at a pressure lower than the ambient pressure in the well bore where the sample is to be taken, a second chamber that has a piston slidingly positioned therein and containing a liquid relatively above the piston, a first valve for controlling the flow of the liquid from the second chamber into the first chamber, and a second valve for controlling the flow of the sample into the second chamber below the piston. The body of the tool is separable whereby the portion thereof containing the second chamber, that is the chamber containing the sample, can be readily separated and sent to the laboratory for tests. A latching device is provided that retains the second valve in the closed position after the sample is obtained so that the sample is maintained at substantially the ambient pressure where the sample was obtained.

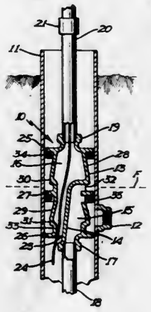
3,556,212
DOWNHOLE DISASTER VALVE WITH DUMP UNIT
Gonzalo Vazquez, Dorking Surrey, England, and John V. Salerni, Whittier, Calif., assignors to Baker Oil Tools, Inc., City of Commerce, Calif., a corporation of California
Filed Aug. 13, 1968, Ser. No. 752,366
Int. Cl. E21b *33/12;* **F16k** *17/168*
U.S. Cl. 166—72 **19 Claims**

Disaster valve apparatus for gas or oil wells in which a well pipe is disposed for conducting production fluid to the top of the well, the disaster valve being located below the top of the well in a control fluid tubing string above a packer sealingly engaged with the well pipe, the disaster valve having a valve sleeve provided with a central bore closed by a releasable plug, control fluid pressure in the control fluid tubing holding the valve open against the pressure of well fluid tending to close the valve. Such disaster valve apparatus including a dump unit located at the top of the well for venting the con-



trol fluid tubing if production fluid pressure in the flow line at the top of the well changes sufficiently to require that the disaster valve be closed.

3,556,213
PITLESS WELL ADAPTER
Dean C. Kramer, Mason City, Iowa, assignor to Martinson Manufacturing Co., Inc., Sheffield, Iowa, a corporation of Iowa
Filed Aug. 26, 1969, Ser. No. 853,094
Int. Cl. E21b *33/03*
U.S. Cl. 166—88 **4 Claims**



A pitless well adapter comprises an elongate body having a fitting in its lower end for connection to the well pipe and having a fitting at the upper end for connection to a pull pipe. The body has two end flanges and a central flange, and the exterior surface between these flanges presents two tapered portions. One tapered portion flares downwardly and outwardly from the upper end flange, while the other tapered portion flares downwardly and outwardly from the central flange. When the adapter is installed, O-ring seals will roll along the flared surfaces and seat within grooves, so that the adapter is mounted in sealed relation within the well casing.

3,556,214
PULLING APPARATUS
Jackson M. Kellner, Midland, Tex., assignor to Esso Production Research Company, a corporation of Delaware
Filed June 9, 1969, Ser. No. 831,439
Int. Cl. E21b *31/00*
U.S. Cl. 166—98 **14 Claims**

An apparatus for pulling retrievable subsurface devices mounted internally of a tubular string. The apparatus in-

cludes a hydraulic motor and a latching assembly. The apparatus is lowered through the tubular string bringing the latching assembly into gripping engagement with the retrieva-

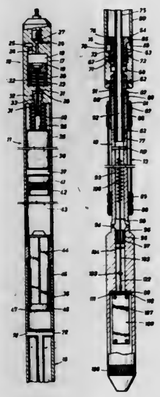


ble device. Actuation of the hydraulic motor imparts an upward pulling force on the device which tends to dislodge the device from its seat.

3,556,215
APPARATUS FOR BRIDGING A WELL CONDUIT

Nevyl G. Owens, Houston, Tex., assignor to Schlumberger Technology Corporation, New York, N.Y., a corporation of Texas

Filed Apr. 22, 1969, Ser. No. 819,515
Int. Cl. E21b *23/06, 33/127*
U.S. Cl. 166—187 **14 Claims**

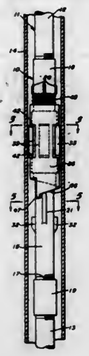


An illustrative embodiment of the present invention in through-tubing bridge plugs includes a body member carrying an expansible bridging element, a pump and receptacle assembly releasably coupled to the body member and adapted to contain a cementitious material that can be displaced from the receptacle to expand the bridging element, a vent passage through the body member to enable fluid movement within the well bore without disturbing the cementitious material as it hardens, and valve means automatically operable after a preselected time delay for closing off the vent passageway.

3,556,216
DEEP WELL PUMP ANCHOR

Elmo L. Condra, 17791 Santa Gertrude's Circle, Fountain Valley, Calif. 90630

Filed Nov. 10, 1969, Ser. No. 875,044
Int. Cl. E21b *23/00*
U.S. Cl. 166—215 **3 Claims**

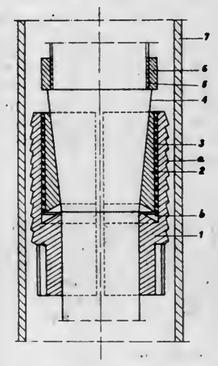


A hollow mandrel connected in a pump tubing string above or below the pump, conical cams formed externally in said mandrel expanding wickered slips slot mounted in a tubular sleeve surrounding said mandrel which sleeve is spring biased downwardly to cause expansion of said slips when said sleeve is rotated clockwise by pump vibration and by gravity action produced by steep helical track on sleeve resting on fixed lug on mandrel. Setting of slips thus anchors pump in casing. Release of slips is effected by lifting of slip mounting sleeve relative to mandrel by action of mandrel lug on helical track when pump tubing is rotated clockwise in preparation for withdrawing pump from well.

3,556,217
DEVICE FOR WEDGING THE PACKER IN WELLS

Vasile Eugeniu Anastasiu and Traian Margarit, Bucharest, Rumania, assignors to I.P.C.U.P. Institutul pentru Proiectare si Cercetare pentru Utilaj Petrolier, Bucharest, Rumania

Filed July 31, 1969, Ser. No. 846,474
Int. Cl. E21b *23/00*
U.S. Cl. 166—217 **8 Claims**



A wedging device of a packer is constituted by an annular rubber member on the outer surface of which are secured circumferentially spaced slip members with external teeth while on the inner surface there are secured circumferentially spaced elements with tapered inner surfaces cooperatively defining a tapered bore. A conical member extends in the bore and can be inserted more deeply therein to expand the wedging device and cause the teeth to engage the inner surface of a surrounding well casing.

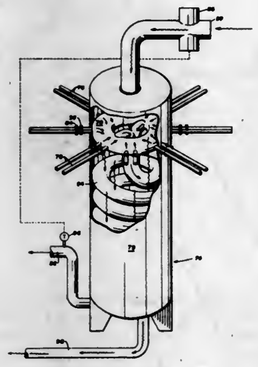
ERRATUM

For Class 166—241 see:
Patent No. 3,556,042

3,556,218
UNDERWATER PRODUCTION SATELLITE

William A. Talley, Jr., Dallas, Tex., and James T. Dean, Dallas, Tex., assignors to Mobil Oil Corporation, a corporation of New York

Filed June 27, 1968, Ser. No. 740,783
Int. Cl. E21b *39/00, 33/035*
U.S. Cl. 166—265 **33 Claims**



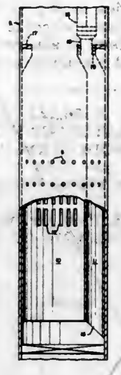
This specification discloses a method and apparatus for the production of subaqueous deposits of fluid minerals through a subsea satellite system. The wells are drilled in a circular pattern through a template on the marine bottom serving also as base upon which the satellite body is installed. The production and control passages of each of the wells are connected to production equipment within the satellite body by separate connector units, independently lowered into place from a surface vessel, to form portions of fluid paths between the passages within the subsea wellheads and the production equipment within the shell of the satellite. Such an installation permits production through the satellite, installed on the template base, after only one of the wells has been drilled and completed. The produced fluids are separated and/or metered within the satellite prior to being transported to storage. Flowline tools are programmed to enter the various subaqueous wells through the connector units. Hydraulic circuitry and controls are provided for pumping the tools and chemicals down through the various wells and for retrieving the tools. Also disclosed is a hot water well utilized in conjunction with the heat exchanger within the satellite for warming the separated-off gases to prevent the formation of hydrates.

3,556,219
ECCENTRIC GRAVEL-PACKED WELL LINER

Robert F. Meldau, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 18, 1968, Ser. No. 760,583
Int. Cl. E21b *43/04*
U.S. Cl. 166—278 **7 Claims**

A liner of increased cross-sectional area inside a casing gravel pack is produced by placing the inside pipe eccentrically in the casing. The casing and liner are each prefabricated with an unperforated side and the unperforated side of the liner is placed adjacent to that of the casing. The perforated sides or areas have an annulus space which is

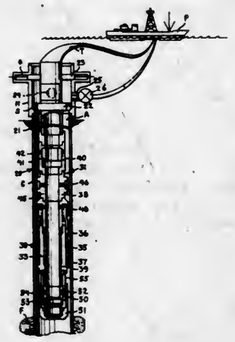


gravel packed. The increased cross section area made thus available is used for gas and oil production and/or separation, accommodation of a pump or other well equipment and thus permits increased production.

3,556,220
WELL TOOLS

Harry E. Schwegman, Plano, Tex., assignor to Otis Engineering Corporation, Dallas, Tex., a corporation of Delaware

Filed Apr. 1, 1969, Ser. No. 811,868
Int. Cl. E21b *33/13, 33/12*
U.S. Cl. 166—290 **25 Claims**

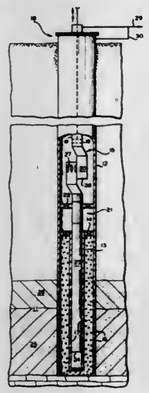


A pluggable well packer and operator means therefor runnable on a pipe string into a well and fluid pressure settable without manipulation of the pipe string to seal off and production test a well formation, and operable for cementing off said formation and plugging said well; said operator means being thereafter removable with said pipe string. The method of treating a well by means of the foregoing is also set forth.

3,556,221
WELL STIMULATION PROCESS
Gerald W. Haws, Denver; Joseph L. Rael, Littleton, and John S. Rhudy, Denver, Colo., assignors to Marathon Oil Company, Findlay, Ohio, a corporation of Ohio
No Drawing. Filed Jan. 6, 1969, Ser. No. 789,355
Int. Cl. E21b *43/25*
U.S. Cl. 166—305 7 Claims

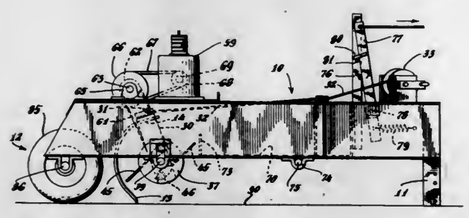
Reduced permeabilities in the vicinity of a well bore caused by polymer solution deposits are improved by introducing into the well bore an aqueous solution having a pH greater than about 8 and containing sodium hypochlorite.

3,556,222
METHOD AND APPARATUS FOR IMPEDING GAS FLOW INTO PRODUCTION WELLS
William B. Lumpkin, and John E. Jennings, Morichal, Venezuela, assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 23, 1968, Ser. No. 785,959
Int. Cl. E21b *43/08*
U.S. Cl. 166—314 8 Claims



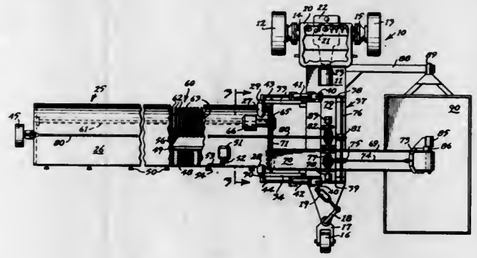
An apparatus for reducing gas production of an oil well having a slotted liner gravel-packed opposite the producing formation. The apparatus includes a tailpipe disposed concentrically in the liner, and a packer for sealing the upper end of the tailpipe. The lower, open end of the tailpipe is located near the bottom of the formation so that an upper gas zone in the formation is sealed off from the tailpipe inlet by oil in the wellbore.

3,556,223
STONE PICKER AND TURF MAINTENANCE MACHINE
Thomas G. Pardy, Stratford, Conn., assignor to Bridgeport Implement Works, Inc., Stratford, Conn.
Filed June 3, 1968, Ser. No. 734,100
Int. Cl. A01b *43/00*
U.S. Cl. 171—85 16 Claims



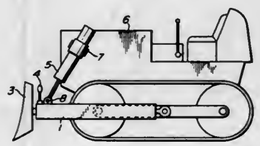
A stone picker and turf maintenance machine capable of removing stone and debris from areas to be seeded with a minimum of initial soil preparation. The machine has a series of curved, individually flexible rake fingers or teeth which are adapted for engagement below the surface of the ground to lift stones to the surface. The stones are then engaged by flexible tines rotating on a reel and are moved along the surfaces of the rake fingers. The entrained soil and soil amendments are aerated, pulverized and sifted through the rake fingers. The stones are moved along by the tines within the curvature of the rake fingers and are deposited in a bin.

3,556,224
BEACH CLEANING APPARATUS
Nelson H. Bogie, Gilbertsville, Ky. 42044
Filed May 23, 1969, Ser. No. 827,361
Int. Cl. A01d *15/04*
U.S. Cl. 171—116 11 Claims



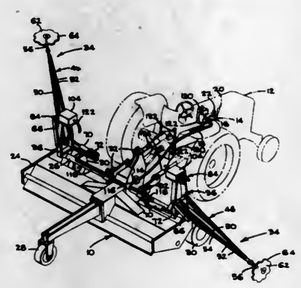
A beach cleaning apparatus including a mobile frame, an elongated collecting housing extended transversely of one side of the frame, including a vibratory screen member and means for engaging, elevating and distributing debris from the beach surface upon the screen member, an endless conveyor mounted transversely of the frame to convey debris from the screen member on one side of the frame to the discharge station on the opposite side of the frame.

3,556,225
AUTOMATIC LEVEL CONTROL SYSTEM FOR EARTH MOVING MACHINES
Atsushi Matsuzaki, Tokyo, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed July 30, 1968, Ser. No. 748,768
Claims priority, application Japan, Aug. 2, 1967, 42/49314
Int. Cl. E02f *3/76*
U.S. Cl. 172—4.5 1 Claim



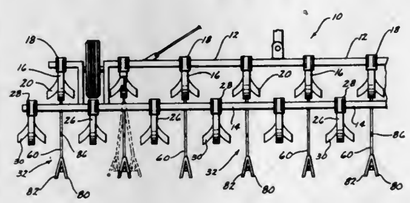
This level control system can effectively be utilized in the case where earth moving machines are employed to smooth and level various courses of soil, gravel etc. That is, the system is so designed as to control automatically the level of working tool of earth moving machine and to actuate the working tool to correct a deviation between the tool level and the desired level.

3,556,226
HYDRAULIC ROW MARKER
Willie F. Brewer, Yazoo, Miss., and Franklyn L. Dahlberg, Minden, La., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Nov. 22, 1968, Ser. No. 778,169
Int. Cl. A01b *17/00, 63/00*
U.S. Cl. 172—130 7 Claims



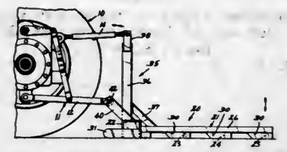
Position indicating furrows are formed by means of a pair of marker discs and arms extended laterally and alternately from either side of a carrier attached behind a tractor during tilling or planting operations. The marker arms and discs are raised hydraulically and automatically latched in the stowed position. Upon release they lower to the working position and are forced against the ground by means of a variable moment loading device. When in the operating position the marker disc and arm are free of hydraulic lifting means thereby enabling them to maintain positive contact with the ground over rough terrain. When employed with marker discs having scalloped rims, the marker apparatus forms clear indicating furrows in hard or trashy soil conditions.

3,556,227
SOIL CONDITIONING DEVICE
Alton O. Homdrom, Ambrose, N. Dak.
Filed Mar. 10, 1969, Ser. No. 805,708
Int. Cl. A01b *49/02*
U.S. Cl. 172—193 9 Claims



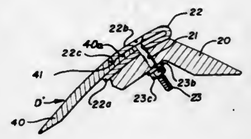
A soil conditioning device for use with shank-type field cultivators having at least front and rear rows of shank members with cultivator sweeps secured to the lower ends thereof. The device is attached to each of the shank members in the front row by means of the cultivator sweep attachment bolts extending through the sweep and through a bracket which is positioned at the rearward side of the shank member. An elongated rod is pivotally secured to the bracket and extends rearwardly therefrom between a pair of adjacent sweeps in the rear row. A V-shaped wing means is mounted on the rearward end of the rod and is positioned rearwardly of the adjacent sweeps so that the said sweeps will throw soil upon the wing means as the cultivator is moved through the field. The wing means modifies the ridge pattern that would otherwise be left by the cultivator.

3,556,228
APPARATUS FOR LEVELING SOIL AND THE LIKE
Orlan H. Mork, 6705 Southdale Road, Edina, Minn. 55435
Filed July 29, 1968, Ser. No. 748,514
Int. Cl. A01b *49/02*
U.S. Cl. 172—199 3 Claims



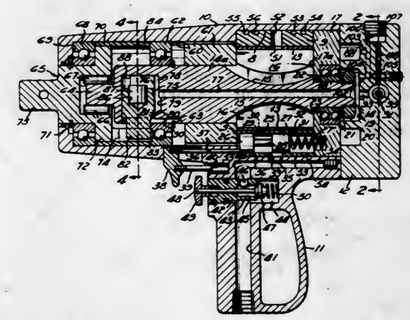
A frame including a plurality of transversely extending ground-engaging members each having a lower surface parallel and in a plane with the lower surface of the remaining members and upstanding beams adjacent the forward edge thereof adapted to be connected to the central link and lift arms of a three-point hitch so that through movement of one of the arms or the central link the orientation of the plane through the lower surface of the ground-engaging members can be altered to make any desired angle with the surface of the ground.

3,556,229
REPLACEABLE BLADE COMBINATION FOR DUCKFOOT CHISEL
Roy I. Hawkins, Pierce, Colo., assignor to Hawkins Mfg. Inc., Pierce, Colo., a corporation of Colorado
Filed Aug. 12, 1968, Ser. No. 752,017
Int. Cl. A01l *39/13*
U.S. Cl. 172—720 3 Claims



A replaceable blade combination for farming plows in which a single spring-tensioned matrix yoke member is utilized to secure the replaceable blade.

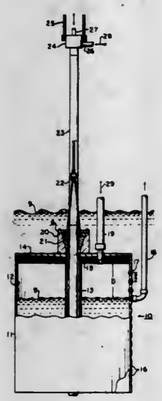
3,556,230
ROTARY IMPACT TOOL
Earl G. Roggenburk, 4120 Behrwald Ave., Cleveland, Ohio
Continuation-in-part of application Ser. No. 636,528, May 5, 1967. This application Jan 13, 1969, Ser. No. 790,799
Int. Cl. B25d *15/02*
U.S. Cl. 172—93.5 18 Claims



Rotary impact tool with torque overload mechanism for stalling the tool automatically in either direction of its opera-

tion. The torque overload mechanism includes a normally-open valve for relieving back pressure behind a centrifugally movable hammer pin on the rotor. This valve closes automatically to stall the tool at a predetermined torque load.

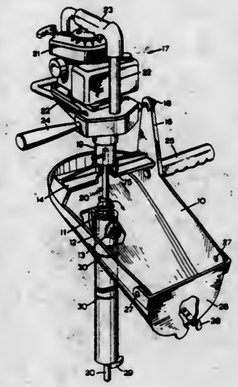
3,556,231
BIT WEIGHT MAINTAINER FOR MARINE EARTH BORING
Homer I. Henderson, 2220 Live Oak St., San Angelo, Tex.
Filed Aug. 30, 1968, Ser. No. 756,453
Int. Cl. E21b 7/12
U.S. Cl. 175—5 2 Claims



A device for use in marine earth boring that supports that portion of the drill pipe weight which is not desired on the drilling bit. The device comprises a large drum, closed at the top and open at the bottom, which drum is placed in the sea. The drum has a central pipe through which the drill pipe and bit passes. The drum is made to have the buoyancy desired by introducing a definite volume of air into the drum. The drum is locked to the drill pipe by means of conventional bowl-and-slips. As the borehole deepens the drum descends with the pipe, and means, manual or automatic, are provided to keep the volume of air constant. The drum is reset for each new length of drill pipe. The device is adapted for either turbodrilling or rotary drilling.

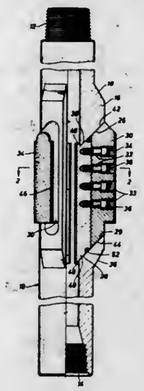
3,556,232
EARTH AUGER
Stephen S. Koziski, 872 Upper Sherman Ave., Hamilton, Ontario, Canada
Filed Dec. 6, 1968, Ser. No. 781,910
Int. Cl. E21b 41/00
U.S. Cl. 175—88 4 Claims

An earth auger comprises an open topped frame having a downwardly sloping floor leading to a discharge end opening having a pivoted closure door. A boss at the bottom of the tray mounts a downwardly extending hollow auger tube. Brackets above the tray mount a motor unit and a thrust bearing. The motor unit engages the thrust bearing and drives a screw auger that extends downwardly through the



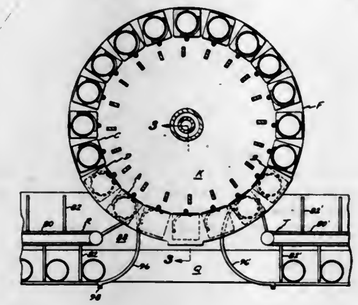
tube; the screw auger has an enlarged lower end so that the hole it cuts is larger than the auger tube.

3,556,233
WELL REAMER WITH EXTENSIBLE AND RETRACTABLE REAMER ELEMENTS
Lafayette E. Gilreath, and Charles H. Pollard, P.O. Box 26171, Houston, Tex.
Filed Oct. 4, 1968, Ser. No. 765,157
Int. Cl. E21b 9/26
U.S. Cl. 175—267 4 Claims



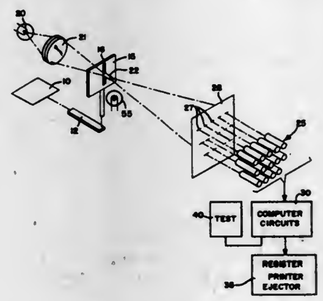
A reamer for use in a drilling string for enlarging, scraping or smoothing a well bore, and having extensible and retractable cutting members operable by the pressure of the drilling fluid circulated through the string during the drilling operation. The cutting members may include a plurality of telescopingly arranged elements movably positioned on the body of the tool for radial movement inwardly and outwardly thereof relative to window openings in the body and having seal forming means positioned to prevent leakage through the openings. The cutting members and body are formed with inwardly and downwardly sloping end faces positioned for coaction to allow the cutting members to move inwardly toward their retracted position, aided by gravity, when the internal pressure in the string is shut off, and the members are also formed with beveled external, upper end faces, positioned for engagement with irregularities in the well bore to move the members toward their retracted positions upon upward movement of the string during the removal of the same from the bore.

3,556,234
UNDERWEIGHT CAN DETECTING AND FILLING APPARATUS
Robert F. Moreno, 946 Bloomwood Road, San Pedro, Calif.
Filed Oct. 27, 1969, Ser. No. 869,796
Int. Cl. G01g 23/18, 15/00, 13/16
U.S. Cl. 177—46 8 Claims



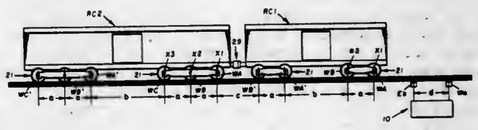
A circular power-driven rotating table with which a number of circumferentially spaced, horizontal platforms are associated, and on which platforms open cans containing both solids and liquids are sequentially delivered. During the time each can is supported on one of the platforms it is weighed, and if underweight, liquid material is automatically added thereto to bring the can up to a predetermined weight. If one of the cans is so far underweight that it cannot be brought up to said predetermined weight within a particular time interval, the apparatus actuates an alarm signal to so indicate.

3,556,235
PHOTOCELL CHECKING CIRCUIT FOR OPTICAL WEIGHING SCALE
Kenneth C. Allen, and Edwin E. Boshinski, Dayton, Ohio, assignors to The Hobart Manufacturing Company, Troy, Ohio, a corporation of Ohio
Filed Sept. 15, 1969, Ser. No. 857,761
Int. Cl. G01g 23/30
U.S. Cl. 177—50 15 Claims



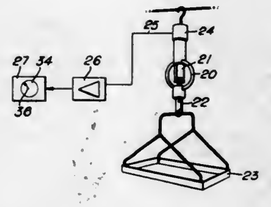
In a computing weighing scale including photoelectric transducers for converting the weight of a commodity into electrical signals, computing means responsive to the output from the photoelectric transducers, and means for indicating the output from the computing means, a testing circuit is included for determining if all of the photoelectric transducers respond properly to illumination. The testing circuit includes means for illuminating all of the transducers in accordance with a predetermined pattern, preferably simultaneously, circuit means for checking each transducer individually for an electrical output indicating that the transducer responds properly to illumination, and means for indicating if any transducer fails to respond properly to illumination. In one embodiment, the transducers are provided with light from the same source as used in the weighing operation while in another embodiment a separate lamp is provided located near the transducers. Photocell checking may be initiated at several different times, such as once during each scale operation, periodically as determined by a counter, whenever the scale reads below a predetermined weight, when the scale is first turned on, or when any change is made in the means for printing the name of the commodity being weighed.

3,556,236
DETECTOR SYSTEMS
William E. Cory, and Raymond B. Wangler, San Antonio, Tex., assignors to Everett L. De Golyer, Jr., and Arthur E. Hamilton, Dallas, Tex., as agents for creditors of Sands Measurement Corp., Dallas, Tex., a corporation of Texas
Filed May 18, 1965, Ser. No. 456,699
Int. Cl. G01g 21/22
U.S. Cl. 177—163 16 Claims



A detector system for detecting movement of railroad cars which has a plurality of wheel actuated switches spaced along a railroad track and which provides a signal each time a railroad car has moved past the switches.

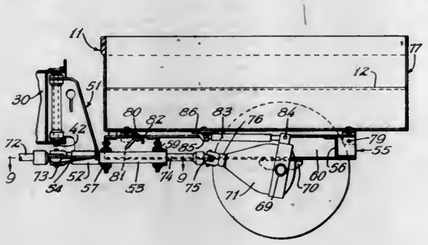
3,556,237
ELECTRICAL WEIGHING DEVICE FOR WEIGHING LOADS SUBJECT TO MOVEMENT
Eric Allison, Anlaby, England, assignor to National Research Development Corporation, London, England
Filed Apr. 22, 1968, Ser. No. 722,968
Claims priority, application Great Britain, Apr. 20, 1967, Aug. 2, 1967, 18244/67;35457/67
Int. Cl. G01g 3/14, 19/00
U.S. Cl. 177—200 12 Claims



The invention concerns apparatus for providing an electrical signal significant of the true weight of a load experiencing vertical accelerations or tilting while being weighed comprising a carrier on which the load is placed during weighing wherein the improvement comprises a load cell through which the apparent weight of the load is transmitted to a support, an accelerometer mounted to be subject to the same

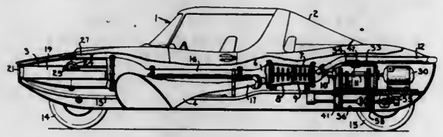
vertical accelerations or tilting as the load, and electrical circuitry in which the accelerometer and the load cell are connected and from which said signal is obtained, the accelerometer being connected to suppress the occurrence in the electrical signal of a component produced by vertical acceleration or tilting of the load being weighed.

3,556,238
LAND AND WATER VEHICLE
William L. Figura, Bruce, Wis.
Continuation-in-part of application Ser. No. 552,118, May 23, 1966, now abandoned. This application July 5, 1968, Ser. No. 750,412
Int. Cl. B60k *17/34*
U.S. Cl. 180—51 **9 Claims**



An articulated vehicle includes a forward section and a rear section, each supported by a pair of axially aligned wheels. A transmission is supported by the frame of the forward section and is connected to drive the wheels of both sections. A motor is mounted on the transmission rearwardly of the vehicle seat. A bracket is pivotally supported on a generally vertical pivot between two vertically spaced bracket plates on the rear of the front section. A generally horizontal sleeve is supported by the bracket and extends through the front of the frame of the rear section to pivotally connect the two sections.

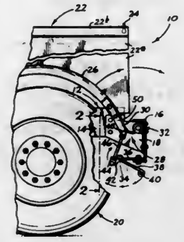
3,556,239
ELECTRICALLY DRIVEN VEHICLE
Joseph W. Spahn, 5007 N. Kensington, Kansas City, Mo.
Filed Sept. 23, 1968, Ser. No. 761,560
Int. Cl. B60l *11/14*; **B60d** *9/00*
U.S. Cl. 180—68 **4 Claims**



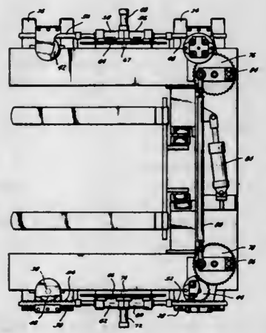
A battery powered automobile includes an air operated turbine fed by front and side air scoops for providing both charging current to the batteries and driving power for the automobile. An auxiliary internal combustion engine is included for use when necessary. Deceleration and wind sensitive controls operate door structure on the front air scoop so that it opens, increasing drag, only under predetermined conditions. Braking energy is utilized to help charge the batteries.

3,556,240
HOOD LIFT APPARATUS IN A VEHICLE
James C. Hartman, 7575 S.E. Johnson Creek Blvd., Portland, Oreg. 97206
Filed Oct. 4, 1968, Ser. No. 765,184
Int. Cl. B62d *25/10*
U.S. Cl. 180—69 **4 Claims**

A vehicle including a frame, and a hood hinged to the frame for swinging between lowered and raised positions. Interposed between the frame and hood is a pedal-operated leverage mechanism which may be operated through the action of a person stepping on a pedal connected to the mechanism to swing the hood from its lowered to its raised position.



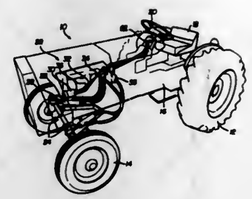
3,556,241
STEERING SYSTEM
Robert W. Mitchell, and Billy J. Dodds, Houston, Tex., assignors to Stewart & Stevenson Services, Inc., Houston, Tex., a corporation of Texas
Filed Oct. 25, 1968, Ser. No. 770,528
Int. Cl. B62d *5/10*, *7/14*
U.S. Cl. 180—79.2 **8 Claims**



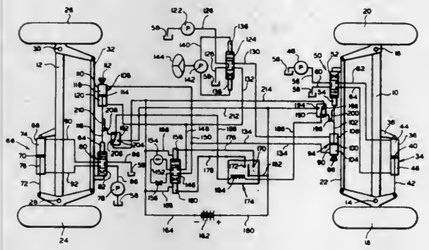
A steering system in which all of the wheels are operated in synchronism for selectively steering a vehicle either one of conventionally, obliquely or rotatably in a circle. A cylinder and piston assembly connected to each wheel for rotating the wheels with the assemblies of the front wheels being connected together and the assemblies for the rear wheels being connected together, first releasable holding means connected between the vehicle frame and the front wheel connected assemblies and a second releasable holding means connected between the frame and the rear wheel connected assemblies, and selective actuated control means for selectively actuating each of the assemblies for conventionally steering by holding two of the wheels parallel and steering the vehicle by rotating the other two wheels in unison, for oblique steering rotating all of the wheels simultaneously, and for rotating the vehicle by positioning all of the wheels in circular alignment for allowing the vehicle to rotate about its vertical axis.

3,556,242
HYDRAULIC STEERING SYSTEM
William R. Dollase, Racine, Wis., assignor to J. I. Case Company, Racine, Wis., a corporation of Wisconsin
Filed Apr. 3, 1969, Ser. No. 813,014
Int. Cl. B62d *5/06*
U.S. Cl. 180—79.2 **6 Claims**

A power steering system including a main pump for supplying pressured main fluid to fluid motors and in which the control valve is actuated by an auxiliary pump which is connected to the steering wheel of a vehicle. The present invention contemplates completely isolating the control valve actuating fluid system from the main fluid control system and connecting the control valve actuating fluid system directly to the fluid motors so that the auxiliary pump can move the fluid motors independently of the pressured main pump system when the pressured main pump fluid system becomes inoperative.

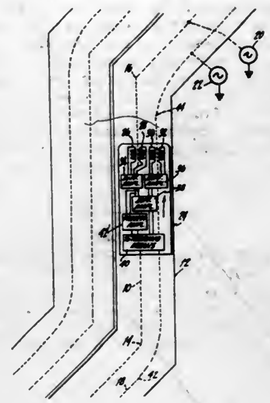


3,556,243
STEERING SYSTEM
Jerome R. Susag; Donald W. York, Battle Creek, Mich., and Donald W. York, Battle Creek, Mich., assignors to Clark Equipment Company, a corporation of Delaware
Filed Apr. 21, 1969, Ser. No. 817,758
Int. Cl. B62d *5/08*
U.S. Cl. 180—79.2 **3 Claims**



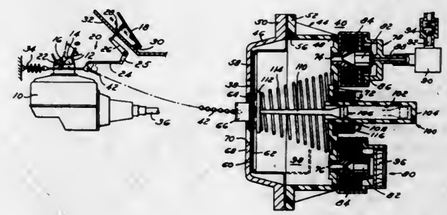
A fluid steering system for a land vehicle having front and rear pairs of dirigible wheels. First and second fluid motors are connected in series with each other and serve to actuate first and second valves, respectively, which control pivotal movement of the front and rear pairs of dirigible wheels. Under certain conditions of nonsynchronization of the front and rear pairs of wheels and pivotal movement of the pairs of wheels in a direction so that the front pair of wheels is lagging the rear pair of wheels, provision is made to bypass fluid around the second fluid motor so that the front pair of wheels can catch up with the rear pair of wheels when the rear pair of wheels is substantially in a centered position.

3,556,244
VEHICLE ROAD GUIDANCE SYSTEM
George W. Gray, Lambertville, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Mar. 15, 1968, Ser. No. 713,473
Int. Cl. B62d *1/24*, *5/04*, *9/00*
U.S. Cl. 180—98 **3 Claims**



A vehicle road guidance system in which two guide conductors are provided along a road and the distance between them is monitored by the vehicle to control the steering mechanism of the vehicle.

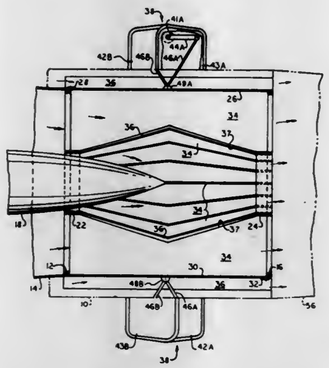
3,556,245
POSITION TO VOLTAGE TRANSDUCER AND SPEED CONTROL SYSTEM UTILIZING SAME
Bernard G. Radin, Oak Park, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Dec. 4, 1968, Ser. No. 781,183
Int. Cl. B60k *31/00*
U.S. Cl. 180—105 **10 Claims**



This disclosure relates to a position sensor and, more particularly, to a position to voltage transducer in which an oscillator is employed having a high input impedance active device, for example, a field effect transistor, coupled to a tank circuit including a center tapped winding or coil. This coil has an opening for the reception of a metallic means, preferably constructed of a ferromagnetic material, attached to a movable mechanical device, the position of which is desired to be sensed. The oscillator produces an alternating voltage output and this output is varied, for example, in a linear fashion, as a function of the positioning of the metallic

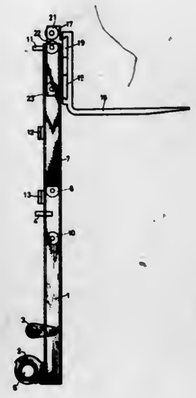
means within the center tapped winding or coil. The output of the oscillator is then rectified, filtered and applied, preferably through an amplifier, to a position indicating meter. This position sensor or position to voltage transducer is particularly suitable for use in an automobile speed control device of the electronic type for producing a feedback signal as a function of the position of a controller means, for example, a throttle of an internal combustion engine in an automotive vehicle. The position of the throttle or controller means may be controlled by a servomotor in the form of a vacuum motor or actuator. The coil mentioned above is positioned on the exterior of the vacuum motor and the movable means takes the form of the diaphragm of the vacuum motor which controls the position of the controller or throttle. The metallic means, preferably constructed of ferromagnetic material, is affixed to this diaphragm. As a result, an output signal is developed from the oscillator which has a magnitude that is a function of the position of the controller or throttle with the minimum amplitude occurring when the throttle or controller is in the idle position and the maximum output occurring when the controller or throttle is at its wide open or full throttle position.

3,556,246
METHOD AND APPARATUS FOR SUPPRESSING THE NOISE OF A FAN JET ENGINE
Jack H. Hilbig, Chula Vista, Calif., assignor to Rohr Corporation, Chula Vista, Calif., a corporation of California
Filed June 16, 1969, Ser. No. 833,513
Int. Cl. F01n *1/14;* **B64d** *33/06*
U.S. Cl. 181—51 **9 Claims**



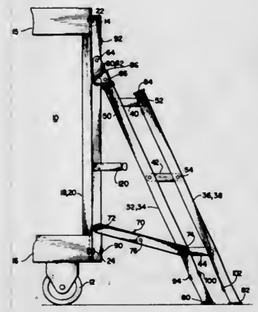
Vanes are mounted at the aft end of the tailpipe of a fan jet engine so that in a first position they form a tubular extension of said tailpipe. A conduit is disposed around the vanes and when the latter are in said first position the conduit defines therewith an annular passage through which secondary air of the engine is discharged. A thrust nozzle is attached to the aft end of the conduit, and when the vanes are in their first position exhaust gas flows in a columnar stream from the channel formed by said vanes and is surrounded at the forward end of the thrust nozzle by the annular stream of secondary air issuing from the passage between said vanes and said conduit. The vanes are alternately hinged at their forward and aft ends to supporting structures, and actuators are provided to rotate the same between the aforesaid first position and a second position wherein their free ends are disposed within the stream of exhaust gas issuing from the tailpipe, in which latter position part of the exhaust gas flows along alternate vanes and into the annular passage through which secondary air is discharged to the thrust nozzle and part of said secondary air flows along the other vanes and into the inner channel through which exhaust gas is discharged to said thrust nozzle.

3,556,247
LIFT TRUCK
Akibumi Shinoda, and Goro Nishi, Chita-gun, Aichi-ken, Japan, assignors to Toyoda Automatic Loom Works Ltd., Toyoda-cho, Kariya-shi, Aichiken, Japan
Filed Oct. 30, 1968, Ser. No. 771,963
Claims priority, application Japan, Nov. 7, 1967, Dec. 14, 1967, 42/71555;42/80227
Int. Cl. B66b *9/20*
U.S. Cl. 187—9 **11 Claims**



A load-lifting apparatus comprising a base, a pair of stationary uprights, a pair of extensible uprights, a load carriage and pairs of upper, middle and lower guide rollers positioned between said uprights and/or between said uprights and said load carriage, said upper and lower rollers cooperating with their respective uprights to resist the forward thrust caused by the load, said middle and lower rollers cooperating with their respective uprights to resist the side thrust caused by eccentric loading.

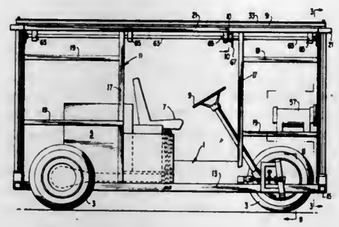
3,556,248
FOLDING LADDER FOR A WORKING CART
Adolphas E. Brown, 4127 W. Glendale Ave., Phoenix, Ariz.
Filed June 13, 1969, Ser. No. 832,897
Int. Cl. E06c *5/00*
U.S. Cl. 182—15 **4 Claims**



A working cart having a frame structure formed of rectangular members to which a pair of vertical members in parallel relation are supported, a set of four ladder-forming members in which two members thereof adjacent to said pair of vertical members are connected at their upper end by a pivot arm, and in which an articulated pivot arm is mounted near the lower end of the pair of vertical members for connecting

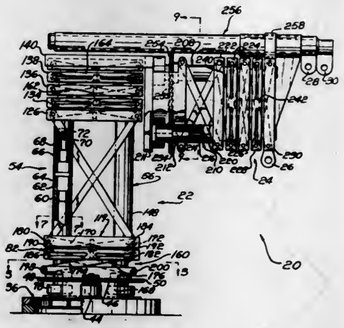
with said two of said four members, and in which a plurality of magnetic elements are disposed in the pair of vertical members for the mating with magnetic elements in said two of said four members for holding the ladder in collapsed position. Steps are disposed between the set of four ladder-forming members to complete the structure of the ladder, and plastic caps may be disposed over the lower ends as well as some of the upper ends of the four members.

3,556,249
MOBILE SCAFFOLD
Clarence G. Jackson, Rte. 1, Autryville, N.C. 28318
Filed Apr. 10, 1969, Ser. No. 815,077
Int. Cl. E04g *1/22*
U.S. Cl. 182—16 **9 Claims**



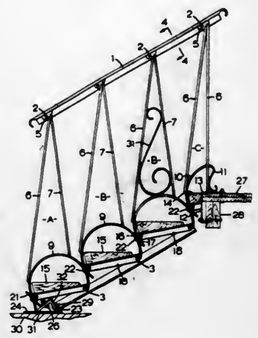
A mobile scaffold comprises a vehicle-mounted platform that can be elevated to a work position and that forms the roof of the vehicle over the driver's seat when the scaffold is not in use. An upper section telescopes within an intermediate section, which in turn telescopes within a lower section, under the control of a special power-driven cable and pulley system.

3,556,250
SUPPORT ASSEMBLY
Anthony A. Miele, 1004 N. Bently Ave., Niles, Ohio 44446
Filed Apr. 17, 1969, Ser. No. 816,969
Int. Cl. E04g *1/22*
U.S. Cl. 182—62.5 **20 Claims**



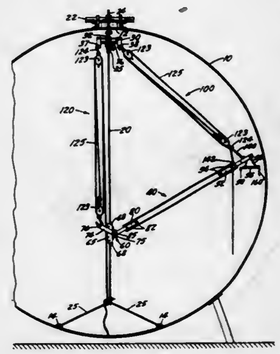
An improved support assembly includes a plurality of extendible units which are operable between a retracted and extended condition. Each of these units includes a plurality of externally threaded sections or tubes mounted in a telescopic relationship with each other and a plurality of internally threaded elements or nuts. Each of the nuts is rotatably connected to one of the tubes and is mounted in threaded engagement with another of the tubes. Frame members are connected to the nuts to retain them against rotation upon rotation of the tubes by a drive assembly.

3,556,251
ADJUSTABLE STAIRCASE STRUCTURES
John I. Whitehead, R.R. 4, Brantford, Ontario, Canada
Filed Mar. 19, 1969, Ser. No. 808,505
Int. Cl. E06c *9/02*
U.S. Cl. 182—93 **13 Claims**



A prefabricated staircase is adjustable to be fitted between floors and comprises at least one parallelogram truss supported at its two lower corners to the two floors by respective supporting members; the truss upper chord member forms the handrail, while the lower chord member supports the stairtreads; a preselected number of vertically-extending panel members extend between the chord members and are pivotally connected thereto; each panel member comprises an arcuate portion engaging the corresponding arcuate portion of the immediately adjacent panel member, these engaging portions being slotted and clamped rigidly together by bolts passing through the slots when adjustment of the staircase is completed; the stairtreads remain parallel and horizontal at all times as the truss is adjusted to fit between the floor levels.

3,556,252
BOOM RIGGING
Milo E. Atkins, Huron, S. Dak. (1125 Selby, St. Paul Park, Minn. 55071)
Filed Sept. 17, 1968, Ser. No. 760,298
Int. Cl. E04g *1/36*
U.S. Cl. 182—128 **8 Claims**

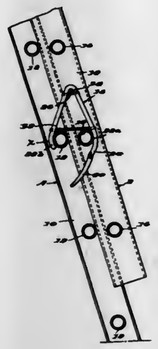


A boom rigging for use in the maintenance of the interior of tanks. It includes a trolley mounted on the end of a boom and supported on a support cable positioned within the tank together with means raising and lowering each end of the boom relative to the support cable.

3,556,253
GRAVITY-TYPE STOP HOOKS

Hyman Kramer, 2764 E 16th St., Brooklyn, N.Y. 11235

Filed Feb. 3, 1969, Ser. No. 795,823
Int. Cl. E06c 7/06
U.S. Cl. 182—210 2 Claims

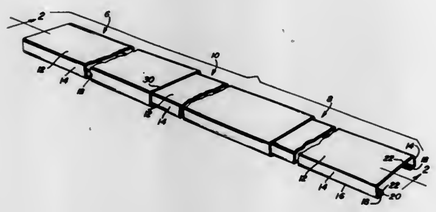


A gravity-type stop hook or catch for securing the fly section of an extension ladder to the base or ground section thereof, comprising a length of wire of appropriate section bent to the shape of an inverted V, the free end portion of the side legs of which are bent towards one another to define facing partial hook formations which are completed by a cross pin or rivet extending between said end portions, just above said partial hook formations. Another cross pin or rivet extends between said legs just below the crotch of the V to define a crotch opening for the reception of bolt or pin for pivotally connecting the stop hook to a ladder side rail.

3,556,254
TELESCOPIC METAL PLANK FOR SCAFFOLDS

Forest J. Lambert, 6729 W. Senior Place, and Philip T. Look, 3955 N. Oketo Ave., Chicago, Ill. 60634

Filed June 20, 1969, Ser. No. 835,121
Int. Cl. E04g 5/08
U.S. Cl. 182—223 6 Claims

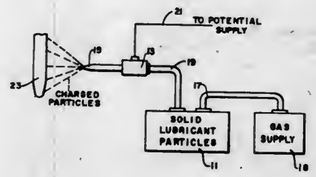


An extensible and retractable sheet metal plank made up of several, more or less, channel-shaped telescopingly connected plank-forming sections made, for example, in lengths of 4 feet, 6 feet or 8 feet and adapted for use when erecting a knockdown-type scaffold. The depending channel-forming flanges are provided with tracks slidingly nested together and having stop lugs which coact in limiting the positions of the fully extended sections.

3,556,255
ELECTROSTATIC APPLICATION OF SOLID LUBRICANTS

George Franklin Lomax, Jr., Shreveport, La., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed June 17, 1968, Ser. No. 737,475
Int. Cl. F16n 15/02; B05b 5/02
U.S. Cl. 184—1 4 Claims



This disclosure describes an apparatus for applying a solid lubricant to the working surface of forge tools. Gas pressure forces the particles through an electrostatic charging chamber wherein the particles receive an electrostatic charge. The charged particles are emitted from a nozzle onto the working surface of the forge tool being lubricated. Because the working surface is formed of a material of opposite electrostatic charge, the charged particles adhere to the surface. An electrostatic coil may be mounted inside of the forge tool to oppositely charge the tool and aid in the application of the lubricant. The electrostatic coil also maintains an attractive effect between the charged particles and the tool when the forge tool is heated to a point where its surface loses its ferromagnetic properties.

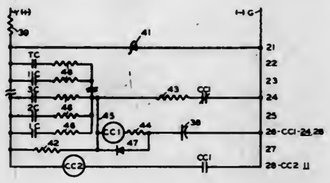
ERRATUM

For Class 187—9 see:
Patent No. 3,556,247

3,556,256
ELEVATOR FALSE CAR CALL CANCELLATION CONTROL

Gordon P. Sprague, Toledo, Ohio, assignor to Reliance Electric Company, Euclid, Ohio, a corporation of Delaware

Filed Apr. 25, 1969, Ser. No. 819,214
Int. Cl. B66b 1/52
U.S. Cl. 187—29 7 Claims



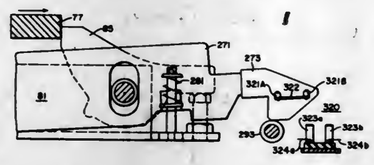
False car call registrations as by the registration of successive calls at a rapid rate by sweeping a hand across the array of call buttons in a car operating panel are sensed as a rate at which the calls are registered exceeding a preset level. When such rate is sensed, the car calls are automatically canceled.

3,556,257
MASTER DOOR OPERATOR HATCH DOOR CLOSURE

William R. Caputo, Jersey City, N.J., and Harry Berkovitz, Glen Rock, N.J., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Aug. 30, 1968, Ser. No. 756,636
Int. Cl. B66b 13/00
U.S. Cl. 187—52 20 Claims

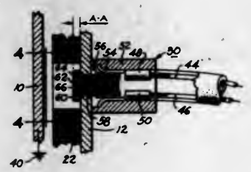
Positive hatch door closing is assured in an elevator master door operator system. If the hatch door does not lock within one second after the close limit switch opens the circuit on the master door operator, the close limit switch is bypassed allowing the master door operator to drive the hatch doors until the lock indication is received. When driving beyond the close limit of the car gate, the counterweight on the vertically movable gate is slowly raised. Means are provided to slowly lower the counterweight thereby returning the car mounted portion of the drive coupling between the car door operator and the hatch door operator to the normal closed position after the hatch door lock indication is received.



3,556,258
BRAKE LINING WEAR INDICATOR

John L. Winge, and Donald W. Howard, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware

Filed Nov. 6, 1968, Ser. No. 773,825
Int. Cl. F16d 66/02
U.S. Cl. 188—1 14 Claims

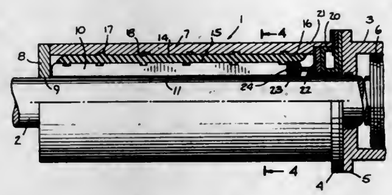


This invention relates to a device providing a warning signal to the vehicle operator when the brake lining has worn a predetermined amount, and more specifically, concerns an electronic control means which is responsive to a probe means inserted in the brake lining for controlling an indicator means that provides a visual indication.

3,556,259
FAIL-SAFE BRAKE WITH ELASTOMERIC ACTUATOR

Earle F. Allen, Norwell, Mass., assignor to Valentine E. Macy, Jr., New York, N.Y., a part interest

Filed Mar. 13, 1969, Ser. No. 807,063
Int. Cl. B65h 59/10
U.S. Cl. 188—67 11 Claims

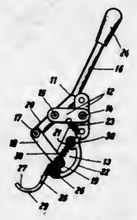


An improved fail-safe type of brake is disclosed for engaging rodlike pistons or other driven members for locking them against movement. The brake has a brakeshoe surrounding the rod with an inner friction surface for engaging the rod. The brakeshoe is formed in a number of sections and has its outer surface spaced from an outer housing. The space between the shoe and housing is filled with a compressed resilient elastomer which is attached to the facing surfaces of the brakeshoe and the housing. The compressed elastomer applies a radially inwardly directed braking force on the rod. Relative axial movement between the brakeshoe and the housing by a hydraulic drive in the brake results in a deformation or thinning of the elastomer and the release of the braking force. When the hydraulic drive in the brake is released, the resiliency of the elastomer returns it to its original compressed braking form. The braking force is thus obtained from the compressed elastomer and the deformation of the elastomer by the application of a hydraulic force releases the brake.

3,556,260
BRAKE DEVICE FOR THE WHEEL OF A CONVEYANCE

Wilhelm Meyer, 3 Kleinbahnhofstrasse, Vlotho(Weser), Germany

Filed Nov. 25, 1968, Ser. No. 778,468
Claims priority, application Germany, Nov. 24, 1967, 1,605,755
Int. Cl. F16d 63/00
U.S. Cl. 188—74 5 Claims

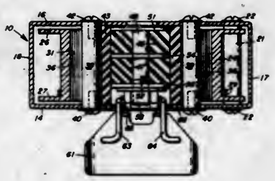


A brake device for the wheel of a conveyance, wherein the brake device is provided with a brakeshoe movable at its upper end about a fixed bearing point and a lever linkage connected to the lower end thereof, the lever linkage having a manual operating handle and being formed as a toggle such that the brakeshoe is maintained in either an operative or an inoperative position as the toggle is moved from one side to the other.

3,556,261
PERSONNEL LOWERING DEVICE AND BRAKE THEREFOR

Billy Gene Pugh, P. O. Box 802, Corpus Christi, Tex. 78403

Filed May 26, 1969, Ser. No. 827,591
Int. Cl. F16d 51/12
U.S. Cl. 188—78 4 Claims

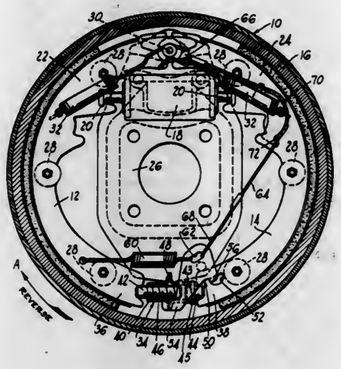


A device of compact size for lowering individuals from elevated positions and its weight is such that it may be carried as a part of survival equipment. The device includes a cable wound on a drum and an adjustable brake mechanism for the drum which enables a pilot whose parachute is entangled in a tree to lower himself safely to the ground.

3,556,262
APPLICATOR ADJUSTER

Edward K. Dombeck, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware

Filed Jan. 15, 1969, Ser. No. 792,903
Int. Cl. F16d 51/52, 65/56
U.S. Cl. 188—79.5 2 Claims

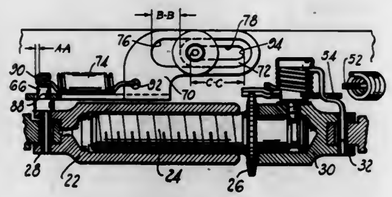


A drum brake including an automatic adjuster mechanism is disclosed which has the usual pair of brakeshoes and an extendible strut operated by rotation of a serrated wheel disposed between the ends of the shoes. An adjuster lever which engages the serrated wheel includes a tab which extends through a D-shaped opening provided in one of the shoes. The D-shaped opening provides a substantially flat sliding surface and an arcuate camming surface in the brakeshoe. The camming surface urges the tab into engagement with the sliding surface when the adjuster functions normally, but permits the adjuster lever to slide in the opening when excess torque is applied to the lever when the adjuster mechanism malfunctions.

3,556,263
AUTOMATIC BRAKE SHOE POSITIONER MECHANISM

George F. Wieger, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware

Filed Jan. 16, 1969, Ser. No. 791,617
Int. Cl. F16d 51/52, 65/56
U.S. Cl. 188—79.5 5 Claims

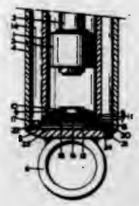


A drum brake is disclosed which includes a mechanism that properly positions the brake shoes with respect to the drum to maintain the proper clearance between the shoes and the drum. The mechanism includes a linkage slidably mounted on the fixed support and connected to one of the shoes so that movement of the shoes in excess of a predetermined amount slides the linkage with respect to the support. The linkage includes a pair of members which move together as a unit during forward braking but which move relative to each other during reverse braking to insure that the brake shoes are repositioned during forward braking only.

3,556,264
FOOT VALVE ASSEMBLY FOR SHOCK ABSORBERS

Arie Adrianus De Koning and Kornelis Korstiaan Karel De Koning, Oud-Beijerland, Netherlands

Filed Sept. 11, 1968, Ser. No. 759,094
Claims priority, application Netherlands, Sept. 22, 1967, 67/12,962
Int. Cl. F16f 9/34
U.S. Cl. 188—100 4 Claims

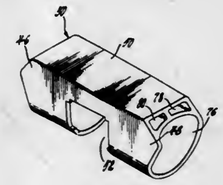


A hydraulic telescopic shock absorber including a cylinder and a piston with a piston rod mounted for movement therein including the provision of means which allows a shock absorber which is intended to be built in vertically to be used horizontally and even at a negative angle relative to the horizontal.

3,556,265
DISC BRAKE CALIPER HOUSING

Horacio Shakespear, Troy, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware

Filed Oct. 1, 1968, Ser. No. 764,261
Int. Cl. F16d 55/224
U.S. Cl. 188—73.3 6 Claims



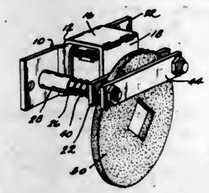
A disc brake caliper housing is made from an extruded pipe by cutting the pipe into segments and transversely notching each segment to provide space for receiving the disc to be braked and for mounting the brake pads. The pipe cross section pattern provides suitable openings for mounting wheel cylinder assemblies, for cooling, and for weight reduction.

3,556,266
CALIPER BRAKE

Richard H. McCarthy, Milwaukee, Wis., assignor to Stearns Electric Corporation, Milwaukee, Wis., a corporation of Wisconsin

Filed Oct. 31, 1968, Ser. No. 772,317
Int. Cl. B60t 13/04; F16d 55/22
U.S. Cl. 188—171 5 Claims

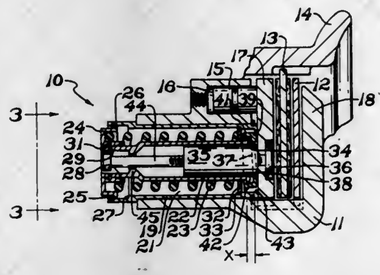
Guide bolts support one or more brake plates and also support pressure springs which bias the plates toward each other and into engagement with one or more intervening brake discs. The guide bolts connect to a solenoid frame which provides a flux path and is centered between the bolts to support the winding and to guide an armature which is centered in the plane of the bolts and attached centrally to the first of the caliper brake plates for the retraction thereof against the bias of the springs when the solenoid is energized, whereby energization of the solenoid is energized, whereby energization of the solenoid releases the brake. A second like unit used in a diametrically opposite location provides a balanced supplement to the braking action of the first unit.



3,556,267
BRAKE RETRACTOR MECHANISM

James A. Hall, Vaudalie, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York

Filed May 5, 1969, Ser. No. 821,728
Int. Cl. F16d 65/54, 55/20
U.S. Cl. 188—196 5 Claims

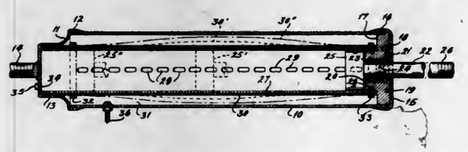


A brake retractor assembly in which the automatic adjustment mechanism has a locking plate carried by a sleeve member surrounding the retractor rod and held in tilted locking position during brake retraction and in which the locking plate is automatically moved into unlocked position during brake actuation when the rod is moved beyond the normal brake release clearance distance.

3,556,268
GAS CONTROLLED ORIFICE IN HYDRAULIC SHOCK ABSORBER

Louis P. Fister, St. Louis, and William A. Scheublein, Jr., Ballwin, Mo., assignors to Moog Industries, Inc., St. Louis, Mo., a corporation of Missouri

Filed Jan. 9, 1969, Ser. No. 790,104
Int. Cl. F16f 9/19
U.S. Cl. 188—268 12 Claims

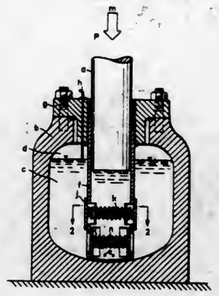


A shock absorber assembly embodying a valveless piston movable in a cylinder having hydraulic fluid therein working against the interior of a flow resisting first control means in the form of a flexible sheath or diaphragm having an exterior second control means in the form of a captured gas cushion for controlling the reaction of the piston upon the hydraulic fluid flow through orifices around the piston, the control means combining to impose resistance to fluid transfer around the valveless piston as the piston moves out of its normal static position in response to loads imposed thereon, whereby there is achieved a predetermined bidirectional resistance to piston displacement for absorbing shock loads.

3,556,269
COMBINED SPRING AND DAMPING DEVICE

Lars-Olof Knutson Norlin, Vallvagen 12, Lidingo, Sweden

Filed June 21, 1968, Ser. No. 738,946
Int. Cl. F16f 9/346
U.S. Cl. 188—281 2 Claims

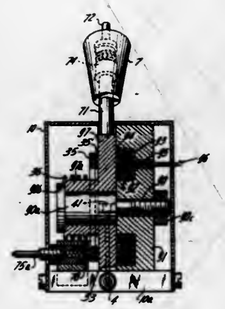


A combined spring and damping device, especially intended to prevent material or persons being damaged or injured as a consequence of jolts when sudden changes in the positions of foundations take place, comprise a piston movable in a cylinder and a liquid and a gas contained in a closed chamber communicating with the cylinder space through one or several openings. The cylinder is provided with at least two check valves having opposite directions of flow. The check valves have their openings in the cylinder casing and have a total area of flow which is substantially as great as or larger than the permanent opening or openings and also substantially as great as or larger than the cross-sectional area of the cylinder.

3,556,270
MANUAL CONTROL FOR ACCELERATOR

Paul Comment, 2892 Courgenay, Switzerland

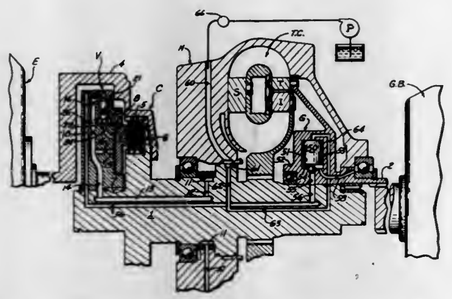
Continuation-in-part of application Ser. No. 691,802, Dec. 19, 1967, now abandoned. This application June 20, 1969, Ser. No. 835,208
Int. Cl. F16d 23/00; G05g 5/06
U.S. Cl. 192—3 15 Claims



In a manual control system for the throttle of a vehicle engine, a control member connected with the throttle is spring biased to a rest position and is movable to selected operative positions by means of a handle which is located convenient to the operator. An electromagnetic brake for holding the

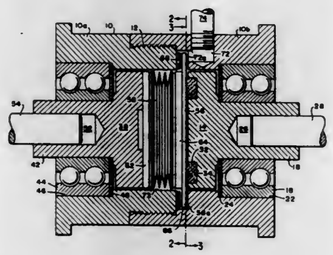
control member in set position is controlled by switches connected in series and including a manual switch on the handle, a switch controlled by the position of the control member, a switch controlled by the vehicle brake, and a switch controlled by the vehicle clutch.

3,556,271
CLUTCH AND TORQUE CONVERTER TRANSMISSION HAVING AN INTEGRAL GOVERNOR FOR CONSTANT OUTPUT SPEED
Conrad R. Hilpert, Winnebago, Ill., assignor to Twin Disc, Incorporation, Racine, Wis., a corporation of Wisconsin
Filed June 2, 1969, Ser. No. 829,169
Int. Cl. F16d 47/06
U.S. Cl. 192—3.33 **6 Claims**



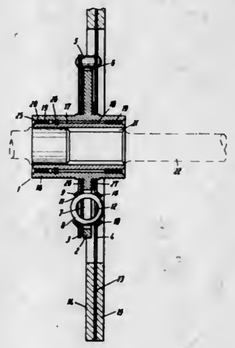
A power transmission having a governor controlled friction clutch and torque converter for maintaining a constant ground speed of a vehicle. The governor is centrifugally actuated and is located within the converter housing and is driven by or carried on the turbine of the converter. The centrifugally actuated governor controls a centrifugal valve which is located in a hydraulically actuated and modulatable friction clutch, whereby the amount of clutch engagement can be varied to thereby vary the power input to the converter and maintain the output speed of the converter constant.

3,556,272
PNEUMATIC BELLOW OPERATED CLUTCH AND BRAKE
Geoffrey T. Jones, Walpole, Mass., assignor to Metal Bellows Corporation, Sharon, Mass.
Filed June 18, 1969, Ser. No. 834,398
Int. Cl. F16d 67/04
U.S. Cl. 192—18 **8 Claims**



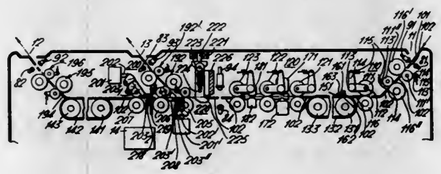
A pneumatic brake and clutch has driving and driven members rotatably mounted in a housing which is fluid tight. A friction plate is positioned opposite the driving member and connected by way of a bellows to the driven member. The plate is normally biased by the bellows into frictional engagement with the driving member so that when the driving member is rotated, the driven member rotates also. Fluid under pressure may be introduced into the housing exteriorly of the bellows which compresses the bellows and pulls the friction plate away from the driving member so the torque is no longer coupled to the driven member. At the same time, the plate may also be pulled into engagement with a friction surface on the housing which brakes the plate and driven member to a stop.

3,556,273
CLUTCH DISC WITH VIBRATION DAMPENERS IN SERIES
Paul Maucher, Neuweier, Baden, Germany, assignor to Luk Lamellen-und Kupplungsbau Gesellschaft m. beschrankter Haftung, Buhl, Baden, Germany
Filed Aug. 6, 1968, Ser. No. 750,585
Claims priority, application Germany, Aug. 19, 1967, L57,240
Int. Cl. F16d 13/68
U.S. Cl. 192—106.2 **8 Claims**



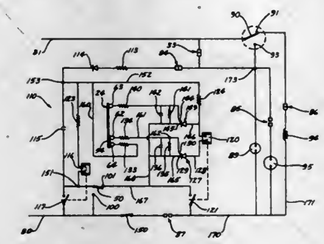
A clutch which includes hub means adapted to be positively connected for rotation with a shaft, and disc means having the plane thereof extending radially with regard to said hub means for receiving and supporting friction lining means, said hub means including means operable to establish a rotational elastically limited play between said disc means and said hub means.

3,556,274
AUTOMATIC TICKET GATE
Yukio Mizuta; Toshio Tanaka, and Takeo Asada, Kyoto, Japan, assignors to Omron Tateisi Electronics Co., Kyoto, Japan, a company of Japan
Filed Aug. 16, 1968, Ser. No. 753,196
Claims priority, application Japan, Aug. 23, 1967, 42/54406
Int. Cl. G07f 17/00
U.S. Cl. 194—4 **10 Claims**



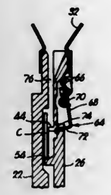
An automatic ticket gate which can handle both ordinary tickets and commutation tickets. The ticket gate of the invention is provided with a single ticket inlet in which both kinds of tickets are inserted for examination of their validity, and two outlets, one for ordinary tickets and the other for commutation tickets to be delivered out. The ticket inserted into the inlet is conveyed through the interior mechanism of the gate and while it is being conveyed, the information previously recorded on the ticket is read and checked with respect to its validity, and then directed to one of the two outlets in accordance with its kind so as to project therethrough. The ticket gate, when used as an entrance gate, is provided with means for punching ordinary tickets to be returned to the passengers, and when used as an exit gate, it is provided with means for storing ordinary tickets not to be returned to the passengers.

3,556,275
TOKEN ACTUATING CIRCUIT
Quintin N. Rottering, Newton, Iowa, assignor to The Maytag Company, Newton, Iowa, a corporation of Delaware
Filed Feb. 24, 1969, Ser. No. 801,264
Int. Cl. G07f 1/06
U.S. Cl. 194—4 **10 Claims**



The actuating circuit disclosed is operable for verifying authenticity of a token and initiating energization of the control circuit. The actuating circuit verifies the size and conductivity characteristics of the token and triggers energization of a control circuit through a gate-controlled rectifier.

3,556,276
DUAL PATH COIN SORTING AND VALIDATING DEVICE
Kit E. Pennell, Independence, Mo., assignor to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed Mar. 29, 1968, Ser. No. 717,306
Int. Cl. G07f 3/02
U.S. Cl. 194—101 **6 Claims**



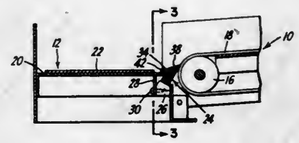
A coin acceptor is capable of accepting either magnetic or nonmagnetic, legitimate coins of a single denomination. Separate coin paths are provided for testing magnetic and nonmagnetic coins for validity utilizing magnetic graduation and eddy-current separation principles. A coin rail defining the path for nonmagnetic coins is below a coin rail that defines the path for the magnetic coins, and a deposited coin is permitted to gravitate to the lower rail if it is of nonmagnetic composition. However, a guide ramp is provided that shifts into alignment with the upper rail when a magnetic coin is deposited to thereby divert the magnetic coin along the upper path. The guide ramp is shiftable between a normal position clearing the deposited coin and an operative position in alignment with the upper rail, response to the presence of a magnetic material in the deposited coin being provided through the use of a permanent magnet attached to the shiftable guide ramp which senses the deposited coin and shifts the ramp as it is attracted toward the approaching coin.

3,556,277
SWITCHPOINT-TYPE DEFLECTING DEVICE
Folker Galaske, and Helmut Wilhelm Schilling, Pforzheim, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Nov. 5, 1968, Ser. No. 773,521
Claims priority, application Germany, Nov. 30, 1967, 1,556,261
Int. Cl. B41j 7/00
U.S. Cl. 197—18 **6 Claims**



A switchpoint type of deflecting device for effecting the undisturbed distribution of continuously moving bodies which have been preliminarily deflected by a selecting station to different tracks or paths marked by special guide members. A distributing tongue prevents head-on collisions which would otherwise occur between a body and the stationary guide members as a result of insufficient preliminary deflection. The guide members are wedge-shaped with the pointed end serving to separate the individual paths, and are preceded by the vertically deflectable distributing or deflecting tongue, fitted at one end to the wedge-shaped end of the guide and pointed at the other end facing the selecting station, and whose top surface is doubly inclined downwards toward the pointed end and the deflection path side face. Urging of improperly deflected bodies in the proper direction, already begun by the selecting station, is furthered by the doubly-inclined top surface and spring-opposed downward movement of the tongue, and compulsorily completed by the guide. Properly deflected and undeflected bodies are not affected by the tongue.

3,556,278
ANTI-SNAG DEVICE
Michael L. Mastracci, York, Pa., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed May 2, 1969, Ser. No. 821,270
Int. Cl. B65g 37/00, 47/52
U.S. Cl. 198—28 **5 Claims**

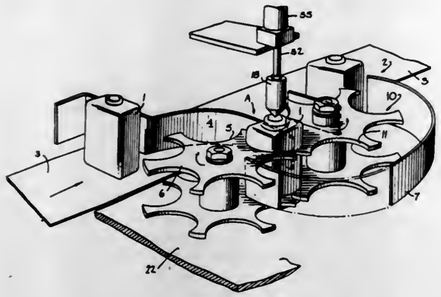


Materials handling apparatus which comprises a first conveyor belt, a second conveyor belt spaced from said first conveyor belt by a gap and disposed with respect thereto so as to receive articles therefrom, means mounted adjacent the gap between said conveyor belts and extending into said gap, said means including a block mounted in spaced relationship with said gap and a plurality of bristles mounted on said block and extending into said gap to substantially fill the same.

3,556,279
ROTARY INSPECTING MEANS FOR NONROUND ARTICLES
James F. Cotter, Lancaster, Ohio, assignor to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware
Filed May 8, 1968, Ser. No. 727,467
Int. Cl. B65g 47/22
U.S. Cl. 198—29 **9 Claims**

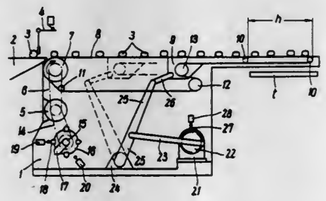
Apparatus for transporting articles to an inspecting station and for rotating the articles about a predetermined axis dur-

ing an article inspecting or similar operation. The apparatus is particularly adapted for handling nonround articles and for positioning such articles for rotation about a predetermined vertical axis. The rotating means comprises a turntable and the means for centering the articles on the turntable com-



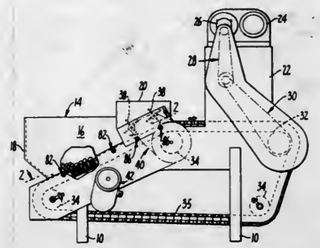
prises a pair of cooperating pocket wheels. An article locating pocket is formed above the turntable by adjacent pockets in the two pocket wheels. In addition to the locating pocket, a centering plunger may be used for the final positioning of articles having an open central mouth.

3,556,280
APPARATUS FOR DEPOSITING ARTICLES IN ROWS
Walter Schnee, and Peter Maag, Villingen, Germany, assignors to Fr. Winkler KG Spezialfabrik fur Backereimaschinen und Backofen, Villingen, Black Forest, Germany
Filed Oct. 4, 1968, Ser. No. 765,147
Claims priority, application Denmark, Mar. 15, 1968, 1100/68
Int. Cl. B65g *47/26*
U.S. Cl. 198—31 **12 Claims**



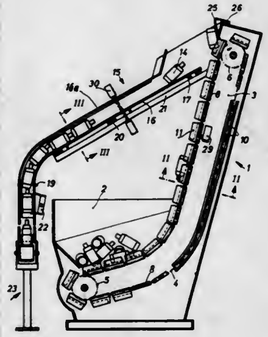
Apparatus for depositing articles in rows on a tray, conveyor, or the like. The apparatus employs a conveyor belt which receives the articles at one end of its transport length and drops them from the other. A plurality of guides are provided for guiding the belt; these guides include a stationary guide defining one end of the transport length of the belt and a movable guide defining the other. The movable guide is movable in a linear direction above the receiving tray or conveyor to vary the transport length of the belt. According to the invention, the conveyor belt is advanced a prescribed distance from the stationary to the movable guide by a first drive means each time an article is received by the belt, and the movable guide is moved in the linear direction by a second drive means each time a prescribed number of articles have been received. The second drive means is separate from, but operates in dependence upon the first drive means to move the movable guide in the direction opposite to the direction of movement of the conveyor belt and back again in one swift action.

3,556,281
APPARATUS AND METHOD FOR HANDLING AND PITTING PRUNES
John L. Margaroli, Oakland, and Fred J. Cimperman, San Lorenzo, Calif., assignors to George W. Ashlock Company, San Leandro, Calif., a corporation of California
Filed Nov. 5, 1968, Ser. No. 773,447
Int. Cl. B65g *47/24*
U.S. Cl. 198—33 **4 Claims**



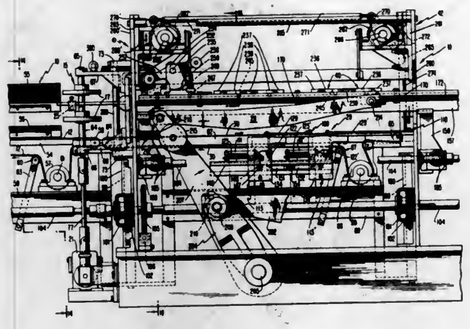
A prune pitter which utilizes the pitting chuck conveyor also as the pickup or feed conveyor, the pickup portion of said conveyor having associated therewith means for selectively adjusting the size of the prune pickup pockets in order to prevent the entry into any one of such pockets of more than one prune, said pickup portion of the conveyor having also associated therewith means for preventing the conveying of nonpocketed fruit to the pitting portion of the conveyor.

3,556,282
DEVICE FOR TRANSFERRING MOLDED PARTS
Wilhelm Moeltzner, 148 Eichkampstr 1, Berlin, Germany
Filed Sept. 23, 1968, Ser. No. 761,492
Claims priority, application Germany, Oct. 2, 1967, 1,556,096
Int. Cl. B65g *47/24*
U.S. Cl. 198—33 **19 Claims**



A device for transferring molded parts is formed by an upwardly inclined multichannel conveyor for moving the molded parts from a storage bin to a downwardly inclined multitrack feed trough. At the lower end of the trough a locking mechanism releases the molded parts onto a conveyor assembly which transports them to a processing station. Individual carrier members on the first conveyor have molded recesses to conform to the molded parts. The carrier members may be formed of one or of a plurality of molded sections with each molded section being supported by a base plate secured to the conveyor.

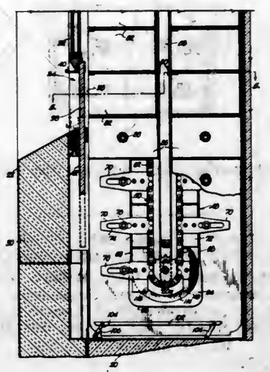
3,556,283
BOOK FORMING APPARATUS AND METHOD
Clinton F. Brundage, Mahwah, N.J., and Dominick V. Mammolito, Staten Island, N.Y., assignors to North American Rockwell Corporation, Pittsburg, Pa., a corporation of Delaware, by mesne assignments
Filed Sept. 24, 1968, Ser. No. 762,108
Int. Cl. B65g *47/31, 37/00*
U.S. Cl. 198—34 **17 Claims**



Apparatus and method for handling a succession of bodies of books preparatory to applying backs and covers thereto. The apparatus includes a first conveyor for carrying a succession of books in end to end upright relationship to an escapement mechanism positioned between the first conveyor and a second conveyor aligned therewith. At spaced time intervals, the escapement mechanism delivers sets each containing a plurality of books (two books in the illustrative apparatus) to the second conveyor where the books of the delivered set are stopped in spaced relationship by stop means on the second conveyor. Mounted on a slide or carriage reciprocable parallel to the second conveyor are book gripping or clamping means which clamp the books after they are stopped on the second conveyor. After the books in the thus delivered set thereof have been clamped, they are then carried forward by the slide in accurately spaced relationship for presentation to subsequent book processing apparatus.

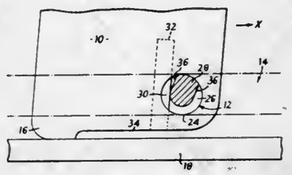
3,556,284
DISPENSING MACHINE HAVING MULTIPLE, VERTICALLY MOVABLE, HORIZONTAL PRODUCT CARRIERS
Kermit W. Dyer, Overland Park, Kans.; William C. Hoppe, Kansas City, Mo.; Michael O. Moore, Overland Park, Kans., and John C. Staley, Independence, Mo., assignors to The Vendo Company, Kansas City, Mo., a corporation of Missouri
Filed Sept. 25, 1968, Ser. No. 762,482
Int. Cl. B65g *15/00*
U.S. Cl. 198—138 **11 Claims**

A general-merchandising machine employs a plurality of horizontal display carriers, each having an identical series of side-by-side product compartments. A closed loop conveyor moves the carriers upwardly or downwardly past a single, horizontally extending delivery opening in the cabinet of the machine. Each of the carriers is pivotally mounted on the conveyor, means being provided at the top and the bottom of the conveyor to prevent substantial tilting of each carrier as it changes its direction of travel. The conveyor is controlled by the customer to permit movement of the compartments of a selected carrier into registration with the delivery opening, the latter being normally closed by a horizontal series of



transparent, sliding doors which mutually support one another.

3,556,285
CONVEYORS
Robert Benjamin Bolton, 14, Middle Drive, Ponteland, Northumberland, England
Filed June 6, 1969, Ser. No. 830,952
Claims priority, application Great Britain, June 7, 1968, 27,165/68
Int. Cl. B65g *19/00*
U.S. Cl. 198—176 **4 Claims**

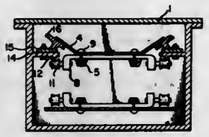


The specification describes chain conveyors intended for broken or fragmented solid materials. Such conveyors comprise an endless chain and a series of flights pivotally connected to the chain. The invention is concerned with controlling the extent of pivotal movement of the flights during the driving run. This control is accomplished by stop means on the pivotal connecting member cooperating with a pin extending substantially at right angles to the pivot axis.

3,556,286
ENDLESS BELT CONVEYOR
Ryunosuke Naito, Takatsuki; Sakan Komatsu, Ibaragi; Saburo Yamane, Toyonaka, and Yoshiro Higashiyama, Toyama, Japan, assignors to Kuraray Co., Ltd., Sakazu Kurashiki City, Okayama Prefecture, Japan, a corporation of Japan
Filed May 14, 1969, Ser. No. 824,615
Claims priority, application Japan, May 18, 1968, 43/33667
Int. Cl. B65g *15/40*
U.S. Cl. 198—201 **6 Claims**

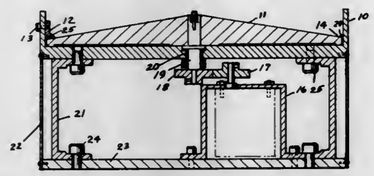
An endless belt conveyor having guide members secured to the underside of the belt, the guide members engaging stationary guide rails, the guide rails having a downwardly inclined portion at the inlet end of the conveyor, and guide plates engaging the longitudinal edges of the belt to fold the

edges of the belt upwardly whereby the guide rails and the guide plates cooperates to change the planar belt to a U-



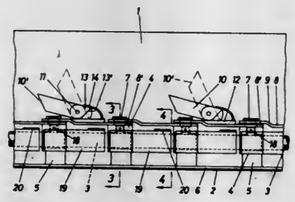
shaped trough configuration adjacent the inlet end of the conveyor.

3,556,287
PARTS FEEDER
Ernest James Bryner, and Gard William Wolcott, Custer City, Pa., assignors to Sigma Engineering Service, Inc., Custer City, Pa., a corporation of Pennsylvania
Filed July 16, 1968, Ser. No. 745,260
Int. Cl. B65g *47/24, 27/00*
U.S. Cl. 198—220 **2 Claims**



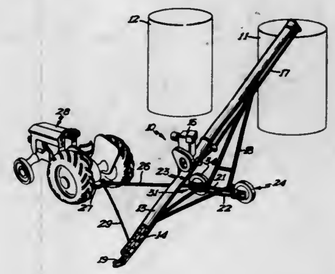
A parts feeder made up of a bowl with an open top. A disc having a conical top is rotatably supported in the bowl. The outer periphery of the disc rotates in close proximity to the inside of the bowl walls and a block is fixed to the wall of the bowl. The block has an opening in it that is tangential to the inside of the bowl walls. The opening in the block is connected to an exit tube from which parts can be fed to a machine. The disc is rotated by a motor connected to its center.

3,556,288
CHIP CONVEYOR
Helmuth Assauer, Wuppertal-Elberfeld, Germany, assignor to Firma Kohler & Bovenkamp G.m.b.H., Wuppertal-Barmen, Germany
Filed Apr. 25, 1969, Ser. No. 819,191
Claims priority, application Germany, Aug. 29, 1968, K62216
Int. Cl. B65g *25/08*
U.S. Cl. 198—224 **8 Claims**



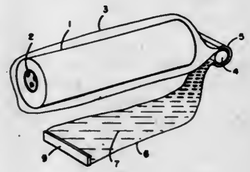
A chip conveyor comprising a plurality of guide blocks slideably mounted for back and forth movement on a rail fixedly positioned on and extending longitudinally of the bottom wall of a trough-shaped conveyor housing. The guide blocks are hingedly connected to one another and carry pushing blades which extend into and occupy a portion of the trough cross section. The upper sides of the guide block are provided with vertically extending hinge pins which support plate-shaped side bars interconnecting the guide blocks to one another for permitting the conveyor to extend through a horizontally curved portion of the conveyor housing. The guide blocks are slideably mounted on a curved rail portion which extends throughout the curved housing portion. The pushing blades are mounted, preferably pivotably, on the side bars.

3,556,289
PIVOTED WHEEL ASSEMBLY FOR ELEVATOR
Wilton R. Erickson, Kerkhoven, Minn.
Filed Sept. 24, 1968, Ser. No. 761,935
Int. Cl. B65g *41/00*
U.S. Cl. 198—233 **5 Claims**



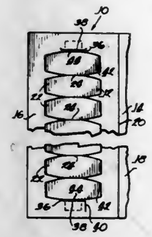
A material elevator having an elongated conveyor secured to a transverse support. A wheel assembly is pivotally mounted on each end of the support. Upright pivots connect the wheel assemblies to the ends of the support allowing the wheels to be selectively positioned longitudinally and transversely of the elevator. Lock pins hold the wheel assemblies in selected positions. An elongated tow bar connected to one wheel assembly is used to laterally move the entire machine.

3,556,290
LONG LIFE PACKAGING OF ELECTROLYTIC RECORDING PAPER AND THE LIKE
J. Raymond Popkin-Clurman, Brookville, N.Y., assignor to International Scanatron Systems Corp., Wyandanch, L. I., N.Y., a corporation of New York
Filed Apr. 17, 1968, Ser. No. 729,478
Int. Cl. B65d *77/08;* **B41m** *5/20;* **G03g** *5/00*
U.S. Cl. 206—47 **6 Claims**



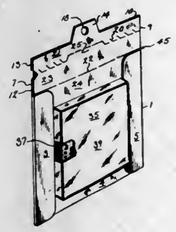
The impregnants for electrolytic recording paper are divided into two or more parts thereby separating parts which may react with time, and/or be oxidized by atmosphere or light from those used to cause other reactions when in contact with metallic substances, which may ionize in an electrolyte, resulting in a long life package. Not only may there be electrolysis, but there may also be reactions with the paper or extraneous ingredients in the paper. Paper and electrolyte packaged in this manner will not only keep for long periods but will also withstand very severe environmental conditions without change or deterioration. Such packaging is of a special utility in military applications.

3,556,291
TAG STRIP AND HOLDER COMBINATION
Eugene Sebring, Chicago, Ill., assignor to Perfection Enterprises, Inc., Chicago, Ill., a corporation of Illinois
Filed May 7, 1969, Ser. No. 822,391
Int. Cl. G09f *3/00;* **G09d** *3/10;* **B65d** *73/00*
U.S. Cl. 206—56 **13 Claims**



A set of tags manufactured in a unitary strip separated by frangible sections and having integral retaining tabs is in combination with a holder therefor comprising a cardboard packet with slots therethrough to slidably receive said tabs.

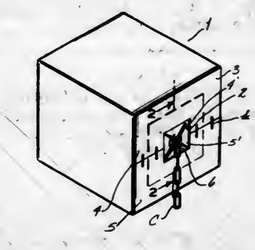
3,556,292
DISPLAY PACKAGE
Robert A. Krzyzanowski, Milwaukee, Wis., assignor to Milprint, Inc., Milwaukee, Wis., a corporation of Delaware
Filed July 17, 1969, Ser. No. 842,628
Int. Cl. B65d *5/54, 5/70, 83/00*
U.S. Cl. 206—56 **2 Claims**



A carton for holding a filled pouch having overlying panels along one side of a base panel with part of the pouch positioned therebetween so that the pouch can be opened upon tearing away of portions of the overlying panels; other portions of the overlying panels remain attached to the carton to provide for effective reclosure of the pouch after part of its contents have been withdrawn.

3,556,293
CHAIN DISPENSER
Don M. Schlueter, Maryville, Mo., assignor to Lloyd Chain Corporation, Maryville, Mo., a corporation of Missouri
Filed Nov. 26, 1968, Ser. No. 778,937
Int. Cl. B65d *83/00*
U.S. Cl. 206—56 **1 Claim**

A device for dispensing a desired length of chain from a closed container having an opening in one side thereof comprising a plate formed of resilient material for disposition within said container opening and having a dispensing aperture developed by intersecting slots which latter define



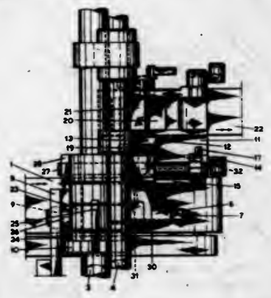
gripping fingers for allowing passage of the material from the container while restraining same against return thereinto.

3,556,294
CATHETER PACKAGE WITH SELF-CONTAINED LUBRICANT
George A. Walck, III, Somerville; Ralph Carson, Long Valley, and George T. Maloney, Plainfield, N.J., assignors to C. R. Bard, Inc., Murray Hill, N.J., a corporation of New York
Filed Nov. 25, 1968, Ser. No. 778,381
Int. Cl. A61b *19/02*
U.S. Cl. 206—63.2 **7 Claims**



A package for elongated surgical or medical devices such as catheters in which friable capsules containing a lubricant such as liquid silicones are packed adjacent one end of the device in a position to be broken by pressure so that the lubricant is released from the capsules but retained adjacent the device to be lubricated as the latter is moved through the lubricating zone immediately prior to use.

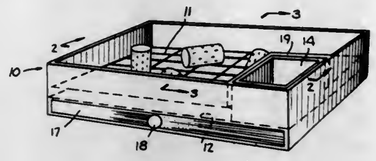
3,556,295
APPARATUS FOR CLASSIFYING ARTICLES AND FOR REMOVING THEM FROM A CONVEYOR
Hendrikus Gerhardus Muller, Hengelo, Netherlands, assignor to N. V. Machinefabriek B & S Bedrijven v.d. Woerdt
Filed Mar. 14, 1969, Ser. No. 807,319
Claims priority, application Netherlands, Mar. 14, 1968, 6,803,639
Int. Cl. B07c *5/06*
U.S. Cl. 209—73 **12 Claims**



Articles are removed from a belt conveyor or not, in one position or another according to their orientation, by a

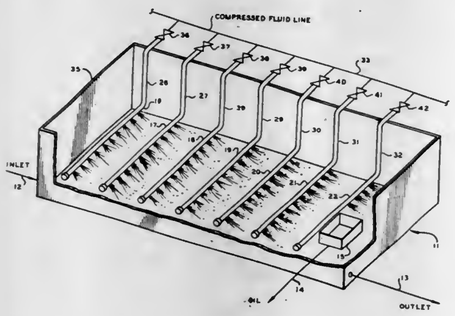
laterally oscillatable catching member that places them in the path of a pusher which moves them over a support having a portion that swings downwardly. If the articles are mispositioned on the support, they will fall from the edge left by the downwardly swung portion of the support.

3,556,296
BEAUTY PARLOR ACCESSORIES
Anthony T. Buscemi, Jr., 5018 17th Ave., Brooklyn, N.Y.
Filed Feb. 13, 1969, Ser. No. 798,957
Int. Cl. B07c *7/00*
U.S. Cl. 209—123 **12 Claims**



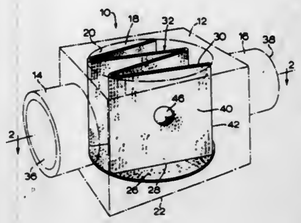
A tray into which a working hairdresser can deposit rollers and clips indiscriminately as the same are removed from the hair of a beauty parlor patron is disclosed. Above its bottom, the tray has a screen arrangement which permits clips to fall through but not rollers, and at one end of the tray, a recess in the screen arrangement provides access to the lower region of the tray for manual removal of accumulated clips. If clips are required for use on another patron, the tray is tilted toward the recess to cause the clips to slide to that end of the tray from where they may then be removed with no time wasted in separating them from the rollers. An auxiliary receptacle, preferably having the contours of the recess, is normally positioned in the tray at the recess and may be used as a depository for the clips taken from the tray.

3,556,297
FLUID SEPARATION
Frank A. Harrington, Sweeney, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Continuation of application Ser. No. 578,563, Sept. 12, 1966, now abandoned. This application Oct. 2, 1968, Ser. No. 767,054
Int. Cl. B01d *17/02*
U.S. Cl. 210—83 **5 Claims**



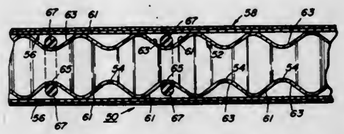
A method for separating a liquid superimposed in stratified relationship to a lower immiscible liquid, for example, oil on water, by injecting an insoluble gas beneath the surface of the liquids to create a zone of lower density and causing this zone to move progressively across the surface and to move the superimposed liquid with it toward a point from which the superimposed liquid is removed.

3,556,298
V-SHAPED FILTER ELEMENT BYPASS MEANS
Werner P. E. Huebner, 6 Sweetbriar Court, Toronto, 16, Ontario, Canada
Filed July 23, 1969, Ser. No. 844,142
Claims priority, application Canada, July 24, 1968, 025,836
Int. Cl. B01d *35/14*
U.S. Cl. 210—131 **7 Claims**



A strainer for removing solids from a flowing fluid comprising a V- or zigzag-shaped elongated screen disposed in an elongated cylindrical chamber and adapted to yield under high fluid pressures.

3,556,299
FLUID DISTRIBUTING CONDUIT FOR PROCESSING APPARATUS
James F. Zievers, La Grange, and Henry Schmidt, Jr., Hinsdale, Ill., assignors to Industrial Filter & Pump Mfg., Co., Cicero, Ill., a corporation of Illinois
Filed Apr. 5, 1968, Ser. No. 719,154
Int. Cl. B01d *23/10, 27/10*
U.S. Cl. 210—136 **4 Claims**



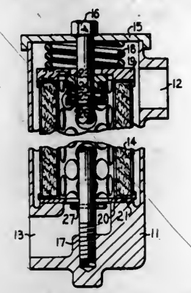
A fluid distributing conduit for conveying fluid under pressure to materials confined within a process vessel includes a feed pipe having a series of holes and a cylindrical elongated member extending along its outer surface over the holes. A plastic coarse-mesh sleeve surrounds the feed pipe and the elongated member, and a fine-mesh fabric sleeve surrounds the coarse-mesh sleeve, whereby the fluid is evenly distributed from the holes to the materials in the vessel. The elongated member spaces the sleeves from the holes to prevent the sleeves from blocking the holes. An elastic band surrounds the pipe over a larger hole to act as a check valve.

ERRATUM

For Class 210—164 see:
Patent No. 3,556,993

3,556,300
FILTER ELEMENT RETAINING MEANS
Edward A. Codo, Joliet, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Sept. 8, 1969, Ser. No. 856,043
Int. Cl. B01d *27/00*
U.S. Cl. 210—232 **3 Claims**

A filter comprising a filter housing and a filter assembly easily removable from the filter housing. The filter assembly comprises a tie rod carrying a cover, a spring, a cap, a filter element and a pin and retainer which cooperate to retain the filter element on the tie rod until the assembly is withdrawn



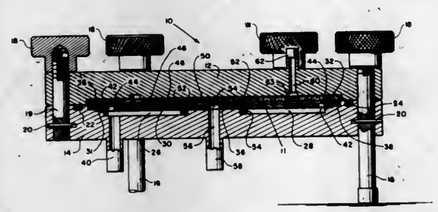
from housing, and then to release the filter element from the tie rod when the pin and retainer are manually aligned.

3,556,301
FLOATING FLEXIBLE SKIMMING DEVICES
Millard F. Smith, Westport, Conn. ((P. O. Box 295, Saugatuck, Conn. 06882))
Filed Oct. 20, 1969, Ser. No. 867,630
Int. Cl. B01d *43/00*
U.S. Cl. 210—242 **12 Claims**



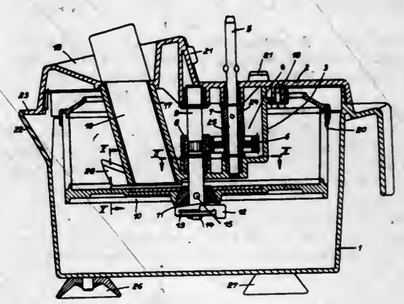
A skimming device for skimming oil and other waste materials from the surface of water is of lightweight nonrigid materials and comprises two parallel-spaced sheets with flexible edges. The device floats on the surface of water and flexibly conforms to waves and swells on the water surface. Skimming is performed by exposing a negative pressure intake portal to a shallow skimming zone directly beneath the surface. The narrow elongated intake portal is defined between a flexible floating underflow edge of one sheet and a second flexible overflow edge of a second sheet spaced beneath the first sheet.

3,556,302
FILTRATION APPARATUS HAVING FLOW DISTRIBUTOR
Edward A. Agranat, Weston, Mass., assignor to Amicon Corporation, Lexington, Mass., a corporation of Massachusetts
Filed Jan. 6, 1969, Ser. No. 797,071
Int. Cl. B01d *31/00*
U.S. Cl. 210—321 **6 Claims**



Apparatus useful for carrying out reverse osmosis, ultrafiltration or other filtration processes wherein it is desirable to transport liquid in a predetermined path over a filter at an elevated operating pressure, said apparatus comprising an ultrafiltration cell formed of two deflection-resistant plates and a flow-distributing means between said plates which flow-distributing means is maintained in intimate contact with the face of a filter by a hydraulic pressure difference maintained across said distributor plate. This pressure assures that any deflection of the aforesaid plates is compensated for by a matching deflection of the distributor plate and thereby avoids short circuiting of the desired flow path between the plate and the membrane surface.

3,556,303
JUICE CENTRIFUGE ATTACHMENT FOR AN ELECTRIC KITCHEN APPLIANCE
Max Diebold; Eberhard Menge; Rudolf Hanschitz, and Dieter Weisshaar, Reichenbach, Germany, assignors to Firma Electrostar GmbH, Reichenbach (Flls), Germany
Filed Oct. 3, 1969, Ser. No. 863,623
Int. Cl. B01d *21/26*
U.S. Cl. 210—377 **11 Claims**

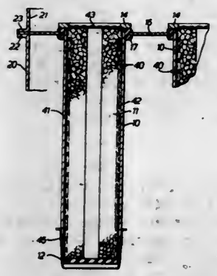


A juice centrifuge is composed of a container having an open upper end closed by a lid to which is secured a transmission housing which extends downwardly into the container. A transmission assembly is positioned within the housing and comprises a driving shaft which extends upwardly through the lid for operative engagement with a kitchen appliance and a driven shaft powered by the driving shaft. A screen drum is positioned within the container and is rotatably mounted on a hub removably secured on the lower end of the driven shaft. Juice discharge openings are provided from the screen drum below the point at which the transmission housing is detachably secured to the lid. A portion of the wall of the transmission housing forms a part of a filler shaft which extends downwardly from the lid to the lower end of the screen drum. A freewheeling gear drive is provided between the driving shaft and the driven shaft so that the screen drum can continue to rotate when the driving shaft is stopped to prevent any damage to the centrifuge.

3,556,304
PLASTIC FILTER CANDLE
Ronald Thomas Collard, and Phillip Brian Wright, Dagenham Dock, England, assignors to Porous Plastics Limited, Dagenham Dock, Essex, England
Filed Sept. 18, 1968, Ser. No. 760,589
Int. Cl. B01d *39/16*
U.S. Cl. 210—489 **5 Claims**

A filter which consists of a foraminous tubular spacer made of two layers of integrally extruded filaments with one end closed with a welded-on cap and the other end provided with a flange and outlet aperture. The interior of the spacer is occupied by a reinforcing tubular core of sintered coarse-

grained polymer and a tubular porous polymer filter septum is releasably secured over the spacer enabling it to be

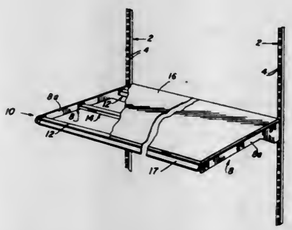


removed and replaced by a fresh filter septum when necessary.

3,556,305
COMPOSITE MEMBRANE AND PROCESS FOR MAKING SAME
Jacob Shorr, Brighton, Mass., assignor to Amicon Corporation, Lexington, Mass., a corporation of Massachusetts
No Drawing. Filed Mar. 28, 1968, Ser. No. 717,039
Int. Cl. B44d 1/14; B01d 39/00
U.S. Cl. 210—490 7 Claims

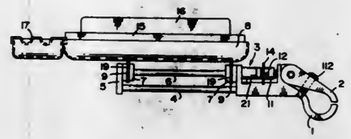
A novel membrane suitable for use in reverse osmosis and related separation processes, said membrane comprising (a) an anisotropic membrane comprising a thin microporous barrier skin and a thicker macroporous support layer, (b) a very thin layer of a film forming adhesive polymer over the barrier skin of hydraulically porous substrate and (c) a very thin diffusive type membrane film overlying said adhesive polymer and bound to said porous substrate by said adhesive polymer.

3,556,306
SHELF SUPPORTING STRUCTURE AND JOINT THEREFOR
Irving W. Shell, 442 Wellington, Chicago, Ill.
Filed Apr. 22, 1968, Ser. No. 723,212
Int. Cl. A47f 5/00, 5/08; A47g 29/02; F16b 7/00
U.S. Cl. 211—90 10 Claims



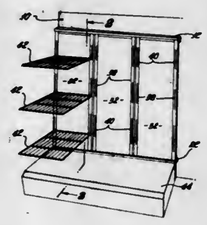
A shelf supporting structure comprising a pair of horizontally spaced brackets and a plurality of horizontal shelf supporting members extending therebetween and including an interlocking joint between the brackets and the respective ends of each of the shelf; supporting members, the joint comprising: a mounting tongue extending upwardly from the bracket, a tongue extending downwardly from the shelf supporting member into interlocking facial contact with the mounting tongue of said bracket, the shelf supporting member having a downwardly vertically extending wall portion having a laterally facing opening therein and into which extends a hooked-shaped projection of the tongue of said bracket which hooked-shaped projection hooks upwardly around the defining edge of said laterally facing opening.

3,556,307
DRAFTING MACHINE CADDY
Dewitt M. Brownson, 10808 62nd St., Temple Terrace, Fla.
Filed Apr. 16, 1968, Ser. No. 721,645
Int. Cl. A47f 3/14
U.S. Cl. 211—126 10 Claims



A drafting machine caddy having a clamp for attachment to the drafting machine, a rotatable horizontal shaft, with a drafting instrument tray affixed thereto and a clutch for controlling the angular position of said shaft and hence said tray.

3,556,308
PANEL MOUNTING APPARATUS
Kenneth McAleenan, Larchmont, N.Y., assignor to Vita-Pakt Citrus Products Co., Covina, Calif., a corporation of California
Filed Sept. 19, 1967, Ser. No. 668,908
Int. Cl. A47f 5/00, 5/08
U.S. Cl. 211—134 2 Claims

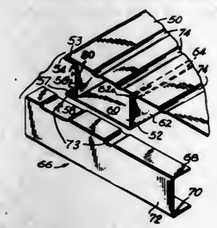


A panel mounting apparatus in which the upper and lower edges of a panel are removably slip fitted in channels which are attached to a backing structure. The channels comprise elongated U-shaped members having a pair of legs and a bottom portion, wherein the leg of each elongated member which contacts the backing structure is longer than the other leg so that fasteners may be readily applied to the longer leg to secure the elongated members to the backing structure. The distance between the upper and lower edges of the panel is less than the distance between the outer edge of the shorter leg of one of the elongated members and the bottom portion of the other elongated member and is greater than the distance between the outer edge of the shorter leg of said other elongated member and the bottom portion of said one elongated member.

3,556,309
SHELF CONSTRUCTIONS
Kenneth D. Schreyer, Furlong Road R.D. 2, Doylestown, Pa.
Continuation-in-part of application Ser. No. 607,741, Jan. 6, 1967, now abandoned. This application Aug. 5, 1968, Ser. No. 756,080
Int. Cl. A47b 96/02
U.S. Cl. 211—153 8 Claims

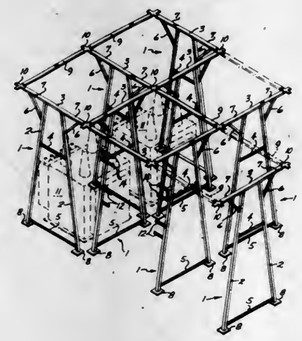
Shelves provided with edge constructions which increase the rigidity and load bearing capability of the shelf. In one embodiment, the two longitudinal edges of the shelf are bent into tubular channels with the free edges returned to the underside of the shelf. In another embodiment, similar to the first, the outermost edges of the tubular channels are of I-

beam shape cross section. In a third embodiment, similar to the second, the longitudinal channels are of I-beam shape



cross section except that the free edges are not returned to the underside of the shelf.

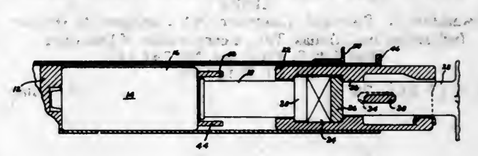
3,556,310
PREFABRICATED MODULAR POWER SUBSTATION
Jack Loukotsky, Suite 303, 2135 Argyle Ave., West Vancouver, British Columbia, Canada
Filed May 27, 1968, Ser. No. 732,136
Int. Cl. A47f 5/10
U.S. Cl. 211—177 10 Claims



An elevated network of bars forms a plurality of rectangular bays in which transformers or other electrical apparatus may be located. Bars of at least one bay are supported by upright frames disposed in rectangular relationship and at least two bars of each bay are supported by upright frames. All of the bar-supporting frames may be identical and composed of upwardly converging legs connected by a lower crosspiece and a central crosspiece and carrying one bar of a bay forming a cap. The bars of the network are connected at the intersections of the network by cross-shaped connectors. Opposite upright frames of a bay can be connected by horizontal mounting bars on which electrical equipment (e.g. disconnect switches) can be supported.

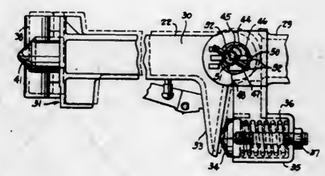
3,556,311
CUSHIONING ARRANGEMENT FOR THE END OF A RAILWAY CAR
Paul G. Kinnecom, St. Charles, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed July 2, 1968, Ser. No. 742,079
Int. Cl. B61g 9/02, 9/06
U.S. Cl. 213—8 3 Claims

A cushioning arrangement for the end of a railway car comprises a hydraulic cushioning unit and a rubber draft gear. The coupler is connected to the yoke for the draft gear by a draft key which fits loosely in slots in the coupler and yoke to permit a predetermined movement therebetween. The yoke fits around and behind an end cap of a movable cylinder of the hydraulic cushion for pulling it in the draft



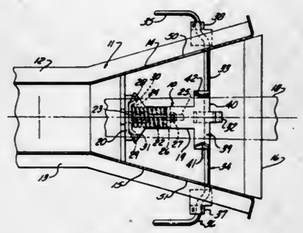
direction. The coupler shank extends into abutment with a front follower plate of the draft gear.

3,556,312
CAR COUPLER
Donald L. Herbert, Lexington, Ohio, assignor to The Ohio Brass Company, Mansfield, Ohio, a corporation of New Jersey
Filed Aug. 7, 1968, Ser. No. 750,949
Int. Cl. B61g 9/04
U.S. Cl. 213—14 9 Claims



An automatic coupler for railway vehicles in which the vertical height of the coupler head may be adjusted while maintaining the vertical alignment of the coupler face.

3,556,313
COUPLER CENTERING DEVICE
Damiano J. Albanese, South Euclid, Ohio, assignor to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 7, 1968, Ser. No. 765,387
Int. Cl. B61g 7/12
U.S. Cl. 213—20 4 Claims

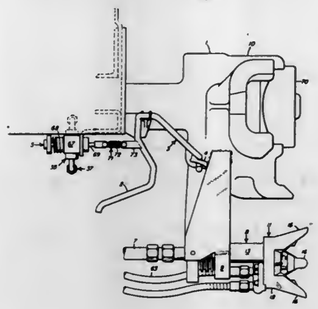


A railway car coupler centering device for railway cars comprising a pivotally mounted spring loaded arm supported in cantilever fashion to the car body underframe underneath the shank of a railway car coupler. The device includes a channel element at its free end that interlocks the arm to the shank of the coupler for cooperative movement with the coupler shank laterally from its central or neutral position within the center sill structure of the car body underframe. A lever release system is provided to deflect the arm downwardly to position the channel element out of interlocking relation with the coupler shank to permit lateral movement of the car coupler independently of the centering device.

3,556,314
AUTOMATIC COUPLING SYSTEM FOR TRAIN BRAKE LINES

Swamidas K. Punwani, Lancaster, N.Y., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed July 9, 1968, Ser. No. 741,116
Int. Cl. B61g 5/06
U.S. Cl. 213—76 17 Claims

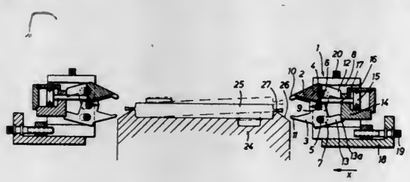


A system for any railway car having mechanical couplers and air brakes for automatically coupling and uncoupling the air brake line, the system including an air coupler mounted for automatic coupling and uncoupling incident to mechanical coupling and uncoupling and valve mechanism which is pneumatically powered from the brake line and not only responsive to intentional mechanical coupling and uncoupling for automatically opening and closing the line, but also differentiates between intentional and accidental uncoupling for bleeding the line and producing a brake application on accidental uncoupling.

3,556,315
GRIPPER DEVICE FOR CONVEYING WORKPIECES IN HOT DIE FORGING PRESSES

Rolf Berger, Opladen, Germany, assignor to Eumuco Aktiengesellschaft fuer Maschinenbau, Leverkusen, Germany

Filed Mar. 27, 1968, Ser. No. 716,573
Claims priority, application Germany, Mar. 29, 1967, E33,695
Int. Cl. B66c 1/42
U.S. Cl. 214—1 7 Claims



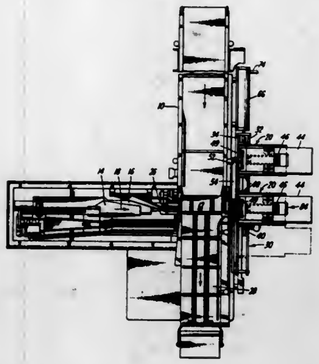
This is a gripper device for conveying workpieces in hot die forging presses. The device includes tongs like gripping means working in conjunction with locking means which respond to a spring system for opening and closing the tongs like grippers.

3,556,316
QUICK-CHANGE SUPPLY SYSTEM

Fred D. Marasso, and Robert E. Rademacher, Richmond, Va., assignors to American Machine & Foundry Company, a corporation of New Jersey

Filed Mar. 3, 1967, Ser. No. 620,387
Int. Cl. B65g 59/02
U.S. Cl. 214—8.5 8 Claims

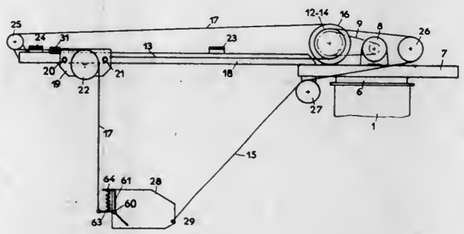
A multimagazine supply system, including a magazine support having an active station and at least one inactive magazine, a plurality of supply magazines adapted to be slidably mounted on said tray support, camming means mounted on each of said supply magazine, locating means having a cam follower surface in spaced relationship with said camming means on said supply magazine, wherein sliding movement of a supply magazine from an inactive position on the magazine support to the active station will cam said locating means out of engagement with a magazine in said active position, allowing said last-named magazine to be removed from said magazine support and be replenished.



3,556,317
INSTALLATION FOR HANDLING BULK MATERIALS

Lucien Rene Vidal, Domaine de la Pimpine 33, Latresne, France

Filed May 20, 1969, Ser. No. 826,211
Claims priority, application France, May 22, 1968, Dec. 31, 1968, 152,700;182,594
Int. Cl. E02f 3/46
U.S. Cl. 214—10 11 Claims

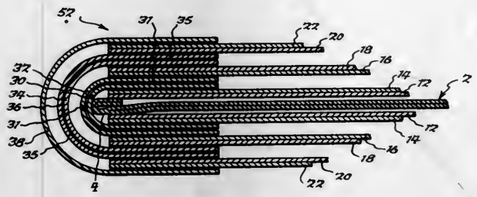


The invention provides a dragline for use in maintaining the slope of bulk materials such as for concrete making stored on the ground in compartments radiating from a distribution tower. A bucket suspended from a carriage running on a horizontal girder moves parallel to the girder until a stop on a return cable connected to the bucket abuts a front stop on the girder. Continued forward travel of the carriage causes the bucket to move in an ascending trajectory. The return cable is wound on a return winch which is connected by a clutch to winches on which are wound cables connected to the carriage and the bucket respectively and the clutch is operated to disconnect the return winch from the other winches when the latter rotate to wind-on their cables and to drive the return winch when they rotate in the opposite direction to pay out their cables.

3,556,318
DUNNAGE BAG

Clinton R. Hollis, Camden, Ark., assignor to International Paper Company, New York, N.Y., a corporation of New York

Original application Mar. 13, 1968, Ser. No. 712;858, now Patent No. 3,506,143, dated Apr. 14, 1970. Divided and this application May 29, 1969, Ser. No. 829,015
Int. Cl. B65g 1/14, 1/20; B65d 33/16
U.S. Cl. 214—10.5 5 Claims

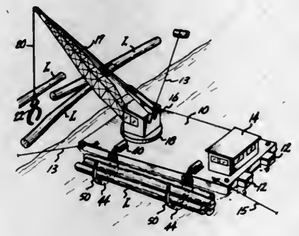


An inflatable and disposable dunnage bag having an airtight bladder enclosed in a multi-ply container folded along parallel fold lines so that the bag, when not inflated, is flat with a back wall and a front wall, the corresponding plies in the back and front wall of the container being joined to each other by tapes extending along the end of the walls and adhesively secured to the ends of the plies.

3,556,319
LOG-BUNDLING APPARATUS

M. Ray Holden, P.O. Box 716, Ketchikan, Alaska 99901

Filed June 30, 1969, Ser. No. 857,247
Int. Cl. B63b 27/16
U.S. Cl. 214—12 5 Claims



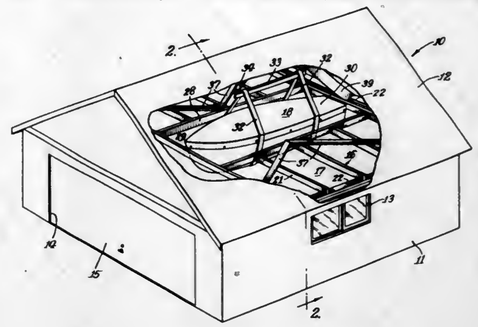
An apparatus for receiving logs and timbers to collect and compact several into a bundle for subsequent transport as a unit.

3,556,320
GARAGE WITH AUXILIARY STORAGE MEANS FOR BOATS AND THE LIKE

Julius H. Henderson, 1013 Justine Drive, Kankakee, Ill.

Filed May 2, 1969, Ser. No. 821,323
Int. Cl. E04b 14/00
U.S. Cl. 214—16 6 Claims

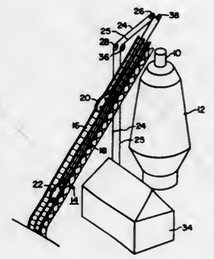
A garage structure defining a lower portion arranged to house an automotive vehicle and an upper loft space. The lower portion is defined by an upper ceiling structure provided with means defining an opening adapted to pass therethrough a structure intended to be stored in the loft space. Means are carried on the roof structure of the garage for selectively raising and lowering the structure intended to be stored in the loft space and means are provided for securing the structure intended to be stored in the storage disposition.



3,556,321
SKIP CAR HOIST WINCH MECHANISM

William A. Munson, Williamsville, N.Y., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 16, 1969, Ser. No. 816,589
Int. Cl. F27b 1/12
U.S. Cl. 214—19 5 Claims



Described is a novel winch drive mechanism for skip cars and the like utilized to charge materials into a blast furnace, the mechanism being characterized in that the cable drive for the cars incorporates movable sheaves which permit an empty skip car at the top of the skip bridge to become righted and start its descent down a skip bridge before any substantial pulling force is imparted to the loaded skip car at the bottom of the skip bridge. In this manner, the weight and momentum of the descending skip car reduces the torque required to accelerate the car and its load at the bottom of the skip bridge, thereby reducing the torque requirements of the drive motors and minimizing stresses in the drive mechanism.

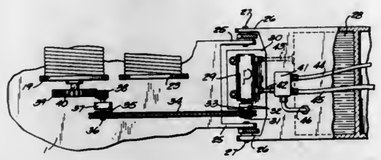
3,556,322
HYDRAULIC SYSTEM FOR A POWER OPERATED APPARATUS

John P. Waite, Menomonee Falls, Wis., assignor to J. P. Waite, Inc., Milwaukee, Wis., a corporation of Wisconsin

Filed May 15, 1969, Ser. No. 824,938
Int. Cl. E02f 3/75
U.S. Cl. 214—138 7 Claims

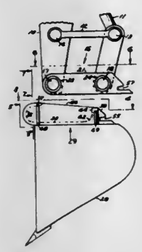
A hydraulic system for power-operated apparatus such as a back hoe, crane or shovel. The apparatus includes a boom which is pivotally connected to a supporting structure and a hydraulically operated working member such as a cylinder or

motor is located on the boom. The hydraulic system utilized to operate the working member is carried entirely by the boom and includes a fluid reservoir and a pump. The reservoir is located within the inner end of the boom while the pump has an input shaft disposed in axial alignment with the



pivotal connection between the boom and the supporting structure. A driving source on the supporting structure is operably connected to the pump shaft to operate the pump and supply fluid through the hydraulic system to the working member.

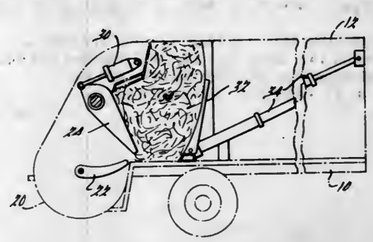
3,556,323
QUICK-CONNECT COUPLER FOR BUCKET ON EXCAVATING MACHINE
Damian M. Heimmermann, Greenville, Wis. (108 Ridgeway Drive, Rte. 1, Appleton, Wis., 54911)
Filed Dec. 23, 1968, Ser. No. 785,943
Int. Cl. E02f *3/81*
U.S. Cl. 214—145 **5 Claims**



A quick-connect coupling means for effecting a rapid change over from a one size bucket to a different size bucket on the dipper stick of an excavating machine such as a backhoe, or the like, comprising a pair of superimposable complementary parts hookedly engageable, and lockable by means of a lock bar operatively movable laterally of said coupling means.

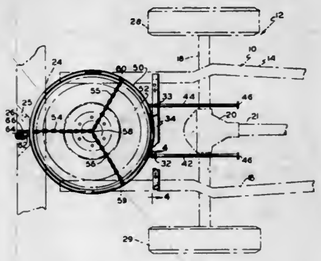
3,556,324
REFUSE PACKING SYSTEM AND METHOD
John McCarthy, Dearborn, Mich., assignor to Gar Wood Industries, Inc., a corporation of Michigan
Original application Dec. 27, 1965, Ser. No. 516,603, now Patent No. 3,410,427 dated No. 12, 1968. Divided and this application July 30, 1968, Ser. No. 748,857
Int. Cl. B65f *3/00*
U.S. Cl. 214—152 **5 Claims**

A refuse packing and storage system in which successive batches of refuse are packed against a longitudinally movable panel within the refuse storage compartment, and wherein movement of the panel in a direction to increase the size of



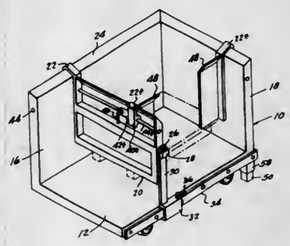
the storage compartment is permitted in response to packing forces.

3,556,325
SPARE TIRE CARRIER FOR VEHICLES
Edward J. Leahy, 3912 Circle Lane, Elkart, Ind., and Charles E. Leahy, 923 Waverly Drive, Albany, Oreg. 97321
Filed Dec. 9, 1968, Ser. No. 782,364
Int. Cl. B62d *43/04*
U.S. Cl. 214—451 **11 Claims**



A spare tire carrier for vehicles such as pickup trucks which mounts a spare tire horizontally beneath a rear end portion of the vehicle. To remove the spare tire, the carrier is unfastened from a rear bumper of the vehicle, slid rearwardly and pivoted downwardly of the vehicle, thereby permitting the tire to be lifted from a flexible sling portion of the carrier formed by a series of chain segments.

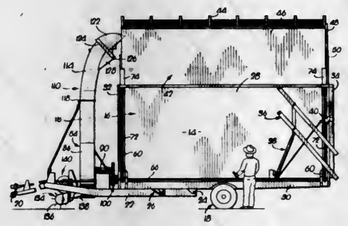
3,556,326
AUTOMATIC SHEET STACKER DEVICE AND THE LIKE
Marion D. Cline, R.D. 1, Blairsville, Pa. 15717
Filed Mar. 21, 1969, Ser. No. 809,336
Int. Cl. B60p *1/02*
U.S. Cl. 214—512 **8 Claims**



An automatic sheet stacker for converting a continuous flow of sheared sheet metal pieces into predetermined size

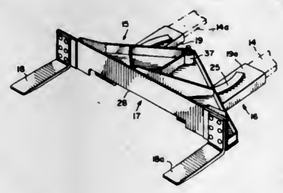
vertical stacks for further handling comprising a dolly platform having caster wheels with a fixed sidewall and a fixed end wall and a removable and adjustable side disposed on said fixed sidewall and adjustable toward and away from said fixed end wall. The removable and adjustable side wall is further provided with an adjustable guide which is slidable along said removable and adjustable side in a direction toward and away from said fixed sidewall. The fixed end wall is provided with an adjustable guide which is moveable toward and away from said fixed sidewall and slidably disposed on said fixed end wall. The dolly platform is further provided with biasing means or brake means for maintaining the dolly platform in a fixed position until released and moved to another position. The device is further provided with an attachment for stacking very small sheet metal segments.

3,556,327
LOOSE HAY WAGON
Harold Keith Garrison, Newton, Kans., assignor to Hesston Corporation, Hesston, Kans., a corporation of Kansas
Filed Apr. 14, 1969, Ser. No. 815,894
Int. Cl. B60p *1/60*
U.S. Cl. 214—522 **9 Claims**



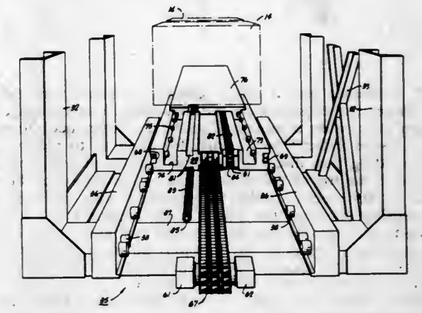
A stack is formed by blowing a crop into the body of a vehicle as it is advanced across the field and by periodically lowering the roof of the body against the crop to compress it into a compact condition, the outlet of the blower being constantly swung back and forth to distribute the crop evenly across the body, and having a shiftable deflector for distributing the hay throughout the body in a fore and aft direction.

3,556,328
LIFT TRUCK ATTACHMENT
Ray P. Miles, 8575 W. Melody Lane, Macedonia, Ohio, and Andrew E. Szucs, 4479 W. 26th. St., Fairview Park, Ohio
Filed Sept. 27, 1968, Ser. No. 763,174
Int. Cl. B66f *9/14*
U.S. Cl. 214—620 **3 Claims**



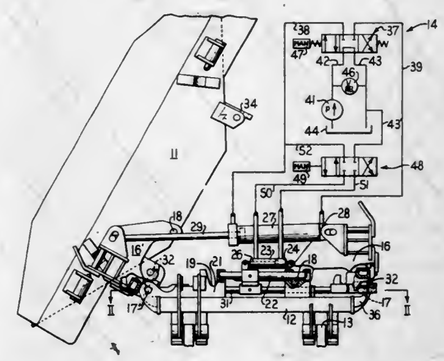
The invention relates to a novel attachment device for use with fork lift trucks and the like to permit side loading from the truck in narrow aisles. The device comprises a platform containing sleeves engageable with the forks of the truck. A rotatable assembly is disposed on the platform which has a pair of forks disposed forwardly thereof.

3,556,329
STACKER CRANE WITH AN EXTENSIBLE LOAD SUPPORT MEANS
Robert R. Johnston, and Robert L. Valliere, Muskegon, Mich., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Continuation of application Ser. No. 696,180, Jan. 8, 1968, now abandoned. This application Sept. 18, 1969, Ser. No. 859,585
Int. Cl. B66f *9/14*
U.S. Cl. 214—730 **1 Claim**



A self-contained article stacker unit suitable for mounting and operation on a variety of powered material handling equipment. The stacker unit includes a frame from which is operably supported a telescopically extendible fork section to move articles to and from storage positions.

3,556,330
SIDE DUMPING LOADER BUCKET CONTROL
Howard O. Keskitalo, Batavia, and Lee H. Stowasser, Aurora, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Jan. 27, 1969, Ser. No. 794,304
Int. Cl. E02f *3/76*
U.S. Cl. 214—768 **3 Claims**

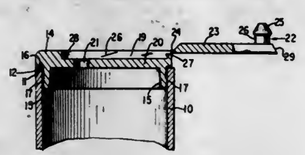


A system for side dumping a loader bucket has a first hydraulic jack which is controlled by a manually operated latch valve for shifting locking pins whereby either side of the bucket may be selectively unlatched from its cradle. Actuation of a second jack, by means of a manually controlled dump valve, then lifts the unlatched side of the bucket in order to dump to the opposite side. The control valves are hydraulically interlocked whereby the first jack cannot be operated to shift the locking pins unless the second jack is simultaneously forcing the bucket to seat properly in its cradle thereby assuring that the locking pin mechanisms are properly aligned for engagement and disengagement.

3,556,331
SAFETY CLOSURE FOR CONTAINERS

Edward J. Towns, 53 Mounthaven Drive, Livingston, N.J.

Filed Jan. 16, 1969, Ser. No. 791,592
Int. Cl. H61j 1/00; B65d 55/02
U.S. Cl. 215—9 6 Claims

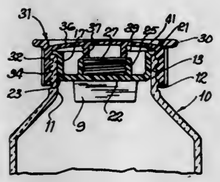


A container and a safety closure therefor wherein the container and closure have portions that are interengageable when the closure is mounted on the container neck to make the closure difficult particularly for children to remove and flush fitting flap integral with the closure and resting in a recess in the top of the closure and on a partition at the bottom of the recess which is provided with at least one dispensing opening. The flap has an integral nosed plug or bung to seal the opening in flush flap position, the nose making it difficult to open. The flap may be swung from its flush position on the closure to an open position by the proper user to withdraw the plug or permit the closure to be removed from the container, the dimensions of the closure and the normally flush position of said flap also making it very difficult if not impossible for children to lift the flap of the closure from its flush position, thus providing safe storage for dangerous container contents and preventing unauthorized access thereto.

3,556,332
CHILD-RESISTANT CLOSURES

Sidney M. Libit, 441 Lakeside Terrace, Glencoe, Ill. 60022

Filed June 12, 1969, Ser. No. 832,587
Int. Cl. A61j 1/00; B65d 55/02
U.S. Cl. 215—9 12 Claims

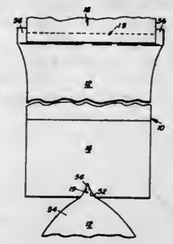


Closures for receptacles containing substances which are, or may be biologically harmful. Specifically the closures are characterized by features calculated to baffle a child who may attempt to remove the same. In general, the various embodiments disclosed include an inner male part or plug frictionally engaged in the receptacle exit for removal by an axially-applied force. An outer rotatable part or overcap is threadedly or otherwise detachably engaged with the receptacle. The overcap and plug are respectively provided with a male member having a left-hand thread and a cooperative female member having an internal, mating, left-hand thread. The overcap has a flexible top to which the male member is secured. To open the closure the top is depressed to engage the male and female left-hand threads, while the outer part is rotated. As such rotation is continued the plug is withdrawn substantially simultaneously with detachment of the overcap from the receptacle neck. The contents may then be discharged. Closure of the receptacle is the reverse of the foregoing. In the case of a threaded neck the rotary motion is continued to detach the overcap from the receptacle. In another form the overcap is inwardly flanged to engage a mating flange on the receptacle so that, upon engagement of the left-hand threaded members, both the plug and overcap may be detached by a simple pull.

3,556,333
STACKABLE, RESILIENT TUBULAR DISPENSING CONTAINER

Kenneth C. Word, 1701 Hillcrest Drive, Carthage, Mo.

Filed Sept. 20, 1968, Ser. No. 761,255
Int. Cl. B65d 21/00
U.S. Cl. 215—10 3 Claims

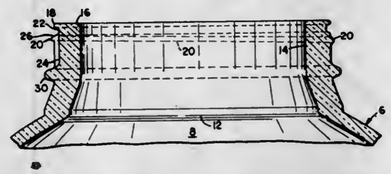


A dispensing container comprising a tubular body portion having a resilient sidewall, a ridge at one end of the body portion and a base closure means sealingly secured to the lower end of the body portion and having a lower surface contoured for mating receipt of the ridge.

3,556,334
RESEALABLE CONTAINER

Kevin J. Howard, San Francisco, Calif., assignor to Flexible Plastics Corporation, San Francisco, Calif., a corporation of California

Filed May 1, 1969, Ser. No. 820,810
Int. Cl. B65d 1/02, 11/04
U.S. Cl. 215—31 9 Claims

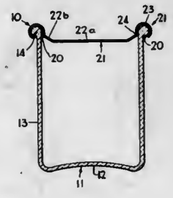


A container which has a neck portion defining the container opening. The neck portion includes an external thread for engagement by a screw-type cover and an annular bead for the alternative engagement by a snap-on lid. A recess extending in an axial direction of the container enables the quick release of the lid from its engagement with the annular bead by providing access to the lid for prying it loose.

3,556,335
CONTAINER CLOSURE

Herbert C. Snyder, Brockway, Pa., assignor to Brockway Glass Company, Inc., Brockway, Pa.

Filed June 6, 1969, Ser. No. 831,116
Int. Cl. B65d 23/00, 53/00
U.S. Cl. 215—40 6 Claims

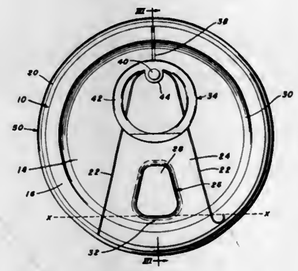


A closure for a wide mouth glass container having a circumferential bead or enlargement at the finish of the container. A circumferential gasket of resilient material is adapted to contact the inner surface of the container finish and extend outwardly around the circumferential bead. A cap member has a central web portion positioned within the gasket and a peripheral portion which extends upwardly and outwardly around the gasket and the circumferential bead. The surface area of the central portion is greater than the area of a surface defined by a plane passing through the juncture of the central and peripheral portions so that upward pressure on the web tends to increase its diameter and urge it against the interior portion of the gasket.

3,556,336
TEAR-OFF CONTAINER CLOSURE

Jackie A. Coop, Richmond, Ind., assignor to Aluminum Company of America, Pittsburgh, Pa., a Corporation of Pennsylvania

Filed Jan. 14, 1969, Ser. No. 791,075
Int. Cl. B65d 43/02, 17/24
U.S. Cl. 215—46 2 Claims

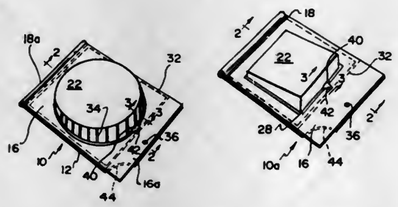


A closure having a top portion with a recessed central panel and a peripheral rim, and a skirt depending from the rim, and having a tear strip defined by scoring divisive of the top portion and extending into the closure skirt, the tear strip having an embossed island in the recessed central panel portion thereof adjacent the rim to aid in severing the tear strip from the top portion and splitting said skirt for removal of the closure from a container.

3,556,337
PACKAGE WITH HINGE

John C. Harmon, Parma, Ohio, and Ronald L. Davis, Fort Wayne, Ind., assignors to Peter Eckrich and Sons, Inc., a corporation of Indiana

Filed Feb. 18, 1969, Ser. No. 800,208
Int. Cl. B65d 43/16, 51/10
U.S. Cl. 220—31 13 Claims

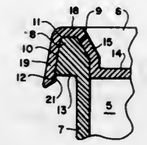


An integral one piece food package for stacked sliced luncheon meat and the like which has opposing shell halves joined by a hinge offset from the seam line. Each shell half has a peripheral flange projecting outwardly along the seam line and the hinge interconnects the flanges of the shell halves to provide an integral one piece package. A cooperating groove and channel system provides a weak snap lock along the seam line and, this in addition to the natural resilience of the flange and hinge, keeps the package closed when not in use. The channel can have a transverse depression rendering it peripherally contractible.

3,556,338
RESILIENT CLOSURE HAVING INVESTED RECESS SECURING MEANS

Thomas B. Wilkinson, Oklahoma City; James O. Melton; Harry B. Musser, and Abraham L. Thomas, Norman, Okla., assignors to Jamco, Inc., Oklahoma City, Okla., a corporation of Oklahoma

Filed Aug. 9, 1968, Ser. No. 751,613
Int. Cl. B65d 43/10, 41/22
U.S. Cl. 220—60 4 Claims

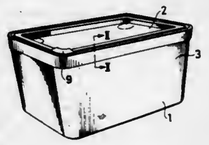


A container and a closure member therefor, the outer surface of the container rim sloping outwardly and downwardly, the closure member being provided with an outer closure wall which is substantially vertical in its relaxed and undistorted state, but which, when placed upon the container, is stretched outwardly and downwardly by the outer surface of the rim whereby the outer closure wall exerts a radially inward force against the rim to improve the sealing relationship between the container and the closure member. A modified form of the invention involves a V-shaped groove in the rim and a complementary V-shaped ridge in the recess of the closure member so as to provide a wedging action when this modified closure member is placed over the modified container.

3,556,339
PLASTIC CONTAINER AND CLOSURE

Evald T.G. Lind, and Arnold R. Skylvik, Trollhaettan, Sweden, assignors to Aktiebolaget Cerbo, Trollhaettan, Sweden, a corporation of Sweden

Filed Dec. 13, 1968, Ser. No. 783,515
Claims priority, application Sweden, Dec. 14, 1967, 17,193/67
Int. Cl. B65d 43/10
U.S. Cl. 220—60 3 Claims

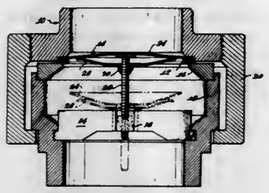


A plastic container having a bottom portion and a lid member for closing the container inside the edges of the bottom portion opening, the sidewalls of the bottom portion having an inwardly facing groove along its periphery, the lower wall of the groove facing an abutment surface and the bottom portion sidewalls decreasing in thickness below its edges and the groove, the lid member having a depending sidewall the lower end of which has an outwardly projecting ridge extending around less than the entire circumference thereof so as to present a no-ridge area, the lid member ridge lying wholly within the groove when closing the container, and the lid having a tongue member in the vicinity of the no-ridge area for facilitating easy opening of the lid.

3,556,340
COMMUNICATING SPRING SYSTEM WITH CONED SNAP SPRING

Allen V. C. Davis, 5600 Alta Canyada, La Canada, Calif.

Filed Jan. 17, 1969, Ser. No. 791,903
Int. Cl. B65d 47/36, 47/00
U.S. Cl. 220—89 9 Claims

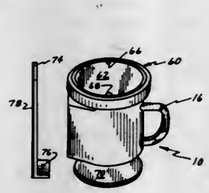


A coned disc spring that is cocked overcenter has a keystone edge seated against a surface of a surrounding cylindrical support. In one embodiment, the support is a ring of softer material than the spring, and the keystone seat is formed by the spring being cocked. In such embodiment, the spring also functions as a diaphragm exposed to fluid pressure. At a predetermined pressure determined via adjusting means for setting its cocked position, the overcenter spring snaps and self-ejects from the ring.

3,556,341
NON-SPILLABLE, MAGNETIC DRINKING CONTAINER

Forrest D. Rains, 1622 Crestview Ave., Columbia, S.C.

Filed Sept. 11, 1968, Ser. No. 761,009
Int. Cl. A47g 19/22
U.S. Cl. 220—90.4 3 Claims



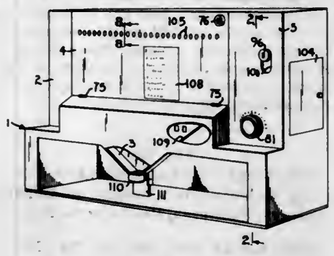
A drinking container of generally cup configuration and having a magnet mounted in the bottom and/or side to permit attachment of the cup to a ferrous metal surface in an upright position. A top mounts on the cup and is provided with an opening for drinking and an air vent. Alternatively, the top may include an elongated member to function as a straw and another type of vent to permit withdrawal of liquid from the cup while maintaining a nonspillable configuration for the cup when not resting on a ferrous metal surface.

3,556,342
MEDICINE DISPENSING APPARATUS

Joseph S. Guarr, 1617 Mulvane, Topeka, Kans. 66604

Filed May 5, 1969, Ser. No. 821,652
Int. Cl. G07f 7/02
U.S. Cl. 221—2 18 Claims

A medicine dispensing apparatus is mounted in a cabinet having a medicine receiving hopper therein. A plurality of medicine dispensing housings are mounted in the cabinet with each communicating with the hopper. A magazine containing medicine in the form of a plurality of pills, capsules, tablets, ampules and the like is movably mounted within each housing and a reciprocable plunger is engaged by each magazine. Plunger moving means are mounted within the cabinet and are selectively engaged and activated for moving the respective magazine from a medicine retaining position to a medicine dispensing position and return. Interaction on an interposer slidably mounted in each housing, an inclined slide surface in a medicine containing chamber within each magazine, and a slidable door permit ejection of a single unit of medicine such as a pill, capsule, tablet, ampul or

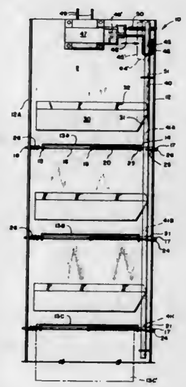


the like from the respective magazine for each movement of the respective magazine to the medicine dispensing position.

3,556,343
ARTICLE DISPENSING APPARATUS WITH SELECTIVELY RELEASABLE HINGED SHELVES

Warren J. Ungerman, Hatboro, Pa., assignor to Captain International Industries, Ltd., Vancouver, British Columbia, Canada

Filed June 21, 1968, Ser. No. 739,116
Int. Cl. G07f 11/06
U.S. Cl. 221—90 24 Claims



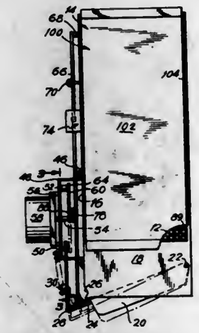
An article-dispensing apparatus having a plurality of vertically aligned shelves, each of which is held in a horizontal article-supporting position by a latch mechanism and then released in sequence to a vertical nonsupporting position, starting from the lowermost shelf, to dispense the articles, one at a time. A cyclically operable release mechanism includes a vertical bar having a plurality of horizontal arms, one for operating the latch mechanism of each shelf. The release mechanism moves automatically from one position whereat it releases one shelf to another position for releasing a higher shelf, in response to the release of the said one shelf.

3,556,344
STRAW DISPENSER

Curtis Lane, Riverdale, N.Y., and Leon Greenstein, Cranford, N.J., assignors to Lanex Importing Company, Union, N.J.

Filed May 22, 1969, Ser. No. 826,942
Int. Cl. G07f 11/16
U.S. Cl. 221—234 10 Claims

A straw dispenser wherein a plurality of straws are situated within a housing to be dispensed one by one out of the latter. The housing has a bottom wall which is movable with respect to the remainder of the housing and a sidewall engaged by the bottom wall when the latter is in a closed position. The bottom wall when in its open position is situated from the bottom edge of the sidewall by a distance sufficiently great to permit a straw to roll along the bottom wall out of the housing. This bottom wall terminates beyond the bottom edge of the sidewall in a trough-shaped portion which extends along but is spaced from the bottom edge of the sidewall of the housing to receive a straw which rolls out of the housing. The bottom wall is urged by a spring to its closed position. A pusher extends into the trough-shaped part of the bottom wall to push a straw therein to a location where the straw extends out beyond the bottom wall to an extent sufficient for convenient removal of the straw. A moving assembly coacts

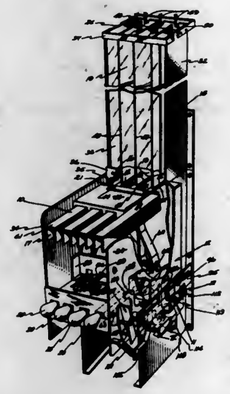


with the bottom wall and with the pusher for moving the bottom wall first to its open position and then for releasing the bottom wall to be closed by the spring, while this moving assembly also coacts with the pusher to retract the latter away from the path of movement of the straw into the trough-shaped part of the bottom wall and for then advancing the pusher along a stroke which will displace a straw sufficiently beyond the bottom wall to be conveniently removed therefrom. A control structure controls the return of the bottom wall to its closed position in such a way that an impact of predetermined degree is transmitted to the housing to prevent bridging of the straws therein.

3,556,345
ADJUSTABLE MAGAZINE FOR GUM DISPENSER

William H. Rowekamp, Cincinnati, Ohio, assignor to William F. Shepherd Inc., Cincinnati, Ohio, a corporation of Ohio

Filed May 27, 1968, Ser. No. 732,360
Int. Cl. B65h 31/20
U.S. Cl. 221—242 5 Claims

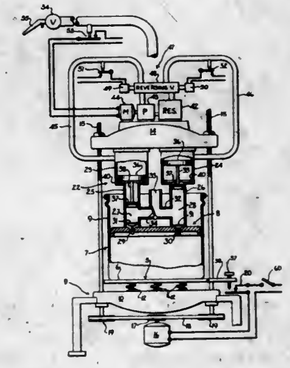


A vending unit particularly adapted for dispensing packages of gum and lozengers comprising, in preferred form, (a) a magazine for storing a stack of packages, (b) a handle for the stack adapted to be pulled horizontally by a consumer to dispense a package, (c) a pusher for the stack horizontally movable into engagement with an end of the package at the stack's bottom to distribute that package, and (d) linkage interconnecting the stack's handle and pusher, the linkage serving to multiply the travel of the pusher over the travel of the handle.

3,556,346
DISPENSER FOR VISCOUS PRODUCTS

Harold Karl Steiner, 3224 S. 92nd St., Milwaukee, Wis. 53227

Filed Nov. 13, 1968, Ser. No. 775,438
Int. Cl. B67d 5/18
U.S. Cl. 222—61 12 Claims

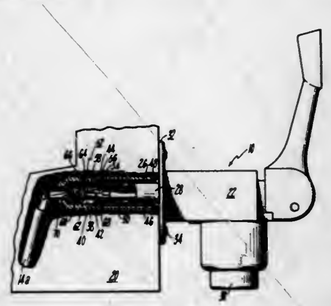


An electric motor driven piston member effects displacement of viscous semiliquid product from its shipping vessel into either of a pair of pump cylinders whose pistons are alternately power driven to expel the product to a delivery line. The pistons of hydraulic actuator cylinders drive the pump pistons under the control of a reversing valve which is reversed each time one of the actuator pistons completes its drive stroke. The electric motor that drives the product-displacing piston member is deenergized whenever the latter effects bodily displacement of the product vessel beyond a predetermined range of motion.

3,556,347
MULTIPLE STATION BEVERAGE DISPENSING SYSTEM HAVING AUXILIARY CONTROL VALVE MEANS

Arthur B. Segal, Barkhamsted, Conn., and Joseph J. Rodth, Swansea, Mass., assignors to Amseco Corporation, Long Island City, N.Y., a corporation of New York

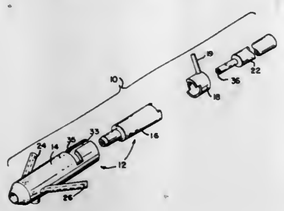
Filed Nov. 1, 1968, Ser. No. 772,690
Int. Cl. B65d 5/72
U.S. Cl. 222—132 9 Claims



System comprising a source of beverage supply and a multiplicity of beverage-dispensing stations each having a

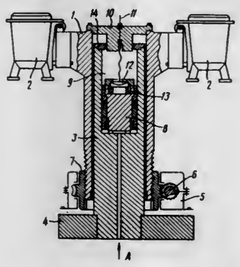
discharge passage and a separable dispensing valve connected thereto in communication with the source of beverage supply, the valves each having an outlet, and an auxiliary control valve disposed upstream of each valve outlet for shutting off beverage flow through its respective discharge passage upon removal of a dispensing valve without deactivating the system.

3,556,348
FLUID MIXING AND DISPENSING APPARATUS
Robert J. Bristow, 30857 182nd SE, Auburn, Wash. 98002
Filed May 20, 1968, Ser. No. 730,502
Int. Cl. B67d *5/52*
U.S. Cl. 222—137 8 Claims



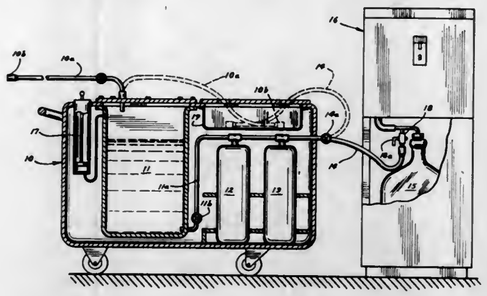
Two or more fluids, such as the bonding and setting adhesive agents, are mixed and dispensed by an assembly comprising a rotatable shaft that has an axial mixing chamber, radial ports extending into the chamber, and a longitudinal fluid mixture dispensing port extending forwardly from the chamber. The forward end section of the shaft is encased by a nonrotatable housing provided with fluid inlet ports adapted to be swept by the inlet ports of the shaft to meter fluid into the mixing chamber. The entire assembly is adapted for mounting to a hand-held rotary electric power tool.

3,556,349
LIFTING TURN-TABLE TO MOUNT TUNDISHES ON CONTINUOUS METAL CASTING MACHINES
Vitaly Maximovich Niskovskikh, Ulitsa Festivalnaya, 21, kv. 60; Anatoly Ivanovich Litvinov, Ulitsa Kirovogradskaya, II, kv. 18; Vladimir Nikolaevich Sobolev, Ulitsa Kalinina, 61, kv. I; Evgeny Jukhimovich Gelfenbein, Ulitsa 40 Let Oktyabrya 28, kv. 51, and Leonid Alexandrovich Bykov, Ulitsa Mashinostroitelei, 59, kv. 30, Sverdlovsk, U.S.S.R.
Filed Aug. 28, 1968, Ser. No. 756,044
Claims priority, application U.S.S.R., Sept. 23, 1967, 54/930
Int. Cl. B67d *5/64*
U.S. Cl. 222—168.5 2 Claims



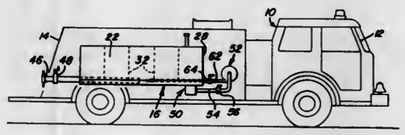
A lifting turntable for tundishes in continuous metal casting machines, wherein the table carrying the tundishes is connected with the piston of the lifting hydraulic cylinder by a mechanism allowing vertical adjusting displacement of the table with respect to the piston to attain accurate tundish positioning over the mould.

3,556,350
METHOD AND APPARATUS FOR TREATING AND SUPPLYING WATER
James O. Hanley, Minnetonka, Minn., assignor to Crest Industries, Inc., Minnetonka, Minn., a corporation of Minnesota
Filed Mar. 17, 1969, Ser. No. 807,721
Int. Cl. H01c *15/00*
U.S. Cl. 222—176 3 Claims



This disclosure embodies a method for "on the site" treatment of water which is designed to supply treated water to water coolers without removing the container from the cooler apparatus and this disclosure also embodies portable apparatus for treating and supplying water to water cooler containers without removal from their location of use.

3,556,351
APPARATUS FOR EMPTYING LIQUID TANKS
Council W. Williams, P.O. Box 1197, Rocky Mount, N.C.
Filed Jan. 24, 1969, Ser. No. 793,654
Int. Cl. A62c *39/00*
U.S. Cl. 222—178 8 Claims

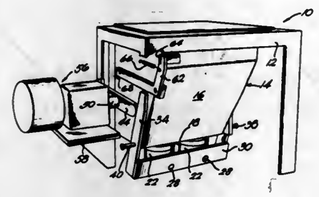


A hollow storage receptacle including a lower gravity flow outlet having inlet and outlet ends. A powered fluid pump is operatively associated with the receptacle and includes a fluid inlet, other than the gravity flow outlet, for intaking fluid from within the receptacle and a fluid outlet nozzle. The outlet end of the outlet nozzle is of smaller diameter than, aligned with and positioned adjacent the inlet end of the gravity flow outlet for discharging a jet of fluid into said outlet in the manner of an eductor.

3,556,352
DISPENSING HOPPER WITH FLEXIBLE-WALLED DISCHARGE COMPARTMENT
Denzil M. Roberts, Corpus Christi, Tex., assignor to Corpus Christi Bank and Trust, Corpus Christi, Tex.,
Filed Mar. 25, 1968, Ser. No. 715,925
Int. Cl. B65g *65/54*
U.S. Cl. 222—203 7 Claims

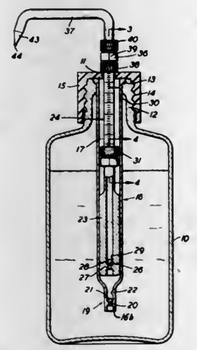
Apparatus for feeding powdered material from a hopper in which a cup-shaped flexible diaphragm is mounted on the lower end of a hopper so as to receive downwardly flowing powdered material in the hopper. The diaphragm has a central outlet opening adjacent its lower end, and pusher members are provided for flexing the diaphragm so as to provide

for a rolling back and forth movement of powdered material in the diaphragm and across the outlet opening, thereby



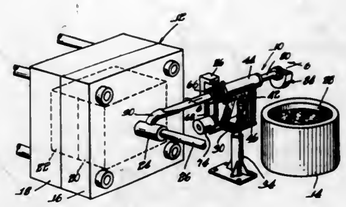
preventing compacting and bridging of the powdered material prior to flow through the outlet opening.

3,556,353
APPARATUS FOR DISPENSING LIQUID
Harry A. Echols, 2410 Wordsworth, Houston, Tex. 77025
Filed Apr. 17, 1968, Ser. No. 721,995
Int. Cl. G01f *11/06*
U.S. Cl. 222—309 9 Claims



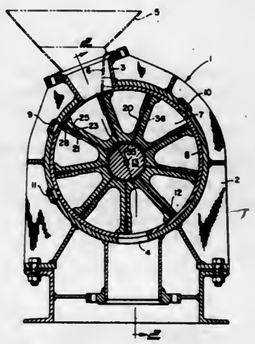
Apparatus for repetitively dispensing accurately measures of liquid which comprises a bottle and a dispensing device installed thereon including a cap having a hole in it and adapted to fit on the neck of the bottle. The device also includes a glass barrel having a shoulder about its upper end for seating upon the upper end of the inside of the neck of the bottle so as to depend beneath the hole in the cap through the neck and into the bottle. A delivery tube has a lower end opening into the barrel and extends upwardly therefrom through the barrel and the hole in the cap to a spout on its outer end. A first check valve is disposed within the barrel beneath the lower end of the delivery tube for normally closing the lower end of the barrel, and a second check valve is disposed within the delivery tube for normally closing its lower end. A glass plunger on the delivery tube is reciprocal within the barrel, in response to raising and lowering of the outer end of the delivery tube, between different vertical positions in the barrel above the lower check valve. A first stop surrounds the delivery tube above the plunger and below the cap, and a second stop surrounds the delivery tube above the cap. A volumetric scale is arranged along the length of the delivery tube below the second stop and above the plunger and the first stop is adjustable along the length of the delivery tube to permit it to be moved to an adjusted position along the scale for varying the stroke of the plunger and thus the volume of liquid to be dispensed.

3,556,354
LADLE TRAP CHAMBER AND TILTING DISPENSER
Richard J. Ott, Baroda, Mich., assignor to Respond Inc., Baroda, Mich., a corporation of Michigan
Filed Apr. 30, 1968, Ser. No. 725,466
Int. Cl. G01f *11/00*
U.S. Cl. 222—357 5 Claims



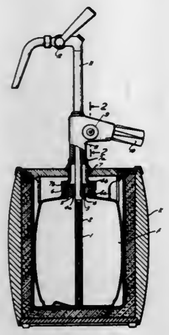
There is disclosed an automatic ladler for delivering major quantities of molten metal to a die casting machine, which ladler comprises a ladle adapted to be completely filled and then rotated a predetermined amount for pouring out a measured quantity of the molten metal.

3,556,355
PRESSURE SEALED ROTARY FEEDER
Joseph J. Ruiz, Cleveland, Ohio, assignor to Basic Incorporated, Cleveland, Ohio, a corporation of Ohio
Filed May 28, 1968, Ser. No. 732,775
Int. Cl. G01f *11/10*
U.S. Cl. 222—368 9 Claims



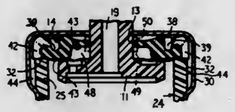
A pressured sealed rotary feeder with an inlet and outlet and a rotor mounted within a housing with a material passage therethrough. The rotor has a plurality of radially extending vanes which define material transporting compartments therebetween. Sealing means are mounted in each of the vanes of the rotor and include a movable blade which extends transversely of the vane and has a surface in contact with the interior of the passage. The surface is maintained in contact with the interior of the passage by fluid under pressure which is introduced through a passageway within the rotor and the vanes. The surface in contact with the passage is preferably of a heat resistant, self-lubricating plastic such as polytetrafluoroethylene.

3,556,356
DEVICE FOR DISPENSING CARBONATED BEVERAGES
Erich Mockesch, Heilbronn, and Wilhelm Schuster, Frankfurt am Main, Germany, assignors to Barrel Fresh Service AG., Chur, Switzerland, a firm
Filed July 24, 1968, Ser. No. 747,298
Claims priority, application Switzerland, July 24, 1967, 10,609/67, Germany, Nov. 17, 1967, B 73,499
Int. Cl. B65d *83/00*
U.S. Cl. 222—399 21 Claims



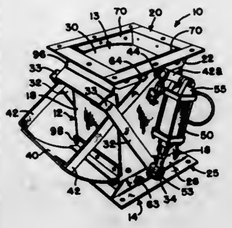
A tapping installation suitable for use in the household for dispensing carbonated beverages comprising an arrangement for broaching and tapping a container in which the beverage is disposed. The arrangement comprises a built-in valve having a valve body in which a pressure-reducing valve is disposed. Means are mounted in the valve body which are adapted to receive a carbonic acid gas capsule which is arranged in front of the valve. The arrangement further comprises a tapping cock and an immersion pipe for insertion into the container. The immersion pipe is adapted to cooperate with a packing ring seal provided in a closure of the container when the immersion pipe is inserted into the container through this seal.

3,556,357
SEAL FOR AEROSOL CONTAINER INCLUDING FLEXIBLE GASKET PERMITTING FILLING OF CONTAINER THROUGH SEAL
Cecil Robert Graham, Montgomery Killara, Sydney, New South Wales, Australia, assignor to Samuel Taylor Pty, Limited, Gore Hill, New South Wales, Australia, a corporation of New South Wales, Australia
Filed Dec. 18, 1968, Ser. No. 784,861
Claims priority, application Austria, Dec. 18, 1967, 31298/67
Int. Cl. B65d *83/00*
U.S. Cl. 222—402.22 7 Claims



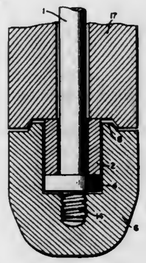
A seal, for an aerosol container having a cap with a central aperture therein and a tubular stem extending through the aperture with clearance, includes a gasket of resiliently deformable material closely fitting around the stem and having an interference fit within the cap. The outer surface of the gasket engages the inner surface of the cap in an annular contact zone surrounding the stem, and a flange on the stem engages the inner surface of the gasket. Resilient means within a shell within the container yieldingly urge the flange toward the gasket. The outer gasket surface is formed with radial grooves which are continued along the circumferential periphery of the gasket to the inner surface of the latter, and the radially inner ends of these grooves are interconnected by an annular groove between the radially inner ends and the annular contact zone.

3,556,358
GATE VALVE
George W. Armstrong, c/o O. B. Armstrong & Son, 248 E. Dayton Drive, Fairborn, Ohio 45324
Filed Aug. 26, 1968, Ser. No. 755,274
Int. Cl. G01f *11/28*
U.S. Cl. 222—445 12 Claims



An air lock and metering gate valve in which upper and lower arcuate blade-type gates are pivotally mounted on the housing in spaced-apart relation defining a space into which flowable material is admitted and discharged. The gates are operated in sequence so that only one gate is open at any time. Piston motors are direct connected to each of the valve blade arms and the upper blade is spring biased to the closed position to assure that it closes first and opens last. Effective seals are provided for sealing each blade with respect to the valve housing, and a pneumatic piston motor control system permits uninterrupted sequential filling and emptying of the valve housing at adjustable rates.

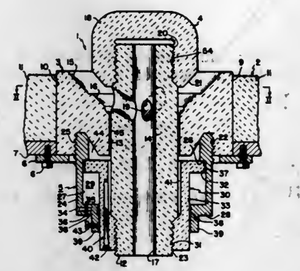
3,556,359
PLUG FOR MOLTEN METAL CONTAINERS
Jose Joaquim Cardoso, Belo Horizonte, Brazil, assignor to Magnesita S. A., Montes Claros, Minas Gerais, Brazil, a corporation of Brazil
Filed Oct. 28, 1968, Ser. No. 770,982
Claims priority, application Brazil, Jan. 5, 1968, 196,053
Int. Cl. B65d *47/00*
U.S. Cl. 222—559 4 Claims



A plug for outlet flow control of molten metals and/or slag from scoops or ladles wherein pouring is effected through the bottom thereof. The plug body is formed of a refractory material and has a first centrally disposed cylindrical cavity in its end face which cavity terminates in a flat bottom. At the center of the flat bottom of the cavity there is provided a second cavity provided with a thread for receiving the threaded stub of the scoop or ladle rod so that the latter may be attached to the plug. The threaded portion of the plug body is used only to sustain the weight of the plug body itself

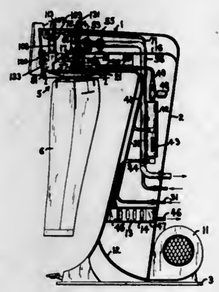
and to transmit the opening forces. When the scoop or ladle rod is covered by a column of refractory sleeves, the weight of the column is supported by a flange at the bottom of the rod and a nipple of refractory material disposed within the first cavity surrounding the rod and resting on the upper surface of the flange. All spaces between the assembled parts are filled with a refractory mortar.

3,556,360
GAS STOPPER FOR A LADLE
Thomas E. Stelson, Pittsburgh, Pa., assignor to Nozzle, Inc., Pittsburgh, Pa.
Filed Jan. 15, 1969, Ser. No. 791,437
Int. Cl. B65d *47/00*; B67d *3/02*
U.S. Cl. 222—559 14 Claims



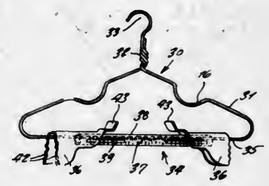
A gas operated stopper for pouring molten metal from a ladle comprising a stationary nozzle seat having an opening therethrough, a movable nozzle positioned in the nozzle seat opening and having a cross section less than the cross section of the opening to form a gap therebetween and a gas operated piston assembly in which the cylinder is secured to the stationary nozzle seat and the piston is secured to the movable nozzle. Compressed air raises the piston and nozzle to remove an extended top section of the nozzle from a mating surface on the nozzle seat and thereby opening a series of inclined passageways leading to a vertically disposed passageway in the nozzle. An inert gas is introduced through the above-identified gap to lubricate the system and prevent molten metal from entering therein.

3,556,361
GARMENT TREATING APPARATUS
Kenneth M. O'Boyle, Albuquerque, N. Mex. (St. Michaels School, St. Michaels, Ariz.)
Continuation-in-part of application Ser. No. 832,205, June 11, 1969. This application Sept. 15, 1969, Ser. No. 857,915
Int. Cl. D06c *5/00*
U.S. Cl. 223—73 15 Claims



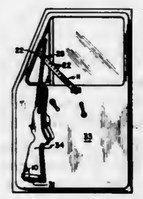
A garment treating apparatus has a support structure having a tubular upright support portion and a tubular upper support portion with an expansible treating form depending from the upper support portion. The expansible form has a plurality of contoured padded sections enclosed within an inflatable permeable air bag with the form sections being movable by adjustment means within the air bag for expanding and contracting the form to conform to a garment to be treated. An air blower directs air into the tubular upright portion and into contact with a radiator for heating same and then upwardly through the tubular upright portion and into an air flow duct within the upper support portion. The air flow duct has a compartment above the expansible form formed by a damper for selectively opening and closing the compartment to introduce heated air and a vacuum thereinto respectively. Steam is introduced into the expansible form through a manifold having a portion of the adjustment means reciprocable therethrough.

3,556,362
GARMENT HANGER
Irene Baumgartner, 10255 Kinsman Road, Novelty, Ohio
Filed May 5, 1969, Ser. No. 821,854
Int. Cl. A47j *51/08*
U.S. Cl. 223—88 1 Claim



A garment hanger designed precisely for women's clothes comprising a wire frame to which skirts or slacks may be secured for support from the hanger.

3,556,363
GUN RACK FOR VEHICLES
Robert K. Whittaker, 525 West 200 South, Richfield, Utah
Filed Nov. 4, 1968, Ser. No. 773,138
Int. Cl. A47b *81/00*
U.S. Cl. 224—1 7 Claims

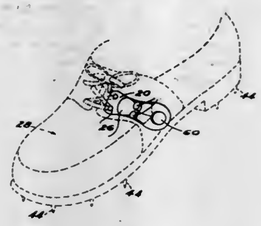


A two-piece gun rack for holding long guns safely and conveniently available on the inside of vehicle doors. An adjustable butt rest supports the gun and a pivotable arm having an adjustable clamp provides means for holding the gun in a set position, for movement with the door.

3,556,364
GOLF ACCESSORY
Faye M. Maretka, 13688 Hannan Road, Romulus, Mich.
Filed Sept. 30, 1968, Ser. No. 763,540
Int. Cl. A45f *5/00*; A63b *57/00*
U.S. Cl. 224—5 2 Claims

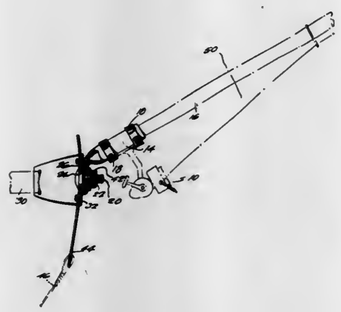
A golf accessory for fastening to the outside of a golfer's garments, such as to the shoe, which includes a flexible, double-pocketed, lightweight unit designed to receive and store a ball spotter which is removably attached to the unit in a snap

fastener recess, a pronged cleat cleaner and green repair tool, and a pair of golf tees, the ball spotter comprising a disc-



like body portion having a projecting stud with a headed portion to be received in a snap fasterner recess.

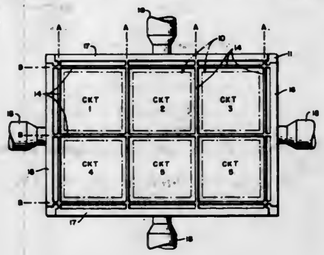
3,556,365
SPINNING REEL TRANSFER
Nulan George Bull, 2311 E. 13th St., Cheyenne, Wyo. 82001
Filed Apr. 4, 1969, Ser. No. 813,496
Int. Cl. A01k *97/10*
U.S. Cl. 224—5 3 Claims



A spinning reel transfer mechanism in which a mechanical holder for spinning reel is made of an iron or aluminum cylindrical element supported on a frame shaped to fit the contour of one's body, and is attached to a belt for being buckled around the body. From a lower end of a critical support frame, there is a belt or cloth line which is disposed for being connected with the belt at the rear of the person wearing it, and thus provides means by which a reel is placed on an extension to the mechanical holder leaving the rod free in one hand, if desired, to facilitate casting after the manner of a fly rod.

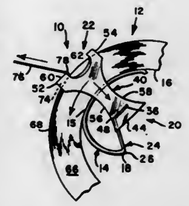
3,556,366
METHODS OF SEVERING MATERIALS EMPLOYING A THERMAL SHOCK
George A. Kim, Chicago, Ill., assignor to Teletype Corporation, Skokie, Ill., a corporation of Delaware
Filed May 1, 1969, Ser. No. 821,026
Int. Cl. B26f *3/06*
U.S. Cl. 225—1 10 Claims

One or more conductive paths are formed on a substrate capable of thermal fracture, and then thermal energy is applied along the paths to fracture the substrate along lines defined by the paths. This technique may be used to separate a plurality of electrical circuits formed on a glass or ceramic substrate, by forming a gridwork of intersecting paths defining the desired boundaries of the circuits. Preferably, the conductive paths are heated using electrical energy to induce



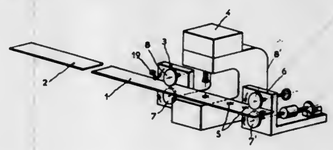
the thermal shock, although the paths may also be heated and then the substrate quenched to induce the shock.

3,556,367
TAPE DISPENSER
Akira Ikeda, Los Altos Hills, Calif., assignor to Sam I. Ishigo, San Jose, Calif.
Filed Feb. 26, 1969, Ser. No. 802,382
Int. Cl. B26f *3/02*
U.S. Cl. 225—65 13 Claims



A tape dispenser for use with a roll of tape having a curved interior surface, and an exterior surface concentric to such interior surface. The dispenser comprises an arcuate, resilient bearing member arranged to engage the interior surface of the roll of tape, a tape-cutting assembly arranged to engage the exterior surface of the roll of tape, and a mounting structure for securing together the bearing member and the tape-cutting assembly in positions for engaging the interior and exterior surfaces, respectively, of the roll of tape.

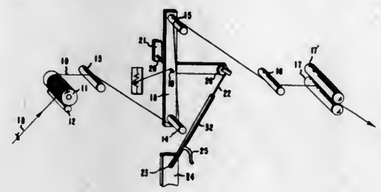
3,556,368
ARRANGEMENT FOR THE FEED OF WORKPIECES IN A MACHINE TOOL
Vidal Lucien Rene, Latresne, France, Assignor to Societe a responsabilite Limitee de Projets et Realisations de Material "Promat," Latresne (France), a French Company
Claims priority, application France, Sept. 15, 1967, 121272
Int. Cl. B65h *25/32*
U.S. Cl. 226—11 5 Claims



The invention is of feed and control means for feeding elongated workpieces in series through one or more machine tools intermittently, when machining operations (for example

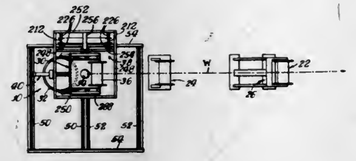
drilling) are to be performed thereon at predeterminedly spaced stations whilst the workpiece is stationary, and it resides essentially in combined feed and measuring means, the latter affording signals which control the feed: means are included to ensure passage of a sequence of separate workpieces.

3,556,369
APPARATUS FOR MAINTAINING CONSTANT TENSION IN A MOVING STRAND
Billy G. Ferguson, Hermitage, Tenn., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 26, 1968, Ser. No. 779,017
Int. Cl. B65h *23/10*
U.S. Cl. 226—25 7 Claims



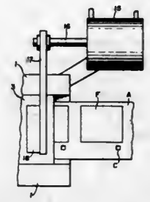
Disclosed is an apparatus for maintaining a constant tension in a moving strand which comprises a rotatably mounted rigid support for two guides, the support being arranged between strand-advancing means having speed-regulator means and strand-takeup means with the support being disposed to provide an S-shaped strand path around the guides with tension in the strand producing a torque in a first direction; torquing means for applying a continuous rotational torque to the support in a direction opposite to the first direction; and position-sensing means for the support operably associated with the speed-regulator means of the advancing means to maintain the support near an equilibrium position.

3,556,370
LET-OFF APPARATUS
Richard S. Strozewski, Berrien Springs, Mich., assignor to National-Standard Company, Niles, Mich., a corporation of Delaware
Filed Dec. 18, 1968, Ser. No. 784,582
Int. Cl. B65h *23/00*
U.S. Cl. 226—25 10 Claims



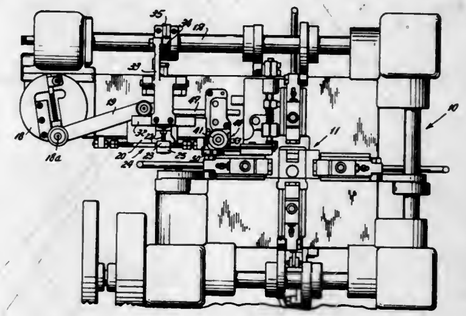
A funnel having a wire-admitting opening at the larger end thereof and a wire-discharging opening at the smaller end thereof is movable between a first position with the wire-admitting opening overlying a coil of wire on a first let-off stand and a second position with the wire-admitting opening overlying a coil of wire on a second let-off stand, said coils being successively connected. Funnel moving and holding means are provided for moving the funnel alternatively between the first and second positions and for temporarily holding the funnel in the respective first and second positions as wire is being pulled from successive coils on the first and second let-off stands. The wire is pulled through the funnel and over an elongated drum rotatably supported by the funnel adjacent to the wire-discharging opening. Snag control means are provided for stopping the wire as a snag in the wire reaches the drum.

3,556,371
FILM ADVANCING MECHANISM
Walter Douglass, Hertfordshire, and Colin Gwyn Lewis, Middlesex, England, assignors to Eastman Kodak Company Rochester, N.Y., a corporation of New Jersey
Filed July 15, 1968, Ser. No. 744,967
Claims priority, application Great Britain, July 19, 1967, 33249/67
Int. Cl. G03b *1/22*
U.S. Cl. 226—63 5 Claims



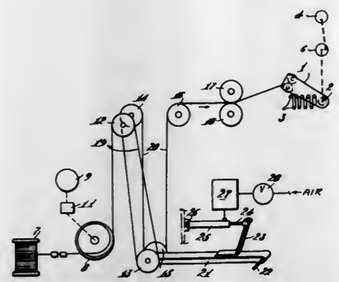
A mechanism for intermittently advancing toward a printing station a strip of film having perforated sections separated by nonperforated or irregularly perforated sections includes two spaced and independently operable film advancing members which are selectively engageable with and disengageable from the sprocket holes so that, as the members are moved in a film advancing direction, at least one of the members is engageable with a sprocket hole even though the other member may be positioned over the unperforated or irregularly perforated section of the film.

3,556,372
WIRE FEEDING DEVICE
Leslie W. Barnes, 33 Placid St., and Robert E. Barnes, 29 Waller Road, Trumbull, Conn. 06611
Filed Mar. 6, 1969, Ser. No. 804,946
Int. Cl. B65h *17/36*
U.S. Cl. 226—115 8 Claims



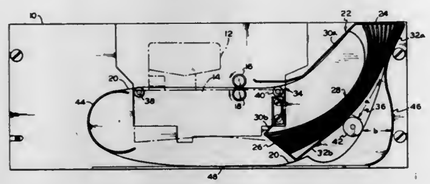
A simple and efficient wire feeding device, particularly for fine wire, having a reciprocating feed means and a rotary feed means for the wire in tandem with the rotary feed means being driven by the reciprocating feed means during a feeding operation of said reciprocating feed means. The rotary feed means tends to advance the wire at the same speed or slightly faster than the reciprocating feed means to maintain the wire between the feed means taut and under tension and prevent sagging of the wire causing undesired buckling of the same in feeding. The feed roller of the rotary feed means is driven in feeding direction through a one-way clutch and is held against rotation in the opposite direction by a one-way brake to prevent retrograde movement of the wire. The wire feeding device is usually drivingly connected to a wire fabricating machine by a releasable dog clutch which insures proper timing with respect to the machine whenever the clutch is operative.

3,556,373
TENSIONING APPARATUS
William E. Whitney, Belmont, Mass., assignor to Comstock & Wescott, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed Oct. 31, 1968, Ser. No. 772,172
Int. Cl. B65h 17/42
U.S. Cl. 226—117 5 Claims



For feeding wire or other elongate flexible stock along a predetermined path, apparatus comprising a constant feeder at one location along the path, an intermittent feeder farther along the path, a portion of the stock between said feeders being free to move in a direction transverse of the path, and a regulator in said portion for maintaining uniform tension in the stock, said regulator comprising a guide bearing on said portion and means yieldingly pressing the guide in said direction, said means including a chamber containing gas under pressure and an actuator responsive to said pressure for actuating said guide, whereby the guide can react quickly in response to rapid jerks of said feeder.

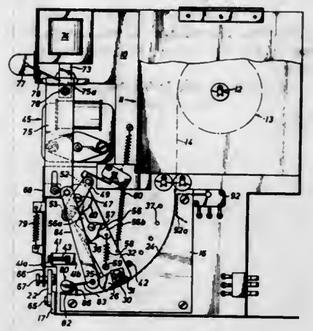
3,556,374
TAPE HANDLING APPARATUS
Joseph W. Demke, Hillsboro, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Sept. 20, 1968, Ser. No. 761,080
Int. Cl. B65h 17/42
U.S. Cl. 226—119 16 Claims



An apparatus for handling a continuous loop fanfold paper tape comprises a storage receptacle into which the tape is folded after the reading thereof. A curved guide means at the exit of the receptacle together with a curved guide wall spaced therefrom allows each fold of the tape to be smoothly withdrawn while the previous fold bows outwardly from the outlet opening without distortion of the tape.

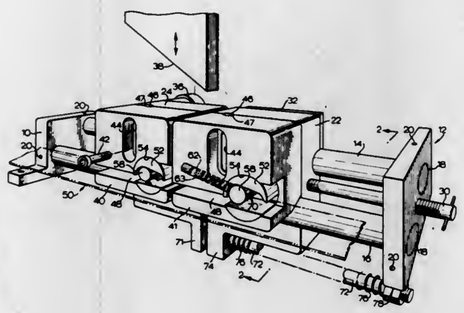
3,556,375
STAMP VENDING MACHINE
John L. Surber, Jr., 166 Greenhaven, San Antonio, Tex.
Filed Oct. 18, 1968, Ser. No. 768,653
Int. Cl. B65h 17/26
U.S. Cl. 226—128 9 Claims

A stamp vending machine is disclosed having a curved track along which a stamp web is moved toward the outlet of the machine through which the stamps are dispensed from the machine. A spring holds the stamp web in compression as the web is being moved along the track, after which the spring is moved out of engagement with the stamp web. A



holding member moves into engagement with the stamp web when the machine is deactuated to hold the web against further movement toward the outlet. This holding member is released when the machine is actuated.

3,556,376
HITCH FEED
Hermann Friedrich Offterdinger, Burlington, Ontario, Canada, assignor to Entarea Investment Management Ltd., Oakville, Ontario, Canada
Filed Mar. 10, 1969, Ser. No. 805,775
Int. Cl. B65h 17/32
U.S. Cl. 226—151 17 Claims



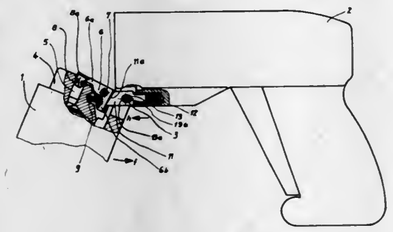
A Hitch Feed for advancing sheet and strip material comprising a novel support assembly for reciprocating one of a pair of novel transfer blocks relative to the other and a release mechanism for use with each of the transfer blocks for facilitating the insertion and removal of the workpiece.

3,556,377
YARN FEED MECHANISM
Clifford W. Palm, Frostburg, and William R. Gibson, Cumberland, Md., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware
Original application Mar. 25, 1964, Ser. No. 359,814, now abandoned, which is a division of application Ser. No. 811,066, May 5, 1959, now Patent No. 3,144,747. Divided and this application Aug. 6, 1968, Ser. No. 764,359
Int. Cl. B65h 17/22
U.S. Cl. 226—153 4 Claims



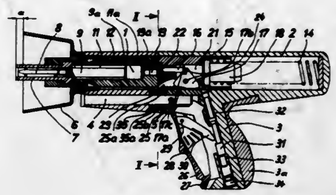
A yarn feed mechanism for producing continuous slub yarn from multifilament yarns having means for periodically overfeeding one multifilament yarn along with a second multifilament yarn to an entanglement means.

3,556,378
EXPLOSIVE ACTUATED GUN FOR DRIVING ANCHORING OR FASTENING ELEMENTS INTO HARD RECEIVING MATERIAL
Wolfgang Bayer, Eschen, Pona, Liechtenstein, assignor to Hilti Aktiengesellschaft, Schaan, Liechtenstein
Filed May 29, 1969, Ser. No. 828,878
Claims priority, application Germany, June 4, 1968, 1,703,523
Int. Cl. B25c 1/08
U.S. Cl. 227—9 3 Claims



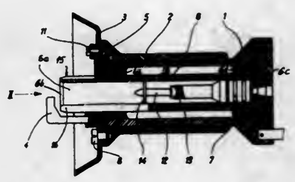
An explosive-actuated gun, for driving anchoring or fastening elements into hard receiving material, includes a first gun part formed with a cartridge chamber arranged to receive a cartridge with a tight fit, and a housing part pivoted to the first gun part and containing the cartridge detonating mechanism. A two-arm pivoted lever is provided for extracting a spent cartridge, and has one arm engageable beneath the cartridge rim with the other arm, upon relative pivoting of the gun parts, cooperating with a stop on the housing part to pivot the lever. The housing part is formed with a slot receiving the stop for displacement parallel to the gun axis, and means limit such displacement of the stop under the bias of spring means which bias said stop outwardly.

3,556,379
DEVICE FOR DRIVING ANCHORING MEMBERS
Wolfgang Bayer, Schaan, and Karl-Ernst Udert, Triesen, Liechtenstein, assignors to Hilti Aktiengesellschaft, Schaan, Liechtenstein
Filed Sept. 6, 1968, Ser. No. 758,095
Claims priority, application Germany, Oct. 2, 1967, 1,603,843
Int. Cl. B25c 1/14
U.S. Cl. 227—10 2 Claims



A device for driving anchoring members is formed of a housing enclosing an axially movable barrel with a bore therethrough and having a cartridge chamber at its rearward end. A plug axially movable through the housing is biased against the rear end of the barrel and forms a closure for the cartridge chamber. The barrel and the plug and the cross-sectional areas of the bore and the cartridge chamber are sized to afford a force locking connection between the barrel and the plug under the force of the explosive gases generated in the cartridge chamber.

3,556,380
DEVICE FOR DRIVING ANCHORING MEMBERS
Wolfgang Bayer, Schaan, Liechtenstein, assignor to Hilti Aktiengesellschaft, Schaan, Liechtenstein
Filed July 10, 1968, Ser. No. 743,704
Claims priority, application Germany, July 14, 1967, H59,569
Int. Cl. B25c 1/18
U.S. Cl. 227—11 6 Claims

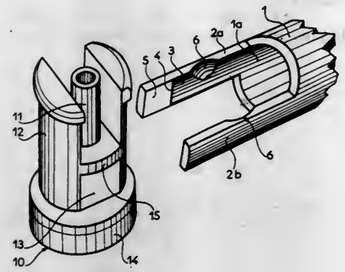


A device for driving anchoring members is formed of a casing enclosing a barrel and a gripping sleeve and cap member slidingly mounted on the exterior of the casing. The gripping sleeve and cap member can be operatively engaged with the barrel to move as a unit relative to the casing. A lever is pivotally mounted on the casing and is movably positionable into alignment in front of the bore in the barrel and a slot in the barrel wall for moving an anchoring member and a hammer piston into the firing position within the barrel.

3,556,381
DRVING-IN TOOL WITH DISMOUNTABLE JOINT OF THE PIVOTING GUIDE-PIECE

Jacques Brack, Nyon, Switzerland, assignor to Etem, Etablissement de Techniques Modernes, Vaduz, Liechtenstein, a company of Liechtenstein

Filed July 8, 1968, Ser. No. 743,098
Claims priority, application Switzerland, July 14, 1967, 10,091/67
Int. Cl. B25c 1/18
U.S. Cl. 227—11 2 Claims

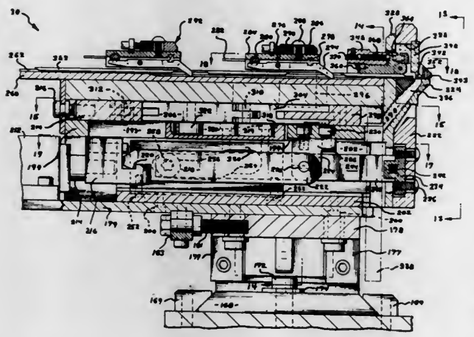


In a driving-in tool with piston rod, having a pivoting guide piece detachable from a front part of said tool, said guide piece having a body member, the general shape of which is at least partly cylindrical having two symmetrical flats, each being limited, at its end which is turned backwards, after assembling, by a trunnioning boss, whereas the part of the driving-in tool designed to receive the pivoting guide piece is extended, forwards, by two longitudinal arms diametrically opposite to each other and each showing an inner longitudinal recess running parallel to the axis and the cross section of which corresponds, with a small clearance, to the cross section of one of the aforesaid bosses, recess to which is tangentially connected a transverse recess of identical cross section which opens out aside of the arm, the outlets of both transverse recesses being located on the same longitudinal side of the two arms.

3,556,382
APPARATUS FOR INSERTING CONTACT MEMBERS INTO INSULATING BLOCKS

Willard Le Roy Busler; Kenneth Foster Folk; Howard Charles Phillips, and Milton Dean Ross, Harrisburg, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed July 31, 1968, Ser. No. 749,122
Int. Cl. B27f 7/00
U.S. Cl. 227—93 8 Claims

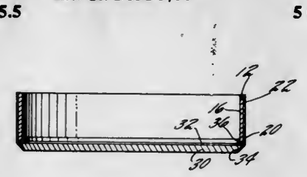


Apparatus for inserting contact terminals into insulating blocks, such as bobbins, comprises an indexible turntable, having a plurality of bobbin holding jigs mounted thereon, and a fixed table, located beneath the turntable, on which a plurality of terminal applicators are mounted. Bobbins are approximately positioned in the jigs at a loading station and are carried past the several inserting stations. Each bobbin jig has clamping means which is actuated between the loading station and the first inserting station and which clamps the bobbin to the jig and accurately positions it on the periphery of the turntable so that the bobbins are precisely located with respect to the several applicators at the inserting stations. The applicators are adjusted to insert a terminal into each of the several terminal receiving openings in the bobbins, each applicator being movable relatively towards and away from the turntable during an operating cycle to insert a single terminal.

3,556,383
BOX CONSTRUCTION AND METHOD OF MANUFACTURE

Norman Glasband, and Hyman Saul Glasband, West Hartford, Conn., assignors to The Callaghan Paper Box Company, Hartford, Conn., a corporation of Connecticut

Filed Sept. 30, 1968, Ser. No. 763,836
Int. Cl. B65d 3/10
U.S. Cl. 229—5.5 5 Claims

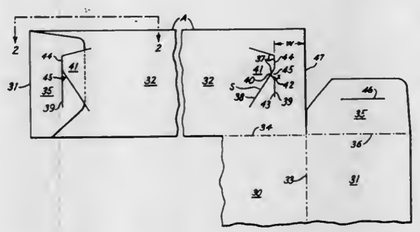


A box construction and method of manufacture are presented wherein the sidewall and top disc are intimately secured by an adhesive which is caused to flow between the abutting surfaces of the disc and sidewall in the final step of construction. In an intermediate step of construction the sidewall and top disc are temporarily held together by an adhesive tape wrapped around the sidewall and overlapping the top disc. The top disc is preferably provided with a beveled edge in the area of the overlap of the adhesive tape, and an adhesive material may be placed in the area of this beveled edge to further secure the tape to the top disc.

3,556,384
INTERLOCKS FOR FOLDING BOX PANELS

Chester J. Pierce, Jr., Palo Alto, Calif., assignor to Kliklok Corporation, New York, N.Y., a corporation of Delaware

Filed May 21, 1969, Ser. No. 826,533
Int. Cl. B65d 5/26, 5/30
U.S. Cl. 229—35 10 Claims

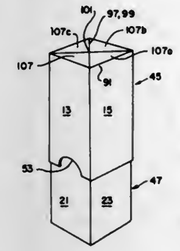


A glueless interlock is provided in which two arms of a three-armed star cut in one box panel define an insertion slot outlining an internal tongue which points towards the box corner, under which tongue a second panel or flap is insertable. The second panel or flap has an internal engagement slot in it, one portion of which, in fully inserted position, coincides with, and engages, a portion of the insertion slot and another portion of which coincides with, and engages, the third arm of the star cut. The third arm is of curved or angular outline adjacent the star center and forms at that point a lock tab or tip which, when snapped past an edge of the engagement slot, maintains the coinciding edges in load-bearing engagement.

3,556,385
SINGLE-PIECE SELF-OPENING CONTAINER CONSTRUCTION

Kenzo Kato, Kamakura-shi, Japan, assignor to Philip J. Hewitt, Atherton, Calif., a part interest

Filed Oct. 23, 1968, Ser. No. 769,977
Int. Cl. B65d 5/02, 43/14
U.S. Cl. 229—37 2 Claims

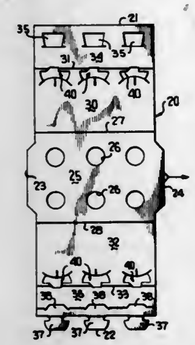


A self-opening container constructed from a single-piece flat blank. A flower-petallike, self-opening end is produced by folding along cutouts and scoring lines on a flat blank. The self-opening end opens upon sliding an inner section longitudinally within an outer section, both produced by folding a unitary flat blank along score lines.

3,556,386
WRAP-AROUND CARTON FOR BOTTLES OR THE LIKE

Robert H. Ganz, Bergenfield, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Original application Mar. 17, 1967, Ser. No. 623,893, now Patent No. 3,474,590, dated Oct. 28, 1969. Divided and this application July 22, 1969, Ser. No. 843,318
Int. Cl. B65d 5/02, 75/00
U.S. Cl. 229—40 17 Claims

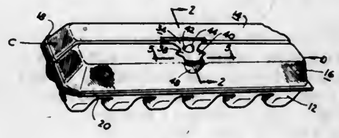


This disclosure is directed to a wraparound carrier blank which includes means for accurately aligning the carrier blank prior to the carrier being wrapped around a plurality of articles, and means for drawing the blank into tight embracing relationship with the articles during a package-forming operation. The repositioning means are a pair of edges disposed generally transverse to a transverse center line of the blank in each of a pair of closure panels for engagement by repositioning fingers of a packaging machine. The means for drawing the blank into embracing relationship with the articles are edge portions formed in each of the closure panels which are disposed generally normal to a longitudinal centerline of the blank and adapted for contact by tightening members of the packaging machine.

3,556,387
POSITIVE LATCH FOR TWO-LID EGG CARTONS

David C. Trimble, Yorklyn, Del., assignor to Haveg Industries, Inc., Wilmington, Del., a corporation of Delaware

Filed Nov. 29, 1968, Ser. No. 780,150
Int. Cl. B65d 5/66, 85/32
U.S. Cl. 229—44 20 Claims

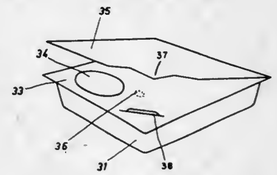


The invention relates to a latch for a two-lid egg carton. The latch comprises a flap which extends from one lid across the other lid and cooperating latching means provided on the flap and on the other lid. The cooperating latching can be: A hole provided in the flap and a projecting button on the other lid which extends through the flap hole or a pair of ears are provided on the flap which are wedged into a corresponding recess on the other lid or are snapped into an opening provided on the other lid. The ears, recess or opening latching means can be used as a supplementary latching means in combination with the button and hole or can be used as the sole latching means.

3,556,388
PACKING BOX WITH COLLAPSIBLE TAKE-OUT OPENING

Karl Klein, Upper Hesse, Germany, assignor to Hassia Verpackung Karl Klein, a firm of Germany

Filed Apr. 29, 1968, Ser. No. 725,233
Claims priority, application Germany, Apr. 28, 1967, Sept. 21, 1967, H62587;H63962
Int. Cl. B65d 17/00
U.S. Cl. 229—51 2 Claims



A packing container having a level wall section on which the lid lies flat. The lid covers most of the section including a removal opening therein and is releasably sealed thereto. A slit is provided into which a tip of the lid is inserted for reclosing after initial opening.

3,556,389
CUT FLOWER PACKAGE

Gerald L. Gregoire, San Francisco, Calif., assignor to Gregoire Flowers, Inc., San Francisco, Calif., a corporation of California

Filed Dec. 21, 1967, Ser. No. 692,571
Int. Cl. B65d *31/16, 65/02*
U.S. Cl. 229—53 2 Claims

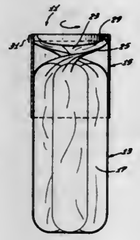


A package for cut flowers is made of flexible material having a champagne glass shape. The lower part of the package grips the stems and the upper part of the package shields and protects the blossoms while allowing ample space for the blossoms to breath.

3,556,390
PACKAGE FOR ARTICLE SUCH AS FRANKFURTERS

Jerome Gould, Encino, and Thomas W. Kellogg, Newport Beach, Calif., assignors to Design Properties, Inc., Los Angeles, Calif., a corporation of California

Filed Mar. 24, 1969, Ser. No. 811,280
Int. Cl. B65d *33/16*
U.S. Cl. 229—62 12 Claims

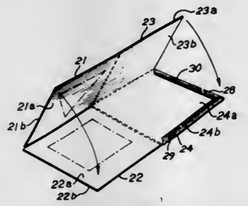


This disclosure describes a package which includes a flexible bag having an open end. A relatively rigid collar is affixed to the bag adjacent the opening in the bag. The bag can be closed by turning of the collar to twist the region of the bag adjacent the opening. The collar is then retained in position with the end of the bag twisted shut.

3,556,391
PHONOGRAPH RECORD ALBUM PACKAGE

Donald W. Kosterka, Wayne, Ill., assignor to Album Graphics, Inc., Chicago, Ill., a corporation of Illinois

Filed Aug. 22, 1969, Ser. No. 852,242
Int. Cl. B65d *85/30*
U.S. Cl. 229—68 5 Claims

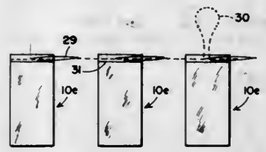


A phonograph record album package made from a blank of sheet material formed to provide at least six printable surfaces and an integral record-receiving pocket.

3,556,392
COFFEE BAG

Dorothy Robin, 20—56 29th St., Long Island City, N.Y. 11105

Filed Jan. 21, 1969, Ser. No. 792,434
Int. Cl. B65d *27/10, 33/12, 85/70*
U.S. Cl. 229—69 1 Claim

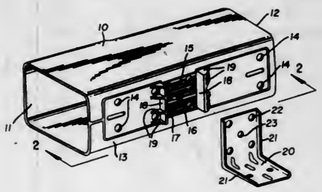


This invention relates to a bag formed of paper and containing granular coffee for steeping in boiling water for making individual or small servings of coffee.

3,556,393
NEWSPAPER DELIVERY TUBE WITH ONE BOLT MOUNTING

Clyde Kenneth Fibus, Youngstown, Ohio, and Robert C. McCormick, Big Flats, N.Y., assignors to The Steel City Corporation, Youngstown, Ohio, a corporation of Ohio

Filed Sept. 17, 1968, Ser. No. 760,141
Int. Cl. B65d *91/00*
U.S. Cl. 232—17 2 Claims



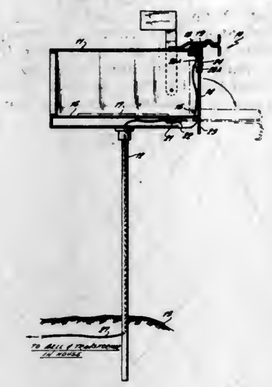
A newspaper delivery or motor route tube comprising an open end receptacle for newspapers having a simplified mounting configuration on one surface thereof for receiving and retaining an L-shaped mounting bracket which, in turn, is adapted to be bolted to a supporting stake or post.

3,556,394
AUDIBLE HOUSE ALARM FOR RURAL MAIL BOXES

Constantine A. Caldes, 37 Canterbury Drive, Scotch Plains, N.J. 07076

Filed Dec. 18, 1968, Ser. No. 784,868
Int. Cl. A47g *29/12*
U.S. Cl. 232—36 1 Claim

A rural mail box including an electrical-warning system to let a rural resident know if anyone is tampering within his mail box, the warning system comprising an electrical circuit having an audible alarm in the house, switch means in the

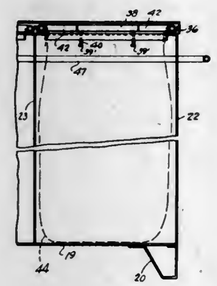


mail box that will automatically close when the box is opened to sound the alarm.

3,556,395
BAG HOLDER

Ralph E. Herman, 334 Dupps, Pueblo, Colo. 81005

Filed Nov. 8, 1968, Ser. No. 774,431
Int. Cl. B65d *91/00*; A63b *55/14*
U.S. Cl. 232—43.2 14 Claims



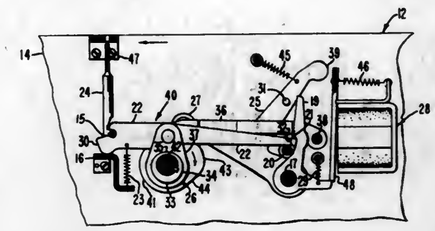
A bag holder consisting of a stand, cabinet, or frame, having a bag-supporting top portion consisting of a pair of horizontal parallel side arms connected by a rear transverse arm. An upwardly facing channel is secured on each side arm. A rear transverse rod is resiliently connected to the rear transverse arm and a rectangular frame is pivoted to the rear transverse rod, the sides of the frame being receivable in the channels. A bag can be fastened within the rectangular frame by wrapping the side portions of its top around the respective frame sides and locking them in the channels, the locking action being aided by the resilient connection of the rear transverse rod to the rear transverse arm. A cover is hinged to the rear transverse arm and can overlie the top of the bag.

3,556,396
RECORD PROCESSING MECHANISM

Paul L. Terbrueggen, Grosse Pointe Farms, and George K. Caspari, Plymouth, Mich., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed June 12, 1968, Ser. No. 736,488
Int. Cl. G06k *1/05*
U.S. Cl. 234—110 1 Claim

The disclosure embodies a record-processing tool and includes mechanism for activating the tool to punch or detect a code hole in a record medium. The tool is activated by a lever selectively pivoted about one of two opposite-acting

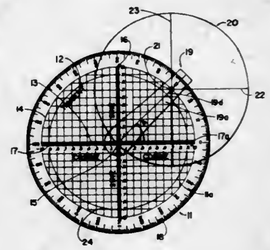


fulcrums by cyclically operable means, selection being dependent on the retraction of one of the fulcrums.

3,556,397
CALCULATING DEVICE FOR TRIGONOMETRIC FUNCTIONS

David C. Andersen, Salt Lake City, Utah (4479 Rockland Place, Apt. 6, La Canada, Calif. 91011)

Filed Dec. 30, 1968, Ser. No. 787,687
Int. Cl. G09b *23/04*; G06g *1/00*
U.S. Cl. 235—61 9 Claims



A trigonometric calculator with a circular degree scale on a scale member and a cursor member mounted to pivot on the scale member at the center of the degree scale. Coordinate axes with their origin at the center of the scale extend one unit length in each positive and negative direction and are calibrated from zero to one. Hairlines are mounted on the cursor member one unit length from the center of the degree scale for placement parallel the ordinate and abscissa axes. The sine and cosine functions may be directly read from the coordinate axes for any angle indicated by the cursor member on the degree scale. Other scales may be provided on either side of the scale member to indicate other trigonometric information relevant to the indicated angle.

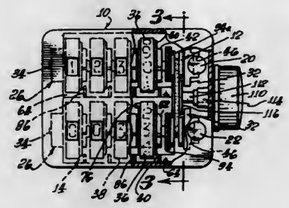
3,556,398
HAND HELD ADDING MACHINE

Edward C. Walsh, LAAC-431 W. 7th St., Los Angeles, Calif.

Continuation-in-part of application Ser. No. 709,106, Feb. 28, 1968, now abandoned. This application Mar. 27, 1969, Ser. No. 811,156
Int. Cl. G06c *27/00*; G06f *15/18*; G06c *15/117*
U.S. Cl. 235—110 12 Claims

The device of the invention is a small or miniature-adding machine capable of being held in one hand and manually operable to perform computations, particularly simple addition. The device comprises two small mechanical counters of known type. The counters are coupled together to operate simultaneously. Both are provided with manual reset in the form of a reset button. A gear drive is provided operable by a manually rotatable knob with a ratio of, for example, 10 to 1. To operate the knob is rotated with the thumb until a figure appears on one counter in the amount to be added. This

amount is of course put into both counters. The first counter is then manually reset to zero with the button, the added



amounts remaining on the second counter until the computation is completed and then the second counter is reset to zero.

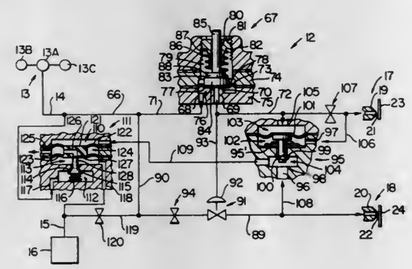
ERRATUM

For Class 235—200 see:
Patent No. 3,557,358

3,556,399
HIGH AND LOW PRESSURE PNEUMATIC CONTROL SYSTEM

Louis M. Puster, and Edward N. Caldwell, Knoxville, Tenn., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

Filed Apr. 2, 1969, Ser. No. 812,757
Int. Cl. G05d *23/185*
U.S. Cl. 236—47 **32 Claims**

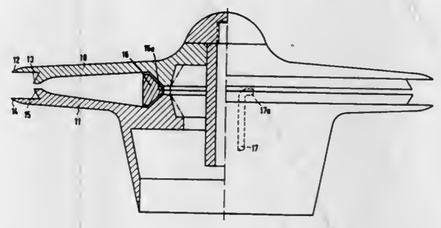


A pneumatic control system having a source of control fluid providing two different control pressure levels for respectively switching the control device of the system from one operating condition thereof to another operating condition thereof, the control device comprising a pair of condition controller means each having a sensor and a bleed-type pneumatic valve operated thereby together with relay means operatively interconnected to the source for directing a branch signal of the control fluid to a pneumatically operated device in relation to a pilot signal directed to a pilot chamber of the relay means by one of the control means. First and second passage means are adapted to respectively interconnect the source to the valves of the control means, a pressure responsive means being disposed in the first passage means for preventing fluid communication therethrough when the source is at one pressure level and permitting fluid communication therethrough when the source is at its other pressure level. A switching means is provided in a third passage means and has one position for interconnecting only the second passage means to the pilot chamber whereby the pilot signal for the relay means is provided only by one of the controller means and having another position for interconnecting only the first passage means to the pilot chamber whereby the pilot signal or relay means is provided only by the other controller means.

3,556,400
APPLIANCE FOR THE ELECTROSTATIC COATING OF OBJECTS WITH COATING MATERIALS IN LIQUID OR POWDER FORM

Otto Gebhardt, Fellbach Wurttenberg, and Fred Luderer, Weiler Zum Stein, Wurttenberg, Germany, assignors to Messrs. Ernst Mueller, Luft - und Farbspritztechnik, Winnenden, Germany, a corporation of Germany

Filed May 15, 1968, Ser. No. 729,297
Claims priority, application Germany, May 17, 1967, M74016
Int. Cl. B05b *5/00*
U.S. Cl. 239—15 **9 Claims**

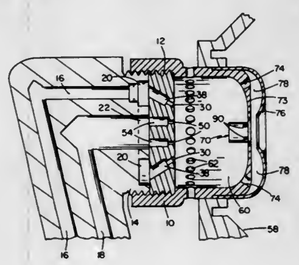


An electrostatic-painting appliance operating at high voltage to ionize paints has at least two parallel-rotating discs to disperse paint on their inner surfaces over a steplike ridge. A distributor ring between the discs permits one or more paint jets to disperse paint selectively to one or both discs to thereby permit mixing or selection of separate colors or constituent parts.

3,556,401
STREAMING

Nathaniel Hughes, Beverly Hills, Calif., assignor to Energy Sciences, Inc., El Segundo, Calif., a corporation of California

Filed Nov. 22, 1968, Ser. No. 778,145
Int. Cl. B05b *3/14*
U.S. Cl. 239—102 **6 Claims**



Liquid is mixed with a gas in a chamber of diameter large relative to a nozzle sculpted in boundary layer downstream thereof, the liquid entering the chamber through holes in a plate at an upstream end of the housing.

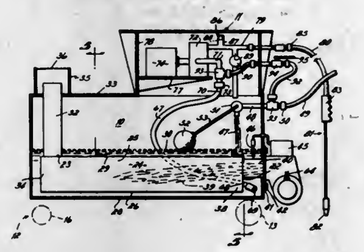
3,556,402
PORTABLE SPRAYING APPARATUS FOR WASHING VEHICLES

William J. Wolking, 685 Neeb Road, Cincinnati, Ohio 45238

Continuation-in-part of application Ser. No. 823,366, May 9, 1969, now abandoned. This application Dec. 10, 1969, Ser. No. 883,950
Int. Cl. B05b *1/24*
U.S. Cl. 239—130 **7 Claims**

Portable spraying apparatus for washing vehicles that includes a hot water tank, a soap reservoir, and a high pressure

spray system all compactly mounted on a set of wheels for easy movement by a single operator from washing position to position as desired. The hot water tank houses an enclosed, elongated heating chamber that includes a flue at one end which extends up through the top of the hot water tank; a flame source located at the other end of the heating chamber providing flame heat for the heating chamber. A float valve in a tap water input line connected to the hot water tank

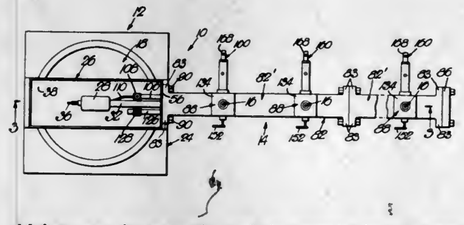


functions to maintain the water level in the hot water tank at a preselected depth above the top of the heating chamber. A water temperature controller interconnected with the flame source functions to maintain automatically the temperature of the water in the hot water tank at a predetermined value. The soap reservoir includes a valve which connects the reservoir with the hot water to selectively meter soap from the reservoir into the hot water at a desired rate.

3,556,403
WAX SUPPLYING APPARATUS FOR PATTERN MOLDS

Ralph Manginelli, 6 Clover St., West Haven, Conn. 06516

Filed Oct. 17, 1968, Ser. No. 768,430
Int. Cl. B05b *1/24*
U.S. Cl. 239—135 **13 Claims**



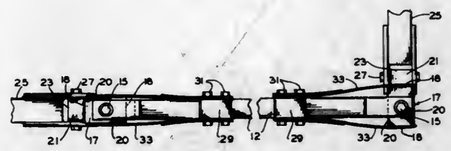
Molten wax in a supply tank is pumped into a heated manifold having a plurality of valve-controlled nozzles through which to force wax under pressure into clamp-on molds to form wax patterns therein, with the tank being supplied with hard wax at a rate, and the wax being heated and agitated in the tank, to have at all times an available supply of molten wax adequate for continuous or interrupted production of wax patterns.

3,556,404
SPRINKLER BOOM RESILIENT PIVOT

Harold L. Walker, Lubbock, Tex., assignor to Prior Products, Inc., Dallas, Tex., a corporation of Texas

Filed June 11, 1969, Ser. No. 832,061
Int. Cl. B05b *1/20*
U.S. Cl. 239—167 **6 Claims**

A mobile spray machine including a rectangular block pivoted to the machine on a vertical axis for pivotally supporting the spray boom and a pair of transversely extending leaf springs mounted on the machine transversely inwardly of the block so that their outer ends engage the sides of the block and bias the block and the boom mounted thereon in a direction transverse of the machine, while yielding sufficiently to permit the boom to be deflected by obstructions in

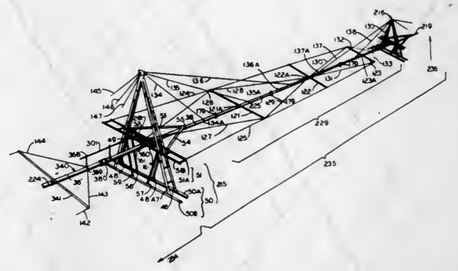


its path without damage to the boom and to permit the boom to be swung to its longitudinal inoperative position for travel.

3,556,405
SPRINKLING APPARATUS CONTROL

Harold Jay Harris, Seminole, and James B. Johson, Jr., Lubbock, Tex., assignors to Gifford-Hill-Western, a division of Gifford-Hill & Co., Inc., Dallas, Tex., a corporation of Delaware

Continuation-in-part of application Ser. No. 868,182, Oct. 21, 1969. This application Oct. 21, 1969, Ser. No. 868,181
Int. Cl. B05b *3/00*
U.S. Cl. 239—177 **8 Claims**



In a combination of irrigation sprinkler supporting trussed pipe sections and movable pipe supporting towers rigidly united with motors on each tower station, each section of pipe is beyond the trussed portion thereof pivotally connected to the next section and the motor control of each tower is connected to the section of pipe outboard thereof to be responsive to the uphill and downhill as well as retarded and advanced position of that tower, the units of movable towers and the pipe therebetween powered to move continuously and evenly in a preset formation in a circular pattern and thereby distribute irrigation water in an even and predictable manner over undulating as well as flat ground.

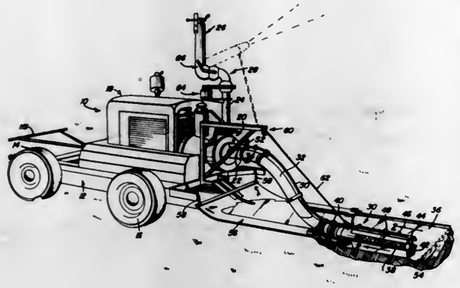
3,556,406
IRRIGATION SPRINKLER WITH PUMP PRIMING SYSTEM

Henry C. King, Hamilton, Mont., assignor to Elsie King, a part interest and Donna F. King, Hamilton, Mont., a part interest

Continuation-in-part of application Ser. No. 639,892, May 19, 1967, now abandoned. This application June 20, 1969, Ser. No. 845,597
Int. Cl. B05b *3/18*
U.S. Cl. 239—181 **14 Claims**

An automatic irrigation ditch traversing sprinkling apparatus provided with a power operated centrifugal pump means intaking water from the irrigation ditch for pressure discharge through a sprinkling head wherein the device is provided with a vacuum actuated pump priming means adapted to automatically maintain or reprime the centrifugal

pump which apparatus includes control means for simultaneously stopping the traversing motion of the device during

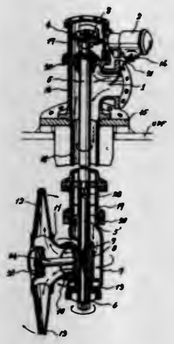


repriming so as to insure uniform distribution of water to an area being irrigated.

3,556,407
CLEANING DEVICE WELL ADAPTED FOR USE IN TANKS AND THE LIKE OF OIL TANKER

Iwajiro Niikura, Hayama-machi, Miura-gun, and Hiroshi Mikami, Yokohama, Japan, assignors to Niikura Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan

Filed Nov. 6, 1968, Ser. No. 773,733
Int. Cl. B05b *3/04*
U.S. Cl. 239—227 2 Claims

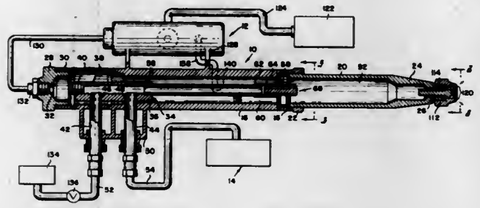


A tank cleaning assembly of the type having upper and lower sections, the upper section including a flange with a fluid intake port defined above said flange while the lower section includes a pipe which is lowered into a tank and held to the tank upper deck by the flange, said pipe having nozzle means towards the end of the pipe lowered into said tank. This tank cleaning assembly comprises a hydraulic reciprocator in said upper section, including a piston therein, with a reciprocating piston ratchet shaft at an outer end thereof, and a conduit connected to said intake port which causes said piston to reciprocate by receiving pressure water through said conduit; a gear mechanism engaged by said ratchet shaft, upper and lower rotary shafts rotated and driven through said ratchet and gear mechanism, said rotary shafts being disposed in the pipe to lead pressurized cleaning fluid into said tank. A jet nozzle body with upper and lower ends fastened at its lower end to the lower end of the lower rotary shaft and is freely rotatable, a hollow and nonrotatable worm gear is concentrically mounted on the outside of said lower rotary shaft at least a part of which penetrates through said jet nozzle body outer wall and is exposed for engagement. A nozzle fitting shaft is mounted on the jet nozzle body in a transverse direction, a nozzle holder with a cylindrical periphery is supported by said nozzle fitting shaft and said jet nozzle body in a freely rotatable manner. A worm wheel is fixed to the periphery of said nozzle holder and engaged with the worm gear to rotate the nozzle holder and nozzles fixed to said nozzle holder.

3,556,408
APPARATUS FOR THE COMBUSTION FIRING OF ASPHALT, PETROLEUM AND PULVERIZED COAL

Albert W. De Voe, R.F.D. 4, Portland, Maine 04105

Filed July 25, 1968, Ser. No. 747,698
Int. Cl. B05b *7/04*
U.S. Cl. 239—403 10 Claims

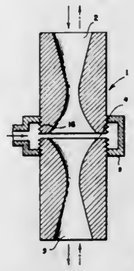


A process and apparatus for the combustion firing of asphalt, petroleum and pulverized coal including a fuel gun having a tubular body, a fuel source and an emulsifying agent source in communication with the fuel gun, a fuel tube assembly passing longitudinally through a substantial portion of the fuel gun tubular body, the fuel tube assembly terminating in a fuel spinner, a gate at the locus of the spinner between the outer periphery of the latter and the inner periphery of the tubular body for admitting the emulsifying agent for mixing with the fuel in an emulsifying chamber after it passes through the fuel spinner, thereby forming an emulsion slurry, the slurry then being fed through a second spinner to a spin chamber prior to discharge from the gun for firing.

3,556,409
FLUID CONTROL DEVICE

Dag Olof Alfred Johannisson, Lidingo, Sweden, assignor to AGA Aktiebolag, Lidingo, Sweden, a corporation of Sweden

Filed Oct. 22, 1968, Ser. No. 769,645
Claims priority, application Sweden, Nov. 30, 1967, 16492/67
Int. Cl. B05b *7/04*
U.S. Cl. 239—433 12 Claims



A fluidistor fluid control device comprising a plurality of channels such as Laval nozzles, each channel extending from a control jet inlet to an outlet, such that the direction of flow of fluid through the channel is dependent on the relative flow characteristics of the channels. These flow characteristics can be varied by varying the shape or size of the channels, or by applying a separate control fluid to the interior of one or more of the channels.

3,556,410
SPRAY NOZZLE

Perry Arant, 2461 Marino Drive, Newport Beach, Calif.

Filed June 12, 1967, Ser. No. 645,207
Int. Cl. B05b *1/14*
U.S. Cl. 239—552 14 Claims

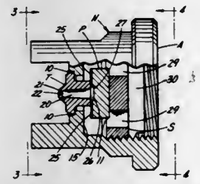


A nozzle for spraying hot or superheated fluid, comprising a nozzle body having a nontapered bore therethrough within which a solid cylindrical core is concentrically mounted. The cross-sectional area of the nozzle bore is a little less than twice that of the core, and the outer end of the core is spaced a distance from the discharge end of the nozzle equal to about one-third the length of the nozzle, so that a stream of hot or superheated fluid discharged from the nozzle is caused to contract to form a high-velocity discharge stream of liquid surrounded by steam that can be directed against a surface to clean the same, without drip or drizzle at the nozzle end when in use. The cylindrical core has longitudinally spaced, radial positioning ribs formed thereon, and is received in a counterbore in the inner end of the nozzle body, said inner end having tapered external threads thereon for mating with the tapered pipe threads in a mounting elbow carried by a spray gun barrel. When the nozzle body is threaded into the elbow, the tapered threads cause the rear end of the nozzle body to be contracted to thereby lock or secure the ribbed core in its counterbore.

3,556,411
SPRAY NOZZLE

Eric T. Nord, Oberlin; Alvin A. Rood, Westlake, and Frederic M. Bosworth, Rocky River, Ohio, assignors to Nordson Corporation, Amherst, Ohio, a corporation of Ohio

Filed May 22, 1968, Ser. No. 731,062
Int. Cl. B05b *1/30*
U.S. Cl. 239—581 26 Claims



Improvements in spray nozzles suitable for hydraulic airless spraying in flat fan patterns, including spraying viscous liquids such as paint, are disclosed herein. Such an improved spray nozzle comprises a known V-cut discharge orifice in a known hemispherical or hemispheroidal impingement dome at the downstream end of a central longitudinal approach passage. It also comprises novel means at or near the upstream end of the passage in novel coaction with the downstream parts of the nozzle for giving a turbulence and/or beneficient quality to the fluid stream as it enters said dome and/or enters and flows through and/or beyond said discharge orifice. It is also disclosed that this nozzle gives an improved spray pattern with better atomization and distribution in relation to the viscosity of the fluid being sprayed and the fluid pressure drop across the nozzle. The improvements disclosed herein may also be incorporated advantageously in nozzles such as in the Brooks U.S. Pat. No. 3,366,337, for mixing and spraying two or more different constitutents of a multicomponent material system. In this improved spray nozzle, the upstream end of said passage is closed against the entry of fluid moving in the direction of the longitudinal axis of the passage, and the nozzle is free of prior art metering jets, preorifices and restrictors which tended so to move the fluid. Fluid is required to enter the upstream end of the passage transversely of said axis, and change direction abruptly with vigorous agitation in a zone or chamber of turbulence and agitation at an appreciable distance from the downstream outlet orifice. The initial agitation produces, or results in the beneficiently turbulent stream and effect mentioned above. It is also disclosed that one form of this improved nozzle is conveniently made in two parts and comprises a removable end closure part, sometimes herein called a turbulence plate, coacting with the upstream end of the said passage, which passage, with said dome and orifice, is incorporated in the other, i.e. body or "tip," part of the nozzle. The nozzle can be caused to revert to substantially prior conventional form and function upon removal of the turbulence plate from its coacting relation to and with the said tip or body portion of the nozzle.

3,556,412
BURNER NOZZLE FOR HOT BLAST STOVE

Joseph A. Vietorisz, Pittsburgh, Pa., assignor to Koppers Company, Inc., a corporation of Delaware

Filed June 18, 1968, Ser. No. 738,014
Int. Cl. B05b *1/34*
U.S. Cl. 239—591 8 Claims

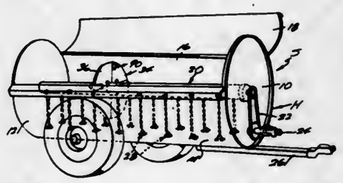


A burner nozzle includes a cylindrical shell having an inner lining of insulating material and a plurality of refractory units inside of the lining. The refractory units are complementary and form a plurality of channels that direct a gaseous fluid, flowing through the nozzle in a spirally converging manner into a mixing relation with another gaseous fluid flowing through the nozzle in an axial manner.

3,556,413
FLAIL-TYPE MATERIAL SPREADER WITH LOAD OPENER

Paul G. Lindgren, Albert City, Iowa 50510

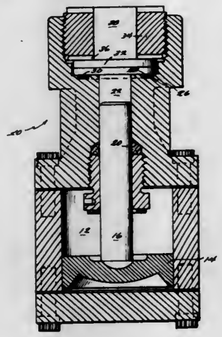
Continuation-in-part of application Ser. No. 516,853, Dec. 28, 1965, now Patent No. 3,392,922. This application July 5, 1968, Ser. No. 742,803
Int. Cl. E01c *19/20*
U.S. Cl. 239—658 2 Claims



A machine comprising a hollow generally cylindrical hopper having a top opening extending therealong, a flail

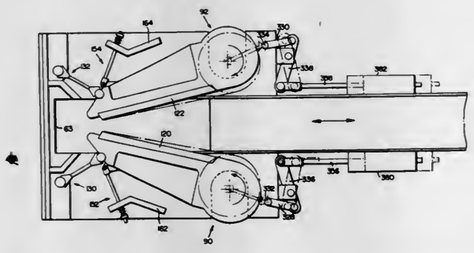
shaft extending axially along the hopper and journaled at its ends thereon, a plurality of flexible chain flails secured to the flail shaft at locations spaced therearound and at locations spaced therealong, a material breaking and displacing device fixed to the flail shaft between adjacent flails thereof.

3,556,414
METHOD AND APPARATUS FOR DISRUPTING CELLS
David H. Eberly, Jr., Fairfield, Conn., assignor to United States Banknote Corporation, N.Y., a corporation of Virginia
Filed Feb. 28, 1968, Ser. No. 708,837
Int. Cl. B02c *19/18, 19/00;* **A61k** *23/00*
U.S. Cl. 241—1 **34 Claims**



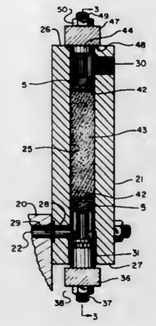
A mass of plant or animal cells in the form of a viscous paste are introduced into a compression chamber, and are compressed or compacted by a reciprocating plunger rod under relatively high pressure of at least 10,000 p.s.i. The mass of cells are then disrupted by being intermittently discharged to a relatively low pressure environment, such as atmospheric pressure, by passing through a dynamic orifice defined by a vibrating or oscillating polished disc and a cooperating sealing ring assembly. The oscillating disc and sealing ring assembly function as a heat sink which prevents excessive heating of the cell mass during discharge in order to preclude denaturation of the the cells. The mode of oscillation of the disc is such that it restricts the cell discharge to a thin-film radial discharge of monocellular thickness, thus eliminating the possibility of cell buffering or cushioning in the vertical plane, thereby ensuring a high yield of subcellular components.

3,556,415
JAW CRUSHER AND METHOD OF OPERATION THEREOF
Heinz W. Winter, Salt Lake City, Utah, assignor to Envirotech Corporation, Salt Lake City, Utah, a corporation of Delaware
Filed July 12, 1968, Ser. No. 747,766
Int. Cl. B02c *1/06*
U.S. Cl. 241—30 **9 Claims**



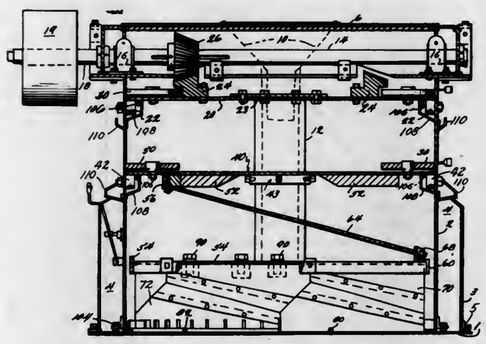
A generally horizontal flow vertical axis jaw-type crusher is provided wherein the jaws are mounted for eccentric motion toward and away from each other and linkage means driven by at least one of the jaws is provided for synchronous compaction feeding of material to be crushed into the jaws of the crusher.

3,556,416
APPARATUS FOR SHEARING SOLIDS IN A SOLIDS-LIQUID SUSPENSION
Joseph Iannicelli, Macon, Ga., assignor to J. M. Huber Corporation, Locust, N.J., a corporation of New Jersey
Filed June 28, 1968, Ser. No. 740,955
Int. Cl. B02c *19/00*
U.S. Cl. 241—39 **1 Claim**



An apparatus for use in conjunction with a pump capable of pumping a solid-liquid suspension at pressures in excess of 1000 p.s.i. which apparatus comprises a column containing particulate media adjustably clamped in fixed position through which the slurry is pumped. The media is made up of hard, durable, substantially nondeformable, non flowable discrete particles forming a plurality of torturous passages producing high shear on solids in the suspension pumped therethrough.

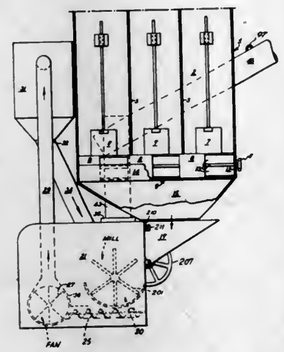
3,556,417
ROTARY-RECIPROCATORY CRUSHING MILL
Henry L. Newmiller, 1539 11th Ave., Helena, Mont. 59601, and Benjamin J. Pugh, deceased, late of Helena, Mont., by Viola May Pugh, sole heir, Helena, Mont.
Filed Jan. 10, 1968, Ser. No. 696,956
Int. Cl. B02c *19/00*
U.S. Cl. 241—46.06 **4 Claims**



A crushing mill with a cooperating stator and rotor wherein the crushing surfaces are provided with segmented abutting surfaces. The segments are inclined such that as the rotor surface cooperates with the stator, the inclination of

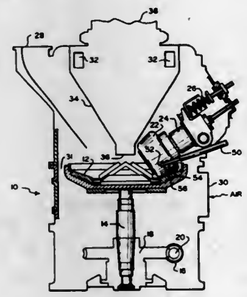
the segment surfaces causes the rotor to be moved axially in a reciprocatory fashion. Flexible cables support and drive the rotor and a central feed tube directs material and liquid to the cooperating surfaces. Screened openings are positioned circumferentially of the crusher to allow the crushed material to exit.

3,556,418
FEED MIXING MILL
Marshall F. Hokana, Ellendale, N. Dak. 58436
Filed Mar. 2, 1967, Ser. No. 620,147
Int. Cl. B02c *13/06, 13/286, 9/00*
U.S. Cl. 241—60 **5 Claims**



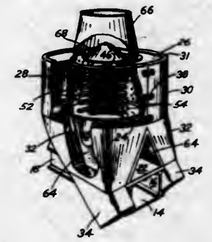
A feed processing assembly in which the various components of formulas can be stored, metered and thereafter mixed, processed and conveyed to a storage area, all with a minimum of effort on the part of the operator. More particularly, this device comprises a gravity storage bin with compartments for holding the individual feed components such as corn, barley, oats and the like, each compartment terminating at the lower portion in gate means. Each gate means has a moving regulator for metering varying amounts of the particular feed from the compartment to a receiver which directs the feed to selected sections of a hammer mill with screen outlets of different sizes whereby the texture of the milled feed may be controlled. A conveyor with pivotable augers leads from the hammer mill to a storage area.

3,556,419
RAKE MEANS FOR USE IN A GRINDING MILL
Gustav H. Frangquist, Mount Prospect, and Paul F. Karnstedt, Park Ridge, Ill., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Aug. 21, 1968, Ser. No. 754,362
Int. Cl. B02c *15/00*
U.S. Cl. 241—61 **2 Claims**



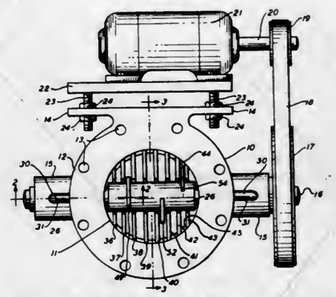
A pulverizing mill for grinding material having a rotatable grinding ring, and grinding rollers coacting with the grinding ring for pulverizing material therebetween. Rake means are associated with each of the grinding rollers to break up the matted and packed finely ground material clinging to the upper surface of the grinding ring.

3,556,420
APPARATUS FOR COMMINUTING COMPOST
Victor Brown, Elmhurst; Ingvar G. Anderson, Wheaton, Ill., and Daniel Boscawin Vincent, Tampa, Fla., assignors to New Life Foundation, a not-for-profit corporation of Illinois
Filed May 8, 1967, Ser. No. 636,939
Int. Cl. B02c *13/18*
U.S. Cl. 241—86 **2 Claims**



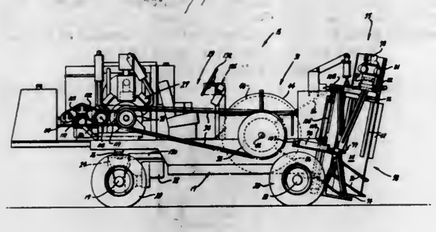
Apparatus is provided for comminuting town waste compost in the form of a vertically disposed foraminous cylinder within which a shaft having a plurality of radial shearing arms rotates rapidly for shearing the compost and forcing it through the perforations of the cylinder so that the resulting product consists of particles of substantially uniform size less than ¼-inch mean diameter. The cylinder is made from abrasion-resistant metal and has from about 50 percent to 65 percent of its surface area closed and the remainder of the surface open in the form of perforations.

3,556,421
CHOPPING MACHINE
Harold E. Galanty, 36 Montgomery Road, Livingston, N.J.
Filed Dec. 15, 1967, Ser. No. 690,946
Int. Cl. B02c *13/06, 13/13*
U.S. Cl. 241—86 **4 Claims**



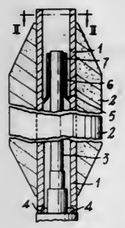
A chopping machine adapted to be connected to a duct through which solid material is transported by a stream of fluid and comprising a grating unit and a cooperating chopper unit provided with chopper blades. The chopper unit is rotated so that the blades pass into and out of slots in the grating with a clearance, whereby the smaller size pieces pass through the grating, the larger size pieces are chopped to a size at which they will freely pass through the grating and at the same time the blades continuously clean the slots and other parts of the machine.

3,556,422
TREE HOGGER UNIT
Routhford J. Burkett, Indio, Calif., assignor to Coachella Valley Organic Fertilizer Co., a corporation of California
Filed Jan. 22, 1968, Ser. No. 699,655
Int. Cl. B02c *19/12, 23/02*
U.S. Cl. 241—101 9 Claims



A mobile tree hogger unit having a masticator assembly with a pair of feed drum units which cooperate to feed tree parts to the masticator for reduction to mulch size chips. The feed drum units are on frames which are adjustably hinged to the hogger unit chassis in such manner as to enable the drum units to be both angularly and elevationally positioned relative to the chassis.

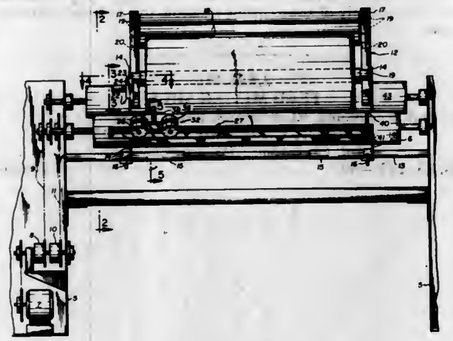
3,556,423
YARN SUPPORTING BODY MEMBER HAVING A CENTERING ELEMENT
Francesco Steffenini, Via Pizzi 28, Milan, Italy
Filed May 7, 1968, Ser. No. 727,277
Claims priority, application Italy, May 12, 1967, 16027/67
Int. Cl. B65h *75/10, 75/30*
U.S. Cl. 242—46.21 10 Claims



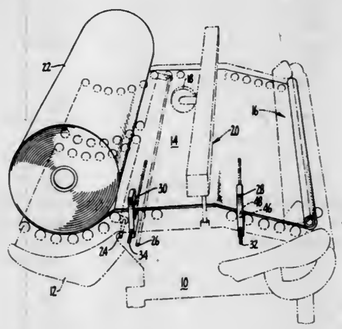
Centering element for yarn-supporting body members, comprising a first portion securable to the internal surface of a supporting body member, and a second portion suitable to abut a spindle of a spinning machine or the like. Said first and second portions are interconnected through a flexible arm suitable to release the second portion from the radial deformations of the supporting body member and first portion.

3,556,424
FABRIC BATCHER
Frank Catallo, Elmont, and Donald Foreman, Scarsdale, N.Y., assignors to Fab-Con Machinery Development Corporation, Paterson, N.J., a corporation of New Jersey
Filed Sept. 11, 1968, Ser. No. 759,135
Int. Cl. B65h *19/20*
U.S. Cl. 242—56 9 Claims

This invention is directed to a fabric batcher having a pair of horizontal winding rolls and a laterally adjustable core magazine positioned thereover. The winding rolls are automatically stopped each time a filled batch is removed and an empty core is automatically released from the magazine. A trough receives the filled batch and a fabric cutter is positioned between the trough and the winding rolls. The fabric cutter is effective to restart the winding rolls after each cutting operation and also activates an air blast to blow the severed leading edge of the fabric into engagement with the empty core.



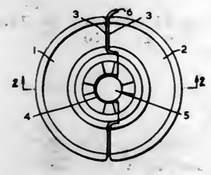
3,556,425
ALIGNMENT MECHANISM FOR CARPET-MEASURING MACHINE
Thomas B. Keesling, Los Gatos, and Clifford E. Keesling, San Jose, Calif., assignors to Functional Systems Corporation, a corporation of Nevada
Continuation-in-part of application Ser. No. 730,836, May 21, 1968, now Patent No. 3,537,662. This application Jan. 27, 1969, Ser. No. 794,340
Int. Cl. B65h *25/10, 25/26*
U.S. Cl. 242—57.1 7 Claims



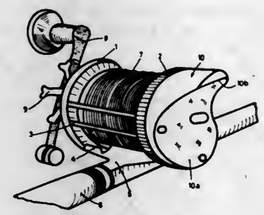
Apparatus for aligning carpet on a carpet-measuring machine including means for aligning one edge of carpet with two edge sensors as the carpet leaves a supply roll and thereafter moving the supply roll to keep the carpet edge aligned with one of the two edge sensors as the carpet is rolled off of the supply roll and onto a takeup roll.

3,556,426
REEL FOR RECORDING TAPE
Lennart Olander, Jonkoping, and Gunnar Kallman, Boras, Sweden, assignors to Aktiebolaget Fannyudde, Stockholm, Sweden, a Swedish Company
Filed Nov. 27, 1968, Ser. No. 779,343
Int. Cl. B65h *75/28*
U.S. Cl. 242—74 3 Claims

A reel for recording tape or film is comprised of two separable parts having mating faces generated by lines parallel to the axis of the reel, the said mating faces being adapted to receive and clamp one end of the tape or film. One of the parts has a horseshoe-shaped recess forming part of this mating face. The other of the parts has a projection cooperating with the horseshoe-shaped recess to hold the parts together.

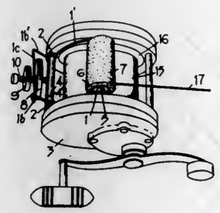


3,556,427
FISHING REEL
Jean-Paul Lemery, Cluses, France, assignor to Ets Carpano & Pons, Cluses, France, a French Company
Filed Oct. 23, 1968, Ser. No. 769,849
Claims priority, application France, Oct. 25, 1967, 125720
Int. Cl. A01k *89/00*
U.S. Cl. 242—84.1 4 Claims



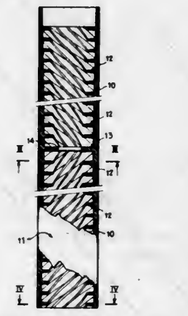
In a winding drum for a fishing reel, a line spool is rotatably mounted between two flanges, one of which carries the crank for manually winding the spool, while the other flange has an extending member by which the reel can be supported against one arm of the fisherman, thereby permitting adequate support of the rod, and preventing the rod and reel from twisting as the crank is manipulated.

3,556,428
ARTICLES FOR INHIBITING ENTANGLING OF A FISHING LINE ON A FISHING LINE REEL
Frederick C. Hayler, 75 Zoutpansberg Road, Pretoria, Republic of South Africa
Filed Aug. 28, 1967, Ser. No. 663,601
Claims priority, application Republic of South Africa, Sept. 1, 1966, Dec. 14, 1966, 66/5317; 66/7569
Int. Cl. A01k *89/02*
U.S. Cl. 242—84.52 4 Claims



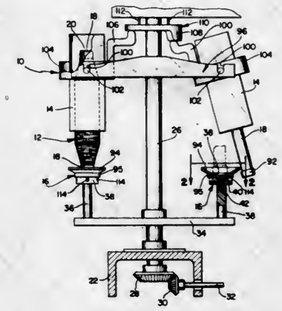
A device for inhibiting the tangling of fishing line windings on a spool of a reel in which a cylinder having a resilient surface of an expanded resilient substance extends in contact across the full width of the windings and spring means freely rotatably mount the cylinder and are adapted for connection to the reel and for pressing the resilient surface against the windings when connected to the wheel. The spring means include wire sections for locating and pressing the resilient surface against the windings with the sections being formed as a pair of bellcranks. The cylinder is rotatably connected near the ends of corresponding two arms of the bellcranks to one side of the pivots and the corresponding two arms of the bellcranks to the other side of the pivot being connected and adjustably located by means allowing variation of the pressure of the resilient surface against the windings.

3,556,429
TUBULAR BODY PARTICULARLY FOR SUPPORTING YARNS
Francesco Steffenini, 28 Via Pizzi 32, Milan, Italy
Claims priority, application Italy, Feb. 7, 1966, 14,222; Dec. 19, 1966, 31,279
Continuation of application Ser. No. 614,461, Feb. 7, 1967, now abandoned. This application Aug. 15, 1969, Ser. No. 854,018
Int. Cl. B65h *75/10*
U.S. Cl. 242—118.31 10 Claims



A tubular body, particularly for supporting yarns which has a comparatively light weight as compared with its strength. Each tubular body consists of a tubular wall whose outer surface has the shape of a revolution body and whose inner surface is integrally formed with helically shaped ribs.

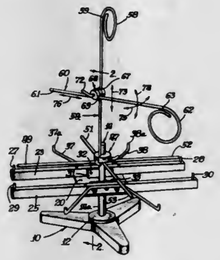
3,556,430
WINDING APPARATUS
Karl Eisenhammer, Cumberland, R.I., assignor to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed Apr. 26, 1968, Ser. No. 724,512
Int. Cl. B65h *49/00*
U.S. Cl. 242—129.51 15 Claims



A bobbin holder for magnetically holding bobbins in an operative position on a winding machine. A dish-shaped seat

of the holder has a magnet which magnetically couples a magnetic end ring of the bobbin core to the seat. The bobbin core is ejected from the seat by tipping a bobbin receiving tube upon movement of the seat from an active or unwinding position toward a reserve position to receive a fresh bobbin. Air passages through the seat communicate with a hollow of the core and facilitate pneumatic end retrieval of the yarn.

3,556,431
STOCK REEL
Henrik Freitag, 1359 S. Highland, Arlington Heights, Ill.
Filed Jan. 29, 1969, Ser. No. 794,858
Int. Cl. B65h *49/00*
U.S. Cl. 242—129 **7 Claims**



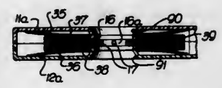
A coil stock-dispensing reel for delivering stock to a press or the like in which the reel is horizontally disposed and sufficiently narrow so that the tines of a fork lift may be used to place a heavy coil of stock on the reel. Removable attaching means are provided for the narrow reel to adequately support the coil after mounting.

3,556,432
COILED TEXTILE PRODUCT
William Kirk Wyatt, Lansdale; Edward G. Mueller, Huntingdon Valley, and William H. Hebrank, Wallingford, Pa., assignors to Turbo Machine Company, Lansdale, Pa., a corporation of Pennsylvania
Original application June 29, 1967, Ser. No. 650,094, now Patent No. 3,478,399. Divided and this application May 12, 1969, Ser. No. 842,053
Int. Cl. B65h *55/00*
U.S. Cl. 242—159 **6 Claims**



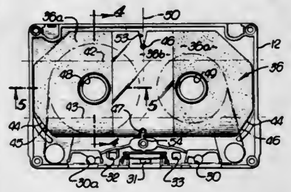
Yarn is laid continuously in loops progressively as a path along an annulus to form an annular layer as part of a coiled yarn package. Various means are used to vary the size of the loops, the number of loops laid over one revolution around the annulus, and the radial position of the loops in the annulus. The loops are laid along the annulus by feeding the yarn upwardly through a rotating nozzle in the annulus. A second annular layer of loops is formed beneath, and as a continuation of, the preceding one, and this step is repeated so that a stack of annular layers of looped yarn is formed into a coiled yarn package.

3,556,433
CASSETTE TAPE-WINDING CONTROL
Georges D. Abitboul, Los Angeles, Calif., assignor to Audio Magnetics Corporation, Gardena, Calif., a corporation of California
Filed Jan. 21, 1969, Ser. No. 792,431
Int. Cl. G11b *23/08*
U.S. Cl. 242—199 **16 Claims**



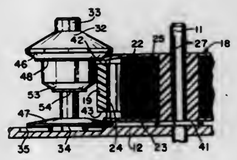
The disclosure concerns the provision, within a magnetic tape cassette case, of a thin sheet of material bowed toward at least one of the tape rolls and engaging the tape with resiliency for accurately guiding tracking movement of the tape extending from the roll.

3,556,434
CASSETTE LINER
Edward P. Koeppe, Santa Monica, Calif., assignor to Audio Magnetics Corporation, Gardena, Calif., a corporation of California
Filed May 19, 1969, Ser. No. 825,711
Int. Cl. G11b *23/08*
U.S. Cl. 242—199 **12 Claims**



The disclosure concerns the provision, within a magnetic tape cassette case, of a thin sheet which contains zones presenting low-friction tape-guiding surfaces to tape feeding onto and off tape rolls, and a transparent third zone extending in underlying proximity to a viewing window in the cassette wall.

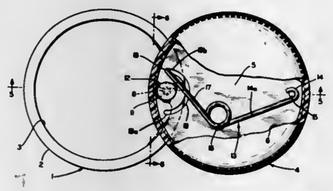
3,556,435
FILM-THREADING APPARATUS
Elmer O. Wangerin, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed May 20, 1968, Ser. No. 730,523
Int. Cl. G11b *15/32, 15/66*
U.S. Cl. 242—210 **14 Claims**



A film-threading apparatus or system of the type in which a roller member engages the flanges of a film supply reel rotating in an unwinding direction and locally flexes the flanges toward one another to cause the leading end of a roll

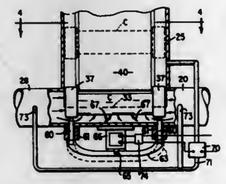
of film on the reel to separate from the roll and enter a film guide channel, is provided with a novel roller member adapted to perform the foregoing function in cooperation with reels of different axial dimensions so that the apparatus can accommodate films of corresponding different widths.

3,556,436
CLOSURE FOR PNEUMATIC SYSTEM CARRIER
Frank J. Roelandt, Dayton, Ohio, assignor to Diebold, Incorporated, Canton, Ohio, a corporation of Ohio
Filed Apr. 16, 1969, Ser. No. 816,769
Int. Cl. B65g *51/06*
U.S. Cl. 243—35 **7 Claims**



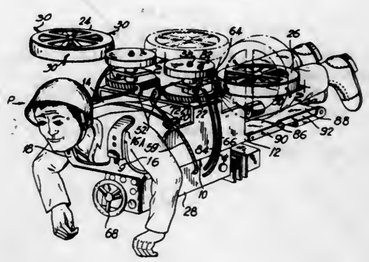
A closure construction and arrangement for an open end of a tubular material-conveying carrier for a pneumatic tube system, particularly adapted for conducting banking transactions. A hollow disclike end cap forms the closure and is pivotally mounted for lateral movement across an open end of a tubular carrier between fully closed and fully opened positions. The pivot pin is fixed to and projects from the end of the tubular carrier wall. A toggle spring is contained within the hollow end cap and has one end pivotally connected to the end cap diametrically opposite the end cap carrier pivot. The other end of the spring is formed with a pin projecting through a semicircular aperture formed in the end cap; and the spring pin is pivotally connected to the tubular carrier wall at a point circumferentially spaced from the end cap carrier pivot, so as to snap the cap to fully open or fully closed position when moving between such positions.

3,556,437
CARRIER TRANSFER IN PNEUMATIC TUBE LINES EMPLOYING OPPOSITE DIRECTIONAL AIR FLOWS
Jon A. Svedman, Syracuse, and Roger L. Paul, Skaneateles, N.Y., assignors to Diebold Incorporated, Canton, Ohio, a corporation of Ohio
Filed Mar. 5, 1969, Ser. No. 804,430
Int. Cl. B65g *51/04*
U.S. Cl. 243—38 **13 Claims**



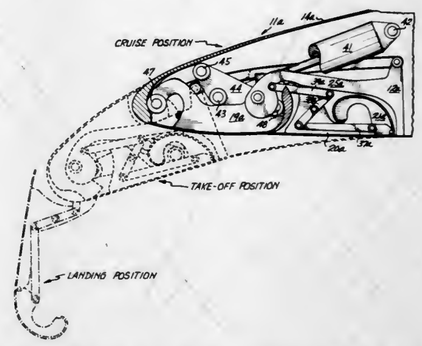
The invention is directed to means operable automatically to shift a carrier subsequent to its arrival at an opening in the sidewall of the tube line in a direction toward the opening for the admission of air flows between the carrier and the closed side of the tube.

3,556,438
AIRBORNE VEHICLE
Ludwig F. Meditz, 419 E. 12th St., New York, N.Y. 10009
Filed Sept. 2, 1969, Ser. No. 854,563
Int. Cl. B64c *29/00*
U.S. Cl. 244—4 **9 Claims**



An aircraft for transporting a single person through the air comprises a cradle for supporting that person, and a pair of electrically operated fan assemblies operatively connected to the cradle. The orientation of the fan assemblies is controlled from a console accessible to the passenger, thereby to control the flight of the aircraft. Means are provided to move the fans to an inoperative position in which they extend to the rear of the cradle and are disposed in an overlying relationship with respect to one another.

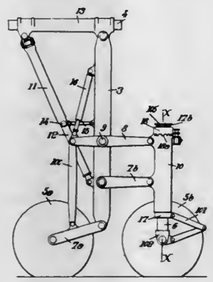
3,556,439
METHODS AND HIGH LIFT SYSTEMS FOR MAKING AN AIRCRAFT WING MORE EFFICIENT FOR TAKEOFFS AND LANDINGS
Charles P. Autry; Paul J. Baumgaertner, and Eugene G. Hill, Seattle, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware
Filed Nov. 22, 1968, Ser. No. 778,164
Int. Cl. B64c *3/50*
U.S. Cl. 244—42 **14 Claims**



A highly efficient aircraft wing is formed by drooping the leading edge portion and extending a leading edge flap for transforming the wing into the most efficient condition for takeoff, and by drooping the leading edge portion and extending a multiplicity of leading edge flaps for transforming the wing into the most efficient condition for landing. Another method comprises extending a leading edge flap from retracted position in the leading edge portion of a wing for transforming the wing into the most efficient condition for takeoff, and extending three leading edge flaps from retracted position in the wing leading edge portion for transforming the wing into the most efficient condition for landing.

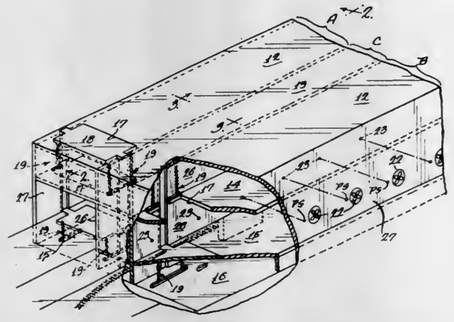
At least two high lift systems for carrying out the above methods comprise mounting in the wing leading edge portion three interconnected, end-to-end, fore-and-aft, leading edge flaps and two different linkages for folding the three flaps internally of the leading edge portion operable by single and double actuators respectively.

3,556,440
AIRCRAFT UNDERCARRIAGE
Pierre Joseph Martin Lallemant, Port-Marly, France, assignor to Bois-Colombus, Guynemer, France
Filed Nov. 12, 1968, Ser. No. 774,902
Claims priority, application France, Nov. 14, 1967, 128,176
Int. Cl. B64c *25/50, 25/58*
U.S. Cl. 244—104 **2 Claims**



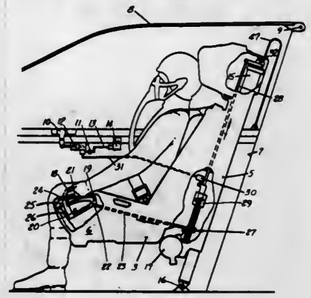
The undercarriage has two pairs of coaxial wheels disposed in tandem, and one of these pairs (rear or front) is orientable about a vertical axis, due to an articulation. A telescopic shock absorber is incorporated in that articulation.

3,556,441
MULTILEVEL AIRPORT STRUCTURE
Julius J. Oberlander, 2148 W. 12th Ave., Gary, Ind. 46404
Filed Oct. 3, 1968, Ser. No. 764,880
Int. Cl. B64f *1/36*
U.S. Cl. 244—114 **13 Claims**



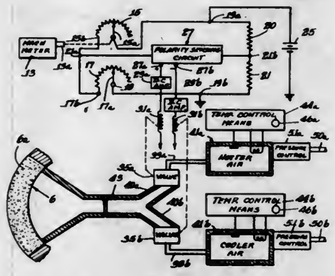
This invention concerns a multilevel airport building structure providing aircraft landing and takeoff and passenger and cargo movement facilities within a single building. The structure includes a landing strip on the roof where incoming planes come in for a landing, an aircraft and passenger service area on the intermediate level where the aircraft is fueled, checked, and passengers board and depart, a takeoff strip on a lower level where the aircraft taxies and takes off, and an aircraft elevator for moving the aircraft vertically between the different levels.

3,556,442
SAFETYING DEVICE FOR FIRING MECHANISM FOR AIRCRAFT EJECTION SEATS
Swen Arne Arnekull, Malmslatt, and Gosta Dahlberg, Linkoping, Sweden, assignors to Saab Aktiebolag, Linkoping, Sweden, a corporation of Sweden
Filed June 16, 1969, Ser. No. 833,591
Claims priority, application Sweden, June 19, 1968, 8331/68
Int. Cl. B64d *25/10*
U.S. Cl. 244—122 **11 Claims**



Ejection seat propulsion mechanism has a firing pin normally held cocked by a latching member that has one lost motion connection with an "eject" handle element, another with an element actuated by jettisoning of a canopy over the seat. Motion of either element alone does not move the latching member but renders the connection operative for firing pin release by subsequent or simultaneous motion of the other element. Canopy jettisoning can be effected by the handle, which actuates a switch, or by a separate canopy jettison knob. Actuation of an auxiliary handle, moved from an inaccessible to an accessible position by actuation of the "eject" handle, gives a second motion to the handle element for ejection through the canopy.

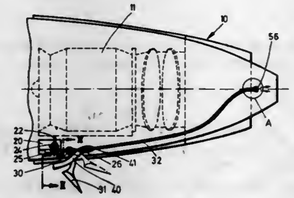
3,556,443
BOUNDARY LAYER CONTROL OF AIRBORNE VEHICLES
Robert P. Kidwell, Box 4433, El Paso, Tex. 79914
Filed July 23, 1968, Ser. No. 746,870
Int. Cl. B64c *21/04*
U.S. Cl. 244—130 **10 Claims**



A gaseous material, such as air, which has a characteristic, such as temperature, which is different from that of the boundary layer air flowing along the surface of the airborne vehicle involved, is directed from within the vehicle along the surfaces of the vehicle under the control of an air speed or Mach number meter so as to maintain a given Mach number independent of air speed, or under the control of an accelerometer to maintain a given direction or flight elevation.

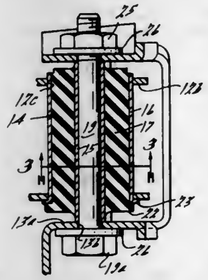
The invention may also be applied to stabilize the Mach number of a ramjet engine by stabilizing the temperature of the air which enters the combustion chamber by means which diverts part of the fuel normally fed to the combustion chamber to the inlet chamber of the ramjet engine where the fuel is injected into the incoming air without combustion to cool the same or is ignited to heat the incoming air in accordance with the measured temperature conditions of the incoming air.

3,556,444
APPARATUS FOR THE DISPOSAL OF AIRCRAFT ENGINE LEAKAGE FLUIDS
Gerhard Kopp, Munich, Germany, assignor to Entwicklungsring Sud GmbH, Munich, Germany
Filed Jan. 16, 1969, Ser. No. 791,707
Claims priority, application Germany, Feb. 2, 1968, 1,556,422
Int. Cl. B64d *37/32*
U.S. Cl. 244—135 **10 Claims**



The invention relates to an apparatus for controlling the discharge of leakage fluids from the jet engines of an aircraft. The apparatus includes a storage tank for receiving the leakage fluids from the engine. Adjacent the discharge orifice of the storage tank is a control valve actuated by a switch responsive to the flow of air about the fuselage. Means are included for pumping the leakage fluids from the tank in response to an open condition of the valve. The fluids removed from the tank are directed into the exhaust jet of the engines for combustion.

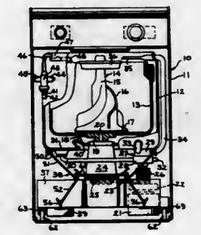
3,556,445
AUTOMOBILE ENGINE MOUNTING AND METHOD
Lawrence E. Werner, Grosse Pointe, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Sept. 24, 1969, Ser. No. 860,720
Int. Cl. F16f *15/08, 13/00*
U.S. Cl. 248—7 **5 Claims**



At each of the forward sides of an automobile engine, a voided bushing assembly comprises an elastic bushing radially spacing and bonded to an outer tubular housing member of oval cross section and a coaxial inner tubular support member. The outer member is tightly secured by a forced fit within a pair of closely conforming oval holes in a pair of axially spaced channel sides respectively of a one-piece channel-shaped engine bracket secured to the engine. A one-piece channel-shaped body bracket associated with each bushing assembly has a pair of bracket arms spaced axially to receive the bushing assembly therebetween. A pair of upwardly opening guide slots within the latter arms respectively receive the axially opposite ends of a bolt in supported relationship on their bases, the bolt being releasably confined coaxially by friction within the inner tubular member. Enlarged clamping members at opposite ends of the bolt axially outward of the slotted bracket arms and oversize with respect to the slots to prevent passage therethrough are adjustable axially with respect to each other by screw action to clamp the latter arms tightly against the bushing assembly therebetween. Flanges of the latter arms closely overlie the tightened clamping members to limit their movement from the slot bases, but without interfering with their axial adjustability.

Prior to mounting the engine, the engine brackets with their bushing assemblies are secured to the engine. The bolts are inserted into the inner tubular members and the clamping members are arranged on the bolts so as to clear the flanges of the slotted bracket arms freely. The engine is then lowered into preassembled position by guiding the bushing assemblies between the slotted bracket arms and the bolts downwardly into the slots to their supported positions on the slot bases. The clamping members are then tightened to clamp the adjacent bracket arms against the bushing assemblies.

3,556,446
SELF-STABILIZING SUSPENSION SYSTEM
John Bochan, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Nov. 14, 1968, Ser. No. 775,888
Int. Cl. F16f *15/00*
U.S. Cl. 248—17 **12 Claims**

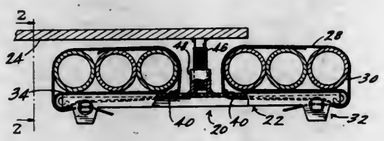


A suspension system particularly adapted for use in an automatic clothes washer is provided for supporting a load member, upon which are mounted the dynamic components of the washer, from a stationary support member such as a tub. At least three bilink elements are provided, each having one end pivotally connected to a separate point on the support member and the other end pivotally connected to a separate point on the load member. Means are provided which pivotally connect with each of the bilink elements at the point of juncture of the links thereof, whereby the center of gravity of the dynamic load will rise under any movement of the load member relative to the support member from the position of equilibrium thereof.

3,556,447
SUPPORT FOR ELONGATE MEMBERS
John C. Jenkins, Lorain, Ohio, and William O. Wesseler, Bremerton, Wash., assignors to TRW Inc., Cleveland, Ohio, a corporation of Ohio, by mesne assignments
Filed Aug. 6, 1968, Ser. No. 750,505
Int. Cl. F16l *3/22*
U.S. Cl. 248—62 **2 Claims**

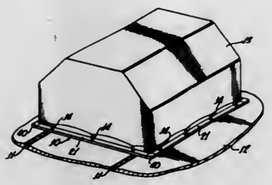
A cable hanger assembly particularly useful on ships includes an elongate supporting hanger extending transversely of the cables and in engagement therewith. A band is

wrapped around the cables and at least part of the hanger and is held in tension by means of a slotted shaft which engages the band with a portion of the band being wound on



the shaft by a small wrench. The cables can be installed on the hanger in a small space and without special skill or training being required.

3,556,448
STRUCTURAL PANEL, AND PALLET FORMED THEREBY
Terry R. Dobbs, Orange, Calif., assignor to Cargo Systems, Inc., Orange, Calif., a corporation of California
Filed Feb. 29, 1968, Ser. No. 709,267
Int. Cl. B60p *7/08*
U.S. Cl. 248—119 **16 Claims**

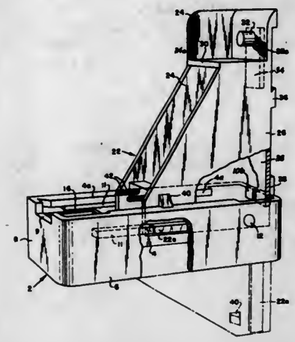


A structural panel in which expanded cores of acrylonitrile butadiene styrene resin are disposed between the flutes or webs of integrally woven three-dimensional fiberglass cloth. The cloth is impregnated with epoxy or polyester bonding resin, and is heat and pressure cured to form the panel. A surface coating of polyurethane resin is provided on the resulting cured product. The disclosure further relates to the combination of the panel with edge structures, including suitable fastener means, the result being a pallet for handling cargo in aircraft and the like.

3,556,449
RETRACTABLE CORNER SUPPORT
Edwin B. Connerat, 6122 Woodmont Road, Alexandria, and Stephen G. Peterson, 6038 Westwood Terrace, Norfolk, Va.
Filed June 3, 1968, Ser. No. 734,161
Int. Cl. B60p *7/08*
U.S. Cl. 248—119 **2 Claims**

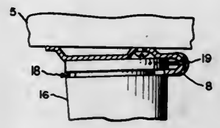
An improved retractable self-contained corner support assembly for vehicle-carried containers, characterized by the provision of a rigid hollow rectangular frame in which the pedestal member is pivotally mounted. The frame is adapted for securement in a corresponding opening in the horizontal platform of the vehicle and includes internal ledge means for supporting the free end of the transverse pedestal wall when the pedestal is pivoted downwardly to the retracted position.

Internal rib means are provided on the frame for additional pedestal support when in the extended position, and internal



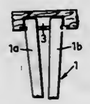
thrust bearing shoulder means serve to prevent the application of longitudinal thrust to the pivot shaft.

3,556,450
FURNITURE LEG FASTENING MEANS
Raymond T. Carlson, 1405 Peter Pan Road, Lookout Mountain, Tenn. 37350
Filed Dec. 11, 1967, Ser. No. 689,446
Int. Cl. F16b *9/02*
U.S. Cl. 248—188 **8 Claims**



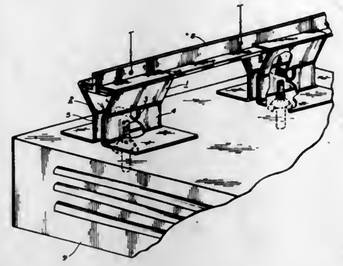
A mounting means for attaching legs to furniture without a screw connection includes a plate adapted to be secured to the underside of the furniture piece. The leg is adapted to lock into the plate.

3,556,451
ARRANGEMENT FOR DETACHABLY MOUNTING A LEG MEMBER TO AN OBJECT SUCH AS AN ARTICLE OF FURNITURE
Rune Arvid Efraim Ostlund, Varnamo, Sweden, assignor to Firma Karl Mathsson, Varnamo, Sweden, a Swedish firm
Filed Sept. 16, 1968, Ser. No. 760,033
Claims priority, application Sweden, Sept. 26, 1967, 13207/67
Int. Cl. F16m *11/16*
U.S. Cl. 248—188 **4 Claims**



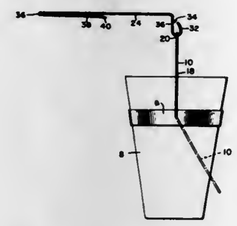
A leg for detachably mounting to an object such as an article of furniture comprises two or more upper parts which spring apart relative to each other. When these parts are pressed together, they can be inserted into a recess in the object. The leg is fixed to the object by the leg parts springing outwardly away from one another. The leg parts are inserted so as to contact the upper wall of the recess in which position a groove or the like is flush with and engages a cooperating tongue, projection or the like on the object.

3,556,452
LIGHTING FIXTURE CLAMPING DEVICE
William W. Ramsey, 6723 S. 72nd East Ave., and Robert Dale Flora, 745 S. 85th East Ave., Tulsa, Okla.
Filed June 2, 1969, Ser. No. 829,194
Int. Cl. F21s *1/02*
U.S. Cl. 248—228 **1 Claim**



A two-section clamping device useful for mounting lighting fixtures from suspended T-bar structure, the said clamping device being constructed in such a manner so as to lend ease of installation, and also furnish stabilizing means to the mounted lighting fixture.

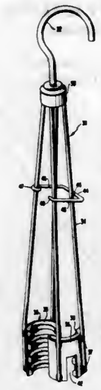
3,556,453
BEVERAGE CUP HOLDER FOR NAUTICAL USE
Mitchell A. Hall, Fort Thomas, Ky., assignor to Monarch Tool and Manufacturing Company, Covington, Ky., a corporation of Ohio
Filed Nov. 12, 1968, Ser. No. 775,005
Int. Cl. A47f *1/08*
U.S. Cl. 248—311 **3 Claims**



The beverage cup holder for nautical use comprises a ring-shaped carrier for a tapered beverage cup, having universal movement laterally from a vertical line, whereby to minimize likelihood of spillage of the liquid contents of the cup in the presence of rocking or pitching movements such as may be experienced in watercraft. The carrier for the cup assures a constant leveling of liquid within the cup, and furnishes no interference with the normal use of the cup in drinking therefrom.

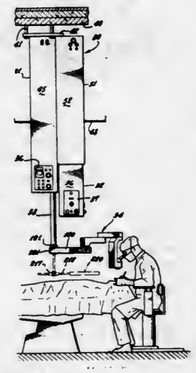
3,556,454
GUN HANGER
Ben Huver, Laurel, Mont., assignor to Daniel Korn, Sr., a part interest; Merrit N. Warden, a part interest and William C. Walterskerchen, Kalispel, Mont., a part interest
Continuation-in-part of application Ser. No. 647,437, June 20, 1967, now Patent No. 3,468,508. This application Dec. 20, 1968, Ser. No. 785,623
Int. Cl. A47b *81/00*; **A47f** *5/00*
U.S. Cl. 248—317 **10 Claims**

In one form, the gun hanger has a tubular member terminate in a hook at its upper end and a plastic sleeve is received within the lower open end of the member. The sleeve and member are provided with downwardly opening laterally registering slots whereby the muzzle of a gun is received within the sleeve with the sight on the muzzle receivable within the slots. A thumb screw threads through the side of the tubular member and through the sleeve to engage and retain the gun barrel within the tubular member. In another form, semicylindrical sleeves lie in spaced relation



one from the other by a wire cage terminate at its upper end in a hook. To retain the gun barrel within the semicylindrical members, a clasp is slidable along the cage to displace the half sleeves toward one another thereby to frictionally retain the gun muzzle between the members.

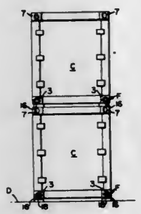
3,556,455
OVERHEAD EQUIPMENT CONTROL APPARATUS FOR OPERATING ROOMS
Fred K. Storm, Glendale, and Eldridge H. Smiley, Rosemead, Calif., assignors to Fred Storm Industrial Designs, Inc., Los Angeles, Calif., a corporation of California
Filed June 24, 1968, Ser. No. 739,376
Int. Cl. A61b *19/00*
U.S. Cl. 248—333 **10 Claims**



An overhead multipurpose equipment control apparatus for surgical operating rooms in which an overhead stationary housing supported from a ceiling structure includes a vertically adjustable control member provided with a multisection laterally movable instrument supporting means, said overhead housing also supporting a relatively movable service or auxiliary housing, said housings and said laterally movable instrument arm including control means whereby a surgeon

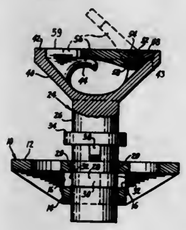
and his assistants may conveniently control various selected equipment and instruments while in a zone surrounding a surgical table, the zone being free from usual stands, tables, and operating room equipment normally clustered about an operating table.

3,556,456
CONTAINER FASTENER MEANS
Einar O. Lunde, 1045 Sansome St., San Francisco, Calif. 94111
Filed Sept. 24, 1968, Ser. No. 761,973
Int. Cl. F16b *17/00*
U.S. Cl. 248—361 12 Claims



A fastener assembly including a plurality of interfitting elements. One, a stacker fitting, is relatively fixed and cooperates with a laterally insertable key assembly including an expandable wedge lock.

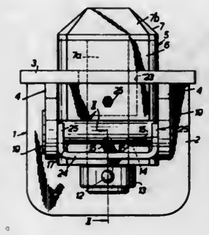
3,556,457
HOLDDOWN ANCHOR FOR AIRPLANES AND OTHER STRUCTURES
Henry A. Patnaude, 831 Los Molinos Way, Sacramento, Calif.
Filed Dec. 24, 1968, Ser. No. 786,624
Int. Cl. F16b *5/07*
U.S. Cl. 248—361 4 Claims



A plurality of anchor units are employed attached to guide lines secured to an airplane or other structure. Each holddown unit includes a base imbedded in concrete and a holddown device having a lower shank insertable into and adapted to be locked to the base and having an inverted frustoconical upper end provided therein with a hook integral with the holddown device and around which holddown lines are adapted to extend.

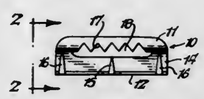
3,556,458
LOCATING AND LOCKING DEVICES
Cyril Edward Charles Erith, 7 St. John's Ave., Churchdown, Gloucester, and Gordon Charles Elkins, Bengrove Farm, Teddington, Tewkesbury, England
Filed June 9, 1969, Ser. No. 831,506
Claims priority, application Great Britain, June 15, 1968, Nov. 26, 1968, Feb. 18, 1969, 28,613/68; 55,932/68; 8,687/69
Int. Cl. B65j *1/22*; B60p *7/08*
U.S. Cl. 248—361 10 Claims

A locating and locking device, for fitting to a freight container transport vehicle, comprises a mounting body for fitting to the vehicle and within which is housed a container locating body from the upper end of which projects the head of a rotary locking bolt mounted in the body. The bolt is rotatable manually between locking and unlocked positions and the locating body is movable within the housing between two levels, namely an upper level providing a locating position in which it projects above the housing and a lower level providing a retracted position below the upper surface of the



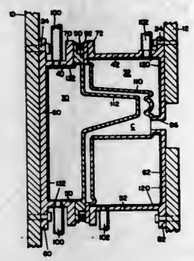
body. The body is formed on one side for engagement with the adjacent side of the locating body to retain the latter in the locating position, and means are provided which act to retain the locating body towards said side of the body in order to maintain said engagement therewith and which are manually operable to allow the body to be disengaged for movement between said locating and retracted positions.

3,556,459
FRAME MOUNTING BRACKET
Donald V. Summerville, Jr., Buffalo, N.Y., assignor to Gardco Industries, Inc., Geneva, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 603,240, Dec. 20, 1966, now Patent No. 3,480,243. This application June 25, 1969, Ser. No. 836,450
Int. Cl. A47g *1/16*
U.S. Cl. 248—497 6 Claims



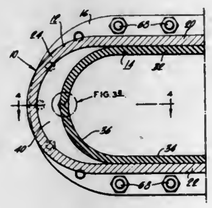
A bracket for mounting a picture frame or the like on a wall including a substantially horizontal portion and a plurality of staggered prongs extending upwardly therefrom for insertion into the underside of the upper member of a frame, a combined offsetting and guiding portion connected to the horizontal portion, and a vertical portion connected to the offsetting portion and having a serrated edge thereon proximate an opening for receiving a nail or hook. A picture hook for mounting a wire attached to the back of a frame comprising a body member, a central elevated projection and a pair of spaced lower projections equally spaced on opposite sides of the central projection, said projections having sloping edges which merge into the body member to wedge a line between said edges and said body member, and pressure-sensitive adhesive on the rear of the hook for mounting the hook on a wall. A bracket arrangement for mounting an object on a wall including a pair of brackets with the first bracket including a body portion having pressure-sensitive adhesive on one surface for attachment to a wall and a keyway in the opposite surface, the second bracket having a pressure-sensitive adhesive on one surface for attachment to the body to be hung and a keyway in its opposite surface and a key for insertion into the two keyways for mounting the first bracket on the second bracket.

3,556,460
PRODUCTION OF POROUS SHAPED ARTICLES FROM A THERMOPLASTIC SUBSTANCE
Charles N. Premo, Springfield, Mass., assignor to Koehring Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Aug. 15, 1968, Ser. No. 752,862
Int. Cl. B29h *5/00*
U.S. Cl. 249—80 3 Claims



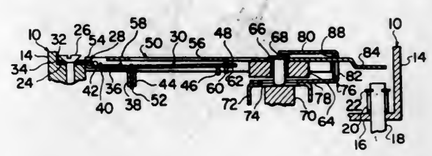
A pressurized chest, such as a steam chest, for a molding machine comprising a base, preferably formed of aluminum and mounted upon a steel or iron platen, and a cavity-defining mold face, also preferably formed of aluminum and mounted upon the base in chest-enclosing manner, with those interior walls of the chest, not directly contributing to the heating or cooling of the part being molded within the cavity, being coated with a lining of a plastic resin having a low limit of thermal conductivity to accommodate to the heat dissipation problem and to preclude against an excessive heat loss.

3,556,461
PINCH-TYPE VALVE
Robert K. Little, Mount Holly, N.J., assignor to RKL Controls, Inc., Hainesport, N.J., a corporation of New Jersey
Filed Mar. 29, 1968, Ser. No. 717,302
Int. Cl. F16k *7/07*
U.S. Cl. 251—5 5 Claims



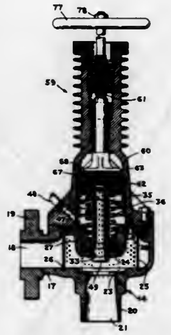
A pressure fluid actuated pinch-type valve of substantially oval cross section having a width substantially exceeding its height and having a relatively short face-to-face length. A flanged resilient valve body is fitted within a flanged oval-sectioned housing having spheroidal end portions permitting lateral expansion of the valve body during pressure fluid closure thereof. The semicircular end walls of the resilient valve body each include a longitudinal tapered protruding portion on the exterior and an opposed coextensive depression on the interior thereof to permit the fluidtight two-lobe sealing of the valve body in the closed position of the valve.

3,556,462
SNAP ACTING BIMETAL HEATMOTOR VALVE OPERATOR
Hollis L. Randolph, Lakewood; Bradford N. Hull, Long Beach, and William W. Chambers, Anaheim, Calif., assignors to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Apr. 4, 1969, Ser. No. 813,684
Int. Cl. F03g *7/06*; F16k *31/02*
U.S. Cl. 251—11 10 Claims



A heatmotor operator comprising a bimetal assembly having a bimetal motor arm connected with a bimetal compensating arm through an insulator, a lever carrying a magnet which is disposed between primary and secondary armatures, the lever being connected to the bimetal assembly and a pivot pin, and actuating means connected with the bimetal assembly whereby the bimetal assembly is actuated to move the lever and cause the magnet to move with snap action from the primary armature to the secondary armature.

3,556,463
TRIP VALVE SYSTEM
John G. Williams, Warren, N.J., assignor to Worthington Corporation, Harrison, N.J., a corporation of Delaware
Filed Oct. 8, 1968, Ser. No. 765,885
Int. Cl. F16k *31/143*, *25/00*
U.S. Cl. 251—14 31 Claims

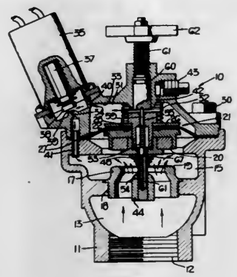


A combined automatic and manual steam supply valve for a steam turbine in combination with a pilot valve for automatically closing the supply valve responsive to turbine shaft overspeed, high bearing temperature or abnormal exhaust pressure. The automatic shutdown device is capable at all times of overriding the manual control and the supply valve can be reset without shutting off the steam supply upstream of the valve.

3,556,464
SELF-DRAINING PRESSURE ACTUATED VALVE
David E. Griswold, Corona Del Mar, Calif., assignor to Griswold Controls, Santa Ana, Calif., a corporation of California
Filed June 9, 1969, Ser. No. 831,393
Int. Cl. F16k *31/385*
U.S. Cl. 251—46 13 Claims

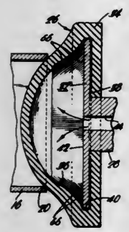
A pressure operated valve having a closure member and seat wherein the valve seat has a cylindrical bore which

slidably receives the cylindrical outer surface of a guide element secured to the movable closure member and a spiral



coil spring encircles an axial pin fixed to the valve seat which is slidably received by the guide element.

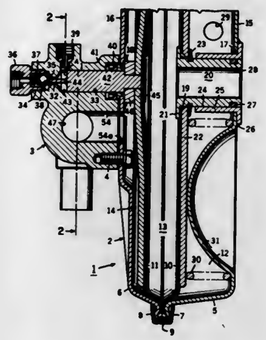
3,556,465
DIAPHRAGM VALVE ASSEMBLY AND METHOD OF MAKING SAME
Robert K. Little, Mount Holly, N.J., assignor to RKL Controls, Inc., Hainesport, N.J., a corporation of New Jersey
Filed June 9, 1969, Ser. No. 831,650
Int. Cl. F16k *7/17*
U.S. Cl. 251—61.1 **9 Claims**



A diaphragm valve having an annular valve seat and a spaced opposed valve assembly comprising a fabric-reinforced elastic diaphragm capsule molded around a metal supporting disc. Low pressure fluid is selectively introduced within the elastic capsule to resiliently expand the capsule toward the valve seat. The elastic capsule is reinforced around the circumference of the disc edge by a layer of tire cord fabric which permits a hemispherical expansion of the capsule without permitting a destructive stretching of the capsule in this region.

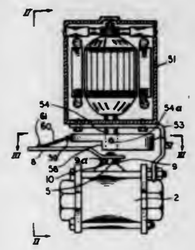
3,556,466
ANTI-SKID MECHANISM
John A. Machek, Berkeley, Mo., assignor to Wagner Electric Corporation, Newark, N.J., a corporation of Delaware
Filed May 8, 1969, Ser. No. 823,087
Int. Cl. B60t *8/02*
U.S. Cl. 251—61.3 **10 Claims**

An antiskid device is provided with a control valve actuated in response to signals from a sensing mechanism of impending vehicle skid conditions to respectively subject a control member to atmosphere and selectively subject said control member to vacuum for controlling the application of supplied fluid pressure to the vehicle brakes, and a resiliently



urged member is provided for disabling said control member in the event the vacuum is lost.

3,556,467
VALVE ACTUATORS
John J. Ziccardi, Evans City, Pa., assignor to William B. Jaspert, Swanton, Md., a part interest in
Continuation-in-part of application Ser. No. 627,802, Apr. 2, 1967, now Patent No. 3,504,684. This application Jan. 12, 1970, Ser. No. 002,235
Int. Cl. F16k *31/04, 31/10*
U.S. Cl. 251—76 **7 Claims**



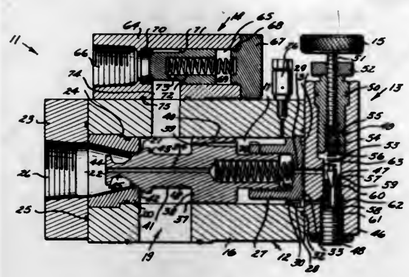
In my former application an angularly movable valve is actuated by a motor driven impact device that imparts a series of hammer blows to the valve handle.

In my former application, I utilized a resilient means between the motor and valve to smooth out the motor action by absorbing and storing part of the motor energy for fractions of a second. The present application generally functions on the same principle and differs from my prior structure mainly in the utilization of a simple all-metal mounting bracket for the motor and impact impulse member and a cocking spring which automatically returns the impact member of the actuator to a predetermined position relative to the valve operating lever or point of impact.

3,556,468
UNLOADING VALVE STRUCTURE
Cedric A. Barrett, Grand Rapids, and William Phillips, Wyoming, Mich., assignors to Pall Corporation, Glen Cove, N.Y., a corporation of New York. by mesne assignments
Original application Mar. 9, 1967, Ser. No. 621,912, now Patent No. 3,468,336, dated Sept. 23, 1969. Divided and this application June 9, 1969, Ser. No. 831,604
Int. Cl. F16k *47/00*
U.S. Cl. 251—121 **2 Claims**

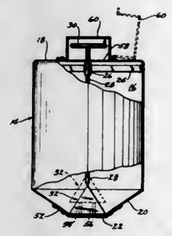
A valve structure useful in control of flow in unloading hydraulic situations and having a snubber and buffer relation-

ship adjacent the seat thereof thereby providing smooth



operation over a relatively wide range of capacity at high pressures.

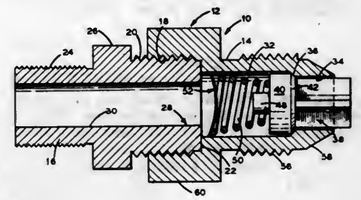
3,556,469
GATE VALVE FOR HOPPER CARS OR THE LIKE
Lloyd D. Barger, Edina, Minn., assignor to Constant Flow Company, Edina, Minn., a partnership
Filed June 5, 1969, Ser. No. 830,819
Int. Cl. B61d *7/26, 7/28*
U.S. Cl. 251—144 **8 Claims**



A gate valve for a material storage container such as a railway hopper car which has a discharge opening formed in the bottom area thereof. A pyramid shaped valve member is vertically movably mounted in the hopper car and has a lower end adapted to close the discharge opening of the hopper car when it is moved to its lowermost position. A vertically disposed shaft is rotatably secured to the upper end of the valve member and threadably extends upwardly through a support member and through the upper end of the car whereby rotation of the shaft will cause the valve member to be vertically moved. A modified form of the invention employs a hydraulic cylinder means for raising and lowering the valve member. A guide means is also provided to prevent undesirable lateral and rotational movement of the valve member with respect to the discharge opening.

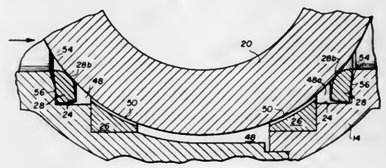
3,556,470
FLARE-OPERATED VALVE
Henry Ehrens, Bayside, N.Y., and Sidney Weiner, Cresskill, N.J., assignors to Sealed Unit Parts Co., Inc., Allenwood, N.J., a corporation of New York
Filed Oct. 26, 1967, Ser. No. 678,251
Int. Cl. F16l *29/00*
U.S. Cl. 251—149.4 **3 Claims**

A flare-operated valve having a through bore comprising an enlarged diameter first portion and a reduced diameter second portion interconnected by a connecting wall. A valve member is slidably received in the bore and includes means for sealingly engaging the connecting wall to prevent the flow of a fluid through said bore. A flare nut is adapted to unseat



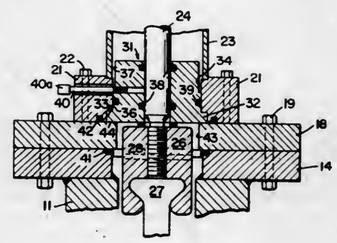
the valve member to allow passage of the fluid thereby to provide a simple and economic valve.

3,556,471
BALL VALVE
Herman L. Paul, Jr., 450 Westover Road, Stamford, Conn.
Filed May 20, 1969, Ser. No. 826,094
Int. Cl. F16k *5/20*
U.S. Cl. 251—172 **8 Claims**



A generally spherical plug of a bidirectional ball valve is supported in the valve housing by similar, oppositely arranged support rings retained in the housing and engaging the plug's surface toward but spaced from opposite ends thereof. Oppositely arranged, flexible sealing rings, separate from the support rings, engage the plug's surface in a circular line contact adjacent to the ends of the plug. The support rings are vented to constitute the housing space between the sealing rings as a single fluid chamber giving fluid support to the plug.

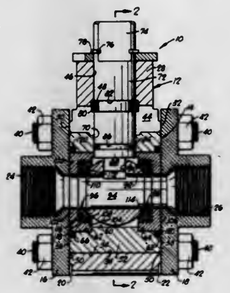
3,556,472
GATE VALVE WITH LOOSELY RETAINED ROD SEAL
Marvin H. Grove, and Lyle R. VanArsdale, Houston, Tex., assignors to M & J Valve Company, Houston, Tex., a corporation of Delaware
Continuation-in-part of application Ser. No. 689,487, Dec. 11, 1967, now abandoned. This application Nov. 29, 1968, Ser. No. 779,783
Int. Cl. F16k *41/04, 3/00*
U.S. Cl. 251—214 **4 Claims**



A gate valve having a bonnet assembly which includes an annular member through which the rod extends and which is

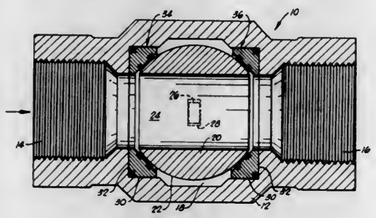
retained in such a manner as to permit self-aligning movements relative to the body. Fluid pressure seals of the O-ring type prevent leakage between the rod and the annular member, and between the periphery of the annular member and the surrounding part of the bonnet assembly.

3,556,473
VALVE ASSEMBLY WITH REPLACEMENT VALVE UNIT
Domer Scaramucci, 3245 Hattie, Oklahoma City, Okla. 73129
Continuation-in-part of application Ser. No. 763,644, Sept. 30, 1968, now Patent No. 3,531,081. This application Feb. 6, 1969, Ser. No. 797,069
Int. Cl. F16k 5/06
U.S. Cl. 251—151 9 Claims



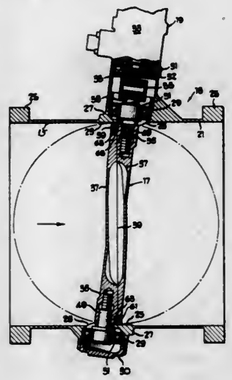
A valve assembly, particularly useful between flanges, which utilizes a housing unit and a separate valve unit. The housing unit provides a supporting housing adapted to be supported between the flanges and includes a valve operator and valve stem. The valve unit is sized to be inserted in the housing unit and includes a valve member and seats. The valve stem is carried by the housing unit and is insertable lengthwise into connection with the valve member. In an assembled position, the valve unit is sealed against the flanges and prevents the housing unit from being contacted by fluid controlled by the valve.

3,556,474
DUAL SEALED BALL VALVES
Domer Scaramucci, 3245 S. Hattie, Oklahoma City, Okla.
Filed Aug. 19, 1968, Ser. No. 753,653
Int. Cl. F16k 5/06
U.S. Cl. 251—172 20 Claims



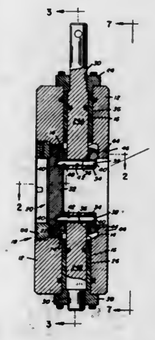
An improved valve, having a seat assembly provided with dual seals, which may be used in the upstream and downstream position. In the downstream position, one seal is a pressure-responsive-type seal and is exposed to pressure in the valve chamber, and the other seal is a secondary compression-type seal. In the upstream position, one seal is a pressure-responsive-type seal and is exposed to pressure in the inlet of the valve, and the other seal is a secondary compression-type seal. The seat structure is so designed to protect the seals from being damaged when the valve member contacts the seat assembly, and is capable of relieving excessive body pressure in the valve chamber.

3,556,475
SHUTOFF VALVE
Charles C. Olenik, Los Angeles County, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed May 22, 1968, Ser. No. 731,239
Int. Cl. F16k 1/22; F16j 9/06
U.S. Cl. 251—306 5 Claims



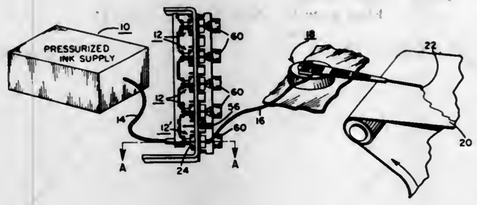
A shutoff valve for a fluid flow conduit which includes a pivotally supported valve closure element. The closure element includes a peripheral groove within which is disposed a sealing ring including a primary sealing surface adapted to engage the conduit bore. The ring is sized to allow radial movement with respect to the closure element and includes a secondary sealing surface biased into sealing engagement with a complementary secondary sealing surface disposed within the peripheral groove of the closure element.

3,556,476
BUTTERFLY VALVE HAVING IMPROVED POSITIVE CLOSURE MEANS
Norman H. Haenky, Tulsa, Okla., assignor to FWI, Inc., Tulsa, Okla., a corporation of Delaware
Filed July 11, 1968, Ser. No. 744,193
Int. Cl. F16k 1/22, 5/14
U.S. Cl. 251—306 12 Claims



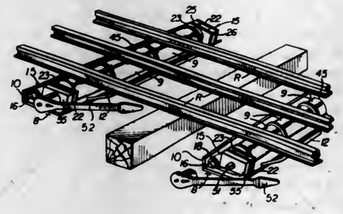
This invention relates to a butterfly valve. More particularly, the invention relates to a butterfly valve having a body with a flow passage therethrough and a disc member supported in the flow passage rotatable between an opened and closed position, the disc member including means engaging portions of the body as the disc member is rotated into closed position, the cam means forcing the disc member into positive sealing engagement with a body seat.

3,556,477
INK FLOW CONTROL MEANS FOR INK PEN RECORDERS
Earl O. Schweitzer, Wickliffe, Ohio, assignor to Clevite Corporation, a corporation of Ohio
Filed June 14, 1968, Ser. No. 737,236
Int. Cl. F16k 41/04
U.S. Cl. 251—335 5 Claims



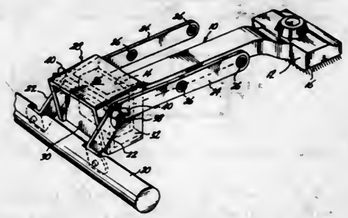
In an ink pen recorder system, the ink flow control means is provided with a unique valving means so that, when the ink pen recorder system is turned off, a sufficient quantity of ink is withdrawn from the pen tip to prevent smudging. Likewise, when the system is turned on, a quantity of ink is made available at the pen tip to insure nearly instantaneous ink flow at the pen tip.

3,556,478
LIFT ROLLER STAND
John P. Rausch, Wheaton, Ill., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Mar. 14, 1969, Ser. No. 807,231
Int. Cl. B66f 1/00
U.S. Cl. 254—1 14 Claims



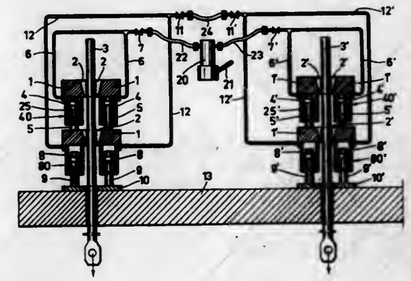
This invention relates to portable hand operated combination lift and roller stands particularly useful in handling long lengths of welded railroad rail into and out of storage. Rollers are mounted on a portion of a shaft eccentric to a drive extension which may be rotated by a hand wrench and which is equipped with a reversible backstop mechanism to safely elevate the heavy rails. The roller shaft is supported in levers pivotally mounted in the base which have freely hanging pawls concentric with the drive extension cooperating with pawl steps in the base to obtain additional height variations.

3,556,479
CARPET STRETCHING APPARATUS
Frank J. Palachuk, 1216 S. 13th Ave., Yakima, Wash.
Filed Mar. 17, 1969, Ser. No. 807,607
Int. Cl. A47g 27/04
U.S. Cl. 254—63 3 Claims



Apparatus is provided for adapting a knee kicker used in stretching carpeting into an extendible power stretcher useful in confined space.

3,556,480
ARRANGEMENT FOR EFFECTING UNIFORM LOAD DISTRUBUTION ON CLIMBING JACKS
Rolf Gustaf Johansson, Saltsjo-Duvnas, Sweden, assignor to A B Byggforbattring, Stockholm, Sweden, a Swedish joint stock Company
Filed Feb. 26, 1968, Ser. No. 708,362
Claims priority, application Sweden, Mar. 3, 1967, 2926/67
Int. Cl. B66f 7/12
U.S. Cl. 254—89 6 Claims

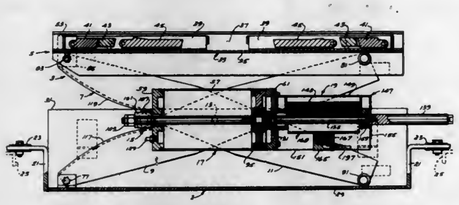


An arrangement for a uniform load distribution and a group of cooperating climbing jacks in which each jack in the group acts on a separate climb rod and includes one or more lifting means. Each climbing jack has associated therewith at least one load transferring hydraulic balancing jack embodying a hydraulic pressure cylinder and hose means hydraulically interconnecting the pressure cylinders of the balancing jacks associated with the group.

3,556,481
AIR-OPERATED SCISSORS-TYPE JACK
Carl H. Mueller; Jerome B. Wegmann; Clarence E. Kitchen, and George Weltzel, St. Louis County, Mo., assignors to McNeil Corporation, Akron, Ohio, a corporation of Ohio
Filed Jan. 23, 1969, Ser. No. 793,273
Int. Cl. B66f 3/22
U.S. Cl. 254—122 18 Claims

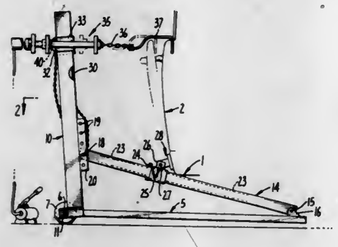
A scissors-type jack for a vehicle lift comprises a base, a scissors linkage above the base and a platform on the scissors linkage adapted to be raised to various elevations by upward extension of the linkage from the base. The linkage is

adapted to be so extended by air cylinder actuated follower rollers which have a wedging action between the links of the scissors linkage, the air cylinder being movable with the scissors pivot. An auxiliary locking mechanism is provided for



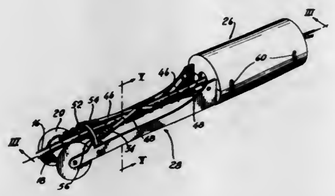
locking the follower rollers in various platform-elevating positions thereof to prevent collapse of the jack under load in the event of failure of the air cylinder to hold the follower rollers in platform-elevating position.

3,556,482
PULLING APPARATUS
Walter D. Whitney, 1044 San Remo Way, San Carlos, Calif.
Filed Nov. 22, 1968, Ser. No. 778,094
Int. Cl. B66f *3/00*
U.S. Cl. 254—134 **5 Claims**



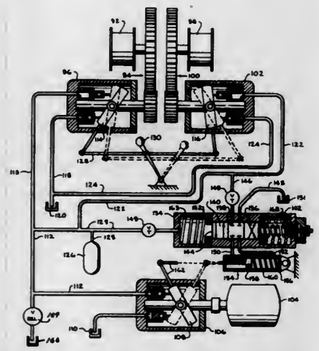
Pulling apparatus particularly adapted for use under emergency conditions for applying a heavy pulling force to the body of an automobile for opening a closed door or other heavy work. The apparatus may be collapsed so as to permit its storage in a small space as, for example, the trunk of an automobile, and may be quickly erected at the site of an automobile accident for immediate operation.

3,556,483
CABLE LASHER
Roland G. Mantion, 132 Provost St., Chateauguay, Quebec, Canada
Filed Mar. 15, 1968, Ser. No. 713,397
Int. Cl. E21c *29/16*
U.S. Cl. 254—134.3 **10 Claims**



A cable lasher comprising a ringlike spool of lashing wire through which the cables to be lashed are passed. While the spool moves relative to the cables, the wire unwinds from the spool and spirally surrounds the cables. A pair of twisted straps mounted at the outlet end of the spool holds the cables together and applies the wire in contact with said cables. The lashing wire is made self-lubricating and the spool is made rigid by immersing the spool of wire in a bath of hot wax and by removing it so as to let it solidify.

3,556,484
AERIAL TRAMWAY POWER AND CONTROL MEANS
Walter H. Moller, and Joseph H. Wilson, 1656-21st Ave. E., Seattle, Wash. 98102
Filed June 10, 1968, Ser. No. 735,744
Int. Cl. B66d *1/26*
U.S. Cl. 254—184 **12 Claims**

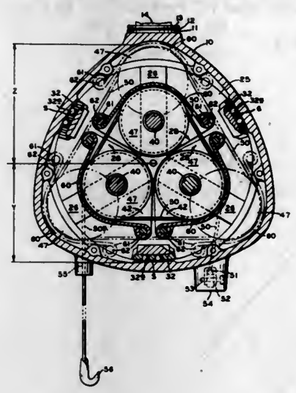


The invention has primary use in connection with aerial tramways, where a traveling carriage is supported by a cable having its end portions supported, respectively, at a head station and a remotely disposed tail station. First and second motors are designed or arranged in paired relation so that the movements of their yokes in a given direction will increase the torque of the first motor and decrease the torque of the second motor and movements of their yokes in the opposite direction will decrease the torque of the first motor and increase the torque of the second motor. Link means are provided interconnecting the yokes of said two motors so that the yokes move simultaneously. Lever means are connected with said link means for determining the position of said link means.

The said first and second motors exert thrust in opposite directions on the carriage and the direction of travel of the carriage, depends on the one motor then having the greater torque, which functions to provide tension to tow or retrieve the carriage, and the other motor functions to provide countertension or drag.

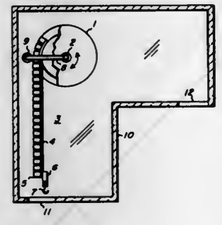
3,556,485
AIR OPERATED HOIST
James Orr, Birmingham, Mich., assignor to Eaton Yale & Towne, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Apr. 15, 1969, Ser. No. 816,361
Int. Cl. B66d *1/00*
U.S. Cl. 254—168 **19 Claims**

A hoist has a series of spaced guide pulleys that define a helical path for a cable passed over the pulleys. A ram cylinder is equipped with a piston that moves in an axis coaxial with the axis of said helical path, and means are provided so that movement of the piston separates said pulleys to lengthen the helical path so as to move the cable to lift a load. The pulleys and ram are within a casing, and an internal



surface of the casing coacts with extensions of the piston to guide and reinforce the piston for movement in the cylinder.

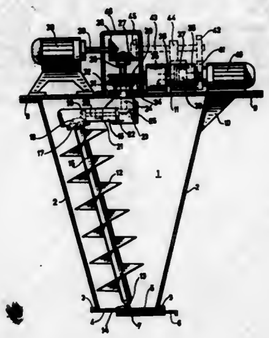
3,556,486
COMBINATION LINEAR LIFTING AND TRANSLATION MECHANISM
Vincent J. Rutkauskas, Pasco, Wash., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Feb. 7, 1969, Ser. No. 797,612
Int. Cl. B66d *1/00*
U.S. Cl. 254—135 **5 Claims**



A laboratory manipulator for the remote handling of objects in a controlled environment. A plurality of blocks are attached to one side of a flexible band. One end of the band is attached to a rotatable drum and a gripping means is attached to the other end of the band.

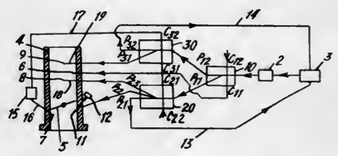
3,556,487
METHOD AND DEVICE FOR TREATING ONE OR MORE SUBSTANCES IN A VESSEL
Constant Johan Nauta, Overveen, Netherlands, assignor to Nautamix Patent A. G., Zug, Switzerland, a Swiss Company
Filed July 25, 1968, Ser. No. 747,727
Int. Cl. B01f *7/08*
U.S. Cl. 259—111 **5 Claims**

Apparatus for mixing substances of a pulverulent, pasty, granular or liquid nature and drying slurries or sludges comprising a vessel having a mixing screw which rotates about its own axis and also about the axis of the vessel. The driving mechanism which drives the stirring member about the axis of the vessel includes a hydraulic coupling to reduce the likelihood of the occurrence of a fracture in the stirring



member and to reduce the capacity of the motor which is necessary to treat substances of comparatively high viscosity.

3,556,488
CARBURETOR WITH FLUID ELEMENTS
Toshinori Arikawa, and Shigetaka Takada, Aichi, Japan, assignors to Aisan Kogyo Co., Ltd., Aichi, Japan
Filed July 10, 1969, Ser. No. 840,671
Claims priority, application Japan, July 10, 1968, 43/48207
Int. Cl. F02m *7/06*
U.S. Cl. 261—36 **9 Claims**

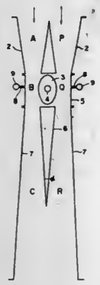


A carburetor employing three pure fluid amplifiers for controlling the flow of fuel to a cylinder. Fuel from a source is supplied to the power input of a first amplifier. The power outputs of this amplifier are connected to the power inputs of the other two amplifiers. The fuel supplied to the two amplifiers may be controlled by the amplifiers to flow to the cylinder and/or to return to the fuel source. Pressure within the cylinder is sensed to control the fluid amplifiers whereby fuel is supplied to the cylinder from one of the two amplifiers during idling or partial power output and fuel is supplied to the cylinder from both of the two amplifiers during full power output.

3,556,489
WET TYPE GAS SCRUBBER
Akiyoshi Ueda, Kitakyushu, Japan, assignor to Nippon Steel Corporation, Tokyo, Japan
Filed Aug. 14, 1967, Ser. No. 660,342
Claims priority, application Japan, Aug. 15, 1966, 41/53619
Int. Cl. B01f *3/04*; **B01d** *47/10, 47/06*
U.S. Cl. 261—62 **6 Claims**

A wet gas scrubber, wherein a mechanism for dividing a gas flow into two and for making the cross-sectional area of the gas flow paths variable is provided in a throat part and guides are provided respectively on the upstream side and downstream side of said mechanism so that the pressure loss may be reduced and further the relation between control variables of the variable cross-sectional area mechanism and the gas flow rate may be linearized. The guides are wedge-shaped with the broad ends at the variable mechanism. In one embodiment the variable mechanism comprises a rotor

shaft extending transversely of the throat part and a rotor mounted on the shaft. The rotor has a rectangular longitudinal cross section and a transverse cross section which has a different length than width. The rotor has a transverse cross section bounded by a closed curve. In another embodiment the variable mechanism comprises a pair of spaced flexible and stretchable plate members extending along the inside portions of the throat parts. Plate moving elements are connected between the plate parts and are coupled to the plate members for bending the plate members outwardly into the



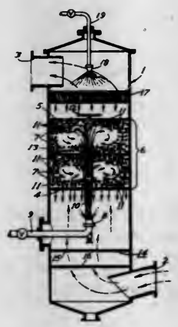
throat parts. In still another embodiment the variable mechanism comprises two spaced sets of bulkhead plates extending along the inside portions of the throat parts. Each set including a first bulkhead plate having one end pivotally mounted on the venturi tube adjacent one gas flow guide and a second bulkhead plate slidably mounted adjacent the other gas flow guide and hingedly coupled to the first bulkhead plate. Plate moving members are connected between the sets of plates and are coupled to the sets of plates for moving the sets of bulkhead plates outwardly into the throat parts.

3,556,490

GAS-LIQUID CONTACT APPARATUS AND METHOD

Ole K. Bockman, Oslo, Norway, assignor to Aktiebolaget Svenska Flaktfabriken, Stockholm, Sweden

Filed May 5, 1969, Ser. No. 821,814
Claims priority, application Sweden, May 7, 1968, 6,103/68
Int. Cl. B01f *3/04*
U.S. Cl. 261—98 10 Claims



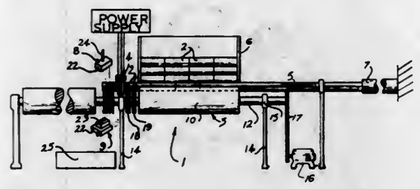
A wet scrubber for effecting liquid-gas contact in which the gas is passed through a bed of suspended loose contact material which is wetted by a liquid. The wetting liquid is injected into the contact material in the form of a compact jet directed upwardly along the central axis of the scrubber so as to impart to the contact material a controlled circulatory motion in the contact zone.

3,556,491

APPARATUS FOR INDUCTIVE HEATING OF CYLINDRICAL MEMBERS

Paul F. Greis, Thiensville, Wis., assignor to Metal Processing Company, Milwaukee, Wis., a corporation of Wisconsin

Filed June 16, 1969, Ser. No. 833,525
Int. Cl. C21d *1/66*
U.S. Cl. 266—4 10 Claims



The disclosure includes a pin heating device having a horizontal bed supporting a series of pins for heat-treating selected portions thereof.

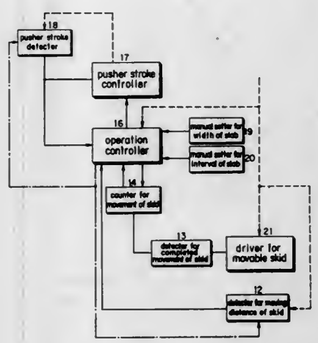
A high frequency heating coil is mounted with a horizontal axis aligned with a horizontal bed which extends to the opposite sides of the coil. A pair of quenching heads is provided at the discharge side of the coil. The bed includes opposed aligned rollers to support the pins and continuously rotate the pins as they pass through the coil and the heads. The rollers immediately adjacent to the coil have one or more circumferential grooves.

3,556,492

METHOD AND APPARATUS FOR CHARGING STEEL SLABS INTO REHEATING FURNACE

Osamu Hirata, and Shinichiro Maehara, Kitakyushu, Japan, assignors to Nippon Steel Corporation, Tokyo, Japan

Filed Nov. 1, 1968, Ser. No. 772,590
Int. Cl. F27b *9/14*; F27d *3/04*
U.S. Cl. 263—6 2 Claims



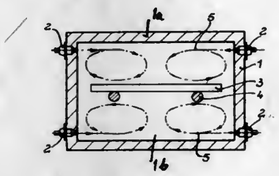
A method and control apparatus for charging steel slabs into the reheating furnace, according to which method and apparatus the volume of pusher stroke necessary for charging a steel slab (SA) is calculated on the basis of the value obtained by the deduction of the sum of the width of the previously charged steel slab (WA) and the prescribed interval between each two slabs in the furnace from the sum of the volume of pusher stroke used for the previously charged steel slab (SB) and the distance on which this slab was transferred after charged (DB), and the value so calculated is transmitted to the pusher driver, thereby making it possible to charge steel slabs into the reheating furnace automatically at constant intervals.

3,556,493

METHOD AND APPARATUS FOR HEAT-TREATING OF WORKPIECES

Ruediger Knaak, Neuss, and Richard Sitte, Kleinenbroich, Germany, assignors to Kopper-Wistra-Ofenbau Gesellschaft mit, Duesseldorf-Heerdt, Germany

Filed Mar. 3, 1969, Ser. No. 804,063
Claims priority, application Germany, Mar. 2, 1968, 1,608,325
Int. Cl. F27b *9/14*
U.S. Cl. 263—6 7 Claims



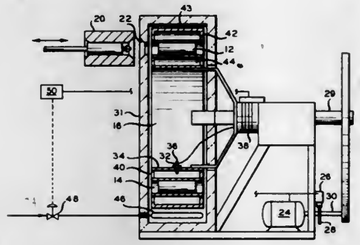
Workpieces are heat treated in an industrial furnace having a horizontally elongated heat-treating chamber. The workpieces to be treated are advanced through the chamber in a path intermediate the top and bottom walls bounding the same. Streams of substantially fully combusted combustion gases are introduced into the chamber from the lateral walls at speeds in excess of 50 m./sec. and with such orientation that they form above and below the workpiece two pairs of laterally adjacent gas spirals each of which rotates about its axis which extends in the direction of elongation of the treating chamber, the direction of rotation being always towards the associated other gas spiral of the pair.

3,556,494

UNIFORM TEMPERATURE CONDITIONING OF PARISONS IN VAPOR HEATED DEVICE

Martin R. Cines, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Dec. 13, 1968, Ser. No. 783,656
Int. Cl. F27b *9/16*
U.S. Cl. 263—7 9 Claims



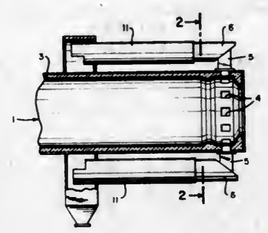
Parison preforms are placed within a parison-receiving means which is carried by a hollow sealed heating block. The heating block is subjected to a source of heat to vaporize a liquid contained therein which thus formed vapors heat the parison receiving means. For instance, a hollow wheel has tubular inserts into which parisons are positioned. As the wheel turns, liquid in the bottom of the wheel is heated and the vapors surround the inserts which hold the parisons.

3,556,495

ROTARY KILNS WITH PLANETARY COOLERS

Flemming Edvin Jensen, Copenhagen-Valby, Denmark, assignor to F. L. Smidth & Co., New York, N.Y., a corporation of Delaware

Filed Jan. 3, 1969, Ser. No. 788,702
Claims priority, application Great Britain, Jan. 22, 1968, 3289/68
Int. Cl. F27b *7/20*
U.S. Cl. 263—32 8 Claims



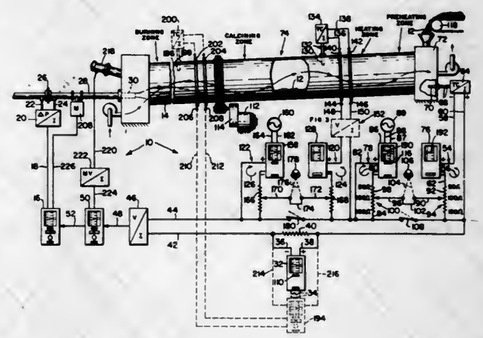
Rotary kiln having planetary-cooling tubes is insulated in a special way and the tubes are provided with lifters which produce curtains of falling material and thus increase the heat carried into the kiln in the secondary air. This heat exchange is so effective that the heat lost in the material that leaves the tubes is compensated for by the increase in heat carried into the kiln in the secondary air.

3,556,496

FURNACE PROFILE TEMPERATURE CONTROLLER WITH ANCILLARY SIGNAL PRODUCING MEANS TO MAINTAIN FURNACE AT OPTIMAL TEMPERATURE CONTROL LEVELS AND TO MINIMIZE ADVERSE EFFECT OF UPSETS

Ernest Hucke, Glenside, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed July 7, 1969, Ser. No. 839,449
Int. Cl. F27b *7/00*
U.S. Cl. 263—32 10 Claims

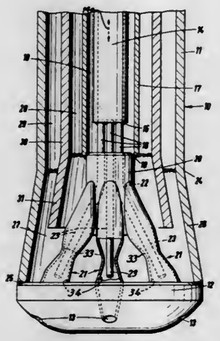


A temperature-measuring control apparatus having opposing ancillary set point adjusting loop circuits for regulating the heat required to convert a granular material, for example: a cement mix into quality clinker which control apparatus is responsive to changes taking place in the overall temperature profile of the furnace and whose control action is not adversely affected when sudden upsets, such as a sudden surge of feed material being passed into the furnace occurs, which causes lengthening and/or shortening of the calcinating and burning zones.

ERRATUM

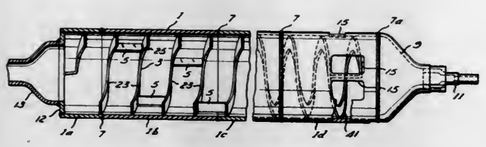
For Class 266—4 see:
Patent No. 3,556,491

3,556,497
LANCE WITH VENTURI OXYGEN NOZZLE
Hugh Willmott Grenfell, Glamorgan, South Wales, England, assignor to The Steel Company of Wales Limited, Glamorgan, South Wales, a British Company
Filed Feb. 12, 1968, Ser. No. 704,919
Claims priority, application Great Britain, Dec. 15, 1967, 57158/67
Int. Cl. C21c 7/00
U.S. Cl. 266—34 6 Claims



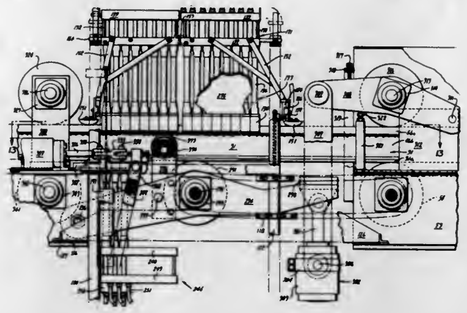
A lance for use in steel refining apparatus comprising a body having concentric fuel and oxygen supply conduits each communicating near the nozzle end of the lance with a plurality of oxygen and fuel supply pipes respectively which terminate at an angle to a longitudinal axis of the lance, said pipes including means for accelerating gas flow in the oxygen supply pipes whereby fuel is entrained by an oxygen stream emitted from the oxygen supply pipe at the nozzle end of the lance at a speed approaching sonic velocity. The lance is particularly adapted for use in a steel refining process in which a flame fed by streams of fuel oil and oxygen is introduced into a converter vessel so that the products of combustion but not the flame impinge upon the melt.

3,556,498
HEAT TREATING RETORT WITH HELIX
John F. Sheahan, Scottdale, Pa., assignor to The Duraloy Company, Scottdale, Pa., a corporation of Delaware
Filed Jan. 8, 1969, Ser. No. 789,708
Int. Cl. F27b 7/08
U.S. Cl. 263—34 7 Claims



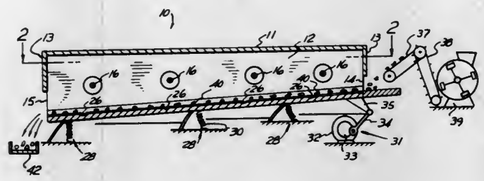
A retort for use in heating metal articles having an internal helix for moving articles in the retort while they are being heated.

3,556,499
HARDENED STEEL MEMBERS AND METHOD AND APPARATUS FOR MAKING THE SAME
George L. Hammon, Oakland, Calif., assignor to Chemetron Corporation, Chicago, Ill., a corporation of Delaware. by mesne assignments
No Drawing. Filed Mar. 27, 1964, Ser. No. 355,505
Int. Cl. C21d 9/04, 1/12, 1/62
U.S. Cl. 266—4 9 Claims



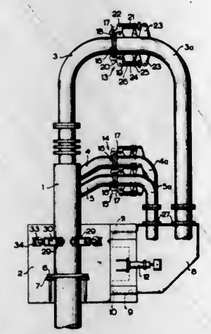
In apparatus for the hardening of a longitudinal surface of an elongate metal member, a heating means and a quenching means, means for advancing the metal member at a predetermined rate along a predetermined path and through the heating and quenching phases of said means, the heating assembly progressively heating a longitudinal surface portion of the metal member as it is advanced through the heating assembly to raise the longitudinal surface to or within the critical temperature range whereby the heated surface portion expands and causes a camber to be formed in the member, the quenching means progressively quenching the heated longitudinal surface portion of the metal member as the metal member is advanced, means including a pair of rollers one engageable with said longitudinal surface after said surface has been heated and quenched and the other engageable with the side of said elongate member opposite said surface and adjacent said heating assembly for applying opposite forces to the member while it is being heated to or within the critical temperature range in directions perpendicular to the camber so that the camber in the member is increased and the heated longitudinal surface expanded, and means for simultaneously moving the axis of each of said rollers toward the longitudinal axis of said elongate member.

3,556,500
METHOD AND APPARATUS FOR SEPARATING METALS FROM COMINGLED SCRAP METAL
Leonard Fritz, Romulus; Melvin Wallace, Birmingham, and John G. Seguin, New Boston, Mich., assignors to Huron Valley Steel Corporation, Belleville, Mich.
Filed Nov. 18, 1968, Ser. No. 776,716
Int. Cl. C22f 1/00
U.S. Cl. 266—33 4 Claims



Separating a scrap nonferrous and ferrous metal mixture into its constituent components by breaking it into approximately equal size pieces and passing it through a furnace having heating zones, each of a temperature to melt one component, to thereby drain the molten components one at a time, with the ferrous metals remaining as the unmelted residue at the discharge end of the furnace, and using a long, tilted and vibrated furnace tray as the means for supporting, agitating and conveying the metal pieces.

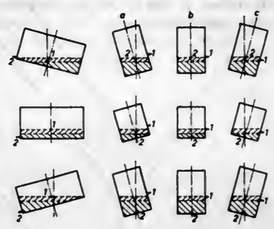
3,556,501
BLOW LANCE ASSEMBLY FOR METALLURGICAL FURNACES
Heinrich Skrzipczyk, Duisburg, and Gunther Szalek, Duisburg-Hamborn, Germany, assignors to Demag Aktiengesellschaft, Duisburg, Germany
Filed Jan. 21, 1969, Ser. No. 792,700
Claims priority, application Germany, Mar. 29, 1968, 1,758,074
Int. Cl. C21c 7/00
U.S. Cl. 266—34 10 Claims



A blow lance assembly for metallurgical furnaces, particularly for steel mill converters, includes two interengageable brackets, one of which contains mounting means for removably receiving a blow lance tube and the other of which contains mounting means for a plurality of additional auxiliary tubes which are adapted to be connected thereto such as an oxygen supply tube, a cooling water feed tube and a cooling water return tube. The brackets are constructed such that they may be shifted laterally in respect to each other under the control of a fluid pressure operated piston and cylinder combination. The auxiliary tubes and the main blow lance tube include portions extending in a substantially common plane, which have flanges which are adapted to interengage with flange portions of the connecting lines for these fittings. The connecting lines are mounted on one of the movable bracket portions and may be shifted laterally to cause engagement of the couplings under a fluid pressure tight sealing. The auxiliary lines also include clamping elements which are operated by fluid piston and cylinder elements to tightly clamp the couplings together in their sealed arrangement and to provide for an instantaneous connection of the auxiliary tubes to the main blow lance tube or to permit the immediate connection thereof. The blow lance tube is mounted on supporting elements on its bracket in a manner such that it may be easily removed therefrom.

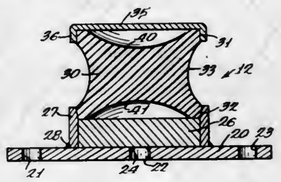
3,556,502
REACTION VESSEL FOR REACTING TOGETHER TWO LIQUIDS OF DIFFERENT SPECIFIC GRAVITIES
Paul Rheinlander; Heinz Schumacher, Wolfenbuttel, and Paul Hahnel, Salzgitter-Lebenstedt, Germany, assignors to Salzgitter Huttenwerk Aktiengesellschaft, Salzgitter-Drutte, Germany, a corporation of Germany
Filed Mar. 19, 1968, Ser. No. 714,299
Int. Cl. C21c 7/04
U.S. Cl. 266—37 9 Claims

A reaction vessel for reacting together two liquids of different specific gravities, for example molten iron and slag in a steel-making process, is mounted so that it can be tilted about two horizontal axes at right angles to each other and is provided with two peripheral outlets, one for the lighter liquid, such as slag and the other for the heavier liquid such as molten iron, and these outlets are disposed so that the flow of one liquid through one of them is controlled by tilting the vessel about one axis and the flow of the other liquid through



the other outlet so that the two liquids can be run off from the vessel either one at a time or both simultaneously, with the rates of flow of the two liquids being independently controlled in dependence upon the angles of tilt about the two axes.

3,556,503
SIDE BEARING FOR RAILROAD CARS
John H. van Moss, Jr., Highland, Ill., assignor to Vanguard Corporation, a corporation of Illinois
Filed Oct. 14, 1968, Ser. No. 767,450
Int. Cl. F16f 1/36
U.S. Cl. 267—3 8 Claims



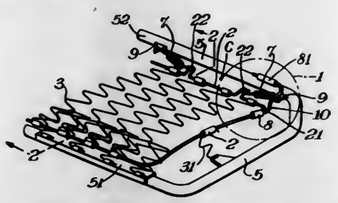
A preloadable side bearing for railroad cars having a mass of hard elastomeric material on a base adapted for attachment to a supporting surface, such as the truck bolster of a railroad car with provision for an initial reduction in the overall height of the bearing in response to preloading forces and to then absorb substantial loading forces with resulting compressive depression of the mass and wherein the mass is formed of a material such as polyurethane.

3,556,504
SUSPENSION SYSTEMS
Frederick William Sinclair, Gloucester, England, assignor to Gloucester Railway Carriage & Wagon Company Limited, Gloucester, England
Filed July 22, 1968, Ser. No. 746,685
Claims priority, application Great Britain, July 25, 1967, 34,125/67
Int. Cl. B61f 5/06
U.S. Cl. 267—4 7 Claims



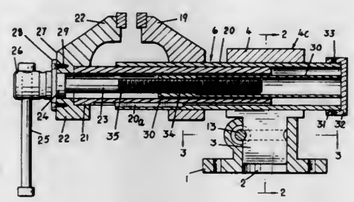
A spring unit for a vehicle suspension system, the unit comprising two springs so arranged that in the pretare condition they operate in series and in the gross load condition operate in parallel.

3,556,505
SEAT CUSHIONING SPRING DEVICE
Seizho Ohta, and Motokuni Kage, Toyota, Japan, assignors to Toyota Jidosha Kogyo Kabushiki Kaisha, Toyota, Japan, a corporation of Japan
Filed Aug. 6, 1968, Ser. No. 750,589
Claims priority, application Japan, Aug. 8, 1967, 42/50825
Int. Cl. A47c 23/16, 23/26
U.S. Cl. 267—107 2 Claims



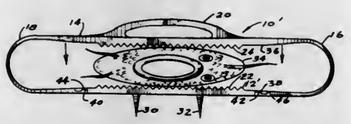
Cushioning spring device for seat structure comprises seat frame having front and rear horizontal members and seat frame line having one end supported by front horizontal member and rear edge arranged with constant space relative to rear horizontal member. Improvement comprises at least two cushioning members located within the space formed by seat members located within the space formed by seat frame line and rear horizontal member. Cushioning members are substantially parallel to rear horizontal member and are connected between seat frame line and rear horizontal member. Improvement also includes spring member stretched between seat frame line and rear horizontal member of seat frame.

3,556,506
ADJUSTABLE MACHINE-TOOL VISE
Karl Welker, Waterloo, Ontario, Canada, assignor to Welker Industries & Co. Limited, Waterloo, Ontario, Canada, a corporation of the Province of Ontario
Filed Aug. 12, 1968, Ser. No. 752,065
Int. Cl. B25b 1/22
U.S. Cl. 269—72 6 Claims



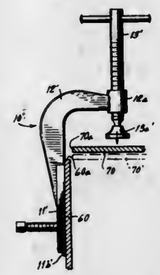
A vise which has the working position of its jaws adjustable through 360° both vertically and horizontally by a single locking device which holds it firmly in its adjusted position.

3,556,507
FISH HOLDING APPARATUS
Frederick Bailey Haskell, 24633 N. Newhall Ave., and Samuel K. Haskell, 23360 Haskell Vista Lane, Newhall, Calif. 91321
Filed Apr. 12, 1968, Ser. No. 721,025
Int. Cl. B23q 3/02, 3/08
U.S. Cl. 269—98 3 Claims



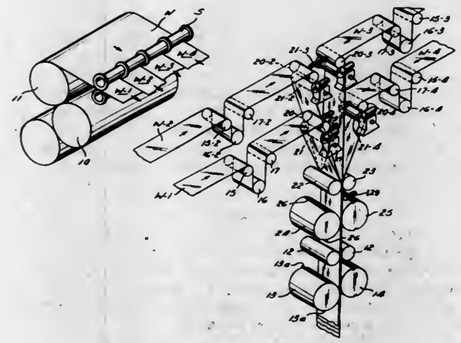
A spring-biased clamp for grasping the midbody of a hooked fish in a compressive manner both to secure the live fish and to urge its mouth open for purposes of removing the hook therefrom. The clamp apparatus includes means for affixing it to the gunwale or other structure of a boat.

3,556,508
WELDING CLAMP
Joseph Varga, 35 Brookdale Ave., Cedar Grove, N.J. 07009
Filed Mar. 4, 1968, Ser. No. 710,147
Int. Cl. B25b 5/14; B23k 5/22
U.S. Cl. 269—155 1 Claim



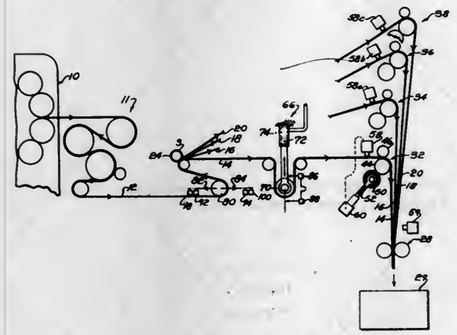
In welding two members along adjoining edges thereof, wherein is presented the problem that the edges are initially sprung apart out of weldable alignment, the improvement comprising a method and apparatus for overcoming the problem including, a screw clamp, the bed of which is secured to one of the members, and the screw of which is brought into engagement with the other of said members until the edges of the two members are brought into weldable alignment, after which the two members are welded along their adjoining edges, and the bed of the screw clamp is disengaged from the member to which it has been secured.

3,556,509
PRINTED WEB RIBBON REGISTRATION CONTROL SYSTEM
James N. Crum, Chagrin Falls, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Aug. 21, 1968, Ser. No. 754,196
Int. Cl. B65h 43/00
U.S. Cl. 270—52 37 Claims



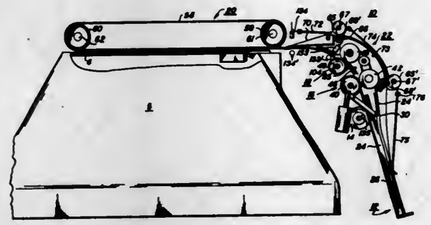
This control system maintains proper registration of several continuously advancing printed web ribbons, which are to be gathered in superimposed relationship and then perforated, cut and folded along lines located in unprinted spaces between successive printed areas. Each ribbon, while under substantially constant tension, enters an individual control nip whose velocity is corrected in accordance with the detection there of misregistration of the ribbon with respect to a reference pulse. A further correction is provided by changing the phase of this reference pulse with respect to the perforating device in accordance with ribbon misregistration at the perforating device. This latter correction is not made during every cycle of operation and it is not made unless the misregistration exceeds an acceptable minimum.

3,556,510
AUTOMATIC WEB TENSION AND REGISTER CONTROL
Ernest H. Treff, Groton, Conn., assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Aug. 21, 1968, Ser. No. 754,197
Int. Cl. B65h 39/16, 25/10
U.S. Cl. 270—52 10 Claims



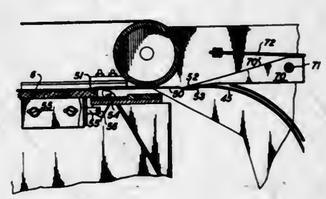
An automatic web tension and register control associated with a web traveling from a printing press to a folder includes a variable speed drive means for varying the speed of the ribbon, and a control means associated with the variable speed drive means for controlling the operation of the drive means. A tension control means maintains a substantially constant tension in the ribbon of material between the printing press and the variable speed drive. The variable speed drive is operative to vary the speed of movement of the ribbon while maintaining substantially constant the length of the ribbon between the drive and a processing unit or an assembly for working on the ribbon.

3,556,511
DOCUMENT FEED APPARATUS
Anthony Howard, Henrietta, N.Y., and George E. Fackler, Louisville, Ky., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Nov. 20, 1968, Ser. No. 777,265
Int. Cl. B65h 5/06
U.S. Cl. 271—4 4 Claims



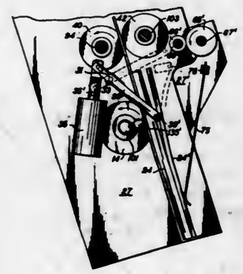
Document feed apparatus for transporting one document at a time from a supply tray to a work station and back to the supply tray on completion of the work cycle, the apparatus having relatively high speed first document transport means for feeding each document to the work station and returning the document to the supply tray, relatively low speed second transport means for bringing the next document forward to a point adjacent the work station inlet, and means to maintain documents returned to the supply tray segregated from documents awaiting feeding to the work station, the last mentioned means being adapted, where the cycle is repeated, to automatically move onto the topmost one of the returned documents following return of the last document to the supply tray.

3,556,512
DOCUMENT FEED APPARATUS
George E. Fackler, Louisville, Ky., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 4, 1968, Ser. No. 781,287
Int. Cl. B65h 9/14
U.S. Cl. 271—4 15 Claims



Document feed apparatus for transporting one document at a time from a supply tray to a work station and back to the supply tray on completion of the work cycle, the apparatus having relatively high speed first document transport means for feeding each document to the work station and returning the document to the supply tray, relatively low speed second transport means for bringing the next document forward to a point adjacent the work station inlet, and means to maintain documents returned to the supply tray segregated from documents awaiting feeding to the work station, the last-mentioned means being adapted, where the cycle is repeated, to automatically move onto the topmost one of the returned documents following return of the last document to the supply tray.

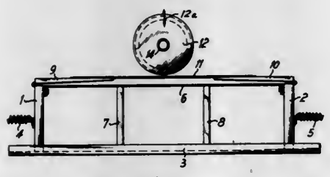
3,556,513
DOCUMENT FEED APPARATUS
Anthony Howard, Henrietta, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Dec. 4, 1968, Ser. No. 782,790
Int. Cl. B65h 5/22
U.S. Cl. 271—4 7 Claims



Document feed apparatus for transporting one document at a time from a supply tray to a work station and back to the supply tray on completion of the work cycle, the apparatus having relatively high speed first document transport means

for feeding each document to the work station and returning the document to the supply tray, relatively low speed second transport means for bringing the next document forward to a point adjacent the work station inlet, and means to maintain documents returned to the supply tray segregated from documents awaiting feeding to the work station, the last mentioned means being adapted, where the cycle is repeated, to automatically move onto the topmost one of the returned documents following return of the last document to the supply tray.

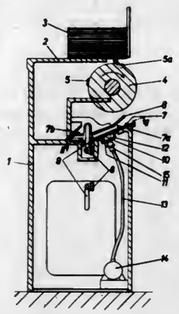
3,556,514
METHOD AND APPARATUS FOR MANIPULATING LABELS OR THE LIKE
Guenther Stockmann, Uchte, Germany, assignor to Dr. Ing. Fritz Sommer NACHF, Ludenscheid, Germany
Filed Oct. 3, 1968, Ser. No. 764,782
Claims priority, application Germany, Oct. 4, 1967, 1,652,452
Int. Cl. B65h *5/10*
U.S. Cl. 271—8 **27 Claims**



Printed labels which are to be introduced into the cavity of a mold for synthetic plastic material are applied to the peripheral surface of a hollow cylindrical transfer member in response to movement of the peripheral surface against a deformable tape which is held in stressed condition and yields when the transfer member is moved against its upper side whereby a label which is placed between the tape and the transfer member is applied to the peripheral surface of the transfer member to be thereupon held thereon by suction during introduction into the female die of the molding machine. The electrostatic charge of the label is destroyed prior to application to the peripheral surface, and the label is thereupon electrostatically charged by one or more metallic strips which are applied to the peripheral surface and are connected to a source of high-voltage electrical energy during application of the label to the peripheral surface of the transfer member.

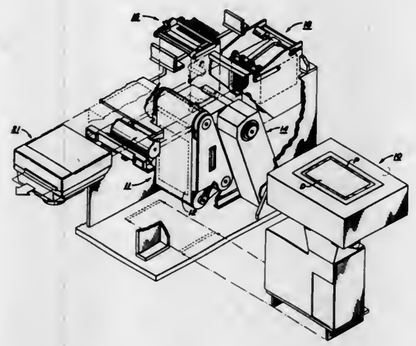
3,556,515
APPARATUS FOR TRANSPORTING SHEET-MATERIAL MEMBERS
Hans Mueller, Barenhubel, Switzerland, assignor to Grapha Maschinenfabrik, Hans Muller AG., Zofingen, Switzerland
Filed Apr. 2, 1968, Ser. No. 718,095
Claims priority, application Switzerland, Apr. 7, 1967, 4985/67
Int. Cl. B65h *5/02*
U.S. Cl. 271—12 **8 Claims**

A collating machine is provided with a guide channel having a guide surface juxtaposed with sheet-material members which are to be transported in the guide channel. Advancing means effects advancing of the sheet-material members along the guide channel. Conduit means serves to blow a gaseous fluid between the guide surface and the surface of sheet material members facing the guide surface so as to establish therebetween a cushion of pressurized gaseous fluid which



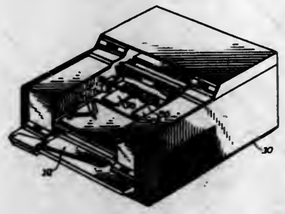
prevents direct frictional contact between the guide surface and the sheet material members.

3,556,516
SELF-ALIGNING FEED ROLLER
Hugh L. Jones, and Daniel S. Hoffman, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed May 24, 1968, Ser. No. 740,405
Int. Cl. B65h *3/06*
U.S. Cl. 271—36 **3 Claims**



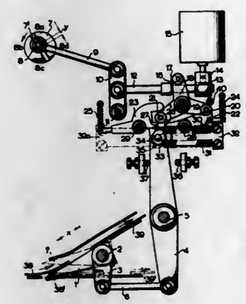
A sheet separating apparatus having a plurality of rollers supported along a common axis adapted to be placed upon the top sheet of a stack of paper. The rollers are adapted to be raised vertically from the stack and also their common axis support rocked so as to permit the outboard rollers to lift individually from the top sheet. Each of the rollers is provided with a one way clutch relative to its support structure.

3,556,517
SHEET SEPARATING APPARATUS
John Taini, Skokie, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Sept. 6, 1968, Ser. No. 757,859
Int. Cl. B65g *65/28*
U.S. Cl. 271—36 **3 Claims**



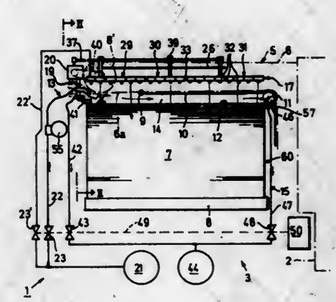
Apparatus for feeding single sheets of sheet material from a stack including nonresilient friction roller means which cooperate with the penultimate and lower adjacent sheets to inhibit movement thereof while the top sheet is being withdrawn from the stack.

3,556,518
APPARATUS FOR SHIFTING A DEFLECTOR IN A MACHINE FOR PROCESSING PAPER OR PLASTICS MATERIAL SHEETING, PREFERABLY A TUBE-MAKING MACHINE
Friedrich Franz Brockmueller, Lengerich of Westphalia, and Boyke Juenemann, Lengerich-Wechte of Westphalia, Germany, assignors to Windmoller & Holscher
Filed Aug. 9, 1968, Ser. No. 751,409
Claims priority, application Germany, Aug. 16, 1967, 44,566
Int. Cl. B65h *29/58*
U.S. Cl. 271—64 **3 Claims**



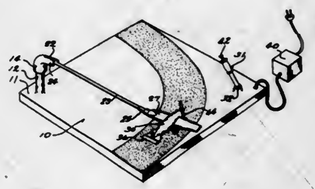
The shifting apparatus serves to change the path of travel of the workpieces. A clutch which is engageable electromagnetically, hydraulically or pneumatically is provided between the lever for shifting the deflector and a mechanical shifting means which performs a shifting movement in each machine cycle. Said clutch when engaged transmits the shifting movement to the lever for shifting the deflector.

3,556,519
METHOD AND APPARATUS FOR STACKING PAPER SHEETS OR THE LIKE
Leo Keller, 7 Sandaeckerstr. 38, Stuttgart-Feuerbach, Germany
Filed June 18, 1968, Ser. No. 738,067
Claims priority, application Germany, June 23, 1967, Jan. 30, 1968, Aug. 7, 1967, 1,536,993;1,611,235;1,611,232
Int. Cl. B65h *31/00*
U.S. Cl. 271—86 **32 Claims**



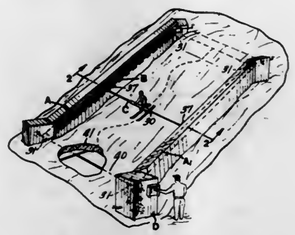
Freshly printed paper sheets **10** issuing from the printing unit **2** of a printing machine **1** are conveyed seriatim to a position above and in registry with a collecting station **60**, and are thereupon caused to descend toward the collecting station to form a growing stack **7**. A stream of compressed air is blown by one or more nozzles **24** below each successive sheet in a direction from the downstream side toward the upstream side of the collecting station while the respective sheet advances toward the position of registry with the collecting station. The air stream contains comminuted solid material which deposits on the topmost sheet **12** of the stack and at the underside of each advancing sheet. Suction orifices **58** at the upstream side of the collecting station evacuate air and the surplus of comminuted material. Jets of compressed air are blown downwardly by auxiliary nozzles **32** at both sides of the path of successive sheets to assist in the generation of uniform suction in all zones of the gap **24** wherein the air stream conveys comminuted material, and to thus insure that the sheets can rapidly descend toward the collecting station without undue bulging or flexing.

3,556,520
TOY AIRPLANE ASSEMBLY
Paul W. Hunt, 2758 N. 84 St., Milwaukee, Wis. 53222
Filed Feb. 13, 1969, Ser. No. 798,929
Int. Cl. A63h *33/26, 27/04*
U.S. Cl. 272—31 **1 Claim**



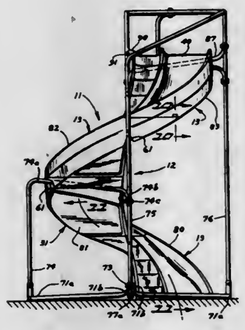
A rectangular board, a pivot at one corner thereof journaling an arm carrying at the free end thereof a toy airplane thus having a 90° segment of takeoff and landing space on said board, a unitary control and throttle lever based on said board, and a source of electric power for operation of the motor and propellor of the plane.

3,556,521
SKI TEACHING APPARATUS
Stanley Segal, 5675 Cote St. Luc Road, Montreal, Quebec, Canada
Filed Sept. 24, 1968, Ser. No. 761,962
Claims priority, application Great Britain, Sept. 25, 1967, 43442/67
Int. Cl. A63g 21/00
U.S. Cl. 272—56.5 8 Claims



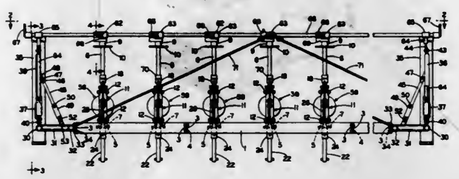
The ski teaching apparatus has the following features: parallel tracks extending down the slope, a carriage on each track supporting an arm in turn supporting a crossbar extending across the slope for the skier to hold on to. Each carriage is connected to an endless cable running parallel to the track and driven from a control center beside the slope so as to control the movement of the supporting bar. The arm may be pivotally mounted on the carriage so that it can be adjusted to various radial positions to vary the height of the crossbar. A sleeve may be slidably mounted on the crossbar for the skier to grasp and facilitate his lateral movement along the bar.

3,556,522
SLIDE
John A. Gale, 978 E. Shady Lane, Wayzata, Minn. 55391
Filed Nov. 29, 1968, Ser. No. 780,135
Int. Cl. A63g 21/00
U.S. Cl. 272—56.5 16 Claims



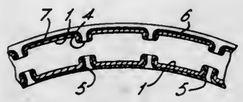
This invention relates to a slide concept which incorporates a basic slide module which individual module encompasses a certain angular displacement from one end to the other with a certain degree of rise from one end to the other to provide a portion of a smoothly ascending spiral. The slide may exist as a single module element or may incorporate a plurality of such modules which modules include not only a body slide portion but which also include a stepped, climbing portion such that when a plurality of such modules are utilized and mounted on a frame structure, a complete integral climbing and slide device is provided. The individual modules are provided with connective devices at the respective ends thereof for interlocking modules together to provide a continual spiral slope and spiral climbing portion. A frame device is provided when such a plurality of modules are utilized and the individual modules are provided with frame engaging portions on the lower sides thereof to positively connect to the frame.

3,556,523
MULTIPLE FOOTBALL TACKLING DUMMY SLED
Verne A. Hooker, Rte. 1, Dennison, Ohio 44621
Continuation-in-part of application Ser. No. 621,617, Mar. 8, 1967, now Patent No. 3,464,696. This application Mar. 10, 1969, Ser. No. 805,682
Int. Cl. A63g 11/00
U.S. Cl. 273—55 5 Claims



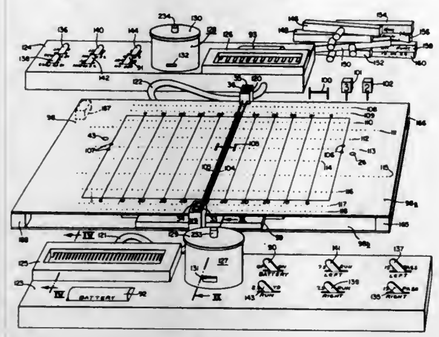
A multiple football tackling dummy sled apparatus comprising a rigid frame mounted upon runners to slide upon the ground and having a plurality of equally spaced rearwardly disposed horizontal arms spaced above the ground, a carriage longitudinally slidable upon each arm, a tackling dummy suspended from each carriage, means for latching the carriages at the rear ends of said arms, spring means for urging the carriages toward the forward ends of the arms and a single releasing lever for simultaneously unlatching all of the carriages. The apparatus also includes novel means whereby the spring means which urges the carriages toward the forward ends of the arms also controls the latch means which normally latches the carriages to the rear ends of the arms.

3,556,524
METHOD OF MANUFACTURING RACKETS
William C. Carlton, Fitches, Finchingfield, England, assignor to Carlton Sports Company Limited, London, England
Filed June 13, 1966, Ser. No. 557,023
Claims priority, application Great Britain, Mar. 18, 1966, 12,055/66
Int. Cl. A63b 49/00
U.S. Cl. 273—73 1 Claim



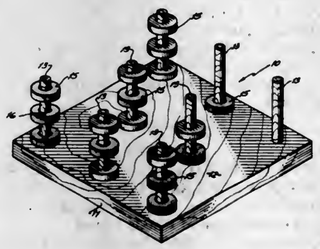
A frame for a badminton, squash or tennis racket is made by forming a hollow metal tube with a recess or groove extending longitudinally so that the strings of the racket may nest therein; forming a plurality of holes in opposite walls of the tube, with the edges of each of the holes having flanges whose free edges are inside the tube; heating the tube, then plunging the tube into a mass of a suitable nylon powder through which air is constantly passing; agitating the tube to cause a nylon coat to cover and adhere to all the outer surfaces of the tube and the flanges including the free edges thereof, thereby to cover the sharp edges of the metal around the holes; and removing the tube and preparing it for stringing. In a modification, a solid metal extrusion is used instead of a hollow tube, holes are drilled in the extrusion at suitable intervals for the strings, eyelets are fitted in said holes to cover the sharp edges of the holes, then the same process is followed to put a nylon coat on the outside of the extrusion and on the eyelets.

3,556,525
ELECTRIC FOOTBALL GAME WITH OFFENSIVE, DEFENSIVE, AND CHANCE SELECTION MEANS
Loren Davis Pegg, Wyncote House, Wyncote, Pa. 19095
Filed June 12, 1968, Ser. No. 736,367
Int. Cl. A63f 7/06
U.S. Cl. 273—94 12 Claims



An electrically-operated simulated football game apparatus is disclosed having a network of perforations in the playing field for passage of light selectively therethrough. Mounted below the field is a slidable scrimmage-line board carrying light bulbs at selected locations on either side of the scrimmage line corresponding to ball positions to be gained (or lost) upon completion of an offensive play. Upon completion of each offensive play, one (and only one) of the lamps becomes illuminated which, relative to the scrimmage line, corresponds to a gain, or no gain, or a loss. The play is made by the offensive player spinning a spinner-type rotary switch, to close a circuit to one (and only one) lamp. Prior to spinning the spinner, the offensive player, by selecting and inserting, into a junction box, one of a number of cross-connection blocks (corresponding to one of a number of offensive plays) establishes the probability of completion of the circuit to the desired lamp, corresponding to the desired ball position to be attained. Concurrently, the defensive player, not knowing which offensive play has been selected by his opponent, operates one of several defensive switches (corresponding to one of several defensive plays) and, by selecting the right defensive play, reduces the probability of successful completion of the chosen offensive play.

3,556,526
THREE-DIMENSIONAL GAME APPARATUS
David W. Currie, 5911 Cary Ave., Cincinnati, Ohio 45224
Filed Nov. 1, 1968, Ser. No. 772,654
Int. Cl. A63f 3/00
U.S. Cl. 273—130 7 Claims



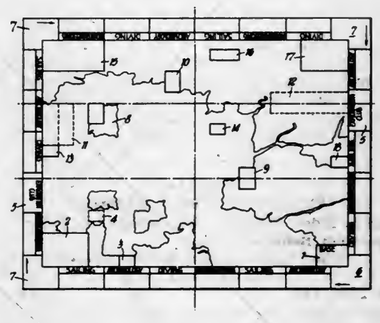
A three-dimensional game apparatus including a game board and player tokens adapted for selective association with each other and the game board so that they may be aligned in horizontal, diagonal or vertical patterns in three planes. The object of play is to effect player token occupancy of three playing positions in a planar or an interplanar line. The game apparatus also includes magnetic player tokens whose like-poles repel each other to provide for three-dimensional alignment of player tokens in different planes.

3,556,527
FLEXIBLE GAME BOARD WITH BALL OPENINGS
Arnold E. Margolis; Morris Margolis, and Charles F. Foley, Minneapolis, Minn., assignors to Marson, Inc., Minneapolis, Minn., a corporation of Minnesota
Filed May 6, 1968, Ser. No. 726,998
Int. Cl. A63b 67/14
U.S. Cl. 273—115 9 Claims



A game or amusement device utilizing a game board ordinarily held and operated by a pair of opposing players or contestants that is made in the form of a flexible band or sheet having upturned side walls along the edges of the band and having one or more holes or pockets located in the band for the purpose of capturing a ball that is jiggled along the flexible band by the actions of the opposing players. The ball is porous or hollow.

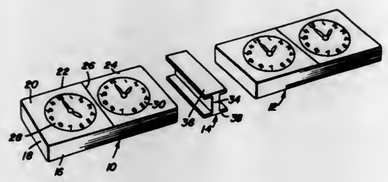
3,556,528
EXPEDITION SIMULATING BOARD GAME
James Christopher Spiring, "Stoneacre," Bentsbrook Park, North Holmwood, Dorking, Surrey, England
Filed Aug. 7, 1968, Ser. No. 750,819
Claims priority, application Great Britain, Aug. 14, 1967, 37,333/67
Int. Cl. A63f 3/04
U.S. Cl. 273—134 14 Claims



A game for two to five players in which playing pieces move around an outer track of a board in accordance with the throws of a numerical die to obtain equipment for use in subsequent diving, sailing, archaeology and mountaineering expeditions. The expeditions are undertaken on a central maplike area of the board with the aid of a direction-indicating die, "equipment" cards obtained in the commencing stage of the game being required to permit access to correspondingly marked subdivisions of the maplike area.

3,556,529
EDUCATIONAL DOMINOES WITH MAGNETIC CONNECTORS

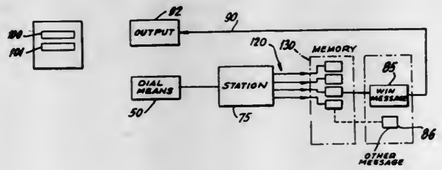
Lois Layton Noriega, 3108 Dewey St., Tampa, Fla. 33607
Filed Aug. 8, 1968, Ser. No. 751,151
Int. Cl. A63f 9/20
U.S. Cl. 273—137 5 Claims



A set of domino-type blocks include indicia thereon representing the face of a timepiece. Magnetic elements are embedded within the blocks so that adjacently positioned blocks may be retained in a semipermanent arrangement. Further, a magnetic I-connector is positioned between confronting, adjacently positioned blocks thereby retaining these adjacently positioned blocks in coplanar relation.

3,556,530
GAME HAVING QUICK PRIZE INDICATION FOR WIDE AREA USE

William H. Barr, Carmel, and Glen L. Wesen, Brooklyn, N.Y., assignors to Howard Miller, Scarsdale, N.Y.; David J. Waltzer, Forest Hills, N.Y. and Leonard Kaye, Westfield, N.J.
Continuation-in-part of application Ser. No. 713,492, Mar. 15, 1968. This application May 23, 1968, Ser. No. 731,577
Int. Cl. A63f 1/18
U.S. Cl. 273—139 3 Claims

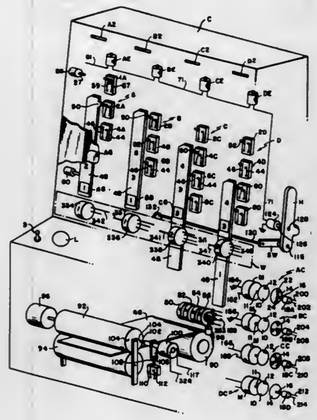


A game-playing system in which the winning indicia in one of a plurality of game-playing tickets is immediately known to the player. The winning indicia is dialed into a response system normally comprising a telephone system. The game also includes one or more game playing areas having zone spaces to form winning indicia.

3,556,531
SWEEPSTAKE PROGRAMMER

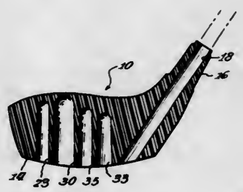
Clarence L. Elder, Baltimore, Md., assignor to Elder Systems Corporation, Baltimore, Md.
Filed June 17, 1968, Ser. No. 737,466
Int. Cl. A63b 71/06
U.S. Cl. 273—143 13 Claims

A game in which a player attempts to match a number or design selected by a chance mechanism. The player sets the game into operation by inserting a first token to operate the chance mechanism for selecting a number or design by the machine, which is to be matched by the player. The token also releases the selecting mechanism by which the player makes his selection. The insertion of a security key releases the trip mechanism for operation by the player. By operating the trip mechanism after the insertion of the security key the player attempts to match the first two numbers (or designs) selected by the machine. The insertion of a second token or other triggering means allows the player a choice of selecting a third number and a third token allows the player to select a fourth number. In the event the player matches the selected numbers the machine prints a tab indicating the correct selection.



3,556,532
PLASTIC GOLF CLUB HEAD WITH CAVITIES THEREIN TO SOUND LIKE A WOODEN CLUB HEAD

James E. Ballmer, Cincinnati, Ohio, assignor to Brunswick Corporation, a corporation of Delaware
Filed Aug. 2, 1968, Ser. No. 749,682
Int. Cl. A63b 53/04
U.S. Cl. 273—167 7 Claims

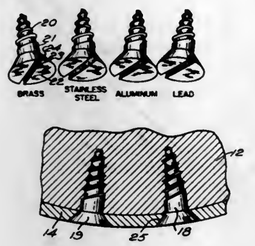


An impacting element characterized in that a plurality of cavities in a body are formed therein to give to the element a desired acoustical quality upon striking a solid object. The impacting element will have many uses but one important one will be in plastic golf club heads wherein it is desired to produce a head which will produce a desired sound upon impacting a golf ball.

3,556,533
SOLE PLATE SECURED TO CLUB HEAD BY SCREWS OF DIFFERENT SPECIFIC GRAVITIES

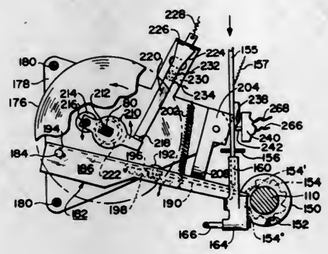
James E. Hollis, Providence, R.I., assignor to Bancroft Racket Company, a corporation of Rhode Island
Filed Aug. 29, 1968, Ser. No. 756,123
Int. Cl. A63b 53/08
U.S. Cl. 273—171 1 Claim

A golf club having a wooden head with the sole plate attached to the bottom of the head by screws, the heads of which screws are exposed, the fastening screws being selected from different materials and, therefore, of different weights for providing the desired balance of the head while at the same time securing the sole plate to the head.



3,556,534
AUTOMATIC CONTROL FOR TAPE ACTUATED INSTRUMENTS

Edwin S. Bara, and Leonard J. Kobek, Chicago, Ill., assignors to Webcor, Inc., Chicago, Ill., a corporation of Illinois
Filed Mar. 14, 1967, Ser. No. 623,026
Int. Cl. G11b 15/00, 21/08
U.S. Cl. 274—4 20 Claims

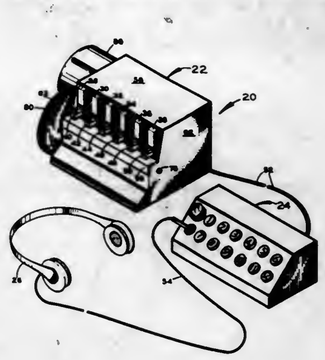


Automatic control for tape players using a continuous tape cartridge having a tape-actuated solenoid to trip a release lever allowing a pinch roller to pass between the tape-driving capstan and a spring-loaded pivotal lever-pawl, movement of the pawl rotates a step wheel from which is mounted the pickup head for vertical and parallel movement to the next track on the tape, or if the preselected number of tracks of the tape is completed a latch drops into alignment with the pawl and the cartridge is ejected, automatically shutting off the unit. A manual selector rotates the step wheel to position the pickup head at any desired track through sequential stepping and the circuit is arranged for repeat play, automatic play or play of a selected track set by a manual selector.

3,556,535
RANDOM ACCESS TAPE LIBRARY

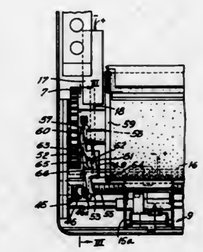
Ernest J. Chabot, Deerfield Beach, Fla. (1425 17th St. NW Apt. 601, Washington D.C. 20036)
Filed June 10, 1968, Ser. No. 735,686
Int. Cl. G11b 5/00, 15/66
U.S. Cl. 274—4 2 Claims

A magnetic tape library in which a plurality of tape cartridges are provided, any of which can be selected and moved into driving relation with a common capstan shaft which is rotated to play the selected tape or tapes. Each cartridge has an initial position and a playback position. In a preferred embodiment, an electromagnetic device is provided for each cartridge to move it between these positions. A spring urges the cartridge to one of the positions thereof, and the electromagnetic device works against the spring.



3,556,536
MAGNETIC RECORD INDEXING DEVICE

Kurt Guettinger, Pfaffhausen, Switzerland, assignor to Dictaphone International AG, Wettingen (Aargau), Switzerland
Filed Dec. 26, 1968, Ser. No. 787,082
Claims priority, application Switzerland, Dec. 28, 1967, 18232/67
Int. Cl. G11b 25/02, 21/12
U.S. Cl. 274—22 11 Claims



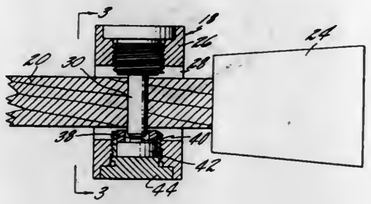
A record indexing device for a dictating machine having a sound head carriage movable along the length of a cylinder. The indexing device includes a limit switch arranged in the path of motion of said sound head carriage to be actuated by it when it is returned and a return element which acts to put the sound head carriage into its starting position. When the carriage is returned, the return element pushes the sound head carriage in its starting position and the limit switch is deactivated to set the cylinder in its start position. This enables one position, i.e., the starting position, to be determined automatically when using the machine both for recording and reproducing.

3,556,537
TONE ARM

William E. Stacy, North Wilbraham, Mass., assignor to The Poly-Choke Company, Inc., East Hartford, Conn., a corporation of Connecticut
Filed Aug. 2, 1968, Ser. No. 749,767
Int. Cl. G11b 3/10
U.S. Cl. 274—23 6 Claims

A tone arm is provided in which the tone arm is mounted on a horizontally disposed shaft, the shaft in turn being pivotally mounted in a vertical pivot assembly to allow verti-

cal motion of the tone arm. The vertical pivot assembly has large diameter sapphire bearing elements against which opposite ends of the shaft bear. The bearing elements are contained in housings which are in turn mounted in resilient isolation mounts which allow for some movement to provide



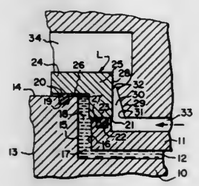
protection and isolation while a stabilization ring limits the amount of movement. A resilient potting compound is contained in a recess along most of the length of the arm, and this potting compound and the isolation rings contribute to the achievement of highly desirable resonance characteristics.

3,556,538

BARRIER SEAL WITH SELF REGULATING BUFFER

Heinz K. Muller, Neustadt, Germany, assignor to Sealol, Inc., Warwick, R.I., a corporation of Delaware

Filed May 14, 1968, Ser. No. 728,950
Claims priority, application Germany, June 3, 1967, M74257
Int. Cl. F16j *15/40*; F16l *17/02*
U.S. Cl. 277—27 **5 Claims**



This specification discloses a barrier seal in which the pressure of the fluid being sealed is opposed by the flow rate of a buffer fluid with a movable ring interposed between the two. This ring is movable axially under the influence of the differential which obtains between the pressures of the sealing fluid and buffer fluid. Appropriate passages are provided for the buffer fluid and seals are provided between the movable ring and the shaft and housing in which the barrier seal is installed.

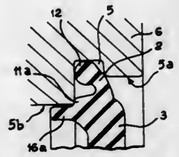
3,556,539

SEALING MEANS FOR BALL OR ROLLER BEARINGS

Dino Senigalliesi, Turin, Italy, assignor to RIV Officine di Villar Perosa Societa per Azioni, Turin, Italy

Continuation of application Ser. No. 461,093, June 3, 1965, now abandoned. This application Aug. 15, 1968, Ser. No. 757,516
Claims priority, Italy, June 16, 1964, 13,418/64
Int. Cl. F16j *15/34*
U.S. Cl. 277—94 **2 Claims**

A seal for antifriction bearings in the form of an annular washer includes; an outer edge, shaped to be deformed upon insertion into a race groove, a stiff intermediate section, and a tapered inner portion for cooperation with the other bearing race. The seal is formed of homogenous resilient material. The seal includes one or more axially extending annular projections between the outer edge and intermediate section



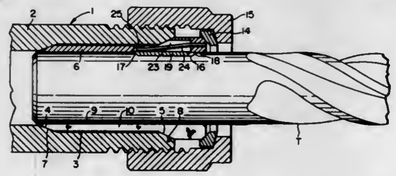
which reinforces the connecting zone between the outer edge and intermediate section.

3,556,540

COLLET CHUCK AND THE LIKE

Milton L. Benjamin, and David D. Walker, Chagrin Falls, Ohio, assignors to Erickson Tool Company, Solon, Ohio, a corporation of Ohio

Filed Feb. 28, 1969, Ser. No. 803,303
Int. Cl. B23b *31/04*
U.S. Cl. 279—47 **8 Claims**



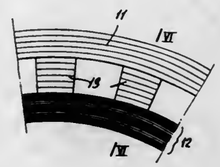
A collet chuck having a radially movable locking means therein for locking a tool against axial withdrawal from and turning in the collet.

3,556,541

ANNULAR PACKING WITH METALLIC REINFORCEMENT

Giuseppe Salono, Via Piave, 50, Quinto de'Stampi, Rozzano-Milan, Italy

Filed Sept. 21, 1966, Ser. No. 580,961
Claims priority, application Italy, Sept. 29, 1965, July 27, 1966, 9,560/65; 20,766/66
Int. Cl. F16j *15/02*
U.S. Cl. 277—204 **3 Claims**



Spirally wound ribbons of metallic and asbestos-type amiantite materials form an annular packing for fluids. Adjacent spirally wound turns are glued to each other and turns of materials differ to provide portions of all metal and all amiantite. Turns are formed into guidance eyes or ears for passage of bolts and thus cooperating for truing and fixing

the packing in place. Metallic ribbon is formed of one material selected from aluminum, copper, nickel, lead, iron and stainless steel in a thickness ranging from 0.05 up to 3 mm. while thickness of the amiantite ranges from 0.4 to 6 mm. Differing types of amiantite portions are provided for different fluids.

ERRATUM

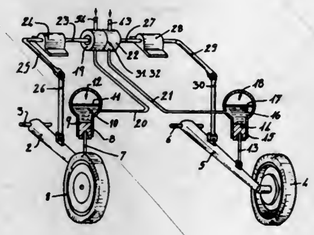
For Class 279—47 see:
Patent No. 3,555,540

3,556,542

TRIM-CORRECTING ARRANGEMENT FOR VEHICLES WITH HYDROPNEUMATIC SUSPENSION

Rene Capgras, Paris, France, assignor to Industrial Development Company Establishments, Vaduz, Liechtenstein

Filed June 19, 1968, Ser. No. 738,331
Claims priority, application France, June 19, 1967, 48,804
Int. Cl. B60g *13/10*
U.S. Cl. 280—6 **5 Claims**



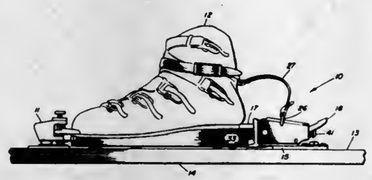
Two hydropneumatic suspension units, acting upon respective wheel mounts on opposite sides of a vehicle frame, are connected in a hydraulic circuit including a pair of contacting valve discs on confronting ends of a pair of torsion shafts which are mechanically linked with the two wheel mounts so as to rotate upon a raising or lowering of the corresponding wheel relative to the vehicle frame. The contacting disc faces have inlet and outlet ports, respectively connected to the high-pressure and low-pressure sides of a fluid supply system, and control ports leading to the oil chambers of the associated suspension units; upon relative rotation of the shafts in one sense or the other, a compensating pressure differential is generated in these oil chambers to restore the normal attitude of the vehicle.

3,556,543

SKI BINDING

Odd Overgaard, Littleton, and Henry P. Berlied, West Concord, Mass., assignors to Dovre Ski Binding Inc., West Concord, Mass., a corporation of Massachusetts

Filed Sept. 23, 1968, Ser. No. 761,703
Int. Cl. A63c *9/084*
U.S. Cl. 280—11.35 **5 Claims**



An automatically releasable step-in type ski binding having a heel engaging clamp provided on its forward side with upper and lower heel engaging protuberances and on its rearward side with means engageable by a spring loaded roller to hold the heel engaging clamp in boot engaging or boot releasing positions. A notch is formed in the rearward side of the heel engaging clamp for engagement by the roller and a cam lever is provided to move the roller out of the notch to provide for manual release to the binding. Additional spring means assists in moving the clamp to heel releasing position.

3,556,544

SKI POLE OF ADJUSTABLE LENGTH

Norbert Hauser, 105 Elfenstrasse, Stuttgart-Moehringen, Germany

Filed Oct. 23, 1968, Ser. No. 769,924
Claims priority, application Germany, Oct. 31, 1967, 1,578,795
Int. Cl. A63c *11/22*
U.S. Cl. 280—11.37 **13 Claims**



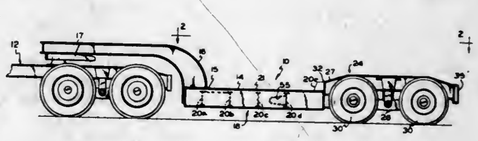
A ski pole of adjustable length with two telescopic tubular pole sections which may be axially locked against each other by means of a clamping element. The clamping element is a pressure element of nonmetallic material, the cross-sectional area of which is undivided and may be increased by reducing the axial length of the pressure element. A surface of the pressure element can directly engage the wall surface of the tubular pole section slidably disposed with respect to the pressure element and the materials of the pole section and the pressure element being so paired that a high coefficient of friction is attained. On the other hand, a tightly confined liquid can be used for the pressure element. In order to reduce the axial length of the pressure element, a rod may be provided which pushes against one end of the pressure element which, with its other end, bears against a retainer which is axially fixed with respect to the surrounding tubular pole section.

3,556,545

EXPANDABLE TRAILER

Frederick F. van Raden, Hillsboro, Oreg., assignor to Peerless Trailer and Truck Service, Inc., Tualatin, Oreg., a corporation of Oregon

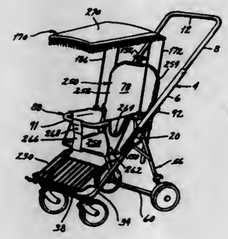
Filed Jan. 8, 1969, Ser. No. 789,787
Int. Cl. B62d *21/14*
U.S. Cl. 280—34 **3 Claims**



An expandable trailer for highway trucks having a first frame attachable to a driving vehicle and a second frame attached to the first frame and to which the trailer wheels are journaled. The second frame comprises two transversely disposed girders which are transversely slidable with respect

to the first frame, such girders being attached to each other telescopically in the transverse direction. Piston and cylinder means are attached to the second frame and are adapted transversely to expand and contract its girders with respect to the first frame, thereby transversely to vary the width or track of the wheels.

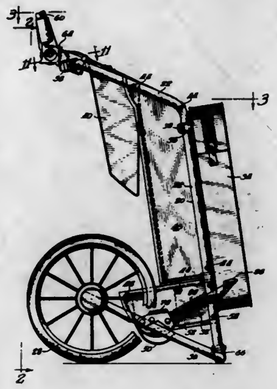
3,556,546
BABY STROLLERS
Edward Daniel Garner, Lincoln, Nebr., assignor to Herschall F. Garhan, Rising City, Nebr.
Original application Aug. 21, 1967, Ser. No. 662,067, now Patent No. 3,459,435, dated Aug. 5, 1969. Divided and this application May 5, 1969, Ser. No. 855,789
Int. Cl. B62b *11/00*
U.S. Cl. 280—36 **6 Claims**



A baby stroller having foldable upper, front and rear frames which carry foldable back and seat frames. A fabric cover is attached to the back and seat frames and includes a padded seat section suspended from the seat frame for supporting a child. The upper, front and rear frames are hingedly connected to one another so that they fold into side-by-side relation. The back and seat frames also fold down against the rear so that all the frames can be folded into a highly compact configuration. The seat frame is partially supported by side plates which have arcuate grooves adapted to receive and contain locking studs on the upper frame when the back and seat frames are in their erected positions. Accordingly, the upper frame is prevented from moving with respect to the front frame when the back frame is erected, and the rear frame is also prevented from moving with respect to the front frame by means of links interconnecting the two. A canopy is supported on forward and rear cross rods connected, respectively, to the seat and back frames. When the back and seat frames are folded down against the rear frame, the canopy folds down upon the back frame.

3,556,547
GOLF CART CONSTRUCTION
Anthony T. Zagwyn, Delavan, Wis., assignor to Ajay Enterprises Corporation, Delavan, Wis., a corporation of Wisconsin
Filed Dec. 2, 1968, Ser. No. 780,418
U.S. Cl. 280—41 **7 Claims**

A golf cart having a tubular rectangular frame, with the side members of the frame supporting a structure defining compartments for receiving golf irons. The side members also support various accessory bags. An adjustable handle is pivotally attached at the top of the frame. Another structure which receives the head of golf woods is supported by the frame, so that the shafts of the woods extend upwardly toward the top of the frame. Attached at the top of the frame are a pair of spring-loaded retaining members each of which are capable of resiliently gripping two of the shafts, but which also provide positive gripping when only one shaft is in place. A pair of wheel carrying struts are pivotally attached at the bottom of the frame, so that the wheels may be swung toward the frame when it is desired to collapse the cart. A suspension member is attached between the frame and each strut. Each suspension member includes springs for absorbing



the shock of the wheels, and for resiliently locking the strut in uncollapsed and collapsed positions.

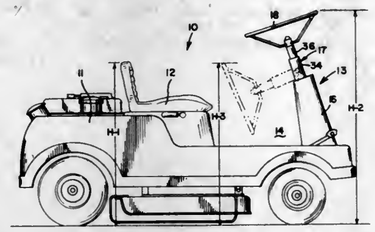
3,556,548
HAND CART
Herbert H. Aplin, 12674 Racine, Detroit, Mich. 48205
Filed May 1, 1969, Ser. No. 820,933
Int. Cl. B62b *1/00*
U.S. Cl. 280—47.27 **3 Claims**



A hand cart of an all welded construction wherein the spaced sideplates which mount the axle for a pair of wheels has secured at their forward ends a pair of laterally extending upright stop plates from whose lower ends project a pair of side supports for a load, coplanar with and secured to a central load support secured between the sideplates and projecting forwardly, and with U-shaped handle at its free ends welded to said sideplates and stop plates.

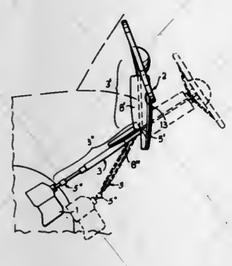
3,556,549
STEERING WHEEL PIVOTING MECHANISM FOR RIDING MOWER
Gordon L. Hershman, La Grange, and Gerald N. Borchardt, Claredon Hills, Ill., assignors to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Aug. 20, 1968, Ser. No. 754,061
Int. Cl. B62d *1/18*
U.S. Cl. 280—87 **5 Claims**

A steering assembly for a riding lawn mower of the type having a body defining an operator's compartment, and including a lower steering shaft journaled for rotation about a fixed axis, and an upper steering shaft hingedly joined to said lower shaft. A sliding collar normally fits around the junction



of the two shafts locking the shafts in axial alignment. The collar is movable to a position removed from the junction whereby the upper shaft is swingable to a collapsed position in the operator's compartment.

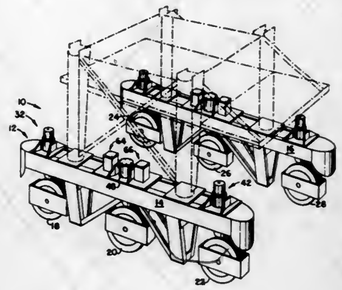
3,556,550
STEERING GEAR FOR MOTOR VEHICLES
Enzo Franchini, Turin, Italy, assignor to Fiat Societa per Azioni, Turin, Italy, an Italian Joint Stock Company.
Filed Aug. 27, 1968, Ser. No. 755,572
Claims priority, application Italy, Sept. 5, 1967, 52,925A/67, Patent No. 813,495
U.S. Cl. 280—87 **5 Claims**



A safety steering gear has at least the rearward portion of the steering shaft deformable about a horizontal transverse axis to assume a vertical position under frontal impact forces. The steering wheel attached to this shaft is also rotatable about a horizontal transverse axis and rotates in the opposite sense to the rearward shaft portion so as to assume a flat near-vertical position with its rim collapsed against the rear shaft portion after impact. The attachment of the steering wheel to the shaft may comprise a universal joint, surrounded by a collapsible sleeve that collapses on frontal impact. The underside of a guide member in which the shaft is mounted near the wheel pivots upwardly on a frontal impact and is padded to prevent injury to the driver's chest. There may be a yieldable and telescopic joint in the forward portion of the shaft.

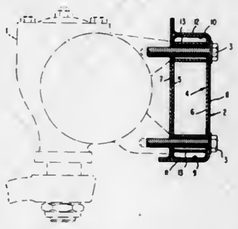
3,556,551
SUSPENSION SYSTEM
John B. Shaw, 1812 E. Mariette, Phoenix, Ariz., and William H. Schwartz, 260 Summit Drive, Corte Madera, Calif.
Filed Jan. 8, 1969, Ser. No. 789,905
Int. Cl. B60g *5/00*
U.S. Cl. 280—104.5 **8 Claims**

Disclosed herein is a suspension system incorporating three in-line wheels for supporting one side of a vehicle. Each end wheel is connected to and cooperates with a hydraulic cylinder. The middle wheel is connected to and cooperates with a pair of hydraulic cylinders. A tubular line connects the hydraulic cylinder of one end wheel with one of the hydraulic cylinders of the middle wheel, and a tubular line connects the



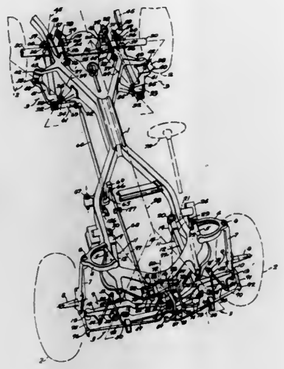
hydraulic cylinder of the other end wheel with the other hydraulic cylinder of the middle wheel.

3,556,552
VEHICLE BODY WITH BOX-SHAPED HOLLOW BEARER
Franz Deckert, Sindelfingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Oct. 30, 1968, Ser. No. 771,837
Claims priority, application Germany, Oct. 31, 1967, 1,630,380
Int. Cl. B62d *25/00*
U.S. Cl. 280—106 **10 Claims**



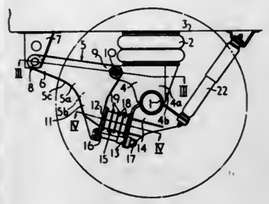
A vehicle body which includes a box-shaped hollow bearer on which a unit such as a steering gear is secured by means of bolts or the like extending through the hollow bearer; a box-shaped support body which is provided within the area of the securing places, substantially lines the hollow bearer; the support body, in its turn, is reinforced within the area of the fastening bolts which extend through the same.

3,556,553
POLYURETHANE CUSHION SUPPORT FOR VEHICLES
Joachim Kolbe, 5126 Haskell Ave., Encino, Calif. 91316
Filed Apr. 1, 1968, Ser. No. 717,722
Int. Cl. B60g 11/60, 21/00
U.S. Cl. 280—112 2 Claims



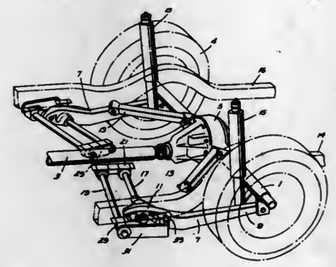
A bouncy 70 durometer polyurethane block is employed to support a lever arm at one end of a torsion bar against twist in a vehicle mounting designed to resist outward leaning of the vehicle superstructure upon turns.

3,556,554
VEHICLE SUSPENSION SYSTEMS
Cyril Joseph Saward, Kenilworth, England, assignor to The Dunlop Company Limited, Birmingham, England, a corporation of Great Britain
Filed Apr. 23, 1968, Ser. No. 723,381
Claims priority, application Great Britain, Apr. 26, 1967, 19118/67
Int. Cl. B60g 9/00, 11/26, 11/62
U.S. Cl. 280—124 11 Claims



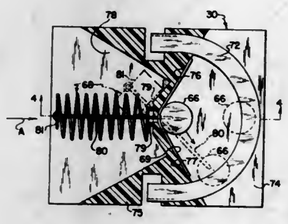
A vehicle suspension incorporating trailing links pivotally secured at both ends of an axle between the axle and the vehicle frame for longitudinal location of the axle and antiroll compression springs mounted between abutments on the links and the axle, of which the following is a specification.

3,556,555
MOTOR VEHICLE SUSPENSION
Brian Abbott and Harry Bernard Groves, Chelmsford, Dennis Harris, Thorpe Bay, and John Bartholomew Turnbull, West Hanningfield, England, assignors to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed Sept. 24, 1968, Ser. No. 762,001
Claims priority, application Great Britain, Oct. 13, 1967, 46,770/67
Int. Cl. B60g 9/04
U.S. Cl. 280—124 12 Claims



A motor vehicle suspension system with a spring assembly having a non-linear spring rate. The assembly comprises a pair of torsion bars that are interconnected by a rigid device and a resilient device. The resilient device is preloaded whereby the torsion bars are loaded at different rates to provide a variable spring rate.

3,556,556
CRASH SENSOR
George W. Goetz, Detroit, Mich., assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 20, 1968, Ser. No. 753,947
Int. Cl. B60r 21/00
U.S. Cl. 280—150 13 Claims



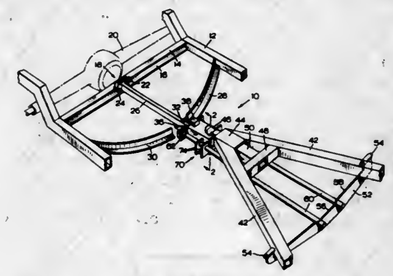
An improved sensor assembly for actuating a vehicle safety apparatus upon the occurrence of a collision includes a mass which is urged against an energy-absorbing stop by a coil spring with sufficient force to prevent movement of the mass to an actuated position due to vehicle braking and the encountering of non-collision driving conditions. The mass is movable in a plurality of directions with the direction of mass movement being dependent upon the direction of impact during the collision. When a collision occurs, the mass moves against the influence of the coil spring to the actuated position to complete a circuit for effecting actuation of the vehicle safety apparatus. The coil spring is associated with the mass so as to resist movement of the mass in any direction with the same biasing force.

3,556,557
MOTORCYCLE FORK EXTENSION
Robert E. Blair III, 22622 Van Buren St., Colton, Calif. 92324
Filed June 11, 1969, Ser. No. 832,284
Int. Cl. B62k 21/02
U.S. Cl. 280—279 5 Claims



An elongated member is connected to the top end of a motorcycle front fork post, and bridges the distance between the upper and lower brackets of a motorcycle front end steering assembly to form a downward and forward extension of the front fork. The said member has substantially the same cross-sectional configuration as the post, and its bottom end is shaped to receive the top end of the post and has a threaded stem that screws into a tapped hole in the post. The top end of the member is formed to seal within a cavity in the upper bracket and has a longitudinally extending tapped hole in its center to receive a cap screw, the head of which seats on the top of the upper bracket to prevent downward movement of the member with respect thereto. When the extension member is in place, the lower bracket is clamped tightly to the upper end of the fork post, and the extension member spans most of the distance between the lower and upper brackets.

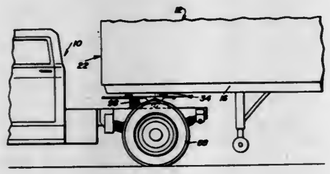
3,556,558
TRAILER HITCH
Oscar E. McKee, 209 Pathfinder Drive, Cooksville, Ontario, Canada
Filed Aug. 12, 1968, Ser. No. 752,066
Int. Cl. B62d 53/00
U.S. Cl. 280—406 15 Claims



This invention relates to a trailer hitch for connecting a tractor to a trailer. The hitch includes a draw bar which has a primary pivot point connected to the tractor vehicle adjacent to the rear axle thereof and a secondary pivot point located at the rear end of the tractor vehicle and connected to the trailer vehicle. The secondary pivot is provided with horizontal pivot control means for preventing horizontal pivoting about the secondary pivot point until horizontal pivoting about the primary point is completed. The horizontal pivot control means also includes

means for adjusting the horizontal pivoting force required to permit horizontal pivoting about the secondary pivot point. The secondary pivot point control means also includes stabilizer rods and a stabilizer bar which cooperate to urge the draw bar into normal axial alignment with the trailer. The present invention also provides load adjustment means for distributing the load applied to the tractor vehicle by the trailer. Preferably and conveniently the load adjustment means and horizontal pivot control means are combined in a single structure.

3,556,559
TRACTOR AND SEMITRAILER PIVOT COUPLING WITH INTERCHANGEABLE TRAILER PLATE
Angelo Interisano, Welland, Ontario, Canada, assignor to Auto-Mat Safety Devices, St. Catharines, Ontario, Canada
Filed July 22, 1968, Ser. No. 746,682
Int. Cl. B62d *53/06*
U.S. Cl. 280—407 **4 Claims**



A releasable pivot connection for use between a tractor and a semitrailer and including a substantially conventional depending fifth wheel pin for support from the forward end of the semitrailer and a slotted oscillatably supported fifth wheel plate for support from a tractor with the plate including latch means whereby the fifth wheel pin may be releasably secured in the inner end of the slot formed in the plate for relative rotation between the pin and the plate. The plate further includes a supplemental pin disposed forwardly of the forward extremity of the fifth wheel pin slot and which is supported from the plate for vertical shifting between an upstanding position with its upper end projecting above the plate and a lowered retracted position with its upper end flush with the upper surface of the plate while the bearing plate supported from the trailer and from which the conventional fifth wheel pin depends includes an arcuate slot through which the supplemental pin is receivable and which is of approximately 180 degrees extent and is operable to coact with the supplemental pin to limit oscillation of an associated trailer to its tractor between positions with the trailer pivoted approximately 90 degrees to either side of the longitudinal axis of the tractor and to also establish a secondary draft coupling between the tractor and the trailer in the event the conventional pivot coupling of the fifth wheel assembly is rendered inoperative.

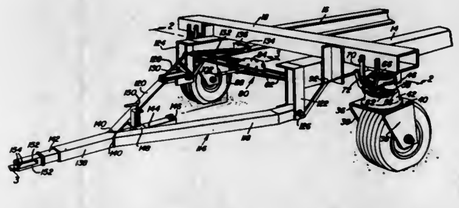
3,556,560
COUPLING FOR SEMITRAILER UNITS
Charles R. Adams, General Delivery, Des Arc, Mo.
Filed July 30, 1968, Ser. No. 752,446
(Filed under Rule 47(b) and 35 U.S.C. 118)
Int. Cl. B62d *53/00*
U.S. Cl. 280—415 **5 Claims**

An improved semitrailer-converter dolly coupling arrangement utilizing a wheeled converter dolly having a fifth wheel rotatably mounted thereon, and a semitrailer having a fifth wheel plate under its front end to which is movably secured a rectilinear coupling member adapted to be snugly received within a complementary coupling aperture or recess in said fifth wheel of said dolly. The converter dolly is employed to connect said semitrailer in a tandem arrangement behind a lead semitrailer drawn behind a tractor. Braking means supported on said dolly



may be selectively operated to prevent rotation of said fifth wheel, and thus of the front end of said semitrailer rigidly coupled thereto, in order to assist in controlling and steering said semitrailer.

3,556,561
FARM WAGON RUNNING GEAR
Theodore Joe Gingue, Stiles Pond Road, St. Johnsbury, Vt. 05819
Filed Oct. 28, 1968, Ser. No. 771,261
Int. Cl. B62d *53/00*
U.S. Cl. 280—489 **10 Claims**

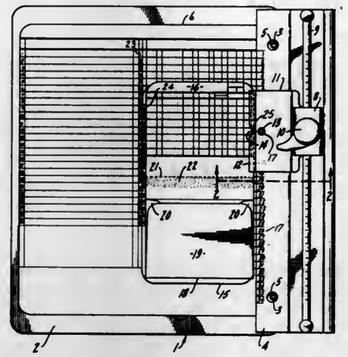


A vehicle chassis including a frame having opposite ends. The chassis includes opposite side ground engaging support wheels at one end journalled for rotation about an axis extending transversely of the frame and the other end of the chassis includes opposite side ground engaging caster wheel assemblies rotatable about upstanding axes. The vehicle further includes brake structure associated with the caster wheel assemblies operable to variably brake the assemblies against rotation about their upstanding axes of rotation.

3,556,562
BOOKKEEPING APPARATUS
Paul E. McGough, North Muskegon, Mich., assignor to The Shaw-Walker Company, Muskegon, Mich., a corporation of Michigan
Filed Mar. 26, 1968, Ser. No. 716,136
Int. Cl. B41l *3/04, 3/06*
U.S. Cl. 282—29 **2 Claims**

In a bookkeeping apparatus, a bookkeeping board with a spring biased blade along one edge thereof. Bookkeeping papers for use with the board including a journal sheet adapted to be clamped by the blade, a ledger sheet and a statement envelope, all three having identical entry boxes arranged in horizontal and vertical alignment. The horizontal lines of the boxes are numbered on the ledger sheet along the right and left hand edges, on the statement envelope on the right hand edge only and on the journal sheet are spaced from the edge thereof a distance greater than the width of the ledger sheet. The blade presents numbers corresponding to the numbers of the horizontal lines. A traveler along the blade is windowed to expose a single blade number at a time

and is notched in alignment therewith to expose a number on the statement envelope when it and the ledger sheet are in register with the journal.



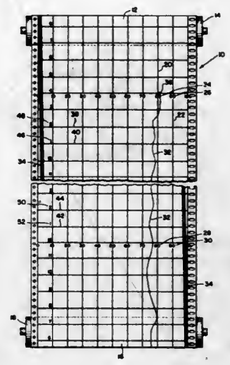
A part of the statement envelope after the entries have been made and the statement sent, may be detached and the envelope used for return payment.

3,556,563
BOOKLET AND CARDS FOR USE IN A LIMITED CREDIT SYSTEM
Ronald L. Scheinberg, 519 Montgomery Ave., and Richard K. Page, 151 Cheswold Valley Road, both of Haverford, Pa. 19041
Filed July 9, 1969, Ser. No. 840,221
Int. Cl. B42d *15/00, 15/06;* **B41n** *1/00*
U.S. Cl. 283—7 **10 Claims**

A limited amount of merchandise or service may be charged against a person's established credit account by another person upon presentation to a shopkeeper of an identification card mounted in the back of a booklet which has a series of pages each of which represents a cash-value limit for a transaction. Each page is correlated with the established account by a facsimile of the account number which is imprinted on an area thereon when the booklet is procured, and each page has an aperture contiguous to the imprint area in which account indicia on the identification card registers to permit the shopkeeper to make a visual comparison of the indicia and to extend credit if the indicia match. In addition to the account indicia registering in the aperture, the identification card also has raised account indicia which underlies the imprint area on each page so that when the booklet and identification card are operated in a credit-receipt imprinting machine in a conventional manner, the facsimile on the imprint area is obliterated if the indicia do not match, thereby warning a shopkeeper of an improper transaction.

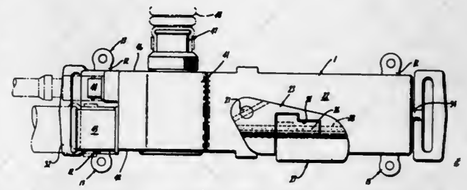
3,556,564
INDICATING APPARATUS
Paul A. Aldinger, Warminster, Pa., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Oct. 1, 1968, Ser. No. 764,268
Int. Cl. B42d *15/00*
U.S. Cl. 283—62 **1 Claim**

A sheet, such as a strip chart having a faint discernable diagonal line which will not obscure a record being recorded on the chart and which extends from one side portion of the chart along the chart to the other side portion of the chart as it passes through a series of spaced apart zero to one hundred percent of scale calibration numbers on the chart to provide a continuous visual indication of the percent of chart remaining on



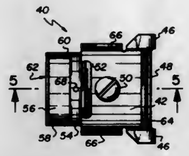
the unrecorded portion of the chart that is wrapped about a partially covered supply roll and to enable an operator to determine if uninterrupted recording over a preselected period of time on a single chart can be accomplished without being required to renew the chart and thereby cause loss of a portion of the record to occur.

3,556,565
MULTIPLE WEB CONNECTOR AND SINGLE POINT RELEASE
John A. Gaylord, San Rafael, Calif., assignor to H. Koch & Sons, Inc., Corte Madera, Calif., a division of Global Systems, a Gulf & Western company
Filed July 7, 1969, Ser. No. 839,519
Int. Cl. B64d *17/32;* **F16l** *37/12*
U.S. Cl. 285—38 **10 Claims**



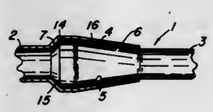
In a hollow body a pair of spaced blocks are slideable and in the outer end of each block are a pair of rotatable roll pins; each roll pin being biased by a torsion spring to turn in a direction whereby a cutaway portion of the pin interlocks with a notch in a stem of the fitting for the web; which stems are insertable through holes in the hollow body; a manipulable release device is turned to move the blocks toward one another thereby to pull the pins out of engagement from the respective stems of the fittings and thereby to release all the harness webs from a single point; a device on one of the blocks operates upon a limited movement of the block to release the mask hose from the body, before the web release, and means being provided to convey oxygen supply to the mask hose.

3,556,566
COUPLING
Menashe Bromberg, West Orange, N.J., assignor to The Thomas & Betts Co., Elizabeth, N.J., a corporation of New Jersey
Filed Jan. 15, 1968, Ser. No. 697,835
Int. Cl. F16l 5/00
U.S. Cl. 285—162 10 Claims



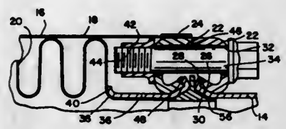
The invention is directed to a coupling and more particularly to a coupling for joining a conduit to an electrical fixture box. The coupling is an expansion type setscrew operated coupling for coupling a conduit to an electrical box having an insulated out-throat for the coupling. The coupling consists of three major components; a steel body, a steel setscrew and a plastic throat. The body is a split tubular device comprised of two halves connected by two hinged ears approximately centrally located at one end of the coupling. The upper half of the split body has an extruded, threaded boss which houses a setscrew, a retaining groove having two shoulders and a skirt. The retaining groove facilitates the securing of the assembled coupling in an electrical fixture box knockout. It also contains a dimple, which, together with one of the shoulders of the retaining groove, acts as a limiting stop for the insertion of a conduit into the coupling. The skirts are used to prevent concrete, or other foreign matter, from getting into the assembled coupling and/or into the electrical fixture box itself. The lower half of the body consists of a section to support the conduit, a retaining groove to secure the coupling in a knockout and a section which supports the plastic throat. The setscrew, which is tightened against the conduit and which causes the locking of the coupling into a knockout in the box, is permitted to dig into the conduit to secure the conduit to the coupling itself. Finally, a plastic throat, having complementary ears formed thereon, is inserted into the outthroat of the coupling and secured thereto by means of retaining ears of the coupling body. The plastic throat provides a smooth entry into the coupling and to the conduit from the electrical fixture box to prevent destruction or abrasion of the insulation of conductors to be placed within the conduit.

3,556,567
TUBE JOINTS
Joseph M. O'Connor, Chicago, Ill., assignor to Peerless of America, Incorporated, Chicago, Ill., a corporation of Illinois
Filed Feb. 10, 1969, Ser. No. 797,988
Int. Cl. F16l 25/00
U.S. Cl. 285—332.3 7 Claims



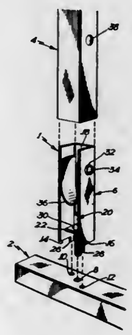
A tube joint having two bells physically interlocked against movement in either axial direction.

3,556,568
CONDUIT CONNECTION MEANS
Louis T. King, 2901 E. Pierson, Phoenix, Ariz. 85016
Filed May 14, 1968, Ser. No. 729,046
Int. Cl. F16l 17/06, 51/02
U.S. Cl. 285—334.2 2 Claims



A conduit connection means comprising a pair of hollow structures having opposed conical bore portions, at least one of the hollow structures being a thin wall tubular member having a clamping flange surrounding the same and conforming to an outer wall of the conduit which is conical and substantially conically parallel to said conical bore portion; and a seal ring disposed between said opposed conical bore portions and having a pair of generally conical portions adapted to provide an annular seal ridge serving as a seal pressure concentration area adapted to bear between a respective one of said conical bore portions and conical seal ring portions. The conduit connection means is particularly adapted for use in the connection of lightweight conduits which are adapted to operate under conditions of high stress and high temperature, such as may be required in aircraft installations or the like.

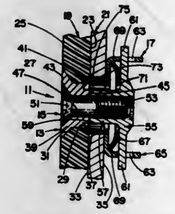
3,556,569
CONNECTOR ASSEMBLY FOR JOINING TUBULAR MEMBERS AT RIGHT ANGLES
Kenneth N. Bruhn, Albert Lea, Minn., assignor to Streater Industries, Inc., Albert Lea, Minn., a corporation of Minnesota
Filed July 24, 1969, Ser. No. 844,308
Int. Cl. E04g 17/00
U.S. Cl. 287—54 6 Claims



The invention relates to a connector assembly for connecting two tubular members together at right angles to each other. The connector assembly is attached at right angles to a first tubular member by utilizing prong and screw means. The telescoping principle is used and the

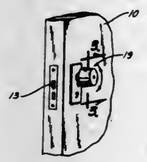
connector assembly has a resiliently biased button which snaps into a hole in a second tubular member to lock the members together.

3,556,570
FASTENER
Frank J. Cosenza, Palos Verdes Peninsula, Calif., assignor to Tridair Industries, Redondo Beach, Calif., a corporation of California
Continuation-in-part of application Ser. No. 657,995, Aug. 2, 1967. This application Aug. 15, 1968, Ser. No. 755,497
Int. Cl. F16b 5/02
U.S. Cl. 287—189.36 13 Claims



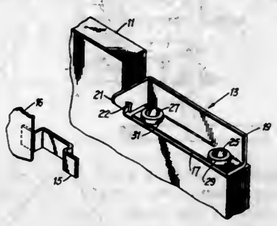
This disclosure describes a fastener which is particularly adapted for interconnecting two panels having confronting apertures therein. One of the panels has an insert mounted within the aperture thereof. The insert has a passageway extending therethrough and a screw extends through the passageway. A nut is attached to the screw and bears against the insert and also retains the second panel adjacent the first panel. The aperture in the second panel is sufficiently large to permit relative movement of the panels.

3,556,571
ATTACHMENT FOR A DOORKNOB
Henry C. Laub, Jr., 8425 Riverview, Brooklyn Park, Minn. 55429
Filed May 28, 1968, Ser. No. 732,776
Int. Cl. E05c 21/00
U.S. Cl. 292—1 8 Claims



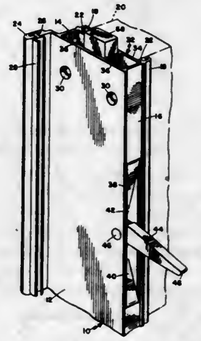
An attachment for a doorknob which rotatably embraces the same to prevent the doorknob from being rotated by small children or the like. The attachment includes a hollow cup means which normally encloses the doorknob and is operatively connected to the doorknob by a connection means. The connection means detachably connects the cup means to the doorknob and permits the cup means to be moved away from the door member partially exposing the doorknob so that the doorknob can be selectively rotated by a person other than the small child.

3,556,572
POSITIVE HOLD LATCH
Frank Christian Olsson, East Lyme, Conn., assignor to American Machine & Foundry Company, a corporation of New Jersey
Filed Jan. 14, 1969, Ser. No. 790,943
Int. Cl. E05c 19/06
U.S. Cl. 292—87 4 Claims



This invention is for a latch having resilient means which positviely holds the latch in closed position in cooperation with a keeper.

3,556,573
ASTRAGAL MOUNTED FLUSH BOLT
Wallace W. Miller, 145 N. 3rd St., El Cajon, Calif. 92021
Filed Oct. 25, 1968, Ser. No. 770,606
Int. Cl. E05c 1/06
U.S. Cl. 292—143 3 Claims



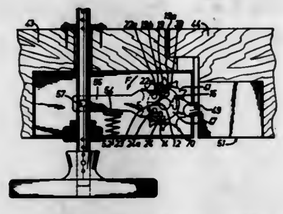
A positive locking bolt is installed in an astragal for attachment to the edge of a door, particularly the least used half of a double door, with the maximum cross section of the bolt in the plane of door motion. The bolt actuating lever is accessible, even with both doors closed, and is positioned at convenient height from the floor regardless of the height of the doors.

3,556,574
DEVICE FOR LOCKING
Paul Parry, 14 Rue Emile Lacoste, Brive, Correze, France
Filed May 16, 1969, Ser. No. 825,179
Claims priority, application France, May 17, 1968, 152,423; Mar. 26, 1969, 6,908,841
Int. Cl. E05c 3/04; E05d 1/04; A47c 1/027
U.S. Cl. 292—280 15 Claims

A device for locking, in at least one direction, two members which are movable in rotation with respect to each other. It can take the form of a bolting device for a doorlock, a tilting window element, or a seat having a back with adjustable inclination.

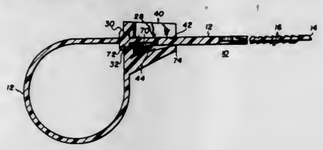
A cylindrical bore is formed in one of the members and receives two semi-cylindrical segments urged into

contact with said bore and carried by the other member. One of the segments is provided with an interacting element in order to create the locking effect. When a torque is applied which would tend to set the two members in



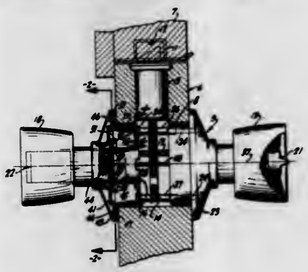
relative rotation, a locking effect is caused by reason of the radial expansion of the corresponding segment by the clamping effect of the element carried by this segment in contact with the interacting element.

3,556,575
TAMPERPROOF SEAL
Paul Farkas, Fair Lawn, N.J., assignor to Thomas & Betts Corporation, Elizabeth, N.J., a corporation of New Jersey
Filed Nov. 15, 1968, Ser. No. 776,158
Int. Cl. B65d *55/06, 33/34, 27/30*
U.S. Cl. 292—307 **9 Claims**



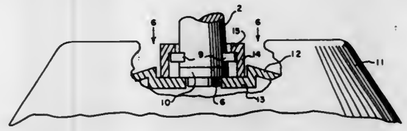
The invention is directed to a tamperproof seal which can be installed or removed without tools and which readily shows when the seal has been tampered with. The seal is comprised of an elongated body portion coupled by a weakened portion to a seal portion. The seal portion extends to a locking head member, shrouded such as to prevent the intrusion of tools or other devices onto the head to unlock the seal. Excess pressure upon the seal ruptures the weakened portion to show tampering.

3,556,576
HOLDING DEVICE FOR A LOCKSET
Kenneth Raeburn Nelson, West Vancouver, British Columbia, and Leslie William Pope, North Vancouver, British Columbia, Canada, assignors to Schlage Lock Company, a corporation
Filed July 10, 1968, Ser. No. 743,652
Int. Cl. E05b *13/00;* **G05g** *5/00*
U.S. Cl. 292—359 **7 Claims**



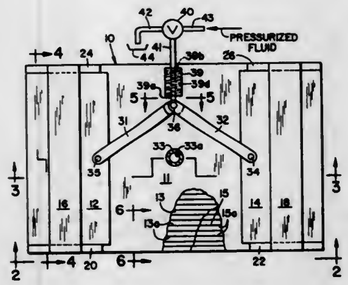
A holding device for a lockset has a housing made up of inner and outer cup members having flanges in abutment and centered and secured against relative rotation. The cup members are bearings for a rotatable hollow spindle carrying locking slides movable outwardly between a pair of lugs on the outer cup member to prevent spindle rotation and inwardly to permit spindle rotation, the locking slides being actuated by a bar within the spindle. Screw posts are fixed on the inner cup member and engage stationary parts of the lockset.

3,556,577
CONTAINER LIFTING DEVICE
Roger N. Brasseur, 6260 Dewhirst, Saginaw, Mich. 48603
Continuation-in-part of application Ser. No. 653,110, July 13, 1967. This application Jan. 10, 1969, Ser. No. 790,355
Int. Cl. A47j *45/07*
U.S. Cl. 294—27 **2 Claims**



A device for lifting a container such as a beer barrel or the like having an opening in one wall thereof surrounded by a sleeve having a peripheral flange provided with circumferentially spaced, radially extending slots, the lifting device having at one end thereof a number of projections capable of passing through the flange slots for rotation into underlying relation with the flange so as to enable the container to be lifted by the lifting device. The lifting device preferably includes a resilient cushioning member that is adapted to bear against the container wall so as frictionally to retain the lifting device in its operative position relative to the flange.

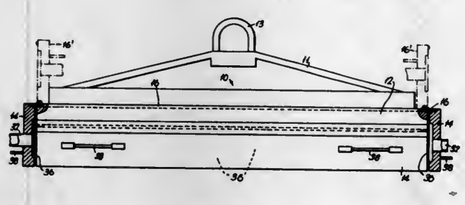
3,556,578
ARTICLE HANDLING
Wheeler W. Meyers, Savona, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Apr. 29, 1969, Ser. No. 820,144
Int. Cl. B66c *1/02*
U.S. Cl. 294—64 **8 Claims**



Handling apparatus for and method of spacing apart a plurality or multitude of similar articles, such as sticks, canes, rods, tubes or small disks or the like disposed adjacent each other on a relatively flat surface, the apparatus including a main body member embodying a vacuum chamber or cavity having an open side against which

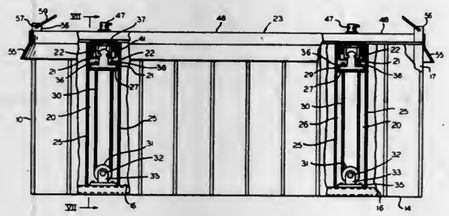
one surface of a perforated plate is disposed. A first surface of a perforated sheet or membrane of an elastic or resilient material, such as rubber, is disposed against the second surface of said plate and means are provided for stretching said membrane or sheet. Said method comprises positioning the second surface of the sheet adjacent a multitude of similar ones of said articles, supplying vacuum to said cavity or chamber to draw the articles into firm contact with such second surface of the sheet, stretching said sheet to separate or space said articles apart, and terminating said vacuum to deposit the articles in a spaced apart orientation on a generally flat surface.

3,556,579
SUCTION PADS
Kay John Seymour-Walker and David John Tudor Webb, Garston, Watford, England, assignors to National Research Development Corporation, London, England, a corporation of Great Britain
Filed June 17, 1968, Ser. No. 737,756
Int. Cl. B66c *1/02*
U.S. Cl. 294—65 **5 Claims**



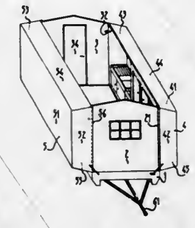
There is described a suction pad having side portions depending downwardly from a top portion and adapted to be brought into gripping relationship with the side faces of an article to be lifted by the pad. In preferred embodiments the pad presents a lifting surface also to the top surface of the article.

3,556,580
METHOD AND APPARATUS FOR LIFTING FREIGHT CONTAINERS
John Bridge, 407 S. Dearborn St., Chicago, Ill. 60604
Filed Aug. 21, 1968, Ser. No. 754,316
Int. Cl. B66c *1/10*
U.S. Cl. 294—81 **12 Claims**



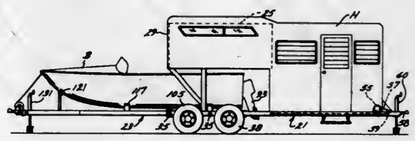
Lifting apparatus for containers for freight adapted to lift containers of various overall lengths. The lifting apparatus is in the general form of an open rectangular saddle, generally conforming to the forms of the containers to be lifted and may be suspended from a gantry and the like and contains a series of latches spaced along opposite sides of the saddle in such relation as to have latching engagement with keepers carried by the containers in the same spacing as the latches. The keepers are mounted adjacent the upper ends of the containers for limited vertical movement with respect to the containers and are connected to the containers at the bottoms of the containers, to exert lifting forces on the containers through flexible cables. The cables are connected to the keepers at their free ends and have bights intermediate their ends extending about sheaves fixedly secured to the bottom beams of the containers.

3,556,581
FOLDING CAMPING TRAILER
Americo G. Da Silva, Saulon-la-Chapelle, France, assignor to Robert Devanne
Filed Jan. 22, 1969, Ser. No. 792,937
Claims priority, application France, Jan. 25, 1968, 880
Int. Cl. B60p *3/34*
U.S. Cl. 296—23 **10 Claims**



A folding camping trailer comprising a platform-chassis detachably mounted on a running gear and hinged to the four sides of the platform-chassis, a foldable front panel, a foldable back panel, and two shell-type lateral panels, one being slightly larger than the other to fold over it, the structure, after unfolding, forming four full side walls, an enlarged floor surface and portions of the roof of a camping shelter.

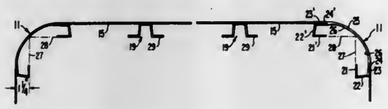
3,556,582
HOUSE AND BOAT TRAILER APPARATUS
Sherman H. Bledsoe, Temple Bar Marina, Temple Bar, Ariz. 86443
Filed Mar. 27, 1969, Ser. No. 811,076
Int. Cl. B60p *3/34*
U.S. Cl. 296—23 **10 Claims**



A house and boat trailer apparatus including a house trailer portion having a frame supported on its rear end by a pair of support wheels. A house trailer closure is mounted on the frame and includes a collapsible rear portion and a forwardly projecting tongue is provided for attachment to a towing vehicle. A rearwardly facing boat trailer portion is provided with a frame for supporting a

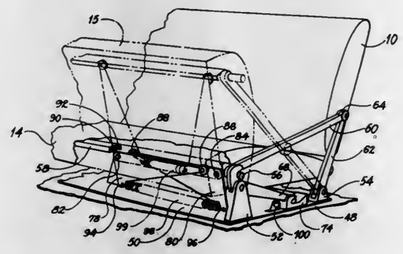
boat. Such frame is supported on its rear end by a pair of support wheels and includes a tongue at its rearwardly facing front extremity. Coupling means is provided for coupling the rear of the boat trailer portion to the rear of the house trailer portion whereby the collapsible rear portion of the house trailer may be collapsed, the rear of the boat trailer interfitted in the space resulting from such collapse and the trailer portions coupled together in back-to-back relationship so the entire apparatus may be towed by the tongue at the front of the house trailer portion. The house trailer portion may then be parked at its destination and the boat trailer portion uncoupled therefrom and towed independently by its tongue.

3,556,583
PANEL VEHICLE BODY ASSEMBLY COMPOSED OF REVERSIBLE FRAME AND PANEL ELEMENTS
Jack Ellard, Baltimore, Md., assignor to The Duralite Manufacturing Company, Baltimore, Md., a corporation of Maryland
Filed Aug. 9, 1968, Ser. No. 751,588
Int. Cl. B62d *33/00*
U.S. Cl. 296—28 **5 Claims**



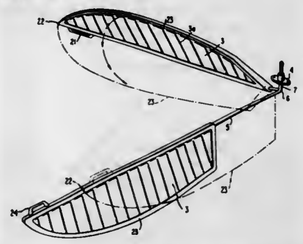
Front and rear corner posts and door assembly members of improved strength to weight ratio are made reversible for use on either left or right side of the vehicle in smooth skin or exposed rib configuration to provide standardized parts each replacing four differing parts.

3,556,584
VEHICLE OCCUPANT PROTECTIVE SEAT
Lewis B. Simon, 1801 Joanne Way, Oxnard, Calif. 93030
Filed Mar. 11, 1968, Ser. No. 712,147
Int. Cl. B60n *1/02*
U.S. Cl. 296—65 **1 Claim**



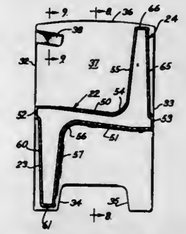
A vehicle seat constructed so as to automatically enfold and protect the occupant in the event of a sudden vehicle deceleration. It includes a fixed seat back and a movable seat bottom. In operation the forward edge of the seat bottom is abruptly raised and the seat bottom is rotated so as to fold the occupant's body between it and the seat back.

3,556,585
SUN VISOR, ESPECIALLY AT THE WINDSHIELD OF MOTOR VEHICLES
Rudolf Binder, Schonaich, Wurttemberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Aug. 23, 1968, Ser. No. 754,913
Claims priority, application Germany, Aug. 25, 1967, 1,630,343
Int. Cl. B60j *3/02*
U.S. Cl. 296—97 **6 Claims**



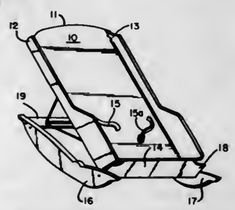
A sun visor, especially for the windshield of motor vehicles whose sun visor plate can be pivoted about an essentially horizontal support rod and can also be axially displaced on the support rod in such a manner that it is automatically held fast in every desired position.

3,556,586
MULTIPUPOSE FURNITURE
John E. Beardmore, Chicago, Ill., assignor to Karoll's Inc., Chicago, Ill., a corporation of Illinois
Filed Feb. 16, 1968, Ser. No. 706,053
Int. Cl. A47c *13/00*; A47d *1/08*
U.S. Cl. 297—3 **1 Claim**



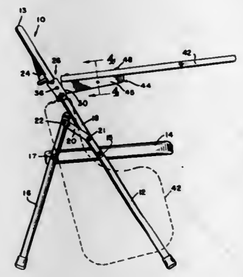
An article of furniture, especially child's furniture, formed as a monolithic hollow walled molding of rigid plastic material operationally usable as an upright chair, a rocking chair, a desk and a table according to selective positioning of the article.

3,556,587
ROCKER SUPPORT FOR INFANT SEAT
William Rymes, Ossipee Mountain Road, Center Ossipee, N.H. 03864
Filed Oct. 1, 1968, Ser. No. 764,070
Int. Cl. A47d *1/08, 13/02*
U.S. Cl. 297—133 **9 Claims**



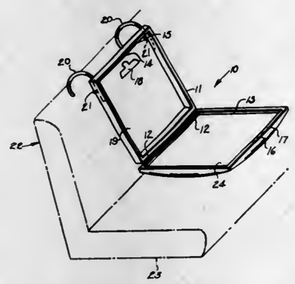
A rocker-type support for a portable infant seat of the type having an adjustable supporting means for supporting the seat upon a plane surface at various angles of inclination. The rocker support is detachably secured to the infant seat and provides an adjustable support therefor, permitting ready adjustment of the location of the center of gravity of the infant seat and rocker combination so as to permit continued balanced operation as the infant grows.

3,556,588
TABLET ARMCHAIR
Robert L. Monyer, Paul M. Fricke, and Donald L. Moore, Gallatin, Tenn., assignors to Hamilton Cosco, Inc., Columbus, Ind., a corporation of Indiana
Filed June 20, 1969, Ser. No. 835,126
Int. Cl. A47b *39/06*
U.S. Cl. 297—162 **12 Claims**



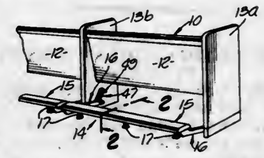
A tablet armchair in which there is provided a seat supported by a plurality of ground-engageable legs. A pair of supports extend upwardly above the seat to support a back rest. A bracket is mounted on one of said supports, and an arm is swingably connected to said bracket. A slide having a tablet fixedly mounted thereon is carried on said arm. Said slide is movable with and with respect to said arm for moving the tablet between a retracted position in a plane generally perpendicular to the plane of and at the side of said seat and an extended operative position in which said tablet is supported in a plane generally parallel to and above the plane of said seat.

3,556,589
COMBINATION SNACK TRAY AND BACKREST
Albert J. Messier, Mendon St., Blackstone, Mass. 01756
Filed Dec. 12, 1968, Ser. No. 783,216
Int. Cl. A47c *7/42*
U.S. Cl. 297—230 **2 Claims**



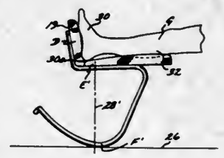
A collapsible snack tray for automobiles having two halves which are foldable along the seat back of an automobile as a backrest.

3,556,590
CHURCH KNEELER WITH FOLDING LEGS
Horace E. Harris, 2916 N. Buena Vista St., Burbank, Calif. 91504
Filed July 31, 1968, Ser. No. 749,128
Int. Cl. A47c *9/12*
U.S. Cl. 297—425 **9 Claims**



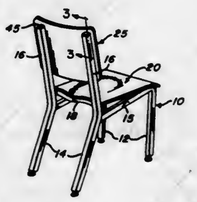
A church kneeler in which a kneeling bench is supported at the outer ends of pivoted arms for movement to raised and lowered positions, the bench having legs foldable to occupy an extended position below the bench in the lowered position thereof, and movable to an angularly displaced retracted out-of-the-way position in the raised position of the bench, the actuation of the legs being by means of a motion responsive mechanism housed within one of the pivoted arms and including a reciprocably mounted toothed rack having one end meshed with a fixed pinion at the pivoted end of the arm and its other end meshed with a rotatable pinion at the outer end of the arm having a driving connection with the movable legs.

3,556,591
FOOT SUPPORT
Glenn R. Smith, Long Beach, Calif., assignor to Anna L. Medearis, Lakewood, Calif.
Filed Oct. 9, 1968, Ser. No. 766,128
Int. Cl. A47c *9/12, 4/02*
U.S. Cl. 297—439 **2 Claims**



A device that includes an arcuately movable platform that moves into a stabilized position to concurrently support the heel and calf of a user in an elevated, substantially horizontal position for his comfort.

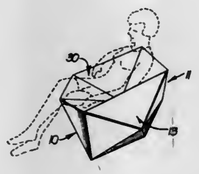
3,556,592
CHAIR ASSEMBLY
Charles K. Antoine, North Manchester, Ind., assignor to American Standard Inc., New Castle, Ind., a corporation of Delaware
Filed Aug. 14, 1968, Ser. No. 752,553
Int. Cl. A47c *7/00, 7/20*
U.S. Cl. 297—444 **7 Claims**



A wooden back panel of a chair is attached to each of two tubular back supports by a pair of screws each threaded into an insert connected to the back panel and

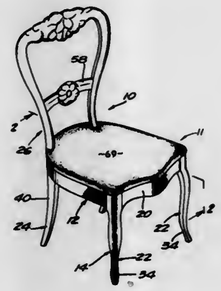
having a head projecting into the support for engagement by a lock member slidably disposed within the support. Resilient washers are mounted on the screws and are located between the back panel and the supports, and cam surfaces are formed on the lock members to compress the washers for positively retaining the back panel.

3,556,593
MULTIPLE TRIANGULAR STRUCTURE FURNITURE
Philip M. Speegle, 3529 Marathon St., Los Angeles, Calif. 90026
Filed Oct. 1, 1968, Ser. No. 764,077
Int. Cl. A47c *4/02, 7/00, 7/14*
U.S. Cl. 297—442 **10 Claims**



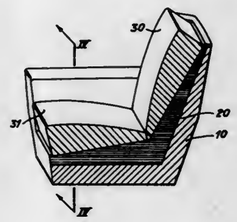
The disclosure concerns furniture comprising a multiplicity of interconnected triangular structures defining planes bounding the furniture interior, with certain planes defining a re-entrant recess or pocket usable as a seating zone, the furniture being of sturdy yet inexpensive construction.

3,556,594
CUSHION ASSEMBLY FOR CHAIRS AND OTHER FURNITURE
Victor F. Anderson, Wenonah, N.J., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 677,153, Oct. 23, 1967, now Patent No. 3,455,605. This application Apr. 16, 1969, Ser. No. 816,699
Int. Cl. A47c *7/00, 7/20*
U.S. Cl. 297—452 **22 Claims**



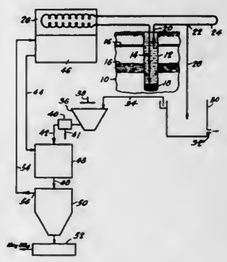
A cushion assembly for chairs and other furniture. The cushion assembly has a parametrically flanged base panel which is preferably molded from plastic and supports a covered cushion structure, such as a simple resilient pad or a resilient pad mounted on coil springs contained between a pair of spring positioning members joined to the panel. These spring positioning members have confronting spring engaging formations which locate the springs in such a way as to eliminate the necessity of hand tying of the springs. The bottom spring positioning member may be molded integrally with the base panel. The edge of the cushion cover is folded against the underside of the base panel flange and is secured to the flange by a retaining ring fitting within a groove in the flange so as to grip the cover between the ring and flange.

3,556,595
SEAT CONSTRUCTION AND THE LIKE
Günter Friedrich Bartel, Lotte Kries, Tecklenburg, Germany
Continuation-in-part of application Ser. No. 714,964, Mar. 21, 1968. This application Jan. 17, 1969, Ser. No. 792,014
Claims priority, application Germany, Jan. 30, 1968, 1,685,173
Int. Cl. A49c *4/02, 27/08*
U.S. Cl. 297—457 **9 Claims**



A seat such as a chair, sofa or the like having a rigid polyurethane foam frame and a semi-rigid polyurethane foam upholstery layer cohesively bound together is molded in separate molding steps without removal from the mold between molding steps.

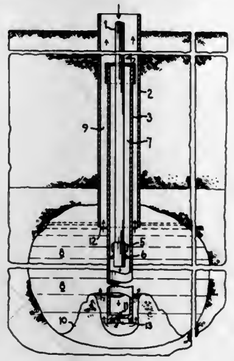
3,556,596
EXTRACTION OF SOLUBLE MATERIAL FROM NATURAL DEPOSITS
William Andrew MacWilliams and Leonard Bithel, Edmonton, Alberta, Canada, assignors to Chemcell Limited, Montreal, Quebec, Canada
Filed Nov. 21, 1968, Ser. No. 778,919
Claims priority, application Canada, Jan. 16, 1968, 010,036
Int. Cl. E21b *43/28*
U.S. Cl. 299—5 **5 Claims**



A process and apparatus for extracting and pre-purifying in situ Glauber's salt from a subterranean deposit which generally contains mud, the said process comprising:

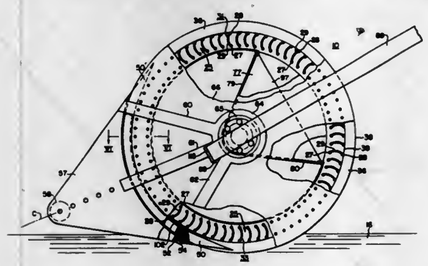
(a) making within said subterranean deposit a solution of at least a portion of said deposit and thereby allowing a portion of the mud to settle down near the bottom of said deposit;
(b) collecting the upper portion of said solution.

3,556,597
TELESCOPIC WASHDOWN LINER AND METHOD OF SOLUTION MINING
Selby W. Porter, Calgary, Alberta, Canada, assignor to Kalium Chemicals Limited, Regina, Saskatchewan, Canada, a corporation of Canada
Filed Feb. 17, 1969, Ser. No. 799,708
Int. Cl. E21b *43/28*
U.S. Cl. 299—5 **10 Claims**



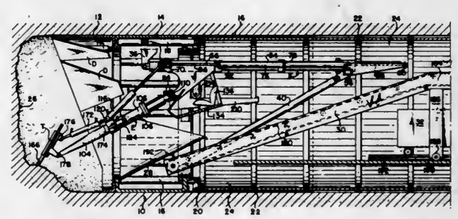
A liner assembly attached to a drill string is described which permits solution mining of rubble piles located on subterranean cavity floors. The liner is sunk into the rubble pile and dissolution of the pile takes place by the introduction of fluid through the liner to the pile. A stop mechanism sets the liner in the pile at a fixed distance. Solution mining of the mineral content of rubble piles in a single hole cavity as well as from a plurality of interconnected subterranean cavities is disclosed. Specific apparatus is shown for each type of operation.

3,556,598
MINING COLLECTOR
Melvin W. Smith, Edgewater, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 16, 1968, Ser. No. 729,728
Int. Cl. E02f *7/06*
U.S. Cl. 299—8 **32 Claims**



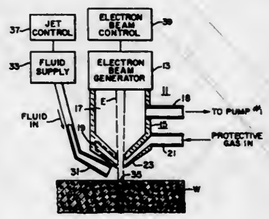
A collector structure for subsea mining operations. The collector is generally cylindrical and rotatable around a horizontal longitudinal axis. A plurality of trays cylindrically disposed about the longitudinal axis are connected to a plurality of rings which engage the sea bed and rotate the trays as the collector is pulled. A plurality of teeth, each tooth located between respective rings at the lower portion of the collector insure that scooped up aggregates are deposited into the trays, A hopper at the front of the collector structure receives the aggregate material carried by the trays when the trays revolve to a point where the aggregates may drop into the hopper. Screens in front of and behind the revolving trays allow the ambient water moving past the collector to sweep out undersize aggregates. The ends of the hopper are connected to a suction source and when aggregates are deposited into the hopper, a baffle directs the material toward the edges of the hopper, and collection may take place. The structure is symmetrically arranged so that it can be operable in case a twist should develop in the conduit or other means which places the structure on the sea bottom.

3,556,599
METHOD OF TUNNELING AND TUNNELING SHIELD WITH A DRAG LOADER
Tyman H. Fikse, Renton, Wash. (1459 Loraine St., Enumclaw, Wash. 98022)
Filed Dec. 10, 1968, Ser. No. 782,567
Int. Cl. E01g *3/03*
U.S. Cl. 299—11 **18 Claims**



At its forward end the boom supports both a power tool, adapted for digging at the tunnel face, and to a hoe. The rear end of the boom is pivotally connected to a carriage which is supported inside the shield for fore and aft movement over both the forward portion of a conveyor and a ramp which discharges onto the conveyor. The tool is used first to dig the tunnel face, and then is retracted and the hoe is used to draw mined material up the ramp and onto the conveyor.

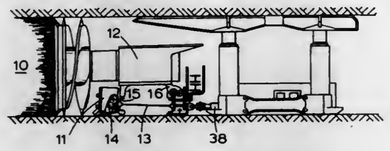
3,556,600
DISTRIBUTION AND CUTTING OF ROCKS, GLASS AND THE LIKE
William E. Shoupp and Berthold W. Schumacher, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 30, 1968, Ser. No. 756,653
Int. Cl. E21c *37/18*
U.S. Cl. 299—14 **28 Claims**



A method is disclosed for drilling holes, excavating and/or tunneling in rocky terrain or cutting or breaking up rock or glass with a corpuscular beam, of electrons or ions of high energy density, typically exceeding about

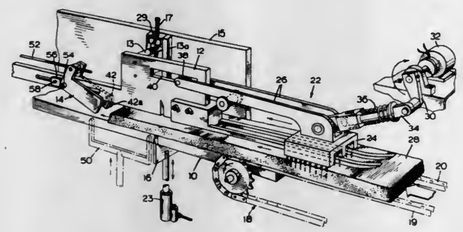
10^8 watts per square centimeter. The beam is projected into the atmosphere from the chamber in which it is generated. Molten material, fumes and dust may be blasted away by a stream of gas, water or steam. The surface being impinged by the beam may advantageously be under water. The particles of the beam may also have very high energy (accelerating voltage one million to 100 million volts) to produce a blasting effect under the surface of the material being disrupted.

3,556,601
LONGWALL CONVEYORS FOR MINERAL MINES
Gunther Dommann and Werner Mennekes, Altlunen, Westphalia, Germany, assignors to Gewerkschaft Eisenhutte Westfalia, Wethmar, near Altlunen, Westphalia, Germany, a body corporate organized and existing under the laws of Germany
Filed Feb. 5, 1969, Ser. No. 796,680
Claims priority, application Germany, Apr. 23, 1968, G 39,431
Int. Cl. E21c *25/52*
U.S. Cl. 299—43 **3 Claims**



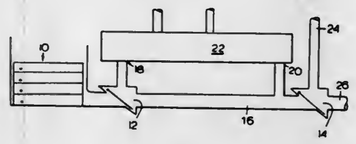
A longwall conveyor in a mineral mining installation having attachments detachably secured on the side thereof remote from the mineral face. The attachments comprise a plate formed with a guide rail at its upper edge for guiding a mineral winning machine extending over the conveyor, and at least one further plate detachably secured to the first mentioned plate. The further plate serves to define passages for receiving and guiding a traction chain used to move the aforesaid mineral winning machine.

3,556,602
KNOT PICKER FOR BRUSH MAKING MACHINES
John R. Gardner and Robert D. Reicker, Saint John, New Brunswick, Canada, assignors to T. S. Simms & Co., Limited, Saint John, New Brunswick, Canada
Filed Mar. 5, 1969, Ser. No. 804,517
Int. Cl. A46d *1/04*
U.S. Cl. 300—7 **3 Claims**



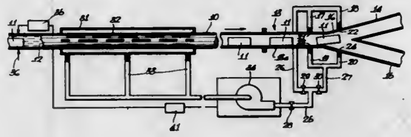
A knot picker for brush making machinery characterized by a bristle receiving pocket for defining a knot in which the portions of the pocket can be readily changed to define knots of different sizes and shapes. Within the pocket there is incorporated a pressure sensing device so that the number of bristles packed in the pocket can be governed by sensing the packing pressure and interrupting the feed of bristles to the pocket when the pressure exceeds a preselected amount.

3,556,603
PNEUMATIC CONVEYANCE OF ROD-SHAPED ARTICLES
Johannes J. Liebenberg, Johannesburg, Transvaal, Republic of South Africa, assignor to Tobacco Research and Development Institute Limited
Filed May 26, 1969, Ser. No. 827,875
Claims priority, application Republic of South Africa, May 30, 1968, 68/3,473; Sept. 9, 1968, 68/5,779
Int. Cl. B65g *53/00*
U.S. Cl. 302—2 **5 Claims**



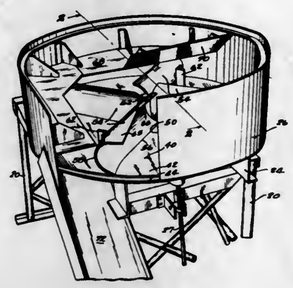
A device is provided for pneumatically despatching rods at one location and pneumatically conveying them to another location. The device includes a conduit which is connected at its outlet end to a pneumatic terminal and which has two one-way valves in it. The first one-way valve is located near the outlet end of the conduit and means are provided to apply alternately pressure to the forward side of the valve (pressure cycle) and suction to the rear side of the valve (suction cycle). The second one-way valve is located between the inlet end of the conduit and the means for applying suction to the first one-way valve. Means are provided for applying pressure to the forward side of this second valve during the pressure cycle. The rods are arranged in a single vertical row the base of which is off-set from the inlet end of the conduit and alignment means is provided. The alignment means includes means for pneumatically moving a rod at the foot of the row into alignment with the inlet end of the conduit during the suction cycle and means for holding a rod at the foot of the row in the off-set position during the pressure cycle.

3,556,604
METHOD AND APPARATUS FOR DIRECTION OF SOLID BODIES IN PIPELINE TRANSPORTATION
George F. Round, Burlington, Ontario, Canada, assignor to Research Council of Alberta, Edmonton, Alberta, Canada, a body corporate
Filed Oct. 31, 1968, Ser. No. 772,338
Claims priority, application Canada, Dec. 5, 1967, 6,787/67
Int. Cl. B65g *53/00*
U.S. Cl. 303—2 **11 Claims**



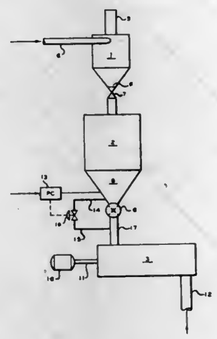
The invention relates to a method and means for diverting some or all of a plurality of large solid bodies being tranported in successive order in a stream in a pipeline into another pipeline stream or to separate the bodies into a plurality of other pipeline streams. The diversion is effected by selectively injecting jets of liquid into the pipeline for impingement on the bodies at a suitable location.

3,556,605
STACKER
Vernon R. Berg, Sr., 1107 W. 8th St., and Vernon R. Berg, Jr., 413 W. Park St., both of Marshfield, Wis. 54449
Continuation-in-part of application Ser. No. 749,219, July 31, 1968. This application July 15, 1969, Ser. No. 841,915
Int. Cl. B65g *53/04*
U.S. Cl. 302—37 **9 Claims**



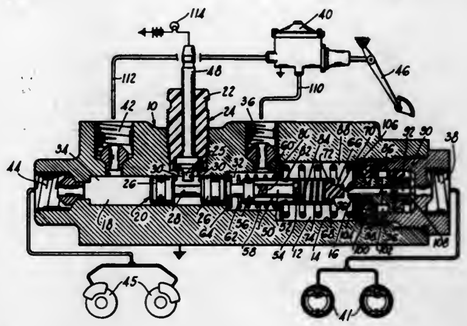
A stand carries a motor-driven centrifugal and pneumatic throwing device in which generally radial blades forwardly pitched at their ends are of concave cross section in a vertical plane and are fixed on edge to a disk which fills the bottom of a housing. The housing is open at its top to receive the material to be stacked and it has an opening for tangential discharge. A baffle converging toward the plane of the rotor blades compresses air set in motion by such blades, the air contributing to the speed of discharge of the material. The housing is adjustable for controlling the elevation of the discharge.

3,556,606
PARTICULATE MATTER TRANSFER SYSTEM
Guy S. Woods, Jr., Cali, Colombia, assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 7, 1969, Ser. No. 813,905
Int. Cl. B65g *53/04*
U.S. Cl. 302—66 **7 Claims**



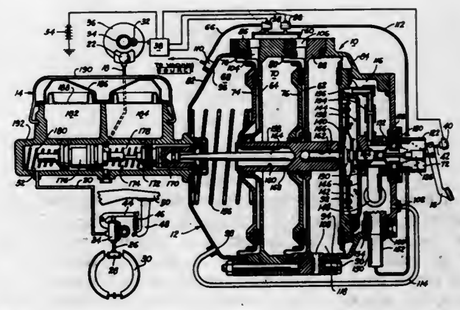
A method of facilitating flow from a vessel through a flow control means which involves sensing the pressure build-up against the flow control means and automatically relieving the pressure to effect resumption of flow.

3,556,607
COMBINATION PROPORTIONING AND BYPASS VALVE
Paul B. Shutt and Charles M. Barnes, St. Joseph, Mich., assignors to The Bendix Corporation, a corporation of Delaware
Filed June 11, 1969, Ser. No. 832,162
Int. Cl. B60t *8/26, 15/00, 17/22*
U.S. Cl. 303—6 **6 Claims**



A brake failure warning device and a brake proportioning valve are provided in a single housing. During normal brake applications, the proportioning valve reduces the braking effort of the rear wheels as compared to the front wheels. The warning device and proportioning valve are interconnected in such a manner that a failure in the front brake hydraulic system not only actuates a warning device in the driver's compartment but also holds the proportioning valve open to permit the rear wheels to deliver their maximum braking effort.

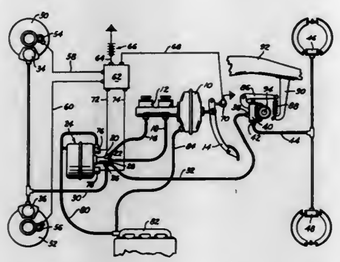
3,556,608
ANTI-SKID MEANS
Stanley I. MacDuff, Maxwell L. Cripe, and Lester J. Larsen, South Bend, Ind., assignors to The Bendix Corporation, a corporation of Delaware
Filed Sept. 12, 1968, Ser. No. 759,296
Int. Cl. B60t *8/12*
U.S. Cl. 303—21 **11 Claims**



A power brake system and servomotor wherein a skid sensing means is adapted to automatically take over control of the servomotor from the vehicle operator to modulate braking at its maximum effectiveness, and which is

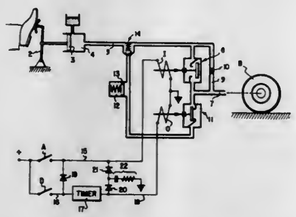
further improved by brake pressure proportioning means to accommodate vehicle weight shifting during deceleration.

3,556,609
HYDRAULIC PRESSURE MODULATOR
Stanley I. MacDuff, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Sept. 30, 1968, Ser. No. 763,742
Int. Cl. B60t *8/12*
U.S. Cl. 303—21 **11 Claims**



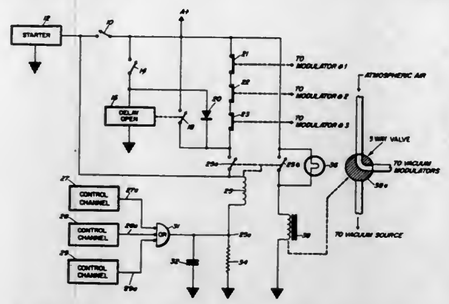
An anti-skid braking system which includes a modulator for controlling communication between the master cylinder and the brakes. The modulator allows normal communication until a skid condition is sensed. Upon sensing the skid condition, the modulator releases fluid pressure from the brakes until the skid condition no longer exists and, thereafter, reapplies the fluid pressure to the brakes. This cycle is repeated as many times as the skid condition is sensed.

3,556,610
BRAKE CONTROL SYSTEM FOR PREVENTING WHEEL LOCKING
Heinz Leiber, Leimen, Germany, assignor to Teldix GmbH, Heidelberg, Germany
Filed Oct. 28, 1968, Ser. No. 771,079
Claims priority, application Germany, Oct. 28, 1967, T 35,141
Int. Cl. B60t *8/08*
U.S. Cl. 303—21 **12 Claims**



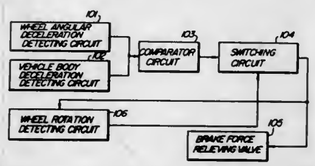
A brake control system, suitable for use with a vehicle having brakes actuated by a pressure medium for preventing the wheels of the vehicle from locking. In addition to the usual means for braking the wheels of the vehicle, the brake control system includes means, connected to sense the rotation of each wheel, for producing an output signal when the rotational deceleration of a particular wheel exceeds a given threshold value. The control system also has means, connected to receive this output signal, for reducing the braking force that is applied to the particular wheel a prescribed delay time after receipt of the output signal.

3,556,611
FAIL-SAFE CIRCUIT FOR MULTIPLE CHANNEL VACUUM MODULATED ADAPTIVE BRAKING SYSTEM
Donald W. Howard, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Dec. 20, 1968, Ser. No. 785,664
Int. Cl. B60t *8/00*
U.S. Cl. 303—21 **8 Claims**



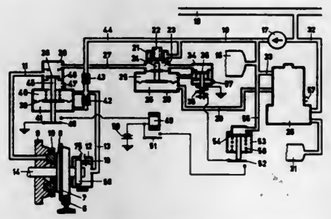
A fail-safe circuit which is suitably used in an adaptive braking system. Normally, in known adaptive braking systems a control signal is applied to a brake pressure modulator which is thereby caused to optimize the braking characteristics of a wheeled vehicle during the time the vehicle is being braked. In the present invention a normally closed modulator limit switch is provided which opens whenever the modulator attempts to control the vehicle braking characteristics. A normally open brake switch is connected across the modulator switch thus shunting this latter switch whenever the brake pedal is depressed. A latching circuit which is latched when the vehicle starter is energized and which supplies power to the modulators whenever latched, is serially connected to the shunted combination of brake switch and modulator limit switch. Additionally the control signal is sampled at the low voltage end of the latching circuit by an RC circuit. If the duration of the error signal is excessive the voltage at the low voltage end of the latching circuit, that is, the voltage across the RC circuit, will build to a level to unlatch the latching circuit. When the latching circuit is unlatched, whether by the opening of the limit switch while the brake switch is open or by voltage across the RC circuit, power is removed from the modulator which will thus return to a normal position and restore normal vehicle braking.

3,556,612
ANTISKID CONTROL APPARATUS FOR VEHICLES
Noriyoshi Ando, Kariya-shi, Japan, assignor to Nippon Denso Company Limited, Kariya-shi, Japan, a corporation of Japan
Filed Mar. 11, 1969, Ser. No. 806,148
Claims priority, application Japan, Mar. 15, 1968, 43/16,992
Int. Cl. B60t *8/12*
U.S. Cl. 303—21 **1 Claim**



An antiskid control apparatus for vehicles, comprising a wheel angular deceleration detecting circuit adapted to convert the speed of rotation of wheels into a DC voltage and detect a wheel angular deceleration signal in accordance with said DC voltage, a vehicle body deceleration detecting circuit adapted to detect a vehicle body deceleration signal, a wheel rotation detecting circuit adapted to detect whether or not the wheels are rotating, and a comparator circuit provided at the output side of said wheel angular deceleration detecting circuit and vehicle body deceleration detecting circuit to thereby compare the outputs of said two circuits, wherein if the difference between the wheel angular deceleration signal and the vehicle body deceleration signal goes above a predetermined value, the brake force applied to the wheels is relieved by the output of said comparator and in case the wheels are stopped from rotating during the time when the brake force is relieved, the brake force relieved state is maintained by the output of said wheel rotation detecting circuit until the wheels begin rotating. Thus, with the present apparatus, an optimum brake force can always be obtained even under such conditions that the coefficient of friction between the wheels and the road surface is greatly varied, whereby the vehicle can be efficiently and safely braked.

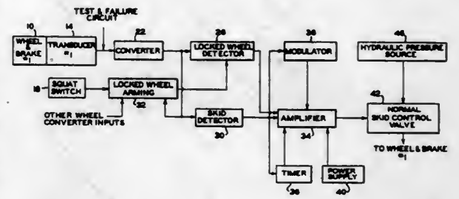
3,556,613
PROTECTION DEVICE AGAINST EXCESSIVE BRAKING OF A VEHICLE WHEEL BRAKED BY COMPRESSED AIR
Siegfried Keller, Effretikon, Switzerland, assignor to Werkzeugmaschinenfabrik Oerlikon-Buhrle AG., Zurich, Switzerland
Filed Apr. 2, 1969, Ser. No. 812,678
Claims priority, application Switzerland, Apr. 5, 1968, 5,105/68
Int. Cl. B60t *8/02*
U.S. Cl. 303—21 **3 Claims**



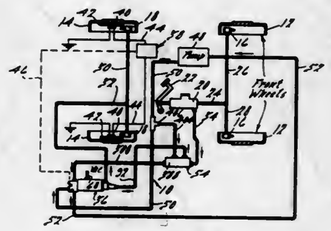
A protection device provided with a pressure transformer whereby the pressure in the brake cylinder is adjustable by a distributor valve. The pressure transformer reverses the pressure between an upper and a lower pressure stage and is normally in the upper pressure stage. The protection device is provided also with a release mechanism responsive to excessive braking which normally by its operation upon the pressure transformer temporarily reverses it to the lower pressure stage. A safety device also prevents such reversal as long as the pressure in an auxiliary air container is below a predetermined pressure and prevents lowering of the pressure in the braking cylinder after a plurality of succeeding operations of the release mechanism has brought the pressure to a minimum value.

3,556,614
ANTISKID SYSTEM FEATURING BRAKE PRESSURE DUMP LIMITING AS A FUNCTION OF RUNWAY COEFFICIENT
John R. Steigerwald, Canton, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
Filed Feb. 24, 1969, Ser. No. 801,367
Int. Cl. B60t *8/10*
U.S. Cl. 303—21 **6 Claims**

This invention relates to a brake control system for vehicles, and more particularly to systems for vehicles having several independently rotatable load-bearing wheels each of which is equipped with a respective unit comprising a brake and a brake applying means. The particular characteristics of this invention are to apply skid control techniques utilizing a modulating voltage to gradually restore dumped pressure back to as near maximum pressure as possible without immediately creating another skid condition, and which unit more rapidly and accurately limits brake pressure dump as a function of runway coefficient. A control circuit is provided between the modulator and amplifier so that as the modulator level increases, it reduces the level of the feedback voltage within the amplifier so that more skid signal voltage is applied to the valve and the pressure dump is greater. On extremely low coefficient runway surfaces, the modulator signal level will be high, because the skid detector signals are wider, and practically full dump of the brake pressure will be allowed.

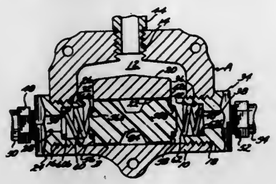


3,556,615
SKID CONTROL SYSTEM
William Stelzer, Milford, Mich., assignor to Kelsey-Hayes Company, Romulus, Mich., a corporation of Delaware
Filed Oct. 28, 1968, Ser. No. 771,167
Int. Cl. B60t *8/08*
U.S. Cl. 303—21 **29 Claims**



A skid control system adapted for operative association with the fluid actuated braking system of an automotive or similar type vehicle; the system including a modulating valve assembly for selectively controlling the flow or supply of hydraulic brake actuating fluid between the master brake cylinder of the vehicle and one or more of the wheel cylinders thereof; the modulating valve being operable in response to and actuable by an increase in fluid pressure from an ancillary or auxiliary fluid pressure source; the skid control system further including an interlocking valve cooperable with the modulating valve assembly for positively preventing inadvertent or premature deactuation thereof in response to variations in fluid pressure from the aforesaid auxiliary fluid source.

3,556,616
SAFETY DEVICE FOR FLUID ACTUATED ASSEMBLIES
James R. Hensley, 510 Euclid, Compton, Calif. 90222
Filed July 31, 1969, Ser. No. 846,433
Int. Cl. B60t 17/18, 15/00
U.S. Cl. 303—84 2 Claims



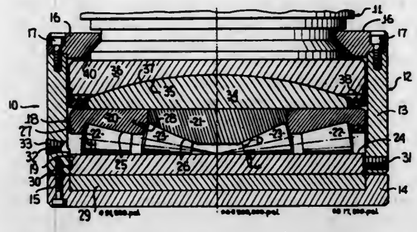
A safety device for use with two concurrently operable fluid actuated assemblies by means of which one of said assemblies may be operated after the other of said assemblies has been rendered inoperative due to development of a leak in the assembly or the conduit leading thereto. The safety device is particularly adapted for use with fluid actuated brake assemblies.

3,556,617
PISTON ROD SEAL FOR SHOCK ABSORBERS
Ludwig Axthammer, Schweinfurt am Main, Heinz Liebeling, Siegburg-Kaldauen, and Felix Wössner, Schweinfurt am Main, Germany, assignors to Fichtel & Sachs AG, Schweinfurt am Main, Germany
Filed Dec. 31, 1968, Ser. No. 788,154
Claims priority, application Germany, Jan. 10, 1968, 1,650,955
Int. Cl. F16c 33/72
U.S. Cl. 308—3.5 8 Claims



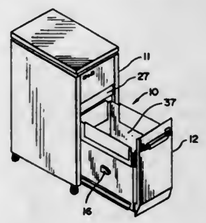
A piston rod seal for a shock absorber is provided with a stiff spacer ring which axially separates a relatively soft, elastomeric, annular sealing disc about the piston rod from the clearance space between the rod and a liner in a guide member, thereby making it unnecessary to maintain close tolerances in the liner, the piston rod, and the guide member. The sealing disc, the spacer ring, and a retaining ring which holds the sealing disc in axially abutting engagement with the spacer ring are received in a stepped central passage of the guide member which permits the spacer ring to move radially with the piston ring if the latter is deflected in service.

3,556,618
DOUBLE RACE SCREWDOWN THRUST BEARING
Leo A. Toth, South Bend, Ind., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine
Filed Dec. 11, 1968, Ser. No. 782,805
Int. Cl. F16c 17/06
U.S. Cl. 308—231 16 Claims



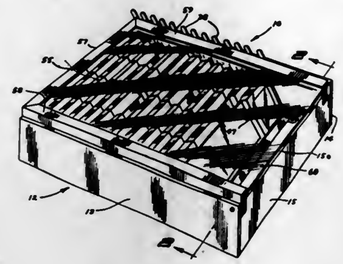
This disclosure relates to screwdown thrust bearings for use in rolling mills or the like. The bearing is provided with two concentric rows of tapered rollers instead of a single row of rollers. For a given axial load the rollers in each of the two concentric rows are shorter and thinner than would be the rollers in a single row capable of carrying the same load. The geometry of the rollers in the double rows is such that the radial component of axial thrust transmitted to the rollers in each of the rows is reduced thereby decreasing the contact stress on guide flanges which are provided to restrain the rollers from radial outward movement.

3,556,619
REFUSE STORAGE APPARATUS
Michael J. Bottas, St. Joseph, and Charles R. Difley, Niles, Mich., assignors to Whirlpool Corporation, a corporation of Delaware
Filed Sept. 4, 1968, Ser. No. 757,445
Int. Cl. A47b 81/00, 88/12; B01f 3/06
U.S. Cl. 312—31 15 Claims



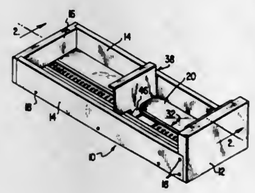
A refuse storage apparatus having a storage drawer which is selectively movable from a storage position within a cabinet to an exposed position wherein refuse may be placed in the drawer. The apparatus includes means for spraying the refuse when the drawer is returned to the storage position. The spray may comprise a disinfectant. Further, the spray may comprise a deodorant. The apparatus is arranged so that the drawer may be partially opened and returned to the storage position without actuation of the spraying device. Resilient means are provided for positively releasing the spray mechanism to prevent jamming thereof in the spraying position. The spraying mechanism includes a gravity biased arm and cam means on the drawer for operating the arm to effect the spraying operation. The arm is arranged to be pivoted to a retracted position to permit movement of the drawer to the exposed position and back to the storage position without operation of the spraying means when desired.

3,556,620
DISPLAY CASE FOR TAPE CARTRIDGES
Julian Gutierrez, 6233 Brookview Ave. S., Minneapolis, Minn. 55424
Filed Mar. 28, 1969, Ser. No. 811,415
Int. Cl. A47f 3/08; A47b 81/00
U.S. Cl. 312—136 5 Claims



A showcase for the safe display and selection of recorded tape cartridges and cassettes comprising a housing substantially parallelepiped in form having a transparent upwardly swinging top cover, a plurality of inclined plate members pivotally upstanding within said housing, said plate members including pockets to receive said cartridges and cassettes, said plate members respectively having exteriorly extending handle portions for pivoting said plate members forwardly and rearwardly and relatively friction free means spacing said plate members for relatively easy movement of said plate members as a group.

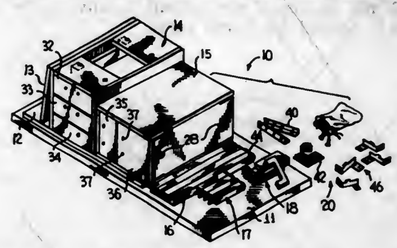
3,556,621
FILE CARD FOLLOWER MECHANISM
Isaac D. Blakley, Winston-Salem, N.C., assignor to Stewart-Warner Corporation, Chicago, Ill.
Filed June 19, 1969, Ser. No. 834,665
Int. Cl. A47b 63/00
U.S. Cl. 312—183 8 Claims



The bottom of a card file drawer carries a U-shaped track which receives the base of the card follower allowing the card follower to slide therein. The track includes a series of upstruck, inclined detents. A depending tab from the follower base contacts the upstruck detents so as to readily slide over the inclined surfaces in one direction but is fully restrained in the opposite direction.

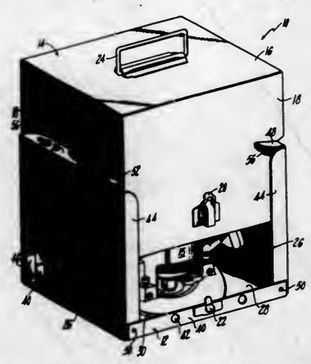
3,556,622
STYLIZED DESK
Ronald W. Rubin and Richard L. Bennice, New York, N.Y., assignors to The Valtronic Corp., Bronx, N.Y., a corporation of New York
Filed Sept. 3, 1968, Ser. No. 756,761
Int. Cl. A47b 19/00
U.S. Cl. 312—195 12 Claims

This disclosure relates to a desk which is fabricated from a plurality of components in kit-form which can be selectively assembled to provide a desired desk style for a particular room decor, the desk being particularly



adapted for rapid assembly from a kit dependent upon the components selected therefrom.

3,556,623
COMBINATION CARRYING CASE AND TOOL-HOLDER FOR PORTABLE POWER TOOLS
Kestutis Damijonaitis, Newington, Conn., assignor to The Stanley Works, New Britain, Conn., a corporation of Connecticut
Filed Sept. 26, 1968, Ser. No. 762,824
Int. Cl. A47b 95/02
U.S. Cl. 312—244 4 Claims

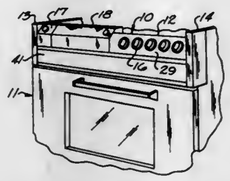


An assembly having a carrying cover slidably interfitting with a base to which a power tool is removably mounted, the base being apertured for admitting a working element of the attached tool and for mounting work guiding fences. The base and cover are each U-shaped and assembled in complementary inverted right angular relation, the base having rigid peripheral stabilizing flanges facilitating assembly of the cover for housing the tool.

3,556,624
RANGE CONTROL PANEL ASSEMBLY
Albert L. Baltz, Millstadt, and Elmer E. Voeke, Belleville, Ill., assignors to Eagle Range & Manufacturing Company, Belleville, Ill., a corporation of Illinois
Filed Oct. 7, 1968, Ser. No. 765,394
Int. Cl. A47b 96/00
U.S. Cl. 312—295 9 Claims

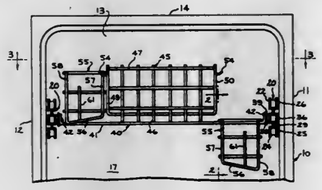
The range control panel cover assembly includes a control panel having attached end caps adapted to be mounted on the range. Elongate grooves are disposed in side-by-side relation longitudinally of the panel. An inner U-shaped cover is disposed in fixed relation at one end of the panel, the cover having a pair of elongate tongues engaging associated grooves on the panel. An outer substantially U-shaped cover, also provided with elongate tongues, is disposed in interfitting relation to the first cover, the tangues being operatively adjacent to

the tongues of the first cover and slidably engageable within associated grooves of the panel so that the outer panel may be moved telescopically relative to the inner panel to conceal the control knobs.



A second embodiment provides a pair of fixed inner covers, disposed at opposite ends of a control panel, and a compatible pair of outer, sliding covers movable toward each other to a fully closed position.

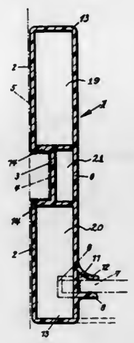
3,556,625
RACK ASSEMBLY FOR A FRONT-OPENING DISHWASHER
Melvin R. Kauffman, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed Apr. 17, 1969, Ser. No. 816,987
Int. Cl. A47b *88/00*
U.S. Cl. 312—301 **10 Claims**



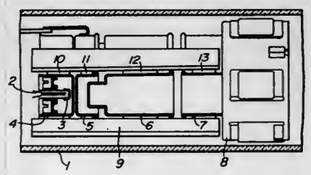
An improved rack assembly in an automatic dishwasher of the type having a front access opening to an inside washing chamber and dish supporting racks which are slidably mounted to be manually pulled outwardly to an extended position through the access opening to facilitate front loading of the racks. The rack assembly for the dishwasher includes upper and lower spaced-apart open framework dish racks that are mounted for independent substantially horizontal movement with respect to the dishwasher's inside washing chamber. One of the dish racks comprises a plurality of sections including an intermediate section that is vertically fixed relative to the rack support means and vertically adjustable and removable sections or dish rack modules provided at each side of the intermediate rack section.

3,556,626
PLASTIC FRAME FOR ARTICLES OF BOX-LIKE CONFIGURATION, SUCH AS FURNITURE, DRAWERS AND THE LIKE
Karl Schock, Wurttemberg, Germany, assignor to Schock & Company G.m.b.H., Schorndorf, Wurttemberg, Germany
Continuation of application Ser. No. 415,439, Dec. 2, 1964. This application Sept. 18, 1967, Ser. No. 668,720
Int. Cl. A47b *88/00*
U.S. Cl. 312—330 **11 Claims**

To make drawers or the like having the sharp corners characteristic of wood drawers, hollow plastic extrusion which have wider side walls than their edge walls are produced flat with miter cuts or notches formed through one side wall and the two edge walls. The furniture manufacturer bends these flat shapes using the unnotched side wall as a hinge to form the sharp corners.



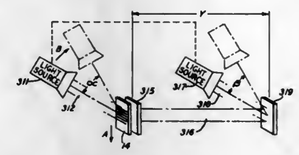
3,556,627
METHOD OF MAKING A CATHODE-RAY TUBE
Takeo Takemoto, Mobara-shi, Japan, assignor to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Apr. 24, 1967, Ser. No. 633,238
Claims priority, application Japan, May 13, 1966, 41/29,937
Int. Cl. H01j *9/00*
U.S. Cl. 316—1 **6 Claims**



A method of making a cathode-ray tube having at least one electron gun including the step of treating the mount with an acid etching solution for the removal of an oxidized layer from the surface of the mount. The acid etching solution preferred for the purpose includes a suitable combination of nitric acid, hydrofluoric acid, hydrochloric acid, sulfuric acid, a hydrogen peroxide solution, chromic anhydride and water with or without an inhibitor.

3,556,628
RECONSTRUCTION OF INFORMATION STORED IN ONLY SELECTED AREAS OF A HOLOGRAM
Christoph B. Burckhardt, Berkeley Heights, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed May 29, 1967, Ser. No. 641,870
Int. Cl. G02f *27/22*
U.S. Cl. 350—3.5 **10 Claims**

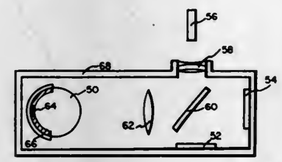
When the information stored in only selected areas of a first hologram is reconstructed, the other areas of the hologram often impair the reconstruction. To avoid this problem, a second hologram is formed by repeatedly exposing a recording medium to a reference beam and to light from an illuminating beam that is incident on and diffracted by the first hologram. After each exposure, the beam projected from the first hologram to the second hologram is translated a distance equal to the width, in the direction of translation, of a selected area; and a compensating adjustment is made in the angle at which the illuminating beam is incident on the first hologram.



Enough exposures are made so that the distance translated equals the distance between adjacent selected areas.

As alternatives, a Lippmann integral photograph may be formed instead of the second hologram or the first hologram may be viewed in real time.

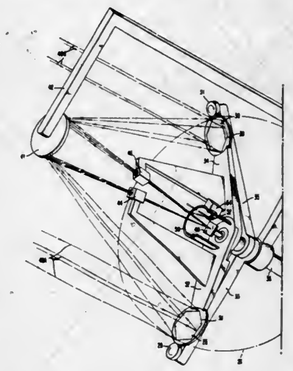
3,556,629
METHOD FOR PRODUCING HOLOGRAMS UTILIZING PHOTOCHROMIC MATERIAL AND PHOTOSENSITIVE MATERIAL
Melvin Seymour Cook, Kings Park, N.Y., assignor to Holobeam, Inc., Paramus, N.J., a corporation of Delaware
Filed July 28, 1967, Ser. No. 657,475
Int. Cl. G02b *27/22*
U.S. Cl. 350—3.5 **6 Claims**



This invention is an apparatus and system for photography. Radiation from a scene is imaged by an absolute instrument such as a Maxwell fish-eye. Optical density in the image region is altered by the imaged radiation and such subsequent processing as may be required to develop and fix the image. One portion of a laser beam is used to illuminate the image in the fish-eye and the other portion is sent to a photographic plate where it forms an interference pattern with radiation scattered from the image in the fish-eye. The interference pattern of radiation exposes the photographic plate. The exposed photographic plate when subjected to such processing as may be required to develop and fix the exposure is a hologram of the original scene viewed by the absolute instrument.

3,556,630
METHOD AND APPARATUS FOR OBTAINING, BY A SERIES OF SAMPLES, THE INTENSITY DISTRIBUTION ACROSS SOURCES OF INCOHERENT ELECTROMAGNETIC WAVES TO PRODUCE A SINGLE COMPOSITE PICTURE
Janusz S. Wilczynski, Ossining, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Aug. 14, 1968, Ser. No. 752,610
Int. Cl. G02b *23/06, 27/00*
U.S. Cl. 350—3.5 **12 Claims**

A method and apparatus is described for obtaining information related to an object, such as in microscopy or astronomy or any other object absorbing, scattering or radiating incoherent electromagnetic waves. The apparatus performs a sequence of observations of the intensity distribution across the object or source of the incoherent electromagnetic waves in a detection plane corresponding to the image plane in conventional image forming systems. Throughout this sequence of observations, a known coordinate system is ascribed to the object. Every point of the object may be thought of as being a source of a spherical electromagnetic wave. In every observation, two different parts of this wave are brought to a common area in the apparatus detection plane where the intensity of the interaction of the two parts of the wave are recorded. Similarly, two parts of the spherical wave from the neighboring point of the object are brought to a neighboring common area and so on. In a single observation, the portions of the electromagnetic wave which arrived at the detection plane have the same shape in the apparatus collecting area, although their direction, amplitude and other

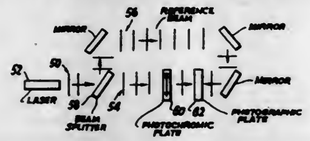


properties may be different. In subsequent observations, this shape or relative position of the two parts is altered. Many obeservations may be required to fully describe the object, but when an appropriate combination of the samples of spherical waves is sequentially brought to the detection plane and recorded, a composite single image will be obtained after appropriate processing. Embodiments of the invention as an astronomical telescope and as an X-ray microscope are disclosed. Data acquisition is obtained through a telescope having two apertures which are moved to predetermined positions and the object is sequentially sampled over a set of discrete ranges of spatial frequencies and the resultant observations are processed to form a single picture. A similar procedure is employed in the embodiment oft he X-ray microscope. It is assumed that the object does not vary substantially during the set of observations required to describe it fully, or if it does vary, the rate of such change is known.

3,556,631
TWO-STAGE IMAGING PROCESS IN WHICH A HOLOGRAM IS MADE FROM A THREE-DIMENSIONAL IMAGE FORMED IN INCOHERENT LIGHT
Melvin Seymour Cook, Scarsdale, N.Y., assignor to Holobeam Inc., Paramus, N.J., a corporation of Delaware
Continuation of application Ser. No. 678,118, Oct. 25, 1967. This application Sept. 3, 1969, Ser. No. 855,053
Int. Cl. G02b *27/22*
U.S. Cl. 350—3.5 **1 Claim**

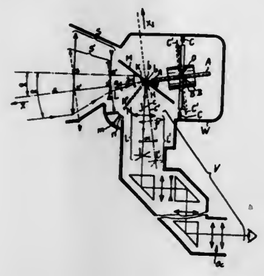
This invention is an apparatus for and a system of photography. Radiation from an object is imaged within a plate of photochromic material. The plate is then used to form a hologram representative of the object in a second

operation involving exposure of a photographic plate by transmission of radiation through or scattering of radiation from the exposed plate of photochromic material and interference of such radiation with a reference beam. In



certain cases, a third stage of operation may be advisable involving formation of a second hologram from the first hologram in order to obtain a hologram of higher transmissivity.

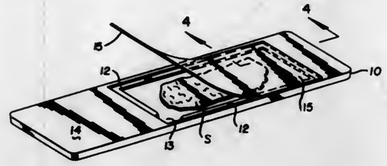
3,556,632
STABILIZED DIRECTION SIGHTING DEVICE
Marcel Déramond, 12 Rue Barrault, Paris 13e, France
Continuation of application Ser. No. 540,966, Apr. 7, 1966. This application Jan. 15, 1969, Ser. No. 793,239
Claims priority, application France, Apr. 8, 1965, 12,389
Int. Cl. G02b *23/00*
U.S. Cl. 350—16 3 Claims



A sighting device for maintaining the image of a point at infinity in a fixed position on the reticle of a telescope despite movements of a vehicle on which the sighting device is mounted. It comprises a gyroscope the axis of whose rotor remains directed toward the point at infinity, an inner frame which is mounted for vertical swinging movement about a horizontal axis that passes through the axis of rotation of the rotor and which carries the rotor, an outer frame which carries the inner frame and which is mounted for rotation about a vertical axis that passes through the axis of rotation of the rotor and the horizontal rotative axis of the inner frame. At least one reflective surface is connected to at least one of the frames of the gyroscope in such a way that the reflective surface sends light from said point to the objective of the telescope in which the reticle is fixed, along a line parallel to said vertical axis.

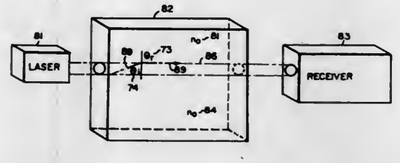
3,556,633
SPECIMEN CARRYING SLIDE WITH RUNOFF TROUGH
Winifred Liu Mutschmann, 3889 Southwood Drive SE., Warren, Ohio 44484, and Nicholas J. Fish, 3900 5th Ave., Youngstown, Ohio 44505
Filed Jan. 17, 1969, Ser. No. 792,021
Int. Cl. G02b *21/34*
U.S. Cl. 350—95 1 Claim

A specimen carrying slide such as used in laboratories for mounting specimens of tissue to be examined under a microscope takes the form of a molded transparent plastic body member having a flat rectangular cavity occupying a majority of its surface area. A stepped shoulder surrounds the cavity in which the specimen is mounted and a very thin transparent plastic cover slip is positioned



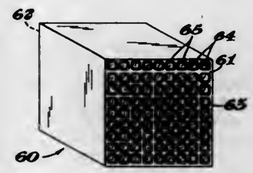
on the stepped shoulder so as to form a cover for the specimen positioned in the flat rectangular cavity. A portion of the stepped shoulder is cut away in one of the corners thereof to form a trough or runoff point so that excess fluid on the specimen may be accommodated.

3,556,634
OPTICAL FREQUENCY WAVEGUIDE
Charles H. Townes, Cambridge, Raymond Y. Chiao, Boston, and Elsa M. Garmire, Cambridge, Mass., assignors, by mesne assignments, to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 11, 1965, Ser. No. 494,739
Int. Cl. G02b *5/14*
U.S. Cl. 350—96 2 Claims



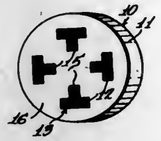
An optical frequency electromagnetic beam is maintained at a power level such that electrostrictive qualities of a selected medium is altered causing the beam to generate its own waveguide, for directing energy through such medium.

3,556,635
FIBER OPTIC BUNDLE
Walter J. Schrenk, Bay City, and Douglas S. Chisholm, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed May 23, 1967, Ser. No. 640,656
Int. Cl. G02b *5/16*
U.S. Cl. 350—96 7 Claims



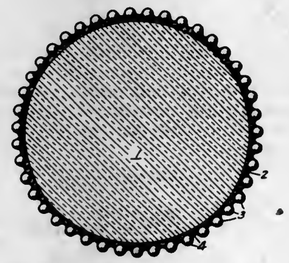
A thermoplastic fiber optic bundle is provided by simultaneous extrusion of matrix, jacket and light conducting fibers to provide fiber optic bundles of varying degrees of stiffness, flexibility and resolution.

3,556,636
COLLIMATED HOLE STRUCTURE WITH MASK FOR PRODUCING HIGH RESOLUTION IMAGES
John A. Roberts, North Chelmsford, and Alwyn H. King, Sherborn, Mass., assignors to Brunswick Corporation, a corporation of Delaware
Filed Jan. 30, 1968, Ser. No. 701,760
Int. Cl. G02b *5/14*
U.S. Cl. 350—96 1 Claim



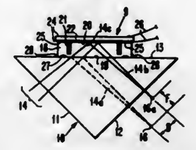
A method of producing high resolution images formed of a plurality of small images produced by passing radiation through a collimated hole structure having substantially rectilinear small cross section passages. The collimated hole structure is provided with a high aspect ratio of passage length to passage cross section to provide a high resolution in the individual images produced thereby. A mask may be formed on one surface of the collimated hole structure having an opening exposing preselected ones of the collimated hole structure passages for producing a composite image defining a preselected pattern corresponding to the opening.

3,556,637
REFLEX-REFLECTING AGGREGATE AND MARKERS PREPARED THEREFROM
Philip V. Palmquist, Maplewood, Minn., assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
Filed June 27, 1968, Ser. No. 740,712
Int. Cl. E01c *23/16*; G02b *5/12*
U.S. Cl. 350—105 8 Claims



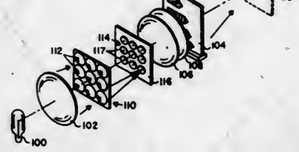
Aggregates particularly suitable for use in highway marking and having a spherical lens element of a refractive index below 1.9, a transparent binder coating thereon and, hemispherically embedded in said binder coating, glass beads having a diameter from about 25 to 150 microns and having a refractive index of at least 2.1. These aggregates may be hemispherically embedded in a resinous base having light reflecting properties. A preferred form of the aggregate includes a light reflecting coating on the exposed or non-embedded surfaces of the glass beads.

3,556,638
DEFLECTOR PLATE FOR LIGHT DEFLECTOR
Willard K. Banks, San Jose, and Melbourne E. Rabedeau, Saratoga, Calif., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed June 5, 1968, Ser. No. 734,718
Int. Cl. G02f *1/34*
U.S. Cl. 350—161 13 Claims



A light deflector comprising two light transparent members having adjacent surfaces wherein the second member is movable into and out of optical contact with the first. Light being passed through the first member is intercepted by that member's surface to be reflected by the principle of total internal reflection when the second member is not in contact with the first. With the surfaces in contact, the light will pass on ino the second member and be reflected along a separate path from the first path. This invention deals with means for controlling the position of the second member for regulating the path of the beam.

3,556,639
PLURAL SOURCE OPTICAL APPARATUS AND METHOD FOR DISPLAYING SPATIALLY PERIODICALLY MODULATED RECORDS
Michael Graser, Jr., Bedford, Mass., assignor to Technical Operations Incorporated, Burlington, Mass., a corporation of Delaware
Filed Nov. 7, 1967, Ser. No. 682,728
Int. Cl. G02b *27/38*
U.S. Cl. 350—162 28 Claims

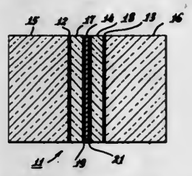


Apparatus and methods for recovering images which are stored on photographic records as modulations of azimuthally distinct spatial carriers. Stress is placed upon a novel arrangement for providing a plurality of sources and novel apparatus for spatially and spectrally filtering the plurality of information channels created so as to produce displays of maximum fidelity.

3,556,640
INTERFERENCE FILTER WITH DIELECTRIC TUNING LAYERS
Robert R. Austin, Ridgefield, Conn., assignor to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Mar. 1, 1968, Ser. No. 709,661
Int. Cl. G02b *1/10*
U.S. Cl. 350—164 5 Claims

A three reflector interference filter in which the two spacer elements used to separate the reflectors are made of solid glass. The two outer reflectors are multilayer dielectric films and are formed on separate substrates. The

outer ends of the two spacer elements are optically contacted to the substrates. The inner ends of the spacer elements are optically contacted to each other. The inner reflector, which is a metal film is formed on the inner end of one of the spacers.



3,556,641
ZOOM LENS SYSTEM HIGHLY CORRECTED FOR COMA ABERRATION
Yasuo Takahashi, Tokyo-to, Japan, assignor to Asahi Kogaku Kogyo Kabushiki Kaisha, Tokyo-to, Japan, a corporation of Japan
Filed June 26, 1967, Ser. No. 648,910
Claims priority, application Japan, June 30, 1966, 41/42,820
Int. Cl. G02b *15/14, 9/60*
U.S. Cl. 350—184 **1 Claim**



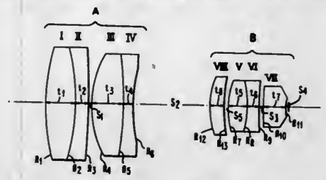
A zoom lens includes fifteen lenses defining five lens groups including respectively the first to the third lenses, the fourth to the sixth lens, the eighth and ninth lens, the tenth and eleventh lens, and the twelfth to the fifteenth lens, and satisfy the following conditions:

$$0.7<r_2/r_3<1.1$$
$$F_1/0.4<|f1.2|<\infty$$
$$1.6\leqq n_3\leqq 1.75$$
$$0.5F_1\leqq|r_7|\leqq 4F_1 \qquad r_7<0$$
$$F_1\geqq F_4\geqq 0.5F_1$$
$$0.05F_1\leqq r_{18}\leqq 0.3F_1$$
$$0.03F_1\leqq|r_{20}|\leqq 0.13F_1 \qquad r_{20}<0$$

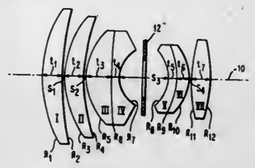
wherein r_2, r_3, r_7, r_{18}, and r_{20} are the radii of the curvature of the first lens rear face, the second lens front face, the fourth lens front face, the tenth lens front face and the fifteenth lens fron face respectively: F_1 and F_4 are resultant focal lengths respectively of the first through the third lenses, and the ninth and tenth lenses; $f_{1.2}$ is the resultant focal length of the first and second lenses, and n_3 is the index of refraction of the third lens.

3,556,642
MICRO-OBJECTIVE LENS SYSTEM
Raymond E. Tibbetts, Mahopac, and Janusz S. Wilczynski, Ossining, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 594,109, Nov. 14, 1966. This application Aug. 15, 1969, Ser. No. 869,422
Int. Cl. G02b *9/34, 9/60*
U.S. Cl. 350—216 **3 Claims**

A first micro-objective lens system including a first lens group having four lens elements and a second lens group having three lens elements and a second micro-objective lens system including a first lens group having four lens elements and a second lens group also having four lens elements. The first lens group of each system functions to correct for images in the center of the field and the second lens group functions to correct for images at the edge of the field thus providing a micro-objective lens system having extremely high resolution over a relatively small field. Eight embodiments of the second eight element lens system are provided to illustrate that the elements of the lens system are within specified constructional ranges.

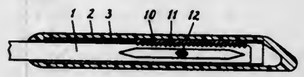


3,556,643
HIGHLY CORRECTED SEVEN ELEMENT GAUSS TYPE REDUCTION LENS
Raymond E. Tibbetts, Mahopac, and Janusz S. Wilczynski, Ossining, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Continuation-in-part of application Ser. No. 594,118, Nov. 14, 1966. This application Aug. 15, 1969, Ser. No. 869,421
Int. Cl. G02b *9/60*
U.S. Cl. 350—218 **2 Claims**



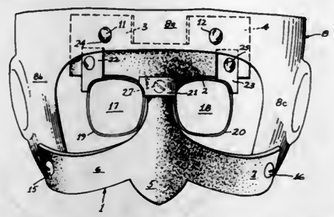
A lens group is described for use as a reduction lens. The lens group consists of seven lens elements. The first and second lens elements are meniscus singlet lenses. The third and fourth elements are cemented together to form a meniscus doublet lens as are the fifth and sixth lens elements. The seventh lens element is a bi-convex lens. The lens group has an extremely high uniform resolution over the image field and an exceedingly flat field with minimum zonal astigmatism. The constructional data of the lens elements have upper and lower limits and seven embodiments of lens groups of the present invention are set forth, all of which provide the high resolution and minimal zonal astigmatism.

3,556,644
SPECTACLE FRAME WITH ADJUSTABLE TEMPLES
Heinz Stahl, Leonberg, Germany, assignor to Optura Dr. Gustav Gammert Brillenfabrik, Leonberg, Germany
Filed Dec. 5, 1967, Ser. No. 688,100
Claims priority, application Germany, Dec. 13, 1966, O 9,117
Int. Cl. G02c *5/16, 5/20*
U.S. Cl. 351—118 **2 Claims**



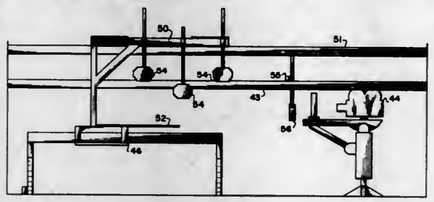
A spectacle frame the temples of which are easily adjustable to different lengths in accordance with the size and shape of the heads of different persons.

3,556,645
LENS CARRIER FOR ATHLETIC HEADGEAR
Richard L. Heilman, 96 Lumley Ave., Fort Thomas, Ky. 41075
Filed Apr. 29, 1968, Ser. No. 724,930
Int. Cl. G02c *3/02*
U.S. Cl. 351—155 **9 Claims**



A visual aid for participants in athletics and the like, suffering from a visual handicap correctable by lenses, comprising prescription ground lenses mounted on a carrier. The carrier comprises an element covering the forehead, nose and cheekbones of the participant and is held in place by suitable means such as straps or athletic headgear. The carrier is so configured as to maintain the lenses in proper position with respect to the participant's eyes.

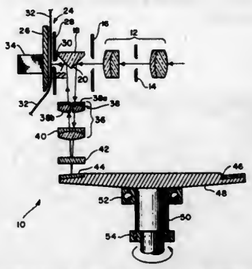
3,556,646
APPARATUS AND METHODS FOR PRODUCING ANIMATED MOTION PICTURES
Juan E. Guidi and Armando A. Guidi, Jamaica, N.Y., assignors to New Dimension Films, Inc., Edgewater Borough, N.J., a corporation of New Jersey
Filed June 7, 1967, Ser. No. 645,103
Int. Cl. G03b *19/18*
U.S. Cl. 352—50 **17 Claims**



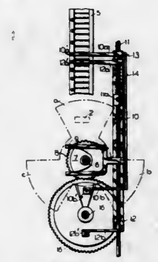
A method and apparatus for producing photographic animations wherein the illusion of movement in the three planes of space, either simultaneously or selectively, may be achieved by a single sequence of animated images. Like images in each member of the sequence have the same proportional size, but are photographed sequentially at different positions in the three planes of space to generate the illusion of movement, thereby guaranteeing a natural appearance, true reflections and actual and natural shadows while reducing both the time and effort required to produce the animation. Transparent supporting members are used for supporting the images from a jig at different positions for photographing.

3,556,647
CONTINUOUS FILM MOVEMENT MOTION PICTURE CAMERA
Chester Brandon, Curacao, Netherlands Antilles, assignor to Singer-General Precision, Inc., a corporation of Delaware
Filed May 29, 1968, Ser. No. 732,909
Int. Cl. G03b *41/06*
U.S. Cl. 352—107 **1 Claim**

A motion picture camera employing continuously moving film. A twisted annular mirror, mounted on the face of a disc, is rotated in synchronism with the film movement and oscillates the optical path to present, at the focal plane, a succession of framed images moving across the film gate at the same linear speed as the film. A variable width focal plane aperture is provided at the film gate for varying the exposure of the film. A collimating objective is interposed between the image gate and the reflecting surface and between the reflecting surface and the film gate. One component of the collimating objective is split diametrally along a plane including its axis and the severed faces are blackened to reduce glare.



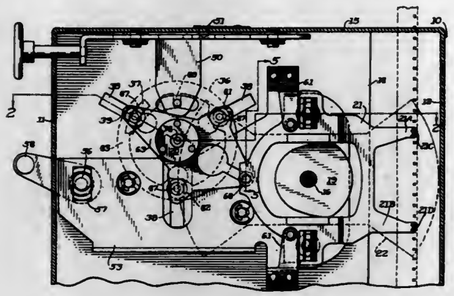
3,556,648
FILM FEED DEVICE FOR MOTION-PICTURE APPARATUS
Yoshikuni Nozawa, Suwa, Japan, assignor to Sankyo Kogaku Kogyo Kabushiki Kaisha, Suwa, Japan
Filed Aug. 15, 1968, Ser. No. 752,834
Claims priority, application Japan, Aug. 17, 1967, 42/52,902; May 9, 1968, 43/31,143
Int. Cl. G03b *1/22*
U.S. Cl. 352—194 **3 Claims**



Feed device for intermittently feeding cinefilm at intervals corresponding to half a standard frame. Two pulldown claws are connected to two forks at the ends of their upper legs such that they are spaced in the direction of the film track from each other by a distance equal to a half the perforation pitch and face the series of film perforations. The forks are slidably and rotatably engaged at the ends of their lower legs on diametrically opposite portions of a face cam mounted on a rotary shaft parallel to a shutter shaft on which an eccentric cam is secured. The face cam is rotated at a speed equal to half the speed of rotation of the eccentric cam and for each complete revolution of the shutter shaft, both claws effect one simultaneous reciprocating movement in the direction of the film movement by one of the forks which is engaged with the eccentric cam, while they alternately enter the film perforations by the action of the face cam to move the cinefilm.

Alternatively both cams may be mounted on the shutter shaft and a cam follower slidably and rotatably engaged with the eccentric cam. Two pulldown claws are movably mounted on the follower and are resiliently urged into the film plane. A projection on the follower contacts the face cam.

3,556,649
FILM MOVEMENT MECHANISM
Arthur E. Nupnau, Chicago, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois
Filed Apr. 22, 1969, Ser. No. 818,312
Int. Cl. G03b 1/22
U.S. Cl. 352—194 11 Claims

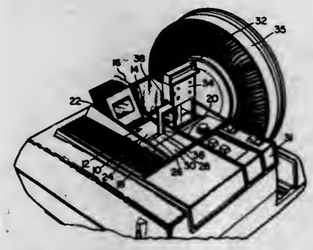


A variable speed movement mechanism is provided wherein a shuttle, adapted to move the film through the projection axis, is moved into and out of engagement with the film perforations at speeds that are related to, but may be different from, the movement of the shutter. The mechanism includes a shaft having mounted thereon a shutter adapted to move through the projection axis. Also mounted on the shaft is a cam operatively connected to the shuttle and adapted to move the shuttle in synchronism with the movement of the shutter. Operatively connected to the shaft is a control means adapted to move the shuttle into and out of engagement with the film perforation so as to vary the rate of engaging movement. A reversing means is also provided for reversing the direction of film movement so that both forward and reverse operation is achieved.

ERRATUM

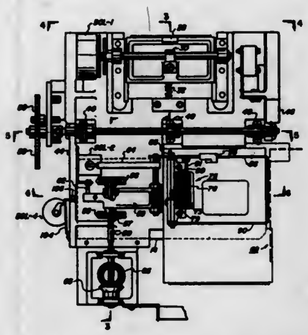
For Class 353—15 see:
Patent No. 3,556,654

3,556,650
SUPPORTING APPARATUS
Robert L. Pennock, Jr., Denver County, Colo., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Sept. 13, 1968, Ser. No. 759,636
Int. Cl. B65g 11/00; G03b 23/02
U.S. Cl. 353—21 7 Claims



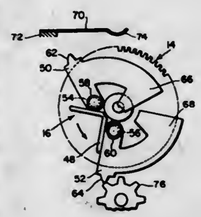
A slide shelf is employed as a top wall portion of a slide projector to enhance the expeditious handling of slides without spillage and soiling during slide editing, loading, storing, sorting and previewing.

3,556,651
CARD HANDLING APPARATUS
Edward J. Lavander, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 24, 1968, Ser. No. 770,366
Int. Cl. G03b 23/12
U.S. Cl. 353—26 4 Claims



Apparatus for automatically handling microfilm data cards during optical scanning on a carriage. A card locking clutch assembly is mounted on the carriage to enable each card to be positioned and firmly held during the scanning operation and released thereafter.

3,556,652
INDEXING MECHANISM
Stephen Blecher, Littleton, Colo., assignor to Honeywell, Inc., Minneapolis, Minn., a corporation of Delaware
Filed Sept. 13, 1968, Ser. No. 759,635
Int. Cl. G03b 23/04
U.S. Cl. 353—116 10 Claims

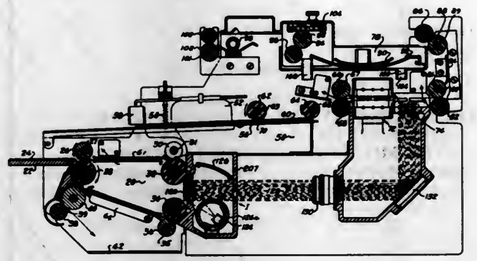


An apparatus for applying a sequential one tooth rotation to advance an indexing pinion in driving contact with the rack teeth of a photographic projector tray in a forward and reverse direction is employed that has a pair of pivoted arms each having a tooth on its outer end and an angle shaped stop therebetween that are mounted on the face of an index drive gear.

3,556,653
LIQUID DEVELOPMENT MEANS FOR ELECTROSTATIC COPIERS
James A. Kolibas, Cleveland, Ohio, assignor to Addressograph-Multigraph Corporation, Cleveland, Ohio, a corporation of Delaware
Original application May 20, 1963, Ser. No. 281,706, now Patent No. 3,441,345, dated Apr. 29, 1969. Divided and this application Aug. 5, 1968, Ser. No. 750,362
Int. Cl. G03g 13/10
U.S. Cl. 355—10 4 Claims

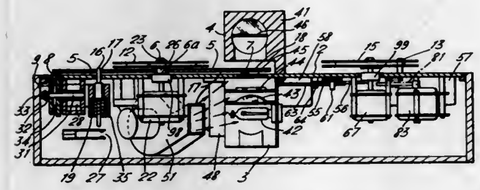
A photocopier of the electrostatic type includes a developing station for developing latent electrostatic images

on photoconductive sheets. The developing station provides a tank in which is held a bath of liquid developer comprising a volatile insulating carrier liquid in which are dispersed finely divided pigment particles which are attracted to the image areas on the sheet. The sheet is fed and guided in such a way as to move face upward, dipping down into the bath and then coming up out of the bath, whereupon it passes into the nip of a pair of squeegee rollers which remove excess carrier liquid. The



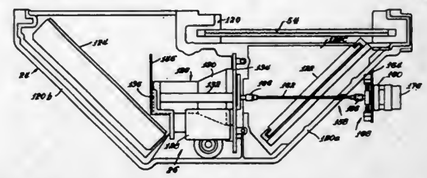
squeegee roller which contacts the unimaged surface of the sheet has a surface of frictional material, such as rubber, and the other squeegee roller is of hard material, such as chromed steel. The latter runs in pressure contact with a wiper pad to prevent return of any accumulated pigment to the face of the sheet. A heater adjacent the squeegee rollers removes most of the balance of the carrier liquid so that the sheet is presented to the operator in dry condition.

3,556,654
AUDIO-VISION TAPE PROJECTOR AND PROGRAMMED RESPONDER
Daniel John Stapleton, "Clareen," Dublin Road, Swords, Dublin, Ireland
Filed Feb. 28, 1968, Ser. No. 709,085
Int. Cl. G03b 31/06
U.S. Cl. 353—15 12 Claims



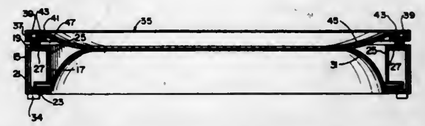
An audio-vision tape projector for use in the field of education and entertainment in which a particular sequence of vidio information and the associated audio information are stored in a self contained unit which can be inserted into and removed from the apparatus as one entity. The unit includes a mangetic tape spool and a disc mounted coaxially with the spool and carrying elements of vidio information at circumferentially spaced positions thereon. The tape on the spool has recorded thereon control signals and audio information associated with the vidio information and the unit is also equipped with means which is operable responsive to a signal related with the audio information for interrupting or altering the vidio information.

3,556,655
PHOTOELECTROSTATIC COPYING MACHINE
George K. Lux, San Jose, Calif., and James B. Ellis, Chicago, and John J. Schulze, Prospect Heights, Ill., assignors to Addressograph-Multigraph Corporation, Mount Prospect, Ill., a corporation of Delaware
Filed Jan. 22, 1968, Ser. No. 699,507
Int. Cl. G03b 27/34, 27/40
U.S. Cl. 355—55 5 Claims



An automatic copying machine operable between a reduced copying mode and a full size copying mode. It has a turret lens assembly movable between different positions for projecting a full size or a reduced size image of an original onto a copy sheet, and a drive system for moving the original and copy sheet respectively past illuminating and exposure stations at equal or unequal speeds. A resilient overtravel operating assembly moves the lens assembly between positions and firmly holds it in place. In the full size copying mode the copy sheet and original move at the same speed; in the reduced copying mode the original moves faster than the copy sheet and in proportion to the size of the reduced light image. A single switch controls the copying mode. During the reduced copying mode, it turns on edge exposure lamps which discharge unexposed marginal areas which would otherwise form dirty copy sheet edges.

3,556,656
CONTACT PHOTOGRAPHY FRAME UTILIZING DEPRESSURIZATION
Gunnar Evensen, Englewood, N.J., assignor of thirty percent each to Haraldur Hagen and Leonard Rosensweig, and five percent each to Robert E. Delaney and Robert R. Keegan as trustee for Darby and Darby
Filed July 2, 1968, Ser. No. 741,994
Int. Cl. G03b 27/20
U.S. Cl. 355—94 9 Claims

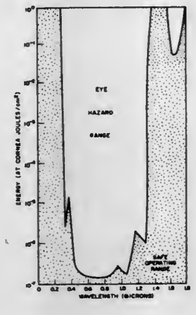


A rectangular frame having mounted therein a flexible transparent and a stretchable sheet. The volume enclosed by the frame and sheets may be depressurized by a conventional vacuum cleaner or other high-volume low-pressure fluid pump for which a suitable fitting is provided in the side of the frame. A negative and sensitized sheet within the frame are pressed together by collapse of the stretchable sheet for exposure in a contact photography process. The frame is preferably hollow with openings surrounding the top interior portion to permit rapid depressurization of the interior.

3,556,657
LASER RANGEFINDER
Fred W. Quelle, Jr., 120 Nichols Road, Cohasset, Mass. 02025
Filed Jan. 26, 1968, Ser. No. 700,992
Int. Cl. G01c 3/08
U.S. Cl. 356—4 4 Claims

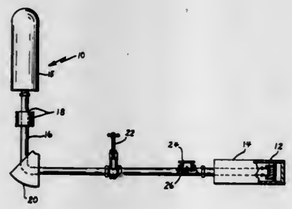
The combination of an erbium Q-spoiled laser and a germanium avalanche diode detector, both operating in

the 1.5 micron region, provides a laser rangefinder or target designation system having excellent transmission characteristics through adverse atmospheric conditions while presenting no hazard to the human eye. The germanium



avalanche diode and the multiply doped, erbium glass laser combination, in addition to eliminating the eye hazard problem, also provides as much as an order of magnitude improvement in efficiency over ruby-laser, photomultiplier-detector systems.

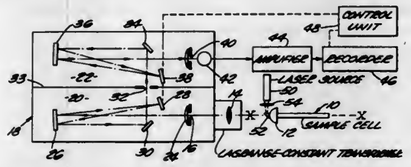
3,556,658
METHOD OF MEASURING ION BEAM HOMOGENEITY
Sven A. Roosild, Billerica, Walter A. McLaughlin, Burlington, and Lester F. Lowe, Bedford, Mass., assignors to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 14, 1970, Ser. No. 2,707
Int. Cl. G01n *1/00*
U.S. Cl. 356—36 **5 Claims**



A method for measuring ion beam homogeneity in high energy accelerating equipment by placing a wafer of a thermal oxide in the path of the beam, bombarding the wafer with ions, etching the wafer with acid and measuring the discontinuity in the bombarded surface to determine the location of variations in intensity in the beam.

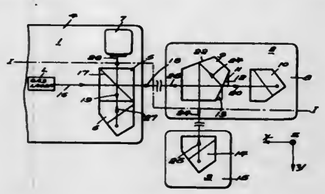
3,556,659
LASER-EXCITED RAMAN SPECTROMETER
Roland C. Hawes, Monrovia, Calif., assignor to Applied Physics Corporation, Monrovia, Calif., a corporation of California
Filed Feb. 3, 1966, Ser. No. 524,687
Int. Cl. G01j *3/44*
U.S. Cl. 356—75 **27 Claims**

A laser-excited Raman spectrometer in which a laser output beam having a very small diameter is projected along the length of a capillary sample cell, rather than being projected in a transverse direction. The beam is substantially coaxial with the cell and the resultant Raman



travelling in the general direction of the cell axis is detected.

3,556,660
ARRANGEMENT FOR INTERFEROMETRIC MEASUREMENT OF A PLURALITY OF LENGTHS WITH MONOCHROMATIC LIGHT BEAMS
François Mottier, Zurich, Switzerland, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Dec. 24, 1968, Ser. No. 786,575
Claims priority, application Switzerland, Jan. 25, 1968, 1,191/68
Int. Cl. G01b *9/02*
U.S. Cl. 356—106 **3 Claims**

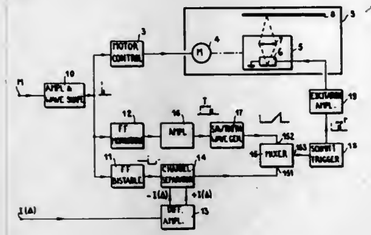


An arrangement for simultaneous interferometric measurement of a plurality of lengths utilizes a single monochromatic circular light beam which is divided up by intensity in a first optical divider into an outgoing reference beam and an outgoing measurement beam. The outgoing measurement beam is further divided by intensity in a second optical divider after traversing one of the lengths to be measured into outgoing two partial measurement beams each having a semicircular cross-section. One of the partial measurement beams is reversed in direction and returned to the second optical divider after traversing the second length to be measured where it is recombined with the other partial measurement beam which has also been reversed in direction and returned. The recombined measurement beam is then returned to the first optical divider where it combines with the outgoing reference beam following the latter's reversal and return to form an outgoing light beam which is differently intensity modulated over the two halves of its cross-section, and these two halves are admitted respectively to photo-detectors which measure their intensity.

3,556,661
ANALYSIS APPARATUS FOR SPECTROMETER SIGNALS WITH FOURIER TRANSFORM OUTPUT
Georges Hepner, Neuilly-sur-Seine, France, assignor to Compagnie Francaise Thomson Houston-Hotchkiss Brandt, Paris, France, a corporation of France
Filed Apr. 10, 1968, Ser. No. 720,013
Claims priority, application France, Apr. 26, 1967, 104,285
Int. Cl. G01b *9/02;* **G01d** *9/42*
U.S. Cl. 356—106 **8 Claims**

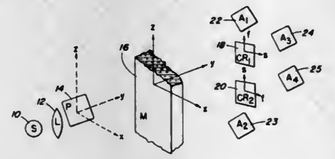
A light generating cell, such as a luminescent diode projects its light on a film, to be scanned thereacross. The

amount of light emitted by the diode is controlled by the output of the spectrometer, so that the density of the film, where exposed by the light emitting diode, will vary; simultaneously, the scanning of the diode across the film is synchronized with the position of the spectrometer displacement and the speed of scan controlled to be a func-



tion of the duration of the signal being studied; in one form of the invention, the signal is sampled at predetermined intervals and a pulse of given intensity, but of variable time duration, applied to the diode, in accordance with the signal from the spectrometer, to eliminate distortion due to non-linearities in film and diode response.

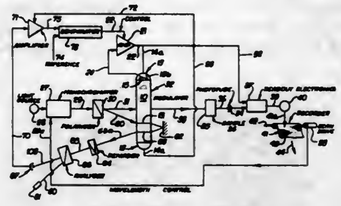
3,556,662
DEVICE FOR DETERMINING BIREFRINGENCE
Harold Levenstein, Glen Cove, Albert Goldstein, Brooklyn, and Audrey J. Hebling, Bellrose, N.Y., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 3, 1968, Ser. No. 726,293
Int. Cl. G01n *21/44;* **G02f** *1/24*
U.S. Cl. 356—114 **8 Claims**



A device for electrically and directly indicating the birefringence of a transparent material which utilizes an electro optical sensor having a combination of polarizers, birefringent plates and photocells to produce voltages functionally dependent upon the birefringence of the transparent material. Difference amplifiers and a cathode ray tube or servo system analyze the photocell produced voltages to give a direct indication of the birefringence of the test material.

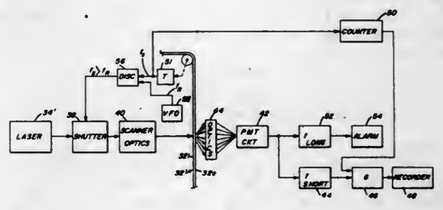
3,556,663
AUTOMATIC CONTROL OF STRAIN MODULATOR
Henry H. Cary, Pasadena, Calif., assignor to Cary Instruments, Monrovia, Calif., a corporation of California
Filed Apr. 7, 1967, Ser. No. 629,261
Int. Cl. G01n *21/40;* **G02f** *1/26*
U.S. Cl. 356—116 **14 Claims**

The invention concerns the provision, in a control system for maintaining near an optimum level the amplitude of oscillation of differential retardation introduced in a polarized light beam by a cyclically variable retarder, of means responsive to a light beam emergent from the retarder for cyclically driving the retarder. In one example, self-resonant oscillation of the retarder is maintained by the output from a sensor attached to the retarder, and the amplitude of oscillation of the plate is controlled by the light beam emergent from the retarder, all in such



manner that a stable equilibrium vibration amplitude of the retarder is maintained, producing peak relative optical phase delay.

3,556,664
METHODS AND APPARATUS FOR INSPECTING PHOTOGRAPHIC MATERIALS
William H. Blaisdell, Edward C. Cornelius, and Howard J. Emerson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 1, 1969, Ser. No. 812,107
Int. Cl. G01n *21/06, 21/16, 21/32*
U.S. Cl. 356—200 **17 Claims**

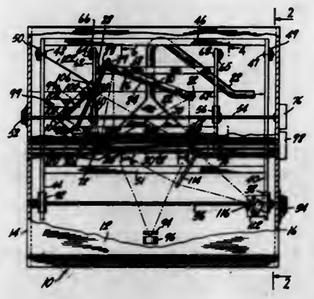


Reciprocity-law failure permits photographic material to be inspected by light to which such material is sensitive. Cast in the environment of a "visible light" scanning system for detecting skips in the sensitized color coats of a photographic web, apparatus according to the invention defines what is to be detected as a defect. As disclosed, visible light is directed at and through a photographic web, the dispersed light exiting from such web being gathered by a cylindrical lens which is so masked that it may be employed, without modification, for webs of various widths.

3,556,665
APPARATUS FOR DETERMINING THE SPAN LENGTH OF A LATERALLY DISPERSED ARRAY OF FIBERS
Kenneth L. Hertel, Knoxville, Tenn., assignor to University of Tennessee Research Corporation, Knoxville, Tenn., a corporation of Tennessee
Filed Jan. 19, 1968, Ser. No. 699,099
Int. Cl. G01n *21/16, 21/32*
U.S. Cl. 356—238 **13 Claims**

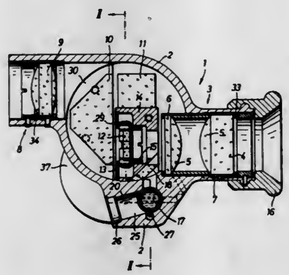
As described herein, a geometric fibrograph is provided which determines the distances spanned by 50 percent and 2.5 percent of a sample of fibers to be used in making yarn. This is accomplished by illuminating the base of a laterally dispersed array of fibers at an angle which is normal to the longitudinal axis of the fibers and measuring the amount of light transmitted through the base of the fibers to provide an indication of the 100 percent span

distance. Thereafter, the fiber array is scanned in a transverse direction by light rays which illuminate the fiber array at angles in a horizontal plane of 30 degrees and approximately 1.5 degrees, respectively, and measurements taken of the amount of light transmitted through the sample. The fiber sample is scanned in the direction parallel to the fibers until the intensity of the light intercepted by the sample at the angles of 30 degrees and 1.5



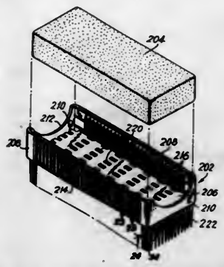
degrees, respectively, equals the intensity of light intercepted by the fiber sample at the base thereof. At this point, the displacement in the direction parallel to the fibers between the base of the sample and those portions of the sample providing the same apparent fiber density at 30 degrees and 1.5 degrees is measured to provide an accurate indication of the 50 percent and 2.5 percent span lengths.

3,556,666
TELESCOPIC GUNSIGHT INCLUDING LEVEL MEANS
Benjamin Lichtenstern, Haifa, Israel, assignor to Etablissement SALGAD, Vaduz, Liechtenstein
Filed Aug. 1, 1967, Ser. No. 657,679
Claims priority, application Germany, Oct. 22, 1966, E 32,713
Int. Cl. G01c 9/18
U.S. Cl. 356—249 **5 Claims**



A telescopic gunsight, particularly adapted for use with weapons such as mortars, the gunsight having a telescope housing which carries in its interior an optical means providing a viewing field. A level means is carried by the housing for indicating the attitude thereof, and an image-transmitting means is carried by the housing and coacts with the level means for providing an image of the latter in the viewing field, so that the operator can see the attitude of the gunsight. An illuminating means, which preferably is self-illuminating so that it requires no outside source of power, coacts with the level means to render the latter visible at night.

3,556,667
SCRUBBING IMPLEMENTS
Jack W. Kaufman, Corona, N.Y.
(37—71 Junction Blvd., Jackson Heights, N.Y. 11372)
Continuation-in-part of application Ser. No. 660,477, Aug. 14, 1967. This application Sept. 5, 1967, Ser. No. 665,593
Int. Cl. A46b 11/04
U.S. Cl. 401—28 **19 Claims**

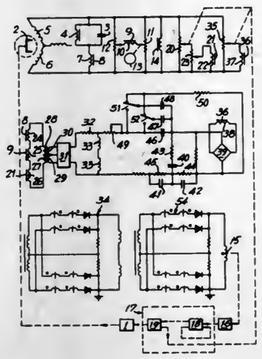


Implements, as for cleansing by scrubbing with the use of a cleansing compound, such as for surgical post or pre-operative scrubbing with a germicidal soap comprising, means for providing rubbing type scrubbing action, for example, a pored surface or a plurality of bristle-like elements, such as Velcro or brush bristles and a quantity of compound, for example, a cleansing compound such as a germicidal soap compound associated therewith, for example, by direct coating on the scrubbing means or by being contained within a dispensing type reservoir for application to the scrubbing, means, such as being contained within a block of resilient foam-like material or within a flexible walled container whereby pressure on the container or foam block will cause dispensing of the cleansing compound outwardly thereof and onto the scrubbing means, the foam block or container being either permanently associated with the scrubbing means to define a throw-away type implement or the block or container being replaceably associated therewith to enable retention of the scrubbing means with replacement of the container or block, such block or throw-away implement being preferably furnished with protective covering means during transport, storage and prior to usage thereof, such as a peelable or strippable layer of water-proof adhesively secured material or a layer of water-soluble material; the implement further preferably comprising means for dispensing the cleansing compound to the bristles, as by a plurality of apertures extending between the reservoir and the bristles, the bristles being formed for providing effective and comfortable scrubbing action, and the implement being flexible and of a size and configuration enabling easy manipulation thereof.

3,556,668
ELECTROHYDRAULIC SPEED CONTROLLER EMPLOYED IN HYDROTURBINES
Veniamin Anatolievich Marbukh, Veniamin Samuilovich Lychak, Lazar Ilich Palkin, Vladimir Alexeevich Matveev, Vasily Vasilievich Semenov, Emil Fedorovich Stepura, and Vasily Nikolaevich Fedorov, Leningrad, U.S.S.R., assignors to Leningradsky Metallichesky Zavod Imeni XXII Siezda KPSS, Leningrad, U.S.S.R.
Filed July 11, 1968, Ser. No. 744,131
Int. Cl. F15b 13/16; H02p 5/00
U.S. Cl. 415—10 **1 Claim**

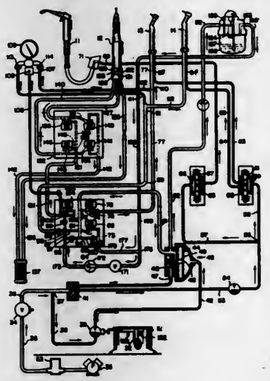
An electrohydraulic speed controller for a hydroturbine comprises an electrical measuring unit coupled to a magnetic amplifier in turn coupled to a hydromechanical actuator via an electrohydraulic converter. The actuator includes a main servomechanism and an auxiliary servomechanism both adapted to vary the degree of opening of

the gate apparatus of the hydroturbine. A proportional feedback and a PI-feedback are connected to the main servomechanism, and the PI-feedback incorporates a passive corrective network connected in series with the con-



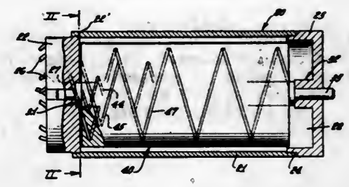
trol windings of the magnetic amplifier. The passive corrective network includes a differentiating section, an integrating section and another differentiating section connected in series in the above order, all sections including RC elements.

3,556,669
FLUID CONTROL SYSTEM FOR DENTAL INSTRUMENTS
John J. Valeska, Rochester, Donald N. Spencer, Pittsford, and Edson L. Kummer, Rochester, N.Y., assignors, by mesne assignments, to Sybron Corporation, a corporation of New York
Original application Feb. 1, 1965, Ser. No. 429,398. Divided and this application Feb. 10, 1969, Ser. No. 797,831
Int. Cl. F01d 15/06; A61c 1/16; F01k 23/16
U.S. Cl. 415—61 **15 Claims**



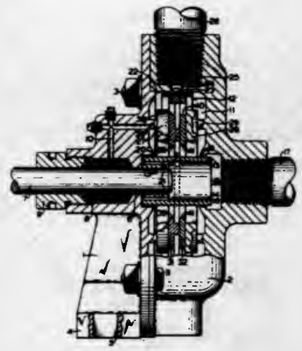
A control system for a plurality of air driven dental tools including adjustable air pressure valve means for independently varying the air pressure supplied to each tool and also including adjustable oil control valve means for independently varying the quantity of oil supplied to each tool requiring oiled air whereby any tool can be replaced by a different tool having different air pressure and oil supply requirements by simply making suitable adjustments in the respective valve means.

3,556,670
ROTARY HEAT ENGINE
Phillip J. Tucker, 5708 S. Condon Ave., Los Angeles, Calif. 90056
Filed May 27, 1969, Ser. No. 828,230
Int. Cl. F01d 5/00, 5/08, 1/02
U.S. Cl. 415—75 **10 Claims**



A rotary heat engine for efficiently converting gas thermal energy to mechanical energy comprising a hollow generally cylindrical housing, a head secured at each end, one of the heads having gas intake means and the other of the heads having gas exhaust means, bearings mounted in the heads supporting a shaft on which is mounted a rotor. The rotor has a plurality of internal spirally disposed fluid or gas chambers each of which has the same hand and pitch and each of which defines a succession of converging, diverging and constant area sections so that fluid introduced under pressure to the chambers releases its heat energy which is converted to mechanical rotational shaft power.

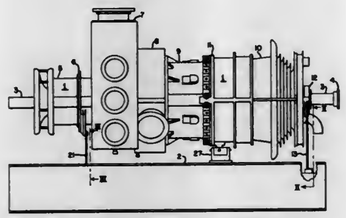
3,556,671
MULTI-STAGE CENTRIFUGAL PUMP
Ernest Armand Houle, Pittsburgh, Pa., assignor to Charles J. Dunlap, Jr., Pittsburgh, Pa.
Filed May 28, 1969, Ser. No. 828,517
Int. Cl. F04d 29/66, 1/06, 29/18
U.S. Cl. 415—98 **10 Claims**



A multi-stage centrifugal pump of simple compact design utilizing a plurality of pairs of diametrically arranged volute pasages in the same plane and hydraulically balanced. Each passage of one pair communicates at its inner end with the inlet eye of the impeller disc and at its outer end with the impeller chamber at both sides of the impeller disc. Each passage of the other pair communicates at its inner end with the impeller chamber on both sides of the impeller disc and at its outer end through a slot in the rim of the impeller disc with

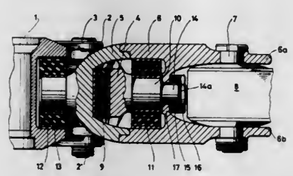
an annular discharge chamber, out of which opens the outlet port. Two diffuser rings are supported on the pump housing in coaxial relation to and on opposite sides of the impeller disc and engage the opposite faces of the impeller disc in free-running contact between the discharges from the first stage volute passages and the inlets for the second stage volute passages.

3,556,672
GAS TURBINE SUPPORT ARRANGEMENT
Richard W. Gentile, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed May 26, 1969, Ser. No. 827,788
Int. Cl. F04f 1/06; F02c 7/20
U.S. Cl. 415—134 7 Claims



A support arrangement for an axial flow elastic fluid machine comprising, after final assembly, two support plates and positioned therebetween a gib key and block assembly. The flat plates are fixed in the vertical and lateral directions but are allowed to flex in an axial direction when thermal movement occurs. The gib key is fixed in the axial direction and is positioned so as to proportion the axial movement between fore and aft support plates. In this manner proper alignment is maintained between the gas turbine shaft and load shaft. During shipment the aft support plate is removed so that the base can twist without imparting a torsional moment to the gas turbine casings.

3,556,673
ROTOR MOUNTING
Ernst-Dieter Kilian, Munich, Germany, assignor to Bolkow Gesellschaft mit beschrankter Haftung, Munich, Germany
Filed Oct. 11, 1968, Ser. No. 766,780
Int. Cl. C64c 27/38
U.S. Cl. 416—134 11 Claims



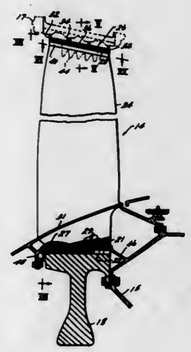
A rotor for gyroplanes having rotor blades of a type which absorb, by their material structure, the forces from pivotal (swivel) or bending (wobble) moments, comprises a jointless mounting at the rotor head having means at its radial outer end for mounting each rotor blade. The mounting is made up of a plurality of laminated rubber-metal bearings having a layer structure arranged substantially normal to the maximum occurring bearing force components or the resultant of such components.

3,556,674
ROTARY WING SYSTEM
Robert E. Foote, Lake Dallas, Tex., assignor to Gros-Ite Industries, Inc., Farmington, Conn., a corporation of Connecticut
Continuation-in-part of application Ser. No. 578,695, Sept. 12, 1966. This application Nov. 15, 1968, Ser. No. 776,111
Int. Cl. B64c 27/38
U.S. Cl. 416—20 10 Claims



A rotary wing system for aircraft which comprises a rotatably mounted hub, and a plurality of blades each connected to the hub for rotation therewith by a respective ball joint to permit movement about three coordinate axes including the longitudinal axis of the blade. Blade pitch control means rotatable with the hub is connected to the blades to hold each blade in predetermined position with respect to its longitudinal axis as the blades are rotated. The blade pitch control means is longitudinally spaced from the hub and mounted for reciprocable movement in a plane parallel to the longitudinal axis of the hub. The blade pitch control means includes a linkage connected to each blade at a point spaced from the blade's ball joint connection to the hub and spaced from the longitudinal axis of the blade.

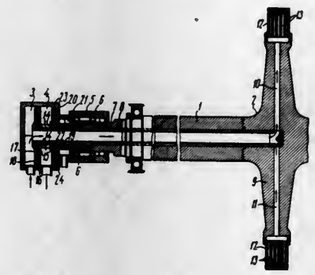
3,556,675
TURBOMACHINERY ROTOR WITH INTEGRAL SHROUD
Werner E. Howald, Cincinnati, and Max W. Stanley, Fairfield, Ohio, assignors to General Electric Company, a corporation of New York
Filed Jan. 29, 1969, Ser. No. 794,860
Int. Cl. F01d 5/24
U.S. Cl. 416—190 2 Claims



A fan rotor is shown and comprises composite material and blades mounted by tangs on a disc. The outer ends of the blades are received by sockets in a tip shroud in the form of a hoop. The hoop comprises an inner band

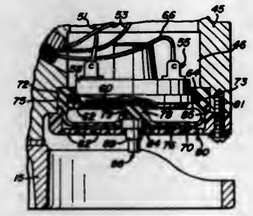
of homogeneous material about which is a wound filament band of composite material. Upon removal of retainers at the inner ends of the tangs, individual blades may be shifted radially inwardly for removal from the rotor.

3,556,676
LIQUID-COOLING SYSTEM OF GAS TURBINE ROTORS
Igor Konstantinovich Gorbunov, Leninoclachnoe, Kvartal 4, korpus 18, kv. 95; Aram Vartanovich Avakov, Leningradsky prospekt 5, kv. 150; and Dmitry Ivanovich Mariev, Leninsky prospekt 99, korpus 123, kv. 66, all of Moscow, U.S.S.R.
Filed Aug. 28, 1968, Ser. No. 756,048
Int. Cl. F01d 5/08
U.S. Cl. 416—96 1 Claim



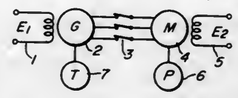
A sealing device in a cooling system for a turbine rotor includes a chamber into which the rotor extends. The rotor supports an impeller in the chamber proximate an opening in the wall through which the rotor extends. The impeller, upon rotating, acts as a sealing device for preventing a fluid from escaping from the chamber through the aforesaid opening.

3,556,677
SUBMERSIBLE PUMP SWITCH ASSEMBLY
David L. Tremain, Dayton, Ohio, assignor to The Tait Manufacturing Company, Dayton, Ohio, a corporation of Ohio
Filed Jan. 22, 1969, Ser. No. 792,966
Int. Cl. F04b 49/06; H01h 35/40; H04h 35/04
U.S. Cl. 417—44 5 Claims



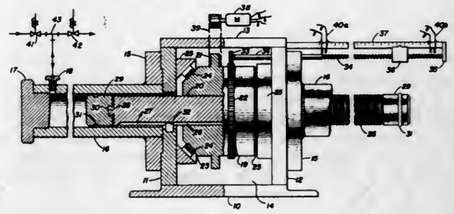
A submersible pump incorporates a motor housing integrally connected to a switch housing which forms a chamber having a lower open end defined by a counterbore. A diaphragm switch is supported within the counterbore by a second resilient diaphragm having an annular portion which extends into the counterbore and around a peripheral flange of the switch to form a radially compressed fluid tight seal. The switch and second diaphragm are secured by a rigid perforated cover which protects the second diaphragm and is effective to urge the annular portion axially against the radial shoulder of the counterbore to form an axially compressed fluid tight seal.

3,556,678
METHOD AND APPARATUS FOR LOW FREQUENCY SYNCHRONOUS STARTING OF REVERSIBLE PUMP TURBINES
Asao Oishi and Shozoo Sashino, Hitachi-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan
Filed June 2, 1969, Ser. No. 829,677
Claims priority, application Japan, June 3, 1968, 43/37,538
Int. Cl. F04d 13/02
U.S. Cl. 417—53 3 Claims



A method and apparatus for the low frequency synchronous starting of pump turbines, in which in order to shorten the time before the pump has acquired a necessary rotational torque, the guide vane opening of a water turbine is progressively increased incident to increase in r.p.m. of the pump runner so as to increase the pump driving torque close to the allowable maximum torque of said pump.

3,556,679
METERING PUMP
Paul L. Middlebusher and William R. Buck, Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware
Filed Aug. 8, 1968, Ser. No. 751,154
Int. Cl. F04b 21/00, 9/00, 35/04
U.S. Cl. 417—63 3 Claims

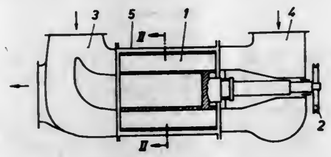


Reciprocating piston pump actuated by a screw feed and having readily interchangeable piston and cylinder assemblies; in one embodiment, a piston position indicator is provided.

3,556,680
AERODYNAMIC PRESSURE-WAVE MACHINE
Paul Leutwyler, Auenstein, and Alfred Wunsch, Wettingen, Switzerland, assignors to Aktiengesellschaft Brown Boveri & Cie, Baden, Switzerland, a joint-stock company
Filed Jan. 13, 1969, Ser. No. 790,781
Claims priority, application Switzerland, Jan. 22, 1968, 952/68
Int. Cl. F04f 11/00; F01d 5/10; F02c 3/02
U.S. Cl. 417—64 6 Claims

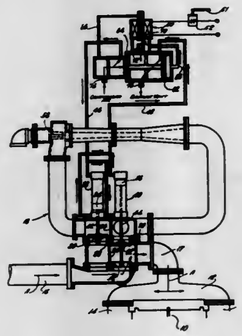
An aerodynamic pressure wave machine in which one gas is expanded while another is compressed operates with a reduced noise level by arranging the cells of the cell

wheel into cell groups extending in the circumferential direction. The cells of each group are of the same width



as measured in a circumferential direction but the cells of adjacent groups have different widths.

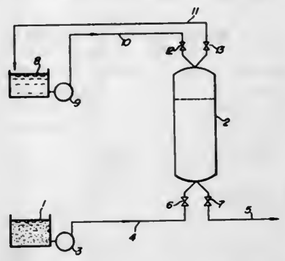
3,556,681
HIGH VACUUM PUMP WITH AIR JET HAVING AUTOMATIC CUT-IN VALVE
Irving C. Jennings, % Nash Engineering Co., South Norwalk, Conn.
Filed Feb. 3, 1969, Ser. No. 795,981
Int. Cl. F04b *23/04, 23/08, 41/06*
U.S. Cl. 417—87 **8 Claims**



A high vacuum pump provided with an air jet that is automatically cut into the system upon the attainment of a predetermined vacuum level. The valve arrangement includes pneumatically operated valves which bring the air jet assembly into operation, using the vacuum pump as a second stage. The pneumatic valves are made operative by a vacuum switch controlling a solenoid and a double-acting control valve.

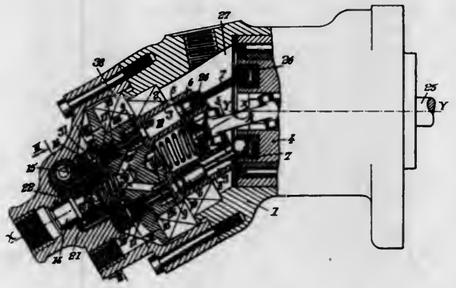
3,556,682
APPARATUS FOR LIQUID DISPLACEMENT TRANSFER
Masakatsu Sakamoto and Kenji Uchida, Tokyo, and Yasunori Yamada and Takashi Yamaguchi, Yokohama, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Aug. 12, 1968, Ser. No. 752,002
Claims priority, application Japan, Aug. 14, 1967, 42/69,631; Sept. 4, 1967, 42/75,267; Sept. 29, 1967, 42/62,335; Nov. 27, 1967, 42/99,157; Dec. 28, 1967, 43/83,608, 43/83,609; Jan. 5, 1968, 43/347
Int. Cl. F04f *11/00;* **F04b** *19/22;* **G01f** *23/06*
U.S. Cl. 417—102 **7 Claims**

In an apparatus for pumping a first liquid or liquid substance, e.g. slurry according to the principle of alternate displacement of the first liquid and a second or driving liquid in a vessel, the improvements according to the present invention reside in that a float member having a specific weight lying between those of the first and the second liquid and a peripheral ring portion of magnetic material is provided in the vessel, which in turn is provided with wall portions of nonmagnetic material and magnetic proximity detectors for detecting the float



member at its upper and lower limit positions, whereby automatic control of operation of the apparatus is improved to positively produce substantially constant flows of the first and the second liquid and the danger of water hammer is avoided.

3,556,683
HYDRAULIC PUMPS
Marcel Schott, Colombes, and Bernard Vauvelle, Houilles, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France
Filed Jan. 29, 1969, Ser. No. 794,887
Claims priority, application France, Jan. 30, 1968, 137,946
Int. Cl. F04b *1/02, 49/00*
U.S. Cl. 417—270 **10 Claims**

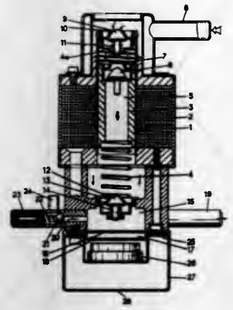


The pump comprises a rotatable cylinder block in which cylinders are provided. Pistons slide in these cylinders. Each variable volume cylinder chamber comprises an admission port and a delivery valve. A counterbalancing shoe is disposed coaxially with each cylinder and bears against a regulating plate. The regulation of the delivery rate is ensured by a groove, provided in the regulating plate, and extending over an arc of 180°.

3,556,684
ELECTROMAGNETICALLY ACTUATED FUEL PUMP
Clement L. Rouquette, Puteux, France, assignor to S.E.V.-Marchal
Filed Dec. 30, 1968, Ser. No. 787,775
Claims priority, application France, Jan. 3, 1968, 134,650
Int. Cl. F04b *17/04, 49/08*
U.S. Cl. 417—307 **4 Claims**

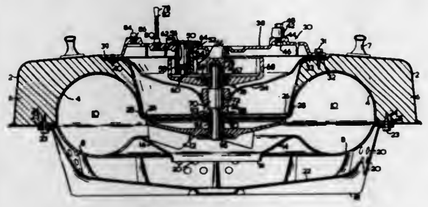
An electromagnetically actuated fuel pump comprising a piston which delivers fuel to an outlet chamber provided with a flexible wall, an outlet for connection

to a carburetor, and a second outlet for connection to the supply tank, said second outlet being controlled by a valve responsive to a predetermined minimum pressure



in the outlet chamber. An electromagnetic coil encircles the piston chamber and an energizing circuit is carried in a shell attached to the outlet chamber.

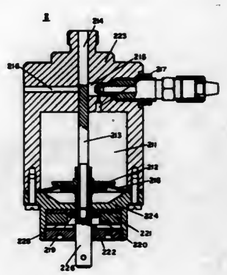
3,556,685
BUOYANT PUMP WITH DRIVE TRAIN SUBASSEMBLY
Frederick A. Moore, Edmonton, Alberta, Canada, assignor to Northwest Industries Limited, Edmonton, Alberta, Canada
Filed Jan. 28, 1969, Ser. No. 794,743
Claims priority, application Canada, Nov. 29, 1968, 36,481
Int. Cl. F04d *13/02, 13/14*
U.S. Cl. 417—337 **8 Claims**



The impeller chamber backing wall, formerly an inward extension of the volute is cut away and a detachable metal plate substituted; thus the impeller, shaft, bearings and seal may be withdrawn together with the chamber wall. The wall is dished to form an oil sump so as to accommodate a speed reducer; a sump cover plate provides locations for mounting the power unit.

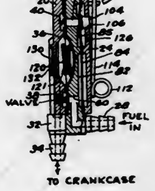
3,556,686
PNEUMATIC PULSATOR
Palle-Finn Beer, Lidingo, Sweden, assignor to AB Autokemi, Stockholm, Sweden, a corporation of Sweden
Filed Oct. 16, 1968, Ser. No. 768,113
Claims priority, application Sweden, Nov. 24, 1967, 16,184/67
Int. Cl. F04b *9/10;* **F15b** *7/00;* **F16k** *31/08*
U.S. Cl. 417—383 **12 Claims**

A pneumatic pulsator in which inlet and outlet passages are arranged to be placed in direct fluid communication with each other. A valve member opens and closes the outlet passage, and is moved by a resilient member which in turn moves in response to the pressure in a regulating chamber, which regulating chamber is in fluid communication with the inlet pasage. Snap action of the valve



member may be provided by magnetic means. The inlet may also be pneumatic coupled to another pneumatic device.

3,556,687
FUEL PUMP FOR SMALL ENGINES
Alton J. O'Connor, Cass City, Mich., assignor to Walbro Corporation, Cass City, Mich., a corporation of Michigan
Filed May 21, 1969, Ser. No. 826,356
Int. Cl. F04b *43/02*
U.S. Cl. 417—395 **8 Claims**

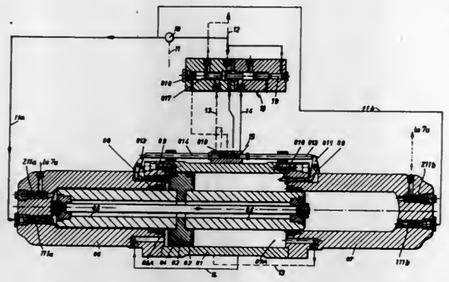


A pump and booster combination unit for supplying fuel to small engines utilizing engine pulsations as motive force and embodied in a housing independent of the carburetor or engine housing. The unit uses a three-part sandwich construction with diaphragms trapped between the parts which form the pumping and booster recesses, there being an exterior control for moving a diaphragm to a close-off position at the fuel outlet, and an external locking device for maintaining the control in the close-off position.

3,556,688
HYDRAULIC PRESSURE AMPLIFYING APPARATUS
Paul Hammelmann and Ulrich Barnowski, Oelde, Westphalia, Germany, assignors to Paul Hammelmann Maschinenfabrik, Oelde, Westphalia, Germany
Filed Jan. 2, 1969, Ser. No. 788,420
Claims priority, application Germany, Jan. 2, 1968, 1,653,474
Int. Cl. F04b *17/00*
U.S. Cl. 417—397 **7 Claims**

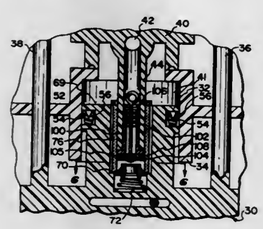
A high-pressure hydraulic pump is connected with a two-stage pressure amplifier by a three-way distributor valve which can seal the pump outlet from the amplifier in a first position and then discharges pressurized liquid

to a first consumer at a first pressure. In a second position of the distributor valve, the entire output of the pump is admitted to the amplifier which can discharge fluid at a



higher or lower second pressure which exceeds the first pressure. In a third position of the distributor valve, the latter admits some liquid to the amplifier and discharges the remaining liquid at first pressure.

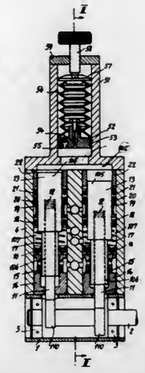
3,556,689
PUMP FOR PROPORTIONING DEVICE
Valentine Hechler IV, 26 Meadow View Road, Northfield, Ill. 60093
Continuation-in-part of applications Ser. No. 520,568, Jan. 14, 1966, and Ser. No. 625,086, Mar. 22, 1967. This application Mar. 5, 1969, Ser. No. 804,646
Int. Cl. F04b *21/00*
U.S. Cl. 417—435 **11 Claims**



A reciprocating pump which has a zero to negative clearance with a valve serving as a cylinder head and the construction thereof wherein the sliding relation has a low frictional coefficient with a piston head of plastic material engaging in sealed relationship a sleeve insert made preferably of glazed ceramic tubular sections which is readily assembled in place in a plastic support by a threaded element received in groups of segmented threads, and method for cutting all of same simultaneously.

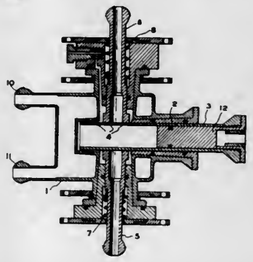
3,556,690
MOTOR-DRIVEN PUMP FOR DELIVERING LIQUIDS AT A PRESSURE SUBSTANTIALLY CONSTANT AND INDEPENDENT FROM THE DELIVERY
Harry Scheffer, Brackwede, Germany, assignor to Harry Kruger GmbH, Brackwede, Germany
Filed Aug. 21, 1968, Ser. No. 754,345
Claims priority, application Germany, Oct. 2, 1967, 1,653,497
Int. Cl. F04b *21/02, 23/04, 37/00*
U.S. Cl. 417—471 **8 Claims**

A piston pump which delivers liquids at a pressure constant and independent from the quantity delivered. The pump cooperates with a control unit which allows automatic variation of the piston stroke with change of delivery, but without substantial change of discharge pressure. This stroke variation is performed by means of a yielding liquid connection between the piston per-



forming the suction stroke and the piston performing the delivery stroke. The drive is resiliently coupled with the pistons during the suction stroke so that partial strokes are performed with a partial idling drive.

3,556,691
PUMP HAVING A PISTON WITH A COMBINED ROTARY AND RECIPROCATING ACTION
Albert Friedrich Buri, Eigenweg 11, Ettingen, Basel-Land, Switzerland
Filed Aug. 4, 1969, Ser. No. 847,090
Claims priority, application Switzerland, Aug. 30, 1968, 13,066/68
Int. Cl. F04b *7/06*
U.S. Cl. 417—500 **6 Claims**

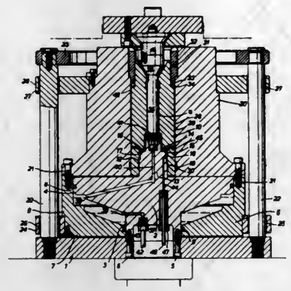


A pump having a rotary and reciprocating piston. The piston being provided with a part or parts adapted to cooperate alternately with the suction and delivery parts in the pump casing. The ends of the suction and delivery parts within the pump casing are shaped to fit the periphery of the piston closely, and urged against the same by springs.

3,556,692
HIGH PRESSURE LIQUID PUMP
Albert Edward Pigott, Clifton, Preston, and Peter John Thompson, St. Anne's-on-Sea, England, assignors to United Kingdom Atomic Energy Authority, London, England
Filed Mar. 4, 1969, Ser. No. 804,102
Claims priority, application Great Britain, Mar. 8, 1968, 11,590/68
Int. Cl. F04b *11/00*
U.S. Cl. 417—540 **8 Claims**

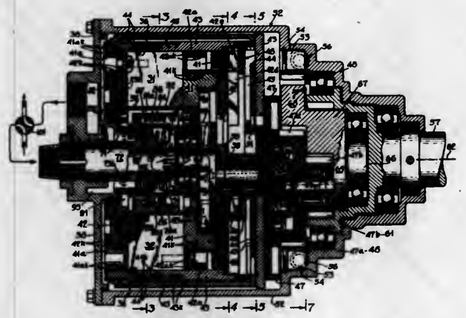
A high pressure pump has a pump cylinder contained by an outer pressure vessel, an interspace being defined

between the pump cylinder and the pressure vessel. Liquid is pressurised in the pump cylinder by a piston and pressurised liquid is fed through a nonreturn valve from the pump cylinder into the interspace on the pressurising stroke of the piston. Supply of liquid by the pump at



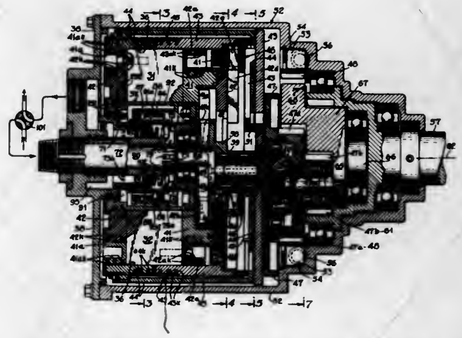
constant pressure is from the interspace. An accumulator space of variable volume may be provided connected with the interspace to accommodate for differences between the rate of supply of liquid from the interspace and the rate of feed of liquid from the pump cylinder into the interspace.

3,556,693
ROTARY PISTON DEVICES
Charles Bancroft, 178 Ferris Hill Road, New Canaan, Conn. 06840
Original application Aug. 5, 1968, Ser. No. 750,084. Divided and this application Dec. 5, 1969, Ser. No. 882,432
Int. Cl. F04c *17/00, 27/00*
U.S. Cl. 418—37 **4 Claims**



A self-contained power system particularly suitable for use as a vehicle drive system consisting of a self-powered and self-regulating gas generator of the rotary piston type delivering hot compressed gas for any desired purpose, such as the powering of compressed gas motors which may also be of the rotary piston type, capable of individually driving each wheel of a vehicle. Both the compressed gas motors and the gas generator incorporate rotating sets of vane pistons moving in an annular chamber, and alternately accelerating and decelerating while moving around the annular chamber. The rotating sets of accelerating and decelerating pistons are controlled by their engagement with connecting members mounted for planetary orbital rotation within the stator housings of these devices. At least one of these connecting members is engaged with at least one central crankshaft for controlling this orbital rotation and delivering torque to or from the device, while one or more other connecting members are "floating" connecting members engaged only with the piston sets, and not connected directly with other connecting members or crankshafts or with the stator housing. The gas generator incorporates a unique compressed gas bleed feature providing self-regulating operation for efficient delivery of compressed gas at a predetermined pressure level. The compressed gas motor devices incorporate simple reversing means and means for automatic adjustment of port openings and closings for most efficient operation at any given pressure, as well as simple speed reducer means functioning to reduce the high rotational velocity of the crankshafts in these gas motors to more useful output velocities for such purposes as driving the wheels of a moving vehicle. Other useful features of these rotary piston devices include positive lubrication means for drawing oil from an oil sump during operation, splashing it over the moving parts during operation, but returning it to a sump in which it is retained when the device is not in operation.

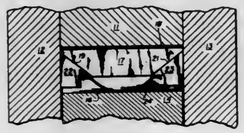
3,556,694
ROTARY PISTON DEVICES
Charles Bancroft, 178 Ferris Hill Road, New Canaan, Conn. 06840
Original application Aug. 5, 1968, Ser. No. 750,084. Divided and this application Dec. 5, 1969, Ser. No. 882,535
Int. Cl. F01c *1/00;* **F04b** *19/00*
U.S. Cl. 418—37 **10 Claims**



A self-contained power system particularly suitable for use as a vehicle drive system consisting of a self-powered and self-regulating gas generator of the rotary piston type delivering hot compressed gas for any desired purpose, such as the powering of compressed gas motors which may also be of the rotary piston type, capable of individually driving each wheel of a vehicle. Both the compressed gas motors and the gas generator incorporate rotating sets of vane pistons moving in an annular chamber, and alternately accelerating and decelerating while moving around the annular chamber. The rotating sets of accelerating and decelerating pistons are controlled by their engagement with connecting members mounted for planetary orbital rotation within the stator housings of these devices. At least one of these connecting members is engaged with at least one central crankshaft for controlling this orbital rotation and delivering torque to or from the device, while one or more other connecting members are "floating" connecting members engaged only with the piston sets, and not connected directly with other

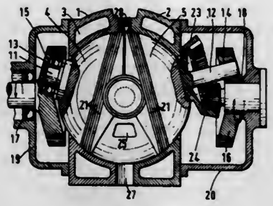
connecting members or crankshafts or with the stator housing. The gas generator incorporates a unique compressed gas bleed feature providing self-regulating operation for efficient delivery of compressed gas at a predetermined pressure level. The compressed gas motor devices incorporate simple reversing means and means for automatic adjustment of port openings and closings for most efficient operation an any given pressure, as well as simple speed reducer means functioning to reduce the high rotational velocity of the crankshafts in these gas motors to more useful output velocities for such purposes as driving the wheels of a moving vehicle. Other useful features of these rotary piston devices include positive lubrication means for drawing oil from an oil sump during operation, splashing it over the moving parts during operation, but returning it to a sump in which it is retained when the device is not in operation.

3,556,695
APEX SEAL FOR ROTARY COMBUSTION ENGINES
Kenichi Yamamoto, Hiroshima-shi, Japan, assignor to Toyo Kogyo Co., Ltd., Hiroshima-ken, Japan
Filed July 16, 1969, Ser. No. 842,106
Int. Cl. F01c *1/02, 19/04, 19/08*
U.S. Cl. 418—61 **5 Claims**



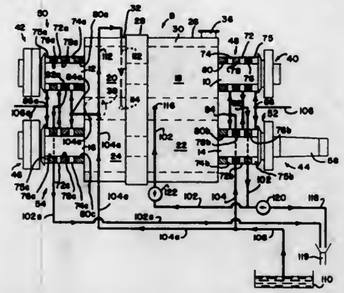
A seal arrangement for the apexes of the rotor of a rotary piston engine, providing materials of different thermal and frictional characteristics for rubbing contact with the side walls and the peripheral housing, and providing for thermal expansion.

3,556,696
SPHERICAL MOTOR
Riccardo Bertoni, Via Giacomo Leopardi 11, Viareggia, Lucca, Italy
Filed Jan. 23, 1969, Ser. No. 793,452
Claims priority, application Italy, Jan. 26, 1968, 10,501/68
Int. Cl. F01c *3/00*
U.S. Cl. 418—68 **5 Claims**



A spherical motor comprising a pair of spherical sectors pivotally connected to each other, accommodated in a hollow sphere so as to move in opposite directions with a spherical movement obtained by the inverse rotation of the two crank throws in the generation of two opposed cones having their vertexes in the centre of the sphere articulated on the axes of the sectors perpendicularly to the axis of the hinge point and the shaft of the crank on the axes of the described cones.

3,556,697
SEALING ARRANGEMENT FOR VACUUM PUMP
Paul D. Webb, Tioga, Pa., and David C. Lasher, Canadaigua, N.Y., assignors to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed Apr. 10, 1969, Ser. No. 814,953
Int. Cl. F04c *27/00*
U.S. Cl. 418—98 **8 Claims**



A sealing arrangement for a vacuum pump having the end portions of the shaft extending through the end walls of a pump housing, each shaft end portion provided with spaced labyrinth seals, and a conduit to conduct sealing liquid to between the seals of each shaft end portion. The subatmospheric pressure produced at both shaft end portions draws sealing liquid through the associated seals into the pump housing. The subatmospheric pressure in an intermediate portion of the pump housing is also utilized to draw sealing liquid through the seals and into the pump housing.

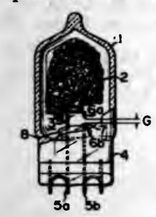
3,556,698
PROCESS FOR BURNING OIL SPILLS
Paul R. Tully, Lowel, William J. Fletcher, Saugus, and Hector Cochrane, Groveland, Mass., assignors to Cabot Corporation, Boston, Mass., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 788,331, Dec. 31, 1968. This application Nov. 18, 1969, Ser. No. 877,826
Int. Cl. F23d *21/00*
U.S. Cl. 431—2 **14 Claims**

The present invention provides an improved method for the elimination of water and land borne spills by burning. Broadly, certain particulate solids are applied to the spill and the resulting system is thereafter fired. Such treated spills are more easily ignited and the combustion thereof is more complete than experienced with untreated spills. When certain conditions pertaining to the type and amount of treating agent applied to the spill are met even further benefits accrue to the process of the invention. Said benefits reside in improved physical character of the burned residue which is more amenable to physical removal thereof from the water or land mass than the burned residuum of untreated spills.

3,556,699
DISCHARGE IGNITION TYPE PHOTOFLASH LAMP
Koichi Takahashi, Ehime-ken, and Hidehiro Shinada and Hisashi Ishii, Yokohama-shi, Japan, assignors to Tokyo Shibura Electric Co., Ltd., Kawasaki-shi, Japan, a corporation of Japan
Filed Jan. 28, 1969, Ser. No. 794,732
Claims priority, application Japan, Feb. 5, 1968, 43/6,768, 43/7,653 (utility model)
Int. Cl. F21k *5/02*
U.S. Cl. 431—95 **7 Claims**

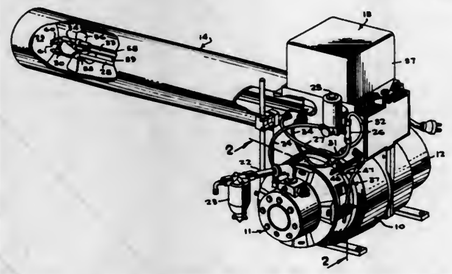
A photoflash lamp of the discharge ignition type is provided with a pair of discharge electrodes, at least one of which is covered at its inner end with a primer material of high electrical resistance. Between the electrodes is formed a gap ranging from 0.05 to 0.8 mm., which is

filled with a combustion-supporting gas. A high voltage pulse is impressed upon the electrodes to dielectrically



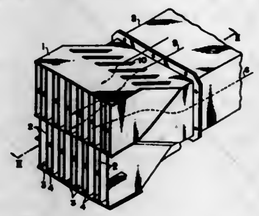
break-down the combustion-supporting gas as well as the primer, thereby to ignite said primer.

3,556,700
BURNER UNIT
Walter F. Jackson and James F. Wise, Clinton, N.C., assignors to Vann Industries, Incorporated, Clinton, N.C., a corporation of West Virginia
Filed Dec. 17, 1968, Ser. No. 784,430
Int. Cl. F23n *1/02*
U.S. Cl. 431—182 **10 Claims**



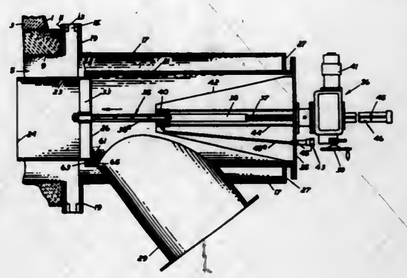
A burner unit comprising means defining a combustion zone, means for suppling air under pressure to the combustion zone, the air supply means having means operative to regulate the air intake thereof, means for supplying fuel under pressure to the combustion zone to provide a fuel-air mixture, the fuel supply means having means operative to regulate the supply of fuel to the combustion zone, actuating means operatively interconnecting the air intake regulating means and the feul supply regulating means movable between predetermined limits to actuate said regulating means, and means disposed in the combustion zone for igniting the fuel-air mixture.

3,556,701
COMBUSTION APPARATUS
Ryujiro Momoda and Hiroshi Yanabu, Nagassaki-shi, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan
Filed Dec. 11, 1968, Ser. No. 782,892
Int. Cl. F23c *5/10*
U.S. Cl. 431—181 **2 Claims**



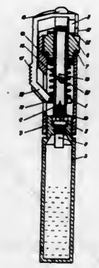
The outlet from a burner is divided into a number of alternating slit-shaped discharge openings for fuel gas and for air arranged side by side. A plurality of such burners open into a fire chamber in such a manner that the axes of flow from their outlet are offset from the center of the fire chamber.

3,556,702
BLAST FURNACE STOVE BURNER ASSEMBLY
Selwyne P. Kinney, Carnegie, and Hugh B. Carr, McMurray, Pa., assignors to S. P. Kinney Engineers, Inc., Carnegie, Pa., a corporation of Pennsylvania
Filed May 28, 1969, Ser. No. 828,557
Int. Cl. F23c *5/06*
U.S. Cl. 431—186 **3 Claims**



A gas burner for use on a blast furnace stove is disclosed wherein there are inner and outer concentric passages for the air and gas. There is a gate valve interposed between the end of the burner, and the inner passage is provided with a terminal section that telescopically engages a fixed inner duct section in such manner that it can be retracted when the gate valve is to be closed and extended to operating position when the gate valve is open and the burner is to be operated. A seal provided by cooperating flanges on the fixed and movable sections prevents leakage when the terminal section is fully extended. The fixed inner section has an offset bottom to provide a dust-collecting space.

3,556,703
SMALL LIGHTER
Peter Florjancic, Garmisch-Partenkirchen, Germany, assignor to S.A.F.F.A. S.p.A. Fabbriche Fiammiferi Ed Affini, Milan, Italy, a corporation of Italy
Filed Nov. 5, 1968, Ser. No. 773,545
Claims priority, application Austria, Nov. 9, 1967, 10,070/67
Int. Cl. F23q *1/02*
U.S. Cl. 431—273 **4 Claims**



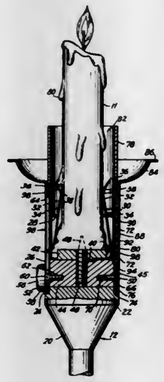
A gas-lighter having a spring biased flint which is axially urged against a friction roll.

3,556,704

ADJUSTABLE CANDLE HOLDER

Kate Grasznick, 1 Addison St., Larchmont, N.Y. 10538

Filed Apr. 15, 1969, Ser. No. 816,213
Int. Cl. F21v *35/00*
U.S. Cl. 431—290 8 Claims



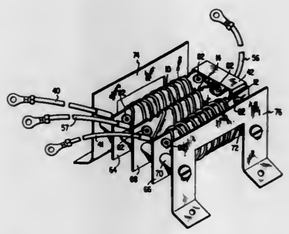
This invention covers an adjustable candle holder which includes supporting means having holding means extending from one end thereof and adapted to receive a candle of varying diameters with mounting means coupling the holding means to the supporting means for vertical adjustment therebetween so that the the exposed length of the candle beyond the supporting means may be adjusted and retained in a selected position by locking means associated with said supporting means and mounting means.

3,556,705

ELECTRICAL IGNITION AND CONTROL SYSTEM FOR FUEL BURNER

Jesse B. Mellett, Zionsville, and Tilford W. Sutterfield, Indianapolis, Ind., assignors to Stewart-Warner Corporation, Chicago, Ill., a corporation of Virginia

Original application July 1, 1968, Ser. No. 741,430. Divided and this application Oct. 8, 1969, Ser. No. 864,853
Int. Cl. F23g *7/06*
U.S. Cl. 431—258 4 Claims



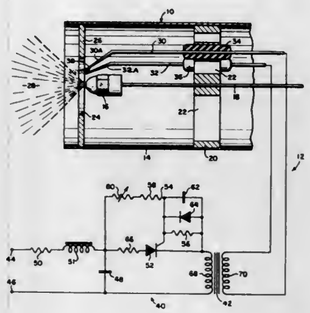
A temperature responsive switching circuit for a fuel burner which employs an assembly of resistances having positive temperature coefficients resistance for insuring a constant low voltage across the blower motor and the resistance igniter during burner start-up regardless of voltage fluctuation.

3,556,706

OIL BURNER SPARK IGNITION SYSTEM

Richard H. Campbell, Rockford, Ill., assignor to Webster Electric Company, Inc., Racine, Wis., a corporation of Delaware

Filed July 16, 1969, Ser. No. 842,247
Int. Cl. F23g *3/00*
U.S. Cl. 431—265 3 Claims



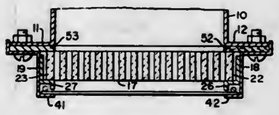
An oil burner ignition system produces a tongue-like configuration of individual sparks extending from a pair of discharge electrodes and into the spray pattern of oil particles produced by the burner nozzle. The system includes a spark generating relaxation oscillator circuit capable of producing individual sparks at a frequency such that subsequent sparks are able to follow the elongating ionized air path established by previous sparks. The oscillator circuit includes a capacitor charged from an AC power source and repetitively discharged during alternate half cycles at rapid intervals through the primary winding of a transformer by means of a controlled rectifier gated in accordance with the capacitor charge level.

3,556,707

GAS-FIRED RADIANT HEATER

Louis P. Hine, Jr., Elyria, Ohio, assignor to Luxaire, Inc., Elyria, Ohio, a corporation of Delaware

Filed June 5, 1969, Ser. No. 830,660
Int. Cl. F23d *13/12*
U.S. Cl. 431—328 6 Claims



A gas-fired radiant heater assembly having a plurality of porous ceramic tiles forming a radiant gas burning surface in which the tiles are supported on two parallel spaced longitudinally extending metal shelves of Z cross sectional shape with the depending leg of each shelf having a plurality of spaced apart stress relieving notches having their openings directed away from the hot radiant side of the tile members supported on the shelves. Each support shelf is secured to a respective long side of a rectangular frame member that is removably attached to the opening of the heater body.

CHEMICAL

ERRATUM

For Class 8—10.1 see:
Patent No. 3,555,584

3,556,708

CELLULOSE DYEING WITH DICHLOROACRYLAMIDE QUATERNIZED REACTIVE DYES

David I. Randall, Easton, Pa., assignor to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 17, 1965, Ser. No. 514,666
Int. Cl. C09b *5/62*
U.S. Cl. 8—39 4 Claims

A water soluble dyestuff containing at least one quaternized fiber-reactive α,β-dichloroacrylamide group of the formula

$$—NH—CO—CCl=CH—NR^1R^2R^3Cl$$

wherein R^1, R^2 and R^3 represent monovalent aliphatic radicals of no more than about 8 carbon atoms or at least two of R^1, R^2 and R^3 taken together, represent the atoms necessary to form with the depicted adjacent N atom a heterocyclic ring, and a method of dyeing therewith.

3,556,709

POLYOLEFIN FIBER DYEING WITH AN ARYLAZO 8 - HYDROXY - QUINOLINE - 5 - SULFONIC ACID AND FIBERS SO DYED

Marcel Georges Jirou, Sotteville-les-Rouen, and Joseph Khachoyan, Sierentz, France, assignors to Ugine Kuhlmann, Paris, France

No Drawing. Continuation-in-part of application Ser. No. 455,298, May 12, 1965. This application Sept. 27, 1967, Ser. No. 671,095

Claims priority, application France, May 15, 1964, 974,618

Int. Cl. D06p *1/02*
U.S. Cl. 8—42 8 Claims

The coloration of fibers of alpha olefin polymers containing metals, with a phenylazo-8-hydroxyquinoline-5-sulfonate with or without a 6-methyl group in the quinoline radical. The phenyl group may be substituted by halogen, methyl, alkoxy, nitro or cyano groups. The fibers are exemplified with polypropylene with nickel salts.

3,556,710

METHOD FOR BLEACHING TEXTILE FABRICS CONTAINING PORTIONS DYED WITH A SENSITIVE DYESTUFF

Neil J. Stalter, North Minister, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 20, 1967, Ser. No. 691,970

Int. Cl. D06l *3/02*
U.S. Cl. 8—111 8 Claims

Textile fabrics containing portions dyed with a sensitive dyestuff such as a vat dye, a naphthol dye or certain copper phthalocyanine dyes, are bleached by subjecting the fabric to the action of a bleaching solution containing a peroxymonosulfate, which solution is buffered at a pH of 5 to 8.5, preferably a pH of 5.5 to 7. Bleaching temperatures up to about the boiling point of water are usable. Preferably, the fabric is saturated with such a solution and then bleached in the saturated state.

3,556,711

PEROXYMONOSULFATE COMPOSITIONS CONTAINING ACYLATE OXIDATION PROMOTERS, AND THEIR USE

Neil J. Stalter, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 691,952, Dec. 20, 1967. This application June 16, 1969, Ser. No. 833,697

Int. Cl. D06l *3/02*
U.S. Cl. 8—111 20 Claims

Particulate compositons comprising admixtures of a water-soluble peroxymonosulfate and a water-soluble salt of a 1 to 4 carbon saturated aliphatic monocarboxylic acid as an oxidation promoter; also, aqueous compositions which are solutions of such a peroxymonosulfate having a pH of 5 to 10 and containing the acylate anion of such an acid. Such solutions are useful for oxidative purposes such as the bleaching of textiles which are amenable to bleaching with peroxymonosulfate, and the removal of stains therefrom. The preferred peroxymonosulfate is the triple salt of potassium peroxymonosulfate of the formula $KHSO_4 \cdot K_2SO_4 \cdot 2KHSO_5$. The preferred promoters are the alkali metal acetates, e.g., sodium acetate. The preferred particulate compositions are substantially anhydrous admixtures of the above potassium peroxymonosulfate, sodium acetate, a buffering agent such as trisodium phosphate or tetrasodium pyrophosphate, and a solid desicating agent, preferably anhydrous magnesium sulfate.

3,556,712

METHOD OF MAKING FLAME-PROOF FIBERS

Kazumasa Yoneshige and Haruo Teranishi, Tokyo, Japan, assignors to Nippon Carbon Company, Limited, Tokyo, Japan

Filed May 23, 1968, Ser. No. 731,546

Claims priority, application Japan, June 3, 1967, 42/35,162

Int. Cl. C01b *31/07*
U.S. Cl. 8—116 1 Claim

In a process for the manufacture of a high tenacity high flame-proof carbonized fiber from a cellulosic viscose rayon, a modified viscose rayon fiber having a high degree of polymerization is used as a starting cellulosic material.

3,556,713

ACETYLATED METHYLOL CARBAMATE FINISHING AGENTS WITH REDUCED FORMALDEHYDE ODOR FOR CELLULOSIC CONTAINING TEXTILE MATERIALS

Russell M. H. Kullman, Metairie, and John G. Frick, Jr., and Robert M. Reinhardt, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Aug. 23, 1968, Ser. No. 754,969

Int. Cl. D06m *13/40*; C07c *125/04*
U.S. Cl. 8—116.3 3 Claims

Finishing agents for fabrics of cellulosic fiber are formed by acetylation of methylol carbamates. The acetoxymethyl agents so formed can be used to produce wash-wear and durable-press cellulosic fabric with little release of formaldehyde during treatment of the fabric.

3,556,714
NOVEL UNSYMMETRICAL SULFONES AND METHOD OF CROSSLINKING CELLULOSIC MATERIALS THEREWITH AND REACTION PRODUCTS PRODUCED THEREBY

Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Feb. 8, 1967, Ser. No. 614,540
Int. Cl. D06m *13/10, 13/28, 13/54*
U.S. Cl. 8—120 7 Claims

Unsymmetrical sulfones of the structure:

(a) $R'O-CH(R''')-CH_2-SO_2-CH_2-CH_2-OR''$

wherein R' and R'' are H, alkyl groups from 1 to 5 carbon atoms, or alkanoyl groups from 2 to 6 carbons, R''' is alkyl, substituted alkyl or aryl, and

(b) $CH_2(O)CH-CH_2SO_2CH_2CH_2OR''$

wherein R'' is defined above.

Reaction of sulfones with cellulosic textile materials in two steps under different reaction conditions to obtain crosslinked cellulosic materials having improved crease recovery properties.

3,556,715
AQUEOUS DYE BATH COMPOSITION AND PROCESS FOR THE DYEING OF SHAPED ARTICLES OF POLYACRYLONITRILE

Ernst Schmitt, Cologne-Buchheim, Walter Hees, Cologne-Hoehenberg, and Mathieu Quaedvlieg, Opladen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

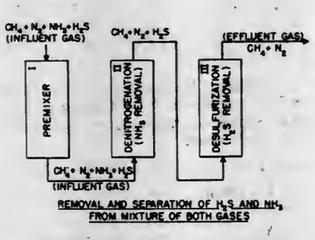
No Drawing. Filed May 1, 1967, Ser. No. 634,898
Claims priority, application Germany, May 27, 1966, F 49,310
Int. Cl. D06p *5/00;* C07d *27/00*
U.S. Cl. 8—168 4 Claims

A process and article of manufacture obtained wherein shaped articles of polyacrylonitrile or copolymers of acrylonitrile with other vinyl compounds exemplified by vinyl chloride and acrylic acid alkyl esters, said articles being treated with a cationic dyestuff in a heated dyeing composition containing about .5–2.5% by weight of the quaternization product of an alkenyl-succinic acid imidamine.

3,556,716
REMOVAL OF H_2S AND NH_3 FROM GAS STREAMS

Frank X. Pollio, Philadelphia, Pa., Kenneth A. Kun, Tokyo, Japan, and Robert Kunin, Yardley, Pa., assignors to Rohm and Haas Company, Philadelphia, Pa., a corporation of Delaware

Filed Apr. 5, 1967, Ser. No. 628,579
Int. Cl. G01d *53/00, 53/14;* C01c *1/12*
U.S. Cl. 23—2 20 Claims



Natural gases, particularly those resulting from petroleum refining operations, frequently contain undesirably excessive quantities of H_2S and NH_3. The H_2S gas is removed by treatment with substantially anhydrous macroreticular or macroporous ion exchange resins having a prescribed minimum surface area and ion exchange functionality. The NH_3 is removed by treatment with carboxylic type cation exchange resins.

3,556,717
CONVERSION OF MONOAMMONIUM ALUMINUM TETRAFLUORIDE TO CRYOLITE

Gustave E. Kidde, 294 California Terrace, Pasadena, Calif. 91105

No Drawing. Filed Feb. 25, 1969, Ser. No. 802,274
Int. Cl. C01f *7/50, 7/54*
U.S. Cl. 23—88 6 Claims

This disclosure describes a process for the conversion of monoammonium aluminum tetrafluoride (NH_4AlF_4) to cryolite through a reaction with ammonium fluoride in a basic solution.

3,556,718
FREE FLOWING MIXTURES CONTAINING SODIUM CHLORIDE AS PREDOMINANT COMPONENT

Rudolf Bachmann and Leonore Gentsch, Hannover, Germany, assignors to Salzdetfurth Aktiengesellschaft, Hannover, Germany

No Drawing. Filed Aug. 31, 1967, Ser. No. 664,608
Int. Cl. C01d *3/26*
U.S. Cl. 23—89 7 Claims

Free flowing mixtures containing subdivided sodium chloride as a predominant component having 0.0001 to 1 weight percent of a morpholine compound selected from the group consisting of compounds of the formula



wherein R is selected from the group consisting of alkyl and alkenyl of 6 to 22 carbon atoms and the water soluble salts thereof with strong acids in intimate admixture therewith as a caking inhibitor.

3,556,719
PROCESS OF PREPARING HYDROXYLAMMONIUM SULFATE

Wallace F. Runge and Herbert L. Wehrmeister, Terre Haute, Ind., assignors to Commercial Solvents Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Continuation of application Ser. No. 440,937, Mar. 18, 1965. This application Mar. 20, 1969, Ser. No. 809,488
Int. Cl. C01c *1/24*
U.S. Cl. 23—117 6 Claims

A process for preparing hydroxylammonium sulfate comprising adding to an aqueous solution of hydroxylammonium acid sulfate an alcohol selected from the group consisting of 1-propanol, 2-propanol, 2-methyl-1-propanol, 1-butanol and 2-butanol.

3,556,720
PREPARATION OF TITANIUM PHOSPHATE FIBERS

Kenneth E. Cox, Albuquerque, N. Mex., and Henry N. Beck, Walnut Creek, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 634,106, Apr. 27, 1967. This application Mar. 5, 1969, Ser. No. 804,671
Int. Cl. C01b *25/00;* C08g *51/04*
U.S. Cl. 23—105 9 Claims

The present invention relates to a novel fibrous titanium phosphate product and a method of its preparation by reacting a titanium source material, and a phosphate source material in the presence of water and under controlled reaction conditions.

3,556,721
PROCESS FOR PURIFYING CRUDE COKE-OVEN GASES

Paul Radusch, Essen, Germany, assignor, by mesne assignments, to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware

Filed Aug. 15, 1968, Ser. No. 752,982
Claims priority, application Germany, Oct. 27, 1967 1,669,326
Int. Cl. C01c *1/24*
U.S. Cl. 23—119 9 Claims

A process for purifying crude coke oven gases includes the steps of flowing cooled and detarred crude gas upwardly in a three-stage gas scrubber, the top stage of which is charged with crude ammonia liquor condensate accumulating from prior cooling of the gas. The aqueous effluent of the third washing stage is delivered to the top of the bottom or first washing stage while the middle or second washing stage is treated with deacidified recycle water. The aqueous effluent accumulating in the first and second washing stages are separately introduced into a distillation column in such a way that each receives a different treatment, but the resulting liquid, after at least partial deacidification, is pumped back to the second washing stage.

3,556,722
PROCESS FOR TREATING SULFUROUS ACID GAS-CONTAINING EXHAUST GAS

Tooru Ōwaki, Hyogo-ken, Japan, assignor to Furukawa Mining Co., Ltd., Tokyo, Japan

Filed Sept. 21, 1967, Ser. No. 669,537
Claims priority, application Japan, Sept. 24, 1966, 41/62,848
Int. Cl. C01b *17/60;* C01f *11/46*
U.S. Cl. 23—122 3 Claims

A process which comprises treating exhaust gas containing sulfurous and/or sulfuric acid gas with a solution or suspension of the hydroxide or carbonate of calcium, to produce the corresponding sulfite and/or sulfate, adding waste sulfuric acid to the liquid so obtained to convert the sulfite to the corresponding sulfate simultaneously with the evolution of sulfurous acid gas and degassing the liquid thus obtained by blowing the air thereinto, to recover the sulfate and sulfurous acid gas from the exhaust gas and consequentially eliminate a public nuisance otherwise caused thereby.

3,556,723
CONTROL OF PHOSPHATE IMPURITIES IN ACID ALUMINA PROCESSES

Thomas R. Scott, Blackburn, Victoria, and Peter T. Davey, Mount Waverley, Victoria, Australia, assignors to Commonwealth Scientific and Industrial Research Organization, East Melbourne, Victoria, Australia, a body corporate

Filed Mar. 13, 1969, Ser. No. 806,945
Claims priority, application Australia, Mar. 21, 1968, 35,386/68
Int. Cl. C22b *59/00*
U.S. Cl. 23—123 16 Claims

A process is provided whereby the amount of dissolved phosphate impurities in acid aluminium sulphate solutions and liquors may be reduced. An acid soluble compound of at least one metal selected from zirconium, titanium, hafnium and thorium is added to the solution or liquor to precipitate dissolved phosphate impurities as phosphates of the added metal or metals.

To increase the rate of precipitation of the phosphates, the mixture resulting from the addition of the acid soluble compound is heated for a short time.

3,556,724
PHOSPHORIC ACID PROCESS

Warren Fuchs, Syosset, N.Y., and Dennis A. Wheeler, Saginaw, Mich., assignors to Baker Perkins Inc., Saginaw, Mich., a corporation of New York, and Treadwell Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 638,743, May 16, 1967. This application May 21, 1969, Ser. No. 826,668
Int. Cl. C01b *25/18, 25/22*
U.S. Cl. 23—165 3 Claims

A process for the production of high strength phosphoric acid wherein the ground rock at about —200 mesh is acidulated in a first step with mineral acid such as sulfuric acid in amounts equivalent to 10% to 50% of the total calcium present in the rock. This initial reaction generates heat and liberates gases and is controlled in temperature and time to obtain effective defluorination. The degassed rock is then passed to an endmix or second reaction stage for completing acidulation. After completing acidulation in the endmix stage the fully acidified rock is leached to recover the product phosphoric acid.

3,556,725
PROCESS FOR PRODUCING LOW-BULK DENSITY SILICA

Vincent Chiola, Joseph E. Ritsko, and Clarence D. Vanderpool, Towanda, Pa., assignors to Sylvania Electric Products Inc., a corporation of Delaware

No Drawing. Filed Feb. 26, 1969, Ser. No. 802,628
Int. Cl. C01b *33/12*
U.S. Cl. 23—182 8 Claims

An improvement to the process for producing silica from tetraalkyl silicate comprising conducting the hydrolysis of the tetraalkyl silicate in the presence of a cationic surface active agent to thereby control the bulk density of the resulting silica between bulk densities of from about 6 pounds per cubic foot and about 23 pounds per cubic foot.

3,556,726
METHOD OF PREPARING PERCHLORYL FLUORIDE

Vytautas Grakauskas, Arcadia, Calif., assignor to Aerojet-General Corporation, Azusa, Calif., a corporation of Ohio

No Drawing. Continuation of application Ser. No. 204,663, June 19, 1962. This application July 11, 1968, Ser. No. 744,621
Int. Cl. C01b *9/08, 11/00, 11/24*
U.S. Cl. 23—203 4 Claims

Process of preparing chlorofluoride compounds by reacting elemental fluorine with an alkali metal chlorate or an alkali metal perchlorate salt in the presence of a moderator such as water, lower alkanols and lower alkylene glycol.

3,556,727
PURIFICATION OF AQUEOUS HYDROGEN PEROXIDE SOLUTIONS CONTAINING DISSOLVED ORGANIC COMPOUND BY USE OF NONIONIC POROUS RESIN

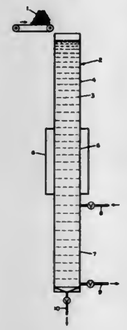
Pierre Thirion, Poisat par Eybens, France, assignor to La Societe dite Oxysynthese

No Drawing. Filed July 16, 1968, Ser. No. 745,102
Claims priority, application France, Aug. 1, 1967, 116,485
Int. Cl. C01b *15/02;* C07c *49/68*
U.S. Cl. 23—207 10 Claims

A process for the organic purification of aqueous solutions of hydrogen peroxide containing organic compounds possibly dissolved in the presence of mineral compounds, wherein the said aqueous solutions are treated with ad-

sorbent, porous, synthetic resins deprived of chemical functions, obtained by simple polymerisation or copolymerisation, with a high specific surface.

3,556,728
SULFUR EXTRACTION PROCESS
John H. Bailey, Sulphur, La., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed May 20, 1969, Ser. No. 826,099
Int. Cl. C01b *17/08;* **B01d** *9/00*
U.S. Cl. 23—308 **7 Claims**



Sulfur extraction from crushed ore, as the result of heating of said ore as it descends in an area of hot fluid to produce globules of said sulfur.

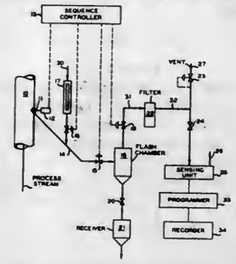
This invention relates to a method of separating sulfur from ore at ground level.

3,556,729
PROCESS FOR OXIDIZING AND CARBONIZING ACRYLIC FIBERS
John R. Holsten and Jerimah G. Morrison, Jr., Raleigh, N.C., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Mar. 24, 1969, Ser. No. 809,998
Int. Cl. C01b *31/07*
U.S. Cl. 23—209.1 **10 Claims**

This invention provides a process for preoxidizing acrylic fibers which can be converted into carbon or graphite fibers of high strength and modulus. The process involves first heating the fiber, while under tension, to a temperature below 250° C. in an atmosphere of oxygen and bromine for a time sufficient to form a permeable sheath around the fiber. The fiber is next heated in an oxygen atmosphere at a temperature above 250° C. for a time sufficient to allow complete permeation of oxygen throughout the core of the fiber. The oxidized fibers are useful for the construction of fireproof fabrics and may also be carbonized or graphitized by heating in an inert atmosphere at the appropriate temperatures.

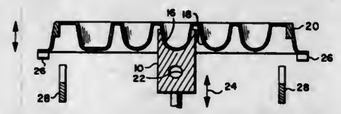
3,556,730
SAMPLING SYSTEM
John Mitacek, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Oct. 21, 1968, Ser. No. 769,077
Int. Cl. G01n *31/08*
U.S. Cl. 23—230 **4 Claims**

A sample of reactive fluid comprising liquid, dissolved gas and suspended particulate solids is automatically withdrawn from a reactor into a fixed volume chamber by the timed action of a series of controlled valves. The reaction fluid in the chamber is then rendered nonreactive by immediately adding a predetermined volume of reaction termination fluid. The nonreactive sample is automatically discharged into a separation chamber from



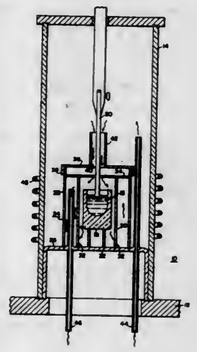
which part of the dissolved gas and liquid is continuously analyzed.

3,556,731
AUTOMATED INCUBATION APPARATUS
Donald N. Martin, Whittier, Calif., assignor to Beckman Instruments, Inc., a corporation of California
Filed Jan. 22, 1968, Ser. No. 699,569
Int. Cl. G01n *1/00*
U.S. Cl. 23—253 **8 Claims**



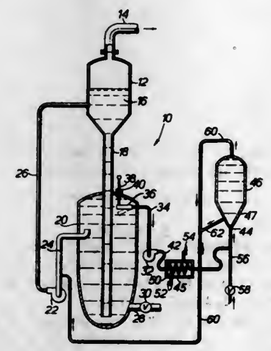
An incubator for use in automated chemical analyzer systems having the form of a serrated block of aluminum or the like, each serration or tooth being hollowed out and having an inner surface into which the outer surface of a capsule cup is adapted to fit snugly, the aluminum block containing a heater controlled by a thermoswitch and serving by contact with the capsule cup to heat liquid contained in the cup for the incubation thereof, the block being mounted for vertical movement and adapted to be brought up to engage around the cup of the capsule.

3,556,732
APPARATUS FOR THE THERMAL TREATMENT OF A SEMICONDUCTOR MATERIAL HAVING A VOLATILE COMPONENT
Hung Chi Chang, Monroeville, and Ting Li Chu, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 31, 1968, Ser. No. 701,967
Int. Cl. B01d *9/02*
U.S. Cl. 23—273 **4 Claims**



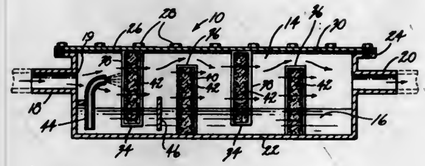
A semiconductor material having a volatile component is thermally treated in an ambient formed by a gaseous mixture which constantly maintains the stoichiometry of the semiconductor material during the thermal treatment.

3,556,733
FINES DISSOLVER FOR CRYSTALLIZERS
Robert Howard Hedrick, Warren, Pa., assignor to Struthers Scientific and International Corporation, a corporation of Delaware
Filed Apr. 5, 1968, Ser. No. 719,112
Int. Cl. B01d *9/02*
U.S. Cl. 23—273 **2 Claims**



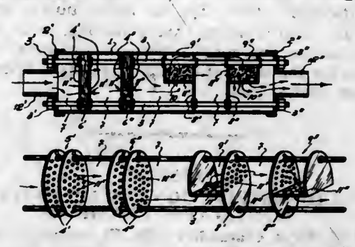
A dissolver for fine crystals in a slurry has a second hydraulically balanced exit flow positioned to draw off larger crystals and prevent crystal buildup and resulting plugging of the dissolver.

3,556,734
EXHAUST GAS CONDITIONING APPARATUS
Leander J. Peterson, 100 Oakwood Ave., West Hartford, Conn. 06119
Filed Feb. 5, 1968, Ser. No. 703,020
Int. Cl. F01n *3/16*
U.S. Cl. 23—277 **6 Claims**



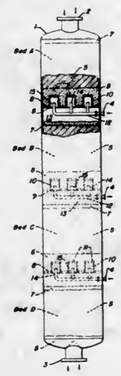
An exhaust gas purifying apparatus having a closed housing defining a chamber containing a filter and partially filled with a purifying liquid. Gas inlet and outlet conduits connected to the housing at opposite ends thereof provide a generally horizontal path of gas flow through the chamber and above the surface of the purifying liquid. A means is provided for continuously conducting purifying liquid upwardly in the chamber and discharging it above the liquid surface and toward the filter to wet the filter medium so that gases passing through the chamber are exposed to both the filter medium and the purifying liquid.

3,556,735
MUFFLER ADAPTED TO PURIFY THE EXHAUST GASES OF INTERNAL COMBUSTION ENGINES
Jacobo Epelman, Bartolome Mitre 1934, Buenos Aires, Argentina
Filed June 23, 1967, Ser. No. 648,481
Int. Cl. B01d *46/12;* **B01j** *9/04;* **F01n** *3/10*
U.S. Cl. 23—288 **1 Claim**



A muffler which silences and purifies exhaust gases and is adapted to be assembled and easily dismantled for cleaning without removing the outer shell, the muffler comprising a tubular elongated shell having straight sides, inlet and outlet and covers for the open ends, longitudinal bolts which press the active purifying means in proper position within the shell, the bolts being threaded at the ends passing through the covers, the threaded ends engaging nuts and the purifying means including porous packing elements within the shell which are also retained within pairs of perforated partitions by the bolts. The end nuts, when loosened, open the covers and perforated partitions to permit replacement and/or cleaning of the packing elements. The purifying means includes means which destroy the carbon monoxide. The relationship between the perforated covers, the packing elements and the shell is such as to provide a chamber through which the exhaust gases pass and a filter section through which all of the exhaust gases flow.

3,556,736
FLUID DISTRIBUTION FOR FLUID-SOLID CONTACTING CHAMBERS
David M. Boyd, Clarendon Hills, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Dec. 20, 1968, Ser. No. 785,666
Int. Cl. B01j *9/02, 9/04*
U.S. Cl. 23—288 **12 Claims**



An apparatus for contacting two fluids in a fluid-solids contacting zone such as an adsorption zone or a reaction zone. A first fluid is passed downwardly into

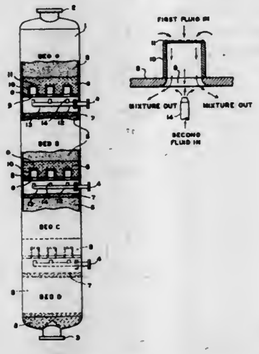
a distributor downcomer and a second fluid is passed upwardly into the downcomer via an inlet nozzle contained within the downcomer. A resulting mixture of first and second fluid passes downflow through the annulus confined between the downcomer wall and the inlet nozzle, and enters a bed of particulated solids below. The apparatus is also applicable to upflow processing through beds of particulated solids. Specific application is in hydrogenation, hydrotreating, hydrocracking, and hydrodealkylation reaction zones, wherein a hydrogen stream is utilized for the thermal quench of reactant hydrocarbon between catalyst beds.

3,556,737

FLUID DISTRIBUTION FOR FLUID-SOLID CONTACTING CHAMBERS

David M. Boyd, Clarendon Hills, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Dec. 20, 1968, Ser. No. 785,667
Int. Cl. B01j *9/02, 9/04*
U.S. Cl. 23—288 **12 Claims**



An apparatus for contacting two fluids in a fluid-solids contacting zone, such as an adsorption zone or a reaction zone. A first fluid is discharged downwardly from a conduit spaced above a bed of particulated solids. From a nozzle spaced below the conduit, a second fluid is discharged upward into the first fluid discharge in a manner sufficient to produce a spray of mixed first and second fluid which passes into the bed below. Specific application is in hydrogenation, hydrotreating, hydrocracking, and hydrodealkylation reaction zones, wherein a hydrogen stream is utilized for the thermal quench of reactant hydrocarbon between catalyst beds.

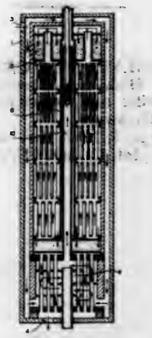
3,556,738

EXOTHERMIC CATALYTIC GAS REACTOR

Robert Schober, Carl Boschweg 8, Linz, Austria

Filed July 24, 1967, Ser. No. 655,585
Int. Cl. B01j *9/00*
U.S. Cl. 23—289 **7 Claims**

In a cylindrical high pressure reactor, for instance for ammonia synthesis, a system of concentric fresh gas cooling tubes arranged with a surface decreasing towards the bottom, which extends through the entire catalyzer space in an axial plane according to height and breadth. Baffle plates are arranged horizontally in the catalyzer column with alternating peripheral recesses to guide the stream



of reaction gas in a variable horizontal direction transversely through the cooling tube system.

3,556,739

CLEANING PHOSPHORIC ACID INCLUDING RECOVERY FROM THE ORGANIC SOLVENT BY HEATING TO STRATIFY INTO AN ACID LAYER AND AN ORGANIC LAYER

Avraham Matitiahu Baniel, and Ruth Blumberg, Haifa, Israel, assignors to Israel Mining Industries—Institute for Research and Development, Haifa, Israel, an Israeli company

No Drawing. Continuation-in-part of application Ser. No. 610,758, Jan. 23, 1967, which is a continuation-in-part of application Ser. No. 438,093, Mar. 8, 1965. This application Oct. 24, 1968, Ser. No. 770,410
Int. Cl. B01d *11/04;* **C01b** *25/22*
U.S. Cl. 23—312 **8 Claims**

Process which comprises extracting technical grade phosphoric acid with certain organic solvents selected from the group of esters, ketones and glycol ethers, which fulfill the conditions set forth below, a small proportion of sulfuric acid being advantageously admixed with the technical grade phosphoric acid prior to said extraction:

(a) Practically not to extract H_3PO_4 from an aqueous phosphoric acid whose H_3PO_4 concentration is below a threshold value of about 35% by weight;

(b) To extract, from an aqueous phosphoric acid of a concentration above the aforesaid threshold value, a substantial proportion of H_3PO_4, which is the larger the higher the H_3PO_4 concentration of the aqueous acid;

(c) To possess a temperature-dependent capability of dissolving phosphoric acid, being substantially greater at low temperatures than at high temperatures;

separating an H_3PO_4-containing solvent extract from the residual technical-grade phosphoric acid, and recovering purified phosphoric acid from said extract.

3,556,740

PREPARATION OF COMPLEX METAL HYDRIDES

Jawad H. Murib, St. Bernard, Ohio, assignor to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Feb. 4, 1958, Ser. No. 713,091
Int. Cl. C01b *6/28*
U.S. Cl. 23—365 **10 Claims**

1. A method for preparation of complex metal hydrides of the formula

$$RXH_4$$

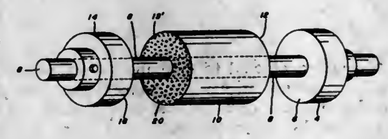
wherein R is an alkali metal and X is a metal from the group consisting of aluminum, gallium, indium, and thallium which comprises hydrogenating a metal from the aforesaid group in the presence of an alkali metal hydride and an ether solvent for the complex metal hydride product at hydrogen pressure of from about 500 to about 4,000 pounds per square inch at a temperature of from about 50° to about 100° C. for from about one to about twenty hours.

3,556,741

METHOD OF KEYING A CARBIDE WORKPIECE TO A DRIVE MEMBER

William H. Bleecker, Pleasant Ridge, Mich., assignor to Carmet Company, Pittsburgh, Pa., a corporation of New Jersey

Filed Nov. 20, 1968, Ser. No. 777,276
Int. Cl. B23p *11/00*
U.S. Cl. 29—148.4 **10 Claims**



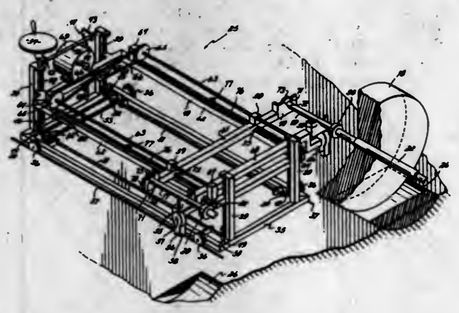
A method of mechanically locking a work roll to a steel drive hub which includes brazing a carbide grit to the lateral surfaces of the roll and pressing the grit into the cooperating surface of the steel drive hub eliminating any void between the roll and the hub to lock the roll and hub in such relation.

3,556,742

SHAFT PULLER

James A. Benzing, Hamilton, Ohio, assignor to U.S. Plywood-Champion Papers Inc., Hamilton, Ohio, a corporation of New York

Filed Jan. 9, 1969, Ser. No. 790,067
Int. Cl. B23p *19/04*
U.S. Cl. 29—256 **8 Claims**



Apparatus for pulling a shaft from a roll of paper the apparatus including a yoke for engaging the end of a shaft and means for moving the yoke away from the roll to withdraw the shaft from the roll.

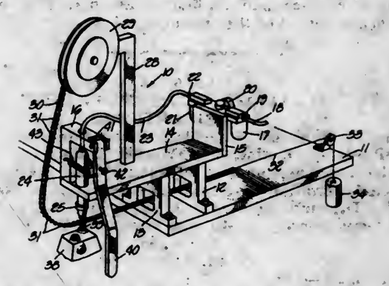
3,556,743

METHOD AND APPARATUS FOR INSTALLING THREAD INSERTS

Paul Allen Yeager, Lynwood, Calif., assignor to Sabema Corporation, Gardena, Calif., a corporation of California

Filed Dec. 23, 1968, Ser. No. 786,311
Int. Cl. B23p *19/00, 19/04;* **B23q** *7/10*
U.S. Cl. 29—429 **11 Claims**

An apparatus rotatably supports a reel of tape in which a plurality of metal thread inserts are releasably mounted in series. The tape is fed past a rigidly supported power tool which operably engages the inserts and screws the



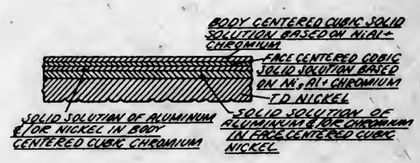
inserts into threaded holes on a workpiece manually supported and positioned to receive the insert.

3,556,744

COMPOSITE METAL ARTICLE HAVING NICKEL ALLOY HAVING COATS CONTAINING CHROMIUM AND ALUMINUM

Stanley G. Berkley, Colchester, Conn., and Frank Suyama, West Palm Beach, Fla., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

Filed Aug. 16, 1965, Ser. No. 480,029
Int. Cl. B32b *15/00*
U.S. Cl. 29—183.5 **5 Claims**



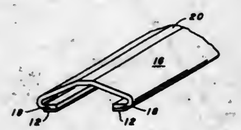
An article and a method for producing an article having high-temperature resistance. An alloy from the group consisting of nickel base, cobalt base and iron base alloys is provided with a chromium coating by a dispersion method and a second chromium-aluminum method by the same dispersion method.

3,556,745

STAINLESS STEEL TRIM MEMBER ASSEMBLY

Donald R. Zaremski, Cheswick, Pa., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania

Original application Apr. 28, 1965, Ser. No. 451,429, now Patent No. 3,484,350, dated Dec. 16, 1969. Divided and this application Apr. 9, 1969, Ser. No. 814,762
Int. Cl. B60r *13/04;* **B32b** *15/18*
U.S. Cl. 29—183.5 **5 Claims**



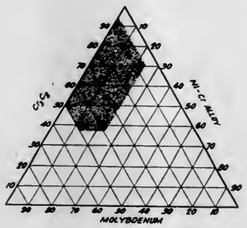
The application describes an assembly comprising a stainless steel trim member and a first metal which is less noble in the electromotive series than stainless steel.

The trim member has an exposed surface and a contact surface abutting the first metal. The contact surface has a coating of second metal which is less noble in the electromotive series than the first metal whereas the exposed surface is devoid of the second metal.

3,556,746
METALLIZING THERMOPLASTIC SHAPED ARTICLES
Gunther Bernhardt, Hangelar, Robert Buning and Egon Bierwirth, Oberlar, and Werner Trautvetter, Spich, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany, a corporation of Germany
No Drawing. Filed Oct. 3, 1968, Ser. No. 765,748
Claims priority, application Germany, Oct. 5, 1967, D 54,263
Int. Cl. B32b *15/08*
U.S. Cl. 29—195 **5 Claims**

A shaped article of a vinylchloride grafted copolymer of ethylene and vinylchloride having on the surface thereof a metal film and process for producing such metallized shaped article comprising (1) preparing an ethylene-vinylchloride copolymer, (2) grafting vinylchloride onto said copolymer, (3) forming said graft copolymer into a shaped article and (4) applying a metal film to the surface of said article.

3,556,747
PISTON RING COATINGS FOR HIGH TEMPERATURE APPLICATIONS
Glenn F. Hyde, Timonium, and John E. Cromwell, Baltimore, Md., assignors to Koppers Company, Inc., a corporation of Delaware
Filed Nov. 7, 1967, Ser. No. 681,153
Int. Cl. B32b *15/00*
U.S. Cl. 29—198 **5 Claims**

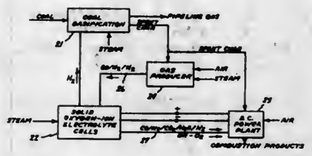


A coating for piston rings which can be used in internal combustion engines such as diesel engines at temperatures about 700° F. comprises a mixture of chromium carbide and molybdenum which may also include a minor portion of a nickel-chromium alloy. The composition is applied to the piston ring with a plasma-arc gun to bond the composition to the base material.

3,556,748
ANTIOXIDANT MIXTURE OF N-PHENYL-N'-SEC-ALKYL - ORTHO - PHENYLENEDIAMINE AND N,N' - DI - SEC - ALKYL-ORTHO-PHENYLENE-DI AMINE, AND USE THEREOF
Russell F. Stedman, Des Plaines, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed July 5, 1966, Ser. No. 562,502
Int. Cl. C10l *1/22*
U.S. Cl. 44—72 **9 Claims**

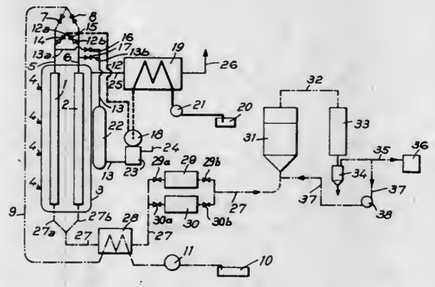
A mixture of N-phenyl-N'-sec-alkyl-ortho-phenylenediamine and an N,N'-di-sec-alkyl-ortho-phenylenediamine. The mixture is useful as an antioxidant in gasoline.

3,556,749
APPARATUS AND METHOD FOR THE HYDROGENATION OF COAL
Henry S. Spacil, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York
Filed July 5, 1968, Ser. No. 742,824
Int. Cl. C10j *3/00, 3/06*
U.S. Cl. 48—77 **6 Claims**



The conversion of coal to methane by reaction thereof with hydrogen gas at elevated temperatures and pressures in the presence of a catalyst in a gasifier apparatus wherein the hydrogen gas required is supplied by the dissociation of water vapor. Power for the dissociation is generated in a power station in which carbonaceous char (which is a by-product of the coal hydrogenation occurring in the gasifier) and air (which may, if desired, be enriched by oxygen produced during the dissociation) are burned. The dissociation is accomplished in solid oxygen-ion electrolyte cells preferably operating at temperatures in excess of 800° C.

3,556,750
PROCESS FOR THE MANUFACTURE UNDER PRESSURE OF GASES WHICH MAY BE SUBSTITUTED FOR NATURAL GASES
Andre A. Salvadori and Carmelo A. Farrugia, Paris, Andre P. Lecoanet, Soisy-sur-Montmorency, and Philippe Lovy, deceased, late of Roissy-en-Brie, France, by Mrs. Philippe Lovy, born Louise Schmidt, administratrix, Roissy-en-Brie, France, assignors to Service National dit: Gaz de France, Paris County, France
Filed July 26, 1967, Ser. No. 657,470
Claims priority, application France, July 26, 1966, 70,813
Int. Cl. B01j *9/04, 11/04;* **C01b** *2/16*
U.S. Cl. 48—197 **4 Claims**



An installation for manufacturing gas under pressure in which liquid or gaseous petroleum hydrocarbons are cracked under pressure on a weak catalyst in the presence of steam in a first series of reactors, while simultaneously, in another series of reactors the used weak catalyst is regenerated by means of a certain quantity of steam and

air at the same pressure as the cracking process. This cracking and regeneration being carried out while external heat is continuously applied. The gases resulting from the cracking and regeneration process being mixed together to form a basic gas which is purified at the same pressure as that used during the cracking process and then subjected to an auto-hydrogenation process in the presence of a second catalyst including a metal of the platinum family.

3,556,751
PRODUCTION OF SYNTHESIS GAS
William L. Slater, La Habra, and John C. Ahlborn, Pomona, Calif., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 5, 1968, Ser. No. 719,229
Int. Cl. C01b *2/14*
U.S. Cl. 48—215 **11 Claims**

Producing synthesis gas or fuel gas wherein the feedstock for a partial oxidation gas generator comprises a mixture of carboniferous fuel and from about 1 to 80 wt. percent of an oxygenated hydrocarbonaceous organic material which supplies the feedstock with a minimum of 0.5 wt. percent of combined oxygen, and the product gas comprises principally CO and H_2 together with minor amounts of H_2O, CO_2, CH_4, and unconverted carbon. By reacting isobutyraldehyde or molasses with heavy fuel oil or vacuum residuum the concentration of CH_4 in the product gas may be increased while the free oxygen consumption and the reaction temperature at a given level of soot production and steam/fuel ratio is decreased.

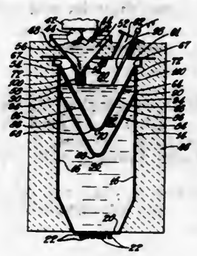
3,556,752
TREATED BRUSH AND BRUSH TREATING COMPOSITION
David W. Wilson, Bay Village, Ohio, assignor, by mesne assignments, to The Sherwin-Williams Company, a corporation of Ohio
Continuation-in-part of application Ser. No. 74,832, Dec. 9, 1960. This application Nov. 5, 1963, Ser. No. 332,321
Int. Cl. B24d *11/00;* **C08g** *51/12*
U.S. Cl. 51—295 **18 Claims**



A two-phase brush treating composition capable of withstanding high temperatures and of retaining abrasive particles formed from a film forming resin in continuous phase and a dispersed phase of small particles of tackifier resin which is incompatible with the film forming resin.

3,556,753
METHOD FOR MELTING AND PROCESSING HEAT-SOFTENABLE MINERAL MATERIALS
Hellmut I. Glaser, Rte. 3, Pine Tree Drive, Newark, Ohio 43055
Original application Aug. 20, 1965, Ser. No. 481,172, now Patent No. 3,401,536, dated Sept. 17, 1968. Divided and this application Sept. 12, 1968, Ser. No. 759,282
The portion of the term of the patent subsequent to Sept. 17, 1985, has been disclaimed
Int. Cl. C03b *37/00*
U.S. Cl. 65—2 **4 Claims**

The disclosure embraces a method of thermally conditioning and processing heat-softened glass in a stream feeder chamber by traversing the glass in both downwardly and upwardly directed paths and heating the glass

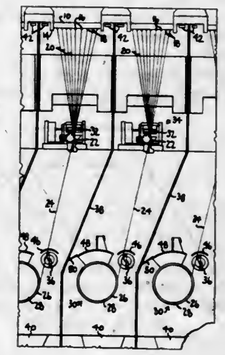


to promote the effluence of gas bubbles to effect improved refinement of the glass.

3,556,754
COATING COMPOSITIONS FOR GLASS FIBERS
James G. Marsden, Tonawanda, and Samuel Sterman, Williamsville, N.Y., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Continuation of application Ser. No. 454,705, May 10, 1965. This application June 27, 1969, Ser. No. 840,593
Int. Cl. C03c *25/02;* **C08g** *31/18*
U.S. Cl. 65—3 **5 Claims**

This application relates to binder compositions for treating fibrous glass. The compositions contain a film-forming organic compound, a coupling agent (i.e., a metal complex, a silane or a siloxane) and a hydrolytically stable siloxane-oxylalkylene copolymer. The block copolymer functions both as an antistatic agent and as a lubricant for the glass fibers. Mixtures containing only the coupling agent and the block copolymer are claimed as well as the above-mentioned compositions and a process for treating glass fibers therewith.

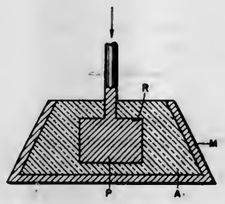
3,556,755
APPARATUS FOR MANUFACTURING FIBER GLASS
Joseph B. Dent, Jr., Lexington, N.C., assignor to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 9, 1968, Ser. No. 743,451
Int. Cl. C03b *37/00*
U.S. Cl. 65—11 **3 Claims**



This invention involves an apparatus for the manufacture of glass fibers in which the fibers are drawn through

a bushing and attenuated into fibers. These fibers are collected on a winder having a metal guard to protect the winder from falling beads and to direct undesirable air currents into a waste chute located below.

3,556,756
METHOD OF PRESSING INTRICATE GLASS ARTICLES
Chester A. Andrysick, Corning, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Oct. 9, 1967, Ser. No. 673,656
Int. Cl. C03b *19/02*
U.S. Cl. 65—23 **2 Claims**



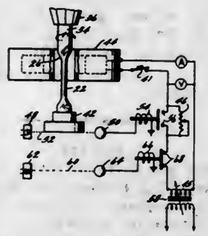
A method of press-forming intricate hollow glass articles having recessed or undercut portions by utilizing plunger and/or mold members with a melting temperature below the annealing point temperature of the glass composition. By heating the pressed article and the mold and/or plunger to the annealing temperature of the glass, the glass is annealed while simultaeously meltably removing the mold and/or plunger.

3,556,757
ALKALI METAL SALT BATH WITH ALKALI METAL ACETATE ADDITIVE FOR TREATMENT OF GLASSES AND GLASS-CERAMICS
Theodore R. Kozlowski, Horseheads, and Dennis A. Krygier, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
No Drawing. Filed Feb. 5, 1968, Ser. No. 702,787
Int. Cl. C03c *21/00*
U.S. Cl. 65—30 **2 Claims**

This invention relates to the strengthening of glass and glass-ceramic articles through an ion exchange reaction carried out in a bath of molten salt. More particularly, this invention relates to a method for decreasing the amount of molten inorganic alkali metal salt adhering to glass and glass-ceramic articles upon removal from the bath of molten salt by the addition of about 0.5–5% by weight of an alkali salt of acetic acid to a bath of the molten salt operating at about 300°–450° C.

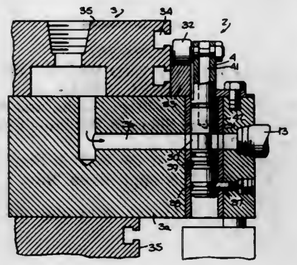
3,556,758
METHOD FOR MAKING AN ELECTROLYTE GUIDE MEMBER
James D. Andrews and Walter C. Kunz, Cincinnati, Ohio, assignors to General Electric Company, a corporation of New York
Original application Oct. 22, 1965, Ser. No. 501,643, now Patent No. 3,384,567, dated May 21, 1968. Divided and this application Feb. 19, 1968, Ser. No. 766,005
Int. Cl. C03b *23/04*
U.S. Cl. 65—109 **3 Claims**

This invention pertains to a method for drawing a portion of a hollow dielectric guide member, for example, a glass nozzle, from a heat softenable circular tube by heating a selected portion of the tube. The heating comprises steps of applying heat at a first rate, applying



heat at a reduced rate and terminating the heating. This is all carried out while the tube is being rotated.

3,556,759
FLUIDIC CONTROL SYSTEM FOR VACUUM CUT-OFF IN A BURN-OFF MACHINE
James F. Cotter, Lancaster, Ohio, assignor to Anchor Hocking Corporation, Lancaster, Ohio, a corporation of Delaware
Filed Mar. 12, 1968, Ser. No. 712,452
Int. Cl. C03b *33/08*
U.S. Cl. 65—159 **3 Claims**

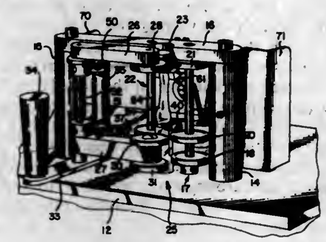


A fluidic control system for cutting off the vacuum supply to a ware-holding chuck in a glass burn-off machine in the absence of ware in the chuck. The system comprises a mechanical switch which admits pressure to a fluid circuit in conjunction with the opening of the vacuum control valve at the ware loading zone; a mechanically operated fluid switch for sensing whether ware is present at the pick-up station and providing an appropriate signal to said circuit; and a series of fluid amplifying switches in the circuit which actuate an air cylinder to close the vacuum control valve when a no-ware signal is received from the ware-sensing switch.

3,556,760
APPARATUS FOR HEAT SEALING EVACUATED GLASS AMPULES
Charles E. Bender, Taylor Norris Thompson, and Douglas S. Fraser, New Paltz, N.Y., assignors to The Virtis Company, Inc., Gardiner, N.Y., a corporation of New York
Filed June 28, 1968, Ser. No. 741,084
Int. Cl. C03b *23/12*
U.S. Cl. 65—268 **8 Claims**

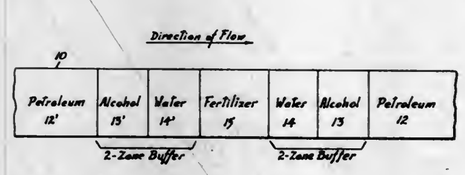
An apparatus for automatically heat sealing ampules which has means to rotate the ampule about an axis, means to heat the ampule for a timed period, and means

for continuously applying oppositely directed forces on said ampule along the axis without torsional restraint. The forces are applied while the ampule is rotated and



heated, to cause axial separation of the ampule while maintaining the ampule in evacuated condition. There is a second heating means for annealing the ampule in the region of separation.

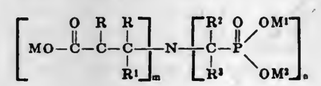
3,556,761
PIPELINE TRANSPORTATION OF IMMISCIBLE FLUIDS
Fay N. Larson and Francis B. Henry, Tulsa, Okla., and Clyde Parks, New York, N.Y., assignors, by mesne assignments, to Williams Brothers Company, a corporation of Delaware
Filed Nov. 30, 1967, Ser. No. 687,048
Int. Cl. C05g *3/00*
U.S. Cl. 71—1 **11 Claims**



A method of transporting by pipeline two immiscible fluids such as a petroleum product and a fertilizer solution. The two fluids are separated by a two-zone liquid buffer, the zones of which are soluble in the respective fluids and also one in the other, as for example, acetone or alcohol and water.

3,556,762
INCREASING CARBOHYDRATE DEPOSITION IN PLANTS WITH AMINOPHOSPHONATES
Philip C. Hamm, Glendale, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 668,208, Sept. 15, 1967, which in turn is a continuation-in-part of application Ser. No. 567,093, July 22, 1966. This application Oct. 21, 1968, Ser. No. 769,409
Int. Cl. A01n *9/12, 9/36*
U.S. Cl. 71—86 **15 Claims**

A method of modifying the normal sequential development of plants to agricultural maturity by application to plants of at least one compound of the formula:



wherein m is one of the integers zero to two, inclusive, and n is one of the integers one to three, inclusive, provided that the sum of m and n is three; R, R^1, R^2 and R^3 are each selected from the group consisting of hydrogen and alkyl having a maximum of four carbon atoms; and M, M^1 and M^2 are each selected from the group consisting of hydrogen, alkyl having a maximum of four carbon atoms and a salt-forming cation, said compound being applied in an amount sufficient to modify the normal sequential development of plants to agricultural maturity, but in an amount insufficient to exert a herbicidal action.

3,556,763
COMPOSITION AND METHOD FOR DESUCKING TOBACCO
Bob G. Gower, Park Forest, and David W. Young, Homewood, Ill., assignors to Atlantic Richfield Company, a corporation of Pennsylvania
No Drawing. Filed Aug. 17, 1966, Ser. No. 572,894
Int. Cl. A01n *5/00*
U.S. Cl. 71—78 **14 Claims**

Aqueous emulsions of water-insoluble horticultural chemicals, such as water-insoluble pesticidal, fungicidal and growth-regulating chemicals, are prepared using as the emulsifying agent a hydrocarbyloxy polyalkylene glycol-esterified polymer of styrene and maleic anhydride, e.g. a methoxy polyethylene glycol-esterified polymer of styrene and maleic anhydride. The emulsifying agent is effective even when present in very minor amounts, e.g. about 0.01 to 0.3 parts by weight of the agent per part of the horticultural chemical. Moreover, the compositions leave little or no visible deposit on the plant life to which they are applied. Particularly suitable horticultural chemicals are tobacco desuckering agents such as petroleum mineral oils, fatty acid esters, long-chain aliphatic aldehydes, and long-chain aliphatic alcohols.

3,556,764
METHOD OF INCREASING THE SUGAR CONTENT OF SUGARCANE
Philip C. Hamm, Glendale, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Mar. 28, 1969, Ser. No. 811,630
Int. Cl. A01n *9/14*
U.S. Cl. 71—103 **1 Claim**

Increasing the sugar content of sugarcane by contacting the sugarcane with 2-isopropylidineaminoethanol salt of p-nitrobenzenesulfonylisourea.

3,556,765
LIQUID SOLUBLE PACKET
Walter A. Houston, Park Ridge, Ill., assignor to Encap Products Company, Park Ridge, Ill., a corporation of Illinois
No Drawing. Filed Aug. 8, 1967, Ser. No. 659,030
Int. Cl. A01n *9/24*
U.S. Cl. 71—117 **1 Claim**

The invention concerns a water soluble pesticide packet for submersion into water to form a liquid pesticide spray. Upon submersion, the polyvinyl-alcohol film encapsulating the pesticide powder dissolves exposing the soluble pesticide powder and the inert dissolving agent therein. To promote rapid solution of the soluble pesticide powder in the liquid, a relatively high concentration of inert soluble material such as sucrose is mixed with the pesticide powder. The weight of the dissolving agent constitutes approximately 40% to 60% of the total weight of the soluble mixture encapsulated within the packet.

3,556,766
1-ARYLBIURETS AS PLANT GROWTH REGULANTS
William D. Mitchell, Chadds Ford, Pa., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 698,135, Jan. 16, 1968. This application Dec. 26, 1968, Ser. No. 787,274
Int. Cl. A01n *9/20, 9/12*
U.S. Cl. 71—120 3 Claims

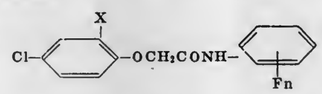
Several 1-arylbiurets when applied to grape plants at flowering results in an increase in the number and size of grapes set. The compounds also prolong the life of harvested green leafy vegetables.

3,556,767
METHOD OF SELECTIVELY KILLING UNDESIRABLE WEEDS
Kenneth T. Mecklenborg, Cincinnati, Ohio, assignor to Emery Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed July 24, 1967, Ser. No. 655,279
Int. Cl. A01n *9/24*
U.S. Cl. 71—122 6 Claims

A post-emergence herbicidal composition is provided which comprises an emulsion containing water, a nonionic emulsifier, and an aliphatic alcohol containing 4 to 22 carbon atoms. The herbicides are effective in killing such weeds as mustard, foxtail, crabgrass and pigweed, and can be made selective so as to have no substantial adverse effect on certain desired crops such as beans and cotton while being toxic to certain undesirable plants.

3,556,768
METHOD FOR INHIBITING GROWTH OF WEED AND GRASSES IN RICE PADDIES
Takayuki Inoue, Kichiro Kato, Teruhiko Toyama, and Tetsuo Yanami, Ohmuta-shi, Japan, assignors to Mitsui Toatsu Chemicals, Inc., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Apr. 4, 1967, Ser. No. 628,271
Claims priority, application Japan, Apr. 11, 1966, 41/22,445
Int. Cl. A01n *9/20*
U.S. Cl. 71—118 1 Claim

A herbicidal composition not toxic to fish containing as an active ingredient at least one compound represented by the formula:



wherein X is a member selected from the group consisting of chlorine atom and methyl radical, and *n* is an integer of 1 or 2, and a method for inhibiting growth of weeds and grasses by using the above composition.

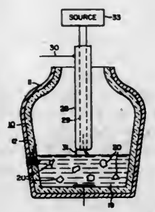
3,556,769
PROCESS FOR MAKING CHROMIUM ALLOYS OF DISPERSION-MODIFIED IRON-GROUP METALS, AND PRODUCT
John B. Lambert, Wilmington, Del., and Harold G. Marsh, Severna Park, Md., assignors, by mesne assignments, to Fansteel Inc., a corporation of New York
No Drawing. Original application May 24, 1967, Ser. No. 640,811. Divided and this application July 9, 1969, Ser. No. 855,437
Int. Cl. B22f *1/00*
U.S. Cl. 75—.5 6 Claims

Difficulties in obtaining a uniform product have hitherto been encountered when making, by powder-blending powder-metallurgy processes, alloys having as metal constituents, by weight, at least 50% of an iron-group metal and 10 to 35% of chromium and optionally, lesser amounts of other metals, said alloys being dispersion-strengthened with particles of a very refractory metal oxide such as thoria. These difficulties are now overcome by (1) using a chromium powder in which at least 95% of the particles have a size smaller than 20 microns, (2) using as the powder containing the iron-group metal a powder in which the particulate refractory oxide dispersion-strengthening agent is dispersed as particles having a number average particle size in the 3 to 50 millimicron range, and (3) milling the powder blend, preferably in a liquid medium in an attrition mill, until at least 95% of the powder particles have a size less than 5 microns. Optionally, there is distributed in the milled powder a sufficient amount of carbonaceous material to reduce any metal oxide occlusions, other than the refractory oxide dispersion-strengthening agent, upon treatment with dry hydrogen at elevated temperatures.

3,556,770
PROCESS FOR MAKING ALLOYS AND METALS
Carl B. Post, Wyomissing, and Ralph C. Leinbach, Jr., Reading, Pa., and Michael D. Sullivan, Bridgeport, Conn., assignors to Carpenter Technology Corporation, a corporation of Delaware
No Drawing. Filed Oct. 24, 1967, Ser. No. 677,729
Int. Cl. C21c *7/06, 7/10;* C22d *7/00*
U.S. Cl. 75—10 9 Claims

A process for making alloys and metals in which metallic values are charged into an electric arc furnace where they are melted by the heat from the electric arc and by the heat of the exothermic reaction resulting from the injection of gaseous oxygen which also serves to at least partially decarburize the molten metal. The molten bath is removed from the arc furnace and thereafter refined under vacuum during which stage final chemistry adjustments are effected. In the case of products in which the final carbon content is to be below about 0.03%, completion of decarburization as well as refining of the melt is carried out under vacuum after the melt has been removed from the arc furnace.

3,556,771
PROCESSES FOR PRODUCING STEEL
Armin M. Bruning, Export, and Serafino M. De Corso, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 6, 1966, Ser. No. 584,798
Int. Cl. C21c *5/52*
U.S. Cl. 75—12 8 Claims



A nonconsumable electrode having a fluid cooled arcing surface and magnetic field generating means for exerting a force on an arc between electrode and melt and causing the arc to move in generally repetitive paths on the electrode and on the melt, with means for adjusting the power of the arc, is used in processes for producing steel providing greater electrical heating efficiency and less contamination by material lost from the electrode.

Another process includes supplying heat from the electrode to prevent heat loss and permit a holding operation. The processes include supplying oxygen to a melt to oxidize impurities, either by a separate oxygen lance or by utilizing an electrode having an axially extending passageway therethrough for bringing oxygen. Our improved processes include all essential steps in making steel, or improved performance in individual steps.

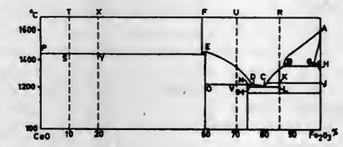
3,556,772
METHOD OF SPONGE IRON BRIQUETTING
Hans Rausch, Oberursel, Taunus, and Hubert Viereck, Nieder, Eschbach, Germany, assignors to Metallgesellschaft Aktiengesellschaft, Frankfurt am Main, Germany
No Drawing. Filed Mar. 21, 1968, Ser. No. 714,789
Claims priority, application Germany, Mar. 29, 1967, M 73,365
Int. Cl. C21b *13/00*
U.S. Cl. 75—33 6 Claims

Sponge iron is briquetted at temperatures from 400 to 800° C. and pressures from 1,500 to 3,000 kg./cm.² to form briquettes having a bulk density of about 5 g./cm.³. These briquettes are heavy enough to sink through the slag in a furnace and down into the molten steel.

3,556,773
REFINING OF METALS
Hugh Willmott Grenfell, Glamorgan, Wales, assignor to The Steel Company of Wales Limited, Glamorgan, Wales, a British company
No Drawing. Filed Sept. 25, 1967, Ser. No. 671,186
Claims priority, application Great Britain, Sept. 26, 1966, 42,900/66; Feb. 13, 1967, 6,709/67
Int. Cl. C21c *5/32;* C22b *15/00*
U.S. Cl. 75—51 7 Claims

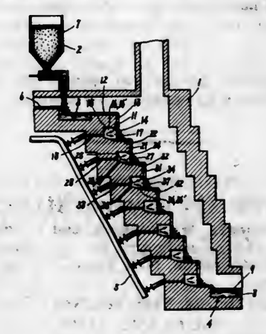
The invention is for the refining of metals and comprises subjecting a melt of the metal to an oxygen treatment within a refining vessel by injecting into the vessel a flame fed by streams of oxygen and liquid carbonaceous fuel wherein particles of solids material are entrained within the stream of liquid carbonaceous fuel supplied to the flame. The invention particularly relates to the refining of iron to steel. The solids material may be lime or a mixture of lime with other materials such as calcium carbide, coal and fluorspar. The solids material has a particle size not more than ⅛" and preferably 1/16" to 200 B.S.S. mesh and is formed into a slurry with the liquid fuel.

3,556,774
PROCESS FOR THE REDUCTION OF MOLTEN IRON ORE
Mihaly Brunner, 3 Kometvagen, Roslags-Nasby, Sweden
Filed Nov. 8, 1967, Ser. No. 681,527
Claims priority, application Sweden, Nov. 15, 1966, 15,602/66
Int. Cl. C21c *7/00, 7/06*
U.S. Cl. 75—57 4 Claims



A process for the reduction of molten iron ore. A reducing agent is added to a melt containing 10–85% iron ore and 15–90% CaO. The reduction is carried out in a furnace lined with CaO.

3,556,775
CONTINUOUS OXYGEN STEEL MAKING PROCESS
Tatsuo Kuratomi, 4–2–18 Hamatake, Chigasaki, Kanagawa Prefecture, Japan
Filed Jan. 3, 1968, Ser. No. 695,452
Claims priority, application Japan, June 22, 1967, 42/39,591
Int. Cl. C21c *5/00, 7/00*
U.S. Cl. 75—60 1 Claim



This invention is to provide a process and apparatus for oxidizing such impurities as carbon, silicon, sulfur and phosphorus in a molten pig iron by injecting oxygen from the side of the molten pig iron while it is being made to flow down a series of shelf members in a vertical refining chamber.

3,556,776
STAINLESS STEEL
William C. Clarke, Jr., Baltimore, Md., and D Cameron Perry, Middletown, Ohio, assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
No Drawing. Continuation-in-part of application Ser. No. 376,570, June 19, 1964, which is a continuation-in-part of application Ser. No. 299,484, Aug. 2, 1963. This application Oct. 10, 1966, Ser. No. 585,298
Int. Cl. C22c *37/10*
U.S. Cl. 75—124 15 Claims

Precipitation - hardenable chromium-nickel-aluminum-molybdenum stainless steel with critically limited amounts of carbon, sulphur and nitrogen, of such composition balance as to be martensitic in the solution-treated condition and precipitation-hardenable therefrom both by single heat-treatment and by double heat-treatment, i.e., a single heating at precipitation-hardening temperature (900° F. to 1150° F.) or a first heating and quenching from substantial temperature (1300° F. to 1750° F.), followed by heating at precipitation-hardening temperature as in heat-treating a fabricated composite structure as required by the other metals in the structure. More especially, the steel essentially consists of about 11.5% to 13.5% chromium, about 7.0% to 10.0% nickel, about 0.5% to 1.5% aluminum, about 1.75% to 2.50% molybdenum, carbon not over 0.05%, manganese not over 0.50%, silicon not over 0.60%, sulphur less than 0.015%, nitrogen not over 0.05%, and remainder essentially iron.

3,556,777
FERROUS ALLOY CONTAINING HIGH MANGANESE AND CHROMIUM
Howard J. Petry, West Alexandria, Ohio, assignor to Rexarc Incorporated, West Alexandria, Ohio, a corporation of Ohio
No Drawing. Filed Apr. 4, 1968, Ser. No. 718,941
Int. Cl. C22c *39/14*
U.S. Cl. 75—126 6 Claims

A ferrous alloy which is particularly suitable for use as a weld deposit for structural members. The alloy,

whose constituents are listed by weight percent are as follows:

	Percent
Chromium	1.0–4.0
Carbon	0.60–1.60
Silicon	0.30–1.00
Manganese	22.0–36.0
Nickel	0–5.0
Molybdenum (max.)	1.50
Phosphorus (max.)	0.015
Sulfur (max.)	0.015

Iron, balance

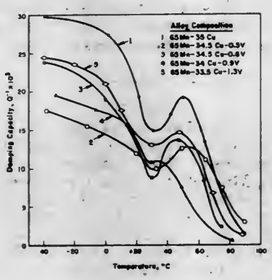
exhibits excellent mechanical properties along with superior resistance to abrasion and impact.

3,556,778

TERNARY DAMPING ALLOY

Robert E. Maringer, Worthington, and Leonard P. Rice, Columbus, Ohio, assignors to American Potash & Chemical Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 14, 1968, Ser. No. 767,365
Int. Cl. C22c *31/00*
U.S. Cl. 75—134 4 Claims



A ternary damping alloy consisting essentially of between about 60% and 70% by weight manganese, between about 30% to 40% by weight copper and between about 0.25% to 5% by weight vanadium. The ternary alloy is characterized by excellent damping capacity over a wide temperature range, both above and below room temperature. The inclusion of vanadium in the alloy assists in stabilizing the damping at the upper temperature range and improves low temperature ductility of the alloy.

3,556,779

COPPER-LEAD ALLOY

Robert Turkisher, Manitou Springs, and Charles E. Lundin, Evergreen, Colo., assignors, by mesne assignments, to Colorado Springs National Bank, Colorado Springs, Colo., a national banking corporation of Colorado

No Drawing. Filed Feb. 19, 1968, Ser. No. 706,640
Int. Cl. C22c *9/08*
U.S. Cl. 75—135 11 Claims

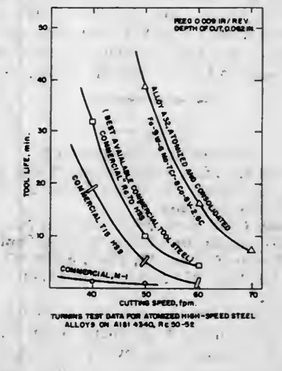
A method of making a homogenous copper-lead alloy, and the alloy and its uses, wherein the method comprises adding an effective amount of a homogeneity promoter to a mixture of molten lead and copper. The promoter consists essentially of elemental carbon and an alkali metal compound capable of reacting to form a gas. An example of the alkali metal compound is sodium carbonate. Uses for the alloy include bearings, lubricants and as an additive to petroleum and vegetable based lubricating compounds.

3,556,780

PROCESS FOR PRODUCING CARBIDE-CONTAINING ALLOY

Frederick C. Holtz, Jr., Evanston, Ill., assignor to IIT Research Institute, Chicago, Ill., a not-for-profit corporation of Illinois

Continuation-in-part of application Ser. No. 435,733, Feb. 26, 1965. This application Jan. 3, 1966, Ser. No. 518,058
Int. Cl. B22d *23/08*; B22f *3/12*
U.S. Cl. 75—203 3 Claims



Fully dense iron-base alloys characterized by having a microstructure exhibiting a substantially uniformly dispersed carbide phase of particles size predominantly less than 3 microns are produced from prealloyed powders by rapidly quenching an atomized alloy charge and subjecting the solidified particles to the step of hot consolidation in an environment protected against admission of oxygen to produce metal stock directly from prealloyed powder by plastic deformation.

3,556,781

MIGRATION IMAGING PROCESS

Mortimer Levy and Arnold L. Pundsack, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 27, 1967, Ser. No. 678,678
Int. Cl. G03g *13/22*
U.S. Cl. 96—1 9 Claims

A method of imaging which comprises providing an imaging structure having a support, and an overlayer of softenable material containing a particulate photosensitive overlayer, selectively imaging a desired portion of said structure by forming a latent image on said portion, developing said latent image by uniform exposure to a developing agent, whereby an nmage is formed by the selective migration of photosensitive particles in image configuration, and selectively forming at least one additional latent image on said imaging structure, and developing said latent image by uniform exposure to a developing agent, whereby an additional image is formed by the selective migration of photosensitive particles in image configuration.

3,556,782

METHOD OF FORMING HIGH DENSITY MATERIAL ARRAYS

James E. Young, Pittsford, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 549,254, May 11, 1966. This application Sept. 29, 1967, Ser. No. 675,744
Int. Cl. G03g *13/22*
U.S. Cl. 96—1.1 10 Claims



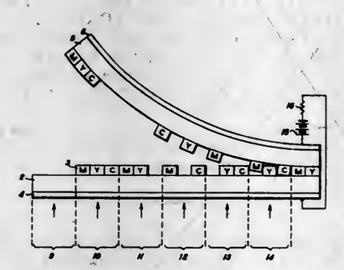
Method and apparatus for producing high density material arrays by forming precise depressions in a deformable member which is then cascaded with a suitable material, either particulate or non-particulate, which fills these depressions.

3,556,783

COLOR MANIFOLD IMAGING PROCESS

Basil M. Kyriakakis, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed Apr. 1, 1966, Ser. No. 539,449
Int. Cl. G03g *13/22*
U.S. Cl. 96—1.2 13 Claims



A method for obtaining color separation in the manifold layer transfer imaging process wherein the cohesively weak, electrically photosensitive imaging layer comprises contiguous areas of at least two colors. The imaging layer is placed between two sheets and subjected to an electric field and electromagnetic radiation to which at least one the areas of the imaging layer is sensitive. Upon separation of the sheets the imaging layer fractures in imagewise configuration providing a full color copy of the original image on one of the sheets.

3,556,784

ELECTROSTATIC IMAGE DEVELOPMENT

Gene H. Robinson and James G. Jarvis, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Continuation of application Ser. No. 297,263, July 24, 1963. This application Sept. 21, 1966, Ser. No. 581,116
Int. Cl. G03g *13/16, 13/10, 15/10*
U.S. Cl. 96—1.4 14 Claims

A process in which an electrostatic image-bearing insulating sheet is brought into contact with a cover sheet by a pair of rolls forming a line of contact at which the development takes place. A bead of liquid developer is placed between the sheets and as the sheets are moved as a unit between the rolls, the bead is wiped across the sheet and images are developed in accordance with the potential applied to the roll in contact with its respective sheet. The process includes the following embodiments: the electrostatic image induced on the cover sheet can be developed; the electrostatic image on the insulating sheet can be developed with simultaneous transfer of the developer particles to the cover sheet; the electrostatic image on the insulating sheet can be developed and simultaneous physically transferring the toner particles to the cover sheet; and the electrostatic image on the insulating layer can be developed with simultaneous development of the electrostatic image induced on the cover sheet.

3,556,785

SENSITIZERS FOR ORGANIC PHOTOCONDUCTOR COMPRISING ORAZOLONE AND BUTENOLIDE DERIVATIVES OF FLUORENONE

Evans S. Baltazzi, Brookfield, Ill., assignor to Addressograph-Multigraph Corporation, Mount Prospect, Ill., a corporation of Delaware

No Drawing. Filed Feb. 23, 1968, Ser. No. 707,413
Int. Cl. G03j *5/00*
U.S. Cl. 96—1.6 14 Claims

The compounds are of the class of oxazolone derivatives and butenolide derivatives of fluorenone useful as sensitizers for organic photoconductive media. An example of a particular species is 2-phenyl-4(2,4,7-trinitro-9-fluorenylidene)-5-oxazolone.

3,556,786

DYE SENSITIZATION OF ELECTROPHOTOGRAPHIC MATERIAL

Karel Eugeen Verhille, Mortsel, Belgium, assignor to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company

Filed May 19, 1967, Ser. No. 639,905
Claims priority, application Great Britain, May 20, 1966, 22,631/66
Int. Cl. G03g *5/08, 7/00*
U.S. Cl. 96—1.7 6 Claims

An indoaniline dye is employed in conjunction with a conventional sensitizing dye effective within the region of 530 to 550 nm. for spectrally sensitizing a photoconductive recording material containing photoconductive zinc oxide powder dispersed in a binder. The indoaniline dyes have strong sensitizing effects in the region above 600 nm. and are substantially stable to light, and in conjunction with the conventional sensitizing dye imparts a long-lasting off-white appearance to the recording material.

3,556,787

PHOTOSENSITIVE ELEMENT INCLUDING ELECTRON CONDUCTING LAYER, ELECTRON SENSITIVE LAYER AND PHOTOCONDUCTIVE LAYER

Eugene C. Letter, Penfield, N.Y.
(90 Royal View Drive, Rochester, N.Y. 14526)

Continuation-in-part of application Ser. No. 387,658, Aug. 5, 1964. This application Nov. 12, 1968, Ser. No. 774,891
The portion of the term of the patent subsequent to Nov. 21, 1984, has been disclaimed
Int. Cl. G03c *3/10*; G03g *5/00*
U.S. Cl. 96—1.8 5 Claims

A photoelectric element for recording information having three solid layers superimposed in contiguous relation including an electron conducting layer, an electron sensitive layer and a photoconductive layer. The photoelectric element is exposed to radiation to change the conductivity of the photoconductive layer in acordane to a desired pattern and is subsequently exposed to an electron beam to produce coloring in the electron sensitive film in accordance with the pattern of radiation received.

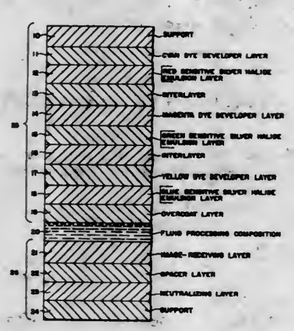
3,556,788
COLOR PHOTOGRAPHIC ELEMENTS AND PROCESS COMPRISING 6 - HALO - 7 - HYDROXY - 1,3,4 - TRIAZAINDOLIZINES AS STABILIZERS

William H. Ryan, Carlisle, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Continuation-in-part of application Ser. No. 513,439, Dec. 13, 1965. This application Feb. 10, 1969, Ser. No. 798,021

Int. Cl. G03c *1/34, 5/54*

U.S. Cl. 96—3 11 Claims



A photosensitive element comprising in combination a support carrying on one surface at least one silver halide emulsion layer containing a 6-halo-7-hydroxy-1,3,4-triazaindolizine and a dye, said dye being a silver halide developing agent, associated with said emulsion.

3,556,789
COLOR OSCILLOGRAPH PROCESSING

Carl E. Johnson and Dewey M. Dumers, Binghamton, N.Y., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 15, 1967, Ser. No. 683,148

Int. Cl. G03c *5/38, 7/16*

U.S. Cl. 96—22 2 Claims

An improvement in a process for developing multicolored photographic trace recording material, the trace material consisting of a light-colored supporting sheet having superposed thereon at least two light-sensitive silver halide emulsion layers each one of which is sensitive to light of different wave lengths and each one of which contains a non-diffusing color former, which comprises passing the material, after trace recording exposure to light of different colors, progressively and in sequence through an aqueous caustic alkali solution, an aqueous color developer solution and an aqueous fixer solution.

3,556,790
PHOTOGRAPHIC PHOTOPOLYMERIZATION AND VIEWING PROCESS

John B. Rust, Los Angeles, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Feb. 16, 1967, Ser. No. 616,599

Int. Cl. G03c *5/04*

U.S. Cl. 96—27 15 Claims

The discovery provides an optical method and compositions for effecting the production of a photopolymer image in a photopolymerizable composition with actinic light of high absorption intensity and enabling subsequent viewing of the created image with actinic light of low absorption intensity, with or without fixing, of the photopolymerization image, and the product thereof.

3,556,791
PHOTOSENSITIVE COMPOSITIONS AND ELEMENTS AND A PROCESS OF MAKING FLEXOGRAPHIC PRINTING PLATE THEREFROM

Kenichi Suzuki, Tokyo, and Tsunetoshi Kai, Saitama-ken, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Kita-ku, Osaka, Japan, a corporation of Japan

Filed Mar. 8, 1966, Ser. No. 532,574

Claims priority, application Japan, Mar. 11, 1965, 40/13,773

Int. Cl. G03c *7/00, 1/68*

U.S. Cl. 96—35.1 7 Claims

Photosensitive compositions comprising (a) an unsaturated polyester produced from an alcoholic monomer containing at least one polyol having at least 5 ether-oxygen groups in its main chain and 3 or less carbon atoms between the ether-oxygen groups and an acidic monomer containing at least one unsaturated dicarboxylic acid, (b) an addition polymerizable ethylenically unsaturated monomer and (c) a photopolymerization initiator.

3,556,792
NOVEL SUBSTITUTED ALLYL POLYMER DERIVATIVES USEFUL AS PHOTORESISTS

Leon Katz, Springfield, N.J., assignor to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 22, 1968, Ser. No. 731,279

Int. Cl. G03c *1/68, 1/69*

U.S. Cl. 96—35.1 14 Claims

Light-sensitive, organic solvent-soluble, film-forming substituted allyl containing polymers suitable for use as photoresists.

3,556,793
NOVEL SUBSTITUTED ALLYL POLYMER DERIVATIVES USEFUL AS PHOTORESISTS

Nathan D. Field, Allentown, and Harlan Benjamin Freyermuth, Easton, Pa., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed May 22, 1968, Ser. No. 731,280

Int. Cl. G03c *1/68, 1/69*

U.S. Cl. 96—35.1 14 Claims

Light-sensitive, organic solvent-soluble, film-forming substituted allyl containing polymers suitable for use as photoresists.

3,556,794
METHOD OF INHIBITING PHOTOPOLYMERIZATION AND PRODUCTS THEREFOR

John D. Margerum, Chatsworth, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Filed Oct. 3, 1966, Ser. No. 583,651

Int. Cl. G03c *5/32*

U.S. Cl. 96—45.2 18 Claims



Method of optically polymerizing and optically desensitizing photopolymerizable

composition containing polymerizable ethylenic monomers, a light-sensitive polymerization catalyst system and a light-sensitive polymerization inhibitor material, the steps consisting of irradiating the composition with radiation to activate polymerization of said composition and with radiation activating said inhibitor to deactivate photopolymerization of said composition, and composition therefor.

3,556,795
ETHYLENE POLYMERIC COMPOSITIONS CONTAINING SILVER

Richard H. Hughes and Bert H. Clampitt, Overland Park, Kans., and Harry D. Anspon, Kansas City, Mo., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Apr. 19, 1967, Ser. No. 631,874

Int. Cl. G03c *1/04*

U.S. Cl. 96—61 19 Claims

Silver-containing ethylene polymeric compositions suitably employed in the preparation of photographic film and coatings highly resistant to bacteria and fungus are formed from silver-containing aqueous dispersions of water-insoluble, self-emulsifiable ethylene-alkyl acrylate polymers.

3,556,796
SILVER HALIDE EMULSION CONTAINING NAPHTHOL COLOUR COUPLERS FOR CYAN

Hector Alfons Vanden Eynde, Mortsel-Antwerp, Marcel Karel Van Doorselaer, Gravenwezel, Arthur Henri De Cat, Mortsel-Antwerp, Belgium, and Rigobert Otto, Friedrich-Wilhelm Kunitz, Leverkusen, and Walter Schulte, Opladen, Germany, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company

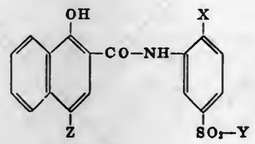
No Drawing. Filed Oct. 11, 1966, Ser. No. 585,730

Claims priority, application Great Britain, Oct. 13, 1965, 43,386/65

Int. Cl. G03c *1/40*

U.S. Cl. 96—100 2 Claims

Cyan-forming color couplers suitable for use in negative silver halide color materials and the use of such color couplers in an integral mask process are described. The color couplers have the structure



wherein:

Z is a hydrogen atom or a halogen atom,

X is a halogen atom, an alkyloxy group, an alkylthio group, an alkylsulfonyl group, an aryloxy group, an arylthio group, an arylsulfonyl group, a monoalkylamino group, a dialkylamino group or an amino group, the nitrogen atom of which makes part of the ring atoms of a saturated heterocyclic nucleus,

Y is an alkyl radical, a monoalkylamino group, a dialkylamino group or an amino group, the nitrogen atom of which makes part of the ring atoms of a saturated heterocyclic nucleus, at least one of the alkyl radicals in the above groups being an aliphatic radical containing from 5 to 20 carbon atoms.

3,556,797
COBALT (II) AND MANGANESE (II) CHELATES AS PHOTOGRAPHIC EMULSION ANTIFOGGANTS

Hendrik Adolf Pattijn, Wilrijk, Robrecht Julius Thiers, Brasschaat, Bernard Hippoliet Tavernier, Edegem, and Jozef Frans Willems, Wilrijk, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a company of Belgium

No Drawing. Filed Apr. 19, 1968, Ser. No. 722,558

Claims priority, application Great Britain, May 18, 1967, 23,048/67; Oct. 19, 1967, 47,731/67

Int. Cl. G03c *1/34*

U.S. Cl. 96—109 8 Claims

Photographic light-sensitive silver halide emulsions are described which include a cobalt (II) or a manganese (II) chelate of a (poly) amino-(poly)carboxylic acid in acid form or in the form of a water-soluble salt. These materials exert an excellent stabilizing and fog-inhibiting action upon the photographic light-sensitive materials.

3,556,798
METHOD OF USING SORBIC ACID AND SORBATES AS DOUGH CONDITIONING AGENTS

Don R. Tucker and Lloyd L. Green, Louisville, Ky., and Howard K. Zimmerman, New Albany, Ind., assignors to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware

No Drawing. Filed Apr. 9, 1968, Ser. No. 719,836

Int. Cl. A21d *2/14*

U.S. Cl. 99—90 20 Claims

Chemically leavened dough products having improved handling and machinability properties for commercial dough fabricating processing are provided by admixing and developing dough ingredients with at least one dough conditioning agent selected from the group consisting of sorbic acid and the alkaline earth and alkali metal salts of sorbic acid in an amount ranging from about 0.005 to about 0.20 part by weight for each 50 parts by weight flour therein.

3,556,799
LIGHT-SENSITIVE SILVER HALIDE COLOR PHOTOGRAPHIC MATERIAL CONTAINING A MONO-PYRAZOLONE COUPLER AND A BIS-PYRAZOLONE COMPOUND

Toshihiko Yamamoto, Mitsuto Fujiwara, Tamotsu Kojima, and Kenro Sakamoto, Tokyo, Japan, assignors to Konishiroku Photo Industry Co., Ltd., Tokyo, Japan

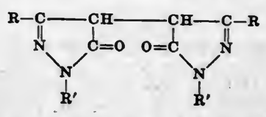
No Drawing. Filed Sept. 11, 1967, Ser. No. 666,936

Claims priority, application Japan, Sept. 19, 1966, 41/61,483

Int. Cl. G03c *1/40*

U.S. Cl. 96—100 3 Claims

Color staining of conventional mono-pyrazolone magenta couplers in photographic materials is prevented by using, together with the mono-pyrazolone, a bis-pyrazolone in an amount of 1–50% by weight based on the mono-pyrazolne. The bis-pyrazolone has the formula:



wherein R is alkyl, aryl or substituted aryl and R' is hydrogen, alkyl, aryl, substituted aryl or a heterocyclic radical with the proviso that at least one of R and R' contains an aliphatic hydrocarbon radical of 12–20 carbon atoms.

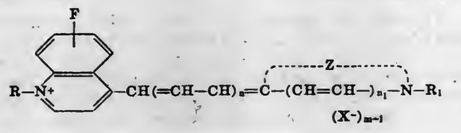
3,556,800

PHOTOGRAPHIC SILVER HALIDE EMULSIONS

Shiro Kimura, Yoshiyuki Nakazawa, Masao Sawahara, and Yasuharu Nakamura, Kanagawa, Japan (all of 210 Nakanuma, Minami Ashigara-machi, Ashigara-Kami-gun, Japan)

No Drawing. Filed July 25, 1968, Ser. No. 747,480
Claims priority, application Japan, July 25, 1967, 42/47,721
Int. Cl. G03c *1/08*
U.S. Cl. 96—120 2 Claims

A photographic silver halide emulsion which contains a novel sensitizing dye represented by the following formula



wherein Z represents the non-metallic atoms necessary to complete a heterocyclic ring of the type employed in a cyanine dye; R and R_1 each represent a member selected from the group consisting of a lower alkyl group, a substituted alkyl group, an allyl group, a benzyl group, a phenethyl group and a phenoxyethyl group; X^- represents an anion; n may vary from 0 to 1; n_1 may vary from 0 to 1; and m may vary from 1 to 2. The various specific dyes and illustrative processes of forming the dyes of this invention are described in the specification.

3,556,801

METHOD FOR THE MANUFACTURE OF A CONCENTRATE OF A BIFIDOGEN FACTOR

Hermann Gustav Hostettler, Liebefeld, Bern, Switzerland, assignor to Ursina A.G., Bern, Switzerland

No Drawing. Filed Jan. 18, 1967, Ser. No. 610,027
Claims priority, application Switzerland, Jan. 18, 1966, 608/66
Int. Cl. A23c *11/00*
U.S. Cl. 99—14 4 Claims

This invention relates to a method for the manufacture of a bifidogen factor called "Bifidus 2" (BF_2) with enhanced activity. The process of the invention is characterized by passing a protein hydrolysate containing the factor BF_2 at least twice through a chromatographic column of an ion-exchange resin or through a dextran gel. The first chromatography is characterized by passing the hydrolysate through a column of a strong acid cation exchange resin in the acid form. The second chromatography is characterized by passing the concentrated eluate from the first chromatography process through a column of a weak acid cation exchange resin. The BF_2 concentrate is then obtained by a further chromatographic process using a basic anion exchange resin, or filtering the solution through gel. The process is directed towards obtaining an improvement in the yield of BF_2 concentrate from protein hydrolysate solution.

3,556,802

METHOD FOR MAKING RYE FLAKES FROM EXPLODED KERNELS

Clayton O. Gulstad, Coon Rapids, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Filed Aug. 28, 1967, Ser. No. 663,502
Int. Cl. A23l *1/10, 1/18*
U.S. Cl. 99—80 11 Claims

A new ready-to-eat flaked breakfast cereal and process for making it. Kernels of grain are explosively puffed to gelatinize the starch, and then milled into flour. The flour is mixed with water and one or more flavoring ingredients to form a dough which is formed into pellets which are flaked and toasted.

3,556,803

METHOD OF MAKING A CARBONATED COMPOSITION

John E. Ehrreich III, Watertown, Adrian R. Reti, Cambridge, and Pierre L. T. Brian, Concord, Mass., assignors to Dynatech Corporation, Cambridge, Mass.

Filed Feb. 15, 1967, Ser. No. 616,305
Int. Cl. A23l *1/00*
U.S. Cl. 99—79 4 Claims

A solid material is formed of an at least slightly water soluble polymeric acid and a carbonate. When the solid material is placed in a container of water, the acid and carbonate react to evolve carbon dioxide and a substantially water insoluble salt. The physical integrity of the solid material is not destroyed by the reaction.

3,556,804

REDUCTION OF MIXING REQUIREMENTS FOR YEAST LEAVENED BREAD DOUGH

James F. Conn, St. Louis, and Thomas P. Kichline, Chesterfield, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 617,503, Feb. 21, 1967. This application Aug. 11, 1969, Ser. No. 849,154
Int. Cl. A21d *2/14*
U.S. Cl. 99—90 16 Claims

Unsaturated aliphatic and cyclic alcohols, having from 3 to about 12 carbon atoms and containing at least one vinylene, carboxy substituted vinylene or ethylene group, reduce the mixing requirements for yeast leavened bread dough produced from wheat flour. Addition of ammonium salts together with the unsaturated alcohols produces bread of improved shelf life.

3,556,805

REDUCTION OF MIXING REQUIREMENTS FOR YEAST LEAVENED BREAD DOUGH

James F. Conn, St. Louis, and Thomas P. Kichline, Chesterfield, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 617,503, Feb. 21, 1967. This application Aug. 11, 1969, Ser. No. 856,243
Int. Cl. A21d *2/14, 2/16*
U.S. Cl. 99—90 17 Claims

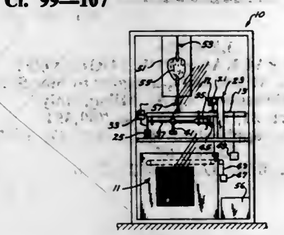
Fumaric acid, fumaric acid salts thereof, and esters, having from 5 to about 9 carbon atoms reduce the mixing requirements for yeast leavened bread dough produced from wheat flour. Dibasic calcium fumarate is preferred. Bread additives containing fumaric acid, salts or esters thereof and ammonium salts of inorganic acids enable the production of bread having an improved shelf life. Wheat flour compositions containing these fumaric acids, salts thereof or esters thereof produce bread doughs having a reduced mixing requirement.

3,556,806

METHOD OF TENDERIZING MEAT

Robert A. Jungk and Kenneth G. McConnell, Ames, Iowa, assignors to Iowa State University Research Foundation, Ames, Iowa, a corporation of Iowa

Filed Mar. 10, 1967, Ser. No. 622,261
Int. Cl. A22c *18/00, 9/00*
U.S. Cl. 99—107 1 Claim



A method of tenderizing meat by subjecting freshly killed meat to isometric tensioning during rigor mortis at a temperature at which the meat will be subjected to minimal tension development.

3,556,807

MEAT TENDERIZATION PROCESS

Willie Woo, % Baker & McKenzie, C.P.O. Box 1576, Tokyo, Japan

No Drawing. Filed Sept. 1, 1967, Ser. No. 664,915
Int. Cl. A22c *18/00*
U.S. Cl. 99—107 1 Claim

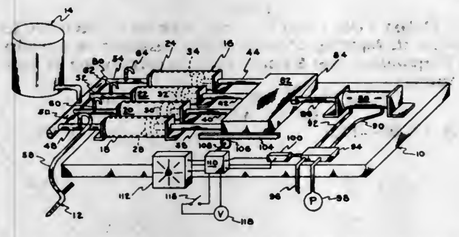
A process for tenderizing meat comprising a first soaking in a sodium bicarbonate bath and a second soaking in a vinegar bath followed by a water rinse.

3,556,808

MEAT INJECTION METHOD

Mitchell W. Panek, Chicago, Ill., assignor to Swift & Company, Chicago, Ill., a corporation of Delaware

Filed Apr. 9, 1969, Ser. No. 814,781
Int. Cl. A22c *18/00, 21/00*
U.S. Cl. 99—107 5 Claims



Liquid material for injection at a plurality of sites in a food item is dispensed simultaneously in separate amounts, each amount being a desired proportion of a total quantity of liquid, and delivered for injection at the sites for equal intervals of time.

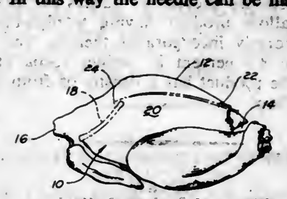
3,556,809

METHOD FOR INJECTING A LIQUID ADDITIVE INTO POULTRY FLESH

Eldon J. Strandine, Chicago, Ill., and Charles W. Peckenpaugh, Detroit Lakes, Minn., assignors to Swift & Company, Chicago, Ill., a corporation of Delaware

Original application Apr. 1, 1968, Ser. No. 717,803, now Patent No. 3,511,164, dated May 12, 1970. Divided and this application Nov. 19, 1969, Ser. No. 871,325
Int. Cl. A22c *21/00*
U.S. Cl. 99—107 3 Claims

Poultry carcasses are treated to improve the eating qualities, notably flavor, tenderness, juiciness, and fat content, by injecting an additive, such as a vegetable oil emulsion, into the meat tissue of the breast areas by inserting a hollow needle into the flesh from locations exposed at either of the posterior and anterior visceral incisions. In this way the needle can be inserted along a



path that is generally normal to the tissue fiber structure so as to release the additive in directions aligned with and between the fibers. Also the injection can be made without penetrating the skin of the fowl whereby there will be substantially less opportunity for the additive to ooze from the tissue.

3,556,810

DESSERT GEL AND GELLING AGENT THEREFOR

Arthur L. Moirano, Mountainside, N.J., assignor to Marine Colloids, Inc., Springfield, N.J., a corporation of Delaware

No Drawing. Filed May 14, 1969, Ser. No. 824,674
Int. Cl. A23l *1/04*
U.S. Cl. 99—131 10 Claims

An improved gelling agent for an aqueous dessert gel is provided by employing in combination (a) calcium reactive low methoxyl pectin, (b) locust bean gum, (c) potassium-sensitive gum selected from the group consisting of potassium-sensitive carrageenan and furcellaran, and (d) calcium-sensitive carrageenan. While the gelling agent has unique advantages in the production of aqueous desert gels, the gelling agent is of a special utility in the production of aqueous dessert gels containing chunks of fruit.

3,556,811

LOW-FERMENTABILITY HARD CANDY

Walton J. Smith, 171 Sharp Hill Road, Wilton, Conn. 06897

No Drawing. Continuation-in-part of application Ser. No. 652,425, July 11, 1967. This application Aug. 11, 1969, Ser. No. 849,136
Int. Cl. A23g *3/00*
U.S. Cl. 99—134 14 Claims

A carbohydrate-containing base for hard candy manufacture having a composition of low-fermentable ingredients, which is adaptable for processing in standard hard candy manufacturing facilities and, when incorporated with the usual flavoring, color and sweentening additives, effects a nutritious finished hard candy product which exhibits minimal tendency to ferment when ingested.

3,556,812

CHOCOLATE MARSHMALLOW AND PROCESS FOR PRODUCTION THEREOF

Harvey Berton Krohn, Rahway, and Fred J. Polito, Colonia, N.J., assignors to The Quaker Oats Company, Chicago, Ill., a corporation of New Jersey

No Drawing. Filed Mar. 14, 1968, Ser. No. 712,938
Int. Cl. A23g *3/00*
U.S. Cl. 99—134 4 Claims

A process for producing chocolate marshmallow comprising the steps: (A) preparing a marshmallow mix; (B) aerating the marshmallow mix under gas pressure until the density of the mixture at atmospheric pressure is from 30 to 74 ounces per gallon; (C) uniformly injecting from 2 to 15 percent by weight of high pressure,

liquid, high-fat-content chocolate into the aerated mixture; (D) folding the mixture to uniformly blend the chocolate therein; and (E) reducing the pressure to atmospheric pressure before the density of the product at atmospheric pressure exceeds 74 ounces per gallon.

A marshmallow product having a high-fat-content chocolate uniformly incorporated therein. The product has from 1 to 8.5 percent by weight cocoa butter fat content, and the product has a density of from 30 to 74 ounces per gallon.

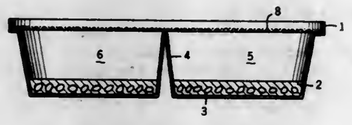
3,556,813
FROZEN CONFECTION
Norman S. Creswick, Cresskill, N.J., assignor to Thomas J. Lipton, Inc., Englewood Cliffs, N.J., a corporation of Delaware
No Drawing. Filed Dec. 8, 1967, Ser. No. 688,982
Int. Cl. A23g *5/00*
U.S. Cl. 99—136 **6 Claims**

A low fat or fat-free frozen confection having good texture and stable structure is provided by whipping an aqueous solution containing heat coagulable protein solids to form a foam with the protein in the continuous phase, coagulating the protein in the foam by subjecting it to electromagnetic radiation in wave length bands normally used for induction, dielectric and microwave heating, for a time sufficient to provide a stable non-rubbery structure in the foam and freezing the resulting stable foam.

3,556,814
PROCESS OF COATING FOOD
Gordon R. Whitman, Weston, and Harold Rosenthal, Newtonville, Mass., assignors to General Foods Corporation, White Plains, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 500,284, Oct. 21, 1965, which is a continuation-in-part of application Ser. No. 287,201, June 12, 1963. This application Sept. 18, 1967, Ser. No. 668,675
Int. Cl. A23b *1/10, 7/16*
U.S. Cl. 99—169 **7 Claims**

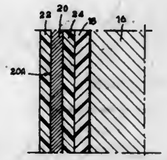
A process of coating food by applying thereto a thermoplastic, edible composition comprising 10–50% gelatin, 50–90% of a polyhydric alcohol, typically propylene glycol, glycerine or sorbitol and mixtures thereof; a limited amount of water, not greater than about 5%, may be present.

3,556,815
COLORED POPCORN PACKAGE
Huygene K. Fujiwara, Clayton, Mo., assignor to Ralston Purina Company, St. Louis, Mo., a corporation of Missouri
Filed Sept. 16, 1968, Ser. No. 762,183
Int. Cl. B65d *81/34*
U.S. Cl. 99—171 **9 Claims**



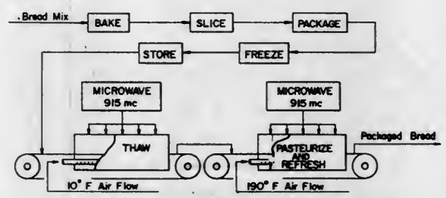
A colored popcorn premix package is disclosed which produces colored popcorn when popped. The package contains popcorn in a cake of solid fat containing a coloring agent. The pan may be divided into compartments and the fat in each compartment may contain different coloring agents. When the popcorn in the divided pan is popped several different colors of popcorn are produced. The pan may have an expansible, transparent cover to retain the popcorn as it is popped.

3,556,816
FLEXIBLE PACKAGE FOR FOODSTUFF
Giovanni Nughes, Milan, Italy, assignor to Star Stabilimento Alimentare S.p.A., Milan, Italy
Filed Oct. 21, 1968, Ser. No. 769,351
Claims priority, application Italy, Oct. 27, 1967, 53,521/67
Int. Cl. B65d *31/02;* B32b *27/08*
U.S. Cl. 99—171 **7 Claims**



A heat-sealed flexible-walled food container is formed of laminated material comprising an aluminium foil provided on both surfaces with polyester layers and an inner polypropylene layer bonded to one of the polyester layers, the aluminum foil and polyester layers forming a thermally balanced laminate, which prevents the formation of microscopic cracks in the aluminum resulting from thermal stresses. Cracking of the aluminium foil by subsequent heat treatment such as sterilisation is prevented.

3,556,817
METHOD FOR PROCESSING BAKERY PRODUCTS
Morris R. Jeppson, Danville, Calif., assignor to Cryodry Corporation, San Ramon, Calif., a corporation of California
Filed Mar. 1, 1968, Ser. No. 709,666
Int. Cl. A21d *15/00*
U.S. Cl. 99—192 **6 Claims**



Packaged fresh bread or the like is preserved by freezing and subsequently thawed, pasteurized and refreshed for consumption by microwave irradiation in the presence of a controlled atmosphere. The atmosphere may be programmed to be cool during the thawing step and is hot during the pasterurizing and refreshing step to avoid adverse effects which might otherwise occur during the microwave treatment.

3,556,818
FREEZE DRYING SOLIDS BEARING LIQUIDS
Henry A. Oldenkamp, Saratoga, and Clyde D. Watson, San Jose, Calif., assignors to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed Sept. 15, 1967, Ser. No. 668,109
Int. Cl. F26b *5/06;* A23f *1/08*
U.S. Cl. 99—199 **6 Claims**



Freeze dried coffee extract is prepared by grinding frozen chunks of extract into particles of varying size, spreading the ground particles into trays so that the fines are at the bottom, and freeze drying the bed of particles in the trays.

3,556,819
ASPHALTIC BASED FIRE-RESISTANT COMPOSITIONS UTILIZING VERMICULITE ORE INTUMESCING AGENT
Russell E. Koons, St. Louis, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Mar. 14, 1968, Ser. No. 712,959
Int. Cl. C09k *3/28*
U.S. Cl. 106—15 **5 Claims**

Fire-resistant asphaltic compositions are made by combining:

(a) asphalt having a penetration of from 0 to 50 mm./10 at 77° F. and a softening point of from 150 to 300° F.;
(b) a noncombustible fibrous material such as asbestos or fiber glass;
(c) a finely divided porous aggregate such as perlite or ground foamed polyurethane;
(d) a finely divided heat-fusible material such as boxax glass or boric acid;
(e) a vermiculite ore intumescing agent; and
(f) a solvent for the asphalt to lower viscosity of the composition to a point where it can be applied to a surface.

3,556,820
METHOD OF PRODUCING FRIT FOR CERAMIC BINDING OF ABRASIVE TOOL AND OF ABRASIVE TOOL CASING
Feodosy Grigorievich Ruban, Zapadinsky pereulok 44, kv. 1, and Sergei Nikolaevich Kovalev, Novo-Okruzhnaya ulitsa 17, kv. 22, both of Kiev, U.S.S.R.
No Drawing. Filed Oct. 9, 1967, Ser. No. 673,957
Int. Cl. C03c *5/02, 3/08;* B24d *3/02*
U.S. Cl. 106—48 **1 Claim**

A frit adapted for the ceramic binding of diamond tools and casings therefor comprising SiO_2, B_2O_3, Al_2O_3, Na_2O, Li_2O, BaO, Fe_2O_3, and K_2O.

3,556,821
PORCELAIN ENAMEL FOR HOT WATER TANKS
Alvin S. Hanzlik, Downers Grove, Otto C. Linhart, Cicero, and Marvin D. Putze, Roselle, Ill., assignors to Eagle-Picher Industries, Inc., Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Nov. 18, 1968, Ser. No. 776,756
Int. Cl. C03c *5/02*
U.S. Cl. 106—48 **6 Claims**

Porcelain enamel composition particularly suited for use in lining hot water tanks, the composition containing controlled amounts of silicon dioxide, titanium dioxide, boric oxide, sodium oxide, lithium oxide, calcium oxide, cobalt oxide, manganese oxide, fluorine, and optionally zirconia, potassium oxide and nickel oxide, the percentages of the boric oxide, manganese oxide, fluorine, zirconia, and manganese oxide being controlled to produce an enamel coating which has excellent chemical durability, adherence and freedom from defects.

3,556,822
CARBONACEOUS BONDING SYSTEM FOR REFRACTORIES
George R. Henry, Bethel Park, and Ernest P. Weaver, Pittsburgh, Pa., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
No Drawing. Filed Feb. 9, 1968, Ser. No. 704,984
Int. Cl. C04b *35/04, 35/52*
U.S. Cl. 106—56 **8 Claims**

Carbonaceous bonding system for refractories, especially basic refractories, of increased storage life, said system including neutralized unsaturated fatty acid pitch.

3,556,823
SINTERED POLYCRYSTALLINE MAGNESIA BODIES AND METHOD FOR PRODUCTION THEREOF
Shiro Sano, Shuzo Kato, Eiichi Ishii, and Takeo Iga, Nagoya, Japan, assignors to Agency of Industrial Science and Technology, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Oct. 25, 1967, Ser. No. 677,881
Claims priority, application Japan, Oct. 26, 1966, 41/70,118
Int. Cl. C04b *35/04*
U.S. Cl. 106—58 **3 Claims**

Gallium oxide is added to magnesia containing calcium oxide to form a calcium gallate, and the mixture is shaped and sintered.

3,556,824
STABILIZATION OF METAL TREATING SOLUTIONS
Joseph J. Demo, Jr., Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 30, 1968, Ser. No. 756,393
Int. Cl. C09d *5/08;* C23f *7/26*
U.S. Cl. 106—14 **11 Claims**

A novel and improved metal treatment solution and process for the treatment of metals therewith. More particularly, this invention relates to an anhydrous chromic acid metal treating solution and a process for treating metal articles to impart thereto a higher resistance to corrosion and an improved bonding of paints, lacquers and the like thereto. Certain stabilizers which include zinc cadmium, mercury and salts thereof, effectively stabilize the metal treating solutions to provide improved solutions and processes for the treatment of metals.

3,556,825
FLAME RETARDANT RAYON INCORPORATING BIS-DIPHENYL PHOSPHATE DERIVATIVE OF POLYALKYLENE GLYCOLS
Charles A. Lynch, Severna Park, Md., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
No Drawing. Filed Oct. 20, 1969, Ser. No. 867,918
Int. Cl. C08b *21/20*
U.S. Cl. 106—168 **3 Claims**

Bis-diphenyl phosphate derivatives of specified alkylene glycols are incorporated into viscose solutions which are then spun into flame retardant rayon.

3,556,826

NITROCELLULOSE COATED PLASTIC FILM

Le Roy F. Gronholz and Paul H. Settlage, Richmond, Va., and Jerome L. Schwartz, Newark, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Feb. 17, 1967, Ser. No. 616,802

Int. Cl. C08b *21/12, 21/14, 27/22*

U.S. Cl. 106—170 7 Claims

An aqueous nitrocellulose composition useful as a coating for films such as polypropylene where properties such as odor sensitivity, film blocking, solvent seal, gloss, etc. are important. The composition contains nitrocellulose, plasticizer (dibutyl phthalate), coalescing agent (methyl "Cellosolve"), emulsifier ("Gafac" RE610), hard resin modifier (sucrose benzoate), wax (carnauba), and a particulate slip agent ("Geon 126").

3,556,827

AGGREGATE BINDER AND PAVING COMPOSITION

Kenneth E. McConnaughay, P.O. Box 1457, Lafayette, Ind. 47902

No Drawing. Continuation of application Ser. No. 673,312, Oct. 6, 1967, which is a continuation-in-part of application Ser. No. 655,241, July 21, 1967, which in turn is a continuation of application Ser. No. 392,630, Aug. 27,1964. This application Dec. 29, 1969, Ser. No. 888,119

Int. Cl. C08h *13/00, 17/22;* C08j *1/41*

U.S. Cl. 106—279 14 Claims

A binder for use with an aggregate for forming a paving composition in which said binder comprises a mixture including from about 5% to about 30% of a low molecular weight sub-mixture consisting essentially of fatty and rosin acids and saponifiable esters and having a molecular weight in the range of from about 80 to about 720, from about 5% to about 40% of a sub-mixture of unsaponifiable material, and from about 30% to about 90% of a higher molecular weight sub-mixture consisting essentially of fatty and rosin acids, decarboxylated rosins, and polymerized unsaponifiable matter and having a molecular weight in the range of from about 460 to about 1200. Said mixture is reacted with a reacting and dispersing agent and is then mixed with an aggregate, or with an aggregate and another binder such as an asphaltic material or portland cement to form a paving composition with high compressive strength.

3,556,828

PROCESS FOR TREATING TITANIUM DIOXIDE PIGMENTS

George G. Durrant, Healing, and Ernest Brunskill, Cleethorpes, England, assignors to Laporte Titanium Limited, London, England, a British company

No Drawing. Filed Jan. 22, 1968, Ser. No. 699,325

Int. Cl. C09c *1/36, 3/00;* C08g *51/04*

U.S. Cl. 106—300 10 Claims

A process for treating titanium dioxide pigments containing alumina to increase the durability characteristics of the pigment which includes the steps of forming an aqueous slurry or paste of the pigment, maintaining the pigment in slurry form for a period of time and thereafter adding to the slurry at least one phosphorus-containing dispersing agent to form a dispersion of the titanium dioxide pigment. Conventional procedures may then be used to recover the pigment from said dispersion.

3,556,829

CARBODIIMIDE MODIFIED CLAY

Stanley E. Gebura, Mount Lakes, N.J., assignor to Interpace Corporation, Parsippany, N.J.

No Drawing. Filed May 1, 1968, Ser. No. 725,927

Int. Cl. C09c *1/00, 3/00;* C08k *1/02*

U.S. Cl. 106—288 9 Claims

A process has been provided for modifying with an organic compound a high surface area siliceous substance. According to this process, the siliceous substance is reacted with a carbodiimide such as cyclohexylcarbodiimide. Products prepared by this process are within the scope of the invention as are the uses of these products for purposes as adjuvants in poly(ester) and oleaginous composition formulations.

3,556,830

TREATMENT OF FILLERS

Jean-Jacques Charrin, Lyon, and Pierre Joseph Frechet, Caluire, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

Filed Feb. 23, 1968, Ser. No. 707,854

Claims priority, application France, Feb. 28, 1967, 96,873

Int. Cl. C09c *3/00;* C03c *25/00*

U.S. Cl. 106—309 6 Claims

Finely divided fillers are treated with organopolysiloxanes by introduction into the top of a column provided with baffles, organopolysiloxane vapour being introduced to the bottom of the column alternately with inert gas introduced at the top of the column.

3,556,831

METHOD FOR SEALING LEAKS IN PRESSURIZED VESSELS

Rainer Schinabeck, 5 Gottschalkstr., 82 Munich 8, Germany, and Horst Hasse, Munich, Germany; said Horst assignor to said Schinabeck

No Drawing. Continuation-in-part of application Ser. No. 555,663, June 7, 1966. This application Sept. 16, 1969, Ser. No. 858,517

Int. Cl. B23p *7/04;* B32b *35/00*

U.S. Cl. 117—2 10 Claims

A method for sealing leaks in a rigid, hollow article, such as containers and conduits, preferably made of metal, which comprises the addition of two layers of epoxy resins over the leak to be sealed. The initial layer comprises an epoxy resin composition with a curing agent. This initial layer cures over a relatively fast period of time (within 1 to 5 minutes). Over this layer is added a second layer which may be the same or different epoxy resin together with a curing agent wherein a cure is achieved over a period of from one to five hours.

3,556,832

METHOD AND APPARATUS FOR APPLYING BARRIER COATING SUBSTANCES TO SHEET MATERIALS

George C. Park, 22 Mount Vernon St., North Reading, Mass. 01864

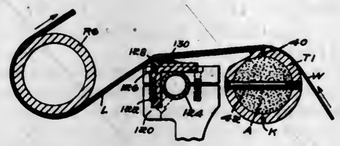
Continuation-in-part of application Ser. No. 806,040, Mar. 6, 1969, which is a continuation of application Ser. No. 335,607, Jan. 3, 1964. This application Mar. 12, 1969, Ser. No. 806,473

Int. Cl. B44d *1/09*

U.S. Cl. 117—7 6 Claims

A barrier coating of the high viscosity "hot melt" class is applied with high uniformity to a moving web by

means of a coating apparatus which is capable of operating at speeds as high as 1,500 feet per minute utilizing "hot melt" compounds of viscosities ranging as high as 100,000 cps. The coating fluid in a heated condition is applied from a coating head consisting of a tubular body formed with an elongated aperture over which the web is passed. The coating fluid is under relatively high pressures of varying intensity. Pressure drops towards the center of the coating tube, induced by friction of high viscosity materials and increasingly high flow rates, is controlled by regulating web pressure. Multiple tensioning means are arranged at two opposite sides of the coating tube. One tensioning device engages the web as it approaches the coating head and acts initially to exert cross tension and stretch the web sufficiently to overcome variations in caliper and web length. A second tensioning device exerts linear tension to force the transversely stretched web uniformly against the coating tube with sufficient web pressure to equalize and balance pumping pressure of fluid all along the coating aperture. Required web pressures of a magnitude necessitating linear tension in excess of the tensile strength of any given web is provided by means of a web press roll supported in rolling contact with the web immediately above the elongated tube aperture. A variable speed power driven winding roll means for the web is interlocked with a variable speed pump mechanism for synchronizing web speed and pumping rate. A dual reading indicator constantly indicates respective web speeds and pumping rates to the machine operator.



3,556,833

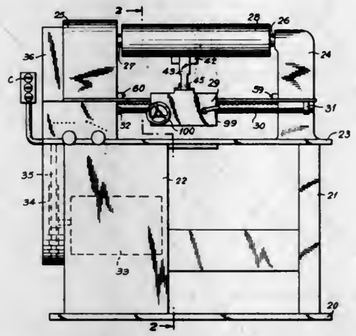
APPARATUS FOR THE MANUFACTURE OF MULTICOLORED AND IRIDESCENT MOLDINGS

Morris Nirenberg, North Woodmere, N.Y., assignor to Oceana International, Inc., New York, N.Y., a corporation of New York

Filed June 17, 1966, Ser. No. 558,347

Int. Cl. B44d *1/09*

U.S. Cl. 117—44 13 Claims



A process and apparatus are disclosed for distributing one or more moldable resins onto a backing film which is subsequently to be charged into a molding machine. The resin is deposited by a nozzle which reciprocates across the whole width of the film as it is rotated on a cylinder which is held against axial movement. The nozzle receives resin from a plurality of sources, the resin streams being differently colored, and certain or all of which may contain lustrous additions, so that molded articles having iridescent effects are obtained.

3,556,834

LOW TEMPERATURE METHOD FOR PRODUCING AMORPHOUS BORON-CARBON DEPOSITS

Joseph J. Gebhardt, Malvern, Pa., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Sept. 28, 1966, Ser. No. 582,483

Int. Cl. C23c *13/04*

U.S. Cl. 117—46 5 Claims

Process for producing an amorphous boron-carbon deposit on a filamentary substrate at a temperature below 1,000° C. by heating the filamentary substrate in a vacuum chamber to a temperature above 700° C., preferably in the range 750–850° C., and contacting it with a hydrocarbon-substituted borane gas such as ethyl decaborane or triethyl borane.

3,556,835

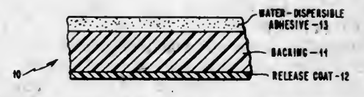
REPULPABLE TAPE

Henry Paul Sorell, Mount Prospect, Ill., assignor to Borden, Inc., New York, N.Y., a corporation of New Jersey

Filed Sept. 3, 1968, Ser. No. 756,752

Int. Cl. C09j *7/04*

U.S. Cl. 117—68.5 8 Claims



This invention relates to repulpable tapes particularly suited for splicing paper webs comprising a water-dispersible backing having applied to at least one surface thereof a water-dispersible pressure-sensitive adhesive consisting essentially of a polyvinyl methylether, a C_1–C_4 alkyl half ester of a vinyl methyl ether and maleic anhydride copolymer, and a hydantoinformaldehyde resin.

3,556,836

COMPOSITE BORON FILAMENTS WITH MATRIX OVERCOAT

Malcolm Basche, West Hartford, Conn., Roy Fanti, Springfield, Mass., and Salvatore F. Galasso, Manchester, Conn., assignors to United Aircraft Corporation, East Hartford, Conn.

Filed Feb. 24, 1967, Ser. No. 618,514

Int. Cl. B32b *15/04;* B44d *1/42*

U.S. Cl. 117—71 4 Claims

A boron filament having a thin, protective layer of silicon carbide is further provided with an overcoat of a matrix material including particularly the light metals such as aluminum, magnesium, titanium and the alloys thereof, to thereby provide a filament which is not only characterized by high strength but also by improved utility in the production of fiber-reinforced articles.

3,556,837

COMPOSITE AND METHOD OF MAKING SAME

Robert H. Hammond, Berkeley, Calif., assignor to Gulf Energy & Environmental System, Inc., a corporation of Delaware

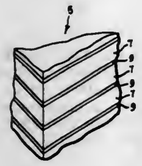
Continuation-in-part of application Ser. No. 535,284, Jan. 28, 1966. This application Nov. 22, 1967, Ser. No. 685,180

Int. Cl. B44d *1/14*

U.S. Cl. 117—71 9 Claims

High strength composite made of a plurality of pairs of alternating layers each of which is made by vapor deposi-

tion. The material of one group of layers is ductile, relative to the other. The composite may have a very high tensile strength or modulus of elasticity by so choosing



the other material. The layers are usually between about 100 A. and 10 microns thick and may have a very thin layer of a third material deposited therebetween to improve bonding.

3,556,838
PROCESS FOR COATING ACTIVE IRON AND THE COATED IRON

Marnell A. Segura, Baton Rouge, La., assignor to Esso Research and Engineering Company, a corporation of Delaware

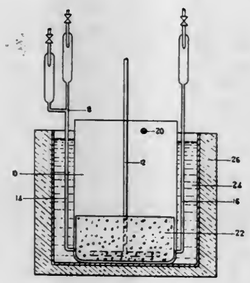
No Drawing. Continuation-in-part of application Ser. No. 591,124, Nov. 1, 1966. This application July 23, 1969, Ser. No. 845,936
Int. Cl. C23f *9/02*; B44d *1/36*
U.S. Cl. 117—100 **15 Claims**

Chemically active and water absorbent surfaces of reduced iron ore are treated to render them water-repellent by treatment with a mixture comprising polymerizable silicones and polymerizable olefins having an average carbon number ranging from C_{20} to about C_{60}, thereby forming a protective film on the surface of the iron.

3,556,839
ELECTROLESS METAL COATING

Alexander R. Roy, Johannesburg, Transvaal, Republic of South Africa, assignor to Industrial Distributors (1946) Limited, Johannesburg, Transvaal, Republic of South Africa

Filed Oct. 24, 1967, Ser. No. 677,521
Claims priority, application Republic of South Africa, Nov. 1, 1966, 66/6,601, 66/6,602, 66/6,603
Int. Cl. C23c *3/02*
U.S. Cl. 117—100 **1 Claim**



The invention concerns a process for coating objects, and in particular, natural or synthetic diamonds, with nickel or cobalt, by contacting the objects with a solution containing ions of the particular metal and a solution containing between 0.001 and 0.035 mole per litre of hypophosphite ions.

3,556,840
METHOD FOR IMPROVING THE FLAME RETARDANT PROPERTIES OF A CELLULOSIC MATERIAL

Giuliana C. Tesoro, Dobbs Ferry, N.Y., assignor to J. P. Stevens & Co., Inc., New York, N.Y., a corporation of Delaware

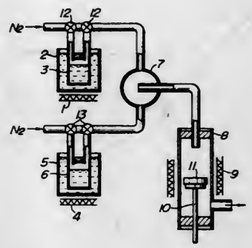
No Drawing. Continuation-in-part of application Ser. No. 672,412, Sept. 15, 1967, which is a continuation-in-part of application Ser. No. 620,109, Mar. 2, 1967. This application Mar. 15, 1968, Ser. No. 713,317
Int. Cl. C09k *3/28*; C09d *5/18*
U.S. Cl. 117—137 **8 Claims**

Cellulosic textile materials are rendered flame-retardant by treating the textile material with an N-(oxymethyl)-3-(dialkylphosphono)propionamide, e.g., N-(hydroxymethyl)-3-(diethylphosphono)propionamide, and an acid catalyst and heating to insolubilize the amide compound, and thereafter treating the material with a poly(oxymethyl) melamine, e.g., tris(hydroxymethyl)melamine, and a peroxide such as hydrogen peroxide and heating to insolubilize the melamine compound. The resulting product, which desirably contains 0.5 to 1.8 weight percent phosphorus, based upon the cellulose, and sufficient nitrogen to render the cellulose flame-retardant, retains the soft hand, strength and air permeability characteristic of the untreated textile.

3,556,841
PROCESS FOR FORMING SILICON DIOXIDE FILMS

Hitoo Iwasa, Toyonaka-shi, Masami Yokozawa, Osaka, and Iwao Teramoto, Ibaragi-shi, Japan, assignors to Matsushita Electronics Corporation, Osaka, Japan, a corporation of Japan

Filed Apr. 4, 1968, Ser. No. 718,896
Claims priority, application Japan, Apr. 11, 1967, 42/23,773
Int. Cl. C23c *11/08*
U.S. Cl. 117—201 **10 Claims**



Silicon dioxide film is formed on the surface of a semiconductor substrate by the thermal decomposition of a mixed gas comprising a vapor of an organo-oxysilane, a vapor of an aliphatic carboxylic acid, such as acetic acid, and an inert gas. The use of said mixed gas results in such advantages that the reaction can proceed at such a low temperature within the range of 300° to 600° C. and the variation in characteristic of silicon dioxide at the deposition step can be reduced.

3,556,842
METHOD OF PRODUCING LAYERS IF INTERMETALLIC SUPERCONDUCTING NIOBIUM-TIN (Nb_3Sn) ON A CARRIER

Kyongmin Kim, Halifax, Nova Scotia, Canada, assignor to Siemens Aktiengesellschaft, a corporation of Germany

Filed Mar. 15, 1968, Ser. No. 713,344
Claims priority, application Germany, Mar. 16, 1967, S 108,857
Int. Cl. C23c *11/00, 13/00*
U.S. Cl. 117—217 **5 Claims**

Described is a method of producing layers from the intermetallic superconducting niobium-tin (Nb_3Sn) upon a carrier comprised of highly refractory metal or of a highly refractory metal alloy, by reducing the halides of niobium and tin, by hydrogen upon the heated carrier. The process is characterized by first bringing a gaseous niobium chloride or bromide and hydrogen into contact with a heated carrier thereby precipitating, upon said carrier, a niobium layer through a reduction of the niobium chloride or niobium bromide and, thereafter, precipitating a niobium-tin layer upon said niobium layer.

3,556,843
METALLIZED CERAMIC AND METHOD AND COMPOSITION THEREFOR

Robert W. Buck, Wheat Ridge, Colo., assignor to Coors Porcelain Company, Golden, Colo., a corporation of Colorado

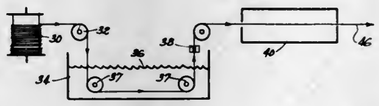
No Drawing. Filed May 23, 1968, Ser. No. 731,607
Int. Cl. H01b *1/02, 1/06*
U.S. Cl. 117—227 **8 Claims**

Sintered beryllium oxide base ceramic is metallized by applying thereto a layer of a mixture of about 70 to 85% by weight tungsten powder and about 15 to 30% by weight yttrium oxide powder and then heating to a temperature sufficient to sinter the tungsten powder and cause the yttrium oxide to react with the beryllium oxide to form a liquid phase which penetrates and fills the interstices of the sintered tungsten to provide a strongly bonded metallized surface on the beryllium oxide ceramic to which other metals may then be easily bonded for forming electrical connections or to form a sealed structure.

3,556,844
ELASTOMER IMPREGNATED FIBROUS GLASS AND METHODS FOR ITS MANUFACTURE

Alfred Marzocchi, 35 Thomas Leighton Blvd., Cumberland, R.I. 02864

Continuation-in-part of application Ser. No. 424,790, Jan. 11, 1965. This application Sept. 25, 1968, Ser. No. 762,468
The portion of the term of the patent subsequent to Nov. 22, 1983, has been disclaimed and dedicated to the Public
Int. Cl. C03c *25/02*
U.S. Cl. 117—65.2 **12 Claims**

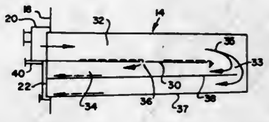


The preparation of glass fiber-elastomeric products wherein the glass fiber component, prior to the combination with the continuous phase elastomer, is formed into bundles and impregnated with an elastomeric composition and partially cured to advance the elastomeric component of the impregnating composition to a stage which will militate against its displacement from within the glass fiber bundle whereby the glass fibers are integrated into the elastomeric system without the need to make use of an anchoring agent for interbonding the glass fiber surfaces to the elastomer and which includes an interfacial coating about the impregnated bundle of glass fibers to assimilate the partially cured elastomeric component of the impregnant with the continuous phase elastomer of the rubber product.

3,556,845
HEATING MEANS FOR CONTINUOUS CRYSTALLIZING VESSELS

Francis Dambrine, Marcq-en-Baroeul, and Jean Claude Giorgi, Hellemmes, France, assignors to Fives Lille-Cail, Paris, France

Filed May 12, 1969, Ser. No. 823,625
Claims priority, application France, May 10, 1968, 151,268
Int. Cl. C13f *1/02*; B01d *1/04*; F28f *3/12*
U.S. Cl. 127—16 **4 Claims**



A group of vertically disposed horizontally elongated hollow heating plates disposed in the bottom portion of a horizontally elongated vessel which has an end wall provided with a steam chest and with condensation collecting means. Each hollow heating plate is partitioned to form an upper compartment in communication with the steam chest and a lower compartment in communication with the condensation collecting means, the two compartments being connected by a passage in the end portion of the heating plate remote from the end wall of the vessel, so that steam flowing through the upper compartment may assist in moving condensation in the lower compartment to the collecting means. A condensation collecting trough is provided in the lower compartment, in upwardly spaced relation from the bottom of the latter.

3,556,846
METHOD OF REMOVING MANGANESE OXIDE DEPOSITS

Vincent F. Hnizda, Huntington Woods, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 21, 1967, Ser. No. 692,270
Int. Cl. C23g *1/02*
U.S. Cl. 134—3 **27 Claims**

A method of removing manganese containing deposits formed on the surfaces of jet engines from burning fuel containing a cyclopentadienyl manganese tricarbonyl as a smoke reducer, by treating the deposit coated surfaces with an aqueous solution of a mineral acid, an organic acid having an ionization constant at 25° C. greater than 10^{-3}, either in the presence or absence of H_2O_2 or an H_2O_2 source as a promoter.

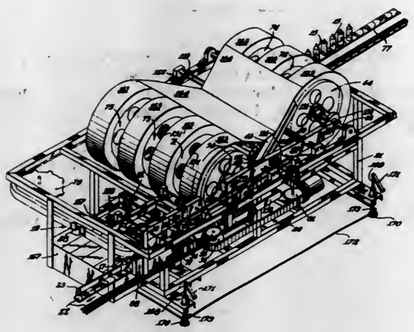
3,556,847
METHOD OF AND APPARATUS FOR CLEANING BOTTLE AND JAR TYPE CONTAINERS

Donald T. Prodzenski, Glen Ellyn, Ill., assignor to Alpeda Industries, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Jan. 23, 1968, Ser. No. 699,850
Int. Cl. B08b *9/00*
U.S. Cl. 134—23 **28 Claims**

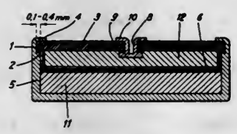
Open end containers are fed to and transported continuously from infeed to discharge seriatim by and between synchronized articulated sections of confronting

endless gripping conveyors along a path having one or more generally figure-eight convolutions and during which cleansing is effected. In a compact, unitary, portable machine, the apparatus includes a timing infeed screw, two banks of relatively offset conveyor guiding and driving



wheels, crossover conveyor track means, and cleaning fluid jet stream means operative while the containers are supported open end inward while traveling about certain of the wheels. Spinout is effected as the containers are traveling open end out about others of the wheels.

3,556,848
HERMETICALLY SEALED ENCLOSURE FOR BATTERY CELLS
Paul Ruetschi, Yverdon, Switzerland, assignor to Leclanche S.A., Yverdon, Switzerland
Filed Sept. 13, 1968, Ser. No. 759,724
Claims priority, application Switzerland, Oct. 4, 1967, 13,832/67
Int. Cl. H01m *35/00*
U.S. Cl. 136—6 **7 Claims**



The enclosure includes a synthetic-plastic ring member, supported by an internal shoulder machined into the cell can. The shoulder embodies a sharp edge that engages into the plastic ring member.

3,556,849
RECHARGING ALKALINE/ZINC CELLS
Harry G. Oswin, Chauncey, and Keith F. Blurton, Hempstead, N.Y., assignors to Leesona Corporation, Warwick, R.I., a corporation of Massachusetts
Filed June 19, 1968, Ser. No. 738,227
Int. Cl. H01m *43/02*
U.S. Cl. 136—30 **10 Claims**

An improved method of recharging a secondary battery utilizing a zinc anode is described comprising maintaining the current density during charging between about 1 and 15 ma./cm.^{2} and pulse charging, i.e., charging with a periodic cut-off of current, with the on time being no greater than about 150 milliseconds and the off period being at least 0.5 of the on period.

3,556,850
LEAD-ACID, POLYELECTROLYTE COMPLEX CONTAINING STORAGE BATTERY AND METHOD OF STORING AND HANDLING THE SAME
David L. Douglas and Henry J. Banas, Minneapolis, Minn., assignors to Gould-National Batteries, Inc., St. Paul, Minn., a corporation of Delaware
No Drawing. Filed Sept. 26, 1966, Ser. No. 581,749
Int. Cl. H01m *39/00, 39/04*
U.S. Cl. 136—26 **18 Claims**

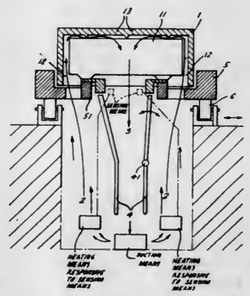
A water-activatable dry-charged lead-acid secondary cell, having a lead peroxide positive electrode, a sponge metallic lead negative electrode, and a cell container, is provided with a polyelectrolyte complex of ionically bonded polycationic and polyanionic organic resins within the cell. The complex contains sulfuric acid in an amount sufficient to provide a sulfuric acid electrolyte upon the addition of water to the cell to thereby activate the cell.

3,556,851
WATER-ACTIVATABLE DRY-CHARGED LEAD-ACID STORAGE CELLS
David L. Douglas and Henry J. Banas, Minneapolis, Minn., assignors to Gould-National Batteries, Inc., St. Paul, Minn., a corporation of Delaware
Continuation-in-part of application Ser. No. 581,749, Sept. 26, 1966. This application Dec. 12, 1968, Ser. No. 783,264
Int. Cl. H01m *3/04, 9/00*
U.S. Cl. 136—26 **7 Claims**



Separators for water-activatable, dry-charged, lead-acid storage batteries comprising a sheet of polyelectrolyte complex of ionically bonded polycationic and polyanionic organic resins, and an auxiliary separator to space the polyelectrolyte from the positive plates. The polyelectrolyte contains concentrated sulfuric acid to provide a sulfuric acid electrolyte when water is added to activate the battery.

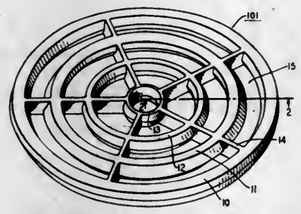
3,556,852
METHOD AND APPARATUS FOR TREATING STORAGE BATTERY PLATE ASSEMBLY
Herbert Haebler, Frankfurt am Main, and Heinz Hense, Wuppertal-Elberfeld, Germany, assignors to Varta Aktiengesellschaft, Frankfurt am Main, Germany
Filed May 16, 1968, Ser. No. 729,809
Claims priority, application Germany, June 22, 1967, V 33,914
Int. Cl. H01m *35/26, 35/18*
U.S. Cl. 136—33 **17 Claims**



A method and an apparatus for producing a storage battery provide for assembling the electrode plates and

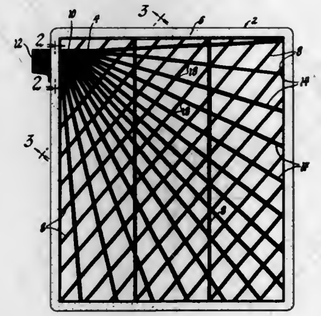
separators in an open-sided housing. The plates are wetted with a protective agent. Thereupon the housing with the assembled plates therein is advanced in a predetermined path and during this movement a heated gas is blown into the housing through the open side thereof and is withdrawn through the spaces between the plates, whereby the latter are dried.

3,556,853
GRID FOR LEAD-ACID CELL
Anthony G. Cannone, Cranford, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed June 5, 1969, Ser. No. 830,603
Int. Cl. H01m *35/04*
U.S. Cl. 136—36 **11 Claims**



The structural members or ribs of the grid for a lead-acid cell are proportioned so that the ratio of surface area to cross-section area is substantially identical for each member. Thus, the growth of each member with aging is substantially identical and the members maintain good contact with the active material between the members whereby the cell charge capacity is maintained for much longer periods than can be attained with present grids.

3,556,854
LEAD ACID STORAGE BATTERY HAVING A GRID WITH DIVERGENT FINGERS
Ellis G. Wheadon, Yorktown, and Norman L. Willmann, Anderson, Ind., assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 29, 1968, Ser. No. 780,068
Int. Cl. H01m *39/00*
U.S. Cl. 136—37 **5 Claims**



A composite battery plate grid and process for forming same the grid being formed from a fan-like conductor and a grate-like nonconductor bonded one to the other by a plurality of fusion-interlocked joints.

3,556,855
BATTERY WITH A GRID OF METAL COATED FIBRES AND RESIN
Eric Reginald Howells, Runcorn, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Filed July 11, 1968, Ser. No. 743,952
Claims priority, application Great Britain, July 19, 1967, 33,230/67
Int. Cl. H01m *35/04*
U.S. Cl. 136—65 **8 Claims**

For use in the plate on an electrochemical cell or battery, a grid at least part of which is shaped from an electrically conductive resinous composition comprising a mouldable resin and metal coated glass fibres. Also, secondary cells and batteries containing such grids.

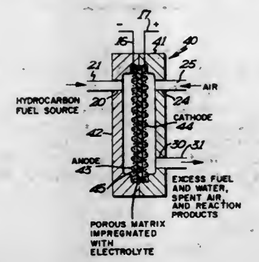
3,556,856
THREE-LAYER FUEL CELL ELECTRODE
Raymond J. Elbert, Cleveland, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Aug. 22, 1968, Ser. No. 754,673
Int. Cl. H01m *27/00, 27/10*
U.S. Cl. 136—86 **8 Claims**

Electrodes which comprise (a) a porous metal layer having relatively fine pores forming the electrolyte side of the electrode, (b) a center layer of porous metal having relatively coarse pores, one side of which is bonded to the fine pored metal layer, and (c) a gas permeable layer of plastic bonded active material which forms the gas side of the electrode and which is bonded to the other side of the coarse pored metal layer, at least a portion of such bonding taking place through penetration of the plastic bonded material into the coarse pores.

3,556,857
FUEL CELL
Armand R. Poirier, Utica, Mich., and John A. Briese, Idaho Falls, Idaho, assignors to Onan, a division of Studebaker Corporation, Minneapolis, Minn., a corporation of Delaware
Continuation-in-part of application Ser. No. 392,651, Aug. 27, 1964. This application Aug. 23, 1968, Ser. No. 754,859
Int. Cl. H01m *27/00*
U.S. Cl. 136—86 **8 Claims**

A fuel cell in which there are porous fuel and oxygen electrodes and an interposed porous matrix containing an electrolyte and in which an excess of hydrocarbon fluid fuel is introduced into the fuel electrode compartment and is forced through the fuel electrode, the elec-

trolyte matrix, and the oxygen electrode, and out through an exhaust passage in the oxygen electrode compartment



to carry with it any reaction products occurring at the fuel and oxygen electrodes.

3,556,858
CONTROL APPARATUS

Richard C. Hill, Glenside, and Michael J. Pollack, Lansdale, Pa., assignors to Honeywell, Inc., Minneapolis, Minn., a corporation of Delaware

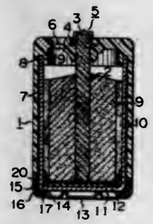
Filed Sept. 11, 1968, Ser. No. 759,024
Int. Cl. H01m *17/00*
U.S. Cl. 136—100 **11 Claims**

A replenishable electric-current producing cell, or battery of cells, wherein the components which are depleted through use of the cell are packaged in a replaceable unit. The materials of which the cell is made are nontoxic in nature and nonhazardous for use by children. Also, a device embodying, as an integral part thereof, an electric-current producing cell with the replenishable feature.

3,556,859
DRY BATTERY WITH METAL PLATE OVERLAPPING THE ZINC ANODE

Soichi Ohki, Tokyo, Japan, assignor to Toshiba Ray-O-Vac Co., Ltd., Shinagawa-ku, Tokyo, Japan, a corporation of Japan

Filed Nov. 6, 1968, Ser. No. 773,906
Int. Cl. H01m *21/06*
U.S. Cl. 136—107 **2 Claims**

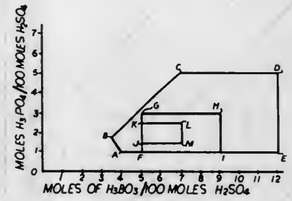


A dry battery comprising a cylindrical member made of thermoplastic synthetic resin and provided at the upper sealed part with a cathode terminal cap, and a zinc can, a component of a power generating element, inserted into the cylindrical member from the bottom opening, said can being filled with other power generating components including a carbon rod, a depolarizing agent surrounding it, an electrolyzing paste disposed around the outer circumference of said agent and an insulating bottom plate, particularly characterized in that there is positioned an anode metal plate below the bottom of the zinc can, the upwardly bent periphery of said anode metal plate contacts the outer periphery near the bottom of the zinc can, said upwardly bent peripheral edge of the anode metal plate is again bent downward to form a folded section with a free space allowed therein, and the bottom peripheral edge of the aforesaid cylindrical member of thermoplastic resin is thermally bent up and inserted into said space with external pressure so as to seal the bottom of the plastic cylindrical member.

3,556,860
STORAGE BATTERY AND ELECTROLYTE PRECURSOR THEREFOR

Robert F. Amlie, Milwaukee, Wis., assignor to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

Filed Feb. 17, 1969, Ser. No. 799,679
Int. Cl. H01m *9/00*
U.S. Cl. 136—157 **9 Claims**

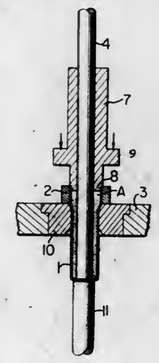


A gelled sulfuric acid composition for forming a battery electrolyte which contains either the oxyacids or oxides of boron and phosphorous as gelling agents, lead acid batteries containing such electrolytes formed from the gel, and methods for preparing the same. The invention also relates to battery constructions which utilize gelled sulfuric acid in the formation of electrolytes in dry charged batteries for on-the-site preparations of ready-to-use dry charged lead-acid batteries.

3,556,861
METHOD OF MANUFACTURING ELECTRO-CHEMICAL GENERATORS

Jean Firmin Jammet, Poitiers, France, assignor to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme), Seine-Saint-Denis, France, a company of France

Filed Dec. 9, 1968, Ser. No. 782,203
Claims priority, application France, Dec. 8, 1967, 131,624; Sept. 27, 1968, 168,043
Int. Cl. H01m *31/00, 33/00*
U.S. Cl. 136—175 **15 Claims**



Manufacture of electrochemical generators or cells, particularly of the alkaline type including a metallic cup preferably of zinc serving as a container as well as current collector involving providing oversize diametered cups on the inner wall of which a coherent mass of active material such as zinc or amalgamated zinc powder is adhered by delivering the powder in loose form into the oversize cup into which a mandrel is concentrically disposed, leaving an annular space defined by the inner wall of the cup and the mandrel. The powder is distributed into the annular space. Thereafter, prior to removal of the mandrel, this powder in said space is submitted to compression in situ by cold compression and dimensional reduction of the cup diameter to sufficient extent to effect adequate mechanical cohesion of the powder into an annular mass while retaining high porosity thereof and effecting its adherence to the inner wall of the reduced diametered cup. Subsequently, the mandrel is withdrawn and other components of the cell or generator including the opposite polarity electrode, depolarizer, separator and electrolyte are assembled with the so-treated cup-mass. Thereafter, additional cold compressional dimensional reduction of the cup and its contents may be effected to bring the positive and negative electrodes closer together and increase the electrochemical efficiency of the cell. A variety of modes of effecting cold compressioned dimensional reduction of the cup and distribution of the zinc powder into the annular space are described.

3,556,862
METHOD FOR MAKING A BATTERY HAVING ELECTRODES AND/OR SEPARATORS ANCHORED IN CONTAINER

Albert L. Fox, University Heights, Ohio, assignor to ESB Incorporated, a corporation of Delaware

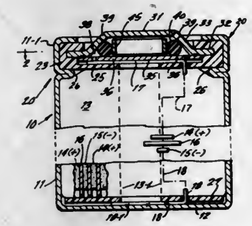
Filed May 2, 1968, Ser. No. 725,999
Int. Cl. H01m *35/18*
U.S. Cl. 136—176 **14 Claims**

Rests in a battery container are softened and the battery electrodes and/or separators are pressed and embedded in the rests. The rests may be softened by any convenient technique including the use of solvents and heat. The container may be in one piece or may be in two portions which are sealed together; where the container is in two portions, the sealing may be done by any convenient technique including the use of heat.

3,556,863
NORMALLY SEALED ENCASED RECHARGEABLE CELLS WITH SELF-RESEALING EXCESS PRESSURE GAS VENT

Raymond J. Nathe, Pleasantville, N.Y., assignor to Marathon Manufacturing Company, a corporation of Delaware

Filed Aug. 7, 1968, Ser. No. 750,795
Int. Cl. H01m *1/06*
U.S. Cl. 136—178 **10 Claims**

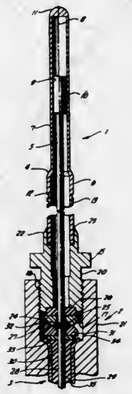


An encased normally sealed rechargeable cell has a casing wall portion which together with an overlapping opposite retainer wall portion converge with their radically more outward seating wall regions toward each other and form a loop-shaped vent passage of wedge-shaped transverse cross section, having its radially most outward vent space connected to the casing interior for releasing excess pressure gases. This vent passage is normally sealed by an endless elastomer loop held wedged in and compressed radially generally inward by sealing engagement of the elastomer loop with opposite converging sealing wall regions. Internal pressure exceeding a certain maximum moves radially more inward at least portions of the elastomer loop to release gases past the elastomer loop at a certain high pressure with the loop preventing gas release below said certain pressure. Such compressed elastomer loop seal is shown combined with an outwardly expanding stiff elastically compressed ring of spring metal, which applies radially outward compression forces to the elastomer loop and assures close control of the pressure at which the elastomer loop unseals and reseals the vent passage.

3,556,864
THERMOCOUPLE STRUCTURE AND METHOD FOR MAKING SAME

Edmond M. Wagner, Sierra Madre, Calif., assignor to Jade Controls Co., Inc., Montclair, Calif., a corporation of California

Filed June 3, 1968, Ser. No. 734,512
Int. Cl. H01v *1/04*
U.S. Cl. 136—228 **17 Claims**



A length of tube made from one metal has an extremity with a smaller diameter and wall thickness than its base. A length of wire made from a dissimilar metal extends inside the tube in axial alignment therewith from a point spaced from the end of the extremity of the tube to its base. A hot thermocouple junction is formed in a cylindrical area between a portion of the extremity of the tube and the adjacent portion of the length of the wire. A tip is formed integral with the end of the extremity of the tube and is spaced from the adjacent end of the wire so as to seal the end of the tube from the atmosphere without electrical contact with the end of the wire. A connector having a male member and a female member adapted to mate with each other has two mutually insulated electrical paths connecting a pair of leads to the tube and the wire, respectively. At least one cold junction is formed in one of the electrical paths. The formation of the tip is facilitated by reducing the open area at the end of the tube prior to the sealing operation.

3,556,865
MECHANICALLY STABLE THERMOCOUPLE AND METHOD FOR MAKING THE SAME
Paul F. Levy, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Dec. 28, 1966, Ser. No. 605,250
Int. Cl. H01v 1/04, 1/06
U.S. Cl. 136—233 8 Claims



A thermocouple constructed by heating a thermojunction weld and an adjacent support member with either a hydrogen-oxygen torch or a "Heliarc" welding device until the weld is melted into the holes in the support member or until the weld penetrates the holes of the support member and the support member partially or totally encapsulates the weld.

3,556,866
METHOD FOR PRODUCING DEEP DRAWING STEEL
Melvin B. Gibbs, Harvey, Ill., and James L. Golding, Valparaiso, and Barry H. Levine, Highland, Ind., and John P. Novak, Homewood, Ill., assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware
No Drawing. Filed Jan. 31, 1968, Ser. No. 701,866
Int. Cl. C21d 7/00, 7/14
U.S. Cl. 148—2 6 Claims

Pour steel ingot containing 0.06–0.12 weight percent carbon, 0.20–0.60 weight percent manganese, less than 0.03 phosphorous, 0.05 maximum copper, 1.00 weight percent maximum metalloid, residual sulfur. Initially allow ingot to rim, then core kill with deoxidizing agent to provide homogenous ingot core. Roll ingot into strip. Anneal strip to give uniform recrystallized grain size of 7–8 ASTM (ferritic). Decarburize to 0.008 weight percent maximum carbon. Cool without further anneal. Temper roll. Resulting product is readily deep drawn and readily coated with porcelain enamel.

3,556,867
METHOD FOR FORMING LUBRICANT COATINGS ON METAL SURFACES TO BE DEFORMED
Cecil W. Glasson, Huntington Woods, Mich., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 649,139, June 27, 1967. This application Apr. 18, 1968, Ser. No. 722,148
Int. Cl. C23f 7/10
U.S. Cl. 148—6.15 12 Claims

A process for forming a lubricant coating on a metal surface to be deformed wherein a phosphate material is applied to the metal surface so as to effect a controlled reaction between the phosphate material and the metal surface and form a phosphate coating which is at least partially unreacted with the metal surface. Thereafter, a fatty acid composition is applied to the phosphate coated surface so as to effect a controlled reaction between the fatty acid composition and the phosphate coating and form a fatty acid coating which is at least partially unreacted with the phosphate coating and the metal surface. Both the phosphate material and the fatty acid compositions are applied so that a substantially dry coating is formed substantially upon contact of the respective material with the metal surface. Preferably, the metal surface is at an elevated temperature when the coating materials are applied and both the phosphate material and the fatty acid composition are desirably in the form of aqueous solution.

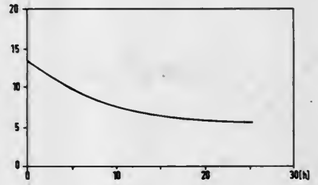
3,556,868
CHROMATE COATING COMPOSITION AND METHOD
Victor F. Ziemba, Detroit, Mich., assignor to Detrex Chemical Industries Incorporated, Detroit, Mich., a company of Michigan
No Drawing. Filed Feb. 21, 1968, Ser. No. 707,318
Int. Cl. C23f 7/26
U.S. Cl. 148—6.2 5 Claims

An aqueous solution for producing chromate conversion coatings on aluminum surfaces is described which contains in addition to water, iodate ions, hexavalent chromium and a fluorine bearing compound. One embodiment of this solution contains additionally silver. These solutions produce chromate conversion coatings on the aluminum surfaces by contact, and such solutions have longer effective lives than conventional chromate conversion coating solutions.

3,556,869
METHOD FOR SURFACE-TREATMENT OF ZINC METAL AND ZINC ALLOYS
Hideya Okada and Shozo Matsuda, Kawasaki, Misao Ohbu, Kitakyushu, and Hideo Tamura, Kawasaki, Japan, assignors to Nippon Steel Corporation, Tokyo, Japan
No Drawing. Continuation-in-part of application Ser. No. 438,718, Mar. 10, 1965. This application July 22, 1969, Ser. No. 843,859
Claims priority, application Japan, Mar. 16, 1964, 39/14,504
Int. Cl. C23f 7/26
U.S. Cl. 148—6.2 7 Claims

A method is provided for surface treatment of zinc metal and zinc alloys to obtain a product of excellent corrosion resistance, paint adhesion properties and appearance. According to this method, the article having the surface of zinc metal and zinc alloys, is treated with an aqueous solution of chromic acid and colloidal silica.

3,556,870
METHOD OF PREOXIDIZING NUCLEAR REACTOR COMPONENTS OF ZIRCONIUM ALLOYS
Werner Debray, Ullrich Mattern, and Lothar Stieding, Erlangen, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Sept. 27, 1967, Ser. No. 670,979
Claims priority, application Germany, Sept. 30, 1966, S 106,324
Int. Cl. C23f 7/02; G21c 21/00
U.S. Cl. 148—6.3 3 Claims



Described is a method of preoxidation of nuclear reactor components of zirconium alloys, using water or water vapor. The process characterized by a multistep treatment whereby the usual preoxidation in water vapor of 400° C. is preceded by treatment in water or vapor, at temperatures between 200–350° C. and preferably 250–300° C. over a period of 1–4 days.

3,556,871
METHOD OF MAKING BLACK STAINLESS STEEL SHEET
Harold L. Helgert, Hayden B. Powell, and Robert K. Teorsky, Natrona Heights, Pa., assignors to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
No Drawing. Filed Apr. 15, 1968, Ser. No. 721,159
Int. Cl. C23f 7/04
U.S. Cl. 148—6.14 6 Claims

Described herein is a method of producing blackened stainless steel strip, sheet and the like, and formed articles of blackened stainless steel. The strip is produced by oxidizing the stainless steel surface to form a blackened, porous oxide coating, impregnating said coating with an alkali metal silicate, drying and fusing the silicate by heating above 1400° F., and thereafter flattening the stainless steel to permit fabrication. The formed articles are made by surface conditioning prior to oxidizing.

3,556,872
PROCESS FOR PREPARING ALUMINUM BASE ALLOYS
George J. Jagaciak, Conyngham, Pa., assignor to Olin Corporation, a corporation of Virginia
No Drawing. Division of applications Ser. No. 457,487, now Patent No. 3,346,370, Ser. No. 457,488, now Patent No. 3,346,371, Ser. No. 457,489, now Patent No. 3,346,372, Ser. No. 457,490 now Patent No. 3,346,373, Ser. No. 457,509, now Patent No. 3,346,374, Ser. No. 457,510, now Patent No. 3,346,375, Ser. No. 457,511, Ser. No. 457,515, now Patent No. 3,346,376, Ser. No. 457,516, now Patent No. 3,366,476, and Ser. No. 457,523, now Patent No. 3,346,377, all dated May 20, 1965. This application July 19, 1967, Ser. No. 654,334
Int. Cl. C22f 1/04
U.S. Cl. 148—11.5 11 Claims

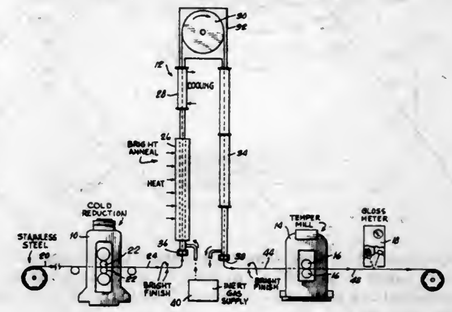
The present disclosure relates to a process for obtaining aluminum base alloys containing magnesium having improved stress corrosion resistance and high strength.

3,556,873
SILICON STEELS CONTAINING SELENIUM
Frank A. Malagari, Jr., Freeport, Pa., assignor to Allegheny Ludlum Steel Corporation, Brackenridge, Pa., a corporation of Pennsylvania
No Drawing. Filed Apr. 12, 1968, Ser. No. 721,099
Int. Cl. H01f 1/16; C22c 39/46, 39/54
U.S. Cl. 148—31.55 4 Claims

Described is grain oriented silicon steel having a predominantly (110) [001] texture and critical carbon, manganese and selenium quantities, i.e., 0.02% to 0.07% carbon, at least 0.045% manganese, 0.01% to 0.1% selenium and not more than residual sulfur.

3,556,874
METAL ARTICLES WITH CONTROLLED FINISH
Rollin T. McClain, Massillon, Ohio, assignor to Republic Steel Corporation, Cleveland, Ohio, a corporation of New Jersey
Filed Aug. 1, 1967, Ser. No. 657,562
C22c 39/20
U.S. Cl. 148—37 9 Claims

Stainless steel sheet, e.g. strip, of unusual matte finish having a subdued luster of completely non-directional character is achieved by cold rolling the strip to final gauge with a bright mirror-like finish, then annealing the strip while maintaining the bright surface unimpaired, as by bright anneal in an inert atmosphere, and thereafter subjecting the mirror-like sheet to temper rolling with essentially zero elongation, using matte-surfaced rolls prepared by polishing followed by grit blasting or etch treatment, the matte roll surfaces having a substantial profile depth and a fine, random, relief distribution of indentations of the same grain count or peak density in all directions. Being measurable by a simple reflectivity test, the matte surface on the strip can be produced to any desired standard by control of the rolling pressure and number of passes in the temper rolling stage. The resulting new sheet product has a highly attractive, non-directional finish, is reproducible, and has good corrosion resistance and durability in fabrication for many uses, affording a sum of qualities not previously attained in special-finish stainless steel. The process is applicable to many stainless steels, including the 200, 300 and 400 grades.



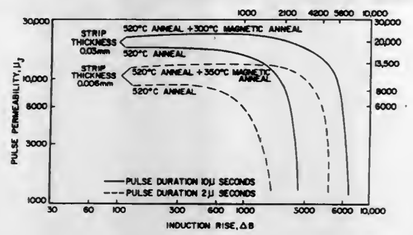
3,556,875
PROCESS FOR EPITAXIALLY GROWING GALLIUM ARSENIDE ON GERMANIUM
Henry Holloway, Orchid Lake, Mich., and Kenneth H. Maxwell, Palmyra, N.Y., assignors to Philco-Ford Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 607,018
Int. Cl. H01l 7/34, 7/36
U.S. Cl. 148—175 4 Claims

A monocrystalline germanium substrate having an exposed surface oriented between the (100) and the (111) crystal planes, preferably at or between the (311) and (511) planes, is established at a temperature between 730° and 780° centigrade. While at this temperature the exposed germanium surface is subjected initially, for about two minutes, to a first vapor mixture of arsenic, hydrogen chloride and hydrogen (but no gallium metal or compound). This first mixture preferably is produced by reacting at about 900° C. arsenic trichloride vapor with hydrogen gas. Then the exposed germanium surface is subjected to a second vapor mixture of arsenic, gallium chloride, hydrogen chloride and hydrogen. This second mixture preferably is produced by reacting at about 900° C. arsenic trichloride vapor, the vapor of gallium saturated with arsenic prior to vaporization, and hydrogen. Under such conditions, monocrystalline gallium arsenide having sufficiently high crystalline perfection for use in semiconductor devices epitaxes onto the exposed surface of the germanium substrate.

3,556,876
PROCESS FOR TREATING NICKEL-IRON-BASE ALLOY STRIP TO INCREASE INDUCTION RISE AND PULSE PERMEABILITY
Friedrich Pfeifer, Oberissigheim, and Rudolf Deller, Hainstadt, Germany, assignors to Vacuumschmelze GmbH, Hanau, Germany, a corporation of Germany
Filed Jan. 8, 1968, Ser. No. 696,416
Claims priority, application Germany, Jan. 25, 1967, V 32,844
Int. Cl. C21d 1/04; H01f 1/14
U.S. Cl. 148—108 5 Claims

Nickel-iron-molybdenum alloy strip, optionally including copper, which has previously been subjected to an

annealing treatment at a temperature between 950° C. and 1220° C. is annealed at a temperature in the range from 450° C. to 600° C. and rapidly cooled thereafter to improve the initial permeability, then the alloy strip

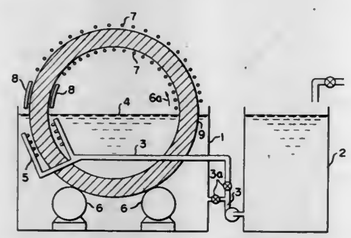


is subjected to a final tempering anneal at a temperature in the range from 250° C. to 400° C. which is preferably conducted in a transverse magnetic field to improve induction rise, ΔB.

3,556,877
METHOD FOR HARDENING A TUBULAR SHAPED STRUCTURE

Akira Ujiie, Kobe-shi, Japan, assignor to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan

Filed Mar. 27, 1968, Ser. No. 716,646
Claims priority, application Japan, Apr. 3, 1967, 42/21,131
Int. Cl. C21d *9/08*
U.S. Cl. 148—143 **3 Claims**

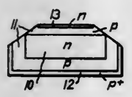


A method of quenching and tempering including controlling the heat treatment, controlling the immersion in a cooling medium and controlling repeated cycles to produce a stronger steel structure.

3,556,878
METHOD OF PRODUCING A THYRISTOR DEVICE

Karl-Heinz Ginsbach and Rigobert Schimmer, Belecke (Mohne), Germany, assignors to Licentia Patent-Verwaltungs G.m.b.H., Frankfurt am Main, Germany

Original application Aug. 8, 1966, Ser. No. 570,923. Divided and this application Sept. 19, 1967, Ser. No. 678,133
Claims priority, application Germany, Aug. 9, 1965, L 40,230, L 51,331
Int. Cl. H01l *7/34*
U.S. Cl. 148—175 **8 Claims**



A method of making a thyristor by arranging a first layer of p-type conductivity upon all the surfaces of an n-type substrate, arranging a p+ layer on all the surfaces of the p layer, removing part of the p+ layer to expose a portion of the p layer and arranging n-type layer on the exposed portion of the p layer.

3,556,879
METHOD OF TREATING SEMICONDUCTOR DEVICES

Alfred Mayer, Plainfield, N.J., assignor to RCA Corporation, a corporation of Delaware

Filed Mar. 20, 1968, Ser. No. 714,577
Int. Cl. H01l *7/36*
U.S. Cl. 148—191 **6 Claims**

The stability and minority carrier lifetime of a device comprising a semiconductor body covered by an insulating layer is improved by subjecting the insulating layer to an atmosphere including hydrogen chloride, while heating the device, so that a gradient is established for out-diffusion of certain deleterious metals from the device.

3,556,880
METHOD OF TREATING SEMICONDUCTOR DEVICES TO IMPROVE LIFETIME

Frederic P. Heiman, Cranbury, and Paul H. Robinson, Trenton, N.J., assignors to RCA Corporation, a corporation of Delaware

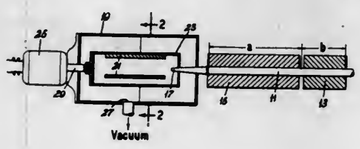
Filed Apr. 11, 1968, Ser. No. 720,538
Int. Cl. H01l *7/34, 7/44*
U.S. Cl. 148—191 **13 Claims**

The stability and lifetime of a device comprising a semiconductor body covered by an insulating layer is improved by thermally growing at least part of the insulating layer in an atmosphere comprising oxygen and hydrogen chloride, and substantially free of water vapor. The device is heated in this atmosphere to establish a gradient for out-diffusion of certain deleterious metals from the device.

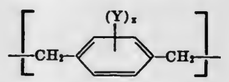
3,556,881
ENCAPSULATED CHEMICAL PRODUCT

William F. Gorham, Berkeley Heights, and William E. Loeb, Martinsville, N.J., assignors to Union Carbide Corporation, a corporation of New York

Filed Mar. 1, 1962, Ser. No. 176,630
Int. Cl. C06b *19/02;* **C06d** *5/00*
U.S. Cl. 149—7 **16 Claims**



1. Solid particulate nitronium perchlorate having as an inner coating contacting the surface of the particles, a continuous coating surrounding and encapsulating said particle of a solvent-resistant, moisture-impermeable linear polymer having the repeating unit



wherein Y is an electron withdrawing substituent group having a positive sigma para value of at least 0.20, x is an integer from 1 to 3, inclusive, and the sum of the sigma para value of all of the substituent Y groups is at least 0.40.

3,556,882
METHOD OF RENDERING THERMOPLASTICS RECEPTIVE TO COATINGS

David H. Fishman, West Orange, and Harry T. Hanson, Union, N.J., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 13, 1967, Ser. No. 653,042
Int. Cl. B44c *1/092*
U.S. Cl. 156—2 **4 Claims**

Disclosed herein is a description of a new and improved process for etching thermoplastic resins to prepare the surface of such resins for painting or other coating.

3,556,883
METHOD FOR CHEMICALLY POLISHING COPPER OR COPPER ALLOY

Akira Naito and Shigeo Obsawa, Tokyo, Japan, assignors to Mitsubishi Edogawa Kagaku Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

No Drawing. Filed July 21, 1967, Ser. No. 655,009
Int. Cl. C23f *3/02*
U.S. Cl. 156—20 **7 Claims**

This invention relates to a method for polishing copper or copper alloys so as to obtain lustrous surfaces which involves treating copper or copper alloy articles with a mixture of an aqueous solution of hydrogen peroxide, an acid, and a saturated aliphatic alcohol to form thereby an oxide film on the surface of said article, and thereafter removing the film by chemical dissolution.

3,556,884
PLASTIC TUBE CONSTRUCTION

Frank McGrath, Maplewood, N.J., assignor to Lusteroid Container Company, Inc., a corporation of New Jersey

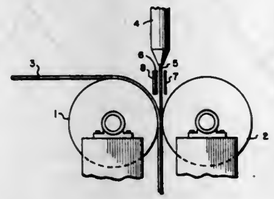
Original application May 2, 1966, Ser. No. 546,751, now Patent No. 3,448,890. Divided and this application Sept. 9, 1968, Ser. No. 794,431
Int. Cl. B65b *7/16*
U.S. Cl. 156—69 **6 Claims**

The method of the invention contemplates employment of commercially available cylindrical thermoplastic tubing, as of cellulose acetate butyrate, vinyl (PVC), polyethylene, or polycarbonate. The tubing is cut to desired length, and one end is generally spherically rounded in a taper extending inwardly to define a central opening within which an insert (which may be flat or of essentially the same curvature) is inserted and sealed.

3,556,885
DEVICE FOR USE IN MACHINES FOR MANUFACTURING PLASTIC FOIL COVERED PAPER

Torsten Lennartson Lindh, Lund, and Lars Olof Ingemar Lindblad, Sodra Sandby, Sweden, assignors to AB Tetra Pak, Lund, Sweden, a Swedish company

Original application Feb. 4, 1965, Ser. No. 430,420, now Patent No. 3,440,125, dated Apr. 22, 1969. Divided and this application Aug. 19, 1968, Ser. No. 753,665
Int. Cl. B29c *13/00*
U.S. Cl. 156—244 **1 Claim**

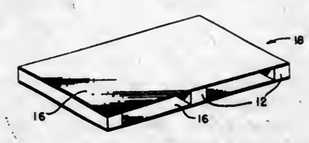


Method of manufacturing covered paper in which one side of the extruded plastic is maintained at a high temperature to insure a good bond with the paper and the other side is cooled rapidly to prevent oxidation.

3,556,886
PALLET BOARD USING POLYSTYRENE FOAM SPACERS BETWEEN CORRUGATED CARDBOARD

Carl J. Reusser, Seattle, Wash., assignor to Marine Commuter Corporation, Seattle, Wash., a corporation of Washington

Filed Apr. 25, 1968, Ser. No. 724,106
Int. Cl. B32b *31/00*
U.S. Cl. 156—265 **2 Claims**

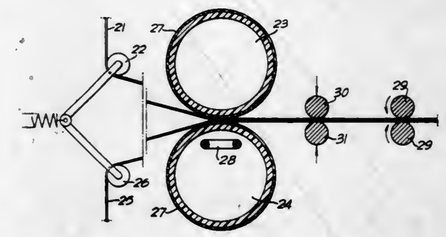


A pallet board comprised of plastic foam spacers glued by pressure-sensitive adhesive between facings of corrugated cardboard, with the spacers and facings each factory-produced including the glue coatings and supplied to the customer separately in the size specified.

3,556,887
PRODUCTION OF LAMINATES

Edmund Philip Adcock, Harpenden, and Joan Ann Stanley, Dunstable, England, assignors to United Glass Limited, Staines, England, a corporation of the United Kingdom

Filed July 18, 1967, Ser. No. 654,130
Claims priority, application Great Britain, July 19, 1966, 32,399/66
Int. Cl. B29c *27/04*
U.S. Cl. 156—272 **14 Claims**



A continuous process for the production of a laminate comprises continuously bringing a layer of a non-magnetic metal into contact with a layer of a thermoplastic material and pressing the layers together, the metal layer being heated by means of an induced radio frequency current to a temperature sufficient to cause the thermoplastic material to soften and thus adhere to the metal.

3,556,888
PULTRUSION MACHINE AND METHOD

William Brandt Goldsworthy, Palos Verdes Estates, Calif., assignor to Glastrusions, Inc., Palos Verdes Estates, Calif., a corporation of Alaska

Filed June 23, 1967, Ser. No. 648,347
Int. Cl. B32b *31/26*
U.S. Cl. 156—73 **12 Claims**

The invention is embodied in a device and method for continuously forming stock material from a combination of filaments impregnated with synthetic thermosetting plastic resin into which an appropriate hardener is entrained, followed by what amounts to extremely rapid curing while the stock passes through a forming die through which it is pulled by a hand-over-hand type of

pulling device. An impregnating or composing tube wherein the filament is impregnated with catalyzed resin, hereinafter termed a composing tube, is of such design and construction that the action assists in pushing the stock through the process providing a combined action which gives rise to the designation "pultrusion machine and process."

The over-all operation can best be envisioned from an examination of FIGS. 1 and 2 wherein there is provided a source of supply of filament which, in practice, is customarily strands of fiberglass roving coming from a multiple source, the separate strands being directed into a composing tube where they are impregnated with synthetic thermosetting plastic resin. An appropriate hardener is metered into the resin at or near the composing tube. The impregnated strands then pass immediately to a forming die wherein they are subjected to a rapid cure by application of wave energy, such as radio frequency waves. Pullers engage the cured stock after it emerges from the forming dies and draw it to a cut-off point. Assisting in the passage of the stock through the forming dies is an ultrasonic generator which imparts longitudinal wave energy to the forming dies as the stock passes through. As the strands are pulled into the composing tube, they are wetted by the resin and compacted so that the combination of filament and resin is densely compacted upon emergence from the composing tube, the proportion being about 80% filament to about 20% resin.

3,556,889
VENTILATED RIB FOR GUN BARRELS AND METHOD OF INSTALLATION
Arne Y. Grahn, Granby, Conn., assignor to The Poly-Choke Company, Incorporated, East Hartford, Conn., a corporation of Connecticut
Filed Jan. 24, 1969, Ser. No. 793,762
Int. Cl. B23p *13/00*; F41c *1/00, 21/00*
U.S. Cl. 156—91 **6 Claims**

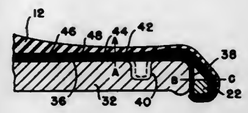


A ventilated rib for gun barrels and method of installation are presented wherein the rib is fixed to the gun barrel by a suitable mastic material. The rib is preferably aluminum to provide the necessary heat conductivity characteristics, and a substantially warp-free rib mounting is accomplished through the particular steps of the installation process wherein the rib is held in a retaining fixture while being bonded to the gun barrel.

3,556,890
PROCESS FOR PRODUCTION OF INTERLAYER SAFETY-GLASS
Francis T. Buckley, Hampden, Raymond F. Riek, Wilbraham, and Donald I. Christensen, East Longmeadow, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Nov. 16, 1967, Ser. No. 683,487
Int. Cl. B32b *31/12*
U.S. Cl. 156—106 **13 Claims**

This invention relates to a process for improving the impact strength of polyvinyl butyral interlayer glass laminate which comprises depositing on at least one surface of at least one of the members to be laminated and additive which increases the impact strength of the resulting laminate wherein the increased impact strength additive is deposited at at least one glass/poly(vinyl butyral) interface in the resultant laminate.

3,556,891
PNEUMATIC TIRE METHOD OF FABRICATION AND INTERMEDIATE ARTICLE
Paul S. Martinkovic, Detroit, and Lester M. Symons, Southfield, Mich., assignors to Uniroyal, Inc., New York, N.Y., a corporation of New Jersey
Continuation of application Ser. No. 553,352, May 27, 1966. This application Apr. 21, 1969, Ser. No. 829,150
Int. Cl. B29h *17/20*; B60c *9/04*
U.S. Cl. 156—132 **26 Claims**



The method of manufacturing a pneumatic multi-ply tire on a shoulder drum having a circumferentially extending groove therein comprising the steps of forming a tire carcass by disposing at least the innermost ply of reinforcing material about the drum surface and into the groove, and disposing at least the outermost ply of reinforcing material in surrounding relation to the inner ply and bridging the groove and placing the carcass in a mold for final forming.

3,556,892
METHOD OF MANUFACTURE OF CONVEYOR BELT
Everett A. Hilliard, Jr., Danvers, Mass., assignor to American Biltrite Rubber Co., Inc., Chelsea, Mass., a corporation of Delaware
Filed Dec. 18, 1967, Ser. No. 691,479
Int. Cl. B32b *31/08*
U.S. Cl. 156—164 **11 Claims**

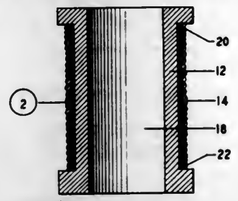


The invention is a continuous method for manufacturing long lengths of belting, and the product thereof. The steps consist of assembling in front of a continuous curing or vulcanizing press the several plies and strength elements that go into the making of the belting. The plies are brought together under a pair of pressure rollers just before entering the nip of the curing press, and during passage through the press they are then bonded together and cured, the bond being primarily chemical. Additional steps of preparing the edges so as to have a predetermined configuration in the finished belt are also included, as well as suitable steps of tensioning and aligning the respective component layers and elements prior to bonding and curing.

3,556,893
FIBER REINFORCED HOT PRESSING MOLDS
Werner H. Ruoff, Berea, Ohio, assignor to Union Carbide Corporation, a corporation of New York
Filed Dec. 15, 1967, Ser. No. 690,888
Int. Cl. B65h *81/00*
U.S. Cl. 156—172 **5 Claims**

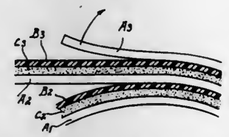
A method for reinforcing a refractory mold by wrapping a carbonaceous textile material around the surface

of the mold. The textile material may be coated with a binder and the assembly subsequently baked to a temper-



ature sufficient to coke the binder in order to reinforce and mechanically link the textile material.

3,556,894
METHOD OF MANUFACTURE OF ADHESIVE TRANSFER
Emile C. Bernard, Beauvais, France, assignor to Societe Novacel, Paris, France, a corporation of France
Filed Oct. 30, 1967, Ser. No. 678,894
Claims priority, application France, Feb. 6, 1967, 93,768
Int. Cl. B44c *1/10*
U.S. Cl. 156—235 **8 Claims**



A method of manufacture of composite adhesive transfer material in rolled bands and strips, in which a film of plastic material is formed on a temporary non-adhesive support, this film is coated with a layer of pressure-sensitive adhesive, the composite band thus formed being dried and wound into a roll, the adhesive being applied against the face of the next adjacent turn of the roll; the rolled band is then unwound so as to separate the plastic film from the temporary support, the second face of the film is coated with a layer of adhesive, and finally the composite band thus formed is wound into a roll.

3,556,895
BONDING POLYAMIDE ARTICLES BY GASEOUS SULFUR DIOXIDE AND CHLORINE
William C. Mallonee, Chapel Hill, N.C., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Nov. 4, 1968, Ser. No. 773,352
Int. Cl. C09j *5/00*
U.S. Cl. 156—306 **10 Claims**

Touching polyamide shaped articles, such as filaments, films, small pellets or granules and the like, are bonded along their contiguous surfaces by the absorption and subsequent desorption of a gaseous mixture of sulfur dioxide and chlorine to form products including bonded nonwoven fabrics, porous pellicles and the like.

3,556,896
METHOD OF BONDING EMPLOYING A NITROGENOUS PLASTIC FILM
Elliot A. Schonberg, East Orange, Albert H. Steinberg, Morris Plains, and Philip S. Bollen, Boonton, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed May 3, 1968, Ser. No. 726,505
Int. Cl. C09j *7/00*
U.S. Cl. 156—309 **6 Claims**

This invention relates to the use as an adhesive of a low-crystalline plastic film made from a graft copolymer of e-caprolactam onto an ethylene-ethyl acrylate backbone. This graft copolymer is formed by grafting e-caprolactam onto 10–25% by weight of a backbone copolymer preferably made from about 18% by weight ethyl acrylate and a corresponding about 82% ethylene. This graft copolymer has been found to be particularly useful as a low-crystalline adhesive film for adhering metals and particularly for forming the side seams of coated steel cans, providing superior adhesion and leak resistance.

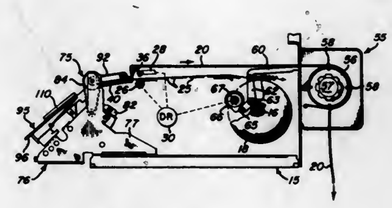
3,556,897
METHOD OF PRODUCING WOODEN BOARDS FROM THIN WOODEN SHEETS
Christen Christoffersen and Karl-Otto Sörensen, Naestved, Denmark, assignors to Vedex Dansk Skovindustrie A/S, Naestved, Denmark
No Drawing. Filed Oct. 23, 1967, Ser. No. 684,092
Claims priority, application Denmark, Oct. 24, 1966, 5,536/66
Int. Cl. B32b *21/00*
U.S. Cl. 156—310 **9 Claims**

Thin wooden sheets, such as thin plies or shavings, are vacuum impregnated with one component of a two-component plastic adhesive prior to being bonded together to form a wooden board through application of heat and pressure and through the use of an adhesive containing an addition of the second component of said two component plastic adhesive. In practice hitherto all two component plastic adhesives have been formaldehyde products, and in such cases the thin wooden sheets ought to be vacuum impregnated with the component different from Formalin. Simultaneously with the said one plastic component the thin wooden sheets may be impregnated with a salt acting as a catalytic agent in the reaction between the plastic components and/or with other impregnating agents.

ERRATUM

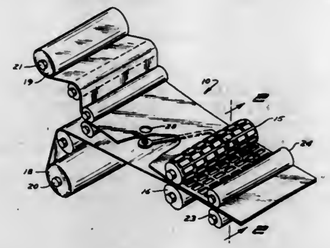
For Class 156—383 see:
Patent No. 3,557,156

3,556,898
LABEL PRINTING AND DISPENSING APPARATUS
Kenneth C. Allen, Dayton, Ohio, assignor to The Hobart Manufacturing Company, Troy, Ohio, a corporation of Ohio
Filed Sept. 19, 1967, Ser. No. 668,811
Int. Cl. B32b
U.S. Cl. 156—384 **9 Claims**



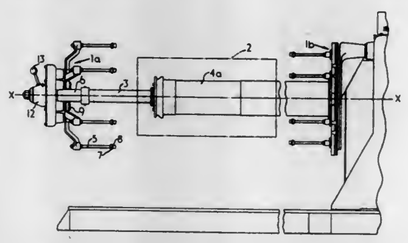
A power actuated printer successively prints variable information on pressure sensitive adhesive labels carried by a backup tape. Immediately after each label is printed, it is removed from the tape by a drive which pulls the tape through a separator, and guide means directs each label to an application station by engaging a small area of the adhesive coating of the label after it is stripped from the backup tape.

3,556,899
TACK BONDING OF COVERLAY
John S. Strobel, Northfield, Minn., assignor to G. T. Schjeldahl Company, Northfield, Minn., a corporation of Minnesota
Filed Oct. 9, 1967, Ser. No. 673,692
Int. Cl. B32b 31/10
U.S. Cl. 156—553 5 Claims



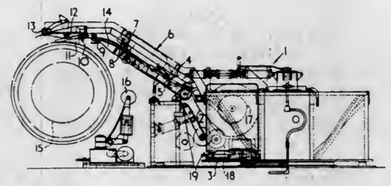
An apparatus and technique for encapsulating a printed wiring array wherein the conductors are disposed upon the exposed surface of a flexible substrate, the encapsulating coverlay being a flexible coverlay or covering film having a surface arranged to establish a bond with the exposed surface and conductors. The apparatus and technique includes a means for establishing a nip zone between first and second pressure members, such as rollers, and further includes means for delivering a printed wiring which is mounted on a substrate and a flexible coverlay film for the mounted wiring into the nip zone simultaneously. In addition, at least one of the pressure members is provided with a raised reticulate pattern (of substantially continuous configuration) having intersecting longitudinal and transverse recessed segments so as to form a plurality of substantially isolated and closed tack bonded zones existing between the exposed surface and the bonding surface. The tack bonded material may thereafter be firmly bonded together over the entire area of contact.

3,556,900
BEAD-RING APPLICATOR
Walter James Edney, Birmingham, and John F. Askam, Sutton Coldfield, England, assignors to Dunlop Company Limited, London, England, a British company
Filed Mar. 8, 1968, Ser. No. 711,726
Claims priority, application Great Britain, Mar. 17, 1967, 12,613/67
Int. Cl. B29h 17/22
U.S. Cl. 156—403 5 Claims



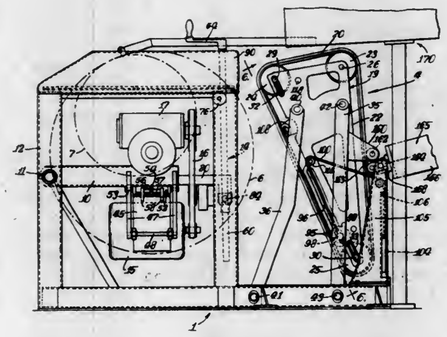
A bead-ring applicator for a tire building machine comprises an applicator shaft which projects coaxially from the end of a tire building drum shaft in the form of a cantilever, six bead-ring carrying arms supported on the applicator shaft, which may be collapsed inwardly from and reerected to a ring supporting disposition to facilitate transfer of the bead-ring from the applicator to the tire and also to facilitate removal of the finished tire, and means for reciprocating the applicator shaft.

3,556,901
APPARATUS FOR SUPPLYING FLEXIBLE SHEET MATERIAL
William Tearne, Birmingham, England, assignor to The Dunlop Company Limited, London, England, a British company
Filed Mar. 8, 1968, Ser. No. 711,724
Claims priority, application Great Britain, Mar. 17, 1967, 12,611/67
Int. Cl. B29h 17/18, 17/20
U.S. Cl. 156—406 11 Claims



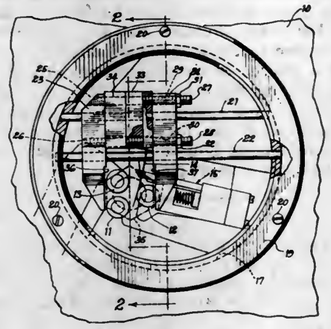
Application for supplying reinforced sheet material to a tire building drum comprising four arms, pivotally mounted on a turntable and extendable radially outwardly of the turntable, for holding the material, material storage units, one for each arm, a conveyor for feeding the material from the storage unit on a conveying surface, and a material aligning means located at the end of each arm comprising an air cushion device, a pair of guide members and a roller.

3,556,902
APPARATUS FOR STITCHING STRIP MATERIAL ONTO THE PERIPHERY OF TIRE CARCASS
Leon J. Cole, Niles, Mich., assignor to National-Standard Company, Niles, Mich., a corporation of Delaware
Filed Apr. 17, 1968, Ser. No. 721,991
Int. Cl. B29h 17/18
U.S. Cl. 156—412 16 Claims



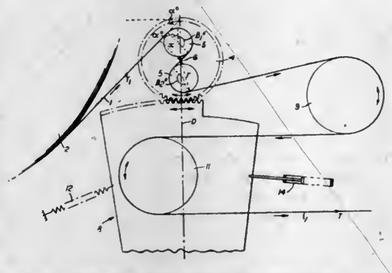
Apparatus for stitching strip material, such as tire tread material, onto the peripheries of annular rotatable objects of different diameters within a given range of diameters of such annular objects, such as tire carcasses, embodying an endless belt including means for bringing the endless belt into engagement with the strip material to properly stitch the same to the periphery of any annular object of a diameter within the given range of diameters of such annular objects.

3,556,903
HOLDER FOR FLAT-SIDED PARTS FOR TAPE WRAPPING MACHINE
Egons Inka, Chicago, Ill., assignor to Crane Packing Company, Morton Grove, Ill., a corporation of Illinois
Filed Nov. 1, 1968, Ser. No. 772,780
Int. Cl. B23b 5/22, 33/00; B32b 31/02
U.S. Cl. 156—425 5 Claims



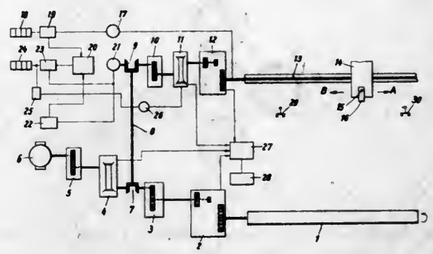
A device to be used with apparatus for wrapping tape around a threaded, flat-sided article such as a hexagonal headed bolt, the device being an adjustable holder which engages opposite flat sides of the bolt head to prevent the bolt from turning as the tape is wrapped around its threads.

3,556,904
APPARATUS FOR CONTROLLING TENSION IN TAPE MATERIAL BEING DRAWN OFF FROM A PAD
Ronald Hinds, Woolton, Liverpool, England, assignor to British Insulated Callender's Cables Limited, London, England
Filed Mar. 7, 1967, Ser. No. 621,287
Claims priority, application Great Britain, Mar. 9, 1966, 10,394/66
Int. Cl. B31c 1/08; B65g 35/00, 49/00
U.S. Cl. 156—425 11 Claims



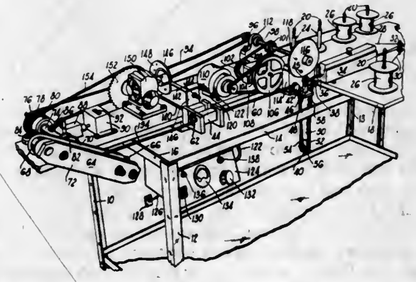
Tension regulating apparatus for applying a retarding force to a tape being drawn from a pad which is mounted for rotation about its axis against a constant braking torque applied to the pad comprises a rotatably adjustable base on which are mounted two parallel non-rotatable cylindrical pins over the surfaces of which the tape can be drawn in opposite directions to generate frictionally a force tending to retard the passage of the tape. A spring loaded control arrangement responsive to variations in the tension in the tape after it leaves the apparatus and to variations in the spring loading so controls the angular position of the pin base relative to a datum position that the aggregate arc of contact between the tape and the pins is automatically adjusted to compensate for any variations tending to occur in the tension in the tape being drawn off from the pad.

3,556,905
APPARATUS FOR THE MANUFACTURE OF PIPES AND TUBULAR BODIES FROM ROVING STRANDS SOAKED WITH SYNTHETIC RESIN
Ludwig Wesch, Heidelberg, Germany, and Marcel Pfister, Eckbolsheim, and Herbert Löeffler, Rixheim, France, assignors to Mancar-Trust, Vaduc-Liechtenstein, a firm
Filed Sept. 11, 1968, Ser. No. 759,067
Claims priority, application Germany, Sept. 12, 1967, M 75,521
Int. Cl. B31c 3/00, 11/04, 19/00
U.S. Cl. 156—429 7 Claims



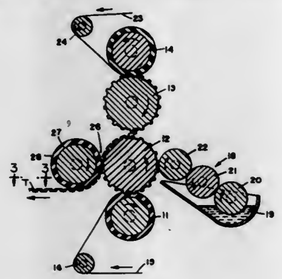
An apparatus for manufacturing pipes or tubular bodies from roving strands soaked with synthetic resin which comprises a winding cylinder drum rotatably mounted in the apparatus on which roving strands impregnated with liquid synthetic resin are wound. The roving strands are supported on a carriage which is reciprocally driven by a screw spindle along a path parallel to the longitudinal axis of the winding cylinder drum. The carriage has an impregnating bath and thread guiding means, both of which are pivotally movably mounted on the carriage and move in accordance with the feeding direction of the roving strands from the carriage to the winding cylinder drum. The improvement comprises means for coordinating the translational movement of the carriage and the angular position of the pivotally mounted impregnating bath and thread guiding means with the rotational movement of the winding cylinder drum.

3,556,906
MACHINE FOR LAMINATING ELONGATED OBJECTS BY WRAPPING
Richard J. Ditlinger, South Bend, Ind., assignor to The Bendix Corporation, a corporation of Delaware
Filed Feb. 5, 1968, Ser. No. 702,984
Int. Cl. B65h 54/00, 59/00, 77/00
U.S. Cl. 156—433 8 Claims



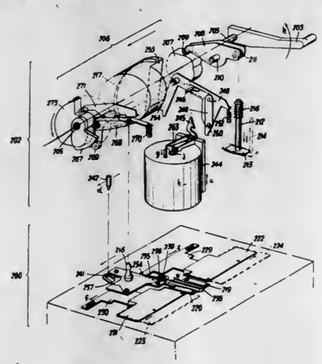
A machine for level winding filaments on an elongated fixture which regulates filament speed in accordance with the requirements of the fixture and which maintains constant tension on the filaments.

3,556,907
MACHINE FOR PRODUCING LAMINATED EMBOSSED WEBS
Ernst Daniel Nystrand, Green Bay, Wis., assignor to Paper Converting Machine Company, Green Bay, Wis., a corporation of Wisconsin
Filed Jan. 23, 1969, Ser. No. 793,430
Int. Cl. B31f *1/00;* **B44b** *5/00*
U.S. Cl. 156—470 **6 Claims**



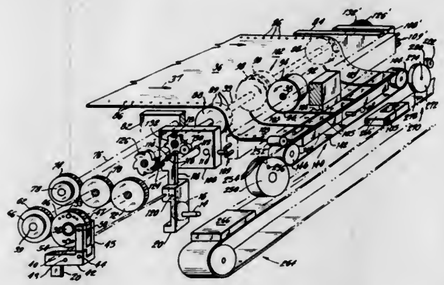
A machine for producing laminated embossed webs useful as toweling, napkins, placemats and the like. The machine employs a novel arrangement of embossing and laminator rolls to achieve a nested configuration of the embossed, inwardly-extending projections and avoids the speed limitations inherent in prior machines.

3,556,908
APPARATUS FOR SPLICING FILM
Otto R. Nemeth, Los Angeles, Calif., and Friedrich Forch, Vienna, Austria, assignors to Karl Vockenhuber and Raimund Hauser, both of Vienna, Austria
Filed Sept. 7, 1966, Ser. No. 577,705
Claims priority, application Austria, Oct. 21, 1965, A 9,564/65
Int. Cl. G03d *15/04*
U.S. Cl. 156—508 **27 Claims**



A film splicing apparatus which comprises in combination means which define a cutting edge for cutting one end of two film ends to be spliced together in a path alternately extending inwardly and outwardly a plurality of times, in order to increase the butt area of said one film end over the area resulting from a straight angle transverse cut by a factor greater than 2. Means are also provided for positioning the two film ends in opposing co-planar relationship, and further means for urging the two film ends together in mating relationship, whereby adhesive material inserted between the opposed ends before pressing the same together will cover a greater area and thus provide a greater holding force after the splice has been completed, as compared to the holding force provided for straight transverse cuts. The means for positioning the two film ends and the means for urging the two film ends together comprises film guide platens. Sprocket teeth are carried by each of the film guide platens. Means are also provided for displacing at least one of the guide platens from the cutting position into the splicing position comprising a spring. The guide platens for the film ends are pressed to immovable, but adjustable abutments. Upper and longer pressure platens retain the film ends during the splicing. The lower pressure platen is displaceably disposed crosswise to the longitudinal direction of the film ends and is outside of the longitudinal axis of the film during the cutting, but is below the film ends in its working position for the splicing operation adjusting means for the control of the longitudinal movement of the guide platens for the film ends and for the cross-movement of the lower pressure platen.

3,556,909
APPARATUS FOR LABEL CUTTING AND APPLICATION
Walter Stegman, Highland Lake, N.Y. (% Tel-Star Tool Corp., 71–79 Reservoir Ave., Port Jervis, N.Y. 12771)
Filed June 30, 1969, Ser. No. 837,767
Int. Cl. B65c *9/08, 9/20;* **B32b** *31/20*
U.S. Cl. 156—521 **21 Claims**

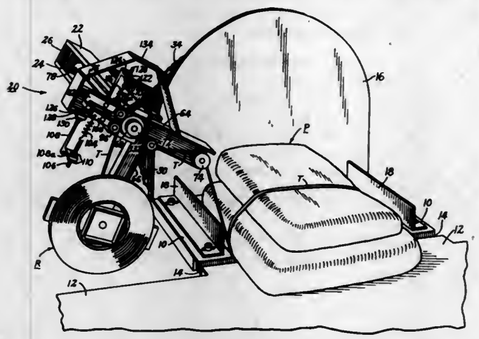


A sheet of labels, each of which labels is to be applied to a separate item, is moved past a first knife means which slits the sheet forming separate columns of labels; a second knife which cuts off one horizontal row of labels at a time; a transport, onto which individual labels settle after they have been cut, to transport the labels to an applicator which applies each label to an item to be labelled; and adjustable cam and lever controlled means for coordinating the movement of the sheet, the operation of the second knife which cuts the rows of labels from the strip columns, and the transport for transporting individual labels to the applicator, so that the labels will be cut off and transported properly, regardless of the number of columns of labels.

3,556,910
TAPING MACHINE
Jerome W. Derenthal, Succasunna, N.J., assignor to Stapling Machines Co., Rockaway, N.J., a corporation of Delaware
Filed June 6, 1968, Ser. No. 735,092
Int. Cl. B65b *13/10, 17/20;* **B32b** *31/18*
U.S. Cl. 156—523 **6 Claims**

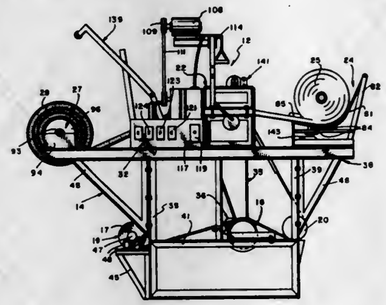
A machine for applying tape around packages, having a tape supply assembly which is rotated around the package and which includes a tape supply roll and driven and idler rollers engaging the tape to pull it from the supply roll and thus reduce the tension on the tape as applied to the package. The pressure between the two

rollers and accordingly the friction between the driven roller and the tape may be controlled by a yieldably



mounted tape sensing element which engages the tape and moves in accordance with the tape tension.

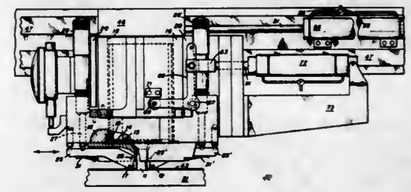
3,556,911
INSULATION LAMINATOR APPARATUS
Merle J. Antisdel, Wichita, Kans., assignor to Wichita Sheet Metal Supply, Inc., Wichita, Kans.
Filed May 27, 1968, Ser. No. 732,323
Int. Cl. B32b *31/08, 31/20*
U.S. Cl. 156—547 **3 Claims**



This invention is a laminator apparatus operable to apply an adhesive to a facing material to be laminated onto insulation fiberglass material or the like. More particularly, this invention is a laminator apparatus having a control drive mechanism operable to achieve controlled speed of movement of the facing material and insulation material relative to the amount of adhesive material being applied thereto. Still, more specifically, this invention is an insulation laminator apparatus having a roll member to apply adhesive to the facing material and a scrapper bar assembly operable to assure precise thickness control and coverage of the adhesive material being applied thereto.

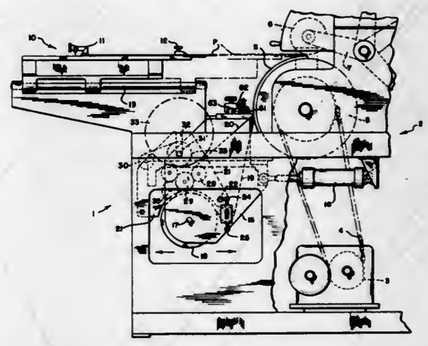
3,556,912
ULTRASONIC FILM SPLICING APPARATUS
Paul A. Burgo and Charles W. Pierson, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester N.Y., a corporation of New Jersey
Filed Sept. 16, 1968, Ser. No. 762,207
Int. Cl. B23k *1/06;* **B29c** *27/08*
U.S. Cl. 156—580 **18 Claims**

An ultrasonic film splicing apparatus having independently adjustable spacing wheels preceding and following the ultrasonic horn. The horn and wheels are supported on a carriage which is moved horizontally along a track by a fluid actuated piston. The apparatus also comprises an anvil below the horn, and two tables on opposite sides



of the anvil for supporting the films to be spliced. The anvil and tables are movable into and out of operative position so as to bring the two films into overlapping relation.

3,556,913
ADHESIVE APPLICATOR
Rudolph T. Brazdovic, Pittstown, N.J., assignor to Wood Industries, Inc., Plainfield, N.J., a corporation of Virginia
Filed Mar. 8, 1968, Ser. No. 711,739
Int. Cl. B32b
U.S. Cl. 156—584 **4 Claims**



Adhesive applicator for applying a double faced pressure sensitive adhesive sheet from an adhesive supply roll having paper separating adjacent sheets where the applicator has a rotatable shaft for supporting the roll, a driven mandrel about which the separating paper is wound as it is stripped from the adhesive sheet and gearing operatively connecting the shaft and mandrel whereby as the adhesive sheet is pulled from the roll, the separating paper is stripped from the adhesive and wound on the mandrel. A severing device whereby double-faced pressure sensitive adhesive sheet applied to an article may be accurately cut and severed from a supply roll of the adhesive sheet.

3,556,914
COMPOSITE METAL FIBER AND PLASTIC STRUCTURES AND METHOD OF PRODUCING THE SAME
Appy Juras, Chicago, Ill., assignor to University Patents, Inc. of Illinois, Chicago, Ill., a corporation of Illinois
No Drawing. Continuation-in-part of application Ser. No. 292,142, July 1, 1963. This application May 9, 1967, Ser. No. 637,085
The portion of the term of the patent subsequent to Dec. 5, 1984, has been disclaimed
Int. Cl. B29j *5/00;* **B44f** *1/04*
U.S. Cl. 161—5 **10 Claims**

A composite metal fiber-plastic structure wherein the metal fiber is anodized, color coated metal, particularly

aluminum. The fibers themselves are composite sandwich members having exposed metal on all four sides thereof. Such composite fibers are felted and non-metallurgically bonded after which the interstices may be filled with plastic to form a non-porous structure or the pores may be left unfilled to provide a porous, plastic bonded skeleton. Rigid or flexible sheet materials may be readily made.

3,556,915
FLEXIBLE DECORATIVE LAMINATES FOR VERTICAL CLADDING

Edward Sheridan Stanley, Turramurra, New South Wales, and David Neil McColl, Mount Colah, New South Wales, Australia, assignors to Formica International Limited, London, England, a corporation of the United Kingdom

Filed Feb. 23, 1968, Ser. No. 707,795
Int. Cl. B32b *27/10, 27/32, 27/42*
U.S. Cl. 161—165 **10 Claims**

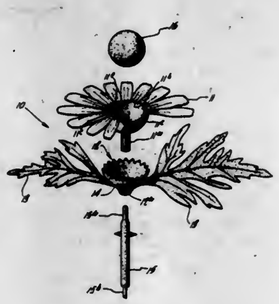


A decorative laminate for vertical cladding comprises a core layer constituted by at least one fibrous sheet impregnated with a thermosetting resin such as phenol-formaldehyde, and a decorative surface layer constituted by at least one fibrous sheet impregnated with a thermosetting resin such as melamine-formaldehyde, the decorative surface layer preferably comprising a coloured decorative paper sheet or a printed and/or, decorative paper sheet and an alpha-cellulose paper overlay sheet, there being interposed between the core layer and the decorative surfact layer a barrier layer, e.g. a film or an extrusion coating, of a thermoplastic resin forming a cohesive bond with the layers and substantially impermeable to the thermosetting resins.

3,556,916
ARTIFICIAL FLOWER INCLUDING A PIERCEABLE CASING CONTAINING A SCENT-PRODUCING SUBSTANCE

Robert F. Levey and Sandra R. Levey, both of 4524 Beeman, Studio City, Calif. 91604

Filed June 4, 1968, Ser. No. 734,435
Int. Cl. A41g *1/00*
U.S. Cl. 161—28 **4 Claims**

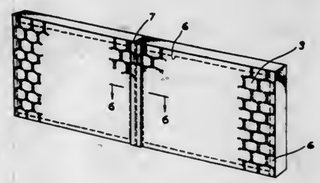


An artificial flower includes a plastic petal structure having a cup-shaped receptacle and a depending portion, a plastic element having an epicalyx portion and a leaf portion received on the depending portion, a stem received within a bore provided in the depending portion, and a casing containing a scent-producing substance received within the receptacle.

3,556,917
HONEYCOMB INSULATION PANEL FOR CRYOGENIC TEMPERATURES

Bertram E. Eakin, Naperville, Amanullah R. Khan, Chicago, and Phillip J. Anderson, Deerfield, Ill., assignors, by mesne assignments, to American Gas Association, Inc., New York, N.Y., a membership corporation of New York

Filed Feb. 14, 1966, Ser. No. 527,228
Int. Cl. B32b *1/04, 3/02;* **D04h** *1/02*
U.S. Cl. 161—44 **5 Claims**

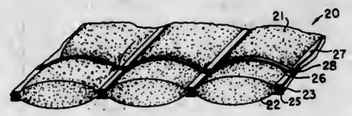


A composite insulating panel useful as insulation at cryogenic temperatures. The panel includes a skeletal structure of flexible polyurethane foam having relatively thin walls which form a plurality of adjacent hexagonal cells. Rigid polyurethane foam block is secured to the walls of and within each of the cells. A sheet of material covers and is secured to one face of the panel.

3,556,918
COMPOSITE REINFORCED PLASTIC FOAM SHEET

Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840

Continuation-in-part of application Ser. No. 501,394, Oct. 22, 1965. This application Dec. 3, 1968, Ser. No. 780,858
Int. Cl. A47l *25/00;* **B32b** *5/18*
U.S. Cl. 161—55 **6 Claims**



A composite, sheet-like article of manufacture is provided comprising a base sheet made of flexible, cellular plastic material and a plurality of reinforcing elements secured to one or both major surfaces of the sheet or extending through the sheet. Where the composite sheet is to be utilized as a cleaning and scouring device, the parallelly extending reinforcing elements are surface secured and serve to scour grease while the sponge-like base element serves to retain and dispense a cleaning liquid such as water.

The composite sheet may be formed by welding strip-like or filamental elements to the surfaces of the sheet or by co-extruding said elements with the base material.

3,556,919
WATER-DISPERSIBLE FABRIC

Martha Marie Johns, Wilmington, Del., and John Andrew Lynch, Jr., Chadds Ford, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed July 14, 1967, Ser. No. 653,540
Int. Cl. D03d *15/00;* **A61f** *13/16;* **B32b** *7/00*
U.S. Cl. 161—70 **5 Claims**



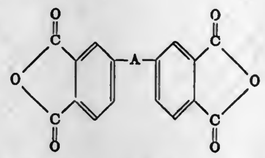
Soft, water-dispersible fabrics are prepared by modifying one side of a woven fabric or nonwoven fabric of entangled fibers, through a depth of at least 40% but less than 95% of its thickness to convert fibers in such modified side to a high-swelling form.

3,556,920
SHAPED FIBROUS LAMINATES IMPREGNATED WITH DIANHYDRIDE CROSS-LINKED EPOXY RESINS

Maurice Balme and Max Gruffaz, Lyon, France, assignors to Rhone-Poulence, S.A., Paris, France, a French body corporate

No Drawing. Filed Feb. 12, 1968, Ser. No. 704,568
Claims priority, application France, Feb. 24, 1967, 96,476
Int. Cl. B32b *27/04, 27/12, 27/38*
U.S. Cl. 161—185 **4 Claims**

Dianhydrides of formula:



in which A is an azo or azoxy group, are used as harderners for epoxy resins which, while effective, do not dequire the use of a moderating agent. They are useful for example in the production of laminates and moulded articles.

3,556,921
MECHANICALLY COMPRESSED EXTENSIBLE FABRIC

Erle V. Painter, Monmouth Beach, N.J., and Frederick K. Mesek, Downers Grove, and Robert C. Shepherd, Oak Lawn, Ill., assignors to Johnson & Johnson, a corporation of New Jersey

Application Oct. 6, 1964, Ser. No. 401,838, which is a continuation-in-part of application Ser. No. 375,142, June 15, 1964. Divided and this application Mar. 8, 1968, Ser. No. 711,768
Int. Cl. B32b *3/28*
U.S. Cl. 161—132 **2 Claims**

A fabric compactor is described having an entrance nip defined by a pair of rotatable feed rolls, one of which has a pattern of indentations formed in the surface thereof, and an exit passage defined by a rotatable retarder roll in cooperation with one of the feed rolls. The three rolls, the entrance nip, and the exit passage define a compression zone substantially thicker than the fabric to be compacted. The fabric in which a pattern of small pleats to be formed is introduced into the compression zone through the feed nip, the feed rolls rotating at essentially the same linear speed. The retarder roll rotates at a somewhat slower speed than the feed rolls, thus retarding the movement of the fabric through the compression zone. As a result of this retardation, a portion of the fabric in the compression zone and just leaving the nip is forced into the exit side of the nip against the surface of the feed rolls and into the indentations in the surface of one of the feed rolls. As a

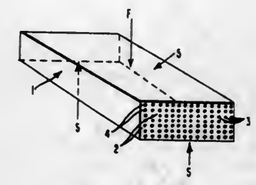


result, the extensible fabric produced is compressed in the lengthwise direction and has a plurality of discontinuous pleats extending across the fabric, the discontinuous pleats being made up of small pleats having interposed between them pleats of a larger size to form a pleat pattern of small and larger pleats extending across the fabric.

3,556,922
FIBER-RESIN COMPOSITE OF POLYAMIDE AND INORGANIC FIBERS

James R. Green, Wilmington, Del., Joseph T. Rivers, Jr., West Chester, Pa., and Donald L. G. Sturgeon, Wilmington, Del., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Aug. 27, 1968, Ser. No. 755,655
Int. Cl. B32b *5/28, 5/14*
U.S. Cl. 161—156 **12 Claims**



A fiber-resin composite is disclosed containing carbocyclic aromatic polyamide fibers and inorganic fibers. The inorganic fibers are located within the portions of the composite which will be subjected to compressive stress, e.g., these fibers are located within the composite where they will be subjected to compression along their axes when the composite is loaded. Particular flexural properties of the composite are significantly improved compared to composites containing either the polyamide fibers or the inorganic fibers.

3,556,923
POLYVINYL FLUORIDE FILM

Jacob David Polejes, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 433,499, Feb. 17, 1965. This application Oct. 1, 1968, Ser. No. 764,344
Int. Cl. C08f *45/08;* **B32b** *27/18, 27/30*
U.S. Cl. 161—162 **8 Claims**

A polyvinyl fluoride film containing from about 0.5% to 60% by weight, based on the total weight of the film,

of an opacifying coloration pigment and from about 2% to 10% by weight, based on the total weight of the film, of inert particulate material of silica having an average particle diameter within the range of 2 to 10 microns and an effective length within the range of 10 to 50 microns, the polyvinyl fluoride film exhibiting an 85° Gardner gloss rating no greater than 20.

3,556,924
CUSHIONING MEMBERS AND METHODS OF MAKING THE SAME

Theodore Loew, Schenectady, N.Y., assignor to Cee Bee Mfg. Co., Inc., Brooklyn, N.Y., a corporation of New York

Filed Nov. 24, 1967, Ser. No. 685,576
Int. Cl. B32b *3/26, 31/08*
U.S. Cl. 161—160 8 Claims

The disclosure describes a method of making elongated cushioning members for the interior of vehicles, particularly automobiles, and for other purposes, in which strips of polyvinyl foam are formed by means of putting a foaming agent in vinyl plastisols. The plastisol is fed upon a heat resistant belt, whether it be paper or fabric, and this belt is passed through an elongated heating chamber to cause a swelling or puffing up of the thin layer of vinyl polymer usually into an externally rounded shape.

The foam vinyl polymer is stripped from the carrier and then 1, 2, 3, 4 or more strips are welded or adhesively connected together to form a central cushioning member. This cushioning member may be used as such or it may be wrapped in reinforcing and decorative sheets which may be of thermoplastic materials to permit suitable adhesive attachments to various members, articles, or interior portions of an automobile so that adequate cushioning effect is achieved.

3,556,925
METHOD OF PRODUCING AN INSULATING SLEEVE OF MICA TAPE IMPREGNATED WITH THERMOSETTING EPOXIDE IMPREGNATING RESIN MIXTURE AND PRODUCT THEREOF

Willi Mertens, Berlin-Zehlendorf, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

Continuation-in-part of abandoned application Ser. No. 204,445, June 22, 1962. This application Dec. 3, 1968, Ser. No. 796,938
Claims priority, application Germany, June 23, 1961, S 74,586
Int. Cl. B32b *19/02, 19/06*
U.S. Cl. 161—163 23 Claims

Flexible mica tape for producing an electrically insulating sleeve (jacket) impregnated with a thermosetting mixture of epoxide and hardner components includes two superimposed sheets of pliable base material with a layer of mica flakes disposed therebetween, a liquid binder applied to the mica flakes to bind them together and to the pliable sheet base material, the binder consisting of a substance selected from compounds containing epoxide groups or glycidyl groups and having a molecular weight between 300 and 2000 and of an accelerator selected from the group consisting of di- and polytertiary aliphatic-aromatic amines in which the amine-nitrogen is directly bound to an aromatic system, from organozinc salts soluble in organic solvents or from ethylamineboron fluoride, piperidineboron fluoride and dimethylanilineboron fluoride applied to the mica tapes of accelerating addition polymerization of thermosetting epoxide impregnating resin mixtures on the basis of bi- and higher-functional glycidyl ethers or epoxides with acid anhydrides as hardener.

3,556,926
SHOCK-COOLED CAULKING TAPE AND METHOD OF PREPARATION

Victor A. Rundle, Oakland, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Apr. 2, 1968, Ser. No. 718,203
Int. Cl. B29f *3/08*; B32b *7/10*; C08f *45/52*
U.S. Cl. 161—165 9 Claims

Caulking tape and method of preparation of tape which consists of extruding in tape form a fused mixture of oil-microcrystalline wax and stereoregular polypropylene and rapidly cooling one side of the tape to at least 150° F. below the fusion temperature of the mixture, wherein the oil is present in form 10 to 50% by weight of the said oil-microcrystalline wax combination.

3,556,927
COMPOUND FILAMENT OF TWO POLYMERS WITH DIFFERENT SHRINKAGE CAPACITIES

Erwin Sommer, Obernburg, Fritz Wiloth, Erlenbach, Helmut Werner, Elsenfeld, Rudolf Lotz, Obernburg, and Gerhard Wick, Erlenbeach, Germany, assignors to Glanzstoff AG, Wuppertal, Germany

Filed May 17, 1968, Ser. No. 729,950
Claims priority, application Germany, May 18, 1967, G 50,110
Int. Cl. D02g *3/02*
U.S. Cl. 161—173 5 Claims

An improved compound filament having an eccentric core and mantle structure in which the mantle is a homopolyamide such as polyhexamethylene adipamide or polycaprolactam, and the core is a copolyetheramide of (A) adipic acid with (B) 25–80 mol percent of hexamethylene diamine and 75–20 mol percent of an etherdiamine of the formula $H_2N—(CH_2)_3—O—(CH_2)_3—NH_2$ or

$$H_2N—(CH_2)_3—O—(CH_2)_n—O—(CH_2)_3—NH_2$$

n being 2, 3 or 4 and the mol percent being taken with reference to the mols of adipic acid.

3,556,928
COPPER-CLAD PLASTIC PANEL

Fred U. Zolg, Cincinnati, Ohio, assignor to Cincinnati Milacron Inc., Cincinnati, Ohio

No Drawing. Continuation-in-part of application Ser. No. 644,790, June 9, 1967. This application Mar. 5, 1968, Ser. No. 710,667
Int. Cl. H05k *1/00*; B32b *15/08*
U.S. Cl. 161—186 17 Claims

Copper-clad plastic panels having plastic bases molded from a polyester/methyl methacrylate molding composition and having increased insulation resistance are disclosed. The improvement is achieved by incorporating a minor amount of an epoxide in the molding composition. The useful epoxides have at least one epoxide group for each 950 units of molecular weight, neither carbon atom of the epoxy group is connected to more than two other carbon atoms, and the epoxy groups are separated by one or more carbon atoms from any aromatic ring structure that may be present in the epoxide.

3,556,929
TREMOLITE FACED LAMINATED PANELS

Le Roy L. Fellows, 1540 Johnson St., North Bend, Oreg. 97459

Filed Aug. 1, 1967, Ser. No. 657,697
Int. Cl. B32b *13/04*; C09j *5/06*
U.S. Cl. 161—205 6 Claims

A composite structural panel comprising a core wherein at least one side of the core is provided with an outer

layer of a tremolite-thermosetting synthetic resin composition pressure laminated thereto at a temperature



suitable to cure the resin while simultaneously compressing the laminated panel to a final dimension.

3,556,930
PROCESS FOR MAKING WET-STRENGTH PAPER AND PRODUCT THEREOF

Gus S. Scarvelis, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio

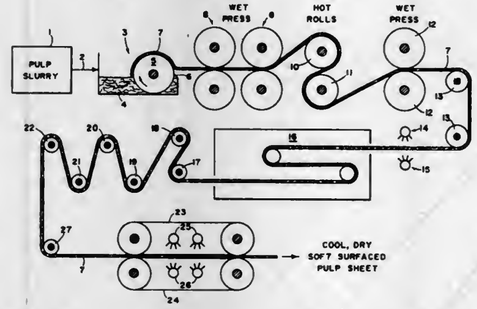
Filed Feb. 29, 1968, Ser. No. 709,491
Int. Cl. D21f *11/00*
U.S. Cl. 162—135 3 Claims

A paper web containing 1–20 percent of a thermosetting resin such as phenol or urea formaldehyde and 0.1–4 percent of a chromium coordination complex of a fluorohydrocarbon which is dissolved in a solvent is immersed in a bath of molten wax. From 5–40% of the wax is picked up on the paper web; the heat of said wax also helps to cure the thermosetting resin. The fluorohydrocarbon is added to the web containing the resin at any stage in the papermaking process prior to the wax impregnation. The fluorohydrocarbon addition generally imparts to the paper web the ability to limit the wax pick-up and control its distribution on the paper web.

3,556,931
MANUFACTURE OF CELLULOSIC FLUFFED SHEET

John F. Champaigne, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware

Filed Apr. 22, 1968, Ser. No. 726,642
Int. Cl. D21d *3/00*
U.S. Cl. 162—158 7 Claims



A method for production of an absorbent, soft, limp cellulosic fibrous body having layers of differential absorption characteristics in which a wet cellulosic batt with a moisture content of at least 30% is treated with a dilute aqueous solution of cellulosic debonding agent such as a quaternary ammonium salt so as to penetrate only a surface zone of the batt and to lessen the coherence of the fibers for each other in this zone. The batt is dried to a consistency of at least 85% in the absence of substantial positive pressure, and then to further open the fibers in the surface zone, the batt is flexed about an axis transverse to its length and subjected to a stream of nonreactive gas. The batt integrity is maintained throughout the process, with the resulting body having a dense absorbent inner zone and a softer more fluid pervious outer zone.

3,556,932
WATER-SOLUBLE, IONIC, GLYOXYLATED, VINYLAMIDE, WET-STRENGTH RESIN AND PAPER MADE THEREWITH

Anthony Thomas Coscia, South Norwalk, and Laurence Lyman Williams, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 471,463, July 12, 1965. This application July 17, 1968, Ser. No. 745,486
Int. Cl. C08g *9/02*; D21h *3/52*
U.S. Cl. 162—166 15 Claims

The ionic-hydrophilic vinylamide polymers which have sufficient —CHOHCHO substituents to be thermosetting possess the property of providing paper with wet and dry strength rapidly at neutral pH, with or without exposure to thermosetting temperatures. The paper rapidly becomes a pulp suitable for re-use when slurried in water having a mildly alkaline pH. Blends of ionic-hydrophilic vinylamide polymers and glyoxal are storage-stable when dry, yet form the above-described thermosetting polymers when they are dissolved in water at room temperature and the resulting solution is aged.

3,556,933
REGENERATION OF AGED-DETERIORATED WET STRENGTH RESINS

Laurence Lyman Williams, Stamford, and Anthony Thomas Coscia, South Norwalk, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Apr. 2, 1969, Ser. No. 812,851
Int. Cl. C08f *27/18*; C08g *9/00*; D21h *3/58*
U.S. Cl. 162—167 6 Claims

Wet strengthening efficiency of aged, deteriorated aqueous solutions of water-soluble sulfite-stabilized thermosetting normally cationic glyoxalated polyvinylamide wet strength resins is rejuvenated by addition of formaldehyde to said solutions.

3,556,934
METHOD OF FORMING A PAPER CONTAINING GASEOUS FILLED SPHERES OF THERMOPLASTIC RESINS

Fred J. Meyer, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Nov. 27, 1967, Ser. No. 685,974
Int. Cl. D21h *3/42, 3/46*
U.S. Cl. 162—169 5 Claims

Papers containing expanded thermoplastic microspheres are prepared by incorporating an expandable thermoplastic microsphere within the pulp slurry and the paper dried at about 90° C., causing the microspheres to foam. This phenomenon appears to be peculiar to microspheres having a vinylidene chloride-acrylonitrile copolymer shell.

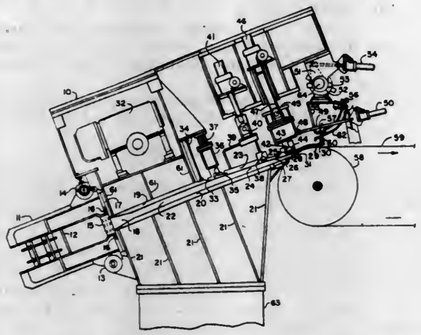
3,556,935
PAPERMAKING HEADBOX WITH ADJUSTABLE HYDRAULIC NOZZLE AND SLICE

John S. Amneus and Abdul S. Bahrani, Cincinnati, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Apr. 3, 1968, Ser. No. 718,596
Int. Cl. D21f *1/02*
U.S. Cl. 162—214 6 Claims

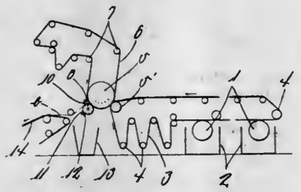
An adjustable pressure nozzle for the delivery of papermaking furnishes to foraminous media in the high speed

production of paper and wet laid nonwovens, which adjustable pressure nozzle is provided with articulation in its various roof sections and throat. Either or both the formation zone and throat of the adjustable pressure nozzle can be adjusted and thereafter maintained in position while the convergence angles in the approach channel preceding the throat remain adjustable by employing pivotable knuckles between the various roof sections, each



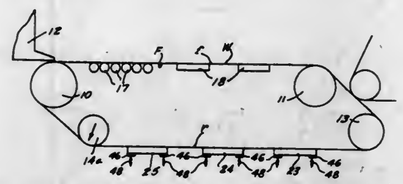
knuckle being connected to an individual knuckle pivot, the knuckles downstream of the approach channel being vertically adjustable; and by employing an expansion knuckle upstream of the approach channel. The adjustable pressure nozzle provides means and process whereby tensile ratio adjustments are conveniently effected during paper formation while the formation zone length and geometry are fixed.

3,556,936
APPARATUS FOR TRIMMING BOTH EDGES OF A MULTILAYER PAPER WEB
Keiji Miyamoto, Nishinomiya, Japan, assignor to Shizuoka Kogyo Kabushiki Kaisha, also known as Shizuoka Kogyo Co., Ltd., Fujimi, Japan
Filed Feb. 23, 1968, Ser. No. 708,480
Claims priority, application Japan, Nov. 25, 1967, 42/76,287
Int. Cl. D21f 7/00
U.S. Cl. 162—272 **4 Claims**



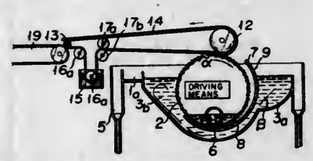
The present invention relates to an improvement of a paper-making apparatus for making piled paper by means of plural cylinders for making paper, and provides such characteristics that the piled paper, which is made into sheet and held and dehydrated between felt belts, is immediately conveyed to an edge-cutting roll without being removed from the felt belt in contact with the roll and both edges of the piled paper are cut and arranged straightly by water jets. On the cutting roll are formed peripheral grooves in the neighborhood of both ends of the outer periphery thereof, and the water jet nozzles spray into these peripheral grooves. Thus, while the piled paper is in contact with the cutting roll, both edges thereof are trimmed. Thus, the piled paper is always in contact with the felt belt until it is conveyed to the cutting roll and both of its edges are trimmed so that there is provided such effect that the paper is prevented from breaking even in the piled state which is normally susceptible to damage.

3,556,937
SUPPORT AND TENSIONING APPARATUS FOR FOURDRINIER WIRE
Donald B. De Noyer, 37 Valley Road, Beloit, Wis. 53511
Filed Jan. 19, 1967, Ser. No. 610,162
Int. Cl. D21f 1/36
U.S. Cl. 162—273 **8 Claims**



In the Fourdrinier section of a paper making machine, a support member is provided beneath the forming wire. The support member has a flat surface extending across the wire and substantially parallel to its travel and slidingly supporting the travelling wire a distance in the direction of wire travel.

3,556,938
APPARATUS FOR MANUFACTURING MICA SHEETS
Shohji Ohta, Yokohama-shi, and Kazuo Ohkuri, Tokyo, Japan, assignors to Nippon Rika Kogyosho Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed May 8, 1967, Ser. No. 636,986
Int. Cl. D21f 2/00
U.S. Cl. 162—306 **3 Claims**

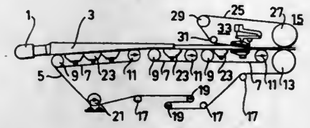


The apparatus comprises a rotary cylindrical net disposed in a fluid vat and a conveyor, located close to said rotary net, which picks up laminated mica from the rotary net and conveys the same. Located in said vat are two interconnecting sections (3*a*, 3*b*) with a narrow arcuate passageway between said sections below said net. The water pressure outside the cylindrical net is made higher than that inside the net at all times so that water in the tank may flow into and through the cylindrical net. The water in the fluid vat is forced into high-speed turbulent flow in section (3*b*) whereby the flake mica dispersed in the water moves at random and strikes and clings to the net.

3,556,939
PRESS APPARATUS FOR DEWATERING A FIBER WEB
Erik Gunnar Stenberg, Karlstad, Sweden, assignor to Aktiebolaget Karlstads Mekaniska Werkstad, Karlstad, Sweden, a company of Sweden
Filed Aug. 31, 1967, Ser. No. 664,737
Claims priority, application Sweden, Sept. 9, 1966, 12,149/66
Int. Cl. D21f 1/38
U.S. Cl. 162—313 **9 Claims**

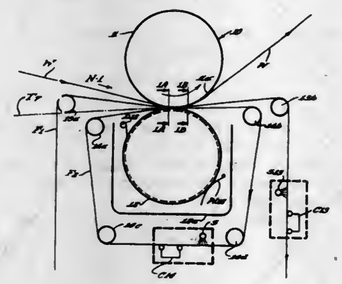
Apparatus for dewatering a fiber web carried on a moving foraminous wire on which the web was formed

comprising a wire or felt overlying the foraminous wire and movable conjointly with it along a portion of its travel and press plates positioned on either side of the wire and the overlying wire or felt to engage and squeeze the fiber web between them to express water from the web in the zone of pressure between the plates. One of the press plates is mounted, such as by means of a lever, for linear movement toward and away from the other press plate and, such as by means of a pivot mounting for attaching the press plate to the lever, for angular



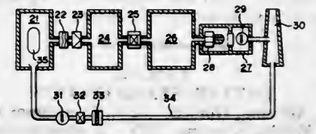
movement of its major plane relative to the major plane of the other press plate. The movable press plate is urged toward the other press plate with a predetermined adjustable force effective to create a zone of pressure in the web of which (a) the integrated magnitude over the area of the plates is substantially constant and (b) the distribution curve in the direction of movement of the web is of substantially unaltered shape, regardless of transient variations in the thickness and drainage properties of the web.

3,556,940
PRESS ASSEMBLY
Dennis Callahan Cronin, Rockton, Ill., assignor to Beloit Corporation, Beloit, Wis., a corporation of Wisconsin
Filed Apr. 8, 1968, Ser. No. 719,475
Int. Cl. D21f 3/00
U.S. Cl. 162—358 **10 Claims**



This relates to a press arrangement for expressing liquid from a liquid-bearing fibrous web, such as a moist paper web. The press nip is defined between a pair of press rolls, at least one of which is equipped to receive and carry away liquid, e.g., a grooved roll or a suction roll, which roll is wrapped by a pair of felts. The felt immediately adjacent such roll has high liquid permeability and high expansibility at the off-running side of the nip. The second felt is interposed between the first felt and the web and such second felt has low liquid-permeability and low expansibility, such that it permits expression of liquid under the high nip pressures but functions as a barrier to rewetting of the web at the off-running side of the nip.

3,556,941
PROCESS AND APPARATUS FOR TREATING AIR CONTAMINATED WITH RADIOACTIVITY
Minoru Takahashi, Kodaira-shi, Tokyo, Japan, assignor to Taisei Kensetsu Kabushiki Kaisha (Taisei Construction Co., Ltd.), Tokyo, Japan
Filed May 3, 1967, Ser. No. 635,724
Claims priority, application Japan, May 30, 1966, 41/34,442
Int. Cl. G21c 9/00
U.S. Cl. 176—37 **4 Claims**



A process and an apparatus for preventing as much as possible contamination of air by air contaminated with radioactivity by continuously pressing air dispersed within a structure containing an atomic pile or reactor therein and contaminated with radioactivity into a reservoir where the air is stored for a required period of time and then discharging the air contaminated after the radioactivity has been reduced by natural decay of the radioactive substances.

3,556,942
METHOD FOR OBTAINING AMYLOSE FROM COOKED STARCH SOLUTIONS
Robert J. Hathaway, Decatur, Ill., assignor to A. E. Staley Manufacturing Company, Decatur, Ill., a corporation of Delaware
No Drawing. Filed July 17, 1967, Ser. No. 653,652
Int. Cl. C13l 1/00
U.S. Cl. 195—31 **9 Claims**

Method for fractionating and separating amylose from a cooked starch solution by contacting said cooked starch solution with a material exhibiting pullulanase activity for a time sufficient to reduce the solution's viscosity to a viscosity of preferably less than 10,000 centipoises measured at 40° C., and thereafter separating said amylose from the solution.

3,556,943
METHOD FOR MICROBIOLIGICAL INTRODUCTION OF OXYGEN INTO HETEROCYCLIC NITROGEN COMPOUNDS
Gunther S. Fonken, Galesburg, Milton E. Herr, Kalamazoo, and Herbert C. Murray, Hickory Corners, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 453,204, May 4, 1965. This application Sept. 11, 1967, Ser. No. 666,991
Int. Cl. C12d 13/00
U.S. Cl. 195—51 **17 Claims**

A method for the microbiological introduction of oxygen into the heterocyclic ring of N-acyl derivatives of polymethyleneimines (azacycloalkanes) and azabicycloalkanes using *Sporotrichum sulfurescens* to obtain the corresponding oxygenated products.

3,556,944
PROCESS FOR FERMENTATIVE SIDE CHAIN CLEAVAGE OF 20-KETO PREGNANES
Thomas L. Miller, Portage, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed Jan. 10, 1969, Ser. No. 790,440
Int. Cl. C07c 167/18
U.S. Cl. 195—51 **9 Claims**

A novel method for the inhibition of over-oxidation during the fermentative side chain cleavage of 20-keto

compounds of the pregnane series to obtain the corresponding 17-ketoandrostanes. The improved process of this invention provides a method whereby 20-ketopregnanes which are unsubstituted at the 17 and 21-positions are bioconverted to the corresponding 17-keto compounds of the androstane series (17-ketoandrostanes) in high yield by employing high substrate levels to inhibit the formation of D-ring lactones. The 17-ketoandrostanes produced by the improved process of this invention are known useful therapeutic agents and they are also useful as intermediates which can be converted by known methods to known useful therapeutic agents.

3,556,945
ENZYME STABILIZATION

Ralph A. Messing, Horseheads, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

No Drawing. Filed Feb. 5, 1968, Ser. No. 702,829
Int. Cl. C07g 7/02
U.S. Cl. 195—63 **7 Claims**

This invention relates to the stabilization of enzymes by coupling the enzymes to an inorganic carrier containing reactive silanol groups through hydrogen and amine-silicate bonding whereby the enzyme becomes insoluble and can be used and reused over an extended period of time.

3,556,946
MALTING PROCESS

Percy B. Polen, Skokie, Ill., assignor to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Illinois

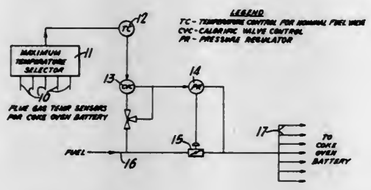
No Drawing. Filed June 23, 1967, Ser. No. 648,200
Int. Cl. C12c 1/04
U.S. Cl. 195—71 **9 Claims**

A process for controlling the growth of rootlets during the germination of grain in the malting process consisting of treating the grain with a compound selected from the group consisting of 3,6-dichloro-o-anisic acid, its ammonium salt, its alkali metal salts and its amine salts, wherein the amine component is selected from the group consisting of mono-, di- and tri-lower alkyl and mono-, di- and tri-lower alkanol in a quantity sufficient to control the rootlet growth.

3,556,947
METHOD FOR REGULATING THE HEATING OF COKE OVENS

Ernst Kümper, Essen, Germany, assignor to Koppers Company, Inc., Pittsburgh, Pa., a corporation of Delaware

Filed Sept. 16, 1968, Ser. No. 762,198
Claims priority, application Germany, Nov. 9, 1967, 1,671,328
Int. Cl. C10b 29/04
U.S. Cl. 201—1 **4 Claims**

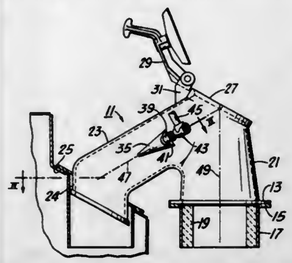


Instruments measure the temperature of the flue gases at selected points and, from a maximum reading, control of the total heat supplied to the coke oven flues is automatically effected by a Wobbe Index or calorific value controller, or other gas flow regulating device.

3,556,948
ASCENSION PIPE ELBOW WITH PLURAL SPRAY NOZZLES

Raymond C. Kinzler, Carnegie, and Gilbert C. Nestler, Pittsburgh, Pa., assignors to Koppers Company, Inc., a corporation of Delaware

Continuation-in-part of application Ser. No. 583,376, Sept. 30, 1966. This application Dec. 18, 1968, Ser. No. 784,638
Int. Cl. C10b 27/00
U.S. Cl. 202—260 **4 Claims**



An ascension pipe elbow is provided with spray nozzle connections which are diametrically opposed and which lie in a plane that is perpendicular to a vertical plane through the elbow. The sprays from the nozzles are directed toward an elbow extension leading into a gas collecting main. Liquid sprayed from the nozzle coats the interior surface of the elbow.

3,556,949
RECOVERY OF WATER FROM URINE BY CHROMIUM ION TREATMENT AND DISTILLATION

David F. Putnam, Granville, Mass., and Sid Russell, Suffield, and Philip Birbara, Hazardville, Conn., assignors to United Aircraft Corporation, East Hartford, Conn., a corporation of Delaware

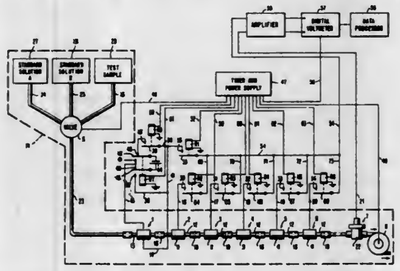
No Drawing. Filed Oct. 19, 1964, Ser. No. 404,954
Int. Cl. B01d 3/34; C23f 11/00, 14/00
U.S. Cl. 203—6 **16 Claims**

An improved method of extracting potable water from urine by distillation is provided in which urine is pretreated prior to distillation with a urine soluble hexavalent chromium compound alone or in combination with a urine soluble sulfate compound.

3,556,950
METHOD AND APPARATUS FOR AUTOMATIC ELECTROCHEMICAL ANALYSIS

Harald Dahms, Ossining, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed July 15, 1966, Ser. No. 565,504
Int. Cl. G01n 27/46
U.S. Cl. 204—1 **23 Claims**



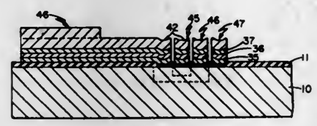
A method and apparatus for automatically detecting a plurality of unknown constituent concentrations in a fluid

is disclosed. Apparatus consisting of a reference electrode and a plurality of other electrodes responsive to the presence of ions and dissolved gases such as calcium, chlorine, hydrogen, potassium, sodium, oxygen, and carbon dioxide are utilized. The apparatus is calibrated in situ by immersing the electrodes in at least two standard solutions which contain different known concentrations of the ions and dissolved gases. After calibration, a sample of fluid containing unknown concentration of ions and dissolved gases is introduced into the system. The electrical outputs of each of the electrodes relative to the reference electrode are sequentially obtained. During calibration, the ion detection surface of silver chloride of the chloride electrode is rejuvenated in situ to prevent inaccuracy due to surface aging of the silver chloride.

3,556,951
METHOD OF FORMING LEADS ON SEMICONDUCTOR DEVICES

Nino P. Cerniglia, Revere, and Richard C. Tonner, Braintree, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware

Filed Aug. 4, 1967, Ser. No. 658,427
Int. Cl. C23f 1/02, 17/00; C23b 5/64
U.S. Cl. 204—15 **4 Claims**



Method of forming supporting beam leads on a semiconductor wafer by depositing in succession thin layers of titanium, molybdenum, and gold, masking with nonconductive photo-resist, and electroplating gold to form thick members. The titanium, molybdenum, and gold not covered by the gold members are removed in a series of compatible steps leaving beam leads of titanium, molybdenum, and gold.

3,556,952
BIMETALLIC PRINTING PLATES

John S. Fry, Somerville, Julius L. Silver, Somerset, and Richard W. Quarles, Princeton, N.J., assignors to Union Carbide Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 409,977, Nov. 9, 1964. This application May 18, 1966, Ser. No. 550,926
Int. Cl. B41n 1/04
U.S. Cl. 204—17 **10 Claims**

A method of preparing a bimetallic printing plate which comprises subjecting a hydrophilic metal substrate to an aqueous solution of a water soluble salt of a hydrophobic metal through a membrane held in intimate contact with the hydrophilic substrate, the membrane being an insolubilized association product of phenolic resin and an ethylene oxide polymer and being characterized by areas of water permeability and water impermeability and thereafter reducing the salt of a hydrophobic metal to hydrophobic metal.

3,556,953
MICROSURGERY SUTURE-NEEDLE AND OF ITS METHOD OF MANUFACTURE

Werner P. Schulz, 2500 Rollingwood Drive, San Bruno, Calif. 94066

Filed Oct. 19, 1964, Ser. No. 404,652
Int. Cl. C23b 5/60; B21g 1/00; A61b 17/06
U.S. Cl. 204—20 **13 Claims**

A process of manufacturing microminiature suture-needles whose cross sectional diameters are as small as 5 to 8 microns. They are useful in performing surgical operations where very small blood vessels or other delicate tissue must be sewn together. The steps of this process are initially to form and shape a non-conductor material strand and then to plate it and finish it, so that the plated part and the rest of the strand become an integral unit which is called a suture-needle.

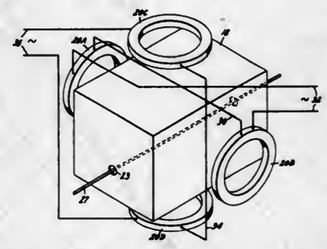


The steps of the process include bending the suture around a mandrel such as a heated graphite rod, cutting the suture to form a point, deforming the point to increase the adhesion of a subsequentially applied metal coating by etching or indentation, and then metallizing the point to form a needle of approximately the same diameter as the suture and integral with the suture.

3,556,954
METHOD FOR OBTAINING CIRCUMFERENTIAL ORIENTATION OF MAGNETIC FILMS ELECTROPLATED ON WIRES

Fred E. Luborsky, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed July 29, 1968, Ser. No. 748,507
Int. Cl. B01d 3/34
U.S. Cl. 204—28 **7 Claims**



A circumferential magnetic orientation is obtained in a nickel-iron magnetic film deposited upon a tungsten wire core successively plated with gold, copper and gold layers by revolving a linear magnetic field greater than 15 oersteds about the wire substrate during the plating of the nickel-iron film. The field is rotated at a speed greater than about one revolution per 10 A. layer of magnetic film deposited and, after deposition of the magnetic film to a thickness less than 15,000 A., the magnetic film plated

wire is annealed at a temperature below 400° C. to decrease the dispersion of anisotropy of the film in the circumferential direction.

3,556,955
PROCESS OF METAL PLATING PLASTICS
Fred H. Ancker, Bound Brook, and Frederick L. Baier, South Plainfield, N.J., assignors to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Feb. 18, 1966, Ser. No. 528,389
Int. Cl. C23b *5/60*
U.S. Cl. 204—30 13 Claims

Process for increasing the adhesion of metal plating to a surface of a polymeric substrate which comprises incorporating in said polymer a sufficient amount up to and including two percent by weight, of a low molecular weight organic compound, said low molecular weight compound has a minimum oxidation rate of at least about twenty times the oxidation rate of stearic acid; thereafter sufficiently oxidizing a surface of the polymeric substrate to oxidize said organic compound thereat; and thereafter metal plating said oxidized surface of said substrate to produce a metal plated substrate in which the metal plating thereon has a minimum peel strength of 5. Metal plated plastic articles produced by this process are described.

3,556,956
ELECTROLESS PLATING OF SUBSTRATES
George T. Miller, Lewiston, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 683,793, Nov. 17, 1967, which is a continuation-in-part of application Ser. No. 614,541, Feb. 8, 1967. This application Aug. 5, 1968, Ser. No. 749,982
Int. Cl. C23b *5/60;* B44d *1/092*
U.S. Cl. 204—30 19 Claims

Substrates, particularly thermoplastic resins and polymers, are plated with metals by pre-treatment of the substrate with phosphorus in an organic solvent to deposit phosphorus at the surface, followed by subjecting the substrate to electroless plating to provide an adherent metallic coating on the substrate.

3,556,957
METAL TREATMENT
Emil Toledo, St. Brighton, and Peter P. Semlenko, Roslindale, Mass., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
No Drawing. Filed Jan. 3, 1966, Ser. No. 518,013
Int. Cl. C23b *3/04, 5/50, 5/58*
U.S. Cl. 204—32 8 Claims

A wire substrate, typically beryllium-copper, for subsequent plating with magnetic films for information storage is prepared by electrolytically eroding the wire continuously in an acid bath to remove the outer, Bielby layer, and subsequently depositing thereon metal, typically copper, to rebuild the substrate to the desired thickness. The reducing bath preferably includes a halogen additive.

3,556,958
PROCESS OF COATING ARTICLE WITH LAMINATE OF METAL AND ALUMINA
John Hutchings, Farnham Royal, and Maurice E. Giles, Maidenhead, England, assignors to Fulmer Research Institute Limited
No Drawing. Filed Feb. 23, 1968, Ser. No. 707,449
Claims priority, application Great Britain, Feb. 27, 1967, 9,283/67
Int. Cl. C23b *5/50, 11/00*
U.S. Cl. 204—42 9 Claims

Laminates comprising alternate layers of electrodeposited metal or alloy and alumina; successive layers may be deposited from separate baths or the same bath and the metal may be copper, which may be deposited from a solution containing copper cyanide or copper pyrophosphate.

3,556,959
NICKEL PLATING
Frank Passal, 19757 Edinborough, Detroit, Mich. 48219
No Drawing. Filed Mar. 29, 1968, Ser. No. 717,432
The portion of the term of the patent subsequent to Feb. 6, 1985, has been disclaimed
Int. Cl. C23b *5/08*
U.S. Cl. 204—49 20 Claims

An electrolyte and method for electroplating semibright, sulfur-free, nickel plate. The electrolyte contains two cooperating additives. One is from the group consisting of formaldehyde, paraformaldehyde, chloral, chloral hydrate, bromal and bromal hydrate. The second is a compound containing an oxyomegasulfoyhydrocarbon-di-yl coumarin anion wherein the oxyomegasulfohydrocarbon-di-yl group is substituted on the carbocyclic nucleus of the coumarin group.

3,556,960
ELECTROLYTIC FORMATION OF ORGANOMETALLIC COMPOUNDS
Dennis L. McKeever and Richard Waack, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Jan. 24, 1968, Ser. No. 700,012
Int. Cl. B01k *1/00*
U.S. Cl. 204—59 13 Claims

A process for the preparation of organometallic compounds comprising contacting an activated olefin or diaryl-containing hydrocarbon with an electric current in the presence of an alkali or alkaline earth metal salt electrolyte, and a tetraalkyl substituted urea, tetraalkyl substituted thiourea, tetraalkyl substituted sulfonamide or a hexaalkyl or aryl substituted phosphoramide polar solvent.

3,556,961
ELECTROLYTIC HYDRODIMERISATION
Jean Bizot, Thiais, Guy Bourat, Bourg-la-Reine, and Daniel Michelet, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate
No Drawing. Filed June 29, 1967, Ser. No. 649,846
Claims priority, application France, June 30, 1966, 67,733
Int. Cl. C07 *1/00*
U.S. Cl. 204—73 12 Claims

Ethylenically unsaturated monomers of the formula $R_1R_2C{=}CR_3Z$, where R_1, R_2 and R_3 each represents a hydrogen atom or a hydrocarbon radical and Z represents a ketone, acid, ester, nitrile, amide or aldehyde group, are hydrodimerised by cathodic reduction of a solution comprising the monomer, water and a buffer of pH 6 to 10 containing at least one quaternary ammonium salt of an oxygen-containing inorganic acid having a pK in water of from 5 to 11.

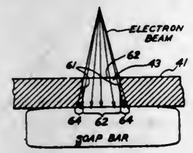
3,556,962
METHOD FOR RECLAIMING COPPER SCRAP CONTAINING TITANIUM AND/OR IRON
Michael J. Pryor, Woodbridge, and Stephen F. Hager, Madison, Conn., assignors to Olin Corporation, a corporation of Virginia
No Drawing. Filed Jan. 24, 1968, Ser. No. 700,025
Int. Cl. C22d *1/16*
U.S. Cl. 204—108 7 Claims

This disclosure teaches the reclamation of copper from copper containing scrap by electrochemical treatment of the scrap material. This disclosure has particular reference to the recovery of copper values from composite materials.

3,556,963
ELECTROCHEMICAL PROCESS FOR CUTTING BERYLLIUM
William B. Distler and Harold J. Wiesner, Livermore, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed July 9, 1968, Ser. No. 743,309
Int. Cl. B23p *1/00*
U.S. Cl. 204—143 4 Claims

An electrochemical method for cutting beryllium by application of pressure jets of electrolyte.

3,556,964
ELECTRON IRRADIATION PROCESS
Thomas F. Mach, Chicago, and David Taber, Evanston, Ill., and John P. O'Meara, Orinda, Calif., assignors to Armour and Company, Chicago, Ill., a corporation of Delaware
Filed July 19, 1967, Ser. No. 654,566
Int. Cl. B01j *1/10*
U.S. Cl. 204—158 13 Claims



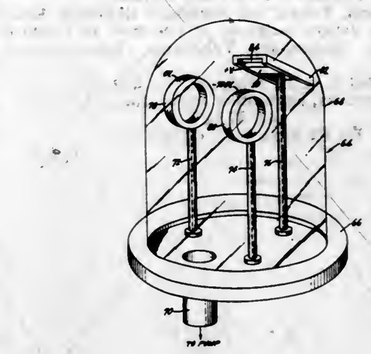
A method for producing a multiple-color soap bar by directing high energy electrons toward a surface of a soap bar, interpositioning, between the bar surface and the electron source, a shield having a design therein, and causing the design configuration to be applied to the soap bar by coloration or a change in color of the portion of the bar exposed to the electron radiation; and the modification of such method wherein the bar of soap to be irradiated contains a high energy electron color-sensitive dye; and the further modification of such method wherein the design is tapered through the shield to allow substantially all radiation passing into the design to emerge therethrough without striking the radiation impenetrable material of the shield.

3,556,965
ANHYDROUS, IRRADIATION TETRAFLUOROETHYLENE-ETHYLENE COPOLYMERIZATION
Vincent F. D'Agostino, Huntington Station, and Joseph Y. C. Lee, Rego Park, N.Y., assignors to RAI Research Corporation, Long Island City, N.Y.
Filed Oct. 4, 1968, Ser. No. 765,109
Int. Cl. C08d *1/00;* C08f *1/16*
U.S. Cl. 204—159.22 5 Claims

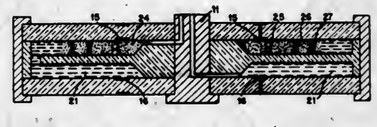
This disclosure is directed to the gas-phase, radiation-induced, copolymerization of tetrafluoroethylene with ethylene. For example, tetrafluoroethylene and ethylene are copolymerized at room temperature under anhydrous conditions. The resulting copolymer has excellent physical and chemical characteristics, and is particularly suitable as a dielectric material.

3,556,966
PLASMA ANODIZING ALUMINUM COATINGS ON A SEMICONDUCTOR
Albert Waxman, Trenton, and Karl H. Zaininger, Princeton, N.J., assignors to RCA Corporation, a corporation of Delaware
Filed Jan. 19, 1968, Ser. No. 699,211
Int. Cl. B44d *5/12*
U.S. Cl. 204—164 1 Claim

Aluminum oxide, made by depositing a layer of metallic aluminum on the surface of a body of semiconductive material and then anodizing the aluminum with ions from an oxygen plasma, is employed as an encapsulating coating and as an insulating layer in a semiconductor device. Active devices formed in the semiconductive material adjacent to the coated surface are stable and radiation resistant.



3,556,967
ELECTROPHORETIC SEPARATION UTILIZING LIQUID CENTRIFUGE
Norman G. Anderson, Oak Ridge, Tenn., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed Aug. 29, 1968, Ser. No. 756,264
Int. Cl. B01d *13/02*
U.S. Cl. 204—180 5 Claims



A method and apparatus are described for separating macromolecular components by electrophoresis in a liquid density gradient while it is being stabilized in a centrifugal field. A modified pancake-type centrifuge rotor is used which contains two radially extending compartments in open communication at their radial peripheries. Electrodes, in electrical communication with externally mounted contact or commutator rings, are disposed within the axial region of each compartment. While the motor is rotating, a liquid density gradient and then a sample are introduced into at least one rotor compartment and direct current applied to the electrodes causing electrophoretic separation of separable components contained in the sample. The liquid density gradient and separated components contained therein are then removed from the rotor by conventional displacement techniques.

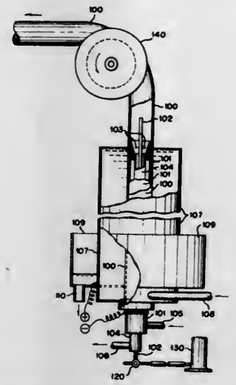
3,556,968
INHIBITION OF DISCOLORATION OF ELECTRODEPOSITED ORGANIC COATINGS
Joseph M. De Vittorio, Homewood, Ill., assignor to Sherwin-Williams Company, Cleveland, Ohio, a corporation of Ohio
No Drawing. Filed Mar. 3, 1966, Ser. No. 531,367
Int. Cl. B01k *5/02;* C23b *13/00*
U.S. Cl. 204—181 9 Claims

Resin coatings are electrodeposited on to a metal substrate by pretreating the substrate with a chelating agent or by incorporating the chelating agent into the coating composition, thereby inhibiting discoloration of the electrodeposited coating.

3,556,969
METHOD AND APPARATUS FOR OBTAINING ELECTRODEPOSITED SHAPED ARTICLES FROM FIBROUS PROTEIN FIBRILS

Jun Mizuguchi, Tokyo, and Sakushige Kinoshita, Kanagawa-ken, Japan, assignors of one-third to Chukichi Kinoshita, Minami-ku, Yokohama, Kanagawa-ken, Japan

Filed Sept. 22, 1967, Ser. No. 669,851
Claims priority, application Japan, June 15, 1967, 42/37,911
Int. Cl. B01k *5/02*; C23b *13/00*
U.S. Cl. 204—181 17 Claims

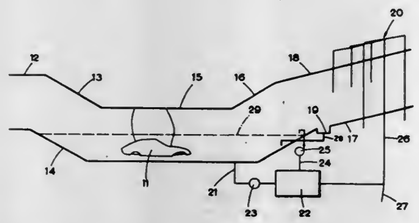


A direct current potential is established between electrodes inserted into an aqueous suspension of finely divided protein fibrils to deposit said fibrils on the surface of an electrode to obtain a shaped product. When the resulting product is tubular, it has utility, for example, as a casing for foodstuffs.

3,556,970
TREATMENT OF EFFLUENTS BY THE REVERSE OSMOSIS PROCESS

John F. Wallace, Didcot, and John G. Ransome, Abingdon, England, assignors to Pressed Steel Fisher Limited, Cowley, Oxford, England, a corporation of Great Britain

Filed Mar. 19, 1968, Ser. No. 714,242
Claims priority, application Great Britain, Mar. 27, 1967, 13,431/67
Int. Cl. B01k *5/00*; C23b *13/00*
U.S. Cl. 204—181 2 Claims

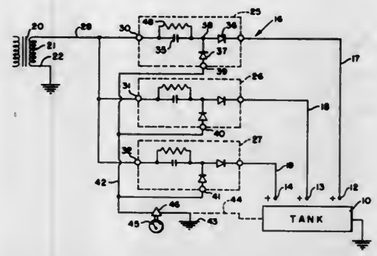


A process for the treatment of solutions and mixtures, which become diluted by rinse water in the course of treatment, such as a water-borne paint, used to coat an article, diluted juices particularly fruit juices or diluted wood pulp in which the contaminated rinse water is conveyed from a rinsing station directly back to a treatment tank and the thus diluted contents of the treatment tank are passed as an effluent under pressure through a reverse osmosis unit to separate the effluent into parts of high and low concentration of the original contents of the treatment tank.

3,556,971
SELF-REGULATING CATHODIC PROTECTION SYSTEMS

Bernard Husock, South Euclid, Ohio, assignor to Harco Corporation, Cleveland, Ohio, a corporation of Ohio

Filed Apr. 10, 1968, Ser. No. 720,106
Int. Cl. C23f *13/00*
U.S. Cl. 204—196 5 Claims



A cathodic protection system for supplying relatively constant current to underground protected devices consisting of an anode array buried adjacent to the protected device and a capacitor input, solid state rectifier arrangement for providing direct current to the array at a regulated value. A full-wave rectifier in combination with an isolation transformer or a direct-coupled half wave configuration is employed, the latter utilizing the conduction of a second rectifier to prevent a DC level from appearing on the power lines.

3,556,972
DEPOSITING A POLYMER FROM AN EMULSION BY ELECTROPHORESIS

Jerry T. Seitz, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Sept. 5, 1968, Ser. No. 757,794
Int. Cl. B01k *5/02*
U.S. Cl. 204—181 10 Claims

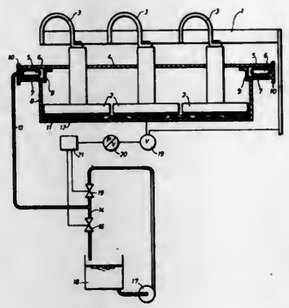
An article is provided with a coating of a dicarboxylic acid of a block copolymer of α-methyl styrene and an aliphatic conjugated diolefin such as 1,3-butadiene by disposing the article to be coated as an anode in an aqueous electrodeposition bath, charging the electrodeposition bath with an aqueous emulsion containing the dicarboxylic acid block copolymer and a neutralizing agent such as potassium hydroxide, and applying a voltage between the article and a cathode disposed within the electrodeposition bath to cause current flow through the bath and thereby electrodeposit the dicarboxylic acid block copolymer on the article.

3,556,973
METHOD OF AND AN APPARATUS FOR RE-ADJUSTING THE ANODES IN THE CELLS OF ELECTROLYSIS PLANTS

Johann Sensen, Rumeln, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

Filed Feb. 26, 1968, Ser. No. 708,146
Claims priority, application Germany, Mar. 1, 1967, F 51,677
Int. Cl. C23b *5/70*; B01k *3/00*
U.S. Cl. 204—225 9 Claims

Apparatus for common adjustment of the position of a group of anodes in an electrochemical cell, including a cell casing having an opening with a cover closing the opening, an inflatable lifting tube sealing the edges between the casing and cover and carrying the cover, a group of anodes mounted in the cover, a pressure fluid source for inflating the tube, and control means operatively connecting the tube and pressure fluid source for adjusting the quantity of pressure fluid in the tube and correspondingly the distance between the cover and casing to vary the position of the anodes with respect to the casing; and method of adjusting the position of a group of anodes with respect to the cathode of an electrochemical cell including a casing containing such cathode and having an opening closed by a cover in which such

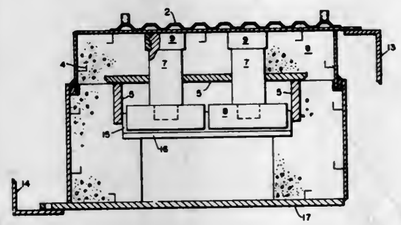


anodes are mounted, in which pressure fluid is maintained in a confined tubular zone, of transverse height which varies in dependence upon the quantity of pressure fluid in said zone, while said zone is maintained in sealing contact with said casing and cover and carries the weight of the cover, the cell voltage is sensed between the anodes and cathode, and the quantity of pressure fluid is adjusted in said zone in dependence upon changes in the sensed cell voltage to adjust correspondingly the transverse height of said zone and in turn the position of said cover and group of anodes with respect to the cathode.

3,556,974
ELECTROLYTIC CELL COVER

George Gerald Day, New York, N.Y., assignor to F. Barry Haskett, New York, N.Y.

Filed Oct. 24, 1968, Ser. No. 770,255
Int. Cl. C22d *3/02*; B01k *3/02*
U.S. Cl. 204—243 4 Claims



An electrolytic cell is provided having a cover of a material which will conduct an electric current, the undersurface of such cover being formed of a refractory material substantially entirely except for allowing contact of the anodes or anode stems with the current carrying material. A cover of such construction allows for substantially less loss of heat from the electrolytic cell and substantially less wear and mechanical failure due to excessively high temperatures of the cover material.

3,556,975
SELF-SUPPORTING CONSTRUCTION MATERIAL FOR THE MANUFACTURE OF CORROSION-RESISTANT PARTS OF APPARATUS IN CHEMICAL PLANTS, ESPECIALLY ELECTROLYSIS PLANTS

Karl Hass, Niederkassel, Walter Kolhagen, Cologne-Dellbruck, Gunther Czehovsky, Niederkassel, and Hans-Ewald Konermann, Troisdorf-Oberlar, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Bezirk Cologne, Germany, a corporation of Germany

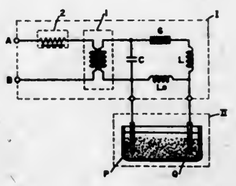
No Drawing. Filed Apr. 26, 1967, Ser. No. 633,729
Int. Cl. B01k *3/10*
U.S. Cl. 204—296 5 Claims

This specification describes a novel use for a particular chlorinated hydrocarbon polymer. The polymer has a hydrocarbon backbone with chlorine substituents thereon. The polymer can be manufactured by initially polymerizing vinyl chloride, ethylene, or 1,2-dichlorethylene alone or in combination with each other, and then post chlorinating the polymers to produce a chlorinated polymeric product having a chlorine content of about 60 to 73 weight percent arranged about 50 to 90% in a 1,2-dichloroethylene configuration. The product polymer is substantially insoluble in acetone and has a relative viscosity of about 1.3 to 25 when measured as a 0.5 weight percent solution in o-dichlorobenzene. These polymers have been found to be particularly well adapted to produce dimensionally stable, self-supporting, corrosion-resistant articles. These articles have found exceptional use in the manufacture of parts of apparatus used in a corrosive environment in chemical processes. Of special importance is the use of articles as described in electrolytic processes, particularly for chlorine production.

3,556,976
APPARATUS FOR CRACKING MATERIALS INTO GASEOUS COMPONENTS AND ERODING SMALL BODIES INTO MICROFINE POWDER

Wataru Ishibashi, Toyonake, Japan, assignor to Iwatani and Company Limited

Filed Nov. 28, 1966, Ser. No. 597,282
Claims priority, application Japan, Dec. 29, 1965, 40/81,539
Int. Cl. C22d *7/08*
U.S. Cl. 204—327 4 Claims



An apparatus for cracking materials into gaseous components and also eroding small metal bodies such as pellets and scraps of metal into microfine powder, comprising a source of an A.C. current; a reactor; at least one pair of electrodes within said reactor; a quenched spark gap oscillator connected to the A.C. source, having a plurality of spark gaps, and the oscillator being provided with an auxiliary coil disposed between each pair of said electrodes and connected in parallel with the output of the oscillator; a resonance coil, the inductance L of which is smaller than the inductance L_0 of said auxil-

iary coil; and a capacitor the capacitance of which is not greater than C=0.05 *f.* and the charge-discharge voltage of which is at least 20 kv., the time constant of the discharge circuit giving at least 1200 discharges per second in the reactor.

3,556,977
SEAL
Harry D. Elbaum, 83—57 118th St., Kew Gardens, N.Y. 11415
Filed Dec. 18, 1968, Ser. No. 784,852
Int. Cl. C23b *5/70*
U.S. Cl. 204—297 3 Claims

A plastic-impregnated, linen based lock nut is disposed in face-to-face contact with the insulated coating of a terminal and contact member of an electroplating rack. The nut absorbs a quantity of an electroplating bath so as to swell, thereby effecting a tight seal against penetration of the bath to the terminal and contact member.

3,556,978
HYDROGASIFICATION OF CARBONACEOUS MATERIAL
Raymond W. Hiteshue and Walter Kawa, Pittsburgh, Pa., assignors to the United States of America as represented by the Secretary of the Interior
No Drawing. Filed Apr. 9, 1969, Ser. No. 814,859
Int. Cl. C10g *1/06*
U.S. Cl. 208—10 7 Claims

Hydrogasification of carbonaceous material at temperatures of about 450° C. or below is accomplished by the use of relatively large amounts of aluminum chloride to catalyze the reaction.

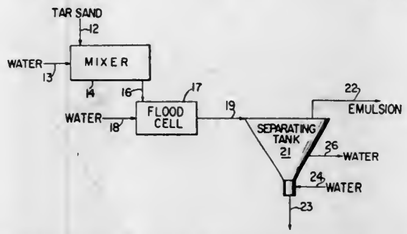
3,556,979
PROCESS FOR RETORTING OIL SHALE
Riley B. Needham, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Aug. 21, 1967, Ser. No. 661,787
Int. Cl. C10g *1/00*
U.S. Cl. 208—11 5 Claims

The production of oil from a mass of particulate oil shale, such as that found in a nuclear chimney, is increased by retorting the shale in an enclosed zone at a pressure in the range of about 7 to 65 p.s.i.a. and periodically reducing said pressure at least 3 p.s.i.g. and substantially re-establishing the former pressure.

3,556,980
REMOVAL OF WATER FROM BITUMINOUS EMULSION
Lincoln Clark, Newport Beach, Calif., and Victor P. Kaminsky, Edmonton, Alberta, Canada, assignors of thirty percent each to Cities Service Athabasca, Inc., a corporation of Delaware, Imperial Oil Limited, a corporation of Canada, and Atlantic Richfield Corporation, a corporation of Pennsylvania, and ten percent to Royalite Oil Company, Limited, a corporation of Canada
No Drawing. Filed June 17, 1968, Ser. No. 737,300
Int. Cl. C10g *1/00*
U.S. Cl. 208—11 8 Claims

Bituminous emulsion such as that produced in the hot water process for recovery of bitumen from tar sand is treated for removal of water by first applying shearing force to the emulsion to coalesce water and then recovering bitumen from the coalesced water. Energy is preferably imparted to the emulsion by shearing forces in amounts between about 500 and about 4,000 foot pounds (ft.-lbs.) per pound of bitumen in the emulsion and the shearing forces may be applied in various ways such as pumping the emulsion through pipes.

3,556,981
SEPARATION OF BITUMEN FROM BITUMINOUS SAND USING A DENSE SLURRY AND CONTROLLED VELOCITIES
Lubomyr M. O. Cymbalisty, Edmonton, Alberta, Canada, assignor of thirty percent each to Cities Service Athabasca, Inc., a corporation of Delaware, Imperial Oil Limited, a corporation of Canada, and Atlantic Richfield Corporation, a corporation of Pennsylvania, and ten percent to Royalite Oil Company, Limited, a corporation of Canada
Filed June 17, 1968, Ser. No. 737,668
Int. Cl. C10g *1/04*
U.S. Cl. 208—11 2 Claims



Bitumen is recovered from bituminous sand by slurrying the bituminous sand with between about 15 and about 25 weight percent water and then introducing the slurry into a body of water so that the bitumen floats to the top and the sand settles to the bottom. Additional flooding water is added to the slurry prior to the separation step. Prior to introduction of the flooding water, linear velocity of the slurry is maintained less than 2 feet per second. Following addition of the flooding water, the linear velocity of the slurry is maintained above 2 feet per second until the slurry is introduced into the body of water for separation of bitumen therefrom.

3,556,982
COMBINATION ADDITIVE FOR TAR SAND PROCESSING
Victor P. Kaminsky and Clement W. Bowman, Edmonton, Alberta, Canada, assignors of thirty percent each to Cities Service Athabasca, Inc., a corporation of Delaware, Imperial Oil Limited, a corporation of Canada, and Atlantic Richfield Corporation, a corporation of Pennsylvania, and ten percent to Royalite Oil Company, Limited, a corporation of Canada
No Drawing. Filed June 26, 1968, Ser. No. 740,016
Int. Cl. C10g *1/04*
U.S. Cl. 208—11 6 Claims

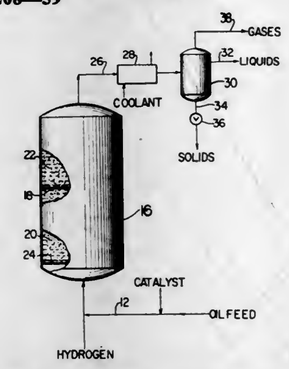
A tar sand additive is disclosed which comprises a mixture of sodium hydroxide and sodium tripolyphosphate. The additive is especially useful in a process for recovering bitumen from bituminous sands by aqueous extraction, when the sodium tripolyphosphate and the sodium hydroxide are each present in amounts from about 0.005 to 0.1% by weight and in which the weight ratio of parts sodium hydroxide per part sodium tripolyphosphate is from about 5:1 to 1:5.

3,556,983
PROCESS FOR THE SELECTIVE HYDROGENATION OF PYROLYSIS GASOLINE
Walter Kronig, Leverkusen, and Kurt Halcour, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany
No Drawing. Filed Oct. 15, 1968, Ser. No. 767,811
Claims priority, application Germany, Oct. 19, 1967, 1,645,747
Int. Cl. C10g *23/04*
U.S. Cl. 208—27 11 Claims

Hydrogenation of pyrolysis gasolines or fractions thereof in a first step at a temperature below about 100° C. to hydrogenate selectively substantially the diolefin content

therein, and thereafter in a second step of the hydrocarbon mixture obtained from the first step at a temperature above 100° C., e.g. at about 150–250° C., to hydrogenate selectively substantially the mono-olefin content therein; both steps using noble metal on an aluminum spinel support as hydrogenation catalyst, at a hydrogen pressure of about 20–80 atmospheres, preferably in a substantially static hydrogen atmosphere, and optionally with recycling of hydrogenation product to the hydrogenation reactor.

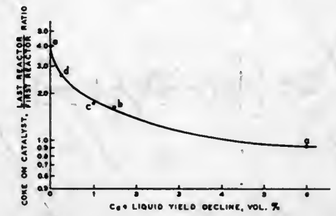
3,556,984
HYDROTREATING PROCESS
Roger P. Van Driesen, Hopewell, N.J., assignor to Cities Service Research and Development Company, New York, N.Y., a corporation of Delaware
Filed May 28, 1968, Ser. No. 732,746
Int. Cl. C10g *13/00*
U.S. Cl. 208—59 5 Claims



An improved method for hydrotreating heavy hydrocarbon oils is disclosed herein which provides for hydrocracking, hydrogenation, hydro-desulfurization, and nitrogen removal utilizing a single reaction vessel having upper and lower reaction zones divided by a transverse one way grid. The method comprises passing a heavy hydrocarbon oil, with hydrogen gas, and fine particulate catalyst upwardly through the lower reaction zone at a rate to establish a continuous flow stirred reactor, contacting the hydrocarbon oil with hydrogen in the presence of the fine particulate catalyst in the lower reaction zone at a temperature of up to 780° F. and at a high pressure and passing the contacted hydrocarbon oil, hydrogen gas and catalyst slurry upward through the one way grid into the upper reaction zone, while simultaneously preventing any return (backmixing) flow of hydrocarbon oil, hydrogen gas, and catalyst slurry back into the lower reaction zone. Temperature control of the process is obtained by controlling the temperature of the various feed materials. The upper reaction zone is maintained at a higher temperature from about 800° F. to about 850° F. by the continuing exothermic reaction. A lower boiling hydrocracked, denitrogenized, and desulfurized hydrocarbon product together with spent catalyst slurry and various gases are withdrawn as effluent from the reaction vessel.

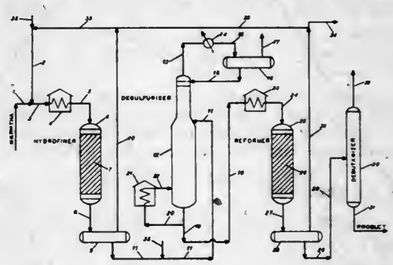
3,556,985
CATALYST COKE CONTROL IN A REFORMING REACTION
Charles S. McCoy, Orinda, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed May 7, 1969, Ser. No. 822,569
Int. Cl. C10g *35/08, 39/00*
U.S. Cl. 208—65 7 Claims

Yield stability of a reforming process involving a plurality of reaction zones containing catalyst can be improved by periodically removing during the reforming process catalyst samples from at least the first and the last reactors in the series, analyzing the amount of coke deposition and controlling the severity of reforming in the



several reactors in response to the coke analysis so that the coke deposition on the catalyst in the first reactor can be maintained at less than one-half of the coke deposition on the catalyst in the last reactor.

3,556,986
STARTUP PROCEDURE FOR COMBINED HYDROFINING-REFORMING PROCESS
Robert R. Beck, Neptune Township, Monmouth County, and Harold E. Knowlton, Scotch Plains, N.J., and Charles S. McCoy, Orinda, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed Sept. 29, 1969, Ser. No. 861,735
Int. Cl. C10g *23/00*
U.S. Cl. 208—89 3 Claims

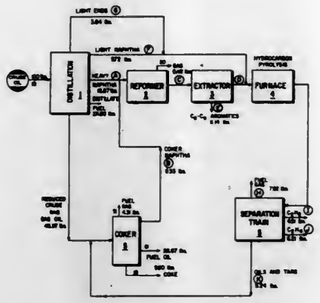


A combined hydrofining-desulfurizing-reforming system is brought on stream rapidly when processing a feed boiling in the range from 150° to 450° F. and containing substantially no C_3–C_5 hydrocarbons, by introducing makeup C_3–C_5 hydrocarbons to the hydrofining zone or desulfurizing zone and permitting the C_3–C_5 hydrocarbons to be refluxed in the desulfurizing zone.

3,556,987
PROCESS FOR THE PRODUCTION OF ACETYLENE, ETHYLENE AND AROMATICS
Carle C. Zimmerman, Jr., 2539 Ridge Court, Littleton, Colo. 80120, and Charles F. Mosier, Jr., 1016 Woodside Drive, Findlay, Ohio 45840
Filed Apr. 25, 1969, Ser. No. 819,171
Int. Cl. B10g *37/10*
U.S. Cl. 208—93 8 Claims

Ethylene, acetylene, an aromatic stream, and petroleum coke are produced by distilling a crude oil to produce light petroleum ends, a light naphtha, a heavy naphtha, and a less volatile reduced crude oil; feeding the light naphtha stream to a hydrocarbon pyrolysis furnace; feeding the heavy naphtha stream combined with a coker naphtha to a reformer where sulfur is removed, the olefins are saturated, and the naphthenes are aromatized, following which aromatics are extracted from the

reformed stream leaving a mixture of normal and isoparaffins which then enter the pyrolysis furnace. The pyrolysis products are sent to a separation train from



which ethylene and/or acetylene are withdrawn. Oils and tars are removed from the separation train and introduced into a coker, which also receives reduced crude and gas oil from the distillation unit and which produces coke, fuel oil, fuel gas, and a coker naphtha which is combined with the heavy naphtha and fed into the reformer.

3,556,988

METHOD OF PREPARING COMPOSITE CATALYST AND HYDROCARBON CONVERSION THEREWITH

William A. Stover, Woodbury, and Harry A. McVeigh, Gibbstown, N.J., assignors to Mobil Oil Corporation, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 701,026, Dec. 26, 1967, which is a continuation-in-part of application Ser. No. 627,429, Mar. 31, 1967. This application Jan. 29, 1969, Ser. No. 795,025

Int. Cl. C10g *11/02;* **B01j** *11/06*

U.S. Cl. 208—120 **13 Claims**

Composite catalyst made by admixing with an aqueous alkali metal silicate a particulate weighting agent such as clay, desirably dispersed in water, so as to coat the clay with alkali metal silicate, ageing at a pH of from about 8 to 10, optionally adding a source of zirconia or alumina and zirconia, reducing the pH to about 4.0 to 7.0 to form a siliceous gel-weighting agent-matrix slurry, admixing therewith a slurry of rare earth crystalline aluminosilicate, drying in the form of particles suitable for fluid catalytic conversion, exchanging with ammonium ions to reduce alkali metal content; and post exchanging with rare earth ions or aluminum ions to substantially replace ammonium ions and to remove residual alkali metal ions.

3,556,989

HYDROCARBON OIL TREATMENT PROCESS AND APPARATUS THEREFOR

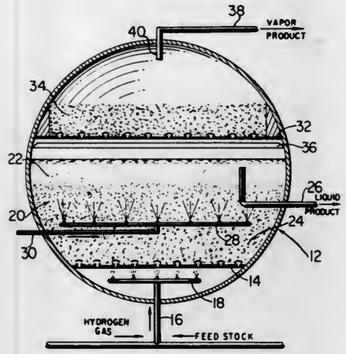
James A. Weber, Uravan, Colo., Lester M. Rapp, Baton Rouge, La., and Norman C. Stewart, Kendall Park, N.J., assignors to Cities Service Research and Development Company, New York, N.Y., a corporation of Delaware

Filed Jan. 14, 1969, Ser. No. 790,941

Int. Cl. C10g *23/06*

U.S. Cl. 208—143 **3 Claims**

A process for the hydrotreating of hydrocarbon oil and the apparatus therefor are disclosed herein. The process comprises feeding a heavy hydrocarbon oil feed and a hydrogen containing gas into the bottom of a high pressure, high temperature spherical reactor vessel, passing the oil and gas upwardly through an expanded particulate catalyst bed in the lower half of the vessel thereby rapidly decreasing the upward velocity of the upwardly flowing gas and oil and removing the treated hydrocarbon oil at a rate sufficient to maintain the upper level of the liquid hydrocarbon oil approximately at the midpoint of the spherical vessel. Preferably vapor product is passed upwardly in the vessel through a second fixed catalyst bed for additional hydrotreating prior to being withdrawn



from the vessel. The vessel comprises a spherical shell having a horizontal grid mounted in the lower part of the shell on which an expandable particulate catalyst is supported. A feed conduit for passing hydrocarbon oil feedstock and hydrogen containing gas is connected to the bottom of the vessel and opens into the vessel below the grid. A liquid drawoff conduit is connected to the vessel and opens below the midpoint of the vessel, and preferably above the level of the expanded catalyst bed. A second horizontal grid is horizontally mounted in the upper half of the spherical vessel and acts to support a fixed catalyst bed for hydrotreating hydrocarbon vapor. A vapor effluent withdrawal conduit is connected to and opens into the reactor above the fixed catalyst bed.

3,556,990

REVERSE OSMOSIS PURIFICATION OF HYDROCARBON FUELS

Arnold G. Gulko, 1835 Arcola Ave., Silver Spring, Md. 20902

No Drawing. Filed Dec. 5, 1967, Ser. No. 687,972

Int. Cl. B01d *13/00, 13/04*

U.S. Cl. 208—290 **9 Claims**

Liquid hydrocarbon fuels are purified by forcing the fuel under pressure through a hydrocarbon-insoluble oleophylic film. The liquid hydrocarbon fuel wets the film because the film comprises at least 20% by weight of side chains having a terminal hydrocarbon group containing at least four carbon atoms and the film is rendered insoluble to liquid hydrocarbons by being cross-linked with from 0.5–15% by weight of cross-linking agent. A typical film is constituted by a solution copolymer containing a large proportion of long chain acrylate or methacrylate ester which is cross-linked with divinyl benzene.

3,556,991

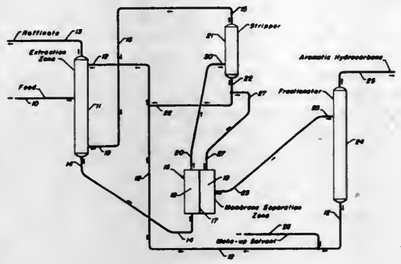
METHOD FOR THE SOLVENT EXTRACTION OF AROMATIC HYDROCARBONS

Clarence G. Gerhold, Palatine, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed Dec. 6, 1968, Ser. No. 781,828

Int. Cl. C10g *21/28*

U.S. Cl. 208—321 **12 Claims**



Process for the recovery of aromatic hydrocarbons using the steps of solvent extraction, dialysis, and fractionation of the extract. Sulfolane is the preferred solvent, and benzene is recovered as a preferred product stream.

3,556,992

ANISOTROPIC ULTRAFILTRATION MEMBRANE HAVING ADHERING COATING AND METHODS OF FORMING AND USING THIS MEMBRANE

Arthur A. Massucco, Watertown, Mass., assignor to Amicon Corporation, Lexington, Mass., a corporation of Massachusetts

No Drawing. Continuation-in-part of application Ser. No. 704,537, Feb. 12, 1968. This application July 22, 1969, Ser. No. 843,843

Int. Cl. B01d *13/00*

U.S. Cl. 210—23 **8 Claims**

An anistropic ultrafiltration membrane comprising a porous support layer, a less porous barrier layer integral therewith, and an adhering coating of irreversibly compressed gel, said coating adhering to said membrane when in contact with a flowing liquid at a liquid shear rate of about 16,000 sec.$^{-1}$; and method for making same.

3,556,993

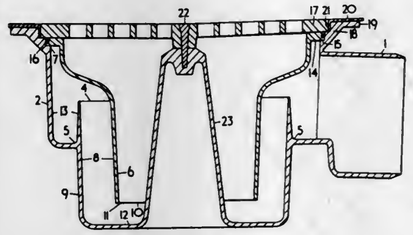
SURFACE DRAIN WITH WATER TRAP

Mats Persson, Virserum, Sweden, assignor to Aktiebolaget Wifa-Berken, Virserum, Sweden, a joint-stock manufacturing company of Sweden

Filed May 5, 1969, Ser. No. 821,805

Int. Cl. E05f *5/06*

U.S. Cl. 210—164 **6 Claims**



A surface drain which is flush with the surface having a trap within the sump of the drain, formed by an easily removable baffle and a means whereby surface water that does not go through a grid set in the top of the drain is passed into the sump by virtue of a recess around the perimeter of the grid between the grid and drain casing where a surface covering material can terminate so that liquid seeping past the grid can flow over the baffle lip or top and thence into the sump.

3,556,994

METAL WORKING AGENTS

Helmut Diery and Siegbert Rittner, Kelkheim, Taunus, and Horst Lorke, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 11, 1968, Ser. No. 743,953

Claims priority, application Germany, July 15, 1967, F 52,971; June 7, 1968, 1,771,548

Int. Cl. C10m *1/34, 1/38*

U.S. Cl. 252—33.6 **5 Claims**

Agents in aqueous metal-working liquids having corrosion inhibiting action and being water soluble or water dispersible salts of inorganic or organic bases and an acid having the general formula

$$(R_1)(R_2)\text{—Ar—}\left(\begin{matrix}O\\ \|\\ S\\ \|\\ O\end{matrix}\text{—N—}\begin{matrix}R_3\\ |\end{matrix}\text{—}R_4\text{—}CO_2H\right)_n$$

3,556,995

ASHLESS DISPERSANTS FOR MOTOR OILS

Richard J. Lee, Park Forest, Ill., and Robert E. Karll, Lake County, Ind., assignors to Standard Oil Company, Chicago, Ill., a corporation of Indiana

No Drawing. Continuation-in-part of application Ser. No. 686,841, Nov. 30, 1967. This application June 10, 1969, Ser. No. 831,980

Int. Cl. C10m *1/24, 1/32*

U.S. Cl. 252—39 **9 Claims**

Disclosed is a composition prepared by (a) reacting an oil-soluble, hydrocarbon-substituted succinic acid anhydride and urea, thereby forming a first intermediate, (b) reacting the first intermediate and an alkylene polyamine having the formula H_2N (-alkylene-NH)$_n$H in which n is an integer from 1 to 5 and "alkylene" is a saturated divalent hydrocarbon containing from about 2 to about 6 carbon atoms, thereby forming a second intermediate, and (c) reacting the second intermediate with a strong base. This composition is useful in keeping harmful materials suspended in motor oil, so that these materials will not interfere with the operation of an internal combustion engine.

3,556,996

COLD FORMING LUBRICANT

Frederick W. C. Jones, 3133 Glenview 48073, and Edwin W. Goodspeed, 1716 N. Pleasant 48067, both of Royal Oak, Mich.

No Drawing. Continuation-in-part of application Ser. No. 510,040, Nov. 26, 1965. This application Jan. 12, 1968, Ser. No. 697,317

The portion of the term of the patent subsequent to Mar. 5, 1985, has been disclaimed

Int. Cl. C10m *3/04, 3/38, 3/48*

U.S. Cl. 252—42.1 **6 Claims**

A lubricant concentrate composition which comprises from about 3 to 75 percent by weight of an alkali metal orthophosphate, about 15 to 97 percent by weight of an alkali metal fatty acid soap, containing from about 8 to 22 carbon atoms, and at least 0.1 percent by weight of a surface active agent selected from the group consisting of non-ionic ethylene oxide-alcohol condensates and amphoteric biodegradable surface active agents. Additionally, the concentrate composition may contain from

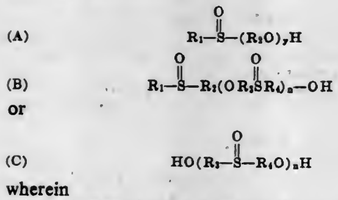
about 0.1 to 80 percent by weight of a water dispersible diluent selected from water soluble and colloidally suspendable diluents, such as sugar and polyethylene glycol having a molecular weight from about 100 to 10,000. An aqueous lubricant composition containing from about 10 to 400 pounds of this concentrate per hundred gallons of solution may be used to form a lubricant coating on a chemically coated metal surface, such as a phosphate coated metal surface, which surface may then be deformed after the lubricant coating has been dried.

3,556,997
COMPOSITIONS WITH SULFINYL-CONTAINING ALKENYLSUCCINATES

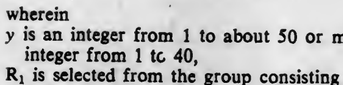
Norman A. Leister, Huntingdon Valley, Pa., assignor to Rohm and Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Original application June 14, 1967, Ser. No. 645,869. Divided and this application Aug. 26, 1969, Ser. No. 853,217
Int. Cl. C01m *1/38*
U.S. Cl. 252—48.6 **5 Claims**

The novel sulfinyl-containing alkenylsuccinates of this invention are useful as dispersants, corrosion inhibitors and antiwear agents particularly in lubricating oil and fuel compositions. The novel sulfinyl compounds are prepared by reacting (1) an alkenylsuccinic anhydride, an alkenylsuccinic acid or an alkenylsuccinamic acid and (2) at least one sulfinyl-containing hydroxy compound having the formulas:

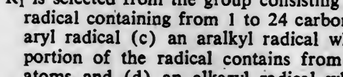


(A) $R_1—\overset{\overset{O}{\|}}{S}—(R_2O)_yH$



(B) $R_1—\overset{\overset{O}{\|}}{S}—R_3(OR_4\overset{\overset{O}{\|}}{S}R_3)_n—OH$

or



(C) $HO(R_2—\overset{\overset{O}{\|}}{S}—R_4O)_nH$

wherein

y is an integer from 1 to about 50 or more and n is an integer from 1 to 40,

R_1 is selected from the group consisting of (a) an alkyl radical containing from 1 to 24 carbon atoms, (b) an aryl radical (c) an aralkyl radical wherein the alkyl portion of the radical contains from 1 to 4 carbon atoms and (d) an alkaryl radical wherein the alkyl portion contains from 1 to 24 carbon atoms,

R_2 is an alkylene radical having 2 to 5 carbon atoms, and

R_3 and R_4 are alkylene radicals having 2 to 5 carbon atoms, a phenylene radical or a (C_1–C_4) alkyl substituted phenylene radical with the proviso that n is 1 when R_3 and R_4 are phenylene or (C_1–C_4) alkyl substituted phenylene.

3,556,998
DRY DEVELOPER FOR ELECTROSTATIC COPYING

Peter Steiner, Somerset, N.J., assignor to GAF Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 6, 1967, Ser. No. 673,278
Int. Cl. G03g *9/02*
U.S. Cl. 252—62.1 **5 Claims**

A developer mix for electrostatic images consisting essentially of a toner and carrier of iron particles, said toner consisting essentially of a powder reaction product of (1) ethyl cellulose, polystyrene or mixtures thereof (2) carbon black or azo oil black and (3) sulfur.

Also provided is an eletrostatic printing process for developing a latent electrostatic image to yield an electrostatically-adhering image of electrostatically-attractable powder comprising magnetically transporting across the latent electrostatic image a dry electroscopic developer mixture comprising a toner consisting of loose movable particles of electrostatically-attractable powder and a carrier comprising separate magnetically attractable granules, the magnetically-attractable granules and powder having a triboelectric relationship of opposite polarity, the powder particles thereby being electrostatically charged through triboelectric action by contact with the magnetically-attractable granules to adhere electrostatically to the surface of the magnetically-attractable granules and being attractable by charged areas of the latent electrostatic image when moved thereacross, and the magnetically attractable granules being correspondingly electrostatically charged to opposite polarity and thus adapted to attract the charged particles and remove them from uncharged areas of the latent electrostatic image when moved thereacross, the electrostatically-attractable powder comprising a mixture of thermoplastic resins, pigments and dyes having about 1 to 60 weight percent of sulfur incorporated therein.

3,556,999
STABILIZED FLUIDS

Nicholas V. Messina, Dresher, and Donald R. Senior, Levittown, Pa., assignors to Rohm and Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 599,731, Dec. 7, 1966, which is a continuation-in-part of application Ser. No. 461,190, June 3, 1965. This application Jan. 23, 1968, Ser. No. 699,812
Int. Cl. C09k *3/00*
U.S. Cl. 252—78 **7 Claims**

Hydraulic fluid compositions, particularly automatic transmission fluid compositions, containing a major amount of lubricating oil and a minor amount of each of (A) a phosphite or disubstituted phosphate, (B) a substituted phenol or an aromatic secondary amine and (C) an oil-soluble dispersant copolymer containing N-vinyl-2-pyrrolidone.

3,557,000
ALKALI ETCHANT COMPOSITION FOR ALUMINUM HAVING EXTENDED BATH LIFE

Harold Vernon Smith, Philadelphia, Pa., assignor to Pennwalt Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Oct. 22, 1968, Ser. No. 769,755
Int. Cl. C23f *1/04*
U.S. Cl. 252—79.5 **2 Claims**

An alkali etching composition for aluminum is comprised of an aqueous solution of alkali metal hydroxide, hexavalent chorium ion, chelating agent, and a minor proportion of fluoroalkyl surfactant. The composition provides more efficient alkali consumption and a longer bath life.

3,557,001
PROCESS FOR INHIBITING SCALE USING PHOSPHATE MIXED ESTER OF HYDROXY AMINE AND HYDROXY HYDROCARBON

James R. Stanford and Paul G. Vogelsang, Jr., Houston, Tex., assignors to Nalco Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Nov. 13, 1967, Ser. No. 682,618
Int. Cl. C02b *5/06, 1/20*
U.S. Cl. 252—87 **13 Claims**

Phosphate mixed esters of hydroxy amines containing less than eight carbon atoms in hydrocarbon groups attached to the amino nitrogen and hydroxy hydrocarbons containing at least six carbon atoms in a hydrocarbon group thereof are prepared and used as scale inhibitors.

3,557,002
STABILIZED AQUEOUS ENZYME PREPARATION

Charles Bruce McCarty, Cincinnati, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed Nov. 15, 1967, Ser. No. 683,196
Int. Cl. C11d *7/50*
U.S. Cl. 252—89 **7 Claims**

Aqueous enzyme preparation stabilized with a short alkyl chain monohydroxy alcohol or an alkoxy short alkyl chain monohydroxy alcohol.

3,557,003
DETERGENT TABLET

Robert L. Morris, Cincinnati, and John R. Castle, Springfield Township, Hamilton County, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

Filed June 21, 1967, Ser. No. 647,825
Int. Cl. C11d *17/00*
U.S. Cl. 252—90 **7 Claims**

In a water-soluble compressed detergent tablet having an interparticulate air filled void volume between 35% and 60% of the total tablet volume, the provision of one or more air escape passageways extending from the core of the tablet to an outer surface, the cross-sectional dimensions of the passageways ranging from about .5 mm. to about 1.5 mm.

3,557,004
PACKAGE AND PROCESS FOR PREPARING FOAM

Seymour Yolles, Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Continuation-in-part of application Ser. No. 612,962, Jan. 31, 1967, which is a continuation-in-part of application Ser. No. 497,593, Oct. 5, 1965, which in turn is a continuation-in-part of application Ser. No. 486,061, Sept. 9, 1965. This application July 24, 1968, Ser. No. 752,125
Int. Cl. C11d *17/00*
U.S. Cl. 252—90 **2 Claims**

A foam-dispensing package comprising an aerosol container having a foam outlet and a valve for dispensing foam, and having contained therein a propellant material, an aqueous foamable composition, hydrogen peroxide, and a substance selected from sodium sulfite, potassium sulfite, ammonium sulfite, sodium thiosulfate, potassium thiosulfate, or a mixture of potassium sulfite and potassium thiosulfate, said substance being reactable with hydrogen peroxide to produce heat. Upon discharge of the container, the hydrogen peroxide contacts the substance reactable therewith to produce heat which imparts a warming effect upon the foam produced during the discharge.

3,557,005
DETERGENT COMPOSITIONS CONTAINING 3-SUBSTITUTED 2,5 DIPHENYL-HETEROCYCLE BRIGHTENERS

Charles D. Broaddus, Greenhills, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio

No Drawing. Filed July 14, 1967, Ser. No. 653,341
Int. Cl. C11d *3/28*
U.S. Cl. 252—99 **10 Claims**

2,5 - diphenylfurans, 2,5 - diphenylpyrroles and 2,5-diphenylthiophenes having auxochromic substituents in the 3 position are useful brighteners in laundry detergent compositions which contain an organic detergent and an alkaline builder salt and are particularly effective in brightening nylon and acetate fabrics.

3,557,006
COMPOSITE TOILET SOAP BAR HAVING AN ACID pH IN USE

Peter J. Ferrara, 47 E. 87th St. 10028; Gaston Dalby, 51 5th Ave. 10003; Clarence A. Barnes, Jr., 829 Park Ave. 10017; and Roy Gordon, 110 East End Ave. 10028, all of New York, N.Y.

No Drawing. Filed Nov. 24, 1967, Ser. No. 685,263
Int. Cl. C11d *9/30, 9/48, 17/00*
U.S. Cl. 252—117 **8 Claims**

A solid soap produced in the form of bars is disclosed, having a pH which ranges from slightly acidic to neutral. The bar of soap comprises two separate soap entities of different properties physically combined to form a unitary structure, the properties of which result from the interaction of the two soap entities in actual use.

3,557,007
METHOD OF RETARDING THE EVAPORATION OF AMMONIA AND HYDRAZINE

Robert P. Cox, 5428 Lake Mendota Drive, Madison, Wis. 53705

No Drawing. Filed Nov. 29, 1967, Ser. No. 686,716
Int. Cl. C11d *3/30*
U.S. Cl. 252—152 **10 Claims**

The invention relates to the retardation of evaporation of ammonia and hydrazine from their liquid phases and from their aqueous solutions by the addition thereto of small amounts of alkyl amines having the formula RNH_2, where R is an alkyl group containing at least 12 carbon atoms.

3,557,008
ANIMAL FAT CLEANING COMPOSITION AND METHOD

William H. Jennings, Norfolk, Va., assignor to Jennings Development Corporation, Virginia Beach, Va., a corporation of Virginia

No Drawing. Filed May 8, 1967, Ser. No. 640,774
Int. Cl. C11b *3/04*
U.S. Cl. 252—182 **20 Claims**

The present invention relates to the process and composition for removal of proteinaceous fines from crude fat derivatives obtained by a rendering of animals, fowl, and the like by addition of certain compounds thereto capable of forming silicic acid in situ by reaction with fatty acids present in the fatty derivatives. The formed silicic acid settles through the fat derivatives to entrain and carry the proteinaceous fines downwardly leaving the clean fatty materials as a top layer.

3,557,009
NONHAZARDOUS POLYMERIZATION INITIATORS

Chester M. McCloskey, Altadena, Calif., Donald E. Rees, Midland Park, N.J., and George Hoff, Glendora, Calif., assignors to The Norac Company, Inc., Azusa, Calif., a corporation of California

No Drawing. Filed May 15, 1967, Ser. No. 638,643
Int. Cl. C08f *1/60*
U.S. Cl. 252—186 **8 Claims**

Alcohols boiling between 130–255° C. are disclosed as effective phlegmatizers in suppressing the explosive decomposition of ketone peroxides due to heating.

3,557,010
REMOVAL OF IRON FROM HYPOCHLORITE SOLUTIONS

Michael J. Skrypa, Florham Park, N.J., and Francis R. Baran, Salina, and William W. Low, Geddes, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Aug. 16, 1967, Ser. No. 660,922
Int. Cl. C01b *11/06*
U.S. Cl. 252—187 **11 Claims**

Production of hypochlorite solutions containing less than 0.1 part per million of iron which comprises adding calcium chloride and an alkali metal carbonate to said

hyprochlorite solutions containing iron impurities and permitting the precipitation of calcium carbonate which results in hypochlorite solutions containing less than 0.1 part per million of iron.

3,557,011

CO_2 SORPTION MATERIAL

Gerald V. Colombo, Playa del Rey, and Edgar S. Mills, Long Beach, Calif., assignors to McDonnell Douglas Corporation, a corporation of Maryland

No Drawing. Filed July 31, 1967, Ser. No. 657,031
Int. Cl. B01d *41/00*, **C09k** *3/00*
U.S. Cl. 252—189 **7 Claims**

A composition for removing carbon dioxide from gases, comprising magnesium oxide and potassium hydroxide, which is manufactured in a specific pellet form.

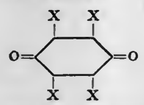
3,557,012

HEAT-STABILIZED INFRARED ABSORBERS AND COMPOSITIONS CONTAINING THE SAME

Robert Jerome Tucker, Hackettstown, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Mar. 18, 1969, Ser. No. 808,305
Int. Cl. G02b *5/22*
U.S. Cl. 252—300 **8 Claims**

A defined class of N,N,N',N'-tetraphenyl-substituted p-benzoquinone diimonium salt infrared absorbers are stabilized against the deleterious effects of heat encountered in the processing of plastics in which the absorbers are incorporated, such as injection moulding, by the addition to the plastic melt of a compound selected from (a) a p-benzoquinone of the formula:



where each X individually represents hydrogen, chlorine, or fluorine and (b) hydroquinone and its lower alkyl ethers.

3,557,013

PROCESS FOR SOLIDIFYING RADIOACTIVE WASTES BY ADDITION OF LIME TO PRECIPITATE FLUORIDE

Emile Detilleux, Werner Georg Hild, Gianfranco Lazzaretto, Emilio Manuel Menchero-Lopez, and Rudolf Rometsch, all of Eurochemic, Mol, Belgium

No Drawing. Filed Nov. 18, 1966, Ser. No. 595,325
Claims priority, application Belgium, Apr. 7, 1966, 26,521, Patent 679,231
Int. Cl. G21c *19/46*
U.S. Cl. 252—301.1 **15 Claims**

A process for solidifying radioactive wastes containing at least one member selected from the group consisting of water-soluble fluoride, water-soluble sulphate and mixtures thereof comprising mixing with agitation at least one liquid radioactive waste with sufficient lime to neutralize the free sulphuric acid and to precipitate the free fluoride, evaporating the water present in the mixture until a hardenable paste is obtained, hardening the paste and enclosing the resulting block in a watertight covering.

3,557,014

FLUORESCENT CALCIUM AND STRONTIUM TITANATES

Malcolm D. Beals, Fanwood, and Leon Merker, Metuchen, N.J., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 20, 1968, Ser. No. 714,457
Int. Cl. C09k *1/60*
U.S. Cl. 252—301.4 **5 Claims**

This invention describes a new and novel composition of matter which exhibits a red fluorescence when said material is exposed to ultra-violet light. The composition of matter comprises strontium titanate and/or calcium titanate and contains small quantities of particular rare earth oxides and particular Group III metal oxides. The rare earth oxides present may be praseodymium oxide, Pr_2O_3, and/or europium oxide, Eu_2O_3. The Group III metal oxide may be one or more of the following: aluminum oxide, Al_2O_3, gadolinium oxide, Ga_2O_3, and scandium oxide, Sc_2O_3. The composition may be prepared either as compacted or powdered multicrystalline material or as a massive monocrystalline body.

3,557,015

DUAL-SENSITIVITY DYED LIQUID TRACERS

James R. Alburger, 5007 Hillard Ave., La Canada, Calif. 91011

Continuation-in-part of application Ser. No. 701,259, Jan. 29, 1968, which is a continuation-in-part of application Ser. No. 444,660, Apr. 1, 1965. This application May 14, 1969, Ser. No. 824,649
Int. Cl. G01n *19/02*; **C09k** *1/00*; **F21k** *2/00*
U.S. Cl. 252—301.2 **4 Claims**

A liquid tracer composition, such as an inspection penetrant, a surface coating compound, or a marking material, in which a nonfluorescent indicator dye and a fluorescent indicator dye are used simultaneously in the same tracer mixture to provide two different levels of dimensional sensitivity, whereby different thicknesses of films of the tracer composition will exhibit discernible differences in nonfluorescent or fluorescent color response. The compositions of the invention are especially useful in "dual-sensitivity inspection penetrants," for example, where relatively large surface cracks may be revealed as visible nonfluorescent color indications, while micro-fine surface cracks are revealed as fluorescent indications.

3,557,016

HEAT REVERSIBLE GEL AND METHOD FOR PREPARING SAME

Harry R. Schuppner, Jr., El Cajon, Calif., assignor to Kelco Company, San Diego, Calif., a corporation of Delaware

No Drawing. Filed Oct. 22, 1965, Ser. No. 502,446
Int. Cl. A23l *1/04*; **B01j** *13/00*; **C09g** *1/02*
U.S. Cl. 252—316 **21 Claims**

A composition for producing a synergistic increase in the viscosity of an aqueous system and for forming a heat reversible, aqueous gel comprising Xanthomonas hydrophilic colloid and locust bean gum, wherein the weight ratio of said Xanthomonas hydrophilic colloid to said locust bean gum ranges from about 95:5 to about 5:95. The viscous aqueous medium is made by adding the Xanthomonas hydrophilic colloid and locust bean gum to water. The heat reversible, aqueous gel can be made by adding a mixture of Xanthomonas hydrophilic colloid and locust bean gum to hot water, and thereafter cooling. The heat reversible, aqueous gel can also be made by adding to water a mixture of Xanthomonas hydrophilic colloid and locust bean gum, and mixing under high shear agitation.

3,537,017

USE OF ULTRA HIGH MOLECULAR WEIGHT POLYMERS AS DEMULSIFIERS

Franklin E. Mange, Rudolph S. Buriks, and Allen R. Fauke, St. Louis, Mo., assignors to Petrolite Corporation, Wilmington, Del., a corporation of Delaware

No Drawing. Original application Aug. 8, 1966, Ser. No. 570,753, now Patent No. 3,499,847, dated Mar. 10, 1970. Divided and this application Jan. 10, 1969, Ser. No. 790,472
Int. Cl. B01d *17/04*
U.S. Cl. 252—339 **17 Claims**

The use of ultra high molecular weight polymers in treating water-in-oil type emulsions, particularly petroleum emulsions. Such polymers are illustrated by ultra high molecular weight oxyalkylene polymers which are substantially water insoluble and organic solvent soluble.

3,557,018

CREATININE ANALYSIS

Günter Scheuerbrandt, Darmstadt, Germany, assignor to E. Merck A.G., Darmstadt, Germany

No Drawing. Filed July 17, 1968, Ser. No. 745,389
Claims priority, application Germany, July 20, 1967, M 74,850
Int. Cl. C07c *79/24*; **G01n** *33/16*
U.S. Cl. 252—408 **6 Claims**

For reproducible quantitative determinations of creatinine in an optionally deproteinized biological fluid, an aqueous picric acid/lithium hydroxide solution is separately admixed with equal volumes of each of (a) the optionally deproteinized biological fluid, (b) a standard solution having a known creatinine content and (c) a blank. The light absorption (extinction or transmission) is then measured for each of the resulting admixtures. The creatinine content of said optionally deproteinized biological fluid is readily calculated from the obtained data.

3,557,019

METHOD OF REGENERATING HYDROGENATION CATALYST

Roger P. Van Driesen, Hopewell, N.J., assignor to Cities Service Research and Development Company, New York, N.Y., a corporation of Delaware

Filed Apr. 26, 1966, Ser. No. 545,502
Int. Cl. B01j *11/68*, *11/04*
U.S. Cl. 252—416 **10 Claims**

Particulate hydrogenation catalyst contaminated with combustible carbonaceous deposits is regenerated by contacting the contaminated catalyst with oxygen-containing gas and water at an elevated temperature and superatmospheric pressure sufficient to maintain liquid phase water in contact with the catalyst particles.

3,557,020

HCl OR HBr VAPOR CARBONIZATION OF VEGETABLE MATERIAL IN THE MANUFACTURE OF ACTIVATED CARBON

Akio Shindo, Isao Souma, and Yoichiro Nakanishi, Osaka, Japan, assignors to Agency of Industrial Science and Technology, Tokyo, Japan, a corporation of Japan

No Drawing. Filed Jan. 11, 1968, Ser. No. 697,008
Claims priority, application Japan, Jan. 13, 1967, 42/2,490
Int. Cl. C01b *31/08*
U.S. Cl. 252—422 **3 Claims**

Wood or other vegetable material having a non-uniform shape such as shapeless particle powder, flaky powder, chip and the others is carbonized in an acidic atmosphere containing vapor or gas of hydrochloric or hydrobromic acid or its anhydride for 10 minutes to 10 hours at a temperature of 80–1200° C. to obtain activated carbon of superior adsorption activity in very high yields.

If desired, the activated carbon so obtained is heated further in an atmosphere containing an oxidizing gas such as steam, carbon dioxide gas or air, or in an inert atmosphere to improve the adsorption activity of said carbon.

3,557,021

OXIDATION OF ISOBUTYLENE TO METHACRYLALDEHYDE OVER COMPLEX VANADIUM OXIDE CATALYSTS

Donald M. Coyne, 3112 W. 79th, Prairie Village, Kans. 66208, and Roger P. Cahoy, 6616 Eby St., Merriam, Kans. 66203

No Drawing. Division of application Ser. No. 542,118, Apr. 12, 1966, now Patent No. 3,499,936, which is a continuation-in-part of applications Ser. No. 208,637, July 9, 1962, and Ser. No. 247,267, Ser. No. 247,268, and Ser. No. 247,307, all filed Dec. 26, 1962. This application Sept. 18, 1968, Ser. No. 833,201
The portion of the term of the patent subsequent to May 27, 1986, has been disclaimed
Int. Cl. B01j *11/74*
U.S. Cl. 252—439 **1 Claim**

An aqueous solution of water soluble compounds of copper, tellurium and vanadium is coated on a refractory solid such as silicon carbide, dried and heated to at least 350° C. yielding a supported catalyst over which isobutylene is oxidized in the vapor phase in yields, for example, of 46 to 52%, with minimum formation of tarry by-products.

3,557,022

HYDROCARBON ISOMERIZATION CATALYST

Richard E. Rausch, Mundelein, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 825,084, May 15, 1969. This application July 2, 1969, Ser. No. 838,683
Int. Cl. B01j *11/74*
U.S. Cl. 252—439 **4 Claims**

Isomerizable hydrocarbons are isomerized using a catalytic composite comprising a combination of a tin component and a rhenium component with a porous carrier material. A catalytic composite comprising a tin component, a rhenium component, and a Friedel-Crafts metal halide component combined with a refractory inorganic oxide is also disclosed.

3,557,023

PROCESS OF PREPARING AN ADSORBENT FOR TREATING BEVERAGES FROM ACID-ACTIVATED MONTMORIN MINERALS

Karl J. Raible, Grafelfing, via Munich, Germany, assignor to Aktiengesellschaft für Brauerei-Industrie, Basel, Switzerland

No Drawing. Filed July 2, 1968, Ser. No. 741,895
Claims priority, application Germany, July 4, 1967, A 56,178
Int. Cl. B01j *11/62*
U.S. Cl. 252—450 **6 Claims**

The mineral which has been activated by an acid treatment and has been separated from the activating acid is subjected to a chemical aftertreatment which reduces the amount of residual iron and/or aluminum which can be transferred from said montmorin mineral to slightly acid liquids contacting the same.

3,557,024
ALUMINA-BONDED CATALYSTS

Dean Arthur Young and Grant A. Mickelson, Yorba Linda, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Mar. 18, 1968, Ser. No. 713,993
Int. Cl. B01j *11/40*
U.S. Cl. 252—455 **16 Claims**

The invention relates to siliceous materials, particularly zeolite-base catalysts, which employ acid-treated boehmite alumina as a binder. The acid treatment consists of treatment of the boehmite with at least 0.5 equivalent of acid per mole of boehmite. The acid employed in the treatment is a mineral acid having a monovalent anion or a salt thereof, e.g., nitric acid, hydrochloric acid or their salts. The catalysts find utility in processes such as cracking, hydrocracking, hydrotreating, isomerization, etc. The binder composition comprising the acid-treated boehmite may also be used for binding a variety of siliceous compositions such as amorphous combinations of silica and alumina, activated clays, silica gel, etc.

3,557,025
METHOD OF PRODUCING ALKALIZED ALUMINA AND PRODUCTS PRODUCED THEREBY

Robert B. Emerson and Wilton A. Brian, Baton Rouge, La., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware

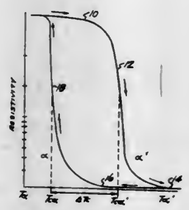
No Drawing. Filed May 13, 1968, Ser. No. 728,839
Int. Cl. B01j *11/06;* **C01f** *7/08;* **C04b** *35/10*
U.S. Cl. 252—463 **9 Claims**

An improved alkalized alumina capable of absorbing SO_2 is prepared from selectively calcined alumina which is capable of at least partial rehydration, by contacting the alumina with an $MHCO_3$ compound, wherein M is selected from alkali metals and NH_4 radical to form at least about 30% by weight alkalized alumina having the empirical formula of $MAl(OH)_2CO_3$.

3,557,026
HIGH THERMAL HYSTERESIS VANADIUM DIOXIDE

Robert O. Teeg, Grosse Pointe, and Robert W. Hallman, St. Clair Shores, Mich., assignors to Teeg Research, Inc., Detroit, Mich., a corporation of Delaware

Filed July 17, 1967, Ser. No. 654,000
Int. Cl. H01b *1/06;* **C01g** *31/00*
U.S. Cl. 252—518 **3 Claims**



Vanadium dioxide provided with a substantially complex domain structure and exhibiting a substantially increased thermal hysteresis of its normal range of transition temperature. The high hysteresis vanadium dioxide is obtained by reducing the normal oxygen content of vanadium dioxide below stoichiometric proportion or, alternately, by doping the vanadium dioxide with an appropriate isomorphic metal oxide.

3,557,027
NOVEL POLYCARBOXYLIC PREPOLYMERIC MATERIALS AND POLYMERS THEREOF

Harold E. Marsh, Jr., La Canada, Calif., and John J. Hutchison, Flushing, N.Y., assignors, by mesne assignments, to the United States of America as represented by the administrator of the National Aeronautics and Space Administration

No Drawing. Filed Aug. 30, 1968, Ser. No. 756,381
Int. Cl. C08g *20/00, 20/26, 53/08*
U.S. Cl. 260—2.5 **12 Claims**

Novel prepolymers and self-foaming, high-temperature resistant polymers thereof are disclosed. The polymers are prepared by the reaction of a relatively high molecular-weight essentially saturated aliphatic hydrocarbon polycarboxylic terminated prepolymer and a polyisocyanate, preferably an aliphatic isocyanate such as hexamethylene-diisocyanate. Carbon dioxide is evolved as a result of the reaction and a uniform cell structure product is formed. Cell size can be controlled by the addition of non-gas evolving cross-linking agents such as polyols or diaziridines. The carboxyl-terminated material is preferably a prepolymer having a star-shaped configuration, for example, dimers or trimers of unsaturated C_{12} to C_{24} fatty acids or polyesters thereof. In an example of the latter prepolymer, three moles of dimerized linoleic acid and two moles of 1,10-decane diol yields a carboxyl-terminated polyester suitable for use in the polymerization reaction of the invention. The presence of trimer acid insures a more tough product.

3,557,028
OZONE RESISTANT POLYMER BLENDS

David L. Turk, Cuyahoga Falls, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Feb. 28, 1967, Ser. No. 619,195
Int. Cl. C08c *11/62;* **C08d** *9/04*
U.S. Cl. 260—5 **9 Claims**

Sulfur vulcanizable, ozone resistant blends of ethylene/propylene terpolymer and conventional general purpose rubbers containing a sulfenamide/sulfur vulcanization system and capable of adhering to a conventional general purpose rubber composition on vulcanization of the two phases. These blends may be used in the construction of tire sidewalls and cover strips for pneumatic tires.

3,557,029
JOINT FILLING COMPOSITIONS

Louis Alonzo Bergeron, 371 Main St., Tonawanda, N.Y. 14150

No Drawing. Filed Feb. 23, 1968, Ser. No. 707,417
Int. Cl. C08h *7/00, 7/02*
U.S. Cl. 260—8 **3 Claims**

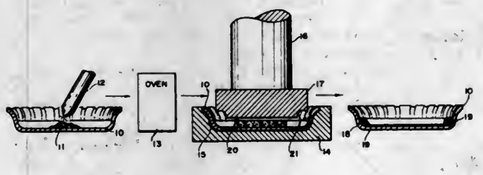
A joint filling composition particularly intended for use between adjacent panels of wall board or plaster board to obtain joints that resist beading and ridging is provided by a mixture of a proteinaceous binder, a resinous binder, an inorganic filler, an organic fibrous filler, glycol and water, the mixture when ready for use having a putty-like consistency.

3,557,030
GASKET-FORMING COMPOSITIONS FOR CLOSURE ELEMENTS

Charles W. Simons, Bedford, Mass., assignor to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut

Filed Sept. 15, 1966, Ser. No. 579,691
Int. Cl. C08f *29/18, 45/40*
U.S. Cl. 260—17 **5 Claims**

Compositions suitable for use as gaskets in container closure elements consisting of a two-phase system composed of plasticized coarse resin particles dispersed in water. Thickening agents such as water-insoluble ma-



terials, e.g., silica gel, or water-soluble materials, e.g., cellulose derivatives, may be included in the compositions.

3,557,031
STAIN-RESISTANT MOLDING COMPOSITION

Norman W. Standish, Shaker Heights, and Richard W. Yanik, Warrensville Heights, Ohio, assignors to The Standard Oil Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 13, 1968, Ser. No. 752,133
Int. Cl. C08g *9/24, 37/3, 37/34, 51/18;* **C08k** *1/44*
U.S. Cl. 260—17.3 **12 Claims**

Stain-resistant molded articles can be prepared from standard, non-stain resistant melamine-formaldehyde molding powder by dry-blending minor amounts of certain amides into the molding powder prior to the molding operation.

3,557,032
PROCESS FOR PREPARING A SOLID POLYURETHANE HAVING A LONG POT-LIFE

John C. Zemlin, Reading, Mass., assignor to Liner Technology, Inc., Burlington, Mass., a corporation of Massachusetts

No Drawing. Continuation-in-part of applications Ser. No. 455,627, May 13, 1965, and Ser. No. 496,155, Oct. 14, 1965. This application Apr. 9, 1969, Ser. No. 814,819
Int. Cl. C08g *22/40*
U.S. Cl. 260—18 **5 Claims**

A process for making substantially non-porous, solid polyurethane which comprises forming said polyurethane from a curable composition containing a mixture of a polyisocyanate, an active hydrogen-containing compound, e.g., a polyol, and a lead salt-containing catalyst which is inactive at room temperature, heating said composition to a temperature of at least about 100° C. to activate said catalyst and to form the substantially non-porous, solid polyurethane.

3,557,033
COATINGS COMPOSITIONS FROM BLENDS OF ALKYD RESINS AND STYRENE-ALLYL ALCOHOL COPOLYMERS

William J. Brinton, 782 E. 19th St., San Bernardino, Calif. 92404

No Drawing. Filed June 25, 1969, Ser. No. 836,653
Int. Cl. C09d *3/52, 3/66, 3/76*
U.S. Cl. 260—21 **7 Claims**

A coating composition comprising a blend of an alkyd resin, a styrene-allyl alcohol copolymer and a hexa-alkoxy methyl melamine resin dissolved in a solution of a non-reactive low boiling solvent and a low boiling alcohol is prepared and applied to a heat sensitive substrate by low temperature baking.

3,557,034
CURING SYSTEM FOR FLUOROCARBON ELASTOMERS

David Kenneth Thomas, Farnham, England, assignor, by mesne assignments, to National Research Development Corporation, London, England

No Drawing. Filed Nov. 25, 1966, Ser. No. 596,789
Claims priority, application Great Britain, Nov. 26, 1965, 50,324
Int. Cl. C08f *15/06, 45/34, 45/46*
U.S. Cl. 260—30.8 **14 Claims**

Fluorocarbon elastomers are cured by heating in the presence of triethylenetetramine, preferably in the presence of p-phenylene diamine as a curing agent. The elastomer can be plasticized, preferably with sulphur pentafluorochloride tetrafluoroethylene telomer or a glycol.

3,557,035
HEAT-CURABLE EPOXIDE RESIN COMPOSITIONS

Rolf Schmid, Reinach, Basel-Land, Friedrich Lohse, Allschwil, Willy Fisch, Binningen, and Hans Batzer, Arlesheim, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Jan. 19, 1970, Ser. No. 4,085
Claims priority, application Switzerland, Jan. 24, 1969, 1,106/69
Int. Cl. C08g *17/16, 30/12*
U.S. Cl. 260—22 **19 Claims**

Heat-curable epoxide resin mixtures of (1) a cycloaliphatic polyglycidyl compound which possesses at least one alicyclic five-membered or six-membered ring, (2) a polycarboxylic acid anhydride (0.2–1.1 anhydride groups per 1 equivalent of epoxide groups) and (3) a polyester containing terminal carboxyl groups and/or hydroxyl groups, which is obtained by esterification of aliphatic-cycloaliphatic higher dicarboxylic acids (manufactured by dimerization of unsaturated monomeric fatty acid with 14–24 carbon atoms in the molecule, preferably 16–18, and optionally subsequent hydrogenation of such a dimeric fatty acid) with aliphatic diols (0.02–0.4 mol of polyester per 1 equivalent of epoxide groups). The curing of the mixtures yields flexible, impact-resistant mouldings the physical properties of which show little temperature-dependence, and which possess high flexibility at low temperatures.

3,557,036
HEAT-CURABLE EPOXIDE RESIN MIXTURES

Rolf Schmid, Reinach, Friedrich Lohse, Allschwil, Willy Fisch, Binningen, and Hans Batzer, Arlesheim, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed June 30, 1969, Ser. No. 837,889
Claims priority, application Switzerland, July 24, 1968, 11,091/68
Int. Cl. C08g *17/18, 30/12*
U.S. Cl. 260—22 **17 Claims**

Heat-curable epoxide resin mixtures of (1) a cycloaliphatic polyepoxide compound which possesses at least one 1,2-epoxide group located on a carbocyclic five-membered or six-membered ring, (2) a polycarboxylic acid anhydride (0.2–1.1 anhydride groups per 1 equivalent of epoxide groups) and (3) a polyester containing terminal carboxyl and/or hydroxyl groups which is obtained by esterification of aliphatic-cycloaliphatic higher dicarboxylic acids (manufactured by dimerization of unsaturated monomeric fatty acid having 14–24 carbon atoms in the molecule, preferably 16–18, and optionally subsequent hydrogenation of such a dimeric fatty acid) with aliphatic diols (0.02–0.4 mol of polyester per 1 equivalent of epoxide groups). The curing of the mixtures yields flexible, impact-resistant mouldings, the mechanical properties of which are largely temperature-independent.

3,557,037

RHEOLOGICAL PROPERTY-MODIFIED PARTICLE SUSPENSIONS IN ORGANIC LIQUIDS

George W. Collins, 605 Mountain Road, Kinnelon, N.J. 07405, and Frank A. Baron, 735 Jefferson Ave., Elizabeth, N.J. 07201

No Drawing. Filed Dec. 23, 1966, Ser. No. 604,190
Int. Cl. C08g *51/22, 51/28, 53/18*
U.S. Cl. 260—29.1 3 Claims

The rheological properties of particle suspensions in organic liquids, such as pigment suspensions for paints, are modified by incorporating in the suspension as a rheological property modifying agent a copolymer of ethylene and an unsaturated organic acid, the copolymer containing free carboxyl groups and having an acid number of between about 2 and 75, a molecular weight of between about 1,000 and 8,000, a softening point of between 205 and 240° F. and a penetration hardness of between about 1 and 8.

3,557,038

POLY(DIACETONE ACRYLAMIDE) MODIFIED KAOLIN

Stanley E. Gebura, Mountain Lakes, N.J., assignor to Interpace Corporation, Parsippany, N.J.

No Drawing. Filed May 3, 1968, Ser. No. 726,531
Int. Cl. C08f *45/24, 45/68*
U.S. Cl. 260—29.2 12 Claims

A process has been provided for polymerizing diacetone acrylamide monomer and a comonomer system based on diacetone acrylamide monomer onto a high surface area siliceous substance, e.g., kaolin clay, silica, etc. This process may be carried out in an aqueous phase. The monomers or comonomers are polymerized via free radical polymerization onto the surface of the siliceous substance. Diacetone acrylamide homopolymer modified siliceous substances possess improved properties. By employing diacetone acrylamide but by varying the component part of the comonomer system, modified siliceous substances, such as clays, are obtained which possess especially advantageous properties. Moreover, modified siliceous substances are obtained with properties which meet specified requirements. Products prepared by this process are within the scope of the invention as are the uses of these surface modified products for purposes as adjuvants in polymers, e.g., poly(ester), poly(vinyl chloride) and in oleaginous, alkyd, adhesive, putty, and grouting composition formulations, to name a few.

3,557,039

AQUEOUS DISPERSION OF BLOCK OR GRAFT POLYMER USEFUL IN SURFACE MODIFYING TREATMENT OF POLYESTER SHAPED ARTICLES

James Eric McIntyre and Michael Mundle Robertson, Harrogate, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Original application May 25, 1964, Ser. No. 370,068, Patent No. 3,416,952, dated Dec. 17, 1968. Divided and this application Dec. 2, 1968, Ser. No. 780,589
Claims priority, application Great Britain, June 5, 1963, 22,323/63
Int. Cl. C08g *17/06, 51/24*
U.S. Cl. 260—29.2 1 Claim

A stable dispersion in water of a block or graft copolymer, a first polymeric constituent of which is a crystalline polyester and a second polymeric constituent of which is solvated by water. The first polymeric constituent contains repeat units of the type used in fiber-forming polyester materials and the second polymeric constituent preferably is a polyoxyethylene chain. The dispersion is useful for applying the polymer to the surface of a polyester article to produce a durable surface effect.

3,557,040

PROCESS FOR PREPARING A CARBON BLACK-SYNTHETIC RESIN COMPOSITION

Naomitsu Takashina, Fujisawa-shi, and Tetuo Aida, Yasuhiro Endo, and Wakio Nagashima, Hiratsuka-shi, Japan, assignors of one-half each to Japan Gas-Chemical Company, Tokyo, Japan, a corporation of Japan, and Research Development Corporation of Japan, Tokyo, Japan, a corporation of Japan

Filed Aug. 14, 1967, Ser. No. 660,420
Int. Cl. C08f *45/08, 47/18*
U.S. Cl. 260—29.6 8 Claims

A process for preparing a carbon black-synthetic resin composition which comprises contacting at least one kind of α,β-ethylenically unsaturated monomer polymerizable with free radicals with a polymerization initiator in the presence of carbon black, characterized in that said initiator is added in at least 2 divided times, namely, once prior to the initiation of the polymerization, and next after fluidity of the reaction mixture increases, and a non-thixotropic carbon black dispersion obtained by the aforementioned process.

3,557,041

VINYLIDENE CHLORIDE INTERPOLYMERS

Samuel Loshaek, Stamford, Conn., and Edward Charles Leonard, Jenkinstown, Pa., assignors to The Borden Company, New York, N.Y., a corporation of New Jersey

No Drawing. Continuation of application Ser. No. 566,464, July 20, 1966. This application July 16, 1969, Ser. No. 847,503
Int. Cl. B44d *1/22*; C08f *15/40*
U.S. Cl. 260—29.6 10 Claims

The instant invention relates to the polymerized polymeric latex product of the monomers vinylidene chloride; vinyl chloride; a monomer selected from the group consisting of acrylonitrile, methacrylonitrile and mixtures thereof; and a monomer selected from the group consisting of normal C_1–C_8 alkyl acrylates and mixtures thereof; the combined proportion of the vinylidene chloride and vinyl chloride being in the range of about 85–97 parts by weight for 100 parts total monomers. More particularly, the invention relates to films made from said interpolymers and characterized as having low moisture vapor and oxygen transmission rates through the film and high flexibility.

3,557,042

CHEMICAL THICKENING AGENT FOR UNSATURATED POLYESTER RESINS

Albert J. Dalhuisen, San Jose, Calif., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 30, 1967, Ser. No. 679,249
Int. Cl. C08f *45/02*
U.S. Cl. 260—31.2 2 Claims

Unsaturated polyester resins containing selected anhydrous monobasic carboxylic acid metal salts as chemical thickening agents.

3,557,043

POLYACRYLATE-URETHANE LACQUERS

Heinz Walter Krauss, Leverkusen, Josef Pedain, Cologne, Karl-Friedrich Zenner and Gunter Oertel, Cologne-Flittard, and Hans Holtschmidt, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Sept. 18, 1967, Ser. No. 668,698
Claims priority, application Germany, Sept. 19, 1966, F 50,229
Int. Cl. C08q *37/32*
U.S. Cl. 260—31.2 3 Claims

Lacquers suitable for motor vehicles and the like are prepared from mixtures of polyacrylate resins containing hydroxyl groups and N-alkoxymethylurethanes. The alkoxymethylurethanes bring about the cross-linking of the polyacrylate resin. In addition to the above mentioned ingredients, melamine formaldehyde or urea formaldehyde resins may be used jointly with the N-alkoxymethylurethanes.

3,557,044

PROCESS FOR MAKING SPANDEX POLYMERS

James L. Bleasdale and Carl L. Sandquist, Waynesboro, Va., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 290,905, June 27, 1963, which is a continuation-in-part of application Ser. No. 200,669, June 7, 1962. This application June 9, 1967, Ser. No. 644,804
Int. Cl. C08g *51/44, 22/16, 22/04*
U.S. Cl. 260—32.6 11 Claims

Spandex polymers which have low intrinsic viscosities and which can thus be spun from solutions at high solids concentrations, but which result in yarns having high intrinsic viscosities and correspondingly good physical properties can be produced. An aromatic diisocyanate is reacted with a difunctional hydroxyl- or amine-terminated linear organic polymer and the resulting isocyanate-terminated macrointermediate is chain-extended with a diamine, hydrazine or dihydrazide. A nonaromatic secondary monoamine, which acts as a chain-terminator, is also used, and the amounts of chain-terminator and chain-extender are selected from within specified limits.

3,557,045

MIXED THERMOSETTING RESIN COMPOSITIONS CONTAINING POLYPHENYLENE ETHERS

Carl L. Wright, Glen Burnie, and Harry H. Beacham, Severna Park, Md., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 13, 1967, Ser. No. 682,326
Int. Cl. C08g *51/04*; C08k *1/84*
U.S. Cl. 260—40 8 Claims

This specification discloses thermosetting resin compositions of improved qualities made by combining a high-temperature thermoplastic resin, i.e., a polyphenylene ether polymer, with organic materials containing polymerizable carbon to carbon unsaturation, particularly diallylic phthalate monomers and prepolymers. These polyphenylene ether polymers combine with polymerizable materials containing carbon to carbon unsaturation in the presence of a free radical catalyst. These compositions are formed by moderate heat and pressure into articles with excellent electrical and mechanical properties which are retained at elevated temperatures, and under conditions of high humidity.

3,557,046

STABLE SYSTEMS BASED ON POLYVINYL CHLORIDE AND REACTIVE PLASTICIZERS

Irving E. Muskat, Miami, Fla., assignor to C-J Corporation, a corporation of Delaware

No Drawing. Filed July 27, 1967, Ser. No. 656,349
Int. Cl. C08f *15/28*
U.S. Cl. 260—41 21 Claims

Blends of polyvinyl chloride and reactive polyunsaturated ester plasticizers such as glycol diacrylates and dimethacrylates including free radical generating polymerization catalyst are gelled at an intermediate temperature high enough to solvate the polyvinyl chloride but insufficient to cure the reactive plasticizer as by the use of temperatures in the range of 90–120° C. for short periods of time to form an at least partly solvated flexible substantially uncured solid material which is stable at room temperature and which can be subsequently shaped, flowed, and cured by the application of appropriate pressure at a temperature in the range of 120–200° C. Fiber reinforced gels are particularly contemplated. To facilitate handling and to provide blends with better fluidity and viscosity stability and which form nonbrittle products even without fiber reinforcement, mixtures of polyvinyl chloride having an average particle size of from 0.05 to 30 microns with larger polyvinyl chloride particles are used in weight proportions of from 60–80 parts of polyvinyl chloride per 40–20 parts of reactive plasticizer.

3,557,047

DIALLYL PHTHALATE MOLDING COMPOSITIONS

Carl L. Wright, Glen Burnie, and James L. Thomas, Baltimore, Md., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 556,543, June 10, 1966. This application Jan. 22, 1969, Ser. No. 793,162
Int. Cl. C08f *45/04*
U.S. Cl. 260—41 2 Claims

This specification discloses molding compositions comprising a diallyl orthophthalate prepolymer, a catalyst to promote the heat advancing thereof and about 1% to about 2.5% magnesium oxide based on the diallyl phthalate prepolymer, whereby crystalline sublimate formation as high temperatures is avoided.

3,557,048

ORGANIC DISPERSIONS OF COLORED CROSS-LINKABLE COPOLYMERS AND THEIR PRODUCTION

Hans Wilhelm, Ludwigshafen (Rhine), Klaus Gulbins, Limburgerhof Pfalz, and Heinrich Hartmann and Guenter Lange, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Nov. 20, 1967, Ser. No. 684,510
Claims priority, application Germany, Nov. 26, 1966, 1,595,364
Int. Cl. C08f *45/14, 45/28, 45/22*
U.S. Cl. 260—41 9 Claims

Organic dispersions of colored crosslinkable copolymers obtained by free-radical copolymerization of

(a) a dye which contains a polymerizable olefinically unsaturated group in the molecule with
(b) a comonomer containing in the molecule at least one N-methylol or N-alkoxymethyl group and
(c) a preponderant amount of a colorless comonomer which does not contain any groups capable of undergoing condensation, in
(d) an organic liquid in which the copolymer formed is not soluble, in the presence of
(e) a copolymer which is soluble in the organic liquid (d) and has been prepared from comonomers from groups (b) and (c).

3,557,049

REACTIVE MIXTURES OF THERMOPLASTIC VINYL CHLORIDE POLYMERS WITH REACTIVE PLASTICIZERS

Irving E. Muskat, Miami, Fla., assignor to C-J Corporation, a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 573,858, Aug. 22, 1966, and Ser. No. 656,349, July 27, 1967. This application Sept. 17, 1968, Ser. No. 760,363
Int. Cl. C08f *15/28*
U.S. Cl. 260—41 21 Claims

Reactive mixtures of pasty consistency are formed by mixing thermoplastic polyvinyl chloride particles with reactive plasticizers such as a mixture of ethylene glycol dimethacrylate and styrene and free-radical generating

catalyst. Powdered or fibrous fillers are desirably added, especially if the mixture is initially fluid. These plasticizers are absorbed or adsorbed into the polyvinyl chloride and the proportions of plasticizer and filler is adjusted to provide the desired pasty mixture. This mixture may be converted to an intermediate gel state by heating at a temperature and for a time interval, which does not cause significant polymerization. The gel product is a flexible solid which can be cured at temperatures of 120–200° C. In preferred practice, a mixture of dispersion grade and suspension grade polyvinyl chloride particles are used to form an initially fluid mixture and fibers are mixed in, and if necessary the mixture is allowed to thicken, to form a non-flowable paste which is encased in protective cellophane sheets and rolled to sheet form essentially free from air with the resin and fibers flowing together to maintain uniform distribution. This sheeted material can be gelled to stabilize it for subsequent use.

3,557,050
STABILIZED VINYL FLUORIDE POLYMERS

Shun Koizumi, Osaka-shi, and Keizo Inamura, Hiratsuka-shi, Japan, assignors to Daikin Kogyo Kabushiki Kaisha, Osaka-shi, Japan, and Kansai Paint Company Limited, Hyogo-ken, Japan, both juridical Persons of Japan

No Drawing. Filed Mar. 5, 1968, Ser. No. 710,646
Claims priority, application Japan, Mar. 8, 1967, 42/14,842
Int. Cl. C08f *45/58, 45/60, 45/62*
U.S. Cl. 260—45.8 **9 Claims**

A heat-stable composition comprising a vinyl fluoride polymer, 0.01 to 5 weight percent of an alkali metal formate, based on the weight of the vinyl fluoride polymer and 0.01 to 5 weight percent of an organic antioxidant having a boiling point of higher than the melting point of the vinyl fluoride polymer, based on the weight of the vinyl fluoride polymer.

3,557,051
STABILIZED VINYL FLUORIDE POLYMERS

Yutaka Kometani, Nishinomiya-shi, Shun Koizumi, Osaka-shi, and Takeshi Suzuki and Chuzo Okuno, Settsu-shi, Japan, assignors to Daikin Kogyo Kabushiki Kaisha, Kita-ku, Osaka-shi, Japan, and Kansai Paint Company Limited, Hyogo-ken, Japan

No Drawing. Filed Apr. 1, 1968, Ser. No. 717,958
Claims priority, application Japan, Apr. 3, 1967, 42/21,428
Int. Cl. C08f *45/56, 45/58, 45/60*
U.S. Cl. 260—45.8 **7 Claims**

A heat-stable composition comprising a vinyl fluoride polymer, 0.01 to 5 weight percent of an inorganic nonmetallic reducing agent, based on the weight of the vinyl fluoride polymer and 0.01 to 5 weight percent of an organic antioxidant having a boiling point of higher than the melting point of the vinyl fluoride polymer, based on the weight of the vinyl fluoride polymer.

3,557,052
CASTING TECHNIQUE USING PURGE GAS AND HEAT STABILIZER

Robert Jerome Tucker, Hackettstown, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Mar. 18, 1969, Ser. No. 808,302
Int. Cl. C08f *45/58*
U.S. Cl. 260—45.75 **4 Claims**

A defined class of N,N,N′,N′-tetraphenyl-substituted p-benzoquinone diimonium salt infrared absorbers are successfully incorporated into polymethylmethacrylate by an improved casting technique in which the polymer syrup is purged with an inert gas, such as nitrogen, in the presence of a p-benzoquinone compound, such as chloranil, prior to being poured into the heat-curing cell.

3,557,053
HIGH TEMPERATURE THERMOPLASTICS STABILIZED WITH A TRIS(HALOPHENYL)PHOSPHATE, A TRIS(HALONAPHTHYL)PHOSPHATE, A TRIS(HALOPHENYL)PHOSPHINE OXIDE, A TRIS(HALONAPHTHYL)PHOSPHINE OXIDE, A POLYHALOPHOSPHATE, A POLYHALOPHENYLPHOSPHATE, A POLYHALONAPHTHYLPHOSPHATE, A POLYHALOPHOSPHATE AND MIXTURES THEREOF

Gerald W. Miller, Pittsburgh, Pa., assignor to Mobay Chemical Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Mar. 18, 1968, Ser. No. 714,029
Int. Cl. C08g *51/58*
U.S. Cl. 260—45.7 **10 Claims**

Self-extinguishing thermoplastics stabilized against thermal degradation with a stabilizing amount of a poly(halophenylphosphate), a poly(haloalkylphenyl)phosphate, a poly(haloalkylnapthylphosphate), a tris(haloalkylphenyl)phosphate, a tris(haloalkylnaphthyl)phosphate, a tris(haloalkylphenyl)phosphine oxide, a tris(haloalkylnaphthyl)phosphine oxide, a poly(halonaphthylphosphate), a tris(halonaphthyl)phosphate, a tris(halophenyl)phosphate, a tris(halophenyl)phosphine oxide, a tris(halonaphthyl)phosphine oxide and mixtures thereof.

3,557,054
RUBBER STABILIZED AGAINST OZONE DETERIORATION BY USE OF MORPHOLINE ADDITIVES

Richard W. Kibler, Cuyahoga Falls, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed July 21, 1965, Ser. No. 473,821
Int. Cl. C08c *11/00*; C08d *7/10*
U.S. Cl. 260—45.8 **6 Claims**

Sulfur-cured SBR is stabilized against ozone deterioration by the addition of N-(p-isopropylaminophenyl) morpholine, N-(p-cyclohexylaminophenyl) morpholine, N-(p-isopropylaminophenyl) 2,6-dimethyl morpholine or N-(p-cyclohexylaminophenyl) 2,6-dimethyl morpholine.

3,557,055
POLYESTER-ETHERS

Lucien Bonnard and René Pich, Lyon, France, assignors to Societe Rhodiaceta, Paris, France

No Drawing. Filed July 31, 1967, Ser. No. 656,999
Claims priority, application France, Aug. 2, 1966, 71,826
Int. Cl. C08g *17/08*
U.S. Cl. 260—47 **6 Claims**

Polyesters suitable for use in textile fibres and films and of being dyed with plastosoluble dyes comprise mainly ethylene (or other alkylene) terephthalate structural units, but also 5–35% of structural units derived from terephthalic acid and certain α-ω-dihydroxy aromatic ethers, namely those of formula:

$$HO.R_3.OAr\{OR_2—OAr\}_nOR_3OH$$

in which R_2 and R_3 are divalent hydorcarbon radicals, of which R_2 may contain an ether linkage, Ar is a divalent aromatic radical, usually phenylene, and n is 4 or more.

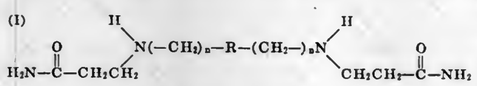
3,557,056
CURING OF EPOXY RESINS WITH CERTAIN AMINOAMIDES

Dwight E. Peerman, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 460,460, June 1, 1965. This application Jan. 21, 1969, Ser. No. 792,784
Int. Cl. C08g *30/14*
U.S. Cl. 260—47 **9 Claims**

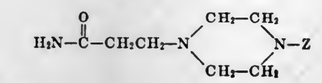
Epoxy resins are cured with compounds of the formulae

(I)

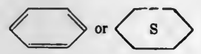


and

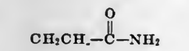
(II)



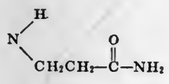
where R is



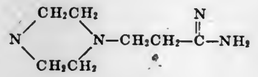
n is 1 to 2, Z is



or $(CH_2)_x—R'$, x is 1, 2 or 3, and R′ is



or



B-stage resins are prepared as well as fully cured products (C-stage).

3,557,057
2,4-DINONYLPHENOLS AS IMPROVED ANTIOXIDANTS FOR RUBBER

Earl Kaplan, Metuchen, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 566,251, July 19, 1966. This application July 9, 1969, Ser. No. 840,514
Int. Cl. C08f *45/58*
U.S. Cl. 260—45.95 **3 Claims**

Diene-containing vulcanizable natural or synthetic rubbers stabilized against oxidative deterioration by addition of 0.1–5% of a branched chain 2,4-dinonylphenol such as prepared by the reaction of propylene trimer and phenol.

3,557,058
PROCESS FOR OBTAINING POLYOXYMETHYLENES HAVING CONTROLLED MOLECULAR WEIGHT AND PRODUCTS OBTAINED THEREFROM

Leonardo Fiore and Giorgio Nissim, Milan, and Elio Crespi, Busto Arsizio, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Apr. 16, 1968, Ser. No. 721,578
Claims priority, application Italy, Apr. 19, 1967, 15,109/67, 795,982/67
Int. Cl. C08g *1/04, 1/22*
U.S. Cl. 260—67 **6 Claims**

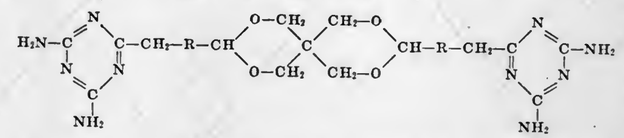
Modified oxymethylene homopolymers and copolymers having particular terminal groups and characterized by controlled molecular weight and increased thermal stability are obtained by polymerizing trioxane or mixtures thereof with other monomers in the presence of particular chain-transfer agents.

3,557,059
DIGUANAMINE RESIN

Yoko Hattori, Tokyo, Tamiki Ooji, Kawasaki-shi, and Kiichiro Tanaka and Takao Matsunaga, Yokohama-shi, Japan, assignors to Toka Shikiso Chemical Industry Co., Ltd., and Ajinomoto Co., Inc., both of Tokyo, Japan

No Drawing. Filed Sept. 10, 1968, Ser. No. 758,681
Int. Cl. C08g *9/28*
U.S. Cl. 260—67.6 **2 Claims**

Compounds of the formula



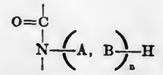
readily form methylol derivatives with formaldehyde, and the methylol derivatives may be further modified by ether formation with lower monohydric or polyhydric alkanols to produce resins soluble in aromatic hydrocarbons and capable of forming organic coatings on metal either by themselves or in combination with known film forming resins. The coatings have outstanding resistance to ultraviolet radiation.

3,557,060
INTERNAL ANTISTATIC AGENT FOR SUPER POLYAMIDES AND POLYAMIDE COMPOSITIONS HAVING IMPROVED ANTISTATIC PROPERTY

Hiroshi Kitagawa, Nagoya, Ataru Suwada, Hirakata-shi, and Satoyoshi Ohno, Kyoto, Japan, assignor of one-half to Toyo Rayon Kabushiki Kaisha, Tokyo, and Sanyo Chemical Industries, Ltd., Kyoto, Japan, both corporations of Japan

No Drawing. Filed Apr. 24, 1968, Ser. No. 723,875
Int. Cl. C08g *20/00*
U.S. Cl. 260—78 **3 Claims**

An internal antistatic agent for synthetic polyamide use which comprises a compound which is an addition product of an alkylene oxide and a carbonamide group-containing compound containing a structural unit of the formula



wherein A stands for ethyleneoxide B stands for propyleneoxide, $\{A,B\}_n$ stands for a homopolymer of ethyleneoxide

or propyleneoxide or a block or random copolymer of ethyleneoxide and propyleneoxide and *n* is an integer from 10 to 1000.

3,557,061

STABILIZED SUSPENSION POLYMERIZATION

Herman Christian Hamann, Melrose Park, Pa., assignor to Rohm and Haas Company, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed Jan. 16, 1969, Ser. No. 791,797

Int. Cl. C08f *1/11*

U.S. Cl. 260—78.4 **6 Claims**

Using a salt of a vinylimidazoline or a vinyltetrahydropyrimidine polymer there is provided an improved suspension polymerization process. The process permits the polymerization of water-soluble monomers, preferably, in the presence of aqueous salt solutions which heretofore have presented great difficulties because of the limited solubility or dispersibility of common dispersants in such salt solution.

3,557,062

POLAR POLYMERS DERIVED FROM BICYCLO[2.2.1]HEPTENE-2

Jean Vergne, Leon Solaux, Jean-Claude Robinet, and Philippe Lacroix, Verneuil-en-Halatte, France, assignors to Charbonnages de France, Paris, France, a public institution of France

No Drawing. Filed July 22, 1968, Ser. No. 746,277

Claims priority, application France, July 25, 1967, 115,634; May 28, 1968, 153,175

Int. Cl. C08f *5/00, 17/00*

U.S. Cl. 260—78.4 **16 Claims**

New polymers obtained from esters derived from bicyclo [2.2.1]heptene-2 carboxylic-5 and dicarboxylic-5,6 acids having a glass transition temperature lower than −10° C. for use in the field of elastomers.

3,557,063

CROSSLINKABLE POLYMERS

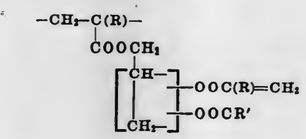
Gaetano F. D'Alelio, 2011 E. Cedar St., South Bend, Ind. 46617

No Drawing. Filed Nov. 25, 1968, Ser. No. 778,848

Int. Cl. C08f *27/12, 37/04*; C08g *30/12*

U.S. Cl. 260—78.4 **18 Claims**

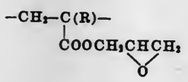
This invention deals with a new one-step process of preparing crosslinkable polymers having a plurality of repeating units of the formula



by reacting anhydrides of the formula

$$CH_2=C(R)COOOCR'$$

with polymers containing the repeating unit



wherein R represents H and CH_3, the number of such repeating units is at least 2, and R′ represents H, a hydrocarbon group containing one to twelve carbon atoms and halogenated derivatives thereof.

The process allows the facile and economical synthesis of a large number of crosslinkable polymers.

3,557,064

VULCANIZABLE COMPOSITION

Douglas Cameron Edwards, Sarnia, Ontario, Canada, and Peter Noel Lewis, Ithaca, N.Y., assignors to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate and body politic

No Drawing. Filed Feb. 11, 1969, Ser. No. 798,442

Claims priority, application Canada, Feb. 22, 1968, 013,077

Int. Cl. C08f *27/08*

U.S. Cl. 260—78.4 **7 Claims**

A solid vulcanizate is prepared from a mixture of (1) a liquid polymer of a conjugated diolefin containing more than one active halogen atom per polymeric molecule and (2) a polyamine salt of a polycarboxylic acid by heating it at a temperature above the decomposition temperature of said salt.

The mixture which is storable at room temperature is suitable for use as premixed and curbable sealants.

3,557,065

PROCESS FOR PREPARATION OF POLY(MALEIC ACID)

John H. Blumberg, Highland Park, and Donald G. MacKellar, Trenton, N.J., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Sept. 29, 1969, Ser. No. 862,059

Int. Cl. C08f *1/60, 3/48*

U.S. Cl. 260—78.4 **7 Claims**

A method for the preparation of light colored poly(maleic acid) which comprises homopolymerizing maleic anhydride in the presence of an acyl maleyl peroxide initiator and a boric acid compound and, thereafter, hydrolyzing the resulting poly(maleic anhydride). Poly(maleic acid) and salts thereof may be effectively utilized in a wide variety of application and, notably, as detergent builders and surface active agents.

3,557,066

NOVEL POLYMERS AND PROCESSES FOR MAKING SAME

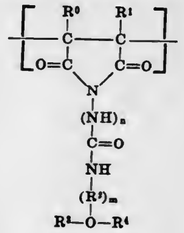
Hyman L. Cohen and James R. King, Jr., Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Mar. 1, 1968, Ser. No. 709,893

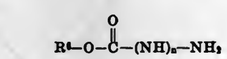
Int. Cl. C08f *27/08*; C08g *20/20*

U.S. Cl. 260—78.5 **14 Claims**

Polymers comprising units represented by the formula:



wherein R^0 and R^1 each represent hydrogen atoms or alkyl groups, and R^3 and R^4 are each a lower alkyl group or R^3 and R^4 can together with Q represent the atoms necessary to form a tertiary nitrogen-containing heterocyclic group; R^2 represents an alkylene group, *n* is 0 or 1, *m* is 0 or 1, and Q represents a nitrogen atom or a carbon radical, with the proviso that R^3 and R^4 are taken together with Q to represent a tertiary nitrogen-containing heterocyclic group when Q is a carbon radical, and *m* can be 0 only when Q is a carbon radical. In one aspect polymers containing the units defined above can be made by reacting polymers comprising units of maleic anhydride with a compound represented by the formula:



wherein R^6 is a hydrocarbon of 1 to 12 carbon atoms and *n* is an integer of 0 to 1.

3,557,067

CROSS-LINKED VINYLIDENE/DICARBOXYLIC ACID ANHYDRIDE COPOLYMERS

Ernest Bingham Burns, Irvine, and Brian Benjamin Darlow and Robert Victor Smallman, Stevenston, Scotland, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

No Drawing. Filed Nov. 7, 1968, Ser. No. 774,193

Claims priority, application Great Britain, Nov. 20, 1967, 52,708/67

Int. Cl. C08f *15/40, 27/12*

U.S. Cl. 260—78.5 **27 Claims**

Cross-linking of vinylidene/dicarboxylic acid anhydride copolymers is achieved using organic ester or ether containing a vinylidene group and an alcoholic hydroxyl group or an ethynyl group.

The reaction is preferably carried out in the presence of a free radical catalyst and the products are salts which are water-soluble or water-swellable.

3,557,068

THIOPHENE POLYMERS AND METHOD OF PREPARATION

Ludwig Konrad Huber, King of Prussia, Pa., assignor to Pennsalt Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Feb. 1, 1968, Ser. No. 702,203

Int. Cl. C08f *5/00*

U.S. Cl. 260—79.7 **7 Claims**

Polymers of thiophene and monoalkyl thiophenes comprised of from about 10 to about 150 thiophene monomer units are prepared by polymerization of the monomer in the presence of a catalytic amount of a hydrocarbon sulfonic acid. The polymers, which are essentially odorless and colorless, are self-curing and useful for preparing solvent-resistant coatings.

3,557,069

PROCESS FOR POLYMERIZING VINYL ESTERS WITH GASEOUS MONOMERS

Ralph H. Bauer, Huntington Beach, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Oct. 9, 1968, Ser. No. 766,293

Int. Cl. C08f *1/13, 15/00*

U.S. Cl. 260—87.3 **4 Claims**

Vinyl acetate and ethylene are copolymerized at high pressure and the polymer product in emulsion form is discharged from the reactor under ethylene pressure. Instead of venting the remaining ethylene, it is sealed into the reactor, the ingredients for the next batch are loaded in and a new reaction is initiated. This eliminates the necessity for flushing air from the system.

3,557,070

PREPARATION OF ETHYLENE POLYMERS

Harry D. Anspon, Kansas City, Mo., and Bert H. Clampitt, Overland Park, and Ronald E. Gilbert, Shawnee Mission, Kans., assignors to Gulf Research & Development Company, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Dec. 28, 1967, Ser. No. 694,118

Int. Cl. C08f *27/00*

U.S. Cl. 260—86.7 **8 Claims**

Ethylene-acrylate copolymers wherein the substituent acrylate groups are converted to the amide and acid form are obtained by the thermal decomposition of an ethylene-isopropyl ester of acrylic or methacrylic acid in an inert atmosphere which is followed by conversion of the anhydride in a second thermal reaction step to produce an ethylene-acrylic acid or ethylene-acrylamide-acrylic acid polymer.

3,557,071

FOAM PREVENTION FOLLOWING EMULSION POLYMERIZATION

Paul J. Steinwand, Placentia, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed Nov. 30, 1967, Ser. No. 686,837

Int. Cl. C08f *15/00*

U.S. Cl. 260—87.3 **6 Claims**

Foam prevention following copolymerization of vinyl acetate with ethylene under pressure is achieved by providing a layer of water on top of the emulsion. Preferably the water is added by spraying and may contain a small amount of foam inhibitor.

3,557,072

PLASTOMERS DERIVED FROM DIMETHANO-OCTAHYDRONAPHTHALENE AND THEIR METHOD OF MANUFACTURE

Jean Vergne, Claude Pailloux, Jean-Claude Muller, and Jean-Claude Robinet, Verneuil-en-Halatte, Oise, France, assignors to Charbonnages de France, Paris, France, a public institution of France

No Drawing. Filed Jan. 10, 1968, Ser. No. 696,719

Claims priority, application France, Jan. 12, 1967, 90,915

Int. Cl. C08f *5/00, 17/00*

U.S. Cl. 260—88.2 **30 Claims**

The invention concerns new plastomer polymers obtained by polymerisation of at least one new monomer of the group of dimethanooctahydronaphthalene and its alkyl derivatives (obtained by reaction of an aliphatic olefin with cyclopentadiene) with from 0 to 99% of a compound of the group of styrene, acenaphthylene and cyclic olefins, in the presence of a catalyst comprising a salt of ruthenium, rhodium, palladium, osmium, iridium, platinum in association with an alcohol or a salt of titanium, vanadium, zirconium, tungsten, molybdenum in association with a compound having a metal-hydrocarbon or metal-hydrogen bond.

3,557,073

PRODUCTION OF A POLYMER HAVING DIHALO-s-TRIAZINYL GROUPS BOUND THERETO

Garth Kay, London, England, assignor to National Research Development Corporation, London, England, a British corporation

No Drawing. Filed June 26, 1968, Ser. No. 740,043

Claims priority, application Great Britain, July 3, 1967, 30,616/67

Int. Cl. C08f *27/08*

U.S. Cl. 260—91.3 **15 Claims**

A process for the production of a polymer having dihalo-s-triazinyl groups bound thereto which comprises contacting a polymer having nucleophilic groups with a solution of a cyanuric halide in an inert water-miscible organic solvent in the presence of water and maintaining

an acid or neutral pH after reaction has occurred whereby the tendency to hydrolysis and cross-linking of the polymer is substantially reduced.

3,557,074
PRODUCTION OF LOW MOLECULAR WEIGHT WAXY POLYETHYLENES

Oskar Buechner and Wolfgang Immel, Ludwigshafen (Rhine), Helmut Pfannmueller, Limburgerhof, Pfalz, Georg Schmidt-Thomee, Heidelberg, and Friedrich Urban, Limburgerhof, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed May 3, 1968, Ser. No. 726,562
Claims priority, application Germany, May 6, 1967, 1,720,273
Int. Cl. C08f *1/60, 3/04*
U.S. Cl. 260—94.9 **7 Claims**

A process for the production of low molecular weight waxy polyethylenes by polymerization of ethylene at elevated temperature and superatmospheric pressure by means of free-radical initiators. The course of the polymerization is influenced by adding (a) hydrogen or an alkane and (b) an alkene.

3,557,075
PROCESS AND CATALYST FOR PRODUCTION OF LIQUID POLYMERS

Rudolf H. Gaeth, Lake Jackson, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Nov. 20, 1967, Ser. No. 684,503
Int. Cl. C08d *1/14, 3/08*
U.S. Cl. 260—94.3 **10 Claims**

A catalyst system comprising a niobium halide, a niobium oxyhalide, a niobium trihalodicarboxylate or mixtures thereof and a mixture of (1) a nickel compound such as nickel oxide, a nickel salt of an organic or inorganic acid, a nickel salt of a beta-diketone, or a complex compound of nickel such as dicyclopentadienylnickel, nickel tetracarbonyl, or the nickel complex with the ester of acetoacetic acid, and (2) an organometallic compound or a lithium aluminum hydride represented by the formulas R_mAlCl_n, $LiAlH_xR'_{(4-x)}$, and R_yM wherein R is a saturated aliphatic, saturated cycloaliphatic, or aromatic radical or combinations thereof containing from 1 to 20 carbon atoms, m and n are integers of 1 or 2 such that $m+n=3$, x is an integer of from 0 to 4, M is lithium, sodium, potassium, rubidium, cesium, beryllium, magnesium, zinc, cadmium, aluminum, gallium, or indium, and y is an integer equal to the valence of the metal, is employed for the polymerization of butadiene. Liquid polymers are obtained using the catalysts of this invention. The products can be hydrogenated immediately following polymerization with the polymerization catalyst functioning as the catalyst for the hydrogenation step.

3,557,076
PROCESS FOR POLYMERIZING ISOPRENE IN CONTACT WITH A THREE-COMPONENT CATALYST PREPARED FROM $TiCl_4$, AlR_2Cl AND PARTICULAR SILANES

Augusto Bonfardeci and Lido Porri, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy

No Drawing. Filed Jan. 10, 1968, Ser. No. 696,720
Claims priority, application Italy, Jan. 11, 1967, 11,330A/67
Int. Cl. C08d *3/10*
U.S. Cl. 260—94.3 **4 Claims**

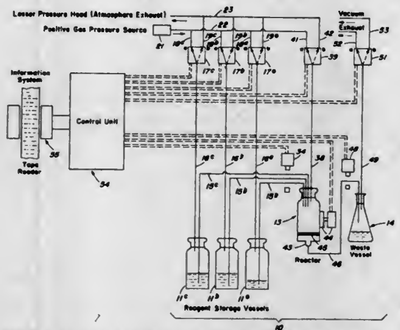
In summary, isoprene is polymerized, in accordance with this invention, to a polyisoprene having elastic and mechanical properties practically identical with those of natural rubber, by subjecting the monomer to polymerizing conditions in contact with a catalyst prepared from the three components:

(1) titanium tetrachloride
(2) an organometallic compound AlR_2Cl in which R is an alkyl group containing 1 to 6 carbon atoms; and
(3) a silicium compound of the formula $R_aSi(OR')_b$ wherein R and R' are the same or different alkyl groups; a is zero or a whole number from 1 to 3; and b is a whole number from 1 to 4, $a+b$ being equal to 4.

3,557,077
REACTIONS SYSTEM

Kay Brunfeldt, Granparke 135, Lyngby, Denmark; Peter Roepstorff, Holmevej 27A, Vlrum, Denmark; and John Halstrom, Ejnarsvej 34, Lyngby, Denmark

Filed Sept. 18, 1967, Ser. No. 668,374
Int. Cl. C07c *103/52*
U.S. Cl. 260—112.5 **15 Claims**



A closed reaction system, particularly adapted to the solid-phase synthesis of peptides, wherein the reagents and reactants are transferred from storage vessels to a metering vessel, or a reaction vessel, without contacting pumps or valves. The storage vessels are selectively connected to a pressure source to apply a pressure head to the reagent or reactant therein which is at greater pressure than the pressure head prevailing in the metering vessel or reaction vessel, causing the reagent or reactant to flow from the storage vessel to the metering or reaction vessel. The reagent or reactant flow is interrupted by connecting the storage vessel to a pressure source to apply a pressure head to the reagent or reactant therein of less pressure than the pressure head prevailing in the metering or reaction vessel. The flow may be initiated by introducing a non-reactive or inert gas into the storage vessel and the flow interrupted by connecting the storage vessel to a source of vacuum or by introducing a non-reactive or inert gas into the metering or reaction vessel or placing the metering or reaction vessel above the storage vessel and connecting the storage vessel to the atmosphere.

3,557,078
METHOD FOR TREATING AND IMPROVING THE PROPERTIES OF PROTEINACEOUS MATTER COMPRISING REACTING HIDE MATERIAL WITH HCHO AND A MALONIC ACID

Stephen H. Feairheller, Maryann M. Taylor, and Edward M. Filachione, Philadelphia, Pa., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Continuation of application Ser. No. 635,973, May 1, 1967. This application Oct. 27, 1969, Ser. No. 869,952
Int. Cl. C08h *1/06, 7/06*
U.S. Cl. 260—123.7 **10 Claims**

Proteinaceous matter such as collagen of animal origin is treated with formaldehyde and malonic or a substituted malonic acid to produce a chemically modified substance having improved ability to bind and utilize mineral tanning agents. When the proteinaceous matter is collagen from animal hides and skins, retanning of the modified collagen with conventional mineral tanning agents produces a high quality leather product with improved hydrothermal stability and resistance to deterioration.

3,557,079
PRODUCTION OF STILBENE AZO DYES

Jeremiah J. Doody, Buffalo, N.Y., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Feb. 1, 1967, Ser. No. 613,113
Int. Cl. C07c *105/00, 107/06*
U.S. Cl. 260—143 **6 Claims**

Production of stilbene azo dyes having excellent solubility in cold water by heating p-nitrotoluene-o-sulfonic acid in the presence of an aqueous caustic alkali and reducing the resultant reaction mass consisting essentially of 4,4'-dinitro-2,2'-stilbene disulfonic acid or an alkali metal salt thereof with sodium sulfide in amount from about 5 to 15%, by weight, of the p-nitrotoluene-o-sulfonic acid employed.

3,557,080
MONOAZO DYES CONTAINING 2-PHENYL-INDOLES

Johannes Dehnert and Gerhard Gnad, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed July 19, 1968, Ser. No. 746,005
Claims priority, application Germany, July 27, 1967, 1,644,063
Int. Cl. C09b *29/36*
U.S. Cl. 260—165 **2 Claims**

Dyes devoid of sulfonic acid groups and derived from nitroanthranilic acid esters and 2-phenylindoles, especially useful for dyeing synthetic polyesters and polyamides.

3,557,081
ALKALI METAL SALTS OF GUANOSINE

Yoshihisa Suzuki, Kawasaki-shi, Takeshi Tsukada, Yokohama-shi, Tsuneo Hirahara, Tokyo, and Tadashi Nakamura, Fujisawa-shi, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan

No Drawing. Filed Oct. 7, 1968, Ser. No. 765,632
Claims priority, application Japan, Oct. 7, 1967, 42/64,536
Int. Cl. C07d *51/54*
U.S. Cl. 260—211.5 **11 Claims**

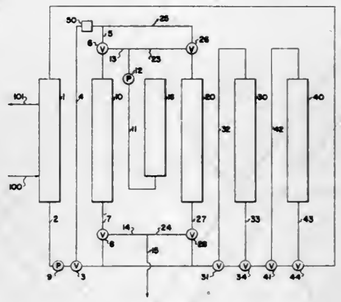
The sodium, potassium and lithium salts of guanosine are obtained in crystalline form when guanosine is reacted with the corresponding alkali metal hydroxide or carbonate in aqueous solution, and the solution is supersaturated with the alkali metal salt formed. The alkali metal salts are readily decomposed by means of acid, and purified guanosine may be crystallized from the neutralized acid solution.

3,557,082
PROCESS FOR SEPARATING IONIC MATERIALS FROM COMPONENT MIXTURES

Douglas J. Bridgeford, Danville, Ill., assignor to Tee-Pak, Inc., a corporation of Illinois

Filed Jan. 24, 1969, Ser. No. 793,773
Int. Cl. B01d *11/00, 15/04;* **C08b** *9/00*
U.S. Cl. 260—218 **35 Claims**

Ionic material is separated from a component mixture containing same, e.g. a crude alkali cellulose xanthate, by contacting the component mixture with a liquid solvent to dissolve ionic material, preferably providing a mixture autogenously separable into two phases, one being the liquid solvent containing separated ionic material and the other, the non-dissolved residue of the component mixture, ionic material is insolubilized and removed from the liquid solvent by contacting the liquid solvent separately with an immiscible ion-exchange medium (e.g. anion-exchange resins, cation-exchange resins, ion retardation resins, or ion-exchange liquids) and resultant ion-exchanged liquid solvent is re-used in the process for separating ionic material from additional efficiently purifying materials which are sensitive to component mixture. Ionic material may be separated from component mixtures comprising gases, liquids, semi-solids, and solids by the process of the present method.



Advantageous features of the process include a widening of the conditions and scale of operations in which solvents economically can be used for separations. Additionally, the process provides a novel route for more certain solvents, heat, acids and/or alkalis and/or contain relatively low ionic material contaminant levels. Other features stem from an ability to utilize preferred purification expedients, e.g. high boiling solvents, heretofore often economically non-feasible. The process is especially useful for purifying polymeric alcohol xanthates, and in particular advantageously can be employed to provide improved solid alkali cellulose xanthate directly from alkali cellulose xanthate crumb.

3,557,083
CELLULOSE TRIACETATE CONTAINING AT MOST 150 PARTS PER MILLION BY WEIGHT OF COMBINED SULFURIC ACID AND PROCESS FOR ITS PRODUCTION

Jean Sacco, Bron, Rhone, France, assignor to Societe Rhodiaceta, Paris, France, a corporation of France

No Drawing. Filed May 20, 1968, Ser. No. 730,601
Claims priority, application France, May 22, 1967, 107,260
Int. Cl. C08b *3/08, 3/28*
U.S. Cl. 260—230 **6 Claims**

Cellulose triacetate containing at most 150 parts per million by weight of combined sulphuric acid and having a dissolution factor of at least 90 in 10 minutes is produced by precipitating with water cellulose triacetate from an acetic gum obtained by the acetylation of wood pulp in the presence of sulphuric acid as catalyst, then displacing the water in the resulting water-impregnated cellulose triacetate with methanol, then displacing the methanol with ethyl ether or isopropyl ether, and finally drying the ether-impregnated cellulose triacetate.

3,557,084
SULFITE-CARBONYL STARCH COMPLEX AND METHOD OF PREPARATION

Roy G. Hyldon, Crystal Lake, Ill., Robert L. High, Canal Winchester, Ohio, and Fredrick H. Anklam, Muscatine, Iowa, assignors to The Keever Company, a corporation of Ohio

No Drawing. Continuation-in-part of application Ser. No. 461,062, June 3, 1965. This application June 20, 1968, Ser. No. 738,406
Int. Cl. C08b *19/01*
U.S. Cl. 260—233.3 10 Claims

A sulfite-carbonyl starch complex is prepared by effecting the interaction of a carbonyl-enriched starch and sulfite ions. The carbonyl starch may be a dialdehyde starch, may be a carbonyl-enriched product of the hypochlorite oxidation of starch, and the like. A preferred embodiment of the invention involves interacting a carbonyl starch and sulfite ions in an aqueous slurry of a carbonyl starch containing about 1% dissolved sodium sulfite (based on starch weight) and at a pH of about 6–10.

3,557,085
PROCESS FOR THE RECOVERY OF CITRUS PEEL OIL

Peter L. Douglas, Glendora, Calif., assignor to Automatic Machinery & Electronics, Inc., Covina, Calif., a corporation of California

No Drawing. Filed Feb. 29, 1968, Ser. No. 709,197
Int. Cl. C07g *17/00*
U.S. Cl. 260—236.6 10 Claims

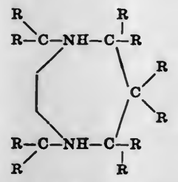
In the process of recovering citrus peel oil wherein the oil is expressed from the peel of the fruit and captured in water to provide a dilute mixture or emulsion containing the oil, the dilute mixture or emulsion is fed to a desludging operation which removes most of the insoluble solids and concentrates the oil emulsion into a cream, the cream then being fed to a polishing operation to break the emulsion and produce a clear citrus peel oil; the improvement wherein calcium chloride is added to the dilute mixture or emulsion prior to the desludging operation to facilitate the recovery of the oil from the cream in the polishing step without the use of any wetting agents.

3,557,086
PROCESS FOR PREPARING SUBSTITUTED HEXAHYDRO-1,4-DIAZEPINES

Giuseppe Cantatore and Alberto Bonvicini, Terni, Italy, assignors to Montecatini Edison S.pA., Milan, Italy

No Drawing. Filed Nov. 3, 1966, Ser. No. 591,687
Claims priority, application Italy, Nov. 9, 1965, 24,848/65
Int. Cl. C07d *53/02*
U.S. Cl. 260—239 10 Claims

Alkyl substituted hexahydro-1,4-diazepines having the formula



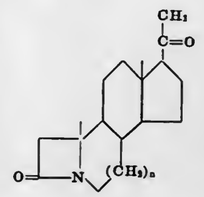
wherein the R substituents are the same or different and are selected from the group consisting of hydrogen atoms and alkyl groups containing 1 to 18 carbon atoms are prepared by reacting an ethylene-diamine with an aliphatic alpha-beta unsaturated aldehyde or ketone and then catalytically hydrogenating the reaction mixture. Novel alkyl substituted hexahydro-1,4-diazepines are disclosed.

3,557,087
SYNTHESIS OF STEROIDS

Seymour D. Levine, North Brunswick, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 29, 1967, Ser. No. 686,744
Int. Cl. C07d *39/00*
U.S. Cl. 260—239 2 Claims

This invention relates to the preparation of novel steroidal β-lactams having the formula:



wherein *n* represents 1 or 2. The β-lactams of this invention are physiologically active materials possessing antiandrogenic activity.

3,557,088
POLYPHENYL 1,2-DIAZEPINES

Erwin Klingsberg, Mountainside, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Continuation-in-part of application Ser. No. 541,065, Apr. 8, 1965. This application Sept. 25, 1968, Ser. No. 762,651
Int. Cl. C07d *53/02*
U.S. Cl. 260—239 3 Claims

1,2 - diazepines which have a phenyl group in the 3, 5, and 7 positions and optionally methyl or phenyl in the 1-position are prepared from a 2,4,6-triphenylthiapyrylium salt such as the perchlorate or fluoborate, by reaction with an excess of hydrazine, methylhydrazine or phenylhydrazine, the excess of hydrazine serving as solvent. By this method there are prepared 3,5,7-triphenyl- and 5 - (p - dimethylaminophenyl) - 3,7 - diphenyl-4H-1,2 - diazepines and 1 - methyl - 3,5,7 - triphenyl - 1H-1,2-diazepine. All the compounds when protonated are useful in dyeing fibers having anionic sites. The 1H compounds exhibit bactericidal activity and the 4H compounds exhibit vasodepressor activity.

3,557,089
PREPARATION OF 1-(CARBAMOYL)-N-(CARBAMOYLOXY)THIOFORMIMIDATES FROM ACETOACETAMIDES

Edward W. Raleigh, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Dec. 27, 1968, Ser. No. 787,614
Int. Cl. C07d *29/34*
U.S. Cl. 260—239 16 Claims

1 - (carbamoyl) - N-(carbamoyloxy)thioformimidates such as methyl 1-(carbamoyl)-N-(methylcarbamoyloxy)-thioformimidate and methyl 1-(dimethylcarbamoyl)-N-(methylcarbamoyloxy)thioformimidate are prepared by the steps of

(a) reacting diketene with ammonia or an amine to obtain an acetoacetamide;
(b) chlorinating the product of (a) at a temperature of −10 to 70° C.;
(c) reacting the product of (b) with a nitrosating agent in the presence of methanol, ethanol, isopropanol, water or their mixtures;
(d) reacting the product of (c) with a mercaptan and then adding a base; and

(e) reacting the product of (d) with either
(1) a carbamoyl chloride in the presence of a base; or
(2) an isocyanate, optionally in the presence of a basic catalyst; in water or organic solvents such as acetone and methylene chloride.

3,557,090
UNSATURATED ALIPHATIC ESTERS OF α-CARBOXY ARYL PENICILLINS

Kenneth Butler, Old Lyme, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 695,885, Jan. 5, 1968. This application June 4, 1969, Ser. No. 830,518
Int. Cl. C07d *99/16, 99/20*
U.S. Cl. 260—239.1 3 Claims

Arylchloro (and bromo) carbonyl ketenes, arylcarboxy ketene unsaturated aliphatic esters derived therefrom, methods for their preparation and the use of the esters as acylating agents and for the production of alkenyl, alkynyl, γ-phenylallyl, γ-(substituted phenyl)allyl, γ-phenylpropargyl and γ-(substituted phenyl)propargyl esters of α-carboxy arylacetyl derivatives of 6-aminopenicillanic acid and, by hydrolysis, the corresponding acid derivatives, are described.

3,557,091
ACETYLATION OF STARCH

Larry C. Martin, Alburnett, and Richard D. Harvey, Marion, Iowa, assignors to Penick & Ford, Limited, Linn County, Iowa, a corporation of Delaware

No Drawing. Filed Apr. 23, 1968, Ser. No. 723,566
Int. Cl. C08b *19/04*
U.S. Cl. 260—233.5 7 Claims

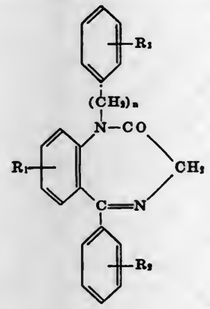
Starch may be made more susceptible to conversion by starch liquefying enzymes by treating it with acetic anhydride in an alkaline medium containing hydrogen peroxide and ferrous salts to effect a considerable lowering of starch swelling temperature without significant starch degradation, gelatinization inhibition, or browning.

3,557,092
PROCESS FOR PRODUCING 1,4-BENZODIAZEPINE-2-ONE DERIVATIVES

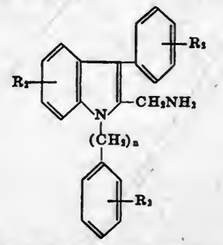
Hisao Yamamoto, Nishinomiya-shi, Shigeho Inaba, Takarazuka-shi, Tadashi Okamoto, Ashiya-shi, Toshiyuki Hirohashi, Kobe, Kikuo Ishizumi, Minoo-shi, Michihiro Yamamoto, Takarazuka-shi, Isamu Maruyama, Minoo-shi, Kazuo Mori, Kobe, and Tsuyoshi Kobayashi, Minoo-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan

No Drawing. Filed Apr. 14, 1969, Ser. No. 816,074
Claims priority, application Japan, Apr. 15, 1968, 43/25,437
Int. Cl. C07d *53/06*
U.S. Cl. 260—239.3 5 Claims

1,4-benzodiazepine-2-one derivatives represented by the formula,



wherein R_1, R_2 and R_3 signify respectively a hydrogen atom or a halogen atom and *n* signifies 0 or 1, and being effective as tranquillizers, muscle-relaxants and hypnotics, are produced by reacting with an oxidizing agent a 2-aminomethylindole derivative, or a salt thereof, represented by the formula,



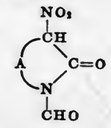
wherein R_1, R_2, R_3 and *n* are as defined above.

3,557,093
1-FORMYL-3-NITRO-AZACYCLOALKAN-2-ONES AND PROCESS FOR THEIR PRODUCTION

Verena R. Foitl, Dobbs Ferry, N.Y., and Walter Traber, Riehen, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Filed Jan. 22, 1969, Ser. No. 793,164
Claims priority, application Switzerland, Jan. 22, 1968, 938/68
Int. Cl. C07d *41/06*
U.S. Cl. 260—239.3 12 Claims

1-formyl-3-nitro-azacycloalkan-2-ones of the formula



wherein

A represents an alkylene radical having 4 to 10 carbon atoms in the chain, which is unsubstituted or substituted by lower alkyl, are disclosed as important intermediates for the production of amino acids such as lysine and agricultural chemicals, e.g. certain fungicides; a process for producing these intermediates in good yields from corresponding azacycloalkanones is also described.

3,557,094
SUBSTITUTED ALKYL ESTERS OF α-CARBOXY ARYL PENICILLINS

Kenneth Butler, Waterford, Conn., assignor to Chas. Pfizer & Co., Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 5, 1968, Ser. No. 695,886
Int. Cl. C07d *99/16*
U.S. Cl. 260—239.1 8 Claims

Arylchloro (and bromo) carbonyl ketenes, arylcarboxy ketene substituted alkyl esters derived therefrom, methods for their reparation and the use of the esters as acylating agents for the production of substituted alkyl esters of α-carboxy arylacetyl derivatives of 6-aminopenicillanic acid and, by hydrolysis, the corresponding acid derivatives, are described.

3,557,095
PYRAZOLODIAZEPINONE COMPOUNDS

Horace A. De Wald, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed May 31, 1968, Ser. No. 733,243
Int. Cl. C07d *53/02*
U.S. Cl. 260—239.3 6 Claims

Pyrazolo[4,3-e][1,4]diazepin-5(1H)-one compounds, substituted in the 1-position by lower alkyl or allyl, in

the 3-position by methyl or ethyl, in the 8-position by phenyl or o-chlorophenyl, and optionally in the 4-position by methyl; salts thereof; and their production by (a) reacting a 4-amino-5-aroylpyrazole with a lower alkyl ester of glycine or a salt thereof, (b) reacting a 5-aroyl-4-(2-haloacetamido)pyrazole or a salt thereof with ammonia, (c) reacting a 4-(2-aminoacetamido) 5-aroylpyrazole salt with a base, and (d) reacting one of the 4-unsubstituted pyrazolodiazepinones with a methylating agent in the presence of a base to produce one of the 4-methyl pyrazolodiazepinones. The compounds of the invention are useful anticonvulsant and anti-anxiety agents.

3,557,096

5,6,8,9 - TETRAHYDRO - 1,3 - BENZOXAZACYCLOUNDECANE - 2,4,7(3H) - TRIONES AND THEIR PREPARATION

Jehan F. Bagli, Valois, Quebec, and Hans U. Immer, Montreal, Quebec, Canada, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 20, 1968, Ser. No. 738,421
Int. Cl. C07d *87/54*
U.S. Cl. 260—239.3 **6 Claims**

There are disclosed herein 5,6,8,9-tetrahydro-1,3-benzoxazacycloundecane - 2,4,7(3H) - triones and its corresponding 3-methyl derivative as well as the 11-methoxy derivatives of both the above compounds and the intermediates used in their preparation, viz, 3,4,5,6-tetrahydro-2(1H)-benzo(h)quinolone, its 1-methyl derivative, and the 8-methoxy derivatives of both those compounds. The compounds possess anti-inflammatory activity, and a process for their preparation as well as methods for using them are also disclosed.

3,557,097

PROCESS FOR THE PREPARATION OF 5β-H-6-KETO-STEROIDS

Andor Fürst and André Furlenmeier, Basel, Albert Langemann, Binningen, and Guy Waldvogel, Riehen, Switzerland, and Peter Hocks, Ulrich Kerb, and Rudolf Wiechert, Berlin, Germany, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Original application Aug. 9, 1966, Ser. No. 571,187. Divided and this application Feb. 29, 1968, Ser. No. 709,238
Claims priority, application Germany, Oct. 15, 1965, 1,493,175; Jan. 27, 1966, Sch 38,384; Switzerland, Mar. 24, 1966, 4,336/66
Int. Cl. C07c *167/16*
U.S. Cl. 260—239.55 **17 Claims**

This invention is directed to processes for the synthesis of 2,3-substituted-5β-H-6-keto-steroids which are useful as metamorphosis hormones and are additionally useful as intermediates for the production of other insect hormones.

3,557,098

SUBSTITUTED-7,12-DIHYDROPLEIADENE DERIVATIVES

Carl Kaiser, Haddon Heights, N.J., and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 4, 1968, Ser. No. 709,863
Int. Cl. C07c *87/28*; C07d *51/70*
U.S. Cl. 260—240 **4 Claims**

7,12-dihydropleiadenes in which the nucleus may have chloro, methyl, methoxy, methylthio or trifluoromethyl substituents and the 7-position is substituted by an aminopropylidene, aminopropyl, piperidylidene, piperidyl, pyrrolidylidene, pyrrolidyl, 2-piperidinylethylidene, 2-piperidinylethyl, 2-pyrrolidinylethylidene or 2-pyrrolidinylethyl moiety are useful as tranquilizers and antidepressants. The compounds are generally prepared by reaction of the appropriate amino Grignard reagent with a 7(12H)-pleiadenone followed by acid dehydration of the 7-hydroxy intermediate and subsequent reduction of the unsaturated derivative with phorphorus and hydroiodic acid. The 1,4-addition products also obtained via the Grignard reaction, namely 6-substituted-7(12H)-pleiadenones, are also useful as tranquilizers and antidepressants.

3,557,099

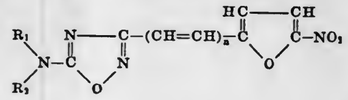
NITROFURYL-OXADIAZOLE DERIVATIVES

Hermann Breuer, Regensburg, Germany, assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 24, 1967, Ser. No. 611,266
Claims priority, application Germany, Mar. 14, 1966, 1,670,338; July 22, 1966, 1,670,370
Int. Cl. C07d *85/52*
U.S. Cl. 260—240 **13 Claims**

This invention relates to new, improved antimicrobial agents of the formula

(I)



wherein R_1 and R_2 each represents hydrogen, alkyl, hydroxy-alkyl or acyl or together with the nitrogen atom to which they are attached form a 3 to 6-membered heterocyclic ring which may also contain oxygen or sulfur, and wherein *n* is 0, 1 or 2.

3,557,100

CERTAIN DECAHYDRO AND DODECAHYDRO-5H-PYRIDO[1,2-a] - 1,6 - NAPHTHYRIDINE - 5 - ONES, THE CORRESPONDING - 5 - OLS AND DERIVATIVES THEREOF

Meier E. Freed, Philadelphia, Pa., and John L. Archibald, Windsor, England, assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 599,404, Dec. 6, 1966. This application June 11, 1969, Ser. No. 832,490
Int. Cl. C07d *39/10*
U.S. Cl. 260—240 **18 Claims**

This invention relates to decahydro and dodecahydro-5H - pyrido[1,2-a]-1,6-naphthyridine compounds, their substituents, and a process for their preparation. The compounds are useful in pharmacology as antiandrogenic, analgesic and central nervous system depressant agents.

3,557,101

TRINUCLEAR DYES HAVING AN ACID NUCLEUS SUBSTITUTED WITH A SECONDARY AMINO SUBSTITUTED ALKYL GROUP USEFUL AS SPECTRAL SENSITIZERS FOR PHOTOGRAPHIC SILVER HALIDE EMULSIONS

Robert C. Taber and Leslie G. S. Brooker, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Original application May 4, 1964, Ser. No. 364,780, now Patent No. 3,335,010, dated Aug. 8, 1967. Divided and this application Mar. 8, 1967, Ser. No. 621,440
Int. Cl. C09b *23/10*
U.S. Cl. 260—240.1 **10 Claims**

Novel trinuclear dyes having an acid nucleus which is substituted with a secondary amino substituted alkyl group are good spectral sensitizers for photographic silver halide emulsions. Their good solubility in aqueous media facilitates their incorporation in photographic emulsions and their removal from photographic elements containing them during photographic processing and reduces staining in the resulting photograph.

3,557,102

NOVEL NITROFURAN DERIVATIVE AND A PROCESS FOR THE PREPARATION THEREOF

Ryuzo Ueno, Nishinomiya-shi, and Ichiro Hirao and Yasuhiko Kato, Kitakyushu-shi, Japan, assignors to Kabushiki Kaisha Ueno Seiyaku Oyo Kenkyujo, Osaka, Japan, a corporation of Japan

No Drawing. Filed Feb. 26, 1968, Ser. No. 707,946
Claims priority, application Japan, Sept. 21, 1967, 42/60,177; Sept. 22, 1967, 42/60,479; Oct. 2, 1967, 42/63,019, 42/63,020; Oct. 20, 1967, 42/67,451
Int. Cl. C07d *85/54*
U.S. Cl. 260—240.1 **11 Claims**

A novel nitrofuran derivative which is 2-substituted amino - 5 - [2(5-nitro-2-furyl)-1-(2-furyl)vinyl] - 1,3,4-oxadiazole wherein the 2-substituted amino group is sulfamino, hydroxymethylamino, and mono- or di-lower alkylamino group.

It has a very potent antimicrobial activity and broad antimicrobial spectrum as well as very low toxicity, and is useful as an active component of a microorganism inhibitor.

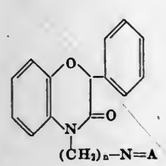
3,557,103

2-PHENYL-4-TERTIARYAMINOLOWERALKYL-2H-1,4-BENZOXAZIN-3(4H)-ONES

Ivan C. Nordin, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed July 18, 1968, Ser. No. 745,695
Int. Cl. C07d *87/48*
U.S. Cl. 260—244 **7 Claims**

Novel benzoxazinone free base (I) and acid addition salt compounds



(I)

are provided by condensing 2-phenyl-2H-1,4-benzoxazin-3(4H)-one with the appropriate aminoalkyl side chain in either one or two steps where *n* is 3, 4 or 5 and —N=A is a diisopropylamino, 2,5-dimethyl-1-pyrrolidinyl or 2,6-dimethylpiperidino group. The products have pharmacological properties and are useful anti-arrhythmic agents.

3,557,104

DERIVATIVES OF 7-ACYLAMINO-CEPHALOSPORANIC ACID

Hans Bickel, Binningen, Rolf Bosshardt, Arlesheim, Bruno Fechtig, Binningen, Enrico Menard, Basel, Johannes Mueller, Arlesheim, and Heinrich Peter, Riehen, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 12, 1967, Ser. No. 689,803
Claims priority, application Switzerland, Dec. 21, 1966, 18,371/66; Oct. 27, 1967, 15,073/67
Int. Cl. C07d *99/24*
U.S. Cl. 260—243 **9 Claims**

Antimicrobially active 7-lower alkoxycarbonylacetylamino cephalosporanic acids and derivatives and salts thereof.

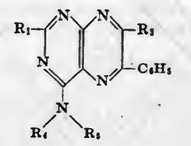
3,557,105

2,7-DI-(HETEROCYCLIC AMINO)-4-AMINO-6-PHENYL-PTERIDINES

Josef Roch, Biberach an der Riss, Germany, assignor to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany, a corporation of Germany

No Drawing. Filed Oct. 11, 1967, Ser. No. 674,641
Claims priority, application Germany, Oct. 14, 1966, T 32,276
Int. Cl. C07d *57/28*
U.S. Cl. 260—247.5 **11 Claims**

Compounds of the formula



wherein

R_1 is pyrrolidino or 2'-methyl-morpholino,

R_3 is pyrrolidino, piperidino, 3'-hydroxy-piperidino or 2'-methyl-morpholino,

R_4 is β-hydroxy-ethyl, β-hydroxy-n-propyl or β,γ-dihydroxy-n-propyl, and

R_5 is β-hydroxy-n-propyl or methyl, with the proviso that R_1 and R_3 are not simultaneously 2'-methyl-morpholino,

useful as coronary dilators in warm-blooded animals.

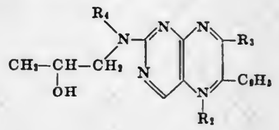
3,557,106

2-[DI - (β-HYDROXY-LOWER ALKYL)AMINO]-4,7-DI - (HETEROCYCLIC AMINO) - 6 - PHENYL-PTERIDINES

Josef Roch, Biberach an der Riss, Germany, assignor to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany, a corporation of Germany

No Drawing. Filed Oct. 11, 1967, Ser. No. 674,652
Claims priority, application Germany, Oct. 14, 1966, T 32,275
Int. Cl. C07d *57/28*
U.S. Cl. 260—247.5 **11 Claims**

Compounds of the formula



wherein

R_2 is morpholino or 2'-methyl-morpholino,

R_3 is pyrrolidino, piperidino, 3'-hydroxy-piperidino morpholino, or 2'-methylmorpholino, and

R_4 is β-hydroxy-ethyl or β-hydroxy-n-propyl, useful as coronary dilators in warm-blooded animals.

3,557,107

PHENYLPIPERAZINYLALKYL ALKOXY ANTHRANILATES

Jerome Marshall Cinnamon, North Caldwell, and William Oroshnik, Plainfield, N.J., assignors to Shulton, Inc., Clifton, N.J., a corporation of New Jersey

No Drawing. Filed May 1, 1967, Ser. No. 634,854
Int. Cl. C07d *51/70*
U.S. Cl. 260—268 **1 Claim**

The compounds of this invention manifest central nervous system depressant activity in many animals and possess antipsychotic and/or anti-anxiety characteristics. They are anthranilates and their corresponding 2-nitro benzoate derivatives containing at least one alkoxy or

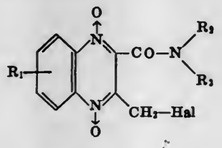
methylenedioxy group in the benzene ring of the benzoate moiety and a phenyl or substituted phenyl piperazinyl group attached to the alkyl group.

3,557,108
PHTHALAZINO-PHTHALAZINEDIONES AND PROCESS FOR THEIR MANUFACTURE
Elvio Bellasio, Albate, Italy, Emilio Testa, Vacallo, Switzerland, and Giulio Maffii and Pierfranco Schiatti, Milan, Italy, assignors to Lepetit S.p.A.-Gruppo per la Ricerca Scientifica e la Produzione Chimica Farmaceutica, Milan, Italy
No Drawing. Filed Jan. 16, 1968, Ser. No. 698,139
Claims priority, application Great Britain, Feb. 1, 1967, 4,842/67
Int. Cl. C07d *51/06*
U.S. Cl. 260—250 **4 Claims**

The present application is concerned with phthalazino-[2,3-b]phthalazine - 5(14H),12(7H) - diones. The compounds are prepared starting from 1,2-diacetyl-hydrazine and a 2-bromomethyl-benzoyl chloride. Their pharmacological activity, as antiinflammatory agents, is also described.

3,557,109
2-HALOMETHYL-3-CARBOXYLIC ACID AMIDO-QUINOXALINE-1,4-DI-N-OXIDES AND THEIR PRODUCTION
Kurt Ley, Odenthal-Gloebusch, Ulrich Eholzer, Cologne-Stammheim, Roland Nast, Cologne-Buchheim, Karl-Georg Metzger, Wuppertal-Elberfeld, and Dieter Fritsche, Wuppertal-Vohwinkel, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Oct. 2, 1968, Ser. No. 764,610
Claims priority, application Germany, Oct. 4, 1967, F 53,667
Int. Cl. C07d *51/78*
U.S. Cl. 260—250 **21 Claims**

2-halomethyl-3-carboxylic acid-amido-quinoxaline - 1,4-di-N-oxides of the formula:



(I)

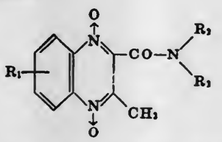
wherein:

R_1 is hydrogen, lower alkyl, lower alkoxy or chlorine,

R_2 is hydrogen, straight or branched chain alkyl or straight or branched chain alkyl substituted by hydroxy, lower alkoxy, acyloxy, monoalkylamino or dialkylamino,

R_3 is hydrogen, straight or branched chain alkyl, straight or branched chain alkyl substituted by hydroxy, lower alkoxy, acyloxy, monoalkylamino or dialkylamino, or when R_2 is hydrogen, cyclohexyl, or R_2 and R_3 together with the amide nitrogen atom form part of a 5- or 6-membered heterocyclic ring, and Hal is chlorine or bromine,

are useful for their antibacterial effect. These compounds may produced, inter alia, by chlorinating or brominating a 2-methyl-3-carboxylic acid amido-quinoxaline-1,4-di-N-oxide of the formula:



(II)

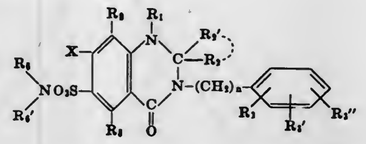
wherein R_1, R_2 and R_3 are as above defined.

3,557,110
METHYL SUBSTITUTED 3-THIENYL THIAZOLO PYRIMIDINES AND METHYL SUBSTITUTED 3-THIENYL IMIDAZO THIAZOLES
Paul L. Anderson, Denville, and Robert E. Manning, Mountain Lakes, N.J., assignors to Sandoz-Wander, Inc., Hanover, N.J., a corporation of Delaware
No Drawing. Filed Dec. 30, 1968, Ser. No. 788,018
Int. Cl. C07d *91/52*
U.S. Cl. 260—251 **6 Claims**

Methyl substituted 3-thienyl thiazolo pyrimidines and methyl substituted 3-thienyl imidazo thiazoles, e.g., 3-(2-[4-methylthienyl]) - 5,6 - dihydroimidazo[2,1-b]thiazole are prepared from 2-halo-acetyl methylthiophene and propylene thiourea or ethylene thiourea and are useful as anorexics.

3,557,111
N AND N,N-ALKYL, ACYL AND ARYL-SULFAMYL-TETRAHYDROQUINAZOLINONES
Bola Vithal Shetty, 100 Beckwith Terrace, Rochester, N.Y. 14610
No Drawing. Filed Mar. 29, 1968, Ser. No. 717,437
The portion of the term of the patent subsequent to Dec. 26, 1984, has been disclaimed and dedicated to the Public
Int. Cl. C07d *51/48*
U.S. Cl. 260—256.5 **7 Claims**

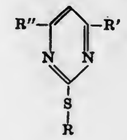
A class of compound having diuretic properties has the following formula:



including the pharmaceutically acceptable salts thereof, in which X is halogen or trifluoromethyl; R_6 and R_6' are loweralkyl, phenyl, or phenylloweralkyl; or R_6 is hydrogen and R_6' is acyl such as acetyl or C_3H_7CO, or phenylloweralkyl or phenylloweralkyl; R_2 and R_2' are hydrogen, loweralkyl, loweralkenyl, thioloweralkyl, alkylthio, halogen substituted loweralkyl, phenylalkyl, phenyl, cycloalkyl, cycloalkylloweralkyl, loweralkoxy, loweralkoxyloweralkyl, or R_2 and R_2' together are a lower polymethylene chain morpholino, pyrrolidino, or piperazino; R_1 is hydrogen, phenylalkyl, hydroxyalkyl, loweralkoxyloweralkyl, or loweralkyl; R_5 and R_8 are hydrogen, loweralkyl, amino, loweralkoxy, or loweralkoxyloweralkyl; R_3, R_3', and R_3'' are hydrogen, loweralkyl, hydroxy, loweralkoxy, loweralkoxyloweralkyl, halogen, trifluoromethyl, sulfamyl, or amino, and *n* is an integer from 0–4.

3,557,112
CERTAIN 2-(HALOALKENYLTHIO)-4,6-DIMETHYLPYRIMIDINES
John Joseph D'Amico, Akron, Ohio, assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Feb. 27, 1969, Ser. No. 803,050
Int. Cl. C07d *51/40*
U.S. Cl. 260—251 **7 Claims**

Compounds of the formula:



where R is is $—CH_2CBr=CH_2$ or $—CH_2CH=CX_2$, $—CH_2CX=C(X)H$, $—CH_2CX=CX_2$ or

$—CH_2CH=CXCH_3$

where X is Cl or Br; and R' and R'' are lower alkyl, useful for controlling growth of undesirable vegetation.

3,557,113
METHOD OF PREPARING GUANINE, ISOGUANINE, AND 7-METHYL DERIVATIVES THEREOF
Yoshitaka Yamada and Izumi Kumashiro, Tokyo, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan
No Drawing. Filed Sept. 18, 1967, Ser. No. 668,661
Claims priority, application Japan, Sept. 19, 1966, 41/61,861, 41/61,863
Int. Cl. C07d *57/64*
U.S. Cl. 260—252 **6 Claims**

Guanine and isoguanine are obtained when 5-carbamoyl-4-imidazolecarboxamidoxime is reacted with the chloride of an organic sulfonic acid in an aqueous solution at least 2-normal with respect to an alkali metal hydroxide. The yield of the two compounds and their ratio vary with the reaction temperature and the proportions of the reactants. 7-methylguanine and 7-methylisoguanine are formed under the same conditions from 1-methyl-5-carbamoyl-4-imidazolecarboxamidoxime.

3,557,114
1-SUBSTITUTED-3-(2-PYRIMIDINYL) IMIDAZOLIUM SALTS
John B. Bicking, Lansdale, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed Dec. 23, 1968, Ser. No. 786,369
Int. Cl. C07d *57/00*
U.S. Cl. 260—256.4 **4 Claims**

1-(alkyl or aralkyl) - 3 - (2-pyrimidinyl)imidazolium salts that exhibit hypoglycemic properties are described. The products are prepared by the reaction of a 2-halopyrimidine and a 1-alkyl- or 1-aralkylimidazole.

3,557,115
2 - (2 - IMIDAZOLIN AND PYRIMIDIN SUBSTITUTED METHYLTHIO) - IMIDAZOLES AND PYRIMIDINES
Robert E. Manning, Mountain Lakes, N.J., assignor to Sandoz-Wander, Inc., Hanover, N.J., a corporation of Delaware
No Drawing. Filed Nov. 29, 1968, Ser. No. 780,235
Int. Cl. C07d *57/00*
U.S. Cl. 260—256.5 **15 Claims**

Substituted imidazoles, e.g., 2-(2-imidazolin-2-ylmethylthio)-imidazole dihydrochloride, and substituted pyrimidines, e.g., 2 - (2-imidazolin-2-ylmethylthio)pyrimidine hydrochloride. The compounds are useful as hypotensives.

3,557,116
2 - HALOGENO-10(OR 11) - HYDROXY - 11(OR 10)-PIPERAZINYL DIBENZOCYCLOHEPTADIENE DERIVATIVES
Jean Clement Louis Fouche, Bourg-la-Reine, and André Leger, Massy, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate
No Drawing. Filed Nov. 19, 1968, Ser. No. 777,156
Claims priority, application France, Nov. 20, 1967, 128,882/67
Int. Cl. C07d *51/70*
U.S. Cl. 260—268 **6 Claims**

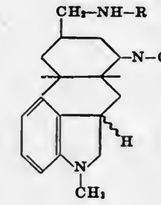
The invention provides new 2-halogeno-10(or 11)-hydroxy - 11 - (or 10)-piperazinyl - dibenzo[a,d]cycloheptadienes and their salts which are useful as neuroleptics, sedatives, tranquillizers, analgesics, anti-emetics, antidepressants, and antiserotonin agents.

3,557,117
TETRAHYDRO - 4 - QUINAZOLINONES SUBSTITUTED IN THE 3-POSITION BY HETEROCYCLIC GROUP
Bola Vithal Shetty, Rochester, N.Y., assignor to Pennwalt Corporation, a corporation of Pennsylvania
No Drawing. Filed Dec. 24, 1968, Ser. No. 793,638
Int. Cl. C07d *51/48*
U.S. Cl. 260—256.5 **7 Claims**

A 3-heterocyclic-6-sulfamyl-7-halo (including 7-trifluoromethyl)-1,2,3,4 - tetrahydro-4-quinazolinone having diuretic characteristics is made by reduction of the corresponding unsaturated compound or by cyclizing the anthranilamide. A typical compound is 2-methyl-3-(2-pyridyl)-6-sulfamyl-7-chloro-1,2,3,4-tetrahydro - 4 - quinazolinone.

3,557,118
1,6-DIMETHYL-2,3-DIHYDRO-10α-ERGOLINE DERIVATIVES
Federico Arcamone, Via Romolo Gessi N. 50, and Giovanni Franceschi, Via Etiopia N. 3, both of Milan, Italy
No Drawing. Filed July 25, 1967, Ser. No. 655,755
Claims priority, application Italy, July 29, 1966, 20,851
Int. Cl. C07d *43/20*
U.S. Cl. 260—285.5 **10 Claims**

Described are hydrogenated ergoline derivatives of the formula:



wherein R is selected from the group consisting of hydrogen and a radical of an organic aliphatic, cycloaliphatic and heterocyclic carboxylic or sulfonic acid having from 1 to 10 carbon atoms, substituted or not by halogen, hydroxy, nitro, amino or alkylamino groups; alkyl, aryl, alkoxy, aryloxy, thioether or sulfonic groups of an alkyl or arylcarbonic and dialkylcarbamic acid and the process for the preparation thereof.

3,557,119
2,3,7,8,9,9a-HEXAHYDRO-1H-BENZO[d,e][1,7] NAPHTHYRIDINE DERIVATIVES
Leslie G. Humber, Dollard des Ormeaux, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 11, 1967, Ser. No. 629,935
Int. Cl. C07d *39/10*
U.S. Cl. 260—287 **22 Claims**

There are disclosed herein the compounds 4,5-dimethoxy- and 5,6 - dimethoxy-2,3,7,8,9a-hexahydro-1H-benzo[d,e][1,7]naphthyridines, and their 2-methyl, 7-methyl, and 2,7-dimethyl derivatives, optionally substituted in positions 1 and 8 by acyl, haloacyl, aminoacyl, lower alkyl, aminoalkyl, and carboxymethyl groups. A process for preparing the above compounds via the intermediate 1-phthalamidomethyl derivatives of the appropriately substituted tetrahydroisoquinolines and the corresponding 1-aminomethyl derivatives, by cyclizing the lat-

ter compounds with formaldehyde or acetaldehyde and a mineral acid, is disclosed.

The compounds are antibacterial agents, and methods for their use are also disclosed.

3,557,120
HEXAHYDROIMIDAZOISOQUINOLINES

Sydney Archer and John W. Schulenberg, Bethlehem, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 569,021, Feb. 23, 1966. This application May 21, 1969, Ser. No. 826,681
Int. Cl. C07d *35/34*
U.S. Cl. 260—288 **7 Claims**

Reaction of a 1 - aminomethyl-1,2,3,4-tetrahydro-6,7-dimethoxyisoquinoline with an aldehyde or ketone effects ring-closure to an imidazo compound, viz., a 1,2,3,5,6,10b-hexahydro-8,9-dimethoxyimidazo[5,1-a]isoquinoline and alkaline treatment of the related 1-[N-(α-halo loweralkanoyl)]-aminomethyl-2-benzyl - 1,2,3,4 - tetrahydro-6,7-dimethoxyisoquinoline effects ring-closure to a pyrazino compound, viz., a 1,3,4,6,7,11b-hexahydro-9,10-dimethoxy-2H-pyrazino[2,1-a]isoquinoline. The final products possess sedative, tranquilizing and related pharmacodynamic effects.

3,557,121
2,6 - DIOXO - 4 - BENZIMIDAZOLYLMETHYL-, -BENZOTHIAZOLYLMETHYL-, AND -BENZOXAZOLYLMETHYLPIPERIDINES

Herman E. Faith, Indianapolis, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 13, 1968, Ser. No. 728,744
Int. Cl. C07d *29/20, 91/44*
U.S. Cl. 260—281 **7 Claims**

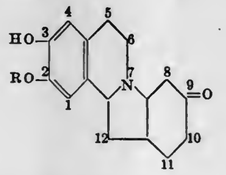
Disclosed are new series of 2,6-dioxo-4-benzimidazolylmethylpiperidine, 2,6-dioxo-4-benzothiazolylmethylpiperidine and 2,6-dioxo-4-benzoxazlymethylpiperidine compounds and derivatives thereof wherein the piperidine ring nitrogen is substituted with an alkyl, allyl or alkylaminoalkyl group and certain mineral acid salts thereof. These compounds are useful as parasiticides.

3,557,122
5,6,7a,8,11,11a,12,12a-OCTAHYDROINDOLO [2,1-a]ISOQUINOLIN-9(10H)-ONES

John Shavel, Jr., Mendham, and Glenn C. Morrison, Dover, N.J., assignors to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Filed Oct. 10, 1968, Ser. No. 766,636
Int. Cl. C07d *39/00*
U.S. Cl. 260—289 **3 Claims**

This invention relates to new and novel 5,6,7a,8,11,11a, 12,12a - octahydroindolo[2,1 - a]isoquinolin-9(10H)-ones having the formula:



wherein R is hydrogen and lower alkyl of 1 to 6 carbon atoms, such as methyl, ethyl, or isobutyl and so on.

The compounds of this invention are useful as hypotensive agents.

3,557,123
1-NAPHTHYLALKYL-4-PHENYLPIPERIDINE DERIVATIVES

Carl Kaiser, Haddon Heights, N.J., and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Original application Nov. 1, 1967, Ser. No. 679,655, now Patent No. 3,506,671. Divided and this application Dec. 3, 1969, Ser. No. 879,971
Int. Cl. C07d *29/38*
U.S. Cl. 260—290 **2 Claims**

1-naphthylalkyl-4-phenylpiperidines in which the naphthalene nucleus may have chloro, methyl or methoxy substituents, the phenyl group may be chloro, bromo, fluoro, methyl, trifluoromethyl or methoxy substituted and the piperidine ring is 4-hydroxy substituted are useful as tranquilizers. The compounds are generally prepared by condensation of a 4-phenyl-4-piperidinol with a naphthalenealkanoic acid or reactive derivative of the acid. The corresponding 4-acyloxy piperidines have analgetic activity and the dehydrated 1,2,5,6-tetrahydropyridines have tranquilizing activity.

3,557,124
PROCESS FOR THE MANUFACTURE OF 2,6-DICHLOROPYRIDINE

Robert R. Stringham and Florence E. Torba, Concord, Calif., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 22, 1968, Ser. No. 715,148
Int. Cl. C07d *31/26*
U.S. Cl. 260—290 **9 Claims**

The process for the manufacture of 2,6-dichloropyridine which comprises contacting chlorine with a 2-chloropyridine composition. 2,6-dichloropyridine is useful as a fungicide and as an intermediate for the production of 3,5,6-trichloro-2-pyridinol.

3,557,125
(—)-N-ETHYL-O-(BENZOYL OR p-NITROBENZOYL)-NORSCOPOLAMINE AND SALTS THEREOF

Karl Zeile, Rolf Banholzer, Gerhard Walthe , Werner Schulz, and Helmut Wick, Ingelheim am Rhein, Germany, assignors to Boehringer Ingelheim G.m.b.H., Ingelheim am Rhein, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 611,262, Jan. 24, 1967. This application Aug. 25, 1969, Ser. No. 852,877
Claims priority, application Germany, Jan. 26, 1966, B 85,554
Int. Cl. C07d *43/06*
U.S. Cl. 260—292 **3 Claims**

(—)-N-ethyl-O-(benzoyl or p-nitrobenzoyl)-norscopolamine and non-toxic acid addition salts thereof, useful as antiperspirants.

3,557,126
DERIVATIVES OF IBOGA ALKALOIDS

Stephen I. Sallay, Wynnewood, Pa., assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Original application Oct. 2, 1967, Ser. No. 671,966. Divided and this application Aug. 14, 1969, Ser. No. 870,998
Int. Cl. C07d *43/38*
U.S. Cl. 260—293 **3 Claims**

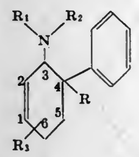
This invention is concerned with new and noval derivatives of iboga alkaloids which are pharmacologically efficacious as central nervous system stimulants. Further, this invention relates to new and novel intermediates for the preparation of iboga alkaloids and their new and novel derivatives by a totally synthetic, commercially applicable process.

3,557,127
SUBSTITUTED CYCLOHEXENES, DERIVATIVES THEREOF AND PROCESSES FOR OBTAINING SAME

Gerhard Satzinger, Gundelfingen-Freiburg, Germany, assignor to Warner-Lambert Pharmaceutical Company, Morris Plains, N.J., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 777,197, Nov. 19, 1968, which is a continuation-in-part of application Ser. No. 587,673, Oct. 19, 1966, and a continuation-in-part of application Ser. No. 690,794, Dec. 15, 1967, which in turn is a continuation-in-part of application Ser. No. 587,673, Oct. 19, 1966. This application Apr. 3, 1969, Ser. No. 813,268
Claims priority, application Germany, Nov. 19, 1965, 1,518,959; June 8, 1967, 1,618,476; June 23, 1967, 1,618,482; June 21, 1968, 1,768,704; Feb. 17, 1969, 1,907,909, 1,907,910, 1,907,911
Int. Cl. C07d *87/36*
U.S. Cl. 260—294.3 **34 Claims**

Substituted cyclohexene bases having the formula:



I

wherein R is CN, COR_4 or $COOR_4$; wherein R_1 is hydrogen or a straight or branched chain lower alkyl radical; wherein R_2 is a straight or branched chain lower alkyl radical or wherein the alkyl radicals represented by the symbols R_1 and R_2, taken together with the nitrogen atom to which they are attached, form a heterocyclic ring system; wherein R_3 is hydrogen or a straight or branched chain lower alkyl radical; and wherein R_4 is a straight or branched chain lower alkyl radical

and medicinally acceptable acid addition salts thereof are disclosed. Disclosed also are cyclohexylamines derived from certain of the Formula I compounds; an amino alcohol derived from a cyclohexene of Formula I(a) and an amino alcohol derived from a cyclohexylamine of Formula II; and the acetylated derivative of the latter amino alcohol.

The compounds of the invention, i.e., the cyclohexenes of Formula I and the aforementioned derivatives thereof, exhibit analgesic activity in mammals and they are used as analgesics.

Disclosed also are processes for obtaining the Formula I compounds in the form of isomeric mixtures; methods for separating the cis- and trans-isomers from the isomeric mixtures, processes for obtaining the disclosed cyclohexylamines, amino alcohols and acetylated derivative; and a method for rearranging the cis-isomers of Formula I(a) to the trans-isomer.

3,557,128
CERTAIN PYRIDYL FORMAMIDINE DERIVATIVES

László Pallos and Pál Benkó, Budapest, Hungary, assignors to Egyesult Gyogyszer-es Tapszergyar, Budapest, Hungary

No Drawing. Filed Mar. 4, 1968, Ser. No. 709,915
Claims priority, application Hungary, Mar. 4, 1967, EE 1,346
Int. Cl. C07d *31/46*
U.S. Cl. 260—294.9 **1 Claim**

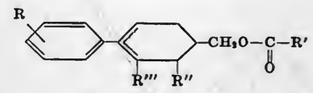
The N-aryl or N-pyridyl N',N'-mono or disubstituted formamidines of this invention are prepared by reacting the appropriate N-aryl or N-pyridyl formamidine in the presence of an alkyl halide. The N-aryl or N-pyridyl-N', N'-substituted formamidines produced by this process have anthelmintic, ascaracidal and herbicidal properties.

3,557,129
CERTAIN PYRIDOYL AND FUROYL ESTERS OF 2-(LOWER ALKYL) - 3 - (LOWER ALKYL)-4-ARYL-3 OR 4-CYCLOHEXENE CARBINOLS

George Karmas, Bound Brook, N.J., assignor to Ortho Pharmaceutical Corporation, a corporation of New Jersey

No Drawing. Filed May 14, 1968, Ser. No. 728,900
Int. Cl. C07d *5/26, 31/36*
U.S. Cl. 260—295.5 **5 Claims**

Compounds of the general formula



are disclosed wherein —R is selected from the group consisting of hydrogen, hydroxy, lower alkoxy of up to 8 carbon atoms, lower alkyl of up to 8 carbon atoms, and lower alkyl anilino of up to 4 carbon atoms; —R' is selected from the group consisting of alkyl and alkenyl of up to 20 carbon atoms, cycloalkyl lower alkyl of up to 3 carbon atoms in the alkyl portion, adamantyl, pyridyl, furyl, lower alkyl carboxylic acids and their alkali metal salts, esters and carbamates; and R'' and R''' are selected from the group consisting of lower alkyl of up to 3 carbon atoms. These compounds exhibit estrogenic properties and when given in a single subcutaneous dose have long acting effects in the suppression of animal reproduction.

3,557,130
METHOD FOR PRODUCING COLORLESS ESTERS OF PYRIDINE CARBOXYLIC ACIDS

Bror Gösta Pettersson, Karlskoga, Sweden, assignor to Aktiebolaget Bofors, Bofors, Sweden, a company of Sweden

No Drawing. Continuation-in-part of application Ser. No. 508,368, Nov. 17, 1965. This application Aug. 6, 1968, Ser. No. 750,491
Claims priority, application Sweden, Nov. 21, 1964, 14,090/64
Int. Cl. C07d *31/36*
U.S. Cl. 260—295.5 **3 Claims**

Colorless esters of pyridine carboxylic acid are obtained by the reaction of an alcohol with the pyridine carboxylic acid chloride. The acid chloride is prepared by the reaction of the free acid with phosphorus oxychloride in solution in a tertiary amine, such as pyridine, and the esterification effected by addition of alcohol to the reaction mixture. The ester is precipitated by the addition of water.

3,557,131
NICOTINATE DERIVATIVES OF VITAMIN B_6

Yoshio Yoshimura, Nishinomiya-shi, Hitoshi Uno, Takatsuki-shi, and Akira Irie, Osaka, Japan, assignors to Dainippon Pharmaceutical Co., Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed June 6, 1966, Ser. No. 555,243
Claims priority, application Japan, June 15, 1965, 40/35,589; Dec. 17, 1965, 40/77,906
Int. Cl. C07d *31/36*
U.S. Cl. 260—295.5 **7 Claims**

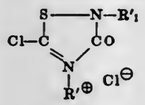
Novel esters of nicotinic acid and vitamin B_6 and derivatives thereof, such esters in addition to possessing the activity of nicotinic and vitamin B_6 additionally possess antiatherosclerosis, hypocholesterolemic and hypoglycemic activities.

3,557,132
POLYAMIDE MOULDING COMPOSITIONS
Karl-Heinz Hermann and Hans Rudolph, Krefeld-Bockum, Heinz Gilch, Krefeld, and August Bockmann, Krefeld-Bockum, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed July 21, 1967, Ser. No. 654,957
Claims priority, application Germany, Sept. 8, 1966, F 50,151
Int. Cl. C08c *11/44*
U.S. Cl. 260—302 4 Claims

Polyamide moulding compositions containing as a mould removal agent 0.01 to 10% by weight of an N-substituted cyclic imide.

3,557,133
THIADIAZOLINIUM CHLORIDES AND PROCESS FOR THEIR PREPARATION
Hans Holtschmidt, Leverkusen-Steinbuchel, Gerhard Zumach, Cologne-Stammheim, Fritz Döring, Odenthal-Globusch, and Engelbert Kühle, Bergisch-Gladbach, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Feb. 21, 1968, Ser. No. 707,327
Claims priority, application Germany, Mar. 25, 1967, F 51,943
Int. Cl. C07d *91/60*
U.S. Cl. 260—306.7 13 Claims

Reacting corresponding stoichiometric quantities of an isothiocyanate having the formula $R(NCS)_x$ and an isocyanate having the formula $R_1(NCO)_y$ in which R and R_1 each individually is alkyl, halogen-substituted alkyl, cycloalkyl, aralkyl, halogen-substituted aralkyl, aryl, or such aryl which is substituted with halogen, nitro, alkyl, halogenoalkyl, alkoxy and/or alkylmercapto, and x and y each is 1 or 2, with the stoichiometrically required quantity of a chlorination agent, e.g. chlorine or a compound which splits off chlorine, at about −20 to +50° C., to form the corresponding thiadiazolinium chloride having the formula



in which R' and R'_1 each individually is correspondingly the same as R and R_1, yet with the proviso that the alkyl and aryl radicals may be substituted with the corresponding thiadiazolinium chloride radical when x and/or y is 2; with optional hydrolysis to form the corresponding hydrolysis compounds; said thiadiazolinium chloride and corresponding hydrolysis compounds possessing herbicidal properties.

3,557,134
5,6-DIHYDRO-5,6-SUBSTITUTED-3H-IMIDAZO-(2,1-c)-1,2,4-DITHIAZOLE-3-THIONES
Gerald T. Stowe, Oakland, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Dec. 30, 1968, Ser. No. 788,045
Int. Cl. C07d *99/10*
U.S. Cl. 260—306.8 6 Claims

Novel 5,6-dihydro-3H-imidazo(2,1-c)-1,2,4-dithiazole-3-thiones are disclosed which are substituted in the 6-position or in both the 5- and the 6-positions by alkyl or phenyl groups. The compounds have utility as active constituents of various fungicidal and other pesticidal compositions.

3,557,135
2-β-HYDROXY ETHYLAMINO-4-5-DIPHENYL-OXAZOLE
Enzo Marchetti, Rome, Italy, assignor to Istituto Farmacologico Serono S.p.A., Rome, Italy, a corporation of Italy
No Drawing. Filed Aug. 8, 1967, Ser. No. 659,574
Claims priority, application Italy, Aug. 10, 1966, 18,390/66
Int. Cl. C07d *85/44*
U.S. Cl. 260—307 1 Claim

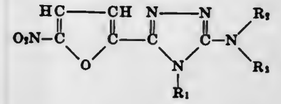
A series of 2-amino-substituted 4,5-diphenyl-oxazoles having anti-inflammatory properties.

3,557,136
ACYLOXYALKYL SUBSTITUTED OXAZOLINES
Alan J. Levy and Morton H. Litt, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Original application Apr. 17, 1967, Ser. No. 631,194, now Patent No. 3,483,145, dated Dec. 9, 1969. Divided and this application July 16, 1969, Ser. No. 857,254
Int. Cl. C07d *85/36*
U.S. Cl. 260—307 4 Claims

This invention relates to novel oxazolines having acyloxyalkyl substituents on the 2-position.

3,557,137
TRIAZOLE COMPOUNDS
Kurt T. J. Skagius and Eva B. Akerblom, Uppsala, Sweden, assignors to Pharmacia Aktiebolag, Uppsala, Sweden, a corporation of Sweden
No Drawing. Continuation-in-part of application Ser. No. 432,412, Feb. 12, 1965. This application Aug. 20, 1968, Ser. No. 753,883
Int. Cl. C07d *55/06*
U.S. Cl. 260—308 10 Claims

This invention relates to novel compounds of the formula



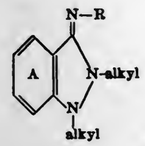
wherein R_1 represents lower alkyl; R_2 is hydrogen or a lower alkyl; R_3 is hydrogen or a lower alkyl or a radical of the formula —COR_4, (wherein R_4 is hydrogen or an alkyl containing from 1 to 3 carbon atoms, or a halogen-substituted alkyl containing from 1 to 3 carbon atoms). It also relates to therapeutically useful salts of these compounds and the disclosed methods of preparing such compounds. The novel compounds are useful as infection combatting agents, and especially useful as urinary tract antiseptics.

3,557,138
3-NITROIMIDAZO-[2,1:a]-ISOINDOLES
Lewis H. Sarett, Princeton, Dale R. Hoff, Cranford, and David W. Henry, Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Continuation of application Ser. No. 724,650, Feb. 2, 1968, which is a division of application Ser. No. 350,639, Mar. 10, 1964, now Patent No. 3,399,211, dated Aug. 27, 1968. This application July 29, 1969, Ser. No. 848,405
Int. Cl. C07d *49/36*
U.S. Cl. 260—309 7 Claims

Nitroimidazoisoindoles prepared by treating a 2-(carboxyphenyl)-5-nitroimidazole with a reducing agent to obtain the corresponding 2-(hydroxymethylphenyl)-5-nitroimidazole, treating the latter compound with a halogenating agent to obtain the corresponding 2-(halomethyl-phenyl)-5-nitroimidazole and heating the latter compound. The nitroimidazoisoindoles are effective for the control of protozoal diseases.

3,557,139
DERIVATIVES OF 3-INDAZOLONE-OXIMES AND 3-INDAZOLONE-IMINO SULPHONIC ACIDS
Robert Frederic Michel Sureau, Enghien les Bains, and Victor Marie Dupre, Louvres, France, assignors, by mesne assignments, to Ugine Kuhlmann, Paris, France, a corporation of France
No Drawing. Original application Nov. 15, 1966, Ser. No. 594,395. Divided and this application Jan. 15, 1969, Ser. No. 807,151
Int. Cl. C07d *49/12*; C09b *29/36*
U.S. Cl. 260—310 1 Claim

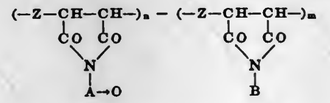
Indazole compounds of the formula



in which the alkyl groups in the 1- and 2-positions are the same or different and contain no more than 4 carbon atoms, wherein R represents an OH or SO_3H radical, and the nucleus A is unsubstituted or substituted by halogen atoms or nitro groups, may be used effectively to produce 1,2-dialkyl-3-indazolone-imonium salts which are useful as indazolium dyestuff intermediates.

3,557,140
PROCESS FOR THE PRODUCTION OF POLY-N-OXIDES
Gustav Pieper, Cologne-Stammheim, Wulf von Bonin, Leverkusen, and Ekkehard Grundmann, Wuppertal-Elberfeld, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Mar. 7, 1968, Ser. No. 711,211
Claims priority, application Germany, Mar. 25, 1967, F 51,950
Int. Cl. C07d *27/10*
U.S. Cl. 260—326.3 8 Claims

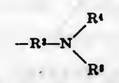
Poly-N-oxides useful in the treating of silicosis and a procedure for making the same and administering them are provided. The poly-N-oxides have the formula:



in which Z is the monomer unit of a vinyl compound of the formula:



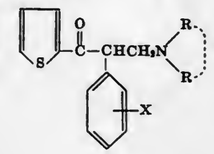
which is copolymerized with maleic acid anhydride and wherein R^1 and R^2 stand for the same or different radicals such as hydrogen, alkyl with 1–4 carbon atoms, cycloalkyl with 3 to 6 carbon atoms, phenyl or phenyl substituted by lower alkyl, and wherein one of R^1 and R^2 may be one of CN, $CONH_2$, COOH, COOR, OR, or OCOR in which R is alkyl with 1 to 4 carbon atoms. The monomer unit which is polymerized with maleic anhydride may also be styrene or isobutylene or ethylene; A→O stands for the radical A of a primary-tertiary polyamine wherein at least one tertiary amino group has been oxidized to N-oxide, and wherein A has the formula:



wherein R^3 is alkylene, phenylene or alkylphenylene with up to 7 carbon atoms of which one CH_2 group may be replaced by an oxygen atom; R^4 and R^5 are lower alkyl with 1 to 4 carbon atoms which, when linked with the nitrogen atom, form a 5 to 7-membered cyclic ring system which, in the case of a 6-membered ring, may contain, as further hetero atom, oxygen, or a nitrogen atom which is substituted by a lower alkyl group; and the heterocyclic ring system being aromatic when no further hetero atoms are present; B stands for an aliphatic, cycloaliphatic, aromatic or heterocyclic radical of a primary monoamine of up to 12 carbon atoms, and which are unsubstituted or substituted by OH or lower alkyl; n and m are integers, whereby the ratio of n:m is 90:10 to 60:40, the sum $n+m$ signifying the polymerization degree of the maleic acid anhydride copolymer ranging between 50 and 500.

3,557,141
2-PHENYL-3-TERTIARYAMINO-1-(2-THIENYL)-1-PROPANONES
Robert Bruce Moffett, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware
No Drawing. Filed July 25, 1968, Ser. No. 747,428
Int. Cl. C07d *63/10*
U.S. Cl. 260—326.5 3 Claims

This invention relates to novel 2-phenyl-3-tertiary-amino-1-(2-thienyl)-1-propanones; it is inclusive of the free base and acid addition salt forms of the componds embraced by the formula



(I)

wherein



is selected from the group consisting of 1-pyrrolidinyl lower-alkyl-1 - pyrrolidinyl di-lower-alkyl-1-pyrrolidinyl, piperidino, lower - alkylpiperidino, di-lower - alkylpiperidino, and di-lower-alkylamino, and X is selected from the group consisting of hydrogen, lower-alkyl, fluorine, chlorine and bromine.

As used in this specification, the term "lower-alkyl" means alkyl of from one through four carbon atoms, e.g., methyl, ethyl, propyl, butyl, and isomeric forms thereof.

3,557,142
4,5,6,7-TETRAHYDRO-INDOLE-LOWER-ALKANOIC ACIDS AND ESTERS
Malcolm R. Bell, East Greenbush, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 20, 1968, Ser. No. 706,802
Int. Cl. C07d *27/54*
U.S. Cl. 260—326.13 1 Claim

New 3-substituted-1 - indole- and 4,5,6,7 - tetrahydro-indole-lower-alkanoic acids and esters having useful anti-

inflammatory activity and prepared by alkylation of a 3 - substituted - indole with an appropriate halo-lower-alkanoic acid or ester or by cyclization of a 2-(2-R_7-2-oxo-ethyl)cyclohexanone or 2-(1 - phenyl-2-oxo-lower-alkyl) cyclohexanone with an amino acid or ester.

3,557,143

BRIDGED BICYCLIC FERROCENE ETHERS AND THIOETHERS

John T. Suh and Claude I. Judd, Mequon, Wis., assignors to Colgate-Palmolive Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Aug. 30, 1967, Ser. No. 664,276
Int. Cl. C07d *7/04, 65/05;* **C07f** *15/02*
U.S. Cl. 260—327 **3 Claims**

The compounds are bridged bicyclic ferrocene ethers and thioethers useful as pesticides, fungicides, hematinic agents, hydrocarbon dyes and fuel additives. Compounds disclosed include 1,1'-(α,α'-epoxy-γ-phenyl-pentamethylene)ferrocene and 1,1'-(α,α'-thia-γ-phenylpentamethylene)ferrocene.

3,557,144

DERIVATIVES OF DIBENZOCYCLOHEPTENES

Marcia E. Christy, Perkasie, Pa., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 20, 1968, Ser. No. 753,868
Int. Cl. C07d *71/00, 7/20*
U.S. Cl. 260—327 **18 Claims**

Novel 10,11 - dihydro - 5,10 - epoxy - 5H - dibenzo [a,d]cycloheptenes, wherein the moiety substituted at the 5-position is a primary, secondary or tertiary-aminoethyl group, possessing anti-depressant activity are disclosed, as well as intermediates and processes for their preparation and use.

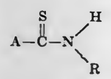
3,557,145

STABILIZING THIIRANE COMPOUNDS

Russell T. McFadden, Jones Creek, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 13, 1968, Ser. No. 728,748
Int. Cl. C07d *59/00*
U.S. Cl. 260—327 **21 Claims**

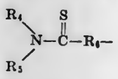
Thiiranes are stabilized against polymerization by blending with from .01 to about 5 percent by weight of compounds having the structure



where R is H, an alkyl group of 1–8 C atoms or an alkenyl group of 3–8 C atoms, and A is an alkyl group of 1–8 C atoms, an alkoxy group of 1–8 C atoms,



where one of R_2, R_3 can be H and one or both can be alkyl of 1–8 C atoms, phenyl or halophenyl groups, or



where R_4 and R_5 can each be H, an alkyl group of 1–8 C atoms phenyl or halophenyl groups and R_6 is an alkylene group of 1–8 C atoms.

3,557,146

HALOALKYLATION OF ORGANIC COMPOUNDS

Richard F. Heck, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 479,665, Aug. 13, 1965, Ser. No. 520,677, Jan. 14, 1966, and Ser. No. 659,899, Aug. 11, 1967. This application Jan. 2, 1968, Ser. No. 694,871
Int. Cl. C07c *17/02, 25/14;* **C07d** *63/12*
U.S. Cl. 260—332.5 **12 Claims**

Organometallic compounds of the formula QM'X, where Q is the organo group, M' is a Group VIII metal, and X is an anion, react with ethylenic compounds in the presence of cupric halide, preferably at least about 1 molar in concentration, to produce a beta-organoethyl halide therefrom.

3,557,147

1-PHENYL-3-PHTHALANCARBOXYLIC ACIDS

Francis J. Petracek, Agoura, and Nobuyuki Sugisaka, Canoga Park, Calif., assignors, by mesne assignments, to Riker Laboratories, Inc., Northridge, Calif., a corporation of Delaware

No Drawing. Filed Nov. 29, 1968, Ser. No. 780,168
Int. Cl. C07d *5/40*
U.S. Cl. 260—343.3 **1 Claim**

1-phenyl-3-phthalancarboxylic acid final products and and the 1,4-dihydro-1-phenyl-3H-2-benzopyran-3-one, 4-bromo-1,4-dihydro-1-phenyl-3H-2-benzopyran-3-one and 4-chloro-1,4-dihydro-1-phenyl-3H-2-benzopyran-3-one intermediates obtained in their synthesis. The final products possess antipyretic and anti-inflammatory activity.

3,557,148

1-AMINO-4-PHENYL-3-BUTEN-2-OLS AND SALTS THEREOF

Hendrik Durk Moed, Volkert Claassen, and Gerard Bernard Paerels, Van Houtenlaan, Weesp, Netherlands, assignors, by mesne assignments to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Original application July 12, 1965, Ser. No. 471,434, now Patent No. 3,420,853, dated Jan. 7, 1969. Divided and this application Oct. 18, 1968, Ser. No. 768,925
Claims priority, application Netherlands, July 11, 1964, 6407943
Int. Cl. C07c *91/06, 149/24*
U.S. Cl. 260—343.7 **17 Claims**

Styryl ethanol amines substituted in the benzene rings with alkyl, alkoxy and alkylthio radicals. Examples are 1-amino-4-(4-methoxy-phenyl)-3-butene-2-ol and 1-(2-p. ethoxyphenyl - 1 - methylethylamino)-4-phenyl-3-butene-2-ol. The compounds exhibit β-sympatholytic activities.

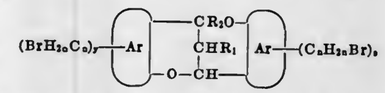
3,557,149

α-BROMOALKYLMETHANODIOXOCINS

Chun-Shan Wang, Midland, and Henry E. Hennis, Coleman, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 25, 1968, Ser. No. 715,487
Int. Cl. C07d *7/20*
U.S. Cl. 260—345.2 **9 Claims**

New α-bromoalkylmethanodioxocins having the formula



where each of *n*, *y* and *z* independently is an integer of from 0 to 4, inclusive; Ar is a homocyclic or heterocyclic substituted or unsubstituted aromatic ring; and each of R_1 and R_2 independently is H, alkyl or aryl, are made by a process which comprises contacting their corresponding alkylmethanodioxocins with a brominating agent in

the presence of a free radical initiating catalyst where the temperature is between 0° and 100° C. These α-bromoalkylmethanodioxocins have biological activity and are useful resin starting materials.

3,557,150

BENZOPYRANYL CARBAMATES

Paul Edward Drummond, Middleport, and Paul Herman Schroeder, Medina, N.Y., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 30, 1968, Ser. No. 771,991
Int. Cl. C07d *7/20*
U.S. Cl. 260—345.2 **3 Claims**

Novel nematocidal N-substituted 3,4-dihydro-2H-1-benzopyranyl-8 carbamates are described, together with their preparation, physical properties, formulation, and use as nematocides and as nematode ovicides.

3,557,151

THE COMPOUND (+)-5'-HYDROXYGRISEOFULVIN

William W. Andres, New City, and Martin Paul Kunstmann, Pearl River, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed June 11, 1968, Ser. No. 735,987
Int. Cl. C07d *5/36*
U.S. Cl. 260—346.2 **1 Claim**

A new compound is produced, (+)-5'-hydroxygriseofulvin, by fermentation from dehydrogriseofulvin or (+)-griseofulvin using *Streptomyces cinereocrocatus* n.s. The new compound (+)-5'-hydroxygriseofulvin is an antifungal agent when used in vitro and in vivo.

3,557,152

5-(2-BROMOMETHYL OR CHLOROMETHYL-2-BROMO OR CHLORO ALKANOYL) BENZOFURAN-2-CARBOXYLIC ACIDS

Janos Zergenyi, Riehen, and Ernst Habicht, Oberwil Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Filed July 22, 1968, Ser. No. 746,267
Claims priority application Switzerland, July 28, 1967, 10,764/67
Int. Cl. C07d *5/40*
U.S. Cl. 260—346.2 **2 Claims**

5 - (2 - bromo-2-bromomethyl-alkanoyl)-benzofuran-2-carboxylic acids and their pharmaceutically acceptable salts with bases have diuretic and saluretic activities. A typical embodiment is 5-(2-bromo-2-bromomethyl-butyryl) - 6 - methyl-benzofuran-2-carboxylic acid. A method of producing a diuretic and simultaneously a saluretic effect comprising administering said compounds to warm-blooded animals as well as pharmaceutical composition containing said compounds are provided.

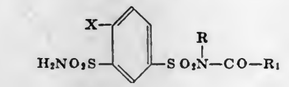
3,557,153

N-ACYLATED BENZENE-2,4-DISULFONAMIDES AND PROCESS FOR PREPARING THEM

Karl Sturm, Frankfurt am Main, and Walter Siedel, Bad Soden, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed June 27, 1967, Ser. No. 649,126
Claims priority, application Germany, July 13, 1966, F 49,679
Int. Cl. C07c *143/82;* **C07d** *5/64*
U.S. Cl. 260—347.2 **7 Claims**

N-acylated halobenzene-2,4-disulfonamide of the formula



in which X is chlorine or bromine; R is methyl, ethyl or tetrahydrofurfuryl; and R_1 is alkyl of up to 8 carbon atoms, chloromethyl, bromomethyl, allyl, furyl, cyclopentylmethyl, phenyl, benzyl or phenylethyl, have been found to have valuable diuretic and saluretic activity.

3,557,154

SUBSTITUTED 1,4,5-TRIAMINO-8-HYDROXY-ANTHRAQUINONE DYES

Rutger Neeff and Wilhelm Gohrbandt, Leverkusen, and Robert Kuth, Cologne-Muengersdorf, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Continuation-in-part of application Ser. No. 444,026, Mar. 30, 1965. This application July 29, 1966, Ser. No. 568,740
Claims priority, application Germany, Aug. 7, 1965, F 46,842
Int. Cl. C09b *1/50, 1/52, 1/56*
U.S. Cl. 260—373 **5 Claims**

1,4,5-triamino-8-hydroxy anthraquinone dyestuffs for polyesters and polyamides containing substituted 2 and/or 3 position wherein one of said positions contains a substituent selected from the group consisting of substituted or unsubstituted alkyl, aryl, and aralkyl groups linked to the anthroquinone nucleus through a bridge selected from the group consisting of O, S, SO, and SO_2, are prepared by reacting a cyclic sulfamide or cyclic sulfimide ester with sulphur in oleum.

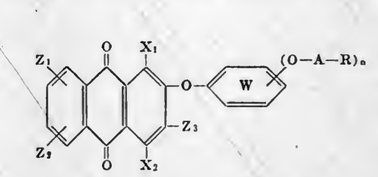
3,557,155

NOVEL ANTHRAQUINONE DISPERSE DYESTUFFS

Eiji Yamada, Takatsuki-shi, Hiroshi Korenaga, Nishinomiya-shi, and Takashi Akamatsu, Ashiya-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Higashiku, Osaka, Japan, a corporation of Japan

No Drawing. Filed Sept. 7, 1966, Ser. No. 577,610
Claims priority, application Japan, Dec. 1, 1965, 40/74,120, 40/74,121; Mar. 3, 1966, 41/13,283, 41/13,284
Int. Cl. C09b *1/12, 1/50*
U.S. Cl. 260—373 **7 Claims**

Anthraquinone dispersed dyestuffs having good fastness and dyeability without deterioration of dyeability, particularly on synthetic fibers represented by the formula



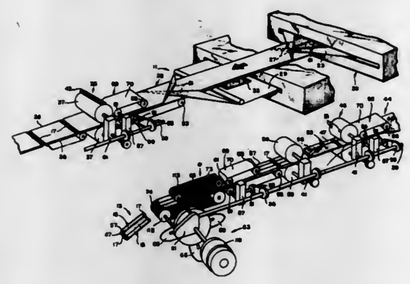
wherein A means a bridging radical represented by a formula of —SO_2—, or —CO—, R means an alkyl radical or alkenyl radical having 1 to 6 carbon atoms; an alkoxyalkyl radical having 3 to 6 carbon atoms; a haloalkyl radical or a haloalkenyl radical having 1 to 3 carbon atoms; an aralkyl radical having 7 to 10 carbon atoms; a cycloalkyl radical having 5 to 7 carbon atoms; phenyl radical substituted with or not substituted with an alkyl radical, an alkoxy radical or alkylmercapto radical having 1 to 6 carbon atoms, a hydroxy radical or a halogen atom, X_1 and X_2 mean respectively amino radical or hydroxy radical, Z_1, Z_2 and Z_3 mean respectively hydrogen atom or a halogen atom, *n* means a whole number of 1 or 2, and benzene nucleus W may be further substituted with a lower alkyl radical, a lower alkoxy radical or a halogen atom.

3,557,156

SECTIONAL DRIVE APPARATUS FOR CONTINUOUSLY FEEDING AN ELASTIC MATERIAL

Arnold A. Enneper and Anthony R. Wierzba, Green Bay, Wis., assignors, by mesne assignments, to International Paper Company, New York, N.Y., a corporation of New York

Filed Feb. 5, 1968, Ser. No. 703,170
Int. Cl. A61f 13/16; B32b 31/20; B31f 1/10
U.S. Cl. 156—383 7 Claims



A plurality of sectional drives feed a web of elastic material along a predetermined path of travel during which successive operations are performed upon the web. The sectional drives operate to move the web through the various operating stations at respective linear speeds, the respective speeds being adjustable relative to one another, thereby controlling the tension in the web at various stations so that a given length of web has a predetermined mass at various stations to provide an accurate registration of various operations on the web.

3,557,157

PROCESS FOR PREPARING TETRAKIS (ALKYL OR ALKENYL-AMINO) ETHYLENES

Harold I. Weingarten and William A. White, St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Jan. 3, 1967, Ser. No. 606,571
Int. Cl. C07c 85/00, 87/24
U.S. Cl. 260—583 3 Claims

The present invention relates to a process for the preparation of tetrakis(disubstitutedamino)ethylenes by the pyrolysis of tri(disubstituted)methanes. The products of the invention have utility in the preparation of chemiluminescence agents, in making charge transfer complexes, and as reaction intermediates.

3,557,158

6α-FLUORO-16-METHYL - 4 - PREGNENE 3,20-DIONES AND INTERMEDIATES PRODUCED IN THE SYNTHESIS THEREOF

Frank H. Lincoln, Kalamazoo, William P. Schneider, Kalamazoo Township, Kalamazoo County, and George B. Spero, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of applications Ser. No. 753,157, Aug. 4, 1958, and Ser. No. 800,090, Mar. 18, 1959. This application Jan. 22, 1962, Ser. No. 167,891
Int. Cl. C07c 169/32
U.S. Cl. 260—397.45 28 Claims

This invention relates to certain novel steroids, more particularly to 6α-fluoro-11β,17α,21-trihydroxy-16-methyl-4-pregnene-3,20-dione, 6α - fluoro - 17α,21 - dihydroxy-16-methyl - 4 - pregnene-3,11,20-trione, 6α-fluoro-11β,17α,21-trihydroxy - 16 - methyl - 1,4 - pregnadiene - 3,20 - dione, 6α - fluoro - 17α,21 - dihydroxy - 16 - methyl - 1,4 - pregnadiene-3,11,20-trione, the 9α-halo, especially the 9α-fluoro, compounds corresponding otherwise thereto, 21-esters of each, the corresponding 21-fluoro and 21-desoxy compounds, and intermediates in the production thereof.

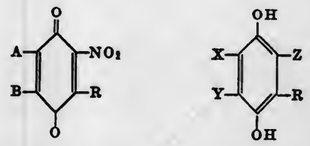
3,557,159

DINITRODIALKYL-p-BENZOQUINONES AND DERIVATIVES THEREOF

Robert J. Gruber, Tonawanda Township, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

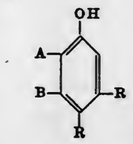
No Drawing. Filed Nov. 30, 1965, Ser. No. 510,679
Int. Cl. C07c 49/64, 45/16
U.S. Cl. 260—396 11 Claims

Compounds of the formulae



wherein R is alkyl; either A or B is alkyl, the other one being nitro; either X or Y is alkyl, the other one being selected from the group consisting of nitro, amino, and amino hydrohalide; and Z is selected from the group consisting of nitro, amino, and amino hydrohalide.

There are also provided processes for the production of the aforementioned compounds. In one of these a phenol of the formula



(where Y may be hydrogen, halogen, nitro, or a sulfo radical, R is alkyl, and either A or B is alkyl, the other one being hydrogen) is reacted with a nitrating agent to yield dinitro-dialkyl-p-benzoquinones. In the second of these the benzoquinones so produced are reduced to form the hydroquinones of this invention.

3,557,160

1,2 - METHYLENE - 6,7 - DIFLUOROMETHYLENE AND 1,2;6,7 - BIS(DIFLUOROMETHYLENE) PREGNANES AND PROCESSES FOR THEIR PREPARATION

Colin C. Beard, Freeport, Grand Bahama Island, and Alexander D. Cross, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Continuation-in-part of application Ser. No. 634,411, Apr. 11, 1967, which is a continuation-in-part of application Ser. No. 499,092, Oct. 20, 1965, which in turn is a continuation-in-part of application Ser. No. 486,226, Sept. 9, 1965. This application Jan. 24, 1969, Ser. No. 793,878
Int. Cl. C07c 169/30
U.S. Cl. 260—397.4 31 Claims

This discloses 3-keto-Δ^4-pregnene and 3-keto-Δ^4-19-norpregnene steroid compounds which contain 6,7-methylene, 6,7-monohalomethylene or 6,7-dihalomethylene groupings. It also discloses 3-keto-Δ^4-pregnene steroid compounds which contain 1,2-methylene-6,7-difluoromethylene and 1,2;6,7-bis(difluoromethylene) groupings. These compounds can be optionally substituted at one or more of the C–6, C–9, C–11, C–16, C–17, C–16,17, C–21 and/or C–17,21 positions. Also taught are processes useful for the preparation of these compounds. These compounds are useful in accordance with exhibited corticoid, anti-inflammatory and progestational activities.

3,557,161

ESTROGEN WATER-SOLUBLE CONJUGATES AND PREPARATION THEREOF

John Paul Dusza, Nanuet, N.Y., Joseph Peter Joseph, Cliffside Park, N.J., and Seymour Bernstein, New City, N.Y., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Jan. 31, 1969, Ser. No. 795,698
Int. Cl. C07c 169/08
U.S. Cl. 260—397.5 5 Claims

The preparation of novel 17-monoformyloxy- and 16,17-diformyloxy ring A aromatic steroids is described. They are useful as estrogenic agents and also as intermediates in the preparation of steroid glucopyranosiduronates and glycosides.

3,557,162

PROCESS FOR THE PREPARATION OF 17α-MONOESTERS OF 11β,17α,21-TRIHYDROXYSTEROIDS

Jan Lens, Voorschoten, and Arthur F. Marx, Delft, Netherlands, assignors to Koninklijke Nederlandsche Gist-en Spiritusfabriek N.V., Delft, Netherlands, a corporation of Netherlands

No Drawing. Filed Jan. 23, 1969, Ser. No. 793,574
Claims priority, application Great Britain, Jan. 23, 1968, 3,587/68
Int. Cl. C07c 167/28
U.S. Cl. 260—397.45 2 Claims

17α-monoesters of 11β,17α,21 - trihydroxysteroids are prepared by silylating the 11β-hydroxyl group of an 11β, 17α-dihydroxy-21-acyloxy steroid to a silyloxy group, esterifying the 17α-hydroxyl group, and then removing the silyl group at the 11β position and the acyl group at the 21 position by hydrolysis or alcoholysis.

3,557,163

N'-SUBSTITUTED N-ARYLSULPHONYL UREAS

Henri Dietrich, Arlesheim, Basel-Land, Switzerland, assignor to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Filed Dec. 15, 1967, Ser. No. 690,774
Claims priority, application Switzerland, Dec. 22, 1966, 18,374/66
Int. Cl. C07c 127/100
U.S. Cl. 260—397.7 10 Claims

1-arylsulphonyl-3-(octahydro - 1,2,4 - methenopentalen-5-yl)-ureas and salts thereof with bases, which compounds have useful hypoglycaemic action, as well as starting materials for their production; therapeutic compositions containing these ureas or their pharmaceutically acceptable salts and processes for producing hypoglycaemic effects in mammals. An illustrative embodiment is 1-(p-tolylsulphonyl) - 3 - (octahydro-1,2,4-methenopentalen-5-yl)-urea.

3,557,164

INHIBITION OF DEPOSITION OF WATER INSOLUBLE COMPOUNDS IN AQUEOUS SYSTEMS

William G. De Pierri, Jr., Baytown, Tex., assignor to Esso Research and Engineering Company

No Drawing. Filed Apr. 4, 1968, Ser. No. 718,913
Int. Cl. A23j 7/00
U.S. Cl. 260—403 9 Claims

Deposition of water insoluble compounds from aqueous systems containing them is inhibited by adding to the aqueous system, which may be a subsurface formation water or brine, a small but effective amount of a phosphate ester of ethoxylated esterified triol or the alkali metal or ammonium salts thereof.

3,557,165

ω-CYANOPERFLUOROALKANOYL HALIDES AND PROCESS THEREFOR

Edwin Dorfman, William E. Emerson, and Russell L. K. Carr, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York

No Drawing. Filed Aug. 17, 1967, Ser. No. 661,242
Int. Cl. C09f 7/00
U.S. Cl. 260—404 10 Claims

ω-Cyanoperfluoroalkanoyl halides are prepared in high yield by reacting polyhaloalkyl ω-cyanoperfluoroalkanoates in the presence of a Lewis acid. ω-Cyanoperfluoroalkanoyl fluorides, bromides and iodides are also claimed. The products are useful intermediates in the preparation of perfluoroalkylenetriazine polymers.

3,557,166

PROCESS FOR PRODUCING CARBOXYLIC ACIDS AND NITROGEN CONTAINING INTERMEDIATES FROM OLEFINS

Donald R. Lachowicz, Todd S. Simmons, and Kenneth L. Kreuz, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application June 24, 1965, Ser. No. 466,816, now Patent No. 3,415,856, dated Dec. 10, 1968. Divided and this application May 31, 1968, Ser. No. 749,236
Int. Cl. C09f 7/00; C07c 73/10, 51/16, 45/04, 49/06
U.S. Cl. 260—404.5 8 Claims

Nitroperoxylnitrate and nitroperoxynitrato alkanoic acid compounds and method of preparing nitroperoxy and nitroketone compounds from alkenes or alkenoic acids comprising contacting an alkene or alkenoic acid with a mixture of dinitrogen tetroxide and oxygen to form the nitroperoxy compound and contacting the nitroperoxy compound with a denitrating agent to form the nitroketone.

3,557,167

PROCESS FOR THE PREPARATION OF 2-ARYLOXYETHYL CARBOXYLATES

Hans-Leo Hülsmann, Witten-Rudinghausen, and Gustav Renckhoff, Witten, Ruhr, Germany, assignors to Dynamit Nobel AG Werk Witten, Witten, Germany

No Drawing. Filed Apr. 26, 1968, Ser. No. 724,630
Claims priority, application Germany, Apr. 27, 1967, D 52,935
Int. Cl. C11c 3/00; C07c 69/78
U.S. Cl. 260—410.5 13 Claims

A process for the preparation of 2-aryloxyethyl esters from an aryl ester prepared from a phenolic compound and an acid selected from the group consisting of aliphatic, cycloaliphatic and aromatic mono- and poly-carboxylic acids, and said aryl esters substituted in the aryl residue with at least one halogen and/or alkyl group, which comprises reacting said aryl ester with ethylene carbonate in approximately equivalent amounts at a temperature of about 100 to 200° C. and in the presence of a catalyst.

3,557,168

AQUEOUS ACETONE EXTRACTION OF COTTONSEED

Walter A. Pons, Jr., New Orleans, and Paul H. Eaves, Metairie, La., assignors to the United States of America as represented by the Secretary of Agriculture

Filed July 18, 1968, Ser. No. 745,888
Int. Cl. C11b 1/00
U.S. Cl. 260—412.4 3 Claims

This invention relates to a process for extracting cottonseed flakes. More particularly, this invention relates to a process whereby cottonseed flakes are extracted with acetone containing 25–30% water to remove all of the gossypol, most of the free fatty acids, about half of the raffinose, and negligible quantities of neutral oil and protein.

3,557,169

PROCESS FOR PRODUCING CARBOXYLIC ACIDS

Gene C. Robinson, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 460,558, June 1, 1965. This application Oct. 29, 1968, Ser. No. 771,670

Int. Cl. C08h *17/36*

U.S. Cl. 260—413 3 Claims

A process for producing straight chain unsubstituted monobasic carboxylic acids having from about 7 to about 19 carbon atoms per molecule with improved selectivity by oxidation of selected olefins. Alpha olefins are dimerized to produce ethylenes containing at least 1,1-disubstitution with a methylene group in the alpha position of at least one of the substituting radicals. The ethylenes are oxidized selectively to produce cleavage of the molecule at the linkage of the methylene group of the radical to the balance of the substituted ethylene molecule.

3,557,170

DESTRUCTION OF CYCLOPROPENE MOIETIES IN VEGETABLE OILS WITH PALLADIUM COMPOUNDS AND CATALYSTS

Reuben O. Feuge and Zigrida M. Zarins, New Orleans, La., assignors to the United States of America as represented by the Secretary of Agriculture

No Drawing. Filed Jan. 15, 1969, Ser. No. 791,515

Int. Cl. C09f *5/10*

U.S. Cl. 260—420 4 Claims

This invention relates to a process for destroying the cyclopropene moiety in refined cottonseed oil and in other fatty acid esters containing the cyclopropene moiety. More particularly, this invention relates to a process whereby palladium compounds in the absence of hydrogen destroy the cyclopropene moiety present in refined cottonseed oil and other fatty acid esters including kapok seed oil and the seed oil of *Hibiscus syriacus*.

3,557,171

METAL SALTS OF REACTION PRODUCT OF AN ALKYL PHENOL AND AN ETHYLENEAMINE

Harry J. Andress, Jr., Pitman, N.J., assignor to Mobil Oil Corporation, a corporation of New York

No Drawing. Original application July 19, 1967, Ser. No. 654,327, now Patent No. 3,493,508, dated Feb. 3, 1970. Divided and this application July 25, 1969, Ser. No. 862,563

Int. Cl. C07f *3/06*

U.S. Cl. 260—429.9 3 Claims

Organic compositions are provided containing as improving agents metal salts of the reaction product of an alkyl phenol and an ethyleneamine. These metal salts act as antiscreen clogging agents and smoke suppressants for fuel oils and as stabilizers for lubricating oils and greases. A method for the preparation of these metal salts is also provided.

3,557,172

METHOD FOR THE PREPARATION OF CYCLOHEXYLTIN TRIHALIDE

Horst G. Langer, Wayland, and Thomas P. Brady, Framingham, Mass., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 31, 1968, Ser. No. 748,949

Int. Cl. C07f *7/22*

U.S. Cl. 260—429.7 5 Claims

Disclosed is a new method of preparing cyclohexyltin trihalide wherein the halide is bromide or chloride which involves the direct halogenation with bromine or chlorine of tetracyclohexyltin, tricyclohexyltin monohalide, or dicyclohexyltin dihalide or mixtures thereof. Cyclohexyltin tribromide and cyclohexyltin trichloride are useful as pesticides.

3,557,173

PROCESS FOR RECOVERING COBALT ACETATE

Alvin E. Trevillyan, Glenwood, Ill., assignor to Sinclair Research Incorporated

No Drawing. Filed May 9, 1968, Ser. No. 728,054

Int. Cl. C07f *15/06;* C07c *51/42*

U.S. Cl. 260—439 10 Claims

The cobalt recovery process of the present invention can provide substantially complete recovery of cobalt acetate catalyst from the oxidation of meta- or para-xylene to phthalic acids, the cobalt acetate being in catalytically-active form and relatively free from side reaction and metal corrosion products. The reaction medium which contains acetic acid solvent, after treatment to recover the isophthalic or terephthalic acid product, is then dehydrated, by physical or chemical means, cooled if desired, and filtered to recover insoluble, anhydrous cobalt acetate, while the by-product acids and metal corrosion products remain in the acetic acid solvent. The catalyst is reformed by dissolving the cobalt acetate in fresh acetic acid containing enough water to form the soluble tetrahydrate from the anhydrous salt.

3,557,174

PROCESS FOR PRODUCING HYDROCARBON ALUMINUM COMPOUNDS

Warren E. Becker, Paul Kobetz, and Gunnar E. Nelson, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Continuation-in-part of application Ser. No. 633,411, Apr. 25, 1967. This application Nov. 4, 1969, Ser. No. 874,023

Int. Cl. C07f *5/06*

U.S. Cl. 260—448 15 Claims

Improvements in reactions for producing organo aluminum compounds are described. The improvements involve halides of alkali metals as catalysts or activators for reactions involving aluminum with an organo aluminum compound and hydrogen or with olefin and hydrogen in the presence of an organo aluminum compound. Preferred catalytic halides are the fluorides. A preferred alkali metal constituent of the catalyst compounds is sodium; however, certain other compounds which are other combinations of other halogens, including psuedo halogens, with other alkali metals are also disclosed as useful catalysts. The preferred compounds are similar to the alkali metals in effectiveness and are much easier to handle and use.

3,557,175

HALOGEN-SUBSTITUTED ORGANOSILICON COMPOUNDS AND LUBRICANTS CONTAINING THE SAME

Edgar D. Brown, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 666,948, Sept. 11, 1967. This application Nov. 3, 1969, Ser. No. 873,511

Int. Cl. C07f *7/18*

U.S. Cl. 260—448.2 7 Claims

Organosilicon compounds containing silicon-bonded ethyl groups substituted with iodine, with bromine or chlorine, and with alkoxy, acyloxy, or hydroxy groups have been prepared by adding I_2 and Br_2, I_2 and Cl_2, IBr, or ICl to vinyl-substituted silanes and siloxanes in the presence of alcohols or carboxylic acids or with subsequent water treatment. Lubricating compositions useful for lubricating high temperature alloys are prepared by adding such substituted organosilicon compounds to oils of lubricating viscosity.

3,557,176

PROCESS FOR THE PREPARATION OF ALKYLARYLDICHLOROSILANES

Andre Bazouin and Marcel Lefort, Caluire, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed Oct. 1, 1968, Ser. No. 764,293

Claims priority, application France, Oct. 2, 1967, 123,017

Int. Cl. C07f *7/12*

U.S. Cl. 260—448.2 7 Claims

Alkylaryldichlorosilanes are produced by heating a dialkyldichlorosilane with a diaryldichlorosilane at 70° to 220° C. in the liquid phase in the presence of aluminum chloride.

3,557,177

PROCESS FOR PRODUCING CYCLOSILOXANES

Terry G. Selin, 2279 Dean St., Schenectady, N.Y. 12309

No Drawing. Continuation of application Ser. No. 406,900, Oct. 27, 1964. This application Sept. 22, 1969, Ser. No. 863,674

Int. Cl. C07f *7/08*

U.S. Cl. 260—448.2 5 Claims

A process for forming cyclopolysiloxanes useful in the formation of higher molecular weight silicones comprises reacting a silanol chain-stopped diorganopolysiloxane, such as tetraphenyldisiloxanediol with a halogen-terminated diorgano-silicon compound, such as dimethyldichlorosilane, in the presence of ammonia and a solvent.

3,557,178

PRODUCTION OF QUATERNARY, ORGANOSILICON-SUBSTITUTED AMMONIUM SALTS

Dietrich Gölitz, Cologne-Stammheim, and Walter Simmler, Odenthal-Schlinghofen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Jan. 16, 1968, Ser. No. 698,110

Claims priority, application Germany, Jan. 24, 1967, F 51,328

Int. Cl. C07f *7/18*

U.S. Cl. 260—448.8 6 Claims

Methyl-alkoxy- or methyl-phenoxy-silyl derivatives of tetramethyl ammonium bromide, siloxane homo-condensates thereof as well as co-condensates thereof with hydrocarbyl-siloxanes are produced by reacting the corresponding derivatives of methylbromide with trimethylamine in an improved manner by carrying out the reaction in the presence of an inert polar solvent having a dielectric constant above 25 at 20° C., at a temperature of not more than 50° C.

3,557,179

PREPARATION OF ORTHOSILICIC ACID TETRAMETHYL ESTERS

Arnold Lenz, Cologne-Stammheim, and Walter Rogler, Ranzel, Troisdorf, Germany, assignors to Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany, a corporation of Germany

Continuation-in-part of application Ser. No. 762,673, Sept. 20, 1968. This application Apr. 29, 1969, Ser. No. 820,268

Claims priority, application Germany, May 2, 1968, 1,768,339

Int. Cl. C07f *7/04*

U.S. Cl. 260—448.8 12 Claims

Process of preparing orthosilicic acid tetramethyl ester comprising reacting at least one of silicon, iron silicide and ferrosilicon with methanol in the presence of sodium, lithium, potassium, rubidium or cesium methylate as catalyst, at a temperature of from about 15° C. to the boiling point of the reaction mixture.

3,557,180

2,4-BIS(ISOCYANATOCYCLOHEXYLMETHYL) CYCLOHEXYL ISOCYANATE

Guenther Kurt Hoeschele, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 2, 1968, Ser. No. 741,847

Int. Cl. C07c *87/42, 119/04;* C08a *22/28*

U.S. Cl. 260—453 1 Claim

The triisocyanate 2,4 - bis(4 - isocyanatocyclohexylmethyl) cyclohexyl isocyanate is prepared by phosgenating the corresponding triamine. The triisocyanate is useful in the preparation of polyurethane materials.

3,557,181

OILY POLYMER HAVING POLYETHER CHAIN AND NITROALKYL GROUPS

Julian Lakritz, Rahway, and William E. Tyler III, New Providence, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Dec. 11, 1961, Ser. No. 159,819

Int. Cl. C07c *43/04, 119/04*

U.S. Cl. 260—453 4 Claims

1. The crosslinked viscous oily polymer of 3-nitropropene oxide containing the recurring unit:

$$\left(-\mathrm{CH}(\mathrm{CH_2NO_2})-\mathrm{CH_2O}-\right)$$

with terminal hydroxyl groups.

3,557,182

PROCESS FOR PRODUCING CYANOCYCLOHEXANOLS

Hideo Nagata and Toshio Tamaki, Osaka-fu, and Hiroaki Moriyama, Nishinomiya-shi, Japan, assignors to Sumitomo Chemical Co., Ltd., Higashi-ku, Osaka-shi, Japan

No Drawing. Filed June 21, 1968, Ser. No. 738,811

Claims priority, application Japan, June 22, 1967, 42/40,252; Feb. 14, 1968, 43/9,497

Int. Cl. C07c *121/46*

U.S. Cl. 260—464 13 Claims

3-cyanocyclohexanol and 4-cyanocyclohexanol are prepared selectively by reducing trans-1-cyano-3,4-epoxycyclohexane and cis-1-cyano-3,4-epoxycyclohexane with sodium borohydride or hydrogenating in the presence of a hydrogenation catalyst, such as, palladium or ruthenium. These cyanocyclohexanols are useful as intermediates in the synthesis of agricultural chemicals.

3,557,183

α-CYANOETHYL N-3,5-DICHLOROPHENYLCARBAMATE

Tetsuji Ishiyama, Kamakura-shi, and Keizo Hamuro, Nishinomiya-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Higashi-ku, Osaka, Japan, a corporation of Japan

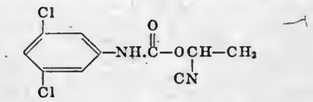
No Drawing. Filed Sept. 18, 1967, Ser. No. 668,651

Claims priority, application Japan, Sept. 22, 1966, 41/62,769

Int. Cl. C07c *125/04;* A01n *9/20*

U.S. Cl. 260—465 1 Claim

Fungicidal compound represented by the formula,

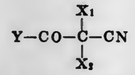


which exhibits low toxicity and has high preventive and exterminative effects on such fungi as *Pyricularia oryzae* Cav., *Cochlioborus miyabeanus* (S. Ito et Kurib). Drech., *Gibberella fujikuroi* (Saw.) Woll., *Helminthosporium sigmoideum* Cav., Hormodendrum sp., and *Alternaria kikuchiana* Tanaka. The above compound is prepared easily and at low cost by the condensation of substituted

anilines with α-cyanoethyl chlorocarbonate or of substituted N-phenylcarbamoyl chlorides with α-cyanoethyl alcohol, or by the reaction of substituted phenyl isocyanates with α-cyanoethyl alcohol.

3,557,184
HALOGENOACETONITRILE DERIVATIVES AND PESTICIDAL PREPARATIONS CONTAINING SAID DERIVATIVES
Werner Toepfl, Basel, and Hans-Rudolf Hitz, Muttenz, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed July 30, 1965, Ser. No. 476,192
Claims priority, application Switzerland, Aug. 17, 1964, 10,730/64
Int. Cl. C07c *121/46, 121/52, 121/16*
U.S. Cl. 260—465.4 **3 Claims**

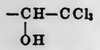
New pesticidal preparations are provided which contain as the active component a compound represented by the formula



wherein X_1 and X_2 represent hydrogen or halogen, and Y represents the radical —OR where R stands for an alkyl or chloralkyl radical containing up to 18 carbon atoms or the radical



in which R_1 and R_2 are identical or different and each represents hydrogen or alkyl, alkoxyalkyl, dialkylaminoalkyl, cyclohexyl, or for a phenyl radical or for the radical of the formula



or, together with the nitrogen atom, form a morpholine, piperidine or piperazine ring which latter is substituted by the radical —CO—CCl_2—CN together with a suitable carrier. The preparation may contain one or several of the following additives: solvents, diluents, dispersants, wetting agents, adhesives and other pesticides.

3,557,185
STABILIZED ALPHA-CYANOACRYLATE ADHESIVE COMPOSITIONS
Kenji Ito and Kishichiro Kondo, Nagoya-shi, Japan, assignors to Toa Gosei Chemical Industry Co., Ltd., Tokyo, Japan
No Drawing. Filed Mar. 6, 1968, Ser. No. 710,738
Claims priority, application Japan, Mar. 6, 1967, 42/11,402
Int. Cl. C07c *121/52, 121/30*
U.S. Cl. 260—465.4 **5 Claims**

Alpha-cyanoacrylate adhesive compositions consisting predominantly of monomeric alpha-cyanoacrylate stabilized with sulfur trioxide in a quantity sufficient to stabilize in bulk.

3,557,186
REDUCTIVE DIMERIZATION OF ACRYLONITRILE
Hans Leitner and Karl Wintersberger, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed June 17, 1968, Ser. No. 737,393
Claims priority, application Germany, June 20, 1967, 1,618,180
Int. Cl. C07c *121/26*
U.S. Cl. 260—465.8 **4 Claims**

A process for the reductive dimerization of α,β-unsaturated nitriles, amides or esters susceptible to Michael reaction by treatment with alkali metal or alkaline earth metal amalgams in the presence of compounds which are proton donors but do not react appreciably under the reaction conditions, particularly water, and in the presence of hexamethylethylenetetramine.

3,557,187
PRODUCTION OF 1,4-DICYANOBUTENE-(2)
Hans-Martin Weitz, Frankenthal, Pfalz, Franz Merger, Ludwigshafen (Rhine), and Juergen Koopmann, Neustadt, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Filed May 18, 1966, Ser. No. 551,145
Claims priority, application Germany, May 19, 1965, 1,518,553
Int. Cl. C07c *121/06*
U.S. Cl. 260—465.8 **5 Claims**

A process for producing 1,4-dicyanobutene-(2) in which at least one of the compounds 1,2-dibromobutene-(3) or 1,4-dibromobutene-(2) is reacted with hydrocyanic acid in the presence of a copper salt catalyst. The process takes place in the presence of an aqueous acid medium and in the presence of an acid acceptor. During the reaction a pH of from −1 to +3 is maintained. The hydrogen bromide that is present in the reaction solution is oxidized to elementary bromine and the aqueous solution containing the acid acceptor is recycled to the reaction mixture. The rate of reaction of the process is considerably higher than that of conventional methods and lower yields of by-products are achieved.

3,557,188
4,7-METHANOINDENE DERIVATIVES
Morris Dunkel, Paramus, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Mar. 2, 1967, Ser. No. 619,966
Int. Cl. G07c *69/74*
U.S. Cl. 260—468 **8 Claims**

Novel 4,7-methanoindenylidene substituted esters or acids useful as perfume ingredients prepared by dehydrating corresponding hydroxymethanoindenyl esters or acids.

3,557,189
α-CHLORO-β-(4-CHLOROPHENYL)-PROPIONIC ACID METHYL ESTER
Ludwig Eue, Cologne-Stammheim, Helmuth Hack, Cologne-Buchheim, Kurt Westphal, Wuppertal-Vohwinkel, and Richard Wegler, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Original application Apr. 7, 1966, Ser. No. 540,844, now Patent No. 3,472,646, dated Oct. 14, 1969. Divided and this application Dec. 6, 1968, Ser. No. 795,762
Claims priority, application Germany, Apr. 17, 1965, F 45,840
Int. Cl. C07c *69/76*
U.S. Cl. 260—476 **1 Claim**

α - Chloro - β - (4 - chlorophenyl) - propionic acid methyl ester which possesses selective herbicidal properties and which may be prepared by conventional methods.

3,557,190
PREPARATION OF 1-(CARBAMOYL)-N-(CARBAMOYLOXY)THIO-FORMIMIDATES FROM ALKYL ACETOACETATES
James B. Buchanan, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Dec. 27, 1968, Ser. No. 787,600
Int. Cl. C07c *161/00*
U.S. Cl. 260—482 **19 Claims**

1 - (carbamoyl) - N-(carbamoyloxy)thioformimidates such as methyl 1-(carbamoyl)-N-(methylcarbamoyloxy) thioformimidate and methyl 1 - dimethylcarbamoyl)-N-(methylcarbamoyloxy)thioformimidate are prepared by the steps of

(a) chlorinating an alkyl acetoacetate in the presence or absence of a solvent such as water or an alcohol;
(b) reacting the produce of (a) with an alkyl nitrite in water or an alcohol at −20 to 50° C.;
(c) mixing the hydroxamoyl chloride formed in (b) with an alkyl mercaptan and then adding a base;
(d) reacting the product of (c) with 2 moles of ammonia or an amine in the presence of water or an alcohol; and
(e) reacting the product of (d) with either
  (1) a carbamoyl chloride, in the presence of a base; or
  (2) an isocyanate, optionally in the presence of a basic catalyst; in water or organic solvents such as acetone and methylene chloride.

3,557,191
PRODUCTION OF VINYL ACETATE AND ACETIC ACID FROM ETHYLENE
Harry B. Copelin, Niagara Falls, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 17, 1964, Ser. No. 345,507
Int. Cl. C07c *67/04*
U.S. Cl. 260—497 **4 Claims**

A two stage process for preparing vinyl acetate and acetic acid wherein ethylene is reacted with a working solution containing acetic acid, a palladium II salt, acetate ions, halide ions and a cupric salt to produce vinyl acetate and acetaldehyde and substantially all of the halide ions are precipitated as cuprous halide in the first stage and wherein the acetaldehyde is oxidized to acetic acid and the reduced working solution is reoxidized by contacting the reduced working solution which is substantially halide-free with the acetaldehyde therein with oxygen in the second stage.

3,557,192
PROCESS FOR PREPARING UNSATURATED ESTERS
Melville E. D. Hillman, Rockville, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
Filed Mar. 18, 1968, Ser. No. 713,763
Int. Cl. C07c *67/04*
U.S. Cl. 260—497 **5 Claims**

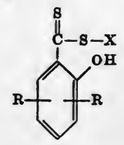
A water-soluble catalyst consisting essentially of a noble metal halide, an alkali metal halide and a cupric halide is prepared and employed in a continuous process for preparing unsaturated esters. An initial, non-soluble catalyst charge is put into the reactor and, as this catalyst becomes reduced, it is continuously removed to be regenerated. The above mentioned water-soluble catalyst is continuously added as make-up catalyst until enough of the reduced catalyst has been regenerated, at which time addition of the aforesaid water-soluble catalyst is stopped and the regenerated catalyst is continuously added.

3,557,193
1-(ALKYLAMINO)-3-(α-PHENYL BENZYL)OXY-PROPAN-2-OLS AND THE SALTS THEREOF
Wijbe Thomas Nauta, Nieuw Loosdrecht, Netherlands, assignor to N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades-Stheeman & Pharmacia, Loolersgracht, Amsterdam, Netherlands
No Drawing. Filed Sept. 15, 1967, Ser. No. 668,214
Int. Cl. C07c *93/06*
U.S. Cl. 260—501.18 **3 Claims**

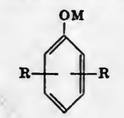
This invention relates to new, therapeutically useful benzhydryl aminopropanol ethers and acid addition salts thereof, to processes for their preparation and to pharmaceutical compositions containing them. The compounds of this invention have been found to possess activity as antiarrhythmic and local anaesthetic agents.

3,557,194
HYDROXYDITHIOAROMATIC ACIDS, DERIVATIVES THEREOF AND PROCESS FOR THEIR MANUFACTURE
Charles H. Fuchsman, Cleveland Heights, and William H. Meek, Northfield, Ohio, assignors to Ferro Corporation, Cleveland, Ohio
No Drawing. Filed Apr. 4, 1969, Ser. No. 813,772
Int. Cl. C07c *153/03, 153/07*
U.S. Cl. 260—502.6 **18 Claims**

Process for preparing hydroxydithioaromatic compounds of the formula:

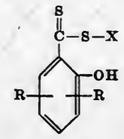


wherein X is H, a metallic cation or an alcoholic residue, and the R groups are relatively inert substituents; which comprises reacting a phenoxide of the formula:



wherein M is a metallic cation and R is as previously defined and wherein at least one position ortho to the OM group is unsubstituted; and carbon disulfide in the presence of a dimethylamide solvent of the formula:

wherein *m* is an integer from 0 to 3; under substantially anhydrous conditions for a time and temperature sufficient to dithiocarboxylate said phenoxide, and recovering the resultant salt or acidifying or esterifying the salt; and novel compounds of the formula:

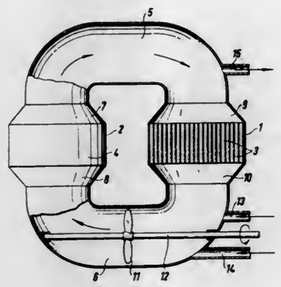


wherein X and R are as previously defined provided that all R groups are not H, hydroxy, alkoxy, or mixtures. The novel compounds are useful as bactericides and fungicides.

3,557,195
MANUFACTURE OF PERACETIC ACID
Michael James Haggar, Allestree, and Donald Arthur Sharman, Coventry, England, assignors to Courtaulds Limited, London, England, a British company
Filed Oct. 11, 1965, Ser. No. 494,431
Claims priority, application Great Britain, Aug. 24, 1965, 36,229/65
Int. Cl. C07c *73/12*
U.S. Cl. 260—502 **3 Claims**

A process for the manufacture of peracetic acid by the vapor phase oxidation of aldehyde with oxygen which comprises establishing a circuitous stream of gases including oxygen, acetaldehyde reactant and acetaldehyde oxidation products, injecting molecular oxygen and acetal-

dehyde vapors into said stream, causing acetaldehyde and oxygen to react while moving in said stream to form



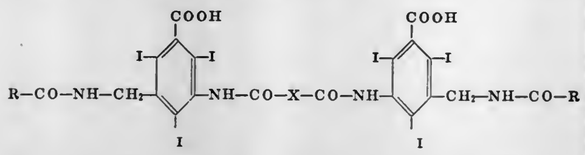
peracetic acid while maintaining the average temperature of said stream at between about 120° and about 220° C.

3,557,196
PROCESS FOR PREPARING BETA-KETO-ACIDS
Giorgio Bottaccio and Gian Paolo Chiusoli, Novara, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy
No Drawing. Filed July 31, 1967, Ser. No. 657,090
Claims priority, application Italy, Aug. 2, 1966, 17,971/66; May 10, 1967, 15,913/67
Int. Cl. C07c *61/36*
U.S. Cl. 260—514 **3 Claims**

Disclosed is a process for preparing beta-keto-acids having the formula R—CO—CHR'—COOH from ketones R—CO—CH_2—R' wherein R and R' are hydrocarbyls containing 1 to 10 C; R' may be H; R and R' taken together give a cycloalkylene. The process is characterized in that the ketone is reacted with carbon dioxide, in the presence of alkaline salts of phenols in an inert polar medium. The alkaline phenol salts preferred are the Li, Na, K salts of phenol, hydroquinone and their methyl homologs. The inert polar medium is preferably selected from trialkylphosphinoxides, trialkyl-phosphates, hexalkyl-phosphotriamides, dialkyl-sulphoxides, dialkyl-formamides, dialkyl-acetamides, tetralkylureas, pyridine, dialkylethers of mono-, di- and tri-ethyleneglycol, wherein alkyl is methyl and/or ethyl.

3,557,197
RADIOPAQUE COMPOUNDS
Ernst Felder and Davide Pitre, Milan, Italy, assignors to Bracco Industria Chimica, Società per Azioni, Milan, Italy
No Drawing. Filed Apr. 7, 1969, Ser. No. 814,176
Claims priority, application Switzerland, May 2, 1968, 6,626/68
Int. Cl. C07c *103/32*
U.S. Cl. 260—519 **12 Claims**

Radiopaque compounds of the formula



are readily converted to their water-soluble salts with sodium, lithium, calcium, magnesium, and the alkanolamines generally used in galenic pharmacy, and the solutions are good contrast media for intravenous injection in cholecystography, and partly also in angiography. In the formula, X is alkylene or oxa-alkylene having 4–10 carbon atoms, and R is lower alkyl.

3,557,198
PROCESS FOR THE PRODUCTION OF ALKALI METAL SALICYLATES
Harry Yakimik, Jr., Garfield, N.J., assignor to Tenneco Chemicals, Inc., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 584,371, Oct. 5, 1966. This application Apr. 12, 1967, Ser. No. 630,211
The portion of the term of the patent subsequent to July 29, 1986, has been dedicated to the Public
Int. Cl. C07c *65/10*
U.S. Cl. 260—521 **7 Claims**

Alkali metal salts of salicylic acid that are substantially free of colored impurities are prepared by neutralizing high quality salicylic acid with high quality alkali metal carbonate in an aqueous medium that is maintained throughout the reaction at a pH below about 8 and a temperature below about 60° C. When U.S.P. salicylic acid that has an APHA color rating of less than 25 is used in this process, the product generally has an APHA color rating of less than 20.

3,557,199
OXIDATION OF ACROLEIN AND METHACROLEIN
R Parthasarathy, Takoma Park, and Frank G. Clapetta, Silver Spring, Md., assignors to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut
No Drawing. Filed Feb. 21, 1967, Ser. No. 617,491
Int. Cl. C07c *51/26*
U.S. Cl. 260—530 **9 Claims**

A catalyst composition comprising oxides of niobium and molybdenum which find particular usefulness in the catalytic vapor phase oxidation of acrolein and/or methacrolein to acrylic acid and/or methacrylic acid. In the preferred catalyst form the oxides of niobium and molybdenum are dispersed within a suitable support material, preferably silica gel.

3,557,200
NITRILOTRIACETIC ACID BASED CHELATING AGENTS
Frederick C. Bersworth, East Orange, N.J., assignor, by mesne assignments, to Frederick C. Bersworth, East Orange, N.J.
Continuation-in-part of applications Ser. No. 580,829, Sept. 20, 1966, now Patent No. 3,351,658, and Ser. No. 588,222, Oct. 20, 1966, which is a continuation-in-part of applications Ser. No. 88,604 and Ser. No. 88,606, both Feb. 13, 1961; Ser. No. 446,120, Apr. 6, 1965; and Ser. No. 468,182, June 4, 1965. This application Aug. 17, 1967, Ser. No. 661,367
Int. Cl. C07c *103/88*
U.S. Cl. 260—534 **2 Claims**

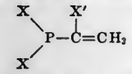
Chelating agents are prepared by reacting ammonia with nitrilotriacetic acid to form a condensation product which has chelating properties suitable for holding iron ions in aqueous solution over the complete temperature and pH range attainable in aqueous solution.

3,557,201
PROCESS FOR THE PREPARATION OF ADIPIC ACID
Jacques Boichard, Bernard Brossard, Michel Gay, and Raymond Janin, Lyon, France, assignors to Rhone-Poulenc S.A., Paris, France, a French body corporation
No Drawing. Filed Dec. 15, 1967, Ser. No. 690,742
Claims priority, application France, Dec. 28, 1966, 89,203
Int. Cl. C07c *55/14*
U.S. Cl. 260—537 **3 Claims**

Adipic acid is prepared in high yield by oxidising ε-caprolactone at 0° to 20° C. with nitric acid of 40 to 80% concentration.

3,557,202
HALOVINYLPHOSPHONOUS DIHALIDES AND A PROCESS FOR THE PREPARATION THEREOF
Walter Stamm, Tarrytown, N.Y., and Eugene H. Uhing, Ridgewood, N.J., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
Filed Jan. 3, 1967, Ser. No. 607,051
Int. Cl. C07f *9/52*
U.S. Cl. 260—543 **7 Claims**

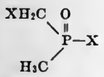
Novel halovinylphosphonous dihalides of the formula:



wherein X is a halogen atom having an atomic weight greater than about 30, and X' is a halogen atom having an atomic weight greater than about 15; a novel process for their preparation by the reaction of a phosphorus trihalide and a vinyl halide at a temperature between about 200° C. and 800° C. in a non-oxidizing medium; polymers incorporating the halovinylphosphonous dihalides and derivatives obtained therefrom.

3,557,203
PROCESS FOR PREPARATION OF HALOMETHYL METHYLPHOSPHINIC HALIDES
Eugene H. Uhing, Ridgewood, N.J., assignor to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
Filed July 6, 1967, Ser. No. 651,525
Int. Cl. C07f *9/52*
U.S. Cl. 260—543 **4 Claims**

Process for preparing halomethyl methylphosphinic halides of the formula:



wherein X is a halogen having an atomic weight greater than 30 but less than 85, which process comprises reacting a phosphorus trihalide of the formula:

$$PX_3$$

wherein X is as previously defined, and dimethyl ether in a nonoxidizing medium and recovering the the halomethyl methylphosphonic halide product.

3,557,204
PRODUCTION OF ARYLPHOSPHINE HALIDES
Kurt Weinberg, Upper Saddle River, N.J., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Mar. 9, 1967, Ser. No. 621,763
Int. Cl. C07f *9/52*
U.S. Cl. 260—543 **6 Claims**

It has been discovered that arylphosphine halides can be produced by reacting an aryl halide with white phosphorus at elevated temperatures in the presence of a Lewis acid catalyst. To illustrate, chlorobenzene is reacted with white phosphorus at 340° to 350° C. in the presence of aluminum chloride catalyst to produce a mixture of phenylphosphine dichloride and diphenylphosphine chloride.

3,557,205
STABILIZATION OF POLYACID HALIDES
John E. Santo, West New York, and Jan E. Vandegaer, Wayne, N.J., assignors to Pennwalt Corporation, a corporation of Pennsylvania
No Drawing. Filed Aug. 23, 1967, Ser. No. 662,566
Int. Cl. C07c *51/50, 51/58*
U.S. Cl. 260—544 **9 Claims**

A stabilized organic polyacid halide solution containing a formamide and thionyl halide or sulfuryl halide. Example: Sebacyl chloride containing 1% thionyl chloride and 0.5% N,N-dimethylformamide.

3,557,206
N-HALOSULFOXIMINES
Warren I. Lyness, Mount Healthy, Ohio, assignor to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 6, 1967, Ser. No. 665,717
Int. Cl. C07c *145/00*
U.S. Cl. 260—551 **3 Claims**

Sulfoximines having a long chain alkyl group, a short chain alkyl group and an active halogen are useful as antibacterial, antifungal and bleach compounds, particularly in combination with an alkaline builder salt.

3,557,207
METHOD FOR RECOVERING N,N-DIMETHYLACETAMIDE
George S. Hammond, Pasadena, Calif., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Feb. 7, 1967, Ser. No. 614,423
Int. Cl. C07c *103/34*
U.S. Cl. 260—561 **3 Claims**

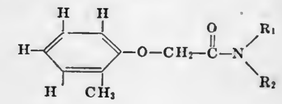
Mixtures of N,N-dimethylacetamide (DMAC) and acetic acid are treated with ketene to form acetic anhydride, which is then distilled whereupon DMAC is recovered.

3,557,208
N-(SUBSTITUTED PHENYL) TRIALKYL PHOSPHINE IMIDE
Stephen J. Kuhn, Sarnia, Ontario, Canada, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed May 8, 1968, Ser. No. 727,690
Int. Cl. C07f *9/28*
U.S. Cl. 260—551 **4 Claims**

The present disclosure is directed to N-(substituted phenyl) trialkyl phosphine imides. The method of preparation is taught as well as the use of these compounds as plant growth retarders.

3,557,209
PHENOXYACETAMIDES
Sidney B. Richter and Jordan P. Berliner, Chicago, Ill. assignors to Velsicol Chemical Corporation, Chicago, Ill., a corporation of Delaware
No Drawing. Continuation-in-part of applications Ser. No. 437,311, and Ser. No. 437,312, Mar. 4, 1965. This application Oct. 18, 1967, Ser. No. 676,089
Int. Cl. C07c *103/30*
U.S. Cl. 260—559 **7 Claims**

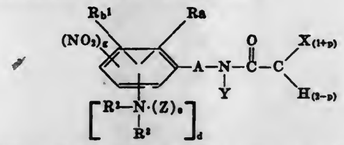
A compound of the formula:



wherein R_1 is selected from the group consisting of lower alkyl, lower alkenyl, lower alkynyl, haloalkyl, haloalkenyl, hydroxyalkyl, carboxyalkyl, lower alkoxyalkyl and cyanoalkyl; and R_2 is selected from the group consisting of hydrogen, lower alkyl, lower alkenyl, lower alkynyl, haloalkyl, haloalkenyl, hydroxyalkyl, carboxyalkyl, lower alkoxyalkyl and cyanoalkyl.

3,557,210
N-PHENYLALKENYL-2-HALOACETAMIDES
Philip C. Hamm, Glendale, and Angelo John Speziale, Creve Coeur, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed Nov. 20, 1967, Ser. No. 684,494
Int. Cl. C07c *103/30*
U.S. Cl. 260—562 **11 Claims**

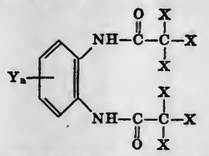
2-haloacetamides of the formula



wherein X is halogen (Cl, Br, F and I), *p* is an integer from 0 to 2 inclusive, A is alkenylene of at least 3 and not more than 6 carbon atoms, R is selected from the group consisting of akyl, alkenyl and alkoxy of not more than 4 carbon atoms, *a* is an integer from 0 to 5, R^1 is halogen (Cl, Br, F and I), *b* is an integer from 0 to 3, R^2 and R^3 are selected from the group consisting of hydrogen and alkyl of not more than 4 carbon atoms, *e*, *d* and *g* are each integers from 0 to 1, Z is an acid forming a phytotoxic acid addition salt, and Y is selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, phenyl and cinnamyl of not more than 12 carbon atoms. Utility as phytotoxicants.

3,557,211
SUBSTITUTED N,N'-BIS(ACETYL)-O-PHENYLENE DIAMINES
Edmund J. Rumanowski, Dover, N.J., assignor to Tenneco Chemicals, Inc., a corporation of Delaware
No Drawing. Filed Oct. 25, 1967, Ser. No. 677,853
Int. Cl. C07c *103/30*
U.S. Cl. 260—562 **6 Claims**

Compounds having the structural formula



wherein each X represents hydrogen, chlorine, or fluorine and each Y represents, halogen, lower alkyl, lower alkoxy, cyano, trifluoromethyl, or nitro, and *n* represents an integer in the range of zero to four; are useful in the control of the growth of plants, insects, and fungi. Illustrative of these compounds are N,N'-bis(trichloroacetyl)-4,5-dichloro-o-phenylene diamine, N,N'-bis(chloroacetyl)-4,5-dichloro-o-phenylene diamine, and N,N'-bis(trifluoroacetyl)-3,4,5-tribromo-o-phenylene diamine.

3,557,212
ETHYL AURAMINE PROCESS
Rill Lewis Groskios, Williamstown, W. Va., assignor to American Cyanamid Company
No Drawing. Filed Nov. 16, 1966, Ser. No. 594,668
Int. Cl. C07c *119/00*
U.S. Cl. 260—566 **8 Claims**

The recovery of ethyl auramine from the reaction product mixture obtained by the reaction of tetraethyldiaminophenylmethane with sulfur and ammonia in the presence of urea is substantially improved by an isolation procedure characterized by the combination of (a) a "basification" step and (b) an "acid-extraction" step. The procedure may be applied either in conjunction with or to the exclusion of the conventional hot water extraction of the filter cake obtained by "drowning" and filtering the reaction product mixture.

3,557,213
PROCESS FOR THE PREPARATION OF PHENYL-TRICHLOROACETOIMIDOCHLORIDES
Hans-Georg Schmelzer, Cologne-Stammheim, Eberhart Degener, Horst Tarnow, and Hans Holtschmidt, Leverkusen, Gunter Unterstenhofer, Opladen, and Wilfried Zecher, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Oct. 25, 1967, Ser. No. 677,877
Claims priority, application Germany, Oct. 28, 1966, F 50,560
Int. Cl. C07c *119/00*
U.S. Cl. 260—566 **15 Claims**

Reacting N-(2,2,2-trichloro-ethylidene)-(fluoro, chloro, bromo and/or trifluoromethyl and optionally alkyl and/or cyano)-substituted anilines with chlorine at elevated temperatures of, for example, about 80–250° C., optionally in the presence of a chlorination catalyst such as, for example, a Lewis acid, to form the corresponding (fluoro, chloro, bromo and/or trifluoromethyl and optionally alkyl, chloroalkyl and/or cyano)-substituted phenyl-trichloroacetoimidochlorides or N-(1,2,2,2-tetrachloro-ethylidene)-(fluoro, chloro, bromo and/or trifluoromethyl and optionally alkyl, chloroalkyl and/or cyano)-substituted anilines, some of which are known and which possess acaricidal properties.

3,557,214
PRODUCTION OF MONOQUATERNARY AMMONIUM HALIDES
Karl-Heinz Koenig and Horst Pommer, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Mar. 28, 1967, Ser. No. 626,421
Claims priority, application Germany, Mar. 31, 1966, 1,543,341
Int. Cl. C07c *85/04*
U.S. Cl. 260—567.6 **5 Claims**

Production of monoquaternary ammonium halides by reacting tertiary amines with α,ω-dihaloalkanes having more than 2 carbon atoms or with unsubstituted or substituted 1,2-dihaloethanes in the presence of water at 30 to 150° C. The halogen compounds, tertiary amines and water are used in the molar ratio of from 0.5:1:0.1 to 40:1:40. The products are suitable for regulating the growth height of plants.

3,557,215
PROCESS FOR THE PREPARATION OF CYCLOALKANOLS AND MIXTURES OF CYCLOALKANOLS AND CYCLOALKANONES
Jacques Paul Marie Bonnart, Lyon, Yannik Bonnet, Ecully, and Paul Pierre Marie Rey, Lyon, France, assignors to Rhone-Poulenc S.A.
No Drawing. Filed Apr. 17, 1967, Ser. No. 631,185
Claims priority, application France, Apr. 20, 1966, 58,341
Int. Cl. C07c *35/08, 45/00*
U.S. Cl. 260—586 **8 Claims**

The catalytic hydrogenation of cycloalkane, especially cyclohexane, hydroperoxides to produce cycloalkanols, alone or in admixture with cycloalkanones, is improved by adding water, in an amount greater than one molecule per molecule of hydroperoxide, to the hydrogenation mixture.

3,557,216
OXIDATION OF HYDROCARBONS
Theodore Wolfin Stein, Hastings-on-Hudson, N.Y., assignor to Halcon International, Inc., a corporation of Delaware
Filed July 25, 1966, Ser. No. 567,427
Int. Cl. C07c *27/12, 35/02, 45/02*
U.S. Cl. 260—586 **4 Claims**

The present invention pertains to the oxidation of hydrocarbons using a boron adjuvant and is specifically concerned with treatment of vapor from the oxidation reaction zone. In accordance with the present invention, water is added to vapors from the oxidation zone in amount so as to at least 60 percent saturate the vapors prior to cooling of the vapors and condensation of condensible materials contained therein.

3,557,217
PROCESS FOR UPGRADING OF CARBONYL STREAMS
Grover C. Royston, East Baton Rouge, La., assignor to Copolymer Rubber & Chemical Corporation, a corporation of Louisiana
No Drawing. Filed Aug. 18, 1967, Ser. No. 661,519
Int. Cl. C07c *49/08, 49/10*
U.S. Cl. 260—593 **14 Claims**

A byproduct carbonyl stream produced in the preparation of butadiene by the catalytic dehydrogenation of butylene, which contains water, acetone, methyl vinyl ketone and methyl ethyl ketone, is upgraded by a novel process wherein the water content is separated as a heavy phase by calcium chloride treatment, the acetone is removed by distillation, the methyl vinyl ketone is reacted with an ethylenically unsaturated compound, and thereafter the methyl ethyl ketone is separated from the reaction mixture.

3,557,218
POLYSUBSTITUTED DIHYDROPYRENES
Luther A. R. Hall, Woodcliff Lake, N.J., John A. Gurney, Tarrytown, N.Y., and Harris B. Renfroe, Montvale, N.J., assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 499,064, Oct. 20, 1965. This application Apr. 7, 1967, Ser. No. 635,287
Int. Cl. C07c *49/76*
U.S. Cl. 260—592 **4 Claims**

Photochromic 1,3,6,8-tetra(lower)alkyl-15,16-dimethyl-15,16-dihydropyrenes, 15,16-methylene-15,16-dihydropyrenes, 15,16-methylene-15,16-dihydropyrenes and 1,3,6,8-tetra(lower)alkyl-15,16-methylene-15,16-dihydropyrenes substituted in one or both of the 2- and 7-positions benzoyl, alkanoyl, alkanoyloxy, cyano, nitro, alkyl, α-hydroxyalkyl, α-acyloxyalkyl, α-isonitrosoalkyl, or acylamido groups are prepared via substitution of the parent hydrocarbon. A typical embodiment is 2-acetamido-7-nitro-1,3,6,8,15,16-hexamethyl-15,16-dihydropyrene.

3,557,219
PROCESS FOR PREPARING ALCOHOLS AND ALDEHYDES
Lawrence J. Kehoe, Huntington Woods, and Raymond A. Schell, Berkley, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Apr. 15, 1968, Ser. No. 721,187
Int. Cl. C07c *45/10*
U.S. Cl. 260—604 **22 Claims**

A process is described for preparing alcohols, aldehydes, and mixtures thereof, by reacting olefins, carbon monoxide and water using metallic rhodium as the catalyst. The reaction is carried out at elevated temperatures (to about 300° C.) and under pressures above atmospheric (to 20,000 p.s.i.).

The alcohols and/or aldehyde produced contain one carbon atom more than the starting olefin; they are especially useful as solvents and intermediates for the preparation of carboxylic acids for example.

3,557,220
ETHYNYLATION OF ALDEHYDES AND KETONES
Ricardo O. Bach and Conrad W. Kamienski, Gastonia, Matthew Henry Dellinger, Cherryville, Luther C. Mitchem, Lowell, and Robert C. Morrison, Gastonia, N.C., assignors to Lithium Corporation of America, Inc., New York, N.Y., a corporation of Minnesota
No Drawing. Original application Sept. 6, 1966, Ser. No. 577,161, now Patent No. 3,445,534, dated May 20, 1969. Divided and this application Dec. 9, 1968, Ser. No. 797,302
Int. Cl. C07c *27/18*
U.S. Cl. 260—617 **7 Claims**

Ethynylation of aldehydes and ketones utilizing, as the ethynylating agent, a solution comprising the reaction product of acetylene with a suspension of lithium carbide in liquid ammonia.

3,557,221
PROCESS FOR PREPARING ALLYLIC ALCOHOLS
David Evans O'Connor, Dobbs Ferry, N.Y., and Warren Irl Lyness, Mount Healthy, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
No Drawing. Original application Sept. 30, 1964, Ser. No. 400,581, now Patent No. 3,336,394. Divided and this application June 20, 1967, Ser. No. 647,346
Int. Cl. C07c *29/00, 31/02, 47/14*
U.S. Cl. 260—618 **1 Claim**

Process for preparing allylic alcohols by reacting β–γ unsaturated alkyl alkyl sulfoxides with specific strong bases in specific solvents.

3,557,222
HYDROLYSIS OF BENZYL CHLORIDE TO BENZYL ALCOHOL
Henry W. Withers, Jr., and John L. Rose, Jr., Chattanooga, Tenn., assignors to Velsicol Chemical Corporation, Chattanooga, Tenn., a corporation of Tennessee
No Drawing. Filed Feb. 19, 1968, Ser. No. 706,677
Int. Cl. C07c *29/00*
U.S. Cl. 260—618 **10 Claims**

A continuous process for preparing benzyl alcohol which comprises continuously charging benzyl chloride and an aqueous alkaline solution to a hydrolysis zone at a rate adjusted to provide turbulent flow therein, effecting the hydrolysis of the benzyl chloride to form benzyl alcohol at elevated temperature and pressure within the hydrolysis zone, continuously withdrawing the effluent from the hydrolysis zone and thereafter recovering the benzyl alcohol contained therein.

3,557,223
HYDROGENATION OF ARALKYL KETONES
Paul N. Rylander, Newark, and Lillian G. Hasbrouck, Boonton, N.J., assignors to Engelhard Minerals & Chemicals Corporation, Newark, N.J., a corporation of Delaware
Filed Mar. 14, 1969, Ser. No. 807,307
Int. Cl. C07c *29/00*
U.S. Cl. 260—618 **3 Claims**

Catalytic reduction of aralkyl ketones to aralkyl alcohols with minimum hydrogenolysis and minimum

ring reduction is effected by hydrogenation of aralkyl ketones in the presence of an osmium catalyst.

3,557,224
PROCESS FOR THE MANUFACTURE OF PERFLUOROALKYLIODIDES
Horst Jaeger, Bettingen, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Filed Sept. 25, 1968, Ser. No. 762,649
Claims priority, application Switzerland, Oct. 4, 1967, 13,835/67
Int. Cl. C07c *17/28*
U.S. Cl. 260—653.1 **8 Claims**

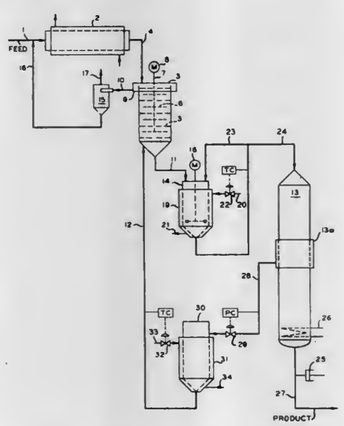
A process is provided for the manufacture of perfluoroalkyliodide telomers from the corresponding monomers, in which a perfluoroalkyliodide is telomerized with a perfluoroethylene or a perfluoropropylene containing at most one chlorine atom in the present of a catalyst pair consisting of a metal salt of Group 1*b* or 2*b* of the Periodic Table and an amine at 50 to 350° C. and under a pressure from 0 to 200 atmospheres (gauge).

The so-obtained products are useful as intermediates for the manufacture of reactive compounds. The latter may be used for making oleophobizing textile auxiliaries or surface active compounds.

3,557,225
STORAGE OF DIENES
Donald H. Kubicek, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Feb. 17, 1969, Ser. No. 799,994
Int. Cl. B01j *1/16;* **C07c** *7/18;* **C09k** *3/00*
U.S. Cl. 260—666.5 **11 Claims**

A diene is admixed with 0.1 to 3 percent of a nickel complex, the mixture is stored in the presence of oxygen and the diene product is recovered from storage. The nickel complex prevents formation of dangerous amounts of oxygenated compounds during storage.

3,557,226
CRYSTAL SEPARATION AND PURIFICATION
Fred T. Sherk, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Apr. 7, 1967, Ser. No. 629,214
Int. Cl. C07c *7/14*
U.S. Cl. 260—674 **6 Claims**



A multi-component fluid stream is partially frozen and passed to an agitated multi-stage solids conditioner wherein it is contacted with a mother liquor stream from, for example, a crystal purification column. A resulting conditioned crystal slurry can then be passed from the solids conditioner to a crystal purification zone as feed.

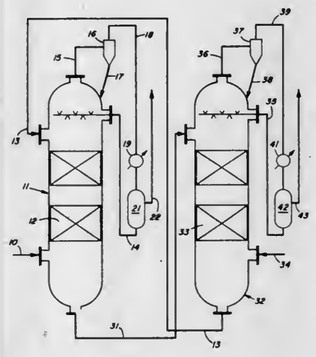
3,557,227
METHOD OF PRODUCING 1,2,4,5-TETRACHLOROBENZENE
Mike M. Fooladi, Atlanta, Ga., assignor to Sonford Chemical Company, Port Neches, Tex., a corporation of Illinois
No Drawing. Filed Dec. 10, 1968, Ser. No. 782,724
Int. Cl. C07c *25/00, 25/02*
U.S. Cl. 260—650 **1 Claim**

1,2,4,5-tetrachlorobenzene is produced by chlorinating lower chlorinated benzenes or benzene in the presence of iodine and antimony trichloride.

3,557,228
DEHYDROHALOGENATION OF HALOGENATED ORGANIC COMPOUNDS IN DIMETHYL SULFOXIDE SOLVENT
Patricia H. Moyer and Siegfried E. Penner, Wichita, Kans., assignors to Vulcan Materials Company, Birmingham, Ala., a corporation of New Jersey
No Drawing. Filed Jan. 17, 1969, Ser. No. 792,171
Int. Cl. C07c *17/34, 21/06, 21/08*
U.S. Cl. 260—653.5 **9 Claims**

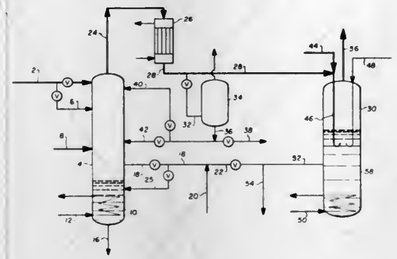
A liquid system containing an alkali metal hydroxide or a quaternary ammonium hydroxide dispersed or dissolved in a solvent which comprises dimethyl sulfoxide is used to dehydrohalogenate halogen-containing organic compounds in liquid phase. This dehydrohalogenation system is particularly useful in making vinylidene fluoride at high conversion and high selectivity by dehydrohalogenation of 1,1,1-halodifluoroethane in liquid phase.

3,557,229
OXYCHLORINATION OF ETHANE TO VINYL CHLORIDE
Herbert Riegel, Maplewood, N.J., assignor to The Lummus Company, New York, N.Y., a corporation of Delaware
Filed Aug. 23, 1967, Ser. No. 662,623
Int. Cl. C07c *21/06, 17/10*
U.S. Cl. 260—656 **6 Claims**



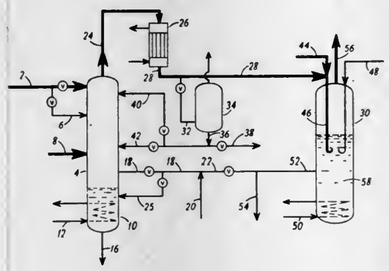
A process for producing chlorinated hydrocarbons wherein an aliphatic hydrocarbon is oxychlorinated in the presence of a melt of an oxychlorination catalyst. Thus, for example, vinyl chloride may be produced by reacting ethane with oxygen and hydrogen chloride in the presence of a copper chloride melt.

3,557,230
PRODUCTION OF CHLOROMETHANES
Bruce E. Kurtz, Marcellus, and Robert H. Fitch, Syracuse, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed May 5, 1969, Ser. No. 821,655
Int. Cl. C07c *17/00*
U.S. Cl. 260—657 **5 Claims**



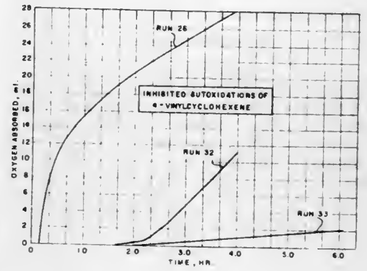
This invention relates to the preparation of chloromethanes from methyl chloromethyl ether by reacting at elevated temperatures methyl chloromethyi ether with hydrogen chloride in the presence of an ether-cleaving agent comprising chlorosulfonic acid preferably having dissolved therein a minor amount of mercury. The methyl chloromethyl ether is prepared by reacting essentially equimolar proportions of methyl alcohol and formaldehyde and contacting this mixture in countercurrent relationship with hydrogen chloride in a reaction vessel at elevated temperatures.

3,557,231
PRODUCTION OF CHLOROMETHANES
Bruce E. Kurtz, Marcellus, Alan G. Follows, Camillus, and Winslow H. Hartford, Fayetteville, N.Y., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed May 5, 1969, Ser. No. 821,749
Int. Cl. C07c *17/00*
U.S. Cl. 260—657 **4 Claims**



This invention relates to the preparation of chloromethanes from methyl chloromethyl ether by reacting at elevated temperatures methyl chloromethyl ether with hydrogen chloride in the presence of an ether-cleaving agent comprising sulfur trioxide dissolved in sulfuric acid, and preferably having dissolved therein a minor amount of mercury. The methyl chloromethyl ether is prepared by reacting essentially equimolar proportions of methyl alcohol and formaldehyde and contacting this mixture in countercurrent relationship with hydrogen chloride in a reaction vessel at elevated temperatures.

3,557,232
AUTOXIDATION INHIBITION WITH CHLORINATED HYDROCARBONS
William H. Starnes, Jr., Baytown, Tex., assignor to Esso Research and Engineering Company
Filed Nov. 13, 1968, Ser. No. 775,256
Int. Cl. C07c *7/08, 7/18;* **B01i** *1/16*
U.S. Cl. 260—666.5 **10 Claims**



The metal-catalyzed autoxidation of organic substrates is inhibited by certain chlorinated hydrocarbons. The chlorinated hydrocarbons together with phenols are strongly synergistic as inhibitors for the metal-catalyzed autoxidation of hydrocarbons.

3,557,233
AROMATIC HYDROCARBONS SUBSTITUTED BY PHENYLETHYNYL GROUPS
Arnold Zweig, Westport, and Donald Roy Maulding, Stamford, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Filed Mar. 14, 1968, Ser. No. 712,922
Int. Cl. C07c *5/12*
U.S. Cl. 260—668 **1 Claim**

This invention relates to a chemiluminescent system to obtain chemiluminescent light by reacting an oxalic-type compound of the group consisting of (a) an oxalic-type anhydride, (b) an oxalic-type amide, (c) an oxalic-type O-acylhydroxylamine, and (d) an oxalic-type ester with a hydroperoxide compound in the presence of a solvent and a phenylethynyl-substituted aromatic compound as a fluorescer.

3,557,234
PRODUCTION OF ETHYLBENZENE AND BENZENE FROM TOLUENE
Joseph Peter Henry, South Charleston, and Roger Harry Garst, St. Albans, W. Va., assignors to Union Carbide Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 27, 1968, Ser. No. 787,620
Int. Cl. C07c *15/04*
U.S. Cl. 260—668 **12 Claims**

Ethylbenzene and benzene are produced from toluene by a unique process which comprises first coupling the toluene under the influence of heat, using elemental sulfur. The products of the coupling reaction are bibenzyl, stilbene and some sulfur-containing compounds. The entire product of the coupling reaction is then subjected to a combined hydrodesulfurization and hydrodealkylation reaction to produce ethylbenzene and benzene as the ultimate major products.

3,557,235
PRODUCTION OF ETHYLBENZENE AND BENZENE FROM TOLUENE

Joseph Peter Henry and Fred Noble Hill, South Charleston, and Roger Harry Garst, St. Albans, W. Va., assignors to Union Carbide Corporation, New York, N.Y., a corporation of New York

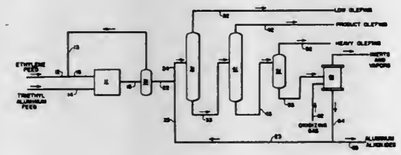
No Drawing. Filed Dec. 27, 1968, Ser. No. 787,621
Int. Cl. C07c *15/04*
U.S. Cl. 260—668 **8 Claims**

Ethylbenzene and benzene are produced from toluene by a unique process which comprises first coupling the toluene in the presence of a catalyst and in the vapor phase to produce bibenzyl and stilbene. The oxidatively coupled products are then diluted with benzene and catalytically hydrodealkylated to produce ethylbenzene and benzene as the ultimate major products.

3,557,236
PROCESS FOR RECOVERING OLEFINS FROM MIXTURES WITH ALUMINUM ALKYLS

John K. Presswood and Walter E. Foster, Baton Rouge, La., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia

Application Mar. 16, 1967, Ser. No. 634,015, now Patent No. 3,400,170, which is a continuation-in-part of abandoned application Ser. No. 198,113, May 28, 1962. This application Mar. 18, 1968, Ser. No. 713,654
Int. Cl. C07c *11/02*
U.S. Cl. 260—677 **9 Claims**



The separation of olefin materials from trialkyl aluminum materials is enhanced by reacting such mixtures with dry air to convert a portion, at least about one-third, of all trialkyl aluminum molecules to at least a mono alkoxy aluminum species and vaporizing at least a portion of the olefins at elevated temperature. Enhanced separation is obtained and isomerization, dimerization and other reactions usually otherwise catalyzed by trialkyl aluminum materials at the separation temperatures are minimized. The olefin materials and trialkyl aluminum materials can be in liquid or vapor phases or combinations. Generally speaking, the olefins are then recovered as a vapor and the aluminum materials as liquid.

3,557,237
PROCESS FOR PREPARING 1,4-SUBSTITUTED-1,3-BUTADIYNES

Chester E. Pawloski, Bay City, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 31, 1968, Ser. No. 748,975
Int. Cl. C07c *11/22, 11/28*
U.S. Cl. 260—678 **10 Claims**

1,4-substituted-1,3-butadiynes having the formula

$$R—C\equiv C—C\equiv C—R$$

are made by a process comprising coupling compounds having the formula

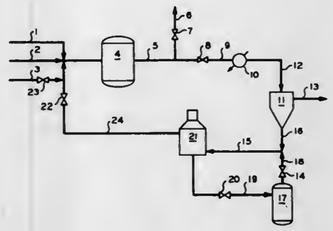
$$Br—C\equiv C—R$$

where each R independently is alkyl, alkoxyalkyl, phenyl, phenoxyalkyl or phenalkoxyalkyl in the presence of a catalytic solution comprising an aqueous solution of CuBr and a non-metallic source of chloride or bromide ions. These 1,4-substituted-1,3-butadiynes are useful as chemical intermediates, fuels, e.g. in welding or cutting applications, and have biological activity.

3,557,238
OXIDATIVE DEHYDROGENATION BY-PRODUCT ELIMINATION

Sheldon A. Cunningham, Borger, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Nov. 6, 1967, Ser. No. 680,671
Int. Cl. C07c *5/18*
U.S. Cl. 260—680 **7 Claims**

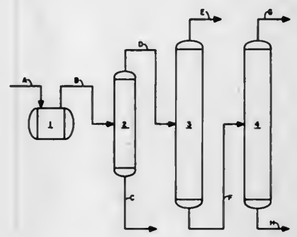


Oxygenated hydrocarbons produced in the dehydrogenation of hydrocarbons are recycled to the reactor during the dehydrogenation and/or catalyst regeneration cycles to convert the same to carbon oxides and water.

3,557,239
TREATMENT OF ISOPRENE STREAMS

Herbert J. Gebhart, Jr., Ferguson, and Earle C. Makin, Jr., St. Louis, Mo., and Charles H. Middlebrooks, Dickinson, Tex., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Continuation-in-part of abandoned application Ser. No. 634,577, Apr. 28, 1967. This application Dec. 31, 1969, Ser. No. 889,692
Int. Cl. C07c *7/00*; B01d *3/14, 3/34*
U.S. Cl. 260—681.5 **6 Claims**



A process for the separation of a C_5 hydrocarbon stream into its components by first heat-treating the stream at temperatures of 90 to 110° C. for 1–3 hours, to dimerize a major portion of the cyclopentadiene, followed by three successive distillations to produce four concentrates, a dicyclopentadiene concentrate, a concentrate of constituents more volatile than isoprene, an isoprene concentrate, and piperylenes concentrate.

3,557,240
DIMERIZATION OF CYCLOPENTADIENE IN ISOPRENE STREAMS

Herbert J. Gebhart, Jr., Ferguson, and Earle C. Makin, Jr., St. Louis, Mo., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

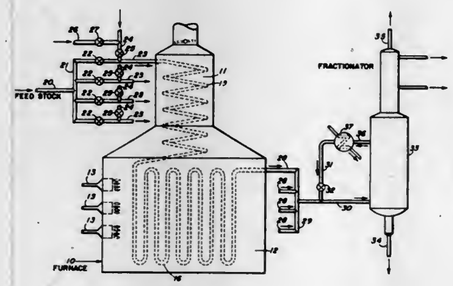
No Drawing. Continuation-in-part of abandoned application Ser. No. 634,494, Apr. 28, 1967. This application Dec. 31, 1969, Ser. No. 889,700
Int. Cl. B01d *3/14, 3/34*; C07c *7/00*
U.S. Cl. 260—681.5 **4 Claims**

A process for dimerizing the cyclopentadiene in a stream containing cyclopentadiene and a C_5 conjugated diolefin comprising heat-treating the stream from one to three hours at a temperature of from 90 to 110° C. The pressure is regulated during the heat-treatment so that the stream is boiling.

3,557,241
DECOKING OF ONSTREAM THERMAL CRACKING TUBES WITH H_2O AND H_2

John A. Kivlen, Sparta, and Ihor Koszman, Parsippany, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware

Filed Oct. 16, 1968, Ser. No. 768,065
Int. Cl. C07c *3/00*; C10g *9/12*
U.S. Cl. 260—683 **11 Claims**



Thermal cracking of hydrocarbons in admixture with steam in tubes arranged in a cracking furnace leads to the deposition of coke on the interior walls of the tubes, which coke must be periodically removed in order to maintain cracking efficiency; the coke can be removed, without shutting down the furnace, by cutting out the feed to at least one tube and passing through such tube or tubes a decoking feed of steam and/or water and hydrogen, while maintaining the furnace onstream and continuing the thermal cracking process in tubes that are not being decoked.

3,557,242
DIMERISATION OF OLEFINES

Roy John Sampson and John Melvyn Thomas, Norton-on-Tees, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain

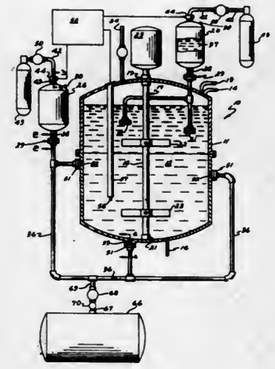
No Drawing. Filed Mar. 3, 1969, Ser. No. 804,021
Claims priority, application Great Britain, Mar. 4, 1968, 10,290/68
Int. Cl. C07c *3/20*
U.S. Cl. 260—683.15 **3 Claims**

A process for dimerising or codimerising an olefine or olefine mixture using a silica-alumina catalyst incorporating nickel oxide or a nickel salt, wherein the proportion of alumina in the catalyst is within the range of from 0.1 to 10% by weight.

3,557,243
AUTOMATIC INDEPENDENTLY FUNCTIONING SPARGING APPARATUS

William J. Boyle, Jr., Springfield, Lauren R. Davis, Ludlow, and Tevis Shusman, Longmeadow, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

Filed Feb. 23, 1968, Ser. No. 707,927
Int. Cl. C07b *29/00*; B01j *1/00, 3/00*
U.S. Cl. 260—698 **4 Claims**



An automatic sparging apparatus for admixing reaction retardant chemicals with a liquid reaction mixture of reactants and reaction products in a pressurizable reactor, and associated methods for using the same.

3,557,244
PROCESS FOR THE PRODUCTION OF POLYMERS AND COPOLYMERS OF VINYL CHLORIDE HAVING A REDUCED MOLECULAR WEIGHT

Klaus Schrage, Thomasberg, Germany, assignor to Dynamit Nobel AG, Troisdorf, Bezirk Cologne, Germany, a corporation of Germany

No Drawing. Filed Jan. 3, 1969, Ser. No. 788,919
Claims priority, application Germany, Jan. 9, 1968, 1,720,529
Int. Cl. C08f *1/62*
U.S. Cl. 260—78.5 **9 Claims**

Improved vinyl chloride polymerization process carried out in bulk with a redox catalyst in the presence of a lower alcohol and an α-hydroxy ketone.

3,557,245
POLYMERIC ANTIOXIDANTS FOR ELASTOMERS AND RUBBERS

Leslie Nathan Phillips, Farnborough, David Kenneth Thomas, Farnham, and William Walter Wright, Farnborough, England, assignors to Minister of Technology in Her Britannic Majesty's Government of the United Kingdom of Great Britain and Northern Ireland, London, England

No Drawing. Filed Sept. 11, 1967, Ser. No. 666,969
Claims priority, application Great Britain, Sept. 12, 1966, 40,674/66
Int. Cl. C08g *33/06, 45/10*
U.S. Cl. 260—824 **10 Claims**

Silicone type rubber compositions are provided having, as the antioxidant, polymeric material in which the re-

peating unit of the polymer chain is an —NH— group attached to a difunctional aromatic group.

3,557,246
HALF ESTER OF A POLYEPOXIDE WITH A SATURATED AND UNSATURATED DICARBOXYLIC ACID ANHYDRIDE AND A VINYL MONOMER
Newton C. Foster, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 27, 1967, Ser. No. 678,703
Int. Cl. C08g *45/04*
U.S. Cl. 260—837 **17 Claims**

Compositions of months-long catalyzed pot life at room temperature and hence especially suitable for coating large objects, are made by mixing (a) the product of the uncatalyzed half-esterification of epoxy resin with an olefinically unsaturated dicarboxylic acid anhydride (e.g., maleic anhydride), (b) a coreactive vinyl monomer (e.g., styrene), (c) a polycarboxylic anhydride containing no olefinic unsaturation (e.g., NADIC methyl anhydride (NMA), viscous liquid methylbicyclo[2.2.1]heptene-2,3-dicarboxylic anhydride isomers) and (d) polymerization catalysts and inhibitors. Upon heating, the composition cures to a thermoset resin. The basic composition is modified with fillers and additives for use as potting compounds, encapsulants, castings, laminate adhesives, etc.

3,557,247
ACRYLONITRILE GRAFT POLYMERS ON POLYAMIDE SUBSTRATE
Helmut Engelhard, Leverkusen, Francis Bentz, Cologne, and Ferdinand Bodesheim and Günther Nischk, Dormagen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Nov. 18, 1968, Ser. No. 776,787
Claims priority, application Germany, Nov. 28, 1967, F 54,137
Int. Cl. C08g *41/04*
U.S. Cl. 260—857 **2 Claims**

This invention relates to acrylonitrile graft polymers having an improved affinity to acid dyes. The used graft substrates consist of linear polyamides containing at least one quaternized nitrogen atom for every two amide groups. The graft copolymers being prepared by polymerizing acrylonitrile together with other copolymerizable monomers in an aqueous medium, said polymerizing being effected in the presence of the linear polyamide as graft substrate and in the presence of a redox-catalyst system.

3,557,248
PROCESS FOR WEAKENING THE HYDROPHOBIC BEHAVIOR OF ALKENE POLYMERS
Mathijs J. M. G. Kisters, Geleen, Netherlands, assignor to Stamicarbon N.V., Heerlen, Netherlands
No Drawing. Filed July 12, 1968, Ser. No. 745,336
Claims priority, application Netherlands, July 14, 1967, 6709859
Int. Cl. C08d *3/04;* **C08f** *15/20*
U.S. Cl. 260—85.7 **4 Claims**

A process for weakening the hydrophobic behavior of alkene polymers is disclosed, wherein a polymer or a copolymer of an alkene is mixed with (a) 0.05–2% by weight of a mono- or diester of a hexavalent, partly dehydrated alcohol and an aliphatic carboxylic acid having 12–22 carbon atoms, and (b) 0.01–0.5% by weight of an amide of an aliphatic carboxylic acid having 12–22 carbon atoms.

3,557,249
THERMOSETTING ALLYL RESINS
Bobby F. Dannels and Alvin F. Shepard, Grand Island, N.Y., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
No Drawing. Filed Dec. 30, 1968, Ser. No. 788,008
Int. Cl. C08g *22/08, 22/16, 41/04*
U.S. Cl. 260—858 **18 Claims**

There is provided a polymerizable composition comprising (A) at least one polymerizable member of the group of (1) the product of a process which comprises reacting an organic polyisocyanate with an alcohol selected from the group consisting of allyl alcohol, methallyl alcohol and mixtures thereof, and thereafter heating the resulting adduct until there are substantially no free isocyanato groups in the product, (2) the product of a process which comprises reacting an organic polyisocyanate with an alcohol selected from the group consisting of allyl alcohol, methallyl alcohol and mixtures thereof, and thereafter reacting the resulting adduct with with a polyol, and (3) the product of a process which comprises reacting an organic polyisocyanate with an alcohol selected from the group consisting of allyl alcohol, methallyl alcohol and mixtures thereof, and thereafter reacting the resulting adduct with an alkyd resin; and (B) a free radical catalyst. The polymerizable mixtures are useful for many purposes such as in the production of reinforced and laminated plastic articles, and in the preparation of molded articles.

3,557,250
POLYVINYL ALCOHOL COMPOSITION
Kiyokazu Imai and Takuji Okaya, Kurashiki, Japan, assignors to Kurashiki Rayon Co., Ltd., Kurashiki, Japan, a corporation of Japan
No Drawing. Filed July 24, 1967, Ser. No. 655,329
Claims priority, application Japan, Aug. 5, 1966, 41/51,600; Oct. 11, 1966, 41/66,802
Int. Cl. C08f *29/26*
U.S. Cl. 260—874 **7 Claims**

A composition or shaped article consisting of 0.1–80% by weight of polyvinyl alcohol having as a terminal group a higher saturated aliphatic hydrocarbon derivative residual group and 99.9–20% by weight of normal polyvinyl alcohol.

3,557,251
COMPOSITIONS COMPRISING A VINYL CHLORIDE RESIN AND A GRAFT POLYMER
Akira Tanaka and Koji Kato, Yokohama, and Shingo Futamura, Tokyo, Japan, assignors to The Japanese Geon Company, Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Dec. 27, 1967, Ser. No. 693,722
Claims priority, application Japan, Dec. 28, 1966, 42/85,406
Int. Cl. C08f *29/24, 41/12*
U.S. Cl. 260—876 **4 Claims**

Vinyl chloride resin compositions comprising a vinyl chloride resin [I] selected from the group consisting of vinyl chloride homopolymers and vinyl chloride copolymers containing at least 70% by weight of vinyl chloride, and a graft copolymer [II] obtained by graft copolymerizing acrylonitrile and an aromatic vinyl and an acrylic acid alkyl ester to an acrylonitrile-aromatic vinyl-butadiene trunk copolymers.

3,557,252
POLY(VINYL HALIDE) COMPOSITIONS
Henry L. Hsieh, Bartlesville, Okla., and Francis X. Mueller, Jr., Louisville, Ky., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Jan. 17, 1969, Ser. No. 792,168
Int. Cl. C08f *29/24*
U.S. Cl. 260—876 **7 Claims**

A poly(vinyl halide) is mixed with a block copolymer of conjugated dienes and lactones or with block copolymers of monovinyl-substituted aromatic compounds, conjugated dienes and lactones to form a composition with improved impact resistance.

3,557,253
METHOD OF PRODUCING VINYL CHLORIDE RESINS
Katsumi Sugimoto and Yoshio Kondo, Tokyo, and Sachio Fukui, Yokohama, Japan, assignors to The Japanese Geon Company, Ltd., Tokyo, Japan, a corporation of Japan
No Drawing. Filed Oct. 10, 1967, Ser. No. 674,099
Claims priority, application Japan, Oct. 14, 1966, 41/67,277
Int. Cl. C08f *25/00*
U.S. Cl. 260—878 **14 Claims**

A method of producing vinyl chloride resins which comprises graft polymerizing to a mixture of (1) at least one elastomer selected from the group consisting of the ethylene-vinyl ester copolymers, the ethylene-acrylic acid ester copolymers and the ethylene-vinyl ester acrylic acid ester ternary copolymers, and (2) at least one elastomer selected from the group consisting of the ethylene-propylene copolymers, the ethylene-propylene-nonconjugated diolefin ternary copolymers, butyl rubber and chlorinated butyl rubber, vinyl chloride or a monomeric mixture of vinyl chloride with a small amount of one or more co-monomers, said first and second-named elastomers and said monomer being used in the amounts, on a weight basis, of 1 to 15%, 2 to 15% and 97 to 70%, respectively.

3,557,254
POLYMERIZATION PROCESS
Rudolf Friedrich Bauer, Kingston, Ontario, and Edward Blake Storey, Sarnia, Ontario, Canada, assignors to Polymer Corporation Limited, Sarnia, Ontario, Canada, a body corporate
No Drawing. Filed June 29, 1967, Ser. No. 649,862
Claims priority, application Canada, July 22, 1966, 966,078
Int. Cl. C08f *15/40*
U.S. Cl. 260—879 **5 Claims**

A process for the production of transparent thermoplastic copolymers of the acrylonitrile-butadiene-styrene type. Polymerization is conducted in the presence of an organic diperoxide having peroxide groups activatable at different temperatures and the process steps include (1) polymerizing at a low temperature butadiene alone or in admixture with styrene and/or acrylonitrile, (2) adding butadiene and/or styrene and/or acrylonitrile monomer(s) and (3) polymerizing the added monomer(s) at a higher temperature.

3,557,255
PIVALOLACTONE-DIENE BLOCK COPOLYMERS AND THEIR PREPARATION
William H. Sharkey, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Mar. 21, 1969, Ser. No. 809,418
Int. Cl. C08f *15/40, 19/08*
U.S. Cl. 260—879 **14 Claims**

Block copolymers of the ABA type are described in which both A units are polypivalolactone, or optionally one A unit is polystyrene, and the B unit is a polydiene (isoprene or butadiene). The block copolymers are useful elastomers which require no vulcanization. When the two A units are the same, the polydiene unit is first formed with two "living" anionic groups, e.g., from sodium or lithium, and polypivalolactone formed from the ends. When polystyrene is present, it is first formed with n-butyllithium, the diene polymerized on the "living end" of the polystyrene, and the polypivalolactone produced on the "living end" of the diene.

3,557,256
POWDER THERMOSETTING COMPOSITIONS BASED ON BULK POLYMERIZED POLYVINYL CHLORIDE AND POLYACRYLATE PLASTICIZER
Irving E. Muskat, Miami, Fla., assignor to C-J Corporation, a corporation of Delaware
No Drawing. Filed June 4, 1969, Ser. No. 830,550
Int. Cl. C08f *15/28*
U.S. Cl. 260—884 **22 Claims**

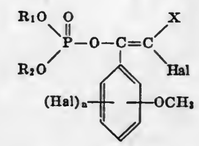
Polyvinyl chloride products possessing thermoset characteristics and which are hard, strong and tough, are produced by curing under heat and pressure a powder in which a polyacrylate plasticizer is absorbed by particles of polymerized thermoplastic polyvinyl chloride free of emulsifying and suspending agents such as bulk polymerized polyvinyl chloride.

3,557,257
PHOSPHORIC, PHOSPHONIC, THIONO-PHOSPHORIC AND THIONO-PHOSPHONIC ACID ESTERS
Gerhard Schrader, Wuppertal-Cronenberg, and Wolfgang Behrenz, Cologne-Stammheim, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Sept. 4, 1968, Ser. No. 758,189
Claims priority, application Germany, Sept. 9, 1967, 1,668,018
Int. Cl. A01n *9/36;* **C07f** *9/08, 9/16*
U.S. Cl. 260—940 **10 Claims**

(Alkyl and O - alkyl) - O - alkyl - O - (4 - [(alkylmercapto-cyano)-methylmercapto] - phenyl) - phosphoric, phosphonic, thionophosphoric and thionophosphonic acid esters, i.e. (alkyl and O-alkyl)-O-alkyl-O-(4-[(α-alkylmercapto)-cyanomethylmercapto] - phenyl) - phosphoric, phosphonic, thionophosphoric and thionophosphonic acid esters which possess pesticidal, especially insecticidal, acaricidal, and nematicidal, properties and which may be produced by reacting the corresponding phosphoric (phosphonic) and thiono-phosphoric (phosphonic) acid ester halide with the appropriate 4-(alkylmercapto-cyano)-methylmercaptophenol compound.

3,557,258
O,O-DILOWER ALKYL-2-HALO-1-(HALOMETHOXYPHENYL)-VINYL PHOSPHATE
Ernst Beriger, Allschwil, and Ladislaus Pinter, Basel, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland
No Drawing. Filed Jan. 8, 1968, Ser. No. 696,119
Claims priority, application Switzerland, Jan. 18, 1967, 803/67
Int. Cl. A01n *9/36;* **C07f** *9/12*
U.S. Cl. 260—951 **6 Claims**

The present invention relates to new phosphoric acid esters of the formula:



(I)

in which R_1 and R_2 may be identical or different and each represents a low alkyl, alkenyl, alkoxyalkyl or alkylthioalkyl radical, "Hal" represents a chlorine, a bromine or an iodine atom, X represents a hydrogen or a halogen atom, especially a chlorine or a bromine atom and *n* stands for 1, 2 or 3, as well as to pesticidal preparations, which contain, as active principle, a phosphoric acid ester as defined above, together with a suitable carrier.

3,557,259
MONO-OMEGA-ALKYNYL DI(ARYL- OR ARALKYL) PHOSPHINATES

Ronald Eugene Montgomery, Middleport, and Harry Hobart Incho, Medina, N.Y., assignors to FMC Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of applications Ser. No. 540,175, Apr. 5, 1966; Ser. No. 559,412 and Ser. No. 559,422, both of June 22, 1966; Ser. No. 559,745, June 23, 1966; Ser. No. 624,689, Mar. 21, 1967; and Ser. No. 630,204, Apr. 12, 1967. This application Apr. 27, 1967, Ser. No. 634,121

Int. Cl. A01n *9/36*; C07f *9/30*

U.S. Cl. 260—956 11 Claims

Synergistic insecticidal combinations of esters of chrysanthemumic acid, e.g. pyrethrins, allethrin, and related compounds, with mono-ω-alkynyl di(aryl- or aralkyl) phosphinates are described. The preparation and properties of representative members of this new of synergistic phosphinates are described, and test results of their synergistic combinations with representative chrysanthemumates are reported.

3,557,260
METHOD OF PREPARING PHOSPHATE ESTERS USING METAL SULFATE CATALYSTS

Arthur E. Gurgiolo, Lake Jackson, Tex., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 2, 1967, Ser. No. 635,343

Int. Cl. C07f *9/08, 9/16*

U.S. Cl. 260—977 13 Claims

Haloalkyl phosphate and phosphite esters are prepared by reacting an epoxide with a phosphorus oxyhalide or halo phosphite with an epoxide in the presence of small amounts of free water or up to 18 moles of water of crystallization present in a sulfate of a di-, tri-, or tetravalent metal having an atomic number from 12–82, inclusive. The tris(haloalkyl) phosphate and phosphite esters have known utility as fire-retardant plasticizers for vinyl and cellulose ester polymers.

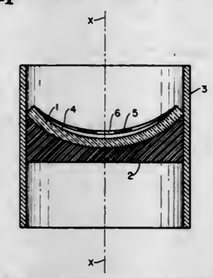
3,557,261
METHOD OF CENTRIFUGALLY CASTING LAYERED CONTACT LENSES

Otto Wichterle, Prague, Czechoslovakia, assignor to Ceskoslovenska akademie ved, Prague, Czechoslovakia

Continuation-in-part of applications Ser. No. 593,643, Nov. 14, 1966, and Ser. No. 423,034, Jan. 4, 1965. This application Oct. 5, 1967, Ser. No. 673,026

Int. Cl. B29d *11/00*; G02c *7/04*

U.S. Cl. 264—1 4 Claims



A mixture of ethyleneglycol monomethacrylate with a little ethyleneglycol dimethacrylate is polymerized in a mold rotating about an axis perpendicular to a spherically concave mold face to form a shape-retaining hydrophilic polymer layer. A very thin layer of opaque matter is deposited on the exposed polymer face and covered with a second layer of the same polymer. The opaque material may simulate the iris, pupil, and/or sclera of an eye when the laminar product is ultimately swelled by contact with physiological saline solution prior to use as a soft contact lens or as part of an artificial eye.

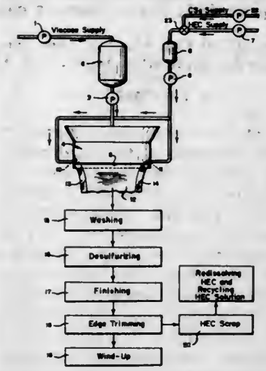
3,557,262
METHOD OF PREPARING TRANSPARENT CELLULOSIC FILM

Reid L. Mitchell, Charles F. Murphy, and Edmund M. La Polla, Morris County, N.J., assignors to ITT Rayonier Incorporated, New York, N.Y., a corporation of Delaware

Filed May 10, 1968, Ser. No. 728,263

Int. Cl. B29h *19/00*; C08b *3/22*; C09j *3/04*

U.S. Cl. 264—37 7 Claims



Transparent cellulosic film having a longitudinally extending center portion comprising regenerated cellulose and integrally formed longitudinally extending edge portions comprising hydroxyethylcellulose (HEC) is produced by extruding a viscose casting solution through the center portion of the film extrusion slit of a viscose casting hopper while concurrently extruding an HEC casting solution through the immediately adjoining edge portions of said film extrusion slit, said solutions being extruded into a conventional acidic regeneration bath to form the aforesaid multi-component film of regenerated cellulosic material.

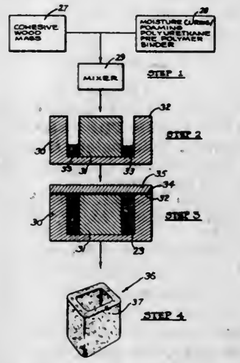
3,557,263
PROCESS FOR THE PREPARATION OF RIGID COMPOSITE WOOD PRODUCTS

Alan A. Marra, 915 Sunset, Ann Arbor, Mich. 48103

Filed Aug. 15, 1967, Ser. No. 660,806

Int. Cl. B27l *11/08*; B29j *5/00*; B32b *21/02*

U.S. Cl. 264—45 9 Claims



A process for the preparation of rigid composite products with similar physical characteristics in all dimensions or directions from a three dimensional skeletal structure formed of randomly oriented elongate sticks with multiple fibrous projections which maintain the elongate sticks in

a loosely cohesive mass which is shaped or molded and made rigid with a binder is described. Various liquid binders both organic and inorganic are used which do not require compression of the cohesive mass and liquid binder in order to be hardened and develop bond strength for consolidating the product into formed or molded shapes.

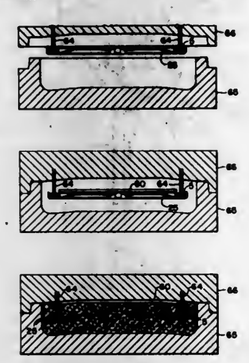
3,557,264
LOAD SUPPORTING STRUCTURES

Edward T. Getz, Cleveland Heights, and Matthew Pacak, Solon, Ohio, assignors to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio

Application Dec. 23, 1965, Ser. No. 528,671, now Patent No. 3,353,869, which is a continuation-in-part of application Ser. No. 479,068, Aug. 12, 1965. Divided and this application Sept. 21, 1967, Ser. No. 698,075

Int. Cl. B29d *12/00*

U.S. Cl. 264—45 1 Claim



This invention relates to a method of molding a foam cushion by placing a frame parallel to and spaced from the bottom and top of a closed mold and placing a preformed pad between the top surface of the closed mold and a load transfer means of the frame and introducing a polyurethane foam within the mold below the preformed pad and thereafter allowing said polyurethane to expand and fill said mold and subsequently curing said polyurethane.

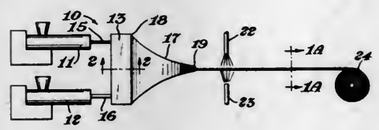
3,557,265
METHOD OF EXTRUDING LAMINATES

Douglas Chisholm, Midland, and Walter J. Schrenk, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Continuation-in-part of application Ser. No. 432,258, Feb. 12, 1965. This application Dec. 29, 1967, Ser. No. 694,470

Int. Cl. B29f *3/00*; B29h *7/20*; B32b *31/30*

U.S. Cl. 264—47 13 Claims



A method is described whereby plastic film or sheet having a plurality of layers is formed by deforming a flowing stream having layers of diverse thermoplastic material wherein the cross-sectional configuration of the plurality of flowing streams is altered by reducing the dimension of the stream in a direction generally perpendicular to the interfaces between the individual streams and by increasing the dimension of the stream in a direction generally parallel to the said interface to provide a sheet or film having a laminar structure. Optionally, alternating foamed and unfoamed layers may be obtained.

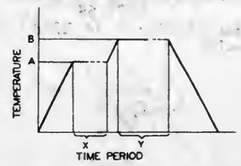
3,557,266
METHOD OF ELIMINATING THE POROSITY AND CONTROLLING THE GRAIN SIZE OF A FERRITE BODY BY A TWO STAGE HOT PRESSING TREATMENT

Hiroyuki Chiba, Yoshio Tawara, and Eiichi Hirota, Osaka-fu, Japan, assignors to Matsushita Electric Industrial Co., Ltd., Osaka, Japan

Filed Feb. 9, 1967, Ser. No. 614,889

Int. Cl. C04b *33/32, 35/26, 35/64*

U.S. Cl. 264—66 9 Claims



A ferrite having a porosity of less than 0.1% by volume and an average crystal grain size higher than 30 microns suitable for magnetic head cores is made by forming a cold pressed green ferrite body in a conventional manner, surrounding the body in a refractory powder in a hot press mold, heating to 1000–1250° C. without pressure, soaking for up to 5 hours and hot pressing during a portion of the soak period, releasing the pressure and heating to a higher temperature up to 1400° C. without pressure, soaking for up to 10 hours while hot pressing during a portion of this soak period and finally cooling the hot pressed ferrite to room temperature without pressure. Either an air atmosphere or partial vacuum is a suitable gaseous environment.

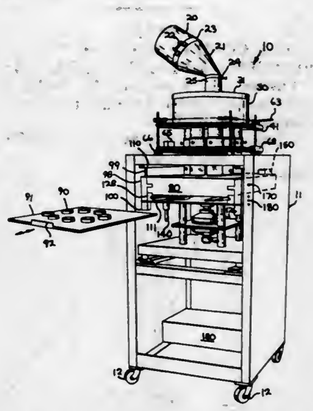
3,557,267
METHOD FOR COMPACTING PARTICULATE MATERIAL

William J. Angelotti, James R. Proffitt, Jr., Nathaniel R. Reyburn, and Louis L. San Frotello, Erie, Pa., assignors to Owens-Illinois, Inc., a corporation of Ohio

Original application Nov. 30, 1966, Ser. No. 598,064. Divided and this application Dec. 31, 1968, Ser. No. 800,317

Int. Cl. B06b *1/00*; B28b *1/08*

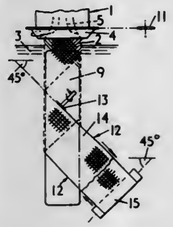
U.S. Cl. 264—72 7 Claims



An apparatus for volumetrically measuring and compacting a thermosetting plastic resin such as melamine. An apparatus employing a high frequency low amplitude

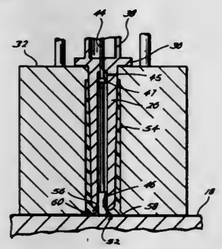
vibration in a horizontal direction and a low frequency high amplitude vibration in a vertical direction to effect compaction of a melamine powder. A method of measuring a powdered melamine by a volumetric chamber, delivering the melamine to a vibration chamber so that it forms a specific configuration suitable for optimum compaction under biaxial vibration.

3,557,268
EXTRUSION OF PLASTIC NETTING
Paolo Beretta and Mario Beretta, Cremella, Italy, assignors to Netlon International Limited, Blackburn, Lancashire, England
Filed Feb. 17, 1969, Ser. No. 799,594
Claims priority, application Great Britain, Feb. 23, 1968, 8,977/68
Int. Cl. B29c 17/14; B29d 7/04
U.S. Cl. 264—145 **5 Claims**



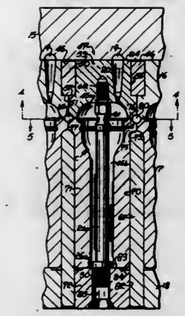
A method of producing a continuous strip or sheet of thermoplastic net, in which one set of strands extends parallel to the strip or sheet edges and the other set lines transversely thereto, from an extruded tubular net in which neither of the sets of strands are parallel to the direction of extrusion, comprising extruding the net strands and net intersections from relatively rotating inner and outer circular concentric die members each having a series of circumferentially spaced die orifices therein, cooling the extruded tubular net, receiving the net tube on a mandrel of circular section, causing the net tube as it advances to rotate about the axis of the mandrel such that any strand of one set of strands follows a fixed helical path over the mandrel surface, slitting the net tube by cutter means between a pair of adjacent strands of said latter set of strands and hauling off the strip or sheet of net so formed in a direction tangential to the surface of the mandrel and inclined to the axis of the mandrel in line with the said helical path.

3,557,269
DOUBLE COMPRESSION METHOD FOR FORMING A PLASTIC SHELLCASE
James L. Vawter and Lawrence E. Socha, El Campo, Tex., assignors to Vawter Ammunition, Inc., El Campo, Tex., a corporation of Texas
Filed June 7, 1966, Ser. No. 555,890
Int. Cl. B29c 3/00
U.S. Cl. 264—154 **4 Claims**



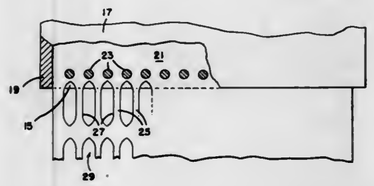
The present invention is directed to the manufacture of plastic articles such as for shotshell casings and the like requiring an oriented base portion. The invention utilizes a primary compression step to form the basic configuration of the cartridge and to orient the sidewalls thereof. A secondary compression step is then employed to apply pressure in the base area, thereby orienting this base area.

3,557,270
METHOD OF MOLDING VALVE STEMS
George R. Wald, Willoughby Hills, Ohio, assignor to Eaton Yale & Towne Inc., Cleveland, Ohio, a corporation of Ohio
Filed Aug. 23, 1967, Ser. No. 662,713
Int. Cl. B29c 17/14; B29f 1/00
U.S. Cl. 264—161 **1 Claim**



In a method for molding valve stems for tires of an automotive vehicle, molding material is injected into a multipart mold under sufficient pressure to flow between the cavity forming mold members at the interface therebetween and into secondary cavities. As a result, a continuous mat of material surrounds the molded articles. The mat includes relatively thick portions formed in the secondary cavities. This mat is removed from the mold and readily separates from the valve stems in a uniform manner.

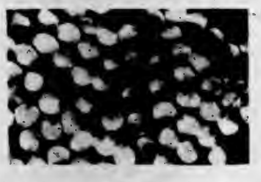
3,557,271
MANUFACTURE OF NET-LIKE MATERIALS BY EXTRUSION
Theodore H. Fairbanks, West Chester, Pa., assignor to FMC Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Dec. 11, 1967, Ser. No. 689,559
Int. Cl. B28b 3/20; D01d 5/20
U.S. Cl. 264—167 **7 Claims**



Manufacture of extruded net-like structures by providing voids in a shaped stream of flowable film-forming material wherein the said voids are produced by obstructing the stream in a direction generally perpendicular to its direction of flow at selected areas spaced from each other in a direction transverse to the direction of stream

flow, and thereafter merging portions adjacent of such streams within the die nozzle at longitudinally spaced areas thereof to obtain said extruded net-like structure.

3,557,272
PROCESS FOR PREPARING POLY-γ-METHYL GLUTAMATE FIBER
Yasuo Takagi and Makoto Iwatsuki, Kawasaki-shi, Kazuhisa Takeshita, Yokohama-shi, and Isao Uemura, Zushi-shi, Japan, assignors to Ajinomoto Co., Inc., Tokyo, Japan
Filed June 24, 1968, Ser. No. 739,517
Claims priority, application Japan, June 24, 1967, 42/40,423
Int. Cl. D01f 7/00
U.S. Cl. 264—184 **4 Claims**

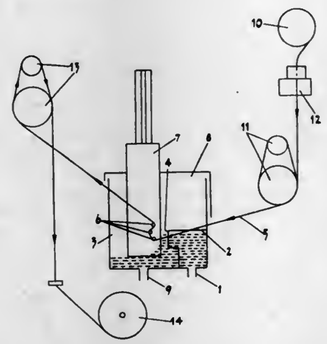


Poly-γ-methyl glutamate fiber having non-circular cross-section may be obtained efficiently by a process, which comprises adding carbon tetrachloride, 1,1,1 - trichloroethane, or ethylene tetrachloride to a solution of poly-γ-methyl glutamate in methylene chloride, chloroform, 1,2-dichloroethane, 1,1,2-trichloroethane or tetrachloroethane, and extruding the mixed solution from a circular nozzle into a mixture of an aliphatic hydrocarbon having a boiling point of 80° C. to 400° C. and carbon tetrachloride, 1,1,1-trichloroethane or ethylene tetrachloride.

ERRATUM

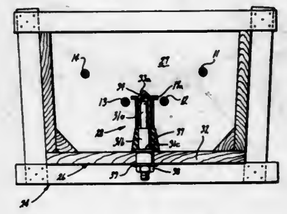
For Class 264—194 see:
Patent No. 3,557,290.

3,557,273
DRAWING SYNTHETIC THERMOPLASTIC YARN
Walter Bergwerk, Harrogate, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Continuation of application Ser. No. 467,076, June 25, 1965. This application Oct. 7, 1968, Ser. No. 768,960
Claims priority, application Great Britain, June 25, 1964, 26,348/64
Int. Cl. D02j 1/22
U.S. Cl. 264—210 **6 Claims**



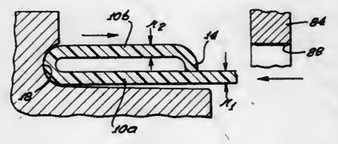
Filamentary yarn composed of thermoplastic synthetic, organic polymers is uniformly drawn at high speed by directing a stream of heated liquid into the path of the yarn to heat the latter to drawing temperature at less than drawing tension and immediately thereafter drawing the yarn by passing it over one or more snubbing pins arranged close to but out of contact with the liquid stream.

3,557,274
METHOD FOR MOLDING A CONCRETE RAILROAD TIE
Edward L. Kowell, Greenbrae, Calif., assignor to J. H. Pomeroy & Company, Inc., San Francisco, Calif., a corporation of California
Filed Mar. 27, 1968, Ser. No. 716,516
Int. Cl. B28b 13/06
U.S. Cl. 264—275 **2 Claims**



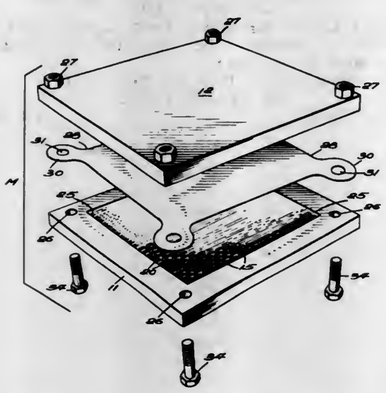
A concrete pouring form accessory supports a slidably removable sleeve and insert threaded thereto in a mold or pouring form during pouring of a concerte railroad tie. Following hardening of the railroad tie, the tie is readily slidably removed from the support post thereby leaving the sleeve inserted within the insert to protect threads of the insert until the sleeve has been unscrewed from the insert at the time of bolting rails to the railroad tie. A resilient annular cone-shaped sealing element forms a plug behind the insert and sleeve to preclude the application of blocking concrete behind the sleeve and the support post.

3,557,275
METHOD FOR COLD FORMING BEADED PLASTIC TUBING
William J. Longshaw, Whittier, Roy C. Wilson, Jr., Santa Paula, and James Ridenour, Huntington Beach, Calif., assignors to Pacific Western Extruded Products, Inc., Downey, Calif., a corporation of California
Continuation-in-part of application Ser. No. 555,153, June 3, 1966. This application July 22, 1968, Ser. No. 746,459
Int. Cl. B29c 17/02; B29d 23/01
U.S. Cl. 264—296 **6 Claims**



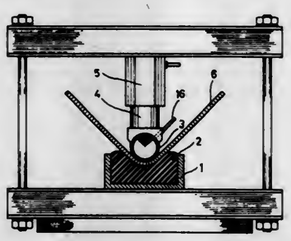
The disclosure concerns a method of forming a rigid plastic tube with an end portion that loops outwardly, reversely and inwardly to form a resiliently deformable hollow annular bead. Also, formation of a double walled plastic tube is described.

3,557,276
METHOD OF MAKING A FINE SCREEN
Charles J. Williams, Aurora, Minn., assignor to Erie Development Company, Cleveland, Ohio, a corporation of Delaware
Original application Dec. 7, 1966, Ser. No. 599,931, now Patent No. 3,483,976, dated Dec. 16, 1969. Divided and this application Apr. 12, 1968, Ser. No. 720,872
Int. Cl. B29d *27/00*
U.S. Cl. 264—316 3 Claims



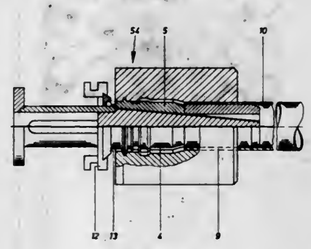
A method for making screening panels from hardenable synthetic organic resinous material by introducing the liquid resinous material into a mold having a plurality of interconnecting grooves providing truncated peaks therebetween in an amount in excess of that required to fill the grooves, placing a resilient covering sheet over the filled mold and then a rigid plane cover on the resilient sheet. The cover and sheet are secured to the mold so that the truncated peaks press into the resilient sheet thus removing excess resinous material from the tops of the peaks and exuding excess resinous material from the mold. The resinous material is then allowed to set and after disassembling the cover and sheet the screening panel is removed from the mold in a substantially flash free condition.

3,557,277
PROCESS FOR THE SHAPING OF FIBER BUILDING BOARD
Helmut Brodersen, Unterschefflenz, and Harry Brodersen, Freiburg im Breisgau, Germany, assignors to Friedrich Bilger, Ulm (Danube), Germany
Continuation of application Ser. No. 659,502, Aug. 9, 1967. This application Dec. 1, 1969, Ser. No. 876,216
Claims priority, application Germany, Aug. 10, 1966, B 88,417
Int. Cl. B29j *5/04*
U.S. Cl. 264—316 8 Claims



A process for the shaping of fiber board in which a heated core with a curved surface is forceably applied against fiber board which is moistened in the region of contact, the board being supported on a flat bed of resilient material which permits indentation of the core therein and deformation of the board while remaining in continuous contact with the board.

3,557,278
METHOD FOR FORMING A SOCKET SHAPED END ON PLASTIC PIPES
Karl Heinrich Kuhlemann, Ahornstrasse 19, Rehau, Germany
Original application Apr. 18, 1967, Ser. No. 631,735. Divided and this application Oct. 30, 1968, Ser. No. 798,517
Int. Cl. B29c *17/02*; B29d *23/00*
U.S. Cl. 264—318 1 Claim



A method of forming a socket on the end of a plastic pipe comprising the steps of inserting the pipe end into a mold, heating the pipe end and applying molding pressure axially along the pipe, cooling the pipe and withdrawing it from the mold.

3,557,279
MICROENCAPSULATION FORM OF AN ANTI-INFLAMMATORY DRUG
Lewis D. Morse, Princeton, N.J., assignor to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Filed June 12, 1969, Ser. No. 832,844
Int. Cl. A61j *3/07*; A61k *27/12*
U.S. Cl. 424—20 7 Claims

The anti-inflammatory drug indomethacin is microencapsulated by the method of polymer/polymer incompatibility, coacervation using either an ethylcellulose-polyethylene system or a gelatin-gum arabic system.

3,557,280
STABLE SOLUTIONS OF OXYTETRACYCLINE SUITABLE FOR PARENTERAL AND PERORAL ADMINISTRATION AND PROCESS OF PREPARATION
Hubert Antonius Weber and Adrianus Pieter Molenaar, Delft, Netherlands, assignors to Koninklijke Nederlandsche Gist-en Spiritusfabriek N.V., Delft, Netherlands, a corporation of the Netherlands
No Drawing. Filed May 26, 1967, Ser. No. 641,483
Claims priority, application Netherlands, May 31, 1966, 6607516
Int. Cl. A61k *27/00*
U.S. Cl. 424—80 6 Claims

The present invention relates to a clear, stable, aqueous solution of oxytetracycline for medical applications consisting essentially of oxytetracycline and water containing polyvinyl pyrrolidone and a magnesium compound, said aqueous solution having a pH in the range of from 8.0 to 9.5, as well as to the process of preparing the same. The oxytetracycline solutions are utilized in parenteral and peroral administrations, are free from adverse side effects and are stable over long periods of storage.

3,557,281
METHODS AND COMPOSITIONS CONTAINING OXAMIDE COMPOUNDS FOR CONTROLLING LIMNORIA
Phyllis D. Oja, San Francisco, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 541,064, Apr. 8, 1966, which is a continuation-in-part of application Ser. No. 463,881, June 14, 1965. This application Dec. 19, 1966, Ser. No. 602,544
Int. Cl. A01n *9/04*, *9/20*, *9/28*
U.S. Cl. 424—82 33 Claims

The present invention is concerned with methods employing and compositions comprising an oxamide compound, as further defined hereinbelow, for the control of members of the genus Limnoria. The control is achieved by contacting the members of the genus Limnoria with the oxamide compound, or, more conveniently, by impregnating wood members subject to attack by members of the genus Limnoria with the oxamide compound. Thus, the present invention is also directed to articles of wood impregnated with the oxamide compound. The compositions of the present invention include those comprising the oxamide compound and one or more adjuvants which facilitate the practices of the present invention.

3,557,282
METHOD OF REGULATING ESTRUS IN THE CAT
Leonard J. Lerner, Cranbury, N.J., assignor to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 2, 1969, Ser. No. 789,068
Int. Cl. A61k *17/06*
U.S. Cl. 424—241 9 Claims

This invention relates to a method for the regulation or estrus in the cat by providing to the cat a composition comprising 0.25 to 25.0 mg. of a 16α,17α-acetal or ketal derivative of 16α,17α - dihydroxyprogesterone on a daily basis. The material may be provided in a prepared cat food or in a food or vitamin supplement such as cod liver oil.

3,557,283
VETERINARY COMPOSITIONS CONTAINING A QUINOLINE-3-CARBOXYLIC ESTER
John Potts Cairns and Walter Hepworth, Macclesfield, England, assignors to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
No Drawing. Original application Feb. 11, 1966, Ser. No. 526,694, now Patent No. 3,414,576, dated Dec. 3, 1968. Divided and this application June 10, 1968, Ser. No. 735,533
Claims priority, application Great Britain, Mar. 9, 1965, 9,979/65; Dec. 2, 1965, 51,232/65
Int. Cl. A61k *27/00*
U.S. Cl. 424—258 13 Claims

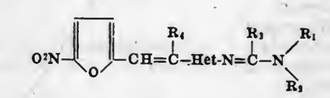
Veterinary compositions containing, as the essential active component, derivatives of 4-hydroxy-quinoline-3-carboxylic esters in which the 7-position of the quinoline nucleus bears a benzyloxy, chlorobenzyloxy or N

$C_{12}H_{25}O$—

group and the 6-position is optionally substituted. These derivatives are disclosed as useful in the prophlatic treatment of coccidiosis in poultry or other domestic animals. Representative of the disclosed active components is methyl 7 - benzyloxy-6-n-butyl-4-hydroxyquinoline-3-carboxylate.

3,557,284
POULTRY FEEDS AND POULTRY FEED ADDITIVES CONTAINING 5-NITROFURFURYLIDENEMETHYL COMPOUNDS
Max Wilhelm, Allschwil, and Kurt Eichenberger, Therwil, Switzerland, assignors to Ciba Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 494,238, Oct. 8, 1965, now Patent No. 3,488,728. This application Oct. 9, 1967, Ser. No. 673,988
Claims priority, application Switzerland, Oct. 26, 1966, 15,539/66; Sept. 15, 1967, 12,916/67
Int. Cl. A61k *27/00*
U.S. Cl. 424—250 17 Claims

Poultry feeds and poultry feed additives containing a compound of the formula



Het=bivalent heterocyclic radical of aromatic character containing at least one ring nitrogen atom;
R_4=hydrogen or alkyl;
R_3=hydrogen or optionally substituted hydrocarbon radical;
R_1, R_2 each
=hydrogen or optionally substituted monovalent hydrocarbon radical or together,
=optionally substituted bivalent hydrocarbon radical which may be interrupted by hetero atoms;

e.g. poultry feeds or poultry feed additives containing N - [3 - (5 - nitrofurfurylidenemethyl)-6-pyridazinyl]-N', N'-dimethylformamidine or a salt thereof. Use: for ensuring better feed utilisation and increase in weight.

3,557,285
METHODS FOR PROVIDING MUSCLE RELAXATION WITH 1-(SUBSTITUTED) - 5-AMINO-TETRAZOLES
Takashi Enkoji, Park Forest, and Charles D. Bossinger, Olympia Fields, Ill., assignors to Armour Pharmaceutical Company, Chicago, Ill., a corporation of Delaware
No Drawing. Original application Oct. 10, 1966, Ser. No. 585,251. Divided and this application Mar. 6, 1969, Ser. No. 804,991
The portion of the term of the patent subsequent to Oct. 11, 1983, has been disclaimed
Int. Cl. A61k *27/00*
U.S. Cl. 424—269 8 Claims

Methods and preparations to provide muscle relaxation for a host animal in need of such therapy using a biologically active 1-substituted-5-aminotetrazole.

3,557,286
THERAPEUTIC COMPOSITIONS AND METHOD FOR THE TREATMENT OF DISORDERS DUE TO INSUFFICIENT CORPUS LUTEUM SECRETION
Robert Joly, Montmorency, Julien Warnant, Neuilly-sur-Seine, and André Farcilli, Rosny-sous Bois, France, assignors to Roussel-UCLAF, Paris, France, a corporation of France
No Drawing. Filed Dec. 21, 1966, Ser. No. 603,458
Claims priority, application France, Dec. 27, 1965, 43,815
Int. Cl. A61k *17/06*
U.S. Cl. 424—242 3 Claims

Therapeutic compositions and method for the treatment of disorders due to an insufficient secretion of the corpus luteum.

3,557,287

COMPOSITIONS AND METHODS FOR TREATING HEADACHES OF VASCULAR ORIGIN WITH COMBINATIONS OF CAFFEINE, A VASOTONIC LYSERGIC ACID AND A THIOXANTHENE

Botond Berde and Albert Fanchamps, Basel, Switzerland, assignors to Sandoz Ltd. (also known as Sandoz AG), Basel, Switzerland

No Drawing. Filed Dec. 31, 1968, Ser. No. 788,351
Claims priority, application Switzerland, Jan. 9, 1968, 350/68
Int. Cl. A61k *27/00*
U.S. Cl. 424—253 6 Claims

The invention relates to a pharmaceutical composition incorporating as active constituents:

(a) a vasotonic lysergic acid derivative of the peptide type or a pharmaceutically acceptable acid addition salt thereof;
(b) caffeine; and
(c) 9-(1-methyl - 4 - piperidylidene)thioxanthene or a pharmaceutically acceptable acid addition salt thereof.

The composition is useful for treating attacks of migraine, or migraine equivalents, and vascular headaches.

3,557,288

CONTROL OF TERRESTRIAL MOLLUSKS

Obren Keckemet, Tacoma, Wash., assignor to Pennwalt Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 7, 1969, Ser. No. 805,375
Int. Cl. A01n *9/00*
U.S. Cl. 424—288 4 Claims

Method of controlling terrestrial mollusks using trimethyltin hydroxide as active agent.

3,557,289

CONTROL OF TERRESTRIAL MOLLUSKS

Obren Keckemet, Tacoma, Wash., assignor to Pennwalt Corporation, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Mar. 7, 1969, Ser. No. 805,377
Int. Cl. A01n *9/00*
U.S. Cl. 424—288 5 Claims

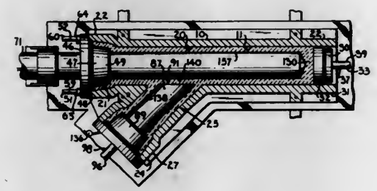
Method of controlling terrestrial mollusks using hexamethylditin as active agent.

3,557,290

METHOD FOR RAM FORMING MONOLITHIC PLASTIC ARTICLES

Edward C. Siegfreid, Conner J. Harwell, and Sheilds L. Murphy, Meridian, Miss., assignors to W. S. Dickey Clay Manufacturing Company, Kansas City, Mo., a corporation of Delaware

Filed Apr. 15, 1968, Ser. No. 721,306
Int. Cl. B28b *1/44, 3/08, 11/12, 21/50*
U.S. Cl. 264—294 4 Claims



A method for ram forming monolithic plastic articles, which produces articles, such as clay pipe and fittings, without stress lines and without knit or bond lines. The method uses a mold having an elongate cavity having an inside surface configuration corresponding to an outside surface of the article to be formed therein. Bore forming mandrels or rams are movable into the elongate cavity for forcing a compression formed mass of plastic clay to flow around the mandrels and fill the cavity and for the article with bores therein. The mandrels being removable from the cavity and the mold opened for removal of the article.

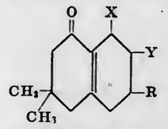
3,557,291

OCTALONE CARBOXYLIC ACIDS AND THEIR DERIVATIVES

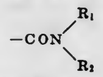
Abraham Weber, Paris, and Jacques Jean Frossard, Champigny, Val-de-Marne, France, assignors, by mesne assignments, to Mead Johnson & Company, a corporation of Delaware

No Drawing. Original application Aug. 13, 1964, Ser. No. 389,489. Divided and this application June 28, 1968, Ser. No. 741,195
Claims priority, application France, Sept. 26, 1963, 948,754
Int. Cl. C07c *65/20*
U.S. Cl. 424—317 6 Claims

1. A pharmaceutical composition in dosage unit form comprising a pharmaceutical carrier and from 50 to 500 mg. of a compound having the formula



wherein R is phenyl or phenyl bearing from one to two substituents selected from alkoxy having up to four carbon atoms, halogen and hydroxyl and wherein one of X and Y is carboxyl and the other is the group



in which R_1 and R_2 are hydrogen or lower alkyl having up to four carbon atoms.

3,557,292

COMPOSITIONS AND METHODS FOR TREATING PARKINSON'S DISEASE WITH COMBINATIONS OF L-3,4-DIHYDROXYPHENYLALANINE AND A HYDRAZINE

Giuseppe Bartholini, Basel, Switzerland, assignor to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Aug. 16, 1968, Ser. No. 753,074
Int. Cl. A61k *27/00*
U.S. Cl. 424—319 13 Claims

Pharmaceutical compositions are described which contain, as the active ingredients (1) L-3,4-dihydroxyphenylalanine and (2) an N'-substituted-N^2-(2,3,4-trihydroxybenzyl)-hydrazine selected from the group consisting of N' - dl-seryl-N^2-(2,3,4-trihydroxybenzyl)-hydrozine, N'-1-seryl - N^2-(2,3,4-trihydroxybenzyl)-hydrazide, N'-glycyl-N^2 - (2,3,4-trihydroxybenzyl)-hydrazine and N'-tyrosyl-N^2-(2,3,4-trihydroxybenzyl)-hydrazine.

The use of the described compositions, as well as the use of the individual components thereof separately but as part of the combined therapy, in the treatment of Parkinson's Disease is disclosed. Additionally, there is disclosed the use of the compositions, and the active components thereof separately but as part of combined therapy, in the treatment of depression and to potentiate the activity of antidepressants, such as, imipramine, and other psychoactive drugs of the tricyclic type.

3,557,293

METHOD OF REPELLING INSECTS WITH AMINO-ALDEHYDES

Philip Kashin, Chicago, and Warner M. Linfield, Evanston, Ill., assignors to IIT Research Institute, Chicago, Ill., a not-for-profit corporation of Illinois

No Drawing. Continuation-in-part of abandoned application Ser. No. 660,918, Aug. 16, 1967. This application May 19, 1969, Ser. No. 825,939
Int. Cl. A01n *9/20*
U.S. Cl. 424—325 9 Claims

An insect repellent containing an organic compound which is believed to operate via neuroinhibition and a liquid carrier which is a solvent for the compound. The compound is an amino-aldehyde having a carbon chain not longer than 15 carbon atoms, acyclic or carbocyclic, saturated or unsaturated, substituted or unsubstituted. Specific examples include 2-amino-benzaldehyde, 4-amino-butyraldehyde, aminoacetaldehyde and (diethylamino) acetaldehyde.

3,557,294

FLUORINATED ETHERS AS INHALATION CONVULSANTS

Robert E. A. Dear and Everett E. Gilbert, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Oct. 12, 1967, Ser. No. 674,746
Int. Cl. A61k *27/00*
U.S. Cl. 424—342 5 Claims

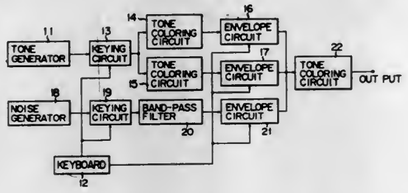
This application relates to the use of certain fluorinated ethers as inhalation convulsants and to certain of these ethers which are novel per se.

ELECTRICAL

3,557,295
WIND INSTRUMENT SOUND PRODUCING SYSTEM FOR ELECTRONIC MUSICAL INSTRUMENTS

Takeshi Adachi, Hamamatsu-shi, Japan, assignor to Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Japan, a corporation of Japan

Filed Jan. 15, 1969, Ser. No. 791,316
Claims priority, application Japan, Jan. 18, 1968, 43/2794
Int. Cl. G10h 1/06
U.S. Cl. 84—1.18 5 Claims

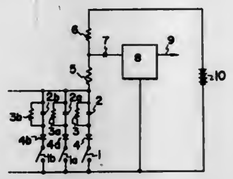


The system comprises means to cause signal having clarinet voice to have a predetermined envelope, means to cause a second tone signal having trumpet voice to have a predetermined envelope, means to cause a noise tone signal to have a predetermined envelope, and means to generate a sound simulating that of saxophone voice after the outputs of all of said means are mixed and amplified.

3,557,296
MUSICAL INSTRUMENT DRIVING CIRCUIT FOR PRODUCING PERCUSSION SOUND

Yasunori Hirose, Hamamatsu-shi, Japan, assignor to Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Shizuoka-ken, Japan

Filed Apr. 25, 1969, Ser. No. 819,355
Int. Cl. G10h 1/02
U.S. Cl. 84—1.26 4 Claims

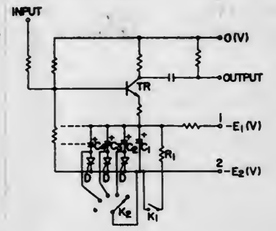


A driving circuit for producing percussion sound employed in an electronic musical instrument is composed of a plurality of circuit branches each of which consists of a capacitor and a resistor connected in parallel, a diode having the conductivity direction coincident with the charging current into the capacitor, and a normally opened switch interlinked with a corresponding key on the keyboard, all connected in series, the number of the circuit branches being substantially equivalent to the number of the keys on the keyboard, all of the plurality of circuit branches being further connected in parallel, one terminal of thus formed parallel circuit being connected with one end of a power source, the other terminal of the parallel circuit being connected through a resistor to the other end of the power source, whereby, when any one of the keys is depressed and the corresponding switch is closed, a charging current flows into the corresponding capacitor and a trigger signal is obtained from the junction point of the capacitor and the resistor connected to the other end of the power source.

3,557,297
ATTACK AND DECAY SWITCHING CIRCUIT FOR ELECTRONIC MUSICAL INSTRUMENT

Toshiro Matsuura, Iwata-shi, Japan, assignor to Nippon Gakki Seizo Kabushiki Kaisha, Nakazawa-cho, Hamamatsu-shi, Shizuoka-ken, Japan

Filed Apr. 2, 1969, Ser. No. 812,815
Int. Cl. G10h 1/02
U.S. Cl. 84—1.26 4 Claims

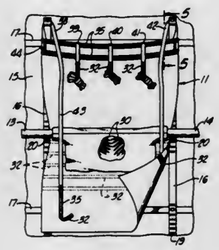


A switching circuit to be used in an electronic musical instrument for changing the time-constant characteristics of an envelope of the musical tone signal is composed of a gate, an envelope-forming capacitor, a key switch connected in parallel to said capacitor, at least one of series circuit each consisting of a capacitor and a current-limiting element, and a time-constant changing switch, said at least one of series-connected circuits being further connected in parallel with said envelope-forming capacitor, and said time-constant changing switch being so arranged that said current-limiting element is thereby short-circuited or not short-circuited.

3,557,298
REUSABLE MULTIPURPOSE PROTECTIVE ASSEMBLY FOR CABLE SPLICES

John T. Thompson, Tarzana (244 Loring St., Los Angeles, Calif. 90024), and George W. Gillemot, Venice, Calif. (2331 20th St., Santa Monica, Calif. 90405)

Filed Mar. 24, 1969, Ser. No. 809,808
Int. Cl. H02g 1/14
U.S. Cl. 174—10 6 Claims



A reusable multipurpose protective jacket assembly for cable splices including a fluidtight resilient inner plaque and a larger nonstretchable restraining plaque each provided with means for holding the same wrapped about an incomplete splice. The inner stretchable rubber plaque is coated with tacky material readily sealable to the cable sheath and to its uncoated surface to provide a fluid-type bladderlike enclosure for the splice and which is then inflatable with gas from the gas charged cable to safeguard against entry of moisture. The outer plaque provides a restraining shroud to protect

and prevent blowout of the rubber bladder. Additionally, the restraining shroud can be suspended between an open splice and a wet manhole wall to shield the splice from the wet wall while splicing is in progress.

3,557,299
SEALED CABLE CLOSURE

Zoltan B. Dienes, Toronto, Ontario, Canada, assignor to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware

Filed Feb. 10, 1969, Ser. No. 797,862
Int. Cl. H02g 9/02, 15/04
U.S. Cl. 174—38 5 Claims

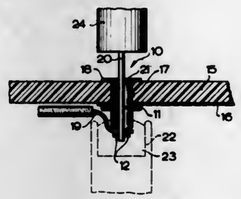


A device for making tap connections to continuous cable wherein a loop of the cable, with insulated conductors exposed for connection, is brought through a tightly fitting rubbery sleeve into a connection area which is thereafter hermetically sealed.

3,557,300
SUPPORT AND INTERCONNECTION ARRANGEMENT FOR SEMICONDUCTOR RECTIFIERS IN ALTERNATOR STRUCTURES

Frithjof Werner, Stuttgart-Zuffenhausen, Germany, assignor to Robert Bosch GmbH, Stuttgart, Germany, a limited liabillty Company of Germany

Filed June 27, 1968, Ser. No. 740,743
Claims priority, application Germany, July 1, 1967, B93279
Int. Cl. H05k 1/18
U.S. Cl. 174—68.5 4 Claims

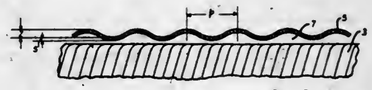


To interconnect the output windings of automotive type alternators with rectifiers, and other circuits placed on an insulating circuit board, a connection element is mounted through an opening in the circuit board, the connection element being formed as a hollow cylindrical body having a flange intermediate its length, which may connect with a printed circuit and bearing against one side of the board, a second flange, for example formed by peening over the end of the body to grip the other side of the board; the connector is slit lengthwise, and an alternator output conductor is clamped in the slit, as well as a rectifier pin of lesser diameter than the cylindrical body passed axially through the element, the element being deformed to hold all conductors together; additionally, the joint may be soldered.

3,557,301
SHEATHING OF ELECTRICAL CABLES

Paolo Gazzana Priaroggia, Milan, Italy, assignor to Pirelli Societa Per Azioni, Milan, Italy, a corporation of Italy

Filed Apr. 8, 1968, Ser. No. 719,352
Claims priority, application Italy, May 23, 1967, 16390/67
Int. Cl. H01b 7/20
U.S. Cl. 174—102 5 Claims

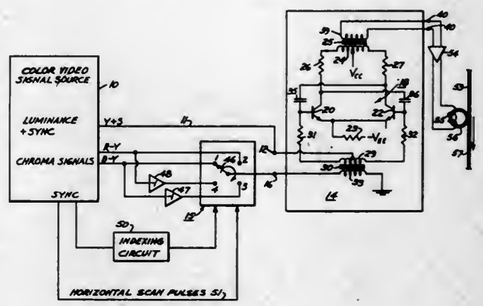


An aluminum tube is extruded over a core containing electrical conductors insulated with paper which has been impregnated with an insulating composition, the extrusion being carried out while introducing additional insulating composition under pressure between the core and the aluminum tube. Subsequent to extrusion, the aluminum tube or sheath is sinusoidally corrugated with shallow corrugations falling within specified dimensional limits.

3,557,302
ONE-CHANNEL SIGNAL CONVEYING SYSTEMS FOR LUMINANCE AND CHROMINANCE VIDEO SIGNALS

Norton W. Bell, Pasadena, Calif., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed Oct. 18, 1967, Ser. No. 676,353
Int. Cl. H04n 9/34
U.S. Cl. 178—5.2 13 Claims

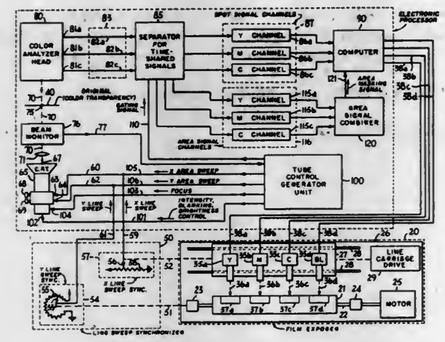


An apparatus for conveying a luminance and two chrominance video signals includes a modulator for symmetry-modulating positive and negative half cycles of a carrier wave sequentially by the two chrominance signals and inverted forms of these two chrominance signals, and for varying a further characteristic of the carrier wave to modulate this carrier wave also by the luminance signals.

3,557,303
CATHODE RAY TUBE SCANNING SYSTEMS WITH SPOT AND AREA SCANNING

Harold O. W. Jordan, Stamford, Conn.; Michael J. Keenan, Chappaqua, N.Y., and Austin Ross, Monroe, Conn., assignors to Printing Developments, Inc., New York, N.Y., a corporation of New York

Filed Dec. 22, 1967, Ser. No. 692,787
Int. Cl. H04n 1/00
U.S. Cl. 178—5.2 37 Claims

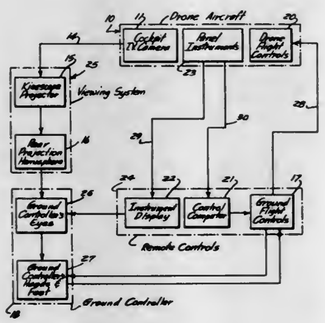


Electromechanical color separation exposing systems in which original is scanned by spot from cathode ray tube and reproduced local contrast is improved by modifying main path scanning signals from spot by signal derived from scanning of original in an area around normal spot position. Spot scans in area by intermittent angularly displaced radial scans or radially displaced spiral sector scans or by being intermittently defocused or subjected to noise deflections in two directions. Concurrent main path and area scannings are effected by a two beam tube. System may be extended to employ a knockout mask scanned by an additional cathode ray tube synchronously with the main path scanning of original by the first tube.

3,557,304
REMOTE CONTROL FLYING SYSTEM

Richard O. Rue; Floyd A. Kinder, and Vance L. Hansen, China Lake, Calif.

Filed Oct. 24, 1967, Ser. No. 677,789
Int. Cl. H04n 5/72, 7/18
U.S. Cl. 178—6.8 1 Claim

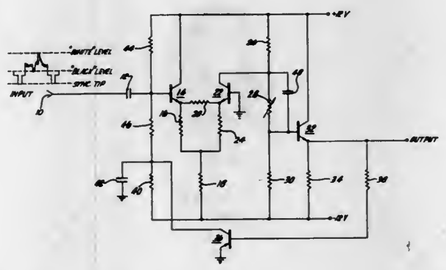


A system for flying a drone aircraft by remote control comprising a television camera mounted in the cockpit of the drone aircraft where the pilot's head is normally located; a wide-angle lens mounted on the television camera; transmitting means to send the pictures back to the ground where they are projected using rear projection means onto a hemispherical viewing screen; and a remote ground control for flying the drone in response to the pictures received from the cockpit television camera.

3,557,305
DC RESTORATION AND WHITE CLIPPING CIRCUIT FOR VIDEO RECORDER

Bert H. Dann, Altadena, Calif., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed Mar. 6, 1968, Ser. No. 711,072
Int. Cl. H04n 5/16, 5/18
U.S. Cl. 178—7.3 9 Claims

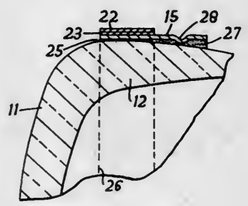


There is described a transistorized direct-coupled amplifier circuit which receives a composite video color signal, amplifies the signal and at the same time establishes a fixed DC level for the sync tips and slices the "white" peaks of the video signal at a predetermined level. The amplifier includes a feedback loop which includes a sync tip detector with a relatively long time constant on the output for controlling the DC operating point of the direct coupled amplifier. The amplifier exhibits good linearity up to its predetermined signal level, after which the output remains substantially constant as the signal increases beyond this level.

3,557,306
CATHODE RAY TUBES WITH MULTIPLE CONVOLUTION TENSION BANDS

James Inglis, London, England, assignor to Thorn Radio Valves and Tubes Limited, London, England

Filed Feb. 28, 1968, Ser. No. 708,864
Claims priority, application Great Britain, Mar. 3, 1967, 10271/67
Int. Cl. H01j 29/28, 61/50; H01k 1/28
U.S. Cl. 178—7.8 10 Claims

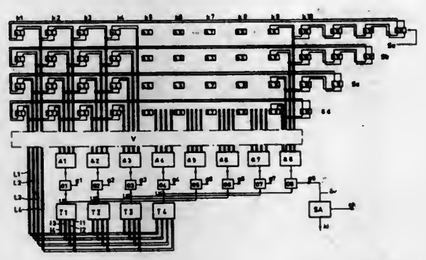


To reduce the implosion risks of the envelope of a cathode ray tube the flange of the face plate has two U-shaped metal strips cooperating to form an encircling close-fitting frame bonded to the flange. A tensioned metal band surrounds the frame and is in the form of a spiral winding of at least two convolutions.

3,557,307
CIPHERING MACHINE

Bengt Florin, Hagersten, and Kalevi Loimaranta, Mattby, Finland, assignors to AB Transvertex, Varby, Sweden, a Swedish Joint Stock Company

Filed Mar. 10, 1969, Ser. No. 805,624
Int. Cl. H04l 9/00
U.S. Cl. 178—22 4 Claims

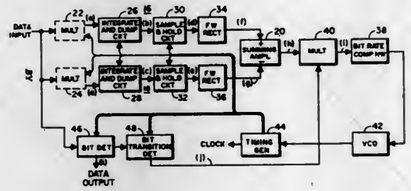


This invention relates to a ciphering machine for ciphering text in clear produced in binary form by superimposing every text in clear character signal with a variable ciphering signal. Such a machine comprises a number of electric devices stepped in parallel with cyclic operations, for example shift registers, the cycles being mutually different, said devices being formed, for example, by chains or rows of mutually different numbers of bistable flip-flops. The initial states of said flip-flops so were set according to a scheme of preferably random choice that the states of flip-flops stepped in parallel in every column in the different shift registers together define a ciphering character. These column characters, thus, automatically change their nature as soon as a shift register has completed a cycle.

3,557,308
DATA SYNCHRONIZING SYSTEM

Jack F. Alexander, Sanford; Peter E. Mallory, and Ronald C. Payne, Maitland, Fla., assignors to General Dynamics Corporation, a corporation of Delaware

Filed Mar. 1, 1968, Ser. No. 709,605
Int. Cl. H04l 7/00
U.S. Cl. 178—69.5 13 Claims

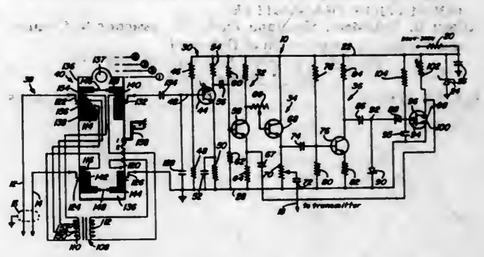


A system is described for acquiring incoming serial data, particularly of PCM code types, and establishing synchronization between the incoming data and a local clock generator. The system includes input signal conditioning circuits which applies the incoming data to a phase lock loop containing the local clock generator. The phase lock loop includes circuits for acquiring the input data and synchronizing the local clock generator therewith in spite of low signal-to-noise ratios and the loss of a large percentage of the input data bits in transmission. The local clock generator circuits include circuits which compare the phase of the clock generator output with the phase of the incoming data bits on a maximum likelihood phase estimate basis. The local clock generator outputs are applied to detect the incoming bits and reconstruct them into a noise-free output data stream.

3,557,309
AMPLIFIER WITH AUTOMATIC GAIN CONTROL

Cecil R. Graham, R.F.D. 1, Wingdale, N.Y. 12594

Filed Oct. 2, 1967, Ser. No. 672,076
Int. Cl. H03g 3/12, 3/30
U.S. Cl. 179—1 10 Claims

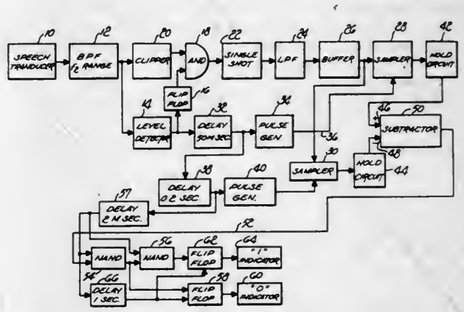


A solid state amplifier supplying a modulating signal to a transmitter or audio reproducing device with an automatically varied gain to maintain a substantially constant output range. Audio inputs to the amplifier from microphones of different impedance values are accommodated by a sliding switch control that changes the impedance of the coupling circuit between the microphone and the initial amplifier stage. A field effect transistor is employed in a signal attenuating network to limit the gain of an automatically controlled amplifier stage coupled to the amplifier output through an impedance matching network monitored by the signal attenuating network.

3,557,310
SPEECH RECOGNIZER

Anthony J. Presti, Warren, and Lawrence G. Kersta, Neshanic Station, N.J., assignors to Farrington Manufacturing Company, New York, N.Y., a corporation of Massachusetts

Filed July 3, 1968, Ser. No. 742,298
Int. Cl. G10l 1/08
U.S. Cl. 179—1 10 Claims



Speech recognition equipment is disclosed which distinguishes the sounds "OH" and "ONE" (respectively corresponding to the numerals 0 and 1). The recognition equipment takes advantage of the fact that the characteristic frequency of the second formant of "OH" increases with the time while the characteristic frequency of the corresponding formant of ONE decreases with respect to time. The sound to be recognized is fed to a frequency discriminator after a test has been made to distinguish the sound from background noise. The discriminator output is applied to two sampling circuits, one of which samples the discriminator output signal shortly after the presence of the sound is detected and the second of which samples the signal shortly after the first sample is taken. The samples are held in capacitive storage means. After both samples have been taken, the outputs of

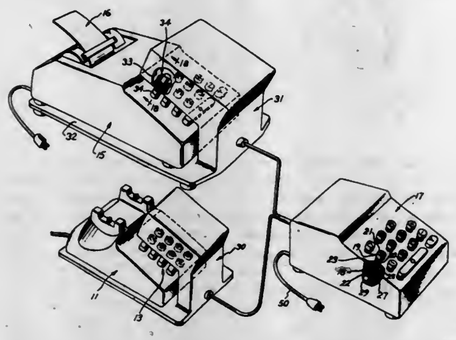
the capacitors are applied to a subtractor. Thus, the polarity output of the signal from the subtractor indicates whether the sound was "OH" or "ONE."

3,557,311

INFORMATION TRANSMISSION SYSTEM INCLUDING A UNIT FOR PRODUCING A PRINTED RECORD OF INFORMATION TRANSMITTED

Albert B. Goldstein, Highland Park, Ill., assignor to Compumatics, Inc., a corporation of Delaware

Filed Jan. 2, 1968, Ser. No. 695,268
Int. Cl. H04m *11/00*
U.S. Cl. 179—2 **9 Claims**



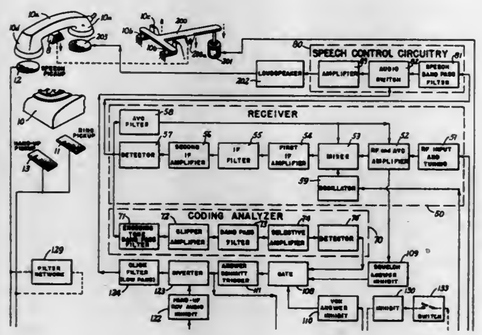
An arrangement for transmitting data over a telephone line by means of signalling tones and for simultaneously recording this data at the transmitting station. In the embodiment disclosed, the signalling tones are produced by depressing keys on a tone-signalling telephone set by means of a first group of solenoids. The printed record of the transmitted data is provided by depressing keys on an adding machine by means of a second group of solenoids. The two sets of key-depressing solenoids are energized by switches which are opened and closed by manipulating the keys on a third keyboard.

3,557,312

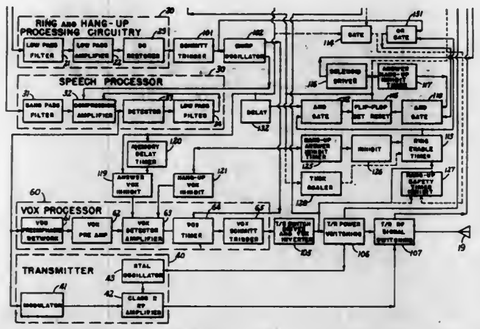
REMOTE TELEPHONE EXTENSION SYSTEM

Joseph Herbert Vogelman, Roslyn, N.Y.; Kenrick O. Stephenson, Jr., Montclair, N.J., and Bernard Feinerman, Suffern, N.Y., assignors to Chromalloy American Corporation, West Nyack, N.Y., a corporation of New York

Original application Oct. 23, 1965, Ser. No. 503;285, now Patent No. 3,476,882. Divided and this application July 22, 1969, Ser. No. 843,520
Int. Cl. H04m *11/00*
U.S. Cl. 179—2 **3 Claims**



The system allows one to answer his telephone and talk to the caller by means of a remote transceiver which is carried by the person when he is away from his telephone. A base station unit develops and transmits to the transceiver a ringing signal to alert the person that his telephone is ringing. The transceiver is operated to transmit an answering signal which has both a frequency-coded component and a speech-modulated component to answer the telephone. Amplitude comparison and timing circuits are used, together with a



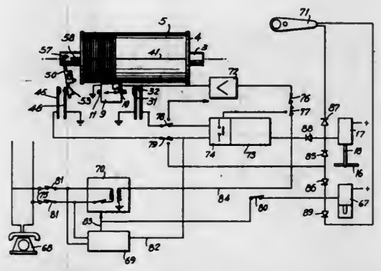
frequency analyzer to prevent unwanted answering of the telephone. Means are provided for terminating the call in response to either hanging up the calling telephone, receipt of a dial tone, or receipt of a warning signal on the telephone after hang-up. Also, means are provided for automatic hang-up after a period of time in which no coded signal from the remote transceiver or voice signals from the caller are received. Remote dialing means are provided in which the answering circuitry is used in the initiation of calls from the remote transceiver, as well as in the answering of incoming calls.

3,557,313

TELEPHONE RESPONDER SYSTEM

Kurt Guettinger, Pfaffhausen, Switzerland, assignor to Dictaphone International AG, Wettingen (Aargau), Switzerland

Filed Dec. 20, 1968, Ser. No. 785,571
Claims priority, application Switzerland, Dec. 21, 1967, 17,955/67
Int. Cl. H04m *1/64*
U.S. Cl. 179—6 **6 Claims**



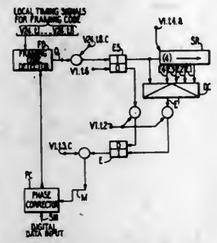
A device for automatically answering telephone calls to be used with a magnetic-sheet or belt-type dictating machine having a cylinder for receiving sheet- or belt-type recording media and a sound head carriage which is guided across the cylinder between two limit switches set in the path of motion of the carriage. The device has an automatic return for placing the sound head carriage in a starting position. When a call is received, the device activates the sound head carriage causing it to move across the cylinder thus enabling a recorded message to be transmitted over the telephone line. When the complete message has been transmitted, the carriage automatically is returned and is set in a start position for transmitting the message again if another call is received.

3,557,314

FRAME SYNCHRONIZATION CIRCUIT

Michel L. Avignon, Neuilly, France, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 11, 1968, Ser. No. 697,061
Claims priority, application France, Jan. 11, 1967, 92070
Int. Cl. H04j *3/06*
U.S. Cl. 179—15 **6 Claims**



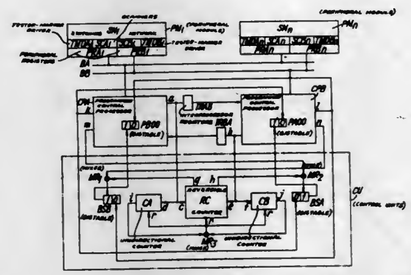
The framing code of a time division multiplex digital data is compared cyclically with the local framing timing signals. When the comparison results in an out-of-frame condition, this condition is stored in a flip-flop and the results of the preceding *j* comparisons are stored in a *j*-stage shift register. A framing error signal is produced when the flip-flop and any *k* stages of the shift register simultaneously indicate an out-of-frame condition. This error signal shifts the relative timing of the data and timing signals until an in-frame condition is produced by the comparison to inhibit the error signal.

3,557,315

AUTOMATIC TELECOMMUNICATION SWITCHING SYSTEM AND INFORMATION HANDLING SYSTEM

Stanislas Kobus, Antwerp, Belgium; Adelin Eugene Gaston Salle, Paris, France; Bernard Jean Robert Fontaine, Antwerp; Alois Rene Termote, Edegem, and Jean Louis Masure, Wilrijk, Belgium, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 18, 1968, Ser. No. 698,870
Claims priority, application Netherlands, Jan. 23, 1967, 6701050
Int. Cl. H04g *3/54*
U.S. Cl. 179—15 **36 Claims**



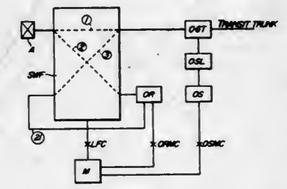
The present system includes two programmed processors and a plurality of identical peripheral modules each comprising a switching network part and two network control circuits which are each permanently connected to a respective one of the two processors by transmission means. Both processors operate on a load-sharing basis and continuously inform one another about the characteristic phases of the operations performed in order that a correctly operating processor should be able to takeover the already started operations of a faulty processor. This continuous exchange of information is performed during interprocessor interrupt programs which are programs of highest priority. In decreasing order of priority, the other programs that are used include a clock interrupt program, an asynchronous switching interrupt program and a base level program. The system also includes means to detect a faulty processor by traffic comparison.

3,557,316

SYSTEM FOR PROVIDING ALTERNATIVE CONNECTIVE PATHS IN A COMMON CONTROL SWITCHING APPARATUS

Ryoichi Kimura; Chikai Ii; Kazuo Itoh, and Eiroku Kondo, Yokohama, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan

Filed May 28, 1968, Ser. No. 732,761
Claims priority, application Japan, June 2, 1967, 42/34839
Int. Cl. H04q *3/42*
U.S. Cl. 179—18 **6 Claims**



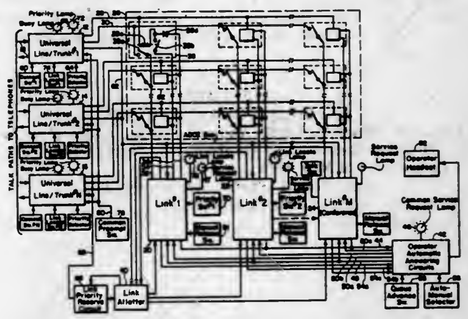
A switching apparatus of the common control type having crossbar switches arranged in a plurality of connection stages and independent registers and senders. In the switching apparatus, alternative links which can connect any one of the originating registers with any one of subscriber terminals accommodated in the switching frame are provided in order to reduce the link congestion.

3,557,317

TELEPHONE SWITCHBOARD WITH UNIVERSAL LINE/TRUNK CIRCUITS

Virgie E. Porter, Country Club Hills, Ill., assignor to Amtron, Inc., Midlothian, Ill., a corporation of Illinois

Filed June 10, 1968, Ser. No. 735,609
Int. Cl. H04m *3/42*
U.S. Cl. 179—27 **55 Claims**



A telephone switchboard includes N line/trunk circuits and M links individually coupled to the N horizontal and M vertical terminals, respectively, of a crosspoint matrix. An incoming call is connected to an allotted one of the links and thence to a called party by control circuitry that effects closure of two crosspoints on a single vertical terminal of the matrix.

An operator automatic answer circuit queues incoming calls in the order of their occurrence and permits the operator to individually access and service these calls with a minimum of effort.

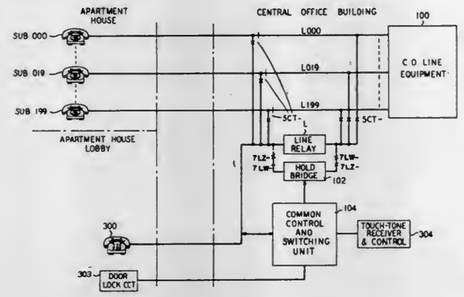
Signaling and indicator circuits utilize positive and negative control signal biases on the connecting matrix talk path to provide various operator informational or control functions.

Selected line/trunk circuits are provided a higher grade of service, i.e., a lesser probability of encountering a busy signal by apparatus which reserves certain of the links for use only by priority status line/trunks. Numerous other features, such as special conference link circuitry, are disclosed.

3,557,318
APARTMENT HOUSE TELEPHONE SYSTEM

John J. Buonsante, Harrison, N.Y., and Norman J. Syvertsen, Fanwood, N.J., assignors to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York

Filed Sept. 29, 1966, Ser. No. 582,852
Int. Cl. H04m *11/00*
U.S. Cl. 179—39 **3 Claims**

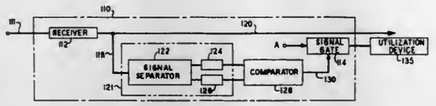


A telephone switching arrangement for apartment houses whereby the apartment tenant telephones utilized for normal communication through the central office are also utilized for lobby-apartment conversations and control of lobby door opening mechanisms. The lobby telephone is connected to an apartment tenant telephone via additional central office equipment. A lobby call to a tenant's idle telephone is identified by a distinct ringing signal separate from that normally applied on central office calls. If the tenant line is busy, the lobby call will apply an alerting tone to the busy connection and the tenant may, by means of a monitoring common line relay and holding bridge, place the prior central office call on hold and converse with the lobby. Should the tenant "hang up" after conversing with the lobby, the "held" central office call will rering the tenant's telephone.

3,557,319
SIGNALING GUARD CIRCUIT

Robert E. Maurer, North Andover, Mass., assignor to Bell Telephone Laboratories Incorporated, Murray Hill, N.J., a corporation of New York

Filed Mar. 13, 1969, Ser. No. 807,022
Int. Cl. H04m *1/50*
U.S. Cl. 179—84 **10 Claims**

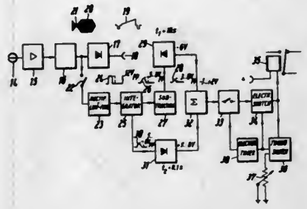


A control circuit in a single frequency signal receiver operates to separate the positive portions of an incoming signal from the negative portions thereof. The difference between the positive and negative portions is used to control the gating of the incoming signal or a separately generated signal.

3,557,320
REPRODUCTION OF A STILL PICTURE FROM A VIDEO TAPE RECORDING BY COMBINED DROP-OUT ZONE SENSING

Jurgen Hopf, Rodacher Strasse 62, Kronach, Germany

Filed Aug. 8, 1967, Ser. No. 659,197
Int. Cl. G11b *5/52*; H04n *5/78*
U.S. Cl. 179—100.2 **12 Claims**

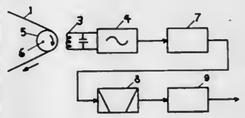


A tape containing a sequence of television picture signals recorded in parallel tracks at normal recording speed, is scanned while at slow motion speed. The tape is stopped when the crossover dropout zone is immediately followed or preceded by an additional dropout zone. The additional dropout zone results from simultaneous tracking of two neighboring tracks and the space between, due to the reduced tape advance speed. This criterion is evaluated by generating a pulse whose amplitude is proportional to the width of the combined dropout zone. When this pulse reaches a maximum amplitude, a switching circuit stops the tape transport. A timing circuit restarts the transport after an adjustable time interval.

3,557,321
SYSTEM FOR DETECTING A MAGNETIC THIN FILM

Yowan Takao, Tokyo, Japan, assignor to Nippon Electronics Co., Ltd.

Filed Oct. 21, 1968, Ser. No. 769,343
Claims priority, application Japan, Oct. 25, 1967, Apr. 22, 1968, 42/68339;43/26578
Int. Cl. G11b *15/02*, *5/30*; G01r *33/04*
U.S. Cl. 179—100.2 **4 Claims**



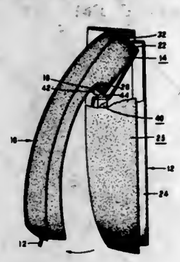
A system for detecting the presence of magnetic layers on a web comprising an oscillator, a coil to vary the oscillator frequency with inductance variation, means for vibrating the web to cause inductance variation and deviation of oscillation frequency, a frequency discriminator connected to the oscillator output to produce a voltage signal and means for reading out recorded information.

3,557,322
WALL SUPPORT WITH LOCKING FEATURE FOR A TELEPHONE HANDSET

Stephen W. Walden, Morral Township, Shelby, Ind., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Dec. 31, 1968, Ser. No. 788,174
Int. Cl. H04m *1/06*
U.S. Cl. 179—146 **10 Claims**

The support has a recess that accommodates the earpiece of the handset, the recess being bounded by a locking wall at the upper end thereof, a locking wall at each side, and a ledge at the lower end. A hookswitch plunger protrudes through the ledge, and the upper surface of the plunger together with the upper locking wall of the recess interact with the earpiece to secure the handset to the support when

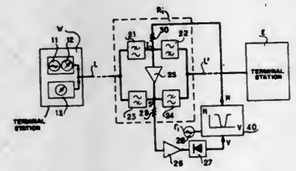


the lower end of the handset is tilted out from the support. In addition, the two side locking walls of the recess interact with the earpiece to secure the handset to the support when the lower end of the handset is tilted parallel to the support.

3,557,323
SYSTEM FOR REMOTE SUPERVISION OF REPEATERS

Christian Chalhoub, Paris, France, assignor to C. I. T. Compagnie Industrielle Des Telecommunications, Paris, France, a corporation of France

Filed Mar. 26, 1968, Ser. No. 716,206
Claims priority, application France, Mar. 29, 1967, 100,722
Int. Cl. H04b *3/46*
U.S. Cl. 179—175.31 **18 Claims**



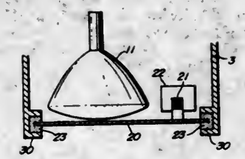
A system for remote supervision of repeaters in a telecommunication line wherein each repeater includes a frequency generator supplying a frequency characteristic of the repeater, a control arrangement for passing the output of the frequency generator for all but one given level of an applied control signal and a rectifier device for producing the control signal proportional to the output of the primary amplifier in the repeater, the telecommunication line having an additional generator of a frequency of variable level connected to the input of the line and an indicator for detecting the level of the signal generated by the frequency generator of a particular repeater.

3,557,324
TELEVISION RECEIVER HAVING MEANS FOR CAUSING SOUND TO EMANATE FROM PICTURE PLANE

Yoshiro Nakamatsu, 62, Shimoumacho-2-chome, Setagaya-ku, Tokyo, Japan

Filed Aug. 29, 1967, Ser. No. 664,156
Claims priority, application Japan, Apr. 28, 1967, June 22, 1967, June 22, 1967, 42/27051;42/39783;42/39784
Int. Cl. H04r *7/46*
U.S. Cl. 179—181 **1 Claim**

A sound device for television receivers having means emitting or reflecting sound in front of the screen of the picture tube to direct the sound toward a viewer so that the

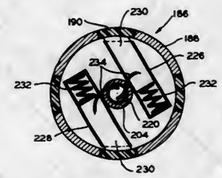


sound can be heard as if it were emanating from the picture screen of the television receiver.

3,557,325
PULSE MODULATING CONTROL DEVICE WITH IMPROVED CONTACT STRUCTURE

Howard C. Hansen, Battle Creek, Mich., assignor to Clark Equipment Company, a corporation of Michigan

Filed Feb. 19, 1968, Ser. No. 706,417
Int. Cl. H01h *39/00*
U.S. Cl. 200—24 **13 Claims**

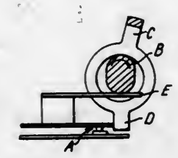


An electromechanical pulse width modulation device for controlling torque, rotational speed and direction of rotation of a direct current electric motor, such as a series, shunt or compound wound motor. The device includes a rotary switch having pairs of brush contacts which are selectively electrically connected through engagement with conductive segments on a driven cylindrical commutator member. The brush contacts are adapted to intermittently connect a direct current source to the field and armature windings of the electric motor, with one pair of contacts being movable relative to the other pair in a manner to modulate the direction and duration of pulse signals from the switch to the field and armature windings of the motor.

3,557,326
DEVICE FOR DELAYING THE OPENING OF THE PULSE CONTACT FOR TELEPHONE DIALS

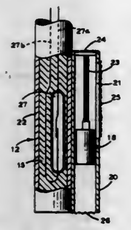
Severino Tessarollo, and Angelo Manzoni, Milan, Italy, assignors to International Standard Electric Corp., New York, N.Y., a corporation of Delaware

Filed Oct. 25, 1968, Ser. No. 770,552
Claims priority, application Italy, Oct. 25, 1967, 21,974/67
Int. Cl. H01h *43/00*
U.S. Cl. 200—33 **2 Claims**



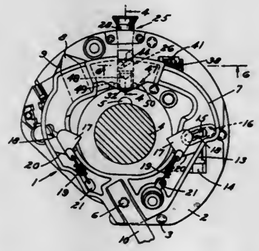
A telephone dialing mechanism is provided to produce a delay of two pulses duration before the beginning of the dial pulse train.

3,557,327
ION-CHANGE-RESPONSIVE SWITCH
Stephen Lepp, Plainsboro Township, Middlesex County; Edward Studley, North Plainfield, and Jonas Weiss, Plainfield, N.J., assignors to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 30, 1968, Ser. No. 787,947
Int. Cl. H01h *36/00*
U.S. Cl. 200—61.04 24 Claims



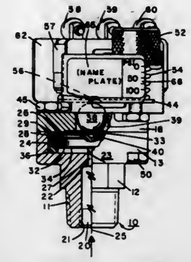
A material, such as polymeric fibers, which change dimensionally in response to increases or decreases in ions such as calcium or magnesium are connected to a first member. A second member is enclosed in a sealed housing and is spaced from and out of direct contact with said first contact. By means of a relationship between the first and second members, such as electrical field, magnetic or electromagnetic, movement of the first member, in response to dimensional changes in the contractile material result in movement of the second member, thereby activating a switch mechanism.

3,557,328
DIRECTION SIGNAL AND HAZARD WARNING SWITCH ASSEMBLY
Ray F. Winogrocki, East Detroit; Stephen J. Brzozowski, Jr., Detroit, and Gerald L. McClure, Warren, Mich., assignors to Essex International, Inc., a corporation of Michigan
Filed Feb. 2, 1968, Ser. No. 702,654
Int. Cl. H01h *3/16*
U.S. Cl. 200—61.27 24 Claims



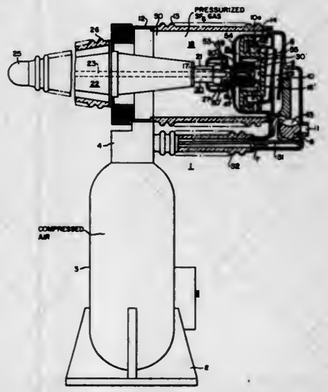
A vehicle direction signal assembly having direction signal operating means and independent hazard warning switch operating means including an actuating member movable linearly into and out of the path of a cam, rotatable in response to rotation of the vehicle's steering mechanism, movement of the actuator being transmitted to a contact carrier movable laterally of the actuator into and out of engagement with fixed contacts, the actuator and carrier having cooperable latch means for latching the actuator in the path of rotation of the cam whereby engagement between the cam and the actuator effects restoration of the latter and the carrier to their initial positions. The direction signal operating means and the hazard warning switch actuator include cooperable means operable in response to movement of the direction signal operating means to restore the hazard warning actuator and the contact carrier to their initial positions.

3,557,329
PRESSURE RESPONSIVE SWITCH
Joseph E. Gergens, Trumbull, and Randall Goff, Weston, Conn., assignors to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware
Filed Mar. 17, 1969, Ser. No. 807,835
Int. Cl. H01h *35/24*
U.S. Cl. 200—83 10 Claims



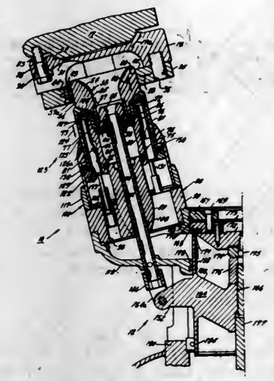
A pressure operable electrical switch having a diagonally supported flexure beam interposed between a pressure responsive diaphragm and a ball movable against a switch actuator. An exposed adjusting knob permits presetting pressure at which the instrument is to be operative and is located laterally displaced from the ball operatively connected to prevent beam movement at pressures below the setting thereof.

3,557,330
DOWNSTREAM PISTON-TYPE COMPRESSED-GAS CIRCUIT INTERRUPTERS
Winthrop M. Leeds, and Harvey E. Spindle, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Mar. 22, 1967, Ser. No. 625,212
Int. Cl. H01h *33/70*
U.S. Cl. 200—148 8 Claims



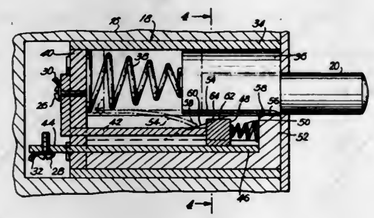
A piston-type of gas-blast circuit interrupter provides a cavitation region downstream of a moving tubular contact to cause exhausting flow of gas therethrough. Means are provided for a fixed open gap distance between the separated contacts to avoid excessive arc lengthening. Cooling means are employed within the moving tubular contact and downstream thereof to prevent gas-clogging action and to protect a rolling rubber diaphragm sealing the moving piston.

3,557,331
AXIALLY VENTED CONTACT AND INTERRUPTER STRUCTURE FOR GAS BLAST CIRCUIT BREAKERS
John H. Golota, Los Angeles, Calif., assignor to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware, by mesne assignments
Filed Nov. 6, 1967, Ser. No. 680,777
Int. Cl. H01h *33/82*
U.S. Cl. 200—148 7 Claims



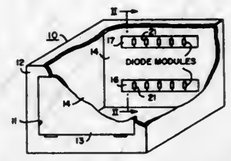
A movable contact has a plurality of inwardly biased fingers that have a limited inward collapse and are surrounded by a movable interrupter cylinder that moves into engagement with the bottom of the stationary contact and is mounted on spring-biased pins which bias the movable interrupter tube open. A mechanism having outwardly extending ears carries a blast valve assembly in a casting which mounts the interrupter tube on a high-pressure tank. The outward extending ears are connected to the ends of the movable contact assembly. A main operating shaft which extends through a main support insulator for each pole is connected to the blast valve through a spring coupling and moves the blast valve and contact with the valve moving from one seat to another to permit a gas blast from the high-pressure tank as the contacts and blast valve are moved.

3,557,332
MOMENTARY PUSHBUTTON SWITCH WITH BRIDGING BLOCK, RAMP AND CAM MEANS
Erwin Fernandes, 117 Arleigh Drive, Albertson, N.Y. 10467
Filed Oct. 5, 1967, Ser. No. 673,118
Int. Cl. H01h *3/12, 13/56*
U.S. Cl. 200—160 1 Claim



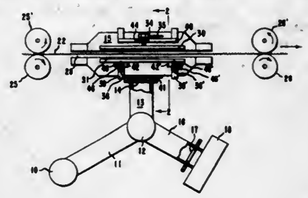
Switch with reciprocal plunger on which is mounted a leaf spring which, during one direction of movement of plunger, brushes a bridging conductor out of position whereat two terminals are connected. A ramp is used to disengage the leaf spring from the bridging conductor after the latter has been displaced. Switch is used to actuate an alarm by disconnecting the two terminals which being disconnected only briefly can be jumped by a second switch to avoid actuation of the alarm when so desired.

3,557,333
SOLID STATE MICROWAVE OVEN
Bruce R. McAvoy, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 21, 1969, Ser. No. 792,283
Int. Cl. H05b *9/06, 5/00*
U.S. Cl. 219—10.55 4 Claims



Apparatus for the treatment of materials by the application of heat for rapidly drying, cooking or the like, of the materials. The apparatus is characterized by the provision of a plurality of solid state oscillators, generating frequencies in the microwave region, the number and location of oscillators being such as to provide uniform distribution of the energy.

3,557,334
METHOD AND APPARATUS FOR REGULATING HEATING IN A MICROWAVE RESONANT CAVITY
Richard William Lewis, Derby, Kans., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Feb. 28, 1969, Ser. No. 803,374
Int. Cl. H05b *9/06, 1/02*
U.S. Cl. 219—10.55 6 Claims

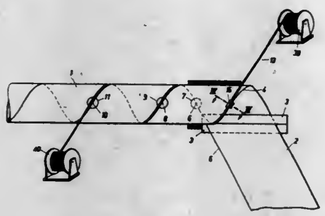


The method of operation of a microwave resonant cavity system in a preselected undercoupled or overcoupled mode and with preselected frequency offset provides stable heating of dielectric material advancing through the cavity for the purposes of moisture or solvent removal or heat treating. The system includes a three-port circulator coupled between a microwave power source, a resonant cavity and a water load. Means are provided between the circulator and cavity to establish the preselected coupling mode and between the circulator and water load to feed a portion of reflected power from the cavity due to detuning and decoupling to the power source to regulate the shift in frequency of the power source (frequency offset) according to variations in resonant frequency of the load cavity.

3,557,335
METHOD AND APPARATUS FOR PRODUCING AND/OR TESTING SPIRAL SEAMED TUBES
Adalbert Sablotny, Hagen-Vorhalle, Germany, assignor to Hoesch Aktiengesellschaft, Dortmund, Germany
Filed Oct. 22, 1968, Ser. No. 769,579
Claims priority, application Germany, Oct. 27, 1967, 1,652,938
Int. Cl. B23k *11/02*
U.S. Cl. 219—62 4 Claims

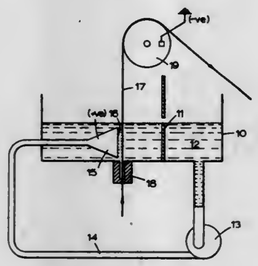
Method of producing or testing with a welding or testing instrument welded spiral-seamed tubes formed of a steel

band, which comprises rolling a steel band in a continuous spiral so as to form a rotating tube-shaped body; placing on the steel band at a constant spacing from an edge of the steel band extending toward a given welding location thereon, a premagnetized tape containing a ferromagnetic material adhering to the steel band and carrying a marking line disposed parallel to the edge of the steel band; sensing the marking line and regulating in accordance therewith the orientation of



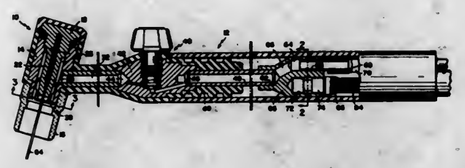
at least one of the welding and testing instruments with respect to the edge of the steel band so that the instrument and the given welding location are momentarily in registry as the tube-shaped body rotates; and withdrawing the premagnetized tape from the steel band after the steel band edge of the tube-shaped body has rotated past a second one of the instruments in the travel direction of the steel band edge; and apparatus for carrying out the method.

3,557,336
ELECTROCHEMICAL HEAT TREATMENT
William Bullough; Walter N. Jenkins; William G. Jaffrey, Swansea; Campbell Watts, Abertillery; Granville K. Jones, and Frederick W. Salt, Swansea, England, assignors to The British Iron and Steel Research Association, London, England, a British Company
Filed Jan. 10, 1968, Ser. No. 696,737
Claims priority, application Great Britain, Jan. 13, 1967, Aug. 16, 1967, 2036/67;37705/67
Int. Cl. C21d *9/52*
U.S. Cl. 219—71 **7 Claims**



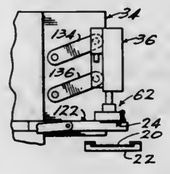
A method and apparatus for heat treating metal wire or strip, for example for annealing steel wire or strip, in which the metal and an aqueous electrolyte solution are moved continuously relative to one another. The metal is cathodically polarized with respect to an anode in the electrolyte. When the current density and interelectrode potential difference are sufficiently high, a substantially stable sheath of hydrogen forms around the metal to separate the metal from the electrolyte and an electrical discharge takes place across the sheath. The metal within the sheath is rapidly heated by a mechanism that is not fully understood but is referred to as electrochemical heating. The electrolyte is preferably directed in a flow at the wire or strip from one or more nozzles, and the wire or strip drawn through the flow.

3,557,337
WELDING TORCH
John M. Sipos, Easton, Pa., and Donald B. Daniels, Blackwood, N.J., assignors to Air Products and Chemicals Inc., Allentown, Pa., a corporation of Delaware
Filed Feb. 27, 1969, Ser. No. 803,026
Int. Cl. B65d *9/02*; **B23k** *9/00*
U.S. Cl. 219—75 **3 Claims**



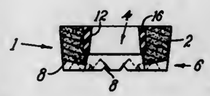
A welding torch of the tungsten electrode and inert gas type having a gas hose which is separate from the power cable, each being separately secured to a connector within the handle portion of the torch. Either the gas hose or the power cable is thus individually replaceable to thereby minimize maintenance costs.

3,557,338
APPARATUS FOR WELDING PARTS TO WORKPIECES
Don E. Ehrlich, Avon, Ohio, assignor to TRW Inc., Cleveland, Ohio, a corporation of Ohio, by mesne assignments
Filed July 8, 1966, Ser. No. 563,914
Int. Cl. B23k *9/20*
U.S. Cl. 219—98 **12 Claims**



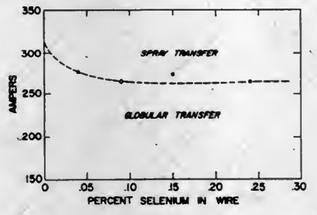
Apparatus is provided for welding parts to workpieces at a high rate, in the order of 250—300 parts per minute. The apparatus includes a unique arrangement for supplying the parts to the chuck of the welding tool and a mechanical arrangement for coordinating the operation of the tool and the part supply. The entire operation of the tool is also controlled mechanically, including mechanical means for timing the pilot and welding arcs of the welding cycle.

3,557,339
NONCONSUMABLE, REUSABLE STUD WELDING FERRULE
Herbert F. Rondeau, Winchester, Mass., assignor to Warren Fastener Corporation, Mt. Clemens, Mich., a corporation of Michigan
Filed Apr. 3, 1969, Ser. No. 813,239
Int. Cl. B23k *9/20*
U.S. Cl. 219—99 **8 Claims**



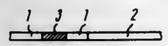
Stud welding means and method including the use of a semipermanent ferrule which is connected to a welding gun by a ferrule holder. The ferrule is electrically conductive to sustain electron flow in a direction opposite to the direction of electron flow in the stud being welded.

3,557,340
SELENIUM BEARING WIRE FOR STEEL WELDING
Pramod Kumar Srivastava, Kenmore, N.Y., assignor to Union Carbide Corporation, New York, N.Y., a corporation of New York
Filed Apr. 4, 1969, Ser. No. 813,685
Int. Cl. B23k *9/00*
U.S. Cl. 219—137 **3 Claims**



The addition of .04—3 percent-wt. of selenium to any ferrous filler wire composition improves the wettability property of the weld metal and substantially eliminates undercut.

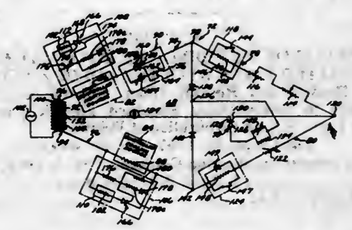
3,557,341
APPARATUS FOR PROTECTING AC SWITCHES AND ELECTRICAL EQUIPMENT AGAINST LOW TEMPERATURES AND ICING
Ilya Andreevich Tikhonov; Ivan Alexandrovich Dzhanshiev, Leningrad; Anatoly Egorovich Sochilin, and Eduard Nikolaevich Yakunin, Velikie Luki, U.S.S.R., assignors to vero-Zapadnoe Otdelenie Vsesojuznogo Gosudarstvennogo Proektno-Izyskatelskogo Nauchno-Issledovatelskogo Instituta Se-"Energosetpoekt" U.S.S.R.
Filed Aug. 9, 1968, Ser. No. 751,577
Int. Cl. H05b *1/00*; **H01h** *3/00*
U.S. Cl. 219—209 **1 Claim**



An AC switch comprises blade contacts in which at least one contact member has at least one ferromagnetic portion integrally incorporated therein so that load current passes through the ferromagnetic portion when the switch is closed. The ferromagnetic portion is interposed in series with the remaining portion of the accommodating contact so as to become a component of the operating current electric circuit.

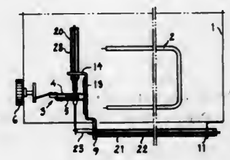
3,557,342
TEMPERATURE CONTROL SYSTEM
William W. Chambers, Anaheim, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Continuation-in-part of application Ser. No. 637,490, May 10, 1967, now abandoned, which is a continuation-in-part of application Ser. No. 547,491, May 4, 1966, now abandoned. This application May 5, 1969, Ser. No. 826,775
Int. Cl. H05b *1/02*
U.S. Cl. 219—499 **19 Claims**

A temperature control system including a temperature sensitive bridge circuit connected to a controlled rectifier, and wherein environmental temperature changes unbalance the



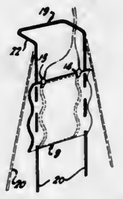
bridge and cause the rectifier to conduct and thereby effect operation of a furnace or an air conditioner.

3,557,343
CONTROL EQUIPMENT OF HEATING DEVICES
Per Gunnar Brynge; O. Arne Andersson, and Hans Ove Nilson, Huskvarna, Sweden, assignors to Husqvarna Vapenfabriks Aktiebolag, Huskvarna, Sweden
Filed June 28, 1968, Ser. No. 741,103
Claims priority, application Sweden, June 29, 1967, 9633/67
Int. Cl. H05b *1/02*
U.S. Cl. 219—510 **3 Claims**



A regulating device in heating apparatus for regulating the power by frequent on and off switching including a switch means controlled concurrently by a first sensor sensing the temperature representative for the apparatus, and by a second sensor, sensing the temperature of the air in a room, which the apparatus is to heat.

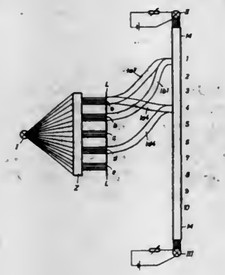
3,557,344
IMMERSIBLE ELECTRICAL HEATING DEVICE
Edward A. De Crosta, and Emil J. Luger, Jr., San Francisco, Calif., assignors to Delta Control, Inc., San Francisco, Calif., a corporation of California
Filed Mar. 7, 1969, Ser. No. 805,211
Int. Cl. H05b *1/00*
U.S. Cl. 219—316 **2 Claims**



Disclosed is an electrical heating device for immersion in liquids to be heated, said device being made up of a supporting frame member on which is mounted an electrical heating unit comprising an inner semiconductive heating element enclosed within nonconductive, insulating face panels, said ele-

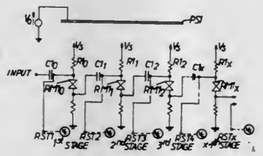
ment having spaced bus bars bonded thereto which serve to receive electrical current and transmit it through the said element, thus generating the heat which is transmitted through the face panels to the liquid.

3,557,345
METHOD OF DECODING THE INFORMATION ON PERFORATED TAPES WITH THE AID OF FIBER OPTICS
Heinz Rensch, and Hoeckly Oden, Korntal, Germany, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 20, 1967, Ser. No. 669,052
Claims priority, application Germany, Oct. 5, 1966, St25951
Int. Cl. G06k 9/02; G02b 5/16
U.S. Cl. 235—61.11 **2 Claims**



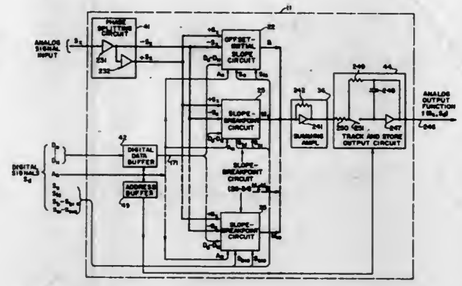
The present invention relates to a method of converting a tape code, preferably an n-out-of-m code, into plain text, in which the scanning of the individual code rows is effected with the aid of parallel light beams.

3,557,346
OPTICAL BINARY COUNTER
Ronald William Lomax, London, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Oct. 13, 1967, Ser. No. 675,235
Claims priority, application Great Britain, Nov. 7, 1966, 49721/66
Int. Cl. H03k 19/08, 23/36
U.S. Cl. 235—92 **4 Claims**



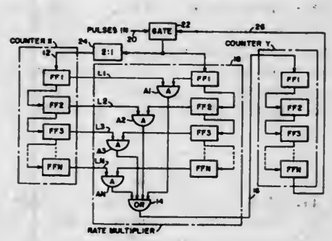
A binary counter including at least two digital divide-by-two circuits connected in cascade, each of said digital divide-by-two circuits which provides the means for obtaining one binary units include a thin metal-insulator-metal resistance-memory device having symmetrical voltage-current characteristics, voltage potential means coupled to said resistance-memory device, and an input/output circuit, wherein each of said digital divide-by-two circuits produces N/2 output pulses for N equal amplitude, single polarity input pulses.

3,557,347
DIGITALLY CONTROLLED ANALOGUE FUNCTION GENERATOR
Jack Y. Robertson, Concord, Calif., assignor to Zeltex, Inc., a corporation of California
Filed Sept. 18, 1968, Ser. No. 760,508
Int. Cl. G06j 7/26, 1/00
U.S. Cl. 235—150.53 **21 Claims**



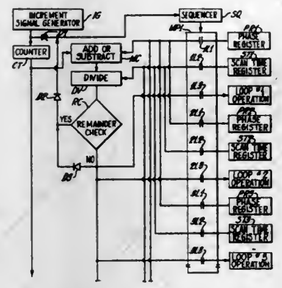
A function generator primarily adapted for use in hybrid computing systems, wherein method and apparatus are disclosed for producing an analogue output signal as a digitally selected segmental function of an independent variable analogue input signal. In particular, the system involves the generation of a fundamental or base signal having a digitally selected linear gain or slope relationship with the input signal and the concurrent generation of a plurality of modifier signals having individual digitally selected discontinuous breakpoint relationships with the same input signal. The base and modifier signals are thereupon electrically summed to produce an analogue output signal having the desired segmental function relationship with the input signal.

3,557,348
DIGITAL ARITHMETIC SYSTEM FOR COMPUTATION OF SQUARE ROOTS AND SQUARES EMPLOYING A RATE MULTIPLIER
Peter F. Aemmer, Urdorf, Switzerland, assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 9, 1969, Ser. No. 814,638
Int. Cl. G06f 7/38, 7/20
U.S. Cl. 235—150.3 **9 Claims**



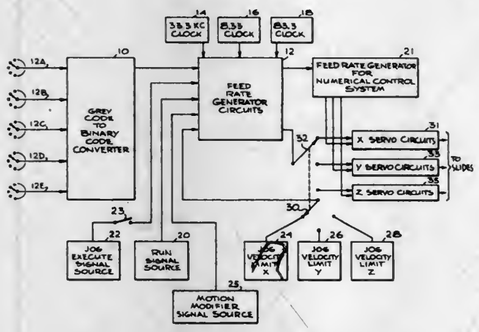
Described is a digital system, employing only two binary counters and a rate multiplier, capable of extracting the square root of an unknown variable or raising the unknown variable to the power of two. The system is much simpler and less expensive than prior art systems for achieving the same function.

3,557,349
METHOD AND APPARATUS FOR PROCESS CONTROL
Paul D. Griem, Jr., Newark, Ohio, assignor to Owens-Corning Fiberglas Corporation, a corporation of Delaware
Filed Dec. 13, 1967, Ser. No. 690,162
Int. Cl. H04g 3/00; G05b 15/00
U.S. Cl. 235—151.1 **18 Claims**



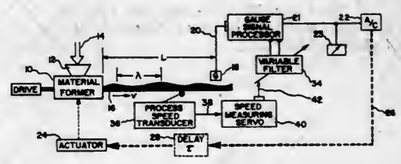
Method and apparatus for producing glass fibers including a plurality of bushings for feeding streams of molten glass through orifices formed therein. A control loop is provided for each bushing for controlling the amount of electrical power supplied to the bushing and includes means for sensing the temperature of the bushing and power regulating means for the bushing. Data processing means is operative to receive a signal from a temperature sensing means of a control loop and to provide a corrective control signal to the power regulating means for that loop. Means selectively connect the data processing means to individual loops in a predetermined sequence to most effectively utilize the control time of the data processor.

3,557,350
DIGITAL FEEDRATE GENERATOR
Thomas Proctor, Lyndhurst, Ohio, assignor to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin. by mesne assignments
Filed Nov. 30, 1967, Ser. No. 686,879
Int. Cl. G06f 15/46; G06g 7/64
U.S. Cl. 235—151.11 **11 Claims**



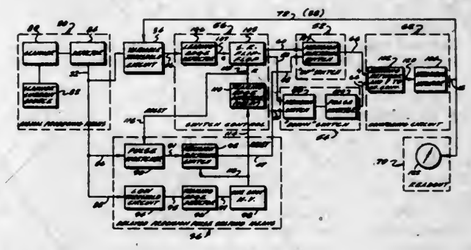
In a numerically controlled machine tool there are provided a number of pulses in accordance with the extent of motion desired along each axis of the numerically controlled machine tool, at a rate which is determined by a feedrate generator under the control of digital data, designated by a feedrate number and recorded on a memory medium. The present invention provides for an additional feedrate generator which may be easily, accurately, and digitally controlled to provide pulses at a desired feedrate when it is desired to jog or manually control movement along an axis of a numerically controlled machine tool system, over a range feedrate controllable from zero to 100 percent of a nominal maximum value. The additional feedrate generator may also be used to produce pulses for driving the feedrate generator of the control system during automatic operation, thus enabling a modification of the block pulse rate fed to the system feedrate generator if desired. Provision is also made for preset maximum limits for each axis, when manual moves or jogs are executed, to avoid exceeding mechanical limits of travel of the individual slides and their drives.

3,557,351
PROPERTY MEASUREMENT SIGNAL FILTERING METHOD AND APPARATUS FOR ELIMINATING PREDETERMINED COMPONENTS
George I. Doering, Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Apr. 12, 1967, Ser. No. 630,393
Int. Cl. G05d 5/02
U.S. Cl. 235—151.3 **30 Claims**



An error signal filtering technique for a control system wherein the rejection or cutoff bands of a filter circuit are shifted in accordance with the speed of the material being controlled. In one embodiment, the error signal from a thickness gauge is averaged over several complete cycles of a predominant uncontrollable frequency component. In another embodiment, an average value of an error signal from a sheet scanning gauge is provided for one or more zones extending down the length of the sheet by controlling the scanning speed of the gauge to provide signal integration over complete cycles of the predominant frequency component.

3,557,352
APPARATUS AND METHOD FOR MEASURING A DIVIDING PARTICLE SIZE OF A PARTICULATE SYSTEM
Walter R. Hogg, Hialeah, Fla., and Wallace H. Coulter, Miami Springs, Fla., assignors to Coulter Electronics Inc., Hialeah, Fla., a corporation of Illinois
Filed Nov. 1, 1967, Ser. No. 679,840
Int. Cl. G01n 15/02
U.S. Cl. 235—151.3 **54 Claims**



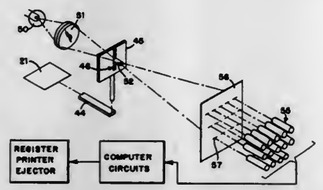
Apparatus which uses the Coulter particle analyzing system, converting the pulses obtained from said system into accumulated electrical quantities which may be compared to one another or to other quantities derived from the same system on the basis of which one can adjust the quantities relative to one another to achieve the size of a particle which

divides the system into two fractional parts having a particular relationship to one another. A variation of this structure is one in which a particle size is obtained which establishes a point in the particulate system above or below which a predetermined fraction of the total mass exists. The preferred structure uses a threshold circuit responding to particle size and separating the electrical pulses produced by the particles being scanned in the Coulter apparatus through the use of such a threshold. The pulse trains are converted into current and these are compared, adjusting the threshold up and down until the desired relationship is reached in a comparison device. The level of the threshold being calibrated to particle size then represents the dividing size between the two fractions. One of the most useful pieces of information of this kind is the dividing size which is the mass median, in which the respective masses of particulate matter above and below the dividing size are equal to one another.

3,557,353
WEIGHING SCALES

Kenneth C. Allen, and Edwin E. Boshinski, Dayton, Ohio, assignors to The Hobart Manufacturing Company, Troy, Ohio, a corporation of Ohio

Filed Dec. 31, 1964, Ser. No. 422,730
Int. Cl. G01g *23/38;* **G06f** *15/20*
U.S. Cl. 235—151.33 **18 Claims**



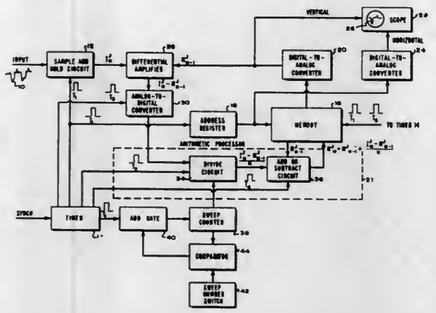
A computing and printing scale system includes a pulse generator and an optical scale incorporating a mechanism which reads out the balance position of the platter and stores the weight information of selective transmission of pulses directly to a series of pulse counters each representing one column of weight information. Thereafter, the value of the weighed load at a preset unit price is computed by selective transmission of pulses to a series of valve counters in accordance with partial product multiplication of the digits of weight and unit price, controlled in part by the weight counters. Finally, the weight and value information stored in the counters is transmitted to a printer-register which prints the information on a label.

3,557,354
SIGNAL-TO-NOISE RATIO ENHANCEMENT METHODS AND MEANS

Charles R. Trimble, Palo Alto, Calif., assignor to Hewlett-Packard Company, Palo Alto, Calif., a corporation of California

Original application June 13, 1966, Ser. No. 557,167, now Patent No. 3,506,813. Divided and this application Jan. 9, 1970, Ser. No. 1,581
Int. Cl. G06f *15/00, 15/34*
U.S. Cl. 235—152 **2 Claims**

A selected interval of a recurring input signal is repetitively sampled in amplitude at the same time positions during successive signal averaging cycles. During the first signal averaging cycle the amplitude sample obtained at each of these time positions is processed as an average of one recurrence of the portion of the selected input interval occurring at that time position and is stored in a memory channel associated with that time position. During each succeeding signal averaging cycle the difference in amplitude between each amplitude sample and the average stored in the associated memory channel during the preceding signal averaging cycle is divided by a selected factor, and the quotient is algebraically added as a correction factor to the average stored in the associated memory channel during the preceding signal averaging cycle to update that average. This may be accomplished for each time position of each sweep by shifting a number indicative of the average stored during the preceding sweep in the associated memory channel x places in an accumulator, adding by signed counting a number indicative of the difference in amplitude between the amplitude sample

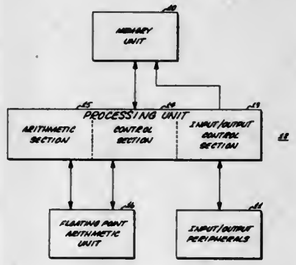


obtained at that time position and the average stored during the preceding sweep in the associated memory channel to the shifted number in the accumulator, shifting the resultant number back x places in the accumulator to provide a corrected average for that time position, and storing the corrected average in the associated memory channel.

3,557,355
DATA PROCESSING SYSTEM INCLUDING MEANS FOR DETECTING ALGORITHM EXECUTION COMPLETION

Marion G. Porter, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York

Filed July 14, 1967, Ser. No. 653,493
Int. Cl. G06f *7/39*
U.S. Cl. 235—164 **3 Claims**



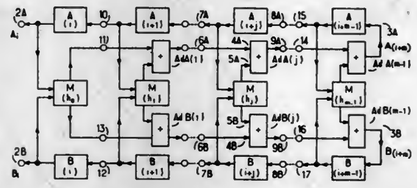
DATA PROCESSING SYSTEM

A data processing system including an arithmetic unit in communication with a data processing unit provides the capacity of performing instruction execution operations upon data supplied thereto by the processing unit. The system further includes means for detecting the completion of an algorithm execution, in particular the completion of a multiplication algorithm.

3,557,356
PSEUDO-RANDOM 4-LEVEL M-SEQUENCES GENERATORS

Claude Baiza, and Maurice Auguste Francois Joseph Maniere, Conflans-Sainte-Honorine, Yvelines, France, assignors to Lignes Telegraphiques & Telephoniques, Paris, France

Filed May 6, 1968, Ser. No. 726,686
Claims priority, application France, May 12, 1967, 106,302
Int. Cl. G06f *7/38*
U.S. Cl. 235—152 **9 Claims**

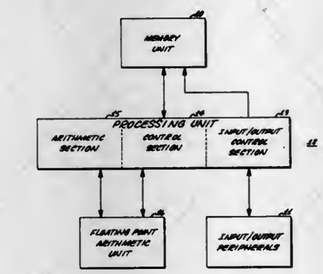


Electronic apparatus for generating pseudo-random sequences of four-level signals, comprising combinations of electronic devices capable of simulating the two possible operations on a 4-element Galois' field. The combinations include various logic circuits of the "AND, EXCLUSIVE OR" and "INVERTER" types.

3,557,357
DATA PROCESSING SYSTEM HAVING TIME-SHARED STORAGE MEANS

Marion G. Porter, Phoenix, Ariz., assignor to General Electric Company, a corporation of New York

Filed July 14, 1967, Ser. No. 653,491
Int. Cl. G06f *7/38*
U.S. Cl. 235—175 **7 Claims**



DATA PROCESSING SYSTEM

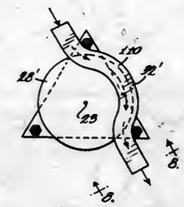
A data processing system including an arithmetic unit having time-shared registers, in communication with a data processing unit provides the capability of performing the execution arithmetic operations, including those of the floating-point type upon data supplied thereto by the processing unit.

3,557,358
FLUID INTEGRATING DEVICE

Guy L. Fougere, Lincoln, Mass., assignor to I-T-E Imperial Corporation, Chicago, Ill., a corporation of Delaware. by mesne assignments

Filed Nov. 14, 1968, Ser. No. 775,705
Int. Cl. G06d *1/02*
U.S. Cl. 235—200 **8 Claims**

A fluid integrating device including a magnetically suspended disc mounted for rotation about a vertical axis with a fluid flow channel receiving a portion of the disc for directing fluid across and parallel to the disc to cause rotation of the same with means for sensing rotation of the disc and providing a representation of a predetermined time

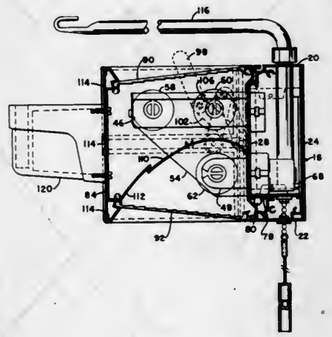


delay, fluid pulse count, and continuous fluid flow integration as well as other functions.

3,557,359
HOSPITAL LIGHT

Ronald K. Meyer, San Francisco, Calif., assignor to Electro/Systems, Inc., Richmond, Calif., a corporation of California

Filed Jan. 22, 1968, Ser. No. 699,587
Int. Cl. F21u *21/00*
U.S. Cl. 240—1.4 **5 Claims**



A hospital light has a fluorescent light mounting frame received within a base panel. The mounting frame and the base panel are held together by a slidable member which fits into a slot formed where the panel and frame come together. The frame is removable so that the lamps and other electrical components are easily changed. Also provided is a terminal block which allows for rapid rewiring of the lamps or other components.

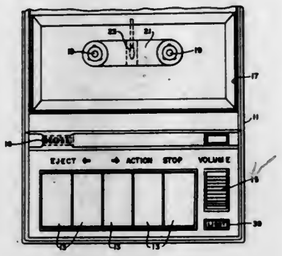
3,557,360
APPARATUS FOR ILLUMINATING THE TAPE REELS AND SPINDLE SPLINES OF TAPE CASSETTES

Charles A. Aldridge, Barrington, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed May 31, 1968, Ser. No. 733,511
Int. Cl. F21v *19/00;* **G11b** *5/00*
U.S. Cl. 240—2 **4 Claims**

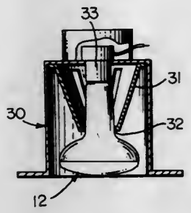
This disclosure describes an apparatus for illuminating the tape reels and the moving spindle splines of a tape cassette when the cassette is held in a tape recorder. The apparatus comprises a light bulb mounted so as to project light into a light ducting plastic glass or other transparent material. The light ducting plastic glass is mounted beneath the point where the cassette is held in the tape recorder so that light is emitted onto the reels and the moving spindle splines. In this manner, the operation of the cassette can be observed when

the light is energized. The light ducting plastic glass has a diffusing surface that prevents an observer from being dis-



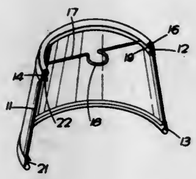
tracted by observing the mechanism of the tape recorder located beneath the light ducting plastic glass.

3,557,361
LAMP FIXTURE CONSTRUCTION
Jimmie G. McCarty, 2805 Bethany Road, Anderson, Ind.
Filed Nov. 25, 1968, Ser. No. 778,516
Int. Cl. F21s *1/06*
U.S. Cl. 240—78 **5 Claims**



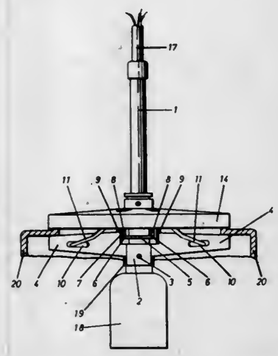
A lamp fixture having an encircling shade designed to receive only a long neck, reflector-type incandescent electric lamp is provided with an element that forms a restriction spaced from the fixture socket. The size and position of the restriction permits only the proper lamp to be screwed into the fixture socket, and prevents other incandescent electric lamps from being screwed into the fixture socket.

3,557,362
EASILY-ASSEMBLED LAMPSHADE
Barrie Edmund White, and Christopher Jarvis Edmund White, The Courtyard, Heath Road, Petersfield, Hampshire, England
Filed June 20, 1968, Ser. No. 738,568
Claims priority, application Great Britain, Jan. 18, 1968, 2830/68
Int. Cl. F21v *1/00*
U.S. Cl. 240—108 **6 Claims**



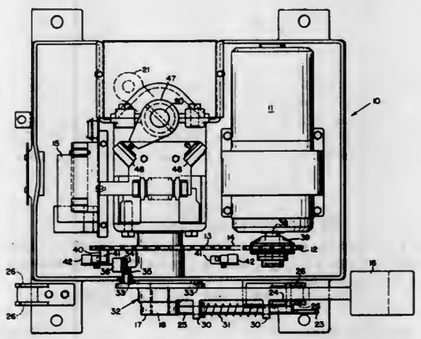
A lampshade includes two hoops, each snapping into a channel in one of a pair of resilient strips, the strips being clipped onto the top and bottom edges of a frustoconical piece of shade material. The upper strip may have any of several forms and may include two channels, one for the hoop and one for a shade-supporting cross piece.

3,557,363
LUMINAIRE
Hans Bunte, Halingen; Horst Traulich, and Herbert Vedder, Menden, Germany, assignors to Firma Gantenbrink-Leuchten oHG Spezialfabrik fuer Aussenleuchten, Menden, Germany
Filed Jan. 31, 1968, Ser. No. 701,950
Int. Cl. F21v *17/06*
U.S. Cl. 240—128 **9 Claims**



A luminaire has a glass globe which is supported between a cover for the luminaire and elongated supporting arms. The luminaire support has a sleeve member upon which the cover is slidably mounted for vertical movement. The support arms are pivotally mounted at equally spaced intervals about the sleeve member. The supporting arms and the cover are connected such that when the cover is raised the arms pivot upwardly to release the globe.

3,557,364
TRAILABLE SWITCH MACHINE WITH DUAL CONTROL
Charles L. Swanton, North Chili, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York
Filed Jan. 23, 1969, Ser. No. 793,275
Int. Cl. B61l *5/00*
U.S. Cl. 246—240 **11 Claims**



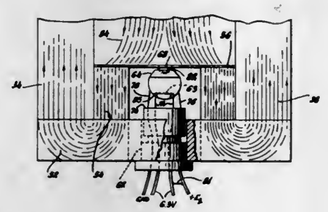
An improved switch machine having a manually operated mechanism for moving a set of switch points between two

predetermined positions, the improvement providing automatic power control including; a starter circuit for activating the power control, a driving means for operating the mechanism, a stopping means for limiting the motion of the driving means, signal means responsive to the stopping means for producing a signal when the driving means is stopped at a predetermined position, a timer for detecting an excessive time for moving the switch points and providing an electrical signal if an excess time duration is detected, a controller for relaying commands to the driving means and a decoupler for disconnecting the driving means from the controller.

The driving means responsive to the controller is activated by the starter circuit, deactivated in response to the stopping means signal and decoupler respectively, and reversed upon receipt of an excess duration indication from the timer.

An agreement detector is incorporated for checking the position of specific component parts with respect to the others.

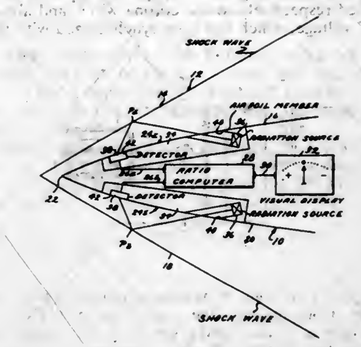
3,557,365
ION SOURCE FOR A MASS SPECTROMETER
Ralph Elliott Mayo, Fairfield, and Edward B. Delany, Ridgefield, Conn., assignors to The Perkin-Elmer Corporation, Norwalk, Conn., a corporation of New York
Filed Dec. 22, 1967, Ser. No. 692,884
Int. Cl. H01j *37/08*
U.S. Cl. 250—41.9 **10 Claims**



An ion source includes a directly heated cathode formed of an elongated wire arranged in a configuration for providing a relatively large electron emission surface. The cathode is surrounded by a grid electrode having a hollow semispherically shaped segment of radius R_1 and a frustum conically shaped segment. A first apertured anode electrode is positioned with respect to the grid electrode and includes a spherical segment extending toward the grid electrode and shaped as a hollow apertured spherical body of radius R_2, where $R_1 > R_2$. With this arrangement a relatively high emission current density is provided while electrons are focused through the first anode aperture with a relatively noncomplex structure.

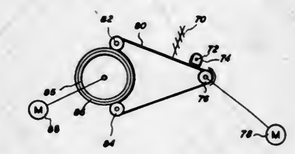
3,557,366
ANGLE OF ATTACK INDICATOR USING A RADIOACTIVE SOURCE AND DETECTOR
Ernest D. Jernigan, Jr., Columbus, Ohio, assignor to Industrial Nucleonics Corporation, a corporation of Ohio
Filed Apr. 17, 1967, Ser. No. 631,328
Int. Cl. G01n *23/12*
U.S. Cl. 250—43.5 **13 Claims**

In order to provide an instantaneous indication of the angle of attack of a body traveling through the air at supersonic speeds, opposite surfaces of the leading edge of the body are provided with nucleonic radiation sources so directed as to intercept the shockwave created by the body with nucleonic radiation, some of which is reflected to radiation detectors also mounted on the body opposite surfaces.



The outputs on the detectors are fed to a ratio computer and from there to a visual display device.

3,557,367
METHOD AND APPARATUS FOR INCREASING THE EFFICIENCY OF CORONA CHARGING OF A PHOTOCONDUCTOR
Walter Roth, Rochester; Charles F. Gallo, Penfield; Algrid G. Leiga, Pittsford, and John A. McInally, Penfield, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Sept. 1, 1967, Ser. No. 665,049
Int. Cl. G03g *13/02, 15/02*
U.S. Cl. 250—49.5 **6 Claims**



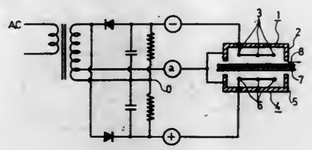
A method and apparatus for increasing the efficiency of corona charging of a photoconductive plate are disclosed in the present application. The method comprises reducing the electromagnetic radiation received by the photoconductive plate by the use of an optical mask between the charging corona wires and the photoconductive plate. In one embodiment, the ions produced by the corona wire are directed to the photoconductive plate by the use of a combination of electrostatic ion deflection techniques and/or the use of a gas flow to carry the ions around an optical mask.

In another embodiment, the efficiency of corona charging is increased by charging an intermediate insulating material such as insulating beads or an insulating belt which may then be brought into contact with an optically shielded photoconductor or other material to be charged.

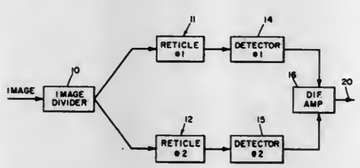
3,557,368
CHARGING DEVICE APPLIED FOR MAKING ELECTROPHOTOGRAPHY
Tekeo Tano, and Morimasa Washiashi, Tokyo, Japan, assignors to Iwatsu Electric Company Limited, Tokyo, Japan, a company of Japan
Filed Jan. 13, 1969, Ser. No. 790,627
Claims priority, application Japan, Jan. 25, 1968, 43/3998
Int. Cl. H01j *37/26*
U.S. Cl. 250—49.5 **4 Claims**

Disclosed herein is a charging device for use in electrophotography, characterized by a pair of corona charging devices facing each other with a suitable intervening space

permitting the passage of photosensitive paper. Each corona charging device is provided with an auxiliary electrode, and at least one corona wire disposed in a holding space of the auxiliary electrode. High DC voltages of opposite polarities are applied respectively to the corona wires, and about 400 v. of AC voltage, which has been synchronized with the ripple voltages, of the high DC voltage is applied to the auxiliary electrodes. Consequently, the loss of the high DC voltage power source is reduced and a smaller power source can be applied for the charging device. Moreover, a very uniform corona discharge can be produced over a substantial portion of the entire charging period to attain a high speed charging.



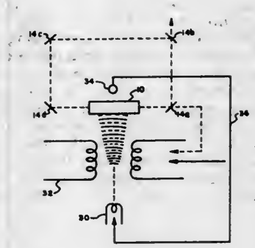
3,557,369
RADIANT ENERGY DETECTING SYSTEM
Eugene S. Rubin, Waban, and William J. Parkin, Wayland, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Oct. 12, 1966, Ser. No. 587,375
Int. Cl. H01j *39/00*
U.S. Cl. 250—83.3 **5 Claims**



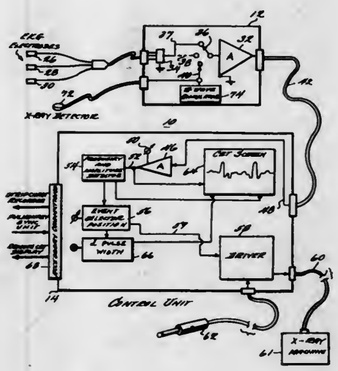
An infrared detection system for discriminating between point sources and extended sources of infrared radiation is disclosed wherein a pair of detectors are provided with control electrodes which are energized with quadraturely phased driving voltages to provide information on the coordinate position of any radiant energy image falling on the detectors. In front of each detector is a stationary reticle having a checkerboard pattern of areas opaque and transparent to infrared radiation. One checkerboard is the reverse of the other. The outputs of the detectors are combined in a differential amplifier. When an image from an extended radiation source is focused on the reticles, it covers several of the individual squares of the checkerboard design and similar signals are produced which cancel out in the amplifier. A point source target, in contradistinction, passes through only one of the reticles and, consequently, its signal does not cancel in the amplifier.

3,557,370
GAMMA RAY LASER HAVING A LOW TEMPERATURE CLOSED RESONATING CAVITY
Lawrence J. Piekenbrock, Longmont, and Edward Camp Tibbals, Jr., Boulder, Colo., assignors, by mesne assignments, to Alexander Dawson, Inc., Mahwah, N.J., a corporation of Delaware
Filed Feb. 14, 1968, Ser. No. 705,417
Int. Cl. H01s *4/00*
U.S. Cl. 250—84 **6 Claims**

Gamma ray laser device, wherein a coherent beam of gamma radiation is generated through stimulation of gamma transitions in excited atomic nuclei in a biologically shielded and low temperature closed resonating cavity, and wherein said atomic nuclei are externally excited by subjection thereof to radiation produced by electron decomposition.

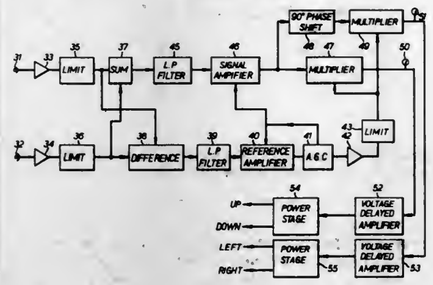


3,557,371
METHOD AND APPARATUS FOR CALIBRATING A CARDIAC X-RAY SYNCHRONIZER
Hal Clarence Becker, New Orleans, La., assignor to X-Scope Corporation, Philadelphia, Pa., a corporation of Delaware, by mesne assignments
Filed June 10, 1968, Ser. No. 735,901
Int. Cl. H05g *1/26*
U.S. Cl. 250—93 **9 Claims**



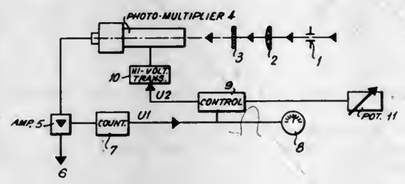
Method and Apparatus for calibrating a cardiac X-ray synchronizer which causes an X-ray machine to produce an X-ray burst at a given adjustable point in the cardiac cycle of a person disposed in the burst path by detecting each R-wave peak and producing a signal actuating the machine at a given adjustable time after the peak and which displays the cardiac waveform and a pulse having a duration equal to the inherent time delay between actuation and burst production so that the operator can set the trailing edge of the pulse on the point. Calibration is accomplished by placing an X-ray detector in the burst path and utilizing a simulated R-wave signal to actuate the synchronizer so that the X-ray burst signal, the simulated R-wave and the pulse are displayed. The pulse width is then adjusted so that the trailing edge coincides with the X-ray burst signal.

3,557,372
GUIDANCE SYSTEM WITH OPTICALLY NUTATED RETICLE HAVING GEOMETRY WHICH OBVIATES THE NEED FOR FREQUENCY DISCRIMINATORS
Ainsley Neville Ede, Cambridge, England, assignor to Hudswell Yates Developments Limited, Leeds, England
Filed Dec. 18, 1968, Ser. No. 784,657
Claims priority, application Great Britain, Dec. 18, 1967, 57356/67
Int. Cl. G01j *1/20*; H01j *39/12*; G01s *1/70*
U.S. Cl. 250—203 **6 Claims**



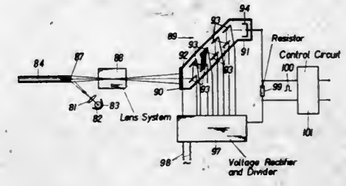
A guidance system comprising a transmitter mounted in a fixed position and a receiver fixed to a movable apparatus to be guided along a straight path defined by a modulated beam of light emitted by the transmitter, the transmitter optical system including a source, a reticle and an optical member, the reticle comprising four optical quadrants of differing capacity, the opacities of the first and third quadrants being substantially different from the opacities of the second and fourth quadrants, and the receiver including at least two radiation detectors the outputs of which are both added and subtracted in each case without being first fed through a frequency discriminator, has been inserted to provide first and second signals which can be utilized to guide the movable apparatus along the straight path.

3,557,373
METHOD AND CIRCUITS FOR REGULATING THE GAIN OF A PHOTOMULTIPLIER FOR LASER-TELEMETRY APPARATUS
Walther Hess, Dilsberg-Neuhof, Germany, assignor to Electro GmbH & Co., Heidelberg, Germany
Filed June 28, 1968, Ser. No. 740,995
Claims priority, application Germany, June 28, 1967, 1,623,420
Int. Cl. H01j *43/30*; H03g *3/24*
U.S. Cl. 250—207 **8 Claims**



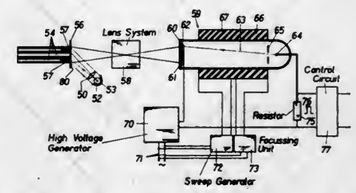
Apparatus is provided for use in laser-telemetry equipment by means of which a photomultiplier has its gain controlled according to the intensity of the prevailing background radiation. The magnitude of the background radiation is converted into a voltage which in turn is used to control a high-voltage source coupled to the photomultiplier. The noise can be received directly through the photomultiplier or a receiver having the same field of view as the photomultiplier may be employed.

3,557,374
ARRANGEMENTS FOR TESTING BLOCKS OF CIGARETTES BY OPTICALLY IMAGING THEIR ENDS ON A PHOTOMULTIPLIER CATHODE
Alfred Schmermund, 62, Kornerstrasse, Gevelsberg, Westphalia, Germany
Original application Mar. 8, 1966, Ser. No. 532,635, now Patent No. 3,473,037, dated Oct. 14, 1969. Divided and this application Dec. 23, 1968, Ser. No. 798,843
Claims priority, application Great Britain, Mar. 12, 1965, 10,480/65
Int. Cl. A24b *7/14*; G06m *7/00*
U.S. Cl. 250—207 **2 Claims**



An arrangement for checking blocks of cigarettes comprises a photomultiplier for forming an image of ends of cigarettes of the block, and electric means responsive to illumination of elements of said image for creating a control effect under the control of said element illumination.

3,557,375
ARRANGEMENTS FOR TESTING BLOCKS OF CIGARETTES BY OPTICALLY IMAGING THEIR ENDS ON A VIDICON TUBE
Alfred Schmermund, 62, Kornerstrasse, Gevelsberg, Westphalia, Germany
Original application Mar. 8, 1966, Ser. No. 532,635, now Patent No. 3,473,037, dated Oct. 14, 1969. Divided and this application Dec. 19, 1968, Ser. No. 798,844
Claims priority, application Great Britain, Mar. 12, 1965, 10,480/65
Int. Cl. A24b *7/14*; G06m *7/00*
U.S. Cl. 250—213 **2 Claims**

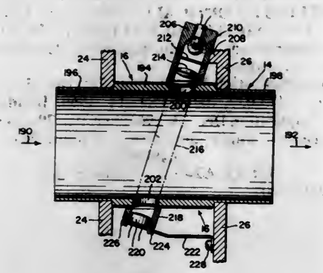


An arrangement for checking blocks of cigarettes comprises an electron camera tube for forming an image of ends of cigarettes of the block, and electric means responsive to illumination of elements of said image for creating a control effect under the control of said element illumination.

3,557,376
RADIATION SENSITIVE DEVICE FOR FLOW TUBE USING MOVING FLUID TIGHT SEAL
Orest J. Senyk, Trenton, N.J., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Feb. 14, 1969, Ser. No. 799,235
Int. Cl. G01n *21/26*
U.S. Cl. 250—218 **10 Claims**

A transparent film under tension is employed to provide a moving fluidtight seal over and about two opposite but lon-

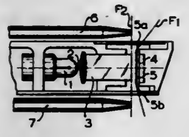
gitudinal openings formed in the displaced wall of a flow tube containing moving matter that is to be continuously analyzed. This seal allows a different clean portion of the transparent film to be continuously brought over each of the aforementioned openings and thereby clean windows through which a source of radiant energy can be directed as this radiant energy is passed into and out of the moving matter in the flow tube and thence to an optical radiant energy detecting and analyzing utilitarian means, such as a turbidimeter.



3,557,377
DEVICE FOR ELECTRO-OPTICALLY MONITORING FILIFORM MATERIAL

Hans Raasch, Rheydt, Germany, assignor to Walter Reiners, Monchengladbach, Germany

Filed Jan. 16, 1969, Ser. No. 791,738
Claims priority, application Germany, Jan. 20, 1968, 1,710,131
Int. Cl. G01b *11/10*
U.S. Cl. 250—219 **6 Claims**



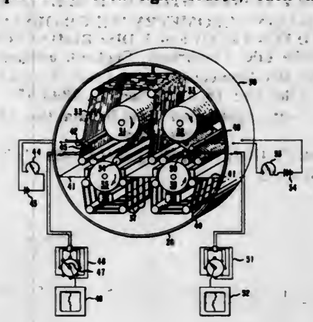
Device for electro-optically monitoring filiform material alternately stationary and traveling in the longitudinal direction thereof includes a light-sensitive element disposed back of the filiform material, means located in front of the filiform material for subjecting the filiform material to light beams extending in at least two directions thereto, and means for spacing the filiform material, in the traveling condition thereof, closer to the light-sensitive element than when the filiform material is in stationary condition thereof.

3,557,378
RADIATION SENSITIVE MONITOR FOR METALIZED FILM

Harvey W. Anger, Tonawanda, Buffalo, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Jan. 17, 1969, Ser. No. 792,120
Int. Cl. G01b *11/02*
U.S. Cl. 250—219 **4 Claims**

Apparatus for monitoring the coating thickness of a transparent substrate having metal coated on both sides so as to leave unmetallized longitudinal unmetallized lanes, which apparatus comprises at least one light source and a photoreceptor juxtaposed to each light source, each light source

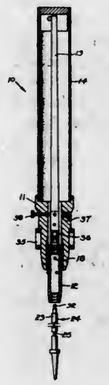


directed substantially perpendicularly toward an unmetallized lane on the coated substrate.

3,557,379
THREE DIMENSIONAL TRACING PROBE WITH STYLUS OPERATING A PHOTOCELL PICK-UP

Christopher G. Kelsey, Glenalta, South Australia, Australia, assignor to Ibes Australia Limited, Plympton, South Australia, Australia

Filed Aug. 16, 1968, Ser. No. 753,238
Claims priority, application Australia, Aug. 16, 1967, 26,021/67
Int. Cl. B23g *35/26;* **G01d** *5/34*
U.S. Cl. 250—220 **6 Claims**



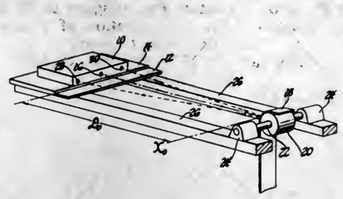
A probe for tracing a body having three dimensions, wherein the sensing element operates means to interrupt a beam of light between a light source and a photocell.

3,557,380
RADIATION SENSITIVE DISPLACEMENT MEASURING INSTRUMENT

David R. Matthews, Ann Arbor, Mich., assignor to Laser Systems Corporation, Ann Arbor, Mich., a corporation of Delaware

Filed Jan. 13, 1969, Ser. No. 790,628
Int. Cl. G01b *15/100*
U.S. Cl. 250—222 **22 Claims**

A displacement measuring instrument is disclosed which enables precise measurements without physical contact by using transmitted and reflected radiant energy, suitably in the infrared range. In one embodiment a transmitter emits a beam of radiant energy which irradiates a small area on the surface of the workpiece. A receiver has two detectors with respective fields of view disposed on opposite sides of the transmitter and directed in such a way that the receivers see the same part of the irradiated area on the workpiece when it is in a reference position. Thus, the receiver signals are equal even though the reflectance of the surface of the workpiece is nonuniform in space distribution. Displacement of the workpiece causes the receiver signals to change according to

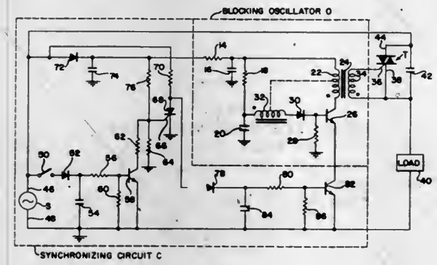


a predetermined function, and the signals are combined to develop a signal corresponding to displacement. In order to compensate for changes of reflectance which occur with time, means are provided to measure the reflectance. This is done by either a separate detector or by combining the receiver signals and compensation is achieved by automatic gain control in the receiver or by modifying the intensity of the transmitted beam.

3,557,381
ZERO SWITCHING CIRCUIT

Donald E. Henry, Davenport, Iowa, assignor to Gulf & Western Industries Inc., New York, N.Y., a corporation of Delaware. by mesne assignments

Filed Sept. 27, 1968, Ser. No. 812,489
Int. Cl. H01h *9/56*
U.S. Cl. 307—133 **6 Claims**

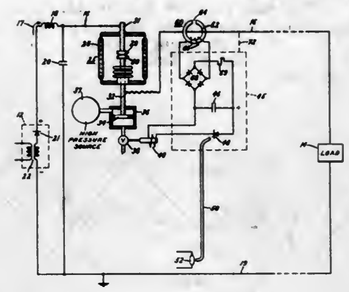


There is provided a signal synchronizing network for providing an output signal when the signal developed by an alternating voltage source is at a predetermined signal level comprising: a first electronic control means having an input circuit adapted to be coupled to the alternating voltage source, and an output circuit; a second electronic control means having a first, second, and control electrode, and exhibiting the characteristics of providing a low impedance to the flow of current between the first and second electrodes from a voltage source coupled across the first and second electrodes upon application of a first level signal to the control electrode, and maintaining the low impedance upon application of a second level signal to the control electrode until the voltage coupled across the first and second electrodes attains a given value; circuit means connected to the control electrode of the second electronic control means for coupling the control electrode to the output circuit of the first electronic control means; and, circuit means connected to the first electrode of the second electronic control means for providing an output signal when the value of the signal developed by the alternating voltage source attains a predetermined level.

3,557,382
CONTROL AT SUBSTANTIALLY LINE POTENTIAL FOR A HIGH VOLTAGE D-C CIRCUIT BREAKER

Peter Kotos, Havertown, Pa., assignor to General Electric Company, a corporation of New York

Filed Dec. 23, 1968, Ser. No. 786,079
Int. Cl. H01h *9/54*
U.S. Cl. 307—139 **4 Claims**

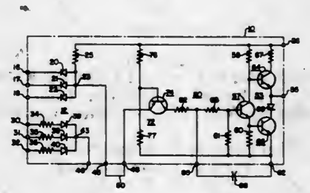


Discloses a high-voltage, direct-current circuit breaker having a control circuit at substantially line potential. Operating power for the control circuit is derived directly from the high voltage DC line by utilizing the small ripple component in the direct current in the line to produce a changing flux in a magnetizable core mounted about the line. The core has a low permeability gap therein that is of sufficient size to maintain the core unsaturated at rated current through the DC line.

3,557,383
CONTROL LOGIC CIRCUIT

Andre Wavre, Monroeville; Francis T. Thompson, and Tibor D. Rubner, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Oct. 2, 1967, Ser. No. 672,156
Int. Cl. H03k *3/26*
U.S. Cl. 307—215 **9 Claims**

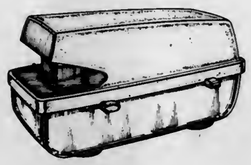


A universal logic gate for fabrication as an integrated circuit includes a first input section and a second input section each of which may be selectively chosen for connection to an inverting or output stage. The circuit includes a threshold means so that the response of the output stage is limited to certain signals within predetermined binary voltage ranges. In one embodiment the threshold means takes the form of a biased transistor, and in another embodiment takes the form of a voltage breakdown diode. The circuit also includes a low pass filter network to provide a time delay such that the output stage responds to the input signals only after a predetermined time delay. With fabrication as an integrated circuit, terminal connections are provided such that an external capacitor for governing the time delay may be connected.

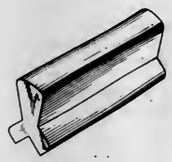
DESIGNS

JANUARY 19, 1971

219,725
ELECTRIC STAPLER
Koichiro Sano, Hirakata, Osaka, Japan, assignor to Matsushita Electrical Industrial Co., Ltd., Osaka, Japan, a corporation of Japan
Filed Aug. 20, 1969, Ser. No. 18,776
Claims priority, application Japan Feb. 25, 1969
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D8—49



219,726
SKI SHARPENER
Edward E. van Horn, 15 Hadley St., Armonk, N.Y. 10504
Filed Nov. 3, 1969, Ser. No. 19,910
Term of patent 14 years
Int. Cl. D8—*02*
U.S. Cl. D8—91



219,727
COMBINED BOTTLE AND CLOSURE THEREFOR
Richard L. Weckman, Perrysburg, Ohio, assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Feb. 19, 1968, Ser. No. 10,631
Term of patent 14 years
Int. Cl. D9—*01*
U.S. Cl. D9—144



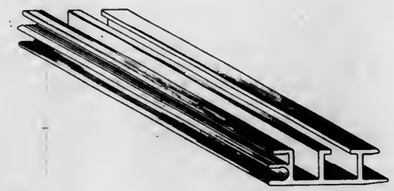
219,728
TRAY FOR BAKERY PRODUCTS
Kenneth W. Artz, Mohnton, Pa., assignor to W. R. Grace & Co., Duncan, S.C., a corporation of Connecticut
Term of patent 14 years
Filed Jan. 29, 1970, Ser. No. 21,139
Int. Cl. D9—*04*
U.S. Cl. D9—185



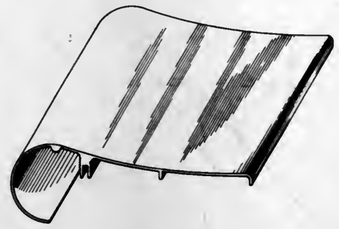
219,729
MOTOR VEHICLE CRASH GUARD
Leonard H. Sobel, 452 Beach 138th St., Rockaway Park, N.Y. 11694
Filed May 22, 1969, Ser. No. 17,279
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—6



219,730
BEAM FOR SWIMMING POOLS
William A. van den Broek, Doylestown, Pa., assignor to Sylvan Pools, Inc., Doylestown, Pa., a corporation of Pennsylvania
Filed Oct. 28, 1969, Ser. No. 19,754
Term of patent 14 years
Int. Cl. D25—*99*
U.S. Cl. D13—1



219,731
COPING TRIM PIECE FOR SWIMMING POOLS
William A. van den Broek, Doylestown, Pa., assignor to Sylvan Pools, Inc., Doylestown, Pa., a corporation of Pennsylvania
Filed Oct. 28, 1969, Ser. No. 19,761
Term of patent 14 years
Int. Cl. D25—*99*
U.S. Cl. D13—1



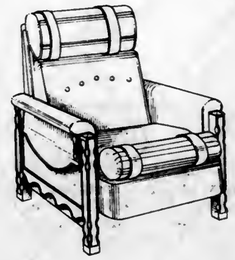
219,732
MODULAR STRUCTURAL ELEMENT FOR SWIMMING POOLS
William A. van den Broek, Doylestown, Pa., assignor to Sylvan Pools, Inc., Doylestown, Pa., a corporation of Pennnsylvania
Filed Oct. 28, 1969, Ser. No. 19,771
Term of patent 14 years
Int. Cl. D25—*99*
U.S. Cl. D13—1



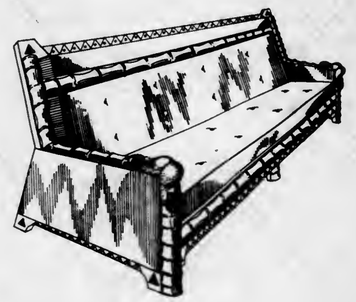
219,733
TIRE RIM FOR VEHICLES
Milford F. Marti, Elkhart, Ind., assignor to Dexter Axle Company, Inc., Elkhart, Ind., a corporation of Indiana
Filed Jan. 2, 1970, Ser. No. 20,734
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D14—30



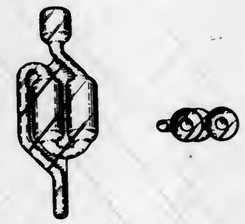
219,734
COMBINED CHAIR AND COLLAPSIBLE TRAY
Thomas Winrow, Naperville, Ill., assignor to Mohasco Industries, Inc., Amsterdam, N.Y., a corporation of New York
Filed Jan. 19, 1970, Ser. No. 20,980
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—1



219,735
DIVAN
John H. Jordan, Jr., 8124 S. Crandon Ave., Chicago, Ill. 60617
Filed Aug. 29, 1969, Ser. No. 18,920
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—11



219,736
FERMENTATION TUBE FOR THE MANUFACTURE OF WINE, VINEGAR CULTURES AND THE LIKE
Svend A. Poulsen, 3 Lindbjergvej, 2750 Ballerup, Denmark
Filed Feb. 28, 1969, Ser. No. 15,966
Term of patent 14 years
Int. Cl. D24—*02*
U.S. Cl. D16—1



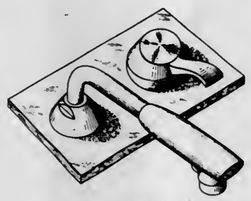
219,737
GUN MOUNT
Lee R. Frix, Knoxville, Tenn., assignor to Volunteer Enterprises, Inc., a corporation of Tennessee
Filed Aug. 18, 1969, Ser. No. 18,752
Term of patent 14 years
Int. Cl. D22—*02*
U.S. Cl. D22—6



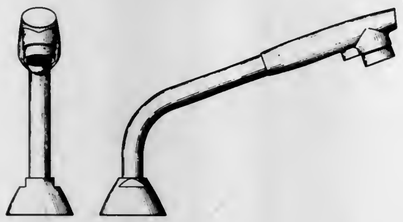
219,738
GUN MOUNT
Lee R. Frix, Knoxville, Tenn., assignor to Volunteer Enterprises, Inc., a corporation of Tennessee
Filed Aug. 18, 1969, Ser. No. 18,753
Term of patent 14 years
Int. Cl. D22—*02*
U.S. Cl. D22—6



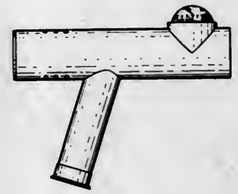
219,739
COMBINED KITCHEN FAUCET AND HANDLE
James E. Niemann, Louisville, Ky., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 18, 1969, Ser. No. 20,160
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—23



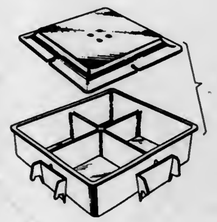
219,740
KITCHEN FAUCET SPOUT
James E. Niemann, Louisville, Ky., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 18, 1969, Ser. No. 20,169
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—32



219,741
RADIO DIRECTION FINDER
Maurice A. Warren, Los Angeles, Calif., assignor to Vec/Trak Research & Development Corporation, New York, N.Y., a corporation of New York
Filed July 22, 1969, Ser. No. 18,323
Term of patent 14 years
Int. Cl. D14—*03*
U.S. Cl. D26—14



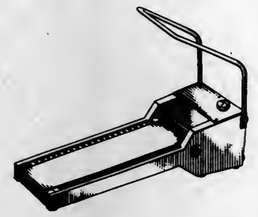
219,742
COMBINED STACKING TRAY AND COVER FOR CHICKS
Daniel Binnie Marshall, Fairview House, Ingliston, Midlothian, Scotland; Jervis Murray Johnson, 2 Lovedale Grove, Balerno, Midlothian, Scotland; and Dymtro Tokalo, 28 Bellevue St., Edinburgh 7, Scotland
Filed Jan. 13, 1969, Ser. No. 15,860
Claims priority, application Great Britain July 18, 1968; Dec. 20, 1968
Term of patent 14 years
Int. Cl. D30—*01*
U.S. Cl. D30—1



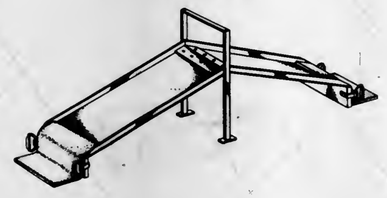
219,743
COMPARTMENTALIZED COOLING CUSHION FOR PETS
Helen K. Murray, R.F.D., Gridley, Ill. 61744
Filed Mar. 6, 1969, Ser. No. 16,097
Term of patent 14 years
Int. Cl. D30—*99*
U.S. Cl. D30—41



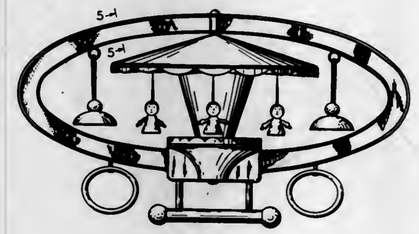
219,744
PORTABLE EXERCISE TREADMILL
Joseph A. Hesen, 2415 N. Parish Place, Burbank, Calif. 91504
Filed May 17, 1968, Ser. No. 11,982
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5



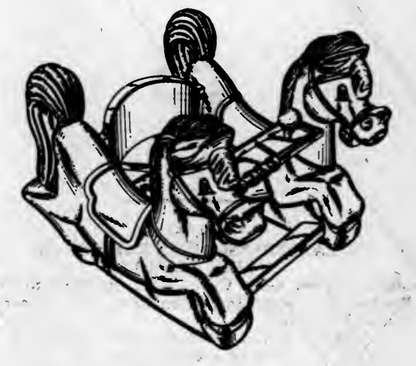
219,745
EXERCISE CONDITIONER APPARATUS
Dennis D. Windscheffel, 11811 Old River School Road, Downey, Calif. 90241
Filed Oct. 13, 1969, Ser. No. 19,532
Term of patent 3½ years
Int. Cl. D21—*03*
U.S. Cl. D34—5



219,746
CRADLE GYM
Albert Stubbmann, Franklin Lakes, N.J., assignor to Kohner Bros., Inc., East Paterson, N.J., a corporation of New York
Filed Jan. 12, 1970, Ser. No. 20,878
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



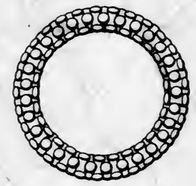
219,747
ROCKING TOY
Laurie Jay Campbell, Erie, Pa., assignor to Louis Marx & Co., Inc., New York, N.Y., a corporation of New York
Filed Feb. 4, 1970, Ser. No. 21,261
Term of patent 14 years
Int. Cl. D21—*02*
U.S. Cl. D34—15



219,748
PIZZA TRAY
Kenneth D. Bixler, Huntington, N.Y., assignor to Diamond International Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 23, 1968, Ser. No. 15,095
Term of patent 14 years
Int. Cl. D7—*02*
U.S. Cl. D44—10



219,749
BRACELET
Helen G. Rafshoon, Apt. G, 3547 Buford Highway NE., Atlanta, Ga. 30329
Filed Aug. 8, 1969, Ser. No. 18,588
Term of patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—4



219,750
FINGER RING
Daniel Shiman, Maplewood, N.J., assignor to Shiman Manufacturing Company, Inc., Newark, N.J., a corporation of New York
Filed Dec. 23, 1968, Ser. No. 15,090
Term of patent 14 years
Int. Cl. D11—*01*
U.S. Cl. D45—10



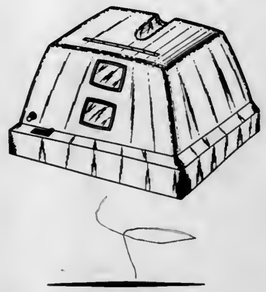
219,751
STEAM PRESSER FOR FABRICS OR A LIKE ARTICLE
Leonard Osrow, Glen Cove, N.Y., assignor to Osrow Products Company, Inc., Glen Cove, N.Y., a corporation of New York
Filed Nov. 4, 1969, Ser. No. 19,936
Term of patent 14 years
Int. Cl. D15—*07*; D23—*04*
U.S. Cl. D49—13



219,752
SUCTION CLEANER
Carroll M. Gantz, North Canton, Ohio, Robert H. Hose, Mountainside, N.J., and Joseph T. Sestak, Pittsburgh, Pa., assignors to The Hoover Company, North Canton, Ohio, a corporation of Delaware
Filed June 23, 1969, Ser. No. 17,822
Term of patent 14 years
Int. Cl. D15—*07*
U.S. Cl. D49—14.1



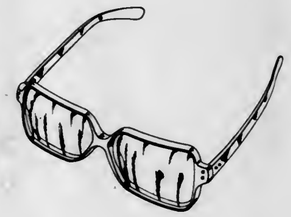
219,753
FINGERPRINT COMPARISON APPARATUS
Stephen Roka, 30 Goshen Court, Gaithersburg, Md. 20760
Filed June 3, 1969, Ser. No. 17,498
Term of patent 14 years
Int. Cl. D16—*03*
U.S. Cl. D52—1



219,754
COMBINED TAPE RECORDER AND RADIO RECEIVER OR SIMILAR ARTICLE
Takemi Ebata, Kyoto, Japan, assignor to Matsushita Electric Industries Co., Ltd., Osaka, Japan, a corporation of Japan
Filed May 29, 1969, Ser. No. 17,410
Claims priority, application Japan Feb. 4, 1969
Term of patent 14 years
Int. Cl. D14—*03, 01*
U.S. Cl. D56—4



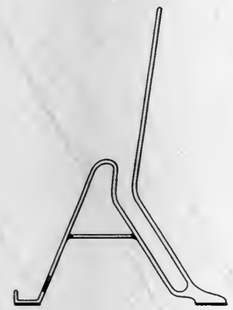
219,755
PAIR OF SPECTACLES
Jack Bloch, Leominster, Mass., assignor to Foster Grant Co., Inc., Leominster, Mass., a corporation of Delaware
Filed Apr. 21, 1969, Ser. No. 16,816
Term of patent 14 years
Int. Cl. D16—*08*
U.S. Cl. D57—1



219,756
BOATING PADDLE
Elmo J. Mouton, Rte. 1, Box 27N, Beaumont, Tex. 77708
Filed Aug. 6, 1969, Ser. No. 18,565
Term of patent 14 years
Int. Cl. D12—*99*
U.S. Cl. D71—1



219,757
NOTEBOOK HOLDER
Paul Sam Pagano, 291 E. 2nd St., Girard, Ohio 44420
Filed July 7, 1969, Ser. No. 18,057
Term of patent 14 years
Int. Cl. D19—*02*
U.S. Cl. D74—1



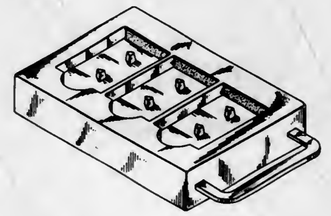
219,758
DESK SET
Heinz Fauth, 263 Mangenberger Str., 565 Solingen-Merscheid, Germany
Filed Feb. 25, 1969, Ser. No. 15,909
Claims priority, application Germany Jan. 7, 1969
Term of patent 14 years
Int. Cl. D19—*02*
U.S. Cl. D74—5



219,759
COMBINED COMB AND CURETTE
Louis Philippe Dallaire, 1094 Labarre Ave., Ste-Foye, Quebec, Canada, and Jean Marie Paradis, 1070 Bon Air Place, Charlesbourg, Quebec, Canada
Filed Sept. 13, 1968, Ser. No. 13,536
Term of patent 14 years
Int. Cl. D28—*03*
U.S. Cl. D86—8



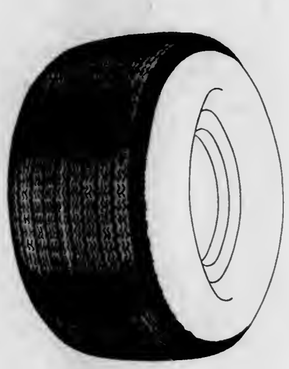
219,760
TAPE CASETTE HOLDER
Louis E. Schwartz, New York Law School, 57 Worth St., New York, N.Y. 10013
Filed Jan. 30, 1970, Ser. No. 21,163
Term of patent 14 years
Int. Cl. D3—*99*
U.S. Cl. D87—1

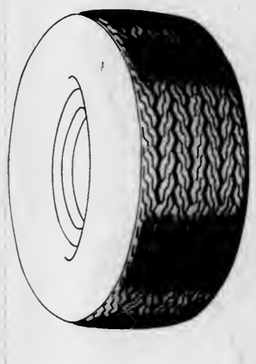


219,761
COMBINED SISSY BAR PAD AND RECEPTACLE FOR CYCLES
Henry Akers and Patricia L. Akers, both of 271 Knox St., Costa Mesa, Calif. 92627
Filed Oct. 1, 1969, Ser. No. 19,359
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—15



219,762
TIRE
Rush M. Johnson, Jr., Wadsworth, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed June 9, 1969, Ser. No. 17,566
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20





219,763
ASH TRAY
Spiros Peter Sarris, 104 Atlantic Ave., Swampscott, Mass. 01907
Filed Aug. 12, 1969, Ser. No. 18,649
Term of patent 14 years
Int. Cl. D27—*03*
U.S. Cl. D85—2



219,764
TIRE
Rush M. Johnson, Jr., Wadsworth, Ohio, assignor to The B. F. Goodrich Company, New York, N.Y., a corporation of New York
Filed Oct. 9, 1969, Ser. No. 19,489
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20

LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 19TH DAY OF JANUARY, 1971

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

AB Autokemi: *See—*
Beer, Palle-Finn, 3,556,686.
AB Byggforbattring: *See—*
Johansson, Rolf Gustaf, 3,556,480.
AB Industrifjadrar: *See—*
Svensson, Lars Erik; and Wahlstrom, Nils Lennart, 3,555,863.
AB Tetra Pak: *See—*
Lindh, Torsten Lennartson; and Lindblad, Lars Olof Ingemar, 3,556,885.
Wettlen, Lars Malte Roland, 3,555,765.
AB Transvertex: *See—*
Florin, Bengt; and Loimaranta, Kalevi, 3,557,307.
Abbott, Brian; Groves, Harry Bernard; Harris, Dennis; and Turnbull, John Bartholomew, to Ford Motor Company. Motor vehicle suspension. 3,556,555, Cl. 280-124.
Aberle, Albert K.; Arthur, Richard J.; and Brugger, Richard G., to Sperry Rand Corporation. Speed, latitude and acceleration compensation of a ballistic gyrocompass. 3,555,692, Cl. 33-226.
Abitboul, Georges D., to Audio Magnetics Corporation. Cassette tape winding control. 3,556,433, Cl. 242-199.
ACF Industries, Incorporated: *See—*
Kinnecom, Paul G., 3,556,311.
Adachi, Takeshi, to Nippon Gakki Seizo Kabushiki Kaisha. Wind instrument sound producing system for electronic musical instruments. 3,557,295, Cl. 84-1.18
Adams, Charles R. Coupling for semitrailer units. 3,556,560, Cl. 280-415.
Adcock, Edmund Philip; and Stanley, Joan Ann, to United Glass Limited. Production of laminates. 3,556,887, Cl. 156-272.
Addis, William L., to Owens-Illinois, Inc. Shear stacker apparatus. 3,555,946, Cl. 83-89.
Addressograph-Multigraph Corporation: *See—*
Baltazzi, Evan S., 3,556,785.
Kolibas, James A., 3,556,653.
Lux, George K.; Ellis, James B.; and Schulze, John J., 3,556,655.
Schulze, Erwin F. C., 3,556,007.
Shelffo, Loren E., 3,555,989.
Aemmer, Peter F., to Westinghouse Electric Corporation. Digital Arithmetic system for computation of square roots and squares employing a rate multiplier. 3,557,348, Cl. 235-150.3
Aerojet-General Corporation: *See—*
Grakauskas, Vytautas, 3,556,726.
Aerpat A.G.: *See—*
Rigot, Robert M.; and Harrington, Winston F., 3,555,649.
Summerlin, Frederick Arthur, 3,555,673.
AGA Aktiebolag: *See—*
Johannisson, Dag Olof Alfred, 3,556,409.
Agafonov, Anatoly Grigorievich: *See—*
Strakhov, Vasily Vasilievich; Kuzmin, Jury Nikolaevich; Krikunov, Alexandr Eliseevich; Tombaev, Nikolai Ivanovich; Gisin, Iosif Borisovich; Agafonov, Anatoly Grigorievich; Zaitsev, Mikhail Pavlovich; Shender, Eda Grigortevna; Prityko, Vladimir Pavlovich; Makeeva, Maria Lukyanovna; and Soloviev, Anatoly Mikhailovich, 3,555,991.
Agfa-Gevaert Aktiengesellschaft: *See—*
Pawlik, Gunter, 3,555,986.
Wagner, Karl, 3,555,988.
Agranat, Edward A., to Amicon Corporation. Filtration apparatus having flow distributor. 3,556,302, Cl. 210-321.
Agrecology, Incorporated: *See—*
Houston, Richard K., 3,556,026.
Agulnick, Robert; and Secklin, Leonard B., to General Appliance Corporation. Electric culinary device. 3,555,678, Cl. 30-166.
Ahern, Charles J., to Bendix Corporation, The. Fluidic shift register. 3,556,118, Cl. 137-81.5
Ahlborn, John C.: *See—*
Slater, William L.; and Ahlborn, John C., 3,556,751.
Aida, Teruo: *See—*
Takashina, Naomitsu; Aida, Teruo; Endo, Yasuhiro; and Nagashima, Wakio, 3,557,040.
Aileo, Jackson A.; and Petruzella, James J., to Gentex Corporation. Tool and method of using the same for inserting leads through resilient grommets. 3,555,674, Cl. 29-630.
Air Products and Chemicals, Inc.: *See—*
Sipos, John M.; and Daniels, Donald B., 3,557,337.
Air Reduction Company: *See—*
Wallace, Dean R., 3,556,097.
Aisan Kogyo Co., Ltd.: *See—*
Arikawa, Toshinori; and Takada, Shigetaka, 3,556,488.
Aitken, James B., to Instant Structures, Inc. Collapsible housing. 3,555,749, Cl. 52-70.
Aizicovici, John, to Societe le Carbone Lorraine. Layer thermistors and method for their manufacture. 3,555,671, Cl. 29-612.
Ajay Enterprises Corporation: *See—*
Zagwyn, Anthony T., 3,556,547.
Ajinomoto Co., Inc.: *See—*
Hattori, Yoko; Ooji, Tamiki; Tanaka, Kiichiro; and Matsunaga, Takao, 3,557,059.
Suzuki, Yoshihisa; Tsukada, Takeshi; Hirahara, Tsuneo; and Nakamura, Tadashi, 3,557,081.
Takagi, Yasuo; Iwatsuki, Makoto; Takeshita, Kazuhisa; and Uemura, Isao, 3,557,272.
Yamada, Yoshitaka; and Kumashiro, Izumi, 3,557,113.
Akamatsu, Takashi: *See—*
Yamada, Eiji; Korenaga, Hiroshi; and Akamatsu, Takashi, 3,557,155.
Akerblom, Eva B.: *See—*
Skagius, Kurt T. J.; and Akerblom, Eva B., 3,557,137.
Akers, Robert M. Bridge plate lifting device. 3,556,020, Cl. 105-458.
Aktiebolaget Bofors: *See—*
Pettersson, Bror Gosta, 3,557,130.
Aktiebolaget Cerbo: *See—*
Lind, Evald T. G.; and Skylvik, Arnold R., 3,556,339.
Aktiebolaget Fannyudde: *See—*
Olander, Lennart; and Kallman, Gunnar, 3,556,426.
Aktiebolaget Karlstads Mekaniska Werkstad: *See—*
Stenberg, Erik Gunnar, 3,556,939.
Aktiebolaget Svenska Flaktfabriken: *See—*
Bockman, Ole K., 3,556,490.
Aktiebolaget Wifa-Berken: *See—*
Persson, Mats, 3,556,993.
Aktiengesellschaft Brown, Boveri & Cie: *See—*
Leutwyler, Paul; and Wunsch, Alfred, 3,556,680.
Mottier, Francois, 3,556,660.
Aktiengesellschaft fur Brauerei-Industrie: *See—*
Raible, Karl J., 3,557,023.
Akwell Industries, Incorporated: *See—*
Miskell, Earle; and Povlacs, Lawrence, 3,555,564.
Albanese, Damiano J., to Midland-Ross Corporation. Coupler centering device. 3,556,313, Cl. 213-20.
Album Graphics, Inc.: *See—*
Kosterka, Donald W., 3,556,391.
Alburger, James R. Dual-sensitivity dyed liquid tracers. 3,557,015, Cl. 252-301.2
Alcan Aluminum Corporation: *See—*
Wegner, Herman E., 3,555,864.
Aldinger, Paul A., to Honeywell Inc. Indicating apparatus. 3,556,564, Cl. 283-62.
Aldridge, Charles A., to Bell & Howell Company. Apparatus for illuminating the tape reels and spindle splines of tape cassettes. 3,557,360, Cl. 240-2.
Alexander, Alan G.: *See—*
Wolf, Heinz K.; and Alexander, Alan G., 3,555,962.
Alexander, Jack F.; Mallory, Peter E.; and Payne, Ronald C., to General Dynamics Corporation. Data synchronizing system. 3,557,308, Cl. 178-69.5
Allegheny Ludlum Steel Corporation: *See—*
Helgert, Harold L; Powell, Hayden B.; and Teorsky, Robert K., 3,556,871.
Malagari, Frank A., Jr., 3,556,873.
Zaremski, Donald R., 3,556,745.
Allen, Benjamin F. Apparatus and method for delivering concrete and similar material to a selected point of use. 3,556,116, Cl. 137-1.
Allen, Earle F., 1/2 to Macy, Valentine E., Jr. Fail-safe brake with elastomeric actuator. 3,556,259, Cl. 188-67.
Allen, Kenneth C., to Hobart Manufacturing Company, The. Label printing and dispensing apparatus. 3,556,898, Cl. 156-384.
Allen, Kenneth C.; and Boshinski, Edwin E., to Hobart Manufacturing Company, The. Photocell checking cirucit for optical weighing scale. 3,556,235, Cl. 177-50.
Allen, Kenneth C.; and Boshinski, Edwin E., to Hobart Manufacturing Company, The. Weighing scales. 3,557,353, Cl. 235-151.33
Allen-Bradley Company: *See—*
Proctor, Thomas, 3,557,350.
Allied Chemical Corporation: *See—*
Bailey, John H., 3,556,728.
Dear, Robert E. A.; and Gilbert, Everett E., 3,557,294.
Doody, Jeremiah J., 3,557,079.
Kurtz, Bruce E.; and Fitch, Robert H., 3,557,230.
Kurtz, Bruce E.; Follows, Alan G.; and Hartford, Winslow H., 3,557,231.
Levy, Alan J.; and Litt, Morton H., 3,557,136.

Schonberg, Elliot A.; Steinberg, Albert H.; and Bollen, Philip S., 3,556,896.
Skrypa, Michael J.; Baran, Francis R.; and Low, William W., 3,557,010.
Allison, Eric, to National Research Development Corporation. Electrical weighing device for weighing loads subject to movement. 3,556,237, Cl. 177-200.
Alpeda Industries, Inc.: *See—*
Prodzenski, Donald T., 3,556,847.
Alpha Press Company: *See—*
Weiss, Adolf F., 3,555,965.
Aluminum Company of America: *See—*
Coop, Jackie A., 3,556,336.
Aluminum Plastic Products Corporation: *See—*
Costanzo, Nicholas Joseph, Jr., 3,555,762.
Aluminum Processing Corporation: *See—*
Dorsky, Stanley, 3,555,668.
Amano, Shin: *See—*
Yamamoto, Miaki; and Amano, Shin,3,555,899.
Ambac Industries, Inc.: *See—*
Vayda, Louis L., 3,556,043.
American Biltrite Rubber Co., Inc.: *See—*
Hilliard, Everett A., Jr., 3,556,892.
American Cyanamid Company: *See—*
Andres, William W.; and Kunstmann, Martin Paul, 3,557,151.
Coscia, Anthony Thomas; and Williams, Laurence Lyman, 3,556,932.
Dusza, John Paul; Joseph, Joseph Peter; and Bernstein, Seymour, 3,557,161.
Grosklos, Rill Lewis, 3,557,212.
Klingsberg, Erwin, 3,557,088.
Thelin, Jack Horstmann, 3,555,877.
Tucker, Robert Jerome, 3,557,012.
Tucker, Robert Jerome, 3,557,052.
Williams, Laurence Lyman; and Coscia, Anthony Thomas, 3,556,933.
Zweig, Arnold; and Maulding, Donald Roy, 3,557,233.
American Cynamid Company: *See—*
Kaplan, Earl, 3,557,057.
American Gas Association, Inc.: *See—*
Eakin, Bertram E.; Khan, Amanullah R.; and Anderson, Phillip J., 3,556,917.
American Home Products Corporation: *See—*
Bagli, Jehan F.; and Immer, Hans U., 3,557,096.
Freed, Meier E.; and Archibald, John L., 3,557,100.
Humber, Leslie G., 3,557,119.
Sallay, Stephen I., 3,557,126.
American Machine & Foundry Company: *See—*
Marasso, Fred D.; and Rademacher, Robert E., 3,556,316.
Mastracci, Michael L., 3,556,278.
Olsson, Frank Christian, 3,556,572.
Wood, Fenton M., 3,555,887.
American Metal Products Corporation: *See—*
Suffron, Fay O.; and Zanias, Theodore J., 3,556,132.
American Potash & Chemical Corporation: *See—*
Maringer, Robert E.; and Rice, Leonard P., 3,556,778.
American Stamping Co.: *See—*
Turner, George L., 3,555,636.
American Standard Inc.: *See—*
Antoine, Charles K., 3,556,592.
Lepp, Stephen; Studley, Edward; and Weiss, Jonas, 3,557,327.
American Telephone and Telegraph Company: *See—*
Buonsante, John J.; and Syvertsen, Norman J., 3,557,318.
American Type Founders Co., Inc.: *See—*
McCool, Edward J., 3,555,978.
Amicon Corporation: *See—*
Agranat, Edward A., 3,556,302.
Massucco, Arthur A., 3,556,992.
Shorr, Jacob, 3,556,305.
A.M.I.S. Apparecchi & Macchine Idrauliche Speciali S.p.A.: *See—*
D'Urso, Nicola, 3,556,138.
Amlie, Robert F., to Globe-Union Inc. Storage battery and gelled electrolyte therefore. 3,556,860, Cl. 136-157.
Ammann, William L. Soil treatment with liquid anhydrous ammonia. 3,556,027, Cl. 111-1.
Amneus, John S.; and Bahrani, Abdul S., to Procter & Gamble Company, The. Papermaking headbox with adjustable hydraulic nozzle and slice. 3,556,935, Cl. 162-214.
AMP Incorporated: *See—*
Busler, Willard Le Roy; Folk, Kenneth Foster; Phillips, Howard Charles; and Ross, Milton Dean, 3,556,382.
O'Keefe, Michael Francis; Schwalm, Glendon Henry; Stull, Robert Stanley; and Fritz, Coey William, 3,555,672.
Ampoules, Inc.: *See—*
Hurschman, Alfred A., 3,556,100.
Amseco Corporation: *See—*
Segal, Arthur B.; and Rodth, Joseph J., 3,556,347.
Amtron, Inc.: *See—*
Porter, Virgle E., 3,557,317.
Anastasiu, Vasile Eugeniu; and Margarit, Traian, to I.P.C.U.P. Institutul pentru Proiectare si Cercetare pentru Utilaj Petrolier. Device for wedging the packer in wells. 3,556,217, Cl. 166-217.
Anchor Hocking Corporation: *See—*
Cotter, James F., 3,556,279.
Cotter, James F., 3,556,759.
Ancker, Fred H.; and Baier, Frederick L., to Union Carbide Corporation. Pro cess of metal plating plastics. 3,556,955, Cl. 204-30.
Andersen, David C. Calculating device for trigonometric functions. 3,556,397, Cl. 235-61.
Anderson, Ingvar G.: *See—*
Brown, Victor; Anderson, Ingvar G.; and Vincent, Daniel Boscawin,3,556,420.
Anderson, Norman G., to United States of America, Atomic Energy Commission. Electrophoretic separation utilizing liquid centrifuge. 3,556,967, Cl. 204-180.
Anderson, Paul L.; and Manning, Robert E., to Sandoz-Wander, Inc. Methyl substituted 3-thienyl thiazolo pyrimidines and methyl substituted 3-thienyl imidazo thiazoles. 3,557,110, Cl. 260-251.
Anderson, Phillip J.: *See—*
Eakin, Bertram E.; Khan, Amanullah R.; and Anderson, Phillip J.,3,556,917.
Anderson, Victor F., to Shell Oil Company. Cushion assembly for chairs and other furniture. 3,556,594, Cl. 297-452.
Andersson, O. Arne: *See—*
Brynge, Per Gunnar; Andersson, O. Arne; and Nilson, Hans Ove,3,557,343.
Ando, Noriyoshi, to Nippon Denso Company Limited. Anti-skid control apparatus for vehicles. 3,556,612, Cl. 303-21.
Andres, William W.; and Kunstmann, Martin Paul, to American Cyanamid Company. Compound (⁸)-5'-hydroxygriseofulvin. 3,557,151, Cl. 260-346.2
Andress, Harry J., Jr., to Mobil Oil Corporation. Metal salts of reaction product of an alkyl phenol and an ethyleneamine. 3,557,171, Cl. 260-429.9
Andrews, James D.; and Kunz, Walter C., to General Electric Company. Method for making an electrolyte guide member. 3,556,758, Cl. 65-109.
Andrysick, Chester A., to Corning Glass Works. Method of pressing intricate glass articles. 3,556,756, Cl. 65-23.
Angelotti, William J.; Proffitt, James R., Jr.; Reyburn, Nathaniel R.; and San Frotello, Louis L. Apparatus for compacting particulate material. 3,555,605, Cl. 18-16.
Angelotti, William J.; Proffitt, James R., Jr.; Reyburn, Nathaniel R.; and San Frotello, Louis L., to Owens-Illinois, Inc. Method for compacting particulate material. 3,557,267, Cl. 264-72.
Anger, Harvey W., to Du Pont de Nemours, E. I., and Company. Radiation sensitive monitor for metalized film. 3,557,378, Cl. 250-219.
Anhanger, Odd, to Square Company Aktiebolag. Machine for forming and dispensing a plastic material. 3,555,592, Cl. 17-32.
Ankeney, Dewey P., to United States of America, Navy. Electro-flueric valve. 3,556,119, Cl. 137-81.5
Anklam, Fredrick H.: *See—*
Hyldon, Roy G.; High, Robert L.; Anklam, Fredrick H.; and Nakamura, Tadashi,3,557,084.
Anspon, Harry D.; Clampitt, Bert H.; and Gilbert, Ronald E., to Gulf Research & Development Company. Preparation of ethylene polymers. 3,557,070, Cl. 260-86.7
Anspon, Harry D.: *See—*
Hughes, Richard H.; Clampitt, Bert H.; and Anspon, Harry D.,3,556,795.
Antisdel, Merle J., to Wichita Sheet Metal Supply, Inc. Insulation laminator apparatus. 3,556,911, Cl. 156-547.
Antoine, Charles K., to American Standard Inc. Chair assembly. 3,556,592, Cl. 297-444.
Aplin, Herbert H. Hand cart. 3,556,548, Cl. 280-47.27
Applied Physics Corporation: *See—*
Hawes, Roland C., 3,556,659.
Arant, Perry,. Spray nozzle. 3,556,410, Cl. 239-552.
Arcamone, Federico; and Franceschi, Giovanni. 1,6-Dimethyl-2,3-dihydro-10α-ergoline derivatives. 3,557,118, Cl. 260-285.5
Archer, Sydney; and Schulenberg, John W., to Sterling Drug Inc. Hexahydroimidazoisoquinolines. 3,557,120, Cl. 260-288.
Archibald, John L.: *See—*
Freed, Meier E.; and Archibald, John L.,3,557,100.
Arikawa, Toshinori; and Takada, Shigetaka, to Aisan Kogyo Co., Ltd. Carburetor with fluid elements. 3,556,488, Cl. 261-36.
Armco Steel Corporation: *See—*
Clarke, William C., Jr.; and Perry, D Cameron, 3,556,776.
Armorlite Lens Company, Inc.: *See—*
Reiterman, Donald R., 3,555,610.
Reiterman, Donald R., 3,555,611.
Armour and Company: *See—*
Mach, Thomas F.; and Taber, David, 3,556,964.
Armour Pharmaceutical Company: *See—*
Enkoji, Takashi; and Bossinger, Charles D., 3,557,285.
Armstrong, George W. Gate valve. 3,556,358, Cl. 222-445.
Arnekull, Swen Arne; and Dahlberg, Gosta, to Saab Aktiebolag. Safetying device for firing mechanism for aircraft ejection seats. 3,556,442, Cl. 244-122.
Aro Corporation, The: *See—*
Harwood, Van Ness, Jr., 3,556,205.
Arthur, Richard J.: *See—*
Aberle, Albert K.; Arthur, Richard J.; and Brugger, Richard G.,3,555,692.
Arvin Industries, Inc.: *See—*
Schroeer, Rudi M.; and Garmhausen, Thomas A., 3,555,879.
Arwine, Ulysses Stanford, to Lockheed Aircraft Corporation. Photocell scoring tool. 3,556,075, Cl. 125-16.
A/S Norva Maskinfabrik: *See—*
Mikkelsen, Vagn Elliot, 3,555,711.

Asada, Takeo: *See—*
Mizuta, Yukio; Tanaka, Toshio; and Asada, Takeo,3,556,274.
Asahi Kasei Kogyo Kabushiki Kaisha: *See—*
Suzuki, Kenichi; and Kai, Tsunetoshi, 3,556,791.
Asahi Kogaku Kogyo Kabushiki Kaisha: *See—*
Takahashi, Yasuo, 3,556,641.
Ashby, Frederick Richard: *See—*
Hirtle, Parker W.; and Ashby, Frederick Richard,3,555,734.
Ashland Oil & Refining Company: *See—*
Oswald, Lawrence E., 3,556,126.
Ashlock, George W., Company: *See—*
Margaroli, John L.; and Cimperman, Fred J., 3,556,281.
Askam, John F.: *See—*
Edney, Walter James; and Askam, John F.,3,556,900.
Assauer, Helmuth, to Kohler & Bovenkamp G.m.b.H., Firma. Chip conveyor. 3,556,288, Cl. 198-224.
Atkins, Milo E. Boom rigging. 3,556,252, Cl. 182-128.
Atkinson, Wallace E., to Long Manufacturing Co., Inc. Slide rod type combination lock and latch structure. 3,555,860, Cl. 70-312.
Atlantic Richfield Company: *See—*
Gower, Bob G.; and Young, David W., 3,556,763.
Atlantic Richfield Corporation: *See—*
Clark, Lincoln; and Kaminsky, Victor P., 3,556,980.
Cymbalisty, Lubomyr M. O., 3,556,981.
Kaminsky, Victor P.; and Bowman, Clement W., 3,556,982.
Audio Magnetics Corporation: *See—*
Abitboul, Georges D., 3,556,433.
Koeppe, Edward P., 3,556,434.
Austin, Robert R., to Perkin-Elmer Corporation, The. Interference filter with dielectric tuning layers. 3,556,640, Cl. 350-164.
Auto-Mat Safety Devices: *See—*
Interisano, Angelo, 3,556,559.
Automatic Machinery & Electronics Inc.: *See—*
Douglas, Peter L., 3,557,085.
Automation Industries, Inc.: *See—*
Weighart, Frederick G., 3,555,889.
Autry, Charles P.; Baumgaertner, Paul J.; and Hill, Eugene G., to Boeing Company, The. Methods and high lift systems for making an aircraft wing more efficient for take-offs and landings. 3,556,439, Cl. 244-42.
Avakov, Aram Vartanovich: *See—*
Gorbunov, Igor Konstantinovich; Avakov, Aram Vartanovich; and Mariev, Dmitry Ivanovich,3,556,676.
Avignon, Michel L., to International Standard Electric Corporation. Frame synchronization circuit. 3,557,314, Cl. 179-15.
Axthammer, Ludwig; Leibeling, Heinz; and Wossner, Felix, to Fichtel & Sach AG. Piston rod seal for shock absorbers. 3,556,617, Cl. 308-3.5
Ayers, William M., to Dow Chemical Company, The. Non-destructive testing method. 3,555,881, Cl. 73-37.
Ayres, Waldemar A. Clinical thermometer. 3,555,906, Cl. 73-371.
Babcock & Wilcox Company, The: *See—*
Piaskowski, Edward J.; and Kreider, Edward W., 3,556,207.
Bach, Ricardo O.; Kamienski, Conrad W.; Dellinger, Matthew Henry; Mitchem, Luther C.; and Morrison, Robert C., to Lithium Corporation of America, Inc. Ethynylation of aldehydes and ketones. 3,557,220, Cl. 260-617.
Bachmann, Rudolf; and Gentsch, Leonore, to Salzdetfurth Aktiengesellschaft. Free flowing mixtures containing sodium chloride as predominant component. 3,556,718, Cl. 23-89.
Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See—*
Buechner, Oskar; Immel, Wolfgang; Pfannmueller, Helmut; Schmidt-Thomee, Georg; and Urban, Friedrich, 3,557,074.
Dehnert, Johannes; and Gnad, Gerhard, 3,557,080.
Koenig, Karl-Heinz; and Pommer, Horst, 3,557,214.
Leitner, Hans; and Wintersberger, Karl, 3,557,186.
Weitz, Hans-Martin; Merger, Franz; and Koopmann, Juergen, 3,557,187.
Wilhelm, Hans; Gulbins, Klaus; Hartmann, Heinrich; and Lange, Guenter, 3,557,048.
Badische Anilin-& Soda-Fabrik Aktiengesellschaft: *See—*
Mohr, Rudolf, 3,555,784.
Bagli, Jehan F.; and Immer, Hans U., to American Home Products Corporation. 5,6,8,9-Tetrahydro-1,3-benzoxazacycloundecane-2,4,7(3H)-triones and their preparation. 3,557,096, Cl. 260-239.3
Bahrani, Abdul S.: *See—*
Amneus, John S.; and Bahrani, Abdul S.,3,556,935.
Baier, Frederick L.: *See—*
Ancker, Fred H.; and Baier, Frederick L.,3,556,955.
Bailey, John H., to Allied Chemical Corporation. Sulfur extraction process. 3,556,728, Cl. 23-308.
Baker, Glenn O. Clam shell tropical fish feeder. 3,556,056, Cl. 119-51.
Baker Oil Tools, Inc.: *See—*
Vazquez, Gonzalo; and Salerni, John V., 3,556,212.
Baker Perkins, Inc.: *See—*
Fuchs, Warren; and Wheeler, Dennis A., 3,556,724.
Baker, Stephen R.; and Kremer, Harry D., to Bethlehem Steel Corporation. Apparatus for applying fittings to strand ends. 3,556,168, Cl. 140-113.
Balding, Harold R.: *See—*
Branfield, Henry A.; and Balding, Harold R.,3,556,008.
Baldwin, D. H., Company: *See—*
Martin, Daniel W., 3,555,956.
Ballard, Thomas B. Counterbalanced cover arrangement. 3,555,732, Cl. 49-386.
Ballmer, James E., to Brunswick Corporation. Plastic golf club head with cavities therein to sound like a wooden club head. 3,556,532, Cl. 273-167.
Balme, Maurice; and Gruffaz, Max, to Rhone-Poulence, S.A. Shaped fibrous laminates impregnated with dianhydride cross-linked epoxy resins. 3,556,920, Cl. 161-185.
Baltazzi, Evan S., to Addressograph-Multigraph Corporation. Sensitizers for organic photoconductor comprising orazolone and butenolide derivatives of fluorenone. 3,556,785, Cl. 96-1.6
Baltz, Albert L.; and Voeke, Elmer E., to Eagle Range & Manufacturing Company. Range control panel assembly. 3,556,624, Cl. 312-295.
Balza, Claude; and Maniere, Maurice Auguste Francois Joseph, to Lignes Telegraphiques & Telephoniques. Pseudo-random 4-level m-sequences generators. 3,557,356, Cl. 235-152.
Banas, Henry J.: *See—*
Douglas, David L.; and Banas, Henry J.,3,556,850.
Douglas, David L.; and Banas, Henry J.,3,556,851.
Bancroft, Charles. Rotary piston devices. 3,555,813, Cl. 60-11.
Bancroft, Charles. Rotary piston devices. 3,556,693, Cl. 418-37.
Bancroft, Charles. Rotary piston devices. 3,556,694, Cl. 418-37.
Bancroft Racket Company: *See—*
Hollis, James E., 3,556,533.
Bangor Punta Operations, Inc.: *See—*
Futer, Rudolph E., 3,555,693.
Banholzer, Rolf: *See—*
Zeile, Karl; Banholzer, Rolf; and Walther, Gerhard,3,557,125.
Baniel, Avraham Matitiahu; and Blumberg, Ruth, to Israel Mining Industries-Institute for Research and Development. Cleaning phosphoric acid including recovery from the organic solvent by heating to stratify into an acid layer and an organic layer. 3,556,739, Cl. 23-312.
Bankes, Robert B.; and Esseluhn, Werner F., to Western Electric Company, Incorporated. Method of and apparatus for transferring articles from a workholder to a handling rack. 3,555,660, Cl. 29-429.
Banks, Willard K.; and Rabedeau, Melbourne E., to International Business Machines Corporation. Deflector plate for light deflector. 3,556,638, Cl. 350-161.
Banse, George, to National Manufacturing Co. Trolley rail bracket. 3,555,750, Cl. 52-97.
Bara, Edwin S.; and Kobek, Leonard J., to Webcor, Inc. Automatic control for tape actuated instruments. 3,556,534, Cl. 274-4.
Baran, Francis R.: *See—*
Skrypa, Michael J.; Baran, Francis R.; and Low, William W.,3,557,010.
Barbuto, David J., to Quality Controls Company, Inc. Rotor valve. 3,556,153, Cl. 137-625.47
Bard, C. R., Inc.: *See—*
Walck, George A., III; Carson, Ralph; and Maloney, George T., 3,556,294.
Barfield, Charles G.: *See—*
Gable, Wyatt T., Jr.; and Barfield, Charles G.,3,555,794.
Barger, Lloyd D., to Constant Flow Company. Gate valve for hopper cars or the like. 3,556,469, Cl. 251-144.
Barnes, Bernard C. Apparatus and method for automatically forming and sealing pliable containers. 3,555,975, Cl. 93-44.1
Barnes, Charles M.: *See—*
Shutt, Paul B.; and Barnes, Charles M.,3,556,607.
Barnes, Clarence A., Jr.: *See—*
Ferrara, Peter J.; Dalby, Gaston; Barnes, Clarence A., Jr.; and Gordon, Roy,3,557,006.
Barnes, Leslie W.; and Barnes, Robert E. Wire feeding device. 3,556,372, Cl. 226-115.
Barnes, Robert E.: *See—*
Barnes, Leslie W.; and Barnes, Robert E.,3,556,372.
Barnes, Roy J.: *See—*
Erickson, Victor H.; Barnes, Roy J.; and Wagner, Ernest W.,3,555,710.
Barnowski, Ulrich: *See—*
Hammelmann, Paul; and Barnowski, Ulrich,3,556,688.
Baron, Frank A.: *See—*
Collins, George W.; and Baron, Frank A.,3,557,037.
Barr, William H.; and Wesen, Glen L., to Miller, Howard, and. Game having quick prize indication for wide area use. 3,556,530, Cl. 273-139.
Barrel Fresh Service AG: *See—*
Mockesch, Erich; and Schuster, Wilhelm, 3,556,356.
Barrett, Cedric A.; and Phillips, William, to Pall Corporation, mesne. Unloading valve structure. 3,556,468, Cl. 251-121.
Bartel, Gunter Friedrich. Seat construction and the like. 3,556,595, Cl. 297-457.
Bartholini, Giuseppe, to Hoffmann-La Roche Inc.Compositions and methods for treating Parkinson's disease with combinations of L-3,4-dihydroxyphenyl alanine and a hydrozine. 3,557,292, Cl. 424-319.
Basche, Malcolm; Fanti, Roy; and Galasso, Salvatore F., to United Aircraft Corporation. Composite boron filaments with matrix overcoat. 3,556,836, Cl. 117-71.
Basic Incorporated: *See—*
Ruiz, Joseph J., 3,556,355.
Bata Shoe Company, Inc.: *See—*
Chu, William; and Rudolf, Guy, 3,555,609.
Edmonds, Thomas A., 3,555,706.
Batzer, Hans: *See—*
Schmid, Rolf; Lohse, Friedrich; Fisch, Willy; and Batzer, Hans,3,557,035.

Schmid, Rolf; Lohse, Friedrich; Fisch, Willy; and Batzer, Hans,3,557,036.
Bauer, Charles L., to Sunbeam Corporation. Electric dry shaver. 3,555,676, Cl. 30-43.92
Bauer, Douglas M.; and Taylor, Clement F., to General Electric Company. Flow meter. 3,555,900, Cl. 73-194.
Bauer, Peter, to Bowles Engineering Corporation. Condition responsive pure fluid oscillator. 3,556,120, Cl. 137-81.5
Bauer, Ralph H., to Union Oil Company of California. Process for polymerizing vinyl esters with gaseous monomers. 3,557,069, Cl. 260-87.3
Bauer, Rudolf Friedrich; and Storey, Edward Blake, to Polymer Corporation Limited. Polymerization process. 3,557,254, Cl. 260-879.
Baum, Lloyd. Face bow. 3,555,684, Cl. 32-20.
Baum, Renee: *See—*
Brumfield, Phyllis A., 3,556,107.
Baumeister, Alois, to Massey-Ferguson G.m.b.H. Telescopic combine reel. 3,555,796, Cl. 56-221.
Baumgaertner, Paul J.: *See—*
Autry, Charles P.; Baumgaertner, Paul J.; and Hill, Eugene G.,3,556,439.
Baumgartner, Irene. Garment hanger. 3,556,362, Cl. 223-88.
Bayer, Wolfgang, to Hilti Aktiengesellschaft. Explosive actuated gun for driving anchoring or fastening elements into hard receiving material. 3,556,378, Cl. 227-9.
Bayer, Wolfgang, to Hilti Aktiengesellschaft. Device for driving anchoring members. 3,556,380, Cl. 227-11.
Bayer, Wolfgang; and Udert, Karl-Ernst, to Hilti Aktiengesellschaft. Device for driving anchoring members. 3,556,379, Cl. 227-10.
Bazouin, Andre; and Lefort, Marcel, to Rhone-Poulenc S.A. Process for the preparation of alkylaryldichlorosilanes. 3,557,176, Cl. 260-448.2
Beachman, Harry H.: *See—*
Wright, Carl L.; and Beachman, Harry H.,3,557,045.
Beals, Malcolm D.; and Merker, Leon, to National Lead Company. Fluorescent calcium and strontium titanates. 3,557,014, Cl. 252-301.4
Beard, Colin C.; and Cross, Alexander D., to Syntex Corporation. 1,2-Methylene-6,7-difluoromethylene and 1,2;6,7-bis(difluoromethylene) pregnanes and processes for their preparation. 3,557,160, Cl. 260-397.4
Beardmore, John E., to Karoll's Inc. Multi-purpose furniture. 3,556,586, Cl. 297-3.
Beck, Henry N.: *See—*
Cox, Kenneth E.; and Beck, Henry N.,3,556,720.
Beck, Robert R.; Knowlton, Harold E.; and Mc Coy, Charles S., to Chevron Research Company. Startup procedure for combined hydrofining- reforming process. 3,556,986, Cl. 208-89.
Becker, Hal Clarence, to X-Scope Corporation, mesne. Method and apparatus for calibrating a cardiac X-ray synchronizer. 3,557,371, Cl. 250-93.
Becker, Warren E.; Kobetz, Paul; and Nelson, Gunner E., to Ethyl Corporation. Process for producing hydrocarbon aluminum compounds. 3,557,174, Cl. 260-448.
Beckman Instruments, Inc.: *See—*
Grichnik, James A.; and Schmutzer, Joel J., 3,556,083.
Martin, Donald N., 3,556,731.
Beer, Palle-Finn, to AB Autokemi. Pneumatic pulsator. 3,556,686, Cl. 417-383.
Behrenz, Wolfgang: *See—*
Schrader, Gerhard; and Behrenz, Wolfgang,3,557,257.
Bell & Howell Company: *See—*
Aldridge, Charles A., 3,557,360.
Bell, Norton W., 3,557,302.
Dann, Bert H., 3,557,305.
Nupnau, Arthur E., 3,556,649.
Taini, John, 3,556,517.
Bell Aerospace Corporation: *See—*
Borgeson, Roger D.; and Shah, Naren M., 3,555,970.
Shah, Naren M., 3,555,969.
Bell, Malcolm R., to Sterling Drug Inc. 4,5,6,7-Tetrahydro-indole-lower-alkanoic acids and esters. 3,557,142, Cl. 260-326.13
Bell, Norton W., to Bell & Howell Company. One-channel signal conveying systems for luminance and chrominance video signals. 3,557,302, Cl. 178-5.2
Bell Telephone Laboratories, Incorporated: *See—*
Burckhardt, Christoph B., 3,556,628.
Cannone, Anthony G., 3,556,853.
Maurer, Robert E., 3,557,319.
Walden, Stephen W., 3,557,322.
Bell, William W., Jr., to Carrier Corporation. Purging absorption refrigeration systems. 3,555,849, Cl. 62-475.
Bellasio, Elvio; Testa, Emilio; Maffii, Giulio; and Schiatti, Pierfranco, to Lepetit S.p.A.,-Gruppo per la Ricerca Scientifica e la Produzione Chimica Farmaceutica. Phthalazino-phthalazinediones and process for their manufacture. 3,557,108, Cl. 260-250.
Bello, Salvatore, to Jacoby-Bender, Inc. Slidable clasp with latching action for foldable connector, and clasp-bracelet combination. 3,555,850, Cl. 63-3.
Beloit Corporation: *See—*
Cronin, Dennis Callahan, 3,556,940.
Jones, James F., 3,556,180.
Bendall, Wilfrid H. Detachable chain. 3,555,918, Cl. 74-249.
Bender, Charles E.; Thompson, Taylor Norris; and Fraser, Douglas S., to Virtis Company, Inc., The. Apparatus for heat sealing evacuated glass ampules. 3,556,760, Cl. 65-268.
Bendix Corporation, The: *See—*
Ahern, Charles J., 3,556,118.
Ditlinger, Richard J., 3,556,906.
Dombeck, Edward K., 3,556,046.
Dombeck, Edward K., 3,556,262.
Howard, Donald W., 3,556,611.
Lenker, Paul E., 3,555,904.
MacDuff, Stanley I.; Cripe, Maxwell L.; and Larsen, Lester J., 3,556,608.
MacDuff, Stanley I., 3,556,609.
Rhee, Seong Kwan, 3,555,666.
Shutt, Paul B.; and Barnes, Charles M., 3,556,607.
Wieger, George F., 3,556,263.
Winge, John J.; and Howard, Donald W., 3,556,258.
Benjamin, Milton L.; and Walker, David D., to Erickson Tool Company. Collet chuck and the like. 3,556,540, Cl. 279-47.
Benko, Pal: *See—*
Pallos, Laszlo; and Benko, Pal,3,557,128.
Bennett, Donald Perry, Jr., 1/2 to Gerry, Martin E. Inverse hybrid rocket. 3,555,826, Cl. 60-251.
Bennice, Richard L.: *See—*
Rubin, Ronald W.; and Bennice, Richard L.,3,556,622.
Bennight, J D: *See—*
Schwinghamer, Robert J.; and Bennight, J D,3,555,867.
Benson, Ann L. Coiffure protector. 3,556,115, Cl. 132-49.
Bentley, Harry Thomas, III: *See—*
Menius, Arthur C., Jr.; and Bentley, Harry Thomas, III,3,555,880.
Bentz, Francis: *See—*
Engelhard, Helmut; Bentz, Francis; Bodesheim, Ferdinand; and Nischk, Gunther,3,557,247.
Benzing, James A., to U.S. Plywood-Champion Papers Inc. Shaft puller. 3,556,742, Cl. 29-256.
Berde, Botond; and Fanchamps, Albert, to Sandoz Ltd., also known as Sandoz AG. Compositions and methods for treating headaches of vascular orgin with combinations of caffeine, a vasotonic lysergic acid and a thioxanthene. 3,557,287, Cl. 424-253.
Beretta, Mario: *See—*
Beretta, Paolo; and Beretta, Mario,3,557,268.
Beretta, Paolo; and Beretta, Mario, to Netlon International Limited. Extrusion of plastic netting. 3,557,268, Cl. 264-145.
Berg, Vernon R., Jr.: *See—*
Berg, Vernon R., Sr.; and Berg, Vernon R., Jr.,3,556,605.
Berg, Vernon R., Sr.; and Berg, Vernon R., Jr. Stacker. 3,556,605. Cl. 302-37.
Berger, Rolf, to Eumuco Aktiengesellschaft fur Maschinenbau. Gripper device for conveying workpieces in hot die forging presses. 3,556,315, Cl. 214-1.
Berger, Victor M. Electric grill. 3,555,995, Cl. 99-446.
Bergeret, Marcel; Borrel, Louis; and Simeone, Marius, to Commissariat a l'Energie Atomique. Remote-manipulation tool. 3,555,653, Cl. 29-211.
Bergeron, Louis Alonzo. Joint filling compositions. 3,557,029, Cl. 260-8.
Bergwerk, Walter, to Imperial Chemical Industries Limited. Drawing synthetic thermoplastic yarn. 3,557,273, Cl. 264-210.
Beriger, Ernst; and Pinter, Ladislaus, to Ciba Limited. O,O-Dilower alkyl-2-halo-1- (halomethoxyphenyl)-vinyl phosphate. 3,557,258, Cl. 260-951.
Berkley, Stanley G.; and Suyama, Frank, to United Aircraft Corporation. Composite metal article having nickel alloy having coats containing chromium and aluminum. 3,556,744, Cl. 29-183.5
Berkovitz, Harry: *See—*
Caputo, William R.; and Berkovitz, Harry,3,556,257.
Berkowitz, Nathan L. Cylinder lock. 3,555,859, Cl. 70-340.
Berlied, Henry P.: *See—*
Overgaard, Odd; and Berlied, Henry P.,3,556,543.
Berliner, Jordan P.: *See—*
Richter, Sidney B.; and Berliner, Jordan P.,3,557,209.
Bernard, Emile C., to Societe Novacel. Method of manufacture of adhesive transfer. 3,556,894, Cl. 156-235.
Bernhardt, Gunther; Buning, Robert; Bierwirth, Egon; and Trautvetter, Werner, to Dynamit Nobel Aktiengesellschaft. Metallizing thermoplastic shaped articles. 3,556,746, Cl. 29-195.
Bernstein, Seymour: *See—*
Dusza, John Paul; Joseph, Joseph Peter; and Bernstein, Seymour,3,557,161.
Bersworth, Frederick C.: *See—*
Bersworth, Frederick C., 3,557,200.
Bersworth, Frederick C., to Bersworth, Frederick C., mesne. Nitrilotriacetic acid based chelating agents. 3,557,200, Cl. 260-534.
Bertoni, Riccardo. Spherical motor. 3,556,696, Cl. 418-68.
Besthorne, Gerard. Inflatable bag. 3,556,186, Cl. 150-1.
Bethlehem Steel Corporation: *See—*
Baker, Stephen R.; and Kremer, Harry D., 3,556,168.
Nippert, Charles R., Sr., 3,556,167.
Bevis Industries, Inc.: *See—*
Hyatt, Frederick, 3,555,637.
Bewick, Leland E.: *See—*
Nemetz, Joseph S.; and Bewick, Leland E.,3,555,994.

Bickel, Hans; Bosshardt, Rolf; Fechtig, Bruno; Menard, Enrico; Mueller, Johannes; and Heinrich, Peter, to Ciba Corporation. Derivatives of 7-acylamino-cephalosporanic acid. 3,557,104, Cl. 260-243.
Bickers, Anthony; and Delmer, Philip T., to Nordberg Manufacturing Company. Directional control valve and method of making. 3,556,144, Cl. 137-596.15
Bicking, John B., to Merck & Co., Inc. 1-Substituted-3-(2-pyrimidinyl imidazolium salts. 3,557,114, Cl. 260-256.4
Bieler, Barrie H.: *See—*
Fuller, William R.; Bieler, Barrie H.; and Morgan, David C.,3,556,024.
Bierwirth, Egon: *See—*
Bernhardt, Gunther; Buning, Robert; Bierwirth, Egon; and Trautvetter, Werner,3,556,746.
Bilgers, Friedrich: *See—*
Brodersen, Helmut; and Brodersen, Harry, 3,557,277.
Billeruds Aktiebolag: *See—*
Kapare, Erik Gunnar, 3,555,778.
Billeter, Henry R.; and Nelson, Axel B., to Sloan Valve Company. Control valves. 3,556,137, Cl. 137-543.15
Billi, G., & C., S.p.A.: *See—*
Billi, Giorgio, 3,555,855.
Billi, Giorgio, to Billi, G., & C., S.p.A. Circular knitting machine. 3,555,855, Cl. 66-138.
Bily, Peter J., to FMC Corporation. Double counterbalanced marine loading arm. 3,556,148, Cl. 137-615.
Bily, Peter J., to FMC Corporation. Mooring and fluid transferring method. 3,556,170, Cl. 141-1.
Binder, Rudolf, to Daimler-Benz Aktiengesellschaft. Sun visor, especially at the windshield of motor vehicles. 3,556,585, Cl. 296-97.
Bingham, Kenneth Charles Arthur; and Gillingham, Alan George Albert, to International Computers and Tabulators Limited. Bonding electrical conductors. 3,555,664, Cl. 29-470.1
Birbara, Philip: *See—*
Putnam, David F.; Russell, Sid; and Birbara, Philip,3,556,949.
Bithel, Leonard: *See—*
Mac Williams, William Andrew; and Bithel, Leonard,3,556,596.
Bizot, Jean; Bourat, Guy; and Michelet, Daniel, to Rhone-Poulenc S.A. Electrolytic hydrodimerisation. 3,556,961, Cl. 204-73.
Blair, Robert E., III. Motorcycle fork extension. 3,556,557, Cl. 280-279.
Blaisdell, William H.; Cornelius, Edward C.; and Emerson, Howard J., to Eastman Kodak Company. Methods and apparatus for inspecting photographic materials. 3,556,664, Cl. 356-200.
Blakley, Isaac D., to Stewart-Warner Corporation. File card follower mechanism. 3,556,621, Cl. 312-183.
Bleasdale, James L.; and Sandquist, Carl L., to Du Pont de Nemours, E. I., and Company. Process for making spandex polymers. 3,557,044, Cl. 260-32.6
Bleasdale, William J. Surge cushioning apparatus for pressure systems. 3,556,159, Cl. 138-30.
Blecher, Stephen, to Honeywell, Inc. Indexing mechanism. 3,556,652, Cl. 353-116.
Bledsoe, Sherman H. House and boat trailer apparatus. 3,556,582, Cl. 296-23.
Bleecker, William H., to Carmet Company. Method of keying a carbide workpiece to a drive member. 3,556,741, Cl. 29-148.4
Bloom, Joseph Lewis, to Lucas, Joseph, (Industries) Limited. Speed control apparatus for gas turbine engines. 3,555,815, Cl. 60-39.28
Blount, Luther H. Meihod and means for growing oysters. 3,556,052, Cl. 119-4.
Bloxom, David E., to Speed Fab-Crete Corporation, International. Method of forming walls with prefabricated panels. 3,555,763, Cl. 52-745.
Blumberg, Ruth: *See—*
Baniel, Avraham Matitiahu; and Blumberg, Ruth,3,556,739.
Blumbergs, John H.; and MacKellar, Donald G., to FMC Corporation. Process for preparation of poly(maleic acid). 3,557,065, Cl. 260-78.4
Blumcraft of Pittsburgh: *See—*
Horgan, William J., Jr., 3,555,733.
Blurton, Keith F.: *See—*
Oswin, Harry G.; and Blurton, Keith F.,3,556,849.
Boatwright, Albert. Underwater breathing device. 3,556,094, Cl. 128-142.2
Bochan, John, to General Electric Company. Self-stabilizing suspension system. 3,556,446, Cl. 248-17.
Bockman, Ole K., to Aktiebolaget Svenska Flaktfabriken. Gas-liquid contact apparatus and method. 3,556,490, Cl. 261-98.
Bodcher, Vilhelm Frederik Herman. Defrosting device for compression refrigerating machine. 3,555,842, Cl. 62-140.
Bodesheim, Ferdinand: *See—*
Engelhard, Helmut; Bentz, Francis; Bodesheim, Ferdinand; and Nischk, Gunther,3,557,247.
Boehringer Ingelheim G.m.b.H.: *See—*
Roch, Josef, 3,557,105.
Roch, Josef, 3,557,106.
Zeile, Karl; Banholzer, Rolf; and Walther, Gerhard, 3,557,125.
Boeing Company, The: *See—*
Autry, Charles P.; Baumgaertner, Paul J.; and Hill, Eugene G., 3,556,439.
Bogaert, Pierre Emmanuel E. J. Mounting arrangement for a skylight. 3,555,752, Cl. 52-200.
Bogie, Nelson H. Beach cleaning apparatus. 3,556,224, Cl. 171-116.
Bogomazov, Vladlen Georgievich: *See—*
Niskovskikh, Vitaly Maximovich; Gelfenbein, Evgeny Jukhimovich; and Bogomazov, Vladlen Georgievich,3,556,198.
Bohn, Floyd O.; and Porter, Forrest V., to Dresser Industries, Inc. Fluid sampler. 3,556,211, Cl. 166-63.
Boichard, Jacques; Brossard, Bernard; Gay, Michel; and Janin, Raymond, to Rhone-Poulenc S.A. Process for the preparation of adipic acid. 3,557,201, Cl. 260-537.
Bois-Colombes: *See—*
Lallemant, Pierre Joseph Martin, 3,556,440.
Bolkow Gesellschaft mit Beschrankter Haftung: *See—*
Kilian, Ernst-Dieter, 3,556,673.
Bollen, Philip S.: *See—*
Schonberg, Elliot A.; Steinberg, Albert H.; and Bollen, Philip S.,3,556,896.
Bolt Beranek and Newman Inc.: *See—*
Hirtle, Parker W.; and Ashby, Frederick Richard, 3,555,734.
Bolton, Robert Benjamin. Conveyors. 3,556,285, Cl. 198-176.
Bonfardeci, Augusto; and Porri, Lido, to Montecantini Edison S.p.A. Process for polymerizing isoprene in contact with a three-component catalyst prepared from $TiCl_4$, AlR_2Cl and particular silanes. 3,557,076, Cl. 260-94.3
Bonnafous, Guy, to Institut Francais du Petrole, des Carburants et Lubrifiants. Semi-submersible floating structure with dynamic positioning. 3,556,033, Cl. 114-0.5
Bonnard, Lucien; and Pich, Rene, to Societe Rhodiaceta. Polyesterethers. 3,557,055, Cl. 260-47.
Bonnart, Jacques Paul Marie; Bonnet, Yannik; and Rey, Paul Pierre Marie, to Rhone-Poulenc S.A. Process for the preparation of cycloalkanols and mixtures of cycloalkanols and cycloalkanones. 3,557,215, Cl. 260-586.
Bonnet, Yannik: *See—*
Bonnart, Jacques Paul Marie; Bonnet, Yannik; and Rey, Paul Pierre Marie,3,557,215.
Bonvicini, Alberto: *See—*
Cantatore, Giuseppe; and Bonvicini, Alberto,3,557,086.
Borchardt, Gerald N.: *See—*
Hershman, Gordon L.; and Borchardt, Gerald N.,3,556,549.
Borden Company, The: *See—*
Loshaek, Samuel; and Leonard, Edward Charles, 3,557,041.
Borden, Inc.: *See—*
Sorell, Henry Paul, 3,556,835.
Borg-Warner Corporation: *See—*
Fleckenstein, Joseph E.; Kimpel, Frank A.; Ormanoski, Leo J.; and Paetow, Herman E., 3,555,844.
King, Donald A., 3,556,150.
Olenik, Charles C., 3,556,475.
Tuzson, John J., 3,556,063.
Borgeson, Roger D.; and Shah, Naren M., to Bell Aerospace Corporation. Pressure regulator for servo valve having dynamic load adaptive response. 3,555,970, Cl. 91-461.
Borrel, Louis: *See—*
Bergeret, Marcel; Borrel, Louis; and Simeone, Marius,3,555,653.
Bosch, Robert, G.m.b.H.: *See—*
Gotsch, Dieter; and Hettich, Alfred, 3,555,921.
Kramer, Manfred, 3,556,154.
Werner, Frithjof, 3,557,300.
Boshinski, Edwin E.: *See—*
Allen, Kenneth C.; and Boshinski, Edwin E.,3,556,235.
Allen, Kenneth C.; and Boshinski, Edwin E.,3,557,353.
Bosshardt, Rolf: *See—*
Bickel, Hans; Bosshardt, Rolf; Fechtig, Bruno; Menard, Enrico; Mueller, Johannes; and Heinrich, Peter,3,557,104.
Bossinger, Charles D.: *See—*
Enkoji, Takashi; and Bossinger, Charles D.,3,557,285.
Bosworth, Frederic M.: *See—*
Nord, Eric T.; Rood, Alvin A.; and Bosworth, Frederic M.,3,556,411.
Bottaccio, Giorgio; and Chiusoli, Gian Paolo, to Montecatini Edison S.p.A. Process for preparing beta-keto-acids. 3,557,196, Cl. 260-514.
Bottas, Michael J.; and Difley, Chares R., to Whirlpool Corporation. Refuse storage apparatus. 3,556,619, Cl. 312-31.
Bouligny, R. H., Inc.: *See—*
Neal, Frank W.; and Snyder, Robert L., 3,555,738.
Bourat, Guy: *See—*
Bizot, Jean; Bourat, Guy; and Michelet, Daniel,3,556,961.
Bourgeois, Jacques, 'Elco' Societe d'Exploitation Lesieur Cotelle et Foucher. Device for controlling opening and closing movement of an adjustable extrusion die. 3,555,602, Cl. 18-14.
Bournez, Lucien Robert; and Fabre, Robert, to Societe Nouvelle Spidem. Device allowing for the variation of the stresses on the operating chocks in multicylindrical rollers. 3,555,872, Cl. 72-245.
Bowles Engineering Corporation: *See—*
Bauer, Peter, 3,556,120.
Bowman, Clement W.: *See—*
Kaminsky, Victor P.; and Bowman, Clement W.,3,556,982.
Bowser, Robert C., to Ford Motor Company. Steering wheel. 3,555,925, Cl. 74-552.
Boyd, David M., to Universal Oil Products Company. Fluid distribution for fluid-solid contacting chambers. 3,556,736, Cl. 23-288.
Boyd, David M., to Universal Oil Products Company. Fluid distribution for fluid-solid contacting chambers. 3,556,737, Cl. 23-288.
Boyd, James G. Transmission unit. 3,555,930, Cl. 74-713.

Boyle, William J., Jr.; Davis, Lauren R.; and Shusman, Tevis, to Monsanto Company. Automatic independently functioning sparging apparatus. 3,557,243, Cl. 260-698.

Bracco Industria Chimica, Societa per Azioni: *See—*
Felder, Ernst; and Pitre, Davide, 3,557,197.

Brack, Jacques, to Etem, Etablissement de Techniques Modernes. Driving-in tool with dismountable joint of the pivoting guide-piece. 3,556,381, Cl. 227-11.

Brady, Thomas P.: *See—*
Langer, Horst G.; and Brady, Thomas P.,3,557,172.

Bragg, Cecil, to English Electric Computers Limited. Hammer block assembly for line printer. 3,556,002, Cl. 101-93.

Brandon, Chester, to Singer-General Precision, Inc. Continuous film movement motion picture camera. 3,556,647, Cl. 352-107.

Branfield, Henry A.; and Balding, Harold R., to Dick, A. B., Company. Ink container mount with selectively operative springs for expelling ink. 3,556,008, Cl. 101-350.

Brasseur, Roger N. Container lifting device. 3,556,577, Cl. 294-27.

Bratkowski, Walter V.; and Pittman, Paul F., to Westinghouse Electric Corporation. Strain gauge transducer apparatus. 3,555,894, Cl. 73-88.5

Brazdovic, Rudolph T., to Wood Industries, Inc. Adhesive applicator. 3,556,913, Cl. 156-584.

Breuer, Hermann, to Squibb, E. R., & Sons, Inc. Nitrofuryl-oxadiazole derivatives. 3,557,099, Cl. 260-240.

Brewer, Willie F.; and Dahlberg, Franklyn L., to FMC Corporation. Hydraulic row marker. 3,556,226, Cl. 172-130.

Brian, Pierre L. T.: *See—*
Ehrreich, John E., III; Reti, Adrian R.; and Brian, Pierre L. T.,3,556,803.

Brian, Wilton A.: *See—*
Emerson, Robert B.; and Brian, Wilton A.,3,557,025.

Bridge, John. Method and apparatus for lifting freight containers. 3,556,580, Cl. 294-81.

Bridgeford, Douglas J., to Tee-Pak, Inc. Process for separating ionic materials from component mixtures. 3,557,082, Cl. 260-218.

Bridgeport Implement Works, Inc.: *See—*
Pardy, Thomas G., 3,556,223.

Bridgestone Liquefied Gas Company Limited: *See—*
Yamamoto, Katsuro; Hatano, Takuya; Obata, Kuniyoshi; Satoh, Tohru; and Nakagawa, Shinji, 3,555,884.

Briese, John A.: *See—*
Poirier, Armand R.; and Briese, John A.,3,556,857.

Brillion Iron Works, Inc.: *See—*
Haun, John W.; Hoyt, Charles T.; and Prem, Joseph F., 3,555,797.

Brink, Edwin H., to FMC Corporation. Seed capsule and method of making same. 3,555,730, Cl. 47-57.6

Brinton, William J. Coatings compositions from blends of alkyd resins and styrene-allyl alcohol copolymers. 3,557,033, Cl. 260-21.

Briskin, Theodore S.; and Ward, Geoffrey R., to Sutton Research Corporation. Method of making a smoking product of oxidized cellulosic material, containing ashing ingredients. 3,556,109, Cl. 131-2.

Briskin, Theodore S.; and Ward, Geoffrey R., to Sutton Research Corporation. Method for producing a smoking product of cellulosic material. 3,556,110, Cl. 131-2.

Bristow, Robert J. Fluid mixing and dispensing apparatus. 3,556,348, Cl. 222-137.

British Insulated Callender's Cables Limited: *See—*
Hinds, Ronald, 3,556,904.

British Iron and Steel Research Association, The: *See—*
Bullough, William; Jenkins, Walter N.; Jaffrey, William G.; Watts, Campbell; Jones, Granville K.; and Salt, Frederick W., 3,557,336.

Broaddus, Charles D., to Procter & Gamble Company. Detergent compositions containing 3-substituted 2,5 diphenyl-heterocycle brighteners. 3,557,005, Cl. 252-99.

Brockmuller, Friedrich Franz; and Junemann, Boyke, to Windmoller & Holscher. Apparatus for shifting a deflector in a machine for processing paper or plastics material sheeting, preferably a tube-making machine. 3,556,518, Cl. 271-64.

Brockway Glass Company: *See—*
Snyder, Herbert C., 3,556,335.

Brodersen, Harry: *See—*
Brodersen, Helmut; and Brodersen, Harry,3,557,277.

Brodersen, Helmut; and Brodersen, Harry, to Bilgers, Friedrich. Process for the shaping of fiber building board. 3,557,277, Cl. 264-316.

Bromberg, Menashe, to Thomas & Betts Co., The. Coupling. 3,556,566, Cl. 285-162.

Brooker, Leslie G. S.: *See—*
Taber, Robert C.; and Brooker, Leslie G. S.,3,557,101.

Brossard, Bernard: *See—*
Boichard, Jacques; Brossard, Bernard; Gay, Michel; and Janin, Raymond,3,557,201.

Brown, Adolphas E. Folding ladder for a working cart. 3,556,248, Cl. 182-15.

Brown, Edgar D., Jr., to General Electric Company. Halogen-substituted organosilicon compounds and lubricants containing the same. 3,557,175, Cl. 260-448.2

Brown, Francis X.; and Wismer, Samuel W., Jr., to Westinghouse Electric Corporation. Method of explosively plugging a leaky metal tube in a heat exchanger tube bundle. 3,555,656, Cl. 29-401.

Brown, George M., to Sauna International, Inc. Release mechanism. 3,555,628, Cl. 24-25.17

Brown, George M., to Sauna International, Inc. Releasable coupling. 3,555,634, Cl. 24-230.

Brown, Richard J. Two stage fluid fuel control valve. 3,556,129, Cl. 137-271.

Brown, Thomas Graham. Ultrasonic detection apparatus. 3,555,888, Cl. 73-67.8

Brown, Victor; Anderson, Ingvar G.; and Vincent, Daniel Boscawin, to New Life Foundation. Apparatus for comminuting compost. 3,556,420, Cl. 241-86.

Browning, Iben. Focal plane shutter system. 3,555,987, Cl. 95-53.

Brownson, Dewitt M. Drafting machine caddy. 3,556,307, Cl. 211-126.

Brucker, John P.: *See—*
Nelke, Conrad J.; and Brucker, John P.,3,556,074.

Brugger, Richard G.: *See—*
Aberle, Albert K.; Arthur, Richard J.; and Brugger, Richard G.,3,555,692.

Bruhn, Kenneth N., to Streater Industries, Inc. Connector assembly for joining tubular members at right angles. 3,556,569, Cl. 287-54.

Brumfield, Phyllis A., 1/3 interest to Meany, Bernard A., and 1/3 interest to Baum, Renee. Self-supporting garment. 3,556,107, Cl. 128-465.

Brundage, Clinton F.; and Mammolito, Dominick V., to North American Rockwell Corporation, mesne. Book forming apparatus and method. 3,556,283, Cl. 198-34.

Brunfeldt, Kay; Roepstorff, Peter; and Halstrom, John. Reactions system. 3,557,077, Cl. 260-112.5

Bruning, Armin M.; and De Corso, Serafino M., to Westinghouse Electric Corporation. Processes for producing steel. 3,556,771, Cl. 75-12.

Brunner, Mihaly. Process for the reduction of molten iron ore. 3,556,774, Cl. 75-57.

Brunskill, Ernest: *See—*
Durrant, George G.; and Brunskill, Ernest,3,556,828.

Brunswick Corporation: *See—*
Ballmer, James E., 3,556,532.
Minks, Floyd M., 3,556,069.
Roberts, John A.; and King, Alwyn H., 3,556,636.

Bryner, Ernest James; and Wolcott, Gard William, to Sigma Engineering Service, Inc. Parts feeder. 3,556,287, Cl. 198-220.

Brynge, Per Gunnar; Andersson, O. Arne; and Nilson, Hans Ove, to Husqvarna Vapenfabriks Aktiebolag. Control equipment of heating devices. 3,557,343, Cl. 219-510.

Brzozowski, Stephen J., Jr.: *See—*
Winogrocki, Ray F.; Brzozowski, Stephen J., Jr.; and McClure, Gerald L.,3,557,328.

Buchanan, James B., to Du Pont de Nemours, E. I., and Company. Preparation of 2-(carbamoyl)-N-(carbamoyloxy) thio-formimidates from alkyl acetoacetates. 3,557,190, Cl. 260-482.

Buck, Robert W., to Coors Porcelain Company. Metallized ceramic and method and composition therefor. 3,556,843, Cl. 117-227.

Buck, William R.: *See—*
Middlebusher, Paul L.; and Buck, William R.,3,556,679.

Buckley, Francis T.; Riek, Raymond F.; and Christensen, Donald I., to Monsanto Company. Process for production of interlayer safety-glass. 3,556,890, Cl. 156-106.

Bucy, Harry R. Mold for pressure injected molten material having cavity with peripheral vent. 3,555,619, Cl. 18-42.

Bucy, Harry R. Mold for pressure injected material vented through ejector pin guides. 3,555,620, Cl. 18-42.

Budd Company, The: *See—*
Cooper, William C., 3,555,940.
Jahnle, Herbert A., 3,555,876.

Budde, Carl A. Medical pulse analyzing apparatus. 3,556,084, Cl. 128-2.05

Buechner, Oskar; Immel, Wolfgang; Pfannmueller, Helmut; Schmidt-Thomee, Georg; and Urban, Friedrich, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of low molecular weight waxy polyethylenes. 3,557,074, Cl. 260-94.9

Bugaut, Andree: *See—*
Kalopissis, Gregoire; and Bugaut, Andree,3,555,584.

Buhler, Eugen. Method for automatic production and transportation of flaskless sand moulds in metal casting. 3,556,196, Cl. 164-38.

Bull, Nulan George. Spinning reel transfer. 3,556,365, Cl. 224-5.

Bullard, E. D., Company: *See—*
Raschke, Herbert A., 3,555,560.

Bullough, William; Jenkins, Walter N.; Jaffrey, William G.; Watts, Campbell; Jones, Granville K.; and Salt, Frederick W., to British Iron and Steel Research Association, The. Electrochemical heat treatment. 3,557,336, Cl. 219-71.

Buning, Robert: *See—*
Bernhardt, Gunther; Buning, Robert; Bierwirth, Egon; and Trautvetter, Werner,3,556,746.

Bunte, Hans; Traulich, Horst; and Vedder, Herbert, to Gantenbrink-Leuchten oHG Spezialfabrik fuer Aussenleuchten, Firma. Luminaire. 3,557,363, Cl. 240-128.

Buonsante, John J.; and Syvertsen, Norman J., to American Telephone and Telegraph Company. Apartment house telephone system. 3,557,318, Cl. 179-39.

Burckhardt, Christoph B., to Bell Telephone Laboratories, Incorporated. Reconstruction of information stored in only selected areas of a hologram. 3,556,628, Cl. 350-3.5

Burge, William G. Chip breakers. 3,555,936, Cl. 77-63.

Burgo, Paul A.; and Pierson, Charles W., to Eastman Kodak Company. Ultrasonic film splicing apparatus. 3,556,912, Cl. 156-580.

Buri, Albert Friedrich. Pump having a piston with a combined rotary and reciprocating action. 3,556,691, Cl. 417-500.

Buriks, Rudolph S.: *See—*
Mange, Franklin E.; Buriks, Rudolph S.; and Fauke, Allen R.,3,557,017.

Burkett, Routhford J., to Coachella Valley Organic Fertilizer Co. Tree hogger unit. 3,556,422, Cl. 241-101.

Burkhardt, Joseph A.: *See—*
Reistle, Carl E., III; and Burkhardt, Joseph A.,3,556,209.

Burnham, Gerald E., Sr. Baffle structure and flow distributor for a degassing apparatus. 3,555,819, Cl. 55-170.

Burns, Ernest Bingham; Darlow, Brian Benjamin; and Smallman, Robert Victor, to Imperial Chemical Industries Limited. Cross-linked vinylidene/dicarboxylic acid anhydride copolymers. 3,557,067, Cl. 260-78.5

Burroughs Corporation: *See—*
Terbrueggen, Paul L.; and Caspari, Georg K., 3,556,396.

Buscemi, Anthony T., Jr. Beauty parlor accessories. 3,556,296, Cl. 209-123.

Busch, Franz: *See—*
Schrumpf, Kurt; and Busch, Franz,3,555,704.

Busch, Thomas N.; and Hoadley, Cyrus E., to Youngstown Sheet and Tube Company, The. Tree harvester. 3,556,183, Cl. 144-34.

Busch, William J., Jr., to Standard Pressed Steel Co. Torque indicating wrench. 3,555,938, Cl. 81-52.4

Buse, Wilhelm G.; Munding, German; and Weigelt, Heinrich, to Messerschmitt-Bolkow Gesellschaft mit beschrankter Haftung. Gas generator construction and a method of operating a combustion chamber. 3,555,824, Cl. 60-220.

Busler, Willard Le Roy; Folk, Kenneth Foster; Phillips, Howard Charles; and Ross, Milton Dean, to AMP Incorporated. Apparatus for inserting contact members into insulating blocks. 3,556,382, Cl. 227-93.

Butler, Kenneth, to Phizer, Chas. & Co., Inc. Unsaturated aliphatic esters of α-carboxy aryl penicillins. 3,557,090, Cl. 260-239.1

Butler, Kenneth, to Pfizer, Chas., & Co., Inc. Substituted alkyl esters of α-carboxy aryl penicillins. 3,557,094, Cl. 260-239.1

Butler, Newton R. Fishing rod holding attachment for a tackle box. 3,555,719, Cl. 43-54.5

Bykov, Leonid Alexandrovich: *See—*
Niskovskikh, Vitaly Maximovich; Litvinov, Anatoly Ivanovich; Sobolev, Vladimir Nikolaevich; Gelfenbein, Evgeny Junkhimovich; and Bykov, Leonid Alexandrovich,3,556,349.

Bywater, William Limited: *See—*
O'Byrne, Brendan, 3,555,638.

C-J Corporation: *See—*
Muskat, Irving E., 3,557,046.
Muskat, Irving E., 3,557,049.
Muskat, Irving E., 3,557,256.

Cabot Corporation: *See—*
Tully, Paul R.; Fletcher, William J.; and Cochrane, Hector, 3,556,698.

Cadral S.A.: *See—*
Uebelhardt, Roger, 3,555,646.

Cahoy, Roger P.: *See—*
Coyne, Donald M.; and Cahoy, Roger P.,3,557,021.

Cairns, John Potts; and Hepworth, Walter, to Imperial Chemical Industries Limited. Veterinary compositions containing a quinoline-3-carboxylic ester. 3,557,283, Cl. 424-258.

Caldes, Constantine A. Audible house alarm for rural mail boxes. 3,556,394, Cl. 232-36.

Caldwell, Edward N.: *See—*
Puster, Louis M.; and Caldwell, Edward N.,3,556,399.

Calhoun, Edward J.; and Pinter, Karoly G. Tracheotomy instrument. 3,556,103, Cl. 128-347.

Callaghan Paper Box Company, The: *See—*
Glasband, Norman; and Glasband, Hyman Saul, 3,556,383.

Camco, Incorporated: *See—*
Delatorre, Leroy C.; and Tausch, Gilbert H., 3,555,901.

Campbell, Richard H., to Webster Electric Company, Inc. Oil burner spark ignition system. 3,556,706, Cl. 431-265.

Canadian Lacrosse Mfg. Inc.: *See—*
Goupil, Marcel, 3,555,708.

Cannon Aeronautical Center: *See—*
Young, Hersey W., Jr., 3,555,915.

Cannone, Anthony G., to Bell Telephone Laboratories, Incorporated. Grid for lead-acid cell. 3,556,853, Cl. 136-36.

Cantatore, Giuseppe; and Bonvicini, Alberto, to Montecatini Edison S.p.A. Process for preparing substituted hexahydro-1,4- diazepines. 3,557,086, Cl. 260-239.

Capetti, Federico: *See—*
Papa, Paolo; and Capetti, Federico,3,556,006.

Capgras, Rene, to Industrial Development Company. Trim-correcting arrangement for vehicles with hydropneumatic suspension. 3,556,542, Cl. 280-6.

Captain International Industries, Ltd.: *See—*
Ungerman, Warren J., 3,556,343.

Caputo, William R.; and Berkovitz, Harry, to Westinghouse Electric Corporation. Master door operator hatch door closure. 3,556,257, Cl. 187-52.

Cardoso, Jose Joaquim, to Magnesita S.A. Plub for molten metal containers. 3,556,359, Cl. 222-559.

Cargo Systems, Inc.: *See—*
Dobbs, Terry R., 3,556,448.

Carlisle Tire and Rubber: *See—*
Otstot, James L., 3,555,942.

Carlson, Raymond T. Furniture leg fastening means. 3,556,450, Cl. 248-188.

Carlson, William G.; Moratis, Christy J.; and English, William A., to Westinghouse Electric Corporation. High temperature, electrically conductive hermetic seals. 3,555,667, Cl. 29-492.

Carlton Sports Company Limited: *See—*
Carlton, William C., 3,556,524.

Carlton, William C., to Carlton Sports Company Limited. Method of manufacturing rackets. 3,556,524, Cl. 273-73.

Carmet Company: *See—*
Bleecker, William H., 3,556,741.

Carpenter Technology Corporation: *See—*
Post, Carl B.; Leinbach, Ralph C., Jr.; and Sullivan, Michael D., 3,556,770.

Carr, Hugh B.: *See—*
Kinney, Selwyne P.; and Carr, Hugh B.,3,556,702.

Carr, Russell L. K.: *See—*
Dorfman, Edwin; Emerson, William E.; and Carr, Russell L. K.,3,557,165.

Carrell, Donald D.: *See—*
Link, Fred W.; Vandesteeg, Wayne H.; and Carrell, Donald D.,3,556,160.

Carrier Corporation: *See—*
Bell, William W., Jr., 3,555,849.
Leonard, Louis H., Jr., 3,555,839.
Leonard, Louis H., Jr., 3,555,840.
Leonard, Louis H., Jr., 3,556,200.

Carson, Ralph: *See—*
Walck, George A., III; Carson, Ralph; and Maloney, George T.,3,556,294.

Carter, Charles I.; and Rogers, Rupert O., to International Paper Company. Method and apparatus for producing spiral wound container. 3,555,976, Cl. 93-80.

Cary, Henry H., to Cary Instruments. Automatic control of strain modulator. 3,556,663, Cl. 356-116.

Cary Instruments: *See—*
Cary, Henry H., 3,556,663.

Case, J. I., Company: *See—*
Dollase, William R., 3,556,242.

Caspari, Georg K.: *See—*
Terbrueggen, Paul L.; and Caspari, Georg K.,3,556,396.

Castle, John R.: *See—*
Morris, Robert L.; and Castle, John R.,3,557,003.

Catallo, Frank; and Foreman, Donald, to Fab-Con Machinery Development Corporation. Fabric batcher. 3,556,424, Cl. 242-56.

Catalytic Engineering & Manufacturing Corporation: *See—*
Lustig, Eduard M., 3,555,787.

Caterpillar Tractor Company: *See—*
Codo, Edward A., 3,556,300.
Erickson, Victor H.; Barnes, Roy J.; and Wagner, Ernest W., 3,555,710.
Keskitalo, Howard O.; and Stowasser, Lee H., 3,556,330.
McWilliams, Orcenith D.; and Waggoner, John B., 3,556,155.
Scheffler, Oscar A., Jr., 3,555,924.

Cee Bee Mfg. Co., Inc.: *See—*
Loew, Theodore, 3,556,924.

Celanese Corporation: *See—*
Fishman, David H.; and Hanson, Harry T., 3,556,882.
Palm, Clifford W.; and Gibson, William R., 3,556,377.

Centre National de la Recherche Scientifique: *See—*
Epain, Raymond; Vodar, Boris; and Susse, Christiane, 3,555,607.

Cerniglia, Nino P.; and Tonner, Richard C., to Sylvania Electric Products, Inc. Method of forming leads on semiconductor devices. 3,556,951, Cl. 204-15.

Ceskoslovensha akademie ved: *See—*
Wichterle, Otto, 3,557,261.

Cetrone, Vincent B.: *See—*
Oakes, Grant A.; and Cetrone, Vincent B.,3,555,873.

Chabot, Ernest J. Random access tape library. 3,556,535, Cl. 274-4.

Chalhoub, Christian, to C.I.T.-Compagnie Industrielle des Telecommunications. System for remote supervision of repeaters. 3,557,323, Cl. 179-175.31

Chambers, William W.: *See—*
Randolph, Hollis L.; Hull, Bradford N.; and Chambers, William W.,3,556,462.

Chambers, William W., to Robertshaw Controls Company. Temperature control system. 3,557,342, Cl. 219-499.

Champaigne, John F., to Kimberly-Clark Corporation. Manufucture of cellulosic fluffed sheet. 3,556,931, Cl. 162-158.

Chang, Hung Chi; and Chu, Ting Li, to Westinghouse Electric Corporation. Apparatus for the thermal treatment of a semi- conductor material having a volatile component. 3,556,732, Cl. 23-273.

Chapmin, Howard C. Guard for rotary lawn mowers. 3,555,793, Cl. 56-25.4

Charbonnages de France: *See—*
Vergne, Jean; Solaux, Leon; Robinet, Jean-Claude; and Lacroix, Philippe, 3,557,062.
Vergne, Jean; Pailloux, Claude; Muller, Jean-Claude; and Robinet, Jean-Claude, 3,557,072.

Charrin, Jean-Jacques; and Frechet, Pierre Joseph, to Rhone-Poulenc S.A. Treatment of fillers. 3,556,830, Cl. 106-309.

Chemcell Limited: *See—*
Mac Williams, William Andrew; and Bithel, Leonard, 3,556,596.
Chemetron Corporation: *See—*
Hammon, George L., 3,556,499.
Chevron Research Company: *See—*
Beck, Robert R.; Knowlton, Harold E.; and Mc Coy, Charles S., 3,556,986.
McCoy, Charles S., 3,556,985.
Rundle, Victor A., 3,556,926.
Chiao, Raymond Y.: *See—*
Townes, Charles H.; Chiao, Raymond Y.; and Garmire, Elsa M.,3,556,634.
Chiba, Hiroyuki; Tawara, Yoshio; and Hirota, Eiichi, to Matsushita Electric Industrial Co., Ltd. Method of eliminating the porosity and controlling the grain size of a ferrite body by a two stage hot pressing treatment. 3,557,266, Cl. 264-66.
Chiola, Vincent; Ritsko, Joseph E.; and Vanderpool, Clarence D., to Sylvania Electric Products, Inc. Process for producing low-bulk density silica. 3,556,725, Cl. 23-182.
Chisholm, Douglas S.: *See—*
Schrenk, Walter J.; and Chisholm, Douglas S.,3,556,635.
Chisholm, Douglas; and Schrenk, Walter J., to Dow Chemical Company, The. Method of extruding laminates. 3,557,265, Cl. 264-47.
Chiusoli, Gian Paolo: *See—*
Bottaccio, Giorgio; and Chiusoli, Gian Paolo,3,557,196.
Christensen, Donald I.: *See—*
Buckley, Francis T.; Riek, Raymond F.; and Christensen, Donald I.,3,556,890.
Christian, Fay F. Holder for newspapers or the like. 3,555,622, Cl. 24-67.
Christoffersen, Christen; and Sorensen, Karl-Otto, to Vedex Dansk Skovindustrie A/S. Method of producing wooden boards from thin wooden sheets. 3,556,897, Cl. 156-310.
Christy, Marcia E., to Merck & Co., Inc. Derivatives of dibenzocycloheptenes. 3,557,144, Cl. 260-327.
Chromalloy American Corporation: *See—*
Vogelman, Joseph Herbert; Stephenson, Kenrick O., Jr.; and Feinerman, Bernard, 3,557,312.
Chrysler Corporation: *See—*
Werner, Lawrence E., 3,556,445.
Chu, Ting Li: *See—*
Chang, Hung Chi; and Chu, Ting Li,3,556,732.
Chu, William; and Rudolf, Guy, to Bata Shoe Company, Inc. Injection molding apparatus. 3,555,609, Cl. 18-30.
Chukichi Kinoshita: *See—*
Mizuguchi, Jun; and Kinoshita, Sakushige, 3,556,969.
Chute, Challoner R. Plant receptacle. 3,555,729, Cl. 47-38.1
Ciapetta, Frank G.: *See—*
Parthasarathy, R; and Ciapetta, Frank G.,3,557,199.
Ciba Corporation: *See—*
Bickel, Hans; Bosshardt, Rolf; Fechtig, Bruno; Menard, Enrico; Mueller, Johannes; and Heinrich, Peter, 3,557,104.
Wilhelm, Max; and Eichenberger, Kurt, 3,557,284.
Ciba Limited: *See—*
Beriger, Ernst; and Pinter, Ladislaus, 3,557,258.
Jaeger, Horst, 3,557,224.
Schmid, Rolf; Lohse, Friedrich; Fisch, Willy; and Batzer, Hans, 3,557,035.
Schmid, Rolf; Lohse, Friedrich; Fisch, Willy; and Batzer, Hans, 3,557,036.
Toepfl, Werner; and Hitz, Hans-Rudolf, 3,557,184.
Cimperman, Fred J.: *See—*
Margaroli, John L.; and Cimperman, Fred J.,3,556,281.
Cincinnati Milacron Inc.: *See—*
Zolg, Fred U., 3,556,928.
Cines, Martin R., to Phillips Petroleum Company. Uniform temperature conditioning of parisons in vapor heated device. 3,556,494, Cl. 263-7.
Cinnamon, Jerome Marshall; and Oroshnik, William, to Shulton, Inc. Phenylpiperazinylalkyl alkoxy anthranilates. 3,557,107, Cl. 260-268.
C.I.T.-Compagnie Industrielle des Telecommunications: *See—*
Chalhoub, Christian, 3,557,323.
Cities Service Athabasca, Inc.,: *See—*
Clark, Lincoln; and Kaminsky, Victor P., 3,556,980.
Cymbalisty, Lubomyr M. O., 3,556,981.
Kaminsky, Victor P.; and Bowman, Clement W., 3,556,982.
Cities Service Company: *See—*
Cooper, Frank W., 3,555,618.
Cities Service Research and Development Company: *See—*
Van Driesen, Roger P., 3,556,984.
Van Driesen, Roger P., 3,557,019.
Weber, James A.; Rapp, Lester M.; and Stewart, Norman C., 3,556,989.
Claassen, Volkert: *See—*
Moed, Hendrik Dufk; Claassen, Volkert; and Paerels, Gerard Bernard,3,557,148.
Clampitt, Bert H.: *See—*
Anspon, Harry D.; Clampitt, Bert H.; and Gilbert, Ronald E.,3,557,070.
Hughes, Richard H.; Clampitt, Bert H.; and Anspon, Harry D.,3,556,795.
Clark Equipment Company: *See—*
Hansen, Howard C., 3,557,325.
Susag, Jerome R.; and York, Donald W., 3,556,243.
Clark, Julius. Pipe end swaging device. 3,555,875, Cl. 72-292.
Clark, Lincoln; and Kaminsky, Victor P., 30% to Cities Service Athabasca, Inc., 30% to Imperial Oil Limited, 30% to Atlantic Richfield Corporation, and 10% to Royalite Oil Company, Limited. Removal of water from bituminous emulsion. 3,556,980, Cl. 208-11.
Clarke, William C., Jr.; and Perry, D Cameron, to Armco Steel Corporation. Stainless steel. 3,556,776, Cl. 75-124.
Cleland, Charles E., to Continental Machine, Inc. Tiltable head band saw machine. 3,556,177, Cl. 143-24.
Clevite Corporation: *See—*
Schweitzer, Earl O., 3,556,477.
Cline, Marion D. Automatic sheet stacker device and the like. 3,556,326, Cl. 214-512.
CMI Corporation: *See—*
Swisher, George W., Jr.; and Smith, Don W., 3,555,983.
Coachella Valley Organic Fertilizer Co.: *See—*
Burkett, Routhford J., 3,556,422.
Coakley, Francis James. Bathers' hand-grip. 3,555,576, Cl. 4-185.
Coats Company, Inc., The: *See—*
Strang, Elmer J.; and Sorenson, Billy L., 3,556,192.
Cocchiaraley, Patrick T. Money clip. 3,555,623, Cl. 24-81.
Cochran, Linden Wayne, to Multi-Menerals Limited. Corrugated reactor. 3,555,786, Cl. 55-196.
Cochrane, Hector: *See—*
Tully, Paul R.; Fletcher, William J.; and Cochrane, Hector,3,556,698.
Cocker Machine & Foundry Company: *See—*
Diehl, Walter L.; and Trumpio, Frank P., 3,555,853.
Codo, Edward A., to Caterpillar Tractor Company. Filter element retaining means. 3,556,300, Cl. 210-232.
Coes, Loring, Jr., to Norton Company. Method of grinding. 3,555,744, Cl. 51-281.
Cohen, Hyman L.; and King, James R., Jr., to Eastman Kodak Company. Novel polymers and processes for making same. 3,557,066, Cl. 260-78.5
Cole, Leon J., to National-Standard Company. Apparatus for stitching strip material onto the periphery of tire carcass. 3,556,902, Cl. 156-412.
Colgate-Palmolive Company: *See—*
Gangwisch, William Jerome; and Kehoe, John James, 3,556,171.
Suh, John T.; and Judd, Claude I., 3,557,143.
Collard, Ronald Thomas; and Wright, Phillip Brian, to Porous Plastics Limited. Plastic filter candle. 3,556,304, Cl. 210-489.
Collins, George W.; and Baron, Frank A. Rheological property-modified particle suspensions in organic liquids. 3,557,037, Cl. 260-29.1
Colombo, Gerald V.; and Mills, Edgar S., to McDonnell Douglas Corporation. CO_2 sorption material. 3,557,011, Cl. 252-189.
Colorado Springs National Bank: *See—*
Turkisher, Robert; and Lundin, Charles E., 3,556,779.
Columbia Scientific Industries Corporation: *See—*
McCullough, Charles E., 3,556,082.
Combustion Engineering, Inc.: *See—*
Frangquist, Gustav H.; and Karnstedt, Paul F., 3,556,419.
Comment, Paul. Manual control for accelerator. 3,556,270, Cl. 192-3.
Commercial Solvents Corporation: *See—*
Runge, Wallace F.; and Wehrmeister, Herbert L., 3,556,719.
Commissariat a l'Energie Atomique:*See—*
Bergeret, Marcel; Borrel, Louis; and Simeone, Marius, 3,555,653.
Commonwealth Scientific and Industrial Research Organization: *See—*
Scott, Thomas R.; and Davey, Peter T., 3,556,723.
Compagnie Des Compteurs: *See—*
Varaut, Bernard, 3,556,068.
Compagnie Francaise Thomson Houston-Hotchkiss Brandt: *See—*
Hepner, Georges, 3,556,661.
Compagnie Industrielle de Mecanismes: *See—*
Doyriven, Paul, 3,555,928.
Compumatics, Inc.: *See—*
Goldstein, Albert B., 3,557,311.
Comstock & Wescott, Inc.: *See—*
Whitney, William E., 3,556,166.
Whitney, William E., 3,556,373.
Condra, Elmo L. Deep well pump anchor. 3,556,216, Cl. 166-215.
Conduco A.G.: *See—*
Mehnert, Gottfried, 3,555,598.
Coniglio, Ignazio James, to Mead Specialties Co., Inc. Air cylinder with pilot valve in head. 3,555,966, Cl. 91-306.
Conn, James F.; and Kichline, Thomas P., to Monsanto Company. Reduction of mixing requirements for yeast leavened bread dough. 3,556,804, Cl. 99-90.
Conn, James F.; and Kichline, Thomas P., to Monsanto Company. Reduction of mixing requirements for yeast leavened bread dough. 3,556,805, Cl. 99-90.
Connerat, Edwin B.; and Peterson, Stephen G. Retractable corner support. 3,556,449, Cl. 248-119.
Constant Flow Company: *See—*
Barger, Lloyd D., 3,556,469.
Continental Can Company, Inc.: *See—*
Dowling, Daniel J., 3,555,764.
Frankenberg, Henry E., 3,556,031.
Ganz, Robert H., 3,556,386.
Miller, John M., 3,555,768.
Roth, Donald J., 3,555,866.
Continental Elektroindustrie Aktiengesellschaft Askania Werke: *See—*
Jacoby, Hans-Dieter, 3,555,691.

Continental Machine, Inc.: *See—*
Cleland, Charles E., 3,556,177.
Continental Oil Company: *See—*
Middlebusher, Paul L.; and Buck, William R., 3,556,679.
Cook, Melvin Seymour, to Holobeam, Inc. Method for producing holograms utilizing photochromic material and photosensitive material. 3,556,629, Cl. 350-3.5
Cook, Melvin Seymour, to Holobeam Inc. Two-stage imaging process in which a hologram is made from a three-dimensional image formed in incoherent light. 3,556,631, Cl. 350-3.5
Cook, Russell E., to Ranco Incorporated. Water chilling unit control. 3,555,843, Cl. 62-196.
Coop, Jackie A., to Aluminum Company of America. Tear-off container closure. 3,556,336, Cl. 215-46.
Cooper, Frank W., to Cities Service Company, mesne. Plastic molding apparatus. 3,555,618, Cl. 18-30.
Cooper, Philip R., to Seak Limited. Manufacture of individual footwear. 3,555,588, Cl. 12-142.
Cooper, William C., to Budd Company, The. Grooving unit. 3,555,940, Cl. 82-2.
Coors Porcelain Company: *See—*
Buck, Robert W., 3,556,843.
Copelin, Harry B., to Du Pont de Nemours, E. I., and Company. Production of vinyl acetate and acetic acid from ethylene. 3,557,191, Cl. 260-497.
Copolymer Rubber & Chemical Corporation: *See—*
Royston, Grover C., 3,557,217.
Cordell, Ray R.; and Morgan, James L., Jr., 50% to Gustafson Manufacturing Company, and 50% to International-Stanley Corporation. Sampler splitter valve. 3,555,911, Cl. 73-423.
Cornelius, Edward C.: *See—*
Blaisdell, William H.; Cornelius, Edward C.; and Emerson, Howard J.,3,556,664.
Corning Glass Works: *See—*
Andrysick, Chester A., 3,556,756.
Eckerlin, Herbert M.; and Langley, Lawrence W., 3,556,157.
Kozlowski, Theodore R.; and Krygier, Dennis A., 3,556,757.
Messing, Ralph A., 3,556,945.
Meyers, Wheeler W., 3,556,578.
Corpus Christi Bank and Trust: *See—*
Roberts, Denzil M., 3,556,352.
Correa, Juan J. Piles suitable for subsidence conditions. 3,555,833, Cl. 61-53.
Cory, William E.; and Wangler, Raymond B., to De Golyer, Everett L., Jr., and Hamilton, Arthur E., mesne. Detector systems. 3,556,236, Cl. 177-163.
Coscia, Anthony Thomas; and Williams, Laurence Lyman, to American Cyanamid Company. Water-soluble, ionic, glyoxylated, vinylamide, wet- strength resin and paper made therewith. 3,556,932, Cl. 162-166.
Coscia, Anthony Thomas: *See—*
Williams, Laurence Lyman; and Coscia, Anthony Thomas,3,556,933.
Cosenza, Frank J., to Tridair Industries. Fastener. 3,556,570, Cl. 287-189.36
Costanzo, Nicholas Joseph, Jr., to Aluminum Plastic Products Corporation. False floor of interlocked metal sections. 3,555,762, Cl. 52-588.
Cotter, James F., to Anchor Hocking Corporation. Rotary inspecting means for non-round articles. 3,556,279, Cl. 198-29.
Cotter, James F., to Anchor Hocking Corporation. Fluidic control system for vacuum cut-off in a burn-off machine. 3,556,759, Cl. 65-159.
Coulter Electronics, Inc.: *See—*
Hogg, Walter R.; and Coulter, Wallace H., 3,557,352.
Coulter, Wallace H.: *See—*
Hogg, Walter R.; and Coulter, Wallace H.,3,557,352.
Courtaulds Limited: *See—*
Haggar, Michael James; and Sharman, Donald Arthur, 3,557,195.
Cox, Kenneth E.; and Beck, Henry N., to Dow Chemical Company, The. Preparation of titanium phosphate fibers. 3,556,720, Cl. 23-105.
Cox, Robert P. Method of retarding the evaporation of ammonia and hydrazine. 3,557,007, Cl. 252-152.
Coyne, Donald M.; and Cahoy, Roger P. Oxidation of isobutylene to methacrylaldehyde over complex vanadium oxide catalysts. 3,557,021, Cl. 252-439.
Craig, Burnie M., to Union Carbide Corporation, mesne. Feeding, propelling, and tensioning system for tape in a seed-type manufacturing machine. 3,555,774, Cl. 53-180.
Cramer, Gerhard; Heck, Gunter; and Malow, Egon, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Decanting apparatus. 3,555,820, Cl. 55-177.
Crane Packing Company: *See—*
Inka, Egons, 3,556,903.
Crespi, Elio: *See—*
Fiore, Leonardo; Nissim, Giorgio; and Crespi, Elio,3,557,058.
Crest Industries, Inc.: *See—*
Hanley, James O., 3,556,350.
Creswick, Norman S., to Lipton, Thomas J., Inc. Frozen confection. 3,556,813, Cl. 99-136.
Cripe, Maxwell L.: *See—*
MacDuff, Stanley I.; Cripe, Maxwell L.; and Larsen, Lester J.,3,556,608.
Cromwell, John E.: *See—*
Hyde, Glenn F.; and Cromwell, John E.,3,556,747.
Cronin, Dennis Callahan, to Beloit Corporation. Press assembly. 3,556,940, Cl. 162-358.
Cross, Alexander D.: *See—*
Beard, Colin C.; and Cross, Alexander D.,3,557,160.
Crum, James N., to Harris-Intertype Corporation. Printed web ribbon registration control system. 3,556,509, Cl. 270-52.
Cryodry Corporation: *See—*
Jeppson, Morris R., 3,556,817.
Cubberly, Walter E., Jr., to Schlumberger Technology Corporation. Centralizing and well-calipering apparatus for well tools. 3,555,689, Cl. 33-178.
Cuculo, John Anthony, to Du Pont de Nemours, E. I., and Company. Process for forming cellulose half-acid esters. 3,555,585, Cl. 8-116.2
Cudnohufsky, Sylvester R. Tracer control circuit with sizing means. 3,555,941, Cl. 82-14.
Cummins, Donald Hadden: *See—*
Padman, John Neville; and Cummins, Donald Hadden,3,556,053.
Cummins Engine Company, Inc.: *See—*
Link, Fred W.; Vandesteeg, Wayne H.; and Carrell, Donald D., 3,556,160.
Cunningham, Sheldon A., to Phillips Petroleum Company. Oxidative dehydrogenation by-product elimination. 3,557,238, Cl. 260-680.
Curran, Bernard E.; Gartner, Rodney W.; and Linder, Robert G., to Robertson, H. H., Company. Insulating building panel unit. 3,555,756, Cl. 52-309.
Currie, David W. Three-dimensional game apparatus. 3,556,526, Cl. 273-130.
Cusato, Anthony J. Wire cutting tool. 3,555,677, Cl. 30-134.
Cymbalisty, Lubomyr M. O., 30% to Cities Service Athabasca, Inc., 30% to Imperial Oil Limited, 30% to Atlantic Richfield Corporation, and 10% to Royalite Oil Company, Limited. Separation of bitumen from bituminous sand using a dense slurry and controlled velocities. 3,556,981, Cl. 208-11.
Czehovsky, Gunther: *See—*
Hass, Karl; Kolhagen, Walter; Czehovsky, Gunther; and Konermann, Hans-Ewald,3,556,975.
Dacor Manufacturing Co., Inc.: *See—*
Volent, Stanley C., 3,555,757.
D'Agostino, Vincent F.; and Lee, Joseph Y. C., to RAI Research Corporation. Anhydrous, irradiation tetrafluoroethylene- ethylene copolymerization. 3,556,965, Cl. 204-159.22
Dahlberg, Franklyn L.: *See—*
Brewer, Willie F.; and Dahlberg, Franklyn L.,3,556,226.
Dahlberg, Gosta: *See—*
Arnekull, Swen Arne; and Dahlberg, Gosta,3,556,442.
Dahms, Harald, to International Business Machines Corporation. Method and apparatus for automatic electrochemical analysis. 3,556,950, Cl. 204-1.
Daikin Kogyo Co., Ltd.: *See—*
Masuda, Kengi, 3,556,151.
Daikin Kogyo Kabushiki Kaisha: *See—*
Koizumi, Shun; and Inamura, Keizo, 3,557,050.
Kometani, Yutaka; Koizumi, Shun; Suzuki, Takeshi; and Okuno, Chuzo, 3,557,051.
Daimler-Benz Aktiengesellschaft: *See—*
Binder, Rudolf, 3,556,585.
Deckert, Franz, 3,556,552.
Dainippon Pharmaceutical Co., Ltd.: *See—*
Yoshimura, Yoshio; Uno, Hitoshi; and Irie, Akira, 3,557,131.
Dalby, Gaston: *See—*
Ferrara, Peter J.; Dalby, Gaston; Barnes, Clarence A., Jr.; and Gordon, Roy,3,557,006.
D'Alelio, Gaetano F. Crosslinkable polymers. 3,557,063, Cl. 260-78.4
Dalhuisen, Albert J., to Merck & Co., Inc. Chemical thickening agent for unsaturated polyester resins. 3,557,042, Cl. 260-31.2
Dambrine, Francis; and Giorgi, Jean Claude, to Fives Lille-Cail. Heating means for continuous crystallizing vessels. 3,556,845, Cl. 127-16.
D'Ambrosio, John J.:*See—*
Morales, Carmelo; D'Ambrosio, John J.; and Wilder, Ira,3,555,885.
D'Amico, John Joseph, to Monsanto Company. Certain 2-(haloalkenylthio)-4,6-dimethylpyrimidines. 3,557,112, Cl. 260-251.
Damijonaitis, Kestutis, to Stanley Works, The. Combination carrying case and toolholder for portable power tools. 3,556,623, Cl. 312-244.
Dana Corporation: *See—*
Holzman, James W., 3,555,893.
Danfoss A/S: *See—*
Huelle, Zbigniew Ryszard, 3,555,845.
Daniels, Donald B.: *See—*
Sipos, John M.; and Daniels, Donald B.,3,557,337.
Daniels, Henricus Petrus Cornelis: *See—*
Gijsbers, Thomas Gerardus; Leblans, Leopold Michael Lambert Joseph; and Daniels, Henricus Petrus Cornelis,3,555,950.
Danielson, Worrell M., to Enterprise Railway Equipment Company. Linkage operating mechanism for sliding gate. 3,556,018, Cl. 105-282.
Dann, Bert H., to Bell & Howell Company. DC restoration and white clipping circuit for video recorder. 3,557,305, Cl. 178-7.3
Dannels, Bobby F.; and Shepard, Alvin F., to Hooker Chemical Corporation. Thermosetting allyl resins. 3,557,249, Cl. 260-858.

Darby & Darby: *See—*
Evensen, Gunnar, 3,556,656.
Darlow, Brian Benjamin: *See—*
Burns, Ernest Bingham; Darlow, Brian Benjamin; and Smallman, Robert Victor,3,557,067.
Darron, Ward K.: *See—*
Payne, Burton L.; Darron, Ward K.; and Zuris, Peter M.,3,555,954.
Da Silva, Americo G., to Devanne, Robert. Folding camping trailer. 3,556,581, Cl. 296-23.
Dassler, Rudolf, to Puma-Sportschuhfabriken Rudolf Dassler KG. Sport Shoe. 3,555,697, Cl. 36-2.5
Date, Tasuku; Ishizuya, Akira; Yamazaki, Shuichi; Togashi, Nobuyuki; Shioya, Toshio; Kikuraku, Tomoki; and Kurihara, Norimitsu, to Honda Giken Kogyo Kabushiki Kaisha. Air-pollution preventive device for spark- ignition type internal-combustion engines. 3,556,064, Cl. 123-117.
Dattilo, Frank. Flying propeller toy. 3,555,720, Cl. 46-83.
Davey, Peter T.: *See—*
Scott, Thomas R.; and Davey, Peter T.,3,556,723.
Davis, Allen V. C. Communicating spring system with coned snap spring. 3,556,340, Cl. 220-89.
Davis, Francis A., Jr., to Paramount Packaging Corporation. Method and apparatus for making plastic bags. 3,555,974, Cl. 93-8.
Davis, Lauren R.: *See—*
Boyle, William J., Jr.; Davis, Lauren R.; and Shusman, Tevis,3,557,243.
Davis, Ray D. Female urinary device. 3,556,102, Cl. 128-295.
Davis, Ronald L.: *See—*
Harmon, John C.; and Davis, Ronald L.,3,556,337.
Dawson, Alexander, Inc.: *See—*
Piekenbrock, Lawrence J.; and Tibbals, Edward Camp, Jr., 3,557,370.
Day, George Gerald, to Haskett, F. Barry. Electrolytic cell cover. 3,556,974, Cl. 204-243.
Dayton Reliable Tool & Mfg. Company: *See—*
Fraze, Ermal C., 3,556,032.
Dean, James T., to Mobil Oil Corporation. Underwater production satellite. 3,556,208, Cl. 166-0.5
Dean, James T.: *See—*
Talley, William A., Jr.; and Dean, James T.,3,556,218.
Dear, Robert E. A.; and Gilbert, Everett E., to Allied Chemical Corporation. Fluorinated ethers as inhalation convulsants. 3,557,294, Cl. 424-342.
De Boer, Geert, to Machinefabriek Stork-Volma N.V. Method and device for preparing a fast dissolving powder. 3,555,698, Cl. 34-22.
Debray, Werner; Mattern, Ullrich; and Stieding, Lothar, to Siemens Aktiengesellschaft. Method of pre-oxidizing nuclear reactor components of zirconium alloys. 3,556,870, Cl. 148-6.3
De Cat, Arthur Henri: *See—*
Vanden, Eynde, Hector Alfons; Van Doorselaer, Marcel Karel; De Cat, Arthur Henri; Otto, Rigobert; Kunitz, Friedrich-Wilhelm; and Schulte, Walter,3,556,796.
Deckert, Franz, to Daimler-Benz Aktiengesellschaft. Vehicle body with box-shaped hollow bearer. 3,556,552, Cl. 280-106.
De Corso, Serafino M.: *See—*
Bruning, Armin M.; and De Corso, Serafino M.,3,556,771.
De Crosta, Edward A.; and Luger, Emil J., Jr., to Delta Control, Inc. Immersible electrical heating device. 3,557,344, Cl. 219-316.
Deering Milliken Research Corporation: *See—*
Warthen, William P., 3,555,945.
Degener, Eberhart: *See—*
Schmelzer, Hans-Georg; Degener, Eberhart; Tarnow, Horst; Holtschmidt, Hans; Unterstenhofer, Gunter; and Zecher, Wilfried,3,557,213.
De Golyer, Everett L., Jr.: *See—*
Cory, William E.; and Wangler, Raymond B., 3,556,236.
De Groote, Raymond S., to United Aircraft Products, Inc. Free convection cooling method and apparatus. 3,556,199, Cl. 165-1.
Dehne, Manfred F., to Perfex Corporation. Air cooled surface condenser. 3,556,204, Cl. 165-39.
Dehnert, Johannes; and Gnad, Gerhard, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Monoazo dyes containing 2-phenyl-indoles. 3,557,080, Cl. 260-165.
De Koning, Arie Adrianus; and De Koning, Kornelis Korstiaan Karel. Foot valve assembly for shock absorbers. 3,556,264, Cl. 188-100.
De Koning, Kornelis Korstiaan Karel: *See—*
De Koning, Arie Adrianus; and De Koning, Kornelis Korstiaan Karel,3,556,264.
de la Burde, Roger Zygmunt; and Harris, Leon Johnson, Jr., to Morris, Philip, Incorporated. Method of making sliced puffed stems for a cigarette filler. 3,556,112, Cl. 131-140.
Delaney, Robert E.: *See—*
Evensen, Gunnar, 3,556,656.
Delany, Edward B.: *See—*
Mayo, Ralph Elliott; and Delany, Edward B.,3,557,365.
Delatorre, Leroy C.; and Tausch, Gilbert H., to Camco, Incorporated. Method of and apparatus for measuring varying fluid flow. 3,555,901, Cl. 73-197.
Deller, Rudolf: *See—*
Pfeifer, Friedrich; and Deller, Rudolf,3,556,876.
Dellinger, Matthew Henry: *See—*
Bach, Ricardo O.; Kamienski, Conrad W.; Dellinger, Matthew Henry; Mitchem, Luther C.; and Morrison, Robert C.,3,557,220.
Delmer, Philip T.: *See—*
Bickers, Anthony; and Delmer, Philip T.,3,556,144.
Delta Control, Inc.: *See—*
De Crosta, Edward A.; and Luger, Emil J., Jr., 3,557,344.
Demag Aktiengesellschaft: *See—*
Skripczyk, Heinrich; and Szaler, Gunther, 3,556,501.
Demke, Joseph W., to Tektronix, Inc. Tape handling apparatus. 3,556,374, Cl. 226-119.
Demo, Joseph J., Jr., to Du Pont de Nemours, E. I., and Company. Stabilization of metal treating solutions. 3,556,824, Cl. 106-14.
De Noyer, Donald B. Support and tensioning apparatus for fourdrinier wire. 3,556,937, Cl. 162-273.
Dent, Joseph B., Jr., to PPG Industries, Inc. Apparatus for manufacturing fiber glass. 3,556,755, Cl. 65-11.
De Pauw, Richard A.: *See—*
Knapp, William H.; De Pauw, Richard A.; and Gochanour, Caroll Q.,3,556,108.
DePierri, William G., Jr., to Esso Research and Engineering Company. Inhibition of deposition of water insoluble compounds in aqueous systems. 3,557,164, Cl. 260-403.
Deramond, Marcel. Stabilized direction sighting device. 3,556,632, Cl. 350-16.
Derenthal, Jerome W., to Stapling Machines Co. Taping machine. 3,556,910, Cl. 156-523.
Deringer, Hans, to Heinrich Koppers, Gesellschaft mit beschrankter Haftung. Processes of removing acidic components from gases. 3,555,782, Cl. 55-48.
Derruppe S.A.: *See—*
Ribier, Michel L., 3,556,149.
Design Properties, Inc.: *See—*
Gould, Jerome; and Kellogg, Thomas W., 3,556,390.
Detilleux, Emile; Hild, Werner Georg; Laazzaretto, Gianfranco; Menchero-Lopez, Emilio Manuel; and Rometsch, Rudolf. Process for solidifying radioactive wastes by addition of lime to precipitate fluoride. 3,557,013, Cl. 252-301.1
Detrex Chemical Industries, Incorporated: *See—*
Ziemba, Victor F., 3,556,868.
Deutsche Gold- und Silber-Scheideanstalt vormals Roessler: *See—*
Pistor, Horst; and Schuster, Hubert, 3,555,696.
Devanne, Robert: *See—*
Da Silva, Americo G., 3,556,581.
De Vittorio, Joseph M., to Sherwin-Williams Company. Inhibition of discoloration of electrodeposited organic coatings. 3,556,968, Cl. 204-181.
De Voe, Albert W. Apparatus for the combustion firing of asphalt, petroleum and pulverized coal. 3,556,408, Cl. 239-403.
De Wald, Horace A., to Parke, Davis & Company. Pyrazolodiazepinone compounds. 3,557,095, Cl. 260-239.3
Diaz, Raul Ralph, to Soto Angelo. Protection device for fire hydrants. 3,556,131, Cl. 137-382.5
Dick, A. B., Company: *See—*
Branfield, Henry A.; and Balding, Harold R., 3,556,008.
Dickey, W. S., Clay Manufacturing Company: *See—*
Siegfreid, Edward C.; Harwell, Conner J.; and Murphy, Sheilds L., 3,557,290.
Dictaphone International AG: *See—*
Guttinger, Kurt, 3,556,536.
Guttinger, Kurt, 3,557,313.
Diebold, Incorporated: *See—*
Roelandt, Frank J., 3,556,436.
Svedman, Jon A.; and Paul, Roger L., 3,556,437.
Diebold, Max; Menge, Eberhard; Hanschitz, Rudolf; and Weisshaar, Dieter, to Electrostar GmbH, Firma. Juice centrifuge attachment for an electric kitchen appliance. 3,556,303, Cl. 210-377.
Diehl, Walter L.; and Trumpio, Frank P., to Cocker Machine & Foundry Company. Guide control means for Raschel knitting machine. 3,555,853, Cl. 66-87.
Dienes, Zoltan B., to Minnesota Mining and Manufacturing Company. Sealed cable closure. 3,557,299, Cl. 174-38.
Diery, Helmut; Rittner, Siegbert; and Lorke, Horst, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Metal working agents. 3,556,994, Cl. 252-33.6
Dietrich, Henri, to Geigy Chemical Corporation. N'-substituted N-arylsulphonyl ureas. 3,557,163, Cl. 260-397.7
Difley, Chares R.: *See—*
Bottas, Michael J.; and Difley, Chares R.,3,556,619.
Dilchert, Heinz, to Dynamit Nobel Aktiengesellschaft. Dual solid fuel propellant rocket engine. 3,555,825, Cl. 60-250.
Distler, William B.; and Wiesner, Harold J., to United States of America, Atomic Energy Commission. Electrochemical process for cutting beryllium. 3,556,963, Cl. 204-143.
Ditlinger, Richard J., to Bendix Corporation, The. Machine for laminating elongated objects by wrapping. 3,556,906, Cl. 156-433.
Dittman, Egon A.; and Lincer, Marvin H. Apparatus for processing photographic prints. 3,555,990, Cl. 95-95.
Dittrich, Werner: *See—*
Latussek, Hans-Peter; and Dittrich, Werner,3,555,651.
Dobbs, Terry R., to Cargo Systems, Inc. Structural panel, and pallet formed thereby. 3,556,448, Cl. 248-119.

Dodds, Billy J.: *See—*
Mitchell, Robert W.; and Dodds, Billy J.,3,556,241.
Doering, George I., to Industrial Nucleonics Corporation. Property measurement signal filtering method and apparatus for eliminating predetermined components. 3,557,351, Cl. 235-151.3
Dokes, George E.: *See—*
Schwarz, Julius Donald; Dokes, George E.; and Kriss, Charles J.,3,555,575.
Dolgorukov, Gregory S. Method of manufacturing a drafting triangle. 3,555,657, Cl. 29-407.
Dollase, William R., to Case, J. I., Company. Hydraulic steering system. 3,556,242, Cl. 180-79.2
Dombeck, Edward K., to Bendix Corporation, The. Brake lining wear indicator. 3,556,046, Cl. 116-114.
Dombeck, Edward K., to Bendix Corporation, The. Applicator adjuster. 3,556,262, Cl. 188-79.5
Dominion Aluminum Fabricating Limited: *See—*
Herman, Gangolf Ernest, 3,555,748.
Domman, Gunther; and Mennekes, Werner, to Gewerkschaft Eisenhutte Westafia. Longwall conveyors for mineral mines. 3,556,601, Cl. 299-43.
Doody, Jeremiah J., to Allied Chemical Corporation. Production of stilbene azo dyes. 3,557,079, Cl. 260-143.
Dorfman, Edwin; Emerson, William E.; and Carr, Russell L. K., to Hooker Chemical Corporation. τ-Cyanoperfluoroalkanoyl halides and process therefor. 3,557,165, Cl. 260-404.
Doring, Fritz: *See—*
Holtschmidt, Hans; Zumach, Gerhard; Doring, Fritz; and Kuhle, Engelbert,3,557,133.
Dorrenberg, Richard, to Rohde & Dorrenberg. Method of producing drills and similar tools, and tools, especially drills, made according to said method. 3,555,935, Cl. 76-108.
Dorsky, Stanley, to Aluminum Processing Corporation. Method of forming a bowl-shaped reflector. 3,555,668, Cl. 29-510.
Douglas, David L.; and Banas, Henry J., to Gould-National Batteries, Inc. Load-acid, polyelectrolyte complex containing storage battery and method of storing and handling the same. 3,556,850, Cl. 136-26.
Douglas, David L.; and Banas, Henry J., to Gould-National Batteries, Inc. Water-activatable dry-charged lead-acid storage cells. 3,556,851, Cl. 136-26.
Douglas, Peter L., to Automatic Machinery & Electronics Inc. Process for the recovery of citrus peel oil. 3,557,085, Cl. 260-236.6
Douglass, Walter; and Lewis, Colin Gwyn, to Eastman Kodak Company. Film advancing mechanism. 3,556,371, Cl. 226-63.
Dovre Ski Binding, Inc.: *See—*
Overgaard, Odd; and Berlied, Henry P., 3,556,543.
Dow Chemical Company, The: *See—*
Ayers, William M., 3,555,881.
Chisholm, Douglas; and Schrenk, Walter J., 3,557,265.
Cox, Kenneth E.; and Beck, Henry N., 3,556,720.
Dunn, James L., Jr., 3,555,695.
Faith, Herman E., 3,557,121.
Fuller, William R.; Bieler, Barrie H.; and Morgan, David C., 3,556,024.
Gurgiolo, Arthur E., 3,557,260.
Kuhn, Stephen J., 3,557,208.
Langer, Horst G.; and Brady, Thomas P., 3,557,172.
Mc Fadden, Russell T., 3,557,145.
McKeever, L Dennis; and Waack, Richard, 3,556,960.
Meyer, Fred J., 3,556,934.
Oja, Phyllis D., 3,557,281.
Pawloski, Chester E., 3,557,237.
Schrenk, Walter J.; and Chisholm, Douglas S., 3,556,635.
Seitz, Jerry T., 3,556,972.
Stowe, Gerald T., 3,557,134.
Stringham, Robert R.; and Torba, Florence E., 3,557,124.
Wang, Chun-Shan; and Hennis, Henry E., 3,557,149.
Dowdall, Dennis Stephen, to Telektron Limited. Pressure regulating valves. 3,556,125, Cl. 137-116.3
Dowling, Daniel J., to Continental Can Company, Inc. Apparatus and method for securing closures to container bodies. 3,555,764, Cl. 53-14.
Doyle, J. E., Company, The: *See—*
Schmidt, Harry P., 3,555,895.
Doyriven, Paul, to Compagnie Industrielle de Mecanismes. Electrical window regulator. 3,555,928, Cl. 74-625.
Drain, Herbert D. Sealing and trim ring for sink. 3,555,577, Cl. 4-187.
Dreher, Donald F. Sealing inserts for joints in concrete. 3,555,980, Cl. 94-18.
Dresser Industries, Inc.: *See—*
Bohn, Floyd O.; and Porter, Forrest V., 3,556,211.
Gorgens, Joseph E.; and Goff, Randall, 3,557,329.
Henry, George R.; and Weaver, Ernest P., 3,556,822.
Johnston, Robert R.; and Valliere, Robert L., 3,556,329.
Punwani, Swamidas K., 3,556,314.
Sloan, John P., Jr.; and Laubscher, Bion L., 3,556,037.
Drompp, John T., to General Tire & Rubber Company, The. Bushing assembly machine. 3,555,655, Cl. 29-235.
Drummond, Paul Edward; and Schroeder, Paul Herman, to FMC Corporation. Benzopyranyl carbamates. 3,557,150, Cl. 260-345.2
Dumers, Dewey M.: *See—*
Johnson, Carl E.; and Dumers, Dewey M.,3,556,789.
Dunbar, George W.: *See—*
McLain, William R.; and Dunbar, George W.,3,555,722.
Dunkel, Morris, to Universal Oil Products Company. 4,7-Methanoindene derivatives. 3,557,188, Cl. 260-468.
Dunlap, Charles J., Jr.: *See—*
Houle, Ernest Armand, 3,556,671.
Dunlop Company Limited, The: *See—*
Edney, Walter James; and Askam, John F., 3,556,900.
Mills, Iain C., 3,556,191.
Riches, John M., 3,556,190.
Saward, Cyril Joseph, 3,556,554.
Tearne, William, 3,556,901.
Dunn, James L., Jr., to Dow Chemical Company, The. Method for removing volatile solvents from deep- nap fabrics. 3,555,695, Cl. 34-1.
Du Pont de Nemours, E. I., and Company: *See—*
Anger, Harvey W., 3,557,378.
Bleasdale, James L.; and Sandquist, Carl L., 3,557,044.
Buchanan, James B., 3,557,190.
Copelin, Harry B., 3,557,191.
Cuculo, John Anthony, 3,555,585.
Demo, Joseph J., Jr., 3,556,824.
Ferguson, Billy G., 3,556,369.
Goodwin, Leslie Ethel; Rowe, Jean Max; and Wyeth, Nathaniel Convers, 3,556,000.
Green, James R.; Rivers, Joseph T., Jr.; and Sturgeon, Donald L. G., 3,556,922.
Gronholz, Le Roy F.; Settlage, Paul H.; and Schwartz, Jerome L., 3,556,826.
Gutmann, Joseph D., Jr., 3,555,808.
Hammond, George S., 3,557,207.
Hoeschele, Guenther Kurt, 3,557,180.
Johns, Martha Marie; and Lynch, John Andrew, Jr., 3,556,919.
Levy, Paul F., 3,556,865.
Lewis, Richard William, 3,557,334.
Meadows, Geoffrey W., 3,555,597.
Mitchell, William D., 3,556,766.
Polejes, Jacob David, 3,556,923.
Raleigh, Edward W., 3,557,089.
Roberts, Robert, 3,556,161.
Sharkey, William H., 3,557,255.
Stalter, Neil J., 3,556,710.
Stalter, Neil J., 3,556,711.
Thatcher, Donald N., 3,556,009.
Yolles, Seymour, 3,557,004.
Dupre, Victor Marie: *See—*
Sureau, Robert Frederic Michel; and Dupre, Victor Marie,3,557,139.
Duquesne, Victor. Device for loosening the beads of tires from a wheel rim. 3,556,193, Cl. 157-1.28
Duralite Manufacturing Company, The: *See—*
Ellard, Jack, 3,556,583.
Duraloy Company, The: *See—*
Sheahan, John F., 3,556,498.
Durrant, George G.; and Brunskill, Ernest, to Laporte Titanium Limited. Process for treating titanium dioxide pigments. 3,556,828, Cl. 106-300.
D'Urso, Nicola, to A.M.I.S. Apparecchi & Macchine Idrauliche Speciali S.p.A. Non-return valves. 3,556,138, Cl. 137-512.15
Dusza, John Paul; Joseph, Joseph Peter; and Bernstein, Seymour, to American Cyanamid Company. Estrogen water-soluble conjugates and preparation thereof. 3,557,161, Cl. 260-397.5
Dyer, Kermit W.; Hoppe, William C.; and Moore, Michael O., to Vendo Company, The. Dispensing machine having multiple, vertically movable, horizontal product carriers. 3,556,284, Cl. 198-138.
Dynamit Nobel A.G.: *See—*
Schrage, Klaus, 3,557,244.
Dynamit Nobel AG Werk Witten: *See—*
Hulsmann, Hans-Leo; and Renckhoff, Gustav, 3,557,167.
Dynamit Nobel Aktiengesellschaft: *See—*
Bernhardt, Gunther; Buning, Robert; Bierwirth, Egon; and Trautvetter, Werner, 3,556,746.
Dilchert, Heinz, 3,555,825.
Hass, Karl; Kolhagen, Walter; Czehovsky, Gunther; and Konermann, Hans-Ewald, 3,556,975.
Lenz, Arnold; and Rogler, Walter, 3,557,179.
Dynatech Corporation: *See—*
Ehrreich, John E., III; Reti, Adrian R.; and Brian, Pierre L. T., 3,556,803.
Dzhanshiev, Ivan Alexandrovich: *See—*
Tikhonov, Ilya Andreevich; Dzhanshiev, Ivan Alexandrovich; Sochilin, Anatoly Egorovich; and Yakunin, Eduard Nikolaevich,3,557,341.
Eagle Range & Manufacturing Company: *See—*
Baltz, Albert L.; and Voeke, Elmer E., 3,556,624.
Eagle-Picher Industries, Inc.: *See—*
Hanzlik, Alvin S.; Linhart, Otto C.; and Putze, Marvin D., 3,556,821.
Eagot, Robert J.: *See—*
United States of America,National Aeronautics and Space Administration, Administrator, 3,555,898.
Eakin, Bertram E.; Khan, Amanullah R.; and Anderson, Phillip J., to American Gas Association, Inc., mesne. Honeycomb insulation panel for cryogenic temperatures. 3,556,917, Cl. 161-44.
Eastman Kodak Company: *See—*
Blaisdell, William H.; Cornelius, Edward C.; and Emerson, Howard J., 3,556,664.

Burgo, Paul A.; and Pierson, Charles W., 3,556,912.
Cohen, Hyman L.; and King, James R., Jr., 3,557,066.
Douglass, Walter; and Lewis, Colin Gwyn, 3,556,371.
Payne, Burton L.; Darron, Ward K.; and Zuris, Peter M., 3,555,954.
Robinson, Gene H.; and Jarvis, James G., 3,556,784.
Taber, Robert C.; and Brocker, Leslie G. S., 3,557,101.
Trachtenberg, William; Robinson, Gene H.; and Rodenberg, Orville C., 3,556,050.
Wangerin, Elmer O., 3,556,435.

Eaton Yale & Towne, Inc.: *See—*
Getz, Edward T.; and Pacak, Matthew, 3,557,264.
Goetz, George W., 3,556,556.
Orr, James, 3,556,485.
Waid, George R., 3,557,270.

Eaves, Paul H.: *See—*
Pons, Walter A., Jr.; and Eaves, Paul H.,3,557,168.

Eberly, David H., Jr., to United States Banknote Corporation. Method and apparatus for disrupting cells. 3,556,414, Cl. 241-1.

Echols, Harry A. Apparatus for dispensing liquid. 3,556,353, Cl. 222-309.

Eckerlin, Herbert M.; and Langley, Lawrence W., to Corning Glass Works. Linear fluid restrictor having a variable coefficient of restriction and method for making the same. 3,556,157, Cl. 138-46.

Eckrich, Peter, and Sons, Inc.: *See—*
Harmon, John C.; and Davis, Ronald L., 3,556,337.

Economou, Steven G., to Hollister Incorporated. Surgical suction assembly. 3,556,101, Cl. 128-277.

Ede, Ainsley Neville, to Hudswell Yates Developments Limited. Guidance system with optically nutated reticle having geometry which obviates the need for frequency discriminators. 3,557,372, Cl. 250-203.

Eder, Otto; and Kawan, Oskar, to Semperit Osterreichisch-Amerikanische Gummiwerke Aktiengesellschaft. Footwerar. 3,555,705, Cl. 36-2.5

Eder, Wolfgang, to Gebruder Welger. Mowing apparatus. 3,555,798, Cl. 56-295.

Edmonds, Thomas A., to Bata Shoe Company, Inc. Athletic footwear particularly basketball shoes. 3,555,706, Cl. 36-2.5

Edney, Walter James; and Askam, John F., to Dunlop Company Limited, The. Bead-ring applicator. 3,556,900, Cl. 156-403.

Edwards, Douglas Cameron; and Lewis, Peter Noel, to Polymer Corporation Limited. Vulcanizable composition. 3,557,064, Cl. 260-78.4

Egresits, Rudolph J., to Robertshaw Controls Company. Indicating means. 3,556,044, Cl. 116-70.

Egyesult Gyogyszer-es Tapszergyar: *See—*
Pallos, Laszlo; and Benko, Pal, 3,557,128.

Eholzer, Ulrich: *See—*
Ley, Kurt; Eholzer, Ulrich; Nast, Roland; Metzger, Karl-Georg; and Fritsche, Dieter,3,557,109.

Ehrens, Henry; and Weiner, Sidney, to Sealed Unit Parts Co., Inc. Flare operated valve. 3,556,470, Cl. 251-149.4

Ehrlich, Don E., to TRW Inc., mesne. Apparatus for welding parts to workpieces. 3,557,338, Cl. 219-98.

Ehrreich, John E., III; Reti, Adrian R.; and Brian, Pierre L. T., to Dynatech Corporation. Method of making a carbonated composition. 3,556,803, Cl. 99-79.

Eichenberger, Kurt: *See—*
Wilhelm, Max; and Eichenberger, Kurt,3,557,284.

Eigenmann, Oskar. Thread braking device for needle threads. 3,556,029, Cl. 112-254.

Eisenberg, Melvin I. Forearm support board for intravenous injections. 3,556,092, Cl. 128-87.

Eisenhammer, Karl, to Leesona Corporation. Winding apparatus. 3,556,430, Cl. 242-129.51

Elbaum, Harry D. Seal. 3,556,977, Cl. 204-297.

Elbert, Andrew Clark: *See—*
Spence, John E.; and Elbert, Andrew Clark,3,555,910.

Elbert, Raymond J., to Union Carbide Corporation. Three-layer feul cell electrode. 3,556,856, Cl. 136-86.

'Elco' Societe d'Exploitation Lesieur Cotelle et Foucher: *See—*
Bourgeois, Jacques, 3,555,602.

Elder, Clarence L., to Elder Systems Corporation. Sweepstake programmer. 3,556,531, Cl. 273-143.

Elder Systems Corporation: *See—*
Elder, Clarence L., 3,556,531.

Electro GmbH & Co.: *See—*
Hess, Walther, 3,557,373.

Electrostar GmbH, Firma: *See—*
Diebold, Max; Menge, Eberhard; Hanschitz, Rudolf; and Weisshaar, Dieter, 3,556,303.

Electro/Systems, Inc.: *See—*
Meyer, Ronald K., 3,557,359.

Elkins, Gordon Charles: *See—*
Erith, Cyril Edward Charles; and Elkins, Gordon Charles,3,556,458.

Ellard, Jack, to Duralite Manufacturing Company, The. Panel vehicle body assembly composed of reversible frame and panel elements. 3,556,583, Cl. 296-28.

Elliott Brothers (London) Limited: *See—*
Sleight, George Robin, 3,555,897.

Ellis, James B.: *See—*
Lux, George K.; Ellis, James B.; and Schulze, John J.,3,556,655.

Ellis, Joseph Reid: *See—*
Williams, Sumner Henry; and Ellis, Joseph Reid,3,555,856.

Elliston, Thomas L.: *See—*
Sizer, Phillip S.; and Elliston, Thomas L.,3,556,147.

Elm Industry Company, Limited: *See—*
Tanigami, Satoshi, 3,556,182.

Elmore, Clifford L.: *See—*
Kruer, Harold H.; Raney, Melvin A.; and Elmore, Clifford L.,3,556,013.

Emerson, Howard J.: *See—*
Blaisdell, William H.; Cornelius, Edward C.; and Emerson, Howard J.,3,556,664.

Emerson, Robert B.; and Brian, Wilton A., to Kaiser Aluminum & Chemical Corporation. Method of producing alkalized alumina and products produced thereby. 3,557,025, Cl. 252-463.

Emerson, William E.: *See—*
Dorfman, Edwin; Emerson, William E.; and Carr, Russell L. K.,3,557,165.

Emery Industries, Inc.: *See—*
Mecklenborg, Kenneth T., 3,556,767.

Encap Products Company: *See—*
Houston, Walter A., 3,556,765.

Endo, Yasuhiro: *See—*
Takashina, Naomitsu; Aida, Teruo; Endo, Yasuhiro; and Nagashima, Wakio,3,557,040.

Energy Sciences, Inc.: *See—*
Hughes, Nathaniel, 3,556,401.

Engelhard, Helmut; Bentz, Francis; Bodesheim, Ferdinand; and Nischk, Gunther, to Farbenfabriken Bayer Aktiengesellschaft. Acrylonitrile graft polymers on polyamide substrate. 3,557,247, Cl. 260-857.

Engelhard Minerals & Chemicals Corporation: *See—*
Rylander, Paul N.; and Hasbrouck, Lillian G., 3,557,223.

English Electric Computers Limited: *See—*
Bragg, Cecil, 3,556,002.

English, William A.: *See—*
Carlson, William G.; Moratis, Christy J.; and English, William A.,3,555,667.

Enkoji, Takashi; and Bossinger, Charles D., to Armour Pharmaceutical Company. Methods for providing muscle relaxation with 1- (substituted)-5-amino-tetrazoles. 3,557,285, Cl. 424-269.

Enneper, Arnold A.; and Wierzba, Anthony R., to International Paper Company, mesne. Sectional drive apparatus for continuously feeding an elastic material. 3,557,156, Cl. 156-383.

Enshu Limited: *See—*
Sakamoto, Toemon, 3,556,162.

Entarea Investment Management Ltd.: *See—*
Offterdinger, Hermann Friedrich, 3,556,376.

Enterprise Railway Equipment Company: *See—*
Danielson, Worrell M., 3,556,018.

Entwicklungsring Sud GmbH: *See—*
Kopp, Gerhard, 3,556,444.

Environmental Services, Inc.: *See—*
Grimshaw, Derald E., 3,555,783.

Envirotech Corporation: *See—*
Winter, Heinz W., 3,556,415.

Eon Corporation: *See—*
Paul, Korschinski Nicholas, 3,555,633.

Epain, Raymond; Vodar, Boris; and Susse, Christiane, to Centre National de la Recherche Scientifique. Apparatus for generating high pressures. 3,555,607, Cl. 18-16.

Epelman, Jacobo. Muffler adapted to purify the exhaust gases of internal combustion engines. 3,556,735, Cl. 23-288.

Erickson Tool Company: *See—*
Benjamin, Milton L.; and Walker, David D., 3,556,540.

Erickson, Victor H.; Barnes, Roy J.; and Wagner, Ernest W., to Caterpillar Tractor Company. Cleaner blade for scraper bowl having pivoted floor-type ejector. 3,555,710, Cl. 37-129.

Erickson, Wilton R. Pivoted wheel assembly for elevator. 3,556,289, Cl. 198-233.

Erie Development Company: *See—*
Williams, Charles J., 3,557,276.

Erith, Cyril Edward Charles; and Elkins, Gordon Charles. Locating and locking devices. 3,556,458, Cl. 248-361.

Ernest, Richard B., to Penn Engineering & Manufacturing Corporation. Stud. 3,556,189, Cl. 151-41.73

ESB Incorporated: *See—*
Fox, Albert L., 3,556,862.

Eskin, Vladimir Iosifovich: *See—*
Vitushkin, Vladimir Ivanovich; Koire, Viktor Evseevich; Pevzner, Semen Albertovich; Sidorenko, Alexandr Konstantinovich; Matsegora, Evgeny Alexandrovich; and Eskin, Vladimir Iosifovich,3,555,961.

Esseluhn, Werner F.: *See—*
Bankes, Robert B.; and Esseluhn, Werner F.,3,555,660.

Essex International, Inc.: *See—*
Winogrocki, Ray F.; Brzozowski, Stephen J., Jr.; and McClure, Gerald L., 3,557,328.

Esso Production Research Company: *See—*
Kellner, Jackson M., 3,556,214.
Reistle, Carl E., III; and Burkhardt, Joseph A., 3,556,209.

Esso Research and Engineering Company: *See—*
DePierri, William G., Jr., 3,557,164.
Kivlen, John A.; and Koszman, Ihor, 3,557,241.

Lakritz, Julian; and Tyler, William E., III, 3,557,181.
Segura, Marnell A., 3,556,838.
Tsien, Hsue C., 3,555,766.

Esso Research Engineering Company: *See—*
Starnes, William H., Jr., 3,557,232.

Etablissement SaLGaD: *See—*
Lichtenstern, Benjamin, 3,556,666.

Etem, Etablissement de Techniques Modernes: *See—*
Brack, Jacques, 3,556,381.

Ethyl Corporation: *See—*
Becker, Warren E.; Kobetz, Paul; and Nelson, Gunner E., 3,557,174.
Hnizda, Vincent F., 3,556,846.
Kehoe, Lawrence J.; and Schell, Raymond A., 3,557,219.
Presswood, John K.; and Foster, Walter E., 3,557,236.
Robinson, Gene C., 3,557,169.

Ets Carpano & Pons: *See—*
Lemery, Jean-Paul, 3,556,427.

Eue, Ludwig; Hack, Helmuth; Westphal, Kurt; and Wegler, Richard, to Farbenfabriken Bayer Aktiengesellschaft. -Chloro- -(4-chlorophenyl)-propionic acid methyl ester. 3,557,189, Cl. 260-476.

Eumuco Aktiengesellschaft fur Maschinenbau: *See—*
Berger, Rolf, 3,556,315.

Evans, Donald J., to General Electric Company. Removable head for a machine tool. 3,555,963, Cl. 90-11.

Evensen, Gunnar, 30% to Hagan, Haraldur, 30% to Rosensweig, Leonard, 5% to Delaney, Robert E., and 5% to Keegan, Robert R., as Trustee for Darby & Darby. Contact photography frame utilizing depressurization. 3,556,656, Cl. 355-94.

Eversharp, Inc.: *See—*
Kuhnl, Leopold K., 3,555,681.

Fab-Con Machinery Development Corporation: *See—*
Catallo, Frank; and Foreman, Donald, 3,556,424.

Fabre, Robert: *See—*
Bournez, Lucien Robert; and Fabre, Robert,3,555,872.

Fackler, George E., to Xerox Corporation. Document feed apparatus. 3,556,512, Cl. 271-4.

Fackler, George E.: *See—*
Howard, Anthony; and Fackler, George E.,3,556,511.

Fairbanks, Theodore H., to FMC Corporation. Manufacture of net-like materials by extrusion. 3,557,271, Cl. 264-167.

Fairchild Hiller Corporation: *See—*
Guman, William J., 3,555,823.

Faith, Herman E., to Dow Chemical Company, The. 2,6-Dioxo-4-benzimidazolylmethyl-, -benzo- thiazolylmethyl-, and -benzoxazolylmethyl- piperidines. 3,557,121, Cl. 260-281.

Fanchamps, Albert: *See—*
Berde, Botond; and Fanchamps, Albert,3,557,287.

Fansteel Inc.: *See—*
Lambert, John B.; and Marsh, Harold G., 3,556,769.

Fanti, Roy: *See—*
Basche, Malcolm; Fanti, Roy; and Galasso, Salvatore F.,3,556,836.

Farbenfabriken Bayer Aktiengesellschaft: *See—*
Engelhard, Helmut; Bentz, Francis; Bodesheim, Ferdinand; and Nischk, Gunther, 3,557,247.
Eue, Ludwig; Hack, Helmuth; Westphal, Kurt; and Wegler, Richard, 3,557,189.
Golitz, Dietrich; and Simmler, Walter, 3,557,178.
Holtschmidt, Hans; Zumach, Gerhard; Doring, Fritz; and Kuhle, Engelbert, 3,557,133.
Krauss, Heinz Walter; Pedain, Josef; Zenner, Karl-Friedrich; Oertel, Gunter; and Holtschmidt, Hans, 3,557,043.
Kronig, Walter; and Halcour, Kurt, 3,556,983.
Ley, Kurt; Eholzer, Ulrich; Nast, Roland; Metzger, Karl-Georg; and Fritsche, Dieter, 3,557,109.
Neeff, Rutger; Gohrbandt, Wilhelm; and Kuth, Robert, 3,557,154.
Pieper, Gustav; von Bonin, Wulf; and Grundmann, Ekkehard, 3,557,140.
Schmelzer, Hans-Georg; Degener, Eberhart; Tarnow, Horst; Holtschmidt, Hans; Unterstenhofer, Gunter; and Zecher, Wilfried, 3,557,213.
Schmitt, Ernst; Hees, Walter; and Quaedvlieg, Mathieu, 3,556,715.
Schrader, Gerhard; and Behrenz, Wolfgang, 3,557,257.
Sensen, Johann, 3,556,973.

Farbenfabrikin Bayer Aktiengesellschaft: *See—*
Hermann, Karl-Heinz; Rudolph, Hans; and Gilch, Heinz, 3,557,132.

Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See—*
Cramer, Gerhard; Heck, Gunter; and Malow, Egon, 3,555,820.
Diery, Helmut; Rittner, Siegbert; and Lorke, Horst, 3,556,994.
Sturm, Karl; and Siedel, Walter, 3,557,153.

Farcilli, Andre: *See—*
Joly, Robert; Warnant, Julien; and Farcilli, Andre,3,557,286.

Farkas, Paul, to Thomas & Betts Corporation. Tamperproof seal. 3,556,575, Cl. 292-307.

Farmhand, Inc.: *See—*
Gerrans, William A., 3,555,799.

Farrington, John. Tire truing device. 3,556,194, Cl. 157-13.

Farrington Manufacturing Company: *See—*
Presti, Anthony J.; and Kersta, Lawrence G., 3,557,310.

Farrugia, Carmelo A.: *See—*
Salvadori, Andre A.; Farrugia, Carmelo A.; Lecoanet, Andre P.; and Lovy, Philippe,3,556,750.

Fauke, Allen R.: *See—*
Mange, Franklin E.; Buriks, Rudolph S.; and Fauke, Allen R.,3,557,017.

Fay, Paul: *See—*
Kopsch, Heinz; Wilbring, Gunther; Fay, Paul; and Hanf, Wilhelm,3,555,723.

Feairheller, Stephen H.; Taylor, Maryann M.; and Filachione, Edward M., to United States of America, Agriculture. Method for treating and improving the properties of proteinaceous matter comprising reacting hide material with HCHO and a malonic acid. 3,557,078, Cl. 260-123.7

Fechtig, Bruno: *See—*
Bickel, Hans; Bosshardt, Rolf; Fechtig, Bruno; Menard, Enrico; Mueller, Johannes; and Heinrich, Peter,3,557,104.

Fedorov, Vasily Nikolaevich: *See—*
Marbukh, Veniamin Anatolievich; Lychak, Veniamin Samuilovich; Paikin, Lazar Ilich; Matveev, Vladimir Alexeevich; Semenov, Vasily Vasilievich; Stepura, Emil Fedorovich; and Fedorov, Vasily Nikolaevich,3,556,668.

Feinerman, Bernard: *See—*
Vogelman, Joseph Herbert; Stephenson, Kenrick O., Jr.; and Feinerman, Bernard,3,557,312.

Felder, Ernst; and Pitre, Davide, to Bracco Industria Chimica, Societa per Azioni. Radiopaque compounds. 3,557,197, Cl. 260-519.

Fellows, Le Roy L. Tremolite faced laminated panels. 3,556,929, Cl. 161-205.

Ferguson, Billy G., to Du Pont de Nemours, E. I., and Company. Apparatus for maintaining constant tension in a moving strand. 3,556,369, Cl. 226-25.

Fernandes, Erwin. Momentary pushbutton switch with bridging block, ramp, and cam means. 3,557,332, Cl. 200-160.

Feroumont, Georges L. E. R.: *See—*
Gregorovic, Dragutin Ivan; and Feroumont, Georges L. E. R.,3,555,683.

Ferrara, Peter J.; Dalby, Gaston; Barnes, Clarence A., Jr.; and Gordon, Roy. Composite toilet soap bar having an acid pH in use. 3,557,006, Cl. 252-117.

Ferri, Antonio: *See—*
Slutsky, Simon; and Ferri, Antonio,3,555,878.

Ferro Corporation: *See—*
Fuchsman, Charles H.; and Meek, William H., 3,557,194.

Ferro Tech Industries, Inc.: *See—*
Holley, Carl A., 3,556,025.

Feuge, Reuben O.; and Zarins, Zigrida M., to United States of America, Agriculture. Destruction of cyclopropene moieties in vegetable oils with palladium compounds and catalysts. 3,557,170, Cl. 260-420.

Fiat Societa per Azioni: *See—*
Franchini, Enzo, 3,556,550.
Rivetti, Enrico, 3,555,822.

Fibus, Clyde Kenneth; and McCormick, Robert C., to Steel City Corporation, The. Newspaper delivery tube with one bolt mounting. 3,556,393, Cl. 232-17.

Fichtel & Sach AG: *See—*
Axthammer, Ludwig; Leibeling, Heinz; and Wossner, Felix, 3,556,617.

Fichtel & Sachs AG: *See—*
Schwerdhofer, Hans Joachim, 3,555,932.

Field, Nathan D.; and Freyermuth, Harlan Benjamin, to GAF Corporation. Novel substituted allyl polymer derivatives useful as photoresists. 3,556,793, Cl. 96-35.1

Figura, William L. Land and water vehicle. 3,556,238, Cl. 180-51.

Fikse, Tyman H., to Robbins, James S., and Associates, Inc., mesne. Method of tunneling and tunneling shield with a drag loader. 3,556,599, Cl. 299-11.

Filachione, Edward M.: *See—*
Feairheller, Stephen H.; Taylor, Maryann M.; and Filachione, Edward M.,3,557,078.

Finestone, Stephen C.; and Katz, Joseph. Device and method for treating cardiac arrest. 3,556,087, Cl. 128-24.

Fiore, Leonardo; Nissim, Giorgio; and Crespi, Elio, to Montecatini Edison S.p.A. Process for obtaining polyoxymethylenes having controlled molecular weight and products obtained therefrom. 3,557,058, Cl. 260-67.

Firestone Tire & Rubber Company, The: *See—*
Kibler, Richard W., 3,557,054.

Fisch, Willy: *See—*
Schmid, Rolf; Lohse, Friedrich; Fisch, Willy; and Batzer, Hans,3,557,035.
Schmid, Rolf; Lohse, Friedrich; Fisch, Willy; and Batzer, Hans,3,557,036.

Fish, Nicholas J.: *See—*
Mutschmann, Winifred Lui; and Fish, Nicholas J.,3,556,633.

Fishman, David H.; and Hanson, Harry T., to Celanese Corporation. Method of rendering thermoplastics receptive to coatings. 3,556,882, Cl. 156-2.

Fister, Louis P.; and Scheublein, William A., Jr., to Moog Industries, Inc. Gas controlled orifice in hydraulic shock absorber. 3,556,268, Cl. 188-268.

Fitch, Robert H.: *See—*
Kurtz, Bruce E.; and Fitch, Robert H.,3,557,230.

Fives Lille-Cail: *See—*
Dambrine, Francis; and Giorgi, Jean Claude, 3,556,845.
Fleckenstein, Joseph E.; Kimpel, Frank A.; Ormanoski, Leo J.; and Paetow, Herman E., to Borg-Warner Corporation. Anti-surge compressor capacity control. 3,555,844, Cl. 62-217.
Fleissner, Hans, to Vepa AG. Apparatus for the wet-treatment of loose textile material. 3,555,857, Cl. 68-22.
Fleming, Lawrence T. Insulation device. 3,555,964, Cl. 90-14.
Fletcher, William J.: *See—*
Tully, Paul R.; Fletcher, William J.; and Cochrane, Hector,3,556,698.
Flexible Plastics Corporation: *See—*
Howard, Kevin J., 3,556,334.
Floehr, Walter L., to Midland-Ross Corporation. Fluid dampened hopper door actuating assembly. 3,556,017, Cl. 105-251.
Flora, Robert Dale: *See—*
Ramsey, William W.; and Flora, Robert Dale,3,556,452.
Florin, Bengt; and Loimaranta, Kalevi, to AB Transvertex. Ciphering machine. 3,557,307, Cl. 178-22.
Florjancic, Peter, to S.A.F.F.A. S.p.A. Fabbriche Frammiferi Ed Affini. Small lighter. 3,556,703, Cl. 431-273.
FMC Corporation: *See—*
Bily, Peter J., 3,556,148.
Bily, Peter J., 3,556,170.
Blumbergs, John H.; and MacKellar, Donald G., 3,557,065.
Brewer, Willie F.; and Dahlberg, Franklyn L., 3,556,226.
Brink, Edwin H., 3,555,730.
Drummond, Paul Edward; and Schroeder, Paul Herman, 3,557,150.
Fairbanks, Theodore H., 3,557,271.
Haley, Harold A., 3,555,603.
Lynch, Charles A., 3,556,825.
Montgomery, Ronald Eugene; and Incho, Harry Hobart, 3,557,259.
Oldenkamp, Henry A.; and Watson, Clyde D., 3,556,818.
Parshall, Bert B., 3,556,012.
Plume, William F., 3,555,927.
Rausch, John P., 3,556,478.
Wright, Carl L.; and Beachman, Harry H., 3,557,045.
Wright, Carl L.; and Thomas, James L., 3,557,047.
Foitl, Verena R.; and Traber, Walter, to Geigy Chemical Corporation. 1-Formyl-3-nitro-azacycloalkan-2-ones and process for their production. 3,557,093, Cl. 260-239.3
Foley, Charles F.: *See—*
Margolis, Arnold E.; Margolis, Morris; and Foley, Charles F.,3,556,527.
Folk, Kenneth Foster: *See—*
Busler, Willard Le Roy; Folk, Kenneth Foster; Phillips, Howard Charles; and Ross, Milton Dean,3,556,382.
Follows, Alan G.: *See—*
Kurtz, Bruce E.; Follows, Alan G.; and Hartford, Winslow H.,3,557,231.
Fonken, Gunther S.; Herr, Milton E.; and Murray, Herbert C., to Upjohn Company, The. Method for microbiological introduction of oxygen into heterocyclic nitrogen compounds. 3,556,943, Cl. 195-51.
Fontaine, Bernard Jean Robert: *See—*
Kobus, Stanislas; Salle, Adelin Eugene Gaston; Fontaine, Bernard Jean Robert; Termote, Alois Rene; and Masure, Jean Louis,3,557,315.
Fooladi, Mike M., to Sanford Chemical Company. Method of producing 1,2,4,5-tetrachlorobenzene. 3,557,227, Cl. 260-650.
Foote, Robert E., to Gros-Ite Industries, Inc. Rotary wing system. 3,556,674, Cl. 416-20.
Forch, Friedrich: *See—*
Nemeth, Otto R.; and Forch, Friedrich,3,556,908.
Ford, Clancy B. Trim around sprinkler head tool. 3,555,680, Cl. 30-276.
Ford Motor Company: *See—*
Abbott, Brian; Groves, Harry Bernard; Harris, Dennis; and Turnbull, John Bartholomew, 3,556,555.
Bowser, Robert C., 3,555,925.
Radin, Bernard G., 3,556,245.
Foreman, Donald: *See—*
Catallo, Frank; and Foreman, Donald,3,556,424.
Forkardt, Paul, Kommanditgesellschaft: *See—*
Scharfen, Hans, 3,555,933.
Forman, Willis R., to United States of America, Navy. Method of making an annular glass-to-metal joint. 3,555,663, Cl. 29-463.
Formica International Limited: *See—*
Stanley, Edward Sheridan; and Mc Coll, David Neil, 3,556,915.
Foster, Newton C., to Westinghouse Electric Corporation. Half ester of a polyepoxide with a saturated and unsaturated dicarboxylic acid anhydride and a vinyl monomer. 3,557,246, Cl. 260-837.
Foster, Walter E.: *See—*
Presswood, John K.; and Foster, Walter E.,3,557,236.
Foster Wheeler Corporation: *See—*
Gorzegno, Walter P.; Stevens, William D.; and Friedrich, Jan L., 3,556,059.
Fouche, Jean Clement Louis; and Leger, Andre, to Rhone-Poulenc S.a. 2-Halogeno-10(or 11)-hydroxy-11(or 10)-piperazinyl dibenzocycloheptadiene derivatives. 3,557,116, Cl. 260-268.
Fougere, Guy L., to I-T-E Imperial Corporation, mesne. Fluid integrating device. 3,557,358, Cl. 235-200.
Fox, Albert L., to ESB Incorporated. Method for making a battery having electrodes and/ or separators anchored in container. 3,556,862, Cl. 136-176.
Foye, John J., to Kaiser Aluminum & Chemical Corporation. Apparatus for lubricating a molten metal mold. 3,556,197, Cl. 164-268.
Fr. Winkler KG Spezialfabrik fur Backereimaschinen und Backofen: *See—*
Schnee, Walter; and Maag, Peter, 3,556,280.
Fram, Morris. Roving cutter with ejection bars. 3,555,947, Cl. 83-116.
Franceschi, Giovanni: *See—*
Arcamone, Federico; and Franceschi, Giovanni,3,557,118.
Franchini, Enzo, to Fiat Societa per Azioni. Steering gear for motor vehicles. 3,556,550, Cl. 280-87.
Frangquist, Gustav H.; and Karnstedt, Paul F., to Combustion Engineering, Inc. Rake means for use in a grinding mill. 3,556,419, Cl. 241-61.
Frankenberg, Henry E., to Continental Can Company, Inc. Method and apparatus for sealing a closure to a can body. 3,556,031, Cl. 113-30.
Fraser, Douglas S.: *See—*
Bender, Charles E.; Thompson, Taylor Norris; and Fraser, Douglas S.,3,556,760.
Fraze, Ermal C., to Dayton Reliable Tool & Mfg. Company. Method of fabricating can bodies. 3,556,032, Cl. 113-120.
Frazer, Robert E.: *See—*
United States of America,National Aeronautics and Space Administration, Administrator, 3,556,048.
Frazier, James L.; and Frazier, Sara J. Hydrotherapy conduit for bathtub. 3,556,089, Cl. 128-66.
Frazier, Sara J.: *See—*
Frazier, James L.; and Frazier, Sara J.,3,556,089.
Frechet, Pierre Joseph: *See—*
Charrin, Jean-Jacques; and Frechet, Pierre Joseph,3,556,830.
Freed, Meier E.; and Archibald, John L., to American Home Products Corporation. Certain decahydro and dodecahydro-5H-pyrido [1,2-α]-1,6-naphthyridine-5-ones, the corresponding-5-ols and derivatives thereof. 3,557,100, Cl. 260-240.
Freitag, Henrik. Stock reel. 3,556,431, Cl. 242-129.
Freyermuth, Harlan Benjamin: *See—*
Field, Nathan D.; and Freyermuth, Harlan Benjamin,3,556,793.
Friant, Charles. Mattress. 3,555,581, Cl. 5-357.
Frick, John G., Jr.: *See—*
Kullman, Russell M.; Frick, John G., Jr.; and Reinhardt, Robert M.,3,556,713.
Fricke, Paul M.: *See—*
Monyer, Robert L.; Fricke, Paul M.; and Moore, Donald L.,3,556,588.
Frieder, Roland W. Applicator for artificial eyelashes. 3,556,113, Cl. 132-31.
Friedrich, Jan L.: *See—*
Gorzegno, Walter P.; Stevens, William D.; and Friedrich, Jan L.,3,556,059.
Fritsche, Dieter: *See—*
Ley, Kurt; Eholzer, Ulrich; Nast, Roland; Metzger, Karl-Georg; and Fritsche, Dieter,3,557,109.
Fritz, Coey William: *See—*
O'Keefe, Michael Francis; Schwalm, Glendon Henry; Stull, Robert Stanley; and Fritz, Coey William,3,555,672.
Fritz, Leonard; Wallace, Melvin; and Seguin, John G., to Huron Valley Steel Corporation. Method and apparatus for separating metals from comingled scrap metal. 3,556,500, Cl. 266-33.
Fritzberg, Edward L., to Pillsbury Company, The. Apparatus for heating, cooling or puffing food products in a dry state. 3,555,992, Cl. 99-345.
Frossard, Jacques Jean: *See—*
Weber, Abraham; and Frossard, Jacques Jean,3,557,291.
Fry, John S.; Silver, Julius L.; and Quarles, Richard W., to Union Carbide Corporation. Bimetallic printing plates. 3,556,952, Cl. 204-17.
Fuchs, Warren; and Wheeler, Dennis A., to Baker Perkins, Inc. Phosphoric acid process. 3,556,724, Cl. 23-165.
Fuchsman, Charles H.; and Meek, William H., to Ferro Corporation. Hydroxydithioaromatic acids, derivatives thereof and process for their manufacture. 3,557,194, Cl. 260-502.6
Fujiwara, Huygene K., to Ralston Purina Company. Colored popcorn package. 3,556,815, Cl. 99-171.
Fujiwara, Mitsuto: *See—*
Yamamoto, Toshihiko; Fujiwara, Mitsuto; Kojima, Tamotsu; and Sakamoto, Kenro,3,556,799.
Fukui, Sachio: *See—*
Sugimoto, Katsumi; Kondo, Yoshio; and Fukui, Sachio,3,557,253.
Fuller, Decla M.: *See—*
Fuller, John D.; and Fuller, Decla M.,3,556,096.
Fuller, Forney, Jr. Magnetically actuated valve. 3,556,156, Cl. 138-43.
Fuller, John D.; and Fuller, Decla M., to Scholl Mfg. Co., Inc., The. Cushioning and protective surgical bandage. 3,556,096, Cl. 128-171.
Fuller, William R.; Bieler, Barrie H.; and Morgan, David C., to Dow Chemical Company, The. Method of reducing halogen emissions from the incineration of halogen containing plastics. 3,556,024, Cl. 110-1.
Fulmer Research Institute Limited: *See—*
Hutchings, John; and Giles, Maurice E., 3,556,958.
Functional Sytems Corporation: *See—*
Keesling, Thomas B.; and Keesling, Clifford E., 3,556,425.

Furlenmeier, Andre: *See—*
Furst, Andor; Furlenmeier, Andre; Langemann, Albert; Waldvogel, Guy; Hocks, Peter; Kerb, Ulrich; and Wiechert, Rudolf,3,557,097.
Furst, Andor; Furlenmeier, Andre; Langemann, Albert; Waldvogel, Guy; Hocks, Peter; Kerb, Ulrich; and Wiechert, Rudolf, to Hoffmann-LaRoche Inc.Process for the preparation of 5β-H-6-keto- steroids. 3,557,097, Cl. 260-239.55
Furukawa Mining Co., Ltd.: *See—*
Owaki, Tooru, 3,556,722.
Furuoka, Hideto, to Gakken Company Limited. Toy water jet plane. 3,555,721, Cl. 46-95.
Futamura, Shingo: *See—*
Tanaka, Akira; Kato, Koji; and Futamura, Shingo,3,557,251.
Futer, Rudolph E., to Bangor Punta Operations, Inc. Method and apparatus for treating pieces of material by microwaves. 3,555,693, Cl. 34-1.
FWI, Inc.: *See—*
Haenky, Norman H., 3,556,476.
Gable, Wyatt T., Jr.; and Barfield, Charles G., to International Harvester Company. Cotton harvester with pneumatic green boll separator. 3,555,794, Cl. 56-30.
Gaeth, Rudolf H., to Phillips Petroleum Company. Process and catalyst for production of liquid polymers. 3,557,075, Cl. 260-94.3
GAF Corporation: *See—*
Field, Nathan D.; and Freyermuth, Harlan Benjamin, 3,556,793.
Johnson, Carl E.; and Dumers, Dewey M., 3,556,789.
Katz, Leon, 3,556,792.
Randall, David I., 3,556,708.
Steiner, Peter, 3,556,998.
Williams, Sumner Henry; and Ellis, Joseph Reid, 3,555,856.
Gakken Company Limited: *See—*
Furuoka, Hideto, 3,555,721.
Galanty, Harold E. Chopping machine. 3,556,421, Cl. 241-86.
Galaske, Folker; and Schilling, Helmut Wilhelm, to International Standard Electric Corporation. Switchpoint type deflecting device. 3,556,277, Cl. 197-18.
Galasso, Salvatore F.: *See—*
Basche, Malcolm; Fanti, Roy; and Galasso, Salvatore F.,3,556,836.
Gale, John A. Slide. 3,556,522, Cl. 272-56.5
Gallo, Charles F.: *See—*
Roth, Walter; Gallo, Charles F.; Leiga, Algrid G.; and McInally, John A.,3,557,367.
Gamewell, Joseph M.: *See—*
Stockford, William F.; and Gamewell, Joseph M.,3,556,202.
Gamewell Mechanical, Inc.: *See—*
Stockford, William F.; and Gamewell, Joseph M., 3,556,202.
Gangwisch, William Jerome; and Kehoe, John James, to Colgate-Palmolive Company. Method and apparatus for transferring the contents of aerosol type containers. 3,556,171, Cl. 141-3.
Ganley, Gregory J., to Honeywell Inc. Altitude indicator. 3,555,908, Cl. 73-384.
Gantenbrink-Leuchten oHG Spezialfabrik fuer Aussenleuchten, Firma: *See—*
Bunte, Hans; Traulich, Horst; and Vedder, Herbert, 3,557,363.
Ganz, Robert H., to Continental Can Company, Inc. Wrap-around carton for bottles or the like. 3,556,386, Cl. 229-40.
Gar Wood Industries, Inc.: *See—*
McCarthy, John, 3,556,324.
Garcia, Vidal. Tortilla frying apparatus. 3,555,993, Cl. 99-426.
Gardco Industries, Inc.: *See—*
Summerville, Donald V., Jr., 3,556,459.
Gardner, John R.; and Reicker, Robert D., to Simms, T. S., & Co., Limited. Knot picker for brush making machines. 3,556,602, Cl. 300-7.
Garhan, Herschal F.: *See—*
Garner, Edward Daniel, 3,556,546.
Garmhausen, Thomas A.: *See—*
Schroeer, Rudi M.; and Garmhausen, Thomas A.,3,555,879.
Garmire, Elsa M.: *See—*
Townes, Charles H.; Chiao, Raymond Y.; and Garmire, Elsa M.,3,556,634.
Garner, Edward Daniel, to Garhan, Herschal F. Baby strollers. 3,556,546, Cl. 280-36.
Garrison, Harold Keith, to Hesston Corporation. Loose hay wagon. 3,556,327, Cl. 214-522.
Garrison, Langdon I., to Swenson, John, Granite Co., Inc., The. Slot-sawing tool. 3,556,073, Cl. 125-14.
Garst, Roger Harry: *See—*
Henry, Joseph Peter; and Garst, Roger Harry,3,557,234.
Henry, Joseph Peter; Hill, Fred Noble; and Garst, Roger Harry,3,557,235.
Gartner, Rodney W.: *See—*
Curran, Bernard E.; Gartner, Rodney W.; and Linder, Robert G.,3,555,756.
Gautsche, William E., Jr., to Victor Comptometer Corporation. Artificial fishing lure. 3,555,717, Cl. 43-42.17
Gay, Michel: *See—*
Boichard, Jacques; Brossard, Bernard; Gay. Michel; and Janin, Raymond,3,557,201.
Gaylord, John A., to Koch, H., & Sons, Inc. Multiple web connector and single point release. 3,556,565, Cl. 285-38.
Gebhardt, Joseph J., to General Electric Company. Low temperature method for producing amorphous boron-carbon deposits. 3,556,834, Cl. 117-46.
Gebhardt, Otto; and Luderer, Fred, to Mueller, Ernst, Messrs., Luft- und Farbspritztechnik. Appliance for the electrostatic coating of objects with coating materials in liquid or powder form. 3,556,400, Cl. 239-15.
Gebhart, Herbert J., Jr.; and Makin, Earle C., Jr., to Monsanto Company. Dimerization of cyclopentadiene in isoprene streams. 3,557,240, Cl. 260-681.5
Gebhart, Herbert J., Jr.; Makin, Earle C., Jr.; and Middlebrooks, Charles H., to Monsanto Company. Treatment of isoprene streams. 3,557,239, Cl. 260-681.5
Gebr. Schmeing: *See—*
Icking, Paul, 3,556,057.
Gebruder Welger: *See—*
Eder, Wolfgang, 3,555,798.
Gebura, Stanley E., to Interspace Corporation. Carbodiimide modified clay. 3,556,829, Cl. 106-288.
Gebura, Stanley E., to Interpace Corporation. Poly (diacetone acrylamide) modified kaolin. 3,557,038, Cl. 260-29.2
Geiger, William L., to Skil Corporation. Power sander. 3,555,743, Cl. 51-170.
Geigy Chemical Corporation: *See—*
Dietrich, Henri, 3,557,163.
Foitl, Verena R.; and Traber, Walter, 3,557,093.
Hall, Luther A. R.; Gurney, John A.; and Renfroe, Harris B., 3,557,218.
Ueda, Minol, 3,555,745.
Zergenyi, Janos; and Habicht, Ernst, 3,557,152.
Geleziunas, Rimas Jonas. Wall mountable equipment system. 3,555,746, Cl. 52-27.
Gelfenbein, Evgeny Jukhimovich: *See—*
Niskovskikh, Vitaly Maximovich; Gelfenbein, Evgeny Jukhimovich; and Bogomazov, Vladlen Georgievich,3,556,198.
Gelfenbein, Evgeny Junkhimovich: *See—*
Niskovskikh, Vitaly Maximovich; Litvinov, Anatoly Ivanovich; Sobolev, Vladimir Nikolaevich; Gelfenbein, Evgeny Junkhimovich; and Bykov, Leonid Alexandrovich,3,556,349.
General Appliance Corporation: *See—*
Agulnick, Robert; and Secklin, Leonard B., 3,555,678.
General Applied Science Laboratories, Inc.: *See—*
Slutsky, Simon; and Ferri, Antonio, 3,555,878.
General Dynamics Corporation: *See—*
Alexander, Jack F.; Mallory, Peter E.; and Payne, Ronald C., 3,557,308.
General Electric Company: *See—*
Andrews, James D.; and Kunz, Walter C., 3,556,758.
Bauer, Douglas M.; and Taylor, Clement F., 3,555,900.
Bochan, John, 3,556,446.
Brown, Edgar D., Jr., 3,557,175.
Evans, Donald J., 3,555,963.
Gebhardt, Joseph J., 3,556,834.
Gentile, Richard W., 3,556,672.
Geyer, Howard M., 3,555,967.
Howald, Werner E.; and Stanley, Max W., 3,556,675.
Kauffman, Melvin R., 3,556,625.
Kotos, Peter, 3,557,382.
Luborsky, Fred E., 3,556,954.
Nelson, Thomas F., 3,555,699.
Porter, Marion G., 3,557,355.
Porter, Marion G., 3,557,357.
Urbanosky, Thomas F., 3,556,121.
Yoder, Joe B., 3,556,169.
General Foods Corporation: *See—*
Whitman, Gordon R.; and Rosenthal, Harold, 3,556,814.
General Mills, Inc.: *See—*
Peerman, Dwight E., 3,557,056.
General Motors Corporation: *See—*
Hulsing, Kenneth L., 3,555,972.
Powell, Thomas C., 3,555,662.
Shakespear, Horacio, 3,556,265.
Wheadon, Ellis G.; and Willmann, Norman L., 3,556,854.
General Signal Corporation: *See—*
Swanton, Charles L., 3,557,364.
General Time Corporation: *See—*
Michael, Eugene M., 3,555,809.
General Tire & Rubber Company, The: *See—*
Drompp, John T., 3,555,655.
Gentex Corporation: *See—*
Aileo, Jackson A.; and Petruzella, James J., 3,555,674.
Gentile, Richard W., to General Electric Company. Gas turbine support arrangement. 3,556,672, Cl. 415-134.
Gentili, Vittorio. Feeding and first folding unit in a wrapping machine. 3,555,777, Cl. 53-209.
Gentsch, Leonore: *See—*
Bachmann, Rudolf; and Gentsch, Leonore,3,556,718.
George, Clayton A. Apparatus for measuring liquid in a tank. 3,555,905, Cl. 73-321.
George, Joseph D. Expansion joint seal. 3,555,982, Cl. 94-18.
Gerhold, Clarence G., to Universal Oil Products Company. Method for the solvent extraction of aromatic hydrocarbons. 3,556,991, Cl. 208-321.

Gerigk, Gunter: *See—*
Klendauer, Wolfgang; Gerigk, Gunter; and Kindl, Erwin,3,555,694.

Gerrans, William A., to Farmhand, Inc. Tree shaking mechanism. 3,555,799, Cl. 56-328.

Gerry, Martin E.: *See—*
Bennett, Donald Perry, Jr., 3,555,826.

Gettinger, Lillian L. Head covering. 3,555,566, Cl. 2-204.

Getz, Edward T.; and Pacak, Matthew, to Eaton Yale & Towne, Inc. Load supporting structures. 3,557,264, Cl. 264-45.

Gevaert-Agfa N.V.: *See—*
Pattijn, Hendrik Adolf; Thiers, Robrecht Julius; Tavernier, Bernard Hippoliet; and Willems, Jozef Frans, 3,556,797.
Vanden, Eynde, Hector Alfons; Van Doorselaer, Marcel Karel; De Cat, Arthur Henri; Otto, Rigobert; Kunitz, Friedrich-Wilhelm; and Schulte, Walter, 3,556,796.
Verhille, Karel Eugeen, 3,556,786.

Gewerkschaft Eisenhutte Westafia: *See—*
Domman, Gunther; and Mennekes, Werner, 3,556,601.

Geyer, Howard M., to General Electric Company. Closed loop servo actuator. 3,555,967, Cl. 91-368.

Gibble, Walter P.; and Holmes, Frank R., to Hunt-Wesson Foods, Inc. Apparatus for exchanging atmosphere in the headspace of a container. 3,556,174, Cl. 141-69.

Gibbs, James W.; and Gibbs, John L. Hydraulic flushing apparatus for discharging fluid from a container and automatically refilling same. 3,555,571, Cl. 4-31.

Gibbs, John L.: *See—*
Gibbs, James W.; and Gibbs, John L.,3,555,571.

Gibbs, Melvin B.; Golding, James L.; Levine, Barry H.; and Novak, John P., to Inland Steel Company. Method for producing deep drawing steel. 3,556,866, Cl. 148-2.

Gibson, William R.: *See—*
Palm, Clifford W.; and Gibson, William R.,3,556,377.

Gifford-Hill-Western: *See—*
Harris, Harold Jay; and Johnson, James B., Jr., 3,556,405.

Gijsbers, Thomas Gerardus; Leblans, Leopold Michael Lambert Joseph; and Daniels, Henricus Petrus Cornelis, to U.S. Philips Corporation. Apparatus for cutting a drawing in a layer of synthetic material. 3,555,950, Cl. 83-171.

Gilbert, Everett E.: *See—*
Dear, Robert E. A.; and Gilbert, Everett E.,3,557,294.

Gilbert, Ronald E.: *See—*
Anspon, Harry D.; Clampitt, Bert H.; and Gilbert, Ronald E.,3,557,070.

Gilch, Heinz: *See—*
Hermann, Karl-Heinz; Rudolph, Hans; and Gilch, Heinz,3,557,132.

Giles, Maurice E.: *See—*
Hutchings, John; and Giles, Maurice E.,3,556,958.

Gillemot, George W.: *See—*
Thompson, John T.; and Gillemot, George W.,3,557,298.

Gillingham, Alan George Albert: *See—*
Bingham, Kenneth Charles Arthur; and Gillingham, Alan George Albert,3,555,664.

Gilreath, Lafayette E.; and Pollard, Charles H. Well reamer with extensible and retractable reamer elements. 3,556,233, Cl. 175-267.

Gingue, Theodore Joe. Farm wagon running gear. 3,556,561, Cl. 280-489.

Ginsbach, Karl-Heinz; and Schimmer, Rigobert, to Licentia Patent-Verwaltungs-G.m.b.H. Method of producing a thyristor device. 3,556,878, Cl. 148-175.

Giorgi, Jean Claude: *See—*
Dambrine, Francis; and Giorgi, Jean Claude,3,556,845.

Gisin, Iosif Borisovich: *See—*
Strakhov, Vasily Vasilievich; Kuzmin, Jury Nikolaevich; Krikunov, Alexandr Eliseevich; Tombaev, Nikolai Ivanovich; Gisin, Iosif Borisovich; Agafonov, Anatoly Grigorievich; Zaitsev, Mikhail Pavlovich; Shender, Eda Grigortevna; Prityko, Vladimir Pavlovich; Makeeva, Maria Lukyanovna; and Soloviev, Anatoly Mikhailovich,3,555,991.

Glanzstoff AG: *See—*
Sommer, Erwin; Wiloth, Fritz; Werner, Helmut; Lotz, Rudolf; and Wick, Gerhard, 3,556,927.

Glasband, Hyman Saul: *See—*
Glasband, Norman; and Glasband, Hyman Saul,3,556,383.

Glasband, Norman; and Glasband, Hyman Saul, to Callaghan Paper Box Company, The. Box construction and method of manufacture. 3,556,383, Cl. 229-5.5

Glaser, Hellmut I. Method for melting and processing heat-softenable mineral materials. 3,556,753, Cl. 65-2.

Glassey, Eugene A. Instrument for gauging liquid depth, and the like. 3,555,903, Cl. 73-302.

Glasson, Cecil W., to Hooker Chemical Corporation. Method for forming lubricant coatings on metal surfaces to be deformed. 3,556,867, Cl. 148-6.15

Globe-Union Inc.: *See—*
Amlie, Robert F., 3,556,860.

Gloucester Railway Carriage & Wagon Company Limited: *See—*
Sinclair, Frederick William, 3,556,504.

Glowacki, Tad. Device for de-watering mud, sludge or fibre suspensions. 3,555,999, Cl. 100-148.

Gnad, Gerhard: *See—*
Dehnert, Johannes; and Gnad, Gerhard,3,557,080.

Gochanour, Caroll Q.: *See—*
Knapp, William H.; De Pauw, Richard A.; and Gochanour, Caroll Q.,3,556,108.

Goetz, George W., to Eaton Yale & Towne, Inc. Crash sensor. 3,556,556, Cl. 280-150.

Goff, Randall: *See—*
Gorgens, Joseph E.; and Goff, Randall,3,557,329.

Gohrbandt, Wilhelm: *See—*
Neeff, Rutger; Gohrbandt, Wilhelm; and Kuth, Robert,3,557,154.

Golding, James L.: *See—*
Gibbs, Melvin B.; Golding, James L.; Levine, Barry H.; and Novak, John P.,3,556,866.

Goldstein, Albert B., to Compumatics, Inc. Information transmission system including a unit for producing a printed record of information transmitted. 3,557,311, Cl. 179-2.

Goldstein, Albert: *See—*
Levenstein, Harold; Goldstein, Albert; and Hebling, Audrey J.,3,556,662.

Goldstein, Herbert; Ingram, Henry T.; and Kufrin, Robert J., to Witco Chemical Corporation. Method for preventing water loss from reservoirs and channels. 3,555,828, Cl. 61-1.

Goldsworthy, William Brandt. Pultrusion machine and method. 3,556,888, Cl. 156-73.

Goldwater, Irving T., to Lockheed Aircraft Corporation. Multi channel shock spectrum analyzer. 3,555,890, Cl. 73-71.4

Golitz, Dietrich; and Simmler, Walter, to Farbenfabriken Bayer Aktiengesellschaft. Production of quaternary, organosilicon- substituted ammonium salts. 3,557,178, Cl. 260-448.8

Golobart, Ramon Balaguer. Process and apparatus for severing flat thermoplastic wefts in looms having a fixed weft supply. 3,556,164, Cl. 139-302.

Golota, John H., to I-T-E Imperial Corporation, mesne. Axially vented contact and interrupter structure for gas blast circuit breakers. 3,557,331, Cl. 200-148.

Goodman, H., & Sons, Inc.: *See—*
Simon, Serge M., 3,556,114.

Goodrich, B. F., Company, The: *See—*
Hall, James A., 3,556,267.
Parks, Clarence E., 3,555,616.

Goodspeed, Edwin W.: *See—*
Jones, Frederick W. C.; and Goodspeed, Edwin W.,3,556,996.

Goodwin, Leslie Ethel; Rowe, Jean Max; and Wyeth, Nathaniel Convers, to Du Pont de Nemours, E. I., and Company. Magnetic calender. 3,556,000, Cl. 100-169.

Goodyear Tire & Rubber Company: *See—*
Turk, David L., 3,557,028.

Goodyear Tire & Rubber Company, The: *See—*
Steigerwald, John R., 3,556,614.

Gorbunov, Igor Konstantinovich; Avakov, Aram Vartanovich; and Mariev, Dmitry Ivanovich. Liquid-cooling system of gas turbine rotors. 3,556,676, Cl. 416-96.

Gordon Johnson Company: *See—*
Scheier, Donald J., 3,555,593.

Gordon, Roy: *See—*
Ferrara, Peter J.; Dalby, Gaston; Barnes, Clarence A., Jr.; and Gordon, Roy,3,557,006.

Gordon, Thomas E. Illuminating stomatoscope. 3,556,086, Cl. 128-22.

Gorgens, Joseph E.; and Goff, Randall, to Dresser Industries, Inc. Pressure responsive switch. 3,557,329, Cl. 200-83.

Gorham, William F.; and Loeb, William E., to Union Carbide Corporation. Encapsulated chemical product. 3,556,881, Cl. 149-7.

Gorzegno, Walter P.; Stevens, William D.; and Friedrich, Jan L., to Foster Wheeler Corporation. Two pass furnace circuit arrangement for once-through vapor generator. 3,556,059, Cl. 122-406.

Gotsch, Dieter; and Hettich, Alfred, to Bosch, Robert, G.m.b.H. Tool with variable gear. 3,555,921, Cl. 74-371.

Gould, Jerome; and Kellogg, Thomas W., to Design Properties, Inc. Package for article such as frankfurters. 3,556,390, Cl. 229-62.

Gould National Batteries, Inc.: *See—*
Wolf, Alby H.; Schreader, Darreld L.; and Schaumburg, Edward G., 3,556,175.

Gould-National Batteries, Inc.: *See—*
Douglas, David L.; and Banas, Henry J., 3,556,850.
Douglas, David L.; and Banas, Henry J., 3,556,851.

Goupil, Marcel, to Canadian Lacrosse Mfg. Inc. Snow shoe. 3,555,708, Cl. 36-4.5

Gower, Bob G.; and Young, David W., to Atlantic Richfield Company. Composition and method for desucking tobacco. 3,556,763, Cl. 71-78.

Grace, W. R., & Co.: *See—*
Hillman, Melville E. D., 3,557,192.
Parthasarathy, R; and Ciapetta, Frank G., 3,557,199.
Simons, Charles W., 3,557,030.

Graham, Cecil Robert Montgomery, to Taylor, Samuel, Pty, Limited. Seal for aerosol container including flexible gasket permitting filling of container through seal. 3,556,357, Cl. 222-402.22

Graham, Cecil R. Amplifier with automatic gain control. 3,557,309, Cl. 179-1.

Grahn, Arne Y., to Poly-Choke Company, Incorporated, The. Ventilated rib for gun barrels and method of installation. 3,556,889, Cl. 156-91.

Grakauskas, Vytautas, to Aerojet-General Corporation. Method of preparing perchloryl fluoride. 3,556,726, Cl. 23-203.

Grapha Maschinenfabrik, Hans Muller AG.: *See—*
Muller, Hans, 3,556,515.

Graser, Michael, Jr., to Technical Operations, Incorporated. Plural source optical apparatus and method for displaying spatially periodically modulated records. 3,556,639, Cl. 350-162.

Grasznick, Kate. Adjustable candle holder. 3,556,704, Cl. 431-290.

Gray, George W., to RCA Corporation. Vehicle road guidance system. 3,556,244, Cl. 180-98.

Great Southern Oil Tool Co., Inc.: *See—*
Roberts, Preston C., 3,555,896.

Green, James R.; Rivers, Joseph T., Jr.; and Sturgeon, Donald L. G., to Du Pont de Nemours, E. I., and Company. Fiber-resin composite of polyamide and inorganic fibers. 3,556,922, Cl. 161-156.

Green, Lloyd L.: *See—*
Tucker, Don R.; Green, Lloyd L.; and Zimmerman, Howard K.,3,556,798.

Greenlee Bros. & Co.: *See—*
Hagemeyer, Kenneth L., 3,555,868.

Greenstein, Leon: *See—*
Lane, Curtis; and Greenstein, Leon,3,556,344.

Gregoire Flowers, Inc.: *See—*
Gregoire, Gerald L., 3,556,389.

Gregoire, Gerald L., to Gregoire Flowers, Inc. Cut flower package. 3,556,389, Cl. 229-53.

Gregorovic, Dragutin Ivan; and Feroumont, Georges L. E. R. Dental prosthesis with a valve and vacuum chamber. 3,555,683, Cl. 32-3.

Greis, Karl Wilhelm; and Sigal, Everard Henri, to Moeller & Neumann GmbH. Shearing line for edge-trimming and cutting metal sheets and plates. 3,555,951, Cl. 83-208.

Greis, Paul F., to Metal Processing Company. Apparatus for inductive heating of cylindrical members. 3,556,491, Cl. 266-4.

Grenfell, Hugh Willmott, to Steel Company of Wales Limited, The. Lance with venturi oxygen nozzle. 3,556,497, Cl. 266-34.

Grenfell, Hugh Willmott, to Steel Company of Wales Limited, The. Refining of metals. 3,556,773, Cl. 75-51.

Grichnik, James A.; and Schmutzer, Joel J., to Beckman Instruments, Inc. Apparatus for measurement of electrodermal phenomena. 3,556,083, Cl. 128-2.1

Griem, Paul D., Jr., to Owens-Corning Fiberglas Corporation. Method and apparatus for process control. 3,557,349, Cl. 235-151.1

Grimshaw, Derald E., to Environmental Services, Inc. Process and apparatus for treating liquids and gases. 3,555,783, Cl. 55-48.

Griswold Controls: *See—*
Griswold, David E., 3,556,464.

Griswold, David E., to Griswold Controls. Self-draining pressure actuated valve. 3,556,464, Cl. 251-46.

Groen, Johannes, to N.V. Metaalwarenfabriek 'Venlo'. Liquid dispensing device automatically operated by proximity of a hand thereto. 3,556,146, Cl. 137-606.

Gronholz, Le Roy F.; Settlage, Paul H.; and Schwartz, Jerome L., to Du Pont de Nemours, E. I., and Company. Nitrocellulose coated plastic film. 3,556,826, Cl. 106-170.

Gros-Ite Industries, Inc.: *See—*
Foote, Robert E., 3,556,674.

Grosklos, Rill Lewis, to American Cyanamid Company. Ethyl auramine process. 3,557,212, Cl. 260-566.

Grossman, Oscar A.Golfer's eyeglasses. 3,555,563, Cl. 2-14.

Grothoff, Hans, to Siebel, Carl Gisbert, mesne. Filling head for pressurized fluid. 3,556,173, Cl. 141-20.

Grouver, Edwin F.; Reid, Guy T.; Wood, John H.; Pharr, Rodger H.; and Mize, Charles A. Method for processing poultry. 3,555,594, Cl. 17-52.

Grove, Marvin H.; and Van Arsdale, Lyle R., to M & J Valve Company. Gate valve with loosely retained rod seal. 3,556,472, Cl. 251-214.

Groves, Harry Bernard: *See—*
Abbott, Brian; Groves, Harry Bernard; Harris, Dennis; and Turnbull, John Bartholomew,3,556,555.

Gruber, Kurt W., to Mannesmann-Meer A.G. Hammer shears for rolled stock moving at high speed. 3,555,952, Cl. 83-310.

Gruber, Robert J., to Hooker Chemical Corporation. Dinitrodialkyl-p-benzoquinones and derivatives thereof. 3,557,159, Cl. 260-396.

Gruffaz, Max: *See—*
Balme, Maurice; and Gruffaz, Max,3,556,920.

Grundmann, Ekkehard: *See—*
Pieper, Gustav; von Bonin, Wulf; and Grundmann, Ekkehard,3,557,140.

Guarr, Joseph S. Medicine dispensing apparatus. 3,556,342, Cl. 221-2.

Guidi, Armando A.: *See—*
Guidi, Jwan E.; and Guidi, Armando A.,3,556,646.

Guidi, Jwan E.; and Guidi, Armando A., to New Dimension Films, Inc. Apparatus and methods for producing animated motion pictures. 3,556,646, Cl. 352-50.

Gulbins, Klaus: *See—*
Wilhelm, Hans; Gulbins, Klaus; Hartmann, Heinrich; and Lange, Guenter,3,557,048.

Gulf & Western Industrial Products Company: *See—*
Staecke, William, J., 3,555,861.

Gulf & Western Industries, Inc.: *See—*
Henry, Donald E., 3,557,381.

Gulf Energy & Environmental System, Inc.: *See—*
Hammond, Robert H., 3,556,837.

Gulf Research & Development Company: *See—*
Anspon, Harry D.; Clampitt, Bert H.; and Gilbert, Ronald E., 3,557,070.
Hughes, Richard H.; Clampitt, Bert H.; and Anspon, Harry D., 3,556,795.

Gulko, Arnold G. Reverse osmosis purification of hydrocarbon fuels. 3,556,990, Cl. 208-290.

Gulstad, Clayton O. Method for making rye flakes from exploded kernels. 3,556,802, Cl. 99-80.

Guman, William J., to Fairchild Hiller Corporation. Solid propellant electric rocket. 3,555,823, Cl. 60-202.

Gurgiolo, Arthur E., to Dow Chemical Company, The. Method of preparing phosphate esters using metal sulfate catalysts. 3,557,260, Cl. 260-977.

Gurney, John A.: *See—*
Hall, Luther A. R.; Gurney, John A.; and Renfroe, Harris B.,3,557,218.

Gusken, Jean: *See—*
Perrier, Marius Antoine, 3,555,854.

Gustafson Manufacturing Company: *See—*
Cordell, Ray R.; and Morgan, James L., Jr., 3,555,911.

Gutierrez, Julian. Display case for tape cartridges. 3,556,620, Cl. 312-136.

Gutmann, Joseph D., Jr., to Du Pont de Nemours, E. I., and Company. Process for drawing and continuously heat-setting synthetic filaments. 3,555,808, Cl. 57-157.

Guttinger, Kurt, to Dictaphone International AG. Magnetic record indexing device. 3,556,536, Cl. 274-22.

Guttinger, Kurt, to Dictaphone International AG. Telephone responder system. 3,557,313, Cl. 179-6.

Habelt, Gerhard: *See—*
Louzil, Friedrich; and Habelt, Gerhard,3,555,917.

Habicht, Ernst: *See—*
Zergenyi, Janos; and Habicht, Ernst,3,557,152.

Hack, Helmuth: *See—*
Eue, Ludwig; Hack, Helmuth; Westphal, Kurt; and Wegler, Richard,3,557,189.

Haebler, Herbert; and Hense, Heinz, to Varta Aktiengesellschaft. Method and apparatus for treating storage battery plate assembly. 3,556,852, Cl. 136-33.

Haenky, Norman H., to FWI, Inc. Butterfly valve having improved positive closure means. 3,556,476, Cl. 251-306.

Hagan, Haraldur,: *See—*
Evensen, Gunnar, 3,556,656.

Hagedorn, Horst, to Siemens Aktiengesellschaft. Method of producing an impregnated electrical capacitor. 3,555,642, Cl. 29-25.42

Hagemeyer, Kenneth L., to Greenlee Bros. & Co. Pipe bender. 3,555,868, Cl. 72-154.

Hager, Stephen F.: *See—*
Pryor, Michael J.; and Hager, Stephen F.,3,556,962.

Haggar, Michael James; and Sharman, Donald Arthur, to Courtaulds Limited. Manufacture of peracetic acid. 3,557,195, Cl. 260-502.

Hahn, Robert S., to Heald Machine Company, The. Grinding machine. 3,555,741, Cl. 51-165.

Haig, Armen Charles, 1/2 to Jacob, Arthur. Foot corrective device for replacing the function of weakened intrinsic musculature. 3,556,091, Cl. 128-81.

Haile, David Alexander, to Rodman Industries, Inc., mesne. Saw table for radial arm saw. 3,556,179, Cl. 143-132.

Halcon International, Inc.: *See—*
Stein, Theodore Wolflin, 3,557,216.

Halcour, Kurt: *See—*
Kronig, Walter; and Halcour, Kurt,3,556,983.

Haley, Harold A., to FMC Corporation. Tubular film manufacturing apparatus. 3,555,603, Cl. 18-14.

Hall, James A., to Goodrich, B. F., Company, The. Brake retractor mechanism. 3,556,267, Cl. 188-196.

Hall, Luther A. R.; Gurney, John A.; and Renfroe, Harris B., to Geigy Chemical Corporation. Polysubstituted dihydropyrenes. 3,557,218, Cl. 260-592.

Hall, Mitchell A., to Monarch Tool and Manufacturing Company. Beverage cup holder for nautical use. 3,556,453, Cl. 248-311.

Hallman, Robert W.: *See—*
Teeg, Robert O.; and Hallman, Robert W.,3,557,026.

Halls, Kenneth F., to Petersen, Eugene E., mesne. Adjustable open end wrench. 3,555,939, Cl. 81-165.

Halopoff, William, to Holmes Hardware & Sales Co. Hardware and devices for adjusting the spring tension in a counterbalance hinging system. 3,555,590, Cl. 16-1.

Halstrom, John: *See—*
Brunfeldt, Kay; Roepstorff, Peter; and Halstrom, John,3,557,077.

Hamann, Herman Christian, to Rohm and Haas Company. Stabilized suspension polymerization. 3,557,061, Cl. 260-78.4

Hamilton, Arthur E.: *See—*
Cory, William E.; and Wangler, Raymond B., 3,556,236.

Hamilton Cosco, Inc.: *See—*
Monyer, Robert L.; Fricke, Paul M.; and Moore, Donald L., 3,556,588.

Hamilton Tool Company, The: *See—*
Huffman, Harold W., 3,555,767.

Hamm, Philip C., to Monsanto Company. Increasing carbohydrate deposition in plants with aminophosphonates. 3,556,762, Cl. 71-86.

Hamm, Philip C., to Monsanto Company. Method of increasing the sugar content of sugar cane. 3,556,764, Cl. 71-103.

Hamm, Philip C.; and Speziale, Angelo John, to Monsanto Company. N-phenylalkenyl-2-haloacetamides. 3,557,210, Cl. 260-562.

Hammelmann, Paul, Maschinenfabrik: *See—*
Hammelmann, Paul; and Barnowski, Ulrich, 3,556,688.

Hammelmann, Paul; and Barnowski, Ulrich, to Hammelmann, Paul, Maschinenfabrik. Hydraulic pressure amplifying apparatus. 3,556,688, Cl. 417-397.
Hammon, George L., to Chemetron Corporation, mesne. Hardened steel members and method and apparatus for making the same. 3,556,499, Cl. 266-4.
Hammond, George S., to Du Pont de Nemours, E. I., and Company. Method for recovering N, N-dimethylacetamide. 3,557,207, Cl. 260-561.
Hammond, Robert H., to Gulf Energy & Environmental System, Inc. Composite and method of making same. 3,556,837, Cl. 117-71.
Hamuro, Keizo: *See—*
Ishiyama, Tetsuji; and Hamuro, Keizo,3,557,183.
Hanf, Wilhelm: *See—*
Kopsch, Heinz; Wilbring, Gunther; Fay, Paul; and Hanf, Wilhelm,3,555,723.
Hanley, James O., to Crest Industries, Inc. Method and apparatus for treating and supplying water. 3,556,350, Cl. 222-176.
Hann, Helen J.: *See—*
Hann, Melvin M.,3,555,817.
Hann, Melvin M., deceased0 (by Hann, Helen J.; executrix), sundstrand Corporation. Acceleration and deceleration pressure relief valves. 3,555,817, Cl. 60-53.
Hanschitz, Rudolf: *See—*
Diebold, Max; Menge, Eberhard; Hanschitz, Rudolf; and Weisshaar, Dieter,3,556,303.
Hansen, Howard C., to Clark Equipment Company. Pulse modulating control device with improved contact structure. 3,557,325, Cl. 200-24.
Hansen, Vance L.: *See—*
Rue, Richard O.; Kinder, Floyd A.; and Hansen, Vance L.,3,557,304.
Hanson, Harry T.: *See—*
Fishman, David H.; and Hanson, Harry T.,3,556,882.
Hanzlik, Alvin S.; Linhart, Otto C.; and Putze, Marvin D., to Eagle-Picher Industries, Inc. Porcelain enamel for hot water tanks. 3,556,821, Cl. 106-48.
Hara, Ei, to Tamagawa Kikai Kinzoku Kabushiki Kaisha. Compacting apparatus for magnetic powders. 3,555,621, Cl. 18-16.5
Harbeck, Charles L.; and Sellon, Raymond N., to Stolper Industries, Inc. Air conditioned vehicle cab. 3,555,846, Cl. 62-244.
Harco Corporation: *See—*
Husock, Bernard, 3,556,971.
Harding, James H. Copying device. 3,556,176, Cl. 142-11.
Harmon, John C.; and Davis, Ronald L., to Eckrich, Peter, and Sons, Inc. Package with hinge. 3,556,337, Cl. 220-31.
Harrah, Robert S. Meter movement. 3,555,909, Cl. 73-411.
Harrington, Frank A., to Phillips Petroleum Company. Fluid separation. 3,556,297, Cl. 210-83.
Harrington, Winston F.: *See—*
Rigot, Robert M.; and Harrington, Winston F.,3,555,649.
Harris, Allan E., to Harris-Hub Company, Inc. Folding bed frame. 3,555,579, Cl. 5-176.
Harris, Dennis: *See—*
Abbott, Brian; Groves, Harry Bernard; Harris, Dennis; and Turnbull, John Bartholomew,3,556,555.
Harris, Harold Jay; and Johnson, James B., Jr., to Gifford-Hill-Western. Sprinkling apparatus control. 3,556,405, Cl. 239-177.
Harris, Horace E. Church kneeler with folding legs. 3,556,590, Cl. 297-425.
Harris, Leon Johnson, Jr.: *See—*
de la Burde, Roger Zygmunt; and Harris, Leon Johnson, Jr.,3,556,112.
Harris-Hub Company, Inc.: *See—*
Harris, Allan E., 3,555,579.
Harris-Intertype Corporation: *See—*
Crum, James N., 3,556,509.
Treff, Ernest H., 3,556,510.
Harrison, Edward J.: *See—*
Martin, Robert F.; and Harrison, Edward J.,3,555,913.
Hartford, Winslow H.: *See—*
Kurtz, Bruce E.; Follows, Alan G.; and Hartford, Winslow H.,3,557,231.
Hartman, James C. Hood lift apparatus in a vehicle. 3,556,240, Cl. 180-69.
Hartmann, Heinrich: *See—*
Wilhelm, Hans; Gulbins, Klaus; Hartmann, Heinrich; and Lange, Guenter,3,557,048.
Harvey, Richard D.: *See—*
Martin, Larry C.; and Harvey, Richard D.,3,557,091.
Harwell, Conner J.: *See—*
Siegfreid, Edward C.; Harwell, Conner J.; and Murphy, Sheilds L.,3,557,290.
Harwood, Van Ness, Jr., to Aro Corporation, The. Underwater heat generator. 3,556,205, Cl. 165-46.
Hasbrouck, Lillian G.: *See—*
Rylander, Paul N.; and Hasbrouck, Lillian G.,3,557,223.
Haskell, Frederick Bailey; and Haskell, Samuel K. Fish holding apparatus. 3,556,507, Cl. 269-98.
Haskell, Samuel K.: *See—*
Haskell, Frederick Bailey; and Haskell, Samuel K.,3,556,507.
Haskett, F. Barry: *See—*
Day, George Gerald, 3,556,974.
Hass, Karl; Kolhagen, Walter; Czehovsky, Gunther; and Konermann, Hans-Ewald, to Dynamit Nobel Aktiengesellschaft. Self-supporting construction material for the manufacture of corrosion-resistant parts of apparatus in chemical plants, especially electrolysis plants. 3,556,975, Cl. 204-296.
Hasse, Horst: *See—*
Schinabeck, Rainer; and Hasse, Horst,3,556,831.
Hassia Verpackung Karl Klein: *See—*
Klein, Karl, 3,556,388.
Hatano, Takuya: *See—*
Yamamoto, Katsuro; Hatano, Takuya; Obata, Kuniyoshi; Satoh, Tohru; and Nakagawa, Shinji,3,555,884.
Hatebur, F. B., A.G.: *See—*
Kuhn, Hans, 3,555,874.
Hatem, Leon Raoul. Tracing-machine. 3,555,686, Cl. 33-23.
Hathaway, Robert J., to Staley, A. E., Manufacturing Company. Method for obtaining amylose from cooked starch solutions. 3,556,942, Cl. 195-31.
Hattori, Yoko; Ooji, Tamiki; Tanaka, Kiichiro; and Matsunaga, Takao, to Toka Shikiso Chemical Industry Co., Ltd., and Ajinomoto Co., Inc. Diguanamine resin. 3,557,059, Cl. 260-67.6
Haun, John W.; Hoyt, Charles T.; and Prem, Joseph F., to Brillion Iron Works, Inc. Flail assembly. 3,555,797, Cl. 56-294.
Hauni-Werke Korber & Co. KG: *See—*
Heitmann, Uwe, 3,555,883.
Wochnowski, Waldemar, 3,556,111.
Hauser, Norbert. Ski pole of adjustable length. 3,556,544, Cl. 280-11.37
Hauser, Raimund: *See—*
Nemeth, Otto R.; and Forch, Friedrich, 3,556,908.
Haveg Industries, Inc.: *See—*
Trimble, David C., 3,556,387.
Hawes, Roland C., to Applied Physics Corporation. Laser-excited Raman spectrometer. 3,556,659, Cl. 356-75.
Hawkins Mfg. Inc.: *See—*
Hawkins, Roy I., 3,556,229.
Hawkins, Roy I., to Hawkins Mfg. Inc. Replaceable blade combination for duck-foot chisel. 3,556,229, Cl. 172-720.
Haws, Gerald W.; Rael, Joseph L.; and Rhudy, John S., to Marathon Oil Company. Well stimulation process. 3,556,221, Cl. 166-305.
Hawthorne, Nathaniel F.: *See—*
Kinney, Mel E.; and Hawthorne, Nathaniel F.,3,556,001.
Hayler, Frederick C. Articles for inhibiting entangling of a fishing line on a fishing line reel. 3,556,428, Cl. 242-845.2
Heagle, Ella Georgina. Garment component having bound buttonholes and method of making same. 3,555,570, Cl. 2-266.
Heald Machine Company, The: *See—*
Hahn, Robert S., 3,555,741.
Healy Tibbitts Construction Co.: *See—*
Smith, Richard H., 3,555,835.
Hebling, Audrey J.: *See—*
Levenstein, Harold; Goldstein, Albert; and Hebling, Audrey J.,3,556,662.
Hebrank, William H.: *See—*
Wyatt, William Kirk; Mueller, Edward G.; and Hebrank, William H.,3,556,432.
Hechler, Valentine, IV. Pump for proportioning device. 3,556,689, Cl. 417-435.
Heck, Gunter: *See—*
Cramer, Gerhard; Heck, Gunter; and Malow, Egon,3,555,820.
Heck, Richard F., to Hercules Incorporated. Haloakylation of organic compounds. 3,557,146, Cl. 260-332.5
Hedgewick, Peter, to Reflex Corporation of Canada Limited. Molding apparatus for making one-piece plastic caps for containers. 3,555,606, Cl. 18-2.
Hedrick, Robert Howard, to Struthers Scientific and International Corporation. Fines dissolver for crystallizers. 3,556,733, Cl. 23-273.
Hees, Walter: *See—*
Schmitt, Ernst; Hees, Walter; and Quaedvlieg, Mathieu,3,556,715.
Hehnel, Paul: *See—*
Rheinlander, Paul; Schumacher, Heinz; and Hehnel, Paul,3,556,502.
Heidtman, Albert G.: *See—*
Tietjen, Albert H.; and Heidtman, Albert G.,3,555,792.
Heilman, Richard L. Lens carrier to athletic headgear. 3,556,645, Cl. 351-155.
Heiman, Frederic P.; and Robinson, Paul H., to RCA Corporation. Method of treating semiconductor devices to improve lifetime. 3,556,880, Cl. 148-191.
Heimmermann, Damian M. Quick-connect coupler for bucket on excavating machine. 3,556,323, Cl. 214-145.
Hein, Gary L., to Lincoln Laboratories, Inc. Skin allergy testing device. 3,556,080, Cl. 128-2.
Heinen, Josef: *See—*
Stoll, Walter W.; Hofflinger, Hans; and Heinen, Josef,3,555,800.
Heinrich Koppers, Gesellschaft mit beschrankter Haftung: *See—*
Deringer, Hans, 3,555,782.
Heinrich, Peter: *See—*
Bickel, Hans; Bosshardt, Rolf; Fechtig, Bruno; Menard, Enrico; Mueller, Johannes; and Heinrich, Peter,3,557,104.
Heitmann, Uwe, to Hauni-Werke Korber & Co. KG. Method and apparatus for testing of cigarettes or the like. 3,555,883, Cl. 73-41.

Helgert, Harold L; Powell, Hayden B.; and Teorsky, Robert K., to Allegheny Ludlum Steel Corporation. Method of making black stainless steel sheet. 3,556,871, Cl. 148-6.14
Henderson, Homer I. Bit weight maintainer for marine earth boring. 3,556,231, Cl. 175-5.
Henderson, Julius H. Garage with auxiliary storage means for boats and the like. 3,556,320, Cl. 214-16.
Hendon Construction Company: *See—*
Schwarz, Julius Donald; Dokes, George E.; and Kriss, Charles J., 3,555,575.
Hennis, Henry E.: *See—*
Wang, Chun-Shan; and Hennis, Henry E.,3,557,149.
Henry-Biabaud, Edmond, to Societe Anonyme Andre CITROEN. Induction system of internal combustion engine. 3,556,060, Cl. 123-75.
Henry, David W.: *See—*
Sarett, Lewis H.; Hoff, Dale R.; and Henry, David W.,3,557,138.
Henry, Donald E., to Gulf & Western Industries, Inc., mesne. Zero switching circuit. 3,557,381, Cl. 307-133.
Henry, Francis B.: *See—*
Larson, Fay N.; Henry, Francis B.; and Parks, Clyde,3,556,761.
Henry, George R.; and Weaver, Ernest P., to Dresser Industries, Inc. Carbonaceous bonding system for refractories. 3,556,822, Cl. 106-56.
Henry, Joseph Peter; and Garst, Roger Harry, to Union Carbide Corporation. Productions of ethylbenzene and benzene from toluene. 3,557,234, Cl. 260-668.
Henry, Joseph Peter; Hill, Fred Noble; and Garst, Roger Harry, to Union Carbide Corporation. Production of ethylbenzene and benzene from toluene. 3,557,235, Cl. 260-668.
Hense, Heinz: *See—*
Haebler, Herbert; and Hense, Heinz,3,556,852.
Hensley, James R. Safety device for fluid actuated assemblies. 3,556,616, Cl. 303-84.
Hepner, Georges, to Compagnie Francaise Thomson Houston-Hotchkiss Brandt. Analysis apparatus for spectrometer signals with fourier transform output. 3,556,661, Cl. 356-106.
Hepworth, Walter: *See—*
Cairns, John Potts; and Hepworth, Walter,3,557,283.
Herbert, Donald L., to Ohio Brass Company, The. Car coupler. 3,556,312, Cl. 213-14.
Hercules Incorporated: *See—*
Heck, Richard F., 3,557,146.
Leasure, John A., Jr.; Main, John H.; and Winer, Richard, 3,555,816.
Leasure, John A., Jr.; Main, John H.; and Winer, Richard, 3,555,958.
Herman, Gangolf Ernest, to Dominion Aluminum Fabricating Limited. Interlock system for sliding sections. 3,555,748, Cl. 52-67.
Herman, Ralph E. Bag holder. 3,556,395, Cl. 232-43.2
Hermann, Karl-Heinz; Rudolph, Hans; and Gilch, Heinz, to Farbenfabrikin Bayer Aktiengesellschaft. Polyamide moulding compositions. 3,557,132, Cl. 260-30.2
Hermle, Werner, to Hilti, A.G. Setting bolt or setting nail construction. 3,555,957, Cl. 85-10.
Herns, Ralph Tobias. Mulch. 3,555,728, Cl. 47-9.
Herr, Calvin D. Method and apparatus for preventing ice fishing holes from freezing closed when not in use. 3,555,827, Cl. 61-1.
Herr, Milton E.: *See—*
Fonken, Gunther S.; Herr, Milton E.; and Murray, Herbert C.,3,556,943.
Hershman, Gordon L.; and Borchardt, Gerald N., to International Harvester Company. Steering wheel pivoting mechanism for riding mower. 3,556,549, Cl. 280-87.
Hertel, Kenneth L., to University of Tennessee Research Corporation. Apparatus for determining the span length of a laterally dispersed array of fibers. 3,556,665, Cl. 356-238.
Hess, Walther, to Electro GmbH & Co. Method and circuits for regulating the gain of a photo-multiplier for laser-telemetry apparatus. 3,557,373, Cl. 250-207.
Hesston Corporation: *See—*
Garrison, Harold Keith, 3,556,327.
Hettich, Alfred: *See—*
Gotsch, Dieter; and Hettich, Alfred,3,555,921.
Hewitt, Philip J.: *See—*
Kato, Kenzo, 3,556,385.
Hewlett-Packard Company: *See—*
Trimble, Charles R., 3,557,354.
Hidden, William P.; and Hunt, Robert E., to Little, Arthur D., Inc. Cleaning and oiling system for molding apparatus. 3,556,049, Cl. 118-72.
High, Robert L.: *See—*
Hyldon, Roy G.; High, Robert L.; Anklam, Fredrick H.; and Nakamura, Tadashi,3,557,084.
Hilbig, Jack H., to Rohr Corporation. Method and apparatus for suppressing the noise of a fan jet engine. 3,556,246, Cl. 181-51.
Hild, Werner Georg: *See—*
Detilleux, Emile; Hild, Werner Georg; Laazzaretto, Gianfranco; Menchero-Lopez, Emilio Manuel; and Rometsch, Rudolf,3,557,013.
Hilemn, Charles R.: *See—*
Owen, Paul D.; Hilemn, Charles R.; and Velvin, James Carroll, Jr.,3,555,858.
Hill, Eugene G.: *See—*
Autry, Charles P.; Baumgaertner, Paul J.; and Hill, Eugene G.,3,556,439.
Hill, Fred Noble: *See—*
Henry, Joseph Peter; Hill, Fred Noble; and Garst, Roger Harry,3,557,235.
Hill, Richard C.; and Pollacek, Michael J., to Honeywell, Inc. Control apparatus. 3,556,858, Cl. 136-100.
Hill, Sandy, Corporation: *See—*
Irwin, Gerald A., 3,555,953.
Hilliard, Everett A., Jr., to American Biltrite Rubber Co., Inc. Method of manufacture of conveyor belt. 3,556,892, Cl. 156-164.
Hillman, Melville E. D., to Grace, W. R., & Co. Process for preparing unsaturated esters. 3,557,192, Cl. 260-497.
Hilpert, Conrad R., to Twin Disc, Incorporated. Clutch and torque converter transmission having an integral governor for constant output speed. 3,556,271, Cl. 192-3.33
Hilti, A.G.: *See—*
Hermle, Werner, 3,555,957.
Hilti Aktiengesellschaft: *See—*
Bayer, Wolfgang, 3,556,378.
Bayer, Wolfgang; and Udert, Karl-Ernst, 3,556,379.
Bayer, Wolfgang, 3,556,380.
Hind, Hobart M. Fluid operated dispensing device. 3,556,141, Cl. 137-564.5
Hinds, Ronald, to British Insulated Callender's Cables Limited. Apparatus for controlling tension in tape material being drawn off from a pad. 3,556,904, Cl. 156-425.
Hine, Louis P., Jr., to Luxaire, Inc. Gas-fired radiant heater. 3,556,707, Cl. 431-328.
Hirahara, Tsuneo: *See—*
Suzuki, Yoshihisa; Tsukada, Takeshi; Hirahara, Tsuneo; and Nakamura, Tadashi,3,557,081.
Hirao, Ichiro: *See—*
Ueno, Ryuzo; Hirao, Ichiro; and Kato, Yasuhiko,3,557,102.
Hirata, Osamu; and Maehara, Shinichiro, to Nippon Steel Corporation. Method and apparatus for charging steel slabs into reheating furnace. 3,556,492, Cl. 263-6.
Hirohashi, Toshiyuki: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,557,092.
Hirose, Yasunori, to Nippon Gakki Seizo Kabushiki Kaisha. Musical instrument driving circuit for producing percussion sound. 3,557,296, Cl. 84-1.26
Hirota, Eiichi: *See—*
Chiba, Hiroyuki; Tawara, Yoshio; and Hirota, Eiichi,3,557,266.
Hirtle, Parker W.; and Ashby, Frederick Richard, to Bolt Beranek and Newman Inc., and U.S. Plywood-Champion Papers Inc. Closure sealing apparatus. 3,555,734, Cl. 49-484.
Hitachi, Ltd.: *See—*
Kimura, Ryoichi; Ii, Chikai; Itoh, Kazuo; and Kondo, Eiroku, 3,557,316.
Matsuzaki, Atsushi, 3,556,225.
Oishi, Asao; and Sashino, Shozoo, 3,556,678.
Sakamoto, Masakatsu; Uchida, Kenji; Yamada, Yasunori; and Yamaguchi, Takashi, 3,556,682.
Takemoto, Takeo, 3,556,627.
Hiteshue, Raymond W.; and Kawa, Walter, to United States of America, Interior. Hydrogasification of carbonaceous material. 3,556,978, Cl. 208-10.
Hitz, Hans-Rudolf: *See—*
Toepfl, Werner; and Hitz, Hans-Rudolf,3,557,184.
Hizume, Akio; Oyagi, Shuji; and Tanaka, Shigeho, to Mitsubishi Jukogyo Kabushiki Kaisha. Vibration force exciting method and apparatus. 3,555,892, Cl. 73-71.5
Hlafcsak, Joseph, to Mesta Machine Company. Roll changing device. 3,555,871, Cl. 72-239.
Hnizda, Vincent F., to Ethyl Corporation. Method of removing manganese oxide deposits. 3,556,846, Cl. 134-3.
Hoadley, Cyrus E.: *See—*
Busch, Thomas N.; and Hoadley, Cyrus E.,3,556,183.
Hoban, Jerome C., to Preformed Line Products Company. Double support line tie. 3,555,625, Cl. 24-131.
Hobart Manufacturing Company, The: *See—*
Allen, Kenneth C.; and Boshinski, Edwin E., 3,556,235.
Allen, Kenneth C., 3,556,898.
Allen, Kenneth C.; and Boshinski, Edwin E., 3,557,353.
Hocks, Peter: *See—*
Furst, Andor; Furlenmeier, Andre; Langemann, Albert; Waldvogel, Guy; Hocks, Peter; Kerb, Ulrich; and Wiechert, Rudolf,3,557,097.
Hoesch Aktiengesellschaft: *See—*
Sablotny, Adalbert, 3,557,335.
Hoeschele, Guenther Kurt, to Du Pont de Nemours, E. I., and Company. 2,4-Bis(isocyanatocyclohexylmethyl)cyclohexyl isocyanate. 3,557,180, Cl. 260-453.
Hoff, Dale R.: *See—*
Sarett, Lewis H.; Hoff, Dale R.; and Henry, David W.,3,557,138.
Hoff, George: *See—*
McCloskey, Chester M.; Rees, Donald E.; and Hoff, George,3,557,009.
Hofflinger, Hans: *See—*
Stoll, Walter W.; Hofflinger, Hans; and Heinen, Josef,3,555,800.

Hoffman, Daniel S.: *See—*
Jones, Hugh L.; and Hoffman, Daniel S.,3,556,516.
Hoffmann-La Roche Inc.: *See—*
Bartholini, Giuseppe, 3,557,292.
Hoffmann-LaRoche Inc.: *See—*
Furst, Andor; Furlenmeier, Andre; Langemann, Albert; Waldvogel, Guy; Hocks, Peter; Kerb, Ulrich; and Wiechert, Rudolf, 3,557,097.
Hogg, Walter R.; and Coulter, Wallace H., to Coulter Electronics, Inc. Apparatus and method for measuring a dividing particle size of a particulate system. 3,557,352, Cl. 235-151.3
Hokana, Marshall F. Feed mixing mill. 3,556,418, Cl. 241-60.
Holcomb, Clifton R. Solenoid valve pre-oiler. 3,556,070, Cl. 123-196.
Holden, M. Ray. Log-bundling apparatus. 3,556,319, Cl. 214-12.
Holley, Carl A., to Ferro Tech Industries, Inc. Incinerator for refuse. 3,556,025, Cl. 110-8.
Hollis, Clinton R., to International Paper Company. Dunnage bag. 3,556,318, Cl. 214-10.5
Hollis, James E., to Bancroft Racket Company. Sole plate secured to club head by screws of different specific gravities. 3,556,533, Cl. 273-171.
Hollister Incorporated: *See—*
Economou, Steven G., 3,556,101.
Holloway, Henry; and Maxwell, Kenneth H., to Philco-Ford Corporation. Process for epitaxially growing gallium arsenide on germanium. 3,556,875, Cl. 148-175.
Holmes, Frank R.: *See—*
Gibble, Walter P.; and Holmes, Frank R.,3,556,174.
Holmes Hardware & Sales Co.: *See—*
Halopoff, William, 3,555,590.
Holobeam, Inc.: *See—*
Cook, Melvin Seymour, 3,556,629.
Cook, Melvin Seymour, 3,556,631.
Holotron Corporation: *See—*
Jones, Henry S., 3,556,081.
Holset Engineering Company Limited: *See—*
Moorhouse, Geoffrey; and Mason, Derek, 3,555,926.
Holsten, John R.; and Morrison, Jerimah G., Jr., to Monsanto Company. Process for oxidizing and carbonizing acrylic fibers. 3,556,729, Cl. 23-209.1
Holtschmidt, Hans: *See—*
Krauss, Heinz Walter; Pedain, Josef; Zenner, Karl-Friedrich; Oertel, Gunter; and Holtschmidt, Hans,3,557,043.
Holtschmidt, Hans; Zumach, Gerhard; Doring, Fritz; and Kuhle, Engelbert, to Farbenfabriken Bayer Aktiengesellschaft. Thiadiazolinium chlorides and process for their preparation. 3,557,133, Cl. 260-306.7
Schmelzer, Hans-Georg; Degener, Eberhart; Tarnow, Horst; Holtschmidt, Hans; Unterstenhofer, Gunter; and Zecher, Wilfried,3,557,213.
Holtz, Frederick C., Jr., to IIT Research Institute. Process for producing carbide-containing alloy. 3,556,780, Cl. 75-203.
Holzman, James W., to Dana Corporation. Lateral and steering force inducing mechanism. 3,555,893, Cl. 73-71.7
Homdrom, Alton O. Soil conditioning device. 3,556,227, Cl. 172-193.
Honda Giken Kogyo Kabushiki Kaisha: *See—*
Date, Tasuku; Ishizuya, Akira; Yamazaki, Shuichi; Togashi, Nobuyuki; Shioya, Toshio; Kikuraku, Tomoki; and Kurihara, Norimitsu, 3,556,064.
Honegger, Lyle J.; Newtson, N. Keigh; and Stevenson, Joseph S., to Thrive Center, Inc., mesne. Movable animal house. 3,556,054, Cl.
Honeywell Inc.: *See—*
Aldinger, Paul A., 3,556,564.
Blecher, Stephen, 3,556,652.
Ganley, Gregory J., 3,555,908.
Hill, Richard C.; and Pollacek, Michael J., 3,556,858.
Hucke, Ernest, 3,556,496.
Johnston, Roy C., 3,555,650.
Pennock, Robert L., Jr., 3,556,650.
Senyk, Orest J., 3,557,376.
Toledo, Emil; and Semienko, Peter P., 3,556,957.
Hooker Chemical Corporation: *See—*
Dannels, Bobby F.; and Shepard, Alvin F., 3,557,249.
Dorfman, Edwin; Emerson, William E.; and Carr, Russell L. K., 3,557,165.
Glasson, Cecil W., 3,556,867.
Gruber, Robert J., 3,557,159.
Miller, George T., 3,556,956.
Hooker, Verne A. Multiple football tackling dummy sled. 3,556,523, Cl. 273-55.
Hopf, Jurgen. Reproduction of a still picture from a video tape recording by combined drop-out zone sensing. 3,557,320, Cl. 179-100.2
Hoppe, William C.: *See—*
Dyer, Kermit W.; Hoppe, William C.; and Moore, Michael O.,3,556,284.
Horgan, William J., Jr., to Blumcraft of Pittsburgh. Combined hinge and glass door unit. 3,555,733, Cl. 49-388.
Hossfeld, John D., to USM Corporation. Extended root flexsplines. 3,555,929, Cl. 74-640.
Hostettler, Hermann Gustav, to Ursina A.G. Method for the manufacture of a concentrate of a bifidogen factor. 3,556,801, Cl. 99-14.
Houle, Ernest Armand, to Dunlap, Charles J., Jr. Multi-stage centrifugal pump. 3,556,671, Cl. 415-98.
Houston, Richard K., to Agrecology, Incorporated. Farming method. 3,556,026, Cl. 111-1.
Houston, Walter A., to Encap Products Company. Liquid soluble packet. 3,556,765, Cl. 71-117.
Howald, Werner E.; and Stanley, Max W., to General Electric Company. Turbomachinery rotor with integral shroud. 3,556,675, Cl. 416-190.
Howard, Anthony, to Xerox Corporation. Document feed apparatus. 3,556,513, Cl. 271-4.
Howard, Anthony; and Fackler, George E., to Xerox Corporation. Document feed apparatus. 3,556,511, Cl. 271-4.
Howard, Donald W., to Bendix Corporation, The. Fail-safe circuit for multiple channel vacuum modulated adaptive braking system. 3,556,611, Cl. 303-21.
Howard, Donald W.: *See—*
Winge, John J.; and Howard, Donald W.,3,556,258.
Howard, Kevin J., to Flexible Plastics Corporation. Resealable container. 3,556,334, Cl. 215-31.
Howell, Robert B. Installation of seam type zippers. 3,555,627, Cl. 24-205.1
Howells, Eric Reginald, to Imperial Chemical Industries Limited. Battery with a grid of metal coated fibres and resin. 3,556,855, Cl. 136-65.
Hoyt, Charles T.: *See—*
Haun, John W.; Hoyt, Charles T.; and Prem, Joseph F.,3,555,797.
H.S.G. S.p.A.: *See—*
Preti, Roberto, 3,555,922.
Hsieh, Henry L.; and Mueller, Francis X., Jr., to Phillips Petroleum Company. Poly(vinyl halide) compositions. 3,557,252, Cl. 260-876.
Hubbard, James R., to Philco-Ford Corporation. Laundry apparatus. 3,555,701, Cl. 34-133.
Huber, J. M., Corporation: *See—*
Iannicelli, Joseph, 3,556,416.
Huber, Ludwig Konrad, to Pennsalt Corporation. Thiophene polymers and method of preparation. 3,557,068, Cl. 260-79.7
Hucke, Ernest, to Honeywell Inc. Furnace profile temperature controller with ancillary signal producing means to maintain furnace at optimal temperature control levels and to minimize adverse effect of upsets. 3,556,496, Cl. 263-32.
Hudswell Yates Developments Limited: *See—*
Ede, Ainsley Neville, 3,557,372.
Huebner, Werner P. E. V-shaped filter element bypass means. 3,556,298, Cl. 210-131.
Huelle, Zbigniew Ryszard, to Danfoss A/S. Forced-flow evaporator for compression refrigeration equipment. 3,555,845, Cl. 62-225.
Huffman, Harold W., to Hamilton Tool Company, The. Boxing method and apparatus. 3,555,967, Cl. 53-37.
Hughes Aircraft Company: *See—*
Margerum, John D., 3,556,794.
Hughes Corporation: *See—*
Rust, John B., 3,556,790.
Hughes, Nathaniel, to Energy Sciences, Inc. Streaming. 3,556,401, Cl. 239-102.
Hughes, Paul R.: *See—*
Sabin, Le Roy J.; and Hughes, Paul R.,3,556,142.
Hughes, Richard H.; Clampitt, Bert H.; and Anspon, Harry D., to Gulf Research & Development Company. Ethylene polymeric compositions containing silver. 3,556,795, Cl. 96-61.
Hull, Bradford N.: *See—*
Randolph, Hollis L.; Hull, Bradford N.; and Chambers, William W.,3,556,462.
Hulsing, Kenneth L., to General Motors Corporation. Crosshead piston. 3,555,972, Cl. 92-157.
Hulsmann, Hans-Leo; and Renckhoff, Gustav, to Dynamit Nobel AG Werk Witten. Process for the preparation of 2-aryloxyethyl carboxylates. 3,557,167, Cl. 260-410.5
Humber, Leslie G., to American Home Products Corporation. 2,3,7,8,9,9a-Hexahydro-1H-benzo[d,e]β1,7] naphthyridine derivatives. 3,557,119, Cl. 260-287.
Hume, Horace D.; and Novak, Byron M. Support apparatus for harvesting equipment. 3,555,795, Cl. 56-208.
Humphrey, Charles W. Detachable and reversible French cuff. 3,555,568, Cl. 2-124.
Hundhausen, Mary Louise. Hair spray guard. 3,555,559, Cl. 2-11.
Hunt, Paul W. Toy airplane assembly. 3,556,520, Cl. 272-31.
Hunt, Robert E.: *See—*
Hidden, William P.; and Hunt, Robert E.,3,556,049.
Hunt-Wesson Foods, Inc.: *See—*
Gibble, Walter P.; and Holmes, Frank R., 3,556,174.
Huron Valley Steel Corporation: *See—*
Fritz, Leonard; Wallace, Melvin; and Seguin, John G., 3,556,500.
Hurschman, Alfred A., to Ampoules, Inc. Ampoule applicator. 3,556,100, Cl. 128-218.
Husock, Bernard, to Harco Corporation. Self-regulating cathodic protection systems. 3,556,971, Cl. 204-196.
Husqvarna Vapenfabriks Aktiebolag: *See—*
Brynge, Per Gunnar; Andersson, O. Arne; and Nilson, Hans Ove, 3,557,343.
Hutchings, John; and Giles, Maurice E., to Fulmer Research Institute Limited. Process of coating article with laminate of metal and alumina. 3,556,958, Cl. 204-42.
Hutchinson, John J.: *See—*
Marsh, Harold E., Jr.; and Hutchinson, John J.,3,557,027.
Huver, Ben, 50% to Korn, Daniel J., Sr., Warden, Merritt N., and Walterskirchen, Wm. C. Gun hanger. 3,556,454, Cl. 248-317.
Huyck Corporation: *See—*
Wagner, Joseph Robert, 3,555,700.

Hyatt, Frederick, to Bevis Industries, Inc. Tentering clip and chain. 3,555,637, Cl. 26-62.
Hyde, Glenn F.; and Cromwell, John E., to Koppers Company, Inc. Piston ring coatings for high temperature applications. 3,556,747, Cl. 29-198.
Hyldon, Roy G.; High, Robert L.; Anklam, Fredrick H.; and Nakamura, Tadashi, to Keever Company, The. Sulfite-carbonyl starch complex and method of preparation. 3,557,084, Cl. 260-233.3
I-T-E Imperial Corporation: *See—*
Fougere, Guy L., 3,557,358.
Golota, John H., 3,557,331.
Iannicelli, Joseph, to Huber, J. M., Corporation. Apparatus for shearing solids in a solids-liquid suspension. 3,556,416, Cl. 241-39.
Ibes Australia Limited: *See—*
Kelsey, Christopher G., 3,557,379.
Icking, Paul, to Gebr. Schmeing. Animal feeding system. 3,556,057, Cl. 119-51.5
Iga, Takeo: *See—*
Sano, Shiro; Kato, Shuzo; Ishii, Eiichi; and Iga, Takeo,3,556,823.
Ignell, Rolf Lennart, to Sobrefina SA. Assembling apparatus for making containers. 3,555,652, Cl. 29-208.
Ii, Chikai: *See—*
Kimura, Ryoichi; Ii, Chikai; Itoh, Kazuo; and Kondo, Eiroku,3,557,316.
IIT Research Institute: *See—*
Holtz, Frederick C., Jr., 3,556,780.
Kashin, Philip; and Linfield, Warner M., 3,557,293.
Ikeda, Akira, to Ishigo, Sam I. Tape dispenser. 3,556,367, Cl. 225-65.
Imai, Kiyokazu; and Okaya, Takuji, to Kurashiki Rayon Co., Ltd. Polyvinyl alcohol composition. 3,557,250, Cl. 260-874.
Imamura, Kiyoshi, to Nippon Safety Glass Co., Ltd. Device for scoring glass sheets. 3,555,944, Cl. 83-12.
Imamura, Kiyoshi: *See—*
Terakado, Osamu; and Imamura, Kiyoshi,3,555,737.
Immel, Wolfgang: *See—*
Buechner, Oskar; Immel, Wolfgang; Pfannmueller, Helmut; Schmidt-Thomee, Georg; and Urban, Friedrich,3,557,074.
Immer, Hans U.: *See—*
Bagli, Jehan F.; and Immer, Hans U.,3,557,096.
Imperial Chemical Industries Limited: *See—*
Bergwerk, Walter, 3,557,273.
Burns, Ernest Bingham; Darlow, Brian Benjamin; and Smallman, Robert Victor, 3,557,067.
Cairns, John Potts; and Hepworth, Walter, 3,557,283.
Howells, Eric Reginald, 3,556,855.
Mc Intyre, James Eric; and Robertson, Michael Mundie, 3,557,039.
Sampson, Roy John; and Thomas, John Melvyn, 3,557,242.
Thomas, Peter R., 3,555,805.
Imperial Oil Limited,: *See—*
Clark, Lincoln; and Kaminsky, Victor P., 3,556,980.
Cymbalisty, Lubomyr M. O., 3,556,981.
Kaminsky, Victor P.; and Bowman, Clement W., 3,556,982.
Inaba, Shigeho: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,557,092.
Inamura, Keizo: *See—*
Koizumi, Shun; and Inamura, Keizo,3,557,050.
Incho, Harry Hobart: *See—*
Montgomery, Ronald Eugene; and Incho, Harry Hobart,3,557,259.
Industrial Development Company: *See—*
Capgras, Rene, 3,556,542.
Industrial Distributors (1946) Limited: *See—*
Roy, Alexander R., 3,556,839.
Industrial Filter & Pump Mfg., Co.: *See—*
Zievers, James F.; and Schmidt, Henry, Jr., 3,556,299.
Industrial Nucleonics Corporation: *See—*
Doering, George I., 3,557,351.
Jernigan, Ernest D., Jr., 3,557,366.
Menius, Arthur C., Jr.; and Bentley, Harry Thomas, III, 3,555,880.
Industrial Science and Technology, Agency of: *See—*
Sano, Shiro; Kato, Shuzo; Ishii, Eiichi; and Iga, Takeo, 3,556,823.
Shindo, Akio; Souma, Isao; and Nakanishi, Yoichiro, 3,557,020.
Ingersoll-Rand Company: *See—*
Webb, Paul D.; and Lasher, David C., 3,556,697.
White, Kenneth H., 3,556,136.
Inglin, Anton Xaver: *See—*
Pfarrwaller, Erwin; and Inglin, Anton Xaver,3,556,163.
Inglis, James, to Thorn Radio Valves and Tubes Limited. Cathode ray tubes with multiple convolution tension bands. 3,557,306, Cl. 178-7.8
Ingram, Henry T.: *See—*
Goldstein, Herbert; Ingram, Henry T.; and Kufrin, Robert J.,3,555,828.
Inka, Egons, to Crane Packing Company. Holder for flat-sided parts for tape wrapping machine. 3,556,903, Cl. 156-425.
Inland Steel Company: *See—*
Gibbs, Melvin B.; Golding, James L.; Levine, Barry H.; and Novak, John P., 3,556,866.
Inoue, Masahiko, to Toyota Jidosha Kogyo Kabushiki Kaisha. Buckle device of safety belt. 3,555,631, Cl. 24-230.
Inoue, Takayuki; Kato, Kichiro; Toyama, Teruhiko; and Yanami, Tetsuo, to Mitsui Toatsu Chemicals, Inc. Method for inhibiting growth of weed and grasses in rice paddies. 3,556,768, Cl. 71-118.
Instant Structures, Inc.: *See—*
Aitken, James B., 3,555,749.
Institut Francais du Petrole, des Carburants et Lubrifiants: *See—*
Bonnafous, Guy, 3,556,033.
Interisano, Angelo, to Auto-Mat Safety Devices. Tractor and semi-trailer pivot coupling with interchangeable trailer plate. 3,556,559, Cl. 280-407.
International Business Machines Corporation: *See—*
Banks, Willard K.; and Rabedeau, Melbourne E., 3,556,638.
Dahms, Harald, 3,556,950.
Santy, William G., 3,555,916.
Tibbetts, Raymond E.; and Wilczynski, Janusz S., 3,556,642.
Tibbetts, Raymond E.; and Wilczynski, Janusz S., 3,556,643.
Wilczynski, Janusz S., 3,556,630.
International Computers and Tabulators Limited: *See—*
Bingham, Kenneth Charles Arthur; and Gillingham, Alan George Albert, 3,555,664.
International Harvester Company: *See—*
Gable, Wyatt T., Jr.; and Barfield, Charles G., 3,555,794.
Hershman, Gordon L.; and Borchardt, Gerald N., 3,556,549.
Knapp, William H.; De Pauw, Richard A.; and Gochanour, Carol Q., 3,556,108.
International Inpak Incorporated: *See—*
Nemer, Russel A., 3,555,779.
International Machinery Corporation: *See—*
Mencacci, Samuel A., 3,556,172.
International Paper Company: *See—*
Carter, Charles I.; and Rogers, Rupert O., 3,555,976.
Enneper, Arnold A.; and Wierzba, Anthony R., 3,557,156.
Hollis, Clinton R., 3,556,318.
Nystrand, Ernst Daniel, 3,556,152.
International Rectifier Corporation: *See—*
Tarn, William H., 3,555,669.
International Scanatron Systems Corporation: *See—*
Popkin-Clurman, J. Raymond, 3,556,290.
International Standard Electric Corporation: *See—*
Avignon, Michel L., 3,557,314.
Galaske, Folker; and Schilling, Helmut Wilhelm, 3,556,277.
Kobus, Stanislas; Salle, Adelin Eugene Gaston; Fontaine, Bernard Jean Robert; Termote, Alois Rene; and Masure, Jean Louis, 3,557,315.
Lomax, Ronald William, 3,557,346.
Papy, Georges; and Papy, Frederique nee Lenger, 3,555,703.
Rensch, Heinz; and Oden, Hoeckly, 3,557,345.
Tessarollo, Severino; and Manzoni, Angelo, 3,557,326.
International-Stanley Corporation: *See—*
Cordell, Ray R.; and Morgan, James L., Jr., 3,555,911.
Interpace Corporation: *See—*
Gebura, Stanley E., 3,557,038.
Interspace Corporation: *See—*
Gebura, Stanley E., 3,556,829.
Iowa State University Research Foundation: *See—*
Jungk, Robert A.; and Mc Connell, Kenneth G., 3,556,806.
Quick, Graeme R., 3,555,790.
I.P.C.U.P. Institutul pentru Proiectare si Cercetare pentru Utilaj Petrolier: *See—*
Anastasiu, Vasile Eugeniu; and Margarit, Traian, 3,556,217.
Irie, Akira: *See—*
Yoshimura, Yoshio; Uno, Hitoshi; and Irie, Akira,3,557,131.
Irwin, Gerald A., to Hill, Sandy, Corporation. Roll splitter. 3,555,953, Cl. 83-460.
Ishibashi, Wataru, to Iwatani and Company Limited. Apparatus for cracking materials into gaseous components and eroding small bodies into microfine powder. 3,556,976, Cl. 204-327.
Ishigo, Sam I.: *See—*
Ikeda, Akira, 3,556,367.
Ishii, Eiichi: *See—*
Sano, Shiro; Kato, Shuzo; Ishii, Eiichi; and Iga, Takeo,3,556,823.
Ishii, Hisashi: *See—*
Takahashi, Koichi; Shinada, Hidehiro; and Ishii, Hisashi,3,556,699.
Ishiyama, Tetsuji; and Hamuro, Keizo, to Sumitomo Chemical Company, Ltd. α-Cyanoethyl N-3,5-dichlorophenyl-carbamate. 3,557,183, Cl. 260-465.
Ishizumi, Kikuo: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,557,092.
Ishizuya, Akira: *See—*
Date, Tasuku; Ishizuya, Akira; Yamazaki, Shuichi; Togashi, Nobuyuki; Shioya, Toshio; Kikuraku, Tomoki; and Kurihara, Norimitsu,3,556,064.
Ismach, Aaron, to United States of America, Army. Automatic intermittent positive pressure ventilator. 3,556,095, Cl. 128-145.8
Israel Mining Industries-Institute for Research and Development: *See—*
Baniel, Avraham Matitiahu; and Blumberg, Ruth, 3,556,739.
Istituto Farmacologico Serono S.p.A.: *See—*
Marchetti, Enzo, 3,557,135.
Ito, Kenji; and Kondo, Kishichiro, to Toa Gosei Chemical Industry Co., Ltd. Stabilized alpha-cyanoacrylate adhesive compositions. 3,557,185, Cl. 260-465.4

Itoh, Kazuo: *See—*
Kimura, Ryoichi; Ii, Chikai; Itoh, Kazuo; and Kondo, Eiroku,3,557,316.
Iwasa, Hitoo; Yokoziwa, Masami; and Teramoto, Iwao, to Matsushita Electronics Corporation. Process for forming silicon dioxide films. 3,556,841, Cl. 117-201.
Iwatani and Company Limited: *See—*
Ishibashi, Wataru, 3,556,976.
Iwatsu Electric Company Limited: *See—*
Tano, Tekeo; and Washiashi, Morimasa, 3,557,368.
Iwatsuki, Makoto: *See—*
Takagi, Yasuo; Iwatsuki, Makoto; Takeshita, Kazuhisa; and Uemura, Isao,3,557,272.
Jackson, Clarence G. Mobile scaffold. 3,556,249, Cl. 182-16.
Jackson, Walter F.; and Wise, James F., to Vann Industries, Incorporated. Burner unit. 3,556,700, Cl. 431-182.
Jacob, Arthur: *See—*
Haig, Armen Charles, 3,556,091.
Jacoby, Hans-Dieter, to Continental Elektroindustrie Aktiengesellschaft Askania Werke. Clinometric pendulum apparatus. 3,555,691, Cl. 33-205.
Jacoby-Bender, Inc.: *See—*
Bello, Salvatore, 3,555,850.
Jade Controls Co., Inc.: *See—*
Wagner, Edmond M., 3,556,864.
Jaeger, Horst, to Ciba Limited. Process for the manufacture of perfluoroalkyliodides. 3,557,224, Cl. 260-653.1
Jaffrey, William G.: *See—*
Bullough, William; Jenkins, Walter N.; Jaffrey, William G.; Watts, Campbell; Jones, Granville K.; and Salt, Frederick W.,3,557,336.
Jagaciak, George J., to Olin Corporation. Process for preparing aluminum base alloys. 3,556,872, Cl. 148-11.5
Jahnle, Herbert A., to Budd Company, The. Laminated molding tool made of a composite metal. 3,555,876, Cl. 72-476.
Jamco, Inc.: *See—*
Wilkinson, Thomas B.; Melton, James O.; Musser, Harry B.; and Thomas, Abraham L., 3,556,338.
Jammet, Jean Firmin, to Societe des Accumulateurs Fixes et de Traction (Societe Anonyme). Method of manufacturing electrochemical generators. 3,556,861, Cl. 136-175.
Janin, Raymond: *See—*
Boichard, Jacques; Brossard, Bernard; Gay, Michel; and Janin, Raymond,3,557,201.
Janklow, Cynthia K. Pacifier. 3,556,104, Cl. 128-360.
Japan Gas-Chemical Company: *See—*
Takashina, Naomitsu; Aida, Teruo; Endo, Yasuhiro; and Nagashima, Wakio, 3,557,040.
Japanese Geon Company, Ltd., The: *See—*
Sugimoto, Katsumi; Kondo, Yoshio; and Fukui, Sachio, 3,557,253.
Tanaka, Akira; Kato, Koji; and Futamura, Shingo, 3,557,251.
Jaquith, Fred M., 25% to West, Clarence Virgill. Frost preventative for crops. 3,555,727, Cl. 47-2.
Jardinier, Pierre Charles; and Simonnot, Jack Paul Robert, to Societe d'Etudes et de Recherches de Ventilation et d'Aeraulique. Fluid flow regulator for use in the ventilation ducts of dwellings. 3,556,134, Cl. 137-499.
Jarvis, James G.: *See—*
Robinson, Gene H.; and Jarvis, James G.,3,556,784.
Jaspert, William B.: *See—*
Ziccardi, John J., 3,556,467.
Jenkins, John C.; and Wesseler, William O., to TRW Inc., mesne. Support for elongate members. 3,556,447, Cl. 248-62.
Jenkins, Walter N.: *See—*
Bullough, William; Jenkins, Walter N.; Jaffrey, William G.; Watts, Campbell; Jones, Granville K.; and Salt, Frederick W.,3,557,336.
Jennings Development Corporation: *See—*
Jennings, William H., 3,557,008.
Jennings, Irving C. High vacuum pump with air jet having automatic cut-in valve. 3,556,681, Cl. 417-87.
Jennings, John E.: *See—*
Lumpkin, William B.; and Jennings, John E.,3,556,222.
Jennings, William H., to Jennings Development Corporation. Animal fat cleaning composition and method. 3,557,008, Cl. 252-182.
Jensen, Flemming Edvin, to Smidth, F. L., & Co. Rotary kilns with planetary coolers. 3,556,495, Cl. 263-32.
Jeppson, Morris R., to Cryodry Corporation. Method for processing bakery products. 3,556,817, Cl. 99-192.
Jernigan, Ernest D., Jr., to Industrial Nucleonics Corporation. Angle of attack indicator using a radioactive source and detector. 3,557,366, Cl. 250-43.5
Jiou, Marcel Georges; and Khachoyan, Joseph, to Ugine Kuhlmann. Polyolefin fiber dyeing with an arylazo 8-hydroxy- quinoline-5-sulfonic acids and fibers so dyed. 3,556,709, Cl. 8-42.
Jisa, Miloslav: *See—*
Zmatlik, Josef; Jisa, Miloslav; Sedlecky, Jaromir; Matejka, Josef; Mohelnicky, Josef; and Milichovsky, Bohumil,3,556,165.
Johannisson, Dag Olof Alfred, to AGA Aktiebolag. Fluid control device. 3,556,409, Cl. 239-433.
Johansson, Rolf Gustaf, to AB Byggforbattring. Arrangement for effecting uniform load distribution on climbing jacks. 3,556,480, Cl. 254-89.
Johns, Martha Marie; and Lynch, John Andrew, Jr., to Du Pont de Nemours, E. I., and Company. Water-dispersible fabric. 3,556,919, Cl. 161-70.
Johns-Nigrelli-Johns, Inc.: *See—*
Nigrelli, Biagio J.; Standley, Wendell E.; and Sprogis, Andre, 3,555,776.
Johnson & Johnson: *See—*
Knight, Francis J.; and Konopka, Barbara A., 3,556,099.
Painter, Erle V.; Mesek, Frederick K.; and Shepherd, Robert C., 3,556,921.
Johnson, Carl E.; and Dumers, Dewey M., to GAF Corporation. Color oscillograph processing. 3,556,789, Cl. 96-22.
Johnson, James B., Jr.: *See—*
Harris, Harold Jay; and Johnson, James B., Jr.,3,556,405.
Johnson, Sarah A. Self-contained portable cooler for food receptacles. 3,555,848, Cl. 62-457.
Johnson, Vincent C. Deep sea well drilling structure. 3,556,210, Cl. 166-0.5
Johnston, Robert R.; and Valliere, Robert L., to Dresser Industries, Inc. Stacker crane with an extensible load support means. 3,556,329, Cl. 214-730.
Johnston, Roy C., to Honeywell Inc. Coil winding machine. 3,555,650, Cl. 29-203.
Joly, Robert; Warnant, Julien; and Farcilli, Andre, to Roussel-UCLAF. Therapeutic compositions and method for the treatment of disorders due to insufficient corpus luteum secretion. 3,557,286, Cl. 424-242.
Jones, Frederick W. C.; and Goodspeed, Edwin W. Cold forming lubricant. 3,556,996, Cl. 252-42.1
Jones, Geoffrey T., to Metal Bellows Corporation. Pneumatic bellow operated clutch and brake. 3,556,272, Cl. 192-18.
Jones, Glyn Owen. Wearing apparel. 3,555,569, Cl. 2-221.
Jones, Granville K.: *See—*
Bullough, William; Jenkins, Walter N.; Jaffrey, William G.; Watts, Campbell; Jones, Granville K.; and Salt, Frederick W.,3,557,336.
Jones, Henry S., to Holotron Corporation. Breast holder for mammograph. 3,556,081, Cl. 128-2.
Jones, Hugh L.; and Hoffman, Daniel S., to Xerox Corporation. Self-aligning feed roller. 3,556,516, Cl. 271-36.
Jones, James F., to Beloit Corporation. Apparatus for processing felled trees. 3,556,180, Cl. 144-2.
Jordan, Harold O. W.; Keenan, Michael J.; and Ross, Austin, to Printing Developments, Inc. Cathode ray tube scanning systems with spot and area scanning. 3,557,303, Cl. 178-5.2
Jordan, Wilmer C. Devices and method s for forming air-fuel mixtures. 3,556,065, Cl. 123-122.
Joseph, Jack. Firearm mounting for sighting device. 3,555,687, Cl. 33-50.
Joseph, Joseph Peter: *See—*
Dusza, John Paul; Joseph, Joseph Peter; and Bernstein, Seymour,3,557,161.
Jouppi, Eino J. Device for delimbing felled trees. 3,556,181, Cl. 144-2.
Judd, Claude I.: *See—*
Suh, John T.; and Judd, Claude I.,3,557,143.
Junemann, Boyke: *See—*
Brockmuller, Friedrich Franz; and Junemann, Boyke,3,556,518.
Junemann, Dieter: *See—*
Overhoff, Heinrich; and Junemann, Dieter,3,555,629.
Jungk, Robert A.; and Mc Connell, Kenneth G., to Iowa State University Research Foundation. Method of tenderizing meat. 3,556,806, Cl. 99-107.
Juras, Appy, to University Patents, Inc. of Illinois. Composite metal fiber and plastic structures and method of producing the same. 3,556,914, Cl. 161-5.
Jurena, Prokop J. Adjustable fingernail and toenail clipper. 3,555,675, Cl. 30-28.
Kabushiki Kaisha Kikusui Seisakusho: *See—*
Maekawa, Hideyuki; Sakamoto, Teruo; and Shimada, Yasuo, 3,555,608.
Kabushiki Kaisha Ueno Suyaku Oyo Kenkyuyo: *See—*
Ueno, Ryuzo; Hirao, Ichiro; and Kato, Yasuhiko, 3,557,102.
Kage, Motokuni: *See—*
Ohta, Seizho; and Kage, Motokuni,3,556,505.
Kai, Tsunetoshi: *See—*
Suzuki, Kenichi; and Kai, Tsunetoshi,3,556,791.
Kaiser Aluminum & Chemical Corporation: *See—*
Emerson, Robert B.; and Brian, Wilton A., 3,557,025.
Foye, John J., 3,556,197.
Schroter, Richard C., 3,555,758.
Kaiser, Carl; and Zirkle, Charles L., to Smith Kline & French Laboratories. Substituted-7,12-dihydropleiadene derivatives. 3,557,098, Cl. 260-240.
Kaiser, Carl; and Zirkle, Charles L., to Smith Kline & French Laboratories. 1-Naphthylalkyl-4-phenylpiperidine derivatives. 3,557,123, Cl. 260-290.
Kalium Chemicals Limited: *See—*
Porter, Selby W., 3,556,597.
Kalle Aktiengesellschaft: *See—*
Klendauer, Wolfgang; Gerigk, Gunter; and Kindl, Erwin, 3,555,694.
Kallman, Gunnar: *See—*
Olander, Lennart; and Kallman, Gunnar,3,556,426.

Kalopissis, Gregoire; and Bugaut, Andree, to Societe Anonyme dite: L'Oreal.Dyeing human hair with (2'-hydroxyethyl)-1-amino-2-nitro-(2'ohydroxyethyl)-4-methyl- aminobenzene. 3,555,584, Cl. 8-10.1
Kaltenbach & Voigt: *See—*
Loge, Hans, 3,555,685.
Kalwall Corporation: *See—*
Reed George P., III, 3,555,755.
Kamberg, Henry; and Wood, Jack K. Divider for light-weight aggregate balcony floors. 3,555,759, Cl. 52-378.
Kamienski, Conrad W.: *See—*
Bach, Ricardo O.; Kamienski, Conrad W.; Dellinger, Matthew Henry; Mitchem, Luther C.; and Morrison, Robert C.,3,557,220.
Kaminsky, Victor P.: *See—*
Clark, Lincoln; and Kaminsky, Victor P.,3,556,980.
Kaminsky, Victor P.; and Bowman, Clement W., 30% to Cities Service Athabasca, Inc., 30% to Imperial Oil Limited, 30% to Atlantic Richfield Corporation, and 10% to Royalite Oil Company, Limited. Combination additive for tar sand processing. 3,556,982, Cl. 208-11.
Kammer, Karl Eugen, to Vertec-Gesellschaft fur Verpackungstechnik mbH & Co. Apparatus for packaging newspaper stacks. 3,555,772, Cl. 53-124.
Kane, Ellis D.: *See—*
Stewart, Donald R.; and Kane, Ellis D.,3,555,742.
Kansai Paint Company Limited: *See—*
Koizumi, Shun; and Inamura, Keizo, 3,557,050.
Kometani, Yutaka; Koizumi, Shun; Suzuki, Takeshi; and Okuno, Chuzo, 3,557,051.
Kanwisher, John W.; and Starck, Walter A., II. Apparatus for controlling environmental conditions, suitable for use underwater. 3,556,098, Cl. 128-142.
Kapare, Erik Gunnar, to Billeruds Aktiebolag. Apparatus for closing valve bags. 3,555,778, Cl. 53-371.
Kaplan, Earl, to American Cynamid Company. 2,4-Dinonylphenols as improved antioxidants for rubber. 3,557,057, Cl. 260-45.95
Karll, Robert E.: *See—*
Lee, Richard J.; and Karll, Robert E.,3,556,995.
Karmas, George, to Qrtho Pharmaceutical Corporation. Certain pyridoyl and furoyl esters of 2-(lower alkyl)-3-(lower alkyl)-4-aryl-3 or 4-cyclohexene carbinols. 3,557,129, Cl. 260-295.5
Karnstedt, Paul F.: *See—*
Frangquist, Gustav H.; and Karnstedt, Paul F.,3,556,419.
Karoll's Inc.:*See—*
Beardmore, John E., 3,556,586.
Kashin, Philip; and Linfield, Warner M., to IIT Research Institute. Method of repelling insects with amino-aldehydes. 3,557,293, Cl. 424-325.
Katchka, Jay R., to Robertshaw Controls Company. Unitary pressure regulator and flow control device. 3,556,117, Cl. 137-66.
Kato, Kenzo, 1/2 to Hewitt, Philip J. Single-piece self-opening container construction. 3,556,385, Cl. 229-37.
Kato, Kichiro: *See—*
Inoue, Takayuki; Kato, Kichiro; Toyama, Teruhiko; and Yanami, Tetsuo,3,556,768.
Kato, Koji: *See—*
Tanaka, Akira; Kato, Koji; and Futamura, Shingo,3,557,251.
Kato, Shuzo: *See—*
Sano, Shiro; Kato, Shuzo; Ishii, Eiichi; and Iga, Takeo,3,556,823.
Kato, Yasuhiko: *See—*
Ueno, Ryuzo; Hirao, Ichiro; and Kato, Yasuhiko,3,557,102.
Katz, Joseph: *See—*
Finestone, Stephen C.; and Katz, Joseph,3,556,087.
Katz, Leon, to GAF Corporation. Novel substituted allyl polymer derivatives useful as photoresists. 3,556,792, Cl. 96-35.1
Kauffman, Melvin R., to General Electric Company. Rack assembly for a front-opening dishwasher. 3,556,625, Cl. 312-301.
Kaufman, Jack W. Scrubbing implements. 3,556,667, Cl. 401-28.
Kawa, Walter: *See—*
Hiteshue, Raymond W.; and Kawa, Walter,3,556,978.
Kawan, Oskar: *See—*
Eder, Otto; and Kawan, Oskar,3,555,705.
Kay, Garth, to National Research Development Corporation. Production of a polymer having dihalo-s-triazinyl groups bound thereto. 3,557,073, Cl. 260-91.3
Keckemet, Obren, to Pennwalt Corporation. Control of terrestrial mollusks. 3,557,288, Cl. 424-288.
Keckemet, Obren, to Pennwalt Corporation. Control of terrestrial mollusks. 3,557,289, Cl. 424-288.
Keegan, Robert R.: *See—*
Evensen, Gunnar, 3,556,656.
Keenan, Michael J.: *See—*
Jordan, Harold O. W.; Keenan, Michael J.; and Ross, Austin,3,557,303.
Keesling, Clifford E.: *See—*
Keesling, Thomas B.; and Keesling, Clifford E.,3,556,425.
Keesling, Thomas B.; and Keesling, Clifford E., to Functional Sytems Corporation. Alignment mechanism for carpet measuring machine. 3,556,425, Cl. 242-57.1
Keever Company, The: *See—*
Hyldon, Roy G.; High, Robert L.; Anklam, Fredrick H.; and Nakamura, Tadashi, 3,557,084.
Kehoe, John James: *See—*
Gangwisch, William Jerome; and Kehoe, John James,3,556,171.
Kehoe, Lawrence J.; and Schell, Raymond A., to Ethyl Corporation. Process for preparing alcohols and aldehydes. 3,557,219, Cl. 260-604.
Kelco Company: *See—*
Schuppner, Harry R., Jr., 3,557,016.
Keller, Leo. Method and apparatus for stacking paper sheets or the like. 3,556,519, Cl. 271-86.
Keller, Siegfried, to Werkzeugmaschinenfabrik Oerlikon-Buhrle AG. Protection device against excessive braking of a vehicle wheel braked by compressed air. 3,556,613, Cl. 303-21.
Kelley, Charles, Jr., to Mc Cluskey Wire Co., Inc. Method of joining ends of warp wires in a wire cloth belt. 3,555,665, Cl. 29-471.3
Kellner, Jackson M., to Esso Production Research Company. Pulling apparatus. 3,556,214, Cl. 166-98.
Kellogg, Ronald E., to Kelly Klosure, Inc. Portable shelter assembly for protection from bad weather and components thereof. 3,555,754, Cl. 52-282.
Kellogg, Thomas W.: *See—*
Gould, Jerome; and Kellogg, Thomas W.,3,556,390.
Kelly Klosure, Inc.: *See—*
Kellogg, Ronald E., 3,555,754.
Kelsey, Christopher G., to Ibes Australia Limited. Three dimensional tracing probe with stylus operating a photocell pick-up. 3,557,379, Cl. 250-220.
Kelsey-Hayes Company: *See—*
Stelzer, William, 3,556,615.
Kennametal Inc.: *See—*
Nicodemas, William F., 3,555,937.
Kent-Owens Machine Company: *See—*
Tremblay, Albert F., 3,555,870.
Kerb, Ulrich: *See—*
Furst, Andor; Furlenmeier, Andre; Langemann, Albert; Waldvogel, Guy; Hocks, Peter; Kerb, Ulrich; and Wiechert, Rudolf,3,557,097.
Kersta, Lawrence G.: *See—*
Presti, Anthony J.; and Kersta, Lawrence G.,3,557,310.
Keskitalo, Howard O.; and Stowasser, Lee H., to Caterpillar Tractor Company. Side dumping loader bucket control. 3,556,330, Cl. 214-768.
Khachoyan, Joseph: *See—*
Jiou, Marcel Georges; and Khachoyan, Joseph,3,556,709.
Khan, Amanullah R.: *See—*
Eakin, Bertram E.; Khan, Amanullah R.; and Anderson, Phillip J.,3,556,917.
Kibler, Richard W., to Firestone Tire & Rubber Company, The. Rubber stabilized against izone deterioration by use of morpholine additives. 3,557,054, Cl. 260-45.8
Kichline, Thomas P.: *See—*
Conn, James F.; and Kichline, Thomas P.,3,556,804.
Conn, James F.; and Kichline, Thomas P.,3,556,805.
Kidde, Gustave E. Conversion of monoammonium aluminum tetrafluoride to cryolite. 3,556,717, Cl. 23-88.
Kidwell, Robert P. Boundary layer control of airborne vehicles. 3,556,443, Cl. 244-130.
Kikuraku, Tomoki: *See—*
Date, Tasuku; Ishizuya, Akira; Yamazaki, Shuichi; Togashi, Nobuyuki; Shioya, Toshio; Kikuraku, Tomoki; and Kurihara, Norimitsu,3,556,064.
Kilian, Ernst-Dieter, to Bolkow Gesellschaft mit Beschrankter Haftung. Rotor mounting. 3,556,673, Cl. 416-134.
Kim, George A., to Teletype Corporation. Methods of severing materials employing a thermal shock. 3,556,366, Cl. 225-1.
Kim, Kyongmin, to Siemens Aktiengesellschaft. Method of producing layers of intermetallic superconducting niobium-tin (Nb_3Sn) on a carrier. 3,556,842, Cl. 117-217.
Kimberly-Clark Corporation: *See—*
Champaigne, John F., 3,556,931.
Koehn, Anthony S., 3,555,624.
Kimmon Manufacturing Co., Ltd.: *See—*
Onoda, Hajime; and Yahiro, Akihumi, 3,555,902.
Kimpel, Frank A.: *See—*
Fleckenstein, Joseph E.; Kimpel, Frank A.; Ormanoski, Leo J.; and Paetow, Herman E.,3,555,844.
Kimura, Ryoichi; Ii, Chikai; Itoh, Kazuo; and Kondo, Eiroku, to Hitachi, Ltd. System for providing alternative connection paths in a common control switching apparatus. 3,557,316, Cl. 179-18.
Kimura, Shiro; Nakazawa, Yoshiuki; Sawahara, Masao; and Nakamura, Yasuharu. Photographic silver halide emulsions. 3,556,800, Cl. 96-120.
Kinder, Floyd A.: *See—*
Rue, Richard O.; Kinder, Floyd A.; and Hansen, Vance L.,3,557,304.
Kindl, Erwin: *See—*
Klendauer, Wolfgang; Gerigk, Gunter; and Kindl, Erwin,3,555,694.
King, Alwyn H.: *See—*
Roberts, John A.; and King, Alwyn H.,3,556,636.
King, Donald A., to Borg-Warner Corporation. Electro hydraulic servovalve. 3,556,150, Cl. 137-625.4
King, Donna F.: *See—*
King, Henry C., 3,556,406.
King, Elsie: *See—*
King, Henry C., 3,556,406.
King, Henry C., 60% to King, Elsie, and 40% to King, Donna F. Irrigation sprinkler with pump priming system. 3,556,406, Cl. 239-181.

King, James R., Jr.: *See—*
Cohen, Hyman L.; and King, James R., Jr.,3,557,066.
King, Louis T. Conduit connection means. 3,556,568, Cl. 285-334.2
King, Richard N., Jr., to Waters Associates, Inc. Rotary valve mounting assembly. 3,556,130, Cl. 137-343.
King-Seeley Thermos Co.: *See—*
Stewart, Ronald B., 3,556,076.
Kinnecom, Paul G., to ACF Industries, Incorporated. Cushioning arrangement for the end of a railway car. 3,556,311, Cl. 213-8.
Kinney, Mel E.; and Hawthorne, Nathaniel F., to Singer Company, The. Tape controlled postage metering machine. 3,556,001, Cl. 101-92.
Kinney, S. P., Engineers, Inc.: *See—*
Kinney, Selwyne P.; and Carr, Hugh B., 3,556,702.
Kinney, Selwyne P.; and Carr, Hugh B., to Kinney, S. P., Engineers, Inc. Blast furnace stove burner assembly. 3,556,702, Cl. 431-186.
Kinoshita, Sakushige: *See—*
Mizuguchi, Jun; and Kinoshita, Sakushige,3,556,969.
Kinzler, Raymond C.; and Nestler, Gilbert C., to Koppers Company, Inc. Ascension pipe elbow with plural spray nozzles. 3,556,948, Cl. 202-260.
Kishikawa, Kanichi: *See—*
Yoshino, Yamata; Kishikawa, Kanichi; and Tanaka, Katsuyoshi,3,555,862.
Kisters, Mathijs J.M.G., to Stamicarbon N.V. Process for weakening the hydrophobic behavior of alkene polymers. 3,557,248, Cl. 260-85.7
Kitagawa, Hioshi; Suwada, Atau; and Ohno, Satoyoshi, 1/2 to Toyo Rayon Kabushiki Kaisha, and Sanyo Chemical Industries, Ltd. Internal antistatic agent for super polyamides and polyamide compositions having improved antistatic property. 3,557,060, Cl. 260-78.
Kitchen, Clarence E.: *See—*
Mueller, Carl H.; Wegmann, Jerome B.; Kitchen, Clarence E.; and Weitzel, George,3,556,481.
Kivlen, John A.; and Koszman, Ihor, to Esso Research and Engineering Company. Decoking of onstream thermal cracking tubes with H_2O and H_2. 3,557,241, Cl. 260-683.
Klein, Karl, to Hassia Verpackung Karl Klein. Packing box with collapsible take-out opening. 3,556,388, Cl. 229-51.
Klendauer, Wolfgang; Gerigk, Gunter; and Kindl, Erwin, to Kalle Aktiengesellschaft. Process for preparing regenerated cellulose tubes to be used as sausage casings for their lengthwise shirring on a shirring mandrel. 3,555,694, Cl. 34-7.
Kliklok Corporation: *See—*
Pierce, Chester J., Jr., 3,556,384.
Klingsberg, Erwin, to American Cyanamid Company. Polyphenyl 1,2-diazepines. 3,557,088, Cl. 260-239.
Knaak, Rudiger; and Sitte, Richard, to Kopper-Wistra-Ofenbau Gesellschaft mit Duesseldorf- Heerdt. Method and apparatus for heat-treating of workpieces. 3,556,493, Cl. 263-6.
Knapp, William H.; De Pauw, Richard A.; and Gochanour, Caroll Q., to International Harvester Company. Combine grain cleaner. 3,556,108, Cl. 130-27.
Knight, Francis J.; and Konopka, Barbara A., to Johnson & Johnson. Hypodermic syringe assembly. 3,556,099, Cl. 128-218.
Knowlton, Harold E.: *See—*
Beck, Robert R.; Knowlton, Harold E.; and Mc Coy, Charles S.,3,556,986.
Knudsen, John P.; Mallonee, William C.; and Martin, Robert E., to Monsanto Company. Porous nylon fiber rods. 3,555,806, Cl. 57-153.
Kobayashi, Tsuyoshi: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,557,092.
Kobek, Leonard J.: *See—*
Bara, Edwin S.; and Kobek, Leonard J.,3,556,534.
Kobetz, Paul: *See—*
Becker, Warren E.; Kobetz, Paul; and Nelson, Gunner E.,3,557,174.
Kobus, Stanislas; Salle, Adelin Eugene Gaston; Fontaine, Bernard Jean Robert; Termote, Alois Rene; and Masure, Jean Louis, to International Standard Electric Corporation. Automatic telecommunication switching system and information handling system. 3,557,315, Cl. 179-15.
Koch, Charles H., Jr.; and McGinnis, Norman M., to Young Windows, Inc. Frame assembly. 3,555,736, Cl. 49-504.
Koch, H., & Sons, Inc.: *See—*
Gaylord, John A., 3,556,565.
Koch, Werner, to Roland Offsetmaschinenfabrik Faber & Schleicher AG. Dampening device for a rotary printing press. 3,556,005, Cl. 101-147.
Koehn, Anthony S., to Kimberly-Clark Corporation. Sanitary napkin fastener. 3,555,624, Cl. 24-73.
Koehring Company: *See—*
Premo, Charles N., 3,556,460.
Koenig, Karl-Heinz; and Pommer, Horst, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of monoquarternary ammonium halides. 3,557,214, Cl. 260-567.6
Koeppe, Edward P., to Audio Magnetics Corporation. Cassette liner. 3,556,434, Cl. 242-199.
Kohler & Bovenkamp G.m.b.H., Firma: *See—*
Assauer, Helmuth, 3,556,288.
Koire, Viktor Evseevich: *See—*
Vitushkin, Vladimir Ivanovich; Koire, Viktor Evseevich; Pevzner, Semen Albertovich; Sidorenko, Alexandr Konstantinovich; Matsegora, Evgeny Alexandrovich; and Eskin, Vladimir Iosifovich,3,555,961.
Koizumi, Shun: *See—*
Kometani, Yutaka; Koizumi, Shun; Suzuki, Takeshi; and Okuno, Chuzo,3,557,051.
Koizumi, Shun; and Inamura, Keizo, to Daikin Kogyo Kabushiki Kaisha, and Kansai Paint Company Limited. Stabilized vinyl fluoride polymers. 3,557,050, Cl. 260-45.8
Kojima, Shigeo, to Nippon Kokan Kabushiki Kaisha. Method of manufacturing electrically welded pipes. 3,555,869, Cl. 72-177.
Kojima, Tamotsu: *See—*
Yamamoto, Toshihiko; Fujiwara, Mitsuto; Kojima, Tamotsu; and Sakamoto, Kenro,3,556,799.
Kolbe, Joachim. Polyurethane cushion support for vehicles. 3,556,553, Cl. 280-112.
Kolhagen, Walter: *See—*
Hass, Karl; Kolhagen, Walter; Czehovsky, Gunther; and Konermann, Hans-Ewald,3,556,975.
Kolibas, James A., to Addressograph-Multigraph Corporation. Liquid development means for electrostatic copiers. 3,556,653, Cl. 355-10.
Komatsu, Sakan: *See—*
Naito, Ryunosuke; Komatsu, Sakan; and Yamane, Saburo,3,556,286.
Kometani, Yutaka; Koizumi, Shun; Suzuki, Takeshi; and Okuno, Chuzo, to Daikin Kogyo Kabushiki Kaisha, and Kansai Paint Company Limited. Stabilized vinyl fluoride polymers. 3,557,051, Cl. 260-45.8
Kondo, Eiroku: *See—*
Kimura, Ryoichi; Ii, Chikai; Itoh, Kazuo; and Kondo, Eiroku,3,557,316.
Kondo, Kishichiro: *See—*
Ito, Kenji; and Kondo, Kishichiro,3,557,185.
Kondo, Yoshio: *See—*
Sugimoto, Katsumi; Kondo, Yoshio; and Fukui, Sachio,3,557,253.
Konermann, Hans-Ewald: *See—*
Hass, Karl; Kolhagen, Walter; Czehovsky, Gunther; and Konermann, Hans-Ewald,3,556,975.
Koninklijke Nederlandsche Gist-en Spiritusfabriek N.V.: *See—*
Lens, Jan; and Marx, Arthur F., 3,557,162.
Weber, Hubert Antonius; and Molenaar, Adrianus Pieter, 3,557,280.
Konishiroku Photo Industry Co., Ltd.: *See—*
Yamamoto, Toshihiko; Fujiwara, Mitsuto; Kojima, Tamotsu; and Sakamoto, Kenro, 3,556,799.
Konopka, Barbara A.: *See—*
Knight, Francis J.; and Konopka, Barbara A.,3,556,099.
Konus-Kessel Gesellschaft fur Warmetechnik mbH & Co. KG: *See—*
Sander, Wolfgang, 3,556,201.
Koons, Russell E., to Monsanto Company. Asphaltic based fire-resistant compositions utilizing vermiculite ore intumescing agent. 3,556,819, Cl. 106-15.
Koopmann, Juergen: *See—*
Weitz, Hans-Martin; Merger, Franz; and Koopmann, Juergen,3,557,187.
Kopp, Gerhard, to Entwicklungsring Sud GmbH. Apparatus for the disposal of aircraft engine leakage fluids. 3,556,444, Cl. 244-135.
Koppelmann, Eldo K., to Madison Industries, Inc. Roller burnishing tool. 3,555,643, Cl. 29-90.
Kopper-Wistra-Ofenbau Gesellschaft mit Duesseldorf- Heerdt: *See—*
Knaak, Rudiger; and Sitte, Richard, 3,556,493.
Koppers Company, Inc.: *See—*
Hyde, Glenn F.; and Cromwell, John E., 3,556,747.
Kinzler, Raymond C.; and Nestler, Gilbert C., 3,556,948.
Kumper, Ernst, 3,556,947.
Radusch, Paul, 3,556,721.
Vietorisz, Joseph A., 3,556,412.
Kopsch, Heinz; Wilbring, Gunther; Fay, Paul; and Hanf, Wilhelm, to Schildkrot AG Vorm Rheinische Gummi- und Celluloid- Fabrik. Doll with skin-covered articulated skeleton. 3,555,723, Cl. 46-161.
Korenaga, Hiroshi: *See—*
Yamada, Eiji; Korenaga, Hiroshi; and Akamatsu, Takashi,3,557,155.
Korn, Daniel J., Sr.,: *See—*
Huver, Ben, 3,556,454.
Kosterka, Donald W., to Album Graphics, Inc. Phonograph record album package. 3,556,391, Cl. 229-68.
Koszman, Ihor: *See—*
Kivlen, John A.; and Koszman, Ihor,3,557,241.
Kotos, Peter, to General Electric Company. Control at substantially line potential for a high voltage D-C circuit breaker. 3,557,382, Cl. 307-139.
Kovalev, Sergei Nikolaevich: *See—*
Ruban, Feodosy Grigorievich; and Kovalev, Sergei Nikolaevich,3,556,820.
Kowell, Edward L., to Pomeroy, J. H., & Company, Inc. Method for molding a concrete railroad tie. 3,557,274, Cl. 264-275.
Koyama, Takuji; and Nosaka, Hiroshi, to Mitsubishi Jukogyo Kabushiki Kaisha. Automatic flow control valve. 3,556,135, Cl. 137-501.
Koziski, Stephen S. Earth auger. 3,556,232, Cl. 175-88.

Kozlowski, Theodore R.; and Krygier, Dennis A., to Corning Glass Works. Alkali metal salt bath with alkali metal acetate additive for treatment of glasses and glass- ceramics. 3,556,757, Cl. 65-30.
Kramer, Dean C., to Martinson Manufacturing Co., Inc. Pitless well adapter. 3,556,213, Cl. 166-88.
Kramer, Hyman. Gravity-type stop hooks. 3,556,253, Cl. 182-210.
Kramer, Manfred, to Bosch, Robert, G.m.b.H. Electrohydraulic control arrangement. 3,556,154, Cl. 137-625.64
Krauss, Heinz Walter; Pedain, Josef; Zenner, Karl-Friedrich; Oertel, Gunter; and Holtschmidt, Hans, to Farbenfabriken Bayer Aktiengesellschaft. Polyacrylate-urethane lacquers. 3,557,043, Cl. 260-31.2
Kreider, Edward W.: *See—*
Piaskowski, Edward J.; and Kreider, Edward W.,3,556,207.
Kremer, Harry D.: *See—*
Baker, Stephen R.; and Kremer, Harry D.,3,556,168.
Kreuz, Kenneth L.: *See—*
Lachowicz, Donald R.; Simmons, Todd S.; and Kreuz, Kenneth L.,3,557,166.
Krikunov, Alexandr Eliseevich: *See—*
Strakhov, Vasily Vasilievich; Kuzmin, Jury Nikolaevich; Krikunov, Alexandr Eliseevich; Tombaev, Nikolai Ivanovich; Gisin, Iosif Borisovich; Agafonov, Anatoly Grigorievich; Zaitsev, Mikhail Pavlovich; Shender, Eda Grigortevna; Prityko, Vladimir Pavlovich; Makeeva, Maria Lukyanovna; and Soloviev, Anatoly Mikhailovich,3,555,991.
Kriss, Charles J.: *See—*
Schwarz, Julius Donald; Dokes, George E.; and Kriss, Charles J.,3,555,575.
Krohn, Harvey Berton; and Polito, Fred J., to Quaker Oaks Company, The. Chocolate marshmallow and process for production thereof. 3,556,812, Cl. 99-134.
Kronig, Walter; and Halcour, Kurt, to Farbenfabriken Bayer Aktiengesellschaft. Process for the selective hydrogenation of pyrolysis gasoline. 3,556,983, Cl. 208-27.
Kruer, Harold H.; Raney, Melvin A.; and Elmore, Clifford L., to Precision Welder & Flexopress Corporation. Fluid motor powered railway car. 3,556,013, Cl. 104-157.
Kruger, Harry, GmbH: *See—*
Scheffer, Harry, 3,556,690.
Krygier, Dennis A.: *See—*
Kozlowski, Theodore R.; and Krygier, Dennis A.,3,556,757.
Krzyzanowski, Robert A., to Milprint, Inc. Display package. 3,556,292, Cl. 206-56.
Kubicek, Donald H., to Phillips Petroleum Company. Storage of dienes. 3,557,225, Cl. 260-666.5
Kuckelsberg, Karl-Wilhelm: *See—*
Mobius, Hans-Gerold; Kuckelsberg, Karl-Wilhelm; and Lange, Klaus,3,555,658.
Kufrin, Robert J.: *See—*
Goldstein, Herbert; Ingram, Henry T.; and Kufrin, Robert J.,3,555,828.
Kuhle, Engelbert: *See—*
Holtschmidt, Hans; Zumach, Gerhard; Doring, Fritz; and Kuhle, Engelbert,3,557,133.
Kuhlemann, Karl Heinrich. Method for forming a socket shaped end on plastic pipes. 3,557,278, Cl. 264-318.
Kuhn, Hans, to Hatebur, F. B., A.G. Tool arrangement for the production of impact extruded articles. 3,555,874, Cl. 72-257.
Kuhn, Stephen J., to Dow Chemical Company, The. N-(Substituted phenyl) trialkyl phosphine imide. 3,557,208, Cl. 260-551.
Kuhn, William A., to Lear Siegler, Inc. Method of making spherical bearings. 3,555,645, Cl. 29-149.5
Kuhnl, Leopold K., to Eversharp, Inc. Adjustable ribbon-type razor. 3,555,681, Cl. 30-346.5
Kullman, Russell M.; Frick, John G., Jr.; and Reinhardt, Robert M., to United States of America, Agriculture. Acetylated methylol carbamated finishing agents with reduced formaldehyde odor for cellulosic containing textile materials. 3,556,713, Cl. 8-116.3
Kumashiro, Izumi: *See—*
Yamada, Yoshitaka; and Kumashiro, Izumi,3,557,113.
Kummer, Edson L.: *See—*
Valeska, John J.; Spencer, Donald N.; and Kummer, Edson L.,3,556,669.
Kumper, Ernst, to Koppers Company, Inc. Method for regulating the heating of coke ovens. 3,556,947, Cl. 201-1.
Kun, Kenneth A.: *See—*
Pollio, Frank X.; Kun, Kenneth A.; and Kunin, Robert,3,556,716.
Kunin, Robert: *See—*
Pollio, Frank X.; Kun, Kenneth A.; and Kunin, Robert,3,556,716.
Kunitz, Friedrich-Wilhelm: *See—*
Vanden, Eynde, Hector Alfons; Van Doorselaer, Marcel Karel; De Cat, Arthur Henri; Otto, Rigobert; Kunitz, Friedrich-Wilhelm; and Schulte, Walter,3,556,796.
Kunstmann, Martin Paul: *See—*
Andres, William W.; and Kunstmann, Martin Paul,3,557,151.
Kunz, Walter C.: *See—*
Andrews, James D.; and Kunz, Walter C.,3,556,758.
Kuraray Co., Ltd.: *See—*
Naito, Ryunosuke; Komatsu, Sakan; and Yamane, Saburo, 3,556,286.
Kurashiki Rayon Co., Ltd.: *See—*
Imai, Kiyokazu; and Okaya, Takuji, 3,557,250.
Kuratomi, Tatsuo. Continuous oxygen steel making process. 3,556,775, Cl. 75-60.
Kurihara, Norimitsu: *See—*
Date, Tasuku; Ishizuya, Akira; Yamazaki, Shuichi; Togashi, Nobuyuki; Shioya, Toshio; Kikuraku, Tomoki; and Kurihara, Norimitsu,3,556,064.
Kurtz, Bruce E.; and Fitch, Robert H., to Allied Chemical Corporation. Production of chloromethanes. 3,557,230, Cl. 260-657.
Kurtz, Bruce E.; Follows, Alan G.; and Hartford, Winslow H., to Allied Chemical Corporation. Production of chloromethanes. 3,557,231, Cl. 260-657.
Kusan, Inc.: *See—*
McLain, William R.; and Dunbar, George W., 3,555,722.
Kuth, Robert: *See—*
Neeff, Rutger; Gohrbandt, Wilhelm; and Kuth, Robert,3,557,154.
Kuzmin, Jury Nikolaevich: *See—*
Strakhov, Vasily Vasilievich; Kuzmin, Jury Nikolaevich; Krikunov, Alexandr Eliseevich; Tombaev, Nikolai Ivanovich; Gisin, Iosif Borisovich; Agafonov, Anatoly Grigorievich; Zaitsev, Mikhail Pavlovich; Shender, Eda Grigortevna; Prityko, Vladimir Pavlovich; Makeeva, Maria Lukyanovna; and Soloviev, Anatoly Mikhailovich,3,555,991.
Kyle, William K., to Westinghouse Electric Corporation. Temperature control system. 3,556,203, Cl. 165-29.
Kyriakakis, Basil M., to Xerox Corporation. Color manifold imaging process. 3,556,783, Cl. 96-1.2
Laazzaretto, Gianfranco: *See—*
Detilleux, Emile; Hild, Werner Georg; Laazzaretto, Gianfranco; Menchero-Lopez, Emilio Manuel; and Rometsch, Rudolf,3,557,013.
Lachowicz, Donald R.; Simmons, Todd S.; and Kreuz, Kenneth L., to Texaco Inc. Process for producing carboxylic acids and nitrogen containing intermediates from olefins. 3,557,166, Cl. 260-404.5
Lacroix, Philippe: *See—*
Vergne, Jean; Solaux, Leon; Robinet, Jean-Claude; and Lacroix, Philippe,3,557,062.
Laerdal, Asmund Sigurd. Valve for artificial respiration apparatus. 3,556,122, Cl. 137-102.
Lakritz, Julian; and Tyler, William E., III, to Esso Research and Engineering Company. Oily polymer having polyether chain and nitroalkyl groups. 3,557,181, Cl. 260-453.
Lallemant, Pierre Joseph Martin, to Bois-Colombes. Aircraft undercarriage. 3,556,440, Cl. 244-104.
Lambert, Forest J.; and Look, Philip T. Telescopic metal plank for scaffolds. 3,556,254, Cl. 182-223.
Lambert, John B.; and Marsh, Harold G., to Fansteel Inc., mesne. Process for making chromium alloys of dispersion-modified iron-group metals, and product. 3,556,769, Cl. 75-0.5
Lane, Curtis; and Greenstein, Leon, to Lanex Importing Company. Straw dispenser. 3,556,344, Cl. 221-234.
Lanex Importing Company: *See—*
Lane, Curtis; and Greenstein, Leon, 3,556,344.
Lange, Guenter: *See—*
Wilhelm, Hans; Gulbins, Klaus; Hartmann, Heinrich; and Lange, Guenter,3,557,048.
Lange, Klaus: *See—*
Mobius, Hans-Gerold; Kuckelsberg, Karl-Wilhelm; and Lange, Klaus,3,555,658.
Langemann, Albert: *See—*
Furst, Andor; Furlenmeier, Andre; Langemann, Albert; Waldvogel, Guy; Hocks, Peter; Kerb, Ulrich; and Wiechert, Rudolf,3,557,097.
Langer, Horst G.; and Brady, Thomas P., to Dow Chemical Company, The. Method for the preparation of cyclohexyltin trihalide. 3,557,172, Cl. 260-429.7
Langley, Lawrence W.: *See—*
Eckerlin, Herbert M.; and Langley, Lawrence W.,3,556,157.
LaPolla, Edmund M.: *See—*
Mitchell, Reid L.; Murphy, Charles F.; and LaPolla, Edmund M.,3,557,262.
Laporte Titanium Limited: *See—*
Durrant, George G.; and Brunskill, Ernest, 3,556,828.
Larsen, Lester J.: *See—*
MacDuff, Stanley I.; Cripe, Maxwell L.; and Larsen, Lester J.,3,556,608.
Larson, Fay N.; Henry, Francis B.; and Parks, Clyde, to Williams Brothers Company, mesne. Pipeline transportation of immiscible fluids. 3,556,761, Cl. 71-1.
Laser Systems Corporation: *See—*
Matthews, David R., 3,557,380.
Lasher, David C.: *See—*
Webb, Paul D.; and Lasher, David C.,3,556,697.
La Societe dite OXYSYNTHESE: *See—*
Thirion, Pierre, 3,556,727.
Laszlo, Tibor S., to Philip Morris Incorporated. Guarded razor blade. 3,555,682, Cl. 30-346.56
Latussek, Hans-Peter; and Dittrich, Werner, to Siemens Aktiengesellschaft. Apparatus for producing the stator of a DC miniature motor. 3,555,651, Cl. 29-205.
Laub, Henry C., Jr. Attachment for a doorknob. 3,556,571, Cl. 292-1.
Laubscher, Bion L.: *See—*
Sloan, John P., Jr.; and Laubscher, Bion L.,3,556,037.
Laughlin, William N., to Mark Tool Co., Inc. Centering device. 3,556,042, Cl. 166-241.

Launchbury, Alan, to Sperryn & Company Limited. Control for gas appliances. 3,556,133, Cl. 137-492.5

Lausch, Henry N.: *See—*
McCarty, Horace G.; Lausch, Henry N.; and Schwalm, Bruce D.,3,555,791.

Lavander, Edward J., to Xerox Corporation. Card handling apparatus. 3,556,651, Cl. 353-26.

Leach, Ralph M.: *See—*
Wooldridge, James E.; Leach, Ralph M.; and Wurtenberg, Oscar A.,3,555,785.

Leahy, Charles E.: *See—*
Leahy, Edward J.; and Leahy, Charles E.,3,556,325.

Leahy, Edward J.; and Leahy, Charles E. Spare tire carrier for vehicles. 3,556,325, Cl. 214-451.

Lear Siegler, Inc.: *See—*
Kuhn, William A., 3,555,645.

Leasure, John A., Jr.; Main, John H.; and Winer, Richard, to Hercules Incorporated. Rocket motor. 3,555,816, Cl. 60-39.47

Leasure, John A., Jr.; Main, John H.; and Winer, Richard, to Hercules Incorporated. Method for the manufacture of a rocket motor. 3,555,958, Cl. 86-1.

Leblans, Leopold Michael Lambert Joseph: *See—*
Gijsbers, Thomas Gerardus; Leblans, Leopold Michael Lambert Joseph; and Daniels, Henricus Petrus Cornelis,3,555,950.

Leclanche S.A.: *See—*
Ruetschi, Paul, 3,556,848.

Lecoanet, Andre P.: *See—*
Salvadori, Andre A.; Farrugia, Carmelo A.; Lecoanet, Andre P.; and Lovy, Philippe,3,556,750.

Lee, Joseph Y. C.: *See—*
D'Agostino, Vincent F.; and Lee, Joseph Y. C.,3,556,965.

Lee, Richard J. Trimming tool for cartridge cases. 3,555,641, Cl. 29-1.32

Lee, Richard J. Cartridge primer. 3,555,959, Cl. 86-37.

Lee, Richard J.; and Karll, Robert E., to Standard Oil Company (Indiana). Ashless dispersants for motor oils. 3,556,995, Cl. 252-39.

Leeds, Winthrop M.; and Spindle, Harvey E., to Westinghouse Electric Corporation. Downstream piston-type compressed-gas circuit interrupters. 3,557,330, Cl. 200-148.

Leesona Corporation: *See—*
Eisenhammer, Karl, 3,556,430.
Oswin, Harry G.; and Blurton, Keith F., 3,556,849.

Lefort, Marcel: *See—*
Bazouin, Andre; and Lefort, Marcel,3,557,176.

Leger, Andre: *See—*
Fouche, Jean Clement Louis; and Leger, Andre,3,557,116.

Leibeling, Heinz: *See—*
Axthammer, Ludwig; Leibeling, Heinz; and Wossner, Felix,3,556,617.

Leiber, Heinz, to Teldix GmbH. Brake control system for preventing wheel locking. 3,556,610, Cl. 303-21.

Leiga, Algrid G.: *See—*
Roth, Walter; Gallo, Charles F.; Leiga, Algrid G.; and McInally, John A.,3,557,367.

Leinbach, Donald K., to University Music Editions, Inc. Microfiche holder. 3,555,713, Cl. 40-104.19

Leinbach, Ralph C., Jr.: *See—*
Post, Carl B.; Leinbach, Ralph C., Jr.; and Sullivan, Michael D.,3,556,770.

Leister, Norman A., to Rohm and Haas Company. Compositions with sulfunyl-containing alkenylsuccinates. 3,556,997, Cl. 252-48.6

Leitner, Hans; and Wintersberger, Karl, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Reductive dimerization of acrylonitrile. 3,557,186, Cl. 260-465.8

Lely Ltd.: *See—*
MacKinnon, Ian Archie, 3,556,127.

Lemelson, Jerome H. Composite reinforced plastic foam sheet. 3,556,918, Cl. 161-55.

Lemery, Jean-Paul, to Ets Carpano & Pons. Fishing reel. 3,556,427, Cl. 242-84.1

Lemforder Metallwaren AG., Firma: *See—*
Ulderup, Jurgen, 3,555,851.

Leningradsky Metallichesky zavod Imeni XXII Siezda KPSS: *See—*
Marbukh, Veniamin Anatolievich; Lychak, Veniamin Samuilovich; Paikin, Lazar Ilich; Matveev, Vladimir Alexeevich; Semenov, Vasily Vasilievich; Stepura, Emil Fedorovich; and Fedorov, Vasily Nikolaevich, 3,556,668.

Lenker, Paul E., to Bendix Corporation, The. Fluid quantity indicating system. 3,555,904, Cl. 73-313.

Lens, Jan; and Marx, Arthur F., to Koninklijke Nederlandsche Gist-en Spiritusfabriek N.V.Process for the preparation of 17α-monoesters of 11β,17α,21-trihydroxysteroids. 3,557,162, Cl. 260-397.45

Lenz, Arnold; and Rogler, Walter, to Dynamit Nobel Aktiengesellschaft. Preparation of orthosilicic acid tetramethyl esters. 3,557,179, Cl. 260-448.8

Leonard, Edward Charles: *See—*
Loshaek, Samuel; and Leonard, Edward Charles,3,557,041.

Leonard, Louis H., Jr., to Carrier Corporation. Variable vapor pressure absorption refrigeration systems. 3,555,839, Cl. 62-101.

Leonard, Louis H., Jr., to Carrier Corporation. Refrigerant condensate dilution in absorption refrigeration systems. 3,555,840, Cl. 62-101.

Leonard, Louis H., Jr., to Carrier Corporation. Heating and cooling system. 3,556,200, Cl. 165-2.

Leonardini, Ida M. Therapeutic chair. 3,556,088, Cl. 128-33.

Lepetit S.p.A.,-Gruppo per la Ricerca Scientifica e la Produzione Chimica Farmaceutica: *See—*
Bellasio, Elvio; Testa, Emilio; Maffii, Giulio; and Schiatti, Pierfranco, 3,557,108.

Lepp, Stephen; Studley, Edward; and Weiss, Jonas, to American Standard Inc. Ion-change-responsive switch. 3,557,327, Cl. 200-61.04

Lerner, Leonard J., to Squibb, E. R., & Sons, Inc. Method of regulating estrus in the cat. 3,557,282, Cl. 424-241.

Letter, Eugene C. Photosensitive element including electron conducting layer, electron sensitive layer and photoconductive layer. 3,556,787, Cl. 96-1.8

Leutwyler, Paul; and Wunsch, Alfred, to Aktiengesellschaft Brown, Boveri & Cie. Aerodynamic pressure-wave machine. 3,556,680, Cl. 417-64.

Levenstein, Harold; Goldstein, Albert; and Hebling, Audrey J., to United States of America, Navy. Device for determining birefringence. 3,556,662, Cl. 356-114.

Levey, Robert F.; and Levey, Sandra R. Artificial flower including a pierceable casing containing a scent-producing substance. 3,556,916, Cl. 161-28.

Levey, Sandra R.: *See—*
Levey, Robert F.; and Levey, Sandra R.,3,556,916.

Levin, Gilbert B. Multiple load rubber band gun. 3,556,072, Cl. 124-19.

Levine, Barry H.: *See—*
Gibbs, Melvin B.; Golding, James L.; Levine, Barry H.; and Novak, John P.,3,556,866.

Levine, Seymour D., to Squibb, E. R., & Sons, Inc. Synthesis of steroids. 3,557,087, Cl. 260-239.

Levy, Alan J.; and Litt, Morton H., to Allied Chemical Corporation. Acyloxyalkyl substituted oxazolines. 3,557,136, Cl. 260-307.

Levy, Mortimer; and Pundsack, Arnold L., to Xerox Corporation. Migration imaging process. 3,556,781, Cl. 96-1.

Levy, Paul F., to Du Pont de Nemours, E. I., and Company. Mechanically stable thermocouple and method for making the same. 3,556,865, Cl. 136-233.

Lewis, Colin Gwyn: *See—*
Douglass, Walter; and Lewis, Colin Gwyn,3,556,371.

Lewis, Peter Noel: *See—*
Edwards, Douglas Cameron; and Lewis, Peter Noel,3,557,064.

Lewis, Richard William, to Du Pont de Nemours, E. I., and Company. Method and apparatus for regulating heating in a microwave resonant cavity. 3,557,334, Cl. 219-10.55

Lewis, Richard, to Stewart and Lloyds Limited. Ultrasonic jet probes. 3,555,891, Cl. 73-71.5

Ley, Kurt; Eholzer, Ulrich; Nast, Roland; Metzger, Karl-Georg; and Fritsche, Dieter, to Farbenfabriken Bayer Aktiengesellschaft. 2-Halomethyl-3-carboxylic acid amidoquinoxaline-1, 4-di-N-oxides and their production. 3,557,109, Cl. 260-250.

Libit, Sidney M. Child-resistant closures. 3,556,332, Cl. 215-9.

Licentia Patent-Verwaltungs-G.m.b.H.: *See—*
Ginsbach, Karl-Heinz; and Schimmer, Rigobert, 3,556,878.

Lichtenstern, Benjamin, to Etablissement SaLGaD. Telescopic gunsight including level means. 3,556,666, Cl. 356-249.

Liebel, Julius: *See—*
Schmidt, Ernst; and Liebel, Julius,3,556,061.

Liebenberg, Johannes J., to Tobacco Research and Development Institute Limited. Pneumatic conveyance of rod-shaped articles. 3,556,603, Cl. 302-2.

Lignes Telegraphiques & Telephoniques: *See—*
Balza, Claude; and Maniere, Maurice Auguste Francois Joseph, 3,557,356.

Lincer, Marvin H.: *See—*
Dittman, Egon A.; and Lincer, Marvin H.,3,555,990.

Lincoln, Frank H.; Schneider, William P.; and Spero, George B., to Upjohn Company, The. 6 α-Fluoro-16-methyl-4-pregnene 3,20-diones and intermediates produced in the synthesis thereof. 3,557,158, Cl. 260-397.45

Lincoln Laboratories, Inc.: *See—*
Hein, Gary L., 3,556,080.

Lind, Evald T. G.; and Skylvik, Arnold R., to Aktiebolaget Cerbo. Plastic container and closure. 3,556,339, Cl. 220-60.

Lindblad, Lars Olof Ingemar: *See—*
Lindh, Torsten Lennartson; and Lindblad, Lars Olof Ingemar,3,556,885.

Lindblad, Stig Martin. Safety belt clasp. 3,555,632, Cl. 24-240.

Linde Aktiengesellschaft: *See—*
Schramm, Walter, 3,555,836.

Linder, Robert G.: *See—*
Curran, Bernard E.; Gartner, Rodney W.; and Linder, Robert G.,3,555,756.

Lindgren, Paul G. Flail-type material spreader with load opener. 3,556,413, Cl. 239-658.

Lindh, Torsten Lennartson; and Lindblad, Lars Olof Ingemar, to AB Tetra Pak. Device for use in machines for manufacturing plastic foil covered paper. 3,556,885, Cl. 156-244.

Liner Technology, Inc.: *See—*
Zemlin, John C., 3,557,032.

Linfield, Warner M.: *See—*
Kashin, Philip; and Linfield, Warner M.,3,557,293.

Linhart, Otto C.: *See—*
Hanzlik, Alvin S.; Linhart, Otto C.; and Putze, Marvin D.,3,556,821.

Link, Fred W.; Vandesteeg, Wayne H.; and Carrell, Donald D., to Cummins Engine Company, Inc. Multi-fuel compensator. 3,556,160, Cl. 138-46.

Lipton, Thomas J., Inc.: *See—*
Creswick, Norman S., 3,556,813.

Lithium Corporation of America, Inc.: *See—*
Bach, Ricardo O.; Kamienski, Conrad W.; Dellinger, Matthew Henry; Mitchem, Luther C.; and Morrison, Robert C., 3,557,220.

Litt, Morton H.: *See—*
Levy, Alan J.; and Litt, Morton H.,3,557,136.

Little, Arthur D., Inc.: *See—*
Hidden, William P.; and Hunt, Robert E., 3,556,049.

Little, Robert K., to RKL Controls, Inc. Pinch type valve. 3,556,461, Cl. 251-5.

Little, Robert K., to RKL Controls, Inc. Diaphragm valve assembly and method of making same. 3,556,465, Cl. 251-61.1

Litvinov, Anatoly Ivanovich: *See—*
Niskovskikh, Vitaly Maximovich; Litvinov, Anatoly Ivanovich; Sobolev, Vladimir Nikolaevich; Gelfenbein, Evgeny Junkhimovich; and Bykov, Leonid Alexandrovich,3,556,349.

Lloyd Chain Corporation: *See—*
Schlueter, Don M., 3,556,293.

Lockheed Aircraft Corporation: *See—*
Arwine, Ulysses Stanford, 3,556,075.
Goldwater, Irving T., 3,555,890.

Lodge & Shipley Company, The: *See—*
Rowekamp, Edward F., 3,555,770.
Rowekamp, Edward F., 3,555,773.

Loeb, William E.: *See—*
Gorham, William F.; and Loeb, William E.,3,556,881.

Loeffler, Herbert: *See—*
Wesch, Ludwig; Pfister, Marcel; and Loeffler, Herbert,3,556,905.

Loew, Theodore, to Cee Bee Mfg. Co., Inc. Cushioning members and methods of making the same. 3,556,924, Cl. 161-160.

Loge, Hans, to Kaltenbach & Voigt. Dental angle handpiece for root canal treatment. 3,555,685, Cl. 32-57.

Lohse, Friedrich: *See—*
Schmid, Rolf; Lohse, Friedrich; Fisch, Willy; and Batzer, Hans,3,557,035.
Schmid, Rolf; Lohse, Friedrich; Fisch, Willy; and Batzer, Hans,3,557,036.

Loimaranta, Kalevi: *See—*
Florin, Bengt; and Loimaranta, Kalevi,3,557,307.

Lomax, George Franklin, Jr., to Sperry Rand Corporation. Electrostatic application of solid lubricants. 3,556,255, Cl. 184-1.

Lomax, Ronald William, to International Standard Electric Corporation. Optical binary counter. 3,557,346, Cl. 235-92.

Long, Henry H.: *See—*
Long, Josiah H.; Long, Wilbert W.; and Long, Henry H.,3,555,716.

Long, Josiah H.; Long, Wilbert W.; and Long, Henry H. Fishing pole holder. 3,555,716, Cl. 43-17.

Long Manufacturing Co., Inc.: *See—*
Atkinson, Wallace E., 3,555,860.

Long, Wilbert W.: *See—*
Long, Josiah H.; Long, Wilbert W.; and Long, Henry H.,3,555,716.

Longshaw, William J.; Wilson, Roy C., Jr.; and Ridenour, James, to Pacific Western Extruded Products, Inc. Method for cold forming beaded plastic tubing. 3,557,275, Cl. 264-296.

Look, Philip T.: *See—*
Lambert, Forest J.; and Look, Philip T.,3,556,254.

Lorke, Horst: *See—*
Diery, Helmut; Rittner, Siegbert; and Lorke, Horst,3,556,994.

Loshaek, Samuel; and Leonard, Edward Charles, to Borden Company, The. Vinylidene chloride interpolymers. 3,557,041, Cl. 260-29.6

Lotz, Rudolf: *See—*
Sommer, Erwin; Wiloth, Fritz; Werner, Helmut; Lotz, Rudolf; and Wick, Gerhard,3,556,927.

Loukotsky, Jack. Prefabricated modular power substation. 3,556,310, Cl. 211-177.

Louzil, Friedrich; and Habelt, Gerhard, to U.S. Philips Corporation. Belt shifting device. 3,555,917, Cl. 74-242.3

Lovy, Philippe born,: *See—*
Salvadori, Andre A.; Farrugia, Carmelo A.; Lecoanet, Andre P.; and Lovy, Philippe,3,556,750.
Salvadori, Andre A.; Farrugia, Carmelo A.; Lecoanet, Andre P.; and Lovy, Philippe,3,556,750.

Low, William W.: *See—*
Skrypa, Michael J.; Baran, Francis R.; and Low, William W.,3,557,010.

Lowe, Lester F.: *See—*
Roosild, Sven A.; Mc Laughlin, Walter A.; and Lowe, Lester F.,3,556,658.

Lowell, Seymour, to Quantachrome Corporation. Incremental method for surface area and pore size determination. 3,555,912, Cl. 73-432.

Luborsky, Fred E., to General Electric Company. Method for obtaining circumferential orientation of magnetic films electroplated on wires. 3,556,954, Cl. 204-28.

Lucas, Joseph, (Industries) Limited: *See—*
Bloom, Joseph Lewis, 3,555,815.

Luderer, Fred: *See—*
Gebhardt, Otto; and Luderer, Fred,3,556,400.

Luger, Emil J., Jr.: *See—*
De Crosta, Edward A.; and Luger, Emil J., Jr.,3,557,344.

Luk Lamellen-und Kupplungsbau Gesellschaft m. beschrankter Haftung: *See—*
Maucher, Paul, 3,556,273.

Lummus Company, The: *See—*
Riegel, Herbert, 3,557,229.

Lumpkin, William B.; and Jennings, John E., to Phillips Petroleum Company. Method and apparatus for impeding gas flow into production wells. 3,556,222, Cl. 166-314.

Lund, Robert S., to Pettibone Mulliken Corporation. Apparatus and method for making foundry and articles. 3,556,195, Cl. 164-16.

Lunde, Einar O. Container fastener means. 3,556,456, Cl. 248-361.

Lundin, Charles E.: *See—*
Turkisher, Robert; and Lundin, Charles E.,3,556,779.

Lundvall, Carl L., II, to RCA Corporation. Method of mounting a heater in a tubular cathode. 3,555,640, Cl. 29-25.16

Lusteroid Container Company, Inc.: *See—*
McGrath, Frank, 3,556,884.

Lustig, Eduard M., to Catalytic Engineering & Manufacturing Corporation. Air purifying and humidity control system. 3,555,787, Cl. 55-179.

Lux, George K.; Ellis, James B.; and Schulze, John J., to Addressograph-Multigraph Corporation. Photoelectrostatic copying machine. 3,556,655, Cl. 355-55.

Luxaire, Inc.: *See—*
Hine, Louis P., Jr., 3,556,707.

Lychak, Veniamin Samuilovich: *See—*
Marbukh, Veniamin Anatolievich; Lychak, Veniamin Samuilovich; Paikin, Lazar Ilich; Matveev, Vladimir Alexeevich; Semenov, Vasily Vasilievich; Stepura, Emil Fedorovich; and Fedorov, Vasily Nikolaevich,3,556,668.

Lykkeberg, Alfred. Meat slicing machine. 3,556,185, Cl. 146-153.

Lynch, Charles A., to FMC Corporation. Flame retardant rayon incorporating bis-diphenyl phosphate derivative of polyalkylene glycols. 3,556,825, Cl. 106-168.

Lynch, John Andrew, Jr.: *See—*
Johns, Martha Marie; and Lynch, John Andrew, Jr.,3,556,919.

Lynch, Paul J.: *See—*
Modahl, Robert J.; and Lynch, Paul J.,3,555,841.

Lyness, Warren I., to Procter & Gamble Company, The. N-halosulfoximines. 3,557,206, Cl. 260-551.

Lyness, Warren Irl: *See—*
O'Connor, David Evans; and Lyness, Warren Irl,3,557,221.

M & J Valve Company: *See—*
Grove, Marvin H.; and Van Arsdale, Lyle R., 3,556,472.

Maag, Peter: *See—*
Schnee, Walter; and Maag, Peter,3,556,280.

MacDuff, Stanley I., to Bendix Corporation, The. Hydraulic pressure modulator. 3,556,609, Cl. 303-21.

MacDuff, Stanley I.; Cripe, Maxwell L.; and Larsen, Lester J., to Bendix Corporation, The. Anti skid means. 3,556,608, Cl. 303-21.

Mach, Thomas F.; and Taber, David, to Armour and Company. Electron irradiation process. 3,556,964, Cl. 204-158.

Machek, John A., to Wagner Electric Corporation. Anti-skid mechanism. 3,556,466, Cl. 251-61.3

Machinefabriek Stork-Volma N.V.: *See—*
De Boer, Geert, 3,555,698.

MacKellar, Donald G.: *See—*
Blumbergs, John H.; and MacKellar, Donald G.,3,557,065.

MacKinnon, Ian Archie, to Lely Ltd. Devices for distributing liquid. 3,556,127, Cl. 137-205.

MacLean Lock Nut Co.: *See—*
Schwiebert, Phillip D.; and Steck, Edward S., 3,556,019.

Mac Williams, William Andrew; and Bithel, Leonard, to Chemcell Limited. Extraction of soluble material from natural deposits. 3,556,596, Cl. 299-5.

Macy, Valentine E., Jr.: *See—*
Allen, Earle F., 3,556,259.

Madison Industries, Inc.: *See—*
Koppelmann, Eldo K., 3,555,643.

Maehara, Shinichiro: *See—*
Hirata, Osamu; and Maehara, Shinichiro,3,556,492.

Maekawa, Hideyuki; Sakamoto, Teruo; and Shimada, Yasuo, 1/2 to Shionogi & Co., Ltd., and 1/2 to Kabushiki Kaisha Kikusui Seisakusho. Apparatus for producing molded article. 3,555,608, Cl. 18-20.

Maffii, Giulio: *See—*
Bellasio, Elvio; Testa, Emilio; Maffii, Giulio; and Schiatti, Pierfranco,3,557,108.

Magadini, Charles R. Concrete slab joint construction. 3,555,753, Cl. 52-227.

Magnesita S.A.: *See—*
Cardoso, Jose Joaquim, 3,556,359.

Main, John H.: *See—*
Leasure, John A., Jr.; Main, John H.; and Winer, Richard,3,555,816.
Leasure, John A., Jr.; Main, John H.; and Winer, Richard,3,555,958.

Makeeva, Maria Lukyanovna: *See—*
Strakhov, Vasily Vasilievich; Kuzmin, Jury Nikolaevich; Krikunov, Alexandr Eliseevich; Tombaev, Nikolai Ivanovich; Gisin, Iosif Borisovich; Agafonov, Anatoly Grigorievich; Zaitsev, Mikhail Pavlovich; Shender, Eda Grigortevna; Prityko, Vladimir

Pavlovich; Makeeva, Maria Lukyanovna; and Soloviev, Anatoly Mikhailovich,3,555,991.
Makin, Earle C., Jr.: *See—*
Gebhart, Herbert J., Jr.; and Makin, Earle C., Jr.,3,557,240.
Gebhart, Herbert J., Jr.; Makin, Earle C., Jr.; and Middlebrooks, Charles H.,3,557,239.
Malagari, Frank A., Jr., to Allegheny Ludlum Steel Corporation. Silicon steels containing selenium. 3,556,873, Cl. 148-31.55
Mallonee, William C., to Monsanto Company. Bonding polyamide articles by gaseous sulfur dioxide and chlorine. 3,556,895, Cl. 156-306.
Mallonee, William C.: *See—*
Knudsen, John P.; Mallonee, William C.; and Martin, Robert E.,3,555,806.
Mallory, Peter E.: *See—*
Alexander, Jack F.; Mallory, Peter E.; and Payne, Ronald C.,3,557,308.
Maloney, George T.: *See—*
Walck, George A., III; Carson, Ralph; and Maloney, George T.,3,556,294.
Malow, Egon: *See—*
Cramer, Gerhard; Heck, Gunter; and Malow, Egon,3,555,820.
Mammolito, Dominick V.: *See—*
Brundage, Clinton F.; and Mammolito, Dominick V.,3,556,283.
Mange, Franklin E.; Buriks, Rudolph S.; and Fauke, Allen R., to Petrolite Corporation. Use of ultra high molecular weight polymers as demulsifiers. 3,557,017, Cl. 252-339.
Manginelli, Ralph. Wax supplying apparatus for pattern molds. 3,556,403, Cl. 239-135.
Maniere, Maurice Auguste Francois Joseph: *See—*
Balza, Claude; and Maniere, Maurice Auguste Francois Joseph,3,557,356.
Mannesmann-Meer A.G.: *See—*
Gruber, Kurt W., 3,555,952.
Manning, Robert E.: *See—*
Anderson, Paul L.; and Manning, Robert E.,3,557,110.
Manning, Robert E., to Sandoz-Wander, Inc. 2-(2-Imidazolin and pyrimidin substituted methyl thio)-imidazoles and pyrimidines. 3,557,115, Cl. 260-256.5
Mantion, Roland G. Cable lasher. 3,556,483, Cl. 254-134.3
Manzoni, Angelo: *See—*
Tessarollo, Severino; and Manzoni, Angelo,3,557,326.
Marasso, Fred D.; and Rademacher, Robert E., to American Machine & Foundry Company. Quick change supply system. 3,556,316, Cl. 214-8.5
Marathon Manufacturing Company: *See—*
Nathe, Raymond J., 3,556,863.
Marathon Oil Company: *See—*
Haws, Gerald W.; Rael, Joseph L.; and Rhudy, John S., 3,556,221.
Marbukh, Veniamin Anatolievich; Lychak, Veniamin Samuilovich; Paikin, Lazar Ilich; Matveev, Vladimir Alexeevich; Semenov, Vasily Vasilievich; Stepura, Emil Fedorovich; and Fedorov, Vasily Nikolaevich, to Leningradsky Metallichesky zavod Imeni XXII Siezda KPSS. Electrohydraulic speed controller employed in hydroturbines. 3,556,668, Cl. 415-10.
Marchetti, Enzo, to Istituto Farmacologico Serono S.p.A.2-β-Hydroxy ethylamino-4,5-diphenyl-oxazole. 3,557,135, Cl. 260-307.
Marcus, Joel A. Clinical thermometer rotary shakedown device. 3,555,907, Cl. 73-373.
Maretka, Faye M. Golf accessory. 3,556,364, Cl. 224-5.
Margarit, Traian: *See—*
Anastasiu, Vasile Eugeniu; and Margarit, Traian,3,556,217.
Margaroli, John L.; and Cimperman, Fred J., to Ashlock, George W., Company. Apparatus and method for handling and pitting prunes. 3,556,281, Cl. 198-33.
Margerum, John D., to Hughes Aircraft Company. Method of inhibiting photopolymerization and products therefor. 3,556,794, Cl. 96-45.2
Margolis, Arnold E.; Margolis, Morris; and Foley, Charles F., to Marson, Inc. Flexible game board with ball openings. 3,556,527, Cl. 273-115.
Margolis, Morris: *See—*
Margolis, Arnold E.; Margolis, Morris; and Foley, Charles F.,3,556,527.
Mariev, Dmitry Ivanovich: *See—*
Gorbunov, Igor Konstantinovich; Avakov, Aram Vartanovich; and Mariev, Dmitry Ivanovich,3,556,676.
Marine Colloids, Inc.: *See—*
Moirano, Arthur L., 3,556,810.
Marine Commuter Corporation: *See—*
Reusser, Carl J., 3,556,886.
Maringer, Robert E.; and Rice, Leonard P., to American Potash & Chemical Corporation. Ternary damping alloy. 3,556,778, Cl. 75-134.
Mark Tool Co., Inc.: *See—*
Laughlin, William N., 3,556,042.
Marra, Alan A. Process for the preparation of rigid composite wood products. 3,557,263, Cl. 264-45.
Marschak, Howard J. Display rack. 3,556,023, Cl. 108-1.
Marsden, James G.; and Sterman, Samuel, to Union Carbide Corporation. Coating compositions for glass fibers. 3,556,754, Cl. 65-3.
Marsh, Harold E., Jr.; and Hutchinson, John J., to United States of America, National Aeronautics and Space Administration. Novel polycarboxylic prepolymeric materials and polymers thereof. 3,557,027, Cl. 260-2.5
Marsh, Harold G.: *See—*
Lambert, John B.; and Marsh, Harold G.,3,556,769.
Marson, Inc.: *See—*
Margolis, Arnold E.; Margolis, Morris; and Foley, Charles F., 3,556,527.
Martin, Daniel W., to Baldwin, D. H., Company. Acousto-electrical transducer for wind instrument. 3,555,956, Cl. 84-400.
Martin, Donald N., to Beckman Instruments, Inc. Automated incubation apparatus. 3,556,731, Cl. 23-253.
Martin, Larry C.; and Harvey, Richard D., to Penick & Ford Limited. Acetylation of starch. 3,557,091, Cl. 260-233.5
Martin, Robert E.: *See—*
Knudsen, John P.; Mallonee, William C.; and Martin, Robert E.,3,555,806.
Martin, Robert F.; and Harrison, Edward J., to United States of America, Air Force. Apparatus for correcting mass unbalance in a gyro. 3,555,913, Cl. 74-5.4
Martinkovic, Paul S.; and Symons, Lester M., to Uniroyal, Inc. Pneumatic tire method of fabrication and intermediate article. 3,556,891, Cl. 156-132.
Martinson Manufacturing Co., Inc.: *See—*
Kramer, Dean C., 3,556,213.
Maruyama, Isamu: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,557,092.
Marx, Arthur F.: *See—*
Lens, Jan; and Marx, Arthur F.,3,557,162.
Marzocchi, Alfred. Elastomer impregnated fibrous glass and methods for its manufacture. 3,556,844, Cl. 117-65.2
Maschinenfabrik Augsburg-Nurnberg Aktiengesellschaft: *See—*
Schmidt, Ernst; and Liebel, Julius, 3,556,061.
Mase, Hirozo, to Mie Seisakusho Kabushiki Kaisha. Channel selection assembly. 3,555,914, Cl. 74-10.6
Mason, Derek: *See—*
Moorhouse, Geoffrey; and Mason, Derek,3,555,926.
Massey-Ferguson G.m.b.H.: *See—*
Baumeister, Alois, 3,555,796.
Massucco, Arthur A., to Amicon Corporation. Anisotropic ultrafiltration membranes having adhering coating and methods of forming and using this membrane. 3,556,992, Cl. 210-23.
Mastracci, Michael L., to American Machine & Foundry Company. Anti-snag device. 3,556,278, Cl. 198-28.
Masuda, Kengi, to Daikin Kogyo Co., Ltd. Sliding plate-type directional control valve. 3,556,151, Cl. 137-625.21
Masure, Jean Louis: *See—*
Kobus, Stanislas; Salle, Adelin Eugene Gaston; Fontaine, Bernard Jean Robert; Termote, Alois Rene; and Masure, Jean Louis,3,557,315.
Matejka, Josef: *See—*
Zmatlik, Josef; Jisa, Miloslav; Sedlecky, Jaromir; Matejka, Josef; Mohelnicky, Josef; and Milichovsky, Bohumil,3,556,165.
Mathes, Howard E., to Procter & Gamble Company, The. Bundling machine. 3,555,771, Cl. 53-73.
Mathsson, Karl, Firma: *See—*
Ostlund, Rune Arvid Efraim, 3,556,451.
Matsegora, Evgeny Alexandrovich: *See—*
Vitushkin, Vladimir Ivanovich; Koire, Viktor Evseevich; Pevzner, Semen Albertovich; Sidorenko, Alexandr Konstantinovich; Matsegora, Evgeny Alexandrovich; and Eskin, Vladimir Iosifovich,3,555,961.
Matsuda, Shozo: *See—*
Okada, Hideya; Matsuda, Shozo; Ohbu, Misao; and Tamura, Hideo,3,556,869.
Matsunaga, Takao: *See—*
Hattori, Yoko; Ooji, Tamiki; Tanaka, Kiichiro; and Matsunaga, Takao,3,557,059.
Matsushita Electric Industrial Co., Ltd.: *See—*
Chiba, Hiroyuki; Tawara, Yoshio; and Hirota, Eiichi, 3,557,266.
Matsushita Electronics Corporation: *See—*
Iwasa, Hitoo; Yokoziwa, Masami; and Teramoto, Iwao, 3,556,841.
Matsuura, Toshiro, to Nippon Gakki Seizo Kabushiki Kaisha. Attack and decay switching circuit for electronic musical instrument. 3,557,297, Cl. 84-1.26
Matsuzaki, Atsushi, to Hitachi, Ltd. Automatic level control system for earth moving machines. 3,556,225, Cl. 172-4.5
Mattern, Ullrich: *See—*
Debray, Werner; Mattern, Ullrich; and Stieding, Lothar,3,556,870.
Matthews, David R., to Laser Systems Corporation. Radiation sensitive displacement measuring instrument. 3,557,380, Cl. 250-222.
Matthey, Maurice, to Tarex S.A. Machine-tool simulator. 3,555,690, Cl. 33-185.
Matveev, Vladimir Alexeevich: *See—*
Marbukh, Veniamin Anatolievich; Lychak, Veniamin Samuilovich; Paikin, Lazar Ilich; Matveev, Vladimir Alexeevich; Semenov, Vasily Vasilievich; Stepura, Emil Fedorovich; and Fedorov, Vasily Nikolaevich,3,556,668.
Maucher, Paul, to Luk Lamellen-und Kupplungsbau Gesellschaft m. beschrankter Haftung. Clutch disc with vibration dampeners in series. 3,556,273, Cl. 192-106.2
Maulding, Donald Roy: *See—*
Zweig, Arnold; and Maulding, Donald Roy,3,557,233.
Maurer, Robert E., to Bell Telephone Laboratories, Incorporated. Signaling guard circuit. 3,557,319, Cl. 179-84.

Maxham, Daniel W. Open end roving, spinning, and spinning and twisting machines. 3,555,802, Cl. 57-58.89
Maxwell, Kenneth H.: *See—*
Holloway, Henry; and Maxwell, Kenneth H.,3,556,875.
Mayer, Alfred, to RCA Corporation. Method of treating semiconductor devices. 3,556,879, Cl. 148-191.
Mayer, Karl: *See—*
Mitter, Mathias; and Mayer, Karl,3,556,004.
Mayo, Ralph Elliott; and Delany, Edward B., to Perkin-Elmer Corporation, The. Ion source for a mass spectrometer. 3,557,365, Cl. 250-41.9
Maytag Company, The: *See—*
Rottering, Quintin N., 3,556,275.
McAleenan, Kenneth, to Vita-Pakt Citrus Products Co. Panel mounting apparatus. 3,556,308, Cl. 211-134.
McAvoy, Bruce R., to Westinghouse Electric Corporation. Solid state microwave oven. 3,557,333, Cl. 219-10.55
McCarter, James T. Cooling means for an air conditioning system. 3,555,847, Cl. 62-286.
McCarthy, John, to Gar Wood Industries, Inc. Refuse packing system and method. 3,556,324, Cl. 214-152.
Mc Carthy, Richard H., to Stearns Electric Corporation. Caliper brake. 3,556,266, Cl. 188-171.
McCarty, Charles Bruce, to Procter & Gamble Company, The. Stabilized aqueous enzyme preparation. 3,557,002, Cl. 252-89.
McCarty, Horace G.; Lausch, Henry N.; and Schwalm, Bruce D., to Sperry Rand Corporation. Drive system for pull-type mower-conditioner machine. 3,555,791, Cl. 56-23.
McCarty, Jimmie G. Lamp fixture construction. 3,557,361, Cl. 240-78.
McClain, Rollin T., to Republic Steel Corporation. Metal articles with controlled finish. 3,556,874, Cl. 148-37.
McClintock, William A., to Phillips Petroleum Company. Temperature control of fluid separation systems. 3,555,837, Cl. 62-17.
McCloskey, Chester M.; Rees, Donald E.; and Hoff, George, to Norac Company, Inc., The. Nonhazardous polymerization initiators. 3,557,009, Cl. 252-186.
McClure, Gerald L.: *See—*
Winogrocki, Ray F.; Brzozowski, Stephen J., Jr.; and McClure, Gerald L.,3,557,328.
Mc Cluskey Wire Co., Inc.: *See—*
Kelley, Charles, Jr., 3,555,665.
Mc Coll, David Neil: *See—*
Stanley, Edward Sheridan; and Mc Coll, David Neil,3,556,915.
Mc Connaughay, Kenneth E. Aggregate binder and paving composition. 3,556,827, Cl. 106-279.
Mc Connell, Kenneth G.: *See—*
Jungk, Robert A.; and Mc Connell, Kenneth G.,3,556,806.
McCool, Edward J., to American Type Founders Co., Inc. Sheet counter and tab inserter. 3,555,978, Cl. 93-93.
McCormick, Robert C.: *See—*
Fibus, Clyde Kenneth; and McCormick, Robert C.,3,556,393.
Mc Coy, Charles S.: *See—*
Beck, Robert R.; Knowlton, Harold E.; and Mc Coy, Charles S.,3,556,986.
McCoy, Charles S., to Chevron Research Company. Catalyst coke control in a reforming reaction. 3,556,985, Cl. 208-65.
McCullough, Charles E., to Columbia Scientific Industries Corporation, mesne. Method and apparatus for measurement of cardiac output. 3,556,082, Cl. 128-2.05
McDonald, Robert T.: *See—*
United States of America, National Aeronautics and Space Administration, Administrator, 3,555,898.
McDonnell Douglas Corporation: *See—*
Colombo, Gerald V.; and Mills, Edgar S., 3,557,011.
Mc Fadden, Russell T., to Dow Chemical Company, The. Stabilizing thiirane compounds. 3,557,145, Cl. 260-327.
McGaughey, Robert L., to Southern Precision Industries, Inc. Barbecue grill. 3,556,078, Cl. 126-25.
McGinnis, Norman M.: *See—*
Koch, Charles H., Jr.; and McGinnis, Norman M.,3,555,736.
McGough, Paul E., to Shaw-Walker Company, The. Bookkeeping apparatus. 3,556,562, Cl. 282-29.
McGrath, Frank, to Lusteroid Container Company, Inc. Plastic tube construction. 3,556,884, Cl. 156-69.
McInally, John A.: *See—*
Roth, Walter; Gallo, Charles F.; Leiga, Algrid G.; and McInally, John A.,3,557,367.
Mc Intyre, James Eric; and Robertson, Michael Mundie, to Imperial Chemical Industries Limited. Aqueous dispersion of block or graft polymer useful in surface modifying treatment of polyester shaped articles. 3,557,039, Cl. 260-29.2
McKee, Oscar E. Trailer hitch. 3,556,558, Cl. 280-406.
McKeever, L Dennis; and Waack, Richard, to Dow Chemical Company, The. Electrolytic formation of organometallic compounds. 3,556,960, Cl. 204-59.
McLain, William R.; and Dunbar, George W., to Kusan, Inc. Transparent dog heart pull toy. 3,555,722, Cl. 46-103.
Mc Laughlin, Walter A.: *See—*
Roosild, Sven A.; Mc Laughlin, Walter A.; and Lowe, Lester F.,3,556,658.
Mc Millan, Allen G. Apparatus for incasing product. 3,555,775, Cl. 53-181.
McNeil Corporation: *See—*
Mueller, Carl H.; Wegmann, Jerome B.; Kitchen, Clarence E.; and Weitzel, George, 3,556,481.
McVeigh, Harry A.: *See—*
Stover, William A.; and McVeigh, Harry A.,3,556,988.
McWilliams, Orcenith D.; and Waggoner, John B., to Caterpillar Tractor Company. Variable flow modulated valve. 3,556,155, Cl. 137-625.69
Mead Johnson & Company: *See—*
Weber, Abraham; and Frossard, Jacques Jean, 3,557,291.
Mead Specialties Co., Inc.: *See—*
Coniglio, Ignazio James, 3,555,966.
Meadows, Geoffrey W., to Du Pont de Nemours, E. I., and Company. Apparatus for hot pressing refractory materials. 3,555,597, Cl. 18-4.
Meakin, Edgar N. Steam jacketed screw compaction conveyor. 3,555,998, Cl. 100-93.
Meany, Bernard A.: *See—*
Brumfield, Phyllis A., 3,556,107.
Mecklenborg, Kenneth T., to Emery Industries, Inc. Method of selectively killing undesirable weeds. 3,556,767, Cl. 71-122.
Medearis, Anna L.: *See—*
Smith, Glenn R., 3,556,591.
Meditz, Ludwig F. Airborne vehicle. 3,556,438, Cl. 244-4.
Meek, William H.: *See—*
Fuchsman, Charles H.; and Meek, William H.,3,557,194.
Mehnert, Gottfried, to Conduco A.G. Apparatus for blow molding of plastic articles. 3,555,598, Cl. 18-5.
Meitinger, Heinz, to Timex Corporation. Horological indexing device. 3,555,810, Cl. 58-23.
Meldau, Robert F., to Phillips Petroleum Company. Eccentric gravel packed well liner. 3,556,219, Cl. 166-278.
Mellett, Jesse B.; and Sutterfield, Tilford W., to Stewart-Warner Corporation. Electrical ignition and control system for fuel burner. 3,556,705, Cl. 431-258.
Melton, James O.: *See—*
Wilkinson, Thomas B.; Melton, James O.; Musser, Harry B.; and Thomas, Abraham L.,3,556,338.
Menard, Enrico: *See—*
Bickel, Hans; Bosshardt, Rolf; Fechtig, Bruno; Menard, Enrico; Mueller, Johannes; and Heinrich, Peter,3,557,104.
Mencacci, Samuel A., to International Machinery Corporation. Method of and apparatus for filling containers. 3,556,172, Cl. 141-11.
Menchero-Lopez, Emilio Manuel: *See—*
Detilleux, Emile; Hild, Werner Georg; Laazzaretto, Gianfranco; Menchero-Lopez, Emilio Manuel; and Rometsch, Rudolf,3,557,013.
Menge, Eberhard: *See—*
Diebold, Max; Menge, Eberhard; Hanschitz, Rudolf; and Weisshaar, Dieter,3,556,303.
Menius, Arthur C., Jr.; and Bentley, Harry Thomas, III, to Industrial Nucleonics Corporation. Liquid density measuring system. 3,555,880, Cl. 73-32.
Mennekes, Werner: *See—*
Domman, Gunther; and Mennekes, Werner,3,556,601.
Merck & Co., Inc.: *See—*
Bicking, John B., 3,557,114.
Christy, Marcia E., 3,557,144.
Dalhuisen, Albert J., 3,557,042.
Morse, Lewis D., 3,557,279.
Sarett, Lewis H.; Hoff, Dale R.; and Henry, David W., 3,557,138.
Merck, E., A.G.: *See—*
Scheuerbrandt, Gunter, 3,557,018.
Merger, Franz: *See—*
Weitz, Hans-Martin; Merger, Franz; and Koopmann, Juergen,3,557,187.
Merino, Peter John. Die supporting work table. 3,555,934, Cl. 76-4.
Merker, Leon: *See—*
Beals, Malcolm D.; and Merker, Leon,3,557,014.
Merritt, Henry Edward, to P. R. Motors Limited. Marine gearboxes. 3,555,920, Cl. 74-356.
Mertens, Willi, to Siemens Aktiengesellschaft. Method of producing an insulating sleeve of mica tape impregnated with thermosetting epoxide impregnating resin mixture and product thereof. 3,556,925, Cl. 161-163.
Mesek, Frederick K.: *See—*
Painter, Erle V.; Mesek, Frederick K.; and Shepherd, Robert C.,3,556,921.
Messerschmitt-Bolkow Gesellschaft mit beschrankter Haftung: *See—*
Buse, Wilhelm G.; Munding, German; and Weigelt, Heinrich, 3,555,824.
Messier, Albert J. Combination snack tray and back rest. 3,556,589, Cl. 297-230.
Messina, Nicholas V.; and Senior, Donald R., to Rohm and Haas Company. Stabilized fluids. 3,556,999, Cl. 252-78.
Messing, Ralph A., to Corning Glass Works. Enzyme stabilization. 3,556,945, Cl. 195-63.
Messrs. Gebruder Junghans G.m.b.H.: *See—*
von Zeppelin, Kurt; and Scholz, Gunther, 3,555,811.
Messrs, Markusches Werk Gesellschaft mit beschrankter Haftung: *See—*
Schroder, Hermann, 3,555,971.
Mesta Machine Company: *See—*
Hlafcsak, Joseph, 3,555,871.
Metal Bellows Corporation: *See—*
Jones, Geoffrey T., 3,556,272.
Metal Box Company Limited, The: *See—*
Rogers, John Anthony, 3,555,780.

Metal Processing Company: *See—*
Greis, Paul F., 3,556,491.
Metallgesellschaft Aktiengesellschaft: *See—*
Rausch, Hans; and Viereck, Hubert, 3,556,772.
Metzger, Karl-Georg: *See—*
Ley, Kurt; Eholzer, Ulrich; Nast, Roland; Metzger, Karl-Georg; and Fritsche, Dieter,3,557,109.
Meyer, Engelbert A., to Warren Fastener Corporation. Clip setting tools. 3,555,654, Cl. 29-230.
Meyer, Fred J., to Dow Chemical Company, The. Method of forming a paper containing gaseous filled spheres of thermoplastic resins. 3,556,934, Cl. 162-169.
Meyer, Ronald K., to Electro/Systems, Inc. Hospital light. 3,557,359, Cl. 240-1.4
Meyer, Wilhelm. Brake device for the wheel of a conveyance. 3,556,260, Cl. 188-74.
Meyers, Wheeler W., to Corning Glass Works. Article handling. 3,556,578, Cl. 294-64.
Michael, Eugene M., to General Time Corporation. Long ringing kitchen timer. 3,555,809, Cl. 58-21.13
Michelet, Daniel: *See—*
Bizot, Jean; Bourat, Guy; and Michelet, Daniel,3,556,961.
Mickelson, Grant A.: *See—*
Young, Dean Arthur; and Mickelson, Grant A.,3,557,024.
Micro Wave Voice Corporation: *See—*
Quick, Clifford F., 3,556,093.
Middlebrooks, Charles H.: *See—*
Gebhart, Herbert J., Jr.; Makin, Earle C., Jr.; and Middlebrooks, Charles H.,3,557,239.
Middlebusher, Paul L.; and Buck, William R., to Continental Oil Company. Metering pump. 3,556,679, Cl. 417-63.
Midland-Ross Corporation: *See—*
Albanese, Damiano J., 3,556,313.
Floehr, Walter L., 3,556,017.
Mie Seisakusho Kabushiki Kaisha: *See—*
Mase, Hirozo, 3,555,914.
Miele, Anthony A. Support assembly. 3,556,250, Cl. 182-62.5
MIF Industries, Inc.: *See—*
Taylor, Edwin C. S., 3,555,747.
Mikami, Hiroshi: *See—*
Niikura, Iwajiro; and Mikami, Hiroshi,3,556,407.
Mikkelsen, Vagn Elliot, to A/S Norva Maskinfabrik. Press for the pressing of wearing apparel or parts thereof. 3,555,711, Cl. 38-71.
Miles, Ray P.; and Szucs, Andrew E. Lift truck attachment. 3,556,328, Cl. 214-620.
Milichovsky, Bohumil: *See—*
Zmatlik, Josef; Jisa, Miloslav; Sedlecky, Jaromir; Matejka, Josef; Mohelnicky, Josef; and Milichovsky, Bohumil,3,556,165.
Miller, Donald, to United States of America, Navy. Prepackaged buoyancy system. 3,556,034, Cl. 114-54.
Miller, George T., to Hooker Chemical Corporation. Electroless plating of substrates. 3,556,956, Cl. 204-30.
Miller, Gerald W., to Mobay Chemical Company. High temperature thermoplastics stabilized with a tris(halophenyl)phosphate, a tris(halonaphthyl) phosphate, a tris(halophenyl)phosphine oxide, a polyhalophosphate, a polyhalophenylphosphate, a polyhalonaphthylphosphate, a polyhalophosphate and mixtures thereof. 3,557,053, Cl. 260-45.7
Miller, Howard, and: *See—*
Barr, William H.; and Wesen, Glen L., 3,556,530.
Miller, John M., to Continental Can Company, Inc. Method and apparatus for handling and registering webs for forming packages. 3,555,768, Cl. 53-39.
Miller, Thomas L., to Upjohn Company, The. Process for fermentative side chain cleavage of 20-keto pregnanes. 3,556,944, Cl. 195-51.
Miller, Wallace W. Astragal mounted flush bolt. 3,556,573, Cl. 292-143.
Mills, Edgar S.: *See—*
Colombo, Gerald V.; and Mills, Edgar S.,3,557,011.
Mills, Iain C., to Dunlop Company Limited, The. Pneumatic tires. 3,556,191, Cl. 152-209.
Milprint, Inc.: *See—*
Krzyzanowski, Robert A., 3,556,292.
Milwaukee Valve Company, Inc.: *See—*
Robinson, Bernie E., 3,555,882.
Miner, William Wiley, Jr.: *See—*
Schwarz, Steven; and Miner, William Wiley, Jr.,3,555,996.
Minks, Floyd M., to Brunswick Corporation. Solid state ignition system for outboard motors. 3,556,069, Cl. 123-143.
Minnesota Mining and Manufacturing Company: *See—*
Dienes, Zoltan B., 3,557,299.
Palmquist, Philip V., 3,556,637.
Minolta Camera Kabushiki Kaisha: *See—*
Ueda, Hiroshi; and Takeuchi, Hideo, 3,555,985.
Miskell, Earle; and Povlacs, Lawrence, to Akwell Industries, Incorporated. Rubber glove. 3,555,564, Cl. 2-168.
Mitacek, John, to Phillips Petroleum Company. Sampling system. 3,556,730, Cl. 23-230.
Mitchell, Reid L.; Murphy, Charles F.; and LaPolla, Edmund M., to Rayonier Incorporated. Method of preparing transparent cellulosic film. 3,557,262, Cl. 264-37.
Mitchell, Robert W.; and Dodds, Billy J., to Stewart & Stevenson Services, Inc. Steering system. 3,556,241, Cl. 180-79.2
Mitchell, William D., to Du Pont de Nemours, E. I., and Company. 1-Arylbiurets as plant growth regulants. 3,556,766, Cl. 71-120.
Mitchem, Luther C.: *See—*
Bach, Ricardo O.; Kamienski, Conrad W.; Dellinger, Matthew Henry; Mitchem, Luther C.; and Morrison, Robert C.,3,557,220.
Mitsubishi Edogawa Kagaku Kabushiki Kaisha: *See—*
Naito, Akira; and Ohsawa, Shigeo, 3,556,883.
Mitsubishi Jukogyo Kabushiki Kaisha: *See—*
Hizume, Akio; Oyagi, Shuji; and Tanaka, Shigeho, 3,555,892.
Koyama, Takuji; and Nosaka, Hiroshi, 3,556,135.
Momoda, Ryujiro; and Yanabu, Hiroshi, 3,556,701.
Ujiie, Akira, 3,556,877.
Mitsui Toatsu Chemicals, Inc.: *See—*
Inoue, Takayuki; Kato, Kichiro; Toyama, Teruhiko; and Yanami, Tetsuo, 3,556,768.
Mitter, Mathias; and Mayer, Karl, to Zimmer, Johannes. Device on rotary printing machines. 3,556,004, Cl. 101-116.
Miyamoto, Keiji, to Shizuoka Kogyo Kabushiki Kaisha. Apparatus for trimming both edges of a multilayer paper web. 3,556,936, Cl. 162-272.
Mize, Charles A.: *See—*
Grouver, Edwin F.; Reid, Guy T.; Wood, John H.; Pharr, Rodger H.; and Mize, Charles A.,3,555,594.
Mizuguchi, Jun; and Kinoshita, Sakushige, 1/3 to Chukichi Kinoshita. Method and apparatus for obtaining electro-deposited shaped articles from fibrous protein fibrils. 3,556,969, Cl. 204-181.
Mizuta, Yukio; Tanaka, Toshio; and Asada, Takeo, to Omron Tateisi Electronics Co. Automatic ticket gate. 3,556,274, Cl. 194-4.
Mobay Chemical Company: *See—*
Miller, Gerald W., 3,557,053.
Mobil Oil Corporation: *See—*
Andress, Harry J., Jr., 3,557,171.
Dean, James T., 3,556,208.
Stover, William A.; and McVeigh, Harry A., 3,556,988.
Talley, William A., Jr.; and Dean, James T., 3,556,218.
Mobius, Hans-Gerold; Kuckelsberg, Karl-Wilhelm; and Lange, Klaus, to Werkzeugmaschinenfabrik Gildemeister & Comp. Akt.- Ges. Method and apparatus for monitoring and reducing tolerances of workpieces in multiple-spindle machine tools. 3,555,658, Cl. 29-407.
Mockesch, Erich; and Schuster, Wilhelm, to Barrel Fresh Service AG. Device for dispensing carbonated beverages. 3,556,356, Cl. 222-399.
Modahl, Robert J.; and Lynch, Paul J., to Trane Company, The. Arsenic trioxide corrosion inhibitor for absorption refrigeration system. 3,555,841, Cl. 62-114.
Moed, Hendrik Dufk; Claassen, Volkert; and Paerels, Gerard Bernard, to U.S. Philips Corporation, mesne. 1-Amino-4-phenyl-3-buten-2-ols and salts thereof. 3,557,148, Cl. 260-343.7
Moeller & Neumann GmbH: *See—*
Greis, Karl Wilhelm; and Sigal, Everard Henri, 3,555,951.
Moeltzner, Wilhelm. Device for transferring molded parts. 3,556,282, Cl. 198-33.
Moffett, Robert Bruce, to Upjohn Company, The. 2-Phenyl-3-tertiaryamino-1-(2-thienyl)-1-propanones. 3,557,141, Cl. 260-326.5
Mohelnicky, Josef: *See—*
Zmatlik, Josef; Jisa, Miloslav; Sedlecky, Jaromir; Matejka, Josef; Mohelnicky, Josef; and Milichovsky, Bohumil,3,556,165.
Mohr, Rudolf, to Badische Anilin-& Soda-Fabrik Aktiengesellschaft. Separating ammonia from offgas obtained in the synthesis of melamine. 3,555,784, Cl. 55-70.
Moirano, Arthur L., to Marine Colloids, Inc. Dessert gel and gelling agent therefor. 3,556,810, Cl. 99-131.
Molenaar, Adrianus Pieter: *See—*
Weber, Hubert Antonius; and Molenaar, Adrianus Pieter,3,557,280.
Moller, Walter H.; and Wilson, Joseph H. Aerial tramway power and control means. 3,556,484, Cl. 254-184.
Momoda, Ryujiro; and Yanabu, Hiroshi, to Mitsubishi Jukogyo Kabushiki Kaisha. Combustion apparatus. 3,556,701, Cl. 431-181.
Monarch Tool and Manufacturing Company: *See—*
Hall, Mitchell A., 3,556,453.
Monsanto Company: *See—*
Boyle, William J., Jr.; Davis, Lauren R.; and Shusman, Tevis, 3,557,243.
Buckley, Francis T.; Riek, Raymond F.; and Christensen, Donald I., 3,556,890.
Conn, James F.; and Kichline, Thomas P., 3,556,804.
Conn, James F.; and Kichline, Thomas P., 3,556,805.
D'Amico, John Joseph, 3,557,112.
Gebhart, Herbert J., Jr.; Makin, Earle C., Jr.; and Middlebrooks, Charles H., 3,557,239.
Gebhart, Herbert J., Jr.; and Makin, Earle C., Jr., 3,557,240.
Hamm, Philip C., 3,556,762.
Hamm, Philip C., 3,556,764.
Hamm, Philip C.; and Speziale, Angelo John, 3,557,210.
Holsten, John R.; and Morrison, Jerimah G., Jr., 3,556,729.
Knudsen, John P.; Mallonee, William C.; and Martin, Robert E., 3,555,806.
Koons, Russell E., 3,556,819.
Mallonee, William C., 3,556,895.
Stevenson, Philip J., 3,556,030.
Weingarten, Harold I.; and White, William A., 3,557,157.
Montecantini Edison S.p.A.: *See—*
Bonfardeci, Augusto; and Porri, Lido, 3,557,076.

Montecatini Edison S.p.A.: *See—*
Bottaccio, Giorgio; and Chiusoli, Gian Paolo, 3,557,196.
Cantatore, Giuseppe; and Bonvicini, Alberto, 3,557,086.
Fiore, Leonardo; Nissim, Giorgio; and Crespi, Elio, 3,557,058.
Montgomery, George R. Fishhook extractor. 3,555,718, Cl. 43-53.5
Montgomery, Ronald Eugene; and Incho, Harry Hobart, to FMC Corporation. Mono-omega-alkynyl di(aryl- or aralkyl) phosphinates. 3,557,259, Cl. 260-956.
Monyer, Robert L.; Fricke, Paul M.; and Moore, Donald L., to Hamilton Cosco, Inc. Tablet arm chair. 3,556,588, Cl. 297-162.
Moog Industries, Inc.: *See—*
Fister, Louis P.; and Scheublein, William A., Jr., 3,556,268.
Moore, Donald L.: *See—*
Monyer, Robert L.; Fricke, Paul M.; and Moore, Donald L.,3,556,588.
Moore, Frederick A., to Northwest Industries Limited. Buoyant pump with drive train sub-assembly. 3,556,685, Cl. 417-337.
Moore, Maurice S. Spinneret for producing hollow filaments. 3,555,600, Cl. 18-8.
Moore, Michael O.: *See—*
Dyer, Kermit W.; Hoppe, William C.; and Moore, Michael O.,3,556,284.
Moorhouse, Geoffrey; and Mason, Derek, to Holset Engineering Company Limited. Viscous torsional vibration damper. 3,555,926, Cl. 74-574.
Morales, Carmelo; D'Ambrosio, John J.; and Wilder, Ira, to United States of America, Navy. Fire-fighting foam portable test kit. 3,555,885, Cl. 73-61.1
Morat, Franz, GmbH: *See—*
Stock, Hans Joachim; Schmidt, Gerhard; and Schunack, Johannes, 3,555,852.
Moratis, Christy J.: *See—*
Carlson, William G.; Moratis, Christy J.; and English, William A.,3,555,667.
Moreno, Robert F. Underweight can detecting and filling apparatus. 3,556,234, Cl. 177-46.
Morgan, David C.: *See—*
Fuller, William R.; Bieler, Barrie H.; and Morgan, David C.,3,556,024.
Morgan, James L., Jr.: *See—*
Cordell, Ray R.; and Morgan, James L., Jr.,3,555,911.
Mori, Kazuo: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,557,092.
Moriyama, Hiroaki: *See—*
Nagata, Hideo; Tamaki, Toshio; and Moriyama, Hiroaki,3,557,182.
Mork, Orlan H. Apparatus for leveling soil and the like. 3,556,228, Cl. 172-199.
Morris, Philip, Incorporated: *See—*
de la Burde, Roger Zygmunt; and Harris, Leon Johnson, Jr., 3,556,112.
Morris, Robert L.; and Castle, John R., to Procter & Gamble Company. Detergent tablet. 3,557,003, Cl. 252-90.
Morris, William F., Jr. Giblet pumping and chilling method and apparatus. 3,555,838, Cl. 62-63.
Morrison, Glenn C.: *See—*
Shavel, John, Jr.; and Morrison, Glenn C.,3,557,122.
Morrison, Jerimah G., Jr.: *See—*
Holsten, John R.; and Morrison, Jerimah G., Jr.,3,556,729.
Morrison, Robert C.: *See—*
Bach, Ricardo O.; Kamienski, Conrad W.; Dellinger, Matthew Henry; Mitchem, Luther C.; and Morrison, Robert C.,3,557,220.
Morse, Lewis D., to Merck & Co., Inc. Microencapsulation form of an anti-inflammatory drug. 3,557,279, Cl. 424-20.
Morsell, Arthur L., III. Internal combustion engines. 3,555,814, Cl. 60-39.6
Mosier, Charles F., Jr.: *See—*
Zimmerman, Carle C., Jr.; and Mosier, Charles F., Jr.,3,556,987.
Motorola, Inc.: *See—*
Nelke, Conrad J.; and Brucker, John P., 3,556,074.
Mottier, Francois, to Aktiengesellschaft Brown, Boveri & Cie. Arrangement for interferometric measurement of a plurality of lengths with monochromatic light-beams. 3,556,660, Cl. 356-106.
Mousel, Canellen K. Tire tool. 3,555,583, Cl. 7-1.
Moyer, Patricia H.; and Penner, Siegfried E., to Vulcan Materials Company. Dehydrohalogenation of halogenated organic compounds in dimethyl sulfoxide solvent. 3,557,228, Cl. 260-653.5
Mracek, Jaroslav, to Western Electric Company, Incorporated. Method and apparatus for separating compact arrays of articles. 3,555,659, Cl. 29-421.
MSL Industries, Inc.: *See—*
Willis, Arnold L., 3,555,580.
Mueller, Carl H.; Wegmann, Jerome B.; Kitchen, Clarence E.; and Weitzel, George, to McNeil Corporation. Air-operated scissors-type jack. 3,556,481, Cl. 254-122.
Mueller, Edward G.: *See—*
Wyatt, William Kirk; Mueller, Edward G.; and Hebrank, William H.,3,556,432.
Mueller, Ernst, Messrs., Luft- und Farbspritztechnik: *See—*
Gebhardt, Otto; and Luderer, Fred, 3,556,400.
Mueller, Francis X., Jr.: *See—*
Hsieh, Henry L.; and Mueller, Francis X., Jr.,3,557,252.
Mueller, Johannes: *See—*
Bickel, Hans; Bosshardt, Rolf; Fechtig, Bruno; Menard, Enrico; Mueller, Johannes; and Heinrich, Peter,3,557,104.
Muirhead, Gerald L.: *See—*
Muirhead, Hugh J.; and Muirhead, Gerald L.,3,556,066.
Muirhead, Hugh J.; and Muirhead, Gerald L., said Muirhead, Gerald L., assor. to said Muirhead, Hugh J. Engine horsepower increasing system. 3,556,066, Cl. 123-127.
Muller, Hans, to Grapha Maschinenfabrik, Hans Muller AG. Apparatus for transporting sheet-material members. 3,556,515, Cl. 271-12.
Muller, Heinz K., to Sealol, Inc. Barrier seal with self regulating buffer. 3,556,538, Cl. 277-27.
Muller, Hendrikus Gerhardus, to N.V. Machinefabriek B & S Bedrijven v.d. Woerdt. Apparatus for classifying articles and for removing them from a conveyor. 3,556,295, Cl. 209-73.
Muller, Jean-Claude: *See—*
Vergne, Jean; Pailloux, Claude; Muller, Jean-Claude; and Robinet, Jean-Claude,3,557,072.
Multi-Menerals Limited: *See—*
Cochran, Linden Wayne, 3,555,786.
Munding, German: *See—*
Buse, Wilhelm G.; Munding, German; and Weigelt, Heinrich,3,555,824.
Munson, William A., to Westinghouse Electric Corporation. Skip car hoist winch mechanism. 3,556,321, Cl. 214-19.
Murex Limited: *See—*
Owen, Frank, 3,555,644.
Murib, Jawad H., to National Distillers and Chemical Corporation. Preparation of complex metal hydrides. 3,556,740, Cl. 23-365.
Murph, Bennie M., to Shuford Mills, Inc. Device for plumbing and centering a rotatable spindle within a spinning ring. 3,555,804, Cl. 57-132.
Murphy, Charles F.: *See—*
Mitchell, Reid L.; Murphy, Charles F.; and LaPolla, Edmund M.,3,557,262.
Murphy, Sheilds L.: *See—*
Siegfreid, Edward C.; Harwell, Conner J.; and Murphy, Sheilds L.,3,557,290.
Murray, Herbert C.: *See—*
Fonken, Gunther S.; Herr, Milton E.; and Murray, Herbert C.,3,556,943.
Muskat, Irving E., to C-J Corporation. Stable systems based on polyvinyl chloride and reactive plasticizers. 3,557,046, Cl. 260-41.
Muskat, Irving E., to C-J Corporation. Reactive mixtures of thermoplastic vinyl chloride polymers with reactive plasticizers. 3,557,049, Cl. 260-41.
Muskat, Irving E., to C-J Corporation. Powder thermsetting compositions based on bulk polymerized polyvinyl chloride and polyacrylate plasticizer. 3,557,256, Cl. 260-884.
Musser, Harry B.: *See—*
Wilkinson, Thomas B.; Melton, James O.; Musser, Harry B.; and Thomas, Abraham L.,3,556,338.
Mutschmann, Winifred Lui; and Fish, Nicholas J. Specimen carrying slide with run off trough. 3,556,633, Cl. 350-95.
Nagashima, Wakio: *See—*
Takashina, Naomitsu; Aida, Teruo; Endo, Yasuhiro; and Nagashima, Wakio,3,557,040.
Nagata, Hideo; Tamaki, Toshio; and Moriyama, Hiroaki, to Sumitomo Chemical Co., Ltd. Process for producing cyanocyclohexanols. 3,557,182, Cl. 260-464.
Naito, Akira; and Ohsawa, Shigeo, to Mitsubishi Edogawa Kagaku Kabushiki Kaisha. Method for chemically polishing copper or copper alloy. 3,556,883, Cl. 156-20.
Naito, Ryunosuke; Komatsu, Sakan; and Yamane, Saburo, to Kuraray Co., Ltd. Endless belt conveyor. 3,556,286, Cl. 198-201.
Nakagawa, Shinji: *See—*
Yamamoto, Katsuro; Hatano, Takuya; Obata, Kuniyoshi; Satoh, Tohru; and Nakagawa, Shinji,3,555,884.
Nakamatsu, Yoshiro. Television receiver having means for causing sound to emanate from picture plane. 3,557,324, Cl. 179-181.
Nakamura, Tadashi: *See—*
Hyldon, Roy G.; High, Robert L.; Anklam, Fredrick H.; and Nakamura, Tadashi,3,557,084.
Suzuki, Yoshihisa; Tsukada, Takeshi; Hirahara, Tsuneo; and Nakamura, Tadashi,3,557,081.
Nakamura, Yasuharu: *See—*
Kimura, Shiro; Nakazawa, Yoshiuki; Sawahara, Masao; and Nakamura, Yasuharu,3,556,800.
Nakanishi, Yoichiro: *See—*
Shindo, Akio; Souma, Isao; and Nakanishi, Yoichiro,3,557,020.
Nakazawa, Yoshiuki: *See—*
Kimura, Shiro; Nakazawa, Yoshiuki; Sawahara, Masao; and Nakamura, Yasuharu,3,556,800.
Nalco Chemical Company: *See—*
Stanford, James R.; and Vogelsang, Paul G., Jr., 3,557,001.
Nally, Francis G. Beer dispensing faucet. 3,556,143, Cl. 137-589.
Narabu, Jiro, to Seibu Gemu Kagaku Kabushiki Kaisha. Fender. 3,555,832, Cl. 61-48.
Nast, Roland: *See—*
Ley, Kurt; Eholzer, Ulrich; Nast, Roland; Metzger, Karl-Georg; and Fritsche, Dieter,3,557,109.

Nathe, Raymond J., to Marathon Manufacturing Company. Normally sealed encased rechargeable cells with self-resealing excess pressure gas vent. 3,556,863, Cl. 136-178.
National Cash Register Company, The: *See—*
Soderstrom, Melvin A., 3,556,003.
National Distillers and Chemical Corporation: *See—*
Murib, Jawad H., 3,556,740.
National Lead Company: *See—*
Beals, Malcolm D.; and Merker, Leon, 3,557,014.
National Machinery Company, The: *See—*
Wisebaker, Robert E., 3,555,586.
National Manufacturing Co.: *See—*
Banse, George, 3,555,750.
National Research Development Corporation: *See—*
Allison, Eric, 3,556,237.
Kay, Garth, 3,557,073.
Seymour-Walker, Kay John; and Webb, David John Tudor, 3,556,579.
Thomas, David Kenneth, 3,557,034.
National Steel Corporation: *See—*
Rawlings, Robert A., 3,555,661.
National-Standard Company: *See—*
Cole, Leon J., 3,556,902.
Strozewski, Richard S., 3,556,370.
Nauta, Constant Johan, to Nautamix Patent AG. Method and device for treating one or more substances in a vessel. 3,556,487, Cl. 259-111.
Nauta, Wijbe Thomas, to N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades-Stheeman & Pharmacia. 1-(Alkylamino)-3-(α-phenyl benzyl)oxy-propan-2- ols and the salts thereof. 3,557,193, Cl. 260-501.18
Nautamix Patent AG.: *See—*
Nauta, Constant Johan, 3,556,487.
Neal, Frank W.; and Snyder, Robert L., to Bouligny, R. H., Inc. Means for lapping split workpieces. 3,555,738, Cl. 51-59.
Needham, Riley B., to Phillips Petroleum Company. Process for retorting oil shale. 3,556,979, Cl. 208-11.
Neeff, Rutger; Gohrbandt, Wilhelm; and Kuth, Robert, to Farbenfabriken Bayer Aktiengesellschaft. Substituted 1,4,5-triamino-8-hydroxy-anthraquinone dyes. 3,557,154, Cl. 260-373.
Neis, Harry B. Protective helmet. 3,555,561, Cl. 2-3.
Nelke, Conrad J.; and Brucker, John P., to Motorola, Inc. Hydraulically tensioned saw assembly. 3,556,074, Cl. 125-15.
Nelson, Axel B.: *See—*
Billeter, Henry R.; and Nelson, Axel B.,3,556,137.
Nelson, Gunner E.: *See—*
Becker, Warren E.; Kobetz, Paul; and Nelson, Gunner E.,3,557,174.
Nelson, Kenneth Raeburn; and Pope, Leslie William, to Schlage Lock Company. Holding device for a lockset. 3,556,576, Cl. 292-359.
Nelson, Thomas F., to General Electric Company. Hair dryer with collapsible hose storage means. 3,555,699, Cl. 34-97.
Nemer, Russel A., to International Inpak Incorporated, mesne. Packaging machine. 3,555,779, Cl. 53-373.
Nemeth, Otto R.; and Forch, Friedrich, to Vockenhuber, Karl, and Hauser, Raimund. Apparatus for splicing film. 3,556,908, Cl. 156-508.
Nemetz, Joseph S.; and Bewick, Leland E. Disposable grill cover. 3,555,994, Cl. 99-444.
Nestler, Gilbert C.: *See—*
Kinzler, Raymond C.; and Nestler, Gilbert C.,3,556,948.
Netlon International Limited: *See—*
Beretta, Paolo; and Beretta, Mario, 3,557,268.
New Britain Machine Company, The: *See—*
Wolf, Heinz K.; and Alexander, Alan G., 3,555,962.
New Dimension Films, Inc.: *See—*
Guidi, Jwan E.; and Guidi, Armando A., 3,556,646.
New Life Foundation: *See—*
Brown, Victor; Anderson, Ingvar G.; and Vincent, Daniel Boscawin, 3,556,420.
Newmiller, Henry L.; and Pugh, Benjamin J., deceased0 (by Pugh, Viola May; sole heir). Rotary-reciprocatory crushing mill. 3,556,417, Cl. 241-46.06
Newtson, N. Keigh: *See—*
Honegger, Lyle J.; Newtson, N. Keigh; and Stevenson, Joseph S.,3,556,054.
Nicodemas, William F., to Kennametal Inc. Diamond drill. 3,555,937, Cl. 77-68.
Nigrelli, Biagio J.; Standley, Wendell E.; and Sprogis, Andre, to Johns-Nigrelli-Johns, Inc. Machine for forming a tray around a group of articles. 3,555,776, Cl. 53-196.
Niikura, Iwajiro; and Mikami, Hiroshi, to Niikura Kogyo Co., Ltd. Cleaning device well adapted for use in tanks and the like of oil tanker. 3,556,407, Cl. 239-227.
Niikura Kogyo Co., Ltd.: *See—*
Niikura, Iwajiro; and Mikami, Hiroshi, 3,556,407.
Nilson, Hans Ove: *See—*
Brynge, Per Gunnar; Andersson, O. Arne; and Nilson, Hans Ove,3,557,343.
Nippert, Charles R., Sr., to Bethlehem Steel Corporation. Apparatus and method for measuring strand. 3,556,167, Cl. 140-1.
Nippon Carbon Company Limited: *See—*
Yoneshige, Kazumasa; and Teranishi, Haruo, 3,556,712.
Nippon Denso Company Limited: *See—*
Ando, Noriyoshi, 3,556,612.
Nippon Electronics Co., Ltd.: *See—*
Takao, Yowan, 3,557,321.
Nippon Gakki Seizo Kabushiki Kaisha: *See—*
Adachi, Takeshi, 3,557,295.
Hirose, Yasunori, 3,557,296.
Matsuura, Toshiro, 3,557,297.
Nippon Kokan Kabushiki Kaisha: *See—*
Kojima, Shigeo, 3,555,869.
Nippon Rika Kogyosho, Ltd.: *See—*
Ohta, Shohji; and Ohkuri, Kazuo, 3,556,938.
Nippon Safety Glass Co., Ltd.: *See—*
Imamura, Kiyoshi, 3,555,944.
Terakado, Osamu; and Imamura, Kiyoshi, 3,555,737.
Nippon Steel Corporation: *See—*
Hirata, Osamu; and Maehara, Shinichiro, 3,556,492.
Okada, Hideya; Matsuda, Shozo; Ohbu, Misao; and Tamura, Hideo, 3,556,869.
Ueda, Akiyoshi, 3,556,489.
Yoshino, Yamata; Kishikawa, Kanichi; and Tanaka, Katsuyoshi, 3,555,862.
Nirenberg, Morris, to Oceana International, Inc. Apparatus for the manufacture of multi-colored and iridescent moldings. 3,556,833, Cl. 117-44.
Nischk, Gunther: *See—*
Engelhard, Helmut; Bentz, Francis; Bodesheim, Ferdinand; and Nischk, Gunther,3,557,247.
Nishi, Goro: *See—*
Shinoda, Akibumi; and Nishi, Goro,3,556,247.
Niskovskikh, Vitaly Maximovich; Gelfenbein, Evgeny Jukhimovich; and Bogomazov, Vladlen Georgievich. Device for withdrawing ingot from mould of radial type apparatus for continuous casting of metal. 3,556,198, Cl. 164-282.
Niskovskikh, Vitaly Maximovich; Litvinov, Anatoly Ivanovich; Sobolev, Vladimir Nikolaevich; Gelfenbein, Evgeny Junkhimovich; and Bykov, Leonid Alexandrovich. Lifting turn-table to mount tundishes on continuous metal casting machines. 3,556,349, Cl. 222-168.5
Nissim, Giorgio: *See—*
Fiore, Leonardo; Nissim, Giorgio; and Crespi, Elio,3,557,058.
Noonan, John Gerard. Methods of fostering animals. 3,556,051, Cl. 119-1.
Norac Company, Inc., The: *See—*
McCloskey, Chester M.; Rees, Donald E.; and Hoff, George, 3,557,009.
Nord, Eric T.; Rood, Alvin A.; and Bosworth, Frederic M., to Nordson Corporation. Spray nozzle. 3,556,411, Cl. 239-581.
Nordberg Manufacturing Company: *See—*
Bickers, Anthony; and Delmer, Philip T., 3,556,144.
Nordin, Ivan C., to Parke, Davis & Company. 2-Phenyl-4-tertiaryaminoloweralkyl- 2H-1,4-benzoxazin-3(4H)-ones. 3,557,103, Cl. 260-244.
Nordson Corporation: *See—*
Nord, Eric T.; Rood, Alvin A.; and Bosworth, Frederic M., 3,556,411.
Noriega, Lois Layton. Educational dominoes with magnetic connectors. 3,556,529, Cl. 273-137.
Norlin, Lars-Olof Knutson. Combined spring and damping device. 3,556,269, Cl. 188-281.
North American Rockwell Corporation: *See—*
Brundage, Clinton F.; and Mammolito, Dominick V., 3,556,283.
Northwest Industries Limited: *See—*
Moore, Frederick A., 3,556,685.
Norton Company: *See—*
Coes, Loring, Jr., 3,555,744.
Nosaka, Hiroshi: *See—*
Koyama, Takuji; and Nosaka, Hiroshi,3,556,135.
Novak, Byron M.: *See—*
Hume, Horace D.; and Novak, Byron M.,3,555,795.
Novak, Ezra H. Machine for shaping, sizing and finishing the edge of a lens blank. 3,555,739, Cl. 51-101.
Novak, John P.: *See—*
Gibbs, Melvin B.; Golding, James L.; Levine, Barry H.; and Novak, John P.,3,556,866.
Nozawa, Yoshikuni, to Sankyo Kogaku Kogyo Kabushiki Kaisha. Film feed device for motion-picture apparatus. 3,556,648, Cl. 352-194.
Nozzle, Inc.: *See—*
Stelson, Thomas E., 3,556,360.
Nughes, Giovanni, to Star Stabilimento Alimentare S.p.A. Flexible package for foodstuff. 3,556,816, Cl. 99-171.
Nupnau, Arthur E., to Bell & Howell Company. Film movement mechanism. 3,556,649, Cl. 352-194.
N.V. Koninklijke Pharmaceutische Fabrieken v/h Brocades-Stheeman & Pharmacia: *See—*
Nauta, Wijbe Thomas, 3,557,193.
N.V. Machinefabriek B & S Bedrijven v.d. Woerdt: *See—*
Muller, Hendrikus Gerhardus, 3,556,295.
N.V. Metaalwarenfabriek 'Venlo':*See—*
Groen, Johannes, 3,556,146.
Nystrand, Ernst Daniel, to International Paper Company, mesne. Rotary valve. 3,556,152, Cl. 137-625.21
Nystrand, Ernst Daniel, to Paper Converting Machine Company. Machine for producing laminated embossed webs. 3,556,907, Cl. 156-470.
Oakes, Grant A.; and Cetrone, Vincent B. Distortable rolling millentry guides. 3,555,873, Cl. 72-250.

Obata, Kuniyoshi: *See—*
Yamamoto, Katsuro; Hatano, Takuya; Obata, Kuniyoshi; Satoh, Tohru; and Nakagawa, Shinji,3,555,884.
Oberlander, Julius J. Multilevel airport structure. 3,556,441, Cl. 244-114.
O'Boyle, Kenneth M. Garment treating apparatus. 3,556,361, Cl. 223-73.
O'Byrne, Brendan, to Bywater, William Limited. Machine for producing endless needled felts. 3,555,638, Cl. 28-4.
Oceana International, Inc.: *See—*
Nirenberg, Morris, 3,556,833.
O'Connor, Alton J., to Walbro Corporation. Fuel pump for small engines. 3,556,687, Cl. 417-395.
O'Connor, David Evans; and Lyness, Warren Irl, to Procter & Gamble Company, The. Process for preparing allylic alcohols. 3,557,221, Cl. 260-618.
O'Connor, Joseph M., to Peerless of America, Incorporated. Tube joints. 3,556,567, Cl. 285-332.3
Odell, Benjamin R., to Tuman S.C.A. Combined marine box. 3,555,919, Cl. 74-355.
Oden, Hoeckly: *See—*
Rensch, Heinz; and Oden, Hoeckly,3,557,345.
Oertel, Gunther: *See—*
Krauss, Heinz Walter; Pedain, Josef; Zenner, Karl-Friedrich; Oertel, Gunter; and Holtschmidt, Hans,3,557,043.
Offterdinger, Hermann Friedrich, to Entarea Investment Management Ltd. Hitch feed. 3,556,376, Cl. 226-151.
Ohbu, Misao: *See—*
Okada, Hideya; Matsuda, Shozo; Ohbu, Misao; and Tamura, Hideo,3,556,869.
Ohio Brass Company, The: *See—*
Herbert, Donald L., 3,556,312.
Ohki, Soichi, to Toshiba Ray-O-Vac Co., Ltd. Dry battery with metal plate overlapping the zinc anode. 3,556,859, Cl. 136-107.
Ohkuri, Kazuo: *See—*
Ohta, Shohji; and Ohkuri, Kazuo,3,556,938.
Ohno, Satoyoshi: *See—*
Kitagawa, Hioshi; Suwada, Atau; and Ohno, Satoyoshi,3,557,060.
Ohsawa, Shigeo: *See—*
Naito, Akira; and Ohsawa, Shigeo,3,556,883.
Ohta, Seizho; and Kage, Motokuni, to Toyota Jidosha Kogyo Kabushiki Kaisha. Seat cushioning spring device. 3,556,505, Cl. 267-107.
Ohta, Shohji; and Ohkuri, Kazuo, to Nippon Rika Kogyosho, Ltd. Apparatus for manufacturing mica sheets. 3,556,938, Cl. 162-306.
Ohtsu, Yasuo, to Sumitomo Electric Industries, Ltd. Pinned throwaway insert and holder therefor with multiple surface restrictions. 3,555,647, Cl. 29-200.
Oishi, Asao; and Sashino, Shozoo, to Hitachi, Ltd. Method and apparatus for low frequency synchronous starting of reversible pump turbines. 3,556,678, Cl. 417-53.
Oja, Phyllis D., to Dow Chemical Company, The. Methods and compositions containing oxamide compounds for controlling limnoria. 3,557,281, Cl. 424-82.
Okada, Hideya; Matsuda, Shozo; Ohbu, Misao; and Tamura, Hideo, to Nippon Steel Corporation. Method for surface-treatment of zinc metal and zinc alloys. 3,556,869, Cl. 148-6.2
Okamoto, Tadashi: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,557,092.
Okaya, Takuji: *See—*
Imai, Kiyokazu; and Okaya, Takuji,3,557,250.
O'Keefe, Michael Francis; Schwalm, Glendon Henry; Stull, Robert Stanley; and Fritz, Coey William, to AMP Incorporated. High speed semiautomatic termination of coaxial cable. 3,555,672, Cl. 29-628.
Okuma, Kisaburo, to Okumaseisakujo Co., Ltd. Hollow cord for effecting remote control of toys. 3,555,726, Cl. 46-243.
Okumaseisakujo Co., Ltd.: *See—*
Okuma, Kisaburo, 3,555,726.
Okuno, Chuzo: *See—*
Kometani, Yutaka; Koizumi, Shun; Suzuki, Takeshi; and Okuno, Chuzo,3,557,051.
Olander, Lennart; and Kallman, Gunnar, to Aktiebolaget Fannyudde. Reel for recording tape. 3,556,426, Cl. 242-74.
Oldenkamp, Henry A.; and Watson, Clyde D., to FMC Corporation. Freeze drying solids bearing liquids. 3,556,818, Cl. 99-199.
Olenik, Charles C., to Borg-Warner Corporation. Shutoff valve. 3,556,475, Cl. 251-306.
Olin Corporation: *See—*
Jagaciak, George J., 3,556,872.
Pryor, Michael J.; and Hager, Stephen F., 3,556,962.
Olson, Carl A. E. Rotary cutting means for collating machine. 3,555,948, Cl. 83-117.
Olsson, Frank Christian, to American Machine & Foundry Company. Positive hold latch. 3,556,572, Cl. 292-87.
Olympus Optical Company, Ltd.: *See—*
Takahashi, Nagashige, 3,556,085.
Omizo, Haruo. Method of puncturing a medical instrument under guidance of ultrasound. 3,556,079, Cl. 128-2.
Omron Tateisi Electronics Co.: *See—*
Mizuta, Yukio; Tanaka, Toshio; and Asada, Takeo, 3,556,274.
Onan: *See—*
Poirier, Armand R.; and Briese, John A., 3,556,857.
Onoda, Hajime; and Yahiro, Akihumi, to Kimmon Manufacturing Co., Ltd. Flow meter. 3,555,902, Cl. 73-229.
Ooji, Tamiki: *See—*
Hattori, Yoko; Ooji, Tamiki; Tanaka, Kiichiro; and Matsunaga, Takao,3,557,059.
Optura Dr. Gustav Gammert Brillenfabrik: *See—*
Stahl, Heinz, 3,556,644.
Orfei, John B.; and Walters, John H., to Xerox Corporatinon, mesne. Self-traveling wheel. 3,555,725, Cl. 46-206.
Ormanoski, Leo J.: *See—*
Fleckenstein, Joseph E.; Kimpel, Frank A.; Ormanoski, Leo J.; and Paetow, Herman E.,3,555,844.
Orme, John Edward, to USM Corporation. Rotational moulding machines. 3,555,615, Cl. 18-26.
Oroshnik, William: *See—*
Cinnamon, Jerome Marshall; and Oroshnik, William,3,557,107.
Orr, James, to Eaton Yale & Towne, Inc. Air operated hoist. 3,556,485, Cl. 254-168.
Ortho Pharmaceutical Corporation: *See—*
Karmas, George, 3,557,129.
Osborn, George E. Safety stirrup. 3,555,781, Cl. 54-49.
Ostlund, Rune Arvid Efraim, to Mathsson, Karl, Firma. Arrangement for detachably mounting a leg member to an object such as an article of furniture. 3,556,451, Cl. 248-188.
Oswald, Lawrence E., to Ashland Oil & Refining Company. Pipeline valve control system. 3,556,126, Cl. 137-118.
Oswin, Harry G.; and Blurton, Keith F., to Leesona Corporation. Recharging alkaline/zinc cells. 3,556,849, Cl. 136-30.
Otis Engineering Corporation: *See—*
Schwegman, Harry E., 3,556,220.
Sizer, Phillip S.; and Elliston, Thomas L., 3,556,147.
Otstot, James L., to Carlisle Tire and Rubber. Tailstock. 3,555,942, Cl. 82-31.
Ott, Richard J., to Respond Inc. Ladle trap chamber and tilting dispenser. 3,556,354, Cl. 222-357.
Otto, Rigobert: *See—*
Vanden, Eynde, Hector Alfons; Van Doorselaer, Marcel Karel; De Cat, Arthur Henri; Otto, Rigobert; Kunitz, Friedrich-Wilhelm; and Schulte, Walter,3,556,796.
Outboard Marine Corporation: *See—*
Shimanckas, William J., 3,556,041.
Strang, Charles D., 3,556,040.
Overgaard, Odd; and Berlied, Henry P., to Dovre Ski Binding, Inc. Ski binding. 3,556,543, Cl. 280-11.35
Overhoff, Heinrich; and Junemann, Dieter, to Raymond, A. No-hole fastening device. 3,555,629, Cl. 24-224.
Owaki, Tooru, to Furukawa Mining Co., Ltd. Process for treating sulfurous acid gas-containing exhaust gas. 3,556,722, Cl. 23-122.
Owen, Frank, to Murex Limited. Cutting tools. 3,555,644, Cl. 29-105.
Owen, Paul D.; Hilemn, Charles R.; and Velvin, James Carroll, Jr. Changeable lock. 3,555,858, Cl. 70-384.
Owen, Victor, to Winer, Melvin. Convertible garment. 3,555,567, Cl. 2-69.5
Owens, Nevyl G., to Schlumberger Technology Corporation. Apparatus for bridging a well conduit. 3,556,215, Cl. 166-187.
Owens-Corning Fiberglas Corporation: *See—*
Griem, Paul D., Jr., 3,557.349.
Owens-Illinois, Inc.: *See—*
Addis, William L., 3,555,946.
Angelotti, William J.; Proffitt, James R., Jr.; Reyburn, Nathaniel R.; and San Frotello, Louis L., 3,557,267.
Scarvelis, Gus S., 3,556,930.
Oyagi, Shuji: *See—*
Hizume, Akio; Oyagi, Shuji; and Tanaka, Shigeho,3,555,892.
Pacak, Matthew: *See—*
Getz, Edward T.; and Pacak, Matthew,3,557,264.
Pacific Western Extruded Products, Inc.: *See—*
Longshaw, William J.; Wilson, Roy C., Jr.; and Ridenour, James, 3,557,275.
Padman, John Neville; and Cummins, Donald Hadden. Milking machines. 3,556,053, Cl. 119-14.08
Paerels, Gerard Bernard: *See—*
Moed, Hendrik Dufk; Claassen, Volkert; and Paerels, Gerard Bernard,3,557,148.
Paetow, Herman E.: *See—*
Fleckenstein, Joseph E.; Kimpel, Frank A.; Ormanoski, Leo J.; and Paetow, Herman E.,3,555,844.
Page, Richard K.: *See—*
Scheinberg, Ronald L.; and Page, Richard K.,3,556,563.
Pahlke, Heinz Erich, to Union Carbide Corporation. Biaxial orientation. 3,555,604, Cl. 18-14.
Paikin, Lazar Ilich: *See—*
Marbukh, Veniamin Anatolievich; Lychak, Veniamin Samuilovich; Paikin, Lazar Ilich; Matveev, Vladimir Alexeevich; Semenov, Vasily Vasilievich; Stepura, Emil Fedorovich; and Fedorov, Vasily Nikolaevich,3,556,668.
Pailloux, Claude: *See—*
Vergne, Jean; Pailloux, Claude; Muller, Jean-Claude; and Robinet, Jean-Claude,3,557,072.
Painter, Erle V.; Mesek, Frederick K.; and Shepherd, Robert C., to Johnson & Johnson. Mechanically compressed extensible fabric. 3,556,921, Cl. 161-132.
Palachuk, Frank J. Carpet stretching apparatus. 3,556,479, Cl. 254-63.
Pall Corporation: *See—*
Barrett, Cedric A.; and Phillips, William, 3,556,468.
Pallos, Laszlo; and Benko, Pal, to Egyesult Gyogyszer-es Tapszergyar. Certain pyridyl formamidine derivatives. 3,557,128, Cl. 260-294.9

Palm, Clifford W.; and Gibson, William R., to Celanese Corporation. Yarn feed mechanism. 3,556,377, Cl. 226-153.
Palmquist, Philip V., to Minnesota Mining and Manufacturing Company. Reflex-reflecting aggregate and markers prepared therefrom. 3,556,637, Cl. 350-105.
Panek, Mitchell W., to Swift & Company. Meat injection method. 3,556,808, Cl. 99-107.
Papa, Paolo; and Capetti, Federico, to Societa Nebiolo S.p.A. Rotary sheet transfer members having engagable toothed sectors in proximity to sheet grippers. 3,556,006, Cl. 101-232.
Paper Converting Machine Company: *See—*
Nystrand, Ernst Daniel, 3,556,907.
Papp, Michael W., to Warner & Swasey Company, The. Cross slide cutter block assembly. 3,555,943, Cl. 82-37.
Papy, Frederique nee Lenger: *See—*
Papy, Georges; and Papy, Frederique nee Lenger, 3,555,703.
Papy, Georges; and Papy, Frederique nee Lenger, to International Standard Electric Corporation. Equipment for teaching mathematics. 3,555,703, Cl. 35-30.
Paramount Packaging Corporation: *See—*
Davis, Francis A., Jr., 3,555,974.
Pardy, Thomas G., to Bridgeport Implement Works, Inc. Stone picker and surf maintenance machine. 3,556,223, Cl. 171-85.
Park, George C. Method and apparatus for applying barrier coating substances to sheet materials. 3,556,832, Cl. 117-7.
Parke, Davis & Company: *See—*
De Wald, Horace A., 3,557,095.
Nordin, Ivan C., 3,557,103.
Parker, Walter, to Scragg, Ernest, & Sons Limited. Method of treating yarn. 3,555,807, Cl. 57-157.
Parkin, William J.: *See—*
Rubin, Eugene S.; and Parkin, William J., 3,557,369.
Parks, Clarence E., to Goodrich, B. F., Company, The. Apparatus for extruding thermoplastic materials. 3,555,616, Cl. 18-30.
Parks, Clyde: *See—*
Larson, Fay N.; Henry, Francis B.; and Parks, Clyde, 3,556,761.
Parry, Paul. Device for locking. 3,556,574, Cl. 292-280.
Parshall, Bert B., to FMC Corporation. Magnetic probe for tow trucks. 3,556,012, Cl. 104-88.
Parthasarathy, R; and Ciapetta, Frank G., to Grace, W. R., & Co. Oxidation of acrolein and methacrolein. 3,557,199, Cl. 260-530.
Passal, Frank. Nickel plating. 3,556,959, Cl. 204-49.
Patnaude, Henry A. Hold-down anchor for airplanes and other sturctures. 3,556,457, Cl. 248-361.
Pattijn, Hendrik Adolf; Thiers, Robrecht Julius; Tavernier, Bernard Hippoliet; and Willems, Jozef Frans, to Gevaert-Agfa N.V. Cobalt(II) and manganese(II) chelates as photographic emulsion antifoggants. 3,556,797, Cl. 96-109.
Patton, George T., Jr., to Welsh Manufacturing Company. Face shield mounting. 3,555,562, Cl. 2-10.
Paul, Herman L., Jr. Ball valve. 3,556,471, Cl. 251-172.
Paul, Korschinski Nicholas, to Eon Corporation. Safety belt buckle. 3,555,633, Cl. 24-230.
Paul, Roger L.: *See—*
Svedman, Jon A.; and Paul, Roger L., 3,556,437.
Pawlik, Gunter, to Agfa-Gevaert Aktiengesellschaft. Exposure control for photographic cameras. 3,555,986, Cl. 95-10.
Pawloski, Chester E., to Dow Chemical Company, The. Process for preparing 1,4-substituted-1,3-butadiynes. 3,557,237, Cl. 260-678.
Payne, Burton L.; Darron, Ward K.; and Zuris, Peter M., to Eastman Kodak Company. Adjustable mounting device. 3,555,954, Cl. 83-699.
Payne, Ronald C.: *See—*
Alexander, Jack F.; Mallory, Peter E.; and Payne, Ronald C., 3,557,308.
Peckenpaugh, Charles W.: *See—*
Strandine, Eldon J.; and Peckenpaugh, Charles W., 3,556,809.
Pedain, Josef: *See—*
Krauss, Heinz Walter; Pedain, Josef; Zenner, Karl-Friedrich; Oertel, Gunter; and Holtschmidt, Hans, 3,557,043.
Peerless of America, Incorporated: *See—*
O'Connor, Joseph M., 3,556,567.
Peerless Trailer and Truck Service, Inc.: *See—*
Van Raden, Frederick F., 3,556,545.
Peerman, Dwight E., to General Mills, Inc. Curing of epoxy resins with certain aminoamides. 3,557,056, Cl. 260-47.
Pegg, Loren Davis. Electric football game with offensive, defensive, and chance selection means. 3,556,525, Cl. 273-94.
Pender, David R. Ski lift. 3,556,015, Cl. 104-173.
Penick & Ford Limited: *See—*
Martin, Larry C.; and Harvey, Richard D., 3,557,091.
Penn Engineering & Manufacturing Corporation: *See—*
Ernest, Richard B., 3,556,189.
Pennell, Kit E., to Vendo Company, The. Dual path coin sorting and validating device. 3,556,276, Cl. 194-101.
Penner, Siegfried E.: *See—*
Moyer, Patricia H.; and Penner, Siegfried E., 3,557,228.
Pennock, Robert L., Jr., to Honeywell Inc. Supporting apparatus. 3,556,650, Cl. 353-21.
Pennsalt Corporation: *See—*
Huber, Ludwig Konrad, 3,557,068.
Pennwalt Corporation: *See—*
Keckemet, Obren, 3,557,288.
Keckemet, Obren, 3,557,289.
Santo, John E.; and Vandegaer, Jan E., 3,557,205.
Shetty, Bola Vithal, 3,557,117.
Smith, Harold Vernon, 3,557,000.
Perfection Enterprises, Inc.: *See—*
Sebring, Eugene, 3,556,291.
Perfex Corporation: *See—*
Dehne, Manfred F., 3,556,204.
Perkin-Elmer Corporation, The: *See—*
Austin, Robert R., 3,556,640.
Mayo, Ralph Elliott; and Delany, Edward B., 3,557,365.
Perrier, Marius Antoine, to Gusken, Jean. Warp knitting machine. 3,555,854, Cl. 66-87.
Perry, D Cameron: *See—*
Clarke, William C., Jr.; and Perry, D Cameron, 3,556,776.
Persson, Mats, to Aktiebolaget Wifa-Berken. Surface drain with water trap. 3,556,993, Cl. 210-164.
Petersen, Eugene E.: *See—*
Halls, Kenneth F., 3,555,939.
Peterson, Leander J. Exhaust gas conditioning apparatus. 3,556,734, Cl. 23-277.
Peterson, Stephen G.: *See—*
Connerat, Edwin B.; and Peterson, Stephen G., 3,556,449.
Petracek, Francis J.; and Sugisaka, Nobuyuki, to Rexall Drug and Chemical Company. 1-Phenyl-3-phthalancarboxylic acids. 3,557,147, Cl. 260-343.3
Petrolite Corporation: *See—*
Mange, Franklin E.; Buriks, Rudolph S.; and Fauke, Allen R., 3,557,017.
Petruzella, James J.: *See—*
Aileo, Jackson A.; and Petruzella, James J., 3,555,674.
Petry, Howard J., to Rexarc Incorporated. Ferrous alloy containing high manganese and chromium. 3,556,777, Cl. 75-126.
Pettersson, Bror Gosta, to Aktiebolaget Bofors. Method for producing colorless esters of pyridine carboxylic acids. 3,557,130, Cl. 260-295.5
Pettibone Mulliken Corporation: *See—*
Lund, Robert S., 3,556,195.
Pevzner, Semen Albertovich: *See—*
Vitushkin, Vladimir Ivanovich; Koire, Viktor Evseevich; Pevzner, Semen Albertovich; Sidorenko, Alexandr Konstantinovich; Matsegora, Evgeny Alexandrovich; and Eskin, Vladimir Iosifovich, 3,555,961.
Pfannmueller, Helmut: *See—*
Buechner, Oskar; Immel, Wolfgang; Pfannmueller, Helmut; Schmidt-Thomee, Georg; and Urban, Friedrich, 3,557,074.
Pfarrwaller, Erwin; and Inglin, Anton Xaver, to Sulzer Brothers, Ltd. Guide for weft picking means in a loom. 3,556,163, Cl. 139-188.
Pfeifer, Friedrich; and Deller, Rudolf, to Vacuumschmeize GmbH. Process for treating nickel-iron-base alloy strip to increase induction rise and pulse permeability. 3,556,876, Cl. 148-108.
Pfister, Marcel: *See—*
Wesch, Ludwig; Pfister, Marcel; and Loeffler, Herbert, 3,556,905.
Pfizer, Chas., & Co., Inc.: *See—*
Butler, Kenneth, 3,557,094.
Pharmacia Aktiebolag: *See—*
Skagius, Kurt T. J.; and Akerblom, Eva B., 3,557,137.
Pharr, Rodger H.: *See—*
Grouver, Edwin F.; Reid, Guy T.; Wood, John H.; Pharr, Rodger H.; and Mize, Charles A., 3,555,594.
Philco-Ford Corporation: *See—*
Holloway, Henry; and Maxwell, Kenneth H., 3,556,875.
Hubbard, James R., 3,555,701.
Philip Morris Incorporated: *See—*
Laszlo, Tibor S., 3,555,682.
Phillips Fibers Corporation: *See—*
Van Doornewaard, Hans, 3,555,639.
Phillips, Howard Charles: *See—*
Busler, Willard Le Roy; Folk, Kenneth Foster; Phillips, Howard Charles; and Ross, Milton Dean, 3,556,382.
Phillips, Leslie Nathan; Thomas, David Kenneth; and Wright, William Walter, to United Kingdom of Great Britain and Northern Ireland, Minister of Technology in Her Britannic Majesty's, Government of the. Polymeric antioxidants for elastomers and rubbers. 3,557,245, Cl. 260-824.
Phillips Petroleum Company: *See—*
Cines, Martin R., 3,556,494.
Cunningham, Sheldon A., 3,557,238.
Gaeth, Rudolf H., 3,557,075.
Harrington, Frank A., 3,556,297.
Hsieh, Henry L.; and Mueller, Francis X., Jr., 3,557,252.
Kubicek, Donald H., 3,557,225.
Lumpkin, William B.; and Jennings, John E., 3,556,222.
McClintock, William A., 3,555,837.
Meldau, Robert F., 3,556,219.
Mitacek, John, 3,556,730.
Needham, Riley B., 3,556,979.
Sherk, Fred T., 3,557,226.
Woods, Guy S., Jr., 3,556,606.
Phillips, William: *See—*
Barrett, Cedric A.; and Phillips, William, 3,556,468.
Phizer, Chas. & Co., Inc.: *See—*
Butler, Kenneth, 3,557,090.
Piaskowski, Edward J.; and Kreider, Edward W., to Babcock & Wilcox Company, The. Drainable shield for heat exchangers. 3,556,207, Cl. 165-135.

Pich, Rene: *See—*
Bonnard, Lucien; and Pich, Rene, 3,557,055.
Piekenbrock, Lawrence J.; and Tibbals, Edward Camp, Jr., to Dawson, Alexander, Inc., mesne. Gamma ray laser having a low temperature closed resonating cavity. 3,557,370, Cl. 250-84.
Pieper, Gustav; von Bonin, Wulf; and Grundmann, Ekkehard, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of poly-N-oxides. 3,557,140, Cl. 260-326.3
Pierce, Chester J., Jr., to Kliklok Corporation. Interlocks for folding box panels. 3,556,384, Cl. 229-35.
Pierson, Charles W.: *See—*
Burgo, Paul A.; and Pierson, Charles W., 3,556,912.
Pigott, Albert Edward; and Thompson, Peter John, to United Kingdom Atomic Energy Authority. High pressure liquid pump. 3,556,692, Cl. 417-540.
Pile, Benjamin D. Lightweight folding litter. 3,555,578, Cl. 5-82.
Pillsbury Company, The: *See—*
Fritzberg, Edward L., 3,555,992.
Tucker, Don R.; Green, Lloyd L.; and Zimmerman, Howard K., 3,556,798.
Pinter, Karoly G.: *See—*
Calhoun, Edward J.; and Pinter, Karoly G., 3,556,103.
Pinter, Ladislaus: *See—*
Beriger, Ernst; and Pinter, Ladislaus, 3,557,258.
Piquerez, Ervin. Fluidtight and tamper-proof timepiece case. 3,555,812, Cl. 58-90.
Pirelli Societa per Azioni: *See—*
Priaroggia, Paolo Gazzana, 3,557,301.
Terragna, Pietro, 3,555,789.
Pistor, Horst; and Schuster, Hubert, to Deutsche Gold- und Silber-Scheideanstalt vormals Roessler. Process for the production of alkali perborates and percarbonates. 3,555,696, Cl. 34-9.
Pitre, Davide: *See—*
Felder, Ernst; and Pitre, Davide, 3,557,197.
Pittman, Paul F.: *See—*
Bratkowski, Walter V.; and Pittman, Paul F., 3,555,894.
Plasser, Franz; and Theurer, Josef. Mobile track correction apparatus. 3,556,010, Cl. 104-7.
Plastic Rotational Mouldings Limited: *See—*
Westhrook, Aubrey Joseph; and Thomson, Ian David MacKnight, 3,555,613.
Plume, William F., to FMC Corporation. Torsional vibration damper. 3,555,927, Cl. 74-574.
Pogonowski, Ivo C., to Texaco Inc. Composite foundation member and method. 3,555,831, Cl. 61-46.5
Poirier, Armand R.; and Briese, John A., to Onan. Fuel cell. 3,556,857, Cl. 136-86.
Polaroid Corporation: *See—*
Ryan, William H., 3,556,788.
Polejes, Jacob David, to Du Pont de Nemours, E. I., and Company. Polyvinyl fluoride film. 3,556,923, Cl. 161-162.
Polen, Percy B., to Velsicol Chemical Corporation. Malting process. 3,556,946, Cl. 195-71.
Polito, Fred J.: *See—*
Krohn, Harvey Berton; and Polito, Fred J., 3,556,812.
Politz, William E., to Young, Stephen A. Faucet construction and means for preventing soil accumulation and incrustation thereon. 3,556,140, Cl. 137-359.
Pollacek, Michael J.: *See—*
Hill, Richard C.; and Pollacek, Michael J., 3,556,858.
Pollard, Charles H.: *See—*
Gilreath, Lafayette E.; and Pollard, Charles H., 3,556,233.
Pollio, Frank X.; Kun, Kenneth A.; and Kunin, Robert, to Rohm and Haas Company. Removal of H_2S and NH_2 from gas streams. 3,556,716, Cl. 23-2.
Poly-Choke Company, Inc., The: *See—*
Stacy, William E., 3,556,537.
Poly-Choke Company, Incorporated, The: *See—*
Grahn, Arne Y., 3,556,889.
Polymer Corporation Limited: *See—*
Bauer, Rudolf Friedrich; and Storey, Edward Blake, 3,557,254.
Edwards, Douglas Cameron; and Lewis, Peter Noel, 3,557,064.
Polzer, Erich, to Voith Getriebe KG. Hydrodynamic transmission. 3,555,931, Cl. 74-718.
Pomagalski, Jean, S.A.: *See—*
Pomagalski, Jean; and Tauzin, Francis, 3,556,016.
Pomagalski, Jean; and Tauzin, Francis, to Pomagalski, Jean, S.A., and Sigma Plastique. Telpher car. 3,556,016, Cl. 105-150.
Pomeroy, J. H., & Co. Inc.: *See—*
York, Philip J., 3,555,830.
Pomeroy, J. H., & Company, Inc.: *See—*
Kowell, Edward L., 3,557,274.
Pommer, Horst: *See—*
Koenig, Karl-Heinz; and Pommer, Horst, 3,557,214.
Pons, Walter A., Jr.; and Eaves, Paul H., to United States of America, Agriculture. Aqueous acetone extraction of cottonseed. 3,557,168, Cl. 260-412.4
Pope, Leslie William: *See—*
Nelson, Kenneth Raeburn; and Pope, Leslie William, 3,556,576.
Popkin-Clurman, J. Raymond, to International Scanatron Systems Corporation. Long life packaging of electrolytic recording paper and the like. 3,556,290, Cl. 206-47.
Porous Plastics Limited: *See—*
Collard, Ronald Thomas; and Wright, Phillip Brian, 3,556,304.
Porri, Lido: *See—*
Bonfardeci, Augusto; and Porri, Lido, 3,557,076.
Porter, Forrest V.: *See—*
Bohn, Floyd O.; and Porter, Forrest V., 3,556,211.
Porter, Marion G., to General Electric Company. Data processing system including means for detecting algorithm execution completion. 3,557,355, Cl. 235-164.
Porter, Marion G., to General Electric Company. Data processing system having time-shared storage means. 3,557,357, Cl. 235-175.
Porter, Selby W., to Kalium Chemicals Limited. Telescopic wash down liner and method of solution mining. 3,556,597, Cl. 299-5.
Porter, Virgle E., to Amtron, Inc. Telephone switchboard with universal line/trunk circuits. 3,557,317, Cl. 179-27.
Post, Carl B.; Leinbach, Ralph C., Jr.; and Sullivan, Michael D., to Carpenter Technology Corporation. Process for making alloys and metals. 3,556,770, Cl. 75-10.
Pourtier, Daniel. Machines for laying cable strands. 3,555,803, Cl. 57-59.
Povlacs, Lawrence: *See—*
Miskell, Earle; and Povlacs, Lawrence, 3,555,564.
Powell, Hayden B.: *See—*
Helgert, Harold L; Powell, Hayden B.; and Teorsky, Robert K., 3,556,871.
Powell, Thomas C., to General Motors Corporation. Method of manufacturing uniform preload ball joint assemblies. 3,555,662, Cl. 29-436.
PPG Industries, Inc.: *See—*
Dent, Joseph B., Jr., 3,556,755.
Praddaude, Pierre A., to Societe Anonyme Poclain Le Plessis-Belleville. Hydraulic power transmission. 3,555,968, Cl. 91-412.
Precision Welder & Flexopress Corporation: *See—*
Kruer, Harold H.; Raney, Melvin A.; and Elmore, Clifford L., 3,556,013.
Preformed Line Products Company: *See—*
Hoban, Jerome C., 3,555,625.
Prem, Joseph F.: *See—*
Haun, John W.; Hoyt, Charles T.; and Prem, Joseph F., 3,555,797.
Premo, Charles N., to Koehring Company, mesne. Production of porous shaped articles from a thermoplastic substance. 3,556,460, Cl. 249-80.
Pressed Steel Fisher Limited: *See—*
Wallace, John F.; and Ransome, John G., 3,556,970.
Presswood, John K.; and Foster, Walter E., to Ethyl Corporation. Process for recovering olefins from mixtures with aluminum alkyls. 3,557,236, Cl. 260-677.
Presti, Anthony J.; and Kersta, Lawrence G., to Farrington Manufacturing Company. Speech recognizer. 3,557,310, Cl. 179-1.
Preti, Roberto, to H.S.G. S.p.A. High efficiency, reversible or irreversible gear pairs with parallel axes suitable to provide high gear ratios, with small center distance. 3,555,922, Cl. 74-458.
Priaroggia, Paolo Gazzana, to Pirelli Societa per Azioni. Sheathing of electrical cables. 3,557,301, Cl. 174-102.
Price, Harold. Apparatus for continuously forming conical shaped cleats on a thermoplastic sheet. 3,555,601, Cl. 18-10.
Printing Developments, Inc.: *See—*
Jordan, Harold O. W.; Keenan, Michael J.; and Ross, Austin, 3,557,303.
Prior Products, Inc.: *See—*
Walker, Harold L., 3,556,404.
Prityko, Vladimir Pavlovich: *See—*
Strakhov, Vasily Vasilievich; Kuzmin, Jury Nikolaevich; Krikunov, Alexandr Eliseevich; Tombaev, Nikolai Ivanovich; Gisin, Iosif Borisovich; Agafonov, Anatoly Grigorievich; Zaitsev, Mikhail Pavlovich; Shender, Eda Grigortevna; Prityko, Vladimir Pavlovich; Makeeva, Maria Lukyanovna; and Soloviev, Anatoly Mikhailovich, 3,555,991.
P. R. Motors Limited: *See—*
Merritt, Henry Edward, 3,555,920.
Procter & Gamble Company: *See—*
Broaddus, Charles D., 3,557,005.
Morris, Robert L.; and Castle, John R., 3,557,003.
Procter & Gamble Company, The: *See—*
Amneus, John S.; and Bahrani, Abdul S., 3,556,935.
Lyness, Warren I., 3,557,206.
Mathes, Howard E., 3,555,771.
McCarty, Charles Bruce, 3,557,002.
O'Connor, David Evans; and Lyness, Warren Irl, 3,557,221.
Procton, Jerome C. Guide roller assembly. 3,555,612, Cl. 16-105.
Proctor, Thomas, to Allen-Bradley Company, mesne. Digital feedrate generator. 3,557,350, Cl. 235-151.11
Prodzenski, Donald T., to Alpeda Industries, Inc. Method of and apparatus for cleaning bottle and jar type containers. 3,556,847, Cl. 134-23.
Proffitt, James R., Jr.: *See—*
Angelotti, William J.; Proffitt, James R., Jr.; Reyburn, Nathaniel R.; and San Frotello, Louis L., 3,555,605.
Angelotti, William J.; Proffitt, James R., Jr.; Reyburn, Nathaniel R.; and San Frotello, Louis L., 3,557,267.
Prontor-Werk Alfred Gauthier G.m.b.H.: *See—*
Rentschler, Waldemar T., 3,555,984.
Pryor, Michael J.; and Hager, Stephen F., to Olin Corporation. Method for reclaiming copper scrap containing titanium and/or iron. 3,556,962, Cl. 204-108.
Pugh, Benjamin J.: *See—*
Newmiller, Henry L.; and Pugh, Benjamin J., 3,556,417.

Pugh, Billy Gene. Personnel lowering device and brake therefor. 3,556,261, Cl. 188-78.
Pugh, Viola May: *See—*
Newmiller, Henry L.; and Pugh, Benjamin J.,3,556,417.
Puma-Sportschuhfabriken Rudolf Dassler KG: *See—*
Dassler, Rudolf, 3,555,697.
Pundsack, Arnold L.: *See—*
Levy, Mortimer; and Pundsack, Arnold L.,3,556,781.
Punwani, Swamidas K., to Dresser Industries, Inc. Automatic coupling system for train brake lines. 3,556,314, Cl. 213-76.
Puster, Louis M.; and Caldwell, Edward N., to Robertshaw Controls Company. High and low pressure pneumatic control system. 3,556,399, Cl. 236-47.
Putnam, David F.; Russell, Sid; and Birbara, Philip, to United Aircraft Corporation. Recovery of water from urine by chromium ion treatment and distillation. 3,556,949, Cl. 203-6.
Putze, Marvin D.: *See—*
Hanzlik, Alvin S.; Linhart, Otto C.; and Putze, Marvin D.,3,556,821.
Quaedvlieg, Mathieu: *See—*
Schmitt, Ernst; Hees, Walter; and Quaedvlieg, Mathieu,3,556,715.
Quaker Oaks Company, The: *See—*
Krohn, Harvey Berton; and Polito, Fred J., 3,556,812.
Quality Control Equipment Company, Inc.: *See—*
Spence, John E.; and Elbert, Andrew Clark, 3,555,910.
Quality Controls Company, Inc.: *See—*
Barbuto, David J., 3,556,153.
Quantachrome Corporation: *See—*
Lowell, Seymour, 3,555,912.
Quarles, Richard W.: *See—*
Fry, John S.; Silver, Julius L.; and Quarles, Richard W.,3,556,952.
Quelle, Fred W., Jr. Laser rangefinder. 3,556,657, Cl. 356-4.
Quick, Clifford F., to Micro Wave Voice Corporation. Speech aid device. 3,556,093, Cl. 128-137.
Quick, Graeme R., to Iowa State University Research Foundation. Dynamic grain handling system. 3,555,790, Cl. 56-21.
Quimby, Leo. Mop wringer attachment for pails, etc.. 3,555,589, Cl. 15-260.
Raasch, Hans, to Reiners, Walter. Device for electro-optically monitoring filiform material. 3,557,377, Cl. 250-219.
Rabedeau, Melbourne E.: *See—*
Banks, Willard K.; and Rabedeau, Melbourne E.,3,556,638.
Rademacher, Robert E.: *See—*
Marasso, Fred D.; and Rademacher, Robert E.,3,556,316.
Radford, Warren S. Therapeutic device. 3,555,582, Cl. 5-338.
Radin, Bernard G., to Ford Motor Company. Position to voltage transducer and speed control system utilizing same. 3,556,245, Cl. 180-105.
Radusch, Paul, to Koppers Company, Inc., mesne. Process for purifying crude coke-oven gases. 3,556,721, Cl. 23-119.
Rael, Joseph L.: *See—*
Haws, Gerald W.; Rael, Joseph L.; and Rhudy, John S.,3,556,221.
Raffaelli, Milo L., Sr., to Scholl Mfg. Co., Inc., The. Cushion insole. 3,555,709, Cl. 36-44.
RAI Research Corporation: *See—*
D'Agostino, Vincent F.; and Lee, Joseph Y. C., 3,556,965.
Raible, Karl J., to Aktiengesellschaft fur Brauerei-Industrie. Process of preparing an adsorbent for treating beverages from acid-activated montmorin minerals. 3,557,023, Cl. 252-450.
Rains, Forrest D. Non-spillable, magnetic drinking container. 3,556,341, Cl. 220-90.4
Raleigh, Edward W., to Du Pont de Nemours, E. I., and Company. Preparation of 1-(carbamoyl)-N-(carbamoyloxy) thioformimidates from acetoacetamides. 3,557,089, Cl. 260-239.
Ralston Purina Company: *See—*
Fujiwara, Huygene K., 3,556,815.
Ramsey, William W.; and Flora, Robert Dale. Lighting fixture clamping device. 3,556,452, Cl. 248-228.
Ranco Incorporated: *See—*
Cook, Russell E., 3,555,843.
Randall, David I., to GAF Corporation. Cellulose dyeing with dichloroacrylamide quaternized reactive dyes. 3,556,708, Cl. 8-39.
Randolph, Hollis L.; Hull, Bradford N.; and Chambers, William W., to Robertshaw Controls Company. Snap acting bimetal heatmotor valve operator. 3,556,462, Cl. 251-11.
Raney, Melvin A.: *See—*
Kruer, Harold H.; Raney, Melvin A.; and Elmore, Clifford L.,3,556,013.
Ransome, John G.: *See—*
Wallace, John F.; and Ransome, John G.,3,556,970.
Rapp, Lester M.: *See—*
Weber, James A.; Rapp, Lester M.; and Stewart, Norman C.,3,556,989.
Raschke, Herbert A., to Bullard, E. D., Company. Suspension system for safety hat. 3,555,560, Cl. 2-3.
Rausch, Hans; and Viereck, Hubert, to Metallgesellschaft Aktiengesellschaft. Method of sponge iron briquetting. 3,556,772, Cl. 75-33.
Rausch, John P., to FMC Corporation. Lift roller stand. 3,556,478, Cl. 254-1.
Rausch, Richard E., to Universal Oil Products Company. Hydrocarbon isomerization catalyst. 3,557,022, Cl. 252-439.
Rawlings, Robert A., to National Steel Corporation. Refractory support. 3,555,661, Cl. 29-431.
Raymond, A.: *See—*
Overhoff, Heinrich; and Junemann, Dieter, 3,555,629.
Rayonier Incorporated: *See—*
Mitchell, Reid L.; Murphy, Charles F.; and LaPolla, Edmund M., 3,557,262.
RCA Corporation: *See—*
Gray, George W., 3,556,244.
Heiman, Frederic P.; and Robinson, Paul H., 3,556,880.
Lundvall, Carl L., II, 3,555,640.
Mayer, Alfred, 3,556,879.
Schlieben, Ernest W., 3,556,035.
Waxman, Albert; and Zaininger, Karl H., 3,556,966.
Reed George P., III, to Kalwall Corporation. Overlap joint for translucent wall panels. 3,555,755, Cl. 52-308.
Rees, Donald E.: *See—*
McCloskey, Chester M.; Rees, Donald E.; and Hoff, George,3,557,009.
Reflex Corporation of Canada Limited: *See—*
Hedgewick, Peter, 3,555,606.
Reicker, Robert D.: *See—*
Gardner, John R.; and Reicker, Robert D.,3,556,602.
Reid, Guy T.: *See—*
Grouver, Edwin F.; Reid, Guy T.; Wood, John H.; Pharr, Rodger H.; and Mize, Charles A.,3,555,594.
Reiners, Walter: *See—*
Raasch, Hans, 3,557,377.
Reinhardt, Robert M.: *See—*
Kullman, Russell M.; Frick, John G., Jr.; and Reinhardt, Robert M.,3,556,713.
Reistle, Carl E., III; and Burkhardt, Joseph A., to Esso Production Research Company. Retrievable wireline lubricator and method of use. 3,556,209, Cl. 166-0.5
Reiterman, Donald R., to Armorlite Lens Company, Inc. Gasket ring. 3,555,610, Cl. 18-34.
Reiterman, Donald R., to Armorlite Lens Company, Inc. Mold for casting optical elements and the like. 3,555,611, Cl. 18-39.
Reliance Electric Company: *See—*
Sprague, Gordon P., 3,556,256.
Renckhoff, Gustav: *See—*
Hulsmann, Hans-Leo; and Renckhoff, Gustav,3,557,167.
Rene, Vidal Lucien, to Societe a Responsabilite Limitee de Projets et Realisations de Materiel 'Promat'. Arrangement for the feed of workpieces in a machine tool. 3,556,368, Cl. 226-11.
Renfroe, Harris B.: *See—*
Hall, Luther A. R.; Gurney, John A.; and Renfroe, Harris B.,3,557,218.
Rensch, Heinz; and Oden, Hoeckly, to International Standard Electric Corporation. Method of decoding the information on perforated tapes with the aid of fiber optics. 3,557,345, Cl. 235-61.11
Rentschler, Waldemar T., to Prontor-Werk Alfred Gauthier G.m.b.H. Photographic camera having an electronic exposure timing device. 3,555,984, Cl. 95-10.
Republic Steel Corporation: *See—*
McClain, Rollin T., 3,556,874.
Research Council of Alberta: *See—*
Round, George F., 3,556,604.
Research Development Corporation: *See—*
Takashina, Naomitsu; Aida, Teruo; Endo, Yasuhiro; and Nagashima, Wakio, 3,557,040.
Respond Inc.: *See—*
Ott, Richard J., 3,556,354.
Reti, Adrian R.: *See—*
Ehrreich, John E., III; Reti, Adrian R.; and Brian, Pierre L. T.,3,556,803.
Reusser, Carl J., to Marine Commuter Corporation. Pallet board using polystyrene foam spacers between corrugated cardboard. 3,556,886, Cl. 156-265.
Rexall Drug and Chemical Company: *See—*
Petracek, Francis J.; and Sugisaka, Nobuyuki, 3,557,147.
Rexarc Incorporated: *See—*
Petry, Howard J., 3,556,777.
Rey, Paul Pierre Marie: *See—*
Bonnart, Jacques Paul Marie; Bonnet, Yannik; and Rey, Paul Pierre Marie,3,557,215.
Reyburn, Nathaniel R.: *See—*
Angelotti, William J.; Proffitt, James R., Jr.; Reyburn, Nathaniel R.; and San Frotello, Louis L.,3,555,605.
Angelotti, William J.; Proffitt, James R., Jr.; Reyburn, Nathaniel R.; and San Frotello, Louis L.,3,557,267.
Rhee, Seong Kwan, to Bendix Corporation, The. Method of diffusion bonding of metals. 3,555,666, Cl. 29-488.
Rheinlander, Paul; Schumacher, Heinz; and Hehnel, Paul, to Salzgitter Huttenwerk Aktiengesellschaft. Reaction vessel for reacting together two liquids of different specific gravities. 3,556,502, Cl. 266-37.
Rhone-Poulenc S.A.: *See—*
Bazouin, Andre; and Lefort, Marcel, 3,557,176.
Bizot, Jean; Bourat, Guy; and Michelet, Daniel, 3,556,961.
Boichard, Jacques; Brossard, Bernard; Gay, Michel; and Janin, Raymond, 3,557,201.
Bonnart, Jacques Paul Marie; Bonnet, Yannik; and Rey, Paul Pierre Marie, 3,557,215.
Charrin, Jean-Jacques; and Frechet, Pierre Joseph, 3,556,830.
Fouche, Jean Clement Louis; and Leger, Andre, 3,557,116.

Rhone-Poulence, S.A.: *See—*
Balme, Maurice; and Gruffaz, Max, 3,556,920.
Rhudy, John S.: *See—*
Haws, Gerald W.; Rael, Joseph L.; and Rhudy, John S.,3,556,221.
Ribier, Michel L., to Derruppe S.A. Device for selecting automatically one from at least three hydraulic receiver circuits. 3,556,149, Cl. 137-624.18
RIC Officine di Villar Perosa Societa per Azioni: *See—*
Senigalliesi, Dino, 3,556,539.
Rice, Leonard P.: *See—*
Maringer, Robert E.; and Rice, Leonard P.,3,556,778.
Riches, John M., to Dunlop Company Limited, The. Pneumatic tyres. 3,556,190, Cl. 152-209.
Richter, Sidney B.; and Berliner, Jordan P., to Velsicol Chemical Corporation. Phenoxyacetamides. 3,557,209, Cl. 260-559.
Ridenour, James: *See—*
Longshaw, William J.; Wilson, Roy C., Jr.; and Ridenour, James,3,557,275.
Riegel, Herbert, to Lummus Company, The. Oxychlorination of ethane to vinyl chloride. 3,557,229, Cl. 260-656.
Riek, Raymond F.: *See—*
Buckley, Francis T.; Riek, Raymond F.; and Christensen, Donald I.,3,556,890.
Rigot, Robert M.; and Harrington, Winston F., to Aerpat A.G. Adaptor for pneumatically operated pulling tool. 3,555,649, Cl. 29-200.
Ritsko, Joseph E.: *See—*
Chiola, Vincent; Ritsko, Joseph E.; and Vanderpool, Clarence D.,3,556,725.
Rittner, Siegbert: *See—*
Diery, Helmut; Rittner, Siegbert; and Lorke, Horst,3,556,994.
Rivers, Joseph T., Jr.: *See—*
Green, James R.; Rivers, Joseph T., Jr.; and Sturgeon, Donald L. G.,3,556,922.
Rivetti, Enrico, to Fiat Societa per Azioni. Master cylinders. 3,555,822, Cl. 60-54.6
RKL Controls, Inc.: *See—*
Little, Robert K., 3,556,461.
Little, Robert K., 3,556,465.
Robbins, James S., and Associates, Inc.: *See—*
Fikse, Tyman H., 3,556,599.
Roberts, Denzil M., to Corpus Christi Bank and Trust, mesne. Dispensing hopper with flexible-walled discharge compartment. 3,556,352, Cl. 222-203.
Roberts, John A.; and King, Alwyn H., to Brunswick Corporation. Collimated hole structure with mask for producing high resolution images. 3,556,636, Cl. 350-96.
Roberts, Preston C., to Great Southern Oil Tool Co., Inc. Stress detector and locator for well pipe. 3,555,896, Cl. 73-151.
Roberts, Robert, to Du Pont de Nemours, E. I., and Company. Structures of polytetrafluoroethylene resins and their manufacture. 3,556,161, Cl. 138-141.
Robertshaw Controls Company: *See—*
Chambers, William W., 3,557,342.
Egresits, Rudolph J., 3,556,044.
Katchka, Jay R., 3,556,117.
Puster, Louis M.; and Caldwell, Edward N., 3,556,399.
Randolph, Hollis L.; Hull, Bradford N.; and Chambers, William W., 3,556,462.
Robertson, H. H., Company: *See—*
Curran, Bernard E.; Gartner, Rodney W.; and Linder, Robert G., 3,555,756.
Robertson, Jack Y., to Zeltex, Inc. Digitally controlled analog function generator. 3,557,347, Cl. 235-150.53
Robertson, Michael Mundie: *See—*
Mc Intyre, James Eric; and Robertson, Michael Mundie,3,557,039.
Robin, Dorothy. Coffee bag. 3,556,392, Cl. 229-69.
Robinet, Jean-Claude: *See—*
Vergne, Jean; Pailloux, Claude; Muller, Jean-Claude; and Robinet, Jean-Claude,3,557,072.
Vergne, Jean; Solaux, Leon; Robinet, Jean-Claude; and Lacroix, Philippe,3,557,062.
Robinson, Bernie E., to Milwaukee Valve Company, Inc. Pneumatic-electrical fluid gauging device. 3,555,882, Cl. 73-37.5
Robinson, Gene C., to Ethyl Corporation. Process for producing carboxylic acids. 3,557,169, Cl. 260-413.
Robinson, Gene H.; and Jarvis, James G., to Eastman Kodak Company. Electrostatic image development. 3,556,784, Cl. 96-1.4
Robinson, Gene H.: *See—*
Trachtenberg, William; Robinson, Gene H.; and Rodenberg, Orville C.,3,556,050.
Robinson, Paul H.: *See—*
Heiman, Frederic P.; and Robinson, Paul H.,3,556,880.
Roch, Josef, to Boehringer Ingelheim G.m.b.H. Novel 2,7,Di-(heterocyclic amino)-4-amino-6- phenyl-pteridines. 3,557,105, Cl. 260-247.5
Roch, Josef, to Boehringer Ingelheim G.m.b.H. 2-[Di-(β-hydroxy-lower alkyl)amino]-4,7-di (heterocyclic amino)-6-phenyl-pteridines. 3,557,106, Cl. 260-247.5
Rochla, Kurt, to Windmoller & Holscher. Tube-making machine for manufacturing valved and gusseted sacks form plastic material. 3,555,973, Cl. 93-8.
Rockwell, Edward A. Power unit for hydraulic brake systems. 3,555,821, Cl. 60-54.5
Rockwell Manufacturing Company: *See—*
Sugden, Harry, Jr., 3,556,145.
Rodenberg, Orville C.: *See—*
Trachtenberg, William; Robinson, Gene H.; and Rodenberg, Orville C.,3,556,050.
Rodman Industries, Inc.: *See—*
Haile, David Alexander, 3,556,179.
Rodth, Joseph J.: *See—*
Segal, Arthur B.; and Rodth, Joseph J.,3,556,347.
Roelandt, Frank J., to Diebold, Incorporated. Closure for pneumatic system carrier. 3,556,436, Cl. 243-35.
Roepstorff, Peter: *See—*
Brunfeldt, Kay; Roepstorff, Peter; and Halstrom, John,3,557,077.
Rogers, John Anthony, to Metal Box Company Limited, The. Sealing of cartons. 3,555,780, Cl. 53-375.
Rogers, Rupert O.: *See—*
Carter, Charles I.; and Rogers, Rupert O.,3,555,976.
Roggenburk, Earl G. Rotary impact tool. 3,556,230, Cl. 173-93.5
Rogler, Walter: *See—*
Lenz, Arnold; and Rogler, Walter,3,557,179.
Rohde & Dorrenberg: *See—*
Dorrenberg, Richard, 3,555,935.
Rohm and Haas Company: *See—*
Hamann, Herman Christian, 3,557,061.
Leister, Norman A., 3,556,997.
Messina, Nicholas V.; and Senior, Donald R., 3,556,999.
Pollio, Frank X.; Kun, Kenneth A.; and Kunin, Robert, 3,556,716.
Rohr Corporation: *See—*
Hilbig, Jack H., 3,556,246.
Roland Offsetmaschinenfabrik Faber & Schleicher AG.: *See—*
Koch, Werner, 3,556,005.
Roman, James A.: *See—*
United States of America,National Aeronautics and Space Administration, Administrator, 3,555,898.
Rometsch, Rudolf: *See—*
Detilleux, Emile; Hild, Werner Georg; Laazzaretto, Gianfranco; Menchero-Lopez, Emilio Manuel; and Rometsch, Rudolf,3,557,013.
Rondeau, Herbert F., to Warren Fastener Corporation. Non-consumable, re-usable stud welding ferrule. 3,557,339, Cl. 219-99.
Rood, Alvin A.: *See—*
Nord, Eric T.; Rood, Alvin A.; and Bosworth, Frederic M.,3,556,411.
Roosild, Sven A.; Mc Laughlin, Walter A.; and Lowe, Lester F., to United States of America, Air Force. Method of measuring ion beam homogeneity. 3,556,658, Cl. 356-36.
Rose, John L., Jr.: *See—*
Withers, Henry W., Jr.; and Rose, John L., Jr.,3,557,222.
Rosebrough, John D. Wall construction. 3,555,761, Cl. 52-478
Rosensweig, Leonard,: *See—*
Evensen, Gunnar, 3,556,656.
Rosenthal, Harold: *See—*
Whitman, Gordon R.; and Rosenthal, Harold,3,556,814.
Rosner, Leonard A. Combination undergarment. 3,556,106, Cl. 128-454.
Ross, Austin: *See—*
Jordan, Harold O. W.; Keenan, Michael J.; and Ross, Austin,3,557,303.
Ross, Irving D., Jr., to Youngstown Steel Door Company, The. Ratchet lock. 3,555,731, Cl. 49-210.
Ross, Milton Dean: *See—*
Busler, Willard Le Roy; Folk, Kenneth Foster; Phillips, Howard Charles; and Ross, Milton Dean,3,556,382.
Rossi, Anthony J. Method for extruding candy fillings having a high percentage of solids. 3,556,021, Cl. 107-54.
Roth, Donald J., to Continental Can Company, Inc. Electropneumatic and electrohydraulic re-forming of tubing and the like. 3,555,866, Cl. 72-56.
Roth, Walter; Gallo, Charles F.; Leiga, Algrid G.; and McInally, John A., to Xerox Corporation. Method and apparatus for increasing the efficiency of coroma charging of a photoconductor. 3,557,367, Cl. 250-49.5
Rottering, Quintin N., to Maytag Company, The. Token actuating circuit. 3,556,275, Cl. 194-4.
Round, George F., to Research Council of Alberta. Method and apparatus for direction of solid bodies in pipeline transportation. 3,556,604, Cl. 302-2.
Rouquette, Clement L., to S.E.V.-Marchal. Electromagnetically actuated fuel pump. 3,556,684, Cl. 417-307.
Roussel-UCLAF: *See—*
Joly, Robert; Warnant, Julien; and Farcilli, Andre, 3,557,286.
Rowe, Jean Max: *See—*
Goodwin, Leslie Ethel; Rowe, Jean Max; and Wyeth, Nathaniel Convers,3,556,000.
Rowekamp, Edward F., to Lodge & Shipley Company, The. Case packer. 3,555,770, Cl. 53-61.
Rowekamp, Edward F., to Lodge & Shipley Company, The. Four-head carriage for case packer. 3,555,773, Cl. 53-166.
Rowekamp, William H., to Shepherd, William F., Inc. Adjustable magazine for gum dispenser. 3,556,345, Cl. 221-242.
Roy, Alexander R., to Industrial Distributors (1946) Limited. Electroless metal coating. 3,556,839, Cl. 117-100.
Royalite Oil Company, Limited: *See—*
Clark, Lincoln; and Kaminsky, Victor P., 3,556,980.

Cymbalisty, Lubomyr M. O., 3,556,981.
Kaminsky, Victor P.; and Bowman, Clement W., 3,556,982.
Royston, Grover C., to Copolymer Rubber & Chemical Corporation. Process for upgrading of carbonyl streams. 3,557,217, Cl. 260-593.
Ruban, Feodosy Grigorievich; and Kovalev, Sergei Nikolaevich. Method of producing frit for ceramic binding of abrasive tool and of abrasive tool casing. 3,556,820, Cl. 106-48.
Rubin, Eugene S.; and Parkin, William J., to United States of America, Navy, mesne. Radiant energy detecting system. 3,557,369, Cl. 250-83.3
Rubin, Ronald W.; and Bennice, Richard L., to Valtronic Corporation, The. Stylized desk. 3,556,622, Cl. 312-195.
Rubner, Tibor D.: *See—*
Wavre, Andre; Thompson, Francis T.; and Rubner, Tibor D.,3,557,383.
Rudkin, Henry A., Jr., to Rudkin-Wiley Corporation. Automatic opening and closing means for a ski lift chair. 3,556,014, Cl. 104-173.
Rudkin-Wiley Corporation: *See—*
Rudkin, Henry A., Jr., 3,556,014.
Rudolf, Guy: *See—*
Chu, William; and Rudolf, Guy,3,555,609.
Rudolph, Hans: *See—*
Hermann, Karl-Heinz; Rudolph, Hans; and Gilch, Heinz,3,557,132.
Rue, Richard O.; Kinder, Floyd A.; and Hansen, Vance L., to United States of America, Navy. Remote control flying system. 3,557,304, Cl. 178-6.8
Ruetschi, Paul, to Leclanche S.A. Hermetically sealed enclosure for battery cells. 3,556,848, Cl. 136-6.
Ruiz, Joseph J., to Basic Incorporated. Pressure sealed rotary feeder. 3,556,355, Cl. 222-368.
Rumanowski, Edmund J., to Tenneco Chemicals, Inc.Substituted N,N'-bis (acetyl)-o-phenylene diamines. 3,557,211, Cl. 260-562.
Rundle, Victor A., to Chevron Research Company. Shock-cooled caulking tape and method of preparation. 3,556,926, Cl. 161-165.
Runge, Wallace F.; and Wehrmeister, Herbert L., to Commercial Solvents Corporation. Process of preparing hydroxylammonium sulfate. 3,556,719, Cl. 23-117.
Ruoff, Werner H., to Union Carbide Corporation. Fiber reinforced hot pressing molds. 3,556,893, Cl. 156-172.
Russell, Sid: *See—*
Putnam, David F.; Russell, Sid; and Birbara, Philip,3,556,949.
Rust, John B., to Hughes Corporation. Photopolymerization and viewing photographic process. 3,556,790, Cl. 96-27.
Rutkauskas, Vincent J., to United States of America, Atomic Energy Commission. Combination linear lifting and translation mechanism. 3,556,486, Cl. 254-135.
Ryan, William H., to Polaroid Corporation. Color photographic elements and process comprising 6-halo-7 hydroxy-1,3-4-triazainodolizines as stabilizers. 3,556,788, Cl. 96-3.
Rylander, Paul N.; and Hasbrouck, Lillian G., to Engelhard Minerals & Chemicals Corporation. Hydrogenation of aralkyl ketones. 3,557,223, Cl. 260-618.
Rymes, William. Rocker support for infant seat. 3,556,587, Cl. 297-133.
Saab Aktiebolag: *See—*
Arnekull, Swen Arne; and Dahlberg, Gosta, 3,556,442.
Sabema Corporation: *See—*
Yeager, Paul Allen, 3,556,743.
Sabin, Le Roy J.; and Hughes, Paul R., to United Aircraft Products, Inc. Fan protection valve. 3,556,142, Cl. 137-565.
Sablotny, Adalbert, to Hoesch Aktiengesellschaft. Method and apparatus for producing and/or testing spiral seamed tubes. 3,557,335, Cl. 219-62.
Sacco, Jean, to Societe Rhodiaceta. Cellulose triacetate containing at most 150 parts per million by weight of combined sulfuric acid and process for its production. 3,557,083, Cl. 260-230.
S.A.F.F.A. S.p.A. Fabbriche Frammiferi Ed Affini: *See—*
Florjancic, Peter, 3,556,703.
Sahaida, Joseph R. Attachment for wind instrument. 3,555,955, Cl. 84-397.
Sakamoto, Kenro: *See—*
Yamamoto, Toshihiko; Fujiwara, Mitsuto; Kojima, Tamotsu; and Sakamoto, Kenro,3,556,799.
Sakamoto, Masakatsu; Uchida, Kenji; Yamada, Yasunori; and Yamaguchi, Takashi, to Hitachi, Ltd. Apparatus for liquid displacement transfer. 3,556,682, Cl. 417-102.
Sakamoto, Teruo: *See—*
Maekawa, Hideyuki; Sakamoto, Teruo; and Shimada, Yasuo,3,555,608.
Sakamoto, Toemon, to Enshu Limited. Apparatus for forming reinforced selvages of a fabric usable in combination with a shuttleless loom. 3,556,162, Cl. 139-122.
Salerni, John V.: *See—*
Vazquez, Gonzalo; and Salerni, John V.,3,556,212.
Sallay, Stephen I., to American Home Products Corporation. Derivatives of iboga alkaloids. 3,557,126, Cl. 260-293.
Salle, Adelin Eugene Gaston: *See—*
Kobus, Stanislas; Salle, Adelin Eugene Gaston; Fontaine, Bernard Jean Robert; Termote, Alois Rene; and Masure, Jean Louis,3,557,315.
Salono, Giuseppe. Annular packing with metallic reinforcement. 3,556,541, Cl. 277-204.
Salt, Frederick W.: *See—*
Bullough, William; Jenkins, Walter N.; Jaffrey, William G.; Watts, Campbell; Jones, Granville K.; and Salt, Frederick W.,3,557,336.
Salvadori, Andre A.; Farrugia, Carmelo A.; Lecoanet, Andre P.; and Lovy, Philippe, deceased0 (by Lovy, Philippe born,0Schmidt, Louise; administrtrix), to Service National dit: Gaz de France. Process for the manufacture under pressure of gases which may be substituted for natural gases. 3,556,750, Cl. 48-197.
Salzdetfurth Aktiengesellschaft: *See—*
Bachmann, Rudolf; and Gentsch, Leonore, 3,556,718.
Salzgitter Huttenwerk Aktiengesellschaft: *See—*
Rheinlander, Paul; Schumacher, Heinz; and Hehnel, Paul, 3,556,502.
Sampson, Roy John; and Thomas, John Melvyn, to Imperial Chemical Industries Limited. Dimerisation of olefines. 3,557,242, Cl. 260-683.15
San Frotello, Louis L.: *See—*
Angelotti, William J.; Proffitt, James R., Jr.; Reyburn, Nathaniel R.; and San Frotello, Louis L.,3,555,605.
Angelotti, William J.; Proffitt, James R., Jr.; Reyburn, Nathaniel R.; and San Frotello, Louis L.,3,557,267.
Sander, Wolfgang, to Konus-Kessel Gesellschaft fur Warmetechnik mbH & Co. KG. Method and apparatus for heating and cooling presses and the like. 3,556,201, Cl. 165-2.
Sandoz AG: *See—*
Berde, Botond; and Fanchamps, Albert, 3,557,287.
Sandoz Ltd.: *See—*
Berde, Botond; and Fanchamps, Albert, 3,557,287.
Sandoz-Wander, Inc.: *See—*
Anderson, Paul L.; and Manning, Robert E., 3,557,110.
Manning, Robert E., 3,557,115.
Sandquist, Carl L.: *See—*
Bleasdale, James L.; and Sandquist, Carl L.,3,557,044.
Sanford Chemical Company: *See—*
Fooladi, Mike M., 3,557,227.
Sankyo Kogaku Kogyo Kabushiki Kaisha: *See—*
Nozawa, Yoshikuni, 3,556,648.
Sano, Shiro; Kato, Shuzo; Ishii, Eiichi; and Iga, Takeo, to Industrial Science and Technology, Agency of. Sintered polycrystalline magnesia bodies and method for production thereof. 3,556,823, Cl. 106-58.
Santo, John E.; and Vandegaer, Jan E., to Pennwalt Corporation. Stabilization of polyacid halides. 3,557,205, Cl. 260-544.
Santy, William G., to International Business Machines Corporation. Positioning device. 3,555,916, Cl. 74-89.15
Sanyo Chemical Industries, Ltd: *See—*
Kitagawa, Hioshi; Suwada, Atau; and Ohno, Satoyoshi, 3,557,060.
Sarett, Lewis H.; Hoff, Dale R.; and Henry, David W., to Merck & Co., Inc.3,Nitroimidazo-[2,1:a]-isoindoles. 3,557,138, Cl. 260-309.
Sashino, Shozoo: *See—*
Oishi, Asao; and Sashino, Shozoo,3,556,678.
Satoh, Tohru: *See—*
Yamamoto, Katsuro; Hatano, Takuya; Obata, Kuniyoshi; Satoh, Tohru; and Nakagawa, Shinji,3,555,884.
Satzinger, Gerhard, to Warner-Lambert Pharmaceutical Company. Substituted cyclohexenes, derivatives thereof and processes for obtaining same. 3,557,127, Cl. 260-294.3
Saumsiegle, Robert W., to Schjeldahl, G. T., Company. Wicket loader. 3,555,977, Cl. 93-93.
Sauna International, Inc.: *See—*
Brown, George M., 3,555,628.
Brown, George M., 3,555,634.
Sawahara, Masao: *See—*
Kimura, Shiro; Nakazawa, Yoshiuki; Sawahara, Masao; and Nakamura, Yasuharu,3,556,800.
Saward, Cyril Joseph, to Dunlop Company Limited, The. Vehicle suspension systems. 3,556,554, Cl. 280-124.
Saxonmeyer, Wallace J., to Whiting Corporation. Railway car handling mechanism. 3,556,011, Cl. 104-48.
Sayen, John: *See—*
Sharratt, Walter B.; and Sayen, John,3,555,707.
Scaglione, Paul J. Pressure balanced regulating valve with flared compression disc. 3,556,128, Cl. 137-219.
Scaramucci, Domer. Valve assembly with replacement valve unit. 3,556,473, Cl. 251-151.
Scaramucci, Domer. Dual sealed ball valves. 3,556,474, Cl. 251-172.
Scarvelis, Gus S., to Owens-Illinois, Inc. Process for making wet-strength paper and product thereof. 3,556,930, Cl. 162-135.
Schaller, Brian M.; and Schaller, Robert L., to Sundstrand-Engelberg Inc. Bar grinder. 3,555,740, Cl. 51-138.
Schaller, Robert L.: *See—*
Schaller, Brian M.; and Schaller, Robert L.,3,555,740.
Scharfen, Hans, to Forkardt, Paul, Kommanditgesellschaft. Adjustable holder for tools and workpieces. 3,555,933, Cl. 74-816.
Schaumburg, Edward G.: *See—*
Wolf, Alby H.; Schreader, Darreld L.; and Schaumburg, Edward G.,3,556,175.
Scheffer, Harry, to Kruger, Harry, GmbH. Motor-driven pump for delivering liquids at a pressure substantially constant and independent from the delivery. 3,556,690, Cl. 417-471.
Scheffler, Oscar A., Jr., to Caterpillar Tractor Company. Adjustable steering wheel. 3,555,924, Cl. 74-493.

Scheier, Donald J., to Gordon Johnson Company. Method of eviscerating poultry. 3,555,593, Cl. 17-45.
Scheikowski, Klaus: *See—*
Wessel, Karl-Heinz; and Scheikowski, Klaus,3,555,617.
Scheinberg, Ronald L.; and Page, Richard K. Booklet and cards for use in a limited credit system. 3,556,563, Cl. 283-7.
Schell, Raymond A.: *See—*
Kehoe, Lawrence J.; and Schell, Raymond A.,3,557,219.
Scher, Joseph William, to Weber & Scher Mfg. Co., Inc. High speed binder machine. 3,555,801, Cl. 57-18.
Scheublein, William A., Jr.: *See—*
Fister, Louis P.; and Scheublein, William A., Jr.,3,556,268.
Scheuerbrandt, Gunter, to Merck, E., A.G. Creatinine analysis. 3,557,018, Cl. 252-408.
Schiatti, Pierfranco: *See—*
Bellasio, Elvio; Testa, Emilio; Maffii, Giulio; and Schiatti, Pierfranco,3,557,108.
Schildkrot AG Vorm Rheinische Gummi- und Celluloid- Fabrik: *See—*
Kopsch, Heinz; Wilbring, Gunther; Fay, Paul; and Hanf, Wilhelm, 3,555,723.
Schilling, Helmut Wilhelm: *See—*
Galaske, Folker; and Schilling, Helmut Wilhelm,3,556,277.
Schimmer, Rigobert: *See—*
Ginsbach, Karl-Heinz; and Schimmer, Rigobert,3,556,878.
Schinabeck, Rainer; and Hasse, Horst, said Horst assor. to said Schinabeck. Method for sealing leaks in pressurized vessels. 3,556,831, Cl. 117-2.
Schjeldahl, G. T., Company: *See—*
Saumsiegle, Robert W., 3,555,977.
Strobel, John S., 3,556,899.
Schlage Lock Company: *See—*
Nelson, Kenneth Raeburn; and Pope, Leslie William, 3,556,576.
Schlieben, Ernest W., to RCA Corporation. Sailing vessel. 3,556,035, Cl. 114-39.
Schloemann Aktiengesellschaft: *See—*
Thieme, Uwe, 3,555,596.
Schlueter, Don M., to Lloyd Chain Corporation. Chain dispenser. 3,556,293, Cl. 206-56.
Schlumberger Technology Corporation: *See—*
Cubberly, Walter E., Jr., 3,555,689.
Owens, Nevyl G., 3,556,215.
Schmelzer, Hans-Georg; Degener, Eberhart; Tarnow, Horst; Holtschmidt, Hans; Unterstenhofer, Gunter; and Zecher, Wilfried, to Farbenfabriken Bayer Aktiengesellschaft. Process for the preparation of phenyl- trichloroacetoimidochlorides. 3,557,213, Cl. 260-566.
Schmermund, Alfred. Arrangements for testing blocks of cigarettes by optically imaging their ends on a photomultiplier cathode. 3,557,374, Cl. 250-207.
Schmermund, Alfred. Arrangements for testing blocks of cigarettes by optically imaging their ends on a vidicon tube. 3,557,375, Cl. 250-213.
Schmid, Rolf; Lohse, Friedrich; Fisch, Willy; and Batzer, Hans, to Ciba Limited. Heat-curable epoxide resin compositions. 3,557,035, Cl. 260-22.
Schmid, Rolf; Lohse, Friedrich; Fisch, Willy; and Batzer, Hans, to Ciba Limited. Heat-curable epoxide resin mixtures. 3,557,036, Cl. 260-22.
Schmidt, Ernst; and Liebel, Julius, to Maschinenfabrik Augsburg-Nurnberg Aktiengesellschaft. Rocker arm for overhead valves. 3,556,061, Cl. 123-90.27
Schmidt, Gerhard: *See—*
Stock, Hans Joachim; Schmidt, Gerhard; and Schunack, Johannes,3,555,852.
Schmidt, Harry P., to Doyle, J. E., Company, The. Roll setting combination and method. 3,555,895, Cl. 73-141.
Schmidt, Henry, Jr.: *See—*
Zievers, James F.; and Schmidt, Henry, Jr.,3,556,299.
Schmidt, Louise: *See—*
Salvadori, Andre A.; Farrugia, Carmelo A.; Lecoanet, Andre P.; and Lovy, Philippe,3,556,750.
Schmidt-Thomee, Georg: *See—*
Buechner, Oskar; Immel, Wolfgang; Pfannmueller, Helmut; Schmidt-Thomee, Georg; and Urban, Friedrich,3,557,074.
Schmitt, Ernst; Hees, Walter; and Quaedvlieg, Mathieu, to Farbenfabriken Bayer Aktiengesellschaft. Aqueous dye bath composition and process for the dyeing of shaped articles of polyacrylonitrile. 3,556,715, Cl. 8-168.
Schmutzer, Joel J.: *See—*
Grichnik, James A.; and Schmutzer, Joel J.,3,556,083.
Schnee, Walter; and Maag, Peter, to Fr. Winkler KG Spezialfabrik fur Backereimaschinen und Backofen. Apparatus for depositing articles in rows. 3,556,280, Cl. 198-31.
Schneider, Marvin. Insulator for pipe accouterments and the like. 3,556,158, Cl. 138-149.
Schneider, William P.: *See—*
Lincoln, Frank H.; Schneider, William P.; and Spero, George B.,3,557,158.
Schober, Robert. Exothermic catalytic gas reactor. 3,556,738, Cl. 23-289.
Schock & Company G.m.b.H.: *See—*
Schock, Karl, 3,556,626.
Schock, Karl, to Schock & Company G.m.b.H. Plastic frame for articles of box-like configuration, such as furniture, drawers and the like. 3,556,626, Cl. 312-330.
Scholl Mfg. Co., Inc., The: *See—*
Fuller, John D.; and Fuller, Decla M., 3,556,096.
Raffaelli, Milo L., Sr., 3,555,709.
Scholz, Gunther: *See—*
von Zeppelin, Kurt; and Scholz, Gunther,3,555,811.
Schonberg, Elliot A.; Steinberg, Albert H.; and Bollen, Philip S., to Allied Chemical Corporation. Method of bonding employing a nitrogenous plastic film. 3,556,896, Cl. 156-309.
Schott, Marcel; and Vauvelle, Bernard, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. Hydraulic pumps. 3,556,683, Cl. 417-270.
Schrader, Gerhard; and Behrenz, Wolfgang, to Farbenfabriken Bayer Aktiengesellschaft. Phosphoric, phosphonic, thiono-phosphoric and thiono-phosphonic acid esters. 3,557,257, Cl. 260-940.
Schrage, Klaus, to Dynamit Nobel A.G. Process for the production of polymers and copolymers of vinyl chloride having a reduced molecular weight. 3,557,244, Cl. 260-78.5
Schramm, Walter, to Linde Aktiengesellschaft. Process and apparatus for the separation of hydrocarbons with simultaneous production of acetylene. 3,555,836, Cl. 62-9.
Schreader, Darreld L.: *See—*
Wolf, Alby H.; Schreader, Darreld L.; and Schaumburg, Edward G.,3,556,175.
Schrenk, Walter J.: *See—*
Chisholm, Douglas; and Schrenk, Walter J.,3,557,265.
Schrenk, Walter J.; and Chisholm, Douglas S., to Dow Chemical Company, The. Fiber optic bundle. 3,556,635, Cl. 350-96.
Schreyer, Kenneth D. Shelf constructions. 3,556,309, Cl. 211-153.
Schroder, Hermann, to Messrs, Markusches Werk Gesellschaft mit beschrankter Haftung. High pressure lift device for power vehicles and the like. 3,555,971, Cl. 92-113.
Schroeder, Paul Herman: *See—*
Drummond, Paul Edward; and Schroeder, Paul Herman,3,557,150.
Schroer, Rudi M.; and Garmhausen, Thomas A., to Arvin Industries, Inc. Thermal testing probe. 3,555,879, Cl. 73-15.
Schroter, Richard C., to Kaiser Aluminum & Chemical Corporation. Panel and sealed joint structure. 3,555,758, Cl. 52-309.
Schrumpf, Kurt; and Busch, Franz, to Zeiss-Stiftung, Carl, d/b/a Zeiss, Carl. Cloud projector. 3,555,704, Cl. 35-42.5
Schulenberg, John W.: *See—*
Archer, Sydney; and Schulenberg, John W.,3,557,120.
Schulte, Walter: *See—*
Vanden, Eynde, Hector Alfons; Van Doorselaer, Marcel Karel; De Cat, Arthur Henri; Otto, Rigobert; Kunitz, Friedrich-Wilhelm; and Schulte, Walter,3,556,796.
Schulz, Werner P. Micro surgery suture-needle and of its method of manufacture. 3,556,953, Cl. 204-20.
Schulze, Erwin F. C., to Addressograph-Multigraph Corporation. Data recording system. 3,556,007, Cl. 101-250.
Schulze, John J.: *See—*
Lux, George K.; Ellis, James B.; and Schulze, John J.,3,556,655.
Schumacher, Berthold W.: *See—*
Shoupp, William E.; and Schumacher, Berthold W.,3,556,600.
Schumacher, Heinz: *See—*
Rheinlander, Paul; Schumacher, Heinz; and Hehnel, Paul,3,556,502.
Schunack, Johannes: *See—*
Stock, Hans Joachim; Schmidt, Gerhard; and Schunack, Johannes,3,555,852.
Schuppner, Harry R., Jr., to Kelco Company. Heat reversible gel and method for preparing same. 3,557,016, Cl. 252-316.
Schuster, Hubert: *See—*
Pistor, Horst; and Schuster, Hubert,3,555,696.
Schuster, Wilhelm: *See—*
Mockesch, Erich; and Schuster, Wilhelm,3,556,356.
Schwalm, Bruce D.: *See—*
McCarty, Horace G.; Lausch, Henry N.; and Schwalm, Bruce D.,3,555,791.
Schwalm, Glendon Henry: *See—*
O'Keefe, Michael Francis; Schwalm, Glendon Henry; Stull, Robert Stanley; and Fritz, Coey William,3,555,672.
Schwartz, Jerome L.: *See—*
Gronholz, Le Roy F.; Settlage, Paul H.; and Schwartz, Jerome L.,3,556,826.
Schwartz, William H.: *See—*
Shaw, John B.; and Schwartz, William H.,3,556,551.
Schwarz, Julius Donald; Dokes, George E.; and Kriss, Charles J., to Hendon Construction Company. Modular swimming pool assembly. 3,555,575, Cl. 4-172.19
Schwarz, Steven; and Miner, William Wiley, Jr., to SFM Corporation. Method and apparatus for reducing the volume of waste materials. 3,555,996, Cl. 100-39.
Schwegman, Harry E., to Otis Engineering Corporation. Well tools. 3,556,220, Cl. 166-290.
Schweitzer, Earl O., to Clevite Corporation. Ink flow control means for ink pen recorders. 3,556,477, Cl. 251-335.
Schwerdhofer, Hans Joachim, to Fichtel & Sachs AG. Multiple-speed bicycle hub. 3,555,932, Cl. 74-752.

Schwiebert, Phillip D.; and Steck, Edward S., to MacLean Lock Nut Co. Railroad car support and securement structure including a collapsible support pedestal. 3,556,019, Cl. 105-366.
Schwinghamer, Robert J.; and Bennight, J D, to United States of America, National Aeronautics and Space Administration. Method and apparatus for precision sizing and joining of large diameter tubes. 3,555,867, Cl. 72-56.
Scott, Thomas R.; and Davey, Peter T., to Commonwealth Scientific and Industrial Research Organization. Control of phosphate impurities in acid alumina processes. 3,556,723, Cl. 23-123.
Scragg, Ernest, & Sons Limited: *See—*
Parker, Walter, 3,555,807.
Seaborn, Paul E., to Westab Inc. Method and apparatus for binding packets of sheet material. 3,555,587, Cl. 11-1.
Seak Limited: *See—*
Cooper, Philip R., 3,555,588.
Sealed Unit Parts Co., Inc.: *See—*
Ehrens, Henry; and Weiner, Sidney, 3,556,470.
Sealol, Inc.: *See—*
Muller, Heinz K., 3,556,538.
Sebastian, Edmund J. Forging apparatus and method. 3,555,865, Cl. 72-21.
Sebring, Eugene, to Perfection Enterprises, Inc. Tag strip and holder combination. 3,556,291, Cl. 206-56.
Seckerson, Clifford A., to United-Carr Incorporated. Clip for locating and guiding two rods in a rattle free manner over a support. 3,555,923, Cl. 74-490.
Secklin, Leonard B.: *See—*
Agulnick, Robert; and Secklin, Leonard B.,3,555,678.
Sedlecky, Jaromir: *See—*
Zmatlik, Josef; Jisa, Miloslav; Sedlecky, Jaromir; Matejka, Josef; Mohelnicky, Josef; and Milichovsky, Bohumil,3,556,165.
Segal, Arthur B.; and Rodth, Joseph J., to Amseco Corporation. Multiple station beverage dispensing system having auxiliary control valve means. 3,556,347, Cl. 222-132.
Segal, Stanley. Ski teaching apparatus. 3,556,521, Cl. 272-56.5
Seguin, John G.: *See—*
Fritz, Leonard; Wallace, Melvin; and Seguin, John G.,3,556,500.
Segura, Marnell A., to Esso Research and Engineering Company. Process for coating active iron and the coated iron. 3,556,838, Cl. 117-100.
Seibu Gemu Kagaku Kabushiki Kaisha: *See—*
Narabu, Jiro, 3,555,832.
Seitz, Jerry T., to Dow Chemical Company, The. Depositing a polymer from an emulsion by electrophoresis. 3,556,972, Cl. 204-181.
Selin, Terry G. Process for producing cyclosiloxanes. 3,557,177, Cl. 260-448.2
Sellon, Raymond N.: *See—*
Harbeck, Charles L.; and Sellon, Raymond N.,3,555,846.
Semenov, Vasily Vasilievich: *See—*
Marbukh, Veniamin Anatolievich; Lychak, Veniamin Samuilovich; Paikin, Lazar Ilich; Matveev, Vladimir Alexeevich; Semenov, Vasily Vasilievich; Stepura, Emil Fedorovich; and Fedorov, Vasily Nikolaevich,3,556,668.
Semienko, Peter P.: *See—*
Toledo, Emil; and Semienko, Peter P.,3,556,957.
Semperit Osterreichisch-Amerikanische Gummiwerke Aktiengesellschaft: *See—*
Eder, Otto; and Kawan, Oskar, 3,555,705.
Senigalliesi, Dino, to RIC Officine di Villar Perosa Societa per Azioni. Sealing means for ball or roller bearings. 3,556,539, Cl. 277-94.
Senior, Donald R.: *See—*
Messina, Nicholas V.; and Senior, Donald R.,3,556,999.
Sensen, Johann, to Farbenfabriken Bayer Aktiengesellschaft. Method of and an apparatus for readjusting the anodes in the cells of electrolysis plants. 3,556,973, Cl. 204-225.
Senyk, Orest J., to Honeywell Inc. Radiation sensitive device for flow tube using moving fluid tight seal. 3,557,376, Cl. 250-218.
Service National dit: Gaz de France: *See—*
Salvadori, Andre A.; Farrugia, Carmelo A.; Lecoanet, Andre P.; and Lovy, Philippe, 3,556,750.
Settlage, Paul H.: *See—*
Gronholz, Le Roy F.; Settlage, Paul H.; and Schwartz, Jerome L.,3,556,826.
S.E.V.-Marchal: *See—*
Rouquette, Clement L., 3,556,684.
Severo-Zapadnoe Otdelenie Vsesojuznogo Gosudarstvennogo Proektno-Izyskatelskogo Nauchno-Issledovatelskogo Instituta 'Energosetproekt':*See—*
Tikhonov, Ilya Andreevich; Dzhanshiev, Ivan Alexandrovich; Sochilin, Anatoly Egorovich; and Yakunin, Eduard Nikolaevich, 3,557,341.
Seymour-Walker, Kay John; and Webb, David John Tudor, to National Research Development Corporation. Suction pads. 3,556,579, Cl. 294-65.
SFM Corporation: *See—*
Schwarz, Steven; and Miner, William Wiley, Jr., 3,555,996.
Sfredda, Albert P. Propulsion device. 3,556,039, Cl. 115-14.
Shah, Naren M.: *See—*
Borgeson, Roger D.; and Shah, Naren M.,3,555,970.
Shah, Naren M., to Bell Aerospace Corporation. Servo-valve having dynamic load adaptive response while maintaining static performance unaffected. 3,555,969, Cl. 91-461.
Shakespear, Horacio, to General Motors Corporation. Disc brake caliper housing. 3,556,265, Cl. 188-73.3
Sharkey, William H., to Du Pont de Nemours, E. I., and Company. Pivalolactone-diene block copolymers and their preparation. 3,557,255, Cl. 260-879.
Sharman, Donald Arthur: *See—*
Haggar, Michael James; and Sharman, Donald Arthur,3,557,195.
Sharratt, Walter B.; and Sayen, John. Collapsible snow shoe. 3,555,707, Cl. 36-4.5
Shavel, John, Jr.; and Morrison, Glenn C., to Warner-Lambert Pharmaceutical Company. 5,6,7a,8,11,11a,12,12a-octahydroindolo [2,1-a]isoquinolin-9 (10H)-ones. 3,557,122, Cl. 260-289.
Shaw, John B.; and Schwartz, William H. Suspension system. 3,556,551, Cl. 280-104.5
Shaw-Walker Company, The: *See—*
McGough, Paul E., 3,556,562.
Sheahan, John F., to Duraloy Company, The. Heat treating retort with helix. 3,556,498, Cl. 263-34.
Shelffo, Loren E., to Addressograph-Multigraph Corporation. Diazotype developer materials and the production and use thereof. 3,555,989, Cl. 95-89.
Shell, Irving Wardell. Modular display device. 3,555,715, Cl. 40-140.
Shell, Irving W. Shelf supporting structure and joint therefor. 3,556,306, Cl. 211-90.
Shell Oil Company: *See—*
Anderson, Victor F., 3,556,594.
Shender, Eda Grigortevna: *See—*
Strakhov, Vasily Vasilievich; Kuzmin, Jury Nikolaevich; Krikunov, Alexandr Eliseevich; Tombaev, Nikolai Ivanovich; Gisin, Iosif Borisovich; Agafonov, Anatoly Grigorievich; Zaitsev, Mikhail Pavlovich; Shender, Eda Grigortevna; Prityko, Vladimir Pavlovich; Makeeva, Maria Lukyanovna; and Soloviev, Anatoly Mikhailovich,3,555,991.
Shepard, Alvin F.: *See—*
Dannels, Bobby F.; and Shepard, Alvin F.,3,557,249.
Shepard, Lillian B. Electrical stimulator and mitten. 3,556,105, Cl. 128-417.
Shepherd, Robert C.: *See—*
Painter, Erle V.; Mesek, Frederick K.; and Shepherd, Robert C.,3,556,921.
Shepherd, William F., Inc.: *See—*
Rowekamp, William H., 3,556,345.
Sheridan, George Edward. Scraper tool. 3,555,679, Cl. 30-172.
Sherk, Fred T., to Phillips Petroleum Company. Crystal separation and purification. 3,557,226, Cl. 260-674.
Shermeister, Edward, to Tecumseh Products Company. Valve spring mechanism for internal combustion engines. 3,556,062, Cl. 123-90.65
Sherwin-Williams Company: *See—*
De Vittorio, Joseph M., 3,556,968.
Sherwin-Williams Company, The: *See—*
Wilson, David W., 3,556,752.
Shetty, Bola Vithal. N and N,N-alkyl, acyl and aryl-sulfamyl-tetrahydro-quinazolinones. 3,557,111, Cl. 260-256.5
Shetty, Bola Vithal, to Pennwalt Corporation. Tetrahydro-4-quinazolinones substituted in the 3-position by heterocyclic group. 3,557,117, Cl. 260-256.5
Shimada, Yasuo: *See—*
Maekawa, Hideyuki; Sakamoto, Teruo; and Shimada, Yasuo,3,555,608.
Shimanckas, William J., to Outboard Marine Corporation. Exhaust system for marine propulsion device. 3,556,041, Cl. 115-34.
Shinada, Hidehiro: *See—*
Takahashi, Koichi; Shinada, Hidehiro; and Ishii, Hisashi,3,556,699.
Shindo, Akio; Souma, Isao; and Nakanishi, Yoichiro, to Industrial Science and Technology, Agency of. HCl or HBr vapor carbonization of vegetable material in the manufacture of activated carbon. 3,557,020, Cl. 252-422.
Shinoda, Akibumi; and Nishi, Goro, to Toyoda Automatic Loom Works, Ltd. Lift truck. 3,556,247, Cl. 187-9.
Shionogi & Co., Ltd.: *See—*
Maekawa, Hideyuki; Sakamoto, Teruo; and Shimada, Yasuo, 3,555,608.
Shioya, Toshio: *See—*
Date, Tasuku; Ishizuya, Akira; Yamazaki, Shuichi; Togashi, Nobuyuki; Shioya, Toshio; Kikuraku, Tomoki; and Kurihara, Norimitsu,3,556,064.
Shizuoka Kogyo Kabushiki Kaisha: *See—*
Miyamoto, Keiji, 3,556,936.
Shorr, Jacob, to Amicon Corporation. Composite membrane and process for making same. 3,556,305, Cl. 210-490.
Shoupp, William E.; and Schumacher, Berthold W., to Westinghouse Electric Corporation. Distribution and cutting of rocks, glass and the like. 3,556,600, Cl. 299-14.
Shuford Mills, Inc.: *See—*
Murph, Bennie M., 3,555,804.
Shulton, Inc.: *See—*
Cinnamon, Jerome Marshall; and Oroshnik, William, 3,557,107.
Shusman, Tevis: *See—*
Boyle, William J., Jr.; Davis, Lauren R.; and Shusman, Tevis,3,557,243.
Shutt, Paul B.; and Barnes, Charles M., to Bendix Corporation, The. Combination proportioning and bypass valve. 3,556,607, Cl. 303-6.

Sidorenko, Alexandr Konstantinovich: *See—*
Vitushkin, Vladimir Ivanovich; Koire, Viktor Evseevich; Pevzner, Semen Albertovich; Sidorenko, Alexandr Konstantinovich; Matsegora, Evgeny Alexandrovich; and Eskin, Vladimir Iosifovich,3,555,961.
Siebel, Carl Gisbert: *See—*
Grothoff, Hans, 3,556,173.
Siedel, Walter: *See—*
Sturm, Karl; and Siedel, Walter,3,557,153.
Siegfreid, Edward C.; Harwell, Conner J.; and Murphy, Sheilds L., to Dickey, W. S., Clay Manufacturing Company. Method for ram forming monolithic plastic articles. 3,557,290, Cl. 264-294.
Siemens Aktiengesellschaft: *See—*
Debray, Werner; Mattern, Ullrich; and Stieding, Lothar, 3,556,870.
Hagedorn, Horst, 3,555,642.
Kim, Kyongmin, 3,556,842.
Latussek, Hans-Peter; and Dittrich, Werner, 3,555,651.
Mertens, Willi, 3,556,925.
Sigal, Everard Henri: *See—*
Greis, Karl Wilhelm; and Sigal, Everard Henri,3,555,951.
Sigma Engineering Service, Inc.: *See—*
Bryner, Ernest James; and Wolcott, Gard William, 3,556,287.
Sigma Plastique: *See—*
Pomagalski, Jean; and Tauzin, Francis, 3,556,016.
Silver, Julius L.: *See—*
Fry, John S.; Silver, Julius L.; and Quarles, Richard W.,3,556,952.
Simeone, Marius: *See—*
Bergeret, Marcel; Borrel, Louis; and Simeone, Marius,3,555,653.
Simmler, Walter: *See—*
Golitz, Dietrich; and Simmler, Walter,3,557,178.
Simmons, Todd S.: *See—*
Lachowicz, Donald R.; Simmons, Todd S.; and Kreuz, Kenneth L.,3,557,166.
Simms, T. S., & Co., Limited: *See—*
Gardner, John R.; and Reicker, Robert D., 3,556,602.
Simon, Lewis B. Vehicle occupant protective seat. 3,556,584, Cl. 296-65.
Simon, Serge M., to Goodman, H., & Sons, Inc. Hair curler. 3,556,114, Cl. 132-40.
Simonnot, Jack Paul Robert: *See—*
Jardinier, Pierre Charles; and Simonnot, Jack Paul Robert,3,556,134.
Simons, Charles W., to Grace, W. R., & Co. Gasket-forming compositions for closure elements. 3,557,030, Cl. 260-17.
Sinclair, Frederick William, to Gloucester Railway Carriage & Wagon Company Limited. Suspension systems. 3,556,504, Cl. 267-4.
Sinclair Research Incorporated: *See—*
Trevillyan, Alvin E., 3,557,173.
Singer Company, The: *See—*
Kinney, Mel E.; and Hawthorne, Nathaniel F., 3,556,001.
Singer-General Precision, Inc.: *See—*
Brandon, Chester, 3,556,647.
Sipos, John M.; and Daniels, Donald B., to Air Products and Chemicals, Inc. Welding torch. 3,557,337, Cl. 219-75.
Sitte, Richard: *See—*
Knaak, Rudiger; and Sitte, Richard,3,556,493.
Sizer, Phillip S.; and Elliston, Thomas L., to Otis Engineering Corporation. Valve device. 3,556,147, Cl. 137-608.
Skagius, Kurt T. J.; and Akerblom, Eva B., to Pharmacia Aktiebolag. Triazole compounds. 3,557,137, Cl. 260-308.
Skil Corporation: *See—*
Geiger, William L., 3,555,743.
Skripczyk, Heinrich; and Szaler, Gunther, to Demag Aktiengesellschaft. Blow lance assembly for metallurgical furnaces. 3,556,501, Cl. 266-34.
Skrypa, Michael J.; Baran, Francis R.; and Low, William W., to Allied Chemical Corporation. Removal of iron from hypochlorite solutions. 3,557,010, Cl. 252-187.
Skylvik, Arnold R.: *See—*
Lind, Evald T. G.; and Skylvik, Arnold R.,3,556,339.
Slater, William L.; and Ahlborn, John C., to Texaco Inc. Production of synthesis gas. 3,556,751, Cl. 48-215.
Sleight, George Robin, to Elliott Brothers (London) Limited. Landing approach aids. 3,555,897, Cl. 73-178.
Sloan, John P., Jr.; and Laubscher, Bion L., to Dresser Industries, Inc. Ballast fluid. 3,556,037, Cl. 114-125.
Sloan Valve Company: *See—*
Billeter, Henry R.; and Nelson, Axel B., 3,556,137.
Slutsky, Simon; and Ferri, Antonio, said Slutsky assor. to General Applied Science Laboratories, Inc. Sonic boom pressure wave simulation method and apparatus. 3,555,878, Cl. 73-12.
Smallman, Robert Victor: *See—*
Burns, Ernest Bingham; Darlow, Brian Benjamin; and Smallman, Robert Victor,3,557,067.
Smathers, Thomas C., to Summit Products Company. Mason's guide line holder. 3,555,688, Cl. 33-86.
Smidth, F. L., & Co.: *See—*
Jensen, Flemming Edvin, 3,556,495.
Smiler, Leonard. Collapsible wire grille cage. 3,556,058, Cl. 119-17.
Smiley, Eldridge H.: *See—*
Storm, Fred K.; and Smiley, Eldridge H.,3,556,455.
Smith, Don W.: *See—*
Swisher, George W., Jr.; and Smith, Don W.,3,555,983.
Smith, Glenn R., to Medearis, Anna L. Foot support. 3,556,591, Cl. 297-439.
Smith, Harold Vernon, to Pennwalt Corporation. Alkali etchant composition for aluminum having extended bath life. 3,557,000, Cl. 252-79.5
Smith, Irving. Desk calendar. 3,555,714, Cl. 40-117.
Smith Kline & French Laboratories: *See—*
Kaiser, Carl; and Zirkle, Charles L., 3,557,098.
Kaiser, Carl; and Zirkle, Charles L., 3,557,123.
Smith, Melvin W., to Westinghouse Electric Corporation. Mining collector. 3,556,598, Cl. 299-8.
Smith, Millard F. Floating flexible skimming devices. 3,556,301, Cl. 210-242.
Smith, Richard H., to Healy Tibbitts Construction Co. Suspended pipe laying stinger for laying pipelines in unlimited depths of water. 3,555,835, Cl. 61-72.3
Smith, Roy B., to Transportation Specialists, Inc. Internal system relief valve. 3,556,123, Cl. 137-107.
Smith, Walton J. Low-fementability-had candy. 3,556,811, Cl. 99-134.
Smithe, F. L., Machine Co., Inc.: *See—*
Treff, Ernest H., 3,555,949.
Snyder, Herbert C., to Brockway Glass Company. Container closure. 3,556,335, Cl. 215-40.
Snyder, Robert L.: *See—*
Neal, Frank W.; and Snyder, Robert L.,3,555,738.
Sobolev, Vladimir Nikolaevich: *See—*
Niskovskikh, Vitaly Maximovich; Litvinov, Anatoly Ivanovich; Sobolev, Vladimir Nikolaevich; Gelfenbein, Evgeny Junkhimovich; and Bykov, Leonid Alexandrovich,3,556,349.
Sobrefina SA: *See—*
Ignell, Rolf Lennart, 3,555,652.
Socha, Lawrence E.: *See—*
Vawter, James L.; and Socha, Lawrence E.,3,557,269.
Sochilin, Anatoly Egorovich: *See—*
Tikhonov, Ilya Andreevich; Dzhanshiev, Ivan Alexandrovich; Sochilin, Anatoly Egorovich; and Yakunin, Eduard Nikolaevich,3,557,341.
Societa Applicazioni Gomma, Antivibranti Saga, S.p.A.: *See—*
Vitali, Ettore, 3,555,981.
Societa Nebiolo S.p.A.: *See—*
Papa, Paolo; and Capetti, Federico, 3,556,006.
Societe a Responsabilite Limitee de Projets et Realisations de Materiel 'Promat':*See—*
Rene, Vidal Lucien, 3,556,368.
Societe Anonyme Andre CITROEN: *See—*
Henry-Biabaud, Edmond, 3,556,060.
Societe Anonyme dite: L'Oreal:*See—*
Kalopissis, Gregoire; and Bugaut, Andree, 3,555,584.
Societe Anonyme Poclain Le Plessis-Belleville: *See—*
Praddaude, Pierre A., 3,555,968.
Societe des Accumulateurs Fixes et de Traction (Societe Anonyme): *See—*
Jammet, Jean Firmin, 3,556,861.
Societe d'Etudes et de Recherches de Ventilation et d'Aeraulique: *See—*
Jardinier, Pierre Charles; and Simonnot, Jack Paul Robert, 3,556,134.
Societe le Carbone Lorraine: *See—*
Aizicovici, John, 3,555,671.
Societe Nationale d'Etude et de Construction de Moteurs d'Aviation:*See—*
Schott, Marcel; and Vauvelle, Bernard, 3,556,683.
Societe Nouvelle Spidem: *See—*
Bournez, Lucien Robert; and Fabre, Robert, 3,555,872.
Societe Novacel: *See—*
Bernard, Emile C., 3,556,894.
Societe Rhodiaceta: *See—*
Bonnard, Lucien; and Pich, Rene, 3,557,055.
Sacco, Jean, 3,557,083.
Soderstrom, Melvin A., to National Cash Register Company, The. Print drum mounting means and intermittent drive means therefor. 3,556,003, Cl. 101-93.
Sogoian, Nash P. Friction type door check. 3,555,591, Cl. 16-49.
Solaux, Leon: *See—*
Vergne, Jean; Solaux, Leon; Robinet, Jean-Claude; and Lacroix, Philippe,3,557,062.
Soloviev, Anatoly Mikhailovich: *See—*
Strakhov, Vasily Vasilievich; Kuzmin, Jury Nikolaevich; Krikunov, Alexandr Eliseevich; Tombaev, Nikolai Ivanovich; Gisin, Iosif Borisovich; Agafonov, Anatoly Grigorievich; Zaitsev, Mikhail Pavlovich; Shender, Eda Grigortevna; Prityko, Vladimir Pavlovich; Makeeva, Maria Lukyanovna; and Soloviev, Anatoly Mikhailovich,3,555,991.
Sommer, Erwin; Wiloth, Fritz; Werner, Helmut; Lotz, Rudolf; and Wick, Gerhard, to Glanzstoff AG. Compound filament of two polymers with different shrinkage capacities. 3,556,927, Cl. 161-173.
Sommer, Fritz, Dr. Ing., NACHF: *See—*
Stockmann, Gunther, 3,556,514.
Sorell, Henry Paul, to Borden, Inc. Repulpable tape. 3,556,835, Cl. 117-68.5
Sorensen, Karl-Otto: *See—*
Christoffersen, Christen; and Sorensen, Karl-Otto,3,556,897.

Sorenson, Billy L.: *See—*
Strang, Elmer J.; and Sorenson, Billy L.,3,556,192.
Soto Angelo: *See—*
Diaz, Raul Ralph, 3,556,131.
Souma, Isao: *See—*
Shindo, Akio; Souma, Isao; and Nakanishi, Yoichiro,3,557,020.
Southern Precision Industries, Inc.: *See—*
McGaughey, Robert L., 3,556,078.
Spacil, Henry S. General Electric Company Apparatus and method for the hydrogenation of coal. 3,556,749, Cl. 48-77.
Spahn, Joseph W. Electrically driven vehicle. 3,556,239, Cl. 180-68.
Speakes, Elizabeth J. Ladies handbags. 3,556,187, Cl. 150-28.
Speed Fab-Crete Corporation, International: *See—*
Bloxom, David E., 3,555,763.
Speegle, Philip M. Multiple triangular structure furniture. 3,556,593, Cl. 297-442.
Spence, John E.; and Elbert, Andrew Clark, to Quality Control Equipment Company, Inc. Sampling apparatus. 3,555,910, Cl. 73-422.
Spencer, Donald N.: *See—*
Valeska, John J.; Spencer, Donald N.; and Kummer, Edson L.,3,556,669.
Spero, George B.: *See—*
Lincoln, Frank H.; Schneider, William P.; and Spero, George B.,3,557,158.
Sperry Rand Corporation: *See—*
Aberle, Albert K.; Arthur, Richard J.; and Brugger, Richard G., 3,555,692.
Lomax, George Franklin, Jr., 3,556,255.
McCarty, Horace G.; Lausch, Henry N.; and Schwalm, Bruce D., 3,555,791.
Sperryn & Company Limited: *See—*
Launchbury, Alan, 3,556,133.
Speziale, Angelo John: *See—*
Hamm, Philip C.; and Speziale, Angelo John,3,557,210.
Spindle, Harvey E.: *See—*
Leeds, Winthrop M.; and Spindle, Harvey E.,3,557,330.
Spiring, James Christopher. Expedition simulating board game. 3,556,528, Cl. 273-134.
Sprague, Gordon P., to Reliance Electric Company. Elevator false car call cancellation control. 3,556,256, Cl. 187-29.
Sprogis, Andre: *See—*
Nigrelli, Biagio J.; Standley, Wendell E.; and Sprogis, Andre,3,555,776.
Square Company Aktiebolag: *See—*
Anhanger, Odd, 3,555,592.
Squibb, E. R., & Sons, Inc.: *See—*
Breuer, Hermann, 3,557,099.
Lerner, Leonard J., 3,557,282.
Levine, Seymour D., 3,557,087.
Srivastava, Pramod Kumar, to Union Carbide Corporation. Selenium bearing wire for steel welding. 3,557,340, Cl. 219-137.
Stacy, William E., to Poly-Choke Company, Inc., The. Tone arm. 3,556,537, Cl. 274-23.
Staecke, William, J., to Gulf & Western Industrial Products Company, mesne. Automatic coining pess. 3,555,861, Cl. 72-4.
Stahl, Heinz, to Optura Dr. Gustav Gammert Brillenfabrik. Spectacle frame with adjustable temples. 3,556,644, Cl. 351-118.
Staley, A. E., Manufacturing Company: *See—*
Hathaway, Robert J., 3,556,942.
Stalter, Neil J., to Du Pont de Nemours, E. I., and Company. Method for bleaching textile fabrics containing portions dyed with a sensitive dyestuff. 3,556,710, Cl. 8-111.
Stalter, Neil J., to Du Pont de Nemours, E. I., and Company. Peroxymonosulfate compositions containing acylate oxidation promoters, and their use. 3,556,711, Cl. 8-111.
Stamicarbon N.V.: *See—*
Kisters, Mathijs J.M.G., 3,557,248.
Stamm, Walter; and Uhing, Eugene H., to Stauffer Chemical Company. Halovinylphosphonous dihalides and a process for the preparation thereof. 3,557,202, Cl. 260-543.
Standard Oil Company (Indiana): *See—*
Lee, Richard J.; and Karll, Robert E., 3,556,995.
Standard Oil Company, The: *See—*
Standish, Norman W.; and Yanik, Richard W., 3,557,031.
Standard Pressed Steel Co.: *See—*
Busch, William J., Jr., 3,555,938.
Standish, Norman W.; and Yanik, Richard W., to Standard Oil Company, The. Stain-resistant molding composition. 3,557,031, Cl. 260-17.3
Standley, Wendell E.: *See—*
Nigrelli, Biagio J.; Standley, Wendell E.; and Sprogis, Andre,3,555,776.
Stanford, James R.; and Vogelsang, Paul G., Jr., to Nalco Chemical Company. Process for inhibiting scale using phosphate mixed ester of hydroxy amine and hydroxy hydrocarbon. 3,557,001, Cl. 252-87.
Stanley, Edward Sheridan; and Mc Coll, David Neil, to Formica International Limited. Flexible decorative laminates for vertical cladding. 3,556,915, Cl. 161-165.
Stanley, Joan Ann: *See—*
Adcock, Edmund Philip; and Stanley, Joan Ann,3,556,887.
Stanley, Max W.: *See—*
Howald, Werner E.; and Stanley, Max W.,3,556,675.
Stanley Works, The: *See—*
Damijonaitis, Kestutis, 3,556,623.
Stanwood, David A., to Swimquip, Inc. Spring loaded weir for pool skimmers. 3,555,574, Cl. 4-172.17
Stapleton, Daniel John. Audio vision tape projector and programmed responder. 3,556,654, Cl. 353-15.
Stapling Machines Co.: *See—*
Derenthal, Jerome W., 3,556,910.
Star Stabilimento Alimentare S.p.A.: *See—*
Nughes, Giovanni, 3,556,816.
Starck, Walter A., II: *See—*
Kanwisher, John W.; and Starck, Walter A., II,3,556,098.
Starnes, William H., Jr., to Esso Research Engineering Company. Autoxidation inhibition with chlorinated hydrocarbons. 3,557,232, Cl. 260-666.5
State Rivers and Water Supply Commission, The: *See—*
Trewhella, Neil William, 3,555,829.
Statni Vyzkumny Ustav Textilni: *See—*
Zmatlik, Josef; Jisa, Miloslav; Sedlecky, Jaromir; Matejka, Josef; Mohelnicky, Josef; and Milichovsky, Bohumil, 3,556,165.
Stauffer Chemical Company: *See—*
Stamm, Walter; and Uhing, Eugene H., 3,557,202.
Uhing, Eugene H., 3,557,203.
Stearns Electric Corporation: *See—*
Mc Carthy, Richard H., 3,556,266.
Steck, Edward S.: *See—*
Schwiebert, Phillip D.; and Steck, Edward S.,3,556,019.
Stedman, Russell F., to Universal Oil Products Company. Antioxidant mixture of N-phenyl-N'-sec-alkyl- ortho-phenylenediamine and N,N'-di-sec-alkyl- ortho-phenylene-diamine, and use thereof. 3,556,748, Cl. 44-72.
Steel City Corporation, The: *See—*
Fibus, Clyde Kenneth; and McCormick, Robert C., 3,556,393.
Steel Company of Wales Limited, The: *See—*
Grenfell, Hugh Willmott, 3,556,497.
Grenfell, Hugh Willmott, 3,556,773.
Steffenini, Francesco. Yarn supporting body member having a centering element. 3,556,423, Cl. 242-46.21
Steffenini, Francesco. Tubular body particularly for supporting yarns. 3,556,429, Cl. 242-118.31
Stegman, Walter. Apparatus for label cutting and application. 3,556,909, Cl. 156-521.
Steigerwald, John R., to Goodyear Tire & Rubber Company, The. Anti-skid system featuring brake pressure dump limiting as a function of runway coefficient. 3,556,614, Cl. 303-21.
Stein, Theodore Wolflin, to Halcon International, Inc. Oxidation of hydrocarbons. 3,557,216, Cl. 260-586.
Steinberg, Albert H.: *See—*
Schonberg, Elliot A.; Steinberg, Albert H.; and Bollen, Philip S.,3,556,896.
Steiner, Harold Karl. Dispenser for viscous products. 3,556,346, Cl. 222-61.
Steiner, Peter, to GAF Corporation. Dry developer for electrostatic copying. 3,556,998, Cl. 252-62.1
Steinwand, Paul J. Union Oil Company of California Foam prevention following emulsion polymerization. 3,557,071, Cl. 260-87.3
Stelson, Thomas E., to Nozzle, Inc. Gas stopper for a ladle. 3,556,360, Cl. 222-559.
Stelzer, William, to Kelsey-Hayes Company. Skid control system. 3,556,615, Cl. 303-21.
Stenberg, Erik Gunnar, to Aktiebolaget Karlstads Mekaniska Werkstad. Press apparatus for dewatering a fiber web. 3,556,939, Cl. 162-313.
Stephenson, Kenrick O., Jr.: *See—*
Vogelman, Joseph Herbert; Stephenson, Kenrick O., Jr.; and Feinerman, Bernard,3,557,312.
Stepura, Emil Fedorovich: *See—*
Marbukh, Veniamin Anatolievich; Lychak, Veniamin Samuilovich; Paikin, Lazar Ilich; Matveev, Vladimir Alexeevich; Semenov, Vasily Vasilievich; Stepura, Emil Fedorovich; and Fedorov, Vasily Nikolaevich,3,556,668.
Sterling Drug Inc.: *See—*
Archer, Sydney; and Schulenberg, John W., 3,557,120.
Bell, Malcolm R., 3,557,142.
Sterman, Samuel: *See—*
Marsden, James G.; and Sterman, Samuel,3,556,754.
Sternau, Martin M. Closure and method and apparatus for making same. 3,555,769, Cl. 53-42.
Stevens, J. P., & Co., Inc.: *See—*
Tesoro, Giuliana C., 3,556,714.
Tesoro, Giuliana C., 3,556,840.
Stevens, William D.: *See—*
Gorzegno, Walter P.; Stevens, William D.; and Friedrich, Jan L.,3,556,059.
Stevenson, Joseph S.: *See—*
Honegger, Lyle J.; Newtson, N. Keigh; and Stevenson, Joseph S.,3,556,054.
Stevenson, Philip J., to Monsanto Company. High bulk yarns. 3,556,030, Cl. 112-400.
Stewart & Stevenson Services, Inc.: *See—*
Mitchell, Robert W.; and Dodds, Billy J., 3,556,241.
Stewart and Lloyds Limited: *See—*
Lewis, Richard, 3,555,891.
Stewart, Donald R.; and Kane, Ellis D., said Kane assor to said Stewart, d/b/a Stewart Instrument Company. Part sizing grinding machine control system. 3,555,742, Cl. 51-165.

Stewart Instrument Company: *See—*
Stewart, Donald R.; and Kane, Ellis D., 3,555,742.
Stewart, Norman C.: *See—*
Weber, James A.; Rapp, Lester M.; and Stewart, Norman C.,3,556,989.
Stewart, Ronald B., to King-Seeley Thermos Co. Portable barbecue grill. 3,556,076, Cl. 126-9.
Stewart-Warner Corporation: *See—*
Blakley, Isaac D., 3,556,621.
Mellett, Jesse B.; and Sutterfield, Tilford W., 3,556,705.
Stieding, Lothar: *See—*
Debray, Werner; Mattern, Ullrich; and Stieding, Lothar,3,556,870.
Stine, Joseph P. Mobile fruit harvester. 3,555,788, Cl. 56-328.
Stock, Hans Joachim; Schmidt, Gerhard; and Schunack, Johannes, to Morat, Franz, GmbH. Method and apparatus for recording a program representing a sample pattern. 3,555,852, Cl. 66-1.
Stockford, William F.; and Gamewell, Joseph M., to Gamewell Mechanical, Inc. Air conditioning system. 3,556,202, Cl. 165-3.
Stockmann, Gunther, to Sommer, Fritz, Dr. Ing., NACHF. Method and apparatus for manipulating labels or the like. 3,556,514, Cl. 271-8.
Stoll, Walter W.; Hofflinger, Hans; and Heinen, Josef, said Hofflinger said Heinen, said Colster and said Zuhlsdorff assors to said Stoll. Centrifugal hay rake. 3,555,800, Cl. 56-370.
Stolper Industries, Inc.: *See—*
Harbeck, Charles L.; and Sellon, Raymond N., 3,555,846.
Storey, Edward Blake: *See—*
Bauer, Rudolf Friedrich; and Storey, Edward Blake,3,557,254.
Storm, Fred, Industrial Designs, Inc.: *See—*
Storm, Fred K.; and Smiley, Eldridge H., 3,556,455.
Storm, Fred K.; and Smiley, Eldridge H., to Storm, Fred, Industrial Designs, Inc. Overhead equipment control apparatus for operating rooms. 3,556,455, Cl. 248-333.
Stover, William A.; and McVeigh, Harry A., to Mobil Oil Corporation. Method of preparing composite catalyst and hydrocarbon conversion therewith. 3,556,988, Cl. 208-120.
Stowasser, Lee H.: *See—*
Keskitalo, Howard O.; and Stowasser, Lee H.,3,556,330.
Stowe, Gerald T., to Dow Chemical Company, The. 5,6-Dihydro-5,6-substituted-3H-imidazo- (2,1-)1,2,4-dithiazole-3-thiones. 3,557,134, Cl. 260-306.8
Strakhov, Vasily Vasilievich; Kuzmin, Jury Nikolaevich; Krikunov, Alexandr Eliseevich; Tombaev, Nikolai Ivanovich; Gisin, Iosif Borisovich; Agafonov, Anatoly Grigorievich; Zaitsev, Mikhail Pavlovich; Shender, Eda Grigortevna; Prityko, Vladimir Pavlovich; Makeeva, Maria Lukyanovna; and Soloviev, Anatoly Mikhailovich. Installation for continuous production of edible fats, mostly butter and margarine. 3,555,991, Cl. 99-244.
Strandine, Eldon J.; and Peckenpaugh, Charles W., to Swift & Company. Method for injecting a liquid additive into poultry flesh. 3,556,809, Cl. 99-107.
Strang, Charles D., to Outboard Marine Corporation. Slant stern drive. 3,556,040, Cl. 115-34.
Strang, Elmer J.; and Sorenson, Billy L., to Coats Company, Inc., The. Tire changing stand. 3,556,192, Cl. 157-1.28
Streater Industries, Inc.: *See—*
Bruhn, Kenneth N., 3,556,569.
Stringham, Robert R.; and Torba, Florence E., to Dow Chemical Company, The. Process for the manufacture of 2,6-dichloropyridine. 3,557,124, Cl. 260-290.
Strobel, John S., to Schjeldahl, G. T., Company. Tack bonding of coverlay. 3,556,899, Cl. 156-553.
Strom, Dee L.: *See—*
Zimmon, Harold; and Strom, Dee L.,3,555,565.
Strozewski, Richard S., to National-Standard Company. Let-off apparauts. 3,556,370, Cl. 226-25.
Structural Fibers, Inc.: *See—*
Wiltshire, Arthur J., 3,555,614.
Struthers Scientific and International Corporation: *See—*
Hedrick, Robert Howard, 3,556,733.
Stubbe, Herr Friedrich: *See—*
Wessel, Karl-Heinz; and Scheikowski, Klaus, 3,555,617.
Studley, Edward: *See—*
Lepp, Stephen; Studley, Edward; and Weiss, Jonas,3,557,327.
Stull, Robert Stanley: *See—*
O'Keefe, Michael Francis; Schwalm, Glendon Henry; Stull, Robert Stanley; and Fritz, Coey William,3,555,672.
Sturgeon, Donald L. G.: *See—*
Green, James R.; Rivers, Joseph T., Jr.; and Sturgeon, Donald L. G.,3,556,922.
Sturm, Karl; and Siedel, Walter, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. N-acylated benzene-2,4-disulfonamides and process for preparing them. 3,557,153, Cl. 260-347.2
Suffron, Fay O.; and Zanias, Theodore J., to American Metal Products Corporation. Ball cock valve. 3,556,132, Cl. 137-437.
Sugden, Harry, Jr., to Rockwell Manufacturing Company. Fluid motor supply and control valve. 3,556,145, Cl. 137-596.15
Sugimoto, Katsumi; Kondo, Yoshio; and Fukui, Sachio, to Japanese Geon Company, Ltd., The. Method of producing vinyl choride resins. 3,557,253, Cl. 260-878.
Sugisaka, Nobuyuki: *See—*
Petracek, Francis J.; and Sugisaka, Nobuyuki,3,557,147.
Suh, John T.; and Judd, Claude I., to Colgate-Palmolive Company. Bridged bicyclic ferrocene ethers and thioethers. 3,557,143, Cl. 260-327.
Sullivan, Michael D.: *See—*
Post, Carl B.; Leinbach, Ralph C., Jr.; and Sullivan, Michael D.,3,556,770.
Sulzer Brothers, Ltd.: *See—*
Pfarrwaller, Erwin; and Inglin, Anton Xaver, 3,556,163.
Sumitomo Chemical Co., Ltd.: *See—*
Nagata, Hideo; Tamaki, Toshio; and Moriyama, Hiroaki, 3,557,182.
Sumitomo Chemical Company, Ltd.: *See—*
Ishiyama, Tetsuji; and Hamuro, Keizo, 3,557,183.
Yamada, Eiji; Korenaga, Hiroshi; and Akamatsu, Takashi, 3,557,155.
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi, 3,557,092.
Sumitomo Electric Industries, Ltd.: *See—*
Ohtsu, Yasuo, 3,555,647.
Summerlin, Frederick Arthur, to Aerpat A.G., mesne. Electrical connector socket. 3,555,673, Cl. 29-629.
Summerville, Donald V., Jr., to Gardco Industries, Inc. Frame mounting bracket. 3,556,459, Cl. 248-497.
Summit Products Company: *See—*
Smathers, Thomas C., 3,555,688.
Sunbeam Corporation: *See—*
Bauer, Charles L., 3,555,676.
sundstrand Corporation: *See—*
Hann, Melvin M., 3,555,817.
Sundstrand-Engelberg Inc.: *See—*
Schaller, Brian M.; and Schaller, Robert L., 3,555,740.
Surber, John L., Jr. Stamp vending machine. 3,556,375, Cl. 226-128.
Sureau, Robert Frederic Michel; and Dupre, Victor Marie, to Ugine Kuhlmann, mesne. Derivatives of 3-indazolone-oximes and 3- indazolone-imino sulphonic acids. 3,557,139, Cl. 260-310.
Susag, Jerome R.; and York, Donald W., to Clark Equipment Company. Steering system. 3,556,243, Cl. 180-79.2
Susse, Christiane: *See—*
Epain, Raymond; Vodar, Boris; and Susse, Christiane,3,555,607.
Sutterfield, Tilford W.: *See—*
Mellett, Jesse B.; and Sutterfield, Tilford W.,3,556,705.
Sutton Research Corporation: *See—*
Briskin, Theodore S.; and Ward, Geoffrey R., 3,556,109.
Briskin, Theodore S.; and Ward, Geoffrey R., 3,556,110.
Suwada, Atau: *See—*
Kitagawa, Hioshi; Suwada, Atau; and Ohno, Satoyoshi,3,557,060.
Suyama, Frank: *See—*
Berkley, Stanley G.; and Suyama, Frank,3,556,744.
Suzuki, Kenichi; and Kai, Tsunetoshi, to Asahi Kasei Kogyo Kabushiki Kaisha. Photosensitive compositions and elements and a process of making flexographic printing plate therefrom. 3,556,791, Cl. 96-35.1
Suzuki, Takeshi: *See—*
Kometani, Yutaka; Koizumi, Shun; Suzuki, Takeshi; and Okuno, Chuzo,3,557,051.
Suzuki, Yoshihisa; Tsukada, Takeshi; Hirahara, Tsuneo; and Nakamura, Tadashi, to Ajinomoto Co., Inc. Alkali metal salts of guanosine. 3,557,081, Cl. 260-211.5
Svedman, Jon A.; and Paul, Roger L., to Diebold Incorporated. Carrier transfer in pneumatic tube lines employing opposite directional air flows. 3,556,437, Cl. 243-38.
Svensson, Lars Erik; and Wahlstrom, Nils Lennart, to AB Industrifjadrar. Control and adjusting apparatus. 3,555,863, Cl. 72-12.
Swanton, Charles L., to General Signal Corporation. Trailable switch machine with dual control 3,557,364, Cl. 246-240.
Swenson, John, Granite Co., Inc., The: *See—*
Garrison, Langdon I., 3,556,073.
Swierenga, John B. Garter. 3,555,635, Cl. 24-245.
Swift & Company: *See—*
Panek, Mitchell W., 3,556,808.
Strandine, Eldon J.; and Peckenpaugh, Charles W., 3,556,809.
Swimquip, Inc.: *See—*
Stanwood, David A., 3,555,574.
Swisher, George W., Jr.; and Smith, Don W., to CMI Corporation. Paving grout control device. 3,555,983, Cl. 94-46.
Sybron Corporation: *See—*
Valeska, John J.; Spencer, Donald N.; and Kummer, Edson L., 3,556,669.
Sylvania Electric Products, Inc.: *See—*
Cerniglia, Nino P.; and Tonner, Richard C., 3,556,951.
Chiola, Vincent; Ritsko, Joseph E.; and Vanderpool, Clarence D., 3,556,725.
Symons, Lester M.: *See—*
Martinkovic, Paul S.; and Symons, Lester M.,3,556,891.
Syntex Corporation: *See—*
Beard, Colin C.; and Cross, Alexander D., 3,557,160.
Syvertsen, Norman J.: *See—*
Buonsante, John J.; and Syvertsen, Norman J.,3,557,318.
Szaler, Gunther: *See—*
Skripczyk, Heinrich; and Szaler, Gunther,3,556,501.
Szucs, Andrew E.: *See—*
Miles, Ray P.; and Szucs, Andrew E.,3,556,328.

Taber, David: *See—*
Mach, Thomas F.; and Taber, David,3,556,964.

Taber, Robert C.; and Brooker, Leslie G. S., to Eastman Kodak Company. Trinuclear dyes having an acid nucleus substituted with a secondary amino substituted alkyl group useful as spectral sensitizers for photographic silver halide emulsions. 3,557,101, Cl. 260-240.1

Taini, John, to Bell & Howell Company. Sheet separating apparatus. 3,556,517, Cl. 271-36.

Taisei Kensetsu Kabushiki Kaisha (Taisei Construction Co., Ltd.): *See—*
Takahashi, Minoru, 3,556,941.

Tait Manufacturing Company, The: *See—*
Tremain, David L., 3,556,677.

Takada, Shigetaka: *See—*
Arikawa, Toshinori; and Takada, Shigetaka,3,556,488.

Takagi, Yasuo; Iwatsuki, Makoto; Takeshita, Kazuhisa; and Uemura, Isao, to Ajinomoto Co., Inc.Process for preparing poly-γ-methyl glutamate fiber. 3,557,272, Cl. 264-184.

Takahashi, Koichi; Shinada, Hidehiro; and Ishii, Hisashi, to Tokyo Shibaura Electric Co., Ltd. Discharge ignition type photoflash lamp. 3,556,699, Cl. 431-95.

Takahashi, Minoru, to Taisei Kensetsu Kabushiki Kaisha (Taisei Construction Co., Ltd.). Process and apparatus for treating air contaminated with radioactivity. 3,556,941, Cl. 176-37.

Takahashi, Nagashige, to Olympus Optical Company, Ltd. Optical viewing instrument. 3,556,085, Cl. 128-6.

Takahashi, Yasuo, to Asahi Kogaku Kogyo Kahushiki Kaisha. Zoom lens system highly corrected for coma aberration. 3,556,641, Cl. 350-184.

Takao, Yowan, to Nippon Electronics Co., Ltd. System for detecting a magnetic thin film. 3,557,321, Cl. 179-100.2

Takashina, Naomitsu; Aida, Teruo; Endo, Yasuhiro; and Nagashima, Wakio, 1/2 each to Japan Gas-Chemical Company, and Research Development Corporation. Process for preparing a carbon black-synthetic resin composition. 3,557,040, Cl. 260-29.6

Takemoto, Takeo, to Hitachi, Ltd. Method of making a cathode-ray tube. 3,556,627, Cl. 316-1.

Takeshita, Kazuhisa: *See—*
Takagi, Yasuo; Iwatsuki, Makoto; Takeshita, Kazuhisa; and Uemura, Isao,3,557,272.

Takeuchi, Hideo: *See—*
Ueda, Hiroshi; and Takeuchi, Hideo,3,555,985.

Talley, William A., Jr.; and Dean, James T., to Mobil Oil Corporation. Underwater production satellite. 3,556,218, Cl. 166-265.

Tamagawa Kikai Kinzoku Kabushiki Kaisha: *See—*
Hara, Ei, 3,555,621.

Tamaki, Toshio: *See—*
Nagata, Hideo; Tamaki, Toshio; and Moriyama, Hiroaki,3,557,182.

Tamura, Hideo: *See—*
Okada, Hideya; Matsuda, Shozo; Ohbu, Misao; and Tamura, Hideo,3,556,869.

Tanaka, Akira; Kato, Koji; and Futamura, Shingo, to Japanese Geon Company, Ltd., The. Compositions comprising a vinyl chloride resin and a graft polymer. 3,557,251, Cl. 260-876.

Tanaka, Katsuyoshi: *See—*
Yoshino, Yamata; Kishikawa, Kanichi; and Tanaka, Katsuyoshi,3,555,862.

Tanaka, Kiichiro: *See—*
Hattori, Yoko; Ooji, Tamiki; Tanaka, Kiichiro; and Matsunaga, Takao,3,557,059.

Tanaka, Shigeho: *See—*
Hizume, Akio; Oyagi, Shuji; and Tanaka, Shigeho,3,555,892.

Tanaka, Toshio: *See—*
Mizuta, Yukio; Tanaka, Toshio; and Asada, Takeo,3,556,274.

Tanigami, Satoshi, to Elm Industry Company, Limited. Electric pencil sharpener. 3,556,182, Cl. 144-28.5

Tano, Tekeo; and Washiashi, Morimasa, to Iwatsu Electric Company Limited. Charging device applied for making electrophotography. 3,557,368, Cl. 250-49.5

Tarex S.A.: *See—*
Matthey, Maurice, 3,555,690.

Tarn, William H., to International Rectifier Corporation. Process for soldering silicon wafers to contacts. 3,555,669, Cl. 29-589.

Tarnow, Horst: *See—*
Schmelzer, Hans-Georg; Degener, Eberhart; Tarnow, Horst; Holtschmidt, Hans; Unterstenhofer, Gunter; and Zecher, Wilfried,3,557,213.

Tausch, Gilbert H.: *See—*
Delatorre, Leroy C.; and Tausch, Gilbert H.,3,555,901.

Tauzin, Francis: *See—*
Pomagalski, Jean; and Tauzin, Francis,3,556,016.

Tavernier, Bernard Hippoliet: *See—*
Pattijn, Hendrik Adolf; Thiers, Robrecht Julius; Tavernier, Bernard Hippoliet; and Willems, Jozef Frans,3,556,797.

Tawara, Yoshio: *See—*
Chiba, Hiroyuki; Tawara, Yoshio; and Hirota, Eiichi,3,557,266.

Taylor, Clement F.: *See—*
Bauer, Douglas M.; and Taylor, Clement F.,3,555,900.

Taylor, Edwin C. S., to MIF Industries, Inc. Light weight cross arm assemblies. 3,555,747, Cl. 52-40.

Taylor, Maryann M.: *See—*
Feairheller, Stephen H.; Taylor, Maryann M.; and Filachione, Edward M.,3,557,078.

Taylor, Samuel, Pty, Limited: *See—*
Graham, Cecil Robert Montgomery, 3,556,357.

Tearne, William, to Dunlop Company Limited, The. Apparatus for supplying flexible sheet material. 3,556,901, Cl. 156-406.

Technical Operations, Incorporated: *See—*
Graser, Michael, Jr., 3,556,639.

Tecumseh Products Company: *See—*
Shermeister, Edward, 3,556,062.

Tee-Pak, Inc.: *See—*
Bridgeford, Douglas J., 3,557,082.

Teeg Research, Inc.: *See—*
Teeg, Robert O.; and Hallman, Robert W., 3,557,026.

Teeg, Robert O.; and Hallman, Robert W., to Teeg Research, Inc. High thermal hysteresis vanadium dioxide. 3,557,026, Cl. 252-518.

Tektronix, Inc.: *See—*
Demke, Joseph W., 3,556,374.

Teldix GmbH: *See—*
Leiber, Heinz, 3,556,610.

Telektron Limited: *See—*
Dowdall, Dennis Stephen, 3,556,125.

Teletype Corporation: *See—*
Kim, George A., 3,556,366.

Tenneco Chemicals, Inc.: *See—*
Rumanowski, Edmund J., 3,557,211.
Yakimik, Harry, Jr., 3,557,198.

Teorsky, Robert K.: *See—*
Helgert, Harold L; Powell, Hayden B.; and Teorsky, Robert K.,3,556,871.

Terada, Kinji. Belt and buckle arrangement. 3,555,626, Cl. 24-198.

Terakado, Osamu; and Imamura, Kiyoshi, to Nippon Safety Glass Co., Ltd. Apparatus for treating glass sheets. 3,555,737, Cl. 51-5.

Teramoto, Iwao: *See—*
Iwasa, Hitoo; Yokoziwa, Masami; and Teramoto, Iwao,3,556,841.

Teranishi, Haruo: *See—*
Yoneshige, Kazumasa; and Teranishi, Haruo,3,556,712.

Terbrueggen, Paul L.; and Caspari, Georg K., to Burroughs Corporation. Record processing mechanism. 3,556,396, Cl. 234-110.

Termote, Alois Rene: *See—*
Kobus, Stanislas; Salle, Adelin Eugene Gaston; Fontaine, Bernard Jean Robert; Termote, Alois Rene; and Masure, Jean Louis,3,557,315.

Terragna, Pietro, to Pirelli, Societa per Azioni. Reinforcing metal cords. 3,555,789, Cl. 57-145.

Tesoro, Giuliana C., to Stevens, J. P., & Co., Inc. Novel unsymmetrical sulfones and method of crosslinking cellulosic materials therewith and reaction products produced thereby. 3,556,714, Cl. 8-120.

Tesoro, Giuliana C., to Stevens, J. P., & Co., Inc. Method for improving the flame retardant properties of a cellulosic material. 3,556,840, Cl. 117-137.

Tessarollo, Severino; and Manzoni, Angelo, to International Standard Electric Corporation. Device for delaying the opening of the pulse contact for telephone dials. 3,557,326, Cl. 200-33.

Testa, Emilio: *See—*
Bellasio, Elvio; Testa, Emilio; Maffii, Giulio; and Schiatti, Pierfranco,3,557,108.

Texaco Inc.: *See—*
Lachowicz, Donald R.; Simmons, Todd S.; and Kreuz, Kenneth L., 3,557,166.
Pogonowski, Ivo C., 3,555,831.
Slater, William L.; and Ahlborn, John C., 3,556,751.

Thatcher, Donald N., to Du Pont de Nemours, E. I., and Company. Delay initiators. 3,556,009, Cl. 102-28.

Thelin, Jack Horstmann, to American Cyanamid Company. Abrasion testing apparatus and method. 3,555,877, Cl. 73-7.

Theurer, Josef: *See—*
Plasser, Franz; and Theurer, Josef,3,556,010.

Thieme, Uwe, to Schloemann Aktiengesellschaft. Roll adjustment system for plastics calenders. 3,555,596, Cl. 18-2.

Thiers, Robrecht Julius: *See—*
Pattijn, Hendrik Adolf; Thiers, Robrecht Julius; Tavernier, Bernard Hippoliet; and Willems, Jozef Frans,3,556,797.

Thirion, Pierre, to La Societe dite OXYSYNTHESE. Purification of aqueous hydrogen peroxide solutions containing dissolved organic compound by use of non-ionic porous resin. 3,556,727, Cl. 23-207.

Thomas & Betts Co., The: *See—*
Bromberg, Menashe, 3,556,566.

Thomas & Betts Corporation: *See—*
Farkas, Paul, 3,556,575.

Thomas, Abraham L.: *See—*
Wilkinson, Thomas B.; Melton, James O.; Musser, Harry B.; and Thomas, Abraham L.,3,556,338.

Thomas, David Kenneth, to National Research Development Corporation, mesne. Curing system for fluorocarbon elastomers. 3,557,034, Cl. 260-30.8

Thomas, David Kenneth: *See—*
Phillips, Leslie Nathan; Thomas, David Kenneth; and Wright, William Walter,3,557,245.

Thomas, James L.: *See—*
Wright, Carl L.; and Thomas, James L.,3,557,047.

Thomas, John Melvyn: *See—*
Sampson, Roy John; and Thomas, John Melvyn,3,557,242.

Thomas, Peter R., to Imperial Chemical Industries Limited. Filaments of a synthetic organic polymer. 3,555,805, Cl. 57-140.

Thomas, Philip S. Credit card holder. 3,556,188, Cl. 150-39.

Thomas, Thomas. Flush tank valve. 3,555,572, Cl. 4-57.

Thompson, Francis T.: *See—*
Wavre, Andre; Thompson, Francis T.; and Rubner, Tibor D.,3,557,383.

Thompson, John T.; and Gillemot, George W. Reusable multipurpose protective assembly for cable splices. 3,557,298, Cl. 174-10.

Thompson, Peter John: *See—*
Pigott, Albert Edward; and Thompson, Peter John,3,556,692.

Thompson, Taylor Norris: *See—*
Bender, Charles E.; Thompson, Taylor Norris; and Fraser, Douglas S.,3,556,760.

Thomson, Ian David MacKnight: *See—*
Westbrook, Aubrey Joseph; and Thomson, Ian David MacKnight,3,555,613.

Thorgusen, Robert M. Expansible construction form and method of forming structures. 3,555,751, Cl. 52-127.

Thorn Radio Valves and Tubes Limited: *See—*
Inglis, James, 3,557,306.

Thornton, William E., to United States of America, Air Force. Nongravimetric mass determination system. 3,555,886, Cl. 73-67.2

Thrive Center, Inc.: *See—*
Honegger, Lyle J.; Newtson, N. Keigh; and Stevenson, Joseph S., 3,556,054.

Tibbals, Edward Camp, Jr.: *See—*
Piekenbrock, Lawrence J.; and Tibbals, Edward Camp, Jr.,3,557,370.

Tibbetts, Raymond E.; and Wilczynski, Janusz S., to International Business Machines Corporation. Micro-objective lens system. 3,556,642, Cl. 350-216.

Tibbetts, Raymond E.; and Wilczynski, Janusz S., to International Business Machines Corporation. Highly corrected seven element Gauss type reduction lens. 3,556,643, Cl. 350-218.

Tietjen, Albert H.; and Heidtman, Albert G. Power operated lawn treating device. 3,555,792, Cl. 56-25.4

Tikhonov, Ilya Andreevich; Dzhanshiev, Ivan Alexandrovich; Sochilin, Anatoly Egorovich; and Yakunin, Eduard Nikolaevich, to Severo-Zapadnoe Otdelenie Vsesojuznogo Gosudarstvennogo Proektno-Izyskatelskogo Nauchno-Issledovatelskogo Instituta 'Energosetproekt'. Apparatus for protecting A.C. switches and electrical equipment against low temperatures and icing. 3,557,341, Cl. 219-209.

Tilus, Carl W., to Westinghouse Electric Corporation. Self-cleaning cooking apparatus of the catalytic type. 3,556,077, Cl. 126-19.

Timex Corporation: *See—*
Meitinger, Heinz, 3,555,810.

Toa Gosei Chemical Industry Co., Ltd.: *See—*
Ito, Kenji; and Kondo, Kishichiro, 3,557,185.

Tobacco Research and Development Institute Limited: *See—*
Liebenberg, Johannes J., 3,556,603.

Toepfl, Werner; and Hitz, Hans-Rudolf, to Ciba Limited. Halogenoacetonitrile derivatives and pesticidal preparations containing said derivatives. 3,557,184, Cl. 260-465.4

Togashi, Nobuyuki: *See—*
Date, Tasuku; Ishizuya, Akira; Yamazaki, Shuichi; Togashi, Nobuyuki; Shioya, Toshio; Kikuraku, Tomoki; and Kurihara, Norimitsu,3,556,064.

Toka Shikiso Chemical Industry Co., Ltd.: *See—*
Hattori, Yoko; Ooji, Tamiki; Tanaka, Kiichiro; and Matsunaga, Takao, 3,557,059.

Tokyo Keiki Seizosho Company, Ltd.: *See—*
Yamamoto, Miaki; and Amano, Shin, 3,555,899.

Tokyo Shibaura Electric Co., Ltd.: *See—*
Takahashi, Koichi; Shinada, Hidehiro; and Ishii, Hisashi, 3,556,699.

Toledo, Emil; and Semienko, Peter P., to Honeywell Inc. Metal treatment. 3,556,957, Cl. 204-32.

Tolley, Calvert B. Crab meat separating apparatus. 3,555,595, Cl. 17-71.

Tombaev, Nikolai Ivanovich: *See—*
Strakhov, Vasily Vasilievich; Kuzmin, Jury Nikolaevich; Krikunov, Alexandr Eliseevich; Tombaev, Nikolai Ivanovich; Gisin, Iosif Borisovich; Agafonov, Anatoly Grigorievich; Zaitsev, Mikhail Pavlovich; Shender, Eda Grigortevna; Prityko, Vladimir Pavlovich; Makeeva, Maria Lukyanovna; and Soloviev, Anatoly Mikhailovich,3,555,991.

Tonner, Richard C.: *See—*
Cerniglia, Nino P.; and Tonner, Richard C.,3,556,951.

Torba, Florence E.: *See—*
Stringham, Robert R.; and Torba, Florence E.,3,557,124.

Torrington Company, The: *See—*
Toth, Leo A., 3,556,618.

Toshiba Ray-O-Vac Co., Ltd.: *See—*
Ohki, Soichi, 3,556,859.

Toth, Leo A., to Torrington Company, The. Double race screwdown thrust bearing. 3,556,618, Cl. 308-231.

Townes, Charles H.; Chiao, Raymond Y.; and Garmire, Elsa M., to United States of America, National Aeronautics and Space Administration, mesne. Optical frequency waveguide. 3,556,634, Cl. 350-96.

Towns, Edward J. Safety closure for containers. 3,556,331, Cl. 215-9.

Toyama, Teruhiko: *See—*
Inoue, Takayuki; Kato, Kichiro; Toyama, Teruhiko; and Yanami, Tetsuo,3,556,768.

Toyo Kogyo Co., Ltd.: *See—*
Yamamoto, Kenichi, 3,556,695.

Toyo Rayon Kabushiki Kaisha: *See—*
Kitagawa, Hioshi; Suwada, Atau; and Ohno, Satoyoshi, 3,557,060.

Toyoda Automatic Loom Works, Ltd.: *See—*
Shinoda, Akibumi; and Nishi, Goro, 3,556,247.

Toyota Jidosha Kogyo Kabushiki Kaisha: *See—*
Inoue, Masahiko, 3,555,631.
Ohta, Seizho; and Kage, Motokuni, 3,556,505.

Traber, Walter: *See—*
Foitl, Verena R.; and Traber, Walter,3,557,093.

Trachtenberg, William; Robinson, Gene H.; and Rodenberg, Orville C., to Eastman Kodak Company. Liquid development apparatus. 3,556,050, Cl. 118-637.

Trane Company, The: *See—*
Modahl, Robert J.; and Lynch, Paul J., 3,555,841.

Transportation Specialists, Inc.: *See—*
Smith, Roy B., 3,556,123.

Traulich, Horst: *See—*
Bunte, Hans; Traulich, Horst; and Vedder, Herbert,3,557,363.

Trautvetter, Werner: *See—*
Bernhardt, Gunther; Buning, Robert; Bierwirth, Egon; and Trautvetter, Werner,3,556,746.

Treff, Ernest H., to Smithe, F. L., Machine Co., Inc. Die cutting presses. 3,555,949, Cl. 83-125.

Treff, Ernest H., to Harris-Intertype Corporation. Automatic web tension and register control. 3,556,510, Cl. 270-52.

Tremain, David L., to Tait Manufacturing Company, The. Submersible pump switch assembly. 3,556,677, Cl. 417-44.

Tremblay, Albert F., to Kent-Owens Machine Company. Gear forming. 3,555,870, Cl. 72-216.

Trevillyan, Alvin E., to Sinclair Research Incorporated. Process for recovering cobalt acetate. 3,557,175, Cl. 260-439.

Trewhella, Neil William, to State Rivers and Water Supply Commission, The. Overflow discharge outlets and irrigation systems incorporating the same. 3,555,829, Cl. 61-17.

Tridair Industries: *See—*
Cosenza, Frank J., 3,556,570.

Trijonis, Felix P. Hot air radiator. 3,556,206, Cl. 165-80.

Trimble, Charles R., to Hewlett-Packard Company. Signal-to-noise ratio enhancement methods and means. 3,557,354, Cl. 235-152.

Trimble, David C., to Haveg Industries, Inc. Positive latch for two-lid egg cartons. 3,556,387, Cl. 229-44.

Trumpio, Frank P.: *See—*
Diehl, Walter L.; and Trumpio, Frank P.,3,555,853.

TRW Inc.: *See—*
Ehrlich, Don E., 3,557,338.
Jenkins, John C.; and Wesseler, William O., 3,556,447.

Tsien, Hsue C., to Esso Research and Engineering Company. Dispenser for nested and cuffed bags. 3,555,766, Cl. 53-29.

Tsukada, Takeshi: *See—*
Suzuki, Yoshihisa; Tsukada, Takeshi; Hirahara, Tsuneo; and Nakamura, Tadashi,3,557,081.

Tucker, Don R.; Green, Lloyd L.; and Zimmerman, Howard K., to Pillsbury Company, The. Method of using sorbic acid and sorbates as dough conditioning agents. 3,556,798, Cl. 99-90.

Tucker, Phillip J. Rotary heat engine. 3,556,670, Cl. 415-75.

Tucker, Robert Jerome, to American Cyanamid Company. Heat-stabilized infrared absorbers and compositions containing the same. 3,557,012, Cl. 252-300.

Tucker, Robert Jerome, to American Cyanamid Company. Casting technique using purge gas and heat stabilizer. 3,557,052, Cl. 260-42.25

Tully, Paul R.; Fletcher, William J.; and Cochrane, Hector, to Cabot Corporation. Process for burning oil spills. 3,556,698, Cl. 431-2.

Tuman S.C.A.: *See—*
Odell, Benjamin R., 3,555,919.

Turbo Machine Company: *See—*
Wyatt, William Kirk; Mueller, Edward G.; and Hebrank, William H., 3,556,432.

Turk, David L., to Goodyear Tire & Rubber Company. Ozone resistant polymer blends. 3,557,028, Cl. 260-5.

Turkisher, Robert; and Lundin, Charles E., to Colorado Springs National Bank. Copper-lead alloy. 3,556,779, Cl. 75-135.

Turnbull, John Bartholomew: *See—*
Abbott, Brian; Groves, Harry Bernard; Harris, Dennis; and Turnbull, John Bartholomew,3,556,555.

Turner, George L., to American Stamping Co. Adjustable size hose clamp. 3,555,636, Cl. 24-278.

Turner, Lloyd S. Swimming pool cover. 3,555,573, Cl. 4-172.12

Tuzson, John J., to Borg-Warner Corporation. Fuel system. 3,556,063, Cl. 123-103.

Twin Disc, Incorporated: *See—*
Hilpert, Conrad R., 3,556,271.

Tyler, William E., III: *See—*
Lakritz, Julian; and Tyler, William E., III,3,557,181.

Uchida, Kenji: *See—*
Sakamoto, Masakatsu; Uchida, Kenji; Yamada, Yasunori; and Yamaguchi, Takashi,3,556,682.

Udert, Karl-Ernst: *See—*
Bayer, Wolfgang; and Udert, Karl-Ernst,3,556,379.

Udesen, Duane L. Elastic type projectile projecting device. 3,556,071, Cl. 124-16.

Uebelhardt, Roger, to Cadral S.A. Process for manufacturing timepiece dials in series. 3,555,646, Cl. 29-177.

Ueda, Akiyoshi, to Nippon Steel Corporation. Wet type gas scrubber. 3,556,489, Cl. 261-62.

Ueda, Hiroshi; and Takeuchi, Hideo, to Minolta Camera Kabushiki Kaisha. Single;blade shutter camera with a exposure meter interlocking mechanism. 3,555,985, Cl. 95-10.
Ueda, Minol, to Geigy Chemical Corporation. Process for grinding a cylindrical article. 3,555,745, Cl. 51-289.
Uemura, Isao: *See—*
Takagi, Yasuo; Iwatsuki, Makoto; Takeshita, Kazuhisa; and Uemura, Isao,3,557,272.
Ueno, Ryuzo; Hirao, Ichiro; and Kato, Yasuhiko, to Kabushiki Kaisha Ueno Suyaku Oyo Kenkyuyo. Novel nitrofuran derivative and a process for the preparation thereof. 3,557,102, Cl. 260-240.1
Ugine Kuhlmann: *See—*
Jiou, Marcel Georges; and Khachoyan, Joseph, 3,556,709.
Sureau, Robert Frederic Michel; and Dupre, Victor Marie, 3,557,139.
Uhing, Eugene H., to Stauffer Chemical Company. Process for preparation of halomethyl methylphosphinic halides. 3,557,203, Cl. 260-543.
Uhing, Eugene H.: *See—*
Stamm, Walter; and Uhing, Eugene H.,3,557,202.
Ujiie, Akira, to Mitsubishi Jukogyo Kabushiki Kaisha. Method for hardening a tubular shaped structure. 3,556,877, Cl. 148-143.
Ulderup, Jurgen, to Lemforder Metallwaren AG., Firma. Universal joint. 3,555,851, Cl. 64-11.
Ungerman, Warren J., to Captain International Industries, Ltd. Article dispensing apparatus with selectively releasable hinged shelves. 3,556,343, Cl. 221-90.
Union Carbide Corporation: *See—*
Ancker, Fred H.; and Baier, Frederick L., 3,556,955.
Craig, Burnie M., 3,555,774.
Elbert, Raymond J., 3,556,856.
Fry, John S.; Silver, Julius L.; and Quarles, Richard W., 3,556,952.
Gorham, William F.; and Loeb, William E., 3,556,881.
Henry, Joseph Peter; and Garst, Roger Harry, 3,557,234.
Henry, Joseph Peter; Hill, Fred Noble; and Garst, Roger Harry, 3,557,235.
Marsden, James G.; and Sterman, Samuel, 3,556,754.
Pahlke, Heinz Erich, 3,555,604.
Ruoff, Werner H., 3,556,893.
Srivastava, Pramod Kumar, 3,557,340.
Weinberg, Kurt, 3,557,204.
Union Oil Company of California: *See—*
Bauer, Ralph H., 3,557,069.
Young, Dean Arthur; and Mickelson, Grant A., 3,557,024.
Uniroyal, Inc.: *See—*
Martinkovic, Paul S.; and Symons, Lester M., 3,556,891.
United Aircraft Corporation: *See—*
Basche, Malcolm; Fanti, Roy; and Galasso, Salvatore F., 3,556,836.
Berkley, Stanley G.; and Suyama, Frank, 3,556,744.
Putnam, David F.; Russell, Sid; and Birbara, Philip, 3,556,949.
United Aircraft Products, Inc.: *See—*
De Groote, Raymond S., 3,556,199.
Sabin, Le Roy J.; and Hughes, Paul R., 3,556,142.
United Glass Limited: *See—*
Adcock, Edmund Philip; and Stanley, Joan Ann, 3,556,887.
United Kingdom Atomic Energy Authority: *See—*
Pigott, Albert Edward; and Thompson, Peter John, 3,556,692.
United Kingdom of Great Britain and Northern Ireland, Minister of Technology in Her Britannic Majesty's, Government of the:*See—*
Phillips, Leslie Nathan; Thomas, David Kenneth; and Wright, William Walter, 3,557,245.
United States Banknote Corporation: *See—*
Eberly, David H., Jr., 3,556,414.
United States of America
Agriculture: *See—*
Feairheller, Stephen H.; Taylor, Maryann M.; and Filachione, Edward M., 3,557,078.
Feuge, Reuben O.; and Zarins, Zigrida M., 3,557,170.
Kullman, Russell M.; Frick, John G., Jr.; and Reinhardt, Robert M., 3,556,713.
Pons, Walter A., Jr.; and Eaves, Paul H., 3,557,168.
Air Force: *See—*
Martin, Robert F.; and Harrison, Edward J., 3,555,913.
Roosild, Sven A.; Mc Laughlin, Walter A.; and Lowe, Lester F., 3,556,658.
Thornton, William E., 3,555,886.
Army: *See—*
Ismach, Aaron, 3,556,095.
Atomic Energy Commission: *See—*
Anderson, Norman G., 3,556,967.
Distler, William B.; and Wiesner, Harold J., 3,556,963.
Rutkauskas, Vincent J., 3,556,486.
Interior: *See—*
Hiteshue, Raymond W.; and Kawa, Walter, 3,556,978.
National Aeronautics and Space Administration, Administrator, with respect to an invention of:
Frazer, Robert E. Vacuum evaporator with electromagnetic ion steering. 3,556,048, Cl. 118-49.5
McDonald, Robert T., Eagot, Robert J., and Roman, James A. Gas low pressure low flow rate metering system. 3,555,898, Cl. 73-194.
National Aeronautics and Space Administration: *See—*
Marsh, Harold E., Jr.; and Hutchinson, John J., 3,557,027.
Schwinghamer, Robert J.; and Bennight, J D, 3,555,867.
Townes, Charles H.; Chiao, Raymond Y.; and Garmire, Elsa M., 3,556,634.
Navy: *See—*
Ankeney, Dewey P., 3,556,119.
Forman, Willis R., 3,555,663.
Levenstein, Harold; Goldstein, Albert; and Hebling, Audrey J., 3,556,662.
Miller, Donald, 3,556,034.
Morales, Carmelo; D'Ambrosio, John J.; and Wilder, Ira, 3,555,885.
Rubin, Eugene S.; and Parkin, William J., 3,557,369.
Rue, Richard O.; Kinder, Floyd A.; and Hansen, Vance L., 3,557,304.
United-Carr Incorporated: *See—*
Seckerson, Clifford A., 3,555,923.
Universal Oil Products Company: *See—*
Boyd, David M., 3,556,736.
Boyd, David M., 3,556,737.
Dunkel, Morris, 3,557,188.
Gerhold, Clarence G., 3,556,991.
Rausch, Richard E., 3,557,022.
Stedman, Russell F., 3,556,748.
University Music Editions, Inc.: *See—*
Leinbach, Donald K., 3,555,713.
University of Tennessee Research Corporation: *See—*
Hertel, Kenneth L., 3,556,665.
University Patents, Inc. of Illinois: *See—*
Juras, Appy, 3,556,914.
Uno, Hitoshi: *See—*
Yoshimura, Yoshio; Uno, Hitoshi; and Irie, Akira,3,557,131.
Unterstenhofer, Gunter: *See—*
Schmelzer, Hans-Georg; Degener, Eberhart; Tarnow, Horst; Holtschmidt, Hans; Unterstenhofer, Gunter; and Zecher, Wilfried,3,557,213.
Upjohn Company, The: *See—*
Fonken, Gunther S.; Herr, Milton E.; and Murray, Herbert C., 3,556,943.
Lincoln, Frank H.; Schneider, William P.; and Spero, George B., 3,557,158.
Miller, Thomas L., 3,556,944.
Moffett, Robert Bruce, 3,557,141.
Urban, Friedrich: *See—*
Buechner, Oskar; Immel, Wolfgang; Pfannmueller, Helmut; Schmidt-Thomee, Georg; and Urban, Friedrich,3,557,074.
Urbanosky, Thomas F., to General Electric Company. Flueric multiplier. 3,556,121, Cl. 137-81.5
Ursina A.G.: *See—*
Hostettler, Hermann Gustav, 3,556,801.
U.S. Philips Corporation: *See—*
Gijsbers, Thomas Gerardus; Leblans, Leopold Michael Lambert Joseph; and Daniels, Henricus Petrus Cornelis, 3,555,950.
Louzil, Friedrich; and Habelt, Gerhard, 3,555,917.
Moed, Hendrik Dufk; Claassen, Volkert; and Paerels, Gerard Bernard, 3,557,148.
U.S. Plywood-Champion Papers Inc.: *See—*
Benzing, James A., 3,556,742.
Hirtle, Parker W.; and Ashby, Frederick Richard, 3,555,734.
USM Corporation: *See—*
Hossfeld, John D., 3,555,929.
Orme, John Edward, 3,555,615.
Vacuumschmeize GmbH: *See—*
Pfeifer, Friedrich; and Deller, Rudolf, 3,556,876.
Valeska, John J.; Spencer, Donald N.; and Kummer, Edson L., to Sybron Corporation, mesne. Fluid control system for dental instruments. 3,556,669, Cl. 415-61.
Valliere, Robert L.: *See—*
Johnston, Robert R.; and Valliere, Robert L.,3,556,329.
Valtronic Corporation, The: *See—*
Rubin, Ronald W.; and Bennice, Richard L., 3,556,622.
Van Arsdale, Lyle R.: *See—*
Grove, Marvin H.; and Van Arsdale, Lyle R.,3,556,472.
Vandegaer, Jan E.: *See—*
Santo, John E.; and Vandegaer, Jan E.,3,557,205.
Vanden, Eynde, Hector Alfons; Van Doorselaer, Marcel Karel; De Cat, Arthur Henri; Otto, Rigobert; Kunitz, Friedrich-Wilhelm; and Schulte, Walter, to Gevaert-Agfa N.V. Silver halide emulsion containing naphthol colour couplers for cyan. 3,556,796, Cl. 96-100.
van der Lely, Cornelis. Crop store. 3,555,997, Cl. 100-66.
Vanderpool, Clarence D.: *See—*
Chiola, Vincent; Ritsko, Joseph E.; and Vanderpool, Clarence D.,3,556,725.
Vandesteeg, Wayne H.: *See—*
Link, Fred W.; Vandesteeg, Wayne H.; and Carrell, Donald D.,3,556,160.
Van Doornewaard, Hans, to Phillips Fibers Corporation. Yarn heating tube and method. 3,555,639, Cl. 28-62.
Van Doorselaer, Marcel Karel: *See—*
Vanden, Eynde, Hector Alfons; Van Doorselaer, Marcel Karel; De Cat, Arthur Henri; Otto, Rigobert; Kunitz, Friedrich-Wilhelm; and Schulte, Walter,3,556,796.
Van Driesen, Roger P., to Cities Service Research and Development Company. Hydrotreating process. 3,556,984, Cl. 208-59.

Van Driesen, Roger P., to Cities Service Research and Development Company. Method of regenerating hydrogenation catalyst. 3,557,019, Cl. 252-416.
Vanguard Corporation: *See—*
Van Moss, John H., Jr., 3,556,503.
Van Kirk, Sara Louise. Classroom seating chart with movable elements. 3,555,702, Cl. 35-7.
Van Moss, John H., Jr., to Vanguard Corporation. Side bearing for railroad cars. 3,556,503, Cl. 267-3.
Vann Industries, Incorporated: *See—*
Jackson, Walter F.; and Wise, James F., 3,556,700.
Van Raden, Frederick F., to Peerless Trailer and Truck Service, Inc. Expandable trailer. 3,556,545, Cl. 280-34.
Varaut, Bernard, to Compagnie Des Compteurs. Device for controlling the ignition in an internal combustion engine. 3,556,068, Cl. 123-148.
Varga, Joseph. Welding clamp. 3,556,508, Cl. 269-155.
Varta Aktiengesellschaft: *See—*
Haebler, Herbert; and Hense, Heinz, 3,556,852.
Vauvelle, Bernard: *See—*
Schott, Marcel; and Vauvelle, Bernard,3,556,683.
Vawter Ammunition, Inc.: *See—*
Vawter, James L.; and Socha, Lawrence E., 3,557,269.
Vawter, James L.; and Socha, Lawrence E., to Vawter Ammunition, Inc. Double compression method for forming a plastic shellcase. 3,557,269, Cl. 264-154.
Vayda, Louis L., to Ambac Industries, Inc. Filter gauge. 3,556,043, Cl. 116-70.
Vazquez, Gonzalo; and Salerni, John V., to Baker Oil Tools, Inc. Downhole disaster valve with dump unit. 3,556,212, Cl. 166-72.
Vedder, Herbert: *See—*
Bunte, Hans; Traulich, Horst; and Vedder, Herbert,3,557,363.
Veder, Christian. Road support structure. 3,555,979, Cl. 94-4.
Vedex Dansk Skovindustrie A/S: *See—*
Christoffersen, Christen; and Sorensen, Karl-Otto, 3,556,897.
Velcro S.A.: *See—*
Wylde, Joseph Rowland, 3,555,630.
Velsicol Chemical Corporation: *See—*
Polen, Percy B., 3,556,946.
Richter, Sidney B.; and Berliner, Jordan P., 3,557,209.
Withers, Henry W., Jr.; and Rose, John L., Jr., 3,557,222.
Velvin, James Carroll, Jr.: *See—*
Owen, Paul D.; Hilemn, Charles R.; and Velvin, James Carroll, Jr.,3,555,858.
Vendo Company, The: *See—*
Dyer, Kermit W.; Hoppe, William C.; and Moore, Michael O., 3,556,284.
Pennell, Kit E., 3,556,276.
Vepa AG: *See—*
Fleissner, Hans, 3,555,857.
Vereinigte Aluminium-Werke Aktiengesellschaft: *See—*
Weinhold, Gottfried, 3,555,599.
Vergne, Jean; Pailloux, Claude; Muller, Jean-Claude; and Robinet, Jean-Claude, to Charbonnages de France. Plastomers derived from dimethanooctahydronaphthalene lene and their method of manufacture. 3,557,072, Cl. 260-88.2
Vergne, Jean; Solaux, Leon; Robinet, Jean-Claude; and Lacroix, Philippe, to Charbonnages de France. Polar polymers derived from bicyclo [2.2.1] heptene-2. 3,557,062, Cl. 260-78.4
Verhille, Karel Eugeen, to Gevaert-Agfa N.V. Dye sensitization of electrophotographic material. 3,556,786, Cl. 96-1.7
Vertec-Gesellschaft fur Verpackungstechnik mbH & Co.: *See—*
Kammer, Karl Eugen, 3,555,772.
Victor Comptometer Corporation: *See—*
Gautsche, William E., Jr., 3,555,717.
Vidal, Lucien Rene. Installation for handling bulk materials. 3,556,317, Cl. 214-10.
Viel, Edmond Pierre Robert. Traction apparatus. 3,556,090, Cl. 128-75.
Viereck, Hubert: *See—*
Rausch, Hans; and Viereck, Hubert,3,556,772.
Vietorisz, Joseph A., to Koppers Company, Inc. Burner nozzle for hot blast stove. 3,556,412, Cl. 239-591.
Vincent, Daniel Boscawin: *See—*
Brown, Victor; Anderson, Ingvar G.; and Vincent, Daniel Boscawin,3,556,420.
Virtis Company, Inc., The: *See—*
Bender, Charles E.; Thompson, Taylor Norris; and Fraser, Douglas S., 3,556,760.
Vita-Pakt Citrus Products Co.: *See—*
McAleenan, Kenneth, 3,556,308.
Vitali, Ettore, to Societa Applicazioni Gomma, Antivibranti Saga, S.p.A. Expansion joint for road or bridge span sections. 3,555,981, Cl. 94-18.
Vitushkin, Vladimir Ivanovich; Koire, Viktor Evseevich; Pevzner, Semen Albertovich; Sidorenko, Alexandr Konstantinovich; Matsegora, Evgeny Alexandrovich; and Eskin, Vladimir Iosifovich. Tooth-cutting machine. 3,555,961, Cl. 90-1.
Vlier, Blaine H. Electrostatic precipitator. 3,555,818, Cl. 55-131.
Vockenhuber, Karl, and: *See—*
Nemeth, Otto R.; and Forch, Friedrich, 3,556,908.
Vodar, Boris: *See—*
Epain, Raymond; Vodar, Boris; and Susse, Christiane,3,555,607.
Voeke, Elmer E.: *See—*
Baltz, Albert L.; and Voeke, Elmer E.,3,556,624.
Vogelman, Joseph Herbert; Stephenson, Kenrick O., Jr.; and Feinerman, Bernard, to Chromalloy American Corporation. Remote telephone extension system. 3,557,312, Cl. 179-2.
Vogelsang, Paul G., Jr.: *See—*
Stanford, James R.; and Vogelsang, Paul G., Jr.,3,557,001.
Voith Getriebe KG: *See—*
Polzer, Erich, 3,555,931.
Volent, Stanley C., to Dacor Manufacturing Co., Inc. Simulated brick. 3,555,757, Cl. 52-309.
von Bonin, Wulf: *See—*
Pieper, Gustav; von Bonin, Wulf; and Grundmann, Ekkehard,3,557,140.
von Zeppelin, Kurt; and Scholz, Gunther, to Messrs. Gebruder Junghans G.m.b.H. Battery-powered wrist watch. 3,555,811, Cl. 58-23.
Voytik, Paul: *See—*
Zickar, Frank R.; and Voytik, Paul,3,555,670.
Vulcan Materials Company: *See—*
Moyer, Patricia H.; and Penner, Siegfried E., 3,557,228.
Waack, Richard: *See—*
McKeever, L Dennis; and Waack, Richard,3,556,960.
Waggoner, John B.: *See—*
McWilliams, Orcenith D.; and Waggoner, John B.,3,556,155.
Wagner, Edmond M., to Jade Controls Co., Inc. Thermocouple structure and method for making same. 3,556,864, Cl. 136-228.
Wagner Electric Corporation: *See—*
Machek, John A., 3,556,466.
Wagner, Ernest W.: *See—*
Erickson, Victor H.; Barnes, Roy J.; and Wagner, Ernest W.,3,555,710.
Wagner, Joseph Robert, to Huyck Corporation. Roll for papermaking machinery. 3,555,700, Cl. 34-116.
Wagner, Karl, to Agfa-Gevaert Aktiengesellschaft. Apparatus for image-transfer photography. 3,555,988, Cl. 95-89.
Wagner, Theodore R. Shock-proof safety screw driver. 3,556,184, Cl. 145-50.
Wahlstrom, Nils Lennart: *See—*
Svensson, Lars Erik; and Wahlstrom, Nils Lennart,3,555,863.
Waid, George R., to Eaton Yale & Towne, Inc. Method of molding valve stems. 3,557,270, Cl. 264-161.
Waite, J. P., Inc.: *See—*
Waite, John P., 3,556,322.
Waite, John P., to Waite, J. P., Inc. Hydraulic system for a power operated apparatus. 3,556,322, Cl. 214-138.
Walbro Corporation: *See—*
O'Connor, Alton J., 3,556,687.
Walck, George A., III; Carson, Ralph; and Maloney, George T., to Bard, C. R., Inc. Catheter package with self-contained lubricant. 3,556,294, Cl. 206-63.2
Walden, Stephen W., to Bell Telephone Laboratories, Incorporated. Wall support with locking feature for a telephone handset. 3,557,322, Cl. 179-146.
Waldvogel, Guy: *See—*
Furst, Andor; Furlenmeier, Andre; Langemann, Albert; Waldvogel, Guy; Hocks, Peter; Kerb, Ulrich; and Wiechert, Rudolf,3,557,097.
Walker, David D.: *See—*
Benjamin, Milton L.; and Walker, David D.,3,556,540.
Walker, Harold L., to Prior Products, Inc. Sprinkler boom resilient pivot. 3,556,404, Cl. 239-167.
Wallace, Bruce M. Wheeled toy. 3,555,724, Cl. 46-205.
Wallace, Dean R., to Air Reduction Company. Disposable anesthesia breathing circuit unit. 3,556,097, Cl. 128-188.
Wallace, John F.; and Ransome, John G., to Pressed Steel Fisher Limited. Treatment of effluents by the reverse osmosis process. 3,556,970, Cl. 204-181.
Wallace, Melvin: *See—*
Fritz, Leonard; Wallace, Melvin; and Seguin, John G.,3,556,500.
Walsh, Edward C. Hand held adding machine. 3,556,398, Cl. 235-110.
Walters, John H.: *See—*
Orfei, John B.; and Walters, John H.,3,555,725.
Walterskirchen, Wm. C.: *See—*
Huver, Ben, 3,556,454.
Walther, Gerhard: *See—*
Zeile, Karl; Banholzer, Rolf; and Walther, Gerhard,3,557,125.
Walton, Robert A., to W. F. Products Corporation. Valve for instant hot water system. 3,556,124, Cl. 137-112.
Wang, Chun-Shan; and Hennis, Henry E., to Dow Chemical Company, The. α-Bromalkylmethanodioxocins. 3,557,149, Cl. 260-345.2
Wangerin, Elmer O., to Eastman Kodak Company. Film threading apparatus. 3,556,435, Cl. 242-210.
Wangler, Raymond B.: *See—*
Cory, William E.; and Wangler, Raymond B.,3,556,236.
Ward, Geoffrey R.: *See—*
Briskin, Theodore S.; and Ward, Geoffrey R.,3,556,109.
Briskin, Theodore S.; and Ward, Geoffrey R.,3,556,110.
Warden, Merritt N.: *See—*
Huver, Ben, 3,556,454.
Warnant, Julien: *See—*
Joly, Robert; Warnant, Julien; and Farcilli, Andre,3,557,286.
Warner & Swasey Company, The: *See—*
Papp, Michael W., 3,555,943.

Warner-Lambert Pharmaceutical Company: *See—*
Satzinger, Gerhard, 3,557,127.
Shavel, John, Jr.; and Morrison, Glenn C., 3,557,122.

Warren Fastener Corporation: *See—*
Meyer, Engelbert A., 3,555,654.
Rondeau, Herbert F., 3,557,339.

Warthen, William P., to Deering Milliken Research Corporation. Cutter method and apparatus. 3,555,945, Cl. 83-56.

Washiashi, Morimasa: *See—*
Tano, Tekeo; and Washiashi, Morimasa,3,557,368.

Wassell, George W., to Wassell Organization, Inc. Information displaying device. 3,556,047, Cl. 116-135.

Wassell Organization, Inc.: *See—*
Wassell, George W., 3,556,047.

Wastian, Heinz. Prefabricated walls. 3,555,760, Cl. 52-476.

Waters Associates, Inc.: *See—*
King, Richard N., Jr., 3,556,130.

Watson, Clyde D.: *See—*
Oldenkamp, Henry A.; and Watson, Clyde D.,3,556,818.

Watts, Campbell: *See—*
Bullough, William; Jenkins, Walter N.; Jaffrey, William G.; Watts, Campbell; Jones, Granville K.; and Salt, Frederick W.,3,557,336.

Wavre, Andre; Thompson, Francis T.; and Rubner, Tibor D., to Westinghouse Electric Corporation. Control logic circuit. 3,557,383, Cl. 307-215.

Waxman, Albert; and Zaininger, Karl H., to RCA Corporation. Plasma anodizing aluminum coatings on a semiconductor. 3,556,966, Cl. 204-164.

Weaver, Ernest P.: *See—*
Henry, George R.; and Weaver, Ernest P.,3,556,822.

Webb, David John Tudor: *See—*
Seymour-Walker, Kay John; and Webb, David John Tudor,3,556,579.

Webb, Paul D.; and Lasher, David C., to Ingersoll-Rand Company. Sealing arrangement for vacuum pump. 3,556,697, Cl. 418-98.

Webcor, Inc.: *See—*
Bara, Edwin S.; and Kobek, Leonard J., 3,556,534.

Weber & Scher Mfg. Co., Inc.: *See—*
Scher, Joseph William, 3,555,801.

Weber, Abraham; and Frossard, Jacques Jean, to Mead Johnson & Company, mesne. Octalone carboxylic acids and their derivatives. 3,557,291, Cl. 424-317.

Weber, Hubert Antonius; and Molenaar, Adrianus Pieter, to Koninklijke Nederlandsche Gist-en Spiritusfabriek N.V. Stable solutions of oxytetracycline suitable for parenteral and peroral administration and process of preparation. 3,557,280, Cl. 424-80.

Weber, James A.; Rapp, Lester M.; and Stewart, Norman C., to Cities Service Research and Development Company. Hydrocarbon oil treatment process and apparatus therefor. 3,556,989, Cl. 208-143.

Webster Electric Company, Inc.: *See—*
Campbell, Richard H., 3,556,706.

Wegler, Richard: *See—*
Eue, Ludwig; Hack, Helmuth; Westphal, Kurt; and Wegler, Richard,3,557,189.

Wegmann, Jerome B.: *See—*
Mueller, Carl H.; Wegmann, Jerome B.; Kitchen, Clarence E.; and Weitzel, George,3,556,481.

Wegner, Herman E., to Alcan Aluminum Corporation. Slat accessory machine. 3,555,864, Cl. 72-14.

Wehr corporation: *See—*
Wooldridge, James E.; Leach, Ralph M.; and Wurtenberg, Oscar A., 3,555,785.

Wehrmeister, Herbert L.: *See—*
Runge, Wallace F.; and Wehrmeister, Herbert L.,3,556,719.

Weigelt, Heinrich: *See—*
Buse, Wilhelm G.; Munding, German; and Weigelt, Heinrich,3,555,824.

Weighart, Frederick G., to Automation Industries, Inc. Ultrasonic inspection apparatus. 3,555,889, Cl. 73-67.9

Weikert, Rudolf. Window and door frameworks. 3,555,735, Cl. 49-501.

Weinberg, Kurt, to Union Carbide Corporation. Production of arylphosphine halides. 3,557,204, Cl. 260-543.

Weiner, Sidney: *See—*
Ehrens, Henry; and Weiner, Sidney,3,556,470.

Weingarten, Harold I.; and White, William A., to Monsanto Company. Process for preparing tetrakis (alkyl or alkenyl- amino) ethylenes. 3,557,157, Cl. 260-583.

Weinhold, Gottfried, to Vereinigte Aluminium-Werke Aktiengesellschaft. Apparatus for shaping of granular substances. 3,555,599, Cl. 18-5.

Weiss, Adolf F., to Alpha Press Company. Apparatus for controlling pressure in a hydraulic machine. 3,555,965, Cl. 91-35.

Weiss, Jonas: *See—*
Lepp, Stephen; Studley, Edward; and Weiss, Jonas,3,557,327.

Weisshaar, Dieter: *See—*
Diebold, Max; Menge, Eberhard; Hanschitz, Rudolf; and Weisshaar, Dieter,3,556,303.

Weitz, Hans-Martin; Merger, Franz; and Koopmann, Juergen, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of 1,4-dicyanobutene-(2). 3,557,187, Cl. 260-465.8

Weitzel, George: *See—*
Mueller, Carl H.; Wegmann, Jerome B.; Kitchen, Clarence E.; and Weitzel, George,3,556,481.

Welker Industries & Co. Limited: *See—*
Welker, Karl, 3,556,506.

Welker, Karl, to Welker Industries & Co. Limited. Adjustable machine-tool vise. 3,556,506, Cl. 269-72.

Wells, Paul S. Deep-sea cargo vessel. 3,556,036, Cl. 114-43.5

Welsh Manufacturing Company: *See—*
Patton, George T., Jr., 3,555,562.

Wenger, Caleb M. Building for animals. 3,556,055, Cl. 119-16.

Werkzeugmaschinenfabrik Gildemeister & Comp. Akt.- Ges.: *See—*
Mobius, Hans-Gerold; Kuckelsberg, Karl-Wilhelm; and Lange, Klaus, 3,555,658.

Werkzeugmaschinenfabrik Oerlikon-Buhrle AG: *See—*
Keller, Siegfried, 3,556,613.

Werner, Frithjof, to Bosch, Robert, GmbH. Support and interconnection arrangement for semi- conductor rectifiers in alternator structures. 3,557,300, Cl. 174-68.5

Werner, Helmut: *See—*
Sommer, Erwin; Wiloth, Fritz; Werner, Helmut; Lotz, Rudolf; and Wick, Gerhard,3,556,927.

Werner, Lawrence E., to Chrysler Corporation. Automobile engine mounting and method. 3,556,445, Cl. 248-7.

Wesch, Ludwig; Pfister, Marcel; and Loeffler, Herbert. Apparatus for the manufacture of pipes and tubular bodies from roving strands soaked with synthetic resin. 3,556,905, Cl. 156-429.

Wesen, Glen L.: *See—*
Barr, William H.; and Wesen, Glen L.,3,556,530.

Wessel, Karl-Heinz; and Scheikowski, Klaus, to Stubbe, Herr Friedrich. Injection molding apparatus. 3,555,617, Cl. 18-30.

Wesseler, William O.: *See—*
Jenkins, John C.; and Wesseler, William O.,3,556,447.

West, Clarence Virgill: *See—*
Jaquith, Fred M., 3,555,727.

Westab Inc.: *See—*
Seaborn, Paul E., 3,555,587.

Westbrook, Aubrey Joseph; and Thomson, Ian David MacKnight, to Plastic Rotational Mouldings Limited. Rotational moulding apparatus. 3,555,613, Cl. 18-26.

Western Electric Company, Incorporated: *See—*
Bankes, Robert B.; and Esseluhn, Werner F., 3,555,660.
Mracek, Jaroslav, 3,555,659.

Westin, Sven Birger. Molding and packaging candy. 3,556,022, Cl. 107-54.

Westinghouse Electric Corporation: *See—*
Aemmer, Peter F., 3,557,348.
Bratkowski, Walter V.; and Pittman, Paul F., 3,555,894.
Brown, Francis X.; and Wismer, Samuel W., Jr., 3,555,656.
Bruning, Armin M.; and De Corso, Serafino M., 3,556,771.
Caputo, William R.; and Berkovitz, Harry, 3,556,257.
Carlson, William G.; Moratis, Christy J.; and English, William A., 3,555,667.
Chang, Hung Chi; and Chu, Ting Li, 3,556,732.
Foster, Newton C., 3,557,246.
Kyle, William K., 3,556,203.
Leeds, Winthrop M.; and Spindle, Harvey E., 3,557,330.
McAvoy, Bruce R., 3,557,333.
Munson, William A., 3,556,321.
Shoupp, William E.; and Schumacher, Berthold W., 3,556,600.
Smith, Melvin W., 3,556,598.
Tilus, Carl W., 3,556,077.
Wavre, Andre; Thompson, Francis T.; and Rubner, Tibor D., 3,557,383.
Zickar, Frank R.; and Voytik, Paul, 3,555,670.

Weston, Clement Walker, Jr. Deep submersible power unit. 3,555,834, Cl. 61-69.

Westphal, Kurt: *See—*
Eue, Ludwig; Hack, Helmuth; Westphal, Kurt; and Wegler, Richard,3,557,189.

Wettlen, Lars Malte Roland, to AB Tetra Pak. Method of producing filling and closing tetrahedral packages and a device for carrying out the method. 3,555,765, Cl. 53-29.

W. F. Products Corporation: *See—*
Walton, Robert A., 3,556,124.

Wheadon, Ellis G.; and Willmann, Norman L., to General Motors Corporation. Lead acid storage battery having a grid with divergent fingers. 3,556,854, Cl. 136-37.

Wheeler, Dennis A.: *See—*
Fuchs, Warren; and Wheeler, Dennis A.,3,556,724.

Whirlpool Corporation: *See—*
Bottas, Michael J.; and Difley, Chares R., 3,556,619.

White, Barrie Edmund; and White, Christopher Jarvis Edmund. Easily-assembled lampshade. 3,557,362, Cl. 240-108.

White, Christopher Jarvis Edmund: *See—*
White, Barrie Edmund; and White, Christopher Jarvis Edmund,3,557,362.

White, Claude C. Self-expanding shell for engagement in mine roof. 3,555,960, Cl. 85-80.

White, Kenneth H., to Ingersoll-Rand Company. Fluid-contol valve. 3,556,136, Cl. 137-512.1

White, William A.: *See—*
Weingarten, Harold I.; and White, William A.,3,557,157.

Whitehead, John I. Adjustable staircase structures. 3,556,251, Cl. 182-93.

Whiting Corporation: *See—*
Saxonmeyer, Wallace J., 3,556,011.

Whitman, Gordon R.; and Rosenthal, Harold, to General Foods Corporation. Process of coating food. 3,556,814, Cl. 99-169.

Whitney, Walter D. Pulling apparatus. 3,556,482, Cl. 254-134.

Whitney, William E., to Comstock & Wescott, Inc. Wire-bending apparatus. 3,556,166, Cl. 140-71.

Whitney, William E., to Comstock & Wescott, Inc. Tensioning apparatus. 3,556,373, Cl. 226-117.

Whittaker, Robert K. Gun rack for vehicles. 3,556,363, Cl. 224-1.

Wichita Sheet Metal Supply, Inc.: *See—*
Antisdel, Merle J., 3,556,911.

Wichterle, Otto, to Ceskoslovensha akademie ved. Method of centrifugally casting layered contact lenses. 3,557,261, Cl. 264-1.

Wick, Gerhard: *See—*
Sommer, Erwin; Wiloth, Fritz; Werner, Helmut; Lotz, Rudolf; and Wick, Gerhard,3,556,927.

Wiechert, Rudolf: *See—*
Furst, Andor; Furlenmeier, Andre; Langemann, Albert; Waldvogel, Guy; Hocks, Peter; Kerb, Ulrich; and Wiechert, Rudolf,3,557,097.

Wieger, George F., to Bendix Corporation, The. Automatic brake shoe positioner mechanism. 3,556,263, Cl. 188-79.5

Wierzba, Anthony R.: *See—*
Enneper, Arnold A.; and Wierzba, Anthony R.,3,557,156.

Wiesner, Harold J.: *See—*
Distler, William B.; and Wiesner, Harold J.,3,556,963.

Wilbring, Gunther: *See—*
Kopsch, Heinz; Wilbring, Gunther; Fay, Paul; and Hanf, Wilhelm,3,555,723.

Wilczynski, Janusz S., to International Business Machines Corporation. Method and apparatus for obtaining, by a series of samples, the intensity distribution across sources of incoherent electromagnetic waves to produce a single composite picture. 3,556,630, Cl. 350-3.5

Wilczynski, Janusz S.: *See—*
Tibbetts, Raymond E.; and Wilczynski, Janusz S.,3,556,642.
Tibbetts, Raymond E.; and Wilczynski, Janusz S.,3,556,643.

Wilder, Ira: *See—*
Morales, Carmelo; D'Ambrosio, John J.; and Wilder, Ira,3,555,885.

Wilhelm, Hans; Gulbins, Klaus; Hartmann, Heinrich; and Lange, Guenter, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Organic dispersions of colored crosslinkable copolymers and their production. 3,557,048, Cl. 260-41.

Wilhelm, Max; and Eichenberger, Kurt, to Ciba Corporation. Poultry feeds and poultry feed additives containing 5-nitrofurfuryl-idenemethyl compounds. 3,557,284, Cl. 424-250.

Wilkinson, Thomas B.; Melton, James O.; Musser, Harry B.; and Thomas, Abraham L., to Jamco, Inc. Resilient closure having inverted recess securing means. 3,556,338, Cl. 220-60.

Willems, Jozef Frans: *See—*
Pattijn, Hendrik Adolf; Thiers, Robrecht Julius; Tavernier, Bernard Hippoliet; and Willems, Jozef Frans,3,556,797.

Williams Brothers Company: *See—*
Larson, Fay N.; Henry, Francis B.; and Parks, Clyde, 3,556,761.

Williams, Charles J., to Erie Development Company. Method of making a fine screen. 3,557,276, Cl. 264-316.

Williams, Council W. Apparatus for emptying liquid tanks. 3,556,351, Cl. 222-178.

Williams, John G., to Worthington Corporation. Trip valve system. 3,556,463, Cl. 251-14.

Williams, Laurence Lyman: *See—*
Coscia, Anthony Thomas; and Williams, Laurence Lyman,3,556,932.

Williams, Laurence Lyman; and Coscia, Anthony Thomas, to American Cyanamid Company. Regeneration of aged-deteriorated wet strength resins. 3,556,933, Cl. 162-167.

Williams, Sumner Henry; and Ellis, Joseph Reid, to GAF Corporation. Apparatus for developing a pattern on a surface of a textile material. 3,555,856, Cl. 68-13.

Williams, Theodore M. Steering wheel position indicator. 3,556,045, Cl. 116-31.

Willis, Arnold L., to MSL Industries, Inc. Pillow and method of making same. 3,555,580, Cl. 5-337.

Willmann, Norman L.: *See—*
Wheadon, Ellis G.; and Willmann, Norman L.,3,556,854.

Wiloth, Fritz: *See—*
Sommer, Erwin; Wiloth, Fritz; Werner, Helmut; Lotz, Rudolf; and Wick, Gerhard,3,556,927.

Wilson, David W., to Sherwin-Williams Company, The, mesne. Treated brush and brush treating composition. 3,556,752, Cl. 51-295.

Wilson, Joseph H.: *See—*
Moller, Walter H.; and Wilson, Joseph H.,3,556,484.

Wilson, Roy C., Jr.: *See—*
Longshaw, William J.; Wilson, Roy C., Jr.; and Ridenour, James,3,557,275.

Wiltshire, Arthur J., to Structural Fibers, Inc. Tube forming apparatus. 3,555,614, Cl. 18-26.

Windmoller & Holscher: *See—*
Brockmuller, Friedrich Franz; and Junemann, Boyke, 3,556,518.
Rochla, Kurt, 3,555,973.

Winer, Melvin: *See—*
Owen, Victor, 3,555,567.
Leasure, John A., Jr.; Main, John H.; and Winer, Richard,3,555,816.

Winer, Richard: *See—*
Leasure, John A., Jr.; Main, John H.; and Winer, Richard,3,555,958.

Winge, John J.; and Howard, Donald W., to Bendix Corporation, The. Brake lining wear indicator. 3,556,258, Cl. 188-1.

Winogrocki, Ray F.; Brzozowski, Stephen J., Jr.; and McClure, Gerald L., to Essex International, Inc. Direction signal and hazard warning switch assembly. 3,557,328, Cl. 200-61.27

Winter, Heinz W., to Envirotech Corporation. Jaw crusher and method of operation thereof. 3,556,415, Cl. 241-30.

Wintersberger, Karl: *See—*
Leitner, Hans; and Wintersberger, Karl,3,557,186.

Wise, James F.: *See—*
Jackson, Walter F.; and Wise, James F.,3,556,700.

Wisebaker, Robert E., to National Machinery Company, The. Forging machine. 3,555,586, Cl. 10-12.5

Wismer, Samuel W., Jr.: *See—*
Brown, Francis X.; and Wismer, Samuel W., Jr.,3,555,656.

Witco Chemical Corporation: *See—*
Goldstein, Herbert; Ingram, Henry T.; and Kufrin, Robert J., 3,555,828.

Withers, Henry W., Jr.; and Rose, John L., Jr., to Velsicol Chemical Corporation. Hydrolysis of benzyl chloride to benzyl alcohol. 3,557,222, Cl. 260-618.

Witschnig, Walter. Machine for dividing wooden parts into individual channel-shaped elements. 3,556,178, Cl. 143-85.

Wochnowski, Waldemar, to Hauni-Werke Korber & Co. KG. Method and apparatus for conditioning tobacco or the like. 3,556,111, Cl. 131-135.

Wolcott, Gard William: *See—*
Bryner, Ernest James; and Wolcott, Gard William,3,556,287.

Wolf, Alby H.; Schreader, Darreld L.; and Schaumburg, Edward G., to Gould National Batteries, Inc. Liquid filling apparatus. 3,556,175, Cl. 141-285.

Wolf, Heinz K.; and Alexander, Alan G., to New Britain Machine Company, The. Machine tool. 3,555,962, Cl. 90-11.

Wolfe, Russell C. View port mounting frame and method of making same. 3,556,038, Cl. 114-173.

Wolking, William J. Portable spraying apparatus for washing vehicle. 3,556,402, Cl. 239-130.

Woo, Willie. Meat tenderization process. 3,556,807, Cl. 99-107.

Wood, Fenton M., to American Machine & Foundry Company. Apparatus for electroacoustically inspecting tubular members for anomalies using the magneto- strictive effect and for measuring wall thickness. 3,555,887, Cl. 73-67.5

Wood Industries, Inc.: *See—*
Brazdovic, Rudolph T., 3,556,913.

Wood, Jack K.: *See—*
Kamberg, Henry; and Wood, Jack K.,3,555,759.

Wood, John H.: *See—*
Grouver, Edwin F.; Reid, Guy T.; Wood, John H.; Pharr, Rodger H.; and Mize, Charles A.,3,555,594.

Woods, Guy S., Jr., to Phillips Petroleum Company. Particulate matter transfer system. 3,556,606, Cl. 302-66.

Woods, Stephen. High air velocity carburetor. 3,556,067, Cl. 123-127.

Wooldridge, James E.; Leach, Ralph M.; and Wurtenberg, Oscar A., to Wehr corporation, mesne. Method and means for efficiently cleaning a gas filter. 3,555,785, Cl. 55-96.

Word, Kenneth C. Stackable, resilient tubular dispensing container. 3,556,333, Cl. 215-10.

Worthington Corporation: *See—*
Williams, John G., 3,556,463.

Wossner, Felix: *See—*
Axthammer, Ludwig; Leibeling, Heinz; and Wossner, Felix,3,556,617.

Wright, Carl L.; and Beachman, Harry H., to FMC Corporation. Mixed thermosetting resin compositions containing polyphenylene ethers. 3,557,045, Cl. 260-40.

Wright, Carl L.; and Thomas, James L., to FMC Corporation. Diallyl phthalate molding compositions. 3,557,047, Cl. 260-41.

Wright, Phillip Brian: *See—*
Collard, Ronald Thomas; and Wright, Phillip Brian,3,556,304.

Wright, William Walter: *See—*
Phillips, Leslie Nathan; Thomas, David Kenneth; and Wright, William Walter,3,557,245.

Wunsch, Alfred: *See—*
Leutwyler, Paul; and Wunsch, Alfred,3,556,680.

Wurtenberg, Oscar A.: *See—*
Wooldridge, James E.; Leach, Ralph M.; and Wurtenberg, Oscar A.,3,555,785.

Wyatt, William Kirk; Mueller, Edward G.; and Hebrank, William H., to Turbo Machine Company. Coiled textile product. 3,556,432, Cl. 242-159.

Wyeth, Nathaniel Convers: *See—*
Goodwin, Leslie Ethel; Rowe, Jean Max; and Wyeth, Nathaniel Convers,3,556,000.

Wylde, Joseph Rowland, to Velcro S.A., mesne. Fastener members. 3,555,630, Cl. 24-204.

X-Scope Corporation: *See—*
Becker, Hal Clarence, 3,557,371.

Xerox Corporatinon: *See—*
Orfei, John B.; and Walters, John H., 3,555,725.
Fackler, George E., 3,556,512.
Howard, Anthony; and Fackler, George E., 3,556,511.
Howard, Anthony, 3,556,513.

Xerox Corporation: *See—*
Jones, Hugh L.; and Hoffman, Daniel S., 3,556,516.
Kyriakakis, Basil M., 3,556,783.
Lavander, Edward J., 3,556,651.
Levy, Mortimer; and Pundsack, Arnold L., 3,556,781.
Roth, Walter; Gallo, Charles F.; Leiga, Algrid G.; and McInally, John A., 3,557,367.
Young, James E., 3,556,782.

Yahiro, Akihumi: *See—*
Onoda, Hajime; and Yahiro, Akihumi, 3,555,902.

Yakimik, Harry, Jr., to Tenneco Chemicals, Inc. Process for the production of alkali metal silicylates. 3,557,198, Cl. 260-521.

Yakunin, Eduard Nikolaevich: *See—*
Tikhonov, Ilya Andreevich; Dzhanshiev, Ivan Alexandrovich; Sochilin, Anatoly Egorovich; and Yakunin, Eduard Nikolaevich, 3,557,341.

Yalovega, Nikolai Vasilievich. Shut-off valve for hydraulic systems. 3,556,139, Cl. 137-554.

Yamada, Eiji; Korenaga, Hiroshi; and Akamatsu, Takashi, to Sumitomo Chemical Company, Ltd. Novel anthraquinone disperse dyestuffs. 3,557,155, Cl. 260-373.

Yamada, Yasunori: *See—*
Sakamoto, Masakatsu; Uchida, Kenji; Yamada, Yasunori; and Yamaguchi, Takashi, 3,556,682.

Yamada, Yoshitaka; and Kumashiro, Izumi, to Ajinomoto Co., Inc. Method of preparing guanine, isoguanine, and 7- methyl derivatives thereof. 3,557,113, Cl. 260-252.

Yamaguchi, Takashi: *See—*
Sakamoto, Masakatsu; Uchida, Kenji; Yamada, Yasunori; and Yamaguchi, Takashi, 3,556,682.

Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi, to Sumitomo Chemical Company, Ltd. Process for producing 1,4-benzodiaze- pine-2-one derivatives. 3,557,092, Cl. 260-239.3

Yamamoto, Katsuro; Hatano, Takuya; Obata, Kuniyoshi; Satoh, Tohru; and Nakagawa, Shinji, to Bridgestone Liquefied Gas Company Limited. Method of testing airtightness of hermetically sealed tanks. 3,555,884, Cl. 73-40.7

Yamamoto, Kenichi, to Toyo Kogyo Co., Ltd. Apex seal for rotary combustion engines. 3,556,695, Cl. 418-61.

Yamamoto, Miaki; and Amano, Shin, to Tokyo Keiki Seizosho Company, Ltd. Ultrasonic flow quantity measuring system. 3,555,899, Cl. 73-194.

Yamamoto, Michihiro: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi, 3,557,092.

Yamamoto, Toshihiko; Fujiwara, Mitsuto; Kojima, Tamotsu; and Sakamoto, Kenro, to Konishiroku Photo Industry Co., Ltd. Light-sensitive silver halide color photographic material containing a mono- pyrazolone coupler and a bis-pyrazolone compound. 3,556,799, Cl. 96-100.

Yamane, Saburo: *See—*
Naito, Ryunosuke; Komatsu, Sakan; and Yamane, Saburo, 3,556,286.

Yamazaki, Shuichi: *See—*
Date, Tasuku; Ishizuya, Akira; Yamazaki, Shuichi; Togashi, Nobuyuki; Shioya, Toshio; Kikuraku, Tomoki; and Kurihara, Norimitsu, 3,556,064.

Yanabu, Hiroshi: *See—*
Momoda, Ryujiro; and Yanabu, Hiroshi, 3,556,701.

Yanami, Tetsuo: *See—*
Inoue, Takayuki; Kato, Kichiro; Toyama, Teruhiko; and Yanami, Tetsuo, 3,556,768.

Yanik, Richard W.: *See—*
Standish, Norman W.; and Yanik, Richard W., 3,557,031.

Yargeau, Laurencia. Moisture proof oil and lube plastic tab holder. 3,555,712, Cl. 40-16.

Yeager, Paul Allen, to Sabema Corporation. Method and apparatus for installing thread inserts. 3,556,743, Cl. 29-429.

Yoder, Joe B., to General Electric Company. Apparatus for coiling lamp filament supports. 3,556,169, Cl. 140-71.6

Yokoziwa, Masami: *See—*
Iwasa, Hitoo; Yokoziwa, Masami; and Teramoto, Iwao, 3,556,841.

Yolles, Seymour, to Du Pont de Nemours, E. I., and Company. Package and process for preparing foam. 3,557,004, Cl. 252-90.

Yoneshige, Kazumasa; and Teranishi, Haruo, to Nippon Carbon Company Limited. Method of making flame-proof fibers. 3,556,712, Cl. 8-116.

York, Donald W.: *See—*
Susag, Jerome R.; and York, Donald W., 3,556,243.

York, Philip J., to Pomeroy, J. H., & Co. Inc. Concrete wall structure and method. 3,555,830, Cl. 61-39.

Yoshida Kogyo Kabushiki Kaisha: *See—*
Yoshikawa, Kiichi, 3,556,028.

Yoshikawa, Kiichi, to Yoshida Kogyo Kabushiki Kaisha. Presser foot for sewing machines. 3,556,028, Cl. 112-240.

Yoshimura, Yoshio; Uno, Hitoshi; and Irie, Akira, to Dainippon Pharmaceutical Co., Ltd. Nicotinate derivatives of vitamin B. 3,557,131, Cl. 260-295.5

Yoshino, Yamata; Kishikawa, Kanichi; and Tanaka, Katsuyoshi, to Nippon Steel Corporation. Apparatus for continuously rolling steel. 3,555,862, Cl. 72-10.

Young, David W.: *See—*
Gower, Bob G.; and Young, David W., 3,556,763.

Young, Dean Arthur; and Mickelson, Grant A., to Union Oil Company of California. Alumina-bonded catalysts. 3,557,024, Cl. 252-455.

Young, Hersey W., Jr., to Cannon Aeronautical Center. Directional force generator. 3,555,915, Cl. 74-84.

Young, James E., to Xerox Corporation. Method of forming high density material arrays. 3,556,782, Cl. 96-1.1

Young, Stephen A.: *See—*
Politz, William E., 3,556,140.

Young Windows, Inc.: *See—*
Koch, Charles H., Jr.; and McGinnis, Norman M., 3,555,736.

Youngstown Sheet and Tube Company, The: *See—*
Busch, Thomas N.; and Hoadley, Cyrus E., 3,556,183.

Youngstown Steel Door Company, The: *See—*
Ross, Irving D., Jr., 3,555,731.

Zagwyn, Anthony T., to Ajay Enterprises Corporation. Golf cart construction. 3,556,547, Cl. 280-41.

Zaininger, Karl H.: *See—*
Waxman, Albert; and Zaininger, Karl H., 3,556,966.

Zaitsev, Mikhail Pavlovich: *See—*
Strakhov, Vasily Vasilievich; Kuzmin, Jury Nikolaevich; Krikunov, Alexandr Eliseevich; Tombaev, Nikolai Ivanovich; Gisin, Iosif Borisovich; Agafonov, Anatoly Grigorievich; Zaitsev, Mikhail Pavlovich; Shender, Eda Grigortevna; Prityko, Vladimir Pavlovich; Makeeva, Maria Lukyanovna; and Soloviev, Anatoly Mikhailovich, 3,555,991.

Zanias, Theodore J.: *See—*
Suffron, Fay O.; and Zanias, Theodore J., 3,556,132.

Zaremski, Donald R., to Allegheny Ludlum Steel Corporation. Stainless steel trim member assembly. 3,556,745, Cl. 29-183.5

Zarins, Zigrida M.: *See—*
Feuge, Reuben O.; and Zarins, Zigrida M., 3,557,170.

Zecher, Wilfried: *See—*
Schmelzer, Hans-Georg; Degener, Eberhart; Tarnow, Horst; Holtschmidt, Hans; Unterstenhofer, Gunter; and Zecher, Wilfried, 3,557,213.

Zeeb, Rhinhold J. Repair anvil. 3,555,648, Cl. 29-200.

Zeile, Karl; Banholzer, Rolf; and Walther, Gerhard, to Boehringer Ingelheim G.m.b.H. (-)-N-ethyl-O-(benzoyl or p-nitrobenzoyl)- norscopolamine and salts thereof. 3,557,125, Cl. 260-292.

Zeiss, Carl: *See—*
Schrumpf, Kurt; and Busch, Franz, 3,555,704.

Zeiss-Stiftung, Carl: *See—*
Schrumpf, Kurt; and Busch, Franz, 3,555,704.

Zeltex, Inc.: *See—*
Robertson, Jack Y., 3,557,347.

Zemlin, John C., to Liner Technology, Inc. Process for preparing a solid polyurethane having a long pot-life. 3,557,032, Cl. 260-18.

Zenner, Karl-Friedrich: *See—*
Krauss, Heinz Walter; Pedain, Josef; Zenner, Karl-Friedrich; Oertel, Gunter; and Holtschmidt, Hans, 3,557,043.

Zergenyi, Janos; and Habicht, Ernst, to Geigy Chemical Corporation. 5-(2-Bromomethyl or chloromethyl-2-bromo or chloro alkanoyl) benzofuran-2-carboxylic acids. 3,557,152, Cl. 260-346.2

Ziccardi, John J., 50% to Jaspert, William B. Valve actuators. 3,556,467, Cl. 251-76.

Zickar, Frank R.; and Voytik, Paul, to Westinghouse Electric Corporation. Methods of constructing electrical transformers. 3,555,670, Cl. 29-605.

Ziemba, Victor F., to Detrex Chemical Industries, Incorporated. Chromate coating composition and method. 3,556,868, Cl. 148-6.2

Zievers, James F.; and Schmidt, Henry, Jr., to Industrial Filter & Pump Mfg., Co. Fluid distributing conduit for processing apparatus. 3,556,299, Cl. 210-136.

Zimmer, Johannes: *See—*
Mitter, Mathias; and Mayer, Karl, 3,556,004.

Zimmerman, Carle C., Jr.; and Mosier, Charles F., Jr. Process for the production of acetylene, ethylene and aromatics. 3,556,987, Cl. 208-93.

Zimmerman, Howard K.: *See—*
Tucker, Don R.; Green, Lloyd L.; and Zimmerman, Howard K., 3,556,798.

Zimmon, Harold; and Strom, Dee L. Nurse's surgical cap. 3,555,565, Cl. 2-198.

Zirkle, Charles L.: *See—*
Kaiser, Carl; and Zirkle, Charles L., 3,557,098.
Kaiser, Carl; and Zirkle, Charles L., 3,557,123.

Zmatlik, Josef; Jisa, Miloslav; Sedlecky, Jaromir; Matejka, Josef; Mohelnicky, Josef; and Milichovsky, Bohumil, to Statni Vyzkumny Ustav Textilni. Fabric having integral and sectional weft threads, and loom for making the same. 3,556,165, Cl. 139-383.

Zolg, Fred U., to Cincinnati Milacron Inc. Copper-clad plastic panel. 3,556,928, Cl. 161-186.

Zumach, Gerhard: *See—*
Holtschmidt, Hans; Zumach, Gerhard; Doring, Fritz; and Kuhle, Engelbert, 3,557,133.

Zuris, Peter M.: *See—*
Payne, Burton L.; Darron, Ward K.; and Zuris, Peter M., 3,555,954.

Zweig, Arnold; and Maulding, Donald Roy, to American Cyanamid Company. Aromatic hydrocarbons substituted by phenylethynyl groups. 3,557,233, Cl. 260-668.

LIST OF REISSUE PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 19TH DAY OF JANUARY, 1971

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

Bezlaj, Frank A., to Unarco Industries, Inc. Landing separating apparatus. Re. 27,034, 1–19–71. Cl. 296—24.
Bieloch, William, to Rand Mines Ltd. Process for the production of extra low carbon stainless steel. Re. 27,037, 1–19–71, Cl. 75—130.5.
Hall, R. M., Corp.: *See—*
Hall, Robert M. Re. 27,032.
Hall, Robert M., to R. M. Hall Corp. Surgical cutting tool. Re. 27,032, 1–19–71, Cl. 128—305.
Miller, Larry J. Single handle faucet valve. Re. 27,036, 1–19–71, Cl. 137—636.3.
Mitsumoto, Heihachi. Hygroscopic hair curler. Re. 27,033, 1–19–71. Cl. 132—39.
Rand Mines Ltd.: *See—*
Bieloch, William. Re. 27,037.
U.S. Industries, Inc.: *See—*
Van Huis, Robert L. Re. 27,035.
Unarco Industries, Inc.: *See—*
Bezlaj, Frank A. Re. 27,034.
Van Huis, Robert L., to U.S. Industries, Inc. Feed saver for automatic feed apparatus. Re. 27,035, 1–19–71, Cl. 222—318.

LIST OF PLANT PATENTEES

Boerner, Eugene S., deceased (by Lincoln Rochester Trust Co., and Roger L. Boerner, executors), to Jackson & Perkins Co. Rose plant. 3,018, 1–19–71, Cl. 11.
Boerner, Roger L.: *See—*
Boerner, Eugene S. 3,018.
Burkard Nurseries, Inc.: *See—*
Scott, Paul L. 3,019.
Gro-Plant Industries, Inc.: *See—*
Whisler, Dorothy S. 3,020.
Jackson & Perkins Co.: *See—*
Boerner, Eugene S. 3,018.
Lincoln Rochester Trust Co.: *See—*
Boerner, Eugene S. 3,018.
Manbeck, A. K., & Sons Nurseries, Inc.: *See—*
Manbeck, Alton K. 3,021.
Manbeck, Alton K., to A. K. Manbeck & Sons Nurseries, Inc. Linden tree. 3,021, 1–19–71, Cl. 51.
Scott, Paul L. to Burkard Nurseries, Inc. Felicia plant. 3,019, 1–19–71, Cl. 68.
Whisler, Dorothy S., to Gro-Plant Industries, Inc. Rose plant. 3,020, 1–19–71, Cl. 20.

LIST OF DESIGN PATENTEES

Akers, Henry, and P. L. Akers. Combined sissy bar pad and receptacle for cycles. 219,761, 1–19–71, Cl. D90—15.
Akers, Patricia L.: *See—*
Akers, Henry, and P. L. 219,761.
American Standard Inc.: *See—*
Niemann, James E. 219,739.
Niemann, James E. 219,740.
Artz, Kenneth W., to W. R. Grace & Co. Tray for bakery products. 219,728, 1–19–71, Cl. D9—185.
Bixler, Kenneth D., to Diamond International Corp. Pizza tray. 219,748, 1–19–71, Cl. D44—10.
Bloch, Jack, to Foster Grant Co., Inc. Pair of spectacles. 219,755, 1–19–71, Cl. D57—1.
Campbell, Lauric Jay, to Louis Marx & Co., Inc. Rocking toy. 219,747, 1–19–71, Cl. D34—15.
Dallaire, Louis Phillipe, and J. M. Paradis. Combined comb and curette. 219,759, 1–19–71, Cl. D86—8.
Dexter Axle Co., Inc.: *See—*
Marti, Milford F. 219,733.
Diamond International Corp.: *See—*
Bixler, Kenneth D. 219,748.
Ebata, Takemi, to Matsushita Electric Industrial Co., Ltd. Combined tape recorder and radio receiver or similar article. 219,754, 1–19–71, Cl. D56—4.
Fauth, Heinz. Desk set. 219,758, 1–19–71, Cl. D74—5.
Foster Grant Co., Inc.: *See—*
Bloch, Jack. 219,755.
Frix, Lee R., to Volunteer Enterprises, Inc. Gun mount. 219,737, 1–19–71, Cl. D22—6.
Frix, Lee R., to Volunteer Enterprises, Inc. Gun mount. 219,738, 1–19–71, Cl. D22—6.
Gantz, Carroll M., R. H. Hose, and J. T. Sestak, to The Hoover Co. Suction cleaner. 219,752, 1–19–71, Cl. D49—14.1.
Goodrich, B. F., Co., The: *See—*
Johnson, Rush M., Jr. 219,762.
Johnson, Rush M., Jr. 219,764.
Grace, W. R., & Co.: *See—*
Artz, Kenneth W. 219,728.
Hesen, Joseph A. Portable exercise treadmill. 219,744, 1–19–71, Cl. D34—5.
Hoover Co., The: *See—*
Gantz, Carroll M., Hose, and Sestak. 219,752.
Hose, Robert H.: *See—*
Gantz, Carroll M., Hose, and Sestak. 219,752.
Johnson, Bush M., Jr., to The B. F. Goodrich Co. Tire. 219,762, 1–19–71, Cl. D90—20.
Johnson, Jervis Murray: *See—*
Marshall, Daniel, Johnson, and Tokalo. 219,742.
Johnson, Rush M., Jr., to The B. F. Goodrich Co. Tire. 219,764, 1–19–71, Cl. D90—20.
Jordan, John H., Jr. Divan. 219,735, 1–19–71, Cl. D15—11.
Kohner Bros., Inc.: *See—*
Stubbmann, Albert. 219,746.
Marshall, Daniel B., J. M. Johnson, and D. Tokalo. Combined stacking tray and cover for chicks. 219,742, 1–19–71, Cl. D30—1.
Marti, Milford F., to Dexter Axle Co., Inc. Tire rim for vehicles. 219,733, 1–19–71, Cl. D14—30.
Marx, Louis, & Co., Inc.: *See—*
Campbell, Lauric Jay. 219,747.
Matsushita Electric Industrial Co., Ltd.: *See—*
Sano, Koichiro. 219,725.
Ebata, Takemi. 219,754.
Mohasco Industries, Inc.: *See—*
Winrow, Thomas. 219,734.
Mouton, Elmo J. Boating paddle. 219,756, 1–19–71, Cl. D71—1.
Murray, Helen K. Compartmentalized cooling cushion for pets. 219,743, 1–19–71, Cl. D30—41.
Niemann, James E., to American Standard Inc. Combined kitchen faucet and handle. 219,739, 1–19–71, Cl. D23—23.
Niemann, James E., to American Standard Inc. Kitchen faucet spout. 219,740, 1–19–71, Cl. D23—32.
Osrow, Leonard, to Osrow Products Co., Inc. Steam presser for fabrics or a like article. 219,751, 1–19–71, Cl. D49—13.
Osrow Products Co., Inc.: *See—*
Osrow, Leonard. 219,751.
Owens-Illinois, Inc.: *See—*
Weckman, Richard L. 219,727.
Pagano, Paul S. Notebook holder. 219,757, 1–19–71, Cl. D74—1.
Paradis, Jean Marie: *See—*
Dallaire, Louis P., and Paradis. 219,759.
Poulsen, Svend A. Fermentation tube for the manufacture of wine, vinegar, cultures and the like. 219,736, 1–19–71, Cl. D16—1.
Rafshoon, Helen G. Bracelet. 219,749, 1–19–71, Cl. D45—4.
Roka, Stephen. Fingerprint comparison apparatus. 219,753, 1–19–71, Cl. D52—1.
Sano, Koichiro, to Matsushita Electric Industrial Co. Ltd. Electric stapler. 219,725, 1–19–71, Cl. D8—49.
Sarris, Spiros P. Ash tray. 219,763, 1–19–71, Cl. D85—2.
Schwartz, Louis E. Tape cassette holder. 219,760, 1–19–71, Cl. D87—1.
Sestak, Joseph T.: *See—*
Gantz, Carroll M., Hose, and Sestak. 219,752.
Shiman Mfg. Co., Inc.: *See—*
Shiman, Daniel. 219,750.
Shiman, Daniel, to Shiman Mfg. Co., Inc. Finger ring. 219,750, 1–19–71, Cl. D45—10.
Sobel, Leonard H. Motor vehicle crash guard. 219,729, 1–19–71, Cl. D14—6.
Stubbmann, Albert, to Kohner Bros., Inc. Cradle gym. 219,746, 1–19–71, Cl. D34—15.
Sylvan Pools, Inc.: *See—*
Van Den Broek, William A. 219,730.
Van Den Broek, William A. 219,731.
Van Den Broek, William A. 219,732.
Tokalo, Dymtro: *See—*
Marshall, Daniel B., Johnson, and Tokalo. 219,742.

Van Den Broek, William A., to Sylvan Pools, Inc. Beam for swimming pools. 219,730, 1–19–71, Cl. D13—1.
Van Den Broek, William A., to Sylvan Pools, Inc. Coping trim piece for swimming pools. 219,731, 1–19–71, Cl. D13—1.
Van Den Broek, William A., to Sylvan Pools, Inc. Modular structural element for swimming pools. 219,732, 1–19–71, Cl. D13—1.
Van Horn, Edward E. Ski sharpener. 219,726, 1–19–71, Cl. D8—91.
Vec/Trak Research & Development Corp.: *See*— Warren, Maurice A. 219,741.
Volunteer Enterprises, Inc.: *See*— Frix, Lee R. 219,737. Frix, Lee R. 219,738.
Warren, Maurice A., to Vec/Trak Research & Development Corp. Radio direction finder. 219,741, 1–19–71, Cl. D26—14.
Weckman, Richard L., to Owens-Illinois, Inc. Combined bottle and closure therefor. 219,727, 1–19–71, Cl. D9—144.
Windscheefel, Dennis D. Exercise conditioner apparatus. 219,745, 1–19–71, Cl. D34—5.
Winrow, Thomas, to Mohasco Industries, Inc. Combined chair and collapsible chair. 219,734, 1–19–71, Cl. D15—1.

CLASSIFICATION OF PATENTS

ISSUED JANUARY 19, 1971

NOTE.—First number, class; second number, subclass; third number, patent number

2– 3	3,555,560	23–288	3,556,736	34–116	3,555,700	55– 70	3,555,784	71–118	3,556,768	76–108	3,555,935
	3,555,561		3,556,737	133	3,555,701	96	3,555,785	120	3,556,766	77– 63	3,555,936
10	3,555,562	289	3,556,738	35– 7	3,555,702	131	3,555,818	122	3,556,767	68	3,555,937
11	3,555,559	308	3,556,728	30	3,555,703	170	3,555,819	72– 4	3,555,861	81– 52.4	3,555,938
14	3,555,563	312	3,556,739	42.5	3,555,704	177	3,555,820	10	3,555,862	165	3,555,939
69.5	3,555,567	365	3,556,740	36– 2.5	3,555,697	179	3,555,787	12	3,555,863	82– 2	3,555,940
124	3,555,568	24– 67	3,555,622		3,555,705	196	3,555,786	14	3,555,864	14	3,555,941
168	3,555,564	73	3,555,624		3,555,706	56– 21	3,555,790	21	3,555,865	31	3,555,942
198	3,555,565	81	3,555,623	4.5	3,555,707	23	3,555,791	56	3,555,866	37	3,555,943
204	3,555,566	131	3,555,625		3,555,708	25.4	3,555,792		3,555,867	83– 12	3,555,944
221	3,555,569	198	3,555,626	44	3,555,709		3,555,793	154	3,555,868	56	3,555,945
266	3,555,570	204	3,555,630	37–129	3,555,710	30	3,555,794	177	3,555,869	89	3,555,946
4– 31	3,555,571	205.1	3,555,627	38– 71	3,555,711	208	3,555,795	216	3,555,870	116	3,555,947
57	3,555,572	.17:	3,555,628	40– 16	3,555,712	221	3,555,796	239	3,555,871	117	3,555,948
172.12:	3,555,573	224	3,555,629	104.19:	3,555,713	294	3,555,797	245	3,555,872	125	3,555,949
.17:	3,555,574	230	3,555,631	117	3,555,714	295	3,555,798	250	3,555,873	171	3,555,950
.19:	3,555,575		3,555,632	140	3,555,715	328	3,555,788	257	3,555,874	208	3,555,951
185	3,555,576		3,555,633	43– 17	3,555,716		3,555,799	292	3,555,875	310	3,555,952
187	3,555,577		3,555,634	42.17:	3,555,717	370	3,555,800	476	3,555,876	460	3,555,953
5– 82	3,555,578	245	3,555,635	53.5	3,555,718	57– 18	3,555,801	73– 7	3,555,877	699	3,555,954
176	3,555,579	278	3,555,636	54.5	3,555,719	58.89:	3,555,802	12	3,555,878	84– 1.18:	3,557,295
337	3,555,580	26– 62	3,555,637	44– 72	3,556,748	59	3,555,803	15	3,555,879	.26:	3,557,296
338	3,555,582	28– 4	3,555,638	46– 83	3,555,720	132	3,555,804	32	3,555,880		3,557,297
357	3,555,581	62	3,555,639	95	3,555,721	140	3,555,805	37	3,555,881	397	3,555,955
7– 1	3,555,583	29– 1.32:	3,555,641	103	3,555,722	145	3,555,789	.5	3,555,882	400	3,555,956
8– 10.1	3,555,584	25.16:	3,555,640	161	3,555,723	153	3,555,806	40.7	3,555,884	85– 10	3,555,957
39	3,556,708	.42:	3,555,642	205	3,555,724	157	3,555,807	41	3,555,883	80	3,555,960
42	3,556,709	90	3,555,643	206	3,555,725		3,555,808	61.1	3,555,885	86– 1	3,555,958
111	3,556,710	105	3,555,644	243	3,555,726	58– 21.13:	3,555,809	67.2	3,555,886	37	3,555,959
	3,556,711	148.4	3,556,741	47– 2	3,555,727	23	3,555,810	.5	3,555,887	90– 1	3,555,961
116	3,556,712	149.5	3,555,645	9	3,555,728		3,555,811	.8	3,555,888	11	3,555,962
.2	3,555,585	177	3,555,646	38.1	3,555,729	90	3,555,812	.9	3,555,889		3,555,963
.3	3,556,713	183.5	3,556,744	57.6	3,555,730	60– 11	3,555,813	71.4	3,555,890	14	3,555,964
120	3,556,714		3,556,745	48– 77	3,556,749	39.28:	3,555,815	.5	3,555,891	91– 35	3,555,965
168	3,556,715	195	3,556,746	197	3,556,750	.47:	3,555,816		3,555,892	306	3,555,966
10– 12.5	3,555,586	198	3,556,747	215	3,556,751	.6	3,555,814	.7	3,555,893	368	3,555,967
11– 1	3,555,587	200	3,555,647	49–210	3,555,731	53	3,555,817	88.5	3,555,894	412	3,555,968
12–142	3,555,588		3,555,648	386	3,555,732	54.5	3,555,821	141	3,555,895	461	3,555,969
15–260	3,555,589		3,555,649	388	3,555,733	.6	3,555,822	151	3,555,896		3,555,970
16– 1	3,555,590	203	3,555,650	484	3,555,734	202	3,555,823	178	3,555,897	92–113	3,555,971
49	3,555,591	205	3,555,651	501	3,555,735	220	3,555,824	194	3,555,898	157	3,555,972
105	3,555,612	208	3,555,652	504	3,555,736	250	3,555,825		3,555,899	93– 8	3,555,973
17– 32	3,555,592	211	3,555,653	51– 5	3,555,737	251	3,555,826		3,555,900		3,555,974
45	3,555,593	230	3,555,654	59	3,555,738	61– 1	3,555,827	197	3,555,901	44.1	3,555,975
52	3,555,594	235	3,555,655	101	3,555,739		3,555,828	229	3,555,902	80	3,555,976
71	3,555,595	256	3,556,742	138	3,555,740	17	3,555,829	302	3,555,903	93	3,555,977
18– 2	3,555,596	401	3,555,656	165	3,555,741	39	3,555,830	313	3,555,904		3,555,978
	3,555,606	407	3,555,657		3,555,742	46.5	3,555,831	321	3,555,905	94– 4	3,555,979
4	3,555,597		3,555,658	170	3,555,743	48	3,555,832	371	3,555,906	18	3,555,980
5	3,555,598	421	3,555,659	281	3,555,744	53	3,555,833	373	3,555,907		3,555,981
	3,555,599	429	3,555,660	289	3,555,745	69	3,555,834	384	3,555,908		3,555,982
8	3,555,600		3,556,743	295	3,556,752	72.3	3,555,835	411	3,555,909	46	3,555,983
10	3,555,601	431	3,555,661	52– 27	3,555,746	62– 9	3,555,836	422	3,555,910	95– 10	3,555,984
14	3,555,602	436	3,555,662	40	3,555,747	17	3,555,837	423	3,555,911		3,555,985
	3,555,603	463	3,555,663	67	3,555,748	63	3,555,838	432	3,555,912		3,555,986
	3,555,604	470.1	3,555,664	70	3,555,749	101	3,555,839	74– 5.4	3,555,913	53	3,555,987
16	3,555,605	471.3	3,555,665	97	3,555,750		3,555,840	10.6	3,555,914	89	3,555,988
	3,555,607	488	3,555,666	127	3,555,751	114	3,555,841	84	3,555,915		3,555,989
.5	3,555,621	492	3,555,667	200	3,555,752	140	3,555,842	89.15:	3,555,916	95	3,555,990
20	3,555,608	510	3,555,668	227	3,555,753	196	3,555,843	242.3	3,555,917	96– 1	3,556,781
26	3,555,613	589	3,555,669	282	3,555,754	217	3,555,844	249	3,555,918	.1	3,556,782
	3,555,614	605	3,555,670	308	3,555,755	225	3,555,845	355	3,555,919	.2	3,556,783
	3,555,615	612	3,555,671	309	3,555,756	244	3,555,846	356	3,555,920	.4	3,556,784
30	3,555,609	628	3,555,672		3,555,757	286	3,555,847	371	3,555,921	.6	3,556,785
	3,555,616	629	3,555,673		3,555,758	457	3,555,848	458	3,555,922	.7	3,556,786
	3,555,617	630	3,555,674	378	3,555,759	475	3,555,849	490	3,555,923	.8	3,556,787
	3,555,618	30– 28	3,555,675	476	3,555,760	63– 3	3,555,850	493	3,555,924	3	3,556,788
34	3,555,610	43.92:	3,555,676	478	3,555,761	64– 11	3,555,851	552	3,555,925	22	3,556,789
39	3,555,611	134	3,555,677	588	3,555,762	65– 2	3,556,753	574	3,555,926	27	3,556,790
42	3,555,619	166	3,555,678	745	3,555,763	3	3,556,754		3,555,927	35.1	3,556,791
	3,555,620	172	3,555,679	53– 14	3,555,764	11	3,556,755	625	3,555,928		3,556,792
23– 2	3,556,716	276	3,555,680	29	3,555,765	23	3,556,756	640	3,555,929		3,556,793
88	3,556,717	346.5	3,555,681		3,555,766	30	3,556,757	713	3,555,930	45.2	3,556,794
89	3,556,718	.56:	3,555,682	37	3,555,767	109	3,556,758	718	3,555,931	61	3,556,795
105	3,556,720	32– 3	3,555,683	39	3,555,768	159	3,556,759	752	3,555,932	100	3,556,796
117	3,556,719	20	3,555,684	42	3,555,769	268	3,556,760	816	3,555,933		3,556,799
119	3,556,721	57	3,555,685	61	3,555,770	66– 1	3,555,852	75– .5	3,556,769	109	3,556,797
122	3,556,722	33– 23	3,555,686	73	3,555,771	87	3,555,853	10	3,556,770	120	3,556,800
123	3,556,723	50	3,555,687	124	3,555,772		3,555,854	12	3,556,771	99– 14	3,556,801
165	3,556,724	86	3,555,688	166	3,555,773	138	3,555,855	33	3,556,772	79	3,556,803
182	3,556,725	178	3,555,689	180	3,555,774	68– 13	3,555,856	51	3,556,773	80	3,556,802
203	3,556,726	185	3,555,690	181	3,555,775	22	3,555,857	57	3,556,774	90	3,556,798
207	3,556,727	205	3,555,691	196	3,555,776	70–312	3,555,860	60	3,556,775		3,556,804
209.1	3,556,729	226	3,555,692	209	3,555,777	340	3,555,859	124	3,556,776		3,556,805
230	3,556,730	34– 1	3,555,693	371	3,555,778	384	3,555,858	126	3,556,777	107	3,556,806
253	3,556,731		3,555,695	373	3,555,779	71– 1	3,556,761	130.5	RE.27,037		3,556,807
273	3,556,732	7	3,555,694	375	3,555,780	78	3,556,763	134	3,556,778		3,556,808
	3,556,733	9	3,555,696	54– 49	3,555,781	86	3,556,762	135	3,556,779		3,556,809
277	3,556,734	22	3,555,698	55– 48	3,555,782	103	3,556,764	203	3,556,780	131	3,556,810
288	3,556,735	97	3,555,699		3,555,783	117	3,556,765	76– 4	3,555,934	134	3,556,811

99—134	3,556,812	123—122	3,556,065	137—615	3,556,148	161—163	3,556,925	184— 1	3,556,255	210—232	3,556,300
136	3,556,813	127	3,556,066	624.18:	3,556,149	165	3,556,915	187— 9	3,556,247	242	3,556,301
169	3,556,814		3,556,067	625.21:	3,556,151		3,556,926	29	3,556,256	321	3,556,302
171	3,556,815	143	3,556,069		3,556,152	173	3,556,927	52	3,556,257	377	3,556,303
	3,556,816	148	3,556,068	.4 :	3,556,150	185	3,556,920	188— 1	3,556,258	489	3,556,304
192	3,556,817	196	3,556,070	.47:	3,556,153	186	3,556,928	67	3,556,259	490	3,556,305
199	3,556,818	124— 16	3,556,071	.64:	3,556,154	205	3,556,929	73.3	3,556,265	211— 90	3,556,306
244	3,555,991	19	3,556,072	.69:	3,556,155	162—135	3,556,930	74	3,556,260	126	3,556,307
345	3,555,992	125— 14	3,556,073	636.3 :	Re.27,036	158	3,556,931	78	3,556,261	134	3,556,308
426	3,555,993	15	3,556,074	138— 30	3,556,159	166	3,556,932	79.5 :	3,556,262	153	3,556,309
444	3,555,994	16	3,556,075	43	3,556,156	167	3,556,933		3,556,263	177	3,556,310
446	3,555,995	126— 9	3,556,076	46	3,556,157	169	3,556,934	171	3,556,266	213— 8	3,556,311
100— 39	3,555,996	19	3,556,077		3,556,160	214	3,556,935	196	3,556,267	14	3,556,312
66	3,555,997	25	3,556,078	141	3,556,161	272	3,556,936	268	3,556,268	20	3,556,313
93	3,555,998	127— 16	3,556,845	149	3,556,158	273	3,556,937	281	3,556,264	76	3,556,314
148	3,555,999	128— 2	3,556,079	139—122	3,556,162	306	3,556,938		3,556,269	214— 1	3,556,315
169	3,556,000		3,556,080	188	3,556,163	313	3,556,939	192— 3	3,556,270	8.5	3,556,316
101— 92	3,556,001		3,556,081	302	3,556,164	358	3,556,940	.33:	3,556,271	10	3,556,317
93	3,556,002	.05:	3,556,082	383	3,556,165	164— 16	3,556,195	18	3,556,272	.5	3,556,318
	3,556,003		3,556,084	140— 1	3,556,167	38	3,556,196	106.2 :	3,556,273	12	3,556,319
116	3,556,004	.1 :	3,556,083	71	3,556,166	268	3,556,197	194— 4	3,556,274	16	3,556,320
147	3,556,005	6	3,556,085	.6 :	3,556,169	282	3,556,198		3,556,275	19	3,556,321
232	3,556,006	22	3,556,086	113	3,556,168	165— 1	3,556,199	101	3,556,276	138	3,556,322
250	3,556,007	24	3,556,087	141— 1	3,556,170	2	3,556,200	195— 31	3,556,942	145	3,556,323
350	3,556,008	33	3,556,088	3	3,556,171		3,556,201	51	3,556,943	152	3,556,324
102— 28	3,556,009	66	3,556,089	11	3,556,172	3	3,556,202		3,556,944	451	3,556,325
104— 7	3,556,010	75	3,556,090	20	3,556,173	29	3,556,203	63	3,556,945	512	3,556,326
48	3,556,011	81	3,556,091	69	3,556,174	39	3,556,204	71	3,556,946	522	3,556,327
88	3,556,012	87	3,556,092	285	3,556,175	46	3,556,205	197— 18	3,556,277	620	3,556,328
157	3,556,013	137	3,556,093	142— 11	3,556,176	80	3,556,206	198— 28	3,556,278	730	3,556,329
173	3,556,014	142	3,556,098	143— 24	3,556,177	135	3,556,207	29	3,556,279	768	3,556,330
	3,556,015	.2 :	3,556,094	85	3,556,178	166— .5 :	3,556,208	31	3,556,280	215— 9	3,556,331
105—150	3,556,016	145.8 :	3,556,095	132	3,556,179		3,556,209	33	3,556,281		3,556,332
251	3,556,017	171	3,556,096	144— 2	3,556,180		3,556,210		3,556,282	10	3,556,333
282	3,556,018	188	3,556,097		3,556,181	63	3,556,211	34	3,556,283	31	3,556,334
366	3,556,019	218	3,556,099	28.5 :	3,556,182	72	3,556,212	138	3,556,284	40	3,556,335
458	3,556,020		3,556,100	34	3,556,183	88	3,556,213	176	3,556,285	46	3,556,336
106— 14	3,556,824	277	3,556,101	145— 50	3,556,184	98	3,556,214	201	3,556,286	219— 10.55:	3,556,333
15	3,556,819	295	3,556,102	146—153	3,556,185	187	3,556,215	220	3,556,287		3,557,334
48	3,556,820	305	Re.27,032	148— 2	3,556,866	215	3,556,216	224	3,556,288	62	3,557,335
	3,556,821	347	3,556,103	6.14:	3,556,871	217	3,556,217	233	3,556,289	71	3,557,336
56	3,556,822	360	3,556,104	.15:	3,556,867	241	3,556,042	200— 24	3,557,325	75	3,557,337
58	3,556,823	417	3,556,105	.2 :	3,556,868	265	3,556,218	33	3,557,326	98	3,557,338
168	3,556,825	454	3,556,106		3,556,869	278	3,556,219	61.04:	3,557,327	99	3,557,339
170	3,556,826	465	3,556,107	.3 :	3,556,870	290	3,556,220	.27:	3,557,328	137	3,557,340
279	3,556,827	130— 27	3,556,108	11.5 :	3,556,872	305	3,556,221	83	3,557,329	209	3,557,341
288	3,556,829	131— 2	3,556,109	31.55:	3,556,873	314	3,556,222	148	3,557,330	316	3,557,344
300	3,556,828		3,556,110	37	3,556,874	171— 85	3,556,223		3,557,331	499	3,557,342
309	3,556,830	135	3,556,111	108	3,556,876	116	3,556,224	160	3,557,332	510	3,557,343
107— 54	3,556,021	140	3,556,112	143	3,556,877	172— 4.5	3,556,225	201— 1	3,556,947	220— 31	3,556,337
	3,556,022	132— 31	3,556,113	175	3,556,875	130	3,556,226	202—260	3,556,948	60	3,556,338
108— 1	3,556,023	39	Re.27,033		3,556,878	193	3,556,227	203— 6	3,556,949		3,556,339
110— 1	3,556,024	40	3,556,114	191	3,556,879	199	3,556,228	204— 1	3,556,950	89	3,556,340
8	3,556,025	49	3,556,115		3,556,880	720	3,556,229	15	3,556,951	90.4 :	3,556,341
111— 1	3,556,026	134— 3	3,556,846	149— 7	3,556,881	173— 93.5	3,556,230	17	3,556,952	221— 2	3,556,342
	3,556,027	23	3,556,847	150— 1	3,556,186	174— 10	3,557,298	20	3,556,953	90	3,556,343
112—240	3,556,028	136— 6	3,556,848	28	3,556,187	38	3,557,299	28	3,556,954	234	3,556,344
254	3,556,029	26	3,556,850	39	3,556,188	68.5 :	3,557,300	30	3,556,955	242	3,556,345
400	3,556,030		3,556,851	151— 41.73:	3,556,189	102	3,557,301		3,556,956	222— 61	3,556,346
113— 30	3,556,031	30	3,556,849	152—209	3,556,190	175— 5	3,556,231	32	3,556,957	132	3,556,347
120	3,556,032	33	3,556,852		3,556,191	88	3,556,232	42	3,556,958	137	3,556,348
114— .5	3,556,033	36	3,556,853	156— 2	3,556,882	267	3,556,233	49	3,556,959	168.5 :	3,556,349
39	3,556,035	37	3,556,854	20	3,556,883	176— 37	3,556,941	59	3,556,960	176	3,556,350
43.5 :	3,556,036	65	3,556,855	69	3,556,884	177— 46	3,556,234	73	3,556,961	178	3,556,351
54	3,556,034	86	3,556,856	73	3,556,888	50	3,556,235	108	3,556,962	203	3,556,352
125	3,556,037		3,556,857	91	3,556,889	163	3,556,236	143	3,556,963	309	3,556,353
173	3,556,038	100	3,556,858	106	3,556,890	200	3,556,237	158	3,556,964	318	Re.27,035
115— 14	3,556,039	107	3,556,859	132	3,556,891	178— 5.2 :	3,557,302	159.2 :	3,556,965	357	3,556,354
34	3,556,040	157	3,556,860	164	3,556,892		3,557,303	164	3,556,966	368	3,556,355
	3,556,041	175	3,556,861	172	3,556,893	6.8 :	3,557,304	180	3,556,967	399	3,556,356
116— 31	3,556,045	176	3,556,862	235	3,556,894	7.3 :	3,557,305	181	3,556,968	402.22:	3,556,357
70	3,556,043	178	3,556,863	244	3,556,885	.8 :	3,557,306		3,556,969	445	3,556,358
	3,556,044	228	3,556,864	265	3,556,886	22	3,557,307		3,556,970	559	3,556,359
114	3,556,046	233	3,556,865	272	3,556,887	69.5 :	3,557,308		3,556,972		3,556,360
135	3,556,047	137— 1	3,556,116	306	3,556,895	179— 1	3,557,309	196	3,556,971	223— 73	3,556,361
117— 2	3,556,831	66	3,556,117	309	3,556,896		3,557,310	225	3,556,973	88	3,556,362
7	3,556,832	81.5 :	3,556,118	310	3,556,897	2	3,557,311	243	3,556,974	224— 1	3,556,363
44	3,556,833		3,556,119	383	3,557,156		3,557,312	296	3,556,975	5	3,556,364
46	3,556,834		3,556,120	384	3,556,898	6	3,557,313	297	3,556,977		3,556,365
65.2 :	3,556,844		3,556,121	403	3,556,900	15	3,557,314	327	3,556,976	225— 1	3,556,366
68.5 :	3,556,835	102	3,556,122	406	3,556,901	18	3,557,315	206— 47	3,556,290	65	3,556,367
71	3,556,836	107	3,556,123	412	3,556,902		3,557,316	56	3,556,291	226— 11	3,556,368
	3,556,837	112	3,556,124	425	3,556,903	27	3,557,317		3,556,292	25	3,556,369
100	3,556,838	116.3 :	3,556,125		3,556,904	39	3,557,318		3,556,293		3,556,370
	3,556,839	118	3,556,126	429	3,556,905	84	3,557,319	63.2 :	3,556,294	63	3,556,371
137	3,556,840	205	3,556,127	433	3,556,906	100.2 :	3,557,320	208— 10	3,556,978	115	3,556,372
201	3,556,841	219	3,556,128	470	3,556,907		3,557,321	11	3,556,979	117	3,556,373
217	3,556,842	271	3,556,129	508	3,556,908	146	3,557,322		3,556,980	119	3,556,374
227	3,556,843	343	3,556,130	521	3,556,909	175.31:	3,557,323		3,556,981	128	3,556,375
118— 49.5 :	3,556,048	359	3,556,140	523	3,556,910	181	3,557,324		3,556,982	151	3,556,376
72	3,556,049	382.5 :	3,556,131	547	3,556,911	180— 51	3,556,238	57	3,556,983	153	3,556,377
637	3,556,050	437	3,556,132	553	3,556,899	65	3,556,239	59	3,556,984	227— 9	3,556,378
119— 1	3,556,051	492.5 :	3,556,133	580	3,556,912	69	3,556,240	65	3,556,985	10	3,556,379
4	3,556,052	499	3,556,134	584	3,556,913	79.2 :	3,556,241	89	3,556,986	11	3,556,380
14.08:	3,556,053	501	3,556,135	157— 1.28:	3,556,192		3,556,242	93	3,556,987		3,556,381
16	3,556,054	512.1 :	3,556,136		3,556,193		3,556,243	120	3,556,988	93	3,556,382
	3,556,055	.15:	3,556,138	13	3,556,194	98	3,556,244	143	3,556,989	229— 5.5 :	3,556,383
17	3,556,058	543.15:	3,556,137	161— 5	3,556,914	105	3,556,245	290	3,556,990	35	3,556,384
51	3,556,056	554	3,556,139	28	3,556,916	181— 51	3,556,246	321	3,556,991	37	3,556,385
.5	3,556,057	564.5 :	3,556,141	44	3,556,917	182— 15	3,556,248	209— 73	3,556,295	40	3,556,386
122—406	3,556,059	565	3,556,142	55	3,556,918	16	3,556,249	123	3,556,296	44	3,556,387
123— 75	3,556,060	589	3,556,143	70	3,556,919	62.5 :	3,556,250	210— 23	3,556,992	51	3,556,388
90.27:	3,556,061	596.15:	3,556,144	132	3,556,921	93	3,556,251	83	3,556,297	53	3,556,389
.65:	3,556,062		3,556,145	156	3,556,922	128	3,556,252	131	3,556,298	62	3,556,390
103	3,556,063	606	3,556,146	160	3,556,924	210	3,556,253	136	3,556,299	68	3,556,391
117	3,556,064	608	3,556,147	162	3,556,923	223	3,556,254	164	3,556,993	69	3,556,392

232— 17	3,556,393	251— 14	3,556,463	260— 88.2 :	3,557,072	260—453	3,557,181	264—318	3,557,278	299— 14	3,556,600
36	3,556,394	46	3,556,464	91.3 :	3,557,073	464	3,557,182	266— 4	3,556,491	43	3,556,601
43.2 :	3,556,395	61.1 :	3,556,465	94.3 :	3,557,075	465	3,557,183		3,556,499	300— 7	3,556,602
234—110	3,556,396	.3 :	3,556,466		3,557,076	.4 :	3,557,184	33	3,556,500	302— 2	3,556,603
235— 61	3,556,397	76	3,556,467	.9 :	3,557,074		3,557,185	34	3,556,497		3,556,604
.11:	3,557,345	121	3,556,468	112.5 :	3,557,077	.8 :	3,557,186		3,556,501	37	3,556,605
92	3,557,346	144	3,556,469	123.7 :	3,557,078		3,557,187	37	3,556,502	66	3,556,606
110	3,556,398	149.4 :	3,556,470	143	3,557,079	468	3,557,188	267— 3	3,556,503	303— 6	3,556,607
150.3 :	3,557,348	151	3,556,473	165	3,557,080	476	3,557,189	4	3,556,504	21	3,556,608
.53:	3,557,347	172	3,556,471	211.5 :	3,557,081	482	3,557,190	107	3,556,505		3,556,609
151.1 :	3,557,349		3,556,474	218	3,557,082	497	3,557,191	269— 72	3,556,506		3,556,610
.11:	3,557,350	214	3,556,472	230	3,557,083		3,557,192	98	3,556,507		3,556,611
.3 :	3,557,351	306	3,556,475	233.3 :	3,557,084	501.18:	3,557,193	155	3,556,508		3,556,612
	3,557,352		3,556,476	.5 :	3,557,091	502	3,557,195	270— 52	3,556,509		3,556,613
.33:	3,557,353	335	3,556,477	236.6 :	3,557,085	.6 :	3,557,194		3,556,510		3,556,614
152 :	3,557,354	252— 33.6 :	3,556,994	239 :	3,557,086	514 :	3,557,196	271— 4 :	3,556,511		3,556,615
	3,557,356	39 :	3,556,995		3,557,087	519 :	3,557,197		3,556,512	84 :	3,556,616
164 :	3,557,355	42.1 :	3,556,996		3,557,088	521 :	3,557,198		3,556,513	307—133 :	3,557,381
175 :	3,557,357	48.6 :	3,556,997		3,557,089	530 :	3,557,199	8 :	3,556,514	139 :	3,557,382
200 :	3,557,358	62.1 :	3,556,998	.1 :	3,557,090	534 :	3,557,200	12 :	3,556,515	215 :	3,557,383
236— 47 :	3,556,399	78 :	3,556,999		3,557,094	537 :	3,557,201	36 :	3,556,516	308— 3.5 :	3,556,617
239— 15 :	3,556,400	79.5 :	3,557,000	.3 :	3,557,092	543 :	3,557,202		3,556,517	231 :	3,556,618
102 :	3,556,401	87 :	3,557,001		3,557,093		3,557,203	64 :	3,556,518	312— 31 :	3,556,619
130 :	3,556,402	89 :	3,557,002		3,557,095		3,557,204	86 :	3,556,519	136 :	3,556,620
135 :	3,556,403	90 :	3,557,003		3,557,096	544 :	3,557,205	272— 31 :	3,556,520	183 :	3,556,621
167 :	3,556,404		3,557,004	.55:	3,557,097	551 :	3,557,206	56.5 :	3,556,521	195 :	3,556,622
177 :	3,556,405	99 :	3,557,005	240 :	3,557,098		3,557,208		3,556,522	244 :	3,556,623
181 :	3,556,406	117 :	3,557,006		3,557,099	559 :	3,557,209	273— 55 :	3,556,523	295 :	3,556,624
227 :	3,556,407	152 :	3,557,007		3,557,100	561 :	3,557,207	73 :	3,556,524	301 :	3,556,625
403 :	3,556,408	182 :	3,557,008	.1 :	3,557,101	562 :	3,557,210	94 :	3,556,525	330 :	3,556,626
433 :	3,556,409	186 :	3,557,009		3,557,102		3,557,211	115 :	3,556,527	316— 1 :	3,556,627
552 :	3,556,410	187 :	3,557,010	243 :	3,557,104	566 :	3,557,212	130 :	3,556,526	350— 3.5 :	3,556,628
581 :	3,556,411	189 :	3,557,011	244 :	3,557,103		3,557,213	134 :	3,556,528		3,556,629
591 :	3,556,412	300 :	3,557,012	247.5 :	3,557,105	567.6 :	3,557,214	137 :	3,556,529		3,556,630
658 :	3,556,413	301.1 :	3,557,013		3,557,106	583 :	3,557,157	139 :	3,556,530		3,556,631
240— 1.4 :	3,557,359	.2 :	3,557,015	250 :	3,557,108	586 :	3,557,215	143 :	3,556,531	16 :	3,556,632
2 :	3,557,360	.4 :	3,557,014		3,557,109		3,557,216	167 :	3,556,532	95 :	3,556,633
78 :	3,557,361	316 :	3,557,016	251 :	3,557,110	592 :	3,557,218	171 :	3,556,533	96 :	3,556,634
108 :	3,557,362	339 :	3,557,017		3,557,112	593 :	3,557,217	274— 4 :	3,556,534		3,556,635
128 :	3,557,363	408 :	3,557,018	252 :	3,557,113	604 :	3,557,219		3,556,535		3,556,636
241— 1 :	3,556,414	416 :	3,557,019	256.4 :	3,557,114	617 :	3,557,220	22 :	3,556,536	105 :	3,556,637
30 :	3,556,415	422 :	3,557,020	.5 :	3,557,111	618 :	3,557,221	23 :	3,556,537	161 :	3,556,638
39 :	3,556,416	439 :	3,557,021		3,557,115		3,557,222	276— 3 :	3,556,503	162 :	3,556,639
46.06:	3,556,417		3,557,022		3,557,117		3,557,223	277— 27 :	3,556,538	164 :	3,556,640
60 :	3,556,418	450 :	3,557,023	268 :	3,557,107	650 :	3,557,227	94 :	3,556,539	184 :	3,556,641
61 :	3,556,419	455 :	3,557,024		3,557,116	653.1 :	3,557,224	204 :	3,556,541	216 :	3,556,642
86 :	3,556,420	463 :	3,557,025	281 :	3,557,121	.5 :	3,557,228	279— 47 :	3,556,540	218 :	3,556,643
	3,556,421	518 :	3,557,026	285.5 :	3,557,118	656 :	3,557,229	280— 6 :	3,556,542	351—118 :	3,556,644
101 :	3,556,422	254— 1 :	3,556,478	287 :	3,557,119	657 :	3,557,230	11.35:	3,556,543	155 :	3,556,645
242— 46.21:	3,556,423	63 :	3,556,479	288 :	3,557,120		3,557,231	.37:	3,556,544	352— 50 :	3,556,646
56 :	3,556,424	89 :	3,556,480	289 :	3,557,122	666.5 :	3,557,225	34 :	3,556,545	107 :	3,556,647
57.1 :	3,556,425	122 :	3,556,481	290 :	3,557,123		3,557,232	36 :	3,556,546	194 :	3,556,648
74 :	3,556,426	134 :	3,556,482		3,557,124	668 :	3,557,233	41 :	3,556,547		3,556,649
84.1 :	3,556,427	.3 :	3,556,483	292 :	3,557,125		3,557,234	47.27:	3,556,548	353— 15 :	3,556,654
.52:	3,556,428	135 :	3,556,486	293 :	3,557,126		3,557,235	87 :	3,556,549	21 :	3,556,650
118.31:	3,556,429	168 :	3,556,485	294.3 :	3,557,127	674 :	3,557,226		3,556,550	26 :	3,556,651
129 :	3,556,431	184 :	3,556,484	.9 :	3,557,128	677 :	3,557,236	104.5 :	3,556,551	116 :	3,556,652
.51:	3,556,430	259—111 :	3,556,487	295.5 :	3,557,129	678 :	3,557,237	106 :	3,556,552	355— 10 :	3,556,653
159 :	3,556,432	260— 2.5 :	3,557,027		3,557,130	680 :	3,557,238	112 :	3,556,553	55 :	3,556,655
199 :	3,556,433	5 :	3,557,028		3,557,131	681.5 :	3,557,239	124 :	3,556,554	94 :	3,556,656
	3,556,434	8 :	3,557,029	306.7 :	3,557,133		3,557,240		3,556,555	356— 4 :	3,556,657
210 :	3,556,435	17 :	3,557,030	.8 :	3,557,134	683 :	3,557,241	150 :	3,556,556	36 :	3,556,658
243— 35 :	3,556,436	.3 :	3,557,031	307 :	3,557,135	.15:	3,557,242	279 :	3,556,557	75 :	3,556,659
38 :	3,556,437	18 :	3,557,032		3,557,136	698 :	3,557,243	406 :	3,556,558	106 :	3,556,660
244— 4 :	3,556,438	21 :	3,557,033	308 :	3,557,137	824 :	3,557,245	407 :	3,556,559		3,556,661
42 :	3,556,439	22 :	3,557,035	309 :	3,557,138	837 :	3,557,246	415 :	3,556,560	114 :	3,556,662
104 :	3,556,440		3,557,036	310 :	3,557,139	857 :	3,557,247	489 :	3,556,561	116 :	3,556,663
114 :	3,556,441	29.1 :	3,557,037	326.13:	3,557,142	858 :	3,557,249	282— 29 :	3,556,562	200 :	3,556,664
122 :	3,556,442	.2 :	3,557,038	.3 :	3,557,140	874 :	3,557,250	283— 7 :	3,556,563	238 :	3,556,665
130 :	3,556,443		3,557,039	.5 :	3,557,141	876 :	3,557,251	62 :	3,556,564	249 :	3,556,666
135 :	3,556,444	.6 :	3,557,040	327 :	3,557,143		3,557,252	285— 38 :	3,556,565	401— 28 :	3,556,667
246—240 :	3,557,364		3,557,041		3,557,144	878 :	3,557,253	162 :	3,556,566	415— 10 :	3,556,668
248— 7 :	3,556,445	30.2 :	3,557,132		3,557,145	879 :	3,557,254	332.3 :	3,556,567	61 :	3,556,669
17 :	3,556,446	.8 :	3,557,034	332.5 :	3,557,146		3,557,255	334.2 :	3,556,568	75 :	3,556,670
62 :	3,556,447	31.2 :	3,557,042	343.3 :	3,557,147	884 :	3,557,256	287— 54 :	3,556,569	98 :	3,556,671
119 :	3,556,448		3,557,043	.7 :	3,557,148	940 :	3,557,257	189.36:	3,556,570	134 :	3,556,672
	3,556,449	32.6 :	3,557,044	345.2 :	3,557,149	951 :	3,557,258	292— 1 :	3,556,571	416— 20 :	3,556,674
188 :	3,556,450	40 :	3,557,045		3,557,150	956 :	3,557,259	87 :	3,556,572	96 :	3,556,676
	3,556,451	41 :	3,557,046	346.2 :	3,557,151	977 :	3,557,260	143 :	3,556,573	134 :	3,556,673
228 :	3,556,452		3,557,047		3,557,152	261— 36 :	3,556,488	280 :	3,556,574	190 :	3,556,675
311 :	3,556,453		3,557,048	347.2 :	3,557,153	62 :	3,556,489	307 :	3,556,575	417— 44 :	3,556,677
317 :	3,556,454		3,557,049	373 :	3,557,154	98 :	3,556,490	359 :	3,556,576	53 :	3,556,678
333 :	3,556,455	45.7 :	3,557,053		3,557,155	263— 6 :	3,556,492	294— 27 :	3,556,577	63 :	3,556,679
361 :	3,556,456	.75:	3,557,052	396 :	3,557,159		3,556,493	64 :	3,556,578	64 :	3,556,680
	3,556,457	.8 :	3,557,050	397.4 :	3,557,160	7 :	3,556,494	65 :	3,556,579	87 :	3,556,681
	3,556,458		3,557,051	.45:	3,557,158	32 :	3,556,495	81 :	3,556,580	102 :	3,556,682
497 :	3,556,459		3,557,054		3,557,162		3,556,496	296— 23 :	3,556,581	270 :	3,556,683
249— 80 :	3,556,460	.95:	3,557,057	.5 :	3,557,161	34 :	3,556,498		3,556,582	307 :	3,556,684
250— 41.9 :	3,557,365	47 :	3,557,055	.7 :	3,557,163	264— 1 :	3,557,261	24 :	Re.27,034	337 :	3,556,685
43.5 :	3,557,366		3,557,056	403 :	3,557,164	37 :	3,557,262	28 :	3,556,583	383 :	3,556,686
49.5 :	3,557,367	67 :	3,557,058	404 :	3,557,165	45 :	3,557,263	65 :	3,556,584	395 :	3,556,687
	3,557,368	.6 :	3,557,059	.5 :	3,557,166		3,557,264	97 :	3,556,585	397 :	3,556,688
83.3 :	3,557,369	78 :	3,557,060	410.5 :	3,557,167	47 :	3,557,265	297— 3 :	3,556,586	435 :	3,556,689
84 :	3,557,370	.4 :	3,557,061	412.4 :	3,557,168	66 :	3,557,266	133 :	3,556,587	471 :	3,556,690
93 :	3,557,371		3,557,062	413 :	3,557,169	72 :	3,557,267	162 :	3,556,588	500 :	3,556,691
203 :	3,557,372		3,557,063	420 :	3,557,170	145 :	3,557,268	230 :	3,556,589	540 :	3,556,692
207 :	3,557,373		3,557,064	429.7 :	3,557,172	154 :	3,557,269	425 :	3,556,590	418— 37 :	3,556,693
	3,557,374		3,557,065	.9 :	3,557,171	161 :	3,557,270	439 :	3,556,591		3,556,694
213 :	3,557,375	.5 :	3,557,066	439 :	3,557,173	167 :	3,557,271	442 :	3,556,593	61 :	3,556,695
218 :	3,

424—250	3,557,284	424—288	3,557,288	424—325	3,557,293	431— 95	3,556,699	431—186	3,556,702	431—273	3,556,703
253	3,557,287		3,557,289	342	3,557,294	181	3,556,701	258	3,556,705	290	3,556,704
258	3,557,283	317	3,557,291	431— 2	3,556,698	182	3,556,700	265	3,556,706	328	3,556,707
269	3,557,285	319	3,557,292								

CLASSIFICATION OF DESIGNS

D 8— 49	219,725	D14— 6	219,729	D23— 23	219,739	D34— 15	219,746	D52— 1	219,753	D85— 2	219,763
91	219,726	30	219,733	32	219,740		219,747	D56— 4	219,754	D86— 8	219,759
D 9—144	219,727	D15— 1	219,734	D26— 14	219,741	D44— 10	219,748	D57— 1	219,755	D87— 1	219,760
185	219,728	11	219,735	D30— 1	219,742	D45— 4	219,749	D71— 1	219,756	D90— 15	219,761
D13— 1	219,730	D16— 1	219,736	41	219,743	10	219,750	D74— 1	219,757	20	219,762
	219,731	D22— 6	219,737	D34— 5	219,744	D49— 13	219,751	5	219,758		219,764
	219,732		219,738		219,745	14.1	219,752				

CLASSIFICATION OF PLANTS

P. — 11	3,018	P. — 20	3,020	P. — 51	3,021	P. — 68	3,019

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

PATENTS

1	3,555,564	6	3,555,826	6	3,556,384	6	3,556,953	9	3,555,699	10	3,556,919
	3,555,775		3,555,830		3,556,389		3,556,963		3,555,747		3,556,922
	3,555,867		3,555,835		3,556,390		3,556,980		3,555,813		3,556,923
	3,555,960		3,555,848		3,556,398		3,556,985		3,555,889		3,557,004
	3,555,976		3,555,864		3,556,401		3,557,009		3,555,916		3,557,089
	3,556,183		3,555,890		3,556,410		3,557,011		3,555,918		3,557,146
2	3,556,319		3,555,903		3,556,422		3,557,015		3,556,014		3,557,180
	3,556,886		3,555,905		3,556,425		3,557,016		3,556,047		3,557,190
4	3,555,753		3,555,936		3,556,433		3,557,024		3,556,081		3,557,255
	3,556,074		3,555,947		3,556,434		3,557,027		3,556,206	11	3,555,898
	3,556,248		3,555,964		3,556,448		3,557,033		3,556,223		3,556,048
	3,556,551		3,555,969		3,556,455		3,557,042		3,556,301	12	3,555,568
	3,556,568		3,555,970		3,556,456		3,557,069		3,556,347		3,555,571
	3,556,582		3,555,975		3,556,457		3,557,071		3,556,372		3,555,576
	3,557,355		3,555,987		3,556,462		3,557,085		3,556,383		3,555,628
	3,557,357		3,555,990		3,556,464		3,557,124		3,556,403		3,555,634
5	3,556,078		3,555,994		3,556,475		3,557,134		3,556,414		3,555,718
	3,556,318		3,555,998		3,556,482		3,557,147		3,556,471		3,555,724
6	RE.27,032		3,556,001		3,556,499		3,557,207		3,556,510		3,555,788
	3,555,559		3,556,024		3,556,507		3,557,274		3,556,572		3,555,934
	3,555,560		3,556,034		3,556,553		3,557,275		3,556,623		3,556,045
	3,555,565		3,556,072		3,556,557		3,557,281		3,556,640		3,556,086
	3,555,573		3,556,075		3,556,565		3,557,298		3,556,681		3,556,094
	3,555,574		3,556,084		3,556,570		3,557,302		3,556,693		3,556,141
	3,555,587		3,556,088		3,556,573		3,557,304		3,556,694		3,556,159
	3,555,590		3,556,096		3,556,584		3,557,305		3,556,734		3,556,307
	3,555,610		3,556,102		3,556,590		3,557,331		3,556,744		3,556,529
	3,555,611		3,556,104		3,556,591		3,557,342		3,556,811		3,556,535
	3,555,619		3,556,105		3,556,593		3,557,344		3,556,836		3,557,046
	3,555,620		3,556,107		3,556,616		3,557,347		3,556,889		3,557,049
	3,555,633		3,556,109		3,556,638		3,557,354		3,556,932		3,557,256
	3,555,645		3,556,110		3,556,655		3,557,359		3,556,933		3,557,308
	3,555,649		3,556,117		3,556,659	7	3,555,606		3,556,962		3,557,352
	3,555,663		3,556,119		3,556,663	8	3,555,783		3,557,041	13	3,555,594
	3,555,669		3,556,132		3,556,670		3,555,915		3,557,051		3,555,787
	3,555,679		3,556,148		3,556,717		3,555,939		3,557,090		3,555,802
	3,555,680		3,556,150		3,556,726		3,556,002		3,557,094		3,556,145
	3,555,684		3,556,170		3,556,731		3,556,089		3,557,233		3,556,416
	3,555,693		3,556,174		3,556,743		3,556,184		3,557,303		3,556,450
	3,555,710		3,556,185		3,556,751		3,556,221		3,557,329		3,557,227
	3,555,730		3,556,194		3,556,790		3,556,229		3,557,365	16	3,555,727
	3,555,739		3,556,209		3,556,794		3,556,395	10	3,555,585	17	RE.27,034
	3,555,749		3,556,210		3,556,817		3,556,650		3,556,000		3,555,577
	3,555,751		3,556,216		3,556,818		3,556,652		3,556,009		3,555,579
	3,555,758		3,556,234		3,556,837		3,556,779		3,556,387		3,555,580
	3,555,759		3,556,246		3,556,864		3,556,843		3,556,710		3,555,601
	3,555,774		3,556,281		3,556,888		3,556,987		3,556,711		3,555,604
	3,555,799		3,556,334		3,556,908		3,557,370		3,556,769		3,555,622
	3,555,818		3,556,340		3,556,916	9	3,555,665		3,556,824		3,555,709
	3,555,821		3,556,367		3,556,926		3,555,681		3,556,865		3,555,715

17 : 3,555,720
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3,556,113
3,556,137
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3,557,209
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3,557,293
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18 : 3,555,655
3,556,046
3,556,140
3,556,160
3,556,258
3,556,262
3,556,263
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3,556,441
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Design Patents

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13 : 219,749

17 : 219,734
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42 : 219,728
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47 : 219,737
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48 : 219,756

Plant Patents

6 : 3,019

6 : 3,020

36 : 3,018

39 : 3,021

A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

U.S. DEPARTMENT OF COMMERCE

Official Gazette of the United States Patent Office

January 19, 1971 Volume 882 Number 3

TRADEMARKS

NOTICES

Separation of the Patent and Trademark Sections of the Official Gazette

Effective February 2, 1971, the OFFICIAL GAZETTE will be separated into two parts to be known as the *Patent Official Gazette* and the *Trademark Official Gazette*. The subscription prices for these publications are as follows:

Patent Official Gazette:
- $89.00 per year
- 22.25 additional for foreign mailing
- 2.00 per single copy

Trademark Official Gazette:
- $17.00 per year
- 4.25 additional for foreign mailing
- .40 per single copy

Also effective February 2, 1971, the OFFICIAL GAZETTE will no longer contain "Decisions in Patent and Trademark Cases." Decisions of the type heretofore found in the "Decisions in Patent and Trademark Cases" are published by non-Federal organizations such as, for example, the Bureau of National Affairs, Inc., 1231 25th St. NW., Washington, D.C. 20037, and West Publishing Co., 50 Kellogg Blvd., St. Paul, Minn. 55102.

Finally, the "Decisions Leaflet" of the OFFICIAL GAZETTE will no longer be supplied as a separate subscription item after January 26, 1971. According to present plans, however, both the PATENT OFFICIAL GAZETTE and the TRADEMARK OFFICIAL GAZETTE will have identical "Patent Office Notices" sections containing notices of the various types heretofore published in the Gazette decision leaflet and Trademark Section. Those notices of particular interest to Patent Office employees will be accumulated and published approximately every fourth week, and distributed separately to employees.

WILLIAM E. SCHUYLER, JR.,
Commissioner of Patents.

Dec. 29, 1970.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 356,751 (PARTAGAS), Cifuentes y Compania, Cigars; **Reg. No. 440,817** (FLOR DE TABACOS HABANA (PARTAGAS)), same, Cigars, cigarettes and smoking tobacco; **Reg. No. 543,257** (DESIGN OF ENTIRE LABEL), same, Cigars; **Reg. No. 544,239** ("PARTAGAS" AND LABEL), same; **Reg. No. 545,830** (EXPOSITION UNIVERSELLE DE 1878 LE JURY INTERNATIONAL DES RECOMPENSES DECERNE UN RAPPEL DE MADAILLE D'OR A MONSIEUR "PARTAGAS AND LABEL), same, filed Aug. 14, 1970, D.C., S.D. Fla. (Miami), Doc. 70-1198-C-WM, *Rafael Cifuentes et al.* v. *Monte Cassino Cigar Corp.*

Reg. No. 440,817. (See Reg. No. 356,751.)

Reg. No. 543,257. (See Reg. No. 356,751.)

Reg. No. 544,239. (See Reg. No. 356,751.)

CONDITION OF TRADEMARK APPLICATIONS AS OF NOVEMBER 30, 1970

Total number of applications awaiting action [excluding renewals and Sec. 12(c)]	23,637
Date of oldest new application	June 2, 1969
Date of oldest amended application (filing date)	January 26, 1968

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISION, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 8, 9, 10, 11, 17, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	1-27-70	4-22-68
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	1-30-70	2-19-68
(III) C. R. FOWLER, Classes 12, 16, 19, 21, 23, 26, 31, 34, 35, 36, 44	3-9-70	2-9-68
(IV) M. E. ABRAMSON, Classes 13, 14, 20, 22, 24, 25, 29; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	6-2-69	1-26-68
Renewals (All Classes)	10-8-70	----------
Sec. 12(c) Publications (All Classes)	10-28-70	----------

Applications filed during the month of November 1970—2,512

Registrations Issued ---------- 388—No. 906,049 to No. 906,436
Renewals Issued ---------- 150

THE TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

Reg. No. 545,830. (See Reg. No. 356,751.)

Reg. No. 599,751 (SANTA CLARA), Pratt-Low Preserving Company, Canned fruits and vegetables, filed Mar. 24, 1967, D.C., S.D.N.Y., Doc. 67–C–1167, *Duffy-Mott Company, Inc.* v. *Fruitcrest Corp.* Stipulation and order of judgment, Dec. 1, 1967.

Reg. No. 645,435 (CASUAL CORNER), Casual Corner, Inc., Women's apparel—namely, dresses, shorts, slacks, sport jackets, coats, suits, sweaters, blouses, shirts, bathing suits, bathing caps, bathing shoes, shirts, beach robes, beach jackets, and beach bags; **Reg. No. 795,275** (CASUAL CORNER AND DESIGN), same, Women's and girls' dresses, skirts, pants, shorts, suits, blouses, shirts, dress coats, car coats, raincoats, sweaters, and gloves; **Reg. No. 861,532** (CASUAL CORNER), same, Ladies' purses, handbags and wallets (Cl. 3); sunglasses (Cl. 26); costume jewelry of nonprecious metals (Cl. 28); wearing apparel and dress accessories for women and young women—namely, dresses, skirts, outer dress and sport shirts and blouses, culottes, slacks, outer pants, outer shorts, jackets and dress and sport coats, car coats, suits, sweaters, boots, shoes and sandals, bathing suits, bathing caps, bathing shoes, beach robes, beach jackets, raincoats, gloves, belts, hosiery and stockings, hats and scarves (Cl. 39), filed Aug. 7, 1970, D.C. Oreg. (Portland), Doc. 70–533, *Casual Corner Associates, Inc.* v. *E. R. Lent, doing business as Casual Corner.*

Reg. No. 648,087 (STP), Chemical compounds, additive compound for motor oils; **Reg. No. 827,102** (STP AND DESIGN), Studebaker Corporation, Additive compound for motor oils and motor fuels, filed July 14, 1970, D.C., C.D. Calif. (Los Angeles), Doc. 70–1535–IH, *STP Corporation* v. *Harold B. Millard, doing business as Transco Oil Co. and also as Motor Guard Lubricants.*

Reg. No. 743,913 (WELLS FARGO BANK AMERICAN TRUST COMPANY ETC. AND DESIGN), Wells Fargo Bank American Trust Company, Banking service; **Reg. No. 779,187** (WELLS FARGO), Wells Fargo Bank, Corp., Banking and trust services; **Reg. No. 791,963** (WELLS FARGO BANK AND DESIGN), same; **Reg. No. 815,196** (WELLS FARGO), Wells Fargo & Company Express S.A., S.M. Travel agency services; **Reg. No. 805,664**, same; Wells Fargo & Company, Toy pistols and holsters, filed Sept. 18, 1970, D.C. Nev. (Las Vegas), Doc. C–LV–1496, *Wells Fargo & Company et al.* v. *Wells Fargo Express Company.*

Reg. No. 779,187. (See Reg. No. 743,913.)

Reg. No. 782,992 (QUALITY COURTS AND DESIGN), Quality Courts Motels, Inc., Providing lodging in tourist courts; **Reg. No. 783,001**, same, Indicating membership in applicant's organization; **Reg. No. 783,871** (SUNBURST AND PYLON DESIGN), same, Providing lodging in tourist courts, filed Jan. 16, 1970, D.C.N.J. (Camden), Doc. 56–70, *Quality Courts Motels, Inc.* v. *Universal Housing Corporation and Ben Schlenzig.* Consent judgment, plaintiff owner of said trademarks and defendants have infringed and are permanently enjoined, July 30, 1970.

Reg. No. 783,001. (See Reg. No. 782,992.)

Reg. No. 783,871. (See Reg. No. 782,992.)

Reg. No. 791,963. (See Reg. No. 743,913.)

Reg. No. 795,275. (See Reg. No. 645,435.)

Reg. No. 805,664. (See Reg. No. 743,913.)

Reg. No. 815,196. (See Reg. No. 743,913.)

Reg. No. 827,102. (See Reg. No. 648,087.)

Reg. No. 861,532. (See Reg. No. 645,435.)

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 309,498. Puppy Palace Enterprises, Inc., Philadelphia, Pa. Filed Oct. 14, 1968.



Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Leaches, Collars, Feeding Bowls, Cat and Dog Baskets and Beds, Trimming and Grooming Equipment for Pets and Bird Cages (Int. Cl. 18).

Class 6—Chemicals and Chemical Compositions

For Proprietary Preparations for the Prevention of Chewing, Licking, Jumping and Scratching and for Repelling and Killing Ticks, Lice, Fleas and Mange of Dogs and Other Domestic Animals; Pet Disinfectants, Deodorants and Repellants (Int. Cl. 5).

Class 18—Medicines and Pharmaceutical Preparations

For Mating Control Tablets for Animals (Int. Cl. 5).

Class 46—Foods and Ingredients of Foods

For Foods and Food Supplements—Namely, Wheat Germ, Oil, Milk Substitutes, Cod Liver Oil, Mynah Bird Meal, Mynah Bird Pellets, Canary seed, Keet seed With Fruit, Canary Moulting Food, Song Food, Canary Conditioning Food, Malt and Malt Supplements (Int. Cls. 5 and 31).

Class 52—Detergents and Soaps

For Preparations To Remove Animal Stains From Rugs and Carpets, and Pads Impregnated With Dry Cleaning Preparation, as Well as Dry Cleaning Preparations for Use on Animals (Int. Cl. 3).

First use May 1, 1968.

SN 317,414. Western Progress, Inc., Mountain View, Calif. Filed Jan. 23, 1969.

WESTERN PROGRESS

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Carrying Cases for Traffic Warning Devices (Int. Cl. 18).

First use Dec. 15, 1955.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Guard Rail Clamps, Clamps, Truck Mounted Storage Brackets and Vehicle Mounted Brackets for Traffic Warning Devices (Int. Cl. 6).

First use Mar. 3, 1954.

Class 21—Electrical Apparatus, Machines, and Supplies

For Electric Lights for Traffic Warning Devices (Int. Cl. 9).

First use Feb. 15, 1957.

Class 22—Games, Toys, and Sporting Goods

For Umbrella Tents and Holders for Manholes (Int. Cl. 22).

First use Mar. 28, 1966.

Class 34—Heating, Lighting, and Ventilating Apparatus

For Ventilator Blowers for Manholes (Int. Cl. 11).

First use Aug. 15, 1966.

Class 50—Merchandise Not Otherwise Classified

For Flagstaffs, Flags, Signs and Sign Panels (Int. Cls. 20 and 24).

First use Dec. 13, 1956.

SN 318,352. Beacon Cycle and Supply Company, Inc., Milwaukee, Wis., assignee of Beacon Cycle and Supply Co., Milwaukee, Wis. Filed Feb. 5, 1969.

WILTON

Class 19—Vehicles

For Bicycle Structural Parts and Attachments (Int. Cl. 12).

Class 35—Belting, Hose, Machinery Packing, and Nonmetallic Tires

For Bicycle Tires and Tubes (Int. Cl. 12).

First use on or about Apr. 1, 1963.

SN 326,547. William Poole Enterprises, Inc., d.b.a. Showcase of Homes, Raleigh, N.C. Filed May 6, 1969.

SHOWCASE OF HOMES

Class 38—Prints and Publications

For Book of House Plans Published Periodically (Int. Cl. 16).

First use at least as early as Mar. 7, 1969.

Class 100—Miscellaneous

For Consulting in the Selection of House Plans and the Drafting of Custom House Plans (Int. Cl. 42).

First use at least as early as Mar. 7, 1969.

SN 332,571. Hapek, Inc., d.b.a. Glamourette Products, Cresskill, N.J. Filed July 15, 1969.

GLAMOURETTE

Class 2—Receptacles

For Tissue Dispensers (Int. Cl. 20).

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Hair Curler Tote Bags (Int. Cl. 18).

Class 40—Fancy Goods, Furnishings, and Notions

For Headbands and Hairbows (Int. Cl. 26).

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Satin Pillowcases (Int. Cl. 24).

First use at least as early as June 24, 1968.

SN 333,166. Multi-Clean Products, Incorporated, St. Paul, Minn. Filed July 22, 1969.

MULTI-CLEAN

Owner of Reg. Nos. 532,022, 554,372, and 635,849.

Class 4—Abrasives and Polishing Materials

For Liquid Floor Wax, Combination Waxing and Cleaning Preparation for Use on Wood and Cork Floors, and Furniture Polish (Int. Cl. 3).

Class 12—Construction Materials

For Concrete Sealer (Int. Cl. 19).

Class 16—Protective and Decorative Coatings

For Terrazzo Sealer, Asphalt Tile Preserver, and Floor Sealer and Finish (Int. Cl. 2).

First use May 1946.

SN 334,826. Esplanade, Santa Monica, Calif. Filed Aug. 8, 1969.

ESPLANADE

Class 32—Furniture and Upholstery

For Home Furnishings in the Nature of Objects Having Decorative or Antique Value (Int. Cl. 20).

Class 38—Prints and Publications

For Paintings (Int. Cl. 16).

Class 50—Merchandise Not Otherwise Classified

For Sculpture (Int. Cl. 20).

First use as early as June 23, 1969.

SN 335,918. Consolidated Foods Corporation, Chicago, Ill., assignee of Hit Sales Corporation, New York, N.Y. Filed Aug. 22, 1969.

PERMATIZED

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Finish Sold as a Component of Key Tags and Money Clips (Int. Cl. 6).
First use 1965.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

For Finish Sold as a Component of Coin Knives and Letter Openers (Int. Cl. 16).
First use 1965.

Class 26—Measuring and Scientific Appliances

For Finish Sold as a Component of Flexible Steel Rule Tapes (Int. Cl. 9).
First use 1965.

Class 37—Paper and Stationery

For Finish Sold as a Component of Desk Pen Sets and Paperweights (Int. Cl. 16).
First use 1968.

Class 40—Fancy Goods, Furnishings, and Notions

For Finish Sold as a Component of Neckerchief Slides (Int. Cl. 26).
First use 1968.

Class 50—Merchandise Not Otherwise Classified

For Finish Sold as a Component of Wall Plaques (Int. Cl. 20).
First use 1968.

SN 348,684. Firma Dr. Justus Rieker & Co., Tuttlingen, Wurttemberg, Germany. Filed Jan. 15, 1970.

Orbis

Priority claimed under Sec. 44(d) on German application filed July 15, 1969; Reg. No. 864,905, dated Jan. 12, 1970.

Class 22—Games, Toys, and Sporting Goods

For Ski Boots (Int. Cl. 25).

Class 39—Clothing

For Mountaineering Boots, Hiking Shoes and Boots (Int. Cl. 25).

First use July 1968; in commerce July 1968.

SN 350,801. Yogg & Co., Inc., Millburn, N.J. Filed Feb. 9, 1970.

YOGG

Class 38—Prints and Publications

For Menus, Posters, and Similar Printed Sales Aids for Restaurants, Clubs, Hotels, Motels, and the Like (Int. Cl. 16).

Class 101—Advertising and Business

For Creating Menus and Similar Printed Sales Aids for Restaurants, Clubs, Hotels, Motels and the Like (Int. Cl. 35).

First use Apr. 15, 1968.

SN 350,802. Yogg & Co., Inc., Millburn, N.J. Filed Feb. 9, 1970.

Yogg

Class 38—Prints and Publications

For Menus, Posters, and Similar Printed Sales Aids for Restaurants, Clubs, Hotels, Motels and the Like (Int. Cl. 16).

Class 101—Advertising and Business

For Creating Menus and Similar Printed Sales Aids for Restaurants, Clubs, Hotels, Motels, and the Like (Int. Cl. 35).

First use Apr. 15, 1968.

SN 352,197. P & C Food Markets, Inc., Syracuse, N.Y. Filed Feb. 24, 1970.

EXEL

Owner of Reg. Nos. 821,802 and 842,582.

Class 2—Receptacles

For Plastic Bags and Plastic Liners for Cans (Int. Cl. 20).

Class 37—Paper and Stationery

For Paper Towels, Napkins, Facial Tissue, and Clear Plastic Wrapping Material (Int. Cl. 16).

First use at least as early as July 1, 1969.

SN 353,946. National Off Road Racing Association, Glendale, Calif. Filed Mar. 13, 1970.

MEXICAN 1000

Class 40—Fancy Goods, Furnishings, and Notions

For Cloth Patches To Be Sewn or Attached on Apparel (Int. Cl. 26).

Class 50—Merchandise Not Otherwise Classified

For Metal Tags To Be Attached to Motor Vehicles and the Like (Int. Cl. 6).

Class 107—Education and Entertainment

For Scheduling, Establishing Rules and Regulations for and Conducting Automobile Road Races at Various Times (Int. Cl. 41).

First use Aug. 15, 1967.

SN 353,947. National Off Road Racing Association, Glendale, Calif. Filed Mar. 13, 1970.

BAJA 500

Class 40—Fancy Goods, Furnishings, and Notions

For Cloth Patches To Be Sewn or Attached on Apparel (Int. Cl. 26).

Class 50—Merchandise Not Otherwise Classified

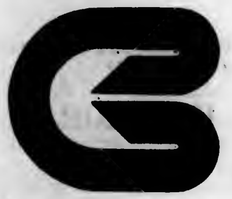
For Metal Tags To Be Attached to Motor Vehicles and the Like (Int. Cl. 6).

Class 107—Education and Entertainment

For Scheduling, Establishing Rules and Regulations for and Conducting Automobile Road Races at Various Times (Int. Cl. 41).

First use Mar. 1, 1969.

SN 358,642. Communications for Business, Inc., Rolling Meadows, Ill. Filed May 4, 1970.



Class 38—Prints and Publications

For Newsletter Directed to the Construction Industry (Int. Cl. 16).

Class 101—Advertising and Business

For Marketing Research Services (Int. Cl. 35).

First use on or about Feb. 2, 1970.

SN 358,643. Communications for Business, Inc., Rolling Meadows, Ill. Filed May 4, 1970.



Class 38—Prints and Publications

For Newsletter Directed to the Construction Industry (Int. Cl. 16).

Class 101—Advertising and Business

For Marketing Research Services (Int. Cl. 35).

First use on or about Feb. 2, 1970.

SN 359,047. Illinois Glove Company, Skokie, Ill. Filed May 7, 1970.

BUCKROE COUNTRY

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

For Attache Cases, Saddle Bags, and Shoulder Bags (Int. Cl. 18).
First use Feb. 13, 1970.

Class 28—Jewelry and Precious-Metal Ware

For Wristbands (Int. Cl. 25).
First use Feb. 13, 1970.

Class 39—Clothing

For Clothing Made From Leather—Namely, Belts, Vests, Tunics, Ponchos, Pants Suits, Pants, Dresses, Shirts, Capes, and Skirts (Int. Cl. 25).
First use Feb. 13, 1970.

Class 40—Fancy Goods, Furnishings, and Notions

For Headbands (Int. Cl. 26).
First use Feb. 14, 1970.

SN 360,852. Avon Products, Inc., New York, N.Y. Filed May 26, 1970.

CATERING SERVICE

Class 51—Cosmetics and Toilet Preparations

For Moisturized Face Cream, Lipstick, Eye Shadow, and Foundation Makeup (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use Mar. 23, 1970.

SN 362,058. Everett G. McGahan, d.b.a. R-Ville, Lima, Ohio. Filed June 8, 1970.

R-VILLE FINE FURNITURE

The words "Fine Furniture" are disclaimed apart from the mark as shown.

Class 32—Furniture and Upholstery

For Bed Frames, Bed Springs, Mattresses, Chests, Bureaus, Framed Pictures, Mirrors, Sofas, Chairs, Desks, Tables, Sideboard China Cabinets, Bookcases, and Footstools (Int. Cl. 20).
First use on or about Apr. 1, 1950.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

For Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use on or about Jan. 22, 1953.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.
A fee of twenty-five dollars must accompany the opposition.
[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 325,519. Kenneth Sparr, d.b.a. Quick-N-Easy Products, Wausau, Wis. Filed Apr. 24, 1969.

TOPCOTE

For Adhesive-Coated, Heat-Shrinkable Plastic Film for Use by Hobbyists in Covering Models Such as Model Airplanes and the Like (Int. Cl. 17).
First use Feb. 7, 1969.

SN 339,228. Rogers Corporation, Rogers, Conn. Filed Sept. 29, 1969.

GP/duroid

Owner of Reg. No. 842,350.
For Fiber-Elastomer Materials Sold in Sheet Form for General Industrial Purposes Such as Use in the Manufacture of Gaskets and Seals (Int. Cl. 17).
First use at least as early as Dec. 31, 1963.

SN 350,789. United States Banknote Corporation, New York, N.Y. Filed Feb. 6, 1970.

P201

For Resin Component for a Plaster Mix (Int. Cl. 19).
First use at least as early as Nov. 7, 1969.

SN 356,505. Liquid Nitrogen Processing Corporation, Malvern, Pa. Filed Apr. 10, 1970.

STAT-KON

For Thermoplastic Resins (Int. Cl. 1).
First use Feb. 20, 1970.

SN 356,692. Johns-Manville Corporation, New York, N.Y. Filed Apr. 13, 1970.

VITRON

Owner of Reg. No. 444,056.
For Fiber Glass Roving (Int. Cl. 21).
First use at least on or about Sept. 24, 1946.

Class 5—Adhesives

SN 348,212. Hercules Equipment & Rubber Co., Inc., San Francisco, Calif. Filed Jan. 12, 1970.

HSG company

For Adhesives for Industrial and Commercial Use (Int. Cl. 1).
First use Dec. 12, 1969.

SN 366,045. Leech Products, Inc., Hutchinson, Kans. Filed July 23, 1970.

X 30

For Contact Cement (Int. Cl. 1).
First use at least as early as Nov. 10, 1959.

SN 366,761. Viking-Criterion Paper Corporation, Long Island City, N.Y. Filed July 30, 1970.

CRITERION

For Gum Sealing Tape Reinforced With Glass Threads (Int. Cl. 17).
First use June 30, 1970.

Class 6—Chemicals and Chemical Compositions

SN 332,242. Kaiser Aluminum & Chemical Corporation, Oakland, Calif. Filed July 10, 1969.

KAY-KOP 80

For Fungicide (Int. Cl. 5).
First use at least as early as Dec. 10, 1968.

SN 346,745. Imoco-Gateway Corporation, Chicago, Ill. Filed Dec. 19, 1969.

FLO-KLEEN

For Heavy Duty Liquid Drain Line Additive Used as an Aid in the Dissolving of Blockages Caused by Organic Materials (Int. Cl. 3).
First use at least as early as Aug. 6, 1969.

SN 356,720. Mallinckrodt Chemical Works, St. Louis, Mo. Filed Apr. 13, 1970.

TOBAZ

For Soil Fungicide (Int. Cl. 5).
First use Mar. 26, 1970.

SN 356,721. Mallinckrodt Chemical Works, St. Louis, Mo. Filed Apr. 13, 1970.

TRUBAN

For Soil Fungicide (Int. Cl. 5).
First use Mar. 26, 1970.

SN 356,722. Mallinckrodt Chemical Works, St. Louis, Mo. Filed Apr. 13, 1970.

BANROT

For Soil Fungicide (Int. Cl. 5).
First use Mar. 26, 1970.

SN 369,037. American Air Filter Company, Inc., Louisville, Ky. Filed Aug. 26, 1970.

VISCOSINE

For Viscose, a Hydrocarbon Composition Having the Property of Arresting Particles Coming in Contact With it Which May Be Used in Connection With the Purification of Gaseous Matter (Int. Cl. 1).
First use Jan. 23, 1921.

Class 12—Construction Materials

SN 319,441. Futurus, Inc., Upland, Calif. Filed Feb. 18, 1969.



The representation of the goods and the term "Carpetile" are disclaimed apart from the mark as shown.
For Flooring Blocks Made of Rubber or Rubber-Like Material (Int. Cl. 19).
First use June 1966.

SN 328,921. Transwall Corp., Malvern, Pa. Filed June 2, 1969.

TRANSWALL

For Movable Partitions, Panels, Dividers, Decorator Panels, Curtain Walls, Study Carrels for Office and Home (Int. Cl. 19).
First use Aug. 12, 1964.

SN 332,076. Albi Manufacturing Company, Inc., Rockville, Conn. Filed July 9, 1969.

ALBI-CLAD

Owner of Reg. No. 401,429.
For Fire and Heat Retardant Mastic Coatings (Int. Cl. 19).
First use December 1960.

SN 346,292. Plibrico Company, Chicago, Ill. Filed Dec. 15, 1969.

PLIBLOC

Owner of Reg. Nos. 176,070, 857,766, and others.
For Preformed Refractory Blocks (Int. Cl. 19).
First use Mar. 20, 1968.

SN 354,543. Arcadia Air Products Co., Pasadena, Calif. Filed Mar. 19, 1970.

DURAMAXIFLEX

Owner of Reg. No. 673,065.
For Diving Boards (Int. Cl. 19).
First use November 1969.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 332,639. G. F. Wright Steel & Wire Company, Worcester, Mass. Filed July 15, 1969.

WRIGHTMARK

For Wire Netting (Int. Cl. 6).
First use Mar. 15, 1962.

SN 341,054. The Ontario Knife Company, Franklinville, N.Y. Filed Oct. 17, 1969.

SAV-A-SPOT

For Display Shelf Fixtures (Int. Cl. 6).
First use on or about June 4, 1969.

SN 341,841. Offshore Systems Ins., Houston, Tex. Filed Oct. 27, 1969.

RAMLOK

For Rotary Valves (Int. Cl. 6).
First use July 26, 1957.

SN 350,898. Flair Zipper Corporation, New York, N.Y. Filed Feb. 9, 1970.



Applicant disclaims the exclusive right to the configuration of the zipper in the mark.
For Zipper Chains (Int. Cl. 26).
First use July 1, 1961.

SN 361,482. Gimas S.R.L., Milan, Italy. Filed June 2, 1970.

GIMAS

For Siphons for Soda Water, Auto-Siphons, and Cream Whippers (Int. Cl. 21).
First use Mar. 31, 1967; in commerce June 30, 1968.

SN 361,949. Unison Corporation, Brisbane, Calif. Filed June 8, 1970.

UNISON

For Scullery and Kitchen Sinks, and Drainboards (Int. Cls. 6 and 21).
First use Apr. 30, 1970.

Class 14—Metals and Metal Castings and Forgings

SN 324,210. P. R. Mallory & Co. Inc., Indianapolis, Ind. Filed Apr. 10, 1969.

MALLOBOND

For Composite Electrically Conductive Metals and Alloys (Int. Cl. 6).
First use on or about Jan. 22, 1969.

SN 334,690. Carpenter Technology Corporation, Reading, Pa. Filed Aug. 7, 1969.

CUSTOM 450

The term "Custom" is disclaimed apart from the mark as shown.
For Steel in the Form of Wire, Strips, Bars, Billets, and Shapes (Int. Cl. 6).
First use June 26, 1969.

Class 16—Protective and Decorative Coatings

SN 276,494. Vinci Ltd., Zurich, Switzerland. Filed July 21, 1967.

VINCI

Owner of Swiss Reg. No. 222,104, dated Sept. 12, 1966.
For Water Colors and Oil Paints (Int. Cl. 2).

SN 331,034. Fuller-O'Brien Corporation, Menlo Park, Calif. Filed June 26, 1969.

PEN-THANE

For Wood Finishes in the Nature of a Varnish (Int. Cl. 2).
First use on or about May 12, 1969.

SN 358,526. United States Steel Corporation, Pittsburgh, Pa. Filed May 1, 1970.

NEXUS

Owner of Reg. No. 843,485.
For Synthetic Resin Composition Used as a Protective Coating and Primer (Int. Cl. 2).
First use Apr. 25, 1969.

Class 17—Tobacco Products

SN 332,757. Turmac Tobacco Company N.V., Amsterdam, Netherlands. Filed July 16, 1969.



For Smoking Tobacco (Int. Cl. 34).
First use June 18, 1969; in commerce June 18, 1969.

SN 360,690. Ardath Tobacco Company, Limited, London, England. Filed May 25, 1970.

STATE EXPRESS
Royal Navy Cut

No claim of exclusive right is made to "Royal Navy Cut" as used for smoking tobacco. Owner of U.S. Reg. Nos. 749,937 and 867,067.
For Smoking Tobacco (Int. Cl. 34).
First use December 1969; in commerce February 1970.

Class 18—Medicines and Pharmaceutical Preparations

SN 346,401. The Reducine Company Limited, Dublin, Eire. Filed Dec. 16, 1969.



Owner of Irish Reg. No. 63,069, dated May 16, 1960, and U.S. Reg. Nos. 709,549, 779,375, and 783,529.
For Veterinary Preparations—Namely, Animal Liniment and Salve for External Use on Horses and Cattle (Int. Cl. 5).

SN 369,862. The Upjohn Company, Kalamazoo, Mich. Filed Sept. 4, 1970.

U-SHOT

For Disposable Syringe Containing Contraceptive Preparation (Int. Cl. 5).
First use July 2, 1970.

SN 370,492. Carter-Wallace, Inc., New York, N.Y. Filed Sept. 14, 1970.

KEEP GOING

For Effervescent Antacid and Analgesic Compound (Int. Cl. 5).
First use June 10, 1970.

Class 19—Vehicles

SN 355,073. Hitco, Gardena, Calif. Filed Mar. 26, 1970.

CHAPARRAL

For Snowmobiles and Amphibious All-Terrain Vehicles (ATV's) Equipped With High Flotation Tires (Int. Cl. 12).
First use Nov. 21, 1969.

Class 22—Games, Toys, and Sporting Goods

SN 322,452. Indian Head Inc., New York, N.Y., assignee of L-B, Inc., Houston, Tex. Filed Mar. 21, 1969.

BAT BACK

For Batting Practice Equipment (or Apparatus) Comprising a Ball Attached to a Cord and Stake Assembly for Baseball Batting Practice Purposes (Int. Cl. 28).
First use at least as early as Feb. 19, 1969.

SN 325,946. American Divers Supply and Manufacturing Corporation, Denver, Colo. Filed Apr. 30, 1969.



The words "American Divers Supply & Manufacturing Corp." are disclaimed except in the association shown, without waiver of applicant's common law rights in the composite mark.
For Diving Equipment and Underwater Athletic Products—Namely, Tanks, Life Vests, Regulators, Wet Suits, Snorkels, Tank Boots, Fins, Masks, and Spearguns (Int. Cls. 9 and 28).
First use Oct. 26, 1968.

SN 331,347. Creme Lure Company, Tyler, Tex. Filed June 30, 1969.

"Shimmy Gal"

For Artificial Fishing Lures, Plastic Worms, Slip Sinkers, Hooks, Jig Head, Skirts, Spinners, Artificial Salmon Eggs and Artificial Herring Cuts and Strips (Int. Cl. 28).
First use on or about Aug. 1, 1966.

SN 331,348. Creme Lure Company, Tyler, Tex. Filed June 30, 1969.

CREME

For Artificial Fishing Lures, Plastic Worms, Slip Sinkers, Hooks, Jig Head, Skirts, Spinners, Artificial Salmon Eggs and Artificial Herring Cuts and Strips (Int. Cl. 28).
First use on or about May 1, 1950.

SN 331,349. Creme Lure Company, Tyler, Tex. Filed June 30, 1969.



Owner of Reg. No. 645,074.
For Artificial Fishing Lures, Plastic Worms, Slip Sinkers, Hooks, Jig Head, Skirts, Spinners, Artificial Salmon Eggs and Artificial Herring Cuts and Strips (Int. Cl. 28).
First use on or about Aug. 1, 1968.

SN 335,569. The Greyhound Corporation, Chicago, Ill. Filed Aug. 18, 1969.

SUPERCRUISER

For Toy Busses (Int. Cl. 28).
First use June 10, 1969.

SN 344,563. Mohawk Products, Inc., Gloversville, N.Y. Filed Nov. 25, 1969.



The drawing is lined for the color gold.
For Sport Clothing—Namely, Golf Gloves (Int. Cl. 25).
First use September 1967.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 345,631. Tracy Holmes Corporation, Santa Monica, Calif. Filed Dec. 8, 1969.

JIBAWAY

For Small Boat Fittings—Namely, Roller Jib Furling Gear (Int. Cl. 7).
First use Mar. 21, 1966.

Class 24 — Laundry Appliances and Machines

SN 362,338. Bishop Freeman Company, Evanston, Ill. Filed June 11, 1970.

VELVATRON

For Press Plates for Garment Pressing Machines (Int. Cl. 7).
First use on or about May 18, 1970.

Class 26 — Measuring and Scientific Appliances

SN 343,182. System Development Corporation, Santa Monica, Calif. Filed Nov. 10, 1969.

SDC DATACENTER

The word "Datacenter" is disclaimed apart from the mark as shown. Owner of Reg. Nos. 727,338, 798,183, and others.
For Electric Computer Terminals (Int. Cl. 9).
First use on or about Sept. 2, 1969.

Class 29 — Brooms, Brushes, and Dusters

SN 332,226. Empire Brushes, Inc., Port Chester, N.Y. Filed July 10, 1969.

Brush Boutique

Applicant disclaims "Brush" apart from the mark as shown.
For Vegetable Brushes, Jar and Bottle Brushes, Basting and Pastry Brushes, Percolator Brushes, Pot and Pan Brushes and Glass and Dish Mops (Int. Cl. 21).
First use May 12, 1969.

SN 360,733. The Drackett Company, Cincinnati, Ohio. Filed May 25, 1970.

ANGLER

For Brooms (Int. Cl. 21).
First use Mar. 2, 1970.

SN 360,964. E Z Paintr Corporation, Milwaukee, Wis. Filed May 27, 1970.

SNAP-FIT

For Paint Rollers (Int. Cl. 16).
First use Apr. 28, 1970.

Class 30 — Crockery, Earthenware, and Porcelain

SN 327,942. Marketing Associates, Inc., d.b.a. Satisfaction House, St. Louis, Mo. Filed May 21, 1969.



For Dinnerware—Namely, Plates, Cups, Saucers, Soup Bowls, Platters and Dishes, All of Melamine Plastic (Int. Cl. 21).
First use Mar. 15, 1968.

Class 32 — Furniture and Upholstery

SN 317,390. Shure Manufacturing Corporation, St. Louis, Mo. Filed Jan. 23, 1969.

SHURE

For Benches, Cabinets, Racks and Counters; Shop and Office Desks, Chairs and Stools; Storage and Clothes Cabinets; and Portable Shelving (Int. Cl. 20).
First use Feb. 1, 1952.

SN 331,657. Storebest-Ladeneinrichtung G.m.b.H., Lubeck, Germany. Filed July 2, 1969.

STOREbest

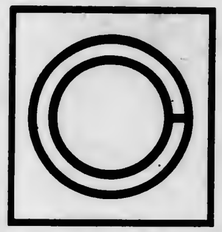
Owner of German Reg. No. 703,431, dated June 13, 1957.
For Store Fixtures, i.e., Shelves, Counters, Mobile Merchandise Stands and Shelves, and Cash-Register Stands (Int. Cl. 20).
First use Apr. 24, 1969; in commerce Apr. 24, 1969.

SN 334,998. Dobbs, Incorporated, Inkster, Mich. Filed Aug. 11, 1969.

DOBBS

For Home Furnishings—Namely, Beds, Mattresses, Springs, Chests, Dressers, Chairs, Sofas, Desks, and Tables (Int. Cl. 20).
First use June 1, 1955.

SN 339,389. Jack Cartwright, Incorporated, High Point, N.C. Filed Oct. 1, 1969.



For Furniture—Namely, Chairs, Sofas, Tables, and Desks (Int. Cl. 20).
First use July 10, 1963.

SN 339,558. Educators Manufacturing Company, Tacoma, Wash. Filed Oct. 2, 1969.

INNOVATOR

For School Furniture—Namely, Storage Cabinets, Shelving, Work Counters, and Special Classroom Furniture for Science Classes, Portable Screen Dividers, and Tables (Int. Cl. 20).
First use May 28, 1969.

SN 339,560. Gavina S.p.A., Milan, Italy. Filed Oct. 2, 1969.
Owner of Italian Reg. No. 233,164, dated Oct. 30, 1968.

GAVINA

For Articles of Furniture—Namely, Chairs, Tables, Desks, Sofas, Hat Stands, and Ottomans (Int. Cl. 20).
First use September 1956; in commerce Sept. 25, 1968.

SN 339,837. The Borg-Erickson Corporation, Chicago, Ill. Filed Oct. 6, 1969.

BORG

For Vanities, Benches, and Commodes (Int. Cl. 20).
First use Oct. 1, 1936.

SN 346,984. Unidine International Corporation, Provo, Utah. Filed Dec. 22, 1969.



Applicant disclaims the representation of the goods apart from the mark as shown.
For Suspended Seating Consisting of Integrated Table (or Counter) and Seating Constructions, the Seating Being Suspended From the Table (or Counter) Top, Used in Both Residential and Commercial Installations (Int. Cl. 20).
First use June 30, 1963.

SN 358,621. Stainless Metal Products, Inc., Chattanooga, Tenn. Filed May 1, 1970.



For Store and Office Furnishings—Namely, Racks, Stands, Shelves, and Desk Baskets (Int. Cl. 20).
First use Oct. 1, 1963.

SN 358,671. Samsonite Corporation, Denver, Colo. Filed May 4, 1970.

MULTIPLICATION TABLES

Applicant disclaims the term "Tables" apart from the mark as shown.
For Furniture—Namely, Tables (Int. Cl. 20).
First use Apr. 3, 1970.

SN 360,491. Schliemann Borgos, New York, N.Y. Filed May 21, 1970.

MILLIONAIRES COLLECTION

For Furniture—Namely, Tables, Desks, Seating, Storage and Shelving Units, and Bedroom Sets (Int. Cl. 20).
First use May 1, 1970.

Class 36 — Musical Instruments and Supplies

SN 343,041. Edgar Rice Burroughs, Inc., Tarzana, Calif. Filed Nov. 10, 1969.

TARZAN

Owner of Reg. Nos. 799,908 and 824,548.
For Phonograph Records (Int. Cl. 9).
First use at least as early as Feb. 21, 1967.

Class 37 — Paper and Stationery

SN 293,116. Expandex Limited, London, England. Filed Mar. 13, 1968.



The Letter "e" is disclaimed apart from the mark as shown.
Owner of British Reg. No. 870,501, dated Oct. 15, 1964.
For Folders, Folder-Type Files, Blank List Finders and Record Strips (Int. Cl. 16).

SN 299,466. Litton Business Systems, Inc., Carlstadt, N.J. Filed May 31, 1968.

Rx CON

Without waiver of common law rights, the prescription symbol is disclaimed apart from the mark as shown.
For Business Forms, Prescription Record Forms, and Labels (Int. Cl. 16).
First use not later than July 28, 1967.

SN 302,606. Eurokote, Sociedad Anonima, Leiza, Navarra, Spain. Filed July 12, 1968.



Owner of Spanish Reg. No. 460,535, dated Nov. 27, 1964.
For All Kinds of Fine Papers, Pasteboard, Coarse Papers, and Coated Papers (Int. Cl. 16).

SN 307,676. Sarah R. Short, Alexandria, Va. Filed Sept. 18, 1968.

SaRaS

For Fancy Note Paper (Int. Cl. 16).
First use Sept. 18, 1968.

SN 328,664. Chemolene Industries, Inc., Bordentown, N.J. Filed May 29, 1969.

LUSTER MARK

For Felt Tip and Fine Point Marking Pens (Int. Cl. 16).
First use Apr. 29, 1969.

SN 329,840. Commercial Ball Pen Co., Inc., New York, N.Y. Filed June 12, 1969.

UNI-GRAPHIC

For Pens, Refills, and Markers (Int. Cl. 16).
First use Feb. 12, 1967.

SN 331,398. Lindy Pen Company, Incorporated, North Hollywood, Calif. Filed June 30, 1969.

SLIMETTE

For Ball Point Pens (Int. Cl. 16).
First use May 29, 1969.

SN 333,106. Herman Dorfman, San Francisco, Calif. Filed July 22, 1969.

PAGEKEEPER

For Bookmarks (Int. Cl. 16).
First use June 10, 1969.

SN 338,472. Keith Clark, Inc., New York, N.Y. Filed Sept. 22, 1969.

WEEKLY-MINDER

Owner of Reg. No. 806,952.
For Desk Calendars, Address Books, Planning Books, Appointment Books, Diaries, Planning Calendars, Desk-Style Calendar Pads, Memo Pads, Memo Books, and Doodle Pads (Int. Cl. 16).
First use Sept. 2, 1969.

SN 338,473. Keith Clark, Inc., New York, N.Y. Filed Sept. 22, 1969.

MONTHLY DATER

Owner of Reg. No. 806,952.
For Desk Calendars, Address Books, Planning Books, Appointment Books, Diaries, Planning Calendars, Desk-Style Calendar Pads, Memo Pads, Memo Books, and Doodle Pads (Int. Cl. 16).
First use Sept. 2, 1969.

SN 338,475. Keith Clark, Inc., New York, N.Y. Filed Sept. 22, 1969.

DAILY DATER

For Desk Calendars, Address Books, Planning Books, Appointment Books, Diaries, Planning Calendars, Desk-Style Calendar Pads, Memo Pads, Memo Books, and Doodle Pads (Int. Cl. 16).
First use Sept. 2, 1969.

SN 346,011. Wild Horse Industrial Corporation, d.b.a. International Office Products, San Francisco, Calif. Filed Dec. 11, 1969.

IOP

The drawing is lined for blue, but no claim is made to color.
For Stationery Sheet Protectors (Int. Cl. 16).
First use April 1969.

SN 354,920. U.S. Plywood-Champion Papers Inc., Hamilton, Ohio. Filed Mar. 23, 1970.



The drawing is lined for blue but no claim is made to color.
Owner of Reg. No. 793,137.
For Packaging Materials—Namely, Plastic Films, Combinations of Foil and Film, Combinations of Paper and Foil and/or Film (Int. Cl. 16).
First use on or before Feb. 14, 1966.

SN 356,111. Markal Company, Chicago, Ill. Filed Apr. 6, 1970.

PAPER RITER

For Felt Tip Marker (Int. Cl. 16).
First use Sept. 4, 1969.

SN 357,055. Clopay Corporation, Cincinnati, Ohio. Filed Apr. 16, 1970.

CLO-COPY

For Copying Papers of All Types (Int. Cl. 16).
First use Feb. 20, 1970.

SN 357,139. Vanity Fair Paper Sales Corp., Greenwich, Conn. Filed Apr. 16, 1970.

PREVENT

For Paper Handkerchiefs (Int. Cl. 16).
First use Jan. 28, 1970.

SN 357,304. Alling & Cory Company, Rochester, N.Y. Filed Apr. 20, 1970.

CORNWALL

Owner of Reg. No. 518,275.
For Bond Paper (Int. Cl. 16).
First use at least as early as January 1915.

SN 357,613. The Gillette Company, d.b.a. Paper Mate Co., Boston, Mass. Filed Apr. 22, 1970.

FLAIR

Owner of Reg. No. 586,100.
For Pens and Refills for Pens (Int. Cl. 16).
First use Mar. 31, 1953.

SN 358,774. Moss Key-Rec. Systems, Inc., Dayton, Ohio. Filed May 4, 1970.

KEY-S.P.O.T.

Owner of Reg. Nos. 643,607 and 801,896.
For Business Forms (Int. Cl. 16).
First use on or about Apr. 28, 1970.

SN 358,781. The Parker Pen Company, Janesville, Wis. Filed May 4, 1970.

T-1

For Fountain Pens, Mechanical Pencils, Ball Point Pens, and Refills Therefor, Marking Pens, Desk Sets, Ink Cartridges, and Erasers (Int. Cl. 16).
First use Apr. 10, 1970.

SN 364,476. Olinkraft, Inc., West Monroe, La. Filed July 6, 1970.

AQUACORR

For Water Resistant Paper and Paperboard Manufactured for Use as a Corrugating Medium (Int. Cl. 16).
First use on or about Oct. 27, 1967.

Class 38 — Prints and Publications

SN 264,019. Consolidated Analysis Centers, Inc., Santa Monica, Calif., by change of name from California Analysis Center, Inc., Santa Monica, Calif. Filed Feb. 6, 1967.

SIMSCRIPT I.5

Applicant disclaims exclusive right to the use of the word "Simscript" except in connection with the notation "I.5."
For Computer Programs and Manuals Therefor (Int. Cl. 16).
First use June 1, 1965.

SN 330,006. The Penton Publishing Company, Cleveland, Ohio. Filed June 13, 1969.

INDUSTRY WEEK

For Magazine Published From Time to Time (Int. Cl. 16).
First use on or about June 12, 1969.

SN 335,749. Decker Communications, Incorporated, New York, N.Y. Filed Aug. 20, 1969.

THE CHIEF EXECUTIVE

For Magazine Published Quarterly (Int. Cl. 16).
First use May 1969.

SN 336,659. American Bureau of Shipping, New York, N.Y. Filed Aug. 29, 1969.



For Magazine, Periodically Published Books Containing Standards for Design and Construction of Ships, and a Register of Ships (Int. Cl. 16).
First use April 1965.

SN 339,046. Robert Saudek Associates, Inc., New York, N.Y. Filed Sept. 26, 1969.

OMNIBUS

For Motion Picture Film and Recorded Video Tapes (Int. Cl. 9).
First use Nov. 9, 1952.

SN 340,529. Betty Debnam, Raleigh, N.C. Filed Oct. 13, 1969.

THE MINI PAGE

For Special Section in Sunday Newspapers Directed Primarily Toward Children (Int. Cl. 16).
First use as early as Apr. 15, 1969.

SN 340,801. Karl Paulding and Frank Bender (joint venturers), d.b.a. L.L. Co. (Luggage Label Co.), Walnut Creek, Calif. Filed Oct. 15, 1969.

TO EACH HIS OWN

For Decorative Pressure Sensitive Initials for Personal Identification of Luggage (Int. Cl. 16).
First use Sept. 4, 1969.

SN 340,905. Colorado Interstate Corporation, Colorado Springs, Colo. Filed Oct. 16, 1969.



For Annual Reports (Int. Cl. 16).
First use Apr. 1, 1961.

SN 341,073. John Wiley & Sons, Inc., New York, N.Y. Filed Oct. 17, 1969.

LECTURE TEXT

For Self-Study Course Kits Containing Pamphlets and Other Printed Materials, Notebook Pads, Audio Tape Cassettes, Film Strips and the Like (Int. Cl. 16).
First use Sept. 10, 1969.

SN 343,415. National Bicentennial Productions, Inc., New York, N.Y. Filed Nov. 13, 1969.



For Brochures and Pamphlets and Bumper Stickers (Int. Cl. 16).
First use December 1967.

SN 344,086. John E. Whitaker, d.b.a. Personal Chronograph Service Co., Virginia Beach, Va. Filed Nov. 20, 1969.

CHRONOGRAPH

For Menstrual Chart (Int. Cl. 16).
First use at least as early as Oct. 30, 1969.

SN 345,971. The Narda Microwave Corporation, Plainview, N.Y. Filed Dec. 11, 1969.

PROBE

For Periodical Magazine Concerned With the Activities of The Narda Microwave Corporation and Including Disclosures and Articles Relating to the Microwave Industry, Including Microwave Equipment for Test and Communication (Int. Cl. 16).
First use Nov. 30, 1963.

SN 348,245. Astroprofile, Ltd., Valley Stream, N.Y. Filed Jan. 12, 1970.

ASTROPROFILE

For Computerized Horoscopes (Int. Cl. 16).
First use Nov. 24, 1969.

SN 351,257. Walt Disney Educational Materials Company, Glendale, Calif. Filed Feb. 13, 1970.



For Audio-Visual Educational Aids and Products—Namely, Film Strips and Films in Cartridge and Cassette Form, and Paintings and Study Prints (Int. Cls. 9 and 16).
First use Nov. 6, 1969.

SN 354,038. The Toledo Blade Company, Toledo, Ohio. Filed Mar. 13, 1970.

TOLEDO/SCOPE

Owner of Reg. No. 781,782.
For Newspaper Supplement (Int. Cl. 16).
First use Feb. 9, 1969.

SN 355,480. Kentucky Automotive Data Analysis, Inc., Louisville, Ky. Filed Mar. 30, 1970.

K.A.D.A. DAILY AUTOMOTIVE RECORD

Applicant disclaims the terminology "Daily Automotive Record" apart from the mark as shown.
For Newsletter Dealing With Automotive Transactions (Int. Cl. 16).
First use on or before December 1968.

SN 357,774. Ziff-Davis Publishing Company, Inc., New York, N.Y. Filed Apr. 23, 1970.

BOATING

Owner of Reg. Nos. 661,782 and 773,698.
For Magazine Published Monthly (Int. Cl. 16).
First use May 1966.

SN 359,056. The Hollingsworth Group, Inc., New York, N.Y. Filed May 7, 1970.

ESSENCE

For Magazine (Int. Cl. 16).
First use Apr. 14, 1970.

SN 369,918. Honeywell Inc., Minneapolis, Minn. Filed Sept. 4, 1970.

CHEK-A-LOG

For Catalogs Which Contain Descriptions, Specifications, Ordering and Pricing Information for Thermocouples and Parts Thereof (Int. Cl. 16).
First use at least as early as Dec. 15, 1969.

SN 369,964. Stanley Publishing Company, Chicago, Ill. Filed Sept. 4, 1970.

GASOLINE RETAILER

For Trade Newspaper (Int. Cl. 16).
First use Jan. 2, 1930.

SN 370,466. Master Hosts International, Inc., Beverly Hills, Calif. Filed Sept. 11, 1970.



Owner of Reg. Nos. 738,805 and 738,806.
For Directories (Int. Cl. 16).
First use June 15, 1970.

SN 370,480. Universal Single Systems, Inc., Hazel Park, Mich. Filed Sept. 11, 1970.

MONTAGE

For Magazine (Int. Cl. 16).
First use Aug. 1, 1970.

SN 371,435. Inter-Varsity Christian Fellowship, Downers Grove, Ill. Filed Sept. 23, 1970.

THE FISH

For Newspapers (Int. Cl. 16).
First use at least as early as December 1969.

SN 371,933. Long Island Clubwoman, Inc., Babylon, N.Y. Filed Sept. 28, 1970.

AMERICAN CLUBWOMAN

For Magazine (Int. Cl. 16).
First use January 1970.

Class 39—Clothing

SN 301,251. Prepshirt, Inc., New York, N.Y. Filed June 24, 1968.



For Boys' Shirts (Int. Cl. 25).
First use June 1961.

SN 313,668. Warren Sewell Clothing Company, Bremen, Ga. Filed Dec. 5, 1968.



For Men's Suits, Sport Coats, and Pants (Int. Cl. 25).
First use July 1, 1948.

SN 322,285. Gayme Corporation, Dallas, Tex. Filed Mar. 20, 1969.

GAYME COTE

Applicant disclaims the word "Cote" apart from the mark as shown.
For Parkas and Carrying Cases Therefor Sold as a Unit (Int. Cl. 25).
First use Oct. 19, 1968.

SN 337,170. Happy Legs Inc., New York, N.Y. Filed Sept. 5, 1969.

FUR CIRCUS

The word "Fur" is disclaimed apart from the mark as shown.
For Coats, Pants, Vests and Tunics Being Partially Made of Artificial Fur (Int. Cl. 25).
First use Aug. 4, 1969.

SN 339,931. Poor Richard's Ltd., Denver, Colo. Filed Oct. 6, 1969.

Poor Richard's

For Clothing—Namely, Coats, Jackets, Dresses, Trousers, Shoes, Belts, Shirts, and Sandals and Boots (Int. Cl. 25).
First use Jan. 1, 1966.

SN 340,182. Pacific Tent and Awning Company, Fresno, Calif. Filed Oct. 8, 1969.

MINERAL KING

For Sports Jackets and Vests (Int. Cl. 25).
First use May 8, 1969.

SN 341,166. Lawson Products, Inc., Pawtucket, R.I. Filed Oct. 20, 1969.

CLING-RING

For Leg Bands of Knitted Fabric Sold as Component Parts of Ladies' Stockings, Panties, and Girdles (Int. Cl. 25).
First use on or about Apr. 21, 1969.

SN 341,640. Delmod International Bekleidungsindustrie GmbH & Co. Hanse-Kleidung KG, Delmenhorst, Germany. Filed Oct. 24, 1969.

delmod

Owner of German Reg. No. 722,737, dated Feb. 6, 1958.
For Ladies' Outer Garments, Particularly Coats With and Without Fur Trim, Suits With and Without Fur Trim, One-Piece and Two-Piece Dresses, Jacket Dresses, Pant Suits, and Fur Hats (Int. Cl. 25).

SN 341,641. Delmod International Bekleidungsindustrie GmbH & Co. Hanse-Kleidung KG, Delmenhorst, Germany. Filed Oct. 24, 1969.



Owner of German Reg. No. 855,321, dated Nov. 26, 1968.
For Ladies' Outer Garments, Particularly Coats With and Without Fur Trim, Suits With and Without Fur Trim, One-Piece and Two-Piece Dresses, Jacket Dresses, Pant Suits, and Fur Hats (Int. Cl. 25).

SN 342,023. Chadbourn Inc., Charlotte, N.C. Filed Oct. 29, 1969.

CHADBOURN

For Ladies' Hosiery and Panty-Hose (Int. Cl. 25).
First use Sept. 26, 1969.

SN 343,854. Jonathan Logan, Inc., New York, N.Y. Filed Nov. 18, 1969.

CEDAR LANE

For Women's Dresses (Int. Cl. 25).
First use Aug. 11, 1969.

SN 345,608. Cotariel, Paris, France. Filed Dec. 8, 1969.
Owner of French Reg. No. 759,569, dated Mar. 12, 1969.

PEP-SET

For Ladies' Dresses, Skirts, Tunics, Blouses, Chasubles, Jumpers, Suits, Trousers, Drawers, Knickers, and Raincoats (Int. Cl. 25).

SN 346,319. Stanly Knitting Mills, Inc., Oakboro, N.C. Filed Dec. 15, 1969.

FORM·U·LON

For Ladies' Hosiery and Panty Hose (Int. Cl. 25).
First use Oct. 15, 1969.

SN 346,637. H. Nasshorn Inc., New York, N.Y. Filed Dec. 18, 1969.

ROUND HILL

For Men's Sportswear—Namely, Sweaters, Shirts, Pants, and Suede Vests (Int. Cl. 25).
First use Nov. 28, 1969.

SN 346,872. Davenshire, Inc., Davenport, Iowa. Filed Dec. 22, 1969.

HUNTIN'SHIRE

For Wearing Apparel—Namely, Men's and Women's Hunting Coats (Int. Cl. 25).
First use on or about Oct. 2, 1969.

SN 347,737. Gildafrox, Inc., Asheville, N.C. Filed Jan. 5, 1970.



For Children's Garments—Namely, Girls' Dresses (Int. Cl. 25).
First use Apr. 1, 1968.

SN 350,450. Beautique, Detroit, Mich. Filed Feb. 4, 1970.

UMBRELLA

For Clothing, More Particularly Headwear, Including Shower and Bathing Caps (Int. Cl. 25).
First use on or before Dec. 18, 1969.

SN 351,007. VB Creations, Inc., New York, N.Y. Filed Feb. 10, 1970.

VALENTINO

Owner of Reg. No. 802,451.
For Articles of Clothing and Accessories—Namely, Dresses, Belts, Gloves, Scarves, Shoes, Swimwear, and Ties (Int. Cl. 25).
First use April 1960.

SN 351,041. Kates Brothers Scientific Shoe Fitting, Inc., Union, N.J. Filed Feb. 10, 1970.



For Shoes (Int. Cl. 25).
First use at least as early as 1941.

SN 351,046. Marja Brassiere Company, Inc., Greenville, Tex. Filed Feb. 10, 1970.

MARJA

For Misses' and Women's Brassieres, Girdles, Combination Brassiere-Slips, Combination Brassiere-Girdles, and Swim Suits (Int. Cl. 25).
First use on or about Nov. 20, 1931.

SN 351,676. Carber Enterprises Limited, New York, N.Y. Filed Feb. 18, 1970.

TRU-PACERS

For Men's and Ladies' Shoes (Int. Cl. 25).
First use Feb. 6, 1970.

SN 351,677. Celebrity Knitwear, Inc., Brooklyn, N.Y. Filed Feb. 18, 1970.

LOVE SPUN

For Children's and Infants' Knitwear, Such as Diaper Sets, Dresses, Suits, Hats, Mittens, Gloves, Jumpsuits, Playsuits, Legging Sets, and Slippers Made of Natural and/or Man Made Fibres, Such as Acrylic Yarn (Int. Cl. 25).
First use Sept. 5, 1969.

SN 352,896. Woolf Brothers, Inc., Kansas City, Mo. Filed Mar. 2, 1970.



For Young Men's and Young Women's Clothes—Namely, Suits, Vests, Trousers, Jackets, Coats, Dresses, Blouses, Skirts, Slacks, Shoes, Gloves, Hats, Scarfs, Neckwear, Belts, Suspenders, Hosiery, and Shirts (Int. Cl. 25).
First use Feb. 16, 1970.

SN 354,219. Carol Reed, d.b.a. Have a Happy Enterprises, Mamaroneck, N.Y. Filed Mar. 16, 1970.

"HAVE A HAPPY"

For Ponchos, Vests, Belts, Blouses, Ascots, Scarfs, Hats, and Swim Suits (Int. Cl. 25).
First use Nov. 23, 1969.

SN 354,671. The Ski Hut, Berkeley, Calif. Filed Mar. 19, 1970.

SKI HUT

For Parkas, Jackets, and Boots (Int. Cl. 25).
First use on or about Sept. 15, 1935.

SN 360,086. Key Industries, Inc., Fort Scott, Kans. Filed May 18, 1970.

MR. KEY

Owner of Reg. Nos. 542,701 and 819,933.
For Men's Slacks (Int. Cl. 25).
First use July 1, 1969.

SN 360,423. Russ Togs, Inc., d.b.a. R. and M. Kaufman, Aurora, Ill. Filed May 21, 1970.

vicky petite

Applicant disclaims any right in the word "Petite" apart from the mark as shown, without waiving any common law rights therein. Owner of Reg. No. 500,108.
For Dresses (Int. Cl. 25).
First use at least as early as Apr. 1, 1966.

SN 361,627. Tailored Baby of California, Van Nuys, Calif. Filed June 3, 1970.

TAILORED BABY

For Baby Diapers, Baby Bibs, Baby Vests, Baby Nightgowns, Baby Jumpers, and Baby Underwear (Int. Cl. 25).
First use Aug. 15, 1960.

SN 361,776. True Form Foundations, Inc., Darby, Pa. Filed June 4, 1970.

PRETTY LEGS

Owner of Reg. No. 864,584.
For Hosiery (Int. Cl. 25).
First use Apr. 17, 1970.

SN 362,219. Bobbi Ann of Boston, New York, N.Y. Filed June 10, 1970.

BOBBI ANN OF BOSTON

The words "of Boston" are disclaimed apart from the mark.
For Women's Outer Wear—Namely, Sweaters, Skirts, Tunics, Vests, Dresses, Scarves, and Hats (Int. Cl. 25).
First use Apr. 1, 1970.

SN 362,270. New Process Company, Warren, Pa. Filed June 10, 1970.

JOHN BLAIR

"John Blair" is a fanciful name and is not the name of any living individual. Owner of Reg. No. 790,047.
For Men's and Boys' Outer Shirts, Sweaters, Sport Jackets, Casual Jackets, Blazers, and Hats (Int. Cl. 25).
First use Feb. 24, 1964.

SN 362,292. V. F. Corporation, Reading, Pa. Filed June 10, 1970.

KNOW-BODIES

For Women's Lingerie and Loungewear—Namely, Nightgowns, Peignoirs, Pajamas, and Hosiery (Int. Cl. 25).
First use Apr. 27, 1970.

SN 362,293. V. F. Corporation, Reading, Pa. Filed June 10, 1970.

SKINNYDIPPER

For Foundation Garments—Namely, a One-Piece Brief (Body Shaper), Brassieres, Girdles, and Hosiery (Int. Cl. 25).
First use Apr. 24, 1970.

SN 362,945. Kenneth Jay Lane, Inc., New York, N.Y. Filed June 17, 1970.

KJL

Owner of Reg. No. 847,229.
For Shoes (Int. Cl. 25).
First use Sept. 3, 1969.

SN 363,021. Flexnit Company, Inc., New York, N.Y. Filed June 18, 1970.

PRETTY PUCKERS

For Foundation Garments (Int. Cl. 25).
First use Mar. 18, 1958.

SN 363,305. Infanta Knitting Mills, Rockledge, Pa. Filed June 22, 1970.



Owner of Reg. No. 780,399.
For Girls' Sweaters and Shirts (Int. Cl. 25).
First use on or about Nov. 15, 1963.

SN 363,454. Penobscot Shoe Company, Boston, Mass. Filed June 23, 1970.

SADDLE TRAMPS

For Shoes (Int. Cl. 25).
First use May 18, 1970.

SN 363,727. Atlas Underwear Corporation, Piqua, Ohio. Filed June 26, 1970.

SKI SKINS

Owner of Reg. No. 889,428.
For Ladies' and Children's Underwear (Int. Cl. 25).
First use May 21, 1968.

SN 364,225. De Luxe Girdlecraft Co., Inc., New York, N.Y. Filed July 2, 1970.

UNI-ELASTIC

For Girdles and Panties and Panty Girdles (Int. Cl. 25).
First use Apr. 17, 1970.

SN 364,594. Santo Tessaro, d.b.a. Calzaturificio di Santo Tessaro & Calzaturificio di Sante Tessaro, Caerano di San Marco, Treviso, Italy. Filed July 7, 1970.

SAN MARCO

Owner of U.S. Reg. No. 845,338.
For Boots and Shoes (Int. Cl. 25).
First use as early as the year 1960; in commerce as early as the year 1960.

SN 364,935. Mighty-Mac, Inc., Gloucester, Mass. Filed July 10, 1970.

WINTERIZER

For Scarves (Int. Cl. 25).
First use on or about Mar. 1, 1970.

SN 365,379. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed July 15, 1970.

RIVE DROITE

"Rive Droite" translated means "right bank." Owner of Reg. Nos. 843,746 and 868,709.
For Men's Neckties and Women's Scarves (Int. Cl. 25).
First use June 8, 1970.

SN 367,130. Flo Toronto's Service Station, Ltd., New York, N.Y. Filed Aug. 5, 1970.

FLO TORONTO

"Flo Toronto" is a fanciful name.
For Men's and Women's Apparel—Namely, Pants and Shirts (Int. Cl. 25).
First use May 1, 1970.

SN 367,545. Quabaug Rubber Company, North Brookfield, Mass. Filed Aug. 10, 1970.

TYGUM

For Shoe Soles and Heels (Int. Cl. 25).
First use May 28, 1970.

SN 370,205. International Playtex Corporation, New York, N.Y. Filed Sept. 9, 1970.

PERMAPETAL

For Swim Caps (Int. Cl. 25).
First use Aug. 14, 1970.

SN 371,147. Consolidated Foods Corporation, Chicago, Ill. Filed Sept. 21, 1970.

BRITLAND

Owner of Reg. No. 266,468.
For Leather and Fabric Gloves (Int. Cl. 25).
First use Jan. 1, 1923.

SN 371,424. Blue Bell, Inc., Greensboro, N.C. Filed Sept. 23, 1970.

SAM LUCCHESE

"Sam Lucchese" is the name of a living individual.
For Boots (Int. Cl. 25).
First use November 1967.

Class 40—Fancy Goods, Furnishings, and Notions

SN 288,456. Toyo Kako Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Jan. 9, 1968.

TATTOO

Owner of Japanese Reg. Nos. 713,584, dated July 16, 1966; and 739,989, dated Apr. 21, 1967.
For Color Rings for Buttons (Int. Cl. 26).

SN 331,671. H. Goodman & Sons, Inc., Kearny, N.J. Filed July 2, 1969.

DOODLES

For Ornamental Ties Primarily for the Hair (Int. Cl. 26).
First use Jan. 10, 1967.

SN 345,637. Jerrax Imports, Inc., New York, N.Y. Filed Dec. 8, 1969.

CURLICUTE

For Clip-On Hairpieces of Synthetic Material With Barrette (Int. Cl. 26).
First use Nov. 15, 1969.

SN 357,425. Schaeffer Lace Corporation, Reading, Pa. Filed Apr. 20, 1970.

SCHAEFFER

Owner of Reg. No. 781,062.
For Shoe Laces (Int. Cl. 26).
First use 1918.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

SN 334,679. Ado-Gardinenwerke Hubert Wulf, Aschendorf/Ems, Germany. Filed Aug. 7, 1969.

ADO GOLD-KANTE

Priority claimed under Sec. 44(d) on German application filed Feb. 8, 1969; Reg. No. 855,840, dated Mar. 17, 1969. The meaning of the expression "Gold-Kante" is "gold-edge."
For Curtains and Curtain Bands (Int. Cl. 24).

SN 342,046. Hercules Incorporated, Wilmington, Del. Filed Oct. 29, 1969.

DELNET

For Plastic Netting (Int. Cl. 24).
First use Aug. 21, 1969.

SN 344,152. T.G. & Y. Stores Company, Oklahoma City, Okla. Filed Nov. 20, 1969.

GOLDEN T

For Pot Holders (Int. Cl. 21).
First use Jan. 10, 1968.

SN 352,963. Johnson & Johnson, d.b.a. Chicopee Manufacturing Company, New Brunswick, N.J. Filed Mar. 3, 1970.

RETICULON

For Plastic Netting (Int. Cl. 24).
First use Jan. 19, 1970.

SN 358,499. Deering Milliken, Inc., New York, N.Y. Filed May 1, 1970.

GENTESSA

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers and Combinations Thereof (Int. Cl. 24).
First use Apr. 11, 1970.

SN 370,882. Deering Milliken, Inc., New York, N.Y. Filed Sept. 17, 1970.

THIRD AVENUE

For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use July 9, 1970.

SN 370,886. Deering Milliken, Inc., New York, N.Y. Filed Sept. 17, 1970.

SPECTRA

For Textile Rugs, Carpets, and Carpeting (Int. Cl. 27).
First use July 9, 1970.

SN 371,153. Deering Milliken, Inc., New York, N.Y. Filed Sept. 21, 1970.

DISPATCH

For Textile Fabrics Made of Wool, Cotton and Synthetic Fibers and Combinations Thereof (Int. Cl. 24).
First use Sept. 11, 1970.

Class 43—Thread and Yarn

SN 331,376. Heirloom Needlework Guild, Inc., New York, N.Y. Filed June 30, 1969.

HI-STRAW

For Strawlike Rayon Yarn (Int. Cl. 23).
First use May 14, 1969.

SN 338,451. Universal Textured Yarns, Inc., Mebane, N.C. Filed Sept. 19, 1969.

TEXTURNIA

For Polyester Yarn (Int. Cl. 23).
First use July 11, 1969.

SN 362,819. English Sewing Limited, Manchester, England. Filed June 16, 1970.

TERRAL

Owner of British Reg. No. 867,059, dated July 15, 1964.
For Sewing Threads (Int. Cl. 23).

SN 362,820. English Sewing Limited, Manchester, England. Filed June 16, 1970.

TRYLKO

Owner of British Reg. No. 708,854, dated July 11, 1952.
For Sewing Threads (Int. Cl. 23).

SN 362,821. English Sewing Limited, Manchester, England Filed June 16, 1970.

SYLKO

Owner of British Reg. Nos. 602,125, dated Nov. 5, 1938; and 736,470, dated Nov. 23, 1954.
For Sewing Threads (Int. Cl. 23).

SN 362,822. English Sewing Limited, Manchester, England. Filed June 16, 1970.

POLYFIL

Owner of British Reg. No. 760,283, dated Dec. 6, 1956.
For Sewing Threads (Int. Cl. 23).

Class 44—Dental, Medical, and Surgical Appliances

SN 313,530. Vacu-Tek, Inc., Medford, Oreg. Filed Dec. 3, 1968.

VACUSTATIC

For Dental Apparatus Designed To Effect Impressions for Restoration Purposes (Int. Cl. 10).
First use Aug. 1, 1965.

Class 46 — Foods and Ingredients of Foods

SN 304,900. Daily Donut Corporation, Cincinnati, Ohio. Filed Aug. 12, 1968.

Daily

For Doughnuts (Int. Cl. 30).
First use on or about Nov. 24, 1961.

SN 328,697. Grobeinkauf Deutscher Lebensmittel-Filialbetriebe GmbH (Gedelfi), Cologne, Germany. Filed May 29, 1969.

FILIA

The English equivalent of the Latin Word "Filia" is "daughter." Owner of German Reg. No. 807,596, dated Nov. 25, 1963.
For Food Products—Namely, Canned Meat, Canned Sausage, Canned Fish, Extract of Meat, Canned Fruits and Vegetables, Pickled Fruits and Vegetables, Gelatines of Meat, Fish, Fruit and Vegetables, Jams, Fresh Eggs, Canned Milk, Butter, Cheese, Margarine, Edible Oil, Cooking Fat, Coffee, Surrogate Coffee, Tea, Sugar, Grape Sugar, Table Syrup, Honey, Meal, Potato Flour, Rice, Breakfast Cereals, Spices, Meat, Fish and Vegetable Sauces and Sauces in the Nature of Toppings for Desserts, Vinegar, Mustard, and Table Salt (Int. Cls. 29 and 30).

SN 332,334. Filigree Foods, Inc., Totowa, N.J. Filed July 11, 1969.

FILIGREE

Owner of Reg. No. 659,898.
For Canned Tomato Juice, Fruit Juice Drinks, Ripe Olives, Evaporated Milk, Pork and Beans, and Bottled Catsup, Spanish Olives, Vinegar, Mustard, and Nondairy Creaming Powder (Int. Cls. 29, 30, 31, and 32).
First use 1942, on catsup, Spanish olives, tomato juice and vinegar.

SN 339,581. Mead Johnson & Company, Evansville, Ind. Filed Oct. 2, 1969.

SKINNY BITS

Owner of Reg. No. 867,662.
For Snack Chips of a Corn Meal Nature (Int. Cl. 29).
First use Sept. 5, 1969.

SN 340,806. Mead Johnson & Company, Evansville, Ind. Filed Oct. 15, 1969.

SKINNY DOWN

Owner of Reg. No. 867,662.
For Snack Chips of a Corn Meal Nature (Int. Cl. 29).
First use Sept. 18, 1969.

SN 341,045. John C. Maddox, New York, N.Y. Filed Oct. 17, 1969.

CHUMSTICK

For Food Product Having the Characteristics of Candy, Derived Principally From Protein Ingredients and Molded to a Stick or Handle of Some Form (Int. Cl. 30).
First use Apr. 1, 1969.

SN 341,661. Holmes and Denning Distributors, Inc., Hamtramck, Mich. Filed Oct. 24, 1969.

HOLLI-DIP

For Ice Cream (Int. Cl. 30).
First use July 10, 1969.

SN 341,683. National Tea Co., Chicago, Ill. Filed Oct. 24, 1969.

SO FRESH

Owner of Reg. Nos. 605,231, 827,929, and others.
For Crackers and Marshmallows (Int. Cl. 30).
First use Feb. 17, 1969.

SN 341,701. Schwartz Meat Company, Norman, Okla. Filed Oct. 24, 1969.



The mark consists of the letters "SMC" and design.
For Frozen Meats (Int. Cl. 29).
First use Aug. 4, 1969.

SN 342,318. Sanitary Sausage Co., Inc., d.b.a. Sanitary Sausage Co., Minneapolis, Minn. Filed Oct. 31, 1969.



The drawing is lined for the color red, but no claim is made as to the color so named.
For Prepared Meat Products (Int. Cl. 29).
First use Nov. 20, 1959.

SN 345,146. Envirofood, Inc., Orange, Calif. Filed Dec. 3, 1969.

UNCLE JOHN'S

Owner of Reg. Nos. 761,441, 761,486, and others.
For Table Syrup, Marmalade, Jelly, Candy, Preserves, Jams, Buttermilk, Pancake Batter, Pickles, Meatless Sauces, Canned Spiced Peaches, Canned Orange Slices, Fruit Syrup for Food Purposes, Pancake Syrup, and Relishes (Int. Cls. 29 and 30).
First use Aug. 26, 1956.

SN 346,004. Victor Products Corp., Richmond ,Va. Filed Dec. 11, 1969.

Victor's Dipsy Dog MIX

The word "Mix" is disclaimed apart from the mark as shown.
For Dry Flour Mixture for Coating Hot Dogs on a Stick (Int. Cl. 30).
First use May 28, 1963.

SN 346,091. Langis Foods Limited, Burnaby, British Columbia, Canada. Filed Dec. 12, 1969.

MUSHROOM-IN-A-MUG

Applicant disclaims any exclusive use of the word "Mushroom" apart from the mark as shown. Owner of U.S. Reg. Nos. 750,955, 768,453, and 771,182.
For Dehydrated Base for Soups and Hot Food Drinks (Int. Cl. 29).
First use Dec. 2, 1963; in commerce as early as Oct. 10, 1969.

SN 346,827. Alfie's Fish & Chips, Inc., Houston, Tex. Filed Dec. 22, 1969.

Hannah's

Owner of Reg. No. 889,184.
For Pies (Int. Cl. 30).
First use at least as early as Mar. 21, 1969.

SN 347,113. National Biscuit Company, New York, N.Y. Filed Dec. 24, 1969.

LEGENDARY PASTRIES

Applicant disclaims the word "Pastries" apart from the mark as shown.
For Mixes for Making Pastries (Int. Cl. 30).
First use Nov. 10, 1969.

SN 347,916. Fountain Industries, Inc., Albert Lea, Minn. Filed Jan. 7, 1970.

HEART O FLAVOR

For Coffee Concentrate Sold in Special Dispenser Packages (Int. Cl. 30).
First use Dec. 17, 1969.

SN 348,772. Fish House, Inc., San Pedro, Calif. Filed Jan. 16, 1970.

Fish House International

The words "Fish House" are disclaimed apart from the mark as shown.
For Packaged Seafood (Int. Cl. 29).
First use July 26, 1969.

SN 349,819. The Brock Candy Company, Chattanooga, Tenn. Filed Jan. 28, 1970.

POWER-PLUS

For High Protein Energy Food Manufactured as a Confectionery Product in Bar Form (Int. Cl. 30).
First use Oct. 17, 1969.

SN 354,432. The Thomas Holmes Corporation, Philadelphia, Pa. Filed Mar. 18, 1970.

YO·ZYME

For Dietary Food Supplement Containing Both Yogurt and Brewer's Yeast (Int. Cl. 5).
First use June 15, 1950.

SN 358,778. National Chicle Products Co., Palo Alto, Calif. Filed May 4, 1970.

P. SZASZ

For Chewing Gum (Int. Cl. 30).
First use June 20, 1969.

SN 372,073. General Mills, Inc., Minneapolis, Minn. Filed Sept. 30, 1970.

LUCKY BERRYS

Owner of Reg. Nos. 759,322 and 759,323.
For Ready To Eat Breakfast Cereal (Int. Cl. 30).
First use on or about July 31, 1970.

SN 372,074. General Mills, Inc., Minneapolis, Minn. Filed Sept. 30, 1970.

LUCKY'S BERRYS

Owner of Reg. Nos. 759,322 and 759,323.
For Ready To Eat Breakfast Cereal (Int. Cl. 30).
First use on or about July 31, 1970.

SN 372,080. General Mills, Inc., Minneapolis, Minn. Filed Sept. 30, 1970.

LUCKY'S SHAMROCKS

Owner of Reg. Nos. 759,322 and 759,323.
For Ready To Eat Breakfast Cereal (Int. Cl. 30).
First use on or about July 17, 1970.

Class 48 — Malt Beverages and Liquors

SN 342,883. N.V. Bierbrouwerij "De Drie Hoefijzers," Breda, Netherlands. Filed Nov. 6, 1969.



The drawing is lined for the colors gold and green but no claim is made to color. Applicant makes no claim to the exclusive use of the words "Brand," "Pilsner Beer," "Produce of Holland," and "Brewed and Bottled in Holland Specially for the Tropics," apart from the mark as a whole.
For Beer (Int. Cl. 32).
First use October 1948; in commerce December 1963.

Class 50 — Merchandise Not Otherwise Classified

SN 313,701. Hauser Associates, Inc., Atlanta, Ga. Filed Dec. 5, 1968.

OMNISIGN

For Various Display Signs of Standard Sizes for Advertising Purposes (Int. Cl. 20).
First use Aug. 12, 1968.

SN 313,702. Hauser Associates, Inc., Atlanta, Ga. Filed Dec. 5, 1968.

UNISIGN

For Advertising Signs (Int. Cl. 9).
First use Aug. 12, 1968.

SN 327,887. Alfred M. George, Jr., d.b.a. AMH Industries, Santa Ana, Calif. Filed May 21, 1969.

AUTO MARINE HOME AMH

The words "Auto," "Marine," and "Home" are disclaimed apart from the mark as shown.
For Upholstery Supplies—Namely, Vinyl Plastic Repair Kits, Including Paint Brush, Spatula, Paint, Cleaner, and Scissors (Int. Cl. 20).
First use January 1967.

SN 342,310. Elaine N. Place, Lincoln City, Oreg. Filed Oct. 31, 1969.

PEBBLE PEOPLE

For Art Work Made of Rock, Driftwood, Shells, and Other Natural Building Materials Caricaturising Life Situations (Int. Cl. 20).
First use Aug. 10, 1969.

SN 345,825. Huron Products Company, Bellevue, Ohio. Filed Dec. 10, 1969.

DOGGIE DOOLEY

For Organic Waste Reduction and Sanitary Systems Comprising of a Miniseptic Tank, Small Shovel and Enzymes for Receipt and Treatment of Organic Waste by Enzyme and Bacterial Action (Int. Cl. 6).
First use July 1, 1968.

SN 351,506. Frank P. Mitten, d.b.a. Mitten's Display Letters, Redlands, Calif. Filed Feb. 16, 1970.

SANBAK

Owner of Reg. No. 521,367.
For Font Assortments of Letters and Figures and Illustrating Accessories for Use in Making Up Changeable and Permanent Signs (Int. Cl. 16).
First use July 18, 1934.

SN 352,023. The Holes-Webway Co., St. Cloud, Minn. Filed Feb. 24, 1970.

MAGIC BOARD

Applicant disclaims the term "Board" apart from the mark as a whole.
For Bulletin Boards (Int. Cl. 20).
First use Jan. 5, 1970.

SN 352,217. Precision Dynamics Corporation, Burbank, Calif. Filed Feb. 24, 1970.

SPEEDI-BAND

The representation of the identification bracelet is disclaimed apart from the mark as shown.
For Hospital Identification Bracelets (Int. Cl. 20).
First use Feb. 5, 1970.

SN 352,919. A. N. Safety Key Tag Co., Poughkeepsie, N.Y. Filed Mar. 3, 1970.

BANKTAG

For Tags To Be Attached to Key Rings or Key Cases (Int. Cl. 16).
First use Feb. 17, 1970.

SN 361,590. Metaframe Corporation, Maywood, N.J. Filed June 3, 1970.

AQUASCAPERS

For Plastic Aquarium Plants and Aquarium Ornaments (Int. Cl. 20).
First use Feb. 26, 1970.

SN 362,273. Phillips Manufacturing Co., Inc., Newark, N.J. Filed June 10, 1970.

POWERLINE

For Badges (Int. Cl. 20).
First use Apr. 2, 1970.

Class 51 — Cosmetics and Toilet Preparations

SN 312,275. Block Drug Company, Inc. (New Jersey corporation), Jersey City, N.J., by merger Block Drug Company, Inc. (Delaware corporation), Jersey City, N.J. Filed Nov. 15, 1968.

BODY FACIAL

For Cosmetic Preparation—Namely, Skin Refresher, for Use on the Limbs and Torso (Int. Cl. 3).
First use Oct. 29, 1968.

SN 331,242. Professional Specialties, Inc., Houston, Tex. Filed June 27, 1969.



For Cosmetics—Namely, Liquid Base; Rouge; Lipstick; Eyeshadow; Shading Pencil; Eyebrow Pencil and Refill; Face Powder; Mascara; Blusher; Moisturizing Lotion, Face Skin Softener, Bath Oil; Cologne and Perfume; and Cosmetic Skin Cleanser (Int. Cl. 3).
First use Oct. 31, 1968.

SN 343,173. Shiseido Co., Ltd., Chuo-ku, Tokyo, Japan. Filed Nov. 10, 1969.

MG5 HAIR SOLID

Applicant disclaims the words "Hair Solid" apart from the mark as shown.
For Hair Creams or Pomades (Int. Cl. 3).
First use January 1964; in commerce May 1967.

Class 52 — Detergents and Soaps

SN 327,033. Mantek Corporation, Dallas, Tex. Filed May 12, 1969.

SNR-48

For Silver Nitrate Stain Remover and Cleaner for Use on Hard Surfaces and Fabrics (Int. Cl. 3).
First use Nov. 21, 1968.

SN 343,455. Sudbury Laboratory Inc., Sudbury, Mass. Filed Nov. 13, 1969.

Automatic

For Bilge Cleaner for Boats (Int. Cl. 3).
First use 1948.

SN 346,050. The Betco Corporation, Toledo, Ohio. Filed Dec. 12, 1969.

Betsy

For Toilet Bowl Cleanser (Int. Cl. 3).
First use Aug. 12, 1969.

SN 354,226. Star Chemical Co., Denver, Colo. Filed Mar. 16, 1970.

BLUE Star

The drawing is lined for the color blue.
For Multipurpose Household Detergent (Int. Cl. 3).
First use on or about Dec. 30, 1969.

SN 354,227. Star Chemical Co., Denver, Colo. Filed Mar. 16, 1970.

RED Star

The drawing is lined for the color red.
For Multipurpose Industrial Detergent (Int. Cl. 1).
First use on or about Dec. 30, 1969.

SERVICE MARKS

Class 100 — Miscellaneous

SN 315,744. Kemp Products Limited, London, Ontario, Canada. Filed Jan. 3, 1969.

KEMPRO

Owner of Canadian Reg. No. 156,268, dated Apr. 5, 1968.
For Service To Provide Technical Consultation and Guidance With Respect to Custom Moldings and Production of Plastic Moldings of All Kinds According to Customer Specifications (Int. Cl. 42).
First use January 1952; in commerce Feb. 19, 1964.

SN 321,583. Mountain Heights, Inc., d.b.a. Mountainside Inn, Mountainside, N.J. Filed Apr. 10, 1969.

MOUNTAINSIDE INN

Applicant disclaims the word "Inn" apart from the mark as shown. The mark consists of the letters "MI."
For Restaurant Services (Int. Cl. 42).
First use Dec. 1, 1967.

SN 329,333. Bratskellars of America, Inc., Denver, Colo. Filed June 6, 1969.

brätskellar

For Restaurant and Liquor Bar Services (Int. Cl. 42).
First use on or about Feb. 1, 1964.

SN 331,864. Chock Full O'Nuts Corporation, New York, N.Y. Filed July 7, 1969.

diet freeze

Applicant disclaims the word "Diet" apart from the mark as shown.
For Confectionery Store Counter Services (Int. Cl. 42).
First use Jan. 14, 1969.

SN 334,989. Comserv, Philadelphia, Pa. Filed Aug. 11, 1969.

COLT

For Computer Time Sharing Services—Namely, Providing On-Line Transaction Data Processing (Int. Cl. 42).
First use during June 1969.

SN 349,409. Wendy's Old Fashioned Foods, Inc., Columbus, Ohio. Filed Jan. 22, 1970.

Wendy's

For Restaurant Services and Carry-Out Restaurant Services (Int. Cl. 42).
First use Nov. 15, 1969.

SN 363,491. Pepsico, Inc., New York, N.Y. Filed June 24, 1970.

The drawing is lined for the color blue.
For the Service of Leasing General Equipment, Electronic Laboratory Equipment, Machine Tools, Office Business Machines, Data Processing and Computer Equipment, Forklift Trucks and Medical Testing Equipment (Int. Cl. 42).
First use June 30, 1964.

Class 101 — Advertising and Business

SN 290,659. Sharin' o' the Green Incorporated, Tulsa, Okla. Filed Feb. 8, 1968.

The mark comprises a grotesque figure seated on a "pot of gold," tossing money into the air.
For Promoting the Goods and Services of Others by Enabling Customers To Redeem Premium Coupons at Retail Establishments (Int. Cl. 35).
First use about May 15, 1967.

SN 293,396. Micah Corporation, Ann Arbor, Mich. Filed Mar. 15, 1968.

MICAH

For Computerized Cost Analysis and Allocation Services for Hospitals (Int. Cl. 35).
First use on or about Sept. 30, 1967.

SN 303,833. Spot O Gold Corporation, Philadelphia, Pa. Filed July 29, 1968.

SUNNY TREASURE

For Promoting the Sale of Goods and/or Services of Others Through the Distribution of Printed Materials and Advertising Design for Promotional Contests (Int. Cl. 35).
First use July 24, 1968.

SN 318,415. Corporate Search, Greenville, S.C., assignee of Corporate Search, Greenville, S.C. Filed Feb. 5, 1969.

Corporate Search

For Employment Agency Services (Int. Cl. 35).
First use May 19, 1968.

SN 326,726. Woodlot Corporation, Cohasset, Mass. Filed May 8, 1969.

For Housekeeping and Domestic Goods Store Services—Namely, the Retail Sales of Sheets, Towels, Draperies, Soap, China, Scales, Jewelry Boxes, and the Like (Int. Cl. 35).
First use November 1966.

SN 326,741. Automated Data Services, Inc., Cincinnati, Ohio. Filed May 8, 1969.

ADS DATA SERVICE

Without waiver of any common law rights, applicant makes no claim to exclusive rights to the use of any of the words "Automated," "Data" and "Service" apart from the mark as shown. The drawing is lined for blue but color is not claimed as a feature of the mark.
For Processing Data for Business and the Professions Primarily for Commercial Purposes Including Billing, Inventory Control, Market Surveys, and Similar Analyses of Information (Int. Cl. 35).
First use June 1, 1968.

SN 327,380. Halpern's Fabrics, Inc., New Orleans, La. Filed May 15, 1969.

THE STORY FOR THE LADY INGENIOUS

For Retail Department Store Services (Int. Cl. 35).
First use Sept. 1, 1967.

SN 327,962. Shur-Valu Stamps, Inc., Little Rock, Ark. Filed May 21, 1969.

Shur-Valu

For Promoting the Sale of Goods of Others by Means of the Issuance and Redemption of Trading Stamps (Int. Cl. 35).
First use May 5, 1969.

SN 332,021. Isca, Inc., d.b.a. Insurance Service Service Centers of America, Minneapolis, Minn. Filed July 8, 1969.



That portion of the mark comprising the map of the United States and the term "Insurance Service Centers of America" are disclaimed apart from the mark as shown.
For Rendering Technical Assistance in Connection With the Establishment and/or Operation of a Chain of Automobile Damage Appraisal and Repair Centers (Int. Cl. 35).
First use February 1969.

SN 332,205. Van Dusen Aircraft Supplies, Incorporated, Minneapolis, Minn. Filed July 10, 1969.

Van Dusen

For Distributorship Services in the Field of Aircraft Supplies (Int. Cl. 35).
First use on or about Jan. 1, 1941.

SN 333,273. Huddleston, Ballew and Co., Memphis, Tenn. Filed July 23, 1969.

THE PEOPLE-PROBLEM PEOPLE

For Consulting and Advising on Management of Personnel (Int. Cl. 35).
First use on or about Apr. 4, 1969.

SN 338,606. Premium Corporation of America, Inc., Minneapolis, Minn. Filed Sept. 22, 1969.

UNI-POINTS

For Service Consisting of Promoting the Sale of the Goods and Services of Others Through the Issuance and Redemption of Trading Stamps, Coupons and Devices (Int. Cl. 35).
First use Aug. 18, 1969.

SN 338,935. Show World, Inc., New York, N.Y. Filed Sept. 25, 1969.

COMPSO

For Arranging Computer Software, Peripheral and Computer Equipment Trade Shows (Int. Cl. 35).
First use Mar. 25, 1969.

SN 345,695. Travel Money, Inc., Westport, Conn. Filed Dec. 8, 1969.

TRAVEL MONEY

For Promoting the Sale of Goods and/or Services of Others by the Issuance and Redemption of Coupons (Int. Cl. 35).
First use at least as early as June 30, 1969.

SN 351,312. Dun & Bradstreet, Inc., New York, N.Y. Filed Feb. 13, 1970.

AMI

For Providing Marketing Information Relating to Wearing Apparel and Accessories (Int. Cl. 35).
First use in or before September 1969.

SN 352,220. Realy State, Inc., South Miami, Fla. Filed Feb. 24, 1970.

MR. REALY STATE

Owner of Reg. No. 780,460.
For Advertising Services Rendered to Real Estate Brokers (Int. Cl. 35).
First use May 9, 1966.

SN 352,223. Robert-Carole, Inc., Elkins Park, Pa. Filed Feb. 24, 1970.

PRINCE OF WHEELS

For Advertising Services in Promoting the Leasing, Sale, and Servicing of New and Used Automobiles by Others (Int. Cl. 35).
First use Dec. 15, 1969.

Class 102 — Insurance and Financial

SN 323,392. United Fidelity Life Insurance Company, Dallas, Tex. Filed Apr. 1, 1969.



Applicant disclaims the term "Growth Opportunity" apart from the mark as shown.
For Underwriting Life Insurance (Special Policies for College Students) (Int. Cl. 36).
First use Feb. 15, 1969.

SN 323,829. The Lumbermens Mutual Insurance Company, Mansfield, Ohio. Filed Apr. 7, 1969.



For Underwriting Homeowners', Automobile, and Personal and Business Liability Insurance (Int. Cl. 36).
First use Nov. 11, 1968.

SN 323,915. Joe Kelley, Macon, Ga. Filed Apr. 8, 1969.

PAY-CON

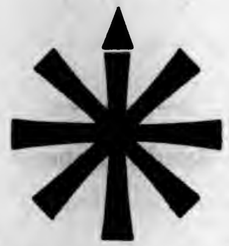
For Insurance Payment Collection Service (Int. Cl. 36).
First use Dec. 19, 1968.

SN 326,010. Uslife Corporation, New York, N.Y., by change of name from Uslife Holding Corp., New York, N.Y. Filed Apr. 30, 1969.



For Financial Planning Service Providing for the Joint Purchase of Both Life Insurance and Mutual Fund Shares With a Single Payment Feature (Int. Cl. 36).
First use Dec. 5, 1968.

SN 329,329. Beneficial National Life Insurance Company, New York, N.Y. Filed June 6, 1969.



For Underwriting of Individual and Group Life Insurance, Annuity, and Accident and Health Policies (Int. Cl. 36).
First use Feb. 5, 1969.

SN 329,371. Marsh & McLennan, Incorporated, Chicago, Ill. Filed June 6, 1969.

MARSH & MCLENNAN

Owner of Reg. No. 761,089.
For Insurance Brokerage Services (Int. Cl. 36).
First use Feb. 1, 1907.

SN 347,212. Charlesbank Trust Company, Cambridge, Mass. Filed Dec. 29, 1969.



For Banking Service—Namely, Operation of a Checking Account Service (Int. Cl. 36).
First use Oct. 27, 1969.

SN 347,213. Charlesbank Trust Company, Cambridge, Mass. Filed Dec. 29, 1969.

ZODIAC

For Banking Service—Namely, Operation of a Checking Account Service (Int. Cl. 36).
First use Oct. 27, 1969.

SN 349,562. Union Service Corporation, New York, N.Y. Filed Jan. 26, 1970.



For Mutual Fund Investment Services (Int. Cl. 36).
First use Dec. 1, 1967.

SN 353,106. Union Service Corporation, New York, N.Y. Filed Mar. 4, 1970.



For Mutual Fund Investment Services (Int. Cl. 36).
First use Oct. 28, 1969.

SN 362,193. First Israel Bank and Trust Company, New York, N.Y. Filed June 10, 1970.



For Banking Services in the Nature of Issuance of Bonds and the Like Evidences of Indebtedness (Int. Cl. 36).
First use May 8, 1970.

Class 103 — Construction and Repair

SN 300,985. Swedish Car Craft Inc., Niles, Ill. Filed June 20, 1968.



No registration rights are claimed in the words "Swedish Car Craft, Inc.," when used apart from the mark as shown.
For Repairing, Reconditioning, Maintaining, Modifying, Tuning, and Testing Motor Vehicles (Int. Cl. 37).
First use Feb. 1, 1967.

SN 329,144. Waste Management, Inc., Hinsdale, Ill. Filed June 4, 1969.

RAIL PAK

For Trash Collection Services (Int. Cl. 37).
First use on or about May 14, 1969.

SN 334,829. Esplanade, Santa Monica, Calif. Filed Aug. 8, 1969.

ESPLANADE

For Services in Connection With Counseling Regarding Complete Interior and Exterior Decorating or the Like, and Selection of Material Therefor (Int. Cl. 37).
First use as early as June 23, 1969.

SN 344,886. John J. Reynolds, d.b.a. Johnny Clean, Spokane, Wash. Filed Nov. 28, 1969.

Johnny Clean

Applicant disclaims the word "Clean" apart from the mark as shown.
For Cleaning of Homes and Commercial Buildings (Int. Cl. 37).
First use on or about Apr. 1, 1968.

SN 370,672. Happy Bear Corporation, d.b.a. Happy Bear Cleans It Corporation, Valdosta, Ga. Filed Sept. 15, 1970.



For Cleaning Services, Specifically Chemical and Mechanical Cleaning of Stove Vents, and of Exterior Surfaces of Buildings, Monuments, Pavements, Swimming Pools, Boats, Airplanes, Trucks, Automobiles, and Busses (Int. Cl. 37).
First use Feb. 12, 1970.

Class 105 — Transportation and Storage

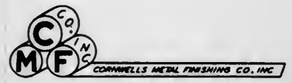
SN 333,842. New England Travel Corporation, Greenwich, Conn. Filed July 29, 1969.

EUROJOB

For Conducting Combination Work/Travel Tours (Int. Cl. 39).
First use Dec. 31, 1968.

Class 106 — Material Treatment

SN 335,020. Cornwells Metal Finishing Co., Inc., Cornwell Heights, Pa. Filed Aug. 11, 1969.



For Pre-Coating Metals (Int. Cl. 40).
First use Nov. 29, 1968.

SN 346,236. GAF Corporation, New York, N.Y. Filed Dec. 15, 1969.



For Processing of Photographic Materials (Int. Cl. 40).
First use 1925.

Class 107 — Education and Entertainment

SN 306,122. Control Data Corporation, Minneapolis, Minn. Filed Aug. 28, 1968.

CDI

For Education and Training Services in Connection With Computers and Data Processing Systems (Int. Cl. 41).
First use June 20, 1965.

SN 328,093. Creative Concepts, Inc., Washington, D.C. Filed May 22, 1969.

C.A.M.P.U.S.

For Advice and Consultation to Students in the Selection of a College To Attend Through the Use of Computers (Int. Cl. 41).
First use Mar. 4, 1969.

SN 344,871. Manhattan Industries, Inc., New York, N.Y. Filed Nov. 28, 1969.

AV-PI

For Management, Office and Plant Personnel Training Services (Int. Cl. 41).
First use Sept. 30, 1969.

SN 368,964. Bankers Management and Services, Inc., Dallas, Tex. Filed Aug. 25, 1970.

CHOCTAW

For Entertainment Services—Namely, Musical Entertainment Services Rendered by a Vocal and Instrumental Group (Int. Cl. 41).
First use Apr. 3, 1969.

CERTIFICATION MARKS

Class A — Goods

SN 268,264. Instituto Portugues de Conservas de Peixe, Lisbon, Portugal. Filed Mar. 31, 1967.



Priority claimed under Sec. 44(d) on Portuguese application filed Feb. 25, 1967; Reg. No. 141,025, dated Sept. 7, 1967.
The mark certifies both quality and geographical origin.
For Canned and Bottled Preserved Fish.

SN 339,461. Southern Pine Inspection Bureau, Pensacola, Fla. Filed Oct. 1, 1969.

SPIB

The mark certifies that the quality and grade of southern pine lumber according to standards of grade and quality established by applicant and approved by the board of review of the American Lumber Standards Committee.
For Lumber.
First use June 3, 1940.

SN 354,224. Specialty Equipment Manufacturers Association, San Gabriel, Calif. Filed Mar. 16, 1970.

MEETS SEMA SPECS

The mark certifies that the goods meet the specifications and safety standards set up by applicant.
For Automotive Parts and Equipment.
First use December 1965.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1 — Raw or Partly Prepared Materials

906,049. BRUSHLON. Minnesota Mining and Manufacturing Company. SN 321,125. Pub. 11–3–70. Filed 3–10–69.

906,050. 3M. Minnesota Mining and Manufacturing Company. SN 321,126. Pub. 11–3–70. Filed 3–10–69.

906,051. GREAT LAKES MINK ASSOCIATION. Great Lakes Mink Association. SN 328,424. Pub. 11–3–70. Filed 5–27–69.

906,052. FEPON. Chapman Industries Inc. SN 328,815. Pub. 11–3–70. Filed 6–2–69.

906,053. TRANSOLUME. Solar Control Products Corp. SN 330,304. Pub. 11–3–70. Filed 6–17–69.

906,054. MASSAGED MASTERPIECE. The Lackawanna Leather Co. SN 335,763. Pub. 11–3–70. Filed 8–20–69.

906,055. GRILL KING. Husky Briquetting, Inc. SN 341,467. Pub. 11–3–70. Filed 10–20–69.

906,056. MR TOM. Excel-Mineral Company, Inc., d.b.a. Excel-Mineral Co. SN 353,253. Pub. 11–3–70. Filed 3–6–70.

906,057. DEKALB. DeKalb AgResearch, Inc. SN 357,274. Pub. 11–3–70. Filed 4–20–70.

Class 2 — Receptacles

906,058. POLARIS AND DESIGN. Textron Inc. MULTIPLE CLASS (Classes 2, 3, 19, 22, 23, and 39). SN 347,853. Pub. 11–3–70. Filed 1–7–70.

906,059. CLEERPEEL. Tower Products, Inc. SN 363,109. Pub. 11–3–70. Filed 6–18–70.

906,060. HOT WHEELS. Mattel, Inc. SN 366,456. Pub. 11–3–70. Filed 7–28–70.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

906,058. (See Class 2 for this trademark.)

906,061. THE COOKMAN COLLECTOR AND DESIGN. Deborah L. Cookman. SN 322,973. Pub. 11–3–70. Filed 3–27–69.

906,062. BY BERCY. Bercy Industries, Inc. MULTIPLE CLASS (Classes 3 and 32). SN 330,871. Pub. 11–3–70. Filed 6–25–69.

906,063. ADORNABLES. Sirco International Corp. SN 339,601. Pub. 11–3–70. Filed 10–2–69.

906,064. GTO. GT Corp. MULTIPLE CLASS (Classes 3 and 22). SN 339,717. Pub. 10–20–70. Filed 10–3–69.

906,065. NAKED LEATHER. H. Margolin & Co., Inc. SN 340,027. Pub. 11–3–70. Filed 10–7–69.

906,066. THE EVERYTHING BAG. Sirco International Corporation. SN 341,856. Pub. 11–3–70. Filed 10–27–69.

906,067. TIGHT-WAD. Sirco International Corp. SN 347,122. Pub. 11–3–70. Filed 12–24–69.

906,068. BACK BREAKER. Helen Hilton Bryant. SN 353,986. Pub. 11–3–70. Filed 3–13–70.

Class 4 — Abrasives and Polishing Materials

906,069. PATHWAY. Pathway Products Corporation. MULTIPLE CLASS (Classes 4 and 52). SN 328,497. Pub. 11–3–70. Filed 5–28–69.

906,070. NOLAP. Clevepak Corporation. SN 339,553. Pub. 11–3–70. Filed 10–2–69.

906,071. ZAT DESIGN. Joseph A. Hallihan, d.b.a. Zat Products Co. SN 355,647. Pub. 11–3–70. Filed 4–1–70.

906,072. SEVER-ALL. American Chain and Cable Company, Inc. SN 359,190. Pub. 11–3–70. Filed 5–8–70.

Class 5 — Adhesives

906,073. ROYAL. Uniroyal, Inc. SN 347,844. Pub. 11–3–70. Filed 1–6–70.

Class 6 — Chemicals and Chemical Compositions

906,074. ELF AND DESIGN. Elf Union, Societe Anonyme. MULTIPLE CLASS (Classes 6, 10, and 15). SN 292,148. Pub. 11–3–70. Filed 2–28–68.

906,075. NOR-AM. Nor-Am Agricultural Products, Inc., assignee of Morton International, Inc. SN 324,735. Pub. 11–3–70. Filed 4–16–69.

906,076. MESORANIL. Ciba Limited. SN 326,351. Pub. 11–3–70. Filed 5–5–69.

906,077. HIMIC. Hitachi Chemical Company Ltd. SN 327,492. Pub. 11–3–70. Filed 5–16–69.

906,078. SE–11. Dresser Industries, Inc. SN 327,751. Pub. 11–3–70. Filed 5–20–69.

906,079. FAZETHIN. Dresser Industries, Inc. SN 327,870. Pub. 11–3–70. Filed 5–21–69.

906,080. VERTHIN. Dresser Industries, Inc. SN 327,871. Pub. 11–3–70. Filed 5–21–69.

906,081. OLEINATE. Pacific Vegetable Oil Corporation. MULTIPLE CLASS (Classes 6 and 46). SN 329,505. Pub. 11–3–70. Filed 6–9–69.

906,082. OXYCHEM. Occidental Petroleum Corporation, d.b.a. Occidental Chemical Company. SN 336,840. Pub. 11–3–70. Filed 9–2–69.

906,083. TRU-KROME. J. M. Eltzroth & Associates, Inc. SN 337,028. Pub. 11–3–70. Filed 9–4–69.

906,084. PHOSPHAZYME. American Hospital Supply Corporation. SN 345,906. Pub. 11–3–70. Filed 12–11–69.

906,085. FRACTOL. Standard Oil Company. SN 353,966. Pub. 11–3–70. Filed 3–13–70.

906,086. IPA AND DESIGN. IPA Industrieerzeugnisse und Patentauswertung GmbH. SN 354,769. Pub. 11–3–70. Filed 3–23–70.

906,087. IPANEX. IPA Industrieerzeugnisse und Patentauswertung GmbH. SN 354,770. Pub. 11–3–70. Filed 3–23–70.

Class 7 — Cordage

906,088. TELL-TALE. Buffalo Weaving and Belting Co. SN 347,475. Pub. 11–3–70. Filed 12–31–69.

Class 9 — Explosives, Firearms, Equipments, and Projectiles

906,089. MISSILE AND DESIGN. Bernard J. Semel. SN 306,276. Pub. 11–3–70. Filed 8–29–68.

906,090. SAN-TEE. Elkton Sparkler Company, Inc. SN 353,295. Pub. 11–3–70. Filed 3–6–70.

Class 10 — Fertilizers

906,074. (See Class 6 for this trademark.)

906,091. SUPER IRON. Occidental Petroleum Corporation. SN 280,809. Pub. 11–3–70. Filed 9–20–67.

906,092. 'NUF. Kaiser Aluminum & Chemical Corporation. SN 344,715. Pub. 11–3–70. Filed 11–26–69.

906,093. REDI–7. W. R. Grace & Co. SN 349,969. Pub. 11–3–70. Filed 1–29–70.

906,094. GREEN ACTION AND DESIGN. Richway Products Inc. SN 350,003. Pub. 11–3–70. Filed 1–29–70.

906,095. DOMINO. American Sugar Company. SN 353,401. Pub. 11–3–70. Filed 3–9–70.

Class 11 — Inks and Inking Materials

906,096. EXCELLOTHERM. Sun Chemical Corporation. SN 353,103. Pub. 11–3–70. Filed 3–4–70.

906,097. MARKWELL. Markwell Manufacturing Co., Inc. SN 354,198. Pub. 11–3–70. Filed 3–16–70.

906,098. CELLOLENE. J. M. Huber Corporation. SN 354,439. Pub. 11–3–70. Filed 3–18–70.

906,099. UROSET. Lawter Chemicals, Inc. SN 354,447. Pub. 11–3–70. Filed 3–18–70.

Class 12 — Construction Materials

906,100. RUBSON AND DESIGN. Rubson S.A.E., assignee of Alexandre Dumas. MULTIPLE CLASS (Classes 12 and 16). SN 286,918. Pub. 11–3–70. Filed 12–14–67.

906,101. DURCOLAM. The Duriron Company, Inc. SN 340,380. Pub. 11–3–70. Filed 10–10–69.

906,102. LARUTAN. The Larutan Corporation. SN 346,630. Pub. 11–3–70. Filed 12–18–69.

906,103. FENCE CITY. Fence City, Inc. MULTIPLE CLASS (Classes 12 and 18). SN 354,758. Pub. 11–3–70. Filed 2–11–70.

Class 13 — Hardware and Plumbing and Steam-Fitting Supplies

906,103. (See Class 12 for this trademark.)

906,104. PAECO-CLIP. Paeco, Inc. SN 317,866. Pub. 11–3–70. Filed 1–29–69.

906,105. TOICO. International Fabricators, Inc. SN 343,715. Pub. 11–3–70. Filed 11–17–69.

906,106. CLASSIC. American Standard Inc. SN 351,408. Pub. 11–3–70. Filed 2–16–70.

906,107. MAGIC MOLD. Parrish's Cake Decorating Supplies, Inc. SN 358,666. Pub. 11–3–70. Filed 5–4–70.

Class 14 — Metals and Metal Castings and Forgings

906,108. DEFIANCE. John Bedford & Sons Limited. SN 342,819. Pub. 11–3–70. Filed 11–6–69.

Class 15 — Oils and Greases

906,074. (See Class 6 for this trademark.)

906,109. K MART AND DESIGN. S. S. Kresge Company. SN 340,023. Pub. 11–3–70. Filed 10–7–69.

906,110. FRICTION FIGHTER. Roy Dean Products Co. SN 343,093. Pub. 11–3–70. Filed 11–10–69.

906,111. BARDAHL 1 AND DESIGN. Bardahl Manufacturing Corporation. SN 356,471. Pub. 11–3–70. Filed 4–10–70.

Class 16 — Protective and Decorative Coatings

906,100. (See Class 12 for this trademark.)

906,112. "BUILD-EX." Chemtrust Industries Corp. SN 323,332. Pub. 11–3–70. Filed 4–1–69.

906,113. MOD-U-LAR. Daniel Products Company. SN 324,424. Pub. 11–3–70. Filed 4–14–69.

906,114. MISCELLANEOUS DESIGN. Harris Paint Company. SN 324,455. Pub. 11–3–70. Filed 4–14–69.

906,115. GAREOSOL. Gare Ceramic Supply Co., Inc. SN 325,104. Pub. 11–3–70. Filed 10–30–68.

906,116. COLONY. Conchemco, Incorporated, d.b.a. Colony Paints. SN 325,341. Pub. 11–3–70. Filed 4–23–69.

906,117. PLASTEVIC. Enamel Varnish & Chemical Company of Australia Pty. Limited. SN 325,356. Pub. 11–3–70. Filed 4–23–69.

906,118. D.P.I. QUALITY PAINTS AND DESIGN. D.P.I. Quality Paints, Inc. SN 326,857. Pub. 11–3–70. Filed 5–9–69.

906,119. LA PATIQUE. Salmon Products, Inc. SN 354,221. Pub. 11–3–70. Filed 3–16–70.

Class 17 — Tobacco Products

906,120. INSURGENTES. Elias Mina Meletiades. SN 324,295. Pub. 11–3–70. Filed 4–11–69.

906,121. LAUSANNE. Philip Morris Incorporated. SN 324,487. Pub. 11–3–70. Filed 4–14–69.

906,122. SAN ROMAN. Moro & Benedit Cigar Corporation. SN 365,404. Pub. 11–3–70. Filed 7–16–70.

Class 18 — Medicines and Pharmaceutical Preparations

906,123. SIEGERTAUBEN-PRAPARATE AND DESIGN. Cl. Lageman G.m.b.H. MULTIPLE CLASS (Classes 18 and 46). SN 276,204. Pub. 11–3–70. Filed 7–18–67.

906,124. SALTRATES RODELL. Continental Saltrates Supply Establishment. SN 295,219. Pub. 11–3–70. Filed 10–28–69.

906,125. SWEET DREAMS. Miles Laboratories, Inc. SN 333,876. Pub. 11–3–70. Filed 7–30–69.

906,126. ACRIFLEX. Allen & Hanburys Limited. SN 334,532. Pub. 11–3–70. Filed 8–6–69.

906,127. CERUVET. Drugs for Veterinary Medicine, Inc. SN 337,284. Pub. 11–3–70. Filed 9–8–69.

906,128. PAN-ESTRA. Pan American Laboratories, Inc. SN 338,689. Pub. 11–3–70. Filed 9–23–69.

906,129. JO-GEN. Genovese Drug Stores, Inc. SN 341,080. Pub. 11–3–70. Filed 10–17–69.

906,130 ECTIMAR. Farbenfabriken Bayer Aktiengesellschaft. SN 341,805. Pub. 11–3–70. Filed 10–27–69.

906,131. OXY-KESSO-TETRA. Foremost-McKesson, Inc., d.b.a. McKesson Laboratories. SN 343,271. Pub. 11–3–70. Filed 11–12–69.

906,132. QUARTERMASTER. The Hamilton Pharmacal Company, Inc. SN 343,557. Pub. 11–3–70. Filed 11–14–69.

906,133. COMPLETE AND DESIGN. Phenex Antiseptic Laboratories, Inc. SN 344,421. Pub. 11–3–70. Filed 11–24–69.

906,134. AEROXONE. The Norwich Pharmacal Company. SN 348,222. Pub. 11–3–70. Filed 1–12–70.

906,135. PAVACON. Meyer Laboratories, Inc. SN 349,367. Pub. 11–3–70. Filed 1–22–70.

906,136. ANDENE. Marion Laboratories, Inc. SN 349,486. Pub. 11–3–70. Filed 1–23–70.

906,137. TANDOM. Marion Laboratories, Inc. SN 349,488. Pub. 11–3–70. Filed 1–23–70.

906,138. METASEP. Marion Laboratories, Inc. SN 349,490. Pub. 11–3–70. Filed 1–23–70.

906,139. ULCEREX. John E. Sweet, d.b.a. Sperry Pharmacal. SN 349,704. Pub. 11–3–70. Filed 1–26–70.

906,140. NASALGEN-P. Richardson-Merrell Inc. SN 350,305. Pub. 11–3–70. Filed 2–2–70.

906,141. BIOCINE-D. Biotec Laboratories, Inc. SN 350,363. Pub. 11–3–70. Filed 2–3–70.

906,142. ALPHONE.. The Upjohn Company. SN 350,538. Pub. 11–3–70. Filed 2–4–70.

906,143. ASPER-FEM. Yonkers Laboratories, Inc. SN 339,478. Pub. 7–28–70. Filed 10–1–69.

906,144. U SHOT. The Upjohn Company. SN 357,044. Pub. 11–3–70. Filed 4–16–70.

Class 19—Vehicles

906,058. (See Class 2 for this trademark.)

906,145. STRICK. Strick Corporation. SN 317,882. Pub. 11–3–70. Filed 1–29–69.

906,146. SPRINT STAR. European Motor Products, Inc., d.b.a. Engineered Motor Products, Inc. SN 320,892. Pub. 11–3–70. Filed 4–10–69.

906,147. HOODFOAM. Hoodfoam Industries, Inc., by change of name from Hood Molded Foam Company, Inc. MULTIPLE CLASS (Classes 19 and 32). SN 330,929. Pub. 11–3–70. Filed 6–25–69.

906,148. PINTO. Ford Motor Company, assignee of Edwin R. Michelsen. SN 341,172. Pub. 4–14–70. Filed 10–20–69.

906,149. TNT. Bombardier Limited. SN 348,254. Pub. 11–3–70. Filed 1–12–70.

Class 21—Electrical Apparatus, Machines, and Supplies

906,150. PERMASIZED. Plastics, Inc. SN 320,373. Pub. 11–3–70. Filed 2–28–69.

906,151. MARSH & MARINE. Schlumberger Technology Corporation. SN 330,851. Pub. 11–3–70. Filed 6–24–69.

906,152. GEL/CELL. Globe-Union Inc. SN 349,624. Pub. 11–3–70. Filed 1–26–70.

Class 22—Games, Toys, and Sporting Goods

906,058. (See Class 2 for this trademark.)

906,064. (See Class 3 for this trademark.)

906,153. WORLDBEATERS. The Lange Co. SN 327,500. Pub. 11–3–70. Filed 5–16–69.

906,154. THE STEERABLES. Gabriel Industries, Inc. SN 331,038. Pub. 11–3–70. Filed 6–26–69.

906,155. SILLY STRING. Wham-O Mfg. Co. SN 334,950. Pub. 11–3–70. Filed 8–11–69.

906,156. MAGIC APPLE. Mattel, Inc. SN 338,317. Pub. 11–3–70. Filed 9–19–69.

906,157. AMERICAN FLYER. The Lionel Toy Corporation. SN 338,793. Pub. 11–3–70. Filed 9–24–69.

906,158. BIG-GYM. Gym Dandy, Inc. SN 340,142. Pub. 340,142. Pub. 11–3–70. Filed 10–8–69.

906,159. SLEEK. Les Davis Fishing Tackle Co. SN 340,525. Pub. 11–3–70. Filed 10–13–69.

906,160. AQUALANDER. Mattel, Inc. SN 347,166. Pub. 347,166. Pub. 11–3–70. Filed 12–29–69.

906,161. FORT KNOX. Superior Toy & Mfg. Co., Inc. SN 351,175. Pub. 11–3–70. Filed 2–12–70.

906,162. PEACHY. Mattel, Inc. SN 355,572. Pub. 11–3–70. Filed 4–1–70.

906,163. PRETTY-UP PUP. Mattel, Inc. SN 357,178. Pub. 11–3–70. Filed 4–17–70.

906,164. PASS-OUT AND DESIGN. Frank Bresee. SN 359,204. Pub. 11–3–70. Filed 5–8–70.

906,165. RHINOZZLE. Mattel, Inc. SN 365,000. Pub. 11–3–70. Filed 7–13–70.

906,166. GRAN TOROS. Mattel, Inc. SN 366,259. Pub. 11–3–70. Filed 7–27–70.

906,167. HI-PERFORMANCE. Mattel, Inc. SN 366,457. Pub. 11–3–70. Filed 7–28–70.

906,168. ROAD TRIALS. Mattel, Inc. SN 366,458. Pub. 11–3–70. Filed 7–28–70.

906,169. CO-MOTION. Mattel, Inc. SN 366,461. Pub. 11–3–70. Filed 7–28–70.

Class 23—Cutlery, Machinery, and Tools, and Parts Thereof

906,170. STAR. Star-New Era, Inc., by change of name from Powers & Eaton Industries, Inc. SN 322,741. Pub. 11–3–70. Filed 3–25–69.

906,058. (See Class 2 for this trademark.)

906,171. ETHAN ALLEN. Baumritter Corporation. SN 330,699. Pub. 11–3–70. Filed 6–23–69.

906,172. DYNABLAST. Wells Electronics, Inc. SN 348,814. Pub. 11–3–70. Filed 1–16–70.

906,173. RASPLANE. Sears, Roebuck and Co. SN 350,964. Pub. 11–3–70. Filed 2–9–70.

906,174. EN-TEC. Engineering Technology, Inc. SN 362,505. Pub. 11–3–70. Filed 6–12–70.

Class 25—Locks and Safes

906,175. POLYLOCK. Fellowes Manufacturing Company. SN 331,112. Pub. 11–3–70. Filed 6–27–69.

Class 26—Measuring and Scientific Appliances

906,176. POLYCOP. American Screen Process Equipment Co. SN 218,054. Pub. 1–24–67. Filed 5–5–65.

Class 27—Horological Instruments

906,177. PERFORMANCE. The Pan-American Barter Co., SN 348,319. Pub. 11–3–70. Filed 1–12–70.

Class 28—Jewelry and Precious-Metal Ware

906,178. ZOLOTAS. Zolotas. SN 333,625. Pub. 7–21–70. Filed 7–25–69.

906,179. RMJ. Royal Military Jewelry Company. SN 347,967. Pub. 11–3–70. Filed 1–7–70.

906,180. SL AND SHIELD DESIGN. Seymour Lampert, d.b.a. Styline Jewelers. SN 358,035. Pub. 11–3–70. Filed 4–27–70.

Class 29—Brooms, Brushes, and Dusters

906,181. SAF-T-DENT. Avon Products, Inc. SN 342,611. Pub. 11–3–70. Filed 11–4–69.

Class 30—Crockery, Earthenware, and Porcelain

906,182. IMPERIAL. William M. Dalton. SN 149,901. Pub. 3–23–65. Filed 7–27–62.

Class 31—Filters and Refrigerators

906,183. DEODOR-ALL. Sherwood Medical Industries Inc. SN 323,046. Pub. 11–3–70. Filed 3–28–69.

906,184. PRE-SORBER. Pritchard-Eco, Inc., by change of name from Pritchard Products Corporation. SN 337,462. Pub. 11–3–70. Filed 9–9–69.

Class 32—Furniture and Upholstery

906,062. (See Class 3 for this trademark.)

906,147. (See Class 19 for this trademark.)

906,185. ERB DESIGN. Erb Plastics, Inc. SN 319,846. Pub. 11–3–70. Filed 2–24–69.

906,186. KING KOIL BEDQUARTERS. The United States Bedding Company. SN 326,152. Pub. 11–3–70. Filed 5–1–69.

906,187. L. J. NEWTON L.N.J. AND DESIGN. W. & J. Sloane. SN 327,720. Pub. 11–3–70. Filed 3–13–69.

906,188. COURT SPANISH. Maestro Import Industries, Inc. SN 330,671. Pub. 11–3–70. Filed 6–23–69.

906,189. GOLD GC CIRCLE. Federated Department Stores, Inc. SN 334,220. Pub. 11–3–70. Filed 8–1–69.

906,190. WHATCHAMACALLIT. Integral Cubics, Inc. SN 343,981. Pub. 11–3–70. Filed 11–19–69.

906,191. CROWN IMPERIAL. The Mebane Company. SN 349,196. Pub. 11–3–70. Filed 1–21–70.

906,192. HOWE. Howe Folding Furniture, Inc. SN 355,523. Pub. 11–3–70. Filed 3–31–70.

906,193. HELP STAMP OUT BLANK WALLS BUY PICTURES. Gary Arts Ltd. SN 356,274. Pub. 11–3–70. Filed 4–8–70.

906,194. BORDER-BOOSTER. Kay Manufacturing Corp. SN 364,053. Pub. 11–3–70. Filed 6–30–70.

906,195. FINAL TOUCH. Consolidated Foods Corporation. SN 365,058. Pub. 11–3–70. Filed 7–13–70.

Class 36—Musical Instruments and Supplies

906,196. ACTION. Action Productions Inc. SN 249,927. Pub. 11–14–67. Filed 7–11–66.

Class 37—Paper and Stationery

906,197. CIMARRON BOND. Arvey Corporation. SN 338,343. Pub. 11–3–70. Filed 9–19–69.

906,198. CIMARRON OPAQUE. Arvey Corporation. SN 338,344. Pub. 11–3–70. Filed 9–19–69.

906,199. COUGAR. Hasbro Industries, Inc. SN 339,887. Pub. 11–3–70. Filed 10–6–69.

906,200. KROMAKODE AND DESIGN. Acme Visible Records, Inc. SN 341,766. Pub. 11–3–70. Filed 10–27–69.

906,201. BLIS-PAK. Riegel Paper Corporation. SN 348,336. Pub. 11–3–70. Filed 1–12–70.

906,202. TOFT. Staff Supermarket Associates, Inc. SN 351,233. Pub. 11–3–70. Filed 2–12–70.

906,203. BLUE HORSE. Westab Inc. SN 351,575. Pub. 11–3–70. Filed 2–16–70.

906,204. MSP. Reynolds Metals Company. SN 351,627. Pub. 11–3–70. Filed 2–17–70.

906,205. SLP. Reynolds Metals Company. SN 351,837. Pub. 11–3–70. Filed 2–19–70.

906,206. GSP. Reynolds Metals Company. SN 351,839. Pub. 11–3–70. Filed 2–19–70.

906,207. SCAN-A-LOPE. Dominion Envelope Company Limited. SN 352,105. Pub. 11–3–70. Filed 2–24–70.

906,208. DARK RITE. Chemolene Industries, Inc. SN 353,034. Pub. 11–3–70. Filed 3–4–70.

Class 38—Prints and Publications

906,209. A CAROUSEL BOOK. Random House, Inc., by merger from The L. W. Singer Company, Inc. SN 303,932. Pub. 11–3–70. Filed 7–30–68.

906,210. MP MEAT PROCESSING. Davies Publishing Company. SN 324,425. Pub. 11–3–70. Filed 4–14–69.

906,211. LE DESIGN. Beverly P. Ball, d.b.a. Laureate Enterprises. SN 326,619. Pub. 11–3–70. Filed 5–7–69.

906,212. R AND DESIGN. Steven K. Herlitz, Inc. SN 328,053. Pub. 11–3–70. Filed 5–22–69.

906,213. ARCHITECTS AND CONTRACTORS REGISTER AND DESIGN. Index Publishing Corp. SN 329,188. Pub. 11–3–70. Filed 8–4–69.

906,214. BOY ON A DOLPHIN (DESIGN). John A. Hillman, d.b.a. J. Hillman Art Studio. SN 333,225. Pub. 11–3–70. Filed 7–23–69.

906,215. PDM PHYSICIAN'S DRUG MANUAL. Physician's Drug Manual, Inc. SN 335,255. Pub. 11–3–70. Filed 8–13–69.

906,216. SHOWER FLOWERS. Tingley Rubber Corporation. SN 335,385. Pub. 11–3–70. Filed 8–14–69.

906,217. BUSINESS MEN IN HEXAGON DESIGN. Sales Training, Inc. SN 335,471. Pub. 11–3–70. Filed 8–15–69.

906,218. MOVE. Move Limited. SN 337,819. Pub. 11–3–70. Filed 9–12–69.

906,219. DELTA FARM PRESS. Delta Farm Press. SN 342,959. Pub. 11–3–70. Filed 11–7–69.

906,220. ELEPHANT EDITIONS AND DESIGN. Pendulum Press, Incorporated. SN 343,324. Pub. 11–3–70. Filed 11–12–69.

906,221. SCHOLASTIC SCENE. Scholastic Roto, Inc. SN 344,262. Pub. 11–3–70. Filed 11–21–69.

906,222. MINORITY BUILDER. National Association of Minority Contractors, Inc. SN 346,393. Pub. 11–3–70. Filed 12–16–69.

906,223. CAMERA GRAMMER AND DESIGN. Lloyd L. Davison. SN 347,238. Pub. 11–3–70. Filed 12–29–69.

906,224. AMINELOGICS. The Dow Chemical Company. SN 348,134. Pub. 11–3–70. Filed 1–9–70.

906,225. PYRAMID. The Walter Reade Organization, Inc. SN 350,439. Pub. 11–3–70. Filed 2–4–70.

906,226. SWL ADDRESS BOOK. Gilfer Associates, Inc. SN 351,201. Pub. 11–3–70. Filed 2–12–70.

906,227. AUTODEX. John T. Gibson, d.b.a. Auto Index Company. SN 351,701. Pub. 11–3–70. Filed 2–18–70.

906,228. THE JELLIBEANS. Derrill S. Gipson. SN 351,933. Pub. 11–3–70. Filed 2–20–70.

906,229. ANSI DESIGN. American National Standards Institute, Incorporated. SN 352,592. Pub. 11–3–70. Filed 2–27–70.

906,230. ANSI. American National Standards Institute, Incorporated. SN 352,594. Pub. 11–3–70. Filed 2–27–70.

906,231. PATTERNS. Parke, Davis & Company. SN 353,257. Pub. 11–3–70. Filed 3–6–70.

906,232. EASYTRIEVE/300. Computer Audit Corporation. SN 353,431. Pub. 11–3–70. Filed 3–9–70.

906,233. JCL/360. Computer Audit Corporation. SN 353,432. Pub. 11–3–70. Filed 3–9–70.

906,234. LENXTRA. Lenox Photo, Incorporated. SN 353,702. Pub. 11–3–70. Filed 3–11–70.

906,235. A PLAYPEN PICTURE BOOK IT'S CLOTH AND DESIGN. Western Publishing Company, Inc. SN 354,041. Pub. 11–3–70. Filed 3–13–70.

906,236. PROJECT/2. Project Software and Development, Inc. SN 354,665. Pub. 11–3–70. Filed 3–19–70.

906,237. A GOLDEN PLAY AND LEARN BOOK AND DESIGN. Western Publishing Company, Inc. SN 355,281. Pub. 11–3–70. Filed 3–27–70.

906,238. ALL ABOUT BOOKS AND DESIGN. Random House, Inc. SN 356,921. Pub. 11–3–70. Filed 4–15–70.

906,239. GRINVITATIONS. Riback Enterprises, Inc. SN 357,002. Pub. 11–3–70. Filed 4–15–70.

906,240. SFTAA AND DESIGN. McGraw-Hill, Inc. SN 358,325. Pub. 11–3–70. Filed 4–29–70.

906,241. CAT AND DESIGN. McGraw-Hill, Inc. SN 358,327. Pub. 11–3–70. Filed 4–29–70.

906,242. FIRSTS. J. Lawrence Herzog. SN 358,752. Pub. 11–3–70. Filed 5–4–70.

906,243. WESTCHESTER GREETINGS AND DESIGN. Doehla Greeting Cards, Incorporated. SN 359,094. Pub. 11–3–70. Filed 5–7–70.

906,244. THE KEYNOTE. D. H. Baldwin Company. SN 359,583. Pub. 11–3–70. Filed 5–13–70.

906,245. MOUNTAIN LIVING. Community Newspapers, Inc. SN 360,033. Pub. 11–3–70. Filed 5–18–70.

906,246. RAGS. Rosy Cheeks Publishers, Inc. SN 360,292. Pub. 11–3–70. Filed 5–20–70.

906,247. THE PENNSYLVANIA SCORE BOARD AND DESIGN. The General Tire & Rubber Company. SN 360,328. Pub. 11–3–70. Filed 5–20–70.

906,248. GRIN-I-CHEERS. Riback Enterprises, Inc. SN 361,751. Pub. 11–3–70. Filed 6–4–70.

906,249. PELICAN DESIGN. Pelican Publishing Company, Inc., d.b.a. Pelican Publishing Company SN 363,067. Pub. 11–3–70. Filed 6–18–70.

906,250. PELICAN DESIGN. Pelican Publishing Company, Inc., d.b.a. Pelican Publishing Company. SN 363,068. Pub. 11–3–70. Filed 6–18–70.

906,251. BETTER CAMPING. Woodall Publishing Company. SN 365,651. Pub. 11–3–70. Filed 7–20–70.

906,252. LETTER PETS BY KAMAR. Kamar Incorporated. SN 366,455. Pub. 11–3–70. Filed 7–28–70.

906,253. QUINCY. The Hearst Corporation. SN 366,772. Pub. 11–3–70. Filed 7–31–70.

906,254. ALUMIN-ART. Elyse, Inc. SN 366,837. Pub. 11–3–70. Filed 8–3–70.

Class 39 — Clothing

906,058. (See Class 2 for this trademark.)

906,255. PLAYBOY OF MIAMI AND DESIGN. Playboy of Miami, Inc. SN 154,152. Pub. 3–10–64. Filed 9–28–62.

906,256. DIVOT DIGGER. Palco Hats Inc. SN 311,170. Pub. 11–3–70. Filed 11–1–68.

906,257. DK DESIGN. Dirndlkönigin GmbH. MULTIPLE CLASS (Classes 39 and 51). SN 318,695. Pub. 11–3–70. Filed 2–10–69.

906,258. SWAN AND DESIGN. Swan Original S.p.A., by change of name from Delmar di Daniele Massa & C. S.a.s. SN 320,130. Pub. 8–11–70. Filed 2–26–69.

906,259. SPORTCETA. Sportailor, Inc. SN 330,540. Pub. 11–3–70. Filed 6–19–69.

906,260. HARRY LANS INTERNATIONAL. Henri Lansberg. SN 334,596. Pub. 11–3–70. Filed 8–6–69.

906,261. IS. D'Antonio Shoe Corporation. SN 339,151. Pub. 8–11–70. Filed 9–29–69.

906,262. CHANEL. Chanel, Inc. SN 339,493. Pub. 11–3–70. Filed 5–28–69.

906,263. CHRISTOPHER ROBIN. Christopher Robin, Ltd. SN 341,201. Pub. 11–3–70. Filed 10–20–69.

906,264. HIPPEROOS. Karman, Inc. SN 342,477. Pub. 11–3–70. Filed 11–3–69.

906,265. MALE DESIGN. Raleigh Manufacturers, Inc. SN 342,999. Pub. 11–3–70. Filed 11–7–69.

906,266. TENSION EZE. Richard Gregg Manufacturing Co., Inc. SN 343,544. Pub. 11–3–70. Filed 11–14–69.

906,267. ALLSPORTS. Uniroyal, Inc. SN 344,472. Pub. 11–3–70. Filed 11–24–69.

906,268. ST. MALO. Miss Pat. SN 345,361. Pub. 11–3–70. Filed 12–4–69.

906,269. CONVEXALON. Shelby Seamless Hosiery Mills, Inc. SN 345,682. Pub. 11–3–70. Filed 12–8–69.

906,270. TURTLE BAX. The Washington Manufacturing Company. SN 345,881. Pub. 11–3–70. Filed 12–10–69.

906,271. IZAAK WALTON. The Servus Rubber Company. SN 346,305. Pub. 11–3–70. Filed 12–15–69.

906,272. TRIANDERIN. Alberta Penny Rich. SN 347,318. Pub. 11–3–70. Filed 12–29–69.

906,273. THE GOING THING AND DESIGN. Janie Originals, Inc. SN 347,410. Pub. 11–3–70. Filed 12–30–69.

906,274. GLO TREADS. Wellco Enterprises, Inc. SN 347,668. Pub. 11–3–70. Filed 1–2–70.

906,275. CLEAN-CHANGE. Miken Enterprises. SN 347,766. Pub. 11–3–70. Filed 1–5–70.

906,276. MEVANA. Mevana Hong Kong Tailors Inc. SN 348,045. Pub. 11–3–70. Filed 1–8–70.

906,277. LOVE-MATES. Melville Shoe Corporation. SN 351,591. Pub. 11–3–70. Filed 2–17–70.

906,278. WASH' HUMS. J. W. Bray Company, Inc. SN 352,079. Pub. 11–3–70. Filed 2–24–70.

906,279. DUNCAN REED. Sagner, Inc. SN 352,225. Pub. 11–3–70. Filed 2–24–70.

906,280. IDENTITY DESIGNS. Koracorp Industries Inc., assignee of Koret of California Inc. SN 352,731. Pub. 11–3–70. Filed 3–2–70.

906,281. ERICSON OF SWEDEN AND DESIGN. Ericson of Sweden. SN 356,058. Pub. 11–3–70. Filed 4–6–70.

906,282. PERMA-BOOT AND DESIGN. Florida Fishermen's Supply Co., Inc. SN 356,063. Pub. 11–3–70. Filed 4–6–70.

906,283. JAY P. KAYS. Sturdi-Wear Clothes Inc. SN 357,762. Pub. 11–3–70. Filed 4–23–70.

906,284. BARUFFA. A. Zegna Societa in Accomandita Semplice. SN 358,160. Pub. 11–3–70. Filed 4–28–70.

906,285. POLYJACK. Spartan Industries, Inc. SN 359,654. Pub. 11–3–70. Filed 5–13–70.

906,286. OFF THE SLOPE CLOTHES WHITE STAG AND DESIGN. White Stag Manufacturing Co. SN 363,624. Pub. 11–3–70. Filed 6–25–70.

906,287. BODY PATTERNS. International Playtex Corporation. SN 364,015. Pub. 11–3–70. Filed 6–30–70.

906,288. DESIGN MISCELLANEOUS. Cooper's, Incorporated. SN 364,532. Pub. 11–3–70. Filed 7–7–70.

906,289. SUPPORT PLUS. Camp and McInnes, Inc. SN 364,712. Pub. 11–3–70. Filed 7–9–70.

906,290. KNOCKABOUTS BY PENDLETON. Pendleton Woolen Mills. SN 365,202. Pub. 11–3–70. Filed 7–14–70.

906,291. SOCIAL WHIRL. The Lovable Company. SN 365,513. Pub. 11–3–70. Filed 7–17–70.

906,292 WINKELS. Charles H. Bacon Company, Inc. SN 366,610. Pub. 11–3–70. Filed 7–30–70.

906,293. CLOUD-MATES. Duti-Duds, Inc. SN 367,101. Pub. 11–3–70. Filed 8–5–70.

Class 42 — Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

906,294. ALICE AND DESIGN. Alice Manufacturing Co. SN 330,893. Pub. 11–3–70. Filed 6–25–69.

906,295. SUPER ROYAL KASHMIR. Maurice Stein, d.b.a. Stuart Kingston Company. SN 337,703. Pub. 11–3–70. Filed 9–11–69.

906,296. LARANDAH. Klopman Mills, Inc. SN 342,286. Pub. 11–3–70. Filed 10–31–69.

906,297. XTRATIZE. Loomskill, Inc. SN 344,792. Pub. 11–3–70. Filed 11–28–69.

906,298. DYCURA. Angelica Corporation. SN 345,054. Pub. 11–3–70. Filed 12–2–69.

906,299. MARNACRAFT. Marnacraft Carpet Co., Ltd. SN 346,266. Pub. 11–3–70. Filed 12–15–69.

906,300. COVINAIR. Spun-Lo Elderlon, Inc. SN 346,976. Pub. 11–3–70. Filed 12–22–69.

906,301. TTX Kanri Incorporated. SN 347,278. Pub. 11–3–70. Filed 12–29–69.

906,302. SOUTH BAY FABRICS AND DESIGN. South Bay Design Corporation. SN 348,355. Pub. 11–3–70. Filed 1–12–70.

906,303. NORTHCREST. Walter Bader. SN 349,570. Pub. 11–3–70. Filed 1–26–70.

906,304. COMBEAU. Synthetics Finishing Corp. SN 351,158. Pub. 11–3–70. Filed 2–11–70.

906,305. MILLIKNIT. Deering Milliken, Inc. SN 364,533. Pub. 11–3–70. Filed 7–7–70.

906,306. ACTION PLUS. Auerbach and Company. SN 364,846. Pub. 11–3–70. Filed 7–10–70.

Class 43 — Thread and Yarn

906,307. SOFIL. Societe de Filature Anciens Etablissements Jules de Surmont & Fils. SN 345,210. Pub. 11–3–70. Filed 12–3–69.

906,308. CRIMPILAC. National Spinning Co., Inc. SN 351,764. Pub. 7–28–70. Filed 2–19–70.

Class 44 — Dental, Medical, and Surgical Appliances

906,309. PHONOCARDIOSIMULATOR. Humetrics Corporation. SN 325,198. Pub. 11–3–70. Filed 4–22–69.

906,310. EMPIRE. Beltone Electronics Corporation. SN 344,808. Pub. 11–3–70. Filed 11–28–69.

906,311. LARGO. Beltone Electronics Corporation. SN 344,809. Pub. 11–3–70. Filed 11–28–69.

906,312. PRELUDE. Beltone Electronics Corporation. SN 344,810. Pub. 11–3–70. Filed 11–28–69.

906,313. NATION WIDE AND DESIGN. Nation-Wide Dental Studios, Inc. SN 351,961. Pub. 11–3–70. Filed 2–20–70.

906,314. LIFEGUARD. Smith Kline Instruments, Inc. SN 362,201. Pub. 11–3–70. Filed 6–10–70.

Class 45 — Soft Drinks and Carbonated Waters

906,315. JERO'S. Meister Brau, Inc., assignee of Jero Products Company. MULTIPLE CLASS (Classes 45, 46, and 49). SN 319,760. Pub. 11–3–70. Filed 2–24–69.

906,316. TY-GO. Imperial Flavors, Inc. SN 323,764. Pub. 11–3–70. Filed 4–7–69.

906,317. VITAMITE. Gold Medal Products Co. SN 342,040. Pub. 11–3–70. Filed 10–29–69.

906,318. SALOON AND DESIGN. Tavern Products, Inc. SN 359,747. Pub. 11–3–70. Filed 5–14–70.

906,319. RED BARON PUNCH AND DESIGN. Consolidated Fruit & Flavor Corp. SN 362,191. Pub. 11–3–70. Filed 6–10–70.

Class 46 — Foods and Ingredients of Foods

906,081. (See Class 6 for this trademark.)

906,123. (See Class 18 for this trademark.)

906,315. (See Class 45 for this trademark.)

906,320. MERRY MIX. W. R. Grace & Co., assignee of Nalley's, Inc. SN 226,554. Pub. 4–18–67. Filed 8–26–65.

906,321. HILLTOP·FARM·PRODUCTS ETC. AND DESIGN. Hilltop Farm Products, Inc. SN 322,164. Pub. 11–3–70. Filed 3–19–69.

906,322. SCUFFY'S Scuffy Pet Centers, Inc., by change of name from Scuffy's Pet Supplies, Inc. SN 323,024. Pub. 11–3–70. Filed 3–27–69.

906,323. MISCELLANEOUS DESIGN. Brooke Bond Foods, Inc. SN 332,078. Pub. 11–3–70. Filed 7–9–69.

906,324. PESCAMINO. Pescamino Ltd. A/S. SN 336,593. Pub. 11–3–70. Filed 8–28–69.

906,325. HONEY BEAR FARM. Carson International Inc., d.b.a. Honey Bear Farm. SN 340,771. Pub. 11–3–70. Filed 10–15–69.

906,326. ESKIMO PRECIOUS SERV. Eskimo Pie Corporation. SN 341,244. Pub. 11–3–70. Filed 10–21–69.

906,327. DRUTHERS. A. H. Robins Company, Incorporated. SN 341,699. Pub. 11–3–70. Filed 10–24–69.

906,328. 'NANAS. Tropi Co. SN 346,532. Pub. 11–3–70. Filed 12–17–69.

906,329. IRISH. Lawrence Tomsky, d.b.a. Labella Sales Company. SN 347,006. Pub. 11–3–70. Filed 12–23–69.

906,330. KOSHERIFFIC. Kosher Zion Sausage Company of Chicago. SN 348,956. Pub. 11–3–70. Filed 1–19–70.

906,331. SEPRO-X. The Robertson Corporation. SN 351,879. Pub. 11–3–70. Filed 2–20–70.

906,332. TATER-DINCKS. Todd Chemical Company Incorporated. SN 353,967. Pub. 11–3–70. Filed 3–13–70.

906,333. DRUMSTICK. I. C. Parker. SN 356,248. Pub. 11–3–70. Filed 4–8–70.

906,334. GULDEN'S. American Home Products Corporation. SN 357,675. Pub. 11–3–70. Filed 4–23–70.

906,335. 'TIL NOON. Miles Laboratories, Inc. SN 361,238. Pub. 11–3–70. Filed 6–1–70.

906,336. PLAYLAND. Carter-Wallace, Inc. SN 366,767. Pub. 11–3–70. Filed 7–31–70.

Class 47 — Wines

906,337. MISCELLANEOUS DESIGN. Grants of St. James's Limited. SN 325,867. Pub. 11–3–70. Filed 4–29–69.

Class 48 — Malt Beverages and Liquors

906,338. VELVET GLOW. Arden-Mayfair, Inc. SN 360,927. Pub. 11–3–70. Filed 5–27–70.

Class 49 — Distilled Alcoholic Liquors

906,815. (See Class 45 for this trademark.)

Class 50 — Merchandise Not Otherwise Classified

906,339. ULTRA-TEX. Burgess Cellulose Company. SN 351,097. Pub. 11–3–70. Filed 2–11–70.

906,340. STP IN AN OVAL. STP Corporation. SN 351,981. Pub. 11–3–70. Filed 2–20–70.

906,341. PAKLINE. Pakline, Inc. SN 356,123. Pub. 11–3–70. Filed 4–6–70.

906,342. MAGIC STAY. Simple Signman, Inc. SN 365,649. Pub. 11–3–70. Filed 7–20–70.

Class 51 — Cosmetics and Toilet Preparations

906,257. (See Class 39 for this trademark.)

906,343. SEXUS. Romäne Incorporated. SN 324,990. Pub. 11–3–70. Filed 4–21–69.

906,344. GAYLORD AND DESIGN. Gerald Ernest Sadler, d.b.a. Gerald E. Sadler. MULTIPLE CLASS (Classes 51 and 52). SN 327,683. Pub. 11–3–70. Filed 5–19–69.

906,345. PRIVILEGE. Avon Products, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 329,561. Pub. 12–23–69. Filed 6–10–69.

906,346. ARATUSA. Givaudan Corporation. SN 333,559. Pub. 11–3–70. Filed 7–25–69.

906,347. DIORESSENCE. Christian Dior Perfumes Corporation. SN 338,752. Pub. 11–3–70. Filed 9–24–69.

906,348. WARM TOUCH. Eversharp, Inc. SN 341,314. Pub. 11–3–70. Filed 10–22–69.

906,349. WARM & LOVELY. Eversharp, Inc. SN 341,315. Pub. 11–3–70. Filed 10–22–69 .

906,350. WARM AND PRETTY. Eversharp, Inc. SN 341,317. Pub. 11–3–70. Filed 10–22–69.

906,351. LAKME'. Johnson & Johnson. SN 352,909. Pub. 11–3–70. Filed 3–3–70.

906,352. BRIO, BRIO, BRIO. Pfizer Inc., by change of name from Chas. Pfizer & Co., Inc. SN 357,850. Pub. 11–3–70. Filed 4–24–70.

906,353. BRIO ROMA. Pfizer Inc., by change of name from Chas. Pfizer & Co., Inc. SN 357,851. Pub. 11–3–70. Filed 4–24–70.

906,354. CON BRIO. Pfizer Inc., by change of name from Chas. Pfizer & Co., Inc. SN 357,852. Pub. 11–3–70. Filed 4–24–70.

906,355. SHEER STRENGTH. Colgate-Palmolive Company. SN 365,986. Pub. 11–3–70. Filed 7–23–70.

Class 52 — Detergents and Soaps

906,069. (See Class 4 for this trademark.)

906,344. (See Class 51 for this trademark.)

906,345. (See Class 51 for this trademark.)

906,356. NALFLEET. Nalco Chemical Company. SN 331,766. Pub. 11–3–70. Filed 7–3–69.

906,357. KAUFMANN'S. A. P. Ordway & Co., Inc. SN 336,346. Pub. 11–3–70. Filed 8–26–69.

906,358. PERBRITE. Montgomery Ward & Co., Incorporated SN 337,135. Pub. 11–3–70. Filed 9–5–69.

906,359. SYSTEM 9. Colgate-Palmolive Company. SN 355,710. Pub. 11–3–70. Filed 4–2–70.

906,360. FORMICA. Formica Corporation. SN 357,819. Pub. 11–3–70. Filed 4–24–70.

906,361. BLU-POO. E. R. Squibb & Sons, Inc. SN 358,517. Pub. 11–3–70. Filed 5–1–70.

906,362. PINK-POO. E. R. Squibb & Sons, Inc. SN 358,518. Pub. 11–3–70. Filed 5–1–70.

906,363. PINKY-POO. E. R. Squibb & Sons, Inc. SN 358,519. Pub. 11–3–70. Filed 5–1–70.

906,364. HA HA . . . THE SHAMPOO WITH NO BOO HOO. Carter-Wallace, Inc. SN 364,982. Pub. 11–3–70. Filed 7–13–70.

Service Marks

Class 100 — Miscellaneous

906,365. PGAC. Pan Geo Atlas Corporation. MULTIPLE CLASS (Classes 100 and 103). SN 299,784. Pub. 11–3–70. Filed 6–5–68.

906,366. DESIGN OF 4 DOTS. Pan Geo Atlas Corporation. MULTIPLE CLASS (Classes 100 and 103). SN 299,785. Pub. 11—3–70. Filed 6–5–68.

906,367. MISCELLANEOUS DESIGN. The Pizza Inn, Inc. SN 328,438. Pub. 11–3–70. Filed 5–27–69.

906,368. IDA AND DESIGN. Walter F. Neumann, d.b.a. International Design Associates. SN 332,966. Pub. 11–3–70. Filed 7–18–69.

906,369. MC & D AND DESIGN. Marine Consultants & Designers, Inc. SN 336,463. Pub. 11–3–70. Filed 8–27–69.

906,370. HERE'S JOHNNY'S. Johnny's American Inn, Inc. SN 338,576. Pub. 11–3–70. Filed 9–22–69.

906,371. DATE-A-MATCH. Absolute Scientific Corporation. SN 348,867. Pub. 11–3–70. Filed 1–19–70.

906,372. AMPROTECTION. Merck & Co., Inc. SN 348,969. Pub. 11–3–70. Filed 1–19–70.

906,373. HSMB. Hydronautics, Incorporated. SN 365,393. Pub. 11–3–70. Filed 7–16–70.

Class 101 — Advertising and Business

906,374. SKI SWAP AND DESIGN. Ski Swap Management Group. SN 299,592. Pub. 11–3–70. Filed 6–3–68.

906,375. ARC. Delta Data Processing, Inc. SN 305,929. Pub. 11–3–70. Filed 8–26–68.

906,376. MANAGEMENT RECRUITERS. Management Recruiters International, Inc., assignee of Management Recruiters, Inc. SN 320,829. Pub. 11–3–70. Filed 3–5–69.

906,377. KAMPGROUNDS. Kampgrounds of America, Inc. SN 322,800. Pub. 11–3–70. Filed 3–20–69.

906,378. THE STUDIO-CREATIVE CRAFTS. The Studio-Creative Crafts, Inc. SN 323,032. Pub. 11–3–70. Filed 3–27–69.

906,379. GRACIOUS LADIES. The Gracious Lady Service, Inc. SN 323,810. Pub. 11–3–70. Filed 4–7–69.

906,380. MONEY RACES. Miller-Waltzer Associates, Inc. SN 324,212. Pub. 11–3–70. Filed 4–10–69.

906,381. AUTO DATA AND DESIGN. Auto Data, Inc. SN 325,328. Pub. 11–3–70. Filed 4–23–69.

906,382. STAT : COM AND DESIGN. Statistical Tabulating Corporation. SN 332,374. Pub. 11–3–70. Filed 7–11–69.

906,383. FREEWAY NATIONAL. Freeway National, Inc. SN 332,705. Pub. 11–3–70. Filed 7–17–69.

906,384. TECMARK. Tecmark Associates, Inc. SN 332,381. Pub. 11–3–70. Filed 7–11–69.

906,385. FNI. Freeway National, Inc. SN 332,706. Pub. 11–3–70. Filed 7–17–69.

906,386. GAMBLETOWN. Richard J. Sarchet. SN 335,064. Pub. 11–3–70. Filed 8–11–69.

906,387. CRAM. CRA West, Inc. SN 335,119. Pub. 11–3–70. Filed 8–12–69.

906,388. WELLINGTON JEWELS. M. Belmont Ver Standig, Inc., d.b.a. Ver Standig, Inc. SN 335,720. Pub. 11–3–70. Filed 8–19–69.

906,389. LORD BEFWICK ENGLISH INNS B AND DESIGN. Befwick International, Inc. SN 337,147. Pub. 11–3–70. Filed 9–5–69.

906,390. CREDIT CARD IN REVERSE. United International Clubs, Inc. SN 340,855. Pub. 11–3–70. Filed 10–15–69.

906,391. KEYTAK. Honeywell Inc. SN 348,945. Pub. 11–3–70. Filed 1–19–70.

906,392. FA DESIGN. Farrell-Argast Electric Co., Inc. SN 353,133. Pub. 11–3–70. Filed 3–5–70.

906,393. DRUMMER BOY AND DRUM DESIGN. Harmon-O'Loughlin Enterprises, Inc. SN 356,677. Pub. 11–3–70. Filed 4–13–70.

Class 102 — Insurance and Financial

906,394. ISL VARIABLE ANNUITIES AND DESIGN. Investors Syndicate Life Insurance and Annuity Company. SN 326,379. Pub. 11–3–70. Filed 5–5–69.

906,395. CHART AND GRAPH (DESIGN). Medicredit Inc. SN 327,649. Pub. 11–3–70. Filed 5–19–69.

906,396. CUPOLA DESIGN. Boston Mutual Sales Corp. SN 327,842. Pub. 11–3–70. Filed 5–21–69.

906,397. LANTERN DESIGN. Boston Mutual Sales Corp. SN 327,843. Pub. 11–3–70. Filed 5–21–69.

906,398. LION DESIGN. Boston Mutual Sales Corp. SN 327,844. Pub. 11–3–70. Filed 5–21–69.

906,399. WEATHER VANE DESIGN. Boston Mutual Sales Corp. SN 327,845. Pub. 11–3–70. Filed 5–21–69.

906,400. FMD AND MALE AND FEMALE DESIGN. Fund For Mutual Depositors Inc. SN 335,128. Pub. 11–3–70. Filed 8–12–69.

906,401. CLEVELAND TRUST AND CT DESIGN. The Cleveland Trust Company. SN 341,015. Pub. 11–3–70. Filed 10–17–69.

906,402. STYLIZED B'S DESIGN. The Branch Banking and Trust Company. SN 342,136. Pub. 11–3–70. Filed 10–30–69.

Class 103 — Construction and Repair

906,365. (See Class 100 for this trademark.)

906,366. (See Class 100 for this trademark.)

906,403. PRO VITA. ARA Services, Inc., by change of name from Automatic Retailers of America, Inc. SN 321,152. Pub. 11–3–70. Filed 3–6–69.

906,404. COLLEGE CRAFT. Ordean Terrence Nelson, d.b.a. College Craft Painters. SN 324,929. Pub. 11–3–70. Filed 4–18–69.

906,405. KENTUCKY COLONEL. Kentucky Colonel Gasoline Inc. SN 340,563. Pub. 11–3–70. Filed 10–13–69.

906,406. TEASDALE FENTON. Teasdale Fenton Cleaners. SN 342,546. Pub. 11–3–70. Filed 11–3–69.

906,407. LPM AND DESIGN. Liberty Plastics & Metals Co. SN 358,041. Pub. 11–3–70. Filed 4–27–70.

Class 104 — Communication

906,408. TOPS. The Bunker-Ramo Corporation. SN 308,087. Pub. 11–3–70. Filed 9–24–68.

Class 106 — Material Treatment

906,409. AMERLITE. American Waterproofing Corp. SN 335,529. Pub. 11–3–70. Filed 8–18–69.

Class 107 — Education and Entertainment

906,410. LAMPLIGHTER. The Lamplighter Club, Inc. SN 314,094. Pub. 11–3–70. Filed 12–10–68.

906,411. TOTAL WOMAN. Total Woman, Inc. SN 322,674. Pub. 11–3–70. Filed 3–24–69.

906,412. IT'S THE GOONIEST ! Golf Players, Incorporated. SN 336,225. Pub. 11–3–70. Filed 8–21–69.

906,413. PADRES AND DESIGN. San Diego Padres. SN 388,647. Pub. 11–3–70. Filed 9–22–69.

906,414. OH AND DESIGN. Sterling Drug, Inc. SN 340,080. Pub. 11–3–70. Filed 10–7–69.

906,415. THE ELECTRIC EAR. Electric Circus of New York, Inc. SN 340,383. Pub. 11–3–70. Filed 10–10–69.

906,416. THE WASHINGTON SCHOOL FOR SECRETARIES. Computer Learning and Systems Corporation. SN 350,652. Pub. 11–3–70. Filed 2–6–70.

Collective Membership Marks

Class 200

906,417. LERC AUDIO RECORDING CLUB AND DESIGN. LERC Audio Recording Club. SN 324,726. Pub. 11–3–70. Filed 4–16–69.

906,418. AMERICAN SAFETY BELT COUNCIL AND LABEL DESIGN. American Safety Belt Council, Inc. SN 332,211. Pub. 11–3–70. Filed 7–10–69.

906,419. COAT OF ARMS (DESIGN). International Fraternity of Delta Sigma Pi. SN 334,338. Pub. 11–3–70. Filed 8–4–69.

906,420. UNITED DUFFERS ASS'N MEMBER AND GOLFER AND CIRCULAR DESIGN. The United States Duffers' Association, Inc. SN 336,196. Pub. 11–3–70. Filed 8–25–69.

906,421. NATIONAL CURTAIN, DRAPERY AND ASSOCIATION ETC. AND SEAL DESIGN. National Curtain, Drapery and Allied Products Association, Inc. SN 342,502. Pub. 11–3–70. Filed 11–3–69.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

Class 2 — Receptacles

906,422. Greif Bros. Corporation, St. Paul, Minn. SN 345,464. Filed P.R. 12–5–69; Am. S.R. 10–1–70.

TAMPER PRUF

For Multi-Wall Paper and Plastic Bags (Int. Cls. 16 and 20).
First use Jan. 19, 1968.

Class 3 — Baggage, Animal Equipments, Portfolios, and Pocketbooks

906,423. Lumured Plastics Corp., Woodbridge, N.J. SN 328,432. Filed P.R. 5–27–69; Am. S.R. 8–28–70.

Croché Bead

For Beaded Handbags (Int. Cl. 18).
First use Apr. 1, 1969.

Class 37 — Paper and Stationery

906,424. Consolidated Papers, Inc., Wisconsin Rapids, Wis. SN 314,413. Filed P.R. 12–13–68; Am. S.R. 7–27–70.

SEBRING ROTO

For Coated Printing Paper (Int. Cl. 16).
First use Apr. 15, 1968.

906,425. R. G. Robbins & Company, Inc., Portland, Oreg. SN 337,691. Filed P.R. 9–11–69; Am. S.R. 11–12–70.

Scribner's

For Pens and Pencils (Int. Cl. 16).
First use June 3, 1969.

Class 38 — Prints and Publications

906,426. Agence France-Presse, New York, N.Y. SN 302,372. Filed P.R. 7–10–68; Am. S.R. 9–30–70.

AGENCE FRANCE-PRESSE

The English translation of the mark "Agence France-Presse" is "French News Agency."
For News Dispatches (Int. Cl. 16).
First use on or about June 1, 1945.

906,427. Trends Publishing, Inc., Washington, D.C. SN 319,087. Filed P.R. 2–13–69; Am. S.R. 11–5–70.

SCIENTIFIC INFORMATION NOTES

For Newsletter (Int. Cl. 16).
First use Jan. 23, 1969.

906,428. Snow Sports Publications, Inc., Minneapolis, Minn. SN 335,070. Filed P.R. 8–11–69; Am. S.R. 10–12–70.

SNOW SPORTS

For Periodically Published Magazine (Int. Cl. 16).
First use on or about Sept. 1, 1968.

906,429. Babson Bros. Co., Oak Brook, Ill. SN 336,736. Filed P.R. 9–2–69; Am. S.R. 9–1–70.

DAIRY ILLUSTRATED

For Periodical Magazine Containing Articles Primarily of Interest to the Dairy Farmer (Int. Cl. 16).
First use Aug. 20, 1969.

906,430. DMS, Inc., Greenwich, Conn. SN 341,018. Filed P.R. 10–17–69; Am. S.R. 11–3–70.

CIVIL PROGRAMS

For Marketing Information Bulletins (Int. Cl. 16).
First use Sept. 30, 1969.

906,431. McGraw-Hill, Inc., New York, N.Y. SN 345,656. Filed P.R. 12–8–69; Am. S.R. 10–9–70.

NEW ELECTRICAL PRODUCTS FOR DESIGN, CONSTRUCTION AND MAINTENANCE

For Monthly Buying Guide (Int. Cl. 16).
First use in September 1969.

906,432. Stillman Publications, Inc., Huntington, N.Y. SN 352,531. Filed P.R. 2–26–70; Am. S.R. 11–10–70.

Electronic Systems Engineering

For Magazine (Int. Cl. 16).
First use Oct. 2, 1969.

906,433. The College Watercolor Group, Inc., Skillman, N.J. SN 355,113. Filed P.R. 3–26–70; Am. S.R. 10–21–70.

GRAY'S

For Watercolor Paintings (Int. Cl. 16).
First use Apr. 1, 1969.

906,434. Paul J. Stelter, d.b.a. The Stelter Company, Des Moines, Iowa. SN 357,884. Filed P.R. 4–2–70; Am. S.R. 10–23–70.

PLANNING WITH PROFIT

For Series of Pamphlets Which Are Sold to Banks for Distribution to Prospects for the Banks' Trust Services (Int. Cl. 16).
First use Sept. 22, 1969.

906,435. Paramount Publications, Inc., New York, N.Y. SN 358,601. Filed P.R. 5–1–70; Am. S.R. 10–16–70.

TV CINEMA

For Periodical Booklets Containing Information Concerning and Listing Motion Picture Telecasts by Television Networks (Int. Cl. 16).
First use June 16, 1969.

Class 46 — Foods and Ingredients of Foods

906,436. McCormick & Company, Incorporated, Cockeysville, Md. SN 324,213. Filed 4–10–69.

PEPPERMILL GRIND

For Black Pepper (Int. Cl. 30).
First use Mar. 15, 1968.

TRADEMARK REGISTRATIONS RENEWED

81,531. CIVIC. Cl. 8 (Int. Cl. 34). 4–18–11.
248,381. FUL-VUE. Cl. 26 (Int. Cl. 9). 10–16–28.
273,280. "ACE" ETC. AND DESIGN. Cl. 13 (Int. Cl. 17). 7–29–30.
274,257. CELLATE. Cl. 1 (Int. Cl. 1). 8–26–30.
274,924. M & M. Cl. 11 (Int. Cl. 16). 9–9–30.
276,308. BON-ART CLOTHES. Cl. 39 (Int. Cl. 25). 10–14–30.
276,797. JAMAGOWN. Cl. 39 (Int. Cl. 25). 10–28–30.
276,798. JAMADRESS. Cl. 39 (Int. Cl. 25). 10–28–30.
276,799. JAMAFROCK. Cl. 39 (Int. Cl. 25). 10–28–30.
276,979. "CAMPARI" ETC. AND DESIGN. Cl. 49 (Int. Cl. 33). 11–4–30.
277,103. "ENCI" AND DESIGN. Cl. 12 (Int. Cl. 19). 11–4–30.
277,153. KEEPSAKE. Cl. 28 (Int. Cl. 14). 10–11–30.
277,589. REPRESENTATION OF GREEK LETTERS KAPPA PSI. Cl. 28 (Int. Cl. 14). 11–18–30.
279,300. DIAMOND. Cl. 26 (Int. Cl. 9). 1–13–31.
279,765. MARITA. Cl. 42 (Int. Cl. 24). 1–20–31.
280,275. PADDLE POP. Cl. 46 (Int. Cl. 30). 2–10–31.
280,954. CELADORE. Cl. 42 (Int. Cl. 24). 3–3–31.
280,960. BOZAL. Cl. 33 (Int. Cl. 21). 3–3–31.
281,225. "MISS AMERICA" AND DESIGN. Cl. 46 (Int. Cl. 29). 3–10–31.
281,584. MAXIPRES. Cl. 23 (Int. Cl. 7). 3–24–31.
282,402. "HOBART H" AND DESIGN. Cl. 21 (Int. Cl. 7). 4–21–31.
444,223. RACK ENGINEERING CO. AND DESIGN. Cl. 13 (Int. Cl. 20). 9–19–50.
444,329. HEX. Cl. 51 (Int. Cl. 5). 11–21–50.
522,820. BOIL-TEX. Cl. 40 (Int. Cl. 26). 3–21–50.
522,927. MONROMATIC. Cl. 26 (Int. Cl. 9). 3–28–50.
523,399. ARMOLA. Cl. 46 (Int. Cl. 29). 4–4–50.
524,373. PANTASOTE. Cl. 42 (Int. Cl. 24). 4–25–50.
526,781. SKYWAY. Cl. 46 (Int. Cl. 29). 6–27–50.
528,233. TECALEMIT. Cl. 23 (Int. Cl. 7). 8–1–50.
528,355. SNOOPER. Cl. 46 (Int. Cl. 31). 8–1–50.
529,199. ROLO AND DESIGN. Cl. 26 (Int. Cl. 9). 8–15–50.
529,474. FRONTENAC. Cl. 39 (Int. Cl. 25). 8–22–50.
530,518. WRINKIES. Cl. 44 (Int. Cl. 3). 9–12–50.
530,520. RICHARD HUDNUT. Cl. 44 (Int. Cl. 3). 9–12–50.
531,128. THURMADUKE. Cls. 21 and 34 (Int. Cl. 11). 9–26–50.
532,019. JOHNSON'S ANT KILLER AND DESIGN. Cl. 6 (Int. Cl. 5). 10–17–50.
532,095. CHEMCO. Cl. 16 (Int. Cl. 1). 10–17–50.
532,367. THE ORIOLE BULLETIN AND DESIGN. Cl. 38 (Int. Cl. 16). 10–24–50.
533,063. EXCELSIOR. Cl. 12 (Int. Cl. 19). 11–7–50.
533,101. VAPOCILLIN. Cl. 44 (Int. Cl. 10). 11–7–50.
533,476. STAPS. Cl. 18 (Int. Cl. 6). 11–14–50.
533,685. FROSTY KNIGHT. Cl. 46 (Int. Cl. 30). 11–21–50.
533,721. BEET SOL AND DESIGN. Cl. 52 (Int. Cl. 3). 11–21–50.
533,863. BRUCE DOUGLAS AND DESIGN. Cl. 39 (Int. Cl. 25). 11–28–50.
534,129. MIDTONE. Cl. 51 (Int. Cl. 3). 11–28–50.
534,165. IF IT'S P-K IT'S O.K. Cl. 13 (Int. Cl. 6). 11–28–50.
534,378. DEJAC. Cl. 39 (Int. Cl. 25). 12–5–50.
534,759. BOXMASTER. Cl. 23 (Int. Cl. 7). 12–12–50.
534,791. JUILLEROY. Cl. 42 (Int. Cl. 24). 12–12–50.
534,918. ENCITON. Cl. 44 (Int. Cl. 5). 12–19–50.
534,926. SHORTY. Cl. 23 (Int. Cl. 8). 12–19–50.
534,947. AVALON. Cl. 39 (Int. Cl. 25). 12–19–50.
535,134. YANKEE DOODLES. Cl. 46 (Int. Cl. 30). 12–26–50.
535,180. LINEN-LIKE. Cl. 37 (Int. Cl. 16). 12–26–50.
535,305. GOLDEN BEAM. Cl. 21 (Int. Cl. 9). 12–26–50.
535,396. CORONADO. Cl. 21 (Int. Cl. 9). 12–26–50.
535,495. ROOMITOES. Cl. 39 (Int. Cl. 25). 1–2–51.
535,634. ZIGANE. Cl. 51 (Int. Cl. 3). 1–2–51.
535,769. MISCELLANEOUS DESIGN. Cl. 12 (Int. Cl. 19). 1–2–51.
535,812. DARELLA. Cl. 42 (Int. Cl. 24). 1–2–51.
535,839. SUGAR SWEET. Cl. 46 (Int. Cl. 31). 1–2–51.
535,909. B & D AND DESIGN. Cl. 23 (Int. Cls. 7 and 8). 1–9–51.
535,933. BLACK & DECKER. Cl. 23 (Int. Cls. 7 and 8). 1–9–51.
536,086. JAYRON. Cl. 18 (Int. Cl. 5). 1–9–51.
536,099. O-PRO-TEX. Cl. 18 (Int. Cl. 5). 1–9–51.
536,174. RIVER VALLEY. Cl. 46 (Int. Cl. 29). 1–9–51.
536,195. MX. Cl. 14 (Int. Cl. 6). 1–9–51.
536,288. VELAMOUR. Cl. 42 (Int. Cl. 24). 1–9–51.
536,327. LINKSEM. Cl. 23 (Int. Cl. 8). 1–9–51.
536,336. MASSO AND DESIGN. Cl. 46 (Int. Cl. 29). 1–16–51.
536,355. SWEE-TOUCH-NEE. Cl. 46 (Int. Cl. 30). 1–16–51.

536,369. TROPIQUE-LYTE. Cl. 39 (Int. Cl. 25). 1-16-51.
536,370. WALTER MORTON. Cl. 39 (Int. Cl. 25). 1-16-51.
536,377. FIBRE FLEX. Cl. 40 (Int. Cl. 26). 1-16-51.
536,406. SUNSHINE FASHIONS. Cl. 39 (Int. Cl. 25). 1-16-51.
536,523. GOLLY WOW. Cl. 46 (Int. Cl. 30). 1-16-51.
536,551. POLYSEAL. Cl. 35 (Int. Cl. 17). 1-16-51.
536,581. CORDO TWIST. Cl. 39 (Int. Cl. 25). 1-16-51.
536,582. SHUTTLECRAFT. Cl. 39 (Int. Cl. 25). 1-16-51.
536,589. ELIZABETH ARDEN. Cl. 2 (Int. Cl. 3). 1-16-51.
536,639. MISCELLANEOUS DESIGN. Cl. 19 (Int. Cl. 12). 1-16-51.
536,656. QUIK BLEND. Cl. 46 (Int. Cl. 29). 1-16-51.
536,898. BANTRY. Cl. 39 (Int. Cl. 25). 1-23-51.
536,899. FLANNAIR. Cl. 39 (Int. Cl. 25). 1-23-51.
536,900. LODENBURY. Cl. 39 (Int. Cl. 25). 1-23-51.
536,901. MARBLE TWIST. Cl. 39 (Int. Cl. 25). 1-23-51.
536,902. SPINDRIFT. Cl. 39 (Int. Cl. 25). 1-23-51.
536,903. SUN SEA SPUN. Cl. 39 (Int. Cl. 25). 1-23-51.
536,906. VELAMBA. Cl. 39 (Int. Cl. 25). 1-23-51.
536,912. TWO GIRLS AND DESIGN. Cl. 46 (Int. Cl. 30). 1-23-51.
537,025. HERECROL. Cl. 1 (Int. Cls. 1 and 17). 1-30-51.
537,155. CANDIA. Cl. 42 (Int. Cl. 24). 1-30-51.
537,161. CASANA. Cl. 42 (Int. Cl. 24). 1-30-51.
537,271. JURA WATCH. Cl. 27 (Int. Cl. 14). 2-6-51.
537,322. DI-MAX. Cl. 14 (Int. Cl. 6). 2-6-51.
537,536. SURE SEAL CROWN CAPS AND DESIGN. Cl. 50 (Int. Cl. 6). 2-13-51.
537,537. LEDGERLESS. Cl. 37 (Int. Cl. 16). 2-13-51.
537,570. DUO SEAL. Cl. 23 (Int. Cl. 7). 2-13-51.
537,645. EMERSON. Cl. 17 (Int. Cl. 34). 2-13-51.
537,682. CONTINENTAL. Cl. 44 (Int. Cl. 10). 2-13-51.
537,729. CARBI-TWIST. Cl. 23 (Int. Cl. 7). 2-13-51.
537,750. KENILWORTH. Cl. 46 (Int. Cl. 31). 2-13-51.
537,761. SANI-WRAP. Cl. 44 (Int. Cl. 10). 2-13-51.
537,837. REDDY. Cl. 40 (Int. Cl. 26). 2-13-51.
538,012. HELEN HARPER. Cl. 39 (Int. Cl .25). 2-20-51.
538,287. SYLVIA ANN ORIGINALS AND DESIGN. Cl. 39 (Int. Cl. 25). 2-20-51.
538,472. CLIPPER. Cl. 23 (Int. Cl. 8). 2-27-51.
538,757. LYRE DESIGN. Cl. 30 (Int. Cl. 21). 2-27-51.
538,936. MISCELLANEOUS DESIGN. Cl. 29 (Int. Cl. 16). 3-6-51.
539,038. OBOCELL. Cl. 18 (Int. Cl. 5). 3-6-51.
539,085. KONRITE. Cl. 6 (Int. Cl. 1). 3-6-51.
539,229. RAPID POWER BOOSTER. Cl. 23 (Int. Cl. 7). 3-13-51.
539,337. HANDY. Cl. 23 (Int. Cl. 8). 3-13-51.
539,454. PLYBASE. Cl. 12 (Int. Cl. 19). 3-13-51.
539,637. SEA ISLAND. Cl. 46 (Int. Cl. 29). 3-20-51.
539,711. WAHL. Cl. 44 (Int. Cls. 10 and 11). 3-20-51.
539,777. MICRON SIZE. Cl. 6 (Int. Cl. 1). 3-20-51.
539,833. VIENNA FINGER SANDWICH. Cl. 46 (Int. Cl. 30). 3-27-51.
540,011. FLORENCE. Cl. 39 (Int. Cl. 25). 3-27-51.
540,071. POTATO FRILLS. Cl. 46 (Int. Cl. 29). 3-27-51.
540,178. CADET AND DESIGN. Cl. 21 (Int. Cls. 9 and 11). 3-27-51.
540,289. PEPPETS. Cl. 18 (Int. Cl. 5). 4-3-51.
540,309. LA ROCO. Cl. 28 (Int. Cl. 14). 4-3-51.
540,420. ALASED. Cl. 18 (Int. Cl. 5). 4-3-51.
540,441. FLAIR. Cl. 39 (Int. Cl. 25). 4-3-51.
540,694. I-T-E AND DESIGN. Cl. 21 (Int. Cl. 9). 4-10-51.
540,785. OXFORD. Cl. 37 (Int. Cl. 16). 4-10-51.
540,798. SPANISH WALTZ. Cl. 42 (Int. Cl. 24). 4-10-51.
540,806. MULTI MAGIC. Cl. 21 (Int. Cl. 9). 4-10-51.
540,813. LINADU. Cl. 42 (Int. Cl. 24). 4-10-51.
540,853. STAPLEX. Cl. 23 (Int. Cl. 7). 4-10-51.
540,869. TW AND DESIGN. Cl. 28 (Int. Cl. 14). 4-10-51.
540,894. LIGHTERWAY. Cl. 42 (Int. Cl. 24). 4-10-51.
540,897. LOBSTIRRER. Cl. 23 (Int. Cl. 8). 4-10-51.
540,938. LINKFIX. Cl. 23 (Int. Cl. 8). 4-10-51.
540,982. GOOSE HEAD DESIGN. Cl. 46 (Int. Cl. 29). 4-17-51.
541,001. TENDERMINT. Cl. 46 (Int. Cl. 30). 4-17-51.
541,094. WINGMASTER. Cl. 9 (Int. Cl. 13). 4-17-51.
541,135. TRANSPARA. Cl. 39 (Int. Cl. 25). 4-17-51.
541,171. GEMONIL. Cl. 18 (Int. Cl. 5). 4-17-51.
541,181. NATURALETTES BY NATURAL BRIDGE. Cl. 39 (Int. Cl. 25). 4-17-51.
541,186. TAME. Cl. 51 (Int. Cl. 3). 4-17-51.
541,272. BOB WHITE AND DESIGN. Cl. 46 (Int. Cl. 30). 4-24-51.
541,273. BOB WHITE. Cl. 46 (Int. Cl. 30). 4-24-51.
541,335. HANS AND DESIGN. Cl. 46 (Int. Cl. 30). 4-24-51.
541,341. MOR-JUCE. Cl. 46 (Int. Cl. 31). 4-24-51.
541,401. VERICOOL. Cl. 39 (Int. Cl. 25). 4-24-51.
541,428. BUZZ. Cl. 46 (Int. Cl. 30). 4-24-51.
541,585. UNION SAUSAGE LABEL AND DESIGN. Cl. 46 (Int. Cl. 29). 4-24-51.
541,632. PERFECT. Cl. 19 (Int. Cl. 12). 5-1-51.

TRADEMARK REGISTRATIONS CANCELED

Section 8

123,314. LIBERTY. Cl. 10. 10-29-18.
189,252. O-CEDAR POLISH THE O-CEDAR POLISH WAY. Cl. 4. 9-16-24.
255,572. LIBERTY. Cl. 6. 4-23-29.
267,523. FLY-TOY (FLAI-TOX). Cl. 6. 2-25-30.
301,256. FROSTYADE. Cl. 45. 2-21-33.
358,877. IFFY THE DOPESTER AND DESIGN. Cl. 38. 7-26-38.
780,724. PAX-ALL. Cl. 52. 11-24-64.

The following registrations issued Dec. 1, 1964

780,784. DELATAMS. Cl. 1.
780,785. STACTRO. Cl. 1.
780,787. REGAL. Cl. 1.
780,789. FLAME. Cl. 1.
780,790. SMOKETTS. Cl. 1.
780,793. WHIP-TAIL. Cl. 1.
780,795. DRAPELUX. Cl. 1.
780,796. KAL AND DESIGN. Cl. 1.
780,798. SPICE-SAVOR. Cl. 2.
780,799. MAC'S FLATS. Cl. 2.
780,800. ATLAS P/N. Cl. 2.
780,801. IL-DI-LEK. Cl. 2.
780,803. MIRACLE TONE. Cl. 3.
780,814. TIMONOX. Cl. 6.
780,815. BOUQUAIRE. Cl. 6.
780,825. LIQUI-LITH. Cl. 6.
780,833. BROMELIQ. Cl. 6.
780,835. ALP. Cl. 6.
780,838. MITSUBISHI. Cl. 10.
780,839. LAWN TIME. Cl. 10.
780,842. VFT. Cl. 10.
780,843. ALP. Cl. 10.
780,846. POW-R-LITE. Cl. 12.
780,849. VILLARAMA. Cl. 12.
780,852. TOPFIT. Cls. 13 and 23.
780,857. GUARDIAN AND DESIGN. Cl. 14.
780,860. HANNALOY. Cl. 14.
780,864. SURFA-KOTE. Cl. 16.
780,865. SPEREX AND DESIGN. Cl. 16.
780,877. CARPE DIEM. Cl. 17.
780,882. SL AND DESIGN. Cl. 18.
780,893. RETRACT-EZE. Cl. 19.
780,894. JATO. Cl. 19.
780,896. EL DORADO. Cl. 19.
780,897. LITTLE GIANT AND DESIGN. Cl. 21.
780,901. DURALEM. Cl. 21.
780,902. ZAGI LOG PERIODIC. Cl. 21.
780,905. ROBOT AND DESIGN. Cl. 21.
780,908. MWL. Cl. 21.
780,914. VCD. Cl. 21.
780,920. LINEMASTER. Cl. 21.
780,922. SKI'N SKORE. Cl. 22.
780,923. SPACESWING. Cl. 22.
780,925. ESCORE. Cl. 22.
780,928. TREE-PEE. Cl. 22.
780,931. WILDCAT DIVISION. Cl. 22.
780,933. PORTA-VAC. Cl. 23.

780,934. ROUSTAROUT 500. Cl. 23.
780,935. HIDE AND GEAR DESIGN. Cl. 23.
780,943. PRODCO. Cl. 23.
780,948. SILMAX AND DESIGN. Cl. 23.
780,949. S-N AND DESIGN. Cl. 23.
780,950. JONNIE. Cl. 23.
780,956. INCH-O-MATIC. Cl. 23.
780,958. DMC AND DESIGN. Cl. 23.
780,960. METEOR. Cl. 26.
780,963. ATTEN-U-MATIC. Cl. 26.
780,964. CUB. Cl. 26.
780,965. UNIMATRONIC AND DESIGN. Cl. 26.
780,966. MATRIXAID. Cl. 26.
780,968. KROMO-TOG. Cl. 26.
780,973. SPEC-KERCHIEF. Cl. 26.
780,970. "PHOTRAN." Cl. 26.
780,974. LABSET. Cl. 26.
780,981. TIMECRAFT AND DESIGN. Cl. 27.
780,982. THB. Cl. 28.
780,991. TRAIL BURNER. Cl. 34.
780,994. WORLD JET ORBIT. Cl. 35.
780,995. O.K. WINTERSTAR. Cl. 35.
780,996. VICTOR VG AND DESIGN. Cl. 35.
780,998. O.K. STARGLIDE. Cl. 35.
781,004. GRAND PRIX AND DESIGN. Cl. 36.
781,005. GEM. Cl. 37.
781,014. MEDICANA. Cl. 38.
781,016. WHAT'S NEW IN PLANT ENGINEERING SERVICES ETC. AND DESIGN. Cl. 38.
781,017. NAL AND DESIGN. Cl. 38.
781,018. LITTLE TIGREE. Cl. 38.
781,023. CRIMSON TIDE-INGS. Cl. 38.
781,030. THE MISSISSIPPI REGISTER. Cl. 38.
781,032. DELFINO A-MARE INC. AND DESIGN. Cl. 39.
781,036. BRITAL AND DESIGN. Cl. 39.
781,038. REPRESENTATION OF A GLOBE RINGED BY ELEVEN FANCIFUL HUMAN BEINGS. Cl. 39.
781,039. ROBERT HALL'S WONDERFUL WORLD ETC. AND DESIGN. Cl. 39.
781,042. SLIPPER PALS. Cl. 39.
781,045. AMCO OF NORVELT. Cl. 39.
781,052. DELLMONT. Cl. 39.
781,053. LTEX FASHIONS AND DESIGN. Cl. 39.
781,054. JAVELIN TEENS. Cl. 39.
781,055. CARICATURE OF MAN IN NIGHT SHIRT. Cl. 39.
781,056. SOLARVISION. Cl. 39.
781,057. COMPETITOR. Cl. 39.
781,067. WHITEFACE. Cl. 42.
781,068. CLARE AND DESIGN. Cl. 44.
781,069. CARDIOTAC. Cl. 44.
781,070. REGARD DURABLE AND DESIGN. Cl. 44.
781,072. UTERING. Cl. 44.
781,074. NINE-NEZ. Cl. 44.
781,080. MAGIC ISLES. Cl. 45.
781,081. MAGIC ISLAND. Cl. 45.
781,083. MUSHROOMS A LA BRANDYWINE. Cl. 46.
781,092. TRI-ONI-7. Cl. 46.
781,099. BEETLES. Cl. 46.
781,102. DIVIDE-A-TRAY. Cl. 46.
781,106. OLD JIM'S. Cl. 46.
781,107. RUMMONDS BROS. Cl. 46.
781,108. REPRESENTATION OF A JET PLANE. Cl. 46.
781,112. ROYAL TEENS. Cl. 46.
781,113. TROPICAL DELIGHTS. Cl. 46.
781,117. PEACH ORCHARD. Cl. 49.
781,119. FRONT LINE. Cl. 50.
781,120. SLAMMER. Cl. 50.
781,122. BOTTS-DOTS. Cl. 50.
781,124. PHOR-LITE. Cl. 50.
781,127. PERMA-RITE. Cl. 50.
781,128. DIACAP. Cl. 50.
781,134. SHEER BEAUTY. Cl. 51.
781,141. ZODYS AND DESIGN. Cl. 52.
781,144. ATH-O-MED AND DESIGN. Cl. 52.
781,146. MIP. Cl. 101.
781,147. REBEL. Cl. 105.
781,153. ANCIENT AND HONORABLE ROYAL ORDER OF F.L.E. Cl. 200
781,155. 28-PLUS. Cl. 12.
781,156. FISH-N-SHIP. Cl. 19.
781,157. CLEGG. Cl. 21.
781,161. COLPAC. Cl. 44.

INDEX OF REGISTRANTS

JANUARY 19, 1971

(Registered ; Renewed ; Canceled ; Amended, Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

A. Zegna Societa in Accomandita Semplice Vallemosso, Vercelli, Italy. 906,284, pub. 11–3–70. Cl. 39.
ARA Services, Inc. From Automatic Retailers of America, Inc. Philadelphia, Pa. 906,403, pub. 11–3–70, Cl. 100.
Abet Corp., El Segundo, Calif. 780,790, canc. Cl. 1.
Abbott Laboratories, North Chicago, Ill. 541,171, ren. 1–19–71. Cl. 18.
Abrahamsen, Hans d.b.a. Hans Barbeque, Oklahoma City, Okla., 541,335, ren. 1–19–71. Cl. 46.
Absolute Scientific Corp., Chicago, Ill. 906,371, pub. 11–3–70. Cl. 100.
Acme Visible Records, Inc., Croset, Va. 906,200, pub. 11–3–70. Cl. 37.
Action Productions, Inc., Atlanta, Ga. 906,196, pub. 11–14–67. Cl. 36.
Agence France-Presse, New York, N.Y. 906,426. Cl. 38.
Aktieselskabet Regard Aarhus Gummivarefabrik, Aarhus, Denmark. 781,070, canc. Cl. 44.
Alamac Knitting Mills, Inc., New York, N.Y. 781,067, canc. Cl. 42.
Allen & Hanburys Ltd., London, England. 906,126, pub. 11–3–70. Cl. 18.
Alice Mfg. Co., Easley, S.C. 906,294, pub. 11–3–70. Cl. 42.
Amalgamated Meat Cutters & Butcher Workmen Of North America, Chicago, Ill 541,585, ren. 1–19–71. Cl. 46.
Amco of Norvelt, Inc., New York, N.Y. 781,045, canc. Cl. 39.
Amerace Esna Corp., New York, N.Y. 273,280, ren. 1–19–71. Cl. 13.
American Chain & Cable Co., Inc., Bridgeport, Conn. 906,072, pub. 11–3–70. Cl. 4.
American Home Products Corp., New York, N.Y. 906,334, pub. 11–3–70. Cl. 46.
American Hospital Supply Corp., Evanston, Ill. 906,084, pub. 11–3–70. Cl. 6.
American National Standards Institute, Inc., New York, N.Y. 906,229–30, pub. 11–3–70. Cl. 38.
American Paper & Plastic Products, Inc. of Wisconsin, Milwaukee, Wis. 535,180, ren. 1–19–71. Cl. 37.
American Plywood Association, Tacoma, Wash. 539,454, ren. 1–19–71. Cl. 12.
American Optical Corp., Southbridge, Mass. 248,381, ren. 1–19–71. Cl. 26.
American Safety Belt Council, Inc., New Rochelle, N.Y. 906,418, pub. 11–3–70. Cl. 200.
American Screen Process Equipment Co., Chicago, Ill. 906,176, pub. 1–24–67. Cl. 26.
American Standard Inc., New York, N.Y. 906,106, pub. 11–3–70. Cl. 13.
American Sugar Co., New York, N.Y. 906,095, pub. 11–3–71. Cl. 10.
American Waterproofing Corp., New Haven, Mo. 906,409, pub. 11–3–70. Cl. 106.
Anaconda Wire & Cable, New York, N.Y. 780,914, canc. Cl. 21.
Ancient & Honorable Order of Fraternity, Loyalty & Economy, Collective Assn. 781,153, canc. Cl. 200.
Angelica Corp., St. Louis, Mo. 906,298, pub. 11–3–70. Cl. 42.
Anthony's Mfg. Co., Glendale, Calif. 781,119, canc. Cl. 60.
Anvil Brand, Inc., High Point, N.C. 781,054, canc. Cl. 39.
Arden, Elizabeth Sales Corp., New York, N.Y. 536,589, ren. 1–19–71. Cl. 2.
Arden-Mayfair, Inc., Los Angeles, Calif. 906,336, pub. 11–3–70. Cl. 48.
Armco Steel Corp., Middletown, Ohio. 537,822, ren. 1–19–71. Cl. 14.
Armour & Co., Chicago, Ill. 523,399, ren. 1–19–71. Cl. 46.
Arvey Corp., Chicago, Ill. 906,197–8, pub. 11–3–70. Cl. 37.
Asphalt Heating, Inc., Caldwell, N.J. 780,991, canc. Cl. 34.
Associated Lead Manufacturers Ltd., London, England. 780,814, canc. Cl. 6.
Auerbach & Co., Los Angeles, Calif. 906,306, pub. 11–3–70. Cl. 42.
Aulson Tanning Machinery Co., The, Beverly, Mass. 780,935, canc. Cl. 23.
Auto Data, Inc., Kansas City, Mo. 906,381, pub. 11–3–70. Cl. 101.
Automatic Retailers of America, Inc.: *See*— ARA Services, Inc.
Avalon Shoe Supplies Ltd., Somerset, England. 534,947, ren. 1–19–71. Cl. 39.
Avon Products, Inc., New York, N.Y. 906,181, pub. 11–3–70. Cl. 29.
Avon Products, Inc., New York, N.Y. 906,345, pub. 12–23–69. Multiple Class (Classes 51 and 52).
Babson Bros. Co., Oak Brook, Ill. 906,429. Cl. 38.
Bacon, Charles H. Co., Inc., Lenoir City, Tenn. 906,292, pub. 11–3–70. Cl. 39.
Bader, Walter, Loudonville, N.Y. 906,303, pub. 11–3–70. Cl. 42.
Baker Clothes, Inc., Philadelphia, Pa. 536,581–2, ren. 1–19–71. Cl. 39.
Baker Clothes, Inc., Philadelphia, Pa. 536,898-903, ren. 1–19–71. Cl. 39.
Baker Clothes, Inc., Philadelphia, Pa. 536,906, ren. 1–19–71. Cl. 39.
Baldwin, D. H., Co., Cincinnati, Ohio. 906,244, pub. 11–3–70. Cl. 38.
Bales Training, Inc., Seattle, Wash. 906,217, pub. 11–3–70. Cl. 38.
Ball, Beverly P., d.b.a. Laureate Enterprises, Falls Church, Va. 906,211, pub. 11–3–70. Cl. 38.
Ball, Geo. J., Inc., West Chicago, Ill. 780,800, canc. Cl. 2.
Bardahl Mfg. Corp., Seattle, Wash. 906,111, pub. 11–3–70. Cl. 15.
Baumritter Corp., New York, N.Y. 906,171, pub. 11–3–70. Cl. 23.
Berwick International, Inc., Erie, Pa. 906,389, pub. 11–3–70. Cl. 101.
Beich, Paul F., Co., Bloomington, Ill. 541,428, ren. 1–19–71. Cl. 46.
Belmont, M. Ver Standig, Inc., d.b.a. Ver Standig, Inc., Washington, D.C. 906,388, pub. 11–3–70. Cl. 101.
Beltone Electronics Corp., Chicago, Ill. 906,310–12, pub. 11–3–70. Cl. 44.
Bercy Industries, Inc., Venice, Calif. 906,062, pub. 11–3–70. Multiple Class (Classes 3 and 32).
Biotec Laboratories, Inc., Lenexa, Kans. 906,141, pub. 11–3–70. Cl. 18.
Black & Decker Mfg. Co., The, Towson, Md. 535,909, ren. 1–19–71. Cl. 23.
Black & Decker Mfg. Co., The, Towson, Md. 535,933, ren. 1–19–71. Cl. 23.
Blue Banner Co., Inc., Riverside, Calif. 537,750, ren. 1–19–71. Cl. 46.
Bombardier Ltd., Valcourt, Quebec, Canada. 906,149, pub. 11–3–70. Cl. 19.
Borden Co., The, New York, N.Y. 781,083, canc. Cl. 46.
Borden, Inc., New York, N.Y. 526,781, ren. 1–19–71. Cl. 46.
Borden, Inc., New York, N.Y. 535,134, ren. 1–19–71. Cl. 46.
Boston Mutual Sales Corp., Boston, Mass. 906,396–9, pub. 11–3–70. Cl. 102.
Botts-Line, Inc., Redwood City, Calif. 781,122, canc. Cl. 50.
Branch Banking & Trust Co., The, Wilson, N.C. 906,402, pub. 11–3–70. Cl. 102.
Brandon, Isaac M., Co., Inc., New York, N.Y. 781,036, canc. Cl. 39.
Bray, J. W., Co., Inc., Dalton, Ga. 906,278, pub. 11–3–70. Cl. 39.
Bresee, Frank, Hollywood, Calif. 906,164, pub. 11–3–70. Cl. 22.
Bridal Originals, Inc., St. Louis, Mo. 538,287, ren. 1–19–71. Cl. 39.
Brooke Bond Foods, Inc., Lake Success, N.Y. 906,328, pub. 11–3–70. Cl. 46.
Brown Clothing Co., Minneapolis, Minn. 276,308, ren. 1–19–71. Cl. 39.
Brown Co., Los Angeles, Calif. 274,257, ren. 1–19–71. Cl. 1.
Bru, Malcolm S., d.b.a. Aldermaston Sales, Glen Cove, N.Y. 780,815, canc. Cl. 6.
Buffalo Weaving & Belting Co., Buffalo, N.Y. 906,088, pub. 11–3–70. Cl. 7.
Bunker-Ramo Corp., The, Oak Brook, Ill. 906,408, pub. 11–3–70. Cl. 104.
Burgess Cellulose Co., Freeport, Ill. 906,389, pub. 11–3–70. Cl. 50.
Burlington Industries, Inc., Greensboro, N.C. 541,135, ren. 1–19–71. Cl. 39.
Burrell Corp., Pittsburgh, Pa. 780,968, canc. Cl. 26.
Burroughs Corp., Detroit, Mich. 274,924, ren. 1–19–71. Cl. 11.
Cl. Lageman G.m.b.H., Aachen, Germany. 906,123, pub. 11–3–70. Multiple Class (Classes 18 and 46).
CRA West, Inc., Los Angeles, Calif. 906,387, pub. 11–3–70. Cl. 101.
Camp & McInnes, Inc., Reading, Pa. 906,289, pub. 11–3–71. Cl. 39.
Carson International Inc., d.b.a. Honey Bear Farm, Itasca, Ill. 906,325, pub. 11–3–70. Cl. 46.
Carter-Wallace, Inc., New York, N.Y. 906,336, pub. 11–3–71. Cl. 46.
Carter-Wallace, Inc., New York, N.Y. 906,364, pub. 11–3–70. Cl. 52.
Catholic Press Society, Inc., The, Denver, Colo. 781,030, canc. Cl. 38.
Celanese Corp., New York, N.Y. 280,954, ren. 1–19–71. Cl. 42.
Centra Leather Goods of Oklahoma, Inc., Frederick, Okla. 780,803, canc. Cl. 3.
Chanel, Inc., New York, N.Y. 906,262, pub. 11–3–70. Cl. 39.
Chapman Industries Inc., Avondale, Pa. 906,052, pub. 11–3–70. Cl. 1.
Charlie's Girls, Inc., New York, N.Y. 538,012, ren. 1–19–71. Cl. 39.
Chattanooga Medicine Co., The, d.b.a. Ath-O-Med Co., Chattanooga, Tenn. 781,144, canc. Cl. 52.
Chattanooga Pharmacal Co., Chattanooga, Tenn. 781,161, canc. Cl. 44.
Chemolene Industries, Inc., Bordentown, N.J. 906,208, pub. 11–3–70. Cl. 37.
Chemtrust Industries Corp., Maywood, Ill. 906,112, pub. 11–3–70. Cl. 16.
Ciba Corp., New York, N.Y. 781,014, canc. Cl. 38.
Ciba Ltd., Basel, Switzerland. 906,076, pub. 11–3–70. Cl. 6.
Civic Co., Ltd., The, London, England. 81,531, ren. 1–19–71. Cl. 8.

Clearasite Headwear, Inc., New York, N.Y. 781,056, canc. Cl. 39.
Clearwater Tissue Mills, Inc., Lewiston, Idaho. 781,005, canc. Cl. 37.
Cleveland Builders Supply Co., The, Cleveland, Ohio. 533,063, ren. 1–19–71. Cl. 12.
Cleveland Trust Co., The, Cleveland, Ohio. 906,401, pub. 11–3–70. Cl. 102.
Clevepak Corp., Cleveland, Ohio. 906,070, pub. 11–3–70. Cl. 4.
Cluett, Peabody & Co., Inc., Troy, N.Y. 276,797–9, ren. 1–19–71. Cl. 39.
Coats & Clark Inc., New York, N.Y. 522,820, ren. 1–19–71. Cl. 40.
Colgate-Palmolive Co., New York, N.Y. 906,355, pub. 11–3–70. Cl. 51.
Colgate-Palmolive Co., New York, N.Y. 906,359, pub. 11–3–70. Cl. 52.
College Watercolor Group, Inc., Skillman, N.J. 906,433. Cl. 38.
Collier Carbon & Chemical Corp., Los Angeles, Calif. 780,835, canc. Cl. 6.
Collier Carbon & Chemical Corp., Los Angeles, Calif. 780,843, canc. Cl. 10.
Community Newspapers, Inc., Franklin, N.C. 906,245, pub. 11–3–70. Cl. 38.
Computer Audit Corp., Silver Spring, Md. 906,232–3, pub. 11–3–70. Cl. 38.
Computer Learning & Systems Corp., Rockville, Md. 906,416, pub. 11–3–70. Cl. 107.
Conchemco, Inc., d.b.a. Colony Paints, Kansas City, Mo. 906,-116, pub. 11–3–70. Cl. 16.
Consolidated Foods Corp. d.b.a. Popsicle Industries, Englewood, N.J. 536,523, ren. 1–19–71. Cl. 46.
Consolidated Foods Corp., Chicago, Ill. 906,195, pub. 11–3–70. Cl. 32.
Consolidated Tea Co., Inc., Lynbrook, N.Y. 536,355, ren. 1–19–71. Cl. 46.
Consolidated Fruit & Flavor Corp., Granite City, Ill. 906,319, pub. 11–3–70. Cl. 45.
Consolidated Papers, Inc., Wisconsin Rapids, Wis. 906,424. Cl. 37.
Continental Saltrates Supply Establishment, Vaduz, Liechtenstein. 906,124, pub. 11–3–70. Cl. 18.
Continental X-Ray Corp., Chicago, Ill. 537,682, ren. 1–19–70. Cl. 44.
Cookman, Deborah L., Labaska, Pa. 906,061, pub. 11–3–70. Cl. 3.
Cooper, Philip R. & Herbert Cooper, d.b.a. Timecraft Watch Co., New York, N.Y. 780,981, canc. Cl. 27.
Cooper's Inc., Kenosha, Wis. 906,288, pub. 11–3–70. Cl. 39.
Craddock-Terry Shoe Corp., Lynchburg, Va. 541,181, ren. 1–19–71. Cl. 39.
Creo-Dipt Co., Inc., North Tonawanda, N.Y. 780,864, canc. Cl. 16.
Crown Cork & Steel Co., Inc., Philadelphia, Pa. 537,536, ren. 1–19–71. Cl. 50.
Curtis Industries, Inc., d.b.a. Lentheric, Chicago, Ill. 781,134, canc. Cl. 51.
Curtiss-Wright Corp., Wood-Ridge, N.J. 780,970, canc. Cl. 26.
DMS, Inc., Greenwich, Conn. 906,430. Cl. 38.
D.P.I. Quality Paints, Inc., Clearwater, Fla. 906,118, pub. 11–3–70. Cl. 16.
Dalkeith Agencies Ltd., Vancouver, British Columbia, Canada, 781,052, canc. Cl. 39.
Dalton, William M., Feasterville, Pa. 906,182, pub. 3–23–65. Cl. 30.
Daniel Products Co., Jersey City, N.J. 906,113, pub. 11–3–70. Cl. 16.
D'Antonio Shoe Corp., New York, N.Y. 906,261, pub. 8–11–70. Cl. 39.
Davide Campari-Milano S.p.a., Milan, Italy. 267,979, ren. 1–19–71. Cl. 49.
Davidson, Lloyd L., Boise, Idaho. 906,223, pub. 11–3–70. Cl. 38.
Davidson-Bigelow, Inc., New York, N.Y. 781,042, canc. Cl. 39.
Davies Publishing Co., Chicago, Ill. 906,210, pub. 11–3–70. Cl. 38.
Davis, Les, Fishing Tackle Co., Tacoma, Wash. 906,159, pub. 11–3–70. Cl. 22.
Dean, Roy, Products Co., Dearborn, Mich. 906,110, pub. 11–3–70. Cl. 15.
Deering Milliken, Inc., New York, N.Y. 906,305, pub. 11–3–70. Cl. 42.
Dekalb Agresearch, Inc., Dekalb, Ill. 906,057, pub. 11–3–70. Cl. 1.
Delano A-Mare Inc., Brooklyn, N.Y. 781,032, canc. Cl. 39.
Dell, Samuel M., & Co., Inc., Baltimore, Md. 538,936, ren. 1–19–71. Cl. 29.
Delmar di Daniele Massa & C.s.a.s.: *See*—
Swan Original S.p.A.
Delta Data Processing, Inc., San Jose, Calif. 906,375, pub. 11–3–70. Cl. 101.
Delta Farm Press, Clarksdale, Miss. 906,219, pub. 11–3–70. Cl. 38.
Dentsply International Inc., York, Pa. 534,918, ren. 1–19–71. Cl. 44.
Diamond International Corp., New York, N.Y. 537,761, ren. 1–19–71. Cl. 44.
Diamond Power Specialty Corp., Lancaster, Ohio. 279,300, ren. 1–19–71. Cl. 26.
Diamond Shamrock Corp., Cleveland, Ohio. 539,085, ren. 1–19–71. Cl. 6.
Dior, Christian, Perfumes Corp., New York, N.Y. 906,347, pub. 11–3–70. Cl. 51.
Dirndlkonigin GmbH, Munich, Germany. 906,257, pub. 11–3–70. Multiple Class (Classes 39 and 51).
Doehla Greeting Cards, Inc., Nashua, N.H. 906,243, pub. 11–3–70. Cl. 38.
Dominion Envelope Co. Ltd., Ontario, Canada. 906,207, pub. 11–3–70. Cl. 37.
Dow Chemical Co., The, Midland, Mich. 906,224, pub. 11–3–70. Cl. 38.
Drackett Co., The, Cincinnati, Ohio. 189,232, canc. Cl. 4.
Dredge Mfg. Corp., Hallandale, Fla. 780,958, canc. Cl. 23.
Dresser Industries, Inc., Dallas, Tex. 906,078–80, pub. 11–3–70. Cl. 6.
Drugs For Veterinary Medicine, Inc., Yonkers, N.Y. 906,127, pub. 11–3–70. Cl. 18.
Duke Mfg. Co., St. Louis, Mo. 531,128, ren. 1–19–71. Multiple Class (Classes 21 and 34).
Dumont Handkerchiefs, Inc., New York, N.Y. 780,973, canc. Cl. 26.
Dun, R. G., Cigar Corp., Lima, Ohio. 537,645, ren. 1–19–71. Cl. 17.
Du Pont, E. I. de Nemours & Co., Wilmington, Del. 780,784, canc. Cl. 1.
Duquesne Mfg. Co., The, New Kensington, Pa. 540,011, ren. 1–19–71. Cl. 39.
Duriron Co., Inc., The, Dayton, Ohio. 906,101, pub. 11–3–70. Cl. 12.
Duti-Duds, Inc., Lynchburg, Va. 906,293, pub. 11–3–70. Cl. 39.
ERB Plastics, Inc., Atlanta, Ga. 906,155, pub. 11–3–70. Cl. 32.
Electric Circus of New York, Inc., New York, N.Y. 906,415, pub. 11–3–70. Cl. 107.
Elf Union, Societe Anonyme, Paris, France. 906,074, pub. 11–3–70. Multiple Class (Classes 6, 10, and 15).
Elias Mina Meletiades, Mexico City, Mexico. 906,120, pub. 11–3–70. Cl. 17.
Elkton Sparkler Co., Inc., North East, Md. 906,090, pub. 11–3–70. Cl. 9.
Ellis, Mardell, d.b.a. Ellis Mfg. Co., Salem, Oreg. 780,950, canc. Cl. 23.
Eltsroth, J. M., & Associates, Inc., Schaumburg, Ill. 906,083, pub. 11–3–70. Cl. 6.
Elyse, Inc., Bergenfield, N.J. 906,254, pub. 11–3–70. Cl. 38.
Enamel Varnish & Chemical Co. of Australia Pty., New South Wales, Australia. 906,117, pub. 11–3–70. Cl. 16.
Engineering Technology, Inc., Salt Lake City, Utah. 906,174, pub. 11–3–70. Cl. 23.
Ericson of Sweden, New York, N.Y. 906,281, pub. 11–3–70. Cl. 39.
Eskimo Pie Corp., Richmond, Va. 533,685, ren. 1–19–71. Cl. 46.
Eskimo Pie Corp., Richmond, Va. 906,326, pub. 11–3–70. Cl. 46.
Esterline Angus Instrument Co., Inc., Indianapolis, Ind. 780,963, canc. Cl. 26.
European Motor Products, Inc., d.b.a. Engineered Motor Products, Riverside, Calif. 906,146, pub. 11–3–70. Cl. 19.
Eversharp, Inc., Milford, Conn. 906,348–50, pub. 11–3–70. Cl. 51.
Excel-Mineral Co., Inc., d.b.a. Excel-Mineral Co., Los Angeles, Calif. 906,056, pub. 11–3–70. Cl. 1.
Fairchild Camera & Instrument Corp, Mountain View, Calif. 780,908, canc. Cl. 21.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 906,130, pub. 11–3–70. Cl. 18.
Farrell-Argast Electric Co., Inc., Indianapolis, Ind. 906,392, pub. 11–3–70. Cl. 101.
Federated Department Stores, Inc., d.b.a. Burdine's, Miami, Fla. 536,406, ren. 1–19–71. Cl. 39.
Federated Department Stores, Inc., Columbus, Ohio. 906,189, pub. 11–3–70. Cl. 32.
Fellowes Mfg. Co., Franklin Park, Ill. 906,175, pub. 11–3–70. Cl. 25.
Fence City, Inc., East Amherst, N.Y. 906,103, pub. 11–3–70. Multiple Class (Classes 12 and 13).
Florida Fishermens Supply Co., Inc., Tampa, Fla. 906,282, pub. 11–3–70. Cl. 39.
Ford Motor Co., Dearborn, Mich., from E. R. Michelsen, Clinton, Minn. 906,148, pub. 4–14–70. Cl. 19.
Fore Co., Inc., Wayne, N.J. 781,128, canc. Cl. 50.
Foremost-McKesson, Inc., d.b.a. McKesson Laboratories, New York, NY. 906,131, pub. 11–3–70. Cl. 18.
Formica Corp., Cincinnati, Ohio. 906,360, pub. 11–3–70. Cl. 52.
Fraternal Order of Orioles, Reading, Pa. 532,367, ren. 1–19–71.
Freeway National, Inc., Knoxville, Tenn. 906,383, pub. 11–3–70. Cl. 101.
Freeway National, Inc., Knoxville, Tenn. 906,385, pub. 11–3–70. Cl. 101.
Frostie Co., The, Camden, N.J. 301,256, canc. Cl. 45.
Fund for Mutual Depositors Inc., New York, N.Y. 906,400, pub. 11–3–70. Cl. 102.
GT Corp., Minami-ku, Osaka, Japan. 906,064, pub. 10–20–70. Multiple Class (Classes 3 and 22).
Gabriel Industries, Inc., New York, N.Y. 906,154, pub. 11–3–70. Cl. 22.
Gamble-Skogmo, Inc., Minneapolis, Minn. 535,396, ren. 1–19–71. Cl. 21.
Garcia Y Vega, Inc., New York, N.Y. 780,877, canc. Cl. 17.
Gare Ceramic Supply Co., Inc., Haverhill, Mass. 906,115, pub. 11–3–70. Cl. 16.
Gary Arts Ltd., New York, N.Y. 906,193, pub. 11–3–70. Cl. 32.
Geigy Chemical Corp., Ardsley, N.Y. 267,523, canc. Cl. 6.
General Tire & Rubber Co., The, Akron, Ohio. 906,247, pub. 11–3–70. Cl. 38.
Genesco Inc., Nashville, Tenn. 533,863, ren. 1–19–71. Cl. 39.
Genovese Drug Stores, Inc., Long Island City, N.Y. 906,129, pub. 11–3–70. Cl. 18.
Gibson, John T., d.b.a. Auto Index Co., Huntersville, N.C. 906,227, pub. 11–3–70. Cl. 38.
Glifer Associates, Inc, Park Ridge, N.J. 906,226, pub. 11–3–70. Cl. 38.
Gillette Co., The, Boston, Mass. 541,186, ren. 1–19–71. Cl. 51.

Gioia Macaroni Co., Inc., Buffalo, N.Y. 781,092, canc. Cl. 46.
Gipson, Derrill S., Huntsville, Ala. 906,228, pub. 11–3–70. Cl. 38.
Givaudan Corp., Clifton, N.J. 906,346, pub. 11–3–70. Cl. 51.
Globe-Union Inc., Milwaukee, Wis. 906,152, pub. 11–3–70. Cl. 21.
Gold Medal Products Co., Cincinnati, Ohio. 906,317, pub. 11–3–70. Cl. 45.
Golf Players, Inc., Chattanooga, Tenn. 906,412, pub. 11–3–70. Cl. 107.
Gooch Foods, Inc., Lincoln, Nebr. 536,912, ren. 1–19–71. Cl. 46.
Goodall Sanford Inc., Wilmington, Del. 540,894, ren. 1–19–71. Cl. 42.
Gossard, H. W., Co., The, Chicago, Ill. 540,441, ren. 1–19–71. Cl. 39.
Grace, W. R., & Co., Cambridge, Mass. 906,093, pub. 11–3–70. Cl. 10.
Grace, W. R., & Co., New York, N.Y., from Nalley's Inc., Tacoma, Wash. 906,320, pub. 4–18–67. Cl. 46.
Gracious Lady Service, Inc., The, Philadelphia, Pa. 906,379, pub. 11–3–70. Cl. 101.
Grants of St. James's Ltd., Burton-On-Trent, England. 906,337, pub. 11–3–70. Cl. 47.
Great Lakes Mink Association, Kenosha, Wis. 906,051, pub. 11–3–70. Cl. 1.
Greenfield Co., The, Elk Grove Village, Ill. 780,893, canc. Cl. 19.
Gregg, Richard Mfg. Co., Inc., Huntsville, Ala. 906,266, pub. 11–3–70. Cl. 39.
Greif Bros. Corp., St. Paul, Minn. 906,422. Cl. 2.
Griffin-Jaco Mills Corp., Griffin, Ga. 534,378, ren. 1–19–71. Cl. 39.
Guard All Chemical Co., Inc., South Norwalk, Conn. 780,789, canc. Cl. 1.
Guardian Steel Corp., Detroit, Mich. 780,857, canc. Cl. 14.
Gulbenkian Swim Distributors, Inc., Rye, N.Y. 781,057, canc. Cl. 39.
Gym Dandy, Inc., Bossier City, La. 906,158, pub. 11–3–70. Cl. 22.
Hall, Robert Clothes, Inc. (also known as Robert Hall Clothes), New York, N.Y. 534,791, ren. 1–19–71. Cl. 42.
Hall, Robert Clothes, Inc. d.b.a. Robert Hall Clothes, New York, N.Y. 781,038–39, canc. Cl. 39.
Hallihan, Joseph A, d.b.a. Zat Products Co., Cherry Valley, Mass. 906,071, pub. 11–3–71. Cl. 4.
Hamilton Pharmacal Co, Inc., The, Hamilton, N.Y. 906,132, pub. 11–3–70. Cl. 18.
Handelmaatschappij, G. A. Beenbakker, Amersfoort, The Netherlands, 780,862, canc. Multiple Class (Classes 18 and 23).
Hanna Furnace Corp., The, Buffalo, N.Y. 780,860, canc. Cl. 14.
Harmon-O'Loughlin Enterprises, Inc., Portland, Oreg. 906,-393, pub. 11–3–70. Cl. 101.
Harris Paint Co., Tampa, Fla. 906,114, pub. 11–3–70. Cl. 16.
Hartfield Stores, Inc., Los Angeles, Calif. 781,141, canc. Cl. 52.
Hasbro Industries, Inc., Pawtucket, R.I. 906,199, pub. 11–3–70. Cl. 37.
Hearst Corp., The, New York, N.Y. 906,253, pub. 11–3–70. Cl. 38.
Henry Mfg. Co., Inc., Topeka, Kans. 780,956, canc. Cl. 23.
Heresite & Chemical Co., Manitowoc, Wis. 537,025, ren. 1–19–71. Cl. 1.
Herlitz, Steven K., Inc., New York, N.Y. 906,212, pub. 11–3–70. Cl. 38.
Herzog, J. Lawrence, Rockford, Ill. 906,242, pub. 11–3–70. Cl. 38.
Hickey-Freeman Co., Inc., Rochester, N.Y. 536,369–70, ren. 1–19–71. Cl. 39.
Hillman, John A., d.b.a. J. Hillman Art Studio, San Francisco, Calif. 906,214, pub. 11–3–70. Cl. 38.
Hilltop Farm Products, Inc., Birmingham, Mich. 906,321, pub. 11–3–70. Cl. 46.
Hilton, Helen Bryant, Gastonia, N.C. 906,068, pub. 11–3–70. Cl. 3.
Hitachi Chemical Co. Ltd., Tokyo, Japan. 906,077, pub. 11–3–70. Cl. 6.
Hobart Mfg. Co., The, Troy, Ohio. 282,402, ren. 1–19–71. Cl. 21.
Hoosier Soil Services, Inc., Bluffton, Ind. 780,839, canc. Cl. 10.
Holophane Co., Inc., New York, N.Y. 280,960, ren. 1–19–71. Cl. 33.
Honeywell, Inc., Minneapolis, Minn. 906,391, pub. 11–3–70. Cl. 101.
Hood Molded Foam Co., Inc.: *See*—
Hoodfoam Industries, Inc.
Hoodfoam Industries, Inc., from Hood Molded Foam Co., Inc., Marblehead, Mass. 906,147, pub. 11–3–70. Multiple Class (Classes 19 and 32).
Howe Folding Furniture, Inc., New York, N.Y. 906,192, pub. 11–3–70. Cl. 32.
Hubbard-Hall Chemical Co., The, Waterbury, Conn. 123,314, canc. Cl. 10.
Hubbard-Hall Chemical Co., The, Waterbury, Conn. 255,572, canc. Cl. 6.
Hubbard-Hall Chemical Co., The, Waterbury, Conn. 780,842, canc. Cl. 10.
Huber, J. M. Corp., Borger, Tex. 906,098, pub. 11–3–70. Cl. 11.
Hudson, H. D. Mfg. Co., Chicago, Ill. 538,472, ren. 1–19–71. Cl. 23.
Hudson, H. D. Mfg. Co., Chicago, Ill. 539,387, ren. 1–19–71. Cl. 23.
Humetrics Corp., Los Angeles, Calif. 906,309, pub. 11–3–70. Cl. 44.
Hunt-Wesson Foods, Inc., Fullerton, Calif. 536,656, ren. 1–19–71. Cl. 46.
Husky Briquetting, Inc., Cody, Wyo. 906,055, pub. 11–3–70. Cl. 1.
Hydronautics, Inc., Laurel, Md. 906,378, pub. 11–3–70. Cl. 100.
Hy-Pure Laboratories, Inc., d.b.a. Peppet Laboratories Distributors, Cincinnati, Ohio, 540,289, ren. 1–19–71. Cl. 18.
IPA Industrieerzeugnisse und Patentauswertung GmbH, Munich-Solln, Germany. 906,096–7, pub. 11–3–70. Cl. 6.
I–T–E Imperial Corp., Philadelphia, Pa. 540,694, ren. 1–19–71. Cl. 21.
Imperial Flavors, Inc., Winter Haven, Fla. 906,316, pub. 11–3–70. Cl. 46.
Imperial Knife Associated Co., Inc., Providence, R.I. 534,926, ren. 1–19–71. Cl. 23.
Index Publishing Corp., Chicago, Ill. 906,213, pub. 11–3–70. Cl. 38.
Industrial Marine, Inc., Warsaw, Ind. 781,156, canc. Cl. 19.
Integral Cubics, Inc., Long Island City, N.C. 906,190, pub. 11–3–70. Cl. 32.
International Fabricators, Inc., Elkhart, Ind. 906,105, pub. 11–3–70. Cl. 13.
International Fraternity of Delta Sigma Pi, Oxford, Ohio. 906,419, pub. 11–3–70. Cl. 200.
International Playtex Corp., New York, N.Y. 906,287, pub. 11–3–70. Cl. 39.
Interpace Corp., Parsippany, N.J. 538,757, ren. 1–19–71. Cl. 30.
Investors Syndicate Life Insurance & Annuity Co., Minneapolis, Minn. 906,394, pub. 11–3–70. Cl. 102.
Ivers-Lee Co., Newark, N.J. 780,801, canc. Cl. 2.
JFD Electronics Corp., Brooklyn, N.Y. 780,902, canc. Cl. 21.
Janie Originals, Inc., New York, N.Y. 906,273, pub. 11–3–70. Cl. 39.
Jaroda Co., Boulder, Colo. 780,984, canc. Cl. 23.
Jato Mfg., Inc., Salina, Kans. 780,894, canc. Cl. 19.
Jenkins, George O., Co., Bridgewater, Mass. 780,785, canc. Cl. 1.
Jero Products Co.: *See*—
Meister Brau, Inc.
Jero Products Co., Inc.: *See*—
Meister Brau, Inc.
Bedford, John, & Sons Ltd., Sheffield, England. 906,108, pub. 11–3–70. Cl. 14.
Johnny's American Inn, Inc., Omaha, Nebr. 906,370, pub. 11–3–70. Cl. 100.
Johnson & Johnson, d.b.a. Personal Products Co., New Brunswick, N.J. 906,351, pub. 11–3–70. Cl. 51.
Johnson, S. C., & Son, Inc., Racine, Wis. 532,019, ren. 1–19–71. Cl. 6.
Johnston, Robert A., Milwaukee, Wis. 280,275, ren. 1–19–71. Cl. 46.
Jura Watch Co., Delemont, Switzerland. 537,271, ren. 1–19–71. Cl. 27.
Kaiser Aluminum & Chemical Corp., Oakland, Calif. 906,092, pub. 11–3–70. Cl. 10.
Kaiser Cement & Gypsum Corp., Oakland, Calif. 535,769, ren. 1–19–71. Cl. 12.
Kal Plastics, Inc., Beaverton, Mich. 780,796, canc. Cl. 1.
Kamar Inc., Gardena, Calif. 906,252, pub. 11–3–70. Cl. 38.
Kampgrounds of America, Inc., Billings, Mont. 906,377, pub. 11–3–70. Cl. 101.
Kanri Inc., New York, N.Y. 906,301, pub. 11–3–70. Cl. 42.
Kappa Psi Pharmaceutical Fraternity, St. Louis, Mo. 277,589, ren. 1–19–71. Cl. 28.
Karman, Inc., Denver, Colo. 906,264, pub. 11–3–70. Cl. 39.
Kay Line Inc., Trenton, N.J. 780,795, canc. Cl. 1.
Kay Mfg. Co., Brooklyn, N.Y. 906,194, pub. 11–3–70. Cl. 32.
Kelly, W. K., d.b.a. The Kelly Mfg. Co., Sanford, N.C. 781,108, canc. Cl. 46.
Kentucky Colonel Gasoline Inc., Louisville, Ky. 906,405, pub. 11–3–70. Cl. 103.
Klopman Mills, Inc., Rockleigh, N.J. 540,798, ren. 1–19–71. Cl. 42.
Klopman Mills, Inc., Rockleigh, N.J. 540,813, ren. 1–19–71. Cl. 42.
Klopman Mills, Inc., Rockleigh, N.J. 906,296, pub. 11–3–70. Cl. 42.
Knight Newspapers, Inc., Detroit, Mich. 358,877, canc. Cl. 38.
Koracorp Industries, Inc. from Koret of California, Inc., San Francisco, Calif. 906,280, pub. 11–3–70. Cl. 39.
Koret of California, Inc.: *See*—
Koracorp Industries, Inc.
Kosher Zion Sausage Co. of Chicago, Chicago, Ill. 906,330, pub. 11–3–70. Cl. 46.
Kresge, S. S., Co., Detroit, Mich. 906,109, pub. 11–3–70. Cl. 15.
Lacakawanna Leather Co., The, Hackettstown, N.J. 906,054, pub. 11–3–70. Cl. 1.
Lakewood Mfg. Co., Westlake, Ohio. 780,925, canc. Cl. 22.
Lampert, Seymour, d.b.a. Styline Jewelers, Chicago, Ill. 906,180, pub. 11–3–70. Cl. 28.
Lamplighter Club, Inc., The, New Orleans, La. 906,410, pub. 11–3–70. Cl. 107.
Land, Charles H., Tuscaloosa, Ala. 781,023, canc. Cl. 38.
Lange Co., The, Dubuque, Iowa. 906,153, pub. 11–3–70. Cl. 22.
Lansberg, Henri, Paris, France. 906,260, pub. 11–3–70. Cl. 39.
Larutan Corp., The, Dallas, Tex. 906,102, pub. 11–3–70. Cl. 12.
Lawter Chemicals, Inc., Chicago, Ill. 906,099, pub. 11–3–70. Cl. 11.
Layko, Ross & Co., Inc., Seattle, Wash. 540,309, ren. 1–19–71. Cl. 28.
Leaf Brands, Inc., Chicago, Ill. 781,099, canc. Cl. 46.
Lenox Photo, Inc., Moline, Ill. 906,234, pub. 11–3–70. Cl. 38.
Lerc Audio Recording Club, Burbank, Calif. 906,417, pub. 11–3–70. Cl. 200.
Lewis Knitting Co., Reno, Nev. 781,055, canc. Cl. 39.
Liberty Plastics & Metals Co., Louisville, Ky. 906,407, pub. 11–3–70. Cl. 103.
Linemaster Switch Corp., Woodstock, Conn. 780,920, canc. Cl. 21.
Lionel Toy Corp., The, Hillside, N.J. 906,157, pub. 11–3–70. Cl. 22.

Little Giant Corp., Oklahoma City, Okla. 780,897, canc. Cl. 21.
Litton Business Systems, Inc., New York, N.Y. 522,927, ren. 1–19–71. Cl. 26.
Loomskill, Inc., New York, N.Y. 906,297, pub. 11–3–70. Cl. 42.
Lovable Co., The, Atlanta, Ga. 906,291, pub. 11–3–70. Cl. 39.
Lowell Textile Co., Greenfield, Ohio. 781,053, canc. Cl. 39.
Ludwig, W. E., K.G., Nurtingen, Wurttemberg, Germany. 780,965, canc. Cl. 26.
Lumured Plastics Corp., Woodbridge, N.J. 906,423. Cl. 3.
Lykes Pasco Packing Co., Dade City, Fla. 535,839, ren. 1–19–71. Cl. 46.
Maestro Import Industries, Inc., Newark, N.Y. 906,188, pub. 11–3–70. Cl. 32.
Mallinckrodt Chemical Works, St. Louis, Mo. 539,038, ren. 1–19–71. Cl. 18.
Maloney-Crawford Tank Corp., Tulsa, Okla. 529,199, ren. 1–19–71. Cl. 26.
Management Recruiters, Inc.: *See*—
Management Recruiters International.
Management Recruiters International, Inc. from Management Recruiters, Inc., Cleveland, Ohio. 906,376, pub. 11–3–70. Cl. 101.
Manhattan Industries, Inc., New York, N.Y. 541,401, ren. 1–19–71. Cl. 39.
Margolin, H. & Co., Inc., New York, N.Y. 906,065, pub. 11–3–70. Cl. 3.
Marine Consultants & Designers, Inc, Cleveland, Ohio. 906,369, pub. 11–3–70. Cl. 100.
Mario Fumagalli S.p.A., Milan, Italy. 780,948, canc. Cl. 23.
Marion Laboratories, Inc., Kansas City, Mo. 906,136–8, pub. 11–3–70. Cl. 18.
Markwell Mfg. Co., Inc., New York, N.Y. 906,097, pub. 11–3–70. Cl. 11.
Marmacraft Carpet Co, Ltd., Dalton, Ga. 906,299, pub. 11–3–70. Cl. 42.
Marton, Mort N., Corp., The, New York, N.Y. 780,798, canc. Cl. 2.
Masso Hermanos, S. A., Vigo, Spain. 536,336, ren. 1–19–71. Cl. 46.
Mattel, Inc., Hawthorne, Calif. 906,060, pub. 11–3–70. Cl. 2.
Mattel, Inc., Hawthorne, Calif. 906,156, pub. 11–3–70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 906,160, pub. 11–3–70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 906,162–3, pub. 11–3–70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 906,165–9, pub. 11–3–70. Cl. 22.
McCormick & Co., Inc., Cockeysville, Md. 906,436, pub. 11–3–70. Cl. 46.
McCoy Box Co., South Sioux City, Nebr. 780,799, canc. Cl. 2.
McFadden, James B. & Sons, Lockport, Ill. 781,106, canc. Cl. 46.
McGraw-Edison Co., Elgin, Ill. 780,846, canc. Cl. 12.
McGraw-Edison Co., Elgin, Ill. 780,901, canc. Cl. 21.
McGraw-Hill, Inc., New York, N.Y. 906,240–1, pub. 11–3–70. Cl. 38.
McGraw-Hill, Inc., New York, N.Y. 906,431, pub. 11–3–70. Cl. 38.
Mebane Co., The, Mebane, N.C. 906,191, pub. 11–3–70. Cl. 62.
Medicredit Inc., Narberth, Pa. 906,395, pub. 11–3–70. Cl. 102.
Meister Brau, Inc., from Jero Products Co., Chicago, Ill. 906,-315, pub. 11–3–70. Multiple Class (Classes 45, 46, and 49).
Melville Shoe Corp., New York, N.Y. 906,277, pub. 11–3–70. Cl. 39.
Merck & Co., Inc., Rahway, N.J. 906,273, pub. 11–3–70. Cl. 100.
Merit House, Inc., New York, N.Y. 781,080–1, canc. Cl. 45.
Mevana Hong Kong Tailors Inc., Hong Kong. 906,276, pub. 11–3–70. Cl. 39.
Meyer Laboratories, Inc, Detroit, Mich. 906,135, pub. 11–3–70. Cl. 18.
Michelsen, Edwin R.: *See*—
Ford Motor Co.
Miken Enterprises, Reading, Pa. 906,275, pub. 11–3–70. Cl. 39.
Miles Laboratories, Inc., Elkhart, Ind. 780,838, canc. Cl. 6.
Miles Laboratories, Inc., Elkhart, Ind. 906,125, pub. 11–3–70. Cl. 18.
Miles Laboratories, Inc., Elkhart, Ind. 906,335, pub. 11–3–70. Cl. 46.
Miller-Waltzer Associates, Inc., New York, N.Y. 906,380, pub. 11–3–70. Cl. 101.
Milsco Mfg. Co., Milwaukee, Wis. 780,964, canc. Cl. 26.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 906,049–50, pub. 11–3–70. Cl. 1.
Miss America Foods, Inc., Cullman, Ala. 281,225, ren. 1–19–71. Cl. 46.
Miss Pat, Los Angeles, Calif. 906,268, pub. 11–3–70. Cl. 39.
Mr. Boston Distiller Inc., Boston, Mass. 781,117, canc. Cl. 49.
Mitsubishi Chemical Industries Ltd., Marunouchi, Chiyoda-ku, Tokyo, Japan. 780, 838, canc. Cl. 10.
Montgomery Ward & Co., Inc., Chicago, Ill. 906,358, pub. 11–3–70. Cl. 52.
Moro & Benedit Cigar Corp., Miami, Fla. 906,122, pub. 11–3–70. Cl. 17.
Morris, Philip Inc., d.b.a. Clark Gum Co., New York, N.Y. 541,001, ren. 1–19–71. Cl. 46.
Morris, Philip Inc., New York, N.Y. 906,121, pub. 11–3–70. Cl. 17.
Morton International, Inc.: *See*—
Nor-Am Agricultural Products, Inc.
Motorola, Inc., Franklin Park, Ill. 535,305, ren. 1–19–71. Cl. 21.
Move, Ltd., London, England. 906,218, pub. 11–3–70. Cl. 38.
Naamloze Vennootschap Eerste Nederlandse Cement Industrie Enci (E. N. C. I.), Amsterdam, Netherlands. 277,103, ren. 1–19–71. Cl. 12.
Nalco Chemical Co., Chicago, Ill. 906,356, pub. 11–3–70. Cl. 52.
Nalley's Inc.: *See*—
Grace, W. R. & Co.
National Association Of Minority Contractors, Inc., San Francisco, Calif. 906,222, pub. 11–3–70. Cl. 38.
National Curtain, Drapery & Allied Products, New Rochelle, N.Y. 906,421, pub. 11–3–70. Cl. 200.
National Machinery Co., The, Tiffin, Ohio. 281,584, ren. 1–19–71. Cl. 23.
National Spinning Co., Inc., New York, N.Y. 906,308, pub. 7–28–70. Cl. 43.
Nation-Wide Dental Studios, Inc., New York, N.Y. 906,313, pub. 11–3–70. Cl. 44.
Neumann, Walter F. d.b.a. International Design Associates, Western Springs, Ill. 906,368, pub. 11–3–70. Cl. 100.
New American Library of World Literature, Inc, The, New York, N.Y. 781,017, canc. Cl. 38.
Nor-Am Agricultural Products, Inc., from Morton International, Inc., Chicago, Ill. 906,075, pub. 11—3–70. Cl. 6.
Nelson, Ordean T., d.b.a. College Craft Painters, Glen Ellyn, Ill. 906,404, pub. 11–3–70. Cl. 103.
Norcross, Inc., New York, N.Y. 781,018, canc. Cl. 38.
Norgine Laboratories, Inc., New York, N.Y. 540,420, ren. 1–19–71. Cl. 18.
Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 444,329, ren. 1–19–71. Cl. 51.
Norman, Merle, Cosmetics, Inc., Los Angeles, Calif. 534,129, ren. 1–19–71. Cl. 51.
Northeastern Inc., Canton, Ohio. 781,146, canc. Cl. 101.
Norwich Pharmacal Co., The, Norwich, N.Y. 906,134, pub. 11–3–70. Cl. 18.
O.K. Rubber Welders, Inc., Littleton, Colo. 780,995, canc. Cl. 35.
O.K. Rubber Welders, Inc., Littleton, Colo. 780,998, canc. Cl. 35.
Occidental Petroleum Corp., d.b.a. Occidental Chemical Co., Los Angeles, Calif. 906,082, pub. 11–3–70. Cl. 6.
Occidental Petroleum Corp., Los Angeles, Calif. 906,091, pub. 11–3–70. Cl. 10.
Orbicon, Ltd., Morris Plains, N.J. 780,922, canc. Cl. 22.
Ordway, A. P., & Co., Inc., New York, N.Y. 906,357, pub. 11–3–70. Cl. 52.
Ortho Pharmaceutical Corp., Raritan, N.J. 781,072, canc. Cl. 44.
Oussani, James J., d.b.a. The Staplex Co., Brooklyn, N.Y. 540,853, ren. 1–19–71. Cl. 23.
Owens-Illinois Glass Co., Toledo, Ohio. 780,974, canc. Cl. 26.
Oxford Pendaflex Corp., Garden City, N.Y. 540,785, ren. 1–19–71. Cl. 37.
Pacific Vegetable Oil Corp., San Francisco, Calif. 906,081, pub. 11–3–70. Multiple Class (Classes 6 and 46).
Packwood, G. H., Mfg. Co., St. Louis, Mo. 780,724, canc. Cl. 52.
Pacuk, Peter P., Jacksonville, Fla. 780,923, canc. Cl. 22.
Paeco, Inc., Perth Amboy, N.J. 906,104, pub. 11–3–70. Cl. 13.
Pakline, Inc., North Hollywood, Calif. 906,341, pub. 11–3–70. Cl. 50.
Palco Hats Inc., South Norwalk, Conn. 906,256, pub. 11–3–70. Cl. 39.
Pan American Laboratories, Inc., New Orleans, La. 906,128, pub. 11–3–70. Cl. 18.
Pan Geo Atlas Corp., Houston, Tex. 906,365–6, pub. 11–3–70. Multiple Class (Classes 100 and 103).
Pan-American Barter Co., Inc., The, New York, N.Y. 906,177, pub. 11–3–70. Cl. 27.
Pantasote Co. of New York, Inc., New York, N.Y. 524,373, ren. 1–19–71. Cl. 42.
Paramount Publications, Inc., New York, N.Y. 906,435. Cl. 38.
Parfums Corday, Inc., New York, N.Y. 535,634, ren. 1–19–71. Cl. 51.
Parke, Davis & Co., Detroit, Mich. 906,231, pub. 11–3–70. Cl. 38.
Parker, I. C., Fort Worth, Tex. 906,833, pub. 11–3–70. Cl. 46.
Parrish's Cake Decorating Supplies, Inc., Los Angeles, Calif. 906,107, pub. 11–3–70. Cl. 13.
Pathway Products Corp., Verona, N.J. 906,069, pub. 11–3–70. Multiple Class (Classes 4 and 52).
Payton Products, Inc., Brooklyn, N.Y. 780,931, canc. Cl. 22.
Pearce, Thomas W., Wilmington, Del. 537,537, ren. 1–19–71. Cl. 37.
Pelican Publishing Co., Inc., d.b.a. Pelican Publishing Co., Gretna, La. 906,249–50, pub. 11–3–70. Cl. 38.
Pendleton Woolen Mills, Portland, Oreg. 906,290, pub. 11–3–70. Cl. 39.
Pendulum Press, Inc., Westport, Conn. 906,220, pub. 11–3–70. Cl. 38.
Pep Boys, Manny, Moe, & Jack, Philadelphia, Pa. 540,178, ren. 1–19–71. Cl. 21.
Perfect Equipment Corp., Murfeesboro, Tenn. 541,632, ren. 1–19–71. Cl. 19.
Pescamino Ltd. A/S, Oslo, Norway. 906,324, pub. 11–3–70. Cl. 46.
Peterson-Rockhill Corp., Seattle, Wash. 780,928, canc. Cl. 22.
Pfizer, Chas., & Co., Inc.: *See*—
Pfizer Inc.
Pfizer Inc., from Chas. Pfizer & Co., Inc., New York, N.Y. 906,352–4, pub. 11–3–70. Cl. 51.
Phenex Antiseptic Laboratories, Inc., Chicago, Ill. 906,133, pub. 11–3–70. Cl. 18.
Physician's Drug Manual, Inc., New York, N.Y. 906,215, pub. 11–3–70. Cl. 38.
Pincus, Bernard S., Co., Philadelphia, Pa. 540,982, ren. 1–19–71. Cl. 46.
Pizza Inn, Inc., The, Arlington, Tex. 906,367, pub. 11–3–70. Cl. 100.
Plastics, Inc., St. Paul, Minn. 906,150, pub. 11–3–70. Cl. 21.
Playboy of Miami, Inc., Miami, Fla. 906,255, pub. 3–10–64. Cl. 39.

Ploeger Packing Co., Inc., The, Darien, Ga. 539,637, ren. 1–19–71. Cl. 46.
Pond, A. H., Co., Inc., Syracuse, N.Y. 277,153, ren. 1–19–71. Cl. 28.
Porter, H. K., Inc., Somerville, Mass. 536,327, ren. 1–19–71. Cl. 23.
Porter, H. K., Inc., Somerville, Mass. 540,938, ren. 1–19–71. Cl. 23.
Powers Chemco, Inc., Glen Cove, N.Y. 532,095, ren. 1–19–71. Cl. 16.
Pritchard Products Corp.: *See*—
Pritchard-Eco, Inc.
Pritchard-Eco, Inc., from Pritchard Products Corp., Kansas City, Mo. 906,184, pub. 11–3–70. Cl. 31.
Product Development Corp., Norristown, Pa. 780,943, canc. Cl. 23.
Professional & College Sports Advertising Co., East Cleveland, Ohio. 781,120, canc. Cl. 50.
Project Software & Development, Inc., Cambridge, Mass. 906,236, pub. 11–3–70. Cl. 38.
Putman Publishing Co., Chicago, Ill. 781,016, canc. Cl. 38.
Rack Engineering Co., Connellsville, Pa. 444,228, ren. 1–19–71. Cl. 13.
Radiant Mfg. Corp., Morton Grove, Ill. 780,960, canc. Cl. 26.
Raleigh Mfg., Inc., New York, N.Y. 906,265, pub. 11–3–70. Cl. 39.
Random House, Inc., from The L. W. Singer Co. Inc., New York, N.Y. 906,206, pub. 11–3–70. Cl. 38.
Random House, Inc., New York, N.Y. 906,238, pub 11–3–70. Cl. 38.
Rapistan Inc., Grand Rapids, Mich. 539,229, ren. 1–19–71. Cl. 23.
Ratterman, Frances S. d.b.a. Ratterman's Maternity Support, Louisville, Ky. 781,074, canc. Cl. 44.
Reade, Walter Organization, Inc., The, Oakhurst, N.J. 906,225, pub. 11–3–70. Cl. 38.
Rebel Towing Co., Houston, Tex. 781,147, canc. Cl. 105.
Reddy Co., Inc., The, Montpelier, Vermont. 537,837, ren. 1–19–71. Cl. 40.
Remington Arms Co., Inc., Bridgeport, Conn. 541,094, ren. 1–19–71. Cl. 9.
Revlon, Inc., New York, N.Y. 533,101, ren. 1–19–71. Cl. 44.
Reynolds Metals Co., Richmond, Va. 906,204–6, pub. 11–3–70. Cl. 37.
Riegel Paper Corp., New York, N.Y. 906,201, pub. 11–3–70. Cl. 37.
Rieke Corp., Auburn, Ind. 536,551, ren. 1–19–71. Cl. 35.
Riback Enterprises, Inc., Chicago, Ill. 906,239, pub. 11–3–70. Cl. 38.
Riback Enterprises, Inc., Chicago, Ill. 906,248, pub. 11–3–70. Cl. 38.
Rich, Alberta Penny, Dallas, Tex. 906,272, pub. 11–3–70. Cl. 39.
Richardson-Merrell Inc., New York, N.Y. 906,140, pub. 11–3–70. Cl. 18.
Richway Products Inc., Janesville, Iowa. 906,094, pub. 11–3–70. Cl. 10.
River Valley Co., Inc., Albany, N.Y. 536,174, ren. 1–19–71. Cl. 46.
Robbins, R. G. & Co. Inc., Portland, Oreg. 906,425, pub. 11–3–70. Cl. 37.
Robertson Corp, The, Brownstown, Ind. 906,381, pub. 11–3–70. Cl. 46.
Robin, Christopher, Ltd., St. Joseph, Mo. 906,263, pub. 11–3–70. Cl. 39.
Robins, A. H. Co., Inc, Richmond, Va. 906,327, pub. 11–3–70. Cl. 46.
Robot Salesman, Inc., Indianapolis, Md. 780,905, canc. Cl. 21.
Romane Inc., Chicago, Ill. 906,343, pub. 11–3–70. Cl. 51.
Rosner, Harold G. d.b.a. Clare, Inc., Minneapolis, Minn. 781,-068, canc. Cl. 44.
Rosy Cheeks Publishers, Inc., New York, N.Y. 906,246, pub. 11–3–70. Cl. 38.
Roy Shoe Co., The, Richland, Pa. 535,495, ren. 1–19–71. Cl. 39.
Royal Military Jewelry Co., Apache Junction, Ariz. 906,179, pub 11–3–70. Cl. 28.
Rubson S.A.E. from Alexandre Dumas, Courbevoie Hauts-de-Seine, France. 906,100, pub. 11–3–70. Multiple Class (Classes 12 and 16).
Rummonds Bros. Ranch, Thermal, Calif. 781,107, canc. Cl. 46.
STP Corp., Des Plaines, Ill. 906,340, pub. 11–3–70. Cl. 50.
Sackner Products, Inc., Grand Rapids, Mich. 536,377, ren. 1–19–71. Cl. 40.
Sadler, Gerald Ernest d.b.a. Gerald E. Sadler, Middlesborough, England. 906,344, pub. 11–3–70. Multiple Class, Classes 51 and 52).
Sagner, Inc., Frederick, Md. 906,279, pub. 11–3–70. Cl. 39.
Salerno-Megowen Biscuit Co., Chicago, Ill. 781,112–3, canc. Cl. 46.
Salmon Products, Inc., Newton, Iowa. 906,119, pub. 11–3–70. Cl. 16.
San Diego Padres, San Diego, Calif. 906,413, pub. 11–3–70. Cl. 107.
Sarchet, Richard J., Munster, Ind. 906,686, pub. 11–3–70. Cl. 101.
Sargent-Welch Scientific Co., Skokie, Ill. 537,570, ren. 1–19–71. Cl. 23.
Schoeneman, J. Inc., Owings Mills, Md. 529,474, ren. 1–19–71. Cl. 39.
Schott, Andrew F., Green Lake, Wis. 780,966, canc. Cl. 26.
Scuffy Pet Centers, Inc. from Scuffy's Pet Supplies, Inc., Allendale, N.J. 906,322, pub. 11–3–70. Cl. 46.
Scuffy's Pet Supplies, Inc.: *See*—
Scuffy Pet Centers, Inc.
Schlumberger Technology Corp., Houston, Tex. 906,151, pub. 11–3–70. Cl. 21.
Scholastic Roto, Inc, New York, N.Y. 906,221, pub. 11–3–70. Cl. 38.
Sealed-Sweet Growers, Inc., Tampa, Fla. 541,341, ren. 1–19–71. Cl. 46.
Sears, Roebuck & Co., Chicago, Ill. 906,173, pub. 11–3–70. Cl. 23.
Seco, Inc., Goodlettsville, Tenn. 780,933, canc. Cl. 23.
Semel, Bernard J., Washington, D.C. 906,089, pub. 11–3–70. Cl. 9.
Servus Rubber Co., The, Rock Island, Ill. 906,271, pub. 11–3–70. Cl. 39.
Shelby Seamless Hosiery Mills, Inc., Shelby, N.C. 906,269, pub. 11–3–70. Cl. 39.
Sherwood Medical Industries Inc., Chicago, Ill. 906,183, pub. 11–3–70. Cl. 31.
Simple Signman, Inc., Columbus, Ohio. 906,342, pub. 11–3–70. Cl. 50.
Singer, L. W., Co., Inc., The: *See*—
Random House, Inc.
Sirco International Corp., Mt. Vernon, N.Y. 906,063, pub. 11–3–70. Cl. 3.
Sirco International Corp., Mt. Vernon, N.Y. 906,066–7, pub. 11–3–70. Cl. 3.
Ski Swap Management Group, Belmont, Calif. 906,374, pub. 11–3–70. Cl. 101.
Sloane, W. & J., New York, N.Y. 906,187, pub. 11–3–70. Cl. 32.
Smith Kline Instruments, Inc., Palo Alto, Calif. 906,314, pub. 11–3–70. Cl. 44.
Snow Sports Publications, Inc., Minneapolis, Minn. 906,428. Cl. 38.
Snow-Nabstedt Gear Corp., The, Hamden, Conn. 780,949, canc. Cl. 23.
Societe de Filature Anciens Etablissements Jules de Surmont & Fils, Tourcoing, Nord, France. 906,307, pub. 11–3–70. Cl. 43.
Solar Control Products Corp., Allston, Mass. 906,053, pub. 11–3–70. Cl. 1.
South Bay Design Corp., New York, N.Y. 906,302, pub. 11–3–70. Cl. 42.
Southern Coal & Coke Co., Inc., Tazewell, Va. 780,787, canc. Cl. 1.
Southern Sizing Co., East Point, Ga. 539,777, ren. 1–19–71. Cl. 6.
Spartan Industries, Inc., New York, N.Y. 906,285, pub. 11–3–70. Cl. 39.
Sperex Corp., Los Angeles, Calif. 780,865, canc. Cl. 16.
Spir-it, Inc., Malden, Mass. 540,897, ren. 1–19–71. Cl. 23.
Sportallor, Inc., Miami, Fla. 906,259, pub. 11–3–70. Cl. 39.
Spun-Lo Elderlon, Inc., New York, N.Y. 906,300, pub. 11–3–70. Cl. 42.
Squibb, E. R., & Sons, Inc., New York, N.Y. 906,361–3, pub. 11–3–70. Cl. 52.
Squires-Sanders, Inc., Plainfield, N.J. 781,157, canc. Cl. 21.
Staff Supermarket Associates, Inc., Jericho, N.Y. 906,202, pub. 11–3–70. Cl. 37.
Standard Oil Co., Flemington, N.J. 906,085, pub. 11–3–70. Cl. 6.
Star-New Era, Inc., South Hackensack, N.J. 906,170, pub. 11–3–70. Cl. 23.
Statistical Tabulating Corp., Chicago, Ill. 906,382, pub. 11–3–70. Cl. 101.
Stein, Maurice, d.b.a. Stuart Kingston Co., Rehoboth Beach, Del. 906,295, pub. 11–3–70. Cl. 42.
Stelter, Paul J., d.b.a. The Stelter Co., Des Moines, Iowa. 906,434. Cl. 38.
Sterling Drug Inc., New York, N.Y. 906,414, pub. 11–3–70. Cl. 107.
Stevens, J. P., & Co., Inc., New York, N.Y. 279,765, ren. 1–19–71. Cl. 42.
Stevens, J. P., & Co., Inc., New York, N.Y. 535,812, ren. 1–19–71. Cl. 42.
Stevens, J. P., & Co., Inc., New York, N.Y. 536,288, ren. 1–19–71. Cl. 42.
Stevens, J. P., & Co., Inc., New York, N.Y. 537,155, ren. 1–19–71. Cl. 42.
Stevens, J. P., & Co., Inc., New York, N.Y. 537,161, ren. 1–19–71. Cl. 42.
Stewart, T & E, Inc., Mason City, Iowa. 536,099, ren. 1–19–71. Cl. 18.
Stewart-Warner Corp., Chicago, Ill. 536,639, ren. 1–19–71. Cl. 19.
Stillman Publications, Inc., Huntington, N.Y. 906,432. Cl. 38.
Strick Corp., Fairless Hills, Pa. 906,145, pub. 11–3–70. Cl. 19.
Studio-Creative Crafts, Inc., The, Arlington, Va. 906,378, pub. 11–3–70. Cl. 101.
Sturdi-Wear Clothes Inc., Scranton, Pa. 906,283, pub. 11–3–70. Cl. 39.
Sugar Beet Products Co., Saginaw, Mich. 533,721, ren. 1–19–71. Cl. 52.
Summers Laboratories, Inc., Ambler, Pa. 780,882, canc. Cl. 18.
Sun Chemical Corp., New York, N.Y. 906,096, pub. 11–3–70. Cl. 11.
Sunshine Biscuits, Inc., New York, N.Y. 539,833, ren. 1–19–71. Cl. 46.
Sunshine Biscuits, Inc., New York, N.Y. 540,071, ren. 1–19–71. Cl. 46.
Superior Industries, Van Nuys, Calif. 780,896, canc. Cl. 19.
Superior Toy & Mfg. Co., Inc., Chicago, Ill. 906,161, pub. 11–3–70. Cl. 22.
Surpass Leather Co., Philadelphia, Pa. 780,793, canc. Cl. 1.
Swan Original S.p.A., from Delmar di Daniele Massa & C.s.a.s., Milan, Italy. 906,258, pub. 8–11–70. Cl. 39.
Sweet, John E., d.b.a. Sperry Pharmacal, Chicago, Ill. 906,-189, pub. 11–3–70. Cl. 18.

Synthetics Finishing Corp., Philadelphia, Pa. 906,304, pub. 11–3–70. Cl. 42.
Takeshi Shindo, d.b.a. Grand Prix Records, Los Angeles, Calif. 781,004, canc. Cl. 36.
Talk-A-Phone Co., Chicago, Ill. 540,806, ren. 1–19–71. Cl. 21.
Tavern Products, Inc., Paramount, Calif. 906,318, pub. 11–3–70. Cl. 45.
Teaneck Chemical Co., Inc., The, Carlstadt, N.J. 780,825, canc. Cl. 6.
Teasdale Fenton Cleaners, Cincinnati, Ohio. 906,406, pub. 11–3–70. Cl. 103.
Tecalemit Ltd., Berkshire, England. 528,233, ren. 1–19–71. Cl. 23.
Techmark Associates Inc., New York, N.Y. 906,384, pub. 11–3–70. Cl. 101.
Tessler & Weiss, Inc., Union, N.J. 540,869, ren. 1–19–71. Cl. 28.
Textron Inc., Providence, R.I. 906,058, pub. 11–3–70. Multiple Class (Classes 2, 3, 19, 22, 23, and 39).
Thalhimer Bros., Inc., Richmond, Va. 780,982, canc. Cl. 28.
Tingley Rubber Corp., South Plainfield, N.J. 906,216, pub. 11–3–70. Cl. 38.
Todd Chemical Co., Inc., Great Neck, N.Y. 906,332, pub. 11–3–70. Cl. 46.
Tomsky, Lawrence, d.b.a. Labella Sales Co., San Mateo, Calif. 906,329, pub. 11–3–70. Cl. 46.
Torbitt & Castleman Co., The, Louisville, Ky. 541,272–3, ren. 1–19–71. Cl. 46.
Total Woman, Inc., Pittsburgh, Pa. 906,411, pub. 11–3–70. Cl. 107.
Tower Products, Inc., Wheeling, Ill. 906,059, pub. 11–3–70. Cl. 2.
Trends Publishing, Inc., Washington, D.C. 906,427. Cl. 38.
Tropi Co., Tulsa, Okla. 906,328, pub. 11–3–70. Cl. 46.
Tyrrell's Inc., Seattle, Wash. 528,355, ren. 1–19–71. Cl. 46.
USM Corp., Boston, Mass. 533,476, ren. 1–19–71. Cl. 13.
USM Corp., Boston, Mass. 534,165, ren. 1–19–71. Cl. 13.
USM Corp., Boston, Mass. 534,759, ren. 1–19–71. Cl. 23.
Uniroyal, Inc., New York, N.Y. 906,073, pub. 11–3–70. Cl. 5.
Uniroyal, Inc., New York, N.Y. 906,267, pub. 11–3–70. Cl. 39.
United Aircraft Corp., Southampton, Pa. 781,069, canc. Cl. 44.
United International Clubs, Inc., Beverly Hills, Calif. 906,390, pub. 11–3–70. Cl. 101.
United States Plywood Corp., New York, N.Y. 781,127, canc. Cl. 50.
United States Steel Corp., Pittsburgh, Pa. 536,195, ren. 1–19–71. Cl. 14.
United States Bedding Co., The, St. Paul, Minn. 906,186, pub. 11–3–70. Cl. 32.
United States Duffers' Association, Inc., Newport, Ky. 906,420, pub. 11–3–70. Cl. 200.
U.S. Expansion Bolt Co., York, Pa. 537,729, ren. 1–19–71. Cl. 23.
Upjohn Co., The, Kalamazoo, Mich. 906,142, pub. 11–3–70. Cl. 18.
Upjohn Co., The, Kalamazoo, Mich. 906,144, pub. 11–3–70. Cl. 18.
Victor Mfg. & Gasket Co., Chicago, Ill. 780,996, canc. Cl. 35.
Villarama Corp., New York, N.Y. 780,849, canc. Cl. 12.
Viobin Corp., Monticello, Ill. 536,086, ren. 1–19–71. Cl. 18.
Wahl Clipper Corp., Sterling, Ill. 539,711, ren. 1–19–71. Cl. 44.
Warner-Lambert Pharmaceutical Co., Morris Plains, N.J. 530,520, ren. 1–19–71. Cl. 44.
Washington Mfg. Co., The, Nashville, Tenn. 906,270, pub. 11–3–70. Cl. 39.
Wellco Enterprises, Inc., Waynesville, N.C. 906,274, pub. 11–3–70. Cl. 39.
Wells Electronics, Inc., South Bend, Ind. 906,172, pub. 11–3–70. Cl. 23.
Wellsville Fire Brick Co., Wellsville, Mo. 781,155, canc. Cl. 12.
Westab Inc., Dayton, Ohio. 906,203, pub. 11–3–70. Cl. 37.
Western Publishing Co., Inc., Racine, Wis. 906,235, pub. 11–3–70. Cl. 38.
Western Publishing Co., Inc., Racine, Wis. 906,237, pub. 11–3–70. Cl. 38.
Wham-O Mfg. Co., San Gabriel, Calif. 906,155, pub. 11–3–70. Cl. 22.
White Stag Mfg. Co., Portland, Oreg. 906,286, pub. 11–3–70. Cl. 39.
Whitney, Frances, New York, N.Y. 781,124, canc. Cl. 50.
Wilson & Co., Inc., Chicago, Ill. 781,102, canc. Cl. 46.
Woodall Publishing Co., Highland Park, Ill. 906,251, pub. 11–3–70. Cl. 38.
World Rubber Co., Dearborn, Mich. 780,994, canc. Cl. 35.
Wright, Margaret J., d.b.a. The B & P Co., Lakewood, Ohio. 530,518, ren. 1–19–71. Cl. 44.
Yonkers Laboratories, Inc., Yonkers, N.Y. 906,143, pub. 7–28–70. Cl. 18.
Zolotas, Paris, France. 906,178, pub. 7–21–70. Cl. 28.

U.S. GOVERNMENT PRINTING OFFICE: 0—1971

A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

U.S. DEPARTMENT OF COMMERCE

Official Gazette of the United States Patent Office

January 26, 1971 Volume 882 Number 4

PATENTS
NOTICES

Board of Appeals Decisions Rendered in the Month of December 1970

Examiner affirmed	154
Examiner affirmed in part	16
Examiner reversed	32
Total	202

Certificates of Correction for the Week of Jan. 26, 1971

D. 218,077	3,502,302	3,530,061	3,534,006
3,296,511	3,504,376	3,530,077	3,534,009
3,389,094	3,505,751	3,531,082	3,534,350
3,449,330	3,512,264	3,531,180	3,535,196
3,456,563	3,512,484	3,531,285	3,536,276
3,457,253	3,514,480	3,531,370	3,536,711
3,458,526	3,520,549	3,531,489	3,537,686
3,462,414	3,520,873	3,531,698	3,537,696
3,468,881	3,523,925	3,531,713	3,537,752
3,480,608	3,524,162	3,532,526	3,538,586
3,483,215	3,524,859	3,532,578	3,539,367
3,490,711	3,527,645	3,532,668	3,539,579
3,491,872	3,528,961	3,533,013	3,539,580
3,496,181	3,529,199	3,533,288	3,539,702
3,498,024	3,529,751	3,533,707	

Dedications

2,816,309.—*Henry Worth* and *Michael D. Goldsmith*, New York, N.Y. COMBINED CONTAINER AND APPLICATOR. Patent dated Dec. 17, 1957. Dedication filed Sept. 17, 1970, by the assignee, *White Laboratories, Inc.*

Hereby dedicates the remaining term of said patent to the Public.

3,289,327.—*Manuel Chevillon*, Montgomery County, Md. BRAILLE RECORDING AND REPRODUCING MEANS. Patent dated Dec. 6, 1966. Dedication filed Sept. 8, 1970, by the inventor.

Hereby dedicates the entire patent to the Public.

3,534,132.—*Carl A. Bailey*, Fairfield, and *Raymond E. Isaacson*, Trumbull, Conn. METHOD OF MAKING AN INSULATED SODIUM CABLE. Patent dated Oct. 13, 1970. Dedication filed Sept. 11, 1970, by the assignee, *General Electric Company*.

Hereby dedicates the entire patent to the Public.

Disclaimers

3,238,852.—*Milton Oscar Schur*, Asheville, and *James C. Rickards*, Brevard, N.C. METHOD AND APPARATUS FOR MAKING FILTERS. Patent dated Mar. 8, 1966. Disclaimer filed Aug. 10, 1970, by the assignee, *Olin Corporation*.

Hereby enters this disclaimer to claims 5, 8 and 10 of said patent.

3,255,327.—*Arthur E. Wood, Jr.*, San Pedro, Calif. LIGHTWEIGHT HIGH-SPEED RELAY. Patent dated June 7, 1966. Disclaimer filed Sept. 3, 1970, by the assignee, *Teledyne, Inc.*

Hereby enters this disclaimer to claims 19 and 20 of said patent.

3,320,626.—*Jacob S. Kamborian*, West Newton, and *Michael M. Becka*, Cambridge, Mass. HEEL SEAT LASTING. Patent dated May 23, 1967. Disclaimer filed Sept. 30, 1970, by the assignee, *Jacob S. Kamborian*.

Hereby enters this disclaimer to claims 58 through 73 of said patent.

3,380,333.—*Robert B. Clay*, Bountiful, and *Melvin A. Cook*, *Lex L. Udy*, and *Douglas H. Pack*, Salt Lake City, Utah. SYSTEM FOR MIXING AND PUMPING SLURRY EXPLOSIVES. Patent dated Apr. 30, 1968. Disclaimer filed Sept. 11, 1970, by the inventors; the assignee, *Intermountain Research and Engineering Company, Inc.*, consenting.

Hereby enter this disclaimer to claim 9 of said patent.

3,462,892.—*Ronald K. Meyer*, San Francisco, Calif. ADAPTER WALL. Patent dated Aug. 26, 1969. Disclaimer filed Sept. 11, 1970, by the assignee, *Electro/Systems, Inc.*

Hereby enters this disclaimer to claims 1, 2, 3, 4, 5 and 6 of said patent.

3,506,767.—*Wilhelm Ernst Frick*, Basel-Land, *Anton G. Weiss*, Basel, *Thomas Wenger* and *Walter Traber*, Riehen, Switzerland. BENZIMIDAZOLE COMPOSITIONS AND METHODS OF USE. Patent dated Apr. 14, 1970. Disclaimer filed Sept. 17, 1970, by the assignee, *Geigy Chemical Corporation*.

Hereby enters this disclaimer to claim 4 of said patent.

New Applications Received During September 1970

Patents	8413
Designs	494
Plant Patents	4
Reissues	41
Total	8952

Issue—January 26, 1971

Patents	1825—No. 3,557,384 to No. 3,559,208, incl.
Designs	36—No. 219,765 to No. 219,800, incl.
Reissues	6—No. 27,038 to No. 27,043, incl.
Def. Pub.	12—No. T882,013 to No. T882,024, incl.
Total	1879

3,520,950.—*David E. Kramm*, Laurel, Md. POLYESTERS OF METAL PHTHALOCYANINEOCTACARBOXYLIC ACID. Patent dated July 21, 1970, Disclaimer filed Apr. 8, 1970, by the inventor; the assignee, *W. R. Grace & Co.*, consenting.

Hereby disclaims the terminal portion of the term of the patent subsequent to Mar. 3, 1987.

3,523,624.—*Charles F. Curry*, Wilmington, Del. BOTTLE CROWN. Patent dated Aug. 11, 1970. Disclaimer filed Sept. 4, 1970, by the assignee, *Continental Can Company*.

Hereby enters this disclaimer to claims 5 and 9 of said patent.

Disclaimer and Dedication

3,422,895.—*Kenneth T. Koonce*, Houston, Tex. WELL SERVICING. Patent dated Jan. 21, 1969. Disclaimer and dedication filed Apr. 20, 1970, by the assignee, *Esso Production Research Company*.

Hereby disclaims and dedicates to the Public the entire term of said patent.

Separation of the Patent and Trademark Sections of the Official Gazette

Effective February 2, 1971, the OFFICIAL GAZETTE will be separated into two parts to be known as the *Patent Official Gazette* and the *Trademark Official Gazette*. The subscription prices for these publications are as follows:

Patent Official Gazette:
- $89.00 per year
- 22.25 additional for foreign mailing
- 2.00 per single copy

Trademark Official Gazette:
- $17.00 per year
- 4.25 additional for foreign mailing
- .40 per single copy

Also effective February 2, 1971, the OFFICIAL GAZETTE will no longer contain "Decisions in Patent and Trademark Cases." Decisions of the type heretofore found in the "Decisions in Patent and Trademark Cases" are published by non-Federal organizations such as, for example, the Bureau of National Affairs, Inc., 1231 25th St. NW., Washington, D.C. 20037, and West Publishing Co., 50 Kellogg Blvd., St. Paul, Minn. 55102.

Finally, the "Decisions Leaflet" of the OFFICIAL GAZETTE will no longer be supplied as a separate subscription item after January 26, 1971. According to present plans, however, both the PATENT OFFICIAL GAZETTE and the TRADEMARK OFFICIAL GAZETTE will have identical "Patent Office Notices" sections containing notices of the various types heretofore published in the Gazette decision leaflet and Trademark Section. Those notices of particular interest to Patent Office employees will be accumulated and published approximately every fourth week, and distributed separately to employees.

WILLIAM E. SCHUYLER, Jr.,
Commissioner of Patents.

Dec. 29, 1970.

National Technical Information Service (NTIS) Opens Sales Desk in Downtown Washington, D.C.

An NTIS Sales Desk is now located in the main lobby of the Commerce Department building 14th St. NW., between E St. and Constitution Ave. Customers are able to purchase all products and services at this location, including individual documents, renewals of subscriptions to NTIS publications, prepaid coupons and NTIS Deposit Accounts.

NTIS (Springfield, Va.) also maintains a Sales Desk for the convenience of customers. To save time, customers wishing to use either of these facilities should call the NTIS Sales Desk at Springfield, Va, on 321-8543 to place their orders in advance. The customer has a choice between either location to pick up orders.

Depending upon what document or service is ordered and its immediate availability, the NTIS pickup service can generally be provided in one day.

Dec. 15, 1970.

Legislative Proposal Regarding Postal Emergency

A bill, H.R. 19884, has been introduced in Congress at the request of the Department of Commerce to provide relief in patent and trademark cases affected by the emergency postal situation of March 1970. (H.R. 19884, 91st Cong. 2d Sess., introduced Dec. 1, 1970.)

Several instances have been reported to the Patent Office in which rights may have been lost because of delays caused by the postal emergency, and in which there is no authority under existing law for excusing the delays. The proposed legislation would allow relief in appropriate circumstances by authorizing earlier filing dates to be awarded and delays to be excused.

The introduction of this proposal, of course, does not necessarily indicate that Congress will enact legislation on this subject, or that legislation which is enacted will be in the form of H.R. 19884.

Particular attention is called to the provision which would provide retroactive filing dates for certain patent and trademark applications. Applicants who may be entitled to retroactive filing dates should note that if the Congress enacts the proposed legislation, a change in their United States filing dates might, in turn, alter the date of expiration of the six and twelve month periods for filing applications abroad under the provisions of the Paris Convention for the Protection of Industrial Property.

The text of H.R. 19884 is reproduced below.

WILLIAM E. SCHUYLER, Jr.,
Commissioner of Patents.

A Bill

To provide relief in patent and trademark cases affected by the emergency situation in the United States Postal Service which began on March 18, 1970.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. (a) A patent or trademark application shall be considered as having been filed in the United States Patent Office on the date that it would have been received by the Patent Office except for the delay caused by the emergency situation affecting postal service which began on March 18, 1970, and ended on or about March 30, 1970, if a claim is made for the benefit of an earlier date in accordance with subsections (b) and (c) of this section. Patents issued with earlier filing dates afforded by this section shall not be effective as prior art under subsection 102(e) of title 35 of the United States Code as of such earlier filing dates.

(b) No patent or trademark application, patent, or trademark registration shall be entitled to an earlier filing date under this section unless a verified statement by the applicant or owner of record claiming the filing date to which the application is believed to be entitled is filed in the Patent Office within six months after enactment of this Act. Such statement shall be maintained in the file of the application in the Patent Office and shall be referred to in the patent or trademark registration when practicable.

(c) When a statement filed under subsection (b) of this section appears unreasonable or defective on its face, or when the filing date of the patent or trademark application, patent, or trademark registration is called into question or is material in any inter partes proceeding in the Patent Office or any proceeding in the courts, the applicant or owner of such application, patent, or trademark registration may be required to present evidence establishing the filing date to which the application is entitled. The filing date to which the application is entitled shall be determined on the basis of such evidence and any evidence introduced by an opposing party. The evidence shall be presented as directed by the Commissioner of Patents in proceedings in the Patent Office or as directed by the courts in proceedings in the courts.

SEC. 2. (a) Except for the filing of a patent or trademark application, if any action is taken or any fee is paid in the United States Patent Office later than the end of a time period specified in the statutes set forth in subsection (b) of this section for taking such action or paying such fee, and no provision exists in law for excusing such delay, the delay may be excused if it is determined that it was caused by the emergency situation affecting postal service which began on March 18, 1970, and ended on or about March 30, 1970. Relief under this section must be requested by a verified statement filed in the Patent Office by the patent or trademark applicant or owner within six months after enactment of this Act.

(b) This section is applicable to title 35, United States Code, "Patents"; the Trademark Act of 1946, ch. 540, 60 Stat. 427, as amended; the Atomic Energy Act of 1954, Public Law 83-703, 68 Stat. 919, as amended; and the National Aeronautics and Space Act, Public Law 85-568, 72 Stat. 426 (1958), as amended. In cases involving the Atomic Energy Act of 1954 or the National Aeronautics and Space Act, determinations of relief shall be made by a Board of Patent Interferences. In other cases determinations shall be made by the Commissioner of Patents.

SEC. 3. The Commissioner of Patents may establish regulations for administering this Act.

Patent Suits

Notices under 35 U.S.C. 290: Patent Act of 1952

2,741,893, Vandamme and Rouyer, METHOD AND APPARATUS FOR PRODUCING CRINKLED YARN; **2,761,272**, same, APPARATUS FOR PRODUCING CURLED YARN; **2,780,047**, same; **2,788,634**, J. Crouzet, TWIST ARRESTORS FOR YARN TWISTERS; **2,823,513**, Vandamme and Rouyer, APPARATUS FOR PRODUCING CURLED YARN; **2,823,514**, same; **2,891,375**, same, APPARATUS FOR THE PRODUCTION OF HIGH-BULK YARN; **2,944,319**, H. Crouzet, HEATING DEVICE FOR FILAMENTS; **3,012,397**, H. Servage, METHOD OF MAKING HIGH-BULK YARNS; **3,117,361**, H. Crouzet, YARN HEAT TREATMENT APPARATUS; **3,117,410**, same, PRODUCTION OF BULKED PLY YARNS OF BALANCED TENSILE STRENGTH AND THE YARN; **3,123,973**, H. Servage, PROCESS FOR THE PRODUCTION OF FANCY YARNS HAVING A THREE DIMENSIONAL CURL; **3,137,119**, C. Crouzet, PROCESS FOR THE PRODUCTION OF HIGH BULK YARNS; **3,165,881**, De Moncuit and Crouzet, PRODUCTION OF HIGH BULK YARNS; **3,166,881**, H. Servage, APPARATUS FOR THE MANUFACTURE OF HIGHLY CRIMPED YARNS BY FALSE TWIST; **3,232,037**, H. Crouzet, FALSE-TWIST SPINDLE; **3,237,392**, same, PROCESS FOR PRODUCING BULKED YARN; **3,283,414**, same, THERMAL TREATMENT OF SYNTHETIC TEXTILES; **3,333,409**, same, PROCESS FOR PRODUCING HIGH BULK STRETCH YARNS; **3,382,656**, H. Crouzet, FALSE-TWIST FRAMES AND METHOD FOR TEXTURING SYNTHETIC FILAMENTS, **filed** Sept. 24, 1970, D.C., M.D.N.C. (Greensboro), Doc. C-216-G-70, *Lawrence Texturing Corp.* v. *Deering Milliken Research Corp, et al.*

2,761,272. (See 2,741,893.)
2,780,047. (See 2,741,893.)
2,788,634. (See 2,741,893.)
2,823,513. (See 2,741,893.)
2,823,514. (See 2,741,893.)
2,891,375. (See 2,741,893.)
2,944,319. (See 2,741,893.)
3,012,397. (See 2,741,893.)

3,071,721, H. G. Dehmelt, OPTICAL ABSORPTION MONITORING OF ORIENTED OR ALIGNED QUANTUM SYSTEMS; **3,109,960**, Bell and Bloom, ELECTRODELESS DISCHARGE LAMP APPARATUS; **3,150,313**, H. G. Dehmelt, MODULATION OF A LIGHT BEAM BY ABSORBING QUANTUM SYSTEMS EXHIBITING A PERIODICALLY VARYING ALIGNMENT; **3,158,803**, W. E. Bell, APPARATUS FOR MONITORING MAGNETIC FIELD GRADIENTS; **3,170,086**, same, ELECTRODELESS DISCHARGE LAMP APPARATUS; **3,173,062**, Bell and Bloom, OPTICALLY DRIVEN SPIN PRECESSION METHOD AND APPARATUS; **3,187,251**, W. D. Bell, QUANTUM OSCILLATORS; **3,252,081**, Ruddock, Bell, Bloom, Arnold and Sarles, OPTICAL MAGNETOMETER AND GRADIOMETER; **3,256,500**, J. T. Arnold, OPTICAL MAGNETOMETERS; **3,257,608**, Bell and Bloom; same; **3,263,161**, Ruddock, Slack and Breiner, METHOD FOR DETERMINING DEPTH AND FALLOFF RATE OF SUBTERRANEAN MAGNETIC DISTURBANCES UTILIZING A PLURALITY OF MAGNETOMETERS; **3,267,360**, H. G. Dehmelt, OPTICAL ABSORPION MONITORING OF ALIGNED ALKALI ATOMS; **3,281,709**, same, APPARATUS FOR OPTICAL ALIGNMENT AND DETECTION OF ATOMIC ENERGY STATES; **3,350,632**, H. G. Robinson, OPTICALLY PUMPED ATOMIC DIFFUSION MASER WITH SEPARATE PUMPING AND OBSERVATION REGIONS, **filed** Aug. 13, 1968, D.C., S.D.N.Y., Doc. 68-C-3261, *Sinclair Oil & Gas Company* v. *Union Oil Company of California*. Stipulation of voluntary dismissal, Aug. 10, 1970. **Same, filed** Aug. 23, 1968, D.C., S.D.N.Y., Doc. 68-C-3412, *Hiroca Corporation* v. *Union Oil Company of California and Varian Associates*. Stipulation of voluntary dismissal, Aug. 10, 1970.

3,109,960. (See 3,071,721.)
3,117,361. (See 2,741,893.)
3,117,410. (See 2,741,893.)
3,123,973. (See 2,741,893.)
3,137,119. (See 2,741,893.)
3,150,313. (See 3,071,721.)
3,158,803. (See 3,071,721.)
3,165,881. (See 2,741,893.)
3,166,881. (See 2,741,893.)
3,170,086. (See 3,071,721.)
3,173,062. (See 3,071,721.)
3,187,251. (See 3,071,721.)
3,232,037. (See 2,741,893.)
3,237,392. (See 2,741,893.)
3,252,081. (See 3,071,721.)
3,256,500. (See 3,071,721.)
3,257,608. (See 3,071,721.)
3,263,161. (See 3,071,721.)
3,267,360. (See 3,071,721.)
3,281,709. (See 3,071,721.)
3,283,414. (See 2,741,893.)
3,333,409. (See 2,741,893.)
3,350,632. (See 3,071,721.)
3,382,656. (See 2,741,893.)

PATENT EXAMINING CORPS

R. A. WAHL, Assistant Commissioner
F. H. BRONAUGH, Deputy Assistant Commissioner

CONDITION OF PATENT APPLICATIONS AS OF JANUARY 12, 1971

PATENT EXAMINING GROUPS	Actual Filing Date of Oldest New Case Awaiting Action
CHEMICAL EXAMINING GROUPS	
GENERAL CHEMISTRY AND PETROLEUM CHEMISTRY, GROUP 110—M. STERMAN, Director. Inorganic Compounds; Inorganic Compositions; Organo-Metal and Organo-Metalloid Chemistry; Metallurgy; Metal Stock; Electro Chemistry; Batteries; Hydrocarbons; Mineral Oil Technology; Lubricating Compositions; Gaseous Compositions; Fuel and Igniting Devices.	7-01-69
GENERAL ORGANIC CHEMISTRY, GROUP 120—I. MARCUS, Director. Heterocyclic; Amides; Alkaloids; Azo; Sulfur; Misc. Esters; Carbohydrates; Herbicides; Poisons; Medicines; Cosmetics; Steroids; Oxo and Oxy; Quinones; Acids; Carboxylic Acid Esters; Acid Anhydrides; Acid Halides.	4-01-69
HIGH POLYMER CHEMISTRY, PLASTICS AND MOLDING, GROUP 140—L. J. BERCOVITZ, Director. Synthetic Resins; Rubber; Proteins; Macromolecular Carbohydrates; Mixed Synthetic Resin Compositions; Synthetic Resins With Natural Polymers and Resins; Natural Resins; Reclaiming; Pore-Forming; Compositions (Part) e.g.: Coating; Molding; Ink; Adhesive and Abrading Compositions; Molding, Shaping, and Treating Processes.	10-09-69
COATING AND LAMINATING, BLEACHING, DYEING AND PHOTOGRAPHY, GROUP 160—A. P. KENT, Director. Coating; Processes and Misc. Products; Laminating Methods and Apparatus; Stock Materials; Adhesive Bonding; Special Chemical Manufactures; Special Utility Compositions; Bleaching; Dyeing and Photography.	11-03-69
SPECIALIZED CHEMICAL INDUSTRIES AND CHEMICAL ENGINEERING, GROUP 170—W. B. KNIGHT, Director. Fertilizers; Foods; Fermentation; Analytical Chemistry; Reactors; Sugar and Starch; Paper Making; Glass Manufacture; Gas; Heating and Illuminating; Cleaning Processes; Liquid Purification; Distillation; Preserving; Liquid and Solid Separation; Gas and Liquid Contact Apparatus; Refrigeration; Concentrative Evaporators; Mineral Oils Apparatus; Misc. Physical Processes.	3-28-69
ELECTRICAL EXAMINING GROUPS	
INDUSTRIAL ELECTRONICS AND RELATED ELEMENTS, GROUP 210—N. ANSHER, Director. Generation and Utilization; General Applications; Conversion and Distribution; Heating and Related Art Conductors; Switches; Miscellaneous.	3-02-70
SECURITY, GROUP 220—R. L. CAMPBELL, Director. Ordnance, Firearms and Ammunition; Rsdar, Underwater Signalling, Directional Radio, Torpedoes, Seismic Exploring, Radio-Active Batteries; Nuclear Reactors, Powder Metallurgy, Rocket Fuels; Radio-Active Material.	6-16-69
INFORMATION TRANSMISSION, STORAGE AND RETRIEVAL, GROUP 230—J. F. COUCH, Director. Communications; Multiplexing Techniques; Facsimile; Data Processing, Computation and Conversion; Storage Devices and Related Arts.	10-02-69
ELECTRONIC COMPONENT SYSTEMS AND DEVICES, GROUP 250—W. L. CARLSON, Director. Semi-Conductor and Space Discharge Systems and Devices; Electronic Component Circuits; Wave Transmission Lines and Networks; Optics; Radiant Energy; Measuring.	12-04-69
PHYSICS, GROUP 280—R. L. EVANS, Director. Photography; Sound and Lighting; Indicators and Optics; Measuring and Testing; Geometrical Instruments.	9-29-69
DESIGNS, GROUP 290—R. L. CAMPBELL, Director. Industrial Arts; Household, Personal and Fine Arts.	4-02-70
MECHANICAL EXAMINING GROUPS	
HANDLING AND TRANSPORTING MEDIA, GROUP 310—A. BERLIN, Director. Conveyors; Hoists; Elevators; Article Handling Implements; Store Service; Sheet and Web Feeding; Dispensing; Fluid Sprinkling; Fire Extinguishers; Coin Handling; Check Controlled Apparatus; Classifying and Assorting Solids; Boats; Ships; Aeronautics; Motor and Land Vehicles and Appurtenances; Railways and Railway Equipment; Brakes; Rigid Flexible and Special Receptacles and Packages.	12-01-69
MATERIAL SHAPING, ARTICLE MANUFACTURING, TOOLS, GROUP 320—D. J. STOCKING, Director. Manufacturing Processes, Assembling, Combined Machines, Special Article Making; Metal Deforming; Sheet Metal and Wire Working; Metal Fusion—Bonding, Metal Founding; Metallurgical Apparatus; Plastics Working Apparatus; Plastic Block and Earthenware Apparatus; Machine Tools for Shaping or Dividing; Work and Tool Holders Woodworking; Tools; Cutlery; Jacks.	9-02-69
AMUSEMENT, HUSBANDRY, PERSONAL TREATMENT, INFORMATION, GROUP 330—A. RUEGG, Director. Amusement and Exercising Devices; Projectors; Animal and Plant Husbandry; Butchering; Earth Working and Excavating; Fishing, etc.; Tobacco; Artificial Body Members; Dentistry; Jewelry; Surgery; Toiletry; Printing; Typewriters; Stationery; Information Dissemination.	9-29-69
HEAT, POWER AND FLUID ENGINEERING, GROUP 340—C. F. GAREAU, Director. Power Plants; Combustion Engines; Fluid Motors; Pumps; Turbines; Heat Generation and Exchange; Refrigeration; Ventilation; Drying; Vsporizing; Temperature and Humidity Regulation; Machine Elements; Power Transmission; Fluid Handling; Lubrication; Joint Packing.	1-22-70
CONSTRUCTIONS, SUPPORTS, TEXTILES, CLEANING, GROUP 350—T. J. HICKEY, Director. Joints; Fasteners; Rod, Pipe and Electrical Connectors; Miscellaneous Hardware; Locks; Building Structures; Closure Operators; Bridges; Closures; Earth Engineering; Drilling; Mining; Furniture; Receptacles; Supports; Cabinet Structures; Centrifugal Separations; Cleaning; Coating; Pressing; Agitating; Foods; Textiles; Apparel and Shoes; Sewing Machines; Winding and Reeling.	11-20-69

Total number of pending applications (excluding Designs)	183,035
Total number of Design applications pending	2,454

Expiration of patents: The patents within the range of numbers indicated below expire during January 1971, except those which may have expired earlier due to shortened terms under the provisions of Public Law 690, 79th Congress, approved August 8, 1946 (60 Stat. 940) and Public Law 619, 83rd Congress, approved August 23, 1954 (68 Stat. 764), or which may have had their terms curtailed by disclaimer under the provisions of 35 U.S.C. 253. Other patents, issued after the dates of the range of numbers indicated below, may have expired before the full term of 17 years for the same reasons, or have lapsed under the provisions of 35 U.S.C. 151.

Patents	Numbers 2,664,562 to 2,667,636, inclusive
Plant Patents	Numbers 1,238 to 1,247, inclusive

DEFENSIVE PUBLICATIONS

PUBLISHED JANUARY 26, 1971

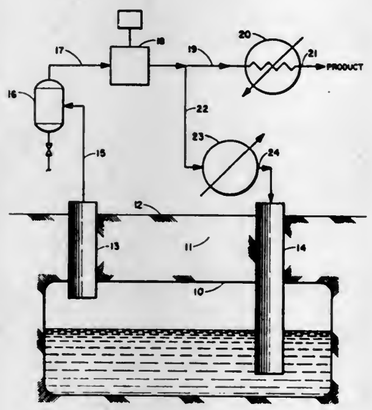
Published at the request of the applicant or owner in accordance with the Notice of Dec. 16, 1969, 869 O.G. 687. The abstracts of Defensive Publication applications are identified by distinctly numbered series and are arranged chronologically. The heading of each abstract indicates the number of pages of specification, including claims and sheets of drawings contained in the application as originally filed. The files of these applications are available to the public for inspection and reproduction may be purchased for 30 cents a sheet.

Defensive Publication applications have not been examined as to the merits of alleged invention. The Patent Office makes no assertion as to the novelty of the disclosed subject matter.

T882,013
RECOVERY OF VOLATILE LIQUID FROM UNDERGROUND STORAGE

J. G. Davis II, and David S. Dillard, Jr., Ponca City, Okla., assignors to Continental Oil Company, Ponca City, Okla., a corporation of Delaware

Filed May 6, 1969, Ser. No. 822,113
Int. Cl. B65g *5/00*; E21f *17/16*
U.S. Cl. 61—.5
1 Sheet Drawing. 7 Pages Specification



Volatile liquids such as ammonia or liquefied petroleum gas are recovered from storage in an underground cavern by withdrawing therefrom a stream of vaporized liquid. A portion of the vapor stream is compressed and condensed as product by cooling, and a second portion is heated and then returned to the cavern.

T882,014
INTEGRAL SCREEN RADIOGRAPHIC ELEMENT

William Wendell Rees and Richard Karl Kurz, both % Eastman Kodak Co., Kodak Park Division, Rochester, N.Y. 14650

Filed Oct. 21, 1969, Ser. No. 868,223
Int. Cl. G03c *1/92*
U.S. Cl. 96—82
No Drawing. 7 Pages Specification

An integral radiographic element containing a support, a silver bromoiodide emulsion layer in which said iodide comprises up to about 10 mole percent of the halide, an X-ray intensifying screen and an arrangement of distinct layers wherein said X-ray intensifying screen and a conversion material are disposed between the support and the emulsion layer is disclosed. The X-ray intensifying screen emits radiation in the electromagnetic spectrum upon exposure to X-rays, which emitted radiation the conversion material is capable of converting to radiation of longer wave lengths in the range of about 400 to about 560 mμ with a resulting improvement in contrast.

Materials which convert the normal radiation emission of barium lead sulfate in the X-ray intensifying screen to radiation of longer wave lengths can include organic or inorganic substances or mixtures thereof, such as, for example, a combination of terphenyl and 1,4-bis[2-(5-phenyloxazolyl)]-benzene, a combination of 1,1,4,4-tetraphenyl butadiene and 1,4-bis[2-(5-phenyloxazolyl)]-benzene, or zinc sulfide.

Radiographic elements improved as described can be chemically sensitized, e.g., with noble metal sensitizers alone or in combination with sulfur or selenium sensitizers. They can contain antifoggants, hardeners, plasticizers, development modifiers, coating aids and other suitable photographic addenda, such as described in U.S. Pat. 3,297,446 (columns 4–9).

T882,015
FLAME RETARDANT POLYOLEFIN

Walter E. Gloor, Wilmington, Del., assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware

Filed Dec. 2, 1969, Ser. No. 881,620
Int. Cl. C08f *1/84, 45/04*; C08k *1/02*
U.S. Cl. 260—41
No Drawing. 6 Pages Specification

Flame retardant compositions are taught comprised of a propylene polymer, maleic anhydride-modified polypropylene, and glass fibers sized with an epoxy or amino-substituted silane, antimony trioxide and a halogenated organic compound. The presence of the flameproofing compounds-antimony trioxide and the halogenated organic compound does not interfere with the coupling reaction between the maleic modified polypropylene and the silane sized glass. Thus, the compositions exhibit high tensile and impact strength as well as flame retardancy. Generally the compositions, when burned, are rated as self-extinguishing and non-dripping.

T882,016
DIOL MONOETHERS AND THEIR MANUFACTURE

Frank C. Canter and Alfred G. Robinson III, both of P.O. Box 2068, Longview, Tex. 75601

Continuation of application Ser. No. 833,699, June 16, 1969, which is a continuation-in-part of application Ser. No. 511,350, Dec. 3, 1965. This application Apr. 9, 1970, Ser. No. 24,432
Int. Cl. C07c *43/00*
U.S. Cl. 260—615
No Drawing. 11 Pages Specification

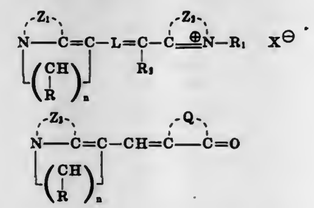
Diol monoethers containing a neopentyl structure are prepared by the catalytic hydrogenation of certain cyclic diethers at elevated temperatures and pressures. Diol monoethers having a quaternary carbon atom are particularly useful, for example, as solvents, as high-temperature functional fluids or as intermediates for other useful chemical compounds such as plasticizers and wetting agents.

T882,017
COATING SUBSTRATES WITH POLYOLEFINS
Charles H. Coney, 2008 Canterbury Road, Kingsport, Tenn. 37660
Filed May 13, 1970, Ser. No. 36,996
Int. Cl. B44d *1/34*
U.S. Cl. 117—49
No Drawing. 10 Pages Specification

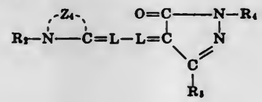
The process of forming a polyolefin deposit or coating on a substrate which comprises: (A) forming a solution of a polyolefin in a solvent therefor (such as polyethylene or polypropylene) heated to a temperature sufficient to bring about solution of the polyolefin therein, progressively cooling the solution to the quasi-solidification point and simultaneously adding to the solution a volatile liquid which is a non-solvent for the polyolefin, and, during addition of the non-solvent, subjecting the mixture to constant agitation and a high degree of shear, whereby minute discreet polyolefin particles are formed as a dispersion in the mixture of solvent and non-solvent; (B) heating the substrate to be coated to a temperature at or above the fusion temperature of the polyolefin; and (C) spraying the polyolefin dispersion onto the heated substrate, whereby the volatile components of the dispersion are evaporated and the discreet particles of polyolefin are deposited on and fused into a continuous coating on the substrate. The process is particularly useful in preparing protective and easily slipable coatings on the surface of a wide variety of metal objects such as steel panelling, construction members and other objects where a protective and low-friction coating is required.

T882,018
SPECTRAL SENSITIZATION OF SILVER HALIDE
Gary L. Hiller, Hilton, N.Y. (Kodak Park, Rochester, N.Y. 14650)
Filed May 14, 1970, Ser. No. 37,302
Int. Cl. G03c *1/28*
U.S. Cl. 96—104
No Drawing. 27 Pages Specification

Photographic silver halide emulsions are spectrally sensitized with chain rigidized dyes, such as those having one of the following formulas:



together with a non-rigidized merocyanine dye, containing a 5-pyrazolone nucleus, such as a merocyanine dye of the formula:



wherein *n* represents 2 or 3; L represents a methine linkage; R represents hydrogen or lower alkyl or aryl; R_1, R_2, R_4 and R_5 each represents alkyl or aryl; R_3 represents hydrogen, lower alkyl, aryl or, taken together with R_1, alkylene containing 2 to 3 carbon atoms; X represents an acid anion; Z_1, Z_2, Z_3 and Z_4 each represents the atoms to complete benzothiazole, naphthothiazole, benzoxazole, naphthoxazole, benzimidazole, naphthimidazole or 3,3-dialkylindolenine nuclei; and, Q represents an acidic nucleus of the type used in merocyanine dyes. Useful chain rigidized dyes include:

5,6-dichloro-3-ethyl-1,8-ethylene-1',3',3'-trimethylbenzimidazoloindocarbocyanine iodide
5,6-dichloro-3,3'-diethyl-1,8-ethylenebenzimidazoloxacarbocyanine iodide
5-[3-(1,2-dihydropyrrolo[2,1-b]benzothiazolyl)-methylene-1-ethyl-2-thiobarbituric acid
5,6-dichloro-3,3'-diethyl-1,8-ethylenebenzimidazolothiacarbocyanine iodide
5,6,5',6'-tetrachloro-3,3'-diethyl-1,8,1',10-diethylenebenzimidazolocarbocyanine diodide
3,3'-diethyl-1,10-(2,3-propylene) naphtho [2,3-d]-imidazolooxacarbocyanine iodide
3,3'-diethyl-1,8-ethylenebenzimidazolothiacarbocyanine iodide
3'-ethyl-3,8-ethylene-9-methylthiacarbocyanine bromide
3,3'-diethyl-1,10-trimethylenenaphth[2,3-d]imidazoloxacarbocyanine iodide;

and, useful non-rigidized merocyanine dyes include

4-[1-ethyl-2(1)-β-naphthothiazolylidene)isopropylidene]-3-methyl-1-(p-sulfophenyl)-5-pyrazolone
4-[(3-ethyl-2(3)-benzothiazolylidene)isopropyliene]-3-methyl-1-(p-sulfophenyl)-5-pyrazolone
4-[(3-ethyl-2(3)-benzothiazolylidene)ethylidene]-methyl-1-(p-sulfophenyl)-5-pyrazolone.

T882,019
PHOTOGRAPHIC MATERIALS CURVE SHAPE STABILIZED WITH CARBOXY SUBSTITUTED 4-THIOURACILS
Thomas Irving Abbott, % Eastman Kodak Co., Kodak Park Division, Rochester, N.Y. 14650
Filed May 14, 1970, Ser. No. 37,323
Int. Cl. G03c *1/34, 1/76, 1/28*
U.S. Cl. 96—109
No Drawing. 30 Pages Specification

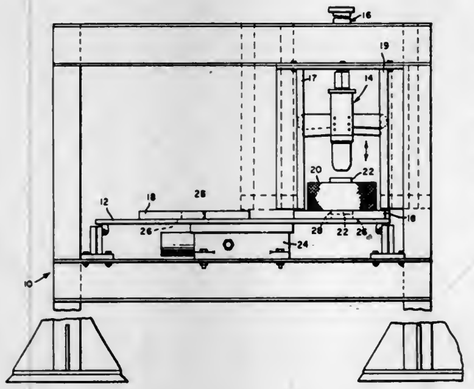
Photographic layers, emulsions and elements comprising them are stabilized against color balance distortion by addition of carboxy substituted 4-thiouracils. Specific examples of stabilizers include 1-carboxyalkyl 5(H)-cyclopenta-(d)-4-thiouracil. Silver halide-containing layers, emulsions and elements so stabilized can be chemically sensitized, e.g., with noble metal sensitizers alone or in combination with sulfur, selenium or tellurium. They can contain spectral sensitizers, incorporated color forming couplers, incorporated developing agents, antifoggants, hardeners, plasticizers, coating aids and other suitable photographic addenda such as described in U.S. Pat. 3,297,446 issued to Dunn on Jan. 10, 1967 (columns 4 to 9). Likewise, the silver halide grains can be prepared as converted halides or as simple halides.

T882,020
VACUUM-DEPOSITED LIGHT SENSITIVE SILVER HALIDE ELEMENT
John A. Haefner, % Kodak Park Works, Rochester, N.Y. 14650
Filed May 18, 1970, Ser. No. 38,591
Int. Cl. G03c *1/74, 1/48*
U.S. Cl. 96—76
No Drawing. 37 Pages Specification

This invention relates to a light sensitive vacuum-deposited silver halide element comprising a support having coated over one surface thereof separate contiguous layers comprising in any order a hydrophilic colloid layer or layers and a vacuum-deposited silver halide layer, said colloid layer containing a small amount of ammonium salt, such as ammonium halides, sulfate, or nitrate, when it is positioned between the support and the silver halide layer to improve image quality. Said colloid layer contains a developing agent such as a hydroquinyl compound, a 3-pyrazolidone, ascorbic acid, catechol, pyrogallol, gallic acid, or p-phenylene diamine, when it serves as an overcoating for the silver halide layer. Optionally, both a colloidal subbing containing an ammonium salt and a colloidal overcoating may be used; moreover, the developing agent may be incorporated in the subbing layer, overcoating layer, or both layers with or without the ammonium salt. In a preferred embodiment, there is also provided a novel protective backing layer to prevent fogging of an uncovered vacuum-deposited silver halide element which comprises a composition of sodium ethyl cellulose sulfate which may, in addition, contain finely divided solid particles. Also disclosed is a process for increasing the speed of an unexposed vacuum-deposited silver halide element comprising heating the unexposed element to a temperature of at least about 60° C., preferably between 60° C. and 150° C.

The various elements of this invention are subject to sensitization and stabilization. They may contain speed increasing layers of alkali metal halide salts, such as described in U.S. Patent 3,316,096, of Rasch et al., issued Apr. 25, 1967. They may be chemically sensitized with gold and other metal salts, and stabilized against fog by the combination of a thiosulfate salt and a thiocyanate salt, as described in U.S. 3,384,490, of Rees, dated May 21, 1968. They may further contain either chemical or spectral photographic sensitizers as described in U.S. 3,442,649, of Rasch et al., issued May 6, 1969 (columns 2–6).

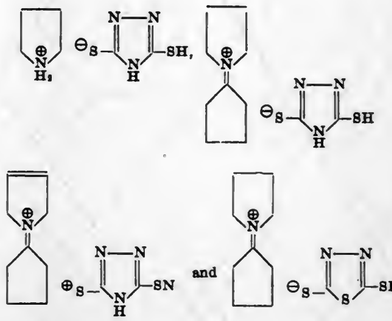
T882,021
BOBBIN STRIPPER
Henry Chenault Cantwell, Waynesboro, Va., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed May 21, 1970, Ser. No. 39,398
Int. Cl. D03d *45/58*
U.S. Cl. 28—19
2 Sheets Drawing. 6 Pages Specification



An apparatus for removing a cylindrical bobbin from its associated yarn package that includes a support for the package which allows the bobbin to pass freely therethrough and a ram mounted for reciprocal movement toward and away from the support. The ram has a knife blade attached to it above its point of engagement with the bobbin for cutting the yarn package as the ram presses the bobbin from the package. In the preferred embodiment, a multiposition movable support for packages is provided so successive positions may be moved under the ram for bobbin removal and cutting.

T882,022
PRINT-OUT SILVER HALIDE MATERIALS
Arthur Fumia, Jr., and Wilbur S. Gaugh, both % Kodak Park Works, Rochester, N.Y. 14650
Filed June 18, 1970, Ser. No. 47,620
Int. Cl. G03c *1/28*
U.S. Cl. 96—108
No Drawing. 15 Pages Specification

There are disclosed novel radiation-sensitive silver halide materials comprising a halogen acceptor and silver halide crystals formed in an acid media with trivalent metal ions occluded on the inside of said crystals. Typical suitable trivalent metal ions include those of antimony, arsenic, bismuth, gold, iridium, rhodium, and the like. The halogen acceptors disclosed are dithiourazole and dimercaptothiadiazole salts of amines and enamines. Suitable aliphatic amines include ethylamine, isopropylamine, tert-butylamine, ethyl-sec-butylamine, di-isopropylamine, amylamine, hexaylamine, ethylenediamine, tetramethylenediamine, etc., while suitable aromatic amines include aniline, diphenylamine, monomethylaniline, benzylamine, etc. Suitable enamine salts may be prepared from the corresponding secondary amines. Preferred embodiments are those salts having the formulas



Emulsions containing these compounds are found to have high Dmax and good relative speed.

The sliver halide emulsions and elements described may further contain dispersing agents, coating aids, plasticizers, sensitizing dyes, hardeners, and other suitable addenda such as described in U.S. Pat. 3,447,927 of Bacon et al., issued June 3, 1969 (columns 2–6). Such elements are particularly suitable for the photodevelopment process described in U.S. Pat. 3,418,122 of Colt, issued Dec. 24, 1968.

T882,023
METHOD OF MAKING A HYDROLYZED CELLULOSE ESTER PRINTING PLATE
Edward C. Yackel, Pittsford, and Donald P. Foster, Hilton, N.Y. (both % Kodak Park Works, Rochester, N.Y. 14650)
Filed June 19, 1970, Ser. No. 47,707
Int. Cl. G03f *7/02*
U.S. Cl. 96—33
1 Sheet Drawing. 11 Pages Specification

Preparation of lithographic printing plates by coating a substantially fully esterified cellulose organic acid ester support with a hydrophilic unhardened, tannable colloid layer such as gelatin containing light sensitive silver halide, exposing the sensitive colloid layer to a subject, developing the exposed layer with a tanning developing agent, heating the developed layer in alkaline hydrolyzing solution at a temperature of about 110° F. to 150° F. to hydrolyze areas on the cellulose organic ester support and

form on said support an image corresponding to said subject and removing the colloid layer from said support.

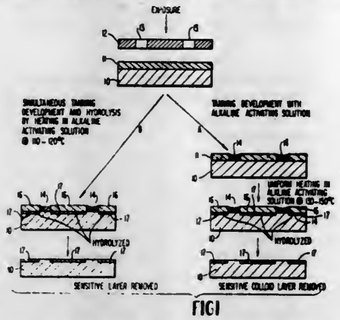


FIG1

In a preferred aspect of the invention, the heating of the developed layer is effected by infrared radiation.

T882,024
TWO COLOR DIRECT-PRINT PHOTOGRAPHIC SYSTEMS
Larry H. Feldman, % Kodak Park Works, Rochester, N.Y. 14650
Filed June 29, 1970, Ser. No. 50,989
Int. Cl. G03c *5/32, 5/24, 7/00*
U.S. Cl. 96—45.2
No Drawing. 14 Pages Specification

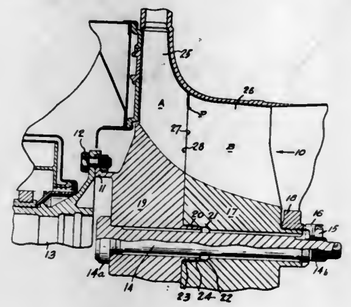
There are disclosed direct-print silver halide photographic elements capable of producing two or more image colors. Such elements comprise two or more direct-print emulsions, each responding to different bands of visible radiation or being of different photographic speed. Emulsions responding to different bands of visible radiation produce different colored images when exposed to a high intensity short duration light source through appropriate colored filters and thereafter photodeveloped. Elements comprised of emulsions having different photographic speeds yield multicolored images when exposed to an intensity modulated light source. Image color and hue for non-selective exposure, at a fixed exposure time, are intensity dependent, and may be altered by appropriate selection of emulsion addenda. Such elements are particularly suitable for making oscillograph traces.

Various direct-print emulsions are suitable, such as those wherein the silver halide grains are formed in the presence of lead ions. Preferred classes of emulsions are described in Davey et al., U.S. 2,592,250 and Colt U.S. 3,418,122. Suitable halogen acceptors, such as disclosed in Bacon et al., U.S. Pat. 3,447,927, may be present. Various spectrally sensitizing dyes, such as merocyanine or cyanine dyes, or those described in McBride, U.S. Pat. 3,287,136, may be employed. Exemplary dyes include 3-ethyl - 5-[(3-ethyl-2-benzothiazolinylidene)-1-methylethylidene]-2-thio-2,4-oxazolidinedione and 3-ethyl-5-[(1-ethylnaphthol[1,2-d]thiazolin-2-ylidene)-1-methylethylidene] rhodanine. Conventional addenda such as coating aids, plasticizers, sensitizers, hardeners, etc., as disclosed in Bacon et al., U.S. 3,447,927 (columns 2–6) may be present.

REISSUES

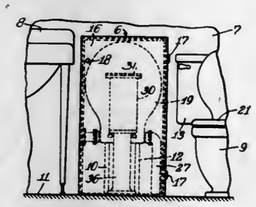
JANUARY 26, 1971

27,038
RADIAL TURBINE BLADE DAMPING DEVICE
Allan Burrell Newland, St. Lambert, Quebec, Canada, assignor to United Aircraft of Canada Limited, Longueuil, Quebec, Canada
Original No. 3,383,091, dated May 14, 1968, Ser. No. 566,844, July 21, 1966. Application for reissue Apr. 23, 1969, Ser. No. 826,762
Int. Cl. F01d *5/04, 5/10*
U.S. Cl. 416—242 **8 Claims**



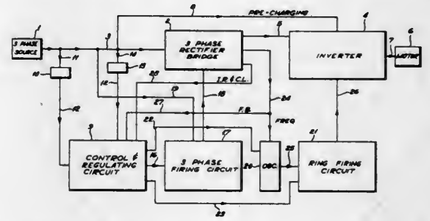
The blades of a rotating element which is subjected to having energy imparted to or extracted therefrom are constructed into a pair of axially separate sections abutting at a beveled or scarf joint for effectuating damping thereof.

27,039
BIDET
Agostino Gregori, Chicago, and Andrew F. Wintercorn, Rockford, Ill., assignors of one-third each to Walter F. Wintercorn and Agostino Gregori, Chicago, and Andrew F. Wintercorn, Rockford, Ill.
Original No. 3,467,966, dated Sept. 23, 1969, Ser. No. 528,988, Feb. 21, 1966. Application for reissue Oct. 8, 1969, Ser. No. 877,913
Int. Cl. A47k *3/22, 11/08*
U.S. Cl. 4—7 **22 Claims**



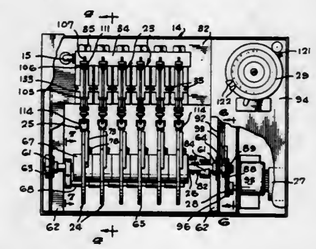
A wall cabinet has a hinged door which when closed conceals the folded bidet pan, its foldable prop, and all of its plumbing connections provided in the wall. With the door open, the bidet pan can be swung down to operative position, the prop therefor being automatically positioned therebeneath to rest on the floor. Hot and cold water valves are then adjustable manually to secure a flow of water in the amount and at the desired temperature, determined by a test nozzle discharging into the rear portion of the bidet pan. A spring pressed valve switches the flow from the test nozzle to the bidet nozzle in the pan when the latter is depressed in sitting upon it, this valve, being operated automatically by a link connection with the pan. The valves, test nozzle and link connection are all compactly arranged to fit in the hollow of the bidet pan when it is folded.

27,040
ADJUSTABLE FREQUENCY CONTROL SYSTEM
Robert L. Risberg, Milwaukee, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware
Original No. 3,344,326, dated Sept. 26, 1967, Ser. No. 381,970, July 13, 1964. Application for reissue Feb. 26, 1969, Ser. No. 807,464
Int. Cl. H02p *5/28*
U.S. Cl. 318—230 **24 Claims**



A control system supplied from a three-phase A.C. power source for supplying adjustable frequency power to control the speed of an A.C. motor and including rectifying and controlling apparatus for providing an adjustable voltage D.C. supply to an SCR inverter that supplies adjustable frequency power to the motor and feeds back energy to the D.C. supply to provide a resultant voltage controlled by motor operation, a firing circuit for the inverter, and means for integrating such resultant voltage to control the firing circuit and the output frequency.

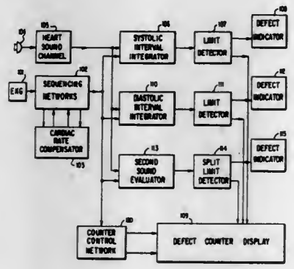
27,041
AUTOMATIC CAM OPERATED PLURAL VALVE CONTROL SYSTEM
Paul M. Hotchkin, 20448 Quedo Drive, Woodland Hills, Calif. 91364
Original No. 3,372,708, dated Mar. 12, 1968, Ser. No. 544,981, Apr. 25, 1966. Application for reissue Oct. 29, 1969, Ser. No. 877,910
Int. Cl. A01g *25/00*
U.S. Cl. 137—624.2 **15 Claims**



An automatic control system for use with a plurality of valves having "on" and "off" positions and control means for setting each valve at one or the other of said

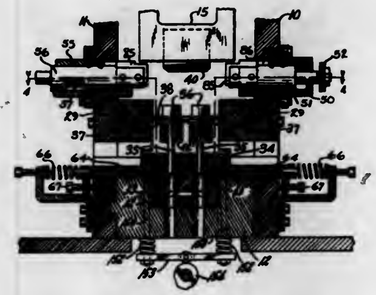
positions. A first cam is secured to a powered rotatable shaft, and a plurality of second cams are freely mounted on the same shaft. Cooperating drive means are provided on said cams whereby the rotation of the first cam is imparted to each succeeding one of the second cams. Said drive means are adjustable to delay selectively the translation of rotation between adjacent cams. Cam followers actuate said valve control means in accordance with an operating program represented by adjustable profiles on the cams.

27,042
METHOD AND APPARATUS FOR AUTOMATIC SCREENING OF CARDIAC SIGNALS
Clinton O. Jorgensen, South Ogden, Utah, and Harvey F. Glassner, Los Angeles, Calif., assignors, by mesne assignments, to Humetrics Corporation, Los Angeles, Calif., a corporation of Delaware
Original No. 3,280,817, dated Oct. 25, 1966, Ser. No. 376,394, June 19, 1964. Application for reissue Oct. 24, 1968, Ser. No. 771,679
Int. Cl. A61b 5/02
U.S. Cl. 128—2.05 **26 Claims**



Method and apparatus for evaluating a heart activity responsive electrical signal in which a signal derived from an EKG signal is used to generate the gating pulses which control the time of evaluation within the cycle of the heart activity signal. The duration of the gating pulses is varied responsively to changes in the duration of the heart cycle.

27,043
SHEARING MACHINE AND METHOD
Albert F. Hausman and Felix A. Chiplis, Indianapolis, Ind., assignors to Amsted Industries Incorporated, Chicago, Ill., a corporation of New Jersey
Original No. 3,273,434, dated Sept. 20, 1966, Ser. No. 413,539, Nov. 24, 1964. Application for reissue Sept. 16, 1968, Ser. No. 776,837
Int. Cl. B26d 3/00, 5/12
U.S. Cl. 83—55 **36 Claims**



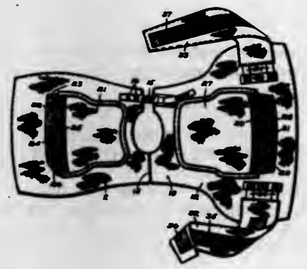
A high-velocity shearing machine for producing straight and true sheared faces. A shearing tool such as a punch or other movable shearing element, mounted for movement in shearing relation with a companion tool such as a die or fixed shearing element, is driven through a shearing stroke by impact of a ram of sufficient mass, accelerated to sufficient velocity, to impart to the movable shearing element a tool velocity of at least 6 to 8 feet per second. Desirably, the ram is driven by fluid pressure in a cylinder. For cyclic operation, the ram may be continuously urged in driving direction by fluid pressure in a large chamber, is mechanically retracted against such pressure, and is then released for acceleration through a working stroke by such pressure. A cushion stops the ram after it has struck the tool and absorbs excess energy. The tool is retracted and work is fed in timed sequence with the ram cycle.

PATENTS

GRANTED JANUARY 26, 1971

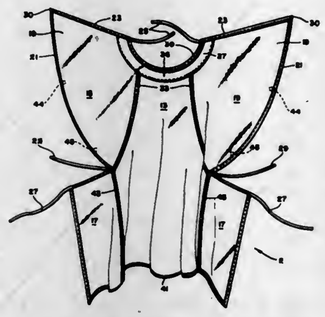
GENERAL AND MECHANICAL

3,557,384
VARIABLE INFANTRY ARMOR SYSTEM
Edward R. Barron, Framingham, Michael P. Cariucci, Natick, Peter James, Brighton, Ralph Martone, Framingham, and Justin E. Walsh, Brookline, Mass., assignors to the United States of America as represented by the Secretary of the Army
Filed Feb. 24, 1969, Ser. No. 801,301
Int. Cl. F41h 5/08
U.S. Cl. 2—2.5 **9 Claims**



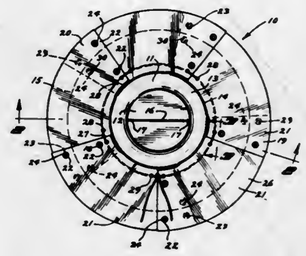
An armor protective system capable of providing varying levels of protection against a variety of ballistic hazards consisting of a lightweight, fragmentation-protective, sleeveless jacket having separate pockets on the front and back of said jacket into which rigid armor plates are inserted to increase the level of protection, said armor plates having integral fastening means which allow the plates to be worn without the jacket.

3,557,385
HOSPITAL GOWN
Jane M. Hendrickson, 426 Countryside Drive, Wheaton, Ill. 60187
Filed Aug. 28, 1968, Ser. No. 756,038
Int. Cl. A41d 9/00
U.S. Cl. 2—114 **1 Claim**



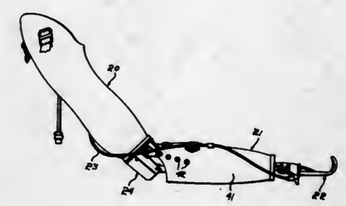
A hospital gown is formed with wing-like portions which are very loosely arranged and draped about the arms of the patient allowing quick and easy access to the patient's chest and arms without exposing the patient or necessitating cutting and tearing of the gown.

3,577,386
PROTECTIVE HEADGEAR
Norma E. Fisher, Rte. 1, Cedar, Minn. 55011
Filed Sept. 2, 1969, Ser. No. 854,381
Int. Cl. A42c 5/00
U.S. Cl. 2—191 **6 Claims**



A hat of semi-rigid material includes a crown portion and a truncated conical brim portion extending outwardly and downwardly from an upper edge of the crown portion. An apron of similar material is constituted as a number of separate apron segments which can be fastened to each other and to the brim of the hat in either a lower or an upper location. The apron constitutes a coplanar extension of the hat brim. The hat can also be used without the apron being affixed thereto. The apron segments have multiple fasteners along side edge portions thereof. Multiple fasteners and fastenings are also provided along the top edge portions of the apron segments. These top apron segment fasteners cooperate with apertures or fasteners provided on the brim of the hat to position the apron as a coplanar extension of the hat brim at either of lower or upper locations with respect to the brim.

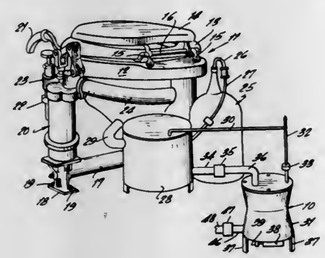
3,557,387
EXTERNALLY POWERED JOINT PROSTHESIS
Cord W. Ohlenbusch, Hopkinton, and David B. Russell, Ashland, Mass., assignors to Liberty Mutual Insurance Company, Boston, Mass., a corporation of Massachuetts
Filed Nov. 12, 1968, Ser. No. 774,789
Int. Cl. A61f 1/00
U.S. Cl. 3—1.1 **51 Claims**



A joint prosthesis is disclosed in an arm embodiment having a first unit providing a stump-receiving socket with a distal support and a second unit to replace the missing member and including framework with a joint-establishing

pivot connecting the framework to the support. Joint flexing means carried by the framework includes a direct current, permanent magnet motor and a ball screw driven thereby and received by a ball nut pivotally mounted on the support below the joint pivot. The control circuit for the motor is connectable to a power source and disclosed as utilizing bioelectric signals, electromyographic signals derived from two muscles being one basis of control with each muscle normally moving the now missing member in a direction opposite to that of the other. The control circuit also provides that the signals from each muscle are rectified with opposite signs added and combined so that the resultant is a signal proportional to the difference between the muscle tensions and provides a basis for motor reversal. The prosthesis includes one or more of such features as a fixed mounting of the motor and brake in the framework and the pivotal attachment of the distal end of the ball screw thereto with a flexible, endless drive between the motor shaft and ball screw, a brake that is engaged whenever the motor speed is zero, a force feedback measuring strain transmitted through the ball screw, a velocity feedback derived from the flexing of the prosthetic joint, and a control which opens the motor and brake circuits as long as muscle tension and torque are in balance.

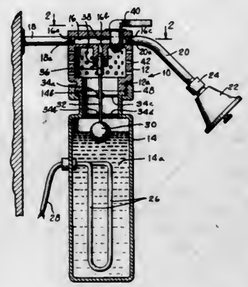
3,557,388
MARINE TOILET SEWAGE SYSTEM
Bert Bach, 270 West End Ave., New York, N.Y. 10023
Filed Feb. 9, 1970, Ser. No. 9,660
Int. Cl. E03d *5/00, 9/02*
U.S. Cl. 4—10 **6 Claims**



A marine toilet includes a chamber in which waste products are mixed with a chemical. The chamber breaks up solid waste. The inlet and outlet pipes to the chamber have operative valves which close the chamber. A flexible diaphragm then acts directly upon the liquid in the chamber.

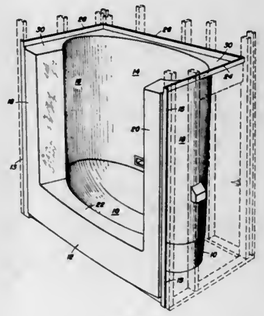
3,557,389
STEAMING UNIT
Robert Scobey, Basking Ridge, N.J.
(Douglass Road, Bernardsville, N.J. 07924)
Filed Jan. 19, 1968, Ser. No. 699,156
Int. Cl. A61h *33/06*
U.S. Cl. 4—161 **11 Claims**

A steaming unit for a stall shower. A container houses a heating element and is separable from a head assembly that includes openings for steam to pass therethrough into the stall shower. A water passage in the head assembly includes an inlet that connects to the usual water line for a shower head, a first outlet to the container and a second outlet to the shower head. A valve in the first outlet controls the application of water to the container and may be regulated to maintain a fixed level of water over the heating element. A valve in the second outlet controls the application of water to the shower head. The steam outlet openings in the head assembly may be horizontally disposed, inclined, or both. Baffles adjacent the



openings may be employed to prevent water particles from passing through the openings.

3,557,390
TUB AND SHOWER SURROUND AND APPARATUS AND METHOD FOR MAKING SAME
Kay L. Ruggles and Norman Van Skyhawk, Salt Lake City, Utah, assignors to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed July 1, 1968, Ser. No. 741,728
Int. Cl. A47k *3/14*
U.S. Cl. 4—148 **4 Claims**

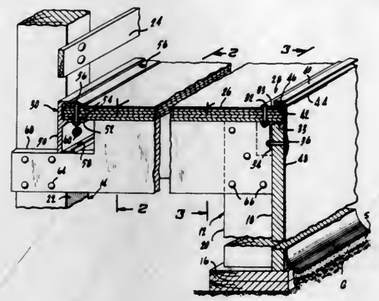


This invention comprises making a tub and shower enclosure of one piece construction wherein the finished product will be seamless and the end areas will be of a columnar partial wrap around arrangement embodying the tube at the lower end and a capped ledge at the upper end so that it will be substantially rigid when freestanding. The invention also includes an improved mold and molding process permitting recesses, walls and tub to all be cast integrally at one time.

3,557,391
COMBINED DECK AND HORIZONTAL GIRDER STRUCTURE
Robert E. West, Yardley, Pa., assignor to Cascade Industries, Incorporated, Edison, N.J.
Filed July 29, 1968, Ser. No. 748,565
Int. Cl. E04h *3/18*
U.S. Cl. 4—172.19 **7 Claims**

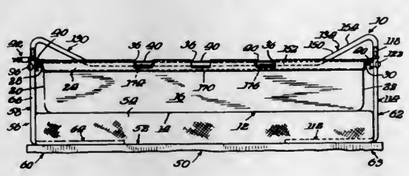
A structure extending outwardly from the wall of a swimming pool mainly combines the functions of a deck extending alongside the pool, and a girder resisting forces

exerted horizontally by the pressure of water on the side walls of the pool. The structure includes a flat web serving as a decking, and extrusions receiving the inner and outer edges of the web. The extrusions and web form a girder,



and also serve to connect the decking to the pool wall structure and surrounding support framing. Additional functions such as those of a liner retainer, grab rail, and coping may be built into the inner extrusion.

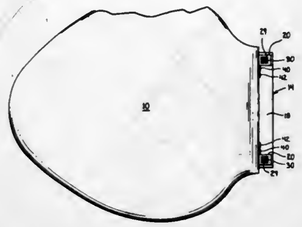
3,557,392
HOSPITAL BED BATH
Richard J. Schmidt, Franklin Park, Ill., assignor to Richard J. Schmidt Corporation, Franklin Park, Ill., a corporation of Illinois
Filed Aug. 14, 1968, Ser. No. 752,591
Int. Cl. A47k *3/08*
U.S. Cl. 4—177 **5 Claims**



Supporting structure for supporting on a bed having a mattress a tub formed of a flexible sheet of water-repellent material comprising a pair of mounting brackets. Each mounting bracket has a base portion adapted to be disposed at one end of the bed beneath the mattress. Each mounting bracket also has a pair of upstanding post portions spaced from each other and extended above the mattress. Side wall supporting means preferably are swingably connected to each of the upstanding post portions for swinging movement between a first position where the side wall supporting means are adapted to provide support for the side wall portions of the tub and a second position where the side wall supporting means are disposed substantially in the planes of the posts of the mounting brackets.

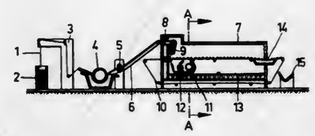
3,557,393
HINGE DEVICE FOR TOILET LID
Vernon L. Waldon, Crawfordsville, Ind., assignor to Ingress Manufacturing Co., Inc., Crawfordsville, Ind., a corporation of Indiana
Original application Apr. 1, 1965, Ser. No. 444,581, now Patent No. 3,377,633, dated Apr. 16, 1968. Divided and this application Feb. 23, 1967, Ser. No. 636,557
Int. Cl. A47k *13/12*
U.S. Cl. 4—236 **8 Claims**

This invention provides a novel mounting of a toilet lid and seat along with a novel and economical means for concealed attachment thereof to a toilet bowl whereby the installation is substantially wholly from the upper



side, thus providing ease of assembly, yet with no visible screwhead or nut.

3,557,394
PROCESS FOR THE CONTINUOUS FINISHING OF KNITTED FABRICS AND HOSIERY GOODS
Heinz Fleissner, Egelsbach, near Frankfurt am Main, Germany, assignor to Vepa A.G.
Filed Oct. 18, 1967, Ser. No. 677,503
Claims priority, application Germany, Oct. 18, 1966, V 32,144
Int. Cl. B08b *3/00;* **D06c** *1/00*
U.S. Cl. 8—149.1 **20 Claims**

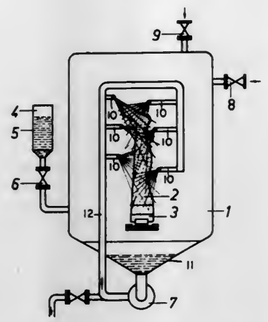


A process for finishing, especially bleaching and/or desizing knitted fabrics and hosiery goods, such as for example cellulose fibers, wherein the knitted fabrics and hosiery goods are impregnated with the treatment liquor, steamed, washed and/or rinsed and dried. The knitted fabrics and the hosiery goods are continuously transported and guided in open width and without any substantial tension during the individual treatment processes.

3,557,395
METHOD FOR SETTING AND DYEING BOARDED ARTICLES OF SYNTHETIC FIBERS
Curt Kronsbein, Hagen-Boelerheide, Germany, assignor to Eugen Bellmann G.m.b.H., Hagen-Aaspe, Germany
Filed May 9, 1969, Ser. No. 823,268
Int. Cl. D06c *5/00;* **B08b** *5/00*
U.S. Cl. 8—149.2 **4 Claims**

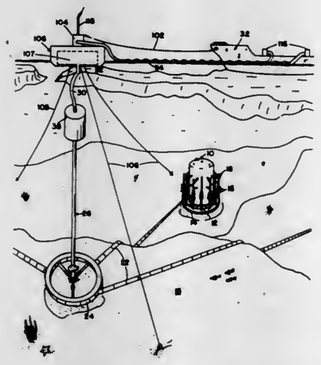
Boarded articles of synthetic fibers are set and dyed in a sealed autoclave into which air under pressure has been introduced before the admission of steam into the autoclave. A liquid dyestuff, or a mixture of such a dyestuff and other ingredients, is admitted to the autoclave at a temperature of less than 100 deg. C., thus precluding this liquid to turn into steam. The liquid is circulated and recirculated inside of the autoclave, and superheated steam under pressure is introduced into the same. This steam raises the temperature of the dyeing liquid within the autoclave and is cooled and condensed by said liquid.

The admission of superheated steam is limited in quantity and time so that the temperature of the dyeing liquid



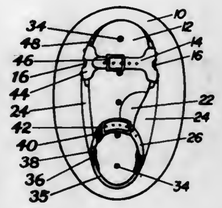
therein does not exceed the vaporization temperature thereof at the superatmospheric pressure prevailing inside the autoclave.

3,557,396
FLOATING STORAGE SYSTEM WITH BUOY-MOUNTED SEPARATOR
Lewis A. Rupp, Wellesley Hills, Mass., assignor to Mobil Oil Corporation, a corporation of New York
Filed Nov. 13, 1968, Ser. No. 775,350
Int. Cl. B63b *21/52, 35/00*
U.S. Cl. 9—8 **3 Claims**



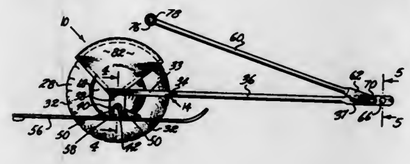
The specification discloses a system for producing, separating, and storing submarine oil and gas. The system includes a floating storage vessel having a ship-shaped hull which is moored to a buoy so that it is free to pivot through 360° in response to the combined forces of wind and water. Produced fluids are directed from an underwater location through a swivel joint on the buoy and a floating hose to the storage tanks of the floating vessel. Mounted in the buoy is a unique oil-gas separator which comprises a rigid standpipe surrounded by a main pressure vessel. An inlet conduit intersects the rigid standpipe in the main pressure vessel at tight angles, thus providing a pair of fluid inlets, one of which is always above the sump fluid. Separated oil is directed through a swivel joint concentric with the top of the standpipe, while separated gas is flared through an upward extension of the standpipe.

3,557,397
SWIMMING DEVICE
Samuel L. Margolles, 208 Jeanette Ave., Jensen Beach, Fla. 33457
Filed Dec. 12, 1966, Ser. No. 601,156
Int. Cl. A63b *31/00*
U.S. Cl. 9—305 **1 Claim**



A swimming device comprising a resilient fin which becomes rigid when moved in one direction against the water and which flexes to a non-rigid position when moved in the opposite direction.

3,557,398
WATER SPORT VEHICLE
Robert E. Pierce, 11189 Royal Palm Blvd., Riverside, Calif. 92505
Filed May 5, 1969, Ser. No. 821,657
Int. Cl. A63c *15/02*
U.S. Cl. 9—310 **10 Claims**

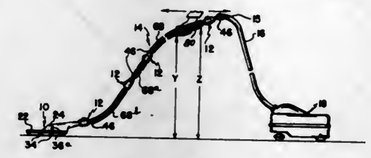


A water sport vehicle having a lightweight wheel with a buoyant tire and fitted with a pair of water skis designed to accommodate a rider in standing position astraddle the wheel. The vehicle can be pulled through the water, with a rider, until a speed is reached at which it rolls along the surface of the water on the wheel. The skis are positioned to ride clear of the surface when held horizontally, and pivotally mounted to permit the rear end of each to be dipped into the water, for braking and turning purposes, when the vehicle is in motion.

3,557,399
WAND FOR VACUUM CLEANER
Lee A. Wolf, Cincinnati, Ohio, assignor to Haley Corporation, Cincinnati, Ohio, a corporation of Ohio
Filed Sept. 25, 1968, Ser. No. 762,573
Int. Cl. A47l *9/32*
U.S. Cl. 15—327 **15 Claims**

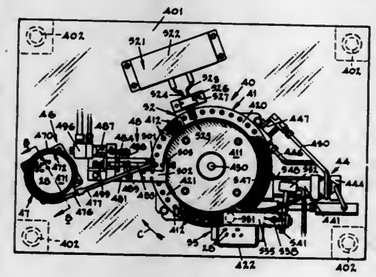
A cleaning tool adapted for use with a vacuum cleaner, such as a canister-type vacuum cleaner, comprising a housing connected to an operating handle or wand, for movement of the housing over the surface, such as a rug, to be cleaned. The housing comprises a suction chamber communicating with the underside of the housing and the latter is adapted to be moved in horizontal condition across the surface to be cleaned. The operating handle is provided with a grip section which enables different sizes of

people having different arm lengths to conveniently operate the tool and still maintain the housing in generally horizontal condition, irrespective of variations in the distance between the floor surface and the hand of the operator due to different arm lengths found in different sizes



of individuals. A novel sectional construction of operating handle is provided together with coupling means for coupling sections of the operating handle together and coupling the latter to the tool, for providing a conduit from the housing of the tool to the canister of the vacuum cleaner.

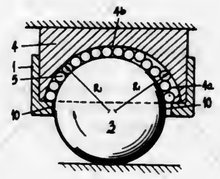
3,557,400
MULTIPLE GLASS SHEET GLAZING UNITS AND THEIR MANUFACTURE
Paul N. Arendt, Columbus, Harry D. Dean, Perrysburg, and Glen J. Lehr, Lucas County, Ohio, assignors to Libbey-Owens-Ford Company, a corporation of Ohio
Filed May 22, 1968, Ser. No. 731,128
Int. Cl. C03c *27/04;* **F27b** *9/06*
U.S. Cl. 16—2 **15 Claims**



Method and apparatus for automatically handling and treating tubular metal inserts for use in forming the dehydration holes in all-glass multiple sheet glazing units in a substantially continuous manner. Metal inserts, coated with a semi-fused glass glazing, are fed to a plurality of support elements arranged in a circular pattern upon a rotatable table, means being provided for intermittently rotating said table to index the support elements beneath metal insert loading means to receive inserts thereon, then to a heating means where the glazed coating is completely fused by electric high-frequency induction heating, and finally to an unloading means which removes the inserts from the support elements.

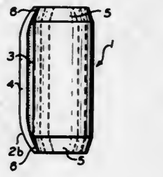
3,557,401
CASTORS
Albert William Jenkins, 8 Longbrae Court, Forest Hills, Victoria, Australia
Filed Feb. 26, 1968, Ser. No. 708,371
Claims priority, application Australia, Feb. 28, 1967, 18,275/67
Int. Cl. B60b *33/08*
U.S. Cl. 16—26 **2 Claims**

The invention provides an improved castor of the type having a plurality of small balls disposed in a space for dual rolling contact between a load supporting large ball and a housing skirting and retaining the large ball and the housing is constructed to allow free movement of the small



balls in the space whereby clustering and resultant jamming of the small balls is prevented.

3,557,402
COILED FASTENING PIN
Hans H. Koehl, Brooklyn, Conn., assignor to C.E.M. Company, Inc., Danielson, Conn., a corporation of Connecticut
Filed Dec. 4, 1968, Ser. No. 780,965
Int. Cl. E05d *5/10;* **F16b** *19/02*
U.S. Cl. 16—168 **15 Claims**

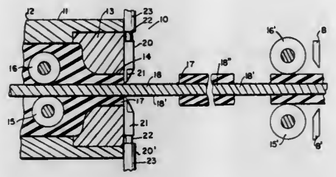


A fastening pin, comprising a spirally wound sheet material having an outer end portion on the outer surface thereof terminating in an edge extending along its length, the end portion including the edge at least in part spaced from the sheet material wound thereunder constituting a spring lip, and the spirally wound sheet material having a diametric thickness through the end portion greater than the diametric thickness through the rest of the spirally wound sheet material.

3,557,403
COMPOSITE EXTRUSION APPARATUS AND METHOD
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Continuation-in-part of application Ser. No. 142,405, Oct. 2, 1961. This application Jan. 21, 1969, Ser. No. 792,477
Int. Cl. B29d *23/05;* **B29f** *3/10*
U.S. Cl. 18—13 **14 Claims**

An apparatus and method for producing novel composite extrusions are provided as are the extrusions produced thereby. The apparatus includes means for feeding an elongated member such as a metal wire, wire rope, electrical cable or other device through the throat of an extrusion die and extruding in situ thereon an extrusion material such as a rigid or flexible polymer. Means are provided for variably operating one or more tools to vary the opening in the extrusion die so as to vary the cross section of extrusion material formed in situ on the elongated member fed through the die. In one form, electrically insulating material is extruded in situ on an

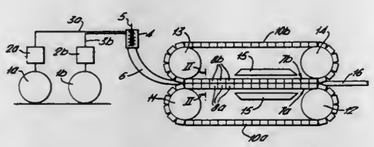
electrical conductor such as a wire, strip of metal or series of these elements to form a protective insulating sheathing therein and tooling is provided to vary the thickness of the extrusion material along predetermined portions of the length of the composite article. For example, the tooling may be operative to either completely stop the flow of insulating material or substantially reduce same along predetermined portions of the length of the elongated member to either bare said sections of insulating material or provide such little insulating material thereon that the post-operative requirements for stripping insulating material in order to connect the ends of the



electrical conductor to termnials or further conducting elements, will be eliminated, if not greatly simplified. A further advantage to be derived is that the usual waste encountered in stripping or baring the ends of wires and cables will be eliminated, if not substantially eliminated.

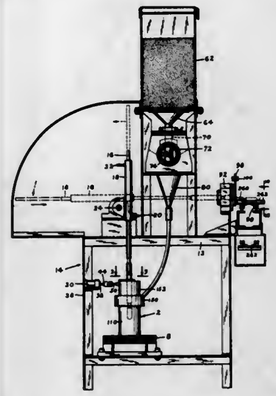
In another form of the invention, an elongated member such as a finite section of wire, rod or tube is passed through an extrusion die and predeterminately coated on its outside surface with extrusion material by automatically controlling the flow of said extrusion material to occur only when the elongated member is passing through the die and to be immediately terminated upon removing the elongated member from the die.

3,557,404
ARRANGEMENTS FOR THE CONTINUOUS MANUFACTURE OF MOULDED ARTICLES
Richard Zippel and Fritz Wiegert, Eschwege, Germany, assignors to Richard Zippel & Co. KG., Eschwege, Germany, a company of Germany
Filed Aug. 12, 1968, Ser. No. 752,020
Claims priority, application Germany, Aug. 26, 1967, 1,704,415
Int. Cl. B29c *1/16*
U.S. Cl. 18—4 **4 Claims**



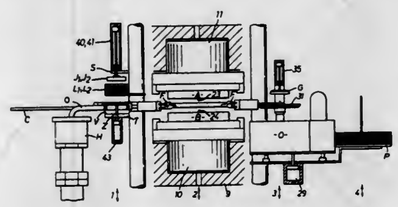
Arrangements are disclosed for the continuous manufacture of molded articles from synthetic plastic materials which comprise two conveyors each having an upper and a lower run, the upper run of one conveyor being immediately adjacent the lower run of the other conveyor. Each conveyor carries one or more mould parts which form one or more moulds while travelling along the immediately adjacent runs, means being provided for feeding plastics materials from a mixing chamber to the mould parts.

3,557,405
AUTOMATED MULTICAVITY ISOSTATIC PRESS
Arnold Gordon Bowles, Warren, Pa., assignor to National Forge Company, Irvine, Pa., a corporation of Delaware
Filed Feb. 4, 1969, Ser. No. 796,429
Int. Cl. B29c *3/04*
U.S. Cl. 18—5 **6 Claims**



A multicavity isostatic press having a plurality of pressure vessels, each vessel having a pressure chamber and an elastomeric container in the pressure chamber, said elastomeric container having a cavity for receiving powder to be molded, a mandrel having an extension for insertion into the powder cavity of the elastomeric container, metering means for delivering a metered charge of powder to the container cavity, means for inserting the mandrel and for withdrawing the mandrel and means for removing isostatic molded articles from the mandrel extension and for transferring the molded article to a conveyor.

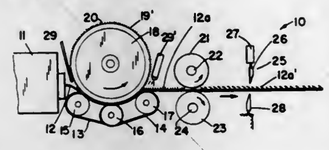
3,557,406
APPARATUS FOR THE AUTOMATIC PRODUCTION OF GRAMOPHONE RECORDS
Hermann Strausfeld, Cologne-Ehrenfeld, Germany, assignor to Carl Lindstrom Gesellschaft m.b.H., Cologne-Braunsfeld, Germany, a company of Germany
Filed July 16, 1968, Ser. No. 745,153
Claims priority, application Germany, July 17, 1967, L 57,008
Int. Cl. B29d *17/00*
U.S. Cl. 18—5.3 **7 Claims**



This specification describes apparatus for the automatic production of gramophone records having several stations equally spaced along a production path at which successive operations on the product are carried out. The product is conveyed between stations by a plurality of transfer means, each serving to convey the product from a respective station to the next along the path. All of the transfer means are mounted on two slide bars which reciprocate to provide concurrent operation of the transfer means. The first transfer means consists of two retractable semicircular claws which together encircle a cylindrical space, which is

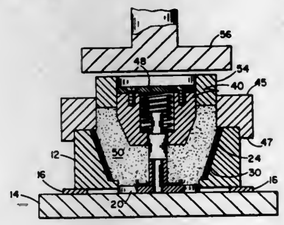
bounded top and bottom by record labels. The space is filled with mouldable material by injection through an orifice formed by the claws and the cake so formed together with the record labels is conveyed by the claws to the moulding press at the next station.

3,557,407
APPARATUS FOR SURFACE FORMING SHEET MATERIAL
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Continuation-in-part of application Ser. No. 574,416, Aug. 23, 1966. This application Aug. 19, 1968, Ser. No. 753,530
Int. Cl. B29d *7/14*
U.S. Cl. 18—10 **4 Claims**



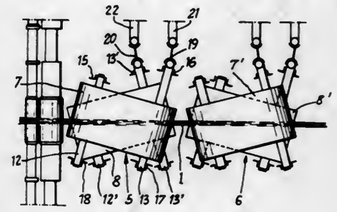
An apparatus and method for forming irregularities in the surface of a sheet of material by working said surface with a plurality of protrusions extending outwardly from the surface of a rotary die or drum. In one form, a plurality of needle or spine-like members or formations are provided in the outer surface of a drum and a sheet of material to be formed is fed to and compressed against the surface of the drum as the drum is power rotated in a manner to cause penetration of said spine like members into the surface strata of the sheet causing them to lift portions of the material of the sheet outwardly from the sheet without detatching said portions from the sheet. The sheet may be presented at ambient or elevated temperature to facilitate the deforming of the portions penetrated by the drum formations. If at ambient temperature, the sheet may comprise a metal or polymer. By elevating the temperature of a sheet of polymeric material, it may be softened to a degree whereby the drum protruding formations dip into the surface of the sheet and remove portions therefrom with little resistance to said action. Cooling means is provided to rapidly solidify or set the surface of the sheet before the formations so formed flow back into the surface of the sheet. Plate or sheet made of metal such as aluminum may also be heat softened below its melting point prior to being so deformed to facilitate the deformation thereof.

3,557,408
APPARATUS FOR MOLDING REINFORCED ARTICLES
Herbert Corliss Fischer and Herbert Corliss Fischer, Jr., both of 3 Sawyer Road, Wellesley, Mass. 02181
Filed May 20, 1968, Ser. No. 730,382
Int. Cl. B29d *3/00*
U.S. Cl. 18—36 **7 Claims**



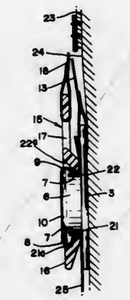
Molding articles with a preformed peripheral reinforcing band. The mold comprises a reinforcing band guard shoulder serving to protect the reinforcing band from edge-directed pressure during the molding process.

3,557,409
RUBBING DEVICE FOR USE ON TEXTILE MACHINES
Jean Frederic Herubel, Guebwiller, France, assignor to N. Schlumberger & Cie, Guebwiller, France, a French company
Filed Aug. 21, 1968, Ser. No. 754,369
Claims priority, application France, Sept. 8, 1967, 120,406
Int. Cl. D01g *15/58*
U.S. Cl. 19—153 **2 Claims**



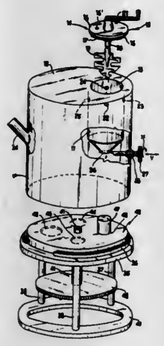
A rubbing device for use on textile machines having at least two successive pairs of rubbing members disposed in series one after the other in the path of a roving of textile fibres through a preparatory or a spinning machine, each pair comprising an upper and a lower rubbing member having transverse motions at opposite angles to said path of said roving.

3,557,410
SNAP-ACTING SUSPENDER FASTENER
Harold S. van Buren, Jr., Lexington, Mass., assignor to United-Carr Incorporated, Boston, Mass., a corporation of Delaware
Filed July 17, 1969, Ser. No. 842,480
Int. Cl. A41f *11/04*
U.S. Cl. 24—245 **5 Claims**



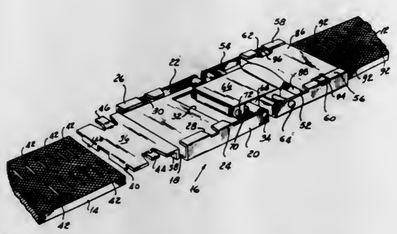
A suspender fastener has a female component disposed at the outer side of a garment, and a male component disposed at the inner side of the garment and having a post passing into an aperture in the female component. The components include cooperating lips and ledges which are hooked and snap engaged to securely grip the material of the garment therebetween and the components present substantially flat, planar surfaces adjacent the body of the wearer of the garment and at the outer side of the fastened combination.

3,557,411
VACUUM MIXER
Angelo Ravasi, Olgiate Molgora, Italy, assignor to F. G. Fina S.p.A., Milan, Italy, an Italian joint-stock company
Filed Jan. 31, 1968, Ser. No. 702,117
Claims priority, application Italy, Feb. 11, 1967, 790,653/67
Int. Cl. B28b 7/26
U.S. Cl. 25—41 2 Claims



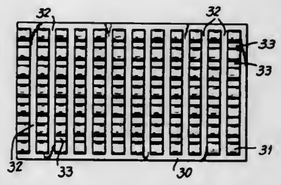
A vacuum mixer designed for mixing and transferring under vacuum special pastes and gypsum for use in dental and jeweller's art and like applications, comprising a vessel wherein the paste can be manually or mechanically mixed and one or more mold containers that can be selectively driven under a vessel exhaust port. The vessel and mold containers are placed inside a jar bell, which can be connected to a vacuum source and comprises means to control from the outside the mixing and transferring operations. Advantageously, said jar bell can be joined to a vibrating device to improve the paste discharging and filling of molds.

3,557,412
LENGTH ADJUSTING MECHANISM FOR WATCHBANDS
Seymour Hauser, North Bergen, N.J., assignor, by mesne assignments, to Kriesler Manufacturing Corporation, North Bergen, N.J., a corporation of Delaware
Filed Oct. 31, 1968, Ser. No. 772,156
Int. Cl. A44c 5/18
U.S. Cl. 24—73 13 Claims



A length adjusting mechanism for a flexible non-expansible watchband length in which a housing carrying an end connector has an open end, for receiving the end of the length, and bottom edge flanges, each of which has a recess along its length. A locking plate has spaced tongues adapted selectively to engage in pairs of notches spaced along the underside of the band adjacent the end. The plate and band end are slipped into the housing until resilient lugs on the plate ride into the housing flange recesses securely to hold the length to the housing.

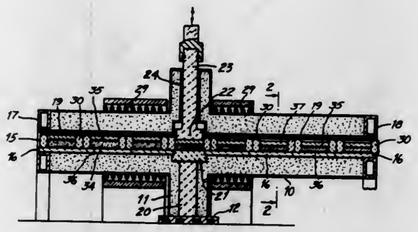
3,557,413
NONMECHANICAL CLOSURE
William H. Engle, 10 Hillvale Road, Syosset, N.Y. 11791
Filed Sept. 23, 1968, Ser. No. 761,548
Int. Cl. A44b 17/00, 19/14
U.S. Cl. 24—201 4 Claims



The present disclosure describes a non-mechanical closure consisting of conforming ridged and grooved resealable locking members. The locking members each have a plurality of parallel locking nipples which may be formed of extruded low density plastic. The locking nipples may be continuous, though they may be interrupted. They are attached by stitching or adhesion to various types of fabrics, garments and other objects which are to be fastened together by detachable means.

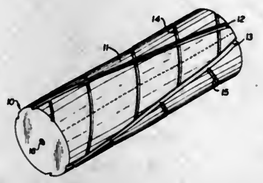
ERRATUM
For Class 25—41 see:
Patent No. 3,557,411

3,557,414
AUTOMATIC HOT PRESSING OF PLATES
Richard A. Alliegro, Holden, Mass., assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
Original application July 30, 1965, Ser. No. 475,940, now Patent No. 3,440,312, dated Apr. 22, 1969. Divided and this application Nov. 5, 1968, Ser. No. 795,132
Int. Cl. F27b 9/00
U.S. Cl. 25—142 2 Claims



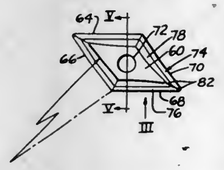
An apparatus for hot pressing refractory powders in a mold to produce thin plates wherein the apparatus has a preheating zone in a furnace, a hot pressing zone and pressing means adapted to engage the mold across its wider dimension to simultaneously apply pressure and flow heat into the product being molded.

3,557,415
ELECTRIFIER CYLINDER
Dieter Kloeckener, Valley Stream, N.Y., assignor to Polrotor, Inc., East Farmingdale, N.Y., a corporation of New York
Filed Sept. 23, 1969, Ser. No. 869,994
Int. Cl. D06c 29/00
U.S. Cl. 26—2 12 Claims



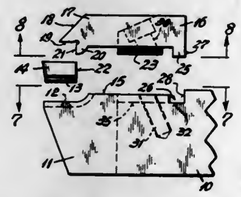
An electrifier cylinder having a plurality of grooves effective to electrify and polish pile fabric, the grooves being disposed in at least two distinct fields, wherein one field effects a longitudinal sweeping of the fabric and a second field effects a cross sweeping of the fabric.

3,557,416
CUTTING INSERT
Dennis G. Jones, Greensburg, Pa., assignor to Kennametal Inc., Latrobe, Pa.
Filed Aug. 16, 1968, Ser. No. 753,168
Int. Cl. B26d 1/00
U.S. Cl. 29—95 11 Claims



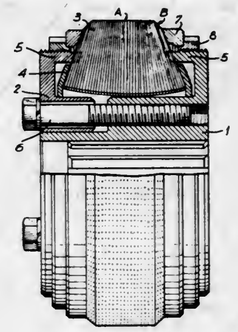
The invention concerns throw away cutting inserts having positive value and especially useful for profiling operations. The inserts are molded and have an included angle at the points of from about 25° up to about 55°.

3,557,417
TOOL HOLDER
John P. Kollar, Trumbull, Conn., assignor of one-half to Thomas J. Kollar, Milford, Conn.
Filed July 11, 1968, Ser. No. 744,051
Int. Cl. B26d 1/00
U.S. Cl. 29—96 6 Claims



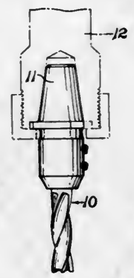
A tool holder shank having an integral blade is provided with a clamp having a blade to hold a tool bit or insert, the shank having transverse and longitudinal grooves receiving transverse and longitudinal ribs on the clamp to control the position of the clamp on the shank when the clamp is secured to the shank with a bit between the blades by a single screw passing through the clamp and into the shank, the blade on the shank having a V groove and a bit having a bottom V-formation to align and hold the bit on the shank blade.

3,557,418
ROTATING CUTTING TOOL FOR SURFACE MACHINING OF ARTICLES AND MATERIALS
Viktor Samsonovich Salukvadze, 5 Parkovaya ul. 42, kv. 53, Moscow, U.S.S.R.
Filed Sept. 20, 1968, Ser. No. 761,249
Int. Cl. B23d 71/00; B26d 1/12
U.S. Cl. 29—105 5 Claims



A rotatable cutting tool comprises cutters formed by pieces of wire fastened together at one of the ends thereof while their other free ends form the working surface of the tool in the shape of a surface of revolution. The side surfaces of the wire pieces are pressed against each other at their fastened ends while along their remaining length the wire pieces are compressed laterally by rings in the form of a truncated cone at the side facing the wires such that the ratio of the sum of the face areas of the cutting tips of the wire to the entire area of the working surface is between 0.10 and 0.93.

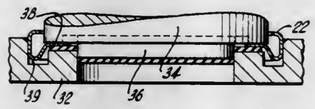
3,557,419
ADJUSTABLE CUTTING TOOL ASSEMBLY
Frank A. Flannery, 1875 Brookshire Road, Akron, Ohio 44313
Filed June 25, 1969, Ser. No. 836,244
Int. Cl. B23b 5/22, 51/00; B26d 1/12
U.S. Cl. 29—105 10 Claims



Rotary cutting tools such as are used for boring, milling and slotting are mounted for longitudinal axial adjustment in rotary cutting machine tools by securing the cutting tool in a toolholder by means of a set screw

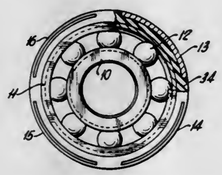
which is canted toward the head of the toolholder. The set screw seats against a flat set-face that is sloped to present a planar face normal to the axis of the canted set screw and of sufficient length to permit seating of the set screw along a definitized length of the cutting tool. The sloped set-face may be cut into the side face of the cutting tool or into a key adapted to fit against the unsloped set-face of conventional commercial cutting tools. The tool holder is provided with an adjustable limit bolt for defining the depth to which the cutting tool can be inserted into the socket of the toolholder.

3,557,420
METHOD FOR MAKING AN ANTIFRICTION BEARING SEAL
Richard J. Matt, Simsbury, and Newman F. Mooers, Plainville, Conn., assignors to Textron Inc., Providence, R.I., a company of Delaware
Filed July 1, 1968, Ser. No. 741,658
Int. Cl. B23p *11/00;* **B23q** *17/00*
U.S. Cl. 29—148.4 **17 Claims**



A method for making an antifriction bearing seal is described. A sheet of preferably polytetrafluoroethylene is provided on one side with a curable adhesive or is otherwise prepared for bonding at one side. A plurality of diaphragms are then punched out of the sheet, so that each diaphragm is bondable on one face thereof. A metallic cap or ring member is formed having an outer annular lip portion shaped to mount to the outer ring of a bearing. The lip extends radially outwardly and axially from an inner annular flat flange to form an apertured dished face, with the flange forming the bottom of the dish. When punched, the diaphragms are shaped and sized to fit within the dish bottom and to cover the aperture with an annular overlap. Thus, upon insertion, each is piloted by the flare of the dish, to a seated bonding position, generally in the center of the bottom of the dish. After bonding, the diaphragm is punched within the ring member, to produce a hole that is precisely concentric with respect to the bearing axis, by piloting the punch on the outer lip of the ring member.

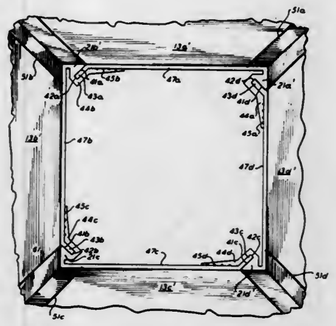
3,557,421
METHOD FOR MAKING A SELF-LOCKING RING
Ralph S. Howe, Jr., New Britain, Conn., assignor to Textron Inc., Providence, R.I., a corporation of Delaware
Filed June 20, 1968, Ser. No. 738,571
Int. Cl. B23p *11/00, 11/02*
U.S. Cl. 29—148.4 **3 Claims**



A method of making a resilient self-locking structure around the periphery of a ring, such as the outer race ring of an antifriction bearing, to be mounted within a bore. Elastic material is bonded around the outer periphery of the ring, with metal feet embedded in the elastic material and having exposed outer surfaces for gripping the internal surface of the bore in which the ring is to be mounted.

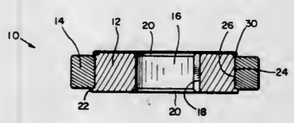
The method includes the formation of a rigid clamp ring large enough for radially spaced containment of the ring to be mounted, and having a bore with a plurality of angularly distributed grooves extending axially for the length of the clamp ring, mounting the clamp ring concentrically with the ring to be mounted, and filling the space therebetween with an elastic material to bond the rings to one another. Subsequently, radially external material is removed from the composite structure to a radially inward depth necessary to produce disconnected independent rigid feet embedded in the elastic material, and having outwardly exposed clamping surfaces.

3,557,422
METHOD OF FORMING A POLE BASE STRUCTURE
Henry C. Pfaff, Jr., Summit, N.J., assignor to Pfaff and Kendall, Newark, N.Y., a corporation of New Jersey
Filed Sept. 27, 1968, Ser. No. 763,211
Int. Cl. B23p *17/00*
U.S. Cl. 29—155 **6 Claims**



A method of forming a pole base structure, which is formed in a simplified fashion by operations on sheets of material to enable convenient assembly of a strong and durable pole base structure, comprising forming transverse cuts in sheets of material to form cut out side panel segments, bending end segments and crimping portions thereof, placing the crimped side panels adjacent cut side panel segments and interfitting said crimped and cut side segments.

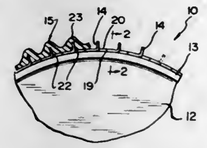
3,557,423
METHOD FOR MANUFACTURING AN IMPROVED COMPOSITE GEAR
Robert L. Wolfe and Augustine Trebnik, Columbus, Ind., assignors to The Reliance Electric and Engineering Company, Cleveland, Ohio, a corporation of Ohio
Filed Aug. 28, 1968, Ser. No. 755,902
Int. Cl. B21d *53/28;* **B23p** *15/14;* **B21h** *5/00;* **B29d** *15/00;* **B21k** *1/20*
U.S. Cl. 29—159.2 **19 Claims**



The method of fabricating an improved composite gear which comprises the steps of arranging an inner ferrous

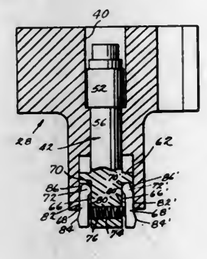
metal annulus and an outer bronze annulus to define a concentric annular space therebetween, placing a solder member adjacent the annular space, heating the annuli and the solder member concurrently, while maintaining the recited relationship of the annuli, to cause molten metal from the solder member to flow into and fill the annular space, and then, while maintaining the recited relationship of the annuli, cooling the annuli to a temperature below the melting point of the solder member, thereby to join the annuli and to improve the wear characteristics of the bronze annulus. Gear teeth may be machined in the external surface of the bronze annulus either before or after the two annuli are so joined. The method of the present invention contemplates heating and cooling the bronze annulus in such a manner as to improve its wear or durability characteristics.

3,557,424
METHOD OF MAKING A COMPOSITE DRIVE WHEEL
Hewart H. Heathwaite, Robert H. Mead, and William T. Paul, Ithaca, N.Y., assignors, by mesne assignments, to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Original application Oct. 30, 1967, Ser. No. 678,833, now Patent No. 3,469,466, dated Sept. 30, 1969. Divided and this application Apr. 2, 1969, Ser. No. 839,106
Int. Cl. B21d *53/28;* **B21h** *5/00;* **B21k** *1/30;* **B23p** *15/14;* **B29d** *15/00*
U.S. Cl. 29—159.2 **2 Claims**



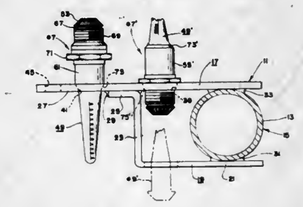
Composite sprocket and drive wheel devices are disclosed herein to provide an illustration of this invention. This wheel includes a circular plate body which is stamped and formed with a laterally extending flange along the periphery thereof. Portions of the flange provide tooth roots over which a plastic toothed rim is molded.

3,557,425
RING TAB ASSEMBLY OPERATION
Jerry F. Scharf, Havertown, Pa., assignor to Crown Cork & Seal Company, Inc., Philadelphia, Pa., a corporation of New York
Filed Oct. 15, 1968, Ser. No. 767,743
Int. Cl. B23p *19/00, 19/04*
U.S. Cl. 29—200 **32 Claims**



A pre-staking station in a press for pre-staking ring tabs to an end closure is provided with a mechanical holding and aligning device for gripping a ring tab blank as it is fed into the station on a feed strip, severing the ring tab blank from the feed strip, and positioning the ring tab blank in relation to an end closure so that the ring tab blank can be pre-staked to the end closure by means of a punch assembly located at the station. The mechanical holding and aligning device comprises a ring pilot with spring-biased fingers that grip the ring tab blank to retain the blank on the ring pilot until the blank is pre-staked to the end closure or a spring-loaded staking punch and ring pilot (no spring-biased fingers required) which protrude through the aperture in the blank for the rivet and the ring portion of the blank respectively. As the ring tab blank is pre-staked to the end closure, in the first form of the invention, the pilot is depressed into its housing causing the fingers of the pilot to disengage the blank and release the ring pilot from the ring tab blank. In the modified form of the invention, the spring-loaded staking punch and ring pilot are both depressed into their housing to effect their release from the blank. A second set of spring-biased fingers on a blanking insert assembly temporarily grip the ring tab blank as the ring pilot is initially inserted through the blank.

3,557,426
HOLDER FOR USE IN REPLACING COTTON PICKER SPINDLES
Leon E. Day, 2269 Jackson Ave., Memphis, Tenn. 38112, and Edward F. Garey, 1419 N. Avalon, West Memphis, Ark. 72301
Filed May 22, 1968, Ser. No. 731,056
Int. Cl. B23p *7/00, 19/00;* **B23q** *1/00*
U.S. Cl. 29—200 **3 Claims**

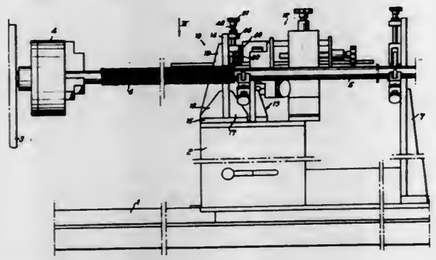


For use with a drum-type cotton picker having many spindle-bushing assemblies mounted in picker bars, and wherein when a spindle of a spindle-bushing assembly is worn or broken, the assembly is removed, the spindle driven from the bushing and a new spindle inserted in the bushing: The invention provides a cantilever-configured, bracket-like apertured holder adapted to be fixed on the support structure of a cotton picker—the spindle assembly is inserted in one aperture of the holder and the spindle driven from the bushing, and then the spindle-bushing assembly is inverted and inserted in another aperture of the holder for installing a new spindle on the bushing.

3,557,427
MACHINE FOR GUIDING, FORMING AND APPLYING A STRIP SPIRALLY AROUND A TUBE
Edmond Pignal, Thonon-les-Bains, France, assignor to Societe des Fabrications Biraghi-Entrepose, Paris, France, a company of France
Filed Oct. 23, 1968, Ser. No. 769,823
Claims priority, application France, Oct. 23, 1967, 125,455
Int. Cl. B23p *15/26*
U.S. Cl. 29—202 **17 Claims**

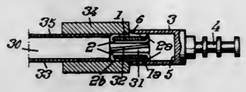
A machine for winding and welding a metal strip around a sealed exchanger tube to form a helical fin, using a welding electrode positioned in the angle between the strip and the tube surface. The tube is rotated while

the strip is applied, the strip and electrode being supported on a longitudinally movable carriage. A vertical platen is secured to the carriage of the machine and angularly adjustable in a vertical plane and has a movable block carrying a pressure roller vertically slidable in an aperture therein. A grooved pressure roller is mounted in the



block for contacting the upper edge of the strip. Guide rollers are mounted with their axes horizontal and of adjustable height to cooperate with the lower and the upper edge of the strip, respectively. Two further guide rollers having their axes vertical cooperate with the two faces of the strip.

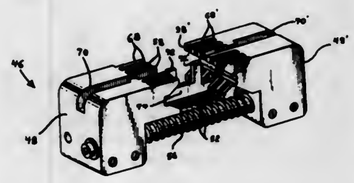
3,557,428
MACHINES FOR MANUFACTURING ELECTRIC CONNECTOR SOCKETS
Francois Robert Bonhomme, Courbevoie, France, assignors to Connectronics Corporation, New York, N.Y., a corporation of New York
Original application June 26, 1966, Ser. No. 559,516, now Patent No. 3,470,527, dated Sept. 30, 1969. Divided and this application May 23, 1969, Ser. No. 842,069
Claims priority application France, June 23, 1965, 21,986
Int. Cl. H05k *13/00*
U.S. Cl. 29—203 **2 Claims**



The sockets have an outer tubular piece surrounding a rigid tubular sleeve lined helically with straight wires, secured at the ends of the sleeve. The machine has a cylindrical support with a first portion of radius equal to the inner radius of the sleeve and having positioning slots for the wires. An adjacent second portion of the support is of radius equal to the sum of the outer radius of the sleeve and the diameter of the wire. A tube slides on the second portion to envelope the first portion so as to hook the ends of the wires back on the sleeve and then is pushed back by means urging the tubular piece onto the sleeve.

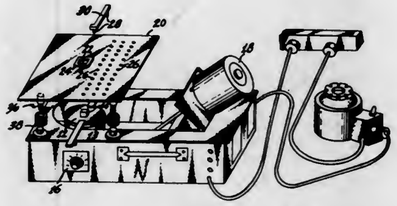
3,557,429
APPARATUS FOR CRIMPING ELECTRICAL CONNECTING DEVICES
Stuart L. Parsons, Clearwater, Fla., assignor to AMP Incorporated, Harrisburg, Pa.
Original application Oct. 9, 1967, Ser. No. 673,856, now Patent No. 3,406,247, dated Oct. 15, 1968. Divided and this application July 23, 1968, Ser. No. 746,905
Int. Cl. H01r *43/04*
U.S. Cl. 29—203 **4 Claims**

Apparatus for crimping an electrical connecting device onto wires comprises a pair of normally spaced-apart crimping dies having forming surfaces on their opposed sides. A supporting means for an electrical connector is located between the dies and is adapted to support a connector having oppositely directed open sides. The dies have recess means on their opposed sides which are adapted to receive the supporting means so that the



dies are permitted to move relatively towards each other and against the oppositely directed sides of the connecting device to crimp the connecting device onto the wires. In accordance with the preferred embodiment, the wire ends are led through the recess means so that when the supporting means moves into the recess means, the ends of the wires are trimmed immediately prior to crimping.

3,557,430
DE-SOLDERING APPARATUS
James B. Jones, Santa Monica, Calif., assignor to RCA Corporation, a corporation of Delaware
Filed Aug. 21, 1968, Ser. No. 754,300
Int. Cl. H05k *13/04;* **B23p** *19/00*
U.S. Cl. 29—203 **4 Claims**

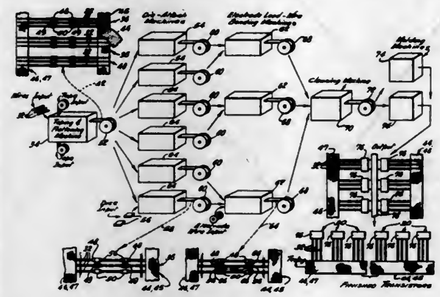


The disclosed invention relates to apparatus for removing a component, such as an integrated circuit, from a substrate, such as a printed circuit board, to which it has been solder secured. Apparatus in accordance with the present invention comprises a heat source, means for disposing the solder connections proximate to said heat source, and means for effectuating the removal of the component from the substrate when the solder connections are caused to reflow.

3,557,431
APPARATUS FOR ASSEMBLING SEMICONDUCTOR DEVICE COMPONENTS
Robert L. Koch, Easton, Earl F. Thomas, Shelton, Joseph A. Miklos, Danbury, and William H. Curry, Bethel, Conn., assignors to National Semiconductor Corporation, Danbury, Conn.
Original application July 8, 1965, Ser. No. 470,410, now Patent No. 3,426,423, dated Feb. 11, 1969. Divided and this application Oct. 31, 1968, Ser. No. 810,050
Int. Cl. H05k *13/00*
U.S. Cl. 29—203 **8 Claims**

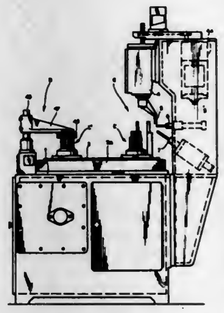
Apparatus for manufacturing plastic encapsulated transistors wherein the lead wires for a plurality of transistors are mounted in spaced relationship on strips of flexible

carrier tape for transport to processing stations which may include those provided to flatten portions of the leads, mount a semiconductor body on one of the leads, inter-



connect electrodes of the semiconductor body to other leads and mold an encapsulating plastic body onto each transistor device.

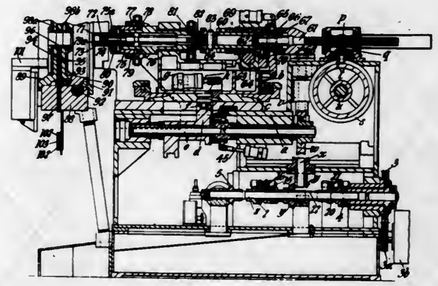
3,557,432
APPARATUS FOR FORMING WOUND STATORS FOR ELECTRIC MOTORS
Alberto Pavesi, Turin, Italy, assignor to Officine Meccaniche Pavesi & C. S.p.A., Cascine Vica, Torino, Italy, an Italian joint-stock company
Filed May 31, 1968, Ser. No. 733,537
Claims priority, application Italy, June 12, 1967, 807,792/67
Int. Cl. H02k *15/00*
U.S. Cl. 29—205 **13 Claims**



Coils for an electric motor stator are wound on an inserting device which is then carried on a rotary platform to an inserting station, where the coils are transferred from said device to the slots of a stator. Both the winding and inserting operations are carried out on different inserting devices concurrently.

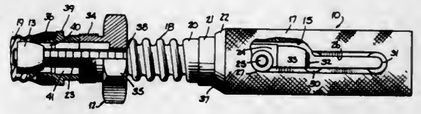
3,557,433
MACHINE FOR WINDING ARMATURES OF DYNAMO ELECTRIC MACHINES
Robert Cyril Sheldon, Warwickshire, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company
Original application July 8, 1963, Ser. No. 293,315, now Patent No. 3,413,714, dated Dec. 3, 1968. Divided and this application June 6, 1968, Ser. No. 742,116
Int. Cl. H02k *15/00*
U.S. Cl. 29—205 **17 Claims**

A machine for winding the armature of a dynamo electric machine and for inserting the wires into slots formed in the commutator segments, the machine having a plurality of angularly spaced guides through which wires are fed in a generally radial inward direction. The armature is held by a reciprocable and angularly movable headstock spindle whereby wires from the guides will be laid in the slots of the armature as the armature is moved. In addition gripping means is provided on the headstock



spindle for gripping the wires and the gripping means incorporates a first series of cutters which through radial inward movement insert the free ends of the wires into the slots and a second series of cutters which later in the winding operation sever the wires and insert the other ends of the windings in the slots and also pen the walls of the slots to retain the wires therein.

3,557,434
TOOL FOR ATTACHING AN END FITTING
Richard J. Delahunty, Chester, N.J., assignor to Co-Operative Industries, Inc., Chester, N.J., a corporation of New Jersey
Filed Sept. 26, 1968, Ser. No. 762,751
Int. Cl. B23p *19/00*
U.S. Cl. 29—237 **11 Claims**

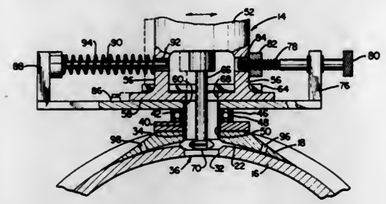


A combination tool with a handle having a helically threaded end for installing a metal sleeve within the end of a length of convoluted plastic conduit carries an extendible threaded stem. When the stem is extended and a combination bearing and anvil member is installed thereon, an expanding bullet can be caused to approach the combination member forcing its way through the bore of an intervening end fitting member for expanding the latter. In one embodiment the bullet is threaded on the stem, while in another, the bullet is integral with the stem which is threaded into the handle.

3,557,435
METHOD FOR REPAIRING BUNGHOLES
Jerald C. Powell and Ray E. Stringer, both of 2945 Larimer St., Denver, Colo. 80205
Filed Sept. 25, 1968, Ser. No. 762,560
Int. Cl. B22d *19/10;* **B23p** *7/00*
U.S. Cl. 29—401 **7 Claims**

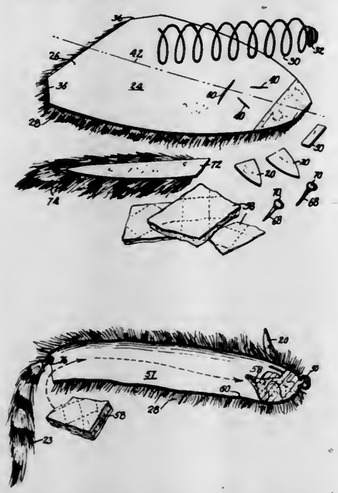
Method of repairing damaged bunghole in container having double walls united around bunghole by weld ring comprises cutting groove in passage wall between container walls to remove most or all of weld ring, cleaning out void between walls and filling groove with new weld metal. If passage wall is scored, can coat entire wall and then ream to proper size. Apparatus comprises support

secured to container, motor on support and drive shaft extending into passage, with cutter at inner end in plane of



weld ring. Motor displaced laterally and swung in circle for cutter to produce groove around entire periphery and remove old weld ring.

3,557,436
METHOD OF MAKING ANIMATED MANIPULATIVE TOY
William Hodes, 244 W. 27th St., New York, N.Y. 10001
Filed Sept. 24, 1968, Ser. No. 761,977
Int. Cl. B23p *19/00*
U.S. Cl. 29—428 **8 Claims**

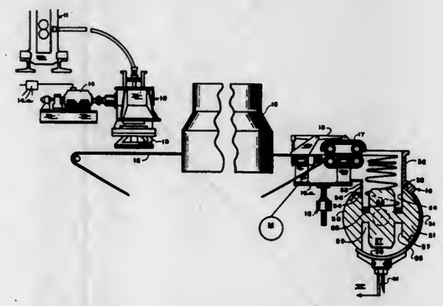


The method of manufacturing an animated toy animal. The method consists of taking a suitably shaped pelt body and forming slits therein constituting ear sockets; folding the pelt body longitudinally upon itself to form a tubular cover for an elastic coiled wire, constituting the body of the animal; stuffing one end of the tubular cover to shape the head of the animal; inserting fabric ears in the head, embedding eyes in the head and attaching a tail at the other end of the cover.

3,557,437
METHOD OF FABRICATING LARGE VESSELS CAPABLE OF WITHSTANDING HIGH INTERNAL PRESSURES
John C. St. Clair, Box 333, R.R. 2, London, Ohio 43140
No Drawing. Filed Jan. 14, 1969, Ser. No. 798,854
Int. Cl. B23k *19/00;* **B23p** *17/00*
U.S. Cl. 29—415 **6 Claims**

Hollow thick walled cylinders suitable for welding together to make large vessels that will withstand 1000 to 5000 pounds per square inch internal pressures are made by casting a hollow cylinder, out of steel, that has twice the wall thickness that is desired. Then the casting is cut longitudinally into two hollow cylinders of the desired one-half wall thickness of the cast cylinder by electrochemical machining. This brings any internal cavities to the surface on the two cut apart cylindrical shells and the cavities can be cheaply repaired by grinding and welding.

3,557,438
ROD HANDLING SYSTEM
Maurice Paul Sieger, Upper St. Clair Township, Pittsburgh, Pa., assignor to United Engineering and Foundry Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed July 1, 1968, Ser. No. 741,626
Int. Cl. B23p *19/00*
U.S. Cl. 29—429 **8 Claims**



A rod handling system consisting of a laying reel for depositing rod delivered from a rolling mill in nonconcentric convolutions on a moving conveyor for cooling. The speed of the laying reel is varied relative to the speed of the rod to form successive rod convolutions with varying diameters that range progressively between the outside and inside diameters of the rod bundle to be ultimately formed. The conveyor delivers the rod to a bundling device where the convolutions are collected to form a bundle in either of two circular recesses formed 180 degrees apart in a rotatable gathering drum which is partially enclosed about its periphery by a housing. The housing has an opening at the top for passage of the rod convolutions into one of the drum's recesses and, at the bottom of the housing, a vertically displaceable platen is located for discharging the rod bundle after the drum is rotated 180 degrees. This rotation also severs the rod into a discrete bundle by employing cooperative shear knives, one knife carried by the drum at the top of the recess and the other carried by the housing at the opening in its top.

3,557,439
PALLET ASSEMBLING SYSTEM
Edgar G. M. Dykeman, deceased, late of Riverside, Calif., by Kathaleen M. Dykeman, administratrix, Riverside, Calif., assignor to FMC Corporation, San Jose, Calif., a corporation of Delaware
Filed May 27, 1968, Ser. No. 732,468
Int. Cl. B23p *19/00, 19/04*
U.S. Cl. 29—430 **10 Claims**

An assembly line for nailing wooden pallets which are formed by a plurality of deck boards placed crosswise to and on both sides of a plurality of spaced stringers. The assembly line includes a jig for positioning and holding the stringers and deck boards for one side of the pallet,

a first automatic nailing machine, a pallet turnover device, a second nailing machine for nailing the deck boards to the other side of the pallet, a pallet stacking device, and

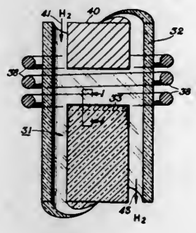


various transfer conveyors for automatically conducting the pallet to and from the mentioned components of the assembly line in the order named.

ERRATUM

For Class 29—470.1 see:
Patent No. 3,557,983

3,557,440
METHOD OF MAKING DIELECTRIC BODIES WITH SELECTIVELY FORMED CONDUCTIVE OR METALLIC PORTIONS AND COMPOSITES THEREWITH
Rolf R. Haberecht, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Original application Sept. 18, 1964, Ser. No. 398,480, now Patent No. 3,390,012, dated June 25, 1968. Divided and this application Jan. 5, 1968, Ser. No. 720,007
Int. Cl. B23k *31/02*
U.S. Cl. 29—472.7 **14 Claims**

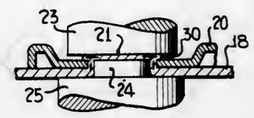


This application relates to a process of preparing a body having conductive and dielectric portions. A surface zone of a dielectric body is selectively reduced to a metal and a conductor is thereafter adhered to the selectively-reduced surface zone. The adhering may be accomplished by joining a conductor such as a metal or graphite to the reduced zone or by plating a metal on the conductive surface zone. Particularly, yttrium iron garnet is joined to a conductor by heating a surface region of the dielectric body in a reducing environment to a temperature not lower than 700° C. to reduce the surface region to a metal and joining a conductor to this reduced region. The conductor and dielectric to be joined may be placed into contact either before or after the surface reduction zone is formed.

ERRATUM

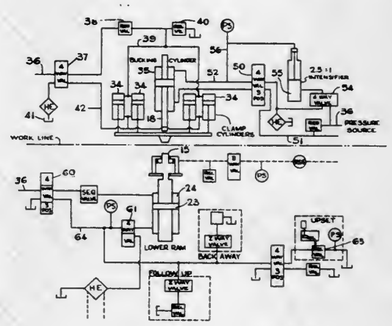
For Class 29—481 see:
Patent No. 3,557,984

3,557,441
METHOD OF FORMING SINGLE OPERATION RIVET
Arnold R. Bolk, Chicago, and Albert J. Holk, Jr., Frankfort, Ill., assignors to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Filed Jan. 5, 1968, Ser. No. 695,915
Int. Cl. B21d *39/00;* **B23p** *11/00*
U.S. Cl. 29—509 **4 Claims**



This disclosure has to do with a rivet which is formed from sheet material as an integral component thereof. The rivet differs from other rivets in that although it is of a tubular construction the body and closed end thereof have the material thereof compressively stressed. The rivet is formed in a single operation through the extrusion flow of the material of the sheet between a pair of punches and as a part of the operation, the rivet may also be headed. The rivet is readily formed utilizing a tool set consisting solely of two opposed male punches and has particular adaptability to the securement of pull tabs to easy opening container ends.

3,557,442
SLUG RIVETING METHOD AND APPARATUS
Thomas H. Speller, Buffalo, N.Y., assignor to General-Electro Mechanical Corporation, Buffalo, N.Y.
Filed Apr. 2, 1968, Ser. No. 718,096
Int. Cl. B21j *15/22, 15/12;* **B23p** *19/04*
U.S. Cl. 29—526 **10 Claims**

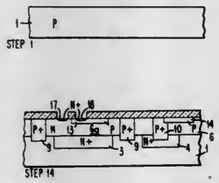


Riveting apparatus having upper and lower annular clamps engaging the work pieces and coaxial upper and lower head forming anvils positioned to hold a cylindrical rivet blank or slug in the rivet hole in the work sheets with both ends of the blank protruding from the work predetermined distances to provide head forming material. In forming the heads the upper anvil is fixed and the lower anvil is moved against the blank to squeeze-form a head. Initially the force of the upper clamp exceeds the squeeze force of the lower anvil but after the lower head is partially formed the increasing force of the lower anvil overcomes the force of the upper clamp and continued squeezing movement of the lower anvil moves the work pieces and the rivet blank upwardly to squeeze-form the upper head against the stationary upper anvil and completes the formation of the lower head.

3,557,443
METHOD OF MACHINING PROPELLER CASTINGS RELATIVE TO A PLANE OF REFERENCE
John T. Parsons, 205 Wellington, Traverse City, Mich. 49684
No Drawing. Filed Oct. 7, 1968, Ser. No. 765,674
Int. Cl. B23p 13/04
U.S. Cl. 29—558 9 Claims

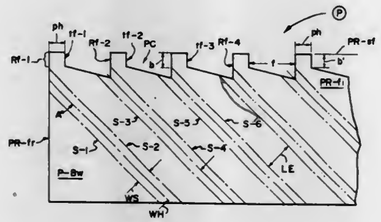
A method of machining propeller castings by retaining the blades fixed with relation to a plane of reference so that their sets of suction faces and pressure faces may be machined to desired contour by programmed machine tools. Significant steps of the method include machining the blade root junctures with the hub before establishing the plane of reference; and after establishing it, adhesively restraining one set of faces while the other set is being machined to contour relative to the plane of reference.

3,557,444
MONOLITHIC BIPOLAR TRANSISTOR LOGIC CIRCUIT AND METHOD OF FORMING SAME
Carl E. Ruoff, Apalachin, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 11, 1968, Ser. No. 766,690
Int. Cl. B01j 17/00; H01l 1/16
U.S. Cl. 29—577 6 Claims



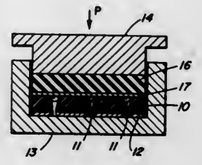
An integrated bipolar transistor circuit of the resistor-transistor logic type is formed on a single semiconductor chip, and interconnections from transistor output electrodes and I/O (input/output) chip terminals to transistor input electrodes are provided by means of high and low resistivity regions within the chip and by a selected metallization pattern formed in a single plane above and isolated from the chip.

3,557,445
METHOD OF FABRICATING SLANT CORES
Richard I. Mizrahi, Hawthorne, Calif., assignor to Honeywell, Inc., Minneapolis, Minn., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 694,976
Int. Cl. H01f 7/66
U.S. Cl. 29—603 6 Claims



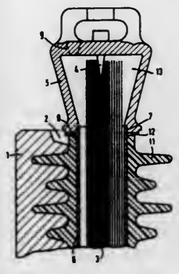
A digital magnetic recording core structure having the core-legs "slanted" with respect to the recording face thereof, this structure especially lending itself to manufacturing matched core sets from a common profile, yet doing so with improved convenience and efficiency, in a preferred embodiment, this arrangement (and method) being especially apt for fabricating one or a set of tunnel erase cores.

3,557,446
METHOD OF FORMING PRINTED CIRCUIT BOARD THROUGH-CONNECTIONS
Sidney Samuel Charschan, Levittown, Pa., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Continuation-in-part of abandoned application Ser. No. 548,156, May 6, 1966. This application Dec. 16, 1968, Ser. No. 798,545
Int. Cl. B41m 3/08; B41q 17/00
U.S. Cl. 29—625 16 Claims



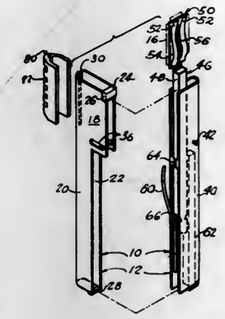
A transversely deformable, conductive foil sheet is positioned over one or more holes in, and in contact with, a major surface of a nonconductive substrate. Uniform pressure is applied to the free major surface of the sheet with a hydraulic medium such as a rubber pad. Such pressure extrudes, explodes or ruptures the unsupported portion of the sheet over the hole thereinto to produce a through-connection.

3,557,447
METHOD OF PRODUCING AN INSULATOR OF GLASS FIBER REINFORCED CAST RESIN
Wolfgang Gruber, Lichtenfels, and Günter Steger, Burgkunstadt, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Nov. 4, 1968, Ser. No. 773,081
Claims priority, application Germany, Nov. 3, 1967, 1,690,082
Int. Cl. H01b 19/02
U.S. Cl. 29—631 6 Claims



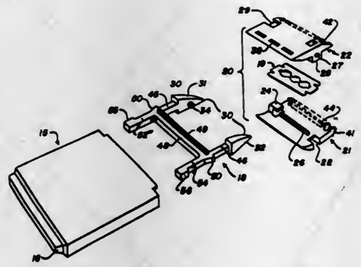
Described is a method of producing an insulator of glass fiber reinforced cast resin. A prestressed glass fiber cord, which had been pretreated with an epoxide resin mixture and located in the interior chamber of a form is fixed therein at the caps and is expanded with the same epoxide resin hardener mixture. To produce a mantel, a filler-containing casting resin which is resistant to creep current, to electric arc and to atmospheric air is cast around the cords and heat hardened.

3,557,448
RETRACTILE AND ADJUSTABLE SAFETY RAZOR
Bobby G. Shead, 360 Home Park Ave. NW., Atlanta, Ga. 31318
Filed June 10, 1968, Ser. No. 735,627
Int. Cl. B26b 21/00
U.S. Cl. 30—30 7 Claims



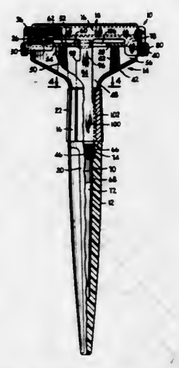
The present safety razor uses an ordinary, conventional razor blade which is removably mounted on a holder that is carried by a case having a slot through which the blade edge extends when a spring mounted portion of the case is pressed by the hand. This is easily done by a barber who holds the case in the hand similar to a straight razor and squeezes the case to expose the blade for cutting. The blade is easily removed from the holder for replacement and also may be controlled by hand as to the amount of edge which is extended. Optionally there is a removable plastic blade guard with spaces for hair-cutting and trimming.

3,557,449
HAIR CUTTER AND SHAVER
Samuel J. Popell, Chicago, Ill., assignor to Popell Brothers, Inc., Chicago, Ill., a corporation of Illinois
Original application Aug. 8, 1968, Ser. No. 751,300, now Patent No. 3,488,673. Divided and this application Dec. 29, 1969, Ser. No. 1,930
Int. Cl. B26b 19/00, 19/38, 21/12
U.S. Cl. 30—31 6 Claims



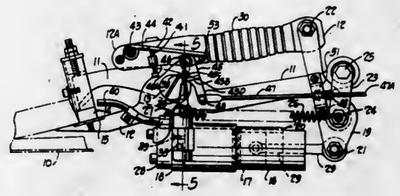
A hair cutter and shaver having three members comprising a case, a blade carrier member proportioned to retractably nest within the case, and a blade head swivelably held in place by jaws extending from the blade retaining member, the blade head having a single comb and cutting edge at one edge, and a shaving edge at the other; each of the edges being oppositely retractable into a saftied position within the case.

3,557,450
OPERATING MECHANISM FOR CLAMSHELL-TYPE SAFETY RAZOR
Paul A. Braginetz, Augusta County, Va., assignor to Philip Morris Incorporated, New York, N.Y., a corporation of Virginia
Filed Jan. 14, 1969, Ser. No. 791,008
Int. Cl. B26b 21/30
U.S. Cl. 30—60.5 9 Claims



A safety razor of the clamshell variety is provided with a bridge supporting member incoroprating an axial bore for spider translation, the support member defining a vertical guide means through which a threaded stem portion of the spider extends, a cap actuating control knob having interior threads in engagement with the spider stem threads being restrained axially between the bridge support member and a plastic handle, rotation of the cap actuating knob causing translation of the spider to open and close the cap members. The razor further embodies a novel means for securing to the spider the cross arms connected to operate the cap members.

3,557,451
INDEX NOTCH CUTTING DEVICE
Joseph Cutrona, Cleveland, Ohio, assignor to The World Publishing Company, Cleveland, Ohio, a corporation of Ohio
Filed Mar. 18, 1969, Ser. No. 808,233
Int. Cl. B26b 17/00
U.S. Cl. 30—180 12 Claims



A device for cutting index notches or thumb recesses in selected pages of bound books wherein a cutting knife is driven toward an anvil by pneumatic pressure upon

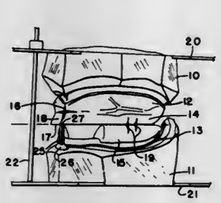
manual actuation of a valve stem in one direction to open a control valve and in which the valve stem is quickly released in response to resiliency of the compressed air in the valve after completion of the manual operation so as to permit quick removal of the knife away from the anvil, the quick release of the valve stem being obtained by a trigger mechanism formed and arranged to permit the valve stem to move to closed position immediately after its initial manual actuation toward opening of the control valve.

3,557,452
SPOON
Richard B. Cronheim, St. Louis County, Mo.
(7 Upper Barnes, St. Louis, Mo. 63124)
Filed Oct. 23, 1968, Ser. No. 769,997
Int. Cl. A47j *43/28*
U.S. Cl. 30—325 **2 Claims**



A spoon for liquid separation, skimming, sampling, and the like having a bowl portion of general oval configuration with a differential in extent of the side portions so that one side edge is disposed upwardly of the other side edge; there being a slot-like aperture formed in said bowl downwardly of the lower side edge.

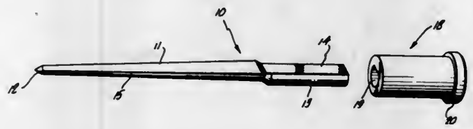
3,557,453
DENTAL APPLIANCE AND METHODS OF USING THE SAME
Henry H. Faust, 319 E. 1st St., and Peter J. Faust, 308 E. Dobbs St., both of Tyler, Tex. 75701
Filed Apr. 10, 1968, Ser. No. 720,076
Int. Cl. A61c *13/00*
U.S. Cl. 32—2 **23 Claims**



Dental appliances and methods of using the same, and particularly methods and apparatus for making full denture constructions providing an accurate and natural functional plane of occlusion and positive centric relationship or position for use in the full dental construction by utilization of the patient's own masticatory movement. The method and apparatus is also adapted for use in determining, and setting teeth to, a proper functional natural path of occlusion in partial dentures involving full posterior tooth replacement.

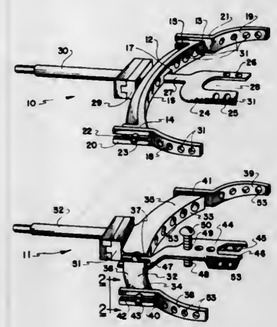
3,557,454
ENDODONTIC DOWEL AND SLEEVE
Wayne W. Whitehill, Arcadia, and Leonard A. Preston, Duarte, Calif., assignors to Unitek Corporation, Monrovia, Calif., a corporation of California
Filed Oct. 28, 1968, Ser. No. 770,955
Int. Cl. A61c *5/08*
U.S. Cl. 32—13 **6 Claims**

A dowel and dowel-and-sleeve assembly for forming and anchoring an artificial tooth crown used to restore a diseased or injured natural tooth. The dowel is a unitary pin having a tapered shank and a generally cylindrical head with a flattened side. The dowel is permanently secured in a root canal of the natural tooth immediately after the canal is prepared by removal of pulp material and subsequent enlargement with reamers or files. The



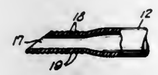
sleeve fits snugly and non-rotatively over the dowel head, and has a flanged end which locks the sleeve in a material used to form an image or impression of the damaged tooth. The sleeve is consumed during casting of the artificial crown, and serves to insure a precisely located and dimensioned socket in the crown to receive the dowel.

3,557,455
ADJUSTABLE AND REUSABLE DENTAL CLUTCH FORMER
Charles Edward Stuart, P.O. Box 891, Ventura, Calif. 91401
Filed July 22, 1968, Ser. No. 746,503
Int. Cl. A61c *9/00*
U.S. Cl. 32—20 **9 Claims**



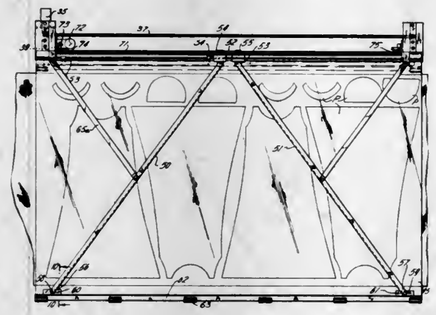
A dental clutch former includes mutually adjustable components that can easily be assembled as a framework for constructing a dental clutch insertable into a patient's mouth in order to obtain jaw movement information for assisting in rehabilitating the patient's mouth. The clutch former has a removable front section with an arcuate surface positionable adjacent the anterior region of the patient's teeth and a pair of longitudinally slidable side railings attached to opposing sides of the front section. A center bearing plate is slidably connected to the front section. In order to quickly and painlessly remove the dental clutch from the patient's mouth, the front section is first slid and pivoted away from the other components and then the other components are removed from the patient's mouth. Rather than being thrown away, the components are saved for constructing other dental clutch formers for different patients with varying jaw sizes.

3,557,456
COMBINATION RETRACTOR AND ASPIRATOR
Seymour M. Hutchinson, Plainview, N.Y., assignor of thirty-five percent to Adrian N. Spitz, Massapequa, N.Y., and thirty percent to I. Jordan Kunik, New York, N.Y.
Filed June 12, 1969, Ser. No. 832,656
Int. Cl. A61c *17/04*
U.S. Cl. 32—33 **5 Claims**



An aspirating tube made of a soft, resilient, but non-collapsing plastic material having ridges or ribs in the outer surface of the end portion thereof to enable said tube to be used as a tissue and lip retractor as well as a protective device for the anatomical or oral cavity during the use of anatomical or dental operating and surgical instruments.

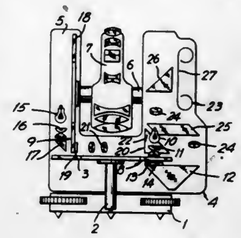
3,557,457
FABRIC DAMAGE ALIGNMENT GUIDE
Abraham Rashbaum, 199—29 22nd Ave., Whitestone, N.Y. 11357
Filed June 21, 1968, Ser. No. 739,121
Int. Cl. B43l *5/00*
U.S. Cl. 33—1 **16 Claims**



The invention relates to a fabric damage alignment guide for facilitating the location of flaws in fabric plies relative to a pattern prior to cutting in order to eliminate such flaws from the fabric in most economical manner, said alignment guide comprising a work surface for supporting the fabric plies, a horizontal collapsible frame positioned over said work surface and including a transparent guide sheet having markings corresponding to the pattern and adjustment means for variably vertically spacing the guide sheet from the work surface.

3,557,458
CODING THEODOLITE
Voldemar Garrievich Shults, Leningrad, U.S.S.R., assignor to Vsesojuzny Nanchno-Issledovatelsky Institut Gornoi Geomekhaniki, Leningrad, U.S.S.R.
Filed Mar. 4, 1968, Ser. No. 710,223
Int. Cl. G01c *1/02*
U.S. Cl. 33—69 **3 Claims**

A coding theodolite comprises a transparent circular plate having a concentric coding scale fixed on the vertical axis of the theodolite and a first diaphragm with an aperture arranged parallel to the plate in front of the coding scale. In front of the aperture is a first illumination means on the other side of the plate and a second diaphragm is rigidly fixed on the horizontal axis of the theodolite and is provided with at least one radial slit. A second illumination means is provided on one side of the second diaphragm for illuminating the slit therein and a first optical system is provided for receiving a light beam passing through the slit in the second diaphragm and for projecting the image of this slit onto the coding scale of the plate, such that angular movements of the slit in the second diaphragm in a vertical plane is equal to the angular movements of the image of the slit on the coding scale of the plate. A second optical system faces the coding scale for projecting to a photoregister an image of a portion of the coding scale which is in front of the aperture of the first diaphragm and an image of the portion of the coding scale which is illuminated by the image of the slit in the second diaphragm.

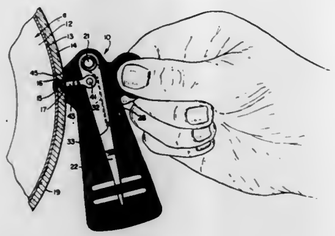


3,557,459
TRACK POSITION INDICATING APPARATUS
Franz Plasser and Josef Theurer, both of Johannesgasse 3, Vienna 1, Austria
Filed June 5, 1968, Ser. No. 734,709
Claims priority, application Austria, June 12, 1967, A 5,464/67
Int. Cl. B61k *9/08*; **E01b** *29/04*
U.S. Cl. 33—144 **7 Claims**



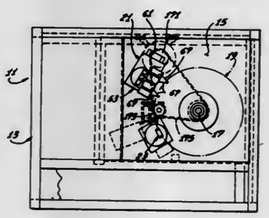
In a mobile track liner comprising an element indicating the position of a selected grade rail of the track, electromechanical means moves the indicating element into flush engagement with the grade rail.

3,557,460
DEPTH GAUGE
Frederick R. McFarland and Park H. Appler, Lancaster, Pa., assignors to K-D Manufacturing Company, Lancaster, Pa., a corporation of Pennsylvania
Filed May 15, 1968, Ser. No. 729,194
Int. Cl. G01b 5/18
U.S. Cl. 33—172 2 Claims



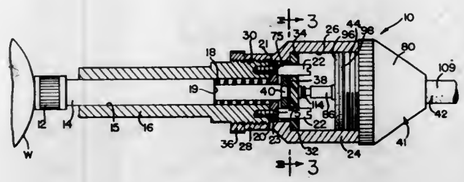
A manually operable gauge is provided, having a backing plate with a spring-biased pointer mounted thereon, with the pointer pivotally secured to the mounting plate, and a free end of the pointer adapted to cooperate with measuring indicia, to indicate the depth of a groove, hole, etc., being measured. The measurement is facilitated by a feeler carried by the pointer member, the feeler being adapted for insertion into the void to be measured, and with the feeler being guided during its measuring movement.

3,557,461
MECHANICAL DISC PACK TESTER AND METHOD
Charles W. David, El Segundo, and Eugene A. Munson, Torrance, Calif., assignors to Disc Pack Corporation, Hawthorne, Calif., a corporation of California
Filed Apr. 18, 1967, Ser. No. 631,705
Int. Cl. G01b 7/28
U.S. Cl. 33—174 20 Claims



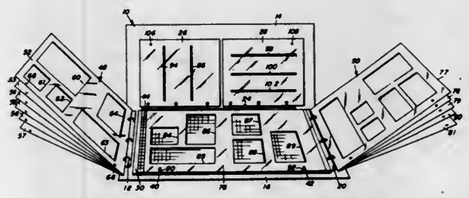
This disclosure describes a method and apparatus for mechanically testing a disc pack which includes mechanically detecting the deviation of a surface of one face of a recording disc from a true mean position to produce a mechanical output and converting the mechanical output into a reading perceptible to an operator to advise the operator if the deviation exceeds a predetermined magnitude. The disclosure also describes a dynamic testing gauge and method, the gauge being engageable with the recording disc if the movement or flutter thereof upon high velocity rotation of the disc pack exceeds a predetermined amount.

3,557,462
GAGING DEVICE AND SYSTEM
Frank M. Kiewicz, Detroit, and Alfred Schneider, Ferndale, Mich., assignors to Inspection Engineering and Equipment, Inc., Royal Oak, Mich., a corporation of Michigan
Filed Oct. 30, 1968, Ser. No. 771,836
Int. Cl. G01b 7/00
U.S. Cl. 33—174 24 Claims



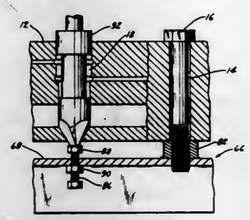
A workpiece gaging device and system, in which the gaging device comprises an electrical switch-type gaging head adjustably positionable in a fixture for contact with a surface to be measured, the gaging head embodying circuitry components designed to signal the presence of an undersized dimension or an oversized dimension. The gaging head is connected to an electronic signalling system and embodying a separate circuit for indicating a dimension which lies between the predetermined high and low limits of the gaging system. Thus, the gaging head connected to such electronic circuitry completes the gaging requirements for indicating a surface dimension below a predetermined limit, above a predetermined limit, or within such limits.

3,557,463
LOOSE LEAF STENCIL FOLDER FOR LAYOUT DESIGN
Charles R. Perry, 1827 Brandywine Drive, Charlottesville, Va. 22901, and James C. Ellis, Charlottesville, Va.; said Ellis assignor to said Perry
Filed May 17, 1968, Ser. No. 730,126
Int. Cl. G01b 3/14
U.S. Cl. 33—174 13 Claims



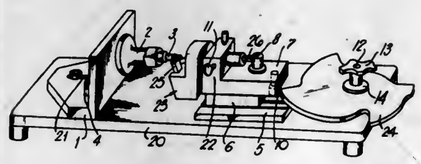
A loose leaf binder is provided, having three binder elements mounted along three edges of a frame member. A drawing board is hinged to one side of the frame and is adapted to receive layout sheets. Three sets of loose leaf layout stencils are secured to the three binder elements, and individual stencils may be selectively folded over the drawing board. In one embodiment, two sets of the stencils each cover one-half of the board, while the third set covers the full board. By selection of the appropriate stencils, any desired layout combinations may be obtained.

3,557,464
FUEL INJECTOR SLEEVE CUTTING GUIDE
John A. Burgess, 5645 NW. 1st St., Des Moines, Iowa 50313
Filed Sept. 5, 1968, Ser. No. 757,658
Int. Cl. G01b 3/30
U.S. Cl. 33—180 6 Claims



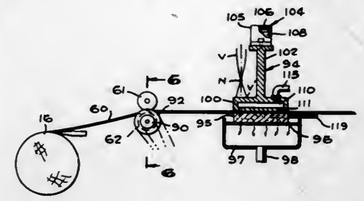
A guide means for use in cutting fuel injector sleeves from diesel engines comprising a guide plate which is secured to the cylinder head by means of head bolts extending through the cylinder head and being threadably received by the plate. A plurality of spaced apart studs are adjustably mounted on the plate and are positioned below the copper injector sleeve in the head. The studs are adapted to limit the depth to which the sleeve cutting tool can extend into the fuel injector opening and also serve as a guide for the same.

3,557,465
DEVICES FOR USE WHEN SETTING MACHINE TOOLS
Edwin James Spalding, Uxbridge, Middlesex, England, assignor to C.A.V. Limited, London, England, a British company
Filed Dec. 11, 1968, Ser. No. 783,011
Claims priority, application Great Britain, Dec. 22, 1967, 58,402/67
Int. Cl. B27g 23/00
U.S. Cl. 33—185 4 Claims



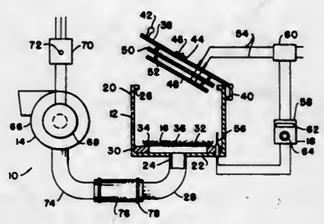
A device for use when setting up automatic machine tools and in particular for facilitating the positioning of a cutting tool within a holder, in which the device is provided with a face plate having means for holding a replica of the component to be machined. A tool carrier is movable towards and away from the face plate, and has means for mounting a tool holder thereon. A pin carries a cam which cam engage a cam holder on said tool carrier to effect movement of the tool carrier towards the face plate as the cam is rotated and a datum peg on the carrier for engagement by the tool holder or an adjustable part thereof.

3,557,466
SONIC METHOD AND APPARATUS FOR DRYING SHEET VENEER AND THE LIKE
Albert G. Bodine, 7877 Woodley Ave., Van Nuys, Calif. 91406
Original application July 5, 1966, Ser. No. 562,636, now Patent No. 3,472,295, dated Oct. 14, 1969. Divided and this application Aug. 25, 1969, Ser. No. 852,543
Int. Cl. F26b 5/02
U.S. Cl. 34—4 10 Claims



Water laden material such as wood veneer is subjected to high level sonic energy to cause the water particles contained therein to flow from the interior to an outside surface thereof. The water particles are removed from the material surface by means of a porous absorber and/or a drying agent such as an air stream.

3,557,467
STRUCTURE FOR AND METHOD OF DRYING GRANULAR MATERIAL
Harry W. Dietert, Kerrville, Tex., assignor to Harry W. Dietert Co., Detroit, Mich., a corporation of Michigan
Filed Oct. 23, 1968, Ser. No. 770,039
Int. Cl. F26b 5/06
U.S. Cl. 34—15 7 Claims

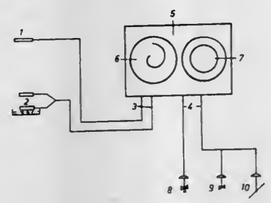


The structure for drying granular material disclosed comprises an oven including means for supporting a sample of granular material on a filter paper or in a specially constructed pan over an opening through which a vacuum is drawn in the oven, means for sealing the sample of granular material over the vacuum forming opening and for sealing the oven except for a controlled air intake opening in response to drawing a vacuum in the oven, and means for maintaining the oven at a predetermined temperature. The vacuum is drawn in the oven through a conduit connected to a motor driven vacuum pump of large capacity. Temperature is maintained at a predetermined level in the oven by means of thermostatically controlled temperature regulating and indicating heating structure.

3,557,468
METHOD AND APPARATUS FOR DRYING LUMBERBOARD

Rudolf Keylwerth, Walzenhausen, Switzerland, assignor to Bauwerk A.G., St. Margrethen, Switzerland, a corporation of Switzerland

Filed Feb. 4, 1969, Ser. No. 796,338
Claims priority, application Switzerland, Feb. 9, 1968, 1,910/68
Int. Cl. F26b 7/00
U.S. Cl. 34—42 4 Claims

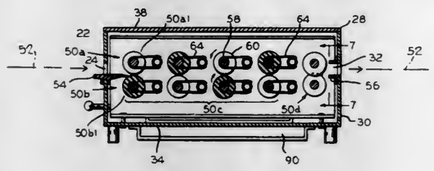


A novel method for drying lumberboard is disclosed as is an apparatus for carrying out the novel method. The inventive method is directed to the control of the climatic drying sequence in lumberboard drying installations and is characterized by the feature that the psychrometer difference during the drying time is increased in the same manner, i.e., steadily and in a uniformly logarithmic fashion, in which the wood moisture of the wood decreases.

3,557,469
GRAPHIC ARTS FILM DRYER

Donald C. Edgington, 2425 N. Ashland Ave., Chicago, Ill. 60614

Continuation-in-part of application Ser. No. 588,084, Oct. 20, 1966. This application Nov. 29, 1968, Ser. No. 780,071
Int. Cl. F26b 13/00
U.S. Cl. 34—151 10 Claims



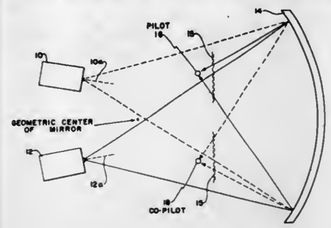
A film dryer including a cabinet having an entrance opening and an exit opening, a series of rolls between the openings, the rolls including squeegee rolls, and final transport rolls sparingly gripping the film at the exit opening, and blower means within the cabinet producing an air stream blowing against the film.

3,557,470
SIMULATOR HAVING VISUALLY INDEPENDENT DISPLAY SYSTEM

Robert M. Emerick, Akron, James A. Horton, Cuyahoga Falls, and Joseph Poticny, Akron, Ohio, assignors to Goodyear Aerospace Corporation, Akron, Ohio, a corporation of Delaware

Filed May 22, 1968, Ser. No. 731,234
Int. Cl. G03b 29/00; G09b 9/08
U.S. Cl. 35—12 7 Claims

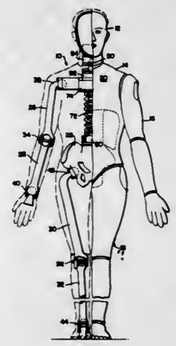
The invention provides a wide angle virtual image display for a two-seated aircraft simulator. The pilot and copilot, seated side by side, receive separate, geometrically correct infinity image displays through the forward windows of the aircraft, but view a common image through the side windows. Suitable projectors form an image on a large directional spherical screen which serves to collect the light and form dual exit pupils, one pupil for each individual in the simulator. Other projectors are utilized to achieve the side window displays.



3,557,471
ANTHROPODYNAMIC DUMMY

Peter R. Payne, Rockville, and Stephen J. Chris, Gaithersburg, Md., assignors to Wyle Laboratories

Filed Sept. 16, 1968, Ser. No. 759,958
Int. Cl. A63h 9/00
U.S. Cl. 35—17 9 Claims



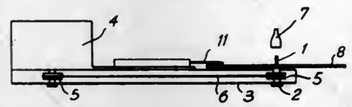
A man model or dummy of the type utilized in tests to determine the survivability or injury of man under crash or crash ejection conditions incorporates structure to simulate the major dynamic characteristics of the human body. The dummy has a body with movable joints having adjustable restraint, a torso with longitudinal and transverse natural frequencies and limbs having bending and axial stiffnesses, all of which simulate a man.

3,557,472
METHOD AND APPARATUS FOR SELECTING AND REPRODUCING COLOURS

Jacques Fillacier, 1 Square Henri Delormel, Paris, France, and Andre Lemonnier, 41 Rue des Fermettes, 78 Carriere-sur-Seine, France

Filed Dec. 9, 1968, Ser. No. 782,116
Claims priority, application France, Dec. 7, 1967, 131,344
Int. Cl. G09b 23/00
U.S. Cl. 35—28.3 5 Claims

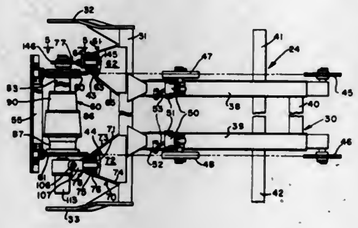
A method and apparatus for selecting and reproducing colour tones by arranging coloured sectors of slit discs on a turn-table in accordance with a code so that when the turn-table is rotated, a colour or colour tone is reproduced corresponding to the colour or colour tone originally produced by means of a like set of coded discs.



3,557,473
DRIVE STRUCTURE FOR FLIGHT-TYPE ELEVATOR

Ronald Paul Grossklaus and John Le Roy Clingerman, Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware

Filed Aug. 21, 1968, Ser. No. 754,315
Int. Cl. B60p 1/36
U.S. Cl. 37—8 13 Claims

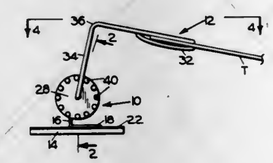


Drive structure at the upper end of a flight-type elevator that includes transversely spaced sprockets rigidly interjoined by torsion-transmitting structure, a portion of which is a hollow casing. A hydraulic motor is supported outwardly of the end sprocket and has a drive shaft extending axially into the hollow portion. The torsion-transmitting structure is driven by a speed-reducing gear drive within the casing and extending between the drive shaft and the hollow casing portion.

3,557,474
TAG HOLDING DEVICE

Donald M. Palmer, 2627 SE. 68th Ave., Portland, Oreg. 97206

Filed May 23, 1969, Ser. No. 827,313
Int. Cl. G09f 3/18
U.S. Cl. 40—10 10 Claims

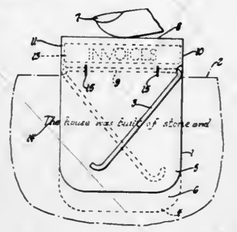


A device for holding a tag or the like on suitable supports such as articles of merchandise. The device has a base portion including supporting means in the form of a magnet, a shelf-talker engaging bracket, a tongue plate, needle-like prongs, or the like, and this base portion supports a tag holding arm made of spring wire with a helical looped portion arranged frictionally to receive and hold a tag removably between the loops. The tag holding arm has extensions on the opposite end from the looped portion provided with inturned ends which pivotally engage sockets in the base portion. The base has a plurality of projections engageable by the extensions of the tag holding arm for holding the latter in selected pivoted positions. The helical loop portion is arranged to have a snap-on engagement with an attachment which in turn removably holds a tag.

3,557,475
INDEX CLIP

Leo E. Verguson, 2333 W. Lincoln, Birmingham, Mich. 48009

Filed July 29, 1968, Ser. No. 748,345
Int. Cl. G09f 3/20
U.S. Cl. 40—16.6 2 Claims

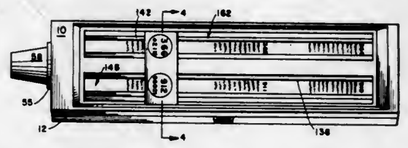


An index clip including a tab folded over on itself to provide depending legs and having a spring clip fastened thereto which includes crossed resilient legs outside the tab legs and a connecting cross bar received therebetween and spaced from the folded over top edge to provide an index tab receptive of writing thereon or a typed insert therewithin.

3,557,476
VIEWING DEVICE FOR MICROPRINT

Paul A. Kalb, Islip, N.Y., assignor to Pandick Press, Inc., New York, N.Y., a corporation of New York

Filed June 17, 1969, Ser. No. 834,061
Int. Cl. G09f 11/24
U.S. Cl. 40—95 8 Claims

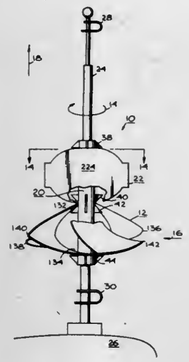


The invention provides a compact device for storing many thousands of graphic characters, e.g., credit card numbers on a paper scroll microprinted on both X and Y axes, but wherein the compression is greater on the X axis so that a large number of columns of numbers can be printed on the scroll. By a combination of cylindrical and spherical lenses the micro-printed characters are made readily readable. The scroll is carried on manually rotated geared rollers which are particularly constructed to grip a respective edge of a printed scroll wrapped around the rollers and feeding reversibly from one to the other below the lens system. The structure further contemplates bearing support means comprised of open ended notches in walls of the housing to rotatively support the rollers and gearing and a manually rotative knob, all maintained in respective notches by gravity but readily removable for changing the paper scroll.

3,557,477
TOY ARRANGEMENT

Marty C. Trent, 3204 Barkentine Road, Palos Verdes Peninsula, Calif. 90274, and Frank L. Reed, 4731 Rock Bluff Drive, Rolling Hills Estates, Calif. 90274

Filed Dec. 23, 1968, Ser. No. 786,004
Int. Cl. G09f *11/02*; A63h *33/40*
U.S. Cl. 40—37.1 16 Claims

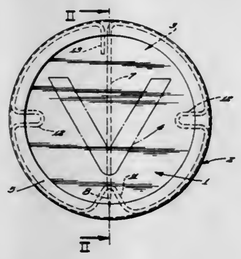


There is disclosed herein a toy arrangement utilizing principals of aerodynamics to provide an aerodynamically actuated toy or display device. A multibladed aerodynamic member is coupled to a generally tubular means for rotation therewith under the influence of air flow over the multibladed aerodynamic member. When such air flow occurs, the aerodynamic member rotates and, in so rotating generates a lifting force. The tube means is mounted for rotational movement on a rod member and as the blade member rotates, the blade and tube move along the rod member due to aerodynamic life generated by such rotation.

3,557,478
INTERCHANGEABLE BADGE ASSEMBLY

Frank J. Sitzberger, Oak Brook, Ill., assignor to Adcraft Mfg. Co., Chicago, Ill., a corporation of Illinois

Filed Nov. 29, 1968, Ser. No. 779,775
Int. Cl. A44c *3/02*
U.S. Cl. 40—1.5 5 Claims

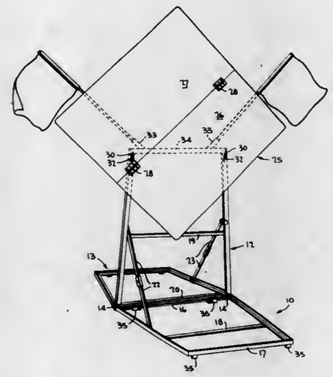


An interchangeable badge assembly comprising a sheet-like badge display member and a holder therefor which forms a frame for the display member, the holder being constructed to receive the display member with the latter being retained in assembled relation therewith by a pin structure having a pin portion with a pointed end and a mounting portion constructed to be engaged with the holder and overlie and engage peripheral portions of the display member, and thereby retain the latter and said holder in assembled relation.

3,557,479
PORTABLE ROAD SIGN UNIT

George F. Allison and Dewey L. Moss, Elmira, and Herman L. Pendleton, Pine City, N.Y., assignors to Eastern Metal of Elmira, Inc., Elmira, N.Y., a corporation of New York

Filed Aug. 7, 1968, Ser. No. 750,847
Int. Cl. G09f *1/00*
U.S. Cl. 40—125 2 Claims

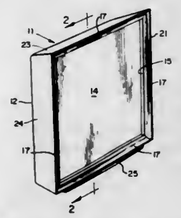


A portable road sign unit having three trapezoidal frames, the bases of said frames being pivotally connected on a common axis, so that when collapsed for transport the frames occupy substantially a common plane in juxtaposed relation to form a generally flat package, and when in use two of the frames extend in opposite directions from the said axis, resting flat on the ground, and the third frame occupies an erect position in which it is retained by toggle links or elbow struts connected between the third frame and each of the other two frames. Means are provided in the collapsed condition of the frames to receive a road sign within the flat package; in the extended position of the frames, means are provided to rigidly support and display the sign.

3,557,480
PICTURE HOLDER AND DISPLAY

Emanuel C. Ebner, Chelmsford, Mass., assignor to Foto-Cube, Inc., Chelmsford, Mass., a corporation of Massachusetts

Filed Sept. 9, 1968, Ser. No. 758,429
Int. Cl. G09f *1/12*
U.S. Cl. 40—152.1 13 Claims



A rigid, three-dimensional, hollow picture holder and support capable of being hung on a wall or stood on a flat surface. The body has a framed opening on the front. A removable retainer, being formed with a gravity concentrating mass, holds pictures in place within the body in proper position to be viewed through the opening. Several pictures may be stored within the holder and may be interchanged with the picture being displayed as desired.

3,557,481
FIREARM MOUNTED IN A SHOE HEEL

Fred E. Stuart, Sr., 1157 Bel Aire Drive, P.O. Box 5856, Daytona Beach, Fla. 32018

Filed Sept. 12, 1968, Ser. No. 759,445
Int. Cl. F41c *9/00*
U.S. Cl. 42—1 8 Claims

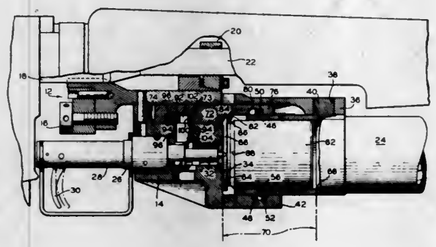


A firearm device in which a tubular element forming a barrel is mounted in a shoe heel or shoe sole at the rear end of the shoe and receives a rim fire cartridge in the back end. The cartridge can be detonated by a sharp impact on the bottom of the heel or the rear end of the heel.

3,557,482
MEANS FOR CONTROLLING THE HEADSPACING OF GRENADE CARTRIDGES IN A SINGLE-SHOT LAUNCHER

Robert L. Hoover, Royal Oak, Mich., assignor, by mesne assignments to the United States of America as represented by the Secretary of the Army

Filed Feb. 4, 1969, Ser. No. 796,366
Int. Cl. F41c *11/02, 27/06*
U.S. Cl. 42—12 10 Claims



In a grenade launcher of the type in which the barrel is pivoted in the receiver for lateral swinging movement between open and closed breech positions, the locking actuation of the barrel lock is also utilized to seat the loaded cartridge in positive firing contact with a fixed breech face in the receiver while the unlocking actuation of the barrel lock is utilized to complete the cocking of a spring-biased extractor and simultaneously free the fired cartridge case in the firing chamber for extraction therefrom by the cocked extractor.

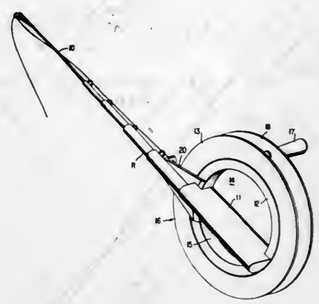
ERRATUM

For Class 42—85 see:
Patent No. 3,557,485

3,557,483
FISHING ROD WITH REEL HANDLE SECTION

Henry Allen Wilson, 16801 Collins Ave., Miami Beach, Fla. 33160

Filed Dec. 4, 1968, Ser. No. 780,973
Int. Cl. A01k *87/06, 89/00*
U.S. Cl. 43—20 4 Claims

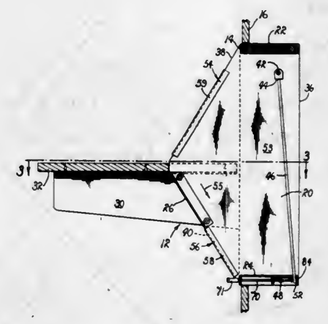


A fishing rod and reel combination device in which the handle of the rod extends centrally of and fixedly along a diameter of the reel to also form the supporting handle around which the spool of the reel must turn when holding the rod during fishing, i.e., the rod is handled and manipulated entirely from a hand-held position at the center of the reel.

3,557,484
STALL TRAP FOR HOMING PIGEONS AND THE LIKE

Alfred H. Anderson, 9300 Nile St., Bakersfield, Calif. 93306

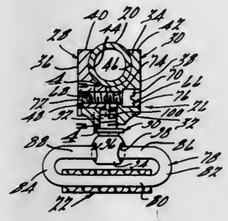
Filed Sept. 5, 1968, Ser. No. 757,615
Int. Cl. A01k *69/06*; A01m *23/08*
U.S. Cl. 43—66 7 Claims



A stall trap including a frame defining a descending passageway and having spaced sides interconnected by upper and lower spacers, a plurality of pendant members disposed in blocking relation to the lower end portion of the passageway having lower distal ends engageable with the lower spacer and swingable therefrom in response to movement of a pigeon through the passageway, and a latch mounted on the lower spacers selectively

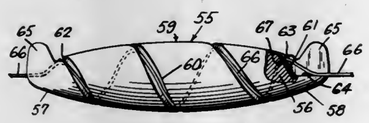
serving to latch the pendant members against swinging movement to prevent a pigeon from passing through the passageway and to release the pendant members to accommodate such passage.

3,557,485
SWIVEL ASSEMBLY
Paul D. Williams, Davison, Mich., assignor to Williams Gun Sight Co., Davison, Mich., a corporation of Michigan
Filed Oct. 14, 1968, Ser. No. 767,266
Int. Cl. F41c *23/02*
U.S. Cl. 42—85 **10 Claims**



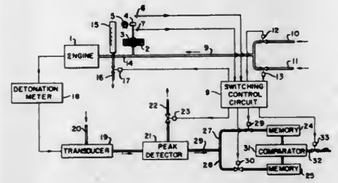
A swivel assembly comprising a pair of clamping members having engagement surfaces adapted to clampingly engage the magazine, barrel or the like of a rifle or similar firearm; means on one of the clamping members defining a generally dovetail recess and means on the other of the members defining a generally dovetail projection adapted to be slidably received within the recess for maintaining the clamping members in a preselected orientation; screw means on one of the clamping members adapted to be threadably received within a bore formed in the other of the members for biasing the members into clamping engagement with the associated firearm, and a loop-shaped member depending downwardly from one of the members and pivotably connected thereto for operatively securing an associated belt sling or the like to the assembly.

3,557,486
FISHING SINKER
Robert H. Wright, 179 Central Ave., Long Beach, Miss. 39560
Filed May 22, 1968, Ser. No. 731,066
Int. Cl. A01k *95/00*
U.S. Cl. 43—44.89 **10 Claims**



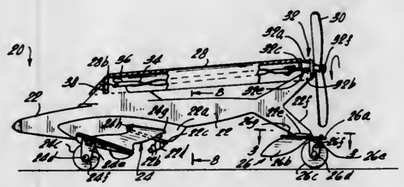
Improved fishing sinkers including means for attaching a fishing line thereto are provided with an organic coating, which preferably comprises a rubbery material, thereby assuring that the fishing line is not damaged by the sinker and remains attached thereto in a positive manner while fishing.

3,557,487
OCTANE RATING ANALYZER
George T. F. Crespin, Ellesmere Port, and Graham D. Davies, Chester, England, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed June 23, 1965, Ser. No. 466,220
Claims priority, application Great Britain, June 30, 1964, 27,040/64
Int. Cl. C10l
U.S. Cl. 44—2 **7 Claims**



An octane analyzer for the automatic comparison of the octane number of a test fuel with the octane number of a reference fuel comprising a test engine and a fluid sample container for selectively supplying the engine with a quantity of either test fuel or a reference fuel under conditions of a continuously varying fuel-air ratio, the container having a diameter which increases upwardly gradually as a function of its height, then remains constant and thereafter decreases gradually. A detonation meter is provided for measuring the knock intensity of the engine and a peak detector is connected to the output of the detonation meter for detecting the peak value of the engine knock intensity. First and second memories are connected to the output of the peak detector and are capable of retaining the peak values of the knock intensity of the test fuel and of the reference fuel, respectively. A comparator is connected to the memories for comparing the stored peak values of the test and reference fuels and producing an output signal proportional to the difference between said stored peak values and switching means operatively engages the sample container, the memories, the peak detector and the comparator for automatically controlling the supply of the test and reference fuels to the container in a predetermined sequence and the storage of the said peak values in the respective memories.

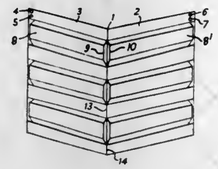
3,557,488
TOY VEHICLE ASSEMBLY
Edwin A. Nielsen, Oceanside, N.Y., assignor to Ideal Toy Corporation, Hollis, N.Y., a corporation of New York
Filed Oct. 14, 1968, Ser. No. 767,291
Int. Cl. A63h *23/10*
U.S. Cl. 46—96 **7 Claims**



A toy hydrofoil-type craft having replaceable and releasably attachable elements. The craft is powered by a rubber-band drive coupled to a propeller; the propeller

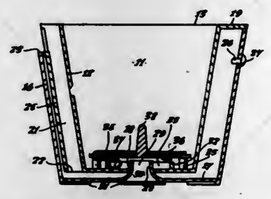
is held to a slotted mounting on the craft body by a pin and cap arrangement, permitting a faulty or damaged propeller to be easily replaced. Front and rear hydroskifoils are provided with detachable wheel assemblies which remain attached for land travel and which may be detached for water operation.

3,557,489
PLANT CONTAINERS
Marcel Ferrand, Ventabrun, 263 Chemine de Bellet, 06 Nice, France
Continuation of application Ser. No. 651,755, July 7, 1967. This application Nov. 19, 1969, Ser. No. 871,692
Claims priority, application France, July 11, 1966, 21,507
Int. Cl. A01g *9/10*
U.S. Cl. 47—37 **2 Claims**



Plant cultivation receptacles are made by forming complementary vertical sections in synthetic sheet material and then folding and locking these sections together to form a container open at one end.

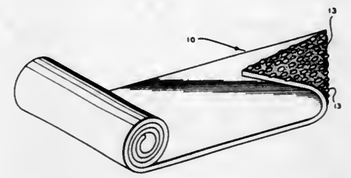
3,557,490
POTS FOR HORTICULTURAL PLANTS
Eric Denys Delaney, The Mill House, Sydenham, Oxfordshire, England
Filed Jan. 23, 1969, Ser. No. 793,512
Int. Cl. A01g *27/00*
U.S. Cl. 47—38.1 **9 Claims**



A horticultural plant pot comprising an inner compartment for the plant and soil, and a separate outer compartment for liquid, with an orifice in a wall common to the compartments to allow flows of liquid and air between the compartments, and with means for restricting the flow of liquid to the inner compartment, is provided with a capillary element within the inner compartment to intercept the direct flow of liquid from the orifice to the soil.

3,557,491
SEED GERMINATION STRUCTURE
Marvin L. Franklin and Duane W. Gagle, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed July 25, 1968, Ser. No. 747,581
Int. Cl. A01c *1/04*
U.S. Cl. 47—56 **7 Claims**

A permeable fabric or film, e.g., a non-woven polyolefin such as polypropylene, is treated on one side with a carrier containing seed and comprising a water-soluble material or gum, e.g., carboxymethylcellulose. A filler, e.g. subdivided cellulose and/or a fertilizer, e.g., ammonium nitrate, can be incorporated into the carrier. The other side of the fabric or film is coated with asphalt applied as a dilute emulsion wash, or the fabric can be at least partially saturated with asphalt. The thus treated fabric or film is placed seed treated side down on and can be fastened to the ground to produce accelerated seed germination and growth and to protect against erosion until

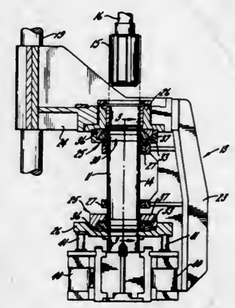


a desired stand of ground cover has been grown. When degradation of the fabric or film is desired, it can be chosen to be an ultraviolet degradable material, e.g., unpigmented polypropylene. By varying the amount and/or dilution of asphalt or of asphalt emulsion or other material combined with the film or fabric selected periods of time of slope reinforcement can be obtained. A radiant heat absorbent material, e.g., a dark pigment, such as carbon black, can be incorporated into the asphalt or similar wash.

ERRATUM

For Class 51—8 see:
Patent No. 3,557,498

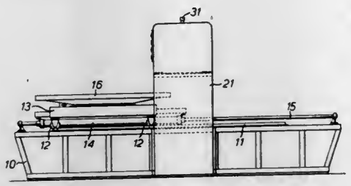
3,557,492
CLAMPING FIXTURE FOR A MACHINE TOOL
Donald K. Greenberg, Rockford, Ill., assignor to Barnes Drill Co., Rockford, Ill., a corporation of Illinois
Filed June 25, 1969, Ser. No. 836,259
Int. Cl. B24b *7/00*
U.S. Cl. 51—34 **5 Claims**



A thin-walled sleeve is clamped endwise beneath a hone for enlarging a cylindrical bore in the sleeve by upper and lower clamping rings which hold the sleeve in place by applying frictional clamping pressure to the ends of the sleeve. The rings are radially expandible to allow the ends of the sleeve to flex outwardly as the

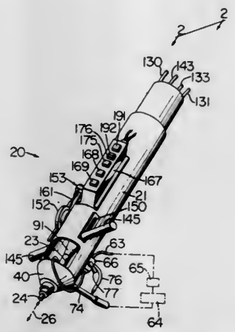
hone progresses through the bore and thus promote honing of the bore to a more nearly perfect cylindrical shape by enabling uniform flexing of the sleeve throughout its entire length in spite of the clamping pressure applied to the ends of the sleeve.

3,557,493
POLISHING OF GLASS
Walter Cuthbert and David Hampson, Birmingham, England, assignors to Triplex Safety Glass Company Limited, Birmingham, England, a British company
Filed Feb. 19, 1968, Ser. No. 706,383
Claims priority, application Great Britain, Feb. 18, 1967, 7,835/67
Int. Cl. B24b *7/00, 9/00*
U.S. Cl. 51—56 **7 Claims**



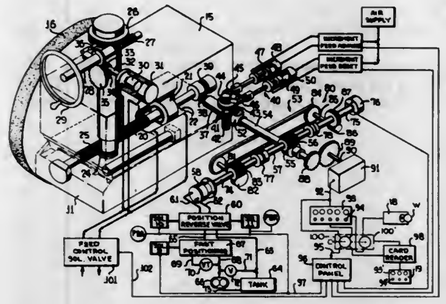
A machine for polishing a face of a glass article having a stand with a first carriage reciprocally mounted thereon and which carries a support means for the article to be polished. A rotary polishing head is carried by a second carriage which is mounted for reciprocatory movement in a direction transverse to the path of movement of the first carriage. First and second drive means are operative in use to reciprocate the carriages. In addition the support means is rotatably mounted on the first carriage and a third drive means is provided to cause it to oscillate relatively to the carriage. Also at least one of the drive means is pneumatic so that the movement of the support means relative to the polishing head is somewhat indeterminate.

3,557,494
MACHINE TOOL
James E. Bullen, Eaton, Ohio, assignor to The Bendix Corporation, a corporation of Delaware
Filed June 11, 1968, Ser. No. 736,121
Int. Cl. B24b *7/00, 9/00, 57/00*
U.S. Cl. 51—59 **21 Claims**



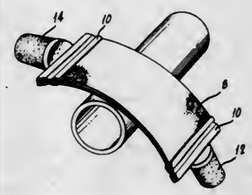
A hand-portable forming apparatus which uses high frequency oscillators of a forming tool and a recirculating abrasive slurry.

3,557,495
POSITIONING MECHANISM FOR MACHINE TOOL
Ralph E. Price, Waynesboro, Pa., assignor to Litton Industries, Inc., a corporation of Delaware
Filed Apr. 17, 1968, Ser. No. 722,117
Int. Cl. B24b *49/00*
U.S. Cl. 51—165 **15 Claims**



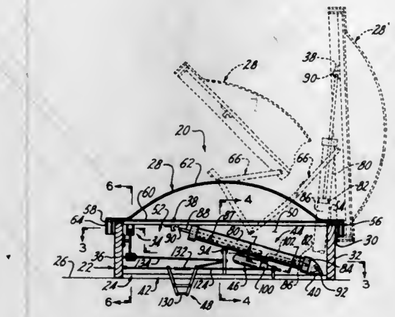
This disclosure relates to a multiple speed, reversible positioning mechanism particularly adapted for use in positioning a slide of a machine tool. The positioning mechanism includes a motor which may be either fluid or electric and arranged to be driven at either of two speeds. The motor may be connected directly through a clutch to a shaft having a worm gear in engagement with a worm wheel on another shaft connected to suitable gearing to rotate a feed screw for a machine slide. The motor is also selectively connectible through another worm and worm wheel, a belt drive and a second worm and worm wheel to drive a shaft which is connected by means of a second clutch to the first mentioned shaft. Thus, two motor speeds and two drive speeds are provided providing for a total of four speeds for the positioning movement of the machine slide. The operation of the motor and the selection of the clutch to be engaged is automatically affected by a control system which includes a rotary encoder which is adjusted in accordance with the adjustment of the feed screw by the positioning mechanism and which provides a signal through suitable apparatus to indicate the instantaneous position of the slide in terms of the dimension of the workpiece.

3,557,496
ABRASIVE TOOL
Robert W. Martin, 1057 Pennington Road, Trenton, N.J. 08618
Filed July 5, 1968, Ser. No. 742,870
U.S. Cl. 51—394 **8 Claims**



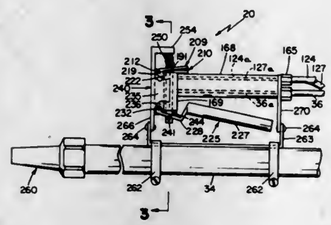
An abrasive tool for use in cleaning or polishing the interior and exterior surfaces of pipes, tubes and the like to prepare the same for soldering, brazing or other operations. The tool embodies a flexible strip of flat material presenting at least one abrasive surface and having handles connected to the opposite ends of said strip. The handles have a generally cylindrical or slightly tapered form and are provided with abrasive surfaces for cleaning the inner surface of a pipe tube or fittings.

3,557,497
EXPLOSIVE PRESSURE AND/OR HEAT AND SMOKE VENTING UNIT
Kenneth A. Schafer, Pittsburgh, and Merle F. Sharp, Delmont, Pa., assignors to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Sept. 11, 1968, Ser. No. 758,994
Int. Cl. E04d *13/035;* **E05f** *15/20*
U.S. Cl. 52—1 **15 Claims**



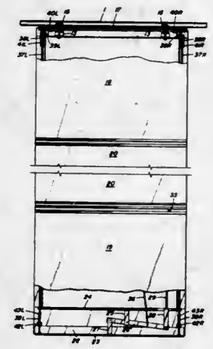
A venting unit capable of quickly relieving heat and smoke due to fires and pressures due to explosions originating in the interior of a building. The venting unit has at least one cover member releaseably retained in a normally closed position. Fluid actuated motor means including a variable volume chamber forcibly urges the cover member toward an open position. The cover member is normally disconnected from the motor means and is freely pivotal toward its open position on being released. Motor energizing means, in the form of a replaceable cartridge containing pressurized working fluids, energizes the motor means in response to a selected elevated temperature within the building.

3,557,498
REMOTELY CONTROLLED SANDBLASTER
Philip K. Lindsay, Deerfield, N.H., assignor to P. K. Lindsay Company, Inc., Deerfield, N.H., a corporation of New Hampshire
Filed Feb. 14, 1969, Ser. No. 799,231
Int. Cl. B24c *3/00*
U.S. Cl. 51—8 **20 Claims**



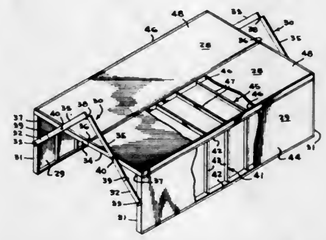
Sandblasting apparatus with remotely controlled apparatus comprising a fluid-displaceable member operating the sand to air ratio control. Shown are pressurized air from the sandblasting apparatus as the source of fluid, a piston-rotary valve assembly for the ratio control, and manually triggered selection valves, with optional dead man safety features.

3,557,499
MOVABLE WALL PANEL SYSTEM
William Niven Dickie, London, Ontario, and Norman Jack Bennett, Pointe Claire, Quebec, Canada, assignors to Formica Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed July 15, 1969, Ser. No. 841,740
Claims priority, application Canada, Sept. 16, 1968, 30,117
Int. Cl. E04d *3/16;* **E04b** *7/10*
U.S. Cl. 52—36 **9 Claims**



A movable wall panel system is described in which the panels move on overhead track and are double and hollow, provided with removable center panels, mating side edges with acoustical insulation and means for pressing resilient top and bottom pieces against the ceiling track and the floor when a panel is in position. The same means provides for automatic leveling to compensate for tract uneveness or floor uneveness.

3,557,500
FOLDABLE STRUCTURE
Ronald R. Schmidt, Fayetteville, Ark., and Monty H. Rial, Dallas, Tex., assignors to Structex Corporation, Dallas, Tex., a corporation of Texas
Filed July 26, 1968, Ser. No. 747,858
Int. Cl. E04b *1/344*
U.S. Cl. 52—69 **9 Claims**



Structural units of X or Y formation, so proportioned that when units are connected to one another by similar members of one unit being pivotally connected to like

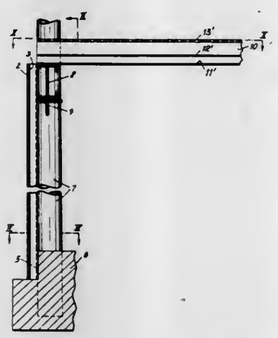
members of another unit, a collapsible, curving, pantographic, structural frame is achieved, suitable for use as a shelter frame. Multiples of the frames in spaced relation with roof panels and floor panels hingedly attached provide collapsible shelters. When the end members of frames are connected together, frames for columnar structures are obtained. Power means may be employed to erect the shelters. The frames can also be arranged diametrically at equi-spaced angles to a common center to produce another form of shelter.

3,557,501
FOLDED PLATE STRUCTURES AND COMPONENTS THEREFOR
Arpad Kolozsvary, 180 Morris Ave., Mountain Lakes, N.J. 07046
Continuation-in-part of application Ser. No. 537,829, Mar. 25, 1966. This application Jan. 8, 1969, Ser. No. 789,845
Int. Cl. E04b *2/82*
U.S. Cl. 52—81 **18 Claims**



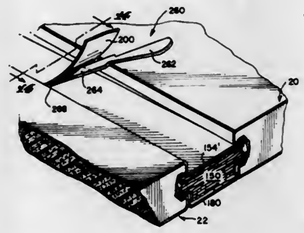
A universal folded plate component for structures, fastening means for joining such components together and structures comprising such components, the components themselves and the fastening means being designed so that the folded plate components can be connected in the same or reversed fold position relative to one another to thereby build up structures having all curved configuration, all straight configuration or curved and straight configuration combined and having a variety of different ground plans.

3,557,502
CELLAR WALL CONSTRUCTION
Arthur Krebs, 8633 Wolfhausen, Zurich, Switzerland
Continuation of application Ser. No. 662,611, Aug. 23, 1967. This application May 20, 1969, Ser. No. 828,430
Claims priority, application Switzerland, Oct. 5, 1966, 14,401/66
Int. Cl. E02d *27/00*; E04b *1/00*
U.S. Cl. 52—169 **6 Claims**



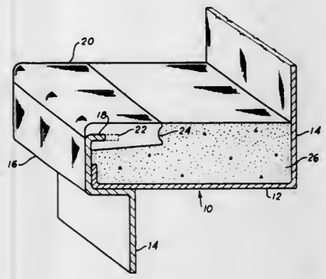
A wall of a cellar is formed from sheet aluminum sections with interlocking vertical edge folds resting against a framework of columns and joists, rising from a concrete foundation, under pressure of soil material piled up outside the wall.

3,557,503
WALL PANEL STRUCTURE AND METHOD OF MAKING SAME
Marvin K. Snyder, Overland Park, Kans., assignor to Butler Manufacturing Company, Kansas City, Mo., a corporation of Missouri
Filed July 3, 1968, Ser. No. 742,458
Int. Cl. E04c *1/10*
U.S. Cl. 52—173 **26 Claims**



Adjacent spaced panels of a wall structure are provided with elongated longitudinally extending grooves in the facing edges of the panels for receiving opposite laterally extending portions or tongues on opposite sides of a spline means to provide a rigid sealed joint therebetween. The spline means comprises a resilient compressible core or body part with opposite rigid face or shell means thereon. The spline means may be precompressed and retained in such state by a retaining member of frangible material which is severed after the spline is inserted in place thereby allowing the spline to expand into final assembled position.

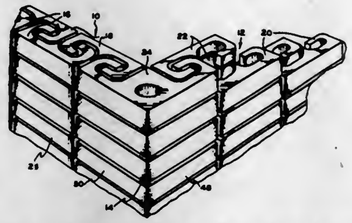
3,557,504
PLASTIC NOSING FOR STAIRWAYS
Richard H. Graf, Hauppauge, N.Y., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York
Filed Nov. 30, 1967, Ser. No. 686,934
Int. Cl. E04d *11/16*
U.S. Cl. 52—179 **6 Claims**



A plastic stair nosing comprises an elongated plastic body having a narrow slot in one edge which extends substantially the full length of the plastic body, so that it is adapted to fit onto the forward lipped edge of a metal pan stair. The remainder of the tread portion of the metal pan stair comprises concrete or other filler material.

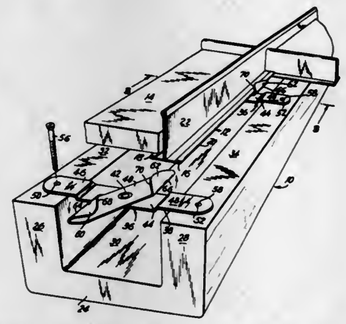
The plastic nosing is safer than the conventional metal nosings and need not be painted. No screws, anchors or welding are required to hold the nosing in position; it is self-positioning, self-leveling and self-supporting.

3,557,505
WALL CONSTRUCTION
Arthur A. Kaul, 961 Chehalis Ave., Chehalis, Wash. 98532
Filed Aug. 12, 1968, Ser. No. 751,953
Int. Cl. E04c *1/04*; E04b *2/04*
U.S. Cl. 52—275 **5 Claims**



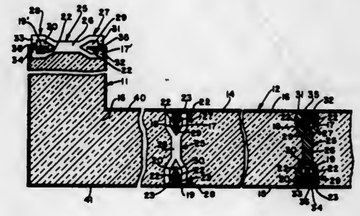
A wall construction according to the present invention includes first and second tiers of interlocking blocks wherein the blocks of one tier are formed with opposed hooks for engaging the blocks of the opposite tier. The blocks of a given tier, for example the tier representing the outside of a building, are aligned vertically and horizontally to provide a uniform appearance, while the blocks of the remaining tier, for example the inside wall, are also aligned horizontally and vertically, but are offset horizontally by half-block intervals from the blocks of the outside tier. The blocks of the inner tier are also offset vertically from the blocks of an outer tier such that a given course of blocks in the outer tier is interlocked with two offset courses in the inner tier. The wall construction is thereby completely interlocked and may be formed, if necessary, without the initial application of mortar or the like. In addition, corner blocks are provided which interlock with a pair of intersecting walls in the same manner. Thus, the corner blocks may form an outside corner tier associated with an outside tier of blocks and interlocked with vertically and horizontally offset blocks in an inner tier for completing an interlocked construction. Each outside surface of each corner block corresponds to the outside surface of the other blocks whereby an identical overall pattern is presented.

3,557,506
IMITATION WOOD BEAM
Stephen Pechenik, Red Lion, Pa., assignor to Paeco, Inc., a corporation of New Jersey
Original application Nov. 29, 1968, Ser. No. 779,882, now Patent No. 3,512,818, dated May 19, 1970. Divided and this application Nov. 10, 1969, Ser. No. 871,310
Int. Cl. E04f *19/02*; E04b *5/52*; E04g *17/00*
U.S. Cl. 52—309 **2 Claims**



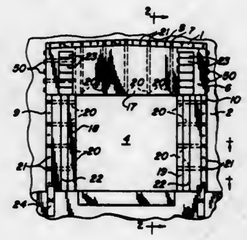
Imitation, lightweight and cellular channel members comprising imitation beams of generally U-shaped cross-section and provided with clips for attaching the beams to suspended ceilings comprising ceiling bars having generally inverted T-shaped cross-section by engagement with the flange thereof.

3,557,507
FABRICATED WALL
Arthur M. Wilder, 3620 26th St., Moline, Ill. 61265
Continuation of application Ser. No. 665,376, Sept. 5, 1967. This application July 8, 1969, Ser. No. 876,151
Int. Cl. E04b *1/74*; E04c *1/10, 1/30*
U.S. Cl. 52—404 **7 Claims**



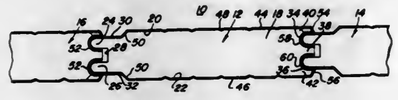
An insulating wall structure composed of inner and outer wall panels with adjoining internally projecting flanges at opposite edges, the flanges having stamped out projections extending from the faces thereof; elongated ribs composed of elastomer material extending between the inner and outer panels at the flanges and having elongated internal grooves at opposite edges with slots therein for receiving the flanges and permitting ingress of the flanges and projections into the grooves whereby the projections may engage the walls of the grooves for preventing egress thereof; and insulating material disposed in the spacing between the panels and ribs whereby the material and ribs serve as a complete insulation between the panels.

3,557,508
LOADING DOCK SHELTERS
Cyril P. Frommelt and Sylvan J. Frommelt, Dubuque, Iowa, assignors to Dubuque Awning & Tent Company, Dubuque, Iowa, a corporation of Iowa
Filed July 2, 1969, Ser. No. 838,389
Int. Cl. E06b *1/04, 1/32, 1/34*
U.S. Cl. 52—204 **10 Claims**



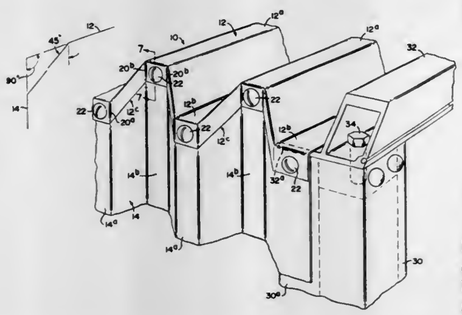
Loading dock shelter with head curtain which may be fixedly attached at its ends to support, and with pleats embodied therein in a manner to afford a normally flat panel capable of lateral displacement.

3,557,509
BUILDING PANEL CONSTRUCTION
John F. Blaski, Chicago, Ill. (% Blaski Manufacturing Co., 1842 Miner St., Des Plaines, Ill. 60016)
Continuation of application Ser. No. 615,982, Feb. 14, 1967. This application Nov. 5, 1968, Ser. No. 778,359
Int. Cl. E04b 1/90; E04c 1/10
U.S. Cl. 52—489 10 Claims



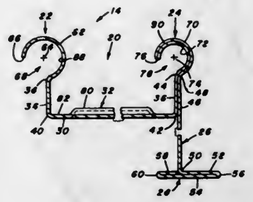
A building panel construction made up of a plurality of interlocked side-by-side planks. Each plank is a laminated construction including a self-sustaining core with shaped edges and cover sheets shaped to overlie the surfaces of the core and yieldably engage the edges thereof. The yieldable engagement is economical and provides an easy assembly procedure by virtue of the shapes of the edges. The panels are locked into an assembly with special clips which engage transverse members.

3,557,510
MOMENT CARRYING AND WATER SHEDDING JOINT CONSTRUCTION
Gerald L. Woodling, 1051 Meadow Park Drive, Akron, Ohio 44313
Filed Nov. 29, 1968, Ser. No. 779,906
Int. Cl. E04c 2/32; E04d 1/06; F16b 5/02
U.S. Cl. 52—534 9 Claims



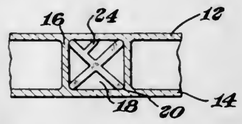
The invention relates to a moment carrying and water shedding joint of two pieces of corrugated sheet, where the ends of the corrugations of both pieces terminate along the joint. The joining construction is applicable to right angle joints as well as all other angles except where the two pieces are parallel. Essentially, the joint comprises complementary folds of the sheet metal without any cuts or other alteration being made to the edge configuration of either sheet to facilitate bending. A complete and continuous fold of one sheet over the other is provided to achieve the water shedding joint. Joining between the two sheets by bolts, rivets or the like is accomplished on two spaced parallel planes so that a moment carrying joint is achieved.

3,557,511
FLOOR STRUCTURE AND BUILDING CONSTRUCTION PANEL THEREFOR
Bernard E. Curran, Sewickley, Pa., assignor to H. H. Robertson Company, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Oct. 9, 1968, Ser. No. 766,048
Int. Cl. E04b 5/36; E04c 2/08, 2/50
U.S. Cl. 52—588 6 Claims



An improved floor structure assembled from concrete and building construction panels of unique design. The panels are assembled in side-by-side interengaged relation. The upside of the assembled panels presents a plurality of troughs having deformations and keying elements associated therewith. The overlying concrete is united with the panels as a composite floor structure capable of developing improved load-carrying capacities. The underside of the assembled panels presents a plurality of channels which may be adapted to provide any one of a variety of finished ceiling arrangements.

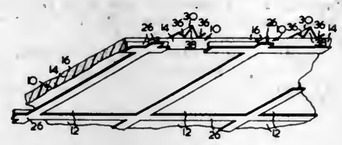
3,557,512
STRUCTURAL UNIT WITH X-SHAPED INSERTS
Karl F. Braeuninger, Ferguson, Mo., and Gordon K. Glaza, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed July 22, 1968, Ser. No. 746,565
Int. Cl. E04c 2/36
U.S. Cl. 52—615 2 Claims



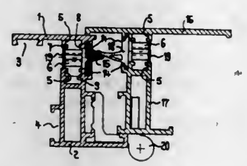
An improved integral structural unit having top and bottom surface members, spaced apart by longitudinally extending, web members forming hollow spaces defined by the top, bottom and adjacent web members; said spaces containing a multiplicity of spaced-apart strengthening rigid inserts. The improved unit may be detachably interlocked with other similar units to form a relatively flat structural surface particularly suitable for high impact uses such as temporary aircraft landing strips and aerial delivery platforms.

3,557,513
CEILING TILES WITH REINFORCING MEMBER
Christian F. Girard, Ottawa, Ontario, Canada, assignor to Canadian International Paper Company, Montreal, Quebec, Canada, a corporation of Canada
Filed Feb. 14, 1969, Ser. No. 799,358
Int. Cl. E04c 2/18, 2/02
U.S. Cl. 52—629 8 Claims

An oversize ceiling tile made from board such as mineral board is provided with a reinforcing spine made of sheet metal or like material to prevent sag, the spine being adapted to be securely attached to the tile with penetrating fasteners on each side of the spine which criss-cross within the core of the tile.

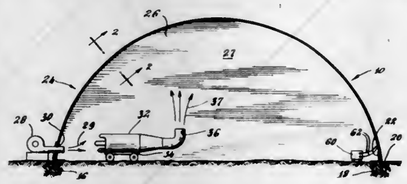


3,557,514
INTERCONNECTED SECTIONS AND FRAMES MADE THEREFROM
Walter Fahrni, Lyss, Bern, Switzerland, assignor to Swiss Aluminium Ltd., Chippis, Valais, Switzerland, a corporation of Switzerland
Filed Oct. 23, 1968, Ser. No. 769,814
Claims priority, application Switzerland, Oct. 24, 1967, 14,857/67
Int. Cl. E06b 1/18; E04b 1/74
U.S. Cl. 52—730 12 Claims



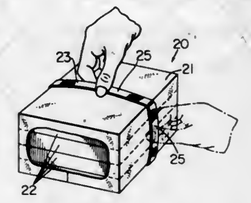
A combination of parts for erection into a frame includes inner and outer metal sections and at least one connecting element secured to the sections by local deformation of the element.

3,557,515
ROOF STRUCTURES OF REINFORCED TEMPERATURE-HARDENABLE PLASTIC AND PROCESS FOR MAKING SAME
Calvin D. MacCracken, Tenafly, N.J., assignor to Calmac Manufacturing Corporation, Englewood, N.J.
Filed Apr. 20, 1967, Ser. No. 632,335
Int. Cl. E04b 1/345; E04g 11/04
U.S. Cl. 52—741 7 Claims



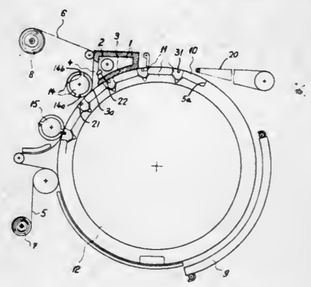
A self-standing roof structure is erected over a building by initially forming the roof structure of flexible, heat-hardenable plastic material. After anchoring its perimeter to form a substantially air-tight space beneath it, the flexible roof structure is inflated and supported by air pressure, and while so supported the plastic material is hardened by applying heat. This hardening is accomplished by providing hot gases beneath the inflated roof or alternatively by feeding hot fluid through ducts in heat exchange relationship with the roof or by a combination of these heating actions. The ducts themselves may desirably be formed of heat-hardenable plastic material so that they become arch-shaped roof beams included in the self-standing roof for strengthening it. Heatable conducting elements may be imbedded in or affixed to the roof panels to supply heat for curing the plastic and later on to be used for melting snow to prevent undue snow loads. These may be electrically heated or plastic tube conducting elements of small diameter for carrying heated fluid such as hot water. While air supported structures have become well known for various uses, primarily temporary in nature, this invention can be classed as an "air-erected" structure or an "air-erected" roof structure intended for permanent uses.

3,557,516
METHOD OF MAKING A PACKAGE CONSTRUCTION
Yale M. Brandt, Waynesboro, Va., assignor to Reynolds Metals Company, Richmond, Va., a corporation of Delaware
Filed Oct. 30, 1968, Ser. No. 771,841
Int. Cl. B65b 61/14, 53/02
U.S. Cl. 53—14 11 Claims



A package construction comprised of articles having an overwrap shrunk in position therearound and having a comparatively unshrinkable ribbon means fastened to the overwrap at spaced intervals and bulging outwardly from the exterior surface of the overwrap at locations between the spaced intervals to define a carrying handle for the package; and, an apparatus for and method of making such a package construction.

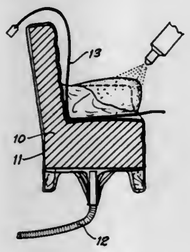
3,557,517
METHOD FOR THE CONTINUOUS PRODUCTION OF EVACUATED PACKAGES AND APPARATUS FOR THE PERFORMANCE OF THE AFORESAID METHOD
Herbert Limmer, Munich, Germany, assignor to Tourpac AG, Zug, Switzerland, a corporation of Switzerland
Filed Feb. 20, 1969, Ser. No. 801,039
Claims priority, application Switzerland, Feb. 29, 1968, 2,981/68
Int. Cl. B65b 31/00
U.S. Cl. 53—22 8 Claims



There is disclosed a method and apparatus for the continuous evacuation and sealing of successive individual filled packages wherein two foil webs defining an upper

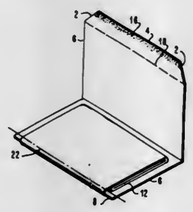
foil web and a lower foil web are fed along a predetermined path of travel. The lower foil web is filled at predetermined spaced locations along its length with the material to be packaged. The lower filled foil web and the upper foil web are conducted past a respective one of two wall means of a vacuum chamber, said respective wall means being provided with openings and abutting one another along an edge. A vacuum is created in the vacuum chamber, to thereby press the foil webs against their associated wall means and by means of said edge said foil webs are pressed against one another. Thereafter the foil webs are sealed together along their lengthwise extending edges and in a direction transverse thereto along a strip portion thereof. Finally, the finished sealed package is separated from the next successive package substantially at the central region of the adjoining strip portion.

3,557,518
METHOD OF PACKAGING FRAGILE ARTICLES
Fred B. Purkey, Morristown, Tenn., assignor to The Berkline Corporation, Morristown, Tenn., a corporation of Tennessee
Filed June 5, 1968, Ser. No. 734,656
Int. Cl. B65b *41/18*
U.S. Cl. 53—27 **5 Claims**



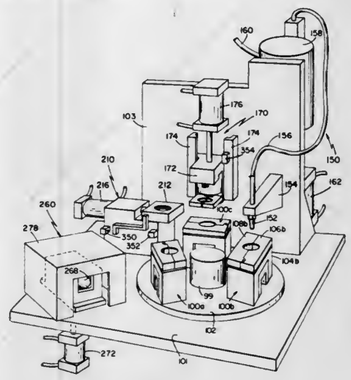
A method of packaging fragile articles which includes enclosing the article in an impervious envelope with the envelope in contiguous relation to the surface contour of the article, and spraying the outer surface of the envelope with a liquid reaction mixture which forms in situ a cellular energy absorbing cushion around the article.

3,557,519
COMBINATION LETTER SHEET AND ENVELOPE
Randolph S. Lyon, Jr., Westport, Conn., assignor to Kurt H. Volk, Inc., Milford, Conn., a corporation of Connecticut
Filed Sept. 4, 1968, Ser. No. 757,347
Int. Cl. B65b *11/48;* B65d *27/00, 27/10*
U.S. Cl. 53—31 **5 Claims**



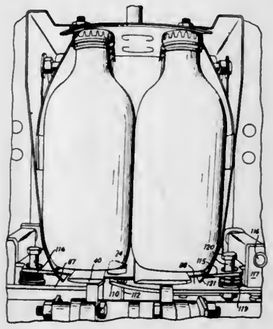
In combination, an integral envelope-letter sheet and methods for the use and preparation thereof.

3,557,520
METHODS AND APPARATUS FOR MANUFACTURING DISPENSING DEVICES
Lloyd Morton, Jr., Chelmsford, and John O'Hare, Needham, Mass., assignors to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Nov. 12, 1968, Ser. No. 774,964
Int. Cl. B65b *3/12, 7/28*
U.S. Cl. 53—37 **21 Claims**



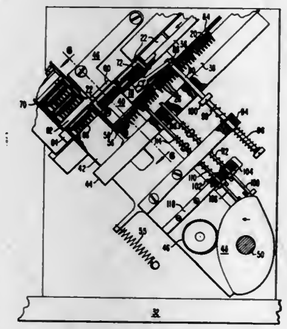
Apparatus for filling a polyethylene inner container and securing that filled container to a valve assembly includes a turntable having three bottle holders on it, which holders are movable in sequence past a filling station and an assembly station. At the assembly station there is provided a holder for a valve assembly and a heater which is movable between the bottle and the valve assembly to appropriately heat two opposed surfaces. The heater is then removed and the two heated surfaces are moved together to provide a seal which forms a bead as some of the plastic material is displaced radially during the filling operation.

3,557,521
DEVICE FOR GROUPING RECEPTACLES AND ENCLOSING, GROUPED RECEPTACLES IN A WRAP-AROUND CARRIER BLANK, AND METHOD
Chester J. Pierce, Jr., Palo Alto, Calif., assignor to Certipak Corporation, New York, N.Y., a corporation of Delaware
Filed Jan. 8, 1968, Ser. No. 696,475
Int. Cl. B65b *21/24, 11/10*
U.S. Cl. 53—48 **9 Claims**



The present improvements provide a small intermittently operating two-station machine for grouping at one station a group of receptacles and enclosing that group at a second station in a wrap-around type bottom closing carrier blank which is tightened around the group by a pair of blades which engage the folded blank at lateral relief openings immediately above the bottom structure through which openings the receptacles project after tightening. The blades tighten the blank to a position of maximum overlap of the overlapping bottom panels and raise the receptacles slightly from the bottom structure during tightening. The completed package may be ejected from the wrapping station by a pair of ejector blades having stepped ends for engaging the trailing carrier edge, the ejector blades moving together with, but in advance of, a reciprocating receptacle-grouping pawl.

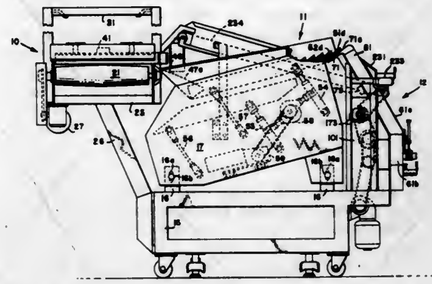
3,557,522
PARTS HANDLING APPARATUS
Jakob Rech, Detroit, Mich., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed July 9, 1969, Ser. No. 840,256
Int. Cl. B65b *57/08, 57/16, 5/04*
U.S. Cl. 53—57 **9 Claims**



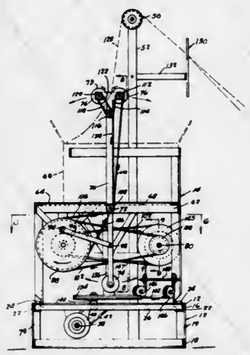
An apparatus for automatically handling and inserting integrated circuit units respectively into individual protective containers. An upper inclined slide for a stack of containers and a lower inclined slide for a stack of integrated circuit units lead downwardly to a station where a reciprocal pusher inserts the units respectively into the containers. The assembled units, under control of the pusher move out of the insertion station by the weight of the stack of containers and are ejected from the container slide by the pusher. Restrainers operating with the pusher alternately remove the weights of the stacks of containers and circuit units on the container and unit at the insertion station. Switches control operation of the pusher in response to predetermined depletion of the stacks of units and containers on the slideways.

3,557,523
FOOD FEEDING AND PACKAGING EQUIPMENT
Ralph K. Daugherty and Poul H. Baumann, San Jose, Calif., assignors of one-half to Genevieve I. Hanscom (formerly Genevieve I. Magnuson), Saratoga, Calif., and one-half to Genevieve I. Hanscom, Robert Magnuson and Lois J. Thomson (formerly Lois J. Duggan), as trustees of the estate of Roy M. Magnuson
Filed Dec. 23, 1968, Ser. No. 786,322
Int. Cl. B65b *57/06, 63/02, 35/30*
U.S. Cl. 53—63 **16 Claims**

The machine is designed to receive indiscriminately arranged articles and to feed and re-arrange them in transverse and longitudinal rows, so that food articles (such as doughnuts) are fed into a collating and dispensing mechanism wherein a desired number of doughnuts, for example, are arranged in side-by-side relation above an open box into which they are placed.



3,557,524
STRIP MATERIAL FOLDING AND PACKAGING MACHINE
John R. Zimmerman, 417 S. Wayne St., Orwigsburg, Pa. 17961
Filed May 28, 1969, Ser. No. 828,504
Int. Cl. B65b *63/08*
U.S. Cl. 53—116 **20 Claims**



A strip material folding and packaging machine comprising a stationary frame and a movable carriage adapted to reciprocate back and forth along guide means disposed on the stationary frame. The moving carriage is provided with a platform for receiving containers thereon into which the strip material is fed for folding and packaging of the material. A slatted drum is disposed above the stationary frame and moving carriage for guiding strip material between a pair of opposed rotating rollers. The rollers are mounted on the upper end of a swinging arm. The swinging arm is pivotally mounted adjacent its center portion to the moving carriage. The lower end of the swinging arm is provided with a counter weight. Between the pivot point of the swinging arm and the counter weight is a Pitman arm pivotally connected to the swinging arm at one end and with its other end pivotally connected to an eccentric roller bearing mounted on a drive sheave which causes the swinging arm and the rollers carried thereby to rock or swing back and forth so as to cause the strip material to be fed into the container disposed on the carriage and cause the material to be folded in the box. A substantially horizontal sheave is carried by the moving carriage and is provided with an eccentric roller which rides in spaced angle iron bars extending

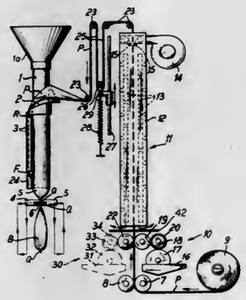
transversely across the stationary frame so that when the horizontal eccentric sheave is rotated it causes the moving carriage to move back and forth longitudinally of the frame to feed the strip material into the containers on the moving carriage to provide a number of layers of material in the container until the container is completely filled. A belt drive arrangement is provided for driving the drive sheave for the Pitman arm and the swinging arm and for the horizontal eccentric sheave and the carriage operatively connected thereto.

3,557,525

APPARATUS FOR MAKING AND FILLING BAGS

Ulrich Bauder, Stuttgart, Germany, assignor to Fr. Hesser Maschinenfabrik, A.G., Stuttgart, Germany, a corporation

Filed Jan. 18, 1968, Ser. No. 698,775
Int. Cl. B65b 9/00, 61/00
U.S. Cl. 53—180 3 Claims



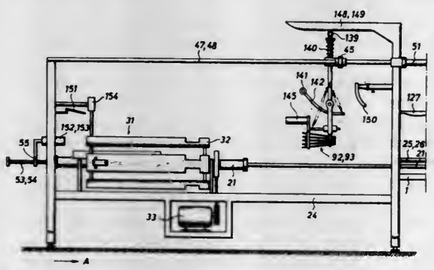
Apparatus for forming, filling and sealing bags formed from a continuous web of paper or carbon-like material which is coated with longitudinal and transverse adhesive regions, dried, placed over a forming tube to create a web of endless tubing. Seal jaws press the longitudinal and intermittent transverse adhesive regions to establish seams. The tubular web is filled, closed by seal jaws and cut into individual bags.

3,557,526

PACKAGING DEVICE FOR PACKING OBJECTS IN TUBULAR CASINGS

Claus Wolfgang Hartmann, 98 Reichertshalde, 7410 Ludwigsburg, Germany

Filed Aug. 4, 1969, Ser. No. 847,036
Claims priority, application Germany, Aug. 9, 1968, 6,752,577
Int. Cl. B65b 43/26
U.S. Cl. 53—183 11 Claims



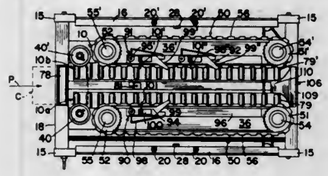
An automatic packaging device for packing objects in tubular casings. The device withdraws and cuts off a length of tube from a stock and one end of the tube is closed. The tube is then moved and slipped over an object whereafter the other end is closed and the completed package discharged.

3,557,527

APPARATUS FOR SEALING CARTONS

Samuel L. Wilkins, 2411 Masseyville Road, Macon, Ga. 31201

Filed Dec. 19, 1968, Ser. No. 792,888
Int. Cl. B65b 7/20
U.S. Cl. 53—374 5 Claims



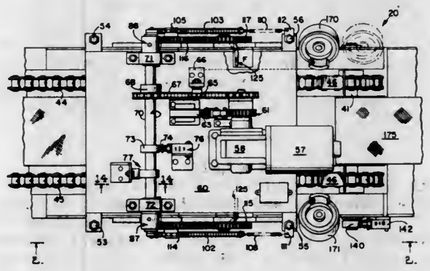
A method and apparatus for sealing the closeable flaps of cartons wherein the method includes feeding the cartons in an end to end relationship toward the glue applying and sealing sections at a first speed and subsequently feeding the cartons through the glue applying and sealing sections at a second speed greater than the first speed so that the spacing between the cartons is increased as the cartons pass through the glue applying and sealing sections.

3,557,528

CLOSING MACHINE FOR EGG CARTONS OR THE LIKE

Harold W. Voorhis, Upper Nyack, N.Y., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed July 15, 1968, Ser. No. 744,713
Int. Cl. B65b 7/26
U.S. Cl. 53—377 23 Claims



This disclosure is directed to a machine for closing egg cartons or the like, and includes a pair of folding members carried by meshed gears whereupon rotation of the gears moves the folding members along arcuate paths

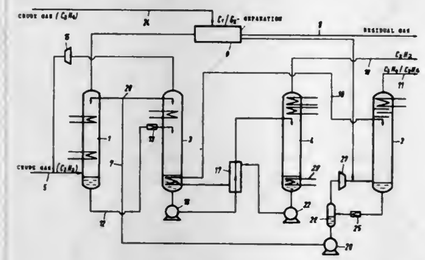
from a position beneath an end portion of each cover to a second position thereabove whereby during the arcuate movement of the folding members the latter initially contact and progressively fold the covers about associated hinge lines to a final position in complete overlying relationship to a body of an associated carton. Crank arms are provided for imparting movement to the folding members, and adjusting means are associated with the crank arms for adjusting the length of travel of the closing members for closing cartons of varying overall heights. Adjustment means are also provided for adapting the machine to close cartons of varying cover widths.

3,557,529

PROCESS AND APPARATUS FOR THE SIMULTANEOUS PRODUCTION OF ACETYLENE AND ETHYLENE

Gerhard Ranke, Munich, Germany, assignor to Linde Aktiengesellschaft, Hollriegelskreuth, Germany

Filed Mar. 18, 1968, Ser. No. 713,964
Claims priority, application Germany, Mar. 17, 1967, L 56,033
Int. Cl. B01d 19/00
U.S. Cl. 55—43 14 Claims



A process is provided for the simultaneous separation of acetylene and ethylene from a gaseous mixture, wherein the gaseous mixture is washed in two stages with an acetylene solvent, the acetylene being recovered from the loaded solvent by regeneration and the ethylene being obtained from the remaining gas by separating the other components of the gaseous mixture. The solvent is returned to the process in a regenerated form.

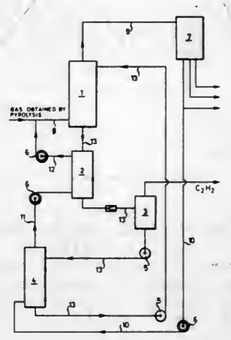
3,557,530

PROCESS FOR THE SEPARATION OF ACETYLENE FROM GASES OBTAINED BY PYROLYSIS

Hartmut Voigt, Frankfurt am Main, Egon Malow, Hofheim, Taunus, and Walter Wetzel and Erich Schneck, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

Filed Jan. 21, 1970, Ser. No. 4,710
Claims priority, application Germany, May 21, 1969, 1,925,731
Int. Cl. B01d 19/00
U.S. Cl. 55—64 5 Claims

Process for the separation of acetylene from gases obtained by pyrolysis by absorption by means of a high-boiling solvent which absorbs acetylene selectively and by subsequent desorption, in which the portions of the gas components absorbed by the solvent are again expelled in several stages, partly with the use of stripping gases.

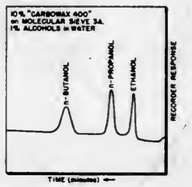


3,557,531

GAS-LIQUID CHROMATOGRAPHY METHOD

Robert W. McKinney, Adelphi, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

Continuation-in-part of abandoned application Ser. No. 724,670, Mar. 29, 1968, which is a continuation-in-part of abandoned application Ser. No. 611,854, Jan. 26, 1967. This application June 5, 1969, Ser. No. 863,000
Int. Cl. B01d 15/08
U.S. Cl. 55—67 5 Claims



The invention relates to a gas-liquid chromatography system utilizing, as the packing material, a coated synthetic molecular sieve having a pore diameter of less than 13 angstrom units. The packing is particularly useful with aqueous samples as the packing removes the water peak from the chromatogram.

3,557,532

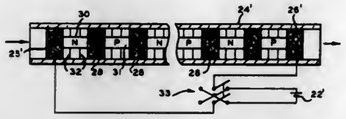
CHROMATOGRAPHIC ANALYSIS COLUMN AND METHOD

Arthur B. Broerman, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed Sept. 4, 1969, Ser. No. 855,331
Int. Cl. B01d 15/08
U.S. Cl. 55—67 7 Claims

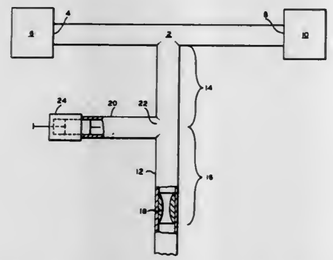
A chromatographic column contains spaced electrodes and material therebetween which changes in tempera-

ture when current is passed through the material. The material can be a resistance heating material, such as



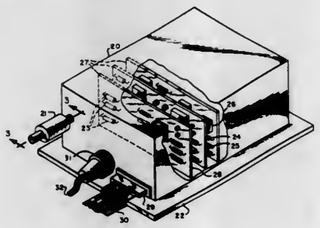
vitreous carbon, or a thermoelectric material, such as bismuth telluride.

3,557,533
APPARATUS AND METHOD FOR DELIVERING GAS SAMPLES
Grady T. Porter, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Feb, 12, 1970, Ser. No. 10,860
Int. Cl. B01d *15/08*
U.S. Cl. 55—67 **10 Claims**



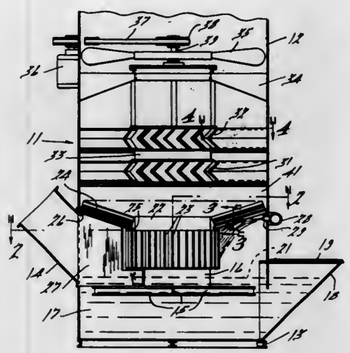
An apparatus for splitting a carrier gas stream into two controlled streams and injecting a gas sample mixture into one of the carrier gas streams for delivery to a receiving chamber. By injecting the sample of gas into a line one end of which has a restricted opening and the other end in communication with the carrier gas stream flowing to the receiving chamber, an uninterrupted sample gas slug can be delivered to said receiving chamber.

3,557,534
FILTER SYSTEM FOR CONTROL OF OUTGAS CONTAMINATION IN VACUUM
Bobby W. Kennedy, Arab, Ala., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Nov. 8, 1968, Ser. No. 774,266
Int. Cl. B01d *53/04*
U.S. Cl. 55—75 **6 Claims**



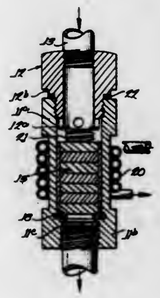
A filter system for control of outgas contamination of equipment assemblies in the space environment. Components subject to outgassing are enclosed in a sealed container vented externally through a filter having absorbent beds of a molecular sieve zeolite, silica gel and charcoal. Contamination of exposed optical surfaces with deposits derived from outgas fragments is prevented by this means.

3,557,535
AIR WASHER
Stanley O. Howick, Union Lake, Mich., assignor to Poma, Inc., Detroit, Mich., a corporation of Michigan
Filed Nov. 25, 1968, Ser. No. 778,541
Int. Cl. B01d *47/00*
U.S. Cl. 55—237 **5 Claims**



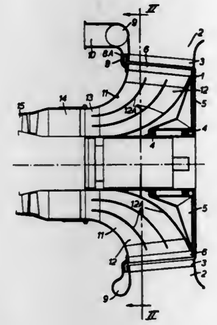
An industrial air washer has a vertical cylindrical housing. Circularly arranged vertical impingement baffles and radially extending impingement baffles with V-shaped cross sections are constantly sprayed with water. Air is drawn through the housing and impinges on these baffles, the water trapping foreign particles and washing them down to a pool at the bottom. The air rises through a series of moisture eliminators, being drawn upwardly by a fan. In a second embodiment, the baffles are constantly rotated.

3,557,536
FILTER ASSEMBLY
Otis E. Ririe, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Dec. 30, 1968, Ser. No. 787,896
Int. Cl. B01d *35/02*
U.S. Cl. 55—269 **3 Claims**



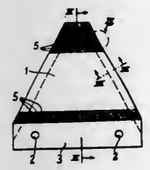
A heated filter assembly is provided for use in removing thermoplastic particles from a vapor stream. The assembly includes a replaceable porous filter unit through which the vapor stream is caused to pass. The unit is heated to a predetermined temperature whereby the thermoplastic particles entrained in the vapor stream are retained by the unit and become soft or melt and form a sticky agglomerate.

3,557,537
DUST OR SAND SEPARATORS
Derek Aubrey Roberts, Almondsbury, Bristol, England, assignor, by mesne assignments, to Rolls-Royce Limited, Derby, England, a British company
Continuation of application Ser. No. 655,621, July 24, 1967. This application Nov. 6, 1969, Ser. No. 871,610
Int. Cl. B01d *45/14*
U.S. Cl. 55—306 **4 Claims**



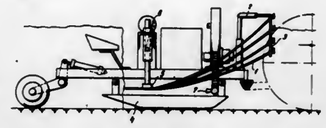
Apparatus for separating sand, dust or other particulate matter from air including a ring of rotor vanes which lie within a ring of guide vanes and act on inwardly flowing dust laden air to concentrate the dust in a zone from which it is discharged.

3,557,538
KNIFE SECTION FOR AGRICULTURAL MOWERS AND METHOD OF FABRICATION OF SAID KNIFE SECTION
Roger Vandewalle, Flers-les-Lille, France, assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed Nov. 12, 1968, Ser. No. 774,831
Int. Cl. A01d *55/02*
U.S. Cl. 56—299 **3 Claims**



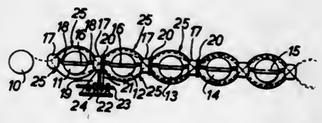
A triangular shaped knife section having under-serrations formed parallel to the base of the section and extending from edge to edge of the side edges of the section to provide extensive areas for re-grinding to obtain a long lived sharpenable knife section.

3,557,539
DEVICE FOR SHAKING DOWN FRUIT, IN PARTICULAR MACHINES FOR COLLECTING BERRY FRUITS
Kalman Lammel and Erno Horvath, Budapest, Hungary, assignors to Mezogazdasagi Gepjavito Vallalat, Pazzto, Hungary
Filed June 18, 1968, Ser. No. 737,922
Claims priority, application Hungary, June 23, 1967, LA-657
Int. Cl. A01g *19/06*
U.S. Cl. 56—330 **5 Claims**



A vehicle-mounted machine for gathering fruit from fruit bushes carries to one side a deflector having a curved surface the forward part of which is upright and the rear part of which is horizontal and directed toward the vehicle. The curved surface is comprised by a plurality of resilient wires; and a vibrator acts on the lower end of the wires, or acts on the bushes between the wires, to shake loose the fruit into a subjacent collecting vessel.

3,557,540
STRANDING MACHINE
Mario Martinez, Dibden Manor, Dibden Hythe, Southampton, England
Filed July 30, 1968, Ser. No. 748,693
Claims priority, application Great Britain, Aug. 3, 1967, 35,677/67
Int. Cl. D07b *3/04*
U.S. Cl. 57—58.34 **20 Claims**

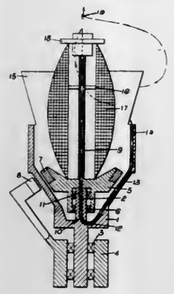


A stranding machine in which the spools of wire are spaced-apart and supported in cradles themselves non-rotatably supported in spaced apart bearing structures each of which include a driven member to which are secured curved support members which rotate therewith, the strand of wire from each spool passing around the adjacent spool and supported on the support members and passing through the bearing structures so as to follow a sinusoidal path about the longitudinal axis of the machine.

3,557,541
DOUBLE TWIST SPINDLE AND METHOD OF TWISTING
Jean Aucagne, Lyon, and Pierre Felix, Miribel, France, assignors to Societe Rhodiaceta, Paris, France, a French body corporate
Filed Oct. 25, 1968, Ser. No. 770,769
Claims priority, application France, Oct. 25, 1967, 125,840
Int. Cl. D01h *1/10, 7/86*
U.S. Cl. 57—58.86 **8 Claims**

The specification discloses a double twist spindle, and a method of twisting, in which yarn is fed via a yarn ten-

sioning means to the inlet of a continuous conduit connected to the rotor of the spindle, the outlet of such continuous conduit being disposed outside a package from which yarn is being withdrawn. Rotation of the continuous conduit causes controlled aspiration of the yarn, which, upon leaving the conduit described an enclosed arc around a shell member before passing through a yarn guide.

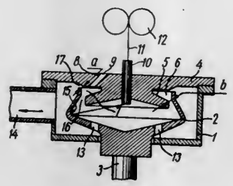


3,557,542

TWISTING AND FORMING DEVICE FOR PNEUMATIC AND MECHANICAL SPINNING

Lev Ivanovich Oskin, Odesskaya ulitsa 14, korpus 4, kv. 20; Chary Anna-Seidov, Ulitsa Televidenia 22, korpus 1, kv. 58; Alexandr Sergeevich Zhukov, Nagornaya ulitsa 32, korpus 3, kv. 71; and Alexandr Fedoseevich Zadoya, Ulitsa Gasheka 11, kv. 54, all of Moscow U.S.S.R.

Filed Apr. 25, 1968, Ser. No. 724,164
Int. Cl. D01h *1/12*
U.S. Cl. 57—58.89 4 Claims



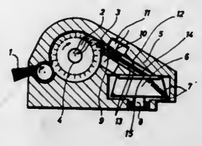
A twisting and forming device is provided for pneumatic and mechanical spinning and the device comprises a housing containing a spinning cup in which a disc-shaped fiber deflector is installed so as to form an annular cavity between the cover of the housing and the deflector. An annular gap for the passage of fibers into the cup is formed between the walls of the cup and the fiber deflector and the size of this gap is equal to 0.5–5 mm. A second annular gap of a size between 0.3 and 4 mm. and smaller than the first gap is formed between the edge of the cup and the cover and it widens outwardly for removing lint and impurities from the fibers passing through the annular cavity in the course of air evacuation from the cup and housing.

3,557,543

METHOD AND APPARATUS FOR PARALLELIZING STAPLE FIBERS FED TO A SPINNING CHAMBER

Hans Walter Krause, Stallikon, Switzerland, assignor to Rieter Machine Works, Ltd., Winterthur, Switzerland, a corporation of Switzerland

Filed May 26, 1969, Ser. No. 827,548
Claims priority, application Switzerland, May 24, 1968, 7,910
Int. Cl. G01h *7/00*; D01g *23/08*
U.S. Cl. 57—58.95 15 Claims



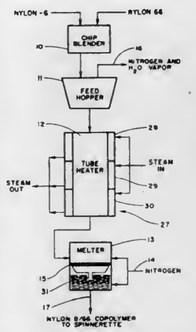
A stream of staple fiber passing through a feed duct is surrounded by an enveloping air jacket so that the fibers are concentrated towards the central axis of the duct. The air jacket is formed by drawing an additional source of air into the duct through an annular free zone.

3,557,544

COMPOSITIONS AND YARN MADE THEREFROM

Frank Holmes Simons, Matthews, N.C., assignor to Fiber Industries, Inc., a corporation of Delaware

Filed Mar. 9, 1967, Ser. No. 621,867
Int. Cl. D02g *3/02*
U.S. Cl. 57—140 12 Claims



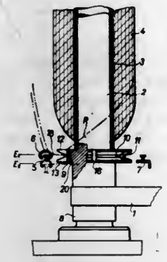
The copolymer of polyhexamethylene adipamide (nylon 66) and polycaprolactam (nylon 6) is produced by heating a blend of chips of the two polymers at a temperature less than the melting point of either of the polymeric materials while passing an inert gas over the chips. The water content in the chips is reduced to such an extent that the polymeric materials are no longer in equilibrium with their water of condensation. Upon melting the polymeric materials react with one another to form a copolymer and equilibrate rapidly to form a copolymer having a higher relative viscosity (RV).

3,557,545

PROCESS FOR WINDING YARN

Werner Naegeli, Winterthur, Switzerland, assignor to Rieter Machine Works, Ltd., Winterthur, Switzerland, a corporation of Switzerland

Original application Jan. 20, 1967, Ser. No. 610,633, now Patent No. 3,490,218, dated Jan. 20, 1970. Divided and this application May 6, 1969, Ser. No. 852,130
Claims priority, application Switzerland, Jan. 26, 1966, 1,005/66
Int. Cl. B65h *65/00*; D01h *1/38, 1/40*
U.S. Cl. 57—156 8 Claims



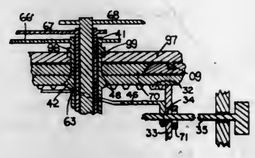
An underwinding element and process for spinning frames fixed on a spindle for winding of a cop. The circumferential groove is filled with the windings of the underwinding coil and the slots allow the lead yarn to be woven into and about the groove before forming the underwinding coil to prevent loose ends and rotation of the underwinding coil in the groove. The lead yarn is moved up and down to be interwoven between the slots and groove and guided into place by the ring and ring coil.

3,557,546

WATCH FOR SIMULTANEOUSLY INDICATING TIME IN TWENTY-FOUR TIME ZONES

Shao-Tang Lee, 25 Chi-Kuang, Taichung, Taiwan

Continuation-in-part of applications Ser. No. 576,191, Aug. 29, 1966, now Patent No. 3,379,004, and Ser. No. 576,506, Aug. 29, 1966, now Patent No. 3,468,122, both being continuations-in-part of application Ser. No. 417,841, Dec. 11, 1964, now Patent No. 3,318,085. This application Jan. 12, 1968, Ser. No. 697,374
Int. Cl. G04b *19/22*
U.S. Cl. 58—42.5 10 Claims



A multi-time zone watch including a time dial ring having hour designating indicia thereabout, a time zone disc received within said ring and mounted for coaxial rotation relative thereto, the disc having indicia about the periphery thereof designating the time zones about the search and orientated so as to relate in the manner in which the time zones relate to each other. A rotatably driven hour hand shaft is normally fixed to the disc for a driving of the entire disc in the manner of an hour hand with each particular time zone indicia on the disc acting in the manner of an hour hand for that particular zone as the disc rotates at the rate of an hour hand within the time dial ring. A driven minute hand is also provided so as to provide minute readings in connection with the hour reading in each time zone designated by the relationship of the particular time zone indicia to the hour designating indicia on the time dial ring. A separate hour hand can be fixed directly to the hour hand shaft, the hour hand shaft being disengageable from the time zone disc for a setting of the hour hand into alignment with a particular time zone indicia when such time zone is of primary concern to the user of the watch.

3,557,547

DIALS FOR STOP WATCHES

Anders Elis Bernhard Rejminger, 15 Knektgatan, Linkoping, Sweden

Filed July 2, 1968, Ser. No. 742,022
Int. Cl. G04f *7/04*
U.S. Cl. 58—74 4 Claims



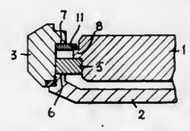
A stop watch dial having two or more concentrically arranged scales for indicating an estimated time spent in covering a given normal distance, and the scales are so graduated that with the aid of the watch hand one can read the time spent in covering the distance or the speed. The dial permits directly reading the estimated speed or time per normal length unit and simultaneously it indicates the size of the deviation from a given ideal speed or time for the normal length unit. The dial is suited for use in measuring speeds or the time spent in covering distances at races over given distances, and the scales of the dial are so graduated that, when the watch is stopped after a short or long distance has been covered, the speed and time, respectively, for the normal distance or normal length unit common to the two scales can be directly read.

3,557,548

WATERPROOF CASE FOR WATCH

Yoshiaki Fujimori, Suwa-shi, Japan, assignor to Kabushiki Kaisha Suwa Seikosha, Tokyo, Japan, a company of Japan

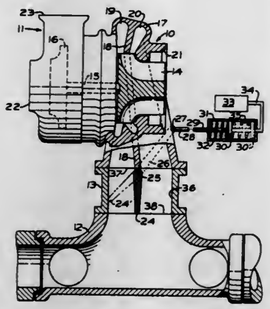
Filed Aug. 20, 1968, Ser. No. 754,015
Claims priority, application Japan, Aug. 22, 1967, 42/71,746
Int. Cl. G04b *37/04*
U.S. Cl. 58—94 5 Claims



Two rings on either side of a collar of a watch movement secure the movement in a case without screws. The first ring engages an abutment of a watch case, the second

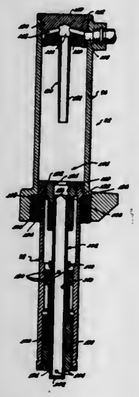
is held in place by the back cover of the watch case. A gasket may be placed between the cover and the second ring.

3,557,549
TURBOCHARGER SYSTEM FOR INTERNAL COMBUSTION ENGINE
Donald F. Webster, Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Mar. 21, 1969, Ser. No. 809,447
Int. Cl. F02b *37/08*
U.S. Cl. 60—13 **7 Claims**



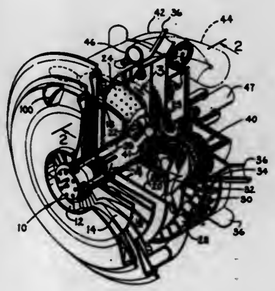
A turbocharger comprises a turbine having an annular partition disposed in the housing thereof to divide the housing's chamber into two separate compartments. A flapper valve is pivotally mounted at the inlet to such housing and is normally positioned to be substantially coplanar with the partition to permit engine exhaust gases to flow into both compartments. During the idle phase of engine operation, for example, the flapper valve automatically pivots to block gas flow into one of the compartments and to direct all gas flow into the other compartment.

3,557,550
PRESSURE-CONTROLLED BOMB EJECTOR FOR AIRCRAFT
Philip H. Legarra, Long Beach, Calif., assignor, by mesne assignments, to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Continuation of application Ser. No. 525,485, Feb. 7, 1966. This application Feb. 5, 1968, Ser. No. 707,010
Int. Cl. F01b *29/08*; **F15b** *15/22, 15/17*
U.S. Cl. 60—26.1 **18 Claims**



A pressure controlled bomb ejector in which a varying pressure fluid supply derived from an explosive charge is controlled to produce a substantially constant pressure and resulting force on a bomb ejecting piston. A variable orifice is provided between the varying pressure supply and the piston chamber. The pressure-reducing effect of the orifice varies with extension of the piston over a substantial portion of the movement of the latter in accordance with the pressure-time characteristic of the varying supply in order to provide the substantially constant pressure in the piston chamber. A retracting mechanism that makes use of the pressurized fluid supplied by the charge is also provided to automatically retract the piston after its full extension in ejecting a bomb.

3,557,551
GAS TURBINE ENGINE WITH ROTATING COMBUSTION CHAMBER
Gordon Keith Colin Campbell, 1007 E. Rose Circle, Los Altos, Calif. 94022
Filed Sept. 26, 1968, Ser. No. 762,916
Int. Cl. F02c *3/16*
U.S. Cl. 60—39.16 **3 Claims**

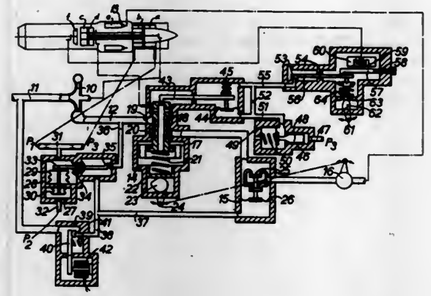


A gas turbine engine which can utilize high velocity gas jets to attain high efficiency and power output comprising a rotatable combustor wheel on which the combustion chamber and nozzle are mounted. The nozzle forms a gas jet which falls directly on a turbine blade wheel to drive it, and to rotate the combustor wheel in the opposite direction by jet reaction. Air is fed to the combustion chamber through a scoop mounted on the combustor wheel near its circumference, to efficiently boost air pressure and achieve the required high air flow.

3,557,552
GAS TURBINE ENGINE INSTALLATION FUEL SYSTEMS
Thomas Charles Yates, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England
Filed Oct. 21, 1968, Ser. No. 769,050
Claims priority, application Great Britain, Oct. 19, 1967, 47,575/67
Int. Cl. F02c *9/08, 3/10*
U.S. Cl. 60—39.16 **4 Claims**

A gas turbine engine installation comprising apparatus for producing a stream of gas and a work turbine through which the gas stream is passed, the fuel system comprising a fuel pump, a control whereby idling or maximum supply can be selected, acceleration control means controlled in accordance with engine conditions, a speed responsive device controlling the fuel in accordance with said acceleration control means, a further speed responsive device modifying response of the first responsive device in accordance

with the speed of the work turbine, and a further control providing limited reduction in speed below the maximum



selected, said further control being arranged to vary the response of the further speed responsive device.

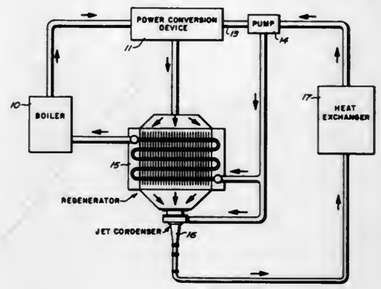
3,557,553
STRUCTURAL PART OF A GAS TURBINE DRIVE UNIT WHICH IS EXPOSED TO THERMAL LOAD AND IS TO BE COOLED BY MEANS OF A GAS
Christian Schmitz, Engelberg, Post Schorndorf, Wurttemberg, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Aug. 30, 1968, Ser. No. 756,646
Claims priority, application Germany, Aug. 31, 1967, 1,626,032
Int. Cl. F02c *7/00*
U.S. Cl. 60—39.65 **3 Claims**



A gas turbine drive unit in which a part thereof, that is exposed to high thermal loads and is to be cooled by gas, consists of a high-heat-resistant steel material, reduced to fibers, compressed to sheet metal thickness under the action of heat and possessing porous properties.

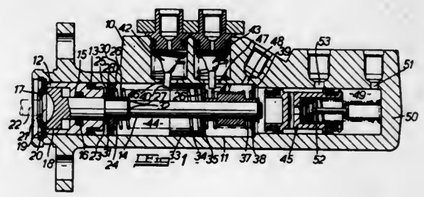
3,557,554
POWER CONVERSION SYSTEM OPERATING ON CLOSED RANKINE CYCLE
Frank Martinek, Burlington, Vt., and William T. Macauley, Arcadia, Calif., assignors to Aerojet-General Corporation, El Monte, Calif., a corporation of Ohio
Filed May 22, 1968, Ser. No. 731,208
Int. Cl. F01n *3/04*
U.S. Cl. 60—94 **10 Claims**

This disclosure concerns a power conversion system for converting heat energy to electrical power, wherein the power conversion system includes a so-called jet condenser connected to the exhaust outlet of a turbine which drives an electric generator, such as an alternator, in producing electrical power. The power conversion system comprises a closed Rankine cycle employing an organic working fluid. The single working fluid after being heated to its vaporized phase drives the turbine to generate electrical power and is discharged from the exhaust outlet of the turbine in its vapor phase for admission into the condenser. A jet stream of cooled working fluid in its liquid phase is injected into the jet condenser to mix with the vaporized working fluid coming from the exhaust outlet of the turbine. The mixing of the cooled liquid working fluid with the vaporized working fluid causes rapid condensation of the vaporized working fluid for reuse in the system cycle, while providing for a reduction in the turbine



back pressures which are critical to the efficiency of the system so as to improve its efficiency in producing an electrical output from a suitable heat source. The heat source employed with the system may comprise nuclear energy, such as heat energy from nuclear reactors or radioactive isotopes, or chemical heating, solar energy, or other heat sources which are capable of heating a working fluid in its liquid phase in a boiler prior to admitting the working fluid as a heated vapor into the turbine for driving the turbine blades and producing electrical energy through an alternator operated by the rotating shaft of the turbine.

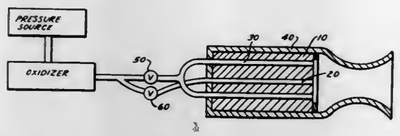
3,557,555
HYDRAULIC BRAKING SYSTEMS FOR VEHICLES
Alexander John Wilson and Stuart B. Dawson, Warwickshire, England, assignors to Girling Limited, Tyseley, Birmingham, England, a British company
Filed June 16, 1969, Ser. No. 833,620
Claims priority, application Great Britain, June 14, 1968, 28,297/68; May 10, 1969, 23,906/69
Int. Cl. F15b *7/00, 7/08*
U.S. Cl. 60—54.6 **12 Claims**



A master cylinder in which a pair of tilting valves control communication between a pressure space, and a reservoir and source of pressure fluid respectively. A piston located within the pressure space incorporates a one-way valve permitting flow of fluid past the piston in one

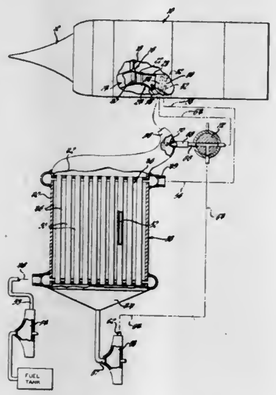
direction, and means are incorporated to permit a metered flow of fluid past the piston in the opposite direction when the one-way valve is closed.

3,557,556
THRUST MODULATOR FOR HYBRID ROCKETS
Raymond J. Muzzy, Saratoga, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed May 20, 1968, Ser. No. 730,462
Int. Cl. F02k 9/06
U.S. Cl. 60—207 1 Claim



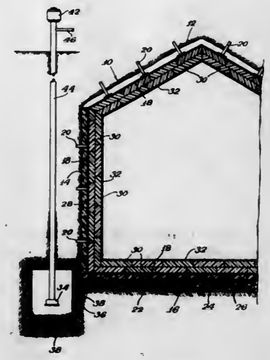
A multiport grain for modulating the thrust of rockets of the hybrid type. To achieve selective control of the burning rate of the grain, and for optimum performance under high thrust or low thrust modes, the grain is provided with two sets of ports. For low thrust operation, the liquid oxidizer is fed to a port in the geometric center of the grain. For high thrust operation, the liquid oxidizer is fed to a multiplicity of radially disposed ports, in addition to the center port.

3,557,557
ENGINE AIR PRECOOLER AND ICE ELIMINATOR
Otakar P. Prachar, Santa Barbara, Calif., assignor to General Motors Corporation, Detroit, Mich, a corporation of Delaware
Continuation of application Ser. No. 58,283, Sept. 26, 1960. This application Nov. 24, 1969, Ser. No. 879,566
Int. Cl. F02k 3/00; F25j 3/04
U.S. Cl. 60—257 9 Claims



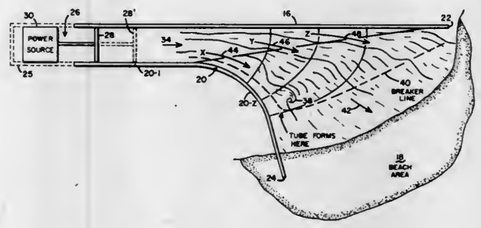
A jet engine using cryogenic fuel produces liquid air by indirect heat exchange between combustion air entering the engine and the fuel. A part of the liquid air is sprayed into the engine air inlet ahead of the heat exchanger to cool the air sufficiently to freeze moisture so that it passes through the heat exchanger as a solid and does not freeze out onto the heat exchanger walls.

3,557,558
INSULATING AND WATERPROOFING SYSTEM FOR STORAGE TANKS
Bertram E. Eakin, Naperville, and John L. Cranmer, Jr., Chicago, Ill., assignors to Institute of Gas Technology, a nonprofit corporation of the State of Illinois
Continuation-in-part of application Ser. No. 702,471, Feb. 1, 1968. This application Jan. 27, 1969, Ser. No. 794,339
Int. Cl. B65g 5/00; E21f 17/16
U.S. Cl. 61—.5 13 Claims



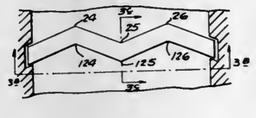
A system for insulating and waterproofing a chamber for storing liquified gas at cryogenic temperatures. A first liquid barrier against ingress of external liquid, such as water, is spaced from the top, sides, and floor of the chamber. A second liquid barrier, having at least a bottom and sides, to prevent egress of the liquid is spaced from the first liquid barrier and is in direct contact with the liquid gas. Thermal insulation completely surrounds the chamber and fills the space between the barriers for maintaining the liquid gas at cryogenic temperature. Material fills the space between the sides and floor of the chamber and is water permeable to permit the passage of water away from the chamber. The filler material also transmits the hydrostatic pressure from the liquid gas to the sides of the chamber for bearing support.

3,557,559
WAVE-GENERATING APPARATUS
Douglas W. Barr, 5420 Irving Ave. S., Minneapolis, Minn. 55419
Filed May 12, 1969, Ser. No. 823,581
Int. Cl. E02b 3/00
U.S. Cl. 61—1 9 Claims



Apparatus for generating waves in relatively small inland bodies of water, such as lakes, or large pools, for permitting surfing and the like, is described. The wave-generating apparatus includes means for defining the surfing area such as either one or a pair of vertical walls disposed in the water, with one of the walls or defining means being substantially straight and the second wall having a first portion arranged parallel to a portion of the first wall and a second portion arcuately diverging from said first wall in a manner to enhance the wave characteristics, and extending toward a beach area. The confined area is provided with a substantially flat or gradually inclining bottom or base, while the area defined adjacent the diverging walls is provided with an inclined bottom or base, so as to enhance the wave activity. A surge-generating device is located in the area where the first and second walls are parallel for imparting motion to the water therein, with breaking waves forming along the arcuate wall surface and propagating outwardly toward the first wall, while advancing along the inclined bottom and toward the batching area.

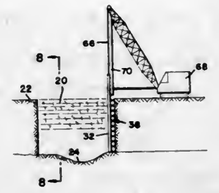
3,557,560
VIBRATION DAMPER FOR A HYDRAULIC SLUICE-GATE
Yasuyoshi Nakajima, Ibaraki-shi, Japan, assignor to Hitachi Zosen Kabushiki Kaisha, Osaka, Japan, a corporation
Continuation-in-part of application Ser. No. 459,639, May 28, 1965. This application May 15, 1968, Ser. No. 729,208
Int. Cl. E02b 7/28
U.S. Cl. 61—28 3 Claims



The present invention is concerned with leaves for preventing the leaf of a single sluice-gate positioned transversely across a conduit from vibrating during the passage of water therethrough with the leaf or conduit or leaf and conduit having special surfaces for defining the downstream portion of said flowing water and the bottom edge of the leaf being horizontally non-linear whereby three-dimensional vortices are generated on the downstream side of the gate or the regular vortex eddies are restricted and are not generated on the downstream side.

3,557,561
METHOD AND APPARATUS FOR CONSTRUCTING IMPERVIOUS UNDERGROUND WALLS
James L. Sherard, 70 Hillcrest Road, Berkeley, Calif. 94705
Filed June 25, 1968. Ser. No. 739,805
Int. Cl. E02d 5/18
U.S. Cl. 61—35 29 Claims

A method for constructing an impervious underground wall by continuously enlarging an excavation by dislodging and fragmenting earth material to form a trench of long length and narrow width in the ground, adding a slurry to the excavation and mixing the fragmented earth material with the slurry in situ. The method comprises the steps of providing a movable but rigid barrier member within an initial slurry filled starter hole or trench so that fluid columns of the slurry are formed on the front and rear sides of the barrier; placing an earth-cutting tool in the front fluid column in contact with the face of the starter hole opposite the front side of the barrier member; manipulating the earth-cutting tool so as to remove progressively thin layers of material from the advancing face of the trench mixing the excavated material with the slurry of the front fluid column; adding additional fresh slurry; and causing the fluid mixture of slurry and cuttings to circulate to the rear column as the barrier-cutting tool continuously advances through the ground. The apparatus includes the barrier member which is operable to remain in a substantially vertical position, or at a constant inclination, as it moves along the trench being formed. Means are provided for preventing any substantial flow of fluid from the rear to the front column except below the bottom of the barrier. The cutting tool which may be directly connected to the movable barrier member is adapted to continuously remove relatively thin layers of earth material from the end face, which material is thoroughly mixed with slurry before it is circulated



to the rear column where it gradually solidifies to form the impermeable wall. Other components of the apparatus include means to raise and lower and guide the upper end of the movable barrier member and manipulate the cutting tool, means to push the combined barrier-cutter tool forward against the advancing face of the excavation and means to add additional slurry. A wall constructed according to the method comprises a continuous narrow impermeable underground structure comprised of the solidified mixture of slurry and natural soil material having no joints, breaks, connections or overlaps. Depending on the character of the slurry used in the process the final product may be either a flexible and plastic wall of mixed soil and bentonite or a rigid and strong wall of soil-cement concrete.

3,557,562
METHOD OF FORMING A FLEXIBLE SEALANT
Homer C. McLaughlin, Jr., and Ronney R. Koch, Duncan, Okla., assignors to Halliburton Company, Duncan, Okla., a corporation of Delaware
No Drawing. Filed Jan. 31, 1968, Ser. No. 701,820
Int. Cl. E21b 33/14; E21d 5/00, 5/11
U.S. Cl. 61—41 26 Claims

This invention relates to a flexible sealant. The sealant comprises an acrylamide monomer, a polyfunctional cross-linking agent such as an alkylene bisacrylamide, a hydrogen bonding solvent such as a glycol, a filler which will hydrogen bond to the solvent and to the polymerized acrylamide such as silica, and a catalyst which will polymerize the monomer. The sealant is particularly useful as a plug to prevent escape of radioactive material resulting from an underground explosion.

3,557,563
GROUTING NOZZLE
Antoni Stevens, 578 Sherman Ave., Roselle, N.J. 07203
Continuation-in-part of application Ser. No. 763,591, Sept. 30, 1968. This application Nov. 24, 1969, Ser. No. 879,248
Int. Cl. E02b 1/00; E04g 21/02
U.S. Cl. 61—63 8 Claims

A device for attachment to a grouting nozzle, the device including a tube frictionally connected to a sealing sleeve member. A plug is slidably mounted in the

tube and normally retained in spaced relation from the sleeve member to permit the flow of grouting material through the tube to fill a void at the outward end thereof.

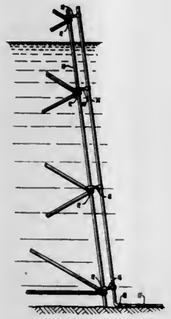


When such void is filled, the plug is displaced to a second sealing position with respect to the sleeve member for effecting a seal against backflow of grouting material.

3,557,564
UNIVERSAL OFFSHORE PIPELINE RISER CLAMP ASSEMBLY

Ferdinand R. Hauber, Galena Park, Tex., assignor to Brown & Root, Inc., Houston, Tex., a corporation of Texas

Filed Apr. 16, 1969, Ser. No. 816,511
Int. Cl. E21b *43/01*
U.S. Cl. 61—72.3 17 Claims



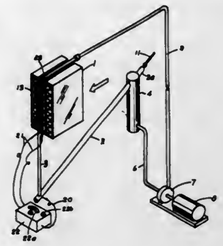
A clamping apparatus having at least two sleeve-like hinged clamps which are adjustably interconnected so as to be rotatable about a common axis to provide universal freedom of movement to elements loosely clamped therein. Each sleeve-like clamp may be fitted with a toggle bolt assembly to provide ease in securing, releasing and adjusting the clamped elements. The surfaces of the clamps which contact the clamped elements may be lined with an electrical insulating material.

3,557,565
THERMAL DEVICE CALIBRATING APPARATUS

Walter J. Kissel, Olivette, Mo., assignor to American Air Filter Company, Inc., Louisville, Ky., a corporation of Delaware

Filed Mar. 24, 1969, Ser. No. 809,762
Int. Cl. F25b *21/02*
U.S. Cl. 62—3 1 Claim

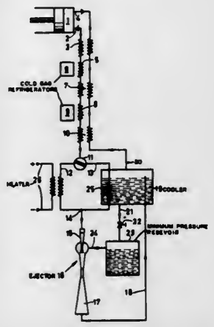
An arrangement for calibrating temperature indicating devices at selected temperatures which includes a fluid flow circuit adapted to receive a temperature indicating device and the device is immersed in a fluid which flows through the circuit. The circuit includes heat exchange means to temper the fluid to a selected temperature where the heat is supplied to and removed from the heat exchanger means by a reversible electric thermal effect generating device.



3,557,566
METHOD AND DEVICE FOR PRODUCING COLD AND LIQUEFYING GASES

Jacobus Abraham van den Born, Emmasingel, Eindhoven, Netherlands, Jan Haisma, Cretell, Val-de-Marne, France, and Ferdinand Jehan Maria Kroon, Calgary, Alberta, Canada, assignors to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed July 10, 1968, Ser. No. 743,668
Claims priority, application Netherlands, July 27, 1967, 6710358
Int. Cl. F25j *1/02*
U.S. Cl. 62—9 10 Claims



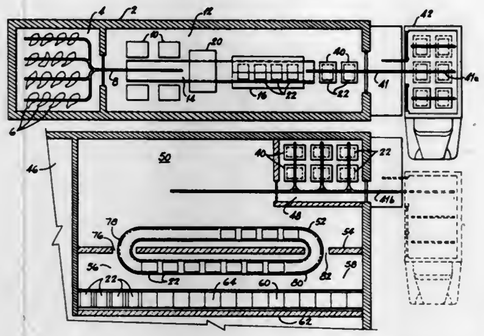
A process of producing refrigeration and liquefying gasses in which the gas is compressed and refrigerated, to have specific enthalpy, before expansion through a jet ejector, that corresponds to the enthalpy associated with the constant enthalpy line substantially tangent to the boundary line of the liquid-vapour region in the temperature-enthrophy diagram of the medium. The gas after passing through the ejector is collected in a high-pressure reservoir which communicates through a throttling valve with the vapor space in the low pressure reservoir.

3,557,567
METHOD AND MEANS FOR MARKETING MEAT PRODUCTS

James H. Brennan, Trenton, N.J., assignor to Emhart Corporation, Bloomfield, Conn., a corporation of Connecticut

Filed Oct. 15, 1968, Ser. No. 777,955
Int. Cl. F23d *25/04*; H23b *1/06*
U.S. Cl. 62—60 4 Claims

A system for use in the retail marketing of meats wherein the meat is maintained under continuous and uniform refrigeration at temperatures of about 31° F. during preparation, delivery and display thereof in retail outlets. For this purpose the meats are cut, wrapped, weighed and priced in a central cutting establishment and are placed on trays which are arranged on movable carts or containers. These containers whil maintained under continuous uniform refrigeration are transported to retail outlets where the carts of prepared meats are moved to

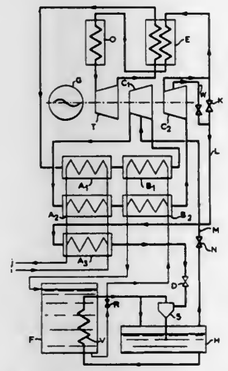


locations where the trays may be transferred directly into refrigerated display equipment for sale to the customer. In this way much of the labor and space heretofore required in cutting and preparing meats for retail sale in a market is eliminated. In some instances one or more of the steps of cutting, weighing, wrapping and pricing of the meats is carried out in the retail market but in any event the meats are maintained at all times under uniform, continuous and controlled refrigeration.

3,557,568
POWER GENERATION APPARATUS

Pierre Henri Pacault, Ville-d'Avray, and Francis J. Mary, Paris, France, assignors to Babcock-Atlantique Societe Anonyme, France, a corporation of France

Filed Jan. 6, 1969, Ser. No. 789,160
Claims priority, application France, Jan. 19, 1968, 136,617
Int. Cl. F25b *7/00*
U.S. Cl. 62—79 19 Claims

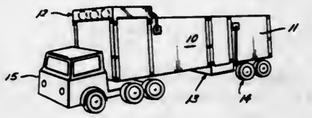


Power generation apparatus employing a gas cycle includes networks for the working fluid, a cold-producing fluid and an intermediary fluid. These networks are arranged so that the cold-producing fluid may be recycled to cause progressive freezing of the intermediary fluid whereby this reserve of cold may be exploited to cool the working fluid at the cold source, during the periods of inactivity of the cold-producing fluid. It is thus possible to limit the operation of the cold-producing fluid to off-peak hours, at which time a store of frozen products is built up for use subsequently at times of demand.

3,557,569
PORTABLE CARGO SYSTEM

Holbert R. Hill and Garfield C. Siverson, both of 3112 Produce Row, Houston, Tex. 77023

Filed Oct. 8, 1968, Ser. No. 765,922
Int. Cl. F25d *15/00*
U.S. Cl. 62—237 1 Claim

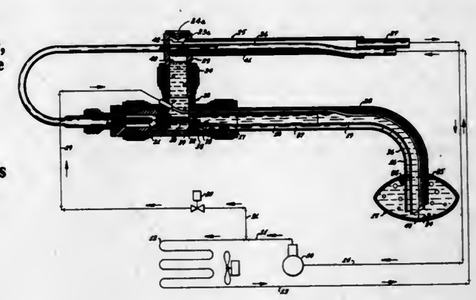


A portable cargo container for handling either perishable or non-perishable goods and adapted to have a portable coolant supply mounted thereon for refrigerating the goods when they are of a perishable nature. Two or more of these portable cargo containers may be used to provide a unitary trailer unit.

3,557,570
REFRIGERANT METERING DEVICE

Paul H. Brandt, 5202 E. Flower, Phoenix, Ariz. 85018

Filed Mar. 10, 1969, Ser. No. 805,720
Int. Cl. F25b *47/00*
U.S. Cl. 62—278 3 Claims



An injector type refrigerant metering device for use in place of standard thermostatic or automatic expansion valves, high or low side floats, capillary tube metering devices or any other conventional method of metering liquid refrigerant from the high side to the low side of a compression type refrigeration system.

3,557,571
ANTI-SWIVEL FINGER RING CLIP USING LOW HEAT SOLDER OR FRICTION ATTACHING MEANS

Vincent De Santo, 794 Bergen Blvd., Ridgefield, N.J. 07657

Filed Sept. 13, 1967, Ser. No. 667,490
Int. Cl. A44c *9/02*
U.S. Cl. 63—15.6 3 Claims

An anti-swivel finger ring clip having a plurality of protuberances supported on one side of an elongated strip,

which may have on the other side a soft solder of a melting temperature sufficiently low to be melted by a match, used for attachment to the ring. This strip can be cut to a predetermined desired length for inserting within the inside circumferential rim of a finger ring. Another anti-swivel finger ring clip may be formed in the shape

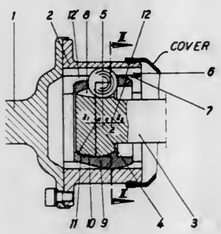


of a "catamaran" having two crossbars protruding radially inwardly into close contact with the soft underside of the finger. When a "catamaran" type clip is used, the clip can be secured on the rim of the ring by means of forcibly pressing together the strip or "catamaran" clip onto the ring's rim.

3,557,572
HOMOKINETIC UNIVERSAL JOINT

Erich Aucktor and Walther Willimek, Offenbach am Main, Germany, assignors to Lohr & Bromkamp G.m.b.H., Offenbach am Main, Germany, a corporation of Germany

Filed Jan. 17, 1969, Ser. No. 792,022
Claims priority, application Austria, Jan. 18, 1968, A 510/68
Int. Cl. F16d *3/22, 3/34*
U.S. Cl. 64—8 **11 Claims**



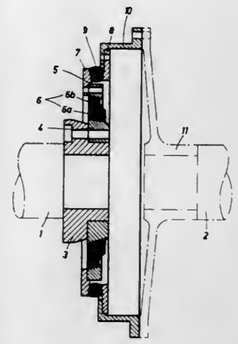
A ball cage retains a plurality of balls between an inner joint member and an outer joint member. Grooves formed in the outer surface of the inner joint member, in which the balls are seated, have center lines which extend with the radial distance of each of the center lines which from the axis of the inner joint member greatest at the ends and decreasing toward the center of the center line. The centers of the spherical inner and outer surfaces of the ball cage are on the axis of the ball cage equidistant from and on opposite sides of a plane through the centers of the balls or coincident in said plane. In the latter case said grooves have to be disposed in helices of the same and opposite pitch in the inner and outer joint members. This arrangement of the grooves is also possible in the first mentioned case.

3,557,573
HIGHLY ELASTIC SHAFT COUPLING PARTICULARLY FOR USE IN CONNECTION WITH ELASTICALLY SUPPORTED DRIVING ENGINES

Klaus Hänsgen, Witten (Ruhr), Germany, assignor to Lohmann & Stolterfoht A.-G.

Filed Dec. 17, 1968, Ser. No. 784,320
Int. Cl. F16d *3/78*
U.S. Cl. 64—13 **13 Claims**

This application discloses a highly elastic shaft coupling wherein, in addition to at least one sleeve spring element comprising an inner ring mounted on one of the shafts to be coupled and having a conical outer surface, an outer ring placed concentrically of the inner ring and having a conical inner surface radially spaced from said outer surface, and a rubber-elastic layer placed between said conical surfaces, at least one disc spring element is provided, the latter comprising a primary disc connected to said outer ring, a secondary disc mounted on

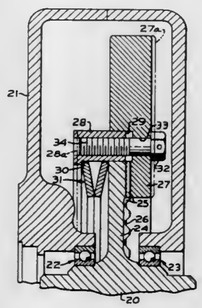


the second shaft, said discs having axially opposed and spaced surfaces, and a rubber-elastic layer placed between said axially opposed surfaces. This arrangement provides a combination of radial initial compression effected by the sleeve spring element with axial initial compression effected by the disc spring element when the coupling is axially compressed.

3,557,574
SPIRAL TOOTHED COUPLING

Bennett W. Avery, Peoria, and Bruce W. Kelley, Washington, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Nov. 25, 1968, Ser. No. 778,594
Int. Cl. F16d *7/04*
U.S. Cl. 64—28 **17 Claims**



A coupling comprises two juxtaposed face gears having spiral teeth of opposite hand formed thereon to fully mesh with each other. The coupling is adapted for use as a fixed coupling by securing the two gears together, an axially engaging clutch by selectively moving the two gears into engagement or a torque limiting device by employing means for controlling tooth separation when torque loads imposed thereon exceed a predetermined amount.

3,557,575
PROCESS FOR FORMING A BASALTIC GLASS-CERAMIC PRODUCT

George H. Beall, Corning, and Hermann L. Rittler, Horseheads, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

Continuation-in-part of application Ser. No. 589,222, Oct. 25, 1966. This application Feb. 4, 1969, Ser. No. 796,522
Int. Cl. C03b *3/22*
U.S. Cl. 65—33 **10 Claims**

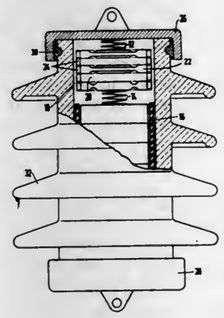


This invention relates to the manufacture of glass-ceramic articles, wherein magnetite crystals alone or in combination with clinopyroxene crystals constitute substantially all of the crystals present, by melting naturally-occurring basalts under oxidizing conditions, cooling the molten basalt to a glass, and then heat treating the glass under non-reducing conditions to crystallize in situ uniformly fine-grained crystals of magnetite with or without clinopyroxene homogeneously dispersed in a glassy matrix.

3,557,576
ELECTRICAL RESISTANCE BODY AND PROCESS FOR ITS MANUFACTURE

Wilhelm Baum, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, a corporation of Germany

Continuation-in-part of application Ser. No. 440,683, Mar. 18, 1965. This application Oct. 24, 1965, Ser. No. 504,343
Claims priority, application Germany, Nov. 18, 1964, S 94,228, S 94,229
Int. Cl. C03b *25/00, 29/00;* **C03c** *21/00*
U.S. Cl. 65—33 **6 Claims**

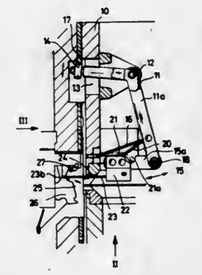


Described is a process for producing a ceramic resistance body housing having a semiconducting glaze. The process comprises preparing a base ceramic body by melting raw materials to form a basic molten ceramic glass composition containing by weight essentially 42 to 51 percent SiO_2, 32 to 37 percent Al_2O_3, 3 to 11 percent Li_2O, 4 to 9 percent TiO_2, 4 to 12 percent MgO and 1 to 4.4 percent B_2O_3, admixing to said basic molten ceramic glass composition from a trace up to 2.5 percent by weight of Cu_2O and from a trace up to 12 percent of at least one compound selected from the group consisting of the metal oxides CdO, NiO, Cr_2O_3, MnO_2, and equimolar metallic compounds which yield said metal oxides upon heating, and devitrifying the composition in the presence of air at 700–1000° C.

3,557,577
CIRCULAR KNITTING MACHINE HAVING A STRIPING APPARATUS AND A YARN-ENGAGING HOOK

Ernst-Dieter Plath, Tailfingen, Germany, assignor to Mayer & Cie., Maschinenfabrik, Tailfingen, Germany, a firm of Germany

Filed July 24, 1968, Ser. No. 747,196
Claims priority, application Germany, Aug. 2, 1967, M 75,010
Int. Cl. D04b *15/48*
U.S. Cl. 66—14 **6 Claims**



Structure for controlling the movement of a yarn-engaging hook of a circular knitting machine having a multiple striping apparatus. The machine includes at least one yarn-engaging hook for engaging and laying a yarn into the striping apparatus. A drive means is operatively connected with the hook for moving the latter along a predetermined path which does not extend along a straight line. The drive means on the one hand shifts the hook longitudinally and on the other hand swings the hook to a limited extent so as to turn the hook simultaneously with the longitudinal displacement thereof, the drive means including a lever system which carries the hook and which has follower rollers coacting with cams to bring about the movement of the hook.

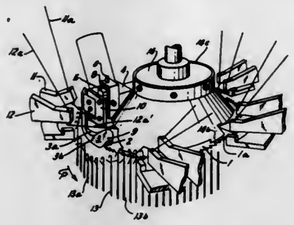
3,557,578
CUTTING APPARATUS FOR A CIRCULAR KNITTING MACHINE

Richard Fetzer, Denkendorf, Germany, assignor to Gottlieb Eppinger, Denkendorf, Germany

Filed Mar. 14, 1969, Ser. No. 807,457
Claims priority, application Germany, Mar. 14, 1968, 1,635,787
Int. Cl. D04b *15/60*
U.S. Cl. 66—140 **10 Claims**

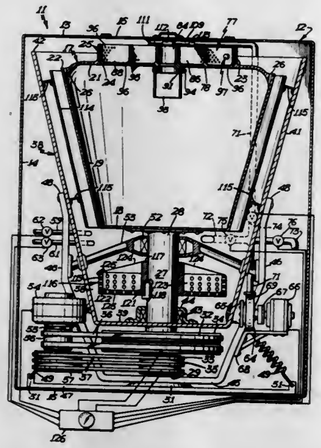
Yarn fed to, and knitted by, the needles of a needle cylinder, is transported by a rotating cutter ring to a stationary cutting means. The portion of the cutter ring before the cutting means is covered so that the yarn is

not immediately cut, but passes first the cutting means by, and is transported until it again arrives at the cutting



means whereby yarn ends of sufficient length remain and are held by holding means within the cutter ring.

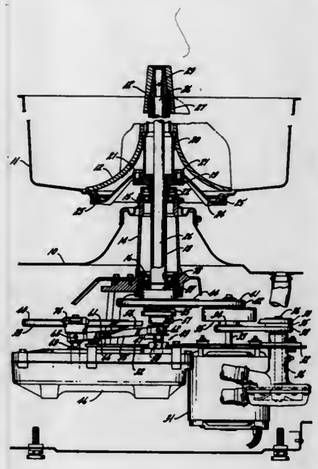
3,557,579
WASHING MACHINE
Donald Marshall, Edina, Minn.
(4904 Sunnyside Road, Minneapolis, Minn. 55424)
Filed Dec. 16, 1968, Ser. No. 784,050
Int. Cl. D06f *39/06*
U.S. Cl. 68—23.5 **26 Claims**



The improved washing machine of the present invention is particularly adapted for washing clothes and the like in wash water having a relatively high concentration of sudsable soap or synthetic detergent. The improved washing machine includes a rotatable, vertically disposed, inverted frusto-conical washing chamber positioned in, but spaced from, the walls of a stationary reservoir chamber. The lower, closed end of the reservoir chamber forms a wash reservoir. The upper open end of the washing chamber is substantially closed by a removable cover which includes means for introducing wash water into the interior of the washing chamber, means for permitting wash water to be removed from the washing chamber during high speed rotation of the washing chamber, and means for suppressing suds in the wash water removed from the washing chamber before the wash water is permitted to return to the reservoir. A suds shield is utilized to prevent suds from contacting the sides of the rotating washing chamber while the wash water is returning to the reservoir from the washing chamber. A rotating disc is positioned in the reservoir and is utilized to suppress suds formed in the wash water in the reservoir.

During operation, the washing chamber is rotated at a relatively high rotational speed about its vertical, central longitudinal axis so that the clothes and wash water in the washing chamber form an annular layer about the axis. Periodically, abruptly and briefly the rotational speed of the washing chamber is reduced to a rotational speed below that necessary to maintain the annular layer of clothes and wash water so that the clothes are tumbled and rearranged in the washing chamber. The rate of wash water being introduced and removed from the washing chamber is preselected so that during high speed rotation of the washing chamber, wash water in excess of that necessary to saturate the clothes is always present in the washing chamber.

3,557,580
WASHING MACHINE TRANSMISSION
Karlis V. Racenis and John Richard Cochran, Ripon, Wis., assignors to McGraw-Edison Company, Ripon, Wis., a corporation of Delaware
Filed Feb. 10, 1969, Ser. No. 798,080
Int. Cl. D06f *37/40*
U.S. Cl. 68—23.7 **14 Claims**

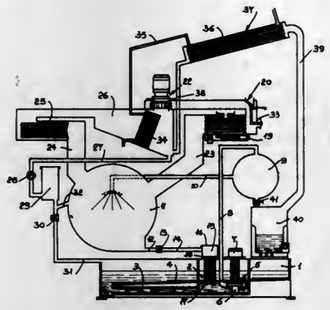


A laundry machine drive mechanism for agitation and centrifgal drying controlled by reversing a power motor which drives through two pulleys mounted on screw threads for limited independent axial and rotational movement, one of which operates a lever to engage and disengage an agitator clutch and the other of which operates to set a tub-brake and alternately to engage a friction clutch to spin the tub for centrifugal drying.

3,557,581
DRY CLEANING APPARATUS
Attilio Donini, Bruno Donini, and Teodoro Donini, all of Via Croce Coperta 6, Bologna, Italy
Filed Apr. 12, 1968, Ser. No. 721,126
Claims priority, application Italy, Apr. 13, 1967, 1,607/67
Int. Cl. D06f *29/00, 39/00*
U.S. Cl. 68—18 **3 Claims**

A dry cleaning apparatus with at least one solvent storage container, a washing tank and relative washing cage, a circuit for circulating the solvent recovery and regenera-

tion circuits for the solvent, filter members, at least one pump for circulating the solvent, at least one source of



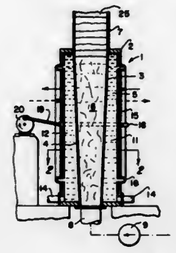
hot air, at least one condenser and a distiller for the solvent.

3,557,582
MEANS FOR TREATING YARNS
John G. Tillotson, Dalton, Ga., assignor to Advance Finishing, Inc., Dalton, Ga., a corporation of Georgia
Filed Sept. 9, 1968, Ser. No. 758,356
Int. Cl. B05c *9/14, 11/24*
U.S. Cl. 68—19 **5 Claims**

A vertical steam tube for dyeing textile yarns is provided with a bundle elevator upon which are piled a plurality of incoming yarns impregnated with dye liquor. The yarns are withdrawn from the bottom of the bundle or pile through an aperture in the elevator, and thence through the bottom end of the steam tube. Twisting and tangling of the yarns is reduced by operating the elevator intermittently to maintain the top of the bundle near the top of the steam tube.

3,557,583
PULP STRAINER
John P. Rich, Nashau, and Lawrence A. Carlsmith, Amherst, N.H., assignors to Improved Machinery Inc., Nashua, N.H., a corporation of Delaware
Filed Sept. 10, 1968, Ser. No. 758,749
Int. Cl. D21c *9/06*
U.S. Cl. 68—181 **18 Claims**

An apparatus for filtering pulp from a liquid suspension including feeding the suspension of pulp between a pair of spaced screens and applying pressure impulses to the screens to progressively propel the pulp mat across the screens while the liquid filtrate drains through the screens. Means for creating the pressure pulses include



varying the volume of chambers behind the screens and intermittently connecting a pump to the chambers behind the screens.

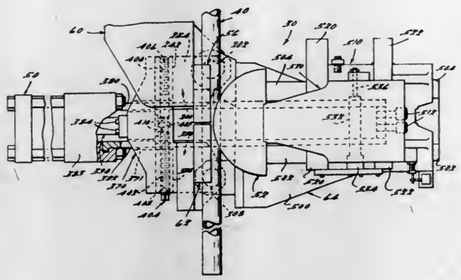
3,557,584
SAFETY LOCK FOR VEHICLES
Benito Triglia, 11 Pine Ave., Ossining, N.Y. 10562
Filed Aug. 20, 1968, Ser. No. 753,996
Int. Cl. B60r *25/02;* **E05b** *65/12;* **G05g** *5/16*
U.S. Cl. 70—179 **4 Claims**

A vehicle provided with hydraulic brakes is locked by hydraulic braking means by locking one or more of the four wheels of the vehicle. This is accomplished by a master safety lock control which is operated by turning the ignition key. The steering column can be also locked by a hydraulic brake. The ignition key can be provided with a self-ejecting device.

3,557,585
METHOD OF BENDING PIPE
Floyd Inda, Racine, Wis., assignor, by mesne assignments, to Tenneco Inc., Houston, Tex., a corporation of Delaware
Original application Sept. 1, 1960, Ser. No. 53,407, now Patent No. 3,426,562. Divided and this application Nov. 6, 1967, Ser. No. 680,641
Int. Cl. B21d *7/12, 7/04*
U.S. Cl. 72—7 **3 Claims**

The bending method of this invention utilizes loading mechanism for the acceptance of lengths of metal tube, a

tube feed mechanism for positioning the tube axially and rotatively with respect to the bending head, a bending head to form the desired bends in the tube, and a numerical control system for controlling the tube feed mechanism and bending head to bend the tube at the axial and rotative position and to any desired angle of bend dictated by the numerical input intelligence. After each bend is accomplished, the tube is axially advanced to the position of the next bend, and rotated if necessary, by the feed



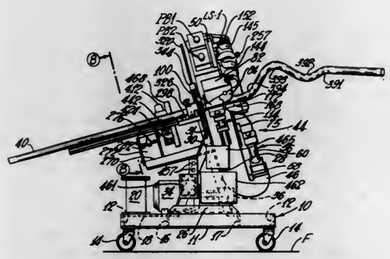
mechanism the sequence being repeated for any desired number of bends. After the tube is moved through the machine by the feed mechanism and the desired bends are completed, the feed mechanism ejects the tube and indexes to an initial position for the acceptance of the next tube from the loading mechanism. Suitable electrical and hydraulic controls, auxiliary to the numerical control system, provide for automatic operation of functions not requiring numerical control.

3,557,586

APPARATUS FOR BENDING TUBING

Daniel A. Zmuda, Toledo, Ohio, assignor to Oldborg Manufacturing Company, Grand Haven, Mich., a corporation of Michigan

Filed June 12, 1968, Ser. No. 736,317
Int. Cl. B21j *7/26*
U.S. Cl. 72—22 **18 Claims**



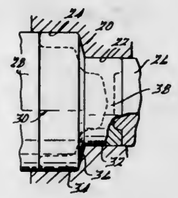
This disclosure embraces a method of and apparatus for forming or impressing successive bends in tubing, such as exhaust pipes for internal combustion engine exhaust systems, the method and apparatus providing for forming successive bends of various depths and angularities while maintaining positive control of the tubing during the successive operations to assure the proper orientation of the bends in the tubing.

3,557,587

FORGING METHOD

Jerry E. Cardillo, Dearborn, Mich., assignor to Federal-Mogul Corporation, Detroit, Mich., a corporation of Michigan

Original application Oct. 23, 1965, Ser. No. 503,400, now Patent No. 3,378,903, dated Apr. 23, 1968. Divided and this application Apr. 5, 1968, Ser. No. 719,274
Int. Cl. B21j *1/06, 3/00*
U.S. Cl. 72—41 **27 Claims**



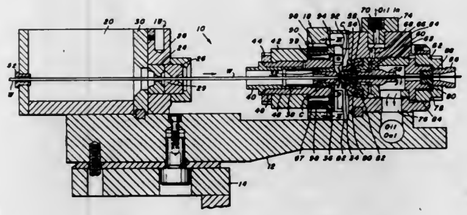
A method for forming ferrous parts at an intermediate temperature between normal hot forging and cold forming temperatures.

3,557,588

METHOD AND APPARATUS FOR SHAVING WIRE

John P. Catlin, Beaver, and Ted H. Widener, Pittsburgh, Pa., assignors to Crucible Inc., a corporation of Delaware

Filed Apr. 18, 1968, Ser. No. 722,270
Int. Cl. B21b *45/02*
U.S. Cl. 72—45 **6 Claims**



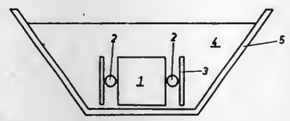
This invention relates to a method and apparatus for shaving titanium wire. More particularly, the invention relates to a practice for eliminating processing and quality difficulties encountered in the shaving of titanium wire to produce, in particular, a wire of superior surface quality. This is achieved by the operation of cold working said wire prior to shaving, using a low viscosity (50 to 150 SUS at 100° F.) cutting oil and a rake angle of between about 5 to 12 degrees between the die and the wire during shaving. The wire is shaved while traveling at a speed up to 150 feet per minute. The chips shaved from the wire during this operation are continuously removed.

3,557,589

METHOD AND APPARATUS FOR EXPLOSIVELY DEFORMING CYLINDERS

Ludwig Schwarz, Kapfenberg, Austria, assignor to Gebr. Bohler & Co., Aktiengesellschaft, Vienna, Austria

Filed July 25, 1968, Ser. No. 747,639
Int. Cl. B21d *26/08*
U.S. Cl. 72—56 **10 Claims**



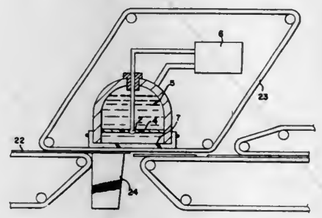
A method of and apparatus for explosively cold deforming a metallic hollow cylindrical workpiece. A substantially cylindrical explosive charge holder having a ring shaped charge about its outer periphery is mounted coaxially within the hollow cylindrical workpiece. Then the holder, charge and workpiece are submerged in a vessel filled with fluid energy transmitting medium. The charge is detonated and the explosive energy is transmitted through the medium to expand the workpiece outwardly. Preferably the charge holder has a circumferential concave recess within which the charge is mounted. It is also possible to explosively deform hollow cylindrical workpieces of relatively great height by first explosively deforming the bottom portion of the workpiece as described above, inverting the partially deformed workpiece, and detonating a second charge to complete the deformation.

3,557,590

HYDROELECTRIC FLUID FORMING DEVICE

Paul M. Erlandson, Palos Park, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed Aug. 27, 1968, Ser. No. 755,641
Int. Cl. B21d *26/14*
U.S. Cl. 72—56 **15 Claims**



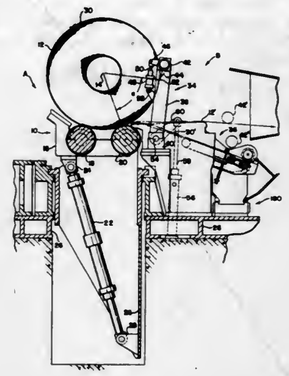
A material working apparatus including a stationary chamber having fluid therein and one or more pairs of electrodes in the fluid to allow an electrical discharge between them. Across the bottom of the chamber is a flexible diaphragm. A second chamber having a flexible diaphragm across its top and bottom is located adjacent the first chamber so that pressure pulses developed in the first chamber may be passed through the diaphragm into a fluid in the second chamber and then to a material which is to be formed. The energy applied through the second chamber may be applied to a flexible diaphragm which in its turn is used to press the material being worked and form it in some way against a die.

3,557,591

METHOD AND APPARATUS FOR REMOVING AND DISPOSING OF WRAPPING BANDS FROM BOUND COILS

Arthur L. Lind, Salem, Ohio, assignor, by mesne assignments, to Gulf & Western Industrial Products Company

Filed Apr. 29, 1968, Ser. No. 724,836
Int. Cl. B21c *47/02*
U.S. Cl. 72—130 **8 Claims**



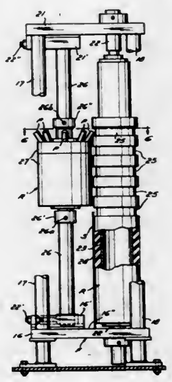
Method and apparatus for removing circumferential wrapping bands from bound coils by severing the band during rotation of the coil and, thereafter, feeding the band through a rotatable deforming unit.

3,557,592

APPARATUS FOR AND METHOD OF PRODUCING STRIP METAL

Edwin A. Corns, Rocky River, Ohio, assignor to Lee Wilson Engineering Company, Inc., Cleveland, Ohio, a corporation of Ohio

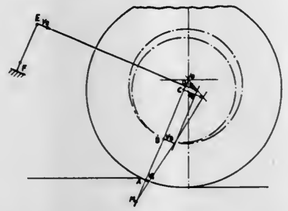
Filed Nov. 7, 1968, Ser. No. 774,108
Int. Cl. B21d *19/00*
U.S. Cl. 72—146 **14 Claims**



A method of producing strip metal in which spaced projections or bulges are formed along an edge of a length of strip, the projections being so dimensioned, as to span or chord and as to height or off-set from the plane of the strip surface, that the metal of the projections is not elongated during formation by a percentage amount

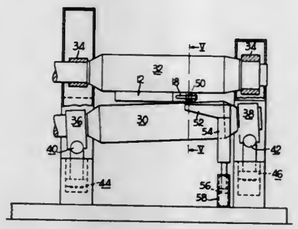
greater than the percentage elongation which will be imparted to the strip in a temper pass following annealing or other heat treatment of the strip in an open coil.

3,557,593
DEVICE FOR FORMING WORKABLE MATERIALS
Georg Bollig, Buderich, near Dusseldorf, Otto Döpper, Krefeld, and Hans Thiemann, Dusseldorf, Germany, assignors to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a German company
Filed Jan. 2, 1969, Ser. No. 788,413
Claims priority, application Germany, Jan. 2, 1968, 1,652,559; Aug. 7, 1968, 1,752,928; Nov. 28, 1968, 1,811,461
Int. Cl. B21b *13/18*; B21j *7/16*
U.S. Cl. 72—190 34 Claims



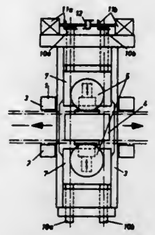
A device for forming material, having two co-operating tool rings with forming sectors which move towards each other to form the material, each tool ring being eccentrically mounted and having a gear which meshes with a gear on an eccentrically-mounted control system, the number of teeth on the gears being related that the material is formed in stages with the effective pair of forming sectors changing after each stage.

3,557,594
METHOD OF MAKING A TRUNCATED CONICAL BODY
James K. Pease, Milwaukee, Ralph A. Keidel, West Allis, and Kattar U. Rao, Milwaukee, Wis., assignors to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Nov. 20, 1968, Ser. No. 777,251
Int. Cl. B21b *1/00*; B21d *9/08*; B21c *37/02*
U.S. Cl. 72—203 7 Claims



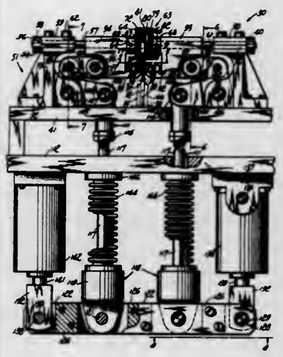
A method of making a truncated conical body such as a head for grinding mills or the like, in which the truncated conical body is fabricated of a pluralty of truncated conical sectors welded to each other. Each truncated conical sector is formed from an initially flat piece of rolled steel plate cut into the developed shape of the conical sector and subsequently bent into the shape of a truncated conical sector while being mounted during the bending operation for swiveling movement about a point coincident with the projected apex of the truncated cone. A hollow trunnion is welded to the outer surfaces of the fabricated truncated cone.

3,557,595
UNIVERSAL ROLLING MILL
Karl Illert, Neuss, Germany, assignor to Siegener Maschinenbau, G.m.b.H., a corporation of Germany
Filed Mar. 12, 1968, Ser. No. 712,410
Claims priority, application Germany, Mar. 17, 1967, S 108,898
Int. Cl. B21b *31/08*
U.S. Cl. 72—237 5 Claims



The universal rolling mill disclosed is designed for alternative employment for rolling either beams or plate. The rolling mill comprises housings for supporting a frame that, in turn, receives a pair of horizontal rolls with their chocks. The frame, when rolling beams, supports a pair of vertical rolls and their chocks located in a co-planar relationship with the horizontal rolls. When rolling plate, the frame supports the chocks of two pairs of vertical rolls located within the region of the circumference of the horizontal rolls. The frame is also provided with two pairs of screws for independently adjusting each pair of vertical rolls when rolling plate or by means of a clutch synchronously adjusting the vertical rolls when rolling beams. The housings are each provided with screws for adjusting the horizontal rolls.

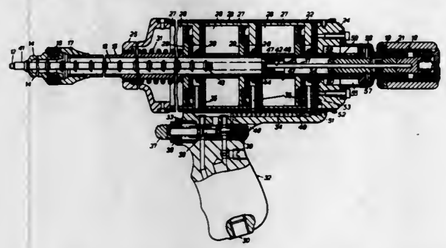
3,557,596
METHODS OF AND APPARATUS FOR SEALING A TUBULATION
Werner F. Esseluhn, Wyomissing, and Charles R. Fegley, Laureldale, Pa., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed Mar. 18, 1968, Ser. No. 713,683
Int. Cl. B21d *14/04*, *43/18*
U.S. Cl. 72—367 16 Claims



Methods of and apparatus for sealing a tubulation extending upwardly from, and attached to, an article which is supported on a conveyor, in which a spring-load magnetic chuck attracts the free end of the tubulation

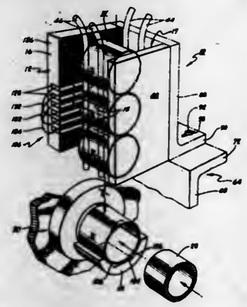
and holds the article slightly above the conveyor. First and second opposed members are moved toward each other to pinch seal the tubulation with the axial elongation of the tubulation in opposite directions taken up by the magnetic chuck pushed upwardly against the spring and the article moving downwardly toward the conveyor.

3,557,597
RIVETING APPARATUS
Victor Lorraine Heslop, Welwyn Garden City, and Leonard Saunders, Hatfield, England, assignors, by mesne assignments, to Aerpat A.G., Zug, Switzerland, a company of Switzerland
Filed Sept. 11, 1967, Ser. No. 666,876
Claims priority, application Great Britain, Sept. 16, 1966, 41,476/66
Int. Cl. B21d *9/05*
U.S. Cl. 72—391 12 Claims



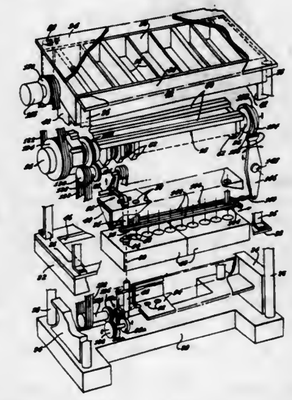
A repetition blind-riveting gun, of the type in which a column of tubular rivets is carried on a mandrel having an enlarged head which is pulled through each rivet in turn to expand it, has a pneumatically-operated device for feeding the column of rivets forward after each operation. This device comprises a piston, slidable along the mandrel, to the rear side of which compressed air is supplied once in each cycle of operation of the gun. There may also be provided a relief valve for automatically venting to atmosphere this compressed air supply if the mandrel is not securely gripped by the jaw-mechanism which holds it in the gun.

3,557,598
ELECTROMAGNETIC FEEDING DEVICE
Cornelis Langewis, Walnut Creek, and Arthur Dean Smith, also known as A. Dean Smith, San Lorenzo, Calif., assignors to Kaiser Aluminum & Chemical Corporation, Oakland, Calif., a corporation of Delaware
Filed Mar. 4, 1969, Ser. No. 804,248
Int. Cl. B21d *22/00*
U.S. Cl. 72—361 13 Claims



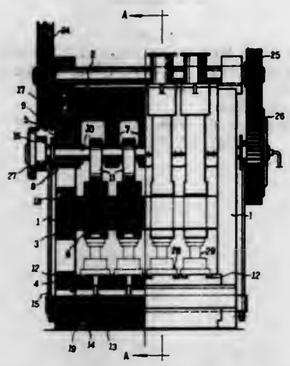
An improved electromagnetic device for use in feeding cup-shaped workpieces and the like to an article forming apparatus or press of the type shown, for example, in U.S. Patent 3,314,274 to C. Langewis, granted on Apr. 18, 1967. The electromagnetic device includes a chute-like element and an electrically energizable stator means associated therewith which operates to generate and maintain an electromagnetic field relative to a metal workpiece disposed within the chute-like element in order to effect advancement of the workpiece along the chute-like element to a position where it can be readily engaged by the ram of the press and thereafter advanced by the ram through one or more forming dies of the press.

3,557,599
MULTIPLE STATION PLUNGER PRESS
Franklin C. Eickenhorst, Mason, Ohio, assignor to Dayton Reliable Tool & Mfg. Company, Dayton, Ohio, a corporation of Ohio
Filed Apr. 8, 1968, Ser. No. 719,469
Int. Cl. B21j *9/18*
U.S. Cl. 72—404 15 Claims



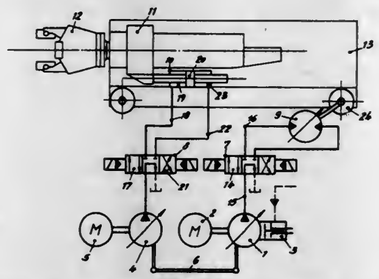
The equivalent of a row of individual plunger presses for successive stages in the production a finished sheet metal part is incorporated in a multiple-station automatic plunger press that has a lower elongated base structure and a corresponding upper crown structure with the two structures rigidly interconnected at their opposite ends to form a unitary frame. Upper dies at the series of stations are operated by corresponding plungers that are actuated by corresponding cams on an upper cam assembly and the working parts of the corresponding lower dies are operated in the same manner by lower plungers and a lower cam assembly. Precision processing of parts with close control of the dies at rates in the range of 200 to 300 pieces per minute is made possible in part by designing the crown structure and the base structure for deflections of a given maximum which, for example, may be as small as .001" under 15 to 30 ton loading. The base structure is of relatively heavy construction and has a lower natural frequency for adequate energy absorption and for minimum reaction to the die actuating forces. High speed precision processing is made possible in further part by staggering the operating strokes at the various stations in time as may be necessary to avoid simultaneous strokes that would be additive to cause more than the given maximum deflection. Exceptional flexibility with respect to the spacing of the stations, and the size of the workpieces is achieved by providing the plunger press with sets of interchangeable parts including interchangeable cam assemblies and interchangeable guides for the plungers.

3,557,600
TRANSFER PRESS
Tadashi Saito, 3–40 2-chome, Nakasu; Masaya Saito, 1–20 1-chome, Minamiguchi; and Masaru Saito and Hachiro Saito, both of 3–40 2-chome, Nakasu, all of Takarazuka, Hyogo Prefecture, Japan
Filed July 24, 1968, Ser. No. 747,184
Claims priority, application Japan, Nov. 16, 1967, 42/73,789
Int. Cl. B21j 9/18
U.S. Cl. 72—404 2 Claims



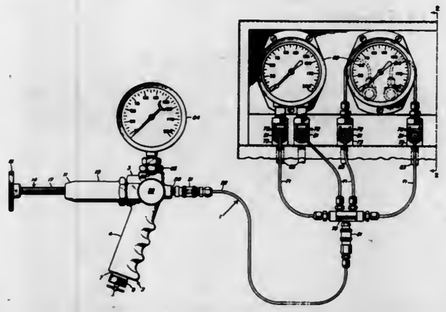
A transfer press comprises a pair of spaced pillars which support a beam, ram-slide and bed. The beam supports a main shaft providing cams for moving rams and has in its lower portion a plurality of shaft supporters. The ram-slide slidably supports each of the rams in perfect independent relationship with the adjacent rams so as to prevent each ram from being subjected to objectionable influences due to the movement of the other rams.

3,557,601
CONTROL OF A FORGING MANIPULATOR COOPERATING WITH A FORGING PRESS
Ludwig Schüssler, Willich, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a corporation of Germany
Filed Apr. 16, 1968, Ser. No. 721,824
Claims priority, application Germany, Apr. 22, 1967, Sch 40,595
Int. Cl. B21j 15/24
U.S. Cl. 72—420 3 Claims



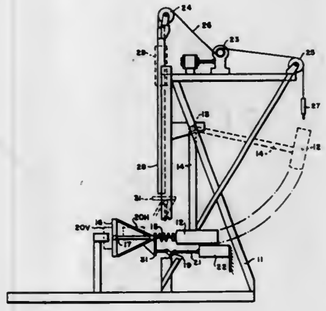
Means for controlling a forging manipulator cooperating with a forging press, comprising: a manipulator carriage with driving wheels running upon rails towards and away from the forging press, a tongs-holder and tongs axially and rotationally movable, a hydro-motor for driving the driving wheels of the manipulator carriage, a piston-and-cylinder unit actuated by fluid pressure for moving the tongs-holder axially at the same speed as the manipulator carriage either in the same direction or in the opposite direction, two adjustable means, such as hydro-pumps or quantity-regulating valves, a servo-control for continuously adjusting the two said adjustable means, and rodding through which the servo-control acts upon the said hydro-pumps or valves.

3,557,602
PRESSURE GAUGE TESTING SYSTEM
Virgil L. Frantz, Salem, Va., assignor to Graham-White Sales Corporation, Salem, Va., a corporation of Virginia
Filed Oct. 15, 1968, Ser. No. 767,631
Int. Cl. G01l 27/00
U.S. Cl. 73—4 18 Claims



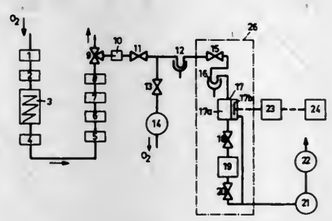
A pressure gauge is calibrated by using a hand-holdable testing gun with a fitting for mounting the pressure gauge. A pressure line leads from the testing gun to the gauge. The fitting locks the gauge in place during testing and prevents unlocking of the gauge except on removal of a plug which normally closes the fitting's testing port. The gun carries a gas charge and the maximum pressure of the gas charge is varied over the test range of the gauge. A master gauge is mounted on the gun to compare the test pressure with the gauge being tested.

3,557,603
SHOCK MACHINE
William E. Carr, Rockville, Md., assignor to the United States of America as represented by the Secretary of the Navy
Filed Mar. 26, 1968, Ser. No. 716,156
Int. Cl. G01n 3/08
U.S. Cl. 73—12 4 Claims



A high impact shock machine for imparting shock of a controlled and reproducible magnitude to test specimens.

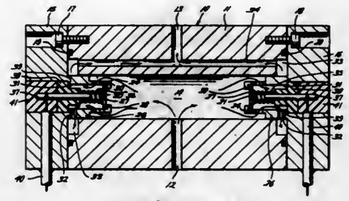
3,557,604
METHOD AND APPARATUS FOR MEASURING OF A GAS FORMING PART OF A GAS MIXTURE, PREFERABLY FOR MEASURING THE QUANTITY OF CARBON OF SOLID BODIES SUCH AS STEEL AND CARBIDES
Nils Johannes Baecklund, Flygeln, Sweden, assignor to Avesta Jernverks Aktiebolag, Avesta, Sweden, a corporation of Sweden
Filed Oct. 25, 1968, Ser. No. 770,760
Claims priority, application Germany, Apr. 29, 1968, 1,773,315
Int. Cl. G01n 7/04
U.S. Cl. 73—19 10 Claims



An automatical analyser measures the percentage of a component such as carbon, sulphur, hydrogen, etc. of a solid, liquid or gaseous substance, particularly the carbon contents of steel, hard metals and carbides, by low pressure measurement of gas. A sample of said substance is decomposed, for example thermically, to release said component in gaseous form, preferably as a suitable gaseous oxide or similar compound. After purification, the component gas thus obtained is separated from all other gases by a freezing process and the component gas is frozen and cooled to a temperature lower than the freezing point thereof. The space containing said frozen gas is hermetically sealed and evacuated. Then, the frozen gas is evaporated and passes through an evacuated gas line into an evacuated space of a pressure gauge device wherein the component gas is refrozen. Then the latter space is cut off from said line and the first space. The frozen gas is evaporated again and caused to operate the pressure gauge device under constant volume and temperature condition so that this device indicates the pressure of the evaporated gas, which pressure is a measure of the quantity of the gas in dependence on the gas constant, constant volume, constant temperature and variable pressure.

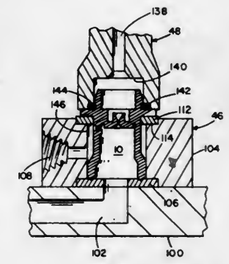
3,557,605
ULTRASONIC ACOUSTICAL ANALYSIS
Keith P. Lanneau, Baton Rouge, La., and James A. Parnell, Houston, Tex., assignors, by mesne assignments, to Tracor, Inc., Austin, Tex., a corporation of Texas
Filed Mar. 31, 1967, Ser. No. 627,518
Int. Cl. G01n 29/02
U.S. Cl. 73—24 18 Claims

A sound cell for analyzing fluids, such as the effluent of a gas chromatograph, utilizes low Q transducers mounted on stems extending into the sound cell which stems have sharp edged frontal retaining lips which make substantially linear contact with the acoustic face of the transducer. The transducers are biased against the lips by springs which also serve as the electrical contact with the transducer. Gas flow through the cell surrounds the transducers preventing a pressure drop across them. Gas flow also serves to sweep the seals of the cells to prevent ingress of foreign material. The cell is utilized in a fluid



analysis system together with a drive oscillator and output amplifiers maintained in a controlled temperature environment, and a phase meter capable of recording increments of phase shift in excess of 360°.

3,557,606
GAUGING SYSTEM
Joseph Thomas Markey, Providence, R.I., assignor to The Gillette Company, Boston, Mass., a corporation of Delaware
Filed Sept. 25, 1968, Ser. No. 762,571
Int. Cl. G01b 13/08
U.S. Cl. 73—37.8 12 Claims

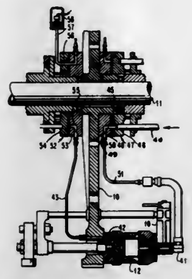


A dimensional gauging system for gauging selected dimensions of a workpiece includes a workpiece holder adapted to receive a workpiece that has a plurality of dimensions to be simultaneously gauged. The workpiece holder has a plurality of inlet fluid passages, which are disposed to direct fluid flow to different portions of the workpiece for simultaneously gauging the several selected dimensions thereof. A plurality of pressure gauging elements are provided for simultaneously gauging each of the selected dimensions as functions of the fluid pressures in the fluid passages, each of the plurality of pressure gauging elements being connected to a corresponding one of the inlet passages.

3,557,607
CONTROL VALVE FOR CAN TESTING APPARATUS
Maynard Harry Riddell, Randolph, and Charles William Scharf, Salamanca, N.Y., assignors to Borden, Inc., New York, N.Y., a corporation of New Jersey
Filed Feb. 24, 1969, Ser. No. 801,571
Int. Cl. G01m 3/32
U.S. Cl. 73—49.2 4 Claims

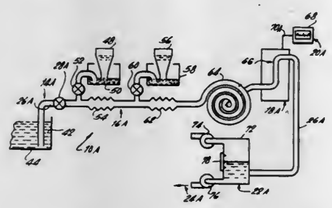
A can testing apparatus having a plurality of chambers in association with turntable, a station where air is injected into a can within a chamber and a station where

the can is tested for leaks. A chamber closure is provided having a valve which is responsive to the presence of a can in a chamber to allow the injection of air into the can.



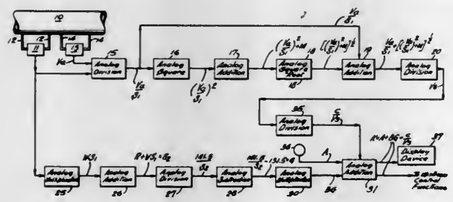
Since the chamber closure valve is responsive only to the presence of a can it protects the delicate leak detector from high pressures.

3,557,608
FLUID ANALYSIS SYSTEM
Alan H. Molof, 26 Roslyn Lane, New City, N.Y. 10956
Filed Sept. 6, 1968, Ser. No. 758,089
Int. Cl. G01n *33/18*
U.S. Cl. 73—53 **4 Claims**



A system for taking samples of a fluid and passing the same through a series of analytical stages without physically damaging the sample. A suction apparatus is provided at the discharge end of the system and is used as the motor force to draw a sample from the environment of the fluid through various analytical and operative stages during which the sample is analyzed.

3,557,609
METHOD AND APPARATUS FOR MONITORING THE PARAFFINICITY CHARACTERIZATION OF HYDROCARBON MIXTURES
Robert A. Woodle, Nederland, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
Filed Mar. 27, 1969, Ser. No. 811,056
Int. Cl. G01n *11/00, 33/26*
U.S. Cl. 73—53 **15 Claims**



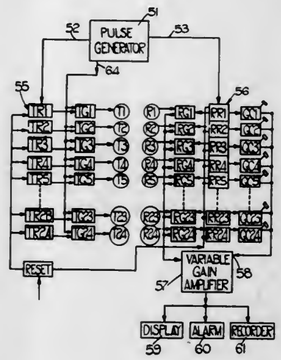
A method for determining the Watson-Nelson characterization factor of hydrocarbons wherein the viscosity and gravity are sensed providing first and second signals, respectively, corresponding to the Saybolt viscosity and API gravity. The signals are then combined in accordance with the following equation:

$$K=A+BG+\frac{C}{V_s}$$

where:

K=the Watson-Nelson characterization factor of the hydrocarbon mixture; V_s=the Saybolt Universal viscosity of the hydrocarbon mixture;
G=the API gravity of the hydrocarbon mixture at 60° F.; and A, B, and C are predetermined constants.

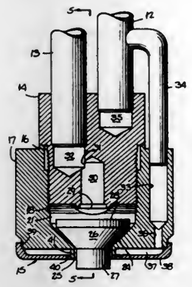
3,557,610
ULTRASONIC TESTING APPARATUS
Donald Malcom Wilson, Linton, England, assignor to S.T.D. Services Limited, Birmingham, England, a British company
Filed Mar. 11, 1968, Ser. No. 712,086
Int. Cl. G01n *29/04*
U.S. Cl. 73—67.5 **2 Claims**



An ulta-sonic testing equipment uses a series of receiving transducers which are scanned by a ring counter arrangement. The signals from the transducers are fed to a variable gain amplifier. A series of separate pre-set gain control circuits associated with the amplifier are scanned in synchronism with the scanning of the transducers to allow for variations in the sensitivity of the transducers.

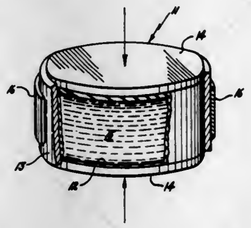
3,557,611
TONOMETER WITH CORRECT USAGE INDICATOR
Herbert H. Adise, Great Neck, N.Y., assignor to Computer Instruments Corporation, Hempstead, N.Y., a corporation of New York
Filed Nov. 1, 1968, Ser. No. 772,628
Int. Cl. A61b *3/16*
U.S. Cl. 73—80 **9 Claims**

In a projecting plunger type of tonometer, a circular orifice is disposed around the plunger in the end wall of the probe communicating with a chamber supplied with air from a low capacity pump. Proper application of the tonometer to an eyeball will occlude the entire circular orifice causing the air pressure within the aforesaid chamber to build up to the maximum capacity of the pump within the time necessary for the instrument to take a tonometric reading which pressure can be read from a



pressure guage as an indication of such correct operation of the instrument.

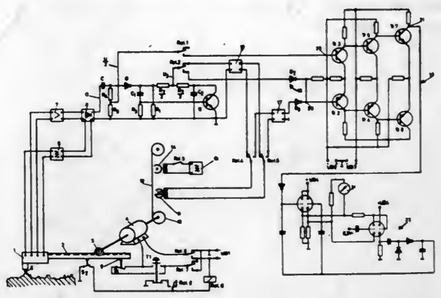
3,557,612
SOIL STRESS GAUGE
Gerald P. D'Arcy, Livermore, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Jan. 7, 1969, Ser. No. 789,456
Int. Cl. G01l *1/22*
U.S. Cl. 73—94 **4 Claims**



A soil stress gauge which effectively matches nonlinear stress-strain properties of soil, including a flexible container filled with a fluid medium constrained inside a cylindrical ring. Freely moving diaphragm plates disposed coaxially at each end of the cylindrical ring transmit stresses applied parallel to the longitudinal axis of the gauge to the fluid. The fluid translates longitudinal stresses to radial stresses which expand the cylindrical ring. The expansion of the ring is detected and measured by strain gauge means attached thereto.

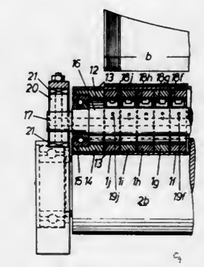
3,557,613
METHOD OF AND APPARATUS FOR GENERATING ELECTRICAL VOLTAGE CORRESPONDING TO A CONTOUR PROFILE CURVE OF A SURFACE TO BE TESTED FOR ROUGHNESS
Johannes Perthen, 21/23 Wohlenbergstrasse 3, Hannover 1, Germany, and Friedrich Hildebrandt, Langenhagen, and Werner Gerighausen, Ronnenberg, Germany; said Hildebrandt and Gerighausen assignors to said Perthen
Filed Mar. 29, 1968, Ser. No. 717,284
Claims priority, application Germany, Oct. 27, 1967, P 43,270
Int. Cl. G01b *5/28*
U.S. Cl. 73—105 **11 Claims**

Method of and apparatus for generating a voltage curve that corresponds to the contour profile of a surface. The contour profile is a curve that consists of a series of upwardly convex, interconnected arcs. A stylus traces the surface in a first direction, then retraces the surface in a second, opposed direction. By means of a transducer and an RC circuit two voltage curves are consecutively generated which comprise arcuately declining portions.



The two voltage curves are simultaneously applied to a comparator at the output of which there appears the larger one of the two compared values. The series of voltage values supplied by the comparator constitutes a voltage curve that corresponds to the said contour profile.

3,557,614
MEASUREMENTS OF LONGITUDINAL STRESSES IN MOVING METAL BANDS AND DEVICES THEREFOR
Wolfgang Mühlberg, Gertrudisstr. 9, Krefeld-Bockum, Germany
Filed Jan. 23, 1967, Ser. No. 611,141
Claims priority, application Germany, Jan. 25, 1966, 1,573,698; Oct. 28, 1966, 1,573,716
Int. Cl. G01l *5/10*
U.S. Cl. 73—144 **3 Claims**

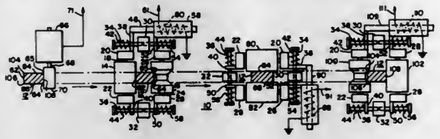


A device for measuring longitudinal stresses occurring across moving metal bands under longitudinal tension by means of a deflecting roller carrying measuring discs. The deflecting forces arising in the center of the band and at both edges are measured. These deflecting forces are proportional to the tensile stresses.

3,557,615
APPARATUS FOR DETECTING FLAWS IN AN ELONGATED MOVING STRAND
James O. Seymour, Jr., Murrysville, Pa., and Hendrick B. F. Agterhuis, Eindhoven, Netherlands, assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 27, 1969, Ser. No. 828,196
Int. Cl. G01l *5/00;* **B65h** *25/00*
U.S. Cl. 73—160 **10 Claims**

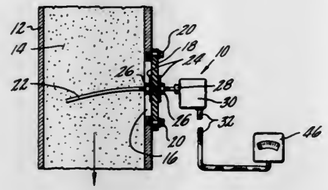
Apparatus for detecting flaws in an elogated moving strand comprising a plurality of pairs of oppositely disposed rollers through which the strand moves. A first

roller of each pair has attached thereto and movable therewith a coil and a second roller of each pair has attached thereto and movable therewith a permanent magnet core. The permanent magnet core of the second roller is positioned inside the coil of the first roller. When a flaw in the strand is detected by either of the rollers the permanent magnet core moves relative to the coil and a voltage is induced in the coil. An electrical tachometer measures the speed of movement of the strand. The output from the tachometer is a voltage output. The voltage output from the coils associated with each pair of rollers



is compared with the voltage output from the tachometer in operational amplifier means. If the voltage output from a coil is greater than the voltage output from the tachometer a signal from the operational amplifier means operates a flip-flop circuit which in turn opens a circuit breaker which shuts down the machine which is moving the strand. After the flaw in the strand is corrected, a signal is injected into the flip-flop to restart normal operation and the circuit breaker is closed and the machine again starts the strand moving through the pairs of rollers.

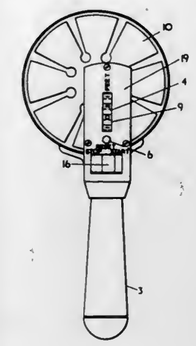
3,557,616
PARTICLE FLOW SENSING DEVICE
William W. Landon, Jr., Hebron, and Robert W. Kulik, East Granby, Conn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Sept. 29, 1967, Ser. No. 671,728
Int. Cl. G01p *5/02*
U.S. Cl. 73—228 **2 Claims**



A flow sensing device comprising a piezoelectric means supported upon and activated by an elongated member placed in the flow path of a particle-entrained flow, the piezoelectric means being a radially stressed ceramic piezoelectric crystal of cylindrical configuration producing an electrical signal in response to the impact of the particles on the elongated member.

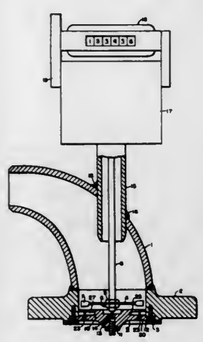
3,557,617
VANE ANEMOMETERS
Alexander Connor Wilson, High Wycombe, Buckinghamshire, and Peter Edward Bagley, Henley-on-Thames, Oxfordshire, England, assignors to Airflow Developments Limited, High Wycombe, England, a British company
Filed June 26, 1968, Ser. No. 740,244
Claims priority, application Great Britain, June 30, 1967, 30,362/67
Int. Cl. G01f *1/02*
U.S. Cl. 73—229 **4 Claims**

A vane anemometer intended to be held in an operator's hand and comprising a vaned rotor releasably coupled to a rotary digital drum counter, there preferably being provided means by which the counter can be started, stopped



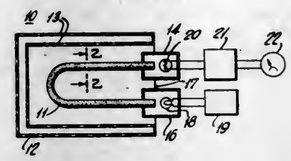
and reset by part of the same hand by which the instrument is held in the air stream of which the velocity is to be measured.

3,557,618
FLUID METERS AND FLUID CONDUIT SYSTEMS EMBODYING THE SAME
Wilbur W. Stevenson, 1125 Lancaster Ave., Pittsburgh, Pa. 15218
Filed Sept. 11, 1968, Ser. No. 759,043
Int. Cl. G01f *1/06*
U.S. Cl. 73—231 **4 Claims**



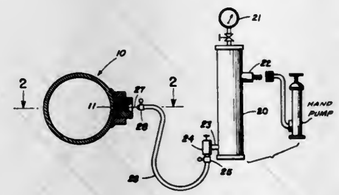
This invention relates to fluid flow meters for measuring accurately the flow of gases and liquids, the meter comprising a disk rotor with a plurality of small blades about its periphery, the blades being from about 5° to 40° to vertical to the disk, and a relatively unobstructed annular nozzle concentric with the rotor directing fluid at the blades so as to drive the rotor smoothly. The meter is connected to a conduit in which fluid is flowing and passing through an orifice so that a small portion is conveyed to the meter. A dual meter arrangement is disclosed for recording wide rates of fluid flow in a conduit.

3,557,619
HUMIDITY MEASURING METHOD AND APPARATUS
Abe Hershler, Flushing, N.Y., assignor to Phys-Chemical Research Corp., New York, N.Y., a corporation of New York
Filed Mar. 17, 1969, Ser. No. 807,754
Int. Cl. G01n *21/22*
U.S. Cl. 73—336.5 **22 Claims**



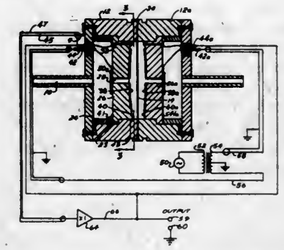
A humidity measuring method and apparatus comprises a sensing member including a radiation light transparent non-hygroscopic, water-insoluble dielectric substrate, such as DVB cross-linked polystyrene, having a radiation transparent conducting ion-exchange surface layer of almost equal or relatively lower refractive index, such as the surface sulfonated polystyrene in a lithium state or a coating having a conductivity varying with humidity. Radiation is directed into the substrate with a component at approximately the Snell critical angle to the substrate layer interface and the phase or intensity of the light emerging from the substrate is a measurement of the ambient humidity. The evanescent radiation lost through the interface at or near the critical angle is responsive to the conductivity of the conducting layer which is responsive to ambient humidity.

3,557,620
FLUID PRESSURE MEASURING MEANS
William R. Jewett, Westfield, and Charles M. Krzyzkowski, Parlin, N.J., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey
Filed Mar. 20, 1969, Ser. No. 808,908
Int. Cl. G07l *7/00*
U.S. Cl. 73—388 **3 Claims**



A pressure measuring apparatus adapted to measure the pressure of a solids-burdened fluid in a chamber and having an aperture in the wall of the chamber sealed normally with a self-sealing apertured diaphragm adapted to be penetrated temporarily by a hollow needle-like pressure testing probe. The latter is connected to a pressurized vessel having a pressure gage and a valve and pressurized to well above the probable pressure in the chamber. The valve is arranged to release the pressure in the pressurized vessel until the pressures in the vessel and in the chamber respectively are equalized whereby the pressure gage measures the pressure in the chamber.

3,557,621
VARIABLE CAPACITANCE DETECTING DEVICES
Robert J. Ferran, Framingham, Mass., assignor to C.G.S. Scientific Corporation, Inc., Waltham, Mass., a corporation of Pennsylvania
Filed July 7, 1969, Ser. No. 839,378
Int. Cl. G01l *9/12*
U.S. Cl. 73—398 **10 Claims**

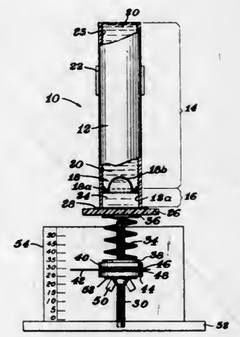


Variable capacitance detecting devices are described in which a conductive member insulated from the fixed and moveable electrodes is disposed within the device across the leakage path of one or more of the electrodes. An amplifier of unity gain is connected to establish the same instantaneous voltage and phase on the conductive member as that on the electrode.

Where the electrodes are within a housing from which leads are fed through to exterior circuitry, the lead from the conductive member surrounds the lead from one of the electrodes.

A pressure transducer for non-conductive fluids is shown in which the conductive member is a conductive coating applied to a dielectric plate, surrounding the fixed electrode which is also carried by the plate. Two of these plates are mounted on opposite sides of a diaphragm to achieve a balanced transducer, and leads from the conductive bands pass through apertures in the plate.

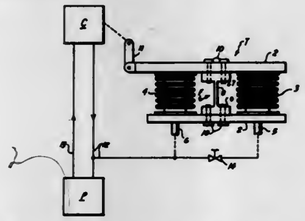
3,557,622
APPARATUS FOR MEASURING HYDROSTATIC PRESSURE OF LIQUID COMPOSITIONS
Lloyd B. Spangle, Tulsa, Okla., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Apr. 21, 1969, Ser. No. 817,745
Int. Cl. G07l *7/00*
U.S. Cl. 73—406 **6 Claims**



An apparatus is provided for accurately measuring hydrostatic pressure of slurry compositions which exhibit "self-supporting" characteristics, such as certain hydraulic cement slurries used in oil wells. The measuring device is basically an open end cylindrical container

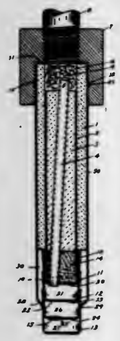
which is divided into upper and lower compartments by a liquid-impermeable diaphragm member. The slurry being measured for hydrostatic pressure is held in a static state in the upper compartment. The lower compartment contains a liquid, such as water, which is capable of being displaced by the pressure of the slurry on the diaphragm member. The water is temporarily retained in the lower compartment by a disc held flush against the base end of the container by a spring under compression. Gradual decompression of the spring to a point at which the downward hydrostatic pressure of the slurry overcomes the upward force exerted by the spring allows a small amount of water to seep under the base end of the container. This point, which is registered on a scale by an indicator activated by the spring, determines the true hydrostatic pressure of the slurry composition.

3,557,623
DEVICES HAVING FLEXURES OF ALUMINUM MATERIAL
Kenneth L. Shelter, Chili, N.Y., assignor to Sybron Corporation, a corporation of New York
Filed Oct. 8, 1968, Ser. No. 765,887
Int. Cl. G01l *7/06*
U.S. Cl. 73—410 **7 Claims**



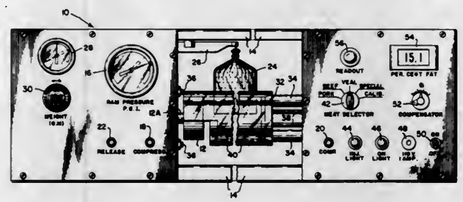
A rigid beam is fixed to a rigid base by a flexure for deflection by bellows connected between the beam and base. The flexure is an I-section extruded from 6061–T6 aluminum alloy stock.

3,557,624
DEVICE AND METHOD FOR SAMPLING MOLTEN METAL
William J. Collins, 7005 Madison St., Merrillville, Ind. 46410
Original application Mar. 18, 1968, Ser. No. 713,640. Divided and this application Mar. 25, 1969, Ser. No. 810,288
Int. Cl. G01n *1/12*
U.S. Cl. 73—425.4 **7 Claims**



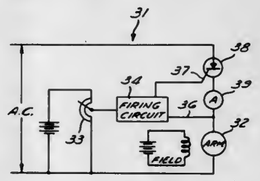
A molten metal sampling device having a tubular housing adapted to be dipped into a molten metal pool and able to withstand the high temperatures for at least a short period. A receiver for the sample is held within the housing and extends beyond the lower end thereof. The invention involves an additional sheath embracing the housing and extending beyond the lower end thereof and beyond the lower end of the receiver forming an air-space for protecting the lower ends of the two elements.

3,557,625
PERCENTAGE FAT ANALYZER
Alton Leger, Jr., Rosly, and Robert C. Whitehead, Jr., Oreland, Pa., assignors to Honeywell, Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 26, 1968, Ser. No. 748,049
Int. Cl. G01n *9/02*
U.S. Cl. 73—432 **3 Claims**



An electro-mechanical system is utilized to detect the weight, volume and temperature of a meat sample. A computer operates on the information supplied by the electro-mechanical system. The computer operates upon these inputs in conjunction with other inputs and constants in order to produce an output signal. The output signal is representative of the percentage fat content of the sample being processed.

3,557,626
BALANCE INDICATOR AND METHOD
Elmer J. von der Heide, 257 Atterbury Blvd., Hudson, Ohio 44236
Filed May 13, 1969, Ser. No. 824,095
Int. Cl. G01m *1/22*
U.S. Cl. 73—462 **6 Claims**

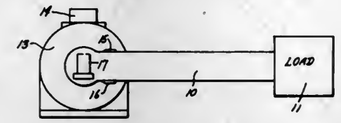


A balance indicator associated with each rotational axis of a casting machine comprising an ammeter in the power circuit of each drive motor to automatically indicate motor load, and therefore the magnitude of an unbalanced load and its angular position with respect to such axis.

3,557,627
APPARATUS FOR COMPENSATING INERTIAL EFFECTS
Donald A. Kugath, Scotia, and Ralph S. Mosher, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Filed Dec. 26, 1968, Ser. No. 787,159
Int. Cl. G01p *15/00*
U.S. Cl. 73—514 **4 Claims**

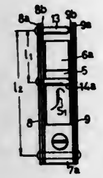
Apparatus for maintaining the limb of an operator in a relatively fixed position with respect to his body when he is subject to an acceleration field yet allow the operator

to move the limb freely with respect to his body. A lever arm member adapted to hold the limb of the operator is mounted at one end to pivot about a pivotal axis by means of a rotary actuator. The rotary actuator is responsive to the difference of a signal representing strain produced in the lever arm member by the acceleration of the lever arm member about the pivotal axis and a signal representing the acceleration of the pivotal axis in a direc-



tion perpendicular to the longitudinal axis of the lever arm member and the pivotal axis. When the lever arm member and the actuator are subject to a common acceleration field the member is maintained substantially stationary with respect to the point and when a force is applied to the member to pivot the member about the point, the actuator aids the movement of member in the direction of the applied force.

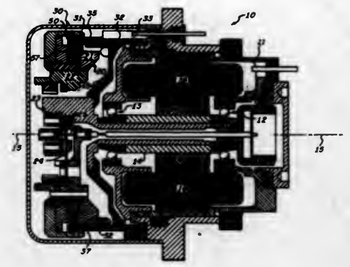
3,557,628
ACCELEROMETER
Koji Tsukada, Nagoya-shi, Aichi-ken, Japan, asignor to Kabushiki Kaisha Toyota Chuo Kenkyusho, Nagoya-shi, Aichi-ken, Japan
Filed Dec. 17, 1968, Ser. No. 784,401
Claims priority, application Japan, Dec. 27, 1967, 43/83,846; May 28, 1968, 43/36,591
Int. Cl. G01p *15/00*
U.S. Cl. 73—516 **9 Claims**



An accelerometer comprising a vessel filled with viscous liquid wherein is immersed a cantilever beam vibrator between a pair of damping walls close to and on both sides of the vibrator. Said damping walls are bi-metal strips which bend in a direction to reduce the space between said pair of damping walls when the temperature of said liquid is raised, thereby compensating for temperature change of the liquid and said walls have a stop element provided at an intermediate point between the fixed and free ends thereof. Desirably, several vibrators mounted at right angle to each other are housed in one vessel. To compensate for change in pressure of said liquid, a compressible and expansible fluid chamber is provided in the vessel and subjected to pressure of the liquid therein.

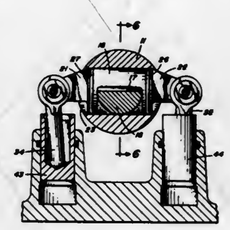
3,557,629
PICK-OFF AND TORQUING DEVICE
Thomas R. Quermann, Huntington Station, N.Y., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Apr. 10, 1968, Ser. No. 720,162
Int. Cl. G01c *19/28*
U.S. Cl. 74—5.6 **12 Claims**

A pick-off device for use with a sensitive element rotatably supported by a shaft for movement within a housing in which the pick-off means has one portion mounted on the sensitive element, another portion mounted on the shaft and still another portion mounted on the housing for providing an output signal accurately representative



of the relative displacement between the sensitive element and the shaft with respect to axes referenced to the housing. The device may also include torquing apparatus integral therewith.

3,557,630
ANTIBACKLASH DRIVING MECHANISM
Raymond J. Estlick, Winchester, Mass., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Mar. 24, 1969, Ser. No. 809,560
Int. Cl. F16h *27/02, 55/18*
U.S. Cl. 74—89 **3 Claims**

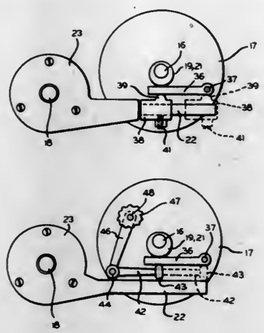


A driving mechanism for eliminating backlash having an output shaft with a flat surface thereon and a rocker arm having a center section with a flat surface engageable with the flat surface on the output shaft and first and second end sections of said rocker arm and first and second means for applying eccentric forces, respectively, to said first and second end sections thereby providing a torquing force to position said flat surface of said center section of said rocker arm in driving relation with said flat surface on said output shaft.

3,557,631
SPEED REDUCING MECHANISM
Arvid Dahlstrom, 1653 W. Carmen Ave., Chicago, Ill. 60640
Filed Jan. 2, 1969, Ser. No. 798,243
Int. Cl. F16h *27/10*
U.S. Cl. 74—125.5 **3 Claims**

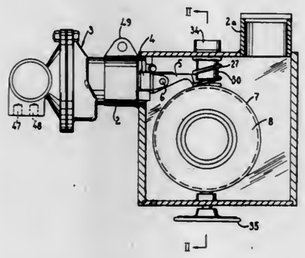
A speed reducing mechanism characterized by the absence of a gear train and comprising a driven shaft having an eccentric cooperating with a rock shaft connected through the medium of a one-way clutch to a

driven shaft. In an embodiment of the invention the angular movement of the rock shaft can be varied from zero to a desired maximum. In a further embodiment of



the invention the single drive shaft operates a pair of rock shafts each in turn connected through one-way clutch means to a driven shaft.

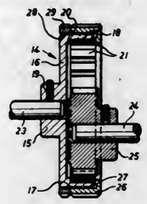
3,557,632
DEVICE FOR REVERSING MOTIONS
Carl-Gustaf Hard af Segerstad, Strandvagen 22, Sandviken, Sweden
Filed Sept. 11, 1968, Ser. No. 759,095
Int. Cl. F16h *27/02*
U.S. Cl. 74—129 **14 Claims**



This disclosure relates to a device for reversing the rotation of an output shaft, and includes a pair of gears drivably coupled to the output shaft, a drive gear, an intermediate gear between the pair of gears carried by the output shaft and the drive gear, means for imparting rotation to the drive gear in but a single direction, and means for selectively coupling the output gears individually with the intermediate gear to effect rotation of the output shaft in either of two directions. The output gears are carried by a sleeve coupled to the output shaft which is shifted by a bell crank under the influence of a reciprocal piston.

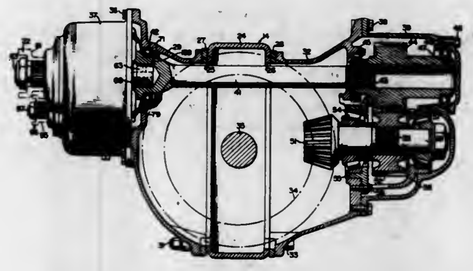
3,557,633
INTERNAL GEAR
Peter Frerichs, Wilhelmshaven, Germany, assignor to Olympia Werke AG, Wilhelmshaven, Germany
Filed Mar. 7, 1969, Ser. No. 805,334
Claims priority, application Germany, Mar. 28, 1968, 1,750,089
Int. Cl. B21k *1/30;* **F16h** *55/12, 57/00*
U.S. Cl. 74—447 **14 Claims**

An internal gear wherein a rim which is connected with a shaft surrounds a split annular flexible toothed belt which is bonded to or in mere frictional engagement with the internal surface of the rim. In the latter instance, the



internal gear constitutes a friction coupling which ceases to transmit torque when the belt or the rim offers excessive resistance to rotation.

3,557,634
AUTOMOTIVE DRIVE SYSTEM
Leo A. Bixby, Niles, Mich., assignor, by mesne assignments, to Rockwell-Standard Company, Pittsburgh, Pa., a corporation of Delaware
Filed Dec. 12, 1968, Ser. No. 783,219
Int. Cl. B60k *17/34;* **F16h** *1/44, 1/42*
U.S. Cl. 74—710.5 **10 Claims**

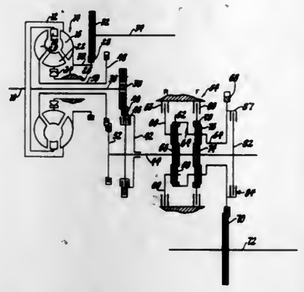


A short wheel base vehicle having a single power plant and forward and rearward drive axles incorporates a power dividing gear arrangement mounted on the rearward axle. The rearward axle housing has front and rear extensions mounting, in balanced weight distribution with respect to the axle, a forward proportional differential gear set and a rearward drop gear set. The forward gear set comprises a planet carrier driven by the input shaft and mounting planet gears that are meshed with a sun gear drive connected to an output shaft for driving the forward axle. The planet gears are also meshed with a ring gear fixed on an output shaft that extends to the drop gear set which includes a pinion driving the rearward axle. The sun gear may be clutched directly to the input shaft for direct drive of both axles.

3,557,635
TRANSMISSION WITH PHASING CLUTCH FOR TORQUE CONVERTER ROTOR
Robert M. Tuck, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Nov. 6, 1968, Ser. No. 773,811
Int. Cl. F16h *47/08;* **F16c** *43/21*
U.S. Cl. 74—731 **7 Claims**

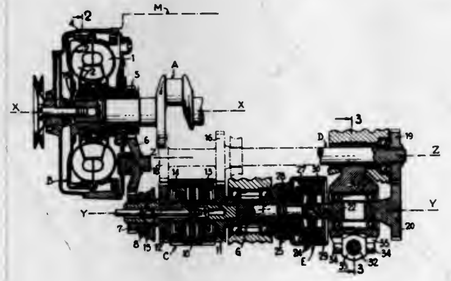
Torque converter transmission having first and second turbines connected to associated gearsets, having different speed ratios for driving a power-combining shaft. A friction clutch, controlled by a fluid-operated motor which is triggered by a change in torque direction on the first turbine, is connected between the output of the first turbine gearset and the shaft. There is a fluid-flow control

valve formed by the clutch hub and combining shaft which directs ample oil to the motor to effect clutch engagement when the first turbine and its driven gear tends to overrun the combining shaft. With the clutch engaged, both turbines drive the combining shaft to provide maximum input torque. When the combining shaft



speed increases until the first turbine can no longer add torque, a further increase of combining shaft speed brings about a torque reversal and the valve moves to exhaust oil from the clutch motor so that the clutch disengages. Under these conditions only the second turbine drives the combining shaft to improve converter performance in the high speed ratios.

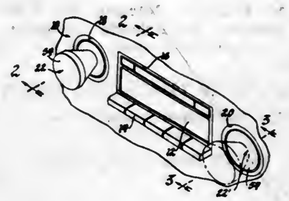
3,557,636
TRANSMISSION FOR AN AUTOMOBILE VEHICLE OR THE LIKE
Marcel Dangauthier, Paris, France, assignor to Societe Industrielle et Commerciale des Automobiles Peugeot, Paris, France, a French body corporate
Continuation of application Ser. No. 656,832, July 28, 1967. This application May 27, 1969, Ser. No. 830,208
Int. Cl. F16h *15/08, 15/16, 47/06*
U.S. Cl. 74—732 **15 Claims**



A transmission between a driving input shaft and a driven output shaft, comprising, in series relation, a hydrokinetic converter and a variator affording a continuous variation of the transmission ratio.

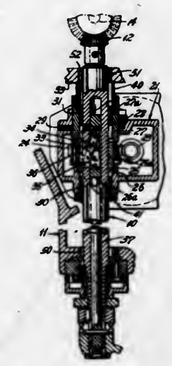
3,557,637
CONTROL KNOB
Eugene Tomczak, Troy, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed July 28, 1969, Ser. No. 845,426
Int. Cl. G05g *1/10*
U.S. Cl. 74—553 **3 Claims**

A control knob assembly for a mechanism to be operated includes a control shaft rotatable and shiftable between a pair of longitudinally spaced positions defined by a plurality of stops on a cam cylinder surrounding the shaft which stops are engaged by a retaining member rotatably mounted on the shaft and shiftable as a unit



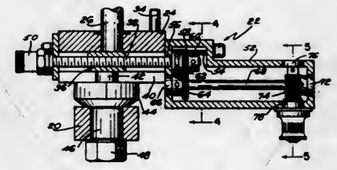
therewith to locate the shaft in either of the spaced longitudinal positions without altering the angular position of the shaft.

3,557,638
POWER DRIVE FOR ROTATABLE SHAFT
William M. Hoddinott, Milford, Conn., assignor to Textron Inc., Providence, R.I., a corporation of Delaware
Filed Aug. 12, 1969, Ser. No. 849,940
Int. Cl. F16h *1/16*
U.S. Cl. 74—625 **6 Claims**



A power drive for rotating a shaft comprising a driving motor and gear housing mounted on and suspended from said shaft intermediate the ends thereof and having clutch means for drivingly connecting a gear in the gear housing to said shaft.

3,557,639
IN-MOTION VERNIER FEED CONTROL
Robert H. Homstead, Greenville, R.I., assignor to Carl G. Peterson Co., Smithfield, R.I., a corporation of Rhode Island
Filed Feb. 3, 1969, Ser. No. 796,086
Int. Cl. F16h *35/00;* **G05g** *1/00*
U.S. Cl. 74—841 **4 Claims**



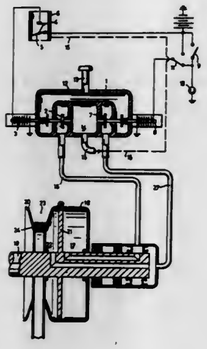
A vernier control for feed mechanisms used in the feed of sheet stock and the like, said control having means for making fine adjustments in the feed stroke while the feed mechanism is in full operation.

3,557,640

MEANS CONTROLLING THE DRIVING RATIO OF A MOTOR VEHICLE

Wilhelm F. M. Hendriks, Nuenen, and Petrus H. van Deursen, Deurne, Netherlands, assignors to Van Doorne's Automobielfabriken, N.V., Eindhoven, Netherlands

Filed Nov. 26, 1968, Ser. No. 779,029
Claims priority, application Netherlands, Dec. 8, 1967, 6716741
Int. Cl. B60k; F02d; G05g
U.S. Cl. 74—846 10 Claims



A motor vehicle having an internal combustion engine with a carburetor, a throttle control valve and a transmission system. The transmission system has one or more variable diameter belt driven pulleys, each having a belt of trapezoidal cross-section associated therewith. Each pulley has an axially displaceable half pulley and a cylinder controlling the variable half pulley has two chambers. A piston fixedly secured to the pulley shaft separates the chambers and a throw-over valve is associated with the piston controlling the pressure below atmospheric in the chambers created by the intake manifold of the engine. The throw-over valve has two selectively operable valve portions for serving the respective chambers of the variable pulley control cylinder and electrical means control the portions in dependence on the driving circumstances of the motor vehicle.

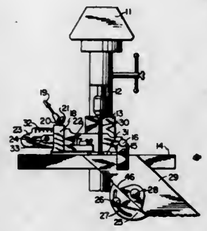
In one preferred embodiment, the two valve portions, which are solenoid operated, are respectively actuated by predetermined positions of the pivotal throttle valve within the intake manifold adjacent the carburetor, which valve actuates an attached micro-switch, and the other by a brake-operated switch. In other embodiments, centrifugal switches may be included in the respective electrical circuitry by being interposed between the solenoids of each valve portion of the throw-over valve and their respective aforesaid actuating devices. These latter centrifugal switches are operated also in accordance with predetermined vehicle conditions, i.e. the first as by the speed of the vehicle via its speedometer cable or shaft, and the other responsive to predetermined engine speed, with each being normally in the open condition below certain predetermined r.p.m.'s, and respectively the former serving to improve the shift quality, and the latter a cleaner exhaust emission.

3,557,641

DOWEL HOLE DRILLING AND SPACING DEVICE

Howard V. Schwandt, P.O. Box 61, 402 S. Broad, Weston, Oreg. 97886

Filed Sept. 12, 1968, Ser. No. 759,469
Int. Cl. B23b *47/28*
U.S. Cl. 77—63 7 Claims



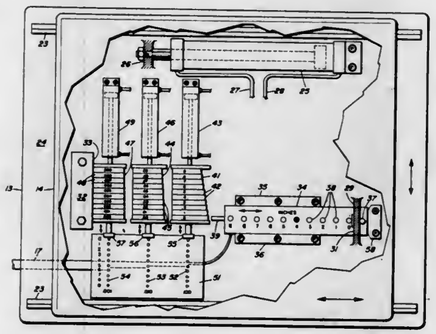
A dowel hole drilling and spacing device in which one drilled dowel hole is used to position the work piece in the path of a drill so that another dowel hole can be drilled at a preselected distance from the previously drilled hole. This device also has means for securing and holding the work piece in the path of the drill and for holding the work piece on the spacing device. This device can also incorporate a positioning system that allows the work piece to be positioned at a variety of angular relationships with respect to the long axis of the drill bit. With this device it is possible to rapidly position and drill numerous dowel holes in a work piece.

3,557,642

MACHINE TOOL

William D. Schmidt, 20 Briarcliff Lane, Holden, Mass. 01520

Filed July 22, 1968, Ser. No. 746,347
Int. Cl. B23b *39/06*
U.S. Cl. 77—64 8 Claims



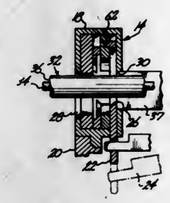
This invention has to do with a machine tool and, more particularly, to a table position control consisting of gages which are arranged in a predetermined manner to stop the table at an accurately-determined position.

3,557,643

BLADE ASSEMBLY AND/OR STRIPPER FRAME FOR WIRE STRIPPING DEVICES

Walter Weglin, Seattle, Wash., assignor to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed Aug. 10, 1967, Ser. No. 659,808
Int. Cl. H02q *1/12*
U.S. Cl. 81—9.5 6 Claims



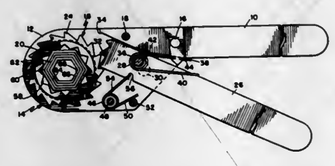
A blade assembly and/or stripper frame for wire stripping devices which comprises a pair of relatively reciprocable cutter members which are cooperatively arranged to open and close about a line extending therebetween. The cutter members have planar faces thereon which are disposed in spaced parallel planes to slidably overlap one another when the members are closed about the aforesaid line, and which terminate at rectilinear edges thereon that pass one another as the members reciprocate. There are notches in the aforesaid edges which register with one another in the closed position of the members, to accommodate the core of the wire. There are also part annular cutting edges adjacent the bights of the notches which cut through the jacket of the wire as the members reciprocate towards the closed position thereof. The notch in the edge of at least one of the members has a width at the edge corresponding to the diameter of the conductive metal core of the wire, and a depth from the edge which is greater than the width of the notch. In addition, the edge portions of the aforesaid one member adjacent the sides of the notch, are sharply beveled at an acute angle to the face thereof, to form cutting edges which cut through those portions of the jacket on the sides of the conductive core corresponding thereto.

3,557,644

SQUEEZE ACTION WRENCH

Gerrett W. Gregory, 68 Casselman Place, Chula Vista, Calif. 92010

Filed Nov. 18, 1968, Ser. No. 776,557
Int. Cl. B25b *13/46*
U.S. Cl. 81—57.39 6 Claims



The wrench has a handle with an actuating lever pivoted for operation by a squeezing action to rotate a socket element, which is configured to accept a variety of nuts, bolts and the like. The toothed driving mechanism is incorporated in the main structural components for maximum strength and is positively engaged for the major portion of a squeezing stroke, then releases for quick ratchet action return. In one position of the actuating lever the socket element is locked for powerful leverage action by the handle.

3,557,645

CAM ACTION WRENCH

Joachim E. Engel, 10348 York Lane, Minneapolis, Minn. 55431

Filed Aug. 7, 1968, Ser. No. 750,989
Int. Cl. B25b *13/16, 13/28*
U.S. Cl. 81—91 4 Claims



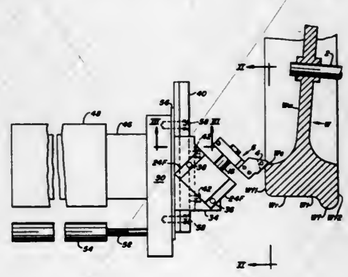
A cam action wrench having a gripping handle and a pair of relatively movable jaws secured to the gripping handle. The gripping handle has a hand-engaging end and a bifurcated jaw-engaging end which is adapted to receive a jaw member capable of modest pivotal rotation relative to the gripping handle. In addition, the handle is provided with a coarse adjusting lug which is coupled to an axially movable jaw, a link member being utilized to establish the coarse adjustment between the axially movable jaw and the coarse adjusting lug. The stationary jaw is preferably provided with a thru-bore for receiving the free end of a threaded member upon which a nut is being turned.

3,557,646

MACHINE TOOL

John D. Agnew, Valparaiso, Ind., assignor to United States Steel Corporation, a corporation of Delaware

Filed June 24, 1968, Ser. No. 739,465
Int. Cl. B23b *5/00*
U.S. Cl. 82—2 6 Claims



Apparatus for removing the burr from a corner of a rotating railroad wheel including a cutter mounted on a

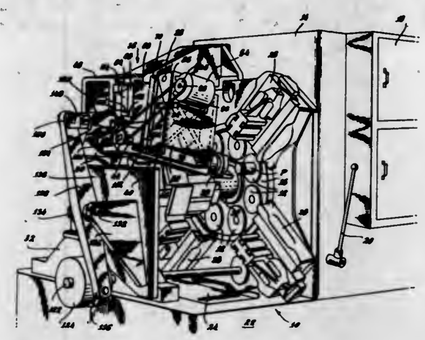
rotatable shaft in offset relationship thereto, means for holding said shaft from rotation during normal machining operation but permitting limited rotation under excessive pressure so that the tool is removed from contact with the wheel. This holding means includes distortable slugs which bear against an enlarged portion on the shaft.

3,557,647

AUXILIARY APPARATUS FOR ELLIPTICAL TURNING OF A WORKPIECE ON A MULTIPLE SPINDLE CHUCKING MACHINE

Clarence P. Foreman, Trumbull, and David W. Knight, Stratford, Conn., assignors to The U.S. Baird Corporation, Stratford, Conn., a corporation of Connecticut

Filed Apr. 26, 1968, Ser. No. 724,328
Int. Cl. B23b *3/34*
U.S. Cl. 82—3 5 Claims



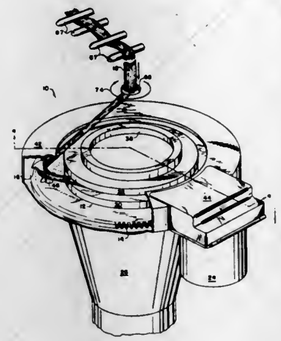
A multiple spindle chucking machine having plural indexable workpiece holding spindles, longitudinal tool slides, cross tool slides and carrying an auxiliary apparatus having an overhead support bracket carrying a longitudinal tool slide from which a motor, a high speed spindle and cutting tool are suspended for longitudinal reciprocation to turn an elliptical surface on a workpiece at one indexed position.

3,557,648

METHOD AND APPARATUS FOR CUTTING ELONGATED MATERIAL INTO PREDETERMINED SHORTER LENGTHS

Arthur G. Coffin, and Bruce W. Stockbridge, Kingsport, Tenn., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed Jan. 27, 1969, Ser. No. 794,089
Int. Cl. B26d *1/12*
U.S. Cl. 83—18 20 Claims



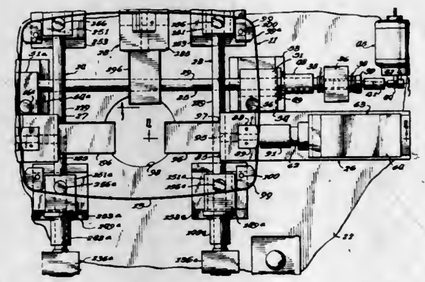
Method and apparatus by which elongated material is wound around a stationary cutter assembly to position the material into contact with and across all of the spaced cutting edges without movement thereafter of the contacting layer longitudinally of the material relative to the cutting edges. Other layers of the material are wound around the cutter assembly outwardly of the contacting layer and a force applying device moves in a path around the cutter assembly and presses against the outer material layers which in turn urge the contacting layer of material inwardly of the cutting edges thereby severing the contacting layer into predetermined shorter lengths. Tension can be applied to the outer layers as they are wound around the cutter assembly to urge the contacting layer inwardly of the cutting edges of the cutter assembly and thus sever the contacting layers into the shorter lengths.

3,557,649

CENTERING AND PIERCING PROCESS AND APPARATUS

Myron C. Kirchner, Itasca, Ill., assignor to Northern Metal Products, Inc., a corporation of Delaware

Filed Dec. 16, 1968, Ser. No. 783,809
Int. Cl. B26f *1/02*
U.S. Cl. 83—54 15 Claims



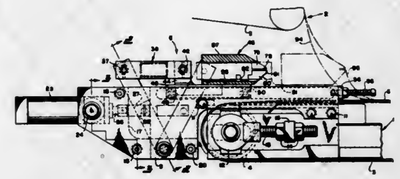
A process and apparatus for forming a plurality of precisely located openings in the flange of a metal frame for a shadow mask assembly. The apparatus includes expansible means for precisely locating the frame on a support prior to the formation of the openings by a plurality of piercing units. The apparatus also includes means engageable with a horizontally disposed midportion of the frame for sensing flatness thereof.

3,557,650

TIRE MATERIAL CUTTING APPARATUS

Armindo Cantarutti, Akron, Ohio, assignor to AMK Subsidiary Corporation, Akron, Ohio, a corporation of Ohio, by mesne assignment

Filed Apr. 12, 1967, Ser. No. 630,384
Int. Cl. B29h *17/30*
U.S. Cl. 83—155 19 Claims



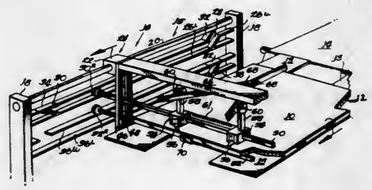
A liner or like cutter for a cut-to-length device for a tire building machine which includes a knife blade movable transversely of the work in a knife housing in response to a work length signal and which cutter can be indexed into and from operative position.

3,557,651

FILM-CUTTING APPARATUS

Lewis R. Byrley, Highland, Ind., assignor to United States Gypsum Company, Chicago, Ill., a corporation of Delaware

Filed Dec. 23, 1968, Ser. No. 786,116
Int. Cl. B23d *25/04*
U.S. Cl. 83—303 10 Claims

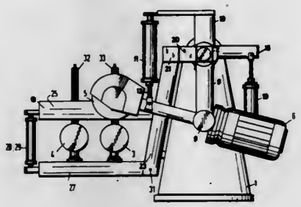


A reciprocally movable carriage assembly axially drives laterally movable, film-cutting knives disposed above axially moving discrete boards covered on their upper surfaces by a continuous plastic film or sheet. A spring-loaded catch connected to the carriage and biased against a board undersurface engages the interval between two boards whereafter the carriage assembly is driven by the moving boards. The cutting knives in the course of carriage movement drop between said two boards thereby penetrating the plastic film, and are cammed outwardly toward opposed longitudinal film edges thereby transversely cutting the film covering the boards.

3,557,652
APPARATUS FOR SEVERING HORIZONTAL STRANDS PRODUCED BY CONTINUOUS CASTING

Heribert Krall, Wurzburg, Germany; Hans Adalbert Koch, Hochberg, Germany, and Karl Vollbracht, Vienna, Austria, assignors to Technica-Guss GmbH, Wurzburg, Germany

Filed Oct. 8, 1968, Ser. No. 765,850
Claims priority, application Germany, Jan. 20, 1968, 1,608,088
Int. Cl. B23d 25/06; B26d 1/16
U.S. Cl. 83—319 7 Claims

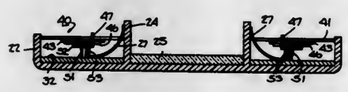


The disclosure relates to an apparatus for severing individual pieces from horizontal strands produced by continuous casting having varying drawing speeds. It has a base frame on which is mounted for movement a girder in a longitudinal direction and parallel to the strands to be severed. The girder has clamp means that move with it that grip onto a selected strand and are moved by the movement of the strand. Also mounted on the girder for longitudinal movement therewith but pivotal thereto is a rocker arm which pivotally carries a cutter means. There is mounted on the base a cylinder and piston that telescopically connects with the rocker arm to rock it into position with a strand, yet the rocker arm may move longitudinally with respect to the base through the telescopic connection. Another cylinder and piston are mounted on the rocker arm and connected to the cutter means to pivot it. A third cylinder and piston are connected at one end to the fixed base and extends parallel to the girder and is connected at their other end to the rocker arm and thus there is moved longitudinally the rocker arm and the girder on which the rocker arm is mounted. After a cut of a piece of the strand, the third piston and cylinder are actuated to return the girder and the parts mounted thereon to a position for reclamping of the clamp means to a selected strand for movement therewith for cutting off of another piece of the strand.

3,557,653
EYELASH MEASURING DEVICE AND TRIMMER

Charles Kim, 215 W. 83rd St., New York, N.Y. 10024

Filed July 31, 1968, Ser. No. 750,427
Int. Cl. B26d 7/00
U.S. Cl. 83—522 10 Claims

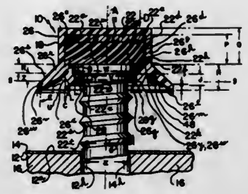


The measuring device permits a false eyelash to be accurately sized to complement the user's eye both as to shape and length. The trimmer allows a false eyelash to be cut accurately to size and shape. The measuring device is used manually by an individual to suit the individual's taste.

3,557,654
PLASTIC HEADED FASTENER

Harry C. Weidner, Jr., Shaker Heights, Ohio, assignor to The Atlas Bolt and Screw Company, Cleveland, Ohio, a corporation of Ohio

Filed June 19, 1968, Ser. No. 738,338
Int. Cl. F16b 23/00, 39/24
U.S. Cl. 85—9 9 Claims

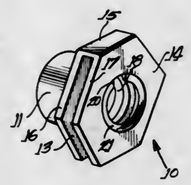


Each of these weathertight composite fasteners (having a plastic head molded onto a metal insert having a threaded shank) has three annular liquid seals, has a positive stop to its driving action controlling seal flexure and preventing fastener overdriving, locks its plastic head and any thin sheet member receiving the fastener onto the metal insert against pulloff in the driven position, and tightly and effectively secures together thin sheets.

3,557,655
EXTRUDED THREAD-CUTTING NUT

William H. Coe, Rockford, Ill., assignor to Keystone Consolidated Industries, Inc., Peoria, Ill., a corporation of Delaware

Filed July 3, 1969, Ser. No. 838,983
Int. Cl. F16b 29/00
U.S. Cl. 85—32 7 Claims



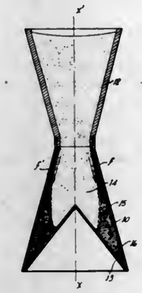
An extruded thread-cutting nut for the forming of threads on an unthreaded post or stud which is a one-piece nut having an extruded body provided with internal threads therein, a body flange integral with and positioned at one end of the extruded body, and a face flange parallel to and joined to the body flange by a short sidewall. The face flange is provided with a central aperture aligned with the nut body and incorporates therein a helical thread provided with one or more cutting edges. An unthreaded stud first engages the cutting edge and thread in the face flange to form the thread and then engages the interior threads of the nut body.

3,557,656
CHARGING EXPLOSIVE PROJECTILES, ESPECIALLY HOLLOW CHARGE PROJECTILES

Michel Precoul, Paris, France, assignor to Societe Technique de Recherches Industrielles et Mechaniques, Paris, France, a French company

Filed Mar. 2, 1965, Ser. No. 437,636
Claims priority, application France, Mar. 3, 1964, Oct. 3, 1964, 965,880; 991,222
Int. Cl. F42b 1/02
U.S. Cl. 86—31 11 Claims

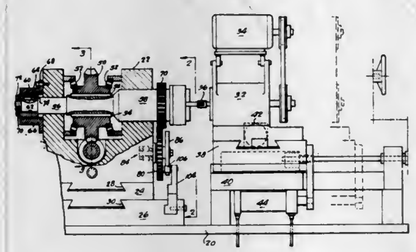
Explosive projectiles are charged with the aid of a mixture comprising a molten liquid explosive and a granular solid explosive more brisant and powerful than the molten liquid explosive. During charging the projectile is set in motion by a rotation about its longitudinal axis, that is to say, the projectile, being vertically positioned, the rotation about the longitudinal axis of the projectile is carried out during cooling of the projectile filled with explosive mixture. During centrifuging and cooling the projectile is furnished with a plug sealing the bottom of the projectile, said plug having an inner shape in contact with the explosive mixture of such form that the centrifuging throws out toward the periphery the particles of the heavy, brisant, powerful, nonmolten explosive.



3,557,657
THREAD-MILLING MACHINE

Bror W. Swanson, 81 Rumford St., West Hartford, Conn.

Filed Nov. 1, 1968, Ser. No. 772,699
Int. Cl. B23g 1/32
U.S. Cl. 90—11.54 8 Claims



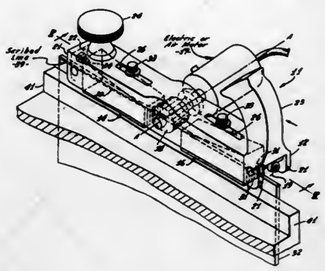
A thread milling machine comprising: a base; a work head and a cutter head mounted on said base, each of said heads having means to rotate, respectively, a workpiece and a cutter on parallel axes; means on said cutter head for advancing the work piece axially; and means on said work head for periodically reciprocating the work transversely of its axis of rotation.

3,557,658
METAL EDGE FINISHER

Kenneth B. Jamison, Los Angeles, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California

Filed Dec. 19, 1968, Ser. No. 785,300
Int. Cl. B23c 1/20
U.S. Cl. 90—12 1 Claim

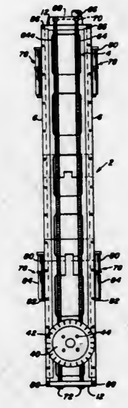
Apparatus adapted to finish the edges of metallic sheet material. The apparatus constitutes a hand milling device incorporating means providing firm and true bearing surfaces—fore and aft—of the cutter member thereof, before, after and during a finishing operation.



3,557,659
APPARATUS FOR MACHINING COKE OVEN DOOR JAMBS

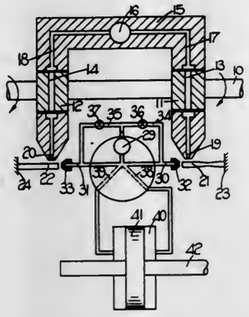
Leonard F. Harris, Provo, Utah, assignor to United States Steel Corporation, a corporation of Delaware

Filed May 8, 1969, Ser. No. 823,106
Int. Cl. B23c 1/20, 3/00
U.S. Cl. 90—12 6 Claims



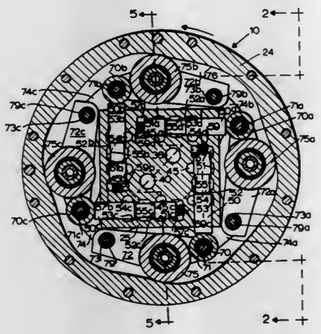
Described is a portable machining apparatus especially suitable for conditioning coke oven door jambs. The apparatus of the invention is adapted to fit in the frame of a coke oven door in place of the door in a position closely adjacent to the door jambs. The apparatus includes an elongated housing having a motor with a cutter connected therewith disposed for longitudinal movement along the housing. The cutter projects an adjustable distance outwardly of the housing so that the cutter is in peripheral engagement with the coke oven door jambs. The motor and cutter are moved longitudinally of the housing by means of screw shafts which are threadingly engaged by the motor case. In normal operation, the motor rotates the cutter as the motor-cutter unit moves longitudinally of the housing so that both door jambs are conditioned simultaneously.

3,557,660
SPEED SENSING AND CONTROLLING APPARATUS
Kenneth Percival Palmer, Barford, England, assignor to Joseph Lucas, (Industries) Limited, Birmingham, England
Filed Oct. 30, 1968, Ser. No. 771,935
Int. Cl. F15b *13/042*
U.S. Cl. 91—3 **6 Claims**



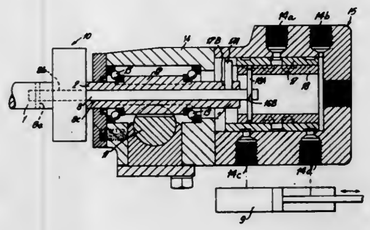
Apparatus for sensing and controlling the speed of a rotating part comprising means for providing a pulsating fluid pressure related to the speed of the part, two devices to which the pulsating pressure is applied, said devices being capable of vibrating at different resonant frequencies, two passage means communicating with a common supply means of the fluid at a steady pressure, the passage means having outlets controlled by the positions of the two devices respectively to vary the pressure in said passage means, and control means whereby the speed of the part can be varied in accordance with the difference in pressure in the passage means respectively, equality of pressures in the two passage means being possible when the devices are vibrating with their amplitudes equal.

3,557,661
FLUID MOTOR
Elias Orshansky, Jr., San Francisco, Calif., assignor to URS Systems Corporation, San Mateo, Calif., a corporation of California
Filed Aug. 27, 1969, Ser. No. 853,309
Int. Cl. F01l *21/02*
U.S. Cl. 91—184 **15 Claims**



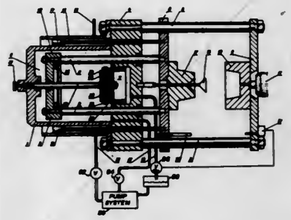
A stationary body has two sets of cylinders, each cylinder in a first set being paired to a cylinder in the second set. Each cylinder is open at one end and has an actuation chamber at the other end and, in between the ends, a valving recess in between an inlet recess and an outlet recess. An inlet passage leads to each inlet recess and an outlet passage leads to each outlet recess. Each of the paired cylinders has its valving recess connected to the actuation chamber of the other cylinder of the pair, so that each piston serves as a valve for its paired piston. A rotatable housing has two internal circumferential cam rings. A link is associated with each piston and pivotally mounted to the body, each link having (1) a piston-engaging roller mounted thereon in contact with the outer end of its associated piston and (2) a cam roller mounted thereon and in engagement with one of the cam rings.

3,557,662
STEERING SYSTEM
Frederick J. Adams, Campton, near Shefford, England, assignor to Cam Gears, Ltd., Hitchin, Hertfordshire, England, a British company, by mesne assignments.
Filed Aug. 22, 1968, Ser. No. 754,638
Claims priority, application Great Britain, Aug. 22, 1967, 38,542/67
Int. Cl. F15b *9/10*
U.S. Cl. 91—375 **4 Claims**



Apparatus for use in a power-steering system including a pinion and a cooperating rack for use in association with a power-assisting dual-acting pressurized fluid-operated servomotor. A steering column is connected to the pinion for limited relative rotation through a torsionally resilient coupling. The pinion is connected for joint rotation to one of a pair of relatively rotatable valve members of a fluid flow valve which controls the flow of pressurized fluid to and from the opposite ends of the servomotor. The steering column is connected to the other valve members through a rigid virtually nonstraining rod.

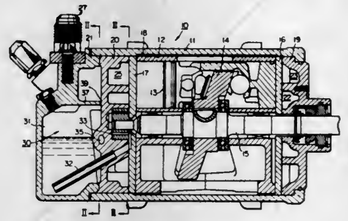
3,557,663
HYDRAULIC DRIVE SYSTEM FOR INJECTION MOLDING MACHINES
Peter-Florjancic, St. Martin strasse 12 Garmisch-Partenkirchen, Germany
Filed July 29, 1968, Ser. No. 748,267
Claims priority, application Austria, Aug. 3, 1967, A7236/67
Int. Cl. F15b *15/22, 15/17*
U.S. Cl. 91—394 **15 Claims**



A device is provided for increasing the thrust force applied to a displaceable part at the end of its stroke. The part to be moved is connected by at least one push rod to a working piston, which is movable in a pressure chamber substantially without contacting the boundaries of said chamber. The piston is provided at one end with an annular sealing surface for engaging a valve piston, which is displaceable in the

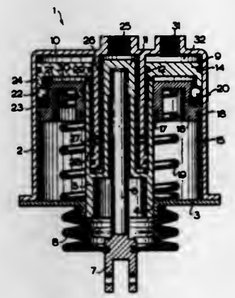
direction of the stroke of the working piston and is sealed at its periphery. The body of said valve piston has a bore between its rear end and its forward end, which is surrounded by the valve seat and faces the working piston. The chamber which adjoins the rear end is connected by a preferably valved outlet to a chamber which is under a pressure that is lower than the operating pressure.

3,557,664
CYLINDRICAL RECIPROCATING COMPRESSOR OF HORIZONTAL TYPE FOR A CAR COOLER OF AN AUTOMOBILE
Seiji Akaike, Atsugi; Tsutomu Nomura; Takayoshi Kimura, Yokohama, and Masayuki Washio, Hiratsuka, Japan, assignors to Nissan Motor Company Limited and Atsugi Motor Parts Company Limited, Yokohama and Atsugi, Japan, respectively
Filed July 8, 1969, Ser. No. 839,991
Claims priority, application Japan, July 16, 1968, 43/49796
Int. Cl. F04b *21/08, 1/12, 39/02*
U.S. Cl. 91—499 **6 Claims**



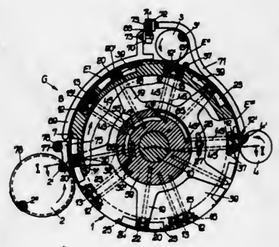
A cylindrical reciprocating compressor of horizontal type for a car cooler of an automobile having an oil reservoir disposed at one end portion of the cylindrical casing for supplying lubricant to the hydraulic circuit of the compressor. This compressor is low enough to be disposed under the hood (bonnet) of the automobile.

3,557,665
BRAKING CYLINDER FOR VEHICLES, ESPECIALLY AUTOMOTIVE VEHICLES
Alexander Von Lowis, Mauren, Germany, assignor to Robert Bosch, G.m.b.H., Stutgart, Germany
Filed June 24, 1969, Ser. No. 836,119
Claims priority, application Germany, July 13, 1968, 1,755,945
Int. Cl. F15b *15/26*
U.S. Cl. 92—13 **13 Claims**



A braking arrangement for vehicles in which a braking piston with a piston rod is reciprocably arranged in a braking cylinder and defines with an end wall of the latter a working space into which pressure fluid may be fed to move the braking piston in a first direction for actuating a brake connected thereto, and in which an annular blocking piston which sealingly engages the inner cylindrical surface of the braking cylinder and the outer surface of the piston rod is arranged between said braking piston and the other endwall of the cylinder. The blocking piston defines in the interior of the cylinder a counterpressure space and moves relative to the braking piston upon feeding of pressure fluid into the counterpressure space. Clamping elements carried by the blocking piston are pressed, during initial feeding of pressure fluid into the counterpressure space and resulting movement of the blocking piston relative to the braking piston, against one of the aforementioned surfaces to thereby hold the blocking piston stationarily with respect to the one surface to cause upon further feeding of pressure fluid into the counterpressure space movement of the braking piston in a direction opposite to the first direction.

3,557,666
APPARATUS FOR FOLDING ENVELOPE FLAPS
Kurt Stemmler, Rhine, Germany, assignor to Winkler & Dunebier Maschinenfabrik und Eisengiesserei, Neuwied am Rhine, Germany, a corporation of Germany
Filed Aug. 7, 1968, Ser. No. 750,929
Claims priority, application Germany, Aug. 17, 1967, W44575
Int. Cl. B31b *1/12, 21/26, 41/26*
U.S. Cl. 93—62 **6 Claims**



A machine for making envelopes or the like is provided with an apparatus for folding the sealing flaps of envelopes or for folding other articles having transversely extending folds which includes a rotary folding cylinder having several rows of suction holes as well as pairs of folding rollers having suction holes for folding the flap of each envelope taken over by a row of suction holes of the folding cylinder.

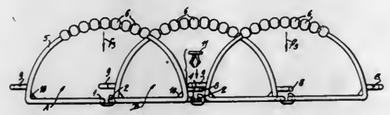
3,557,667
AUTOMATIC DEVICE ASSOCIATED WITH A TO-SIZE CUTTER FOR COLLECTING ABRASIVE OR OTHER KIND OF SHEETS
Pietro Molla, Milan, Italy, assignor to S. A. F. F. A.-Societa Per Azioni Fabbriche Fiammiferi ed Affini, Milan, Italy, a corporation of Italy
Filed July 7, 1967, Ser. No. 651,927
Claims priority, application Italy, July 16, 1966, 165541/66
Int. Cl. B65h *33/00*
U.S. Cl. 93—93 **1 Claim**



Mechanism for automatically collecting abrasive sheets, delivered by a size cutter, into reams including a conveyor,

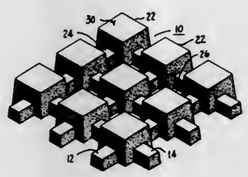
an auxiliary mobile table arranged beneath the advancement surface of the conveyor and a main mobile table arranged beneath the auxiliary table.

3,557,668
ELASTIC SOFT STRUCTURE, AND ITS APPLICATION TO THE MAKING OF SPORTING TRACKS AND RUNS
Jacques Leon Alexandre See, 47, rue Guersant, 17eme Paris, France
Filed Feb. 24, 1969, Ser. No. 801,480
Claims priority, application France, Feb. 21, 1968, 140,679
Int. Cl. E04f *15/00*
U.S. Cl. 94—3 **21 Claims**



An elastic soft structure for making sporting tracks and ski runs made of elements of flexible material, each of which having two struts from which project uprights evenly spaced out and extending at right angles in relation to said struts, said uprights being held together in pairs by rectangular crossmembers supporting protuberances.

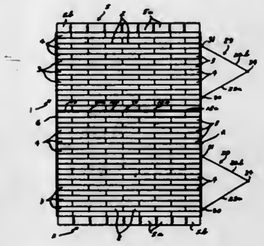
3,557,669
PAVING BLOCK AND PAVING FORMED THEREWITH
Matthew Robert Fenton, 6010 Centre Ave., Pittsburgh, Pa.
Continuation-in-part of application Ser. No. 601,512, Dec. 13, 1966. This application June 19, 1968, Ser. No. 738,337
Int. Cl. E01c *5/00*
U.S. Cl. 94—11 **12 Claims**



I disclose, a paving block comprising a plurality of cleat members disclosed in a spaced array, a number of buttressing members engaging said cleat members to reinforce the same, said buttressing members defining openings extending through the thickness of said paving block.

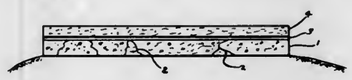
3,557,670
PATCH ASSEMBLY FOR RAPID REPAIR OF BOMB-DAMAGED RUNWAYS AND PAVEMENTS
Paul Thomas Sutton, Defuniak Springs, Fla.
Filed May 27, 1968, Ser. No. 732,467
Int. Cl. B64f *1/00*; E01c *5/16*
U.S. Cl. 94—13 **4 Claims**

An aluminum panel mat assembly for bridging bomb craters in runways and pavements including a standard keylock device that may be initially placed in position over the filled bomb crater. The mat assembly consists of separate, but interconnected extruded aluminum panels, and the keylock device is positioned in the middle of the assembly and the interconnected mat panels are assembled in two sections on opposite sides of the keylock device. A ramp section is attached along each end of the mat assembly and a series of tow bar assemblies are mounted along each side



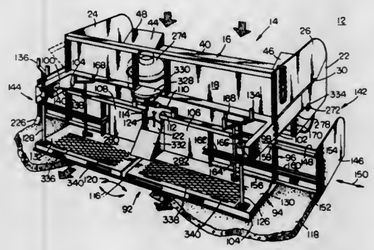
thereof to facilitate movement of the assembly to the selected bomb crater.

3,557,671
REHABILITATION OF OLD ASPHALT AIRFIELDS AND PAVEMENTS
Angelos Vasiloff, Fort Walton Beach, Fla., assignor to the United States of America as represented by the Secretary of the Air Force
Filed Apr. 18, 1969, Ser. No. 817,503
Int. Cl. E01c *21/00*
U.S. Cl. 94—22 **2 Claims**



A method for repairing cracked runways and pavements. A mat of fiberglass is placed over the cracked runway or pavement, the mat is rigidized by spraying or painting with a plastic material, and a new layer of asphalt is laid over the rigidized mat. This method permits a saving of asphalt on the order of 50 percent and overcomes the hazard of reflective cracking.

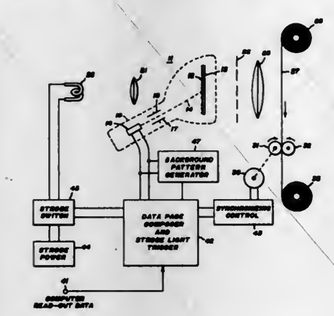
3,557,672
PAVING APPARATUS
Albert L. Shurtz, Fort Wayne, Ind., and Fabian J. Leimeister, Monroeville, Ohio, said Leimeister, assignor to said Albert L. Shurtz, Fort Wayne, Ind.
Filed June 24, 1968, Ser. No. 739,373
Int. Cl. E0/c *19/12*
U.S. Cl. 94—44 **6 Claims**



A towed-type paver including a material hopper having a rearwardly and downwardly inclined front wall, a rear wall, and opposite sidewalls, the walls having lower extremities which mutually define a material discharge opening. A multisection shutoff gate is provided for the material discharge opening including a center section and side sections at each

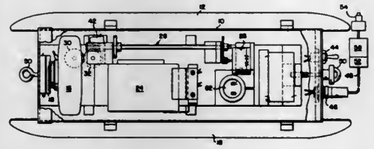
side of the center section. The center gate section may be moved alone between open and closed positions, and the side sections may be moved simultaneously with the center section between open and closed positions. A screed is provided adjustably mounted on the rear wall of the hopper and extending rearwardly therefrom. Vehicle- engaging arms extend forwardly from the hopper for selectively engaging a part of a towing vehicle, and a foot-actuated linkage is provided for selectively moving the engaging arms between an upper engaging position and a lower disengaged position. A heating system is provided for heating both the front wall of the hopper and the screed.

3,557,673
HIGH-SPEED PRINT-OUT DEVICE FOR COMPUTERS AND OTHER USES
Michael A. Scalzo, Baldwinsville, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 28, 1967, Ser. No. 694,163
Int. Cl. B41b *19/00*
U.S. Cl. 95—4.5 **4 Claims**



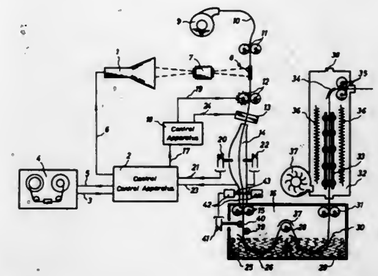
A high-speed printout device is disclosed, employing a light-valve type of projectorr having a film of oil or deformable plastic on which a representation of one or more pages of information is written by means of an electron-beam. A strobe light and optical system cause the page or pages of information to be projected onto a moving strip of photosensitive paper. This sequence is repeated at a high rate of speed, achieving high-speed printout of one or more pages at a time. A background pattern generator is connected to the electron beam means for applying a background pattern, if desired, to the information.

3,557,674
CAMERA DEVICE FOR INTERNAL INSPECTION OF PIPE
Russell F. Carney, Jr., Rochester, N.Y., assignor to Seminole Pollution Equipment Corporation, Rochester, N.Y., a corporation of New York
Filed Feb. 5, 1968, Ser. No. 703,152
Int. Cl. G03b *37/00*
U.S. Cl. 95—11 **2 Claims**



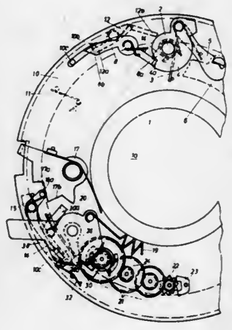
A single frame 35 mm. camera is mounted in a generally cylindrical capsule with a strobe light, an electric drive motor, and a battery. The system is self-contained except for a remote annunciator arrangement and control switch connected to the capsule by a single pair of electrical leads. The strobe light is fired by the discharge of a capacitor, which immediately thereafter starts to charge. The annunciator includes a buzzer shunted by a gas filled diode lamp. The buzzer sounds during charging of the capacitor, and shuts off when the diode fires, which occurs when the capacitor becomes approximately fully charged.

3,557,675
APPARATUS FOR CONTROLLING THE PASSAGE OF PHOTOMATERIAL THROUGH AN ELECTRONIC PHOTOTYPE SETTER
Roman Koll, Kiel-Wellingdorf; Hans Penza, Schoenkirchen, and Ulrich Sendtko, Preetz, Germany, assignors to Dr.-Ing. Rudolf Hell Kommanditgesellschaft Kiel, l, Germany, a corporation of Germany
Filed June 28, 1968, Ser. No. 740,894
Claims priority, application Germany, July 6, 1967, H63211
Int. Cl. G03b *17/50*
U.S. Cl. 95—14 **9 Claims**



An apparatus for controlling the passage of photomaterial through an electronic phototype setter which operates in conjunction with an automatically operated developing apparatus. Switching means are provided and actuated by the photomaterial to cause the setter to stop when the photomaterial accumulates between the outlet of the setter and the inlet of a developing apparatus. A cutting device is provided to cut the photomaterial when the material is stretched between the setter and the developing apparatus.

3,557,676
PHOTOGRAPHIC CAMERA WITH RELAY RELEASE
Richard Wurster, Hofenenz, Germany, assignor to Prontor-Werk Alfred Gauthier, G.m.b.H., Calmbach, Germany, a corporation of Germany
Filed Apr. 4, 1968, Ser. No. 718,819
Claims priority, application Germany, Dec. 27, 1967, P41847
Int. Cl. G03b *9/64*
U.S. Cl. 95—53.3 **5 Claims**



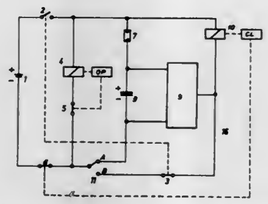
A photographic camera with relay release that has a shutter housing and a shutter blade drive mechanism. A relay

slide is movably guided on the shutter housing under the influence of a motor spring. The relay slide has a tab cooperating with a rotatably mounted locking lever for locking the relay slide in the wound position. In addition, a positioning pin is provided on the relay slide for cooperating with a locking lever for the shutter blade drive mechanism to release the latter.

3,557,677
EXPOSURE CONTROL CIRCUIT FOR A PHOTOGRAPHIC SHUTTER

Joachim Schubert, Olching, Germany, assignor to Ernst & Wilhelm Bertram Fabrik Fototechn. Messgerate, Munche-Pasing, Planegger St., Germany

Filed May 22, 1968, Ser. No. 731,010
Claims priority, application Germany, June 29, 1967, B93246
Int. Cl. G03b *7/08*; H01h *47/22*
U.S. Cl. 95—53 **4 Claims**

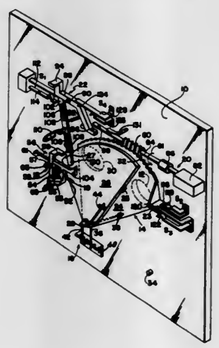


An exposure control circuit for a photographic shutter, the opening and closing of which are each effected by means of at least a pair of electromagnets. Both electromagnets are provided with switch devices connected in series thereto which, when subject to a current sufficient for actuating same, limit this current according to a specified operating time.

3,557,678
EXPOSURE CONTROL APPARATUS

Alfred H. Bellows, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Filed Aug. 1, 1968, Ser. No. 749,449
Int. Cl. G03b *9/16*
U.S. Cl. 95—53 **4 Claims**

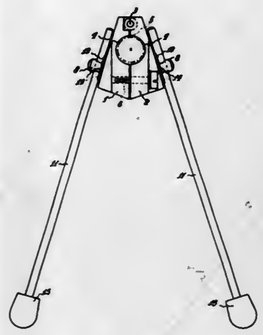


A photographic exposure control mechanism having two shutter blades, one for initiating and one for terminating a photographic exposure. Both blades are retained in a spring loaded condition prior to an exposure. That blade terminating exposure is retained in an open position throughout an exposure interval by a latch which is moved into engagement therewith simultaneously with the movement of an energized electromagnet. Deenergization of the electromagnet releases the blade to terminate an exposure.

3,557,679
STAND FOR PHOTOGRAPHIC OR CINEMATOGRAPHIC CAMERAS

Alexander Spoerl, 8183 Rottach-Egern-D-, Germany, and Heinrich H. Heer, Hoeshestrasse 60, Zollikon, Zurich, Switzerland

Filed May 27, 1968, Ser. No. 732,162
Claims priority, application Germany, May 31, 1967, Apr. 9, 1968, 61255/42;P1773166
Int. Cl. G03b *17/56*
U.S. Cl. 95—86 **5 Claims**

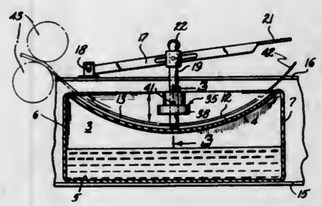


A novel improvement in a stand for photographic and cinematographic cameras is disclosed, the novel mechanism of the subject invention comprising two supporting arms which are connectable to the upper end part of a stand, the free ends of the arms being adjustably spaced apart from one another and from the longitudinal axis of the stand and further being capable of being supported against the chest and shoulder of the photographer. By use of the novel mechanism of the subject invention, a three point bearing results which offers high stability in both the horizontal and vertical directions for the camera utilized.

3,557,680
COMBINED LIQUID CONTAINER AND DISPENSING MEANS

Bernard Kaminstein, Paramus, N.J., and Henry G. Joel, New York, N.Y., assignors to Copia Manufacturing Corporation, Garden City, N.Y., a corporation of Delaware

Filed July 20, 1966, Ser. No. 566,512
Int. Cl. G03d *3/12*
U.S. Cl. 95—94 **13 Claims**

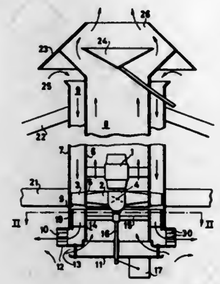


In a copying machine, a combined disposable shipping container and dispensing tray for a processing liquid. The container has a concavity in one of its sidewalls which forms the dispensing tray for the processing liquid. The concave sidewall is punctured by a pump arrangement which supplies the processing liquid to the dispensing tray from the interior of the container. The container has raised end walls interconnected with the concave sidewall for preventing the escape of processing liquid from the dispensing tray.

3,557,681
FAN FOR THE VENTILATION OF BUILDINGS, E.G. STABLES

Svend Helge Kristiansen, Naestved, Denmark, assignor to Nordisk Ventilator Co., Naestved, Denmark, a company of Denmark

Original application Jan. 25, 1968, Ser. No. 700,549, now Patent No. 3,487,767. Divided and this application Feb. 12, 1969, Ser. No. 810,438
Int. Cl. F24f *7/06*
U.S. Cl. 98—33 **7 Claims**

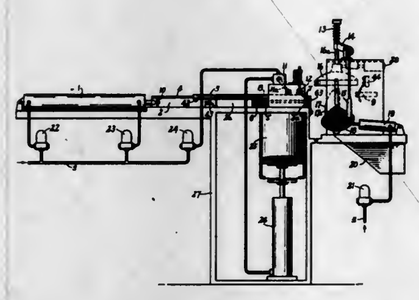


A fan for the ventilation of buildings, e.g. stables, comprising two concentrical tubes in which two sets of interconnected concentric fan vanes are disposed so as to perform an injection of air through the outer tube and an exhaust of air through the inner tube, a bypass being provided between the inner and the outer tube through a first damper which is coupled to a second damper in the outer tube and as the case may be also to one in the inner tube, in such a way that when the first damper is opened the other or others is or are closed and vice versa.

3,557,682
AUTOMATIC FOOD COOKING AND DISPENSING APPARATUS

Frederick Z. Goosman, 200 E. 57th St., New York, N.Y.

Filed Nov. 29, 1968, Ser. No. 779,972
Int. Cl. A47j *27/62*
U.S. Cl. 99—327 **6 Claims**

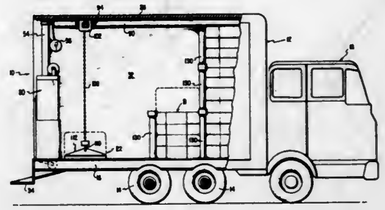


The application discloses an automatically controlled cooking and dispensing apparatus for hamburger and the like. A timer device controls air valves for starting and reversing a meat conveyor which is enabled by an air cylinder and a baffle member to pick up patties of the meat product one at a time. The air valves are controlled during the timing period to place a pair of heating elements in cooking position and at the end of the period to withdraw the elements therefrom. Optional means are provided for automatically positioning the meat supply cylinders in conveyor pickup during operation of the apparatus.

3,557,683
MOBILE COMPACTING UNIT

John A. Boyd, Fairfax, Va., assignor to Mobilpak Corporation, Washington, D.C., a corporation of the District of Columbia

Filed Sept. 3, 1968, Ser. No. 756,754
Int. Cl. B65b *13/00*; B30b *15/32*
U.S. Cl. 100—7 **11 Claims**

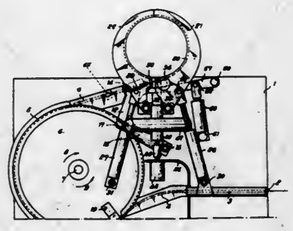


A mobile unit in the form of truck or trailer having a supporting bed with compacting means mounted adjacent the rear end thereof. Trash or other materials can be introduced into the compacting means which then compacts the materials into disposable cartons or merely bales the same. A completed bale or filled carton is then ejected forwardly out of the compacting means onto a conveying means which transfers the bale or carton to a forward storage position. Subsequently, the conveying means can be used for removing the stored bales or cartons and for discharging the same from the unit.

3,557,684
BINDING MACHINE

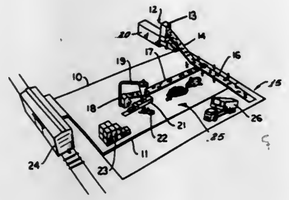
Jean E. Glasson, Argenteuil, France, assignor to Botalam, Paris, France, a corporation of France

Filed Oct. 16, 1968, Ser. No. 767,997
Claims priority, application France, Nov. 29, 1967, 130,180
Int. Cl. B65b *13/04*
U.S. Cl. 100—26 **5 Claims**



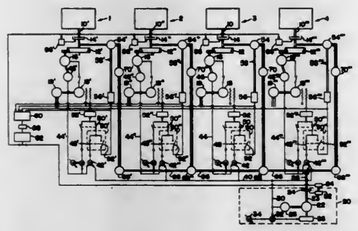
A binding machine having two articulated shells in the internal faces of which is formed a continuous passageway for permitting a binding wire to encircle a bundle of articles. A rotary twisting head is disposed adjacent the shells and is provided with two slots for gripping the two crossed ends of the wire which extends around the bundle. The two articulated shells are provided with noselike extensions which overlie the slots disposed in the twisting head for substantially closing the slots and thus providing a positive guide structure for ensuring that the wire is properly fed into and discharged from the passageway formed in the shells.

3,557,685
SOLID WASTE DISPOSAL PLANT
John B. Schroering, Louisville, Ky., assignor to Industrial Services of America Inc., Louisville, Ky., a corporation of Kentucky
Filed Dec. 26, 1968, Ser. No. 787,116
Int. Cl. B30b *13/00*
U.S. Cl. 100—39 1 Claim



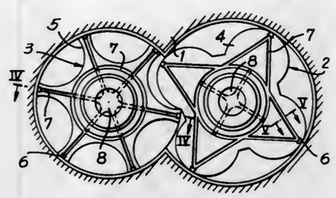
This application discloses a plant for practicing a process for disposing of solid waste material by initially moving raw waste into a salvage separation area, then separating salvageable material from the waste material to be further processed, subsequently shredding the residue waste material and compacting or bailing it, and finally transporting the shredded and compacted waste to a sanitary landfill.

3,557,686
PRESS LINE SYNCHRONIZATION
Roger Sapolsky, Saint-Gratien, France, assignor to Gulf & Western Industrial Products Company, a corporation of Delaware. by mesne assignment
Filed June 10, 1968, Ser. No. 735,768
Claims priority, application France, June 14, 1967, 110,422
Int. Cl. B30b *15/26*; H02k *49/04*
U.S. Cl. 100—43 4 Claims



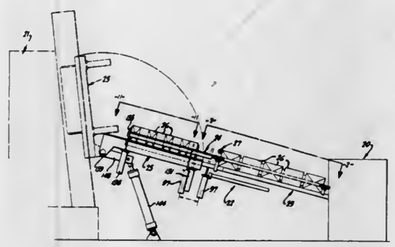
Apparatus for controlling a line of power presses of the type including a flywheel driven by a direct current motor and having a clutch for selectively connecting the flywheel to its respective press drive shaft. The disclosed method comprises energizing the motors and rotating the flywheels while the clutches are disengaged. Thereafter, the speed of rotation of the flywheels is monitored and the excitation of the motors is varied to bring all flywheels to the same rotational speed. The crank or eccentric of each press is positioned at a location so that, considering the inertia of the driven parts of each press, simultaneous actuation of the clutches will cause each press to attain the same rotational speed at substantially the same position of rotation. With the presses rotating at the same rotational speed all the clutches are simultaneously actuated and, thereafter, the angular position of each press crankshaft is measured. After a predetermined time period, variation of the excitation of the motors in response to flywheel speed is discontinued and the excitation is varied in a manner to maintain the presses within a predetermined angular position relationship.

3,557,687
SCREW COMPRESSOR
Boris Lazarevich Grinpress, Tikhoretsky prosp. 20, kv. 20; Ivan Akimovich Sakun, Krasnoputilovskaya ul., 12, kv. 44; Jury Iosifovich Dimentov, Budapeshtskaya ul., 38, korp. 2, kv. 89, and Moisei Fishelevich Vainshtein, Nevsky prosp, 27, kv. 15, Leningrad, U.S.S.R.
Filed Aug. 16, 1968, Ser. No. 753,094
Int. Cl. B30b *3/04*
U.S. Cl. 100—146 7 Claims



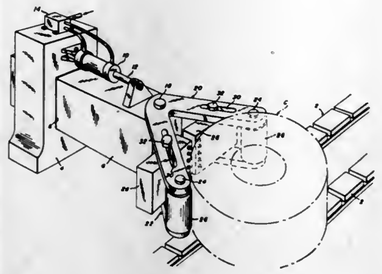
A screw compressor has a rotatable male driving screw and a rotatable female driven screw in meshed relation in a casing for compressing a working medium passing through the casing. The crests of the teeth of the screws have grooves which communicate with internal passages in the teeth for the supply of a fluid sealing medium. The grooves gradually increase in cross section in the direction of flow of the working medium through the casing and the passages have outlets in the grooves which gradually decrease in spacing in the direction of flow of the working medium.

3,557,688
BUNDLE-FORMING APPARATUS
Ellsworth A. Hartbauer, Concord, and Richard Shankel, Antioch, Calif., assignors to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
Filed Oct. 30, 1967, Ser. No. 678,955
Int. Cl. B30b *15/32*; B65b *13/02*
U.S. Cl. 100—218 21 Claims



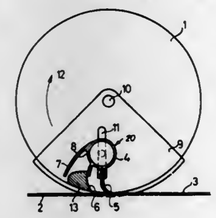
A machine for accumulating groups of collated paper grocery bags into bundles, compressing the bundles, and transferring each compressed bundle into a banding mechanism which wraps a securing band about the bundle. The machine includes an accumulator section which receives successive groups of collated bags constituting the discharge from a collating mechanism and organizes such groups into bundles, it also includes a compression section for squeezing each bundle to reduce the plane-to-plane dimension thereof, and it further includes a transfer section which receives the compressed bundles from the compression section and displaces each compressed bundle along an arcuate path and into a banding mechanism.

3,557,689
APPARATUS FOR MARKING A COIL OF STRIP
Alfred Teplitz, Pittsburgh, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed Apr. 10, 1968, Ser. No. 720,064
Int. Cl. B41f *17/06*
U.S. Cl. 101—35 4 Claims



Apparatus for marking a hot coil of strip including a ram movable toward and away from the coil. The ram pivotally supports a pair of spaced yokes having rollers at the ends of the arms of the yokes for engaging the coil at points spaced about the periphery thereof. A marking device is carried by the arms so that it is positioned as desired with respect to the coil.

3,557,690
ROTARY SCREEN PRINTING MACHINE EQUIPPED WITH IMPROVED SQUEEGEE SYSTEM OR THE LIKE
Heinrich Voegelin, Wiler near Utzensdorf, Switzerland, assignor to Fritz Buser AG, Maschinenfabrik, Wiler near Utzensdoft, Switzerland, a corporation of Switzerland
Filed Sept. 23, 1968, Ser. No. 761,773
Claims priority, application Switzerland, Sept. 26, 1967, Aug. 20, 1968, 13404/67;12500/68
Int. Cl. B41l *13/06*
U.S. Cl. 101—120 8 Claims

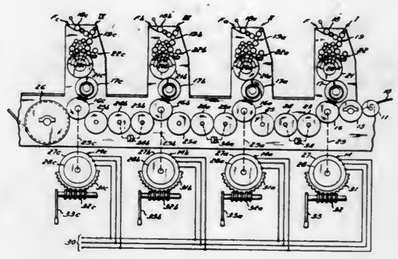


There is disclosed an improved rotary screen printing machine incorporating individual printing stations equipped with a substantially circular printing screen beneath which passes the backing cloth or printer's blanket supporting the material which is to be printed. A squeegee system or the like is inserted in the circular printing screen. According to the invention, the squeegee system which is mounted at both sides of the circular printing screen at the machine frame is constructed to be pivotable.

3,557,691
ELECTROSTATIC STENCIL PRINTING PROCESS UTILIZING POLYESTER-ALKYD RESIN POWDER
John W. Bayer, Toledo, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
No Drawing. Continuation-in-part of application Ser. No. 395,049, Sept. 8, 1964, now abandoned. This application June 25, 1968, Ser. No. 739,610
Int. Cl. B41m *1/12*, *1/30*; C09d *11/10*
U.S. Cl. 101—129 4 Claims

There is disclosed an electrostatic printing ink composition consisting essentially of a free flowing, heat fusible polyester-alkyd resin powder prepared by reacting a difunctional, aliphatic, hydroxy compound, e.g. a glycol, and a dicarboxylic acid or anhydride in the presence of a drying oil acid, e.g. a vegetable oil fatty acid.

3,557,692
PLURAL INDEPENDENTLY OPERABLE MOTOR DRIVE ARRANGEMENT IN PRINTING PRESS
William H. Lee, Lakewood, Ohio, assignor to Harris-Intertype Corporation, Cleveland, Ohio, a corporation of Delaware
Filed Sept. 9, 1968, Ser. No. 758,327
Int. Cl. B41f *5/16*
U.S. Cl. 101—177 14 Claims

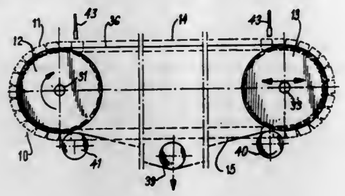


A multicolor printing press having each rotary printing unit driven by an individual synchronous motor. The rotational position of the rotor of each motor may be adjusted individually, either by turning its stator or by changing the frequency of the AC energization of its stator. This enables the printing units to be brought into registration initially or after an out-of-register condition has occurred. A given adjustment of the motor in electrical degrees produces a much smaller rotational adjustment in mechanical degrees of the corresponding printing unit. Any other cyclically-operated mechanism associated with the press may be driven by an individual synchronous motor having a similar speed adjustment.

3,557,693
TYPE CARRIER FOR PRINTERS AND THE LIKE
Hermann Kuchenbecker; Wolfgang Fink, and Ludwig Schmidt, Munich, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Sept. 26, 1968, Ser. No. 762,804
Claims priority, application Germany, Sept. 27, 1967, 1,549,885
Int. Cl. B41j *1/20*
U.S. Cl. 101—93 9 Claims

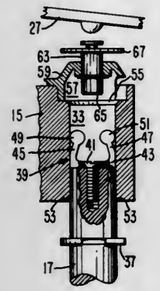
Type carrier for rapid printers in which the type turns about two parallel spaced direction changing sprockets, one of which is a drive sprocket. The type carriers are guided in end-to-end relation with respect to each other between a pair of parallel spaced guide plates having aligned parallel straight guides therein generally tangential of the direction changing sprockets for guiding the type in a continuous path about the sprockets including a front straight line guide section. The type carriers have type on their front faces and have drive pins extending from one side thereof meshing with the teeth of the direction changing sprockets and movable along guide slots in the straight portions of the guide plates. Guide pins extend from the opposite sides of the type carriers and are

guided for movement along straight guide slots in the opposite guide plates, which slots conform to the path of travel of the type carriers. The type carriers are guided for movement along the slots and are retained from outward move-



ment due to centrifugal forces by at least one retainer belt extending along the outsides of the drive pins and the peripheral portions of the teeth of the direction changing sprockets to take up play between the type carriers and the sprockets.

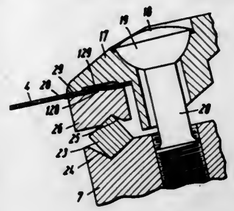
3,557,694
PRINT HEAD LATCHING MECHANISM
Harry L. Wallace, Garden City, Mich., and Bruno Parysek, Livonia, Mich., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 21, 1969, Ser. No. 817,718
Int. Cl. B41f *13/10;* **F16d** *3/28*
U.S. Cl. 101—375 **4 Claims**



The disclosure embodies a latching mechanism to properly position and secure a print head or the like on a shaft and to facilitate the removal and replacement of the print head. The mechanism comprises a plurality of resilient armlike members fixedly mounted on the insertable end of the shaft, said resilient armlike members are angularly displaced inwardly against bias during insertion and return to their normal outwardly biased position when the print head is properly seated on the shaft, and a plunger which is inserted to prevent angular inward displacement of the resilient armlike members.

3,557,695
DEVICE FOR THE FASTENING OF A PRINTING PLATE
Friedrich Preuss, Neu-Isenburg, Germany, assignor to Roland Offsetmaschinenfabrik Faber & Schleicher A.G., Offenbach am Main, Germany, a corporation of Germany
Filed July 25, 1968, Ser. No. 747,513
Claims priority, application Germany, July 29, 1967, 1,611,258
Int. Cl. B41f *27/06*
U.S. Cl. 101—415.1 **12 Claims**

In a clamping device to fasten a printing plate on the plate cylinder of a rotary printing machine, a rod is inserted between the tension bar and the printing plate end so as to be movable to produce a wedging effect. Initial tension in the plate is produced by movement of the clamping jaws which

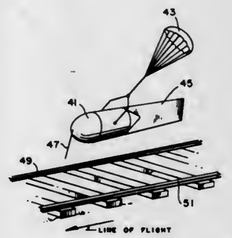


produces a uniform clamping force after which the main tension is applied by movement of the tension bar to stretch the plate.

3,557,696
PLANOGRAPHIC PRINTING PLATE WITH NUCLEATING AGENT AND ZIRCONIUM SALT
Stasel Keith Hoover, Hampstead, London; James Thomas Crawford Knowles, Buckinghamshire, and Wong Kwong Fa Wong Yan Man, London, England, assignors to A. B. Dick Company, Niles, Ill., a corporation of Illinois
No Drawing. Filed July 13, 1966, Ser. No. 564,758
Claims priority, application Great Britain, July 20, 1965, 30857/65
Int. Cl. B41m *1/04;* **B41n** *1/12;* **G03c** *5/54*
U.S. Cl. 101—459 **8 Claims**

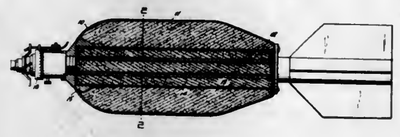
A planographic printing plate having a water receptive, hydrophilic, lithographic surface, said surface having a combination of silver halide nucleating agents and a salt of zirconium, thorium or titanium.

3,557,697
RAILROAD RAIL BREAKING BOMB
Taylor B. Joyner; Herbert D. Mallory, and Kinge Okauchi, China Lake, Calif., assignors to the United States of America as Represented by the Secretary of the Navy
Filed July 23, 1962, Ser. No. 211,918
Int. Cl. F42b *25/00*
U.S. Cl. 102—2 **3 Claims**



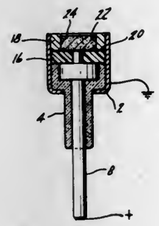
An aerial bomb for breaking railroad rails comprising, in combination: an elongated casing having a longitudinal axis disposed generally horizontally in the operative position of the bomb; a flat vertical guiding vane attached to the rear of said casing; an explosive charge within said casing, said charge having V-grooved portions facing outwardly to the sides of the casing and symmetrical with respect to the plane of said vane, said V-grooved portions upon detonation of said charge serving to direct concentrated jets laterally outwardly of said casing; and an elongated detonator in said charge between said V-grooved positions and generally in the plane of said vane.

3,557,698
PHOTOFLASH BOMB
David Hart; Henry J. Eppig, Dover, and Garry Weingarten, Morris Plains, N.J., assignors to the United States of America as represented by the Secretary of the Army
Filed Jan. 28, 1953, Ser. No. 333,852
Int. Cl. F42b *25/14*
U.S. Cl. 102—6 **10 Claims**



A photoflash bomb containing a metal powder, an oxidizing agent and an explosive burster, each of said metal powder, oxidizing agent, and explosive burster occupying separate isolated compartments, said metal powder occupying an outer compartment, said explosive burster being centrally located, and said oxidizing agent being concentrically located with respect to said metal powder, and said explosive burster.

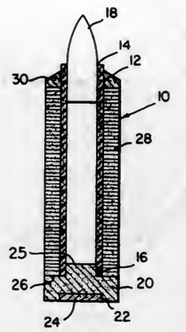
3,557,699
ELECTROEXPLOSIVE PRIMER IGNITION ASSEMBLY
Charles L. Hubbard, Madison, Ill., assignor to Olin Mathieson Chemical Corporation, a corporation of Virginia
Filed June 26, 1968, Ser. No. 740,298
Int. Cl. F42b *3/12*
U.S. Cl. 102—28 **13 Claims**



An electrically actuated primer ignition assembly displaying a 0.75 ampere "no fire" characteristic for 60 seconds, and a 2.5 amperes "all fire" within 10 milliseconds after initial application of current, the "all fire" performance being maintained even after the "no fire" preconditioning.

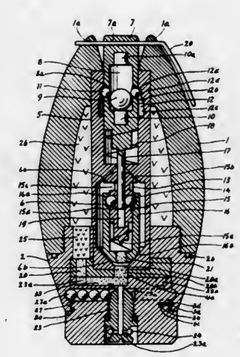
3,557,700
CASELESS AMMUNITION CARTRIDGE
Joseph B. Quinlan, Philadelphia County, and Elwood Vetter, Bucks County, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed Feb. 14, 1969, Ser. No. 799,244
Int. Cl. F42b *5/18*
U.S. Cl. 102—38 **9 Claims**

A caseless ammunition cartridge comprised of a support tube carrying a projectile at one end and a primer cup at the other. A neck portion of the same material as the primer cup is secured at the top of the support tube and a plurality of ex-



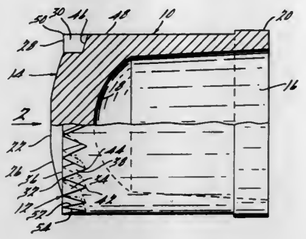
plosive discs are provided around the support tube between the primer cup and the neck portion.

3,557,701
HAND-GRENADE FUZE
Claes G. Arnell, Torshalla, Sweden, assignor to Forsvarets Fabriksverk, Eskilstuna, Sweden, a corporation of Sweden
Filed Feb. 6, 1969, Ser. No. 797,033
Int. Cl. F42b *27/00;* **F42c** *15/00*
U.S. Cl. 102—76 **4 Claims**



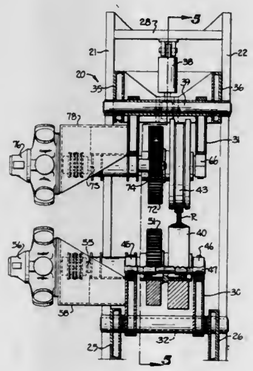
A hand grenade, land mine or the like, of the type which comprises a striker, provided with an ignition pin, partly enclosed by a sleeve in the bottom of which a primer, such as an ignition cap, is located, the parts are supported by two conical end walls in a fuze body member and locked by a number of balls or other similar members. The missile may be provided with a delay mechanism, such as a delay charge located in an end part of the missle, the end part is rotatable relative to the rest of the missile in order to adjust the delay time.

3,557,702
PROJECTILE WITH TARGET CUTTING MEANS
Samuel L. Benson, Rogers, Ark., assignor to Victor Comptometer Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 17, 1968, Ser. No. 768,480
Int. Cl. F42b 11/18
U.S. Cl. 102—92.7 5 Claims



There is herein disclosed a projectile having target cutting means comprising a multiple edge serrated peripheral cutting rim located closely adjacent the front of the projectile.

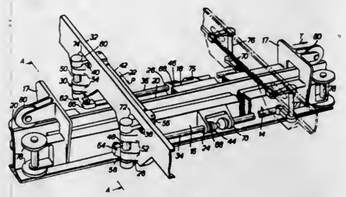
3,557,703
RAILWAY RAIL HANDLING APPARATUS
John E. Moorefield, Charlotte, N.C., and Charles H. Moorefield, executor
Filed Aug. 8, 1968, Ser. No. 751,191
Int. Cl. E01b 29/02
U.S. Cl. 104—2 10 Claims



Apparatus for handling lengths of railway rail by advancing such rail longitudinally wherein opposed rail gripping wheels define a nip through which a rail is to be advanced and are movable one relative to the other by gripping force means and in accommodation of rail flexure for assuring that tractive force is exerted on a rail when the wheels are driven in rotation by a drive means operatively connected thereto.

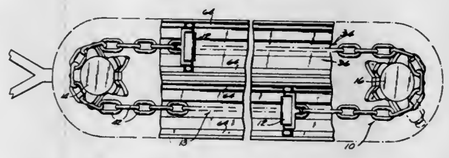
3,557,704
ELECTRO-MAGNETICALLY PROPELLED VEHICLE
Christopher Durrant English, Burnwell, England, assignor to Tracked Hovercraft Limited, London, England, a British Company
Filed Apr. 18, 1969, Ser. No. 817,487
Claims priority, application Great Britain, June 19, 1968, 18683
Int. Cl. B60l 9/00; B60m 1/30; B61b 13/04
U.S. Cl. 104—148 11 Claims

A vehicle propelled by a double sided linear induction motor has a linkage connecting the stator to the vehicle. The linkage includes two main links on opposite sides of the stator lying in a plane in which the tractive forces also lie. Each main link is connected to the stator and to a rotatable crank



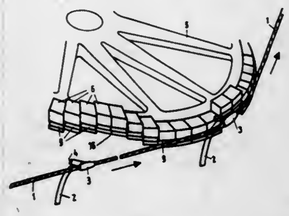
on the vehicle. The rotatable cranks are interconnected by a cross link. The linkage does not transmit yawing, rolling, pitching, lateral or vertical movements of the vehicle to the stator.

3,557,705
CONVEYOR SYSTEM FOR AUTOMOTIVE VEHICLES
Myron M. Gusse, 353 17th St., and Melvin E. Gusse, Winnebago Heights, Malone, Rte 1, Fond Du Lac, Wis. 54935
Filed Feb. 19, 1969, Ser. No. 800,445
Int. Cl. B61b 13/12; B65g 19/24
U.S. Cl. 104—172 6 Claims



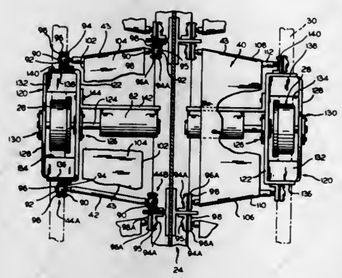
A conveyor system for moving automobiles having an endless coil chain which carries transversely disposed rollers which are adapted to engage the tire of one of the wheels of an automobile and to impart rotational movement thereto. The chain is engaged by driving and idler sprockets at the exit and entrance ends of the conveyor, with the sprockets being positioned below and at an oblique angle to the floor of the installation and with the power and return sides of the chain being located at floor level.

3,557,706
DEVIATION DEVICE OF A TOWING OR SUSPENSION ROPEWAY
Max Maurer, Canton Bern, Switzerland, assignor to Marcel Bachmann, Huenibach near Thun, Bern, Switzerland
Filed Apr. 23, 1969, Ser. No. 818,757
Claims priority, application Switzerland, Apr. 24, 1968, 6092
Int. Cl. B61b 11/02, 7/10
U.S. Cl. 104—191 6 Claims



A deviation device of a towing or suspension ropeway, including a revolving support for laterally deviating the hoisting rope of the ropeway, on which rope spaced load carriers are secured each having laterally a transversal part, all these parts projecting horizontally from the same side of the rope, the revolving support being equipped with a plurality of rope guiding elements each being transiently displaceable in order to leave a gap in the row for the transient entrance of such transversal part when the same passes together with the hoisting rope through the deviating range of the revolving support.

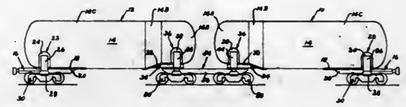
3,557,707
RAILWAY TRAIN SUSPENSION
Ivan L. Joy, 1616 W. 29th St., Topeka, Kans. 66611
Filed Feb. 19, 1969, Ser. No. 800,498
Int. Cl. B61f 1/02, 3/16, 13/00
U.S. Cl. 105—1 18 Claims



The disclosure relates to a high-speed one-car railroad vehicle that can be 500 to 2,000 feet long and is in the form of a millepedelike running gear with multiple sets of closely spaced wheels and carrying load support platforms or decks for freight or the like, in which the running gear extends the length of the train and comprises a continuous center sill structure that is sufficiently flexible horizontally to accommodate curves and includes closely spaced wheel modules, each of which is provided with a pair of small diameter wheels that ride on the respective track rails, with the wheel modules being spaced so that the wheels are disposed every 4 feet on either side of the train. The center sill structure is suspended from the wheels by individual knee action suspensions connecting the wheels to the center sill structure, and where the vehicle is self propelled, each wheel is individually driven by its own motor, with 100 percent dynamic braking being employed. The wheel modules also each include a crossbearer or beam plate member that overlies the wheels thereof, on which members rest the train load support decks that are in the form of freight container receiving deck plates. The deck plates are sprung on the wheels underlying same by employing an elongate fluid tube spring on either side of the center sill for each deck plate. The respective fluid tube springs extend the length of the respective deck plates, and each deck pate is supported only by its underlying fluid tube springs, which are interposed between the respective wheel suspensions and the crossbearers. The individual decks are pivotally connected to the center sill adjacent either end of same and rest on rollers mounted on the respective crossbearers that are oriented so that the center sill may readily shift laterally of the respective decks as required to smoothly round curves in the track.

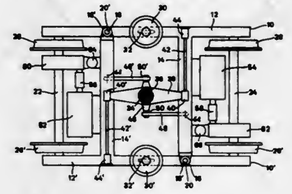
3,557,708
ARTICULATED RAILWAY TANK CARS
Ronald P. Bolte, Saint Louis City, Mo., assignor to ACF Industries, Incorporated, New York, N.Y., a corporation of New Jersey
Filed Sept. 12, 1968, Ser. No. 759,380
Int. Cl. B61d 5/06, 5/16; B61f 3/12
U.S. Cl. 105—4 3 Claims

An articulated structure for adjacent ends of two railway car bodies including a pair of four-wheeled trucks connected by a span sill structure supported for relative pivotal movement on center plates of the pair of trucks. The sill structure has a pair of center plates thereon and support the two railway car bodies for relative pivotal movement thereon. The railway car bodies are particularly adapted as railway tank car bodies having their adjacent ends of a reduced diameter



with stub center sill structures secured to the reduced diameter end portions and permit the connection of two tank car bodies each having a capacity of twenty-five thousand (25,000) gallons or more thereby providing a total capacity in the two articulated cars of over fifty thousand (50,000) gallons.

3,557,709
RAILWAY CAR
Karl E. Hilfing, Ornskoldsvik, and Nils Artur Pettersson, Sidensjo, Sweden, assignors to Aktiebolaget Hagglund & Soner, Ornskoldsvik, Sweden, a corporation of Sweden
Filed Sept. 27, 1968, Ser. No. 763,069
Int. Cl. B61f 3/04, 5/10, 5/20
U.S. Cl. 105—199 2 Claims

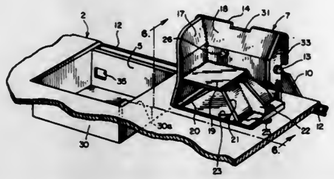


A railcar has a bogie with front and rear frame sections, each of which has a frame consisting of two T-shaped elastically interconnected transoms, while the car body is supported upon the two frameworks by pneumatic springs connected in series with helical steel springs. The present invention is particularly characterized in that the pneumatic and helical springs are rigidly fixed at their interconnections to the outer ends of a U-shaped yoke the central portion of which consists of a torsionally stiff body extending the entire width of the car; this element is subject to torsion and is rotatably mounted in the car body. The cross-sectional central plane of the frame sections is shifted in the direction toward the corresponding end of the car body, whereby the forces exerted upon the car body are transmitted to the frame section through a pin rigidly fixed in the car body and coupling rods provided upon the upper end of the pin and extending transversely to the direction of motion. The acceleration forces between the frame section and the car body are transmitted from the lower end of said pin and through a contact point located upon the framework, the height of which above the edge of the rails is approximately equal to the height of the free passage of the frame section.

3,557,710
CONTAINER VEHICLE AND ADJUSTABLE BRACKET MEANS THEREFOR
Roy W. Miller, Highland, Ind., assignor to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Nov. 6, 1968, Ser. No. 773,932
Int. Cl. B61d 45/00
U.S. Cl. 105—366 6 Claims

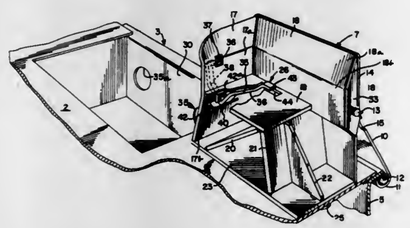
In a container-carrying flat deck railroad car, a plurality of adjustable container corner brackets mounted on the deck,

each bracket having a support leg pivotally and slidably attached to the car side sill for longitudinal movement and a member pivotally mounted with said support leg, said member being provided with a container corner bracket seat



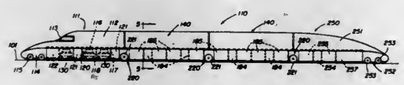
being provided with a base portion couplable in one position to the deck and in another position foldable into a recess within the deck and having guide means for locating the member into the recess, the member and the support leg lying flush with the deck.

3,557,711
LOCKING CONTAINER BRACKET
Ralph W. Dobson, Calumet City, Ill., and Roy W. Miller, Highland, Ind., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed Nov. 6, 1968, Ser. No. 773,933
Int. Cl. B61d 45/00
U.S. Cl. 105—366 11 Claims



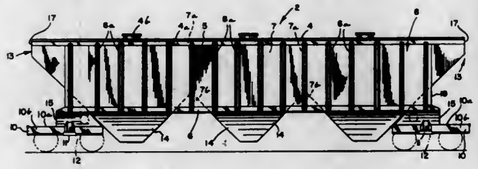
For a container-carrying flat deck railroad car, a locking container bracket of the adjustable type having a support leg pivotally and slidably attached to the car side sill and to the container supporting bracket mountable on and stored within the deck, the seat of the bracket having disposed thereabove a pivotal lock element having one portion lockingly receivable in the aperture of a corner casting of a container and having the other portion moved by the container attendant to moving the locking portion into the aperture of the corner casting for retaining the container on the bracket.

3,557,712
RAILWAY TRAINS FOR COMBINATION RAILWAY AND PASSENGER AUTOMOBILE TRANSPORTATION, AND CARS THEREFOR
Veljko Milenkovic, Boulder, Colo., assignor to General American Transportation Corporation, Chicago, Ill., a corporation of New York
Filed May 8, 1968, Ser. No. 727,601
Int. Cl. B61d 3/02; B65j 1/22
U.S. Cl. 105—368 23 Claims



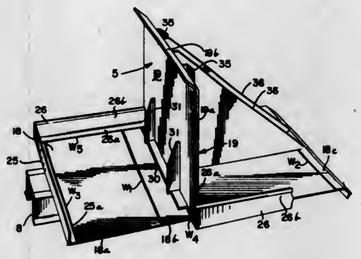
There is disclosed a railway train for use in the railway transportation of both passenger automobiles and the passengers thereof comprising a front car and at least one automobile carrier and a rear car; the automobile carrier has a frame supported well above the tracks and carrying therebeneath a floor for supporting automobiles arranged laterally thereof, a lounge space being provided above the automobile storage space with stairways interconnecting the automobile storage space and the lounge space; the front car and the rear car also are provided with an automobile storage space in the lower portions thereof and a passenger lounge space in the upper portions thereof.

3,557,713
HOPPER VEHICLE CONSTRUCTION
John H. Spence, Chicago Heights, and William VanDer Sluys, Homewood, Ill., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed June 24, 1968, Ser. No. 739,319
Int. Cl. B61f 1/00, 1/10
U.S. Cl. 105—404 9 Claims



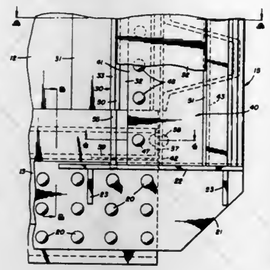
A vehicle hopper construction having a hopper end slope sheet, upright vertical web and flat lower shear plate forming a torsion box design in the area of the side girder of the car to reduce torsional stresses to the coupler forces, where said shear plate may be bowed upwardly in gull wing design for coupling the center sill to the side sill to reduce the depth of the side girders and wherein the slope sheet may be bowed inwardly or the bolster web may be bowed outwardly to increase the cross-sectional area of the torsion box and thereby reduce the stresses upon it due to coupler force.

3,557,714
HOPPER CAR CONSTRUCTION
Herman A. Aquino, Hobart; Walter J. Marulic, Gary, and William R. Shaver, Munster, Ind., assignors to Pullman Incorporated, Chicago, Ill., a corporation of Delaware
Filed June 24, 1968, Ser. No. 739,318
Int. Cl. B61d 7/00; B61f 1/10
U.S. Cl. 105—406 10 Claims



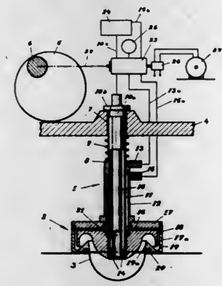
An aluminum hopper car having a high-pitched roof defined by sheeting mounting carlines connected between box-shaped sideplates and the coaming defining a continuous trough hatch opening, the carlines being in transverse alignment with box section side posts and reinforcing partition sheets and the bolster web, a horizontal shear plate lying in the plane of the horizontal portions of the side and end sills connecting with said bolster web and end slope sheet to define a closed torque box arrangement, said slope sheet comprising a plurality of sections of variable thicknesses to accommodate load requirements, the shear plate and slope sheets being assembled by butt welding techniques.

3,557,715
RAILROAD CAR END CORNER CONSTRUCTION
Carl E. Johansson, South Euclid, Ohio, assignor to The Youngstown Steel Door Company, Cleveland, Ohio, a corporation of Ohio
Filed Dec. 7, 1966, Ser. No. 599,819
Int. Cl. B61f 1/10
U.S. Cl. 105—409 9 Claims



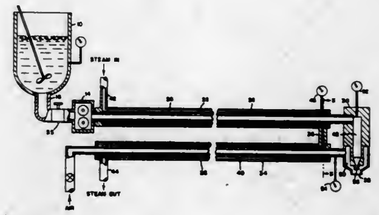
The railroad car sides and ends are fabricated from lightweight metal such as aluminum. The disclosure relates to the bottom corner connection between the sidewall and the end wall in a railroad car. A side sill extends the length of the car. Connected to the end of the sill is a gusset plate which projects beyond the end of the sill. The gusset plate includes a plate or platform which projects substantially transverse of the railroad car. A corner post formed of a plurality of separate structural members rests on the plate with the structural members being interconnected to form a composite corner post. The corner post includes a flange which extends inwardly of the car past the end of the side sill and is connected to the vertical edge of the end wall. A portion of the corner post is spaced outwardly from the side sill so that the rivets employed in interconnecting the structural members forming the corner post do not project into the interior of the car. All of the component parts of the corner construction herein involve either substantially flat sheets or extruded shapes requiring virtually no cutting or coping to subassemble and assemble.

3,557,716
CONFECTIONERY MOULD
Sven Birger Westin, 74 Skarsgatan, Goteborg, Sweden
Filed July 1, 1968, Ser. No. 741,737
Int. Cl. A23g 1/20
U.S. Cl. 107—8 6 Claims



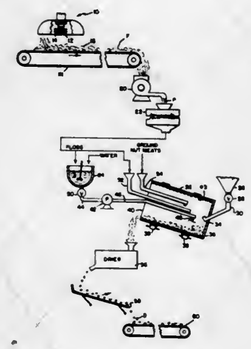
Hollow confectionery articles are manufactured by injecting a flowing confectionery material into an open mould, usually consisting of a series of recesses pressed in a thin sheet of synthetic resin. It is desirable that the confectionery material shall not be permitted to smear the upper surface of the mould between the recesses. The injection is brought about by means of an apparatus having a head extending into the recess during the filling operation, and being tightly pressed against the mould around the recess being filed. The head is provided with a cavity for surplus confectionery material, and compressed air is injected into the recess together with the confectionery material to augment the uniform spreading of the confectionery material over the walls of the recess and to force the surplus into the cavity to be collected in a container.

3,557,717
PROCESS FOR MAKING CANDY FLOSS
Thomas E. Chivers, Osseo, Minn., assignor to General Mills, Inc., a corporation of Delaware
Filed May 17, 1968, Ser. No. 730,057
Int. Cl. A23g 1/20
U.S. Cl. 107—54 7 Claims



Process for making candy floss from a cooked solution slurry or syrup, containing sugar and water, and if desired, other flavoring and/or coloring ingredients. Most of the moisture is removed from the solution by cooking the solution at a high temperature. A pressurized gaseous medium such as air, is used to diffuse the cooked candy as it is sprayed from a discharge opening, and convert it into floss form.

3,557,718
PROCESS FOR COATING CEREAL WITH CANDY FLOSS
Thomas E. Chivers, Osseo, Minn., assignor to General Mills, Inc., a corporation of Delaware
Filed May 17, 1968, Ser. No. 730,075
Int. Cl. A21d 15/00
U.S. Cl. 107—54 17 Claims

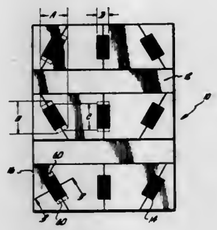


A process for making a sweetened, ready-to-eat food product. Particles of ground candy floss are applied to the moistened surfaces of cereal pieces, after which the cereal pieces are heated to reduce their moisture content and to cause the coating to form a glaze surrounding the pieces.

3,557,719
PAPERBOARD PALLET ASSEMBLY

Thaddeus A. Gielas, 4709 70th St., Kenosha, Wis. 53140

Filed Aug. 12, 1968, Ser. No. 752,019
Int. Cl. B65d 19/12
U.S. Cl. 108—56 8 Claims

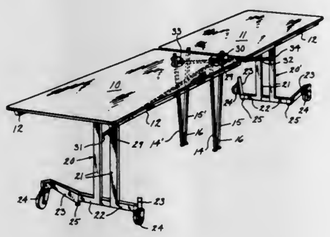


The present invention relates to an improved pallet comprising an assemblage of paperboard elements which are preformed and cut to define blanks which may be stored and shipped in essentially flat condition, and assembled when and where needed, for use into a pallet having a load-bearing deck supported by a plurality of feet which are suitably spaced to permit the tines of a forklift truck to engage the underside of the deck for maneuvering the load-bearing pallet under use conditions.

3,557,720
PORTABLE FOLDING TABLES

Robert O. Blink, Greenfield; William C. Lutzke; Frederick C. Holz, Milwaukee, Wis., and Robert W. Schier, Cook County, Ill., assignors to Mitchell Manufacturing Co., Milwaukee, Wis., a corporation of Wisconsin

Filed Jan. 17, 1969, Ser. No. 791,957
Int. Cl. A47b 3/00
U.S. Cl. 108—113 5 Claims

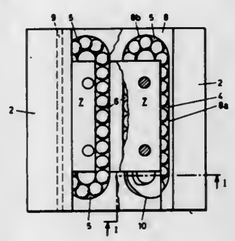


A portable folding table with specially designed leg units including casters adapted to support the table when it is in its upright, folded condition to permit said table to be readily wheeled to or from its storage location, and wherein said leg units are adapted to be acted upon by link means operatively associated with the hinged top sections of the table when said table is unfolded and arranged in its outstretched condition to cause nonslip foot elements on said legs to engage the floor while simultaneously pivoting said casters to a raised position, thereby eliminating the possibility of said table inadvertently rolling or shifting while it is in use.

3,557,721
ARRANGEMENT FOR GUIDING AND SUPPORTING A TABLETOP FOR LENGTHWISE MOVEMENT

Hans Worm, 45 Schaberg, D-565, Solingen, Germany

Filed Jan. 22, 1969, Ser. No. 792,999
Claims priority, application Switzerland, Oct. 30, 1968, 16199/68
Int. Cl. F16c 31/06
U.S. Cl. 108—143 9 Claims

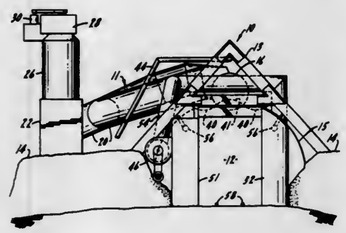


Two closed-path ball races, incorporated between the tabletop and respective outer guide rails are covered in part by a flat guide rail on the bottom surface of which a tabletop drive mechanism can be mounted.

3,557,722
INCINERATING METHOD AND APPARATUS

Walter Erman, Chicago, Ill., assignor to Erman Corporation, Incorporated, Chicago, Ill., a corporation of Kansas

Filed Jan. 3, 1968, Ser. No. 695,488
Int. Cl. F23g 7/00
U.S. Cl. 110—8 5 Claims

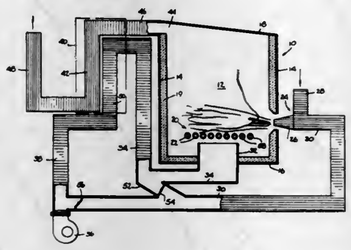


Method and apparatus are provided for incinerating combustible materials while minimizing delivery of contaminants to the atmosphere. In carrying out the method, air is preheated and introduced into the combustion chamber to feed the fire. Preferably the air is preheated to at least about 300° F., and the combustion products are heated to at least about 600° F., or most preferably to at least about 1000° F. Water droplets are preferably introduced into the combustion chamber during incineration, and the products of combustion may be passed through a moving stream of water. The apparatus includes an elongated incineration housing, means for introducing preheated air, and combustion products removal means. Preferably, the air-preheating means also forms means for recirculating air past the entrance and exit openings in the housing. Means are preferably provided for introducing water droplets into an upper portion of the housing and for burning and scrubbing the combustion products.

3,557,723
FURNACE FOR BURNING WET FUELS AND METHOD OF OPERATING SAME

Earle C. Miller, Worcester, Mass., assignor to Riley Stoker Corporation, Worcester, Mass., a corporation of Massachusetts

Filed June 6, 1969, Ser. No. 831,124
Int. Cl. F23g 5/12
U.S. Cl. 110—8 12 Claims

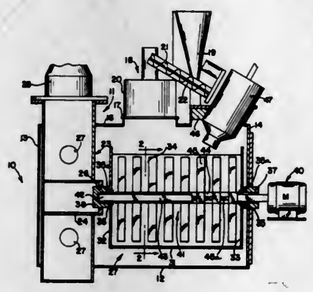


Furnace for burning wet fuels on a grate having a blast of hot air forced through the grate and a supplemental burner to provide additional combustion heat. The blast of hot air is heated to a greater degree by feeding relatively cool combustion air to the supplemental burner and using an air heater, which normally heats such combustion air, to preheat the air forming the undergrate blast.

3,557,724
INCINERATOR

Pei Tai Pan, and John Michael Whalen, Beloit, Wis., assignors to Fairbanks Morse, Inc., New York, N.Y., a corporation of Delaware

Filed July 28, 1969, Ser. No. 845,180
Int. Cl. F23g 5/12
U.S. Cl. 110—8 8 Claims

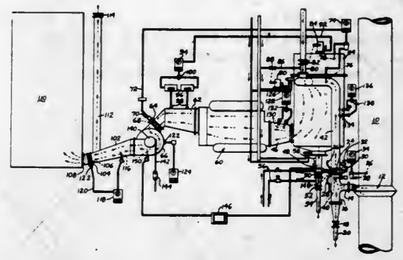


The method of burning glutinous waste mass in an incinerator wherein the glutinous mass is maintained out of contact with a preheated combustion chamber wall to raise the temperature of the mass and cause partial incineration of the mass and thereby prevent the creation of thermal gradients in the combustion chamber wall. The partially incinerated mass deposited on the wall is then burned to convert the waste to ash. The glutinous waste mass is fed into the furnace at a rate commensurate with the burning rate.

3,557,725
FURNACE EMISSION CONTROL SYSTEM

Kenneth W. Stookey, Markle, Ind., assignor to Torrax Systems, Inc., North Tonawanda, N.Y., a corporation of Delaware, by mesne assignments to

Filed July 10, 1969, Ser. No. 840,797
Int. Cl. F23g 5/12
U.S. Cl. 110—10 15 Claims

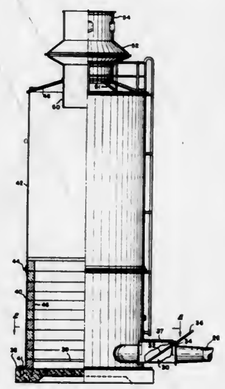


The invention pertains to a furnace emission control system, especially for a vertical furnace charged at the top and having a heated well at the bottom in which hot gases are drawn off from an intermediate point along the furnace and supplied to an igniter for secondary combustion therein with the gases discharged from the igniter being passed through a waste heat boiler and then through an induced draft fan and then through a bag filter or precipitator to the atmosphere. The gas flow throughout the system is maintained so that the furnace above the gas outlet therein is at subatmospheric temperature and so that gas flow will be maintained into the igniter. The oxygen content of the gases discharged from the waste heat boiler is sampled and secondary air is admitted to the igniter in conformity therewith. The temperature of the gases from the igniter is sampled and supplementary fuel may be supplied to the igniter to maintain minimum safe operating temperature. Controls are provided to bypass gases above a predetermined temperature away from the bag filter and to maintain the igniter temperature above a predetermined minimum.

3,557,726
INCINERATOR

William T. S. Montgomery, Jacksonville, Fla., assignor to Jacksonville Blow Pipe Company, Jacksonville, Fla., a corporation of Florida

Filed Jan. 28, 1969, Ser. No. 794,690
Int. Cl. F23g 7/00
U.S. Cl. 110—18 5 Claims



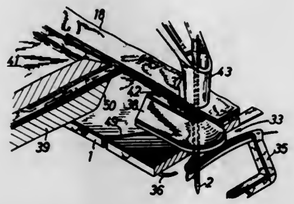
A system for destruction of inflammable particulate waste wherein waste suspended in an amount of air sufficient to

support complete combustion is blown into the lower end of a combustion chamber tangentially of the cylindrical chamber wall where it is ignited and travels during combustion in a helical path to an exhaust at the top of the chamber.

3,557,727
THROAT PLATE FOR DOUBLE CHAINSTITCH SEWING MACHINES

Alfred Heimann, Bielefeld, Germany, assignor to Kochs Adlernahmaschinen Werke AG, Bielefeld, Germany

Continuation-in-part of application Ser. No. 577,975, Sept. 10, 1965, now abandoned. This application June 7, 1968, Ser. No. 735,246
Int. Cl. D05b *21/00, 75/00*
U.S. Cl. 112—121.12 6 Claims

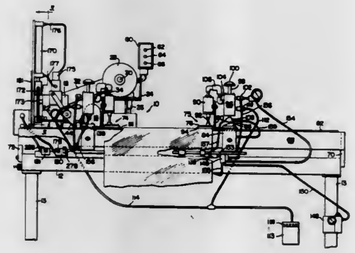


A throat plate for double chainstitch sewing machines provided with a thread-carrying needle, a thread-carrying chainstitch looper and a thread spreader to permit the forming of seams in any feed direction of the workpiece. The throat plate having a groovelike stitch hole is pivoted in the bedplate about the axis of the needle. For use in sewing devices with restricted guidance of the sewing cycle, the throat plate pivoted in the bedplate of the sewing machine is controlled by patterns of corresponding shape for the alignment of the groovelike stitch hole in the feed direction.

3,557,728
RAILWAY SEWING MACHINE

Lewis H. Duke, P.O. Box 267, Salem, Mass. 01970

Continuation-in-part of application Ser. No. 615,184, Feb. 10, 1967, now abandoned. This application July 23, 1968, Ser. No. 752,123
Int. Cl. D05b *3/00*
U.S. Cl. 112—121.14 14 Claims

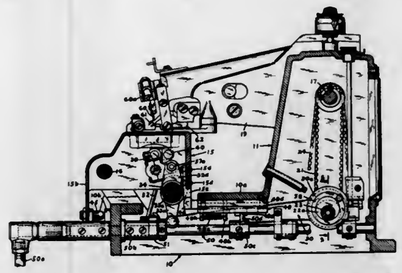


A railway sewing machine having an automatic thread cutoff and automatic carriage return for seaming a fabric clamped adjacent the path of travel by means of a fluid or electrically operated clamping arrangement. A variable speed transmission and controls therefor are provided to enable plural speeds during sewing and a high speed return of the carriage. The fabric clamping arrangement is provided with a semiautomatic cloth tensioning device and the clamping arrangement releases automatically at the end of the seaming operation.

3,557,729
BLINDSTITCH SEWING MACHINE

William T. Richards, Chicago, Ill., assignor to Union Special Machine Company, Chicago, Ill., a corporation of Illinois

Filed July 2, 1969, Ser. No. 838,517
Int. Cl. D05b *1/24*
U.S. Cl. 112—178 12 Claims

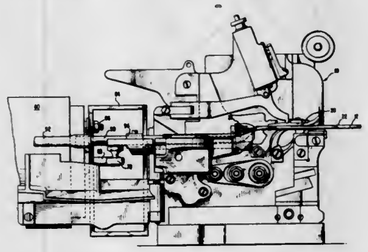


An improved blind stitch sewing machine construction adapted to insure proper formation of blind stitches, of either the skip and the nonskip type, with the machine operated at very high speeds. Includes work table-locking means, for retaining the work supporting rockable table in its uppermost position, during stitch-forming operations. Means, comprising a pair of levers, are provided for disabling said locking means and then bringing about downward rocking of the worktable under the control of the operator, as by operation of a knee press. Means are provided for changing from a nonskip to a skip stitch condition of the machine, and vice versa. Such changeover from one type of stitching to the other involves a change in the location of the arc of oscillation of the work-engaging edge of the node former during a cycle of operation of the machine. Skip stitches are produced by varying the extent of oscillation of a node former during successive operations of the machine.

3,557,730
THREAD-CUTTING MECHANISM FOR SEWING MACHINE

George B. Armstead, Jr., Glastonbury, Conn., assignor to The Merrow Machine Company, Hartford, Conn., a corporation of Connecticut

Filed June 22, 1964, Ser. No. 376,898
Int. Cl. D05b *65/06*
U.S. Cl. 112—252 9 Claims

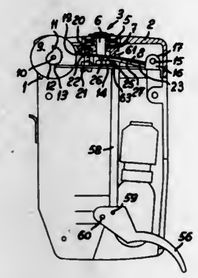


A thread-cutting apparatus for use on a sewing machine and including a horizontally disposed clipper mechanism positioned transversely of the line of movement of articles through the machine and rearwardly of the stitch-forming mechanism substantially in the plane of the machine's work support and needle plates. A suction nozzle is positioned beneath an opening in the work support plate, and extends forwardly of the cutting teeth on the clipper blades to draw a chain of stitches into the cutting mechanism to cut a chain adjacent the trailing edge of an article sewn on the machine and again adjacent the leading edge of a subsequent article sewn on the machine. The top blade of the clipper is fixed and forms a continuation of the work support surface defined by the needle plate and work support.

3,557,731
SYSTEM FOR ADJUSTING THE TENSION OF THE UPPER THREAD IN A SEWING MACHINE

Ramon Casas-Robert, Geneva, Switzerland, assignor to Mefina S. A., Fribourg, Switzerland, a corporation of Switzerland

Filed Nov. 24, 1969, Ser. No. 879,417
Claims priority, application Switzerland, Dec. 6, 1968, 18240/68
Int. Cl. D05b *47/00*
U.S. Cl. 112—254 7 Claims

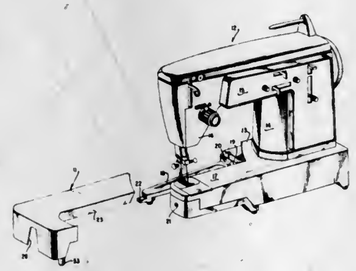


A system for adjusting the tensile stress to which the upper thread of the machine is subjected by means of a spring engaging an arrangement including a spindle carrying two plates between which the thread is held against friction during its progression from its spool towards the needle. The adjustment of the spring is ensured by means of two levers connecting corresponding points of the spring respectively with the spindle of said arrangement and with the cam normally controlling the actual tensioning of the spring.

3,557,732
SEWING MACHINE BED EXTENSIONS

Friedhelm K. Simon, Berghausen, Baden, and Albert E. Immler, Karlsruhe, Baden, Germany, assignors to The Singer Company, New York, N.Y., a corporation of New Jersey

Filed Jan. 12, 1968, Ser. No. 697,487
Int. Cl. D05b *75/00*
U.S. Cl. 112—258 4 Claims

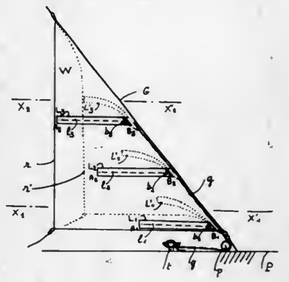


A bed extension is disclosed for converting a cylinder bed sewing machine to a flat bed sewing machine. The bed extension includes a shell, composed of molded plastic, and three brackets, also composed of molded plastic, connected to the shell for removably connecting the bed extension to the sewing machine.

3,557,733
APPARATUS FOR CHANGING THE CURVATURE OF A SAIL

Francois Joseph Henri Hubert Mathieu, and Odile Jeanne Marie nee Maury Mathieu, 18, Rue d'Edimbourg-62, Calais, France

Filed Nov. 8, 1968, Ser. No. 774,245
Claims priority, application France, Nov. 8, 1967, 127,318
Int. Cl. B63b *35/00;* B63h *9/06*
U.S. Cl. 114—102 14 Claims

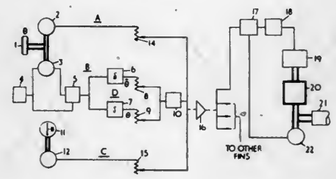


Present invention is concerned with a boat having a sail, and means for acting positively on the curvature of the battens, whereby the curvature of the sail is controllable, two sets of fitting means being located on said sail surface and lines fixed to fitting means of one set and running in fitting means of the other set.

3,557,734
SHIPS' STABILIZER CONTROL SYSTEMS

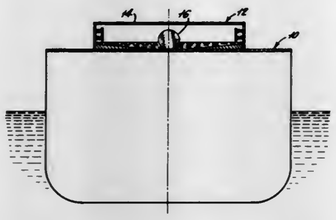
Alexander Arthur Tann, and David William Barry, Beckenham, England, assignors to Muirhead & Co., Limited, Beckenham, Kent, England, a British Company

Filed Oct. 23, 1968, Ser. No. 770,006
Claims priority, application Great Britain, Oct. 24, 1967, 48,206/67
Int. Cl. B63b *39/06;* B64c *13/18*
U.S. Cl. 114—122 8 Claims



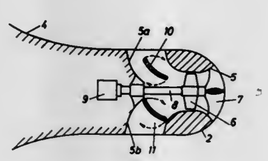
To overcome the shortcomings of known ships' stabilizer control systems and to provide a variety of further desirable features, there is proposed a double-frequency ship's stabilizer control system whereby use is made of various design advantages of higher frequencies together with the convenience of drawing power at the supply frequency of the ship's mains. One of the features of such a system is that it makes possible the use of only a single roll sensing element, as opposed to the customary two. A specific arrangement is shown for the computation of further roll variables required for stabilization purposes from the output signal of the single roll sensing element. Allowance may be made for any steady list which may be present.

3,557,735
MOVING WEIGHT SHIP STABILIZER
Edward D. Dreyfus, Clark, N.J., and Paul A. Brunsell, Massapequa, N.Y., assignors to Flume Stabilization Systems, Inc., Hoboken, N.J., a corporation of New Jersey
Filed July 26, 1968, Ser. No. 748,043
Int. Cl. B63b 39/02, 43/08
U.S. Cl. 114—124 11 Claims



A roll stabilization system for ships including a rolling cylindrical weight guided to roll athwartships in response to the rolling motion of the ship. Liquid means may be provided to dissipate kinetic energy from the rolling weight to assure proper phasing. Further means are provided to slow or dampen the movement of the weight near the extremities of travel.

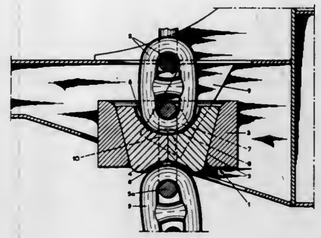
3,557,736
BOW CONTROL SYSTEM FOR SHIPS
Wolfgang Baer, Am Hardt, Germany, assignor to Firma J. M. Voith G.m.b.H., Heidenheim(Brenz), Germany, a limited liability company of Germany
Filed Jan. 10, 1969, Ser. No. 790,249
Int. Cl. B63h 25/46
U.S. Cl. 114—151 3 Claims



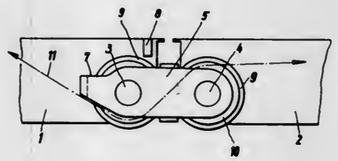
A ship is provided with a bow control system which is completely located in a bulbous enlargement extending forwardly from the bow of the ship at the bottom of the hull. The control system comprises a longitudinal flow passage opening at the front of the enlargement and a propulsion unit in the passage with two transverse flow passages opening from the longitudinal passage behind the propulsion unit to both sides of the enlargement. Means are provided in the transverse passages for controlling the flow of water therethrough. The enlargement together with the control system comprises a unitary structure which can be mounted on the hull of a ship.

3,557,737
CHAIN STOPPER
August Hendrik Maria Smulders, Wassenaar, Netherlands, assignor to N. V. Industrieele Handelscombinatie, Netherlands
Filed Nov. 13, 1968, Ser. No. 775,269
Claims priority, application Netherlands, Nov. 14, 1967, 6715439
Int. Cl. B63b 21/18
U.S. Cl. 114—200 4 Claims

A chain stopper comprises a separable chain-grasping insert rotatably received in a conical recess in a body which is supported on oppositely outwardly extending trunnions that have concave supporting under surfaces curved on a relatively long radius of curvature and which rest on fixed convex supporting surfaces curved on a relatively short radius of curvature.



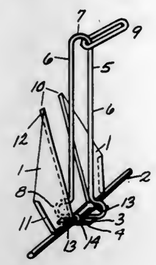
3,557,738
CLOSURE
Uwe Hanssen, and Achim Hildebrandt, Hamburg, Germany, assignors to Blohm & Voss AG, Hamburg, Germany
Filed Feb. 14, 1969, Ser. No. 799,262
Int. Cl. B63b 19/18
U.S. Cl. 114—202 10 Claims



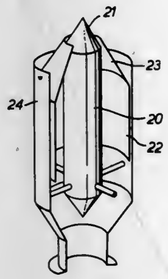
A hatch cover for ships includes a plurality of panels arranged in sets of two and together having a combined cross-sectional area at least equal to that of a hatch in the deck of a ship. Hinges hingedly connect the panels of each set and include a pair of proximal pins each provided on a laterally facing edge face of the respective panels, with a first roller and a smaller-diameter second roller being freely rotatably mounted on each pin and with the respective first rollers engaging guide rails extending along the hatch. At least one connecting lug connects the pins to thereby connect the two panels of each set with one another. The other pairs of panels are connected by analogous hinge arrangements. A pulley is located upwardly of the hatch spaced therefrom in a given direction normal to the pivot axes of the hinges. A rope is convoluted about the pulley and trained around the second rollers alternately below and above the same so that pull on the rope causes the panels to tilt upwardly and become located in adjacent vertical planes at one end of the hatch.

3,557,739
ANCHOR
Earl J. Kaercher, 1 Ferncliff, Erie, Pa. 16505
Filed Nov. 27, 1968, Ser. No. 779,524
Int. Cl. B63b 21/36
U.S. Cl. 114—208 3 Claims

An anchor with a U-shaped shank welded to a base on which are pivoted two symmetrical pointed flukes, each having an upwardly extending flange along one edge and a downwardly extending flange along the opposite edge with the flukes arranged so that no matter in which direction the anchor acts, there are always two flanges which extend downward and dig into the bottom and two flanges which extend upward. In the stored position, a rope link slidable on the shank straddles the pointed ends of the flukes and holds the flukes in an upright position.



3,557,740
VENTING ARRANGEMENT FOR STORAGE TANKS
Will Pratt, Kenley, Surrey, and Geoffrey Joseph Grocott, Bearsted, Maidstone, Kent, England, assignors to The British Petroleum Company Limited, London, England
Filed Oct. 8, 1968, Ser. No. 765,910
Claims priority, application Great Britain, Oct. 10, 1967, 46171/67
Int. Cl. B63j 2/14
U.S. Cl. 114—211 4 Claims

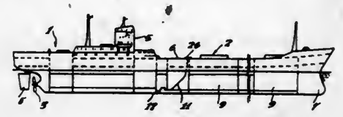


Petroleum storage tanks or the cargo tanks of a tankship have an upwardly directed minimum velocity escape valve in the vent line or lines. During filling this ensures that no flammable concentration of petroleum vapors forms below the valve, e.g. at the deck level of a tankship.

A suitable valve has a tapered sleeve which cooperates with a pointed core. The sleeve lifts to provide a larger annular opening to prevent too high pressure drop at high mass flow rates and falls to reduce the opening to keep a high velocity at lower mass flow rates.

3,557,741
CONSTRUCTION OF SHIPS
James Arthur Teasdale, Whitley Bay, England, assignor to National Research Development Corporation, London, England, a British corporation
Filed Aug. 21, 1967, Ser. No. 662,090
Claims priority, application Great Britain, Aug. 23, 1966, 37,806/66
Int. Cl. B63b 21/00
U.S. Cl. 114—235 34 Claims

This invention relates to the construction of a composite ship, comprising a motive pusher or after part, which houses propulsion machinery, steering gear and controls, and at least one cargo-holding part which comprises a bow provided with mooring and anchoring equipment. The several parts are attachable together rigidly or with a degree of vertical flexibility to provide a composite ship which is stable and controllable at sea and in port.

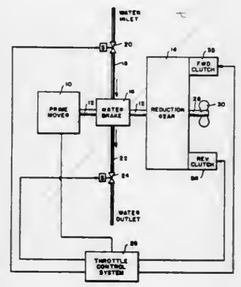


3,557,742
CARGO VESSELS
Reuben Murphy Gainsley, London, England, assignor to Vickers Limited, London, England, a British company and Reuben Murphy Gainsley, known as Reuben Murphy G., London, England
Filed Nov. 20, 1968, Ser. No. 777,431
Claims priority, application Great Britain, Nov. 21, 1967, Jan. 18, 1968, 52,862;52,319
Int. Cl. B63b 21/00, 3/02
U.S. Cl. 114—235 17 Claims



A vessel made up of interlockable sections, the aftermost one being a propulsion unit housing machinery, crew accommodation, the bridge and other offices and being independently navigable. A cargo-carrying section can be removably attached to the forward end of the propulsion unit and when attached mating surfaces of tapered shoulders and recesses are locked in wedged together positions. Power operated devices are provided for drawing the propulsion unit and the cargo-carrying section together and locking them in position. The forward end of the cargo-carrying section can be shaped similarly to the forward end of the propulsion unit so that further similar cargo-carrying sections can be attached end-to-end forward of the propulsion unit.

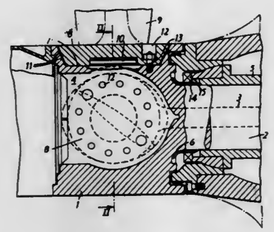
3,557,743
SHIP'S PROPULSION CONTROL SYSTEM
Casimir J. Rubis, Davidsonville, Ohio, assignor to the United States of America as represented by the Secretary of the Navy
Filed Nov. 27, 1968, Ser. No. 779,410
Int. Cl. B63h 1/14
U.S. Cl. 115—34 3 Claims



An automatic dynamic water braking reversal system for a ship's propulsion plant comprising a water brake on the shaft

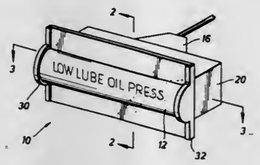
connecting the prime mover and the reduction gears, enabling rapid speed reduction of the propeller shaft thereby reducing the amount of energy required to be absorbed by the clutches used with an unidirectional prime mover and a reversible drive shaft. Additionally, the water brake may be used to load the engine to obtain lower idle speed operation.

3,557,744
AFT STRUCTURES OF MARINE VESSELS
Colin Wray Redcar Herbert, Yorkshire, England, assignor to The Glacier Metal Company Limited, Alperton, Wembley, Middlesex, England
Filed Dec. 11, 1968, Ser. No. 783,031
Claims priority, application Great Britain, Dec. 11, 1967, 56,228/67
Int. Cl. B63h *1/14*
U.S. Cl. 115—34 **10 Claims**



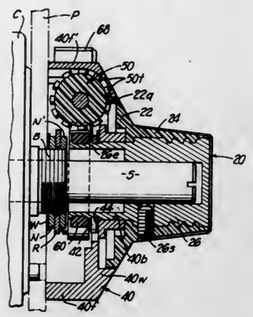
A stern construction for a ship having a propeller with detachable blades includes a passage over the propeller through which the blades can be lifted into the ship. The propeller boss is made integral with the shaft and the blades have flanges which are bolted in recesses in the boss. Provision is made for locating the blades at a required pitch and for purging the space between the blade and the boss as each blade is fitted.

3,557,745
INDICATOR DEVICE
Robert S. Harrah, 4108 Dupont, Houston, Tex. 77021
Filed Nov. 21, 1968, Ser. No. 777,670
Int. Cl. G01l *19/12*
U.S. Cl. 116—70 **5 Claims**



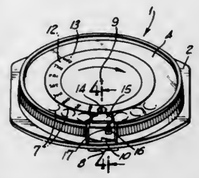
An indicating device providing a visual readout of an equipment malfunction or the like, the readout being visible during an alarm condition wherein the particular malfunction is indicated by appropriate written words or symbols carried on a movable elongate member having sufficient length to span the words or symbols representing the particular failure, wherein the elongate means moves into or away from the optical range of a lens which, when the elongate means is present, provides a readily visible and readable indication and which provides no indication when the elongate means is moved away from and beyond the range of visibility of said lens.

3,557,746
TURNS-COUNTING ROTARY INSTRUMENT DIAL INDICATOR
John R. Jungblut, San Diego, Calif., assignor to Bourns, Inc., a corporation of California
Filed Dec. 31, 1969, Ser. No. 889,426
Int. Cl. G01p *13/00*
U.S. Cl. 116—115 **4 Claims**



A turns-indicating knob and dial indicator combination for rotational adjustment of a rotary shaft-operated instrument with concurrent visual indication of the full turns and fractional turn through which the adjustment shaft has been rotated, with a shaft lock or brake, the combination characterized by exceptionally few and simple parts.

3,557,747
TABLET DISPENSER
William R. Rigney, Watchung; Dirk Tump, Lebanon, and Robert A. Luciano, Warren, N.J., assignors to Ortho Pharmaceutical Corporation, a corporation of New Jersey
Filed May 19, 1969, Ser. No. 825,884
Int. Cl. B65d *83/04*
U.S. Cl. 116—121 **8 Claims**

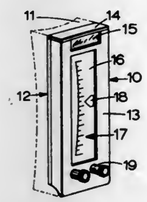


A tablet dispenser having a tablet ring rotatably mounted with respect to both the cover and the base, the cover and tablet ring being initially joined to permit joint rotational movement with respect to the base. The cover and tablet ring are rotated until a time reference indicator is registered with an indicia of time representing the day on which the first tablet is to be taken. The first tablet to be taken underlies the tablet access area of the cover when the cover and tablet ring are joined. After initial setting of the dispenser the interconnection between the cover and the tablet ring is broken to permit rotation of the cover with respect to the tablet ring and sequential dispensing of the tablets.

3,557,748
INSTRUMENT INDICATOR SCALE ASSEMBLY
Hoel L. Bowditch, Foxboro, Mass., assignor to The Foxboro Company, Foxboro, Mass., a corporation of Massachusetts
Filed Nov. 1, 1968, Ser. No. 772,683
Int. Cl. G09f *9/00*
U.S. Cl. 116—129 **1 Claim**

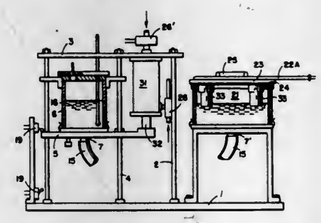
For use in process and/or energy control instrumentation, an indicator assembly with special construction for quick and

simple assembly, disassembly, or interchange of indicia scales. With a variety of indicia presentations, scales may be



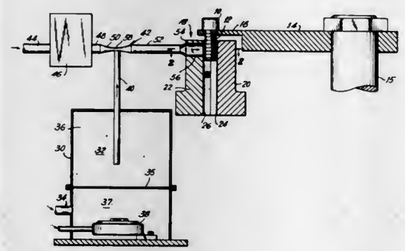
so precisely interchanged as to require no recalibration in selected families of parameters for indication in such an assembly.

3,557,749
IMMERSION APPARATUS
George Farago, 206 East 37th St., Brooklyn, N.Y. 11203
Filed Mar. 12, 1969, Ser. No. 806,401
Int. Cl. B05c *11/10*
U.S. Cl. 118—7 **7 Claims**



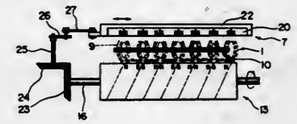
Immersion-coating apparatus having the work holder depending from the immersion vat cover. The holder is a part of the substrate heating and cooling means. A vertically traveling supply tank feeds and drains the immersion vat by variation in the hydrostatic head.

3,557,750
APPARATUS FOR APPLYING A THERMOPLASTIC LOCKING PATCH ON A THREADED FASTENER
James J. Gallagher, Chalfont, Pa., assignor to Standard Pressed Steel Co., Jenkintown, Pa., a corporation of Pennsylvania
Filed July 1, 1968, Ser. No. 741,466
Int. Cl. B05b *7/24*
U.S. Cl. 118—308 **10 Claims**



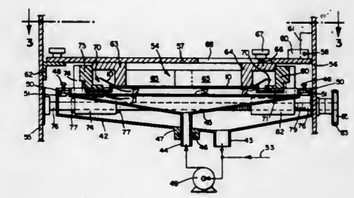
A finely powdered thermoplastic material is placed in a fluidizing chamber and is dispensed on a preheated threaded fastener element in controlled amounts by controlled air pulsations which pass through a venturi tube arrangement. The powdered material is deposited on the threaded surface in a predetermined amount and is fused thereto to provide a locking patch of solidified thermoplastic material.

3,557,751
DEVICE FOR DRY DEVELOPMENT IN ELECTROPHOTOGRAPHY
Teizo Kushima, and Masaya Ogawa, Osaka, Japan, assignors to Minolata Camera Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
Filed May 16, 1968, Ser. No. 729,681
Claims priority, application Japan, May 20, 1967, Feb. 5, 1968, 42/32017;43/7060
Int. Cl. B05b *5/00*
U.S. Cl. 118—637 **1 Claim**



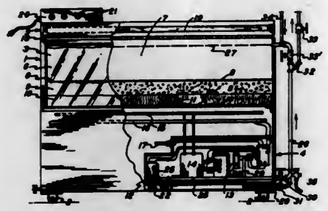
An electrophotographic developing device using developing powder containing a toner and a carrier, which developing powder is applied to each photosensitive paper being developed by a magnetic developing roller. The magnetic developing roller consists of a plurality of sliced permanent magnets with spacers inserted between adjacent magnets. The sliced permanent magnets facilitate formation of magnetic brush ears of the developing powder on the peripheral surface of the magnetic developing roller, so as to insure even distribution of said developing powder over the entire span of the photosensitive paper.

3,557,752
ELECTROPHOTOGRAPHIC DEVELOPING APPARATUS
Hakanson, Nils L., West Springfield, Mass.
Filed Dec. 9, 1968, Ser. No. 782,128
Int. Cl. B05b *5/02*
U.S. Cl. 118—637 **10 Claims**



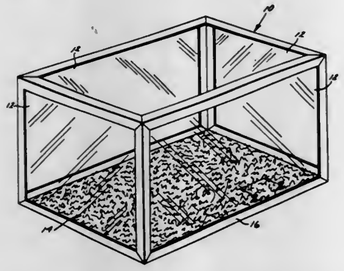
Electrophotographic developing apparatus for applying a liquid developer to one surface of an electrophotographic recording element carrying the electrostatic image thereon so as to render the electrostatic image visible, the apparatus being adapted to apply liquid developer by a surface immersion technique and including edge control means arranged to contact portions of the recording element adjacent the side edges of the recording element as it moves past the reservoir containing the liquid developer, the edge control means preventing immersion of portions of the front surface of the recording element extending inwardly of the side edges for a predetermined distance whereby the back surface of the recording element is kept free from liquid developer.

3,557,753
AQUATIC CHAMBER
Joseph L. Dantoni, Rte. 6, Westminister, Md. 21157
Filed Nov. 13, 1968, Ser. No. 783,451
Int. Cl. A01k *63/00, 64/00*
U.S. Cl. 119—5 8 Claims



An aquarium having a tank for living aquatic specimens, the tank filled with aquatic media suitable for the specimens, a filter in the tank which has an uppermost layer of living algae and aquatic plants, an intermediate layer of calcite to precipitate acid compounds and maintain a suitable PH factor in the media and a lower layer of fiber wool containing anaerobic micro-organisms is provided. A means circulating the media through the aquarium and the three layers of filter, a heating and cooling means for the media and a lighting means complete the structure.

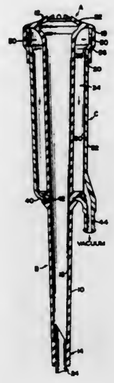
3,557,754
AQUARIUM BOTTOM AND METHOD OF PREPARATION
Harold Bader, Fairfield, N.J., assignor to Miracle Pet Products, Inc., Jersey City, N.J., a corporation of New Jersey
Filed Jan. 22, 1969, Ser. No. 792,955
Int. Cl. A01k *64/00*
U.S. Cl. 119—5 7 Claims



An aquarium bottom made of glass plate whose upper and lower faces include a multiplicity of surface irregularities, the lower face also being covered by an opaque coating, whereby light rays incident upon the bottom are reflected and refracted so as to provide the optical illusion that the bottom is made of a sheet of slate. The invention further includes the method of providing the surface irregularities and opaque coating.

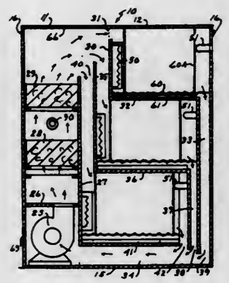
3,557,755
MILKING INFLATION SHELL
Donald S. Close, Stow, Ohio, assignor to Norton Company, Worcester, Mass., a corporation of Massachusetts
Filed Mar. 14, 1969, Ser. No. 807,212
Int. Cl. A01j *05/04*
U.S. Cl. 119—14.49 12 Claims

A milking inflation shell for use with an automatic milking machine including an elongated, rigid cylindrical shell, port means in the shell adapted to be connected to a source of pulsating vacuum, and at least one aperture means in the



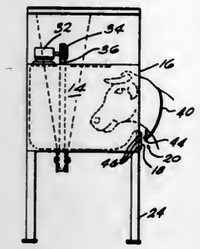
shell defining a passageway between the interior and exterior of the shell.

3,557,756
CONTAINERIZED STORING AND SHIPPING UNIT FOR ANIMALS, BIRDS AND SPECIMENS FOR BIOLOGICAL STUDY
Thomas J. Ramsey, Neptune, N.J., assignor to Ramsey, Industries Corporation, Farmingdale, N.J., a corporation of New Jersey
Filed Dec. 3, 1968, Ser. No. 780,762
Int. Cl. A01k *01/00, 01/02, 31/00*
U.S. Cl. 119—15 7 Claims



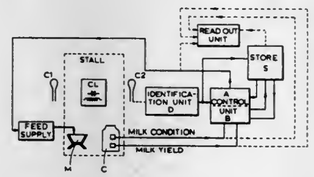
A container divided into a plurality of cells for the storage and shipment of animals, birds or live specimens for biological study in which each animal, bird or specimen is isolated in a separate cell and each cell has a controlled atmosphere by supplying it with clean, filtered air that is thermostatically controlled to a predetermined temperature and predetermined humidity. The airflow may also be treated with a germicidal lamp to kill and eliminate any disease germs. Each container may have an electric plug in for AC power supply and an auxiliary DC power supply to maintain all components active whenever the AC supply is removed or fails. Additional features may be provided such as a water supply for drinking and screen floors and floor trays for drainage.

3,557,757
AUTOMATIC SELECTIVE ANIMAL FEEDER
Cletus A. Brooks, 6670 Brooks Highway, Onsted, Mich.
Filed July 10, 1968, Ser. No. 743,667
Int. Cl. A01k *05/02*
U.S. Cl. 119—51 6 Claims



An automatic feeding system for livestock which permits selective animals to be fed supplemental foods wherein those animals to be selectively fed wear actuating means about their necks such that upon the proper animal inserting its head into a feed trough, the actuating means actuates a conveyor which transfers food from a container or reservoir into the feed trough as long as the animal's head is located in the trough. The disclosure describes several electrical control arrangements which may be used in the practice of the invention.

3,557,758
ANIMAL IDENTIFICATION AND FEED CONTROL MEANS
Keith Malcolm Lack, Tipton, England, assignor to Teledictor Limited, Tipton, England, a corporation of the United Kingdom of Great Britain and Northern Ireland
Filed May 7, 1969, Ser. No. 822,480
Claims priority, application Great Britain, May 9, 1968, 21989/68
Int. Cl. A01k *05/02*
U.S. Cl. 119—51 9 Claims



The invention is concerned with the electronic identification of an animal such as a cow in a stall in order to enable the milk yield from the cow to be entered in a record as the milk yield of that particular cow and also to enable the appropriate predetermined quantity of feed concentrate required by that particular cow to be fed to it. A plurality of signals at discrete frequencies are transmitted from a transmission means to a receiving means in the vicinity of the stall and the cow to be identified is equipped with a tuned circuit or tuned circuits tuned to one or more of the said discrete frequencies so that the presence of this particular cow alters the transmitted signal strength at the corresponding frequencies and thus enables the cow to be identified.

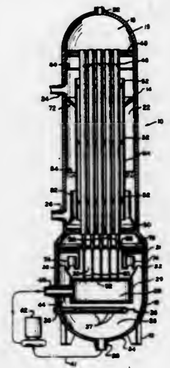
3,557,759
TIME-CONTROLLED LIQUID DISPENSER
Philip C. Anderson, and Frank Lothrop, Crete, Nebr., assignors to Feed Service Corporation, Crete, Nebr., a corporation of Nebraska
Filed Sept. 9, 1968, Ser. No. 758,439
Int. Cl. A01k *05/02*
U.S. Cl. 119—51.11 1 Claim



A dispenser of liquid feed is provided for automatically dispensing feed at a predetermined rate to livestock. The dispenser does not require daily attention and is operative over long periods of time.

The dispenser comprises a container to hold a supply of liquid feed having a feed discharge outlet and a length of pipe positioned within the container. One end of the pipe is hingedly connected in communication with the feed discharge outlet and the other open end of the pipe is suspended from a cable. Downward movement of the cable is controlled by a clockwork motor and permits the open end of the pipe to swing downward in a vertical plane at a predetermined rate and drain the liquid feed from the container into a feeder means accessible to the feeding animal.

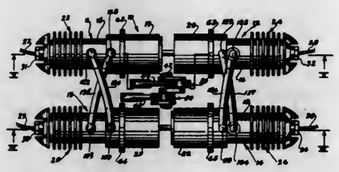
3,557,760
VAPOR GENERATOR ORGANIZATION UTILIZING LIQUID METAL OR MOLTEN SALTS
Nicholas D. Romanos, and Brice W. Kinyon, Chattanooga, Tenn., assignors to Combustion Engineering, Inc., Windsor, Conn., a corporation of Delaware
Filed Aug. 16, 1968, Ser. No. 753,185
Int. Cl. F22b *1/04*
U.S. Cl. 122—32 8 Claims



A vapor generator organization for producing superheated vapor wherein a tube bundle is immersed in a heating medium consisting of high temperature liquid metal or molten salts. The tube bundle comprises a plurality of pressure tubes, each one having inserted therewithin, for a length less than the overall pressure tube length, a bayonet tube arrangement. Vaporizable liquid is passed through each bayonet tube arrangement to be vaporized by steam flowing in the annulus formed between the bayonet tube arrangement and its respective pressure tube. The portion of the annulus surrounding the bayonet tube arrangement acts as a low temperature superheater section in which the steam is superheated to a temperature intermediate the temperature of the heating medium and the saturation temperature of the

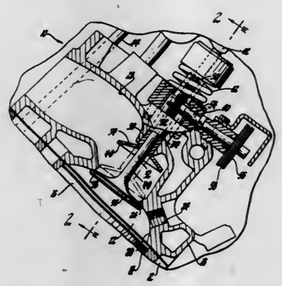
vaporizable liquid, the steam serving as an intermediate heating medium between the primary heating medium and the vaporizing liquid. Additional superheating of the vapor to the final temperature takes place within the pressure tubes over that portion of the length thereof in which the respective bayonet tube arrangements do not extend.

3,557,761
SELF-CHARGING AND -SCAVENGING LEVER ENGINE
John S. Wenzel, Sr., Moosup, Conn., assignor to Edward C. Wenzel, Sparta, N.J., a part interest and John J. Stehr, Sparta, N.J., a part interest
Filed Feb. 25, 1969, Ser. No. 802,065
Int. Cl. F02b 75/24, 33/10
U.S. Cl. 123—56 20 Claims



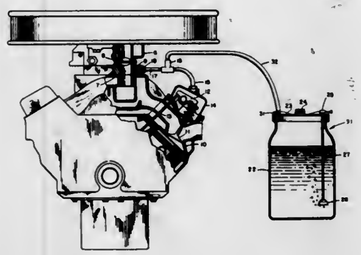
The present invention includes a two-stroke cycle internal combustion engine having a crankshaft, a pair of opposed cylinder assemblies each formed with a combustion chamber and a compression chamber of a larger diameter than the combustion chamber, a piston assembly reciprocable within each of the cylinder assemblies and comprising integral compression and combustion portions slidably supported within said compression and combustion chambers respectively, and a lever assembly of the bellcrank type interconnecting said piston assemblies to the crankshaft. Air is supplied through valve means from a compression chamber of one of the cylinder assemblies to the combustion chamber of the other.

3,557,762
ENGINE WITH VARIABLE OPENING INLET VALVE MEANS
Boris John Mitchell, Birmingham, Mich., assignor to General Motors Company, Detroit, Mich., a corporation of Delaware
Filed Feb. 6, 1969, Ser. No. 797,029
Int. Cl. F02d 11/02; F01l 1/28, 3/00
U.S. Cl. 123—98 6 Claims



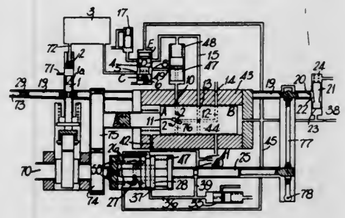
A valve throttled internal combustion engine having inlet valve means for each cylinder including a poppet valve and a throttle valve, each of which independently cooperates with the combustion chamber inlet port to control the flow of combustible mixture thereto. The poppet valve actuating mechanism moves it cyclically through a fixed stroke so that it controls the timing of the inlet valve openings while the throttle valve is mechanically actuated by the engine operator to vary the maximum size of the inlet port flow passage and thereby the extent of the inlet valve openings.

3,557,763
VAPOR INJECTOR
Stephen C. Probst, Dallas, Tex., assignor to Automotive Performance, Inc., Dallas, Tex., a corporation of Texas
Continuation-in-part of application Ser. No. 734834, May 6, 1968, now abandoned. This application July 25, 1969, Ser. No. 844,850
Int. Cl. F02f 9/00; F02m 17/22; F02b 77/00
U.S. Cl. 123—119 4 Claims



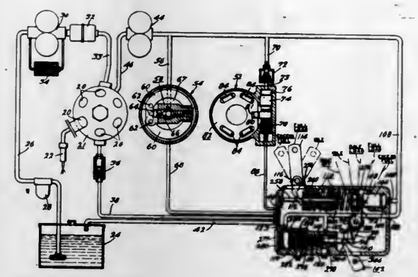
Apparatus for supplying an additive vapor into the fuel-air mixture of an internal combustion engine includes a reservoir for a liquid solution including methanol. The reservoir is connected to the engine by a flexible conduit defining a suction line connected to the primary vacuum inlet of the engine. The reservoir includes an inlet conduit for bubbling air through the solution to produce a vapor in the upper reservoir chamber which is drawn into the engine inlet through the suction conduit. A check valve in the suction line maintains the reduced pressure in the reservoir during times of increased pressure in the engine primary vacuum inlet.

3,557,764
LIQUID FUEL PUMPING APPARATUS
Basil Edward Knight, Pinner, and David Shufflebotham, Ealing, England, assignors to C.A.V. Limited, London, England, a British Company
Filed Dec. 6, 1968, Ser. No. 781,836
Claims priority, application Great Britain, Dec. 8, 1967, 55857/67
Int. Cl. F02d 1/04
U.S. Cl. 123—139 9 Claims



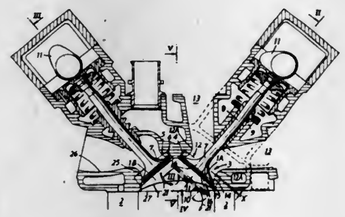
A liquid fuel pumping apparatus including an injection pump for supplying fuel to an accumulator first valve means which when opened permits fuel to flow from the accumulator to the associated engine and second valve means which closes to prevent flow of fuel to the engine when the pressure in the accumulator falls to a predetermined value.

3,557,765
FUEL INJECTION PUMP
Carl H. Nystrom, West Springfield, Mass., assignor to AMBAC Industries, Inc., Springfield, Mass., a corporation of New York
Filed Nov. 29, 1968, Ser. No. 779,904
Int. Cl. F02d 1/12
U.S. Cl. 123—140 12 Claims



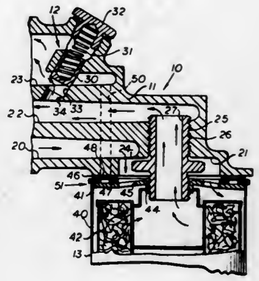
A fuel injection pump for injecting metered quantities of liquid fuel in timed sequence into the cylinders of an internal combustion engine through suitable nozzles. The pump is characterized by a single reciprocating and rotating pumping plunger, the rotation of which by means of an axial distributing slot thereon provides an accurately metered distribution of fuel to the engine nozzles. The pump includes an integral hydraulic governor which senses changes in engine speed by reference to fuel pressure. A centrifugal regulator maintains a control fuel pressure which is an accurate indication of engine speed. A hydraulic torque control is provided in association with the hydraulic governor to restrict full load fuel delivery to predetermined levels. An automatic hydraulic excess fuel device is coupled with the hydraulic torque control to permit the necessary excess starting fuel required during cranking of the engine.

3,557,766
COMBUSTION ENGINES
Frank H. Stark, Derby, England, assignor to Leander Engineering Company Limited, Cardiff, Glamorganshire, Wales, a British Company
Filed June 7, 1968, Ser. No. 735,398
Claims priority, application Great Britain, June 22, 1967, 28,930
Int. Cl. F02b 23/00
U.S. Cl. 123—191 9 Claims



A cylinder head for an internal combustion engine comprising a boundary wall, preferably dished defining a combustion chamber at one end of the cylinder, the normal shape of the wall defining a chamber of insufficient size to accommodate movement of the poppet valve heads controlling the inlet and outlet ports, and the wall being provided with recesses in which the valve seats are located.

3,557,767
OIL ANTI-DRAINBACK DEVICE WITH BYPASS
Roger E. Green, Fort Wayne, Ind., assignor to International Harvester Company, Chicago, Ill., a corporation of Delaware
Filed July 10, 1969, Ser. No. 840,648
Int. Cl. F01m 1/10; F16n 33/00
U.S. Cl. 123—196 10 Claims



An oil filter assembly for an internal combustion engine effective to direct lubricating oil to the bearings and to the cylinder head area of the engine. The assembly includes a pressure actuated check valve effective to trap the lubricating fluid in the cylinder head area when the engine is turned off. The assembly also includes a bypass conduit and a sealing land incorporated on the filter element to normally close the bypass conduit. Oil from the cylinder head area is drained through the bypass conduit when the filter element is removed.

3,557,768
DART PROPELLING DEVICE
Howard L. Lake, P.O. Box 672, Bettendorf, Iowa 52722
Filed Sept. 3, 1968, Ser. No. 756,766
Int. Cl. F41b 3/04
U.S. Cl. 124—5 8 Claims

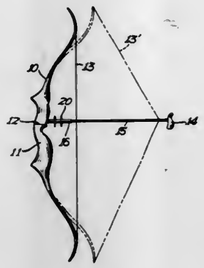


A launching or propelling device for darts, bolts, or arrows that has a handle and an elongated tubular shaft attached thereto with the object to be launched or propelled inserted into a gripping mechanism on the end of the shaft that is actuated at the handle end of the device. The long shaft allows the object to be launched with a great speed by virtue of a casting type delivery much as in a fishing rod.

3,557,769
BOW HANDREST

Russell N. Hofmeister, Waseca, Minn., assignor to Herter's, Inc., Waseca, Minn., a corporation of Minnesota

Filed Oct. 8, 1968, Ser. No. 765,934
Int. Cl. F41b 5/00
U.S. Cl. 124—24 1 Claim

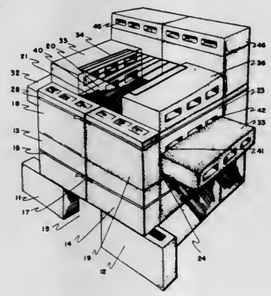


A bow handrest attached to the handle of a bow by an adjustable rod which extends along the string and is offset to accurately position the fingers of the person to prevent the string from being pulled to one side or the other.

3,557,770
MORTARLESS TAKEDOWN MASONRY FIREPLACE

Charles Szentkuti, Two Pence Road, Ridgefield, Conn. 06877

Filed Aug. 15, 1969, Ser. No. 850,402
Int. Cl. A47j 37/00; F24b 3/00; F24c 1/16
U.S. Cl. 126—9 8 Claims



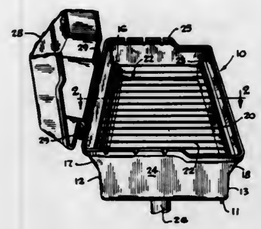
A plurality of building blocks are arranged in a nonpermanent combination forming a fireplace. A mortarless coupling is used to secure various levels or courses of the blocks in a nonadhesive or nonpermanent manner. The configuration of building blocks forms an ash or draft pit and a fire chamber. A fuel supporting grid is suspended in the fire chamber and a flame diffusing grid is suspended above the fuel supported grid. A grill is supported above the flame diffusing grid. Table blocks are supported on grid supporting rods on both sides of the mortarless masonry fireplace.

3,557,771
BARBECUE GRILL WITH TILTING GRID

Walter Koziol, Russell, Ill., assignor to Charmglow Manufacturing Company, Antioch, Ill., a corporation of Illinois

Filed Oct. 8, 1968, Ser. No. 765,848
Int. Cl. A47j 37/00; F24b 3/00
U.S. Cl. 126—25 7 Claims

Steps are integrally mounted in one of two opposing wall panels of a base portion of a barbecue grill to permit horizontal or a tilting positioning of one or more grid members. In a preferred embodiment the wall panels diverge outwardly

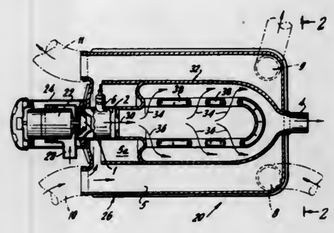


from the base portion and are positioned at different heights from the bottom of the base.

3,557,772
SPACE HEATING APPARATUS

Siegfried Kofink, Esslingen, Neckar, Germany, assignor to J. Eberspacher, Esslingen, Germany

Continuation-in-part of application Ser. No. 757,550, Sept. 5, 1968, now abandoned. This application Feb. 12, 1969, Ser. No. 801,242
Int. Cl. F24h 3/02
U.S. Cl. 126—110 8 Claims



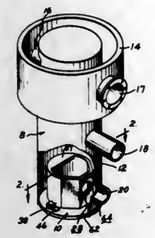
A space heater preferably for mobile units such as automobiles and trailers includes a burner having a combustion chamber which is supplied with combustion air by an axially arranged rotatable fan. The construction is characterized by an arrangement of a blower or air compresser for the combustion air and the exhaust passages for the combustion gases in axial alignment and with a precombustion chamber connected radially into the combustion chamber. The heat exchange portion includes an axially elongated relatively flat passage for the combustion gases and a surrounding chamber for the space air to be heated which is also of relatively flat or narrow construction. A fuel supply system for the space heater includes an electromagnetic piston pump which is connected to a current source in a circuit which is controlled by an interrupter operated off the electric fan motor driving the fan for the combustion air. Current is supplied to the electromagnetic piston pump cyclically in order to provide a pumping action of the fuel to the fuel supply line in a cyclic manner in order to provide the desired combustion conditions within the combustion chamber.

3,557,773
COMBUSTION CHAMBER LOCATING AND SECURING ATTACHMENT

George E. Ray, Kalamazoo, Mich., assignor to Rheem Manufacturing Company, New York, N.Y., a corporation of California

Filed Sept. 5, 1969, Ser. No. 855,699
Int. Cl. F23m 5/00
U.S. Cl. 126—144 5 Claims

An attachment for locating and securing a combustion chamber in a heat exchanger which insures alignment of the inlet port of the combustion chamber with the burner port of the heat exchanger. Securement of the chamber is affected by lugs mounted on the external portion of the combustion chamber. The lugs are securable by clamps to predetermined

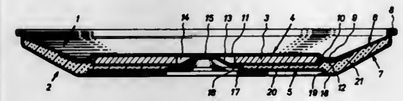


locating embosses in the base of heat exchanger. A locating boss on the periphery of the heat exchanger base is receivable in a notched portion of the external wall of the heat exchanger and provides alignment of the burner port with the inlet port of the combustion chamber.

3,557,774
HEAT STORAGE DISH

Egon Kreis, St. Gallen, Switzerland, assignor to Kries, AG, St. Gallen, Switzerland, a corporation of Switzerland

Filed Apr. 4, 1969, Ser. No. 813,412
Claims priority, application Switzerland, Jan. 24, 1969, 1113/69
Int. Cl. A47g 23/04
U.S. Cl. 126—246 12 Claims



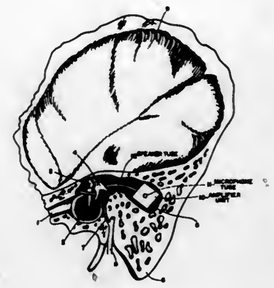
A heat storage dish is disclosed, such dish providing the advantages of not bursting apart as a result of excessive heating and increased interior pressure, and further complying with maximum hygienic requirements. The novel heat storage dish generally is constructed to have a heat storage plate disposed in the bottom thereof between an interior wall and an exterior wall forming an enclosed cavity or space. The novel storage dish is characterized by the feature that the heat storage plate is retained in position in such a manner that it abuts the interior wall of the dish and further defines an opening in the central area thereof. Both of the walls of the dish are connected to one another through the opening in the interior of the heat storage plate as well as on the outside or rim portion exterior of the plate. The bottom portion of the exterior wall of the heat storage dish has an annular deformable section which is upwardly displaced relative to the support plane of the dish itself, this section being delimited by two reinforced zones located between the walls within the interior and exterior points of connection.

3,557,775
METHOD OF IMPLANTING A HEARING AID

Jack Lawrence Mahoney, Carmel, Calif. (901 Pacific St., Monterey, Calif., 93940)

Original application Dec. 27, 1963, Ser. No. 333,858, now Patent No. 3,346,704. Divided and this application Aug. 28, 1967, Ser. No. 663,603
Int. Cl. A61f 11/04; H04r 25/00
U.S. Cl. 128—1 5 Claims

A method is described of implanting a hearing improvement device within the human body, in which a postauricular incision is made in the skin of the anatomical area behind the auricular appendage of the external ear, to thereby expose the bony structure overlying the body of the mastoid, removing a predetermined area of bone down to the antrum cell of



the mastoid, implanting the device in the cavity formed, and then closing the incision. The device has a portion which extends into the middle ear space.

3,557,776
HAND-HOLDABLE PACIFIER

Edmund R. Boots, 2310 Ocean Drive, Vero Beach, Fla., and Weston M. Willis, Bar Harbor, Maine, said Willis assignor to said Boots

Filed Jan. 24, 1969, Ser. No. 793,730
Int. Cl. A61b 19/00
U.S. Cl. 128—1 6 Claims



An elongated hand-holdable pacifier shaped to conform to a comfortable hand grip with a thumb-engageable open ended groove at one end and a handle portion at the other end.

3,557,777
MAGNETIC STUDY OF BIOELECTRIC PHENOMENA

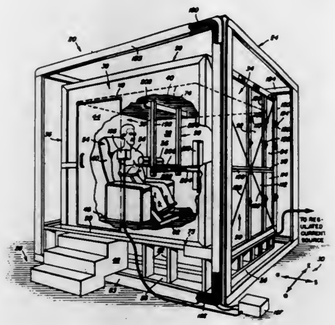
David Cohen, 5801 South Dorchester, Chicago, Ill. 60637

Filed May 4, 1967, Ser. No. 636,071
Int. Cl. A61b 5/10; H05k 9/00; G01r 33/02
U.S. Cl. 128—2 28 Claims

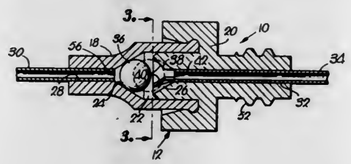
An apparatus and method for magnetic detection of bioelectric activity associated with muscle action or with other living tissue. The system comprises a magnetic shielding facility for establishing an enclosed region within which the ambient level of magnetic noise is below the level of the magnetic fields to be measured and a highly sensitive magnetic field detector positioned within the enclosed space. Also included are adjustable chair means for comfortably supporting a subject to be studied, and suitable electronic signal processing circuitry connected to the magnetic field detector for producing a visual display of the magnetic fields measured.

The magnetic field detector is arranged to produce an electrical indication of a component of the magnetic field in

a relatively localized region of space, so that a direct mapping of the magnetic fields associated with the bioelectric activity being studied may be made by measurement of a single magnetic field component at a plurality of locations.



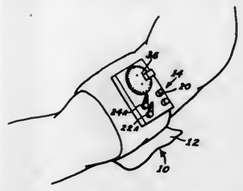
3,557,778
BLOOD SPECIMEN COLLECTION ASSEMBLY
Elbert L. Hughes, Independence, Mo. (358 California Ave., Aurora, Ill., 60506)
Filed Nov. 18, 1968, Ser. No. 776,347
Int. Cl. A61m 1/00
U.S. Cl. 128—2 **1 Claim**



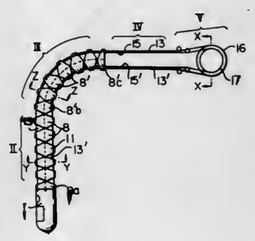
A blood specimen collection assembly having a fluid inlet and a fluid outlet with valve means disposed within the assembly for movement to and from an open and closed position whereby to prevent the backflow of testing fluid from a specimen receptacle, which is coupled with the assembly, into the patient's bloodstream during use of the assembly. The specimen receptacle is in the form of an evacuated container and is coupled with the collection assembly when the same is in use, the receptacle being in communication with the assembly to provide negative pressure through the assembly for opening the valve and withdrawing the specimen, the valve resuming its closed position upon filling of the receptacle.

3,557,779
BLOOD PRESSURE RECORDING DEVICE
Berel Weinstein, New York, N.Y., assignor to Bio-Medical Sciences, Inc., New York, N.Y.
Filed Aug. 1, 1968, Ser. No. 749,518
Int. Cl. A61b 5/02
U.S. Cl. 128—2.05 **11 Claims**

A device for recording the blood pressure of a person comprising a cuff adapted to encircle a limb such as an arm of a person. Pressure regulating means is provided to inflate the cuff to a predetermined pressure and to deflate the cuff when the pressure reaches a preselected value. A record is mounted on a movable support, both of which are mounted on the cuff. The support is adapted to move in response to the pressure of said cuff. Writing means is provided for indicating blood pressures on the record. Actuating means responsive to the pulse beats of a person operates the writing means so that the device produces a graphic record of the blood pressure of the person undergoing examination.



3,557,780
MECHANISM FOR CONTROLLING FLEXURE OF ENDOSCOPE
Masaaki Sato, Hachioji-shi, Japan, assignor to Olympus Optical Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed Apr. 16, 1968, Ser. No. 721,833
Claims priority, application Japan, Apr. 20, 1967, Feb. 26, 1968, Mar. 11, 1968, 42/24827/1967;43/11 793/1968;43/18522/1968
Int. Cl. A61b 1/00
U.S. Cl. 128—4 **10 Claims**



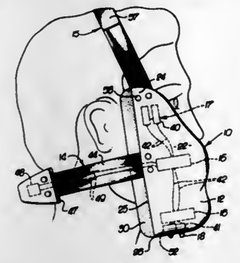
Mechanism for controlling flexture of an endoscope which comprises at least two flexible portions each including a plurality of tubular short articulated segments having their faces tapered to form diametrically extending pivot ridges and flexibly connected to and in alignment with each other by means of wires extending through said ridges with the ridge of one segment bearing against the opposite ridge of the next segment, at least two sets of tension wires extending through said segments to a control portion of the endoscope through a connecting portion connecting said controllable flexible portion to said control portion so as to be connected to an operating mechanism therein, the forward ends of each of said sets of tension wires being secured to the forward ends of the respective flexible portions thereby permitting each of the flexible portions to be bent by activating the set of tension wires secured thereto by means of said operating mechanism separately from other flexible portion(s).

Brake means are provided to releasably maintain the flexible portions in their controlled position.

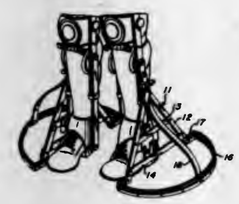
3,557,781
VIBRATORY FACIAL MASK
Robert J. Kaye, Sr., North Hollywood, Calif., assignor to Kavibro Industries, Inc., Agoura, Calif., a corporation of California
Filed Jan. 21, 1969, Ser. No. 792,524
Int. Cl. A61h 1/00
U.S. Cl. 128—36 **9 Claims**

A facial vibratable mask device constructed to cover and contact side facial areas and chin areas with a smooth, soft, resilient, foamlike material within which is fully embedded vibratable means for imparting vibrations to such facial areas through the soft material. Means for holding the mask device

in covering relation to a face to be treated includes a strap passing behind the neck and provided with a vibratable unit for vibrating back neck portions. A vibratable mask device which is resistant to oils, facial cream, nonallergic, nontoxic, resistance to heat, and is a nonconductor of electricity.



3,557,782
BRACE APPARATUS
James Wafer, 124 N. Summit St., Dayton, Ohio 45407
Filed Feb. 2, 1968, Ser. No. 702,610
Int. Cl. A61f 3/00
U.S. Cl. 128—80 **10 Claims**



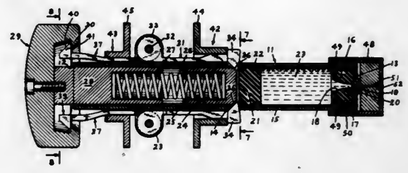
Apparatus for maintaining the equilibrium of a person afflicted with lack of muscular control in his legs or pedal extremities characterized by a bracelike attachment providing an elongate base expanding outwardly to the side of the wearer.

3,557,783
METHOD OF KILLING MICROPROBES WITH MICROBICIDAL COMPOUNDS AND ULTRAVIOLET LIGHT
Charles S. Castner, 213 Revere Blvd., Lincoln Park, Reading, Pa. 19609
No Drawings. Filed Apr. 12, 1967, Ser. No. 630,206
Int. Cl. A61m 31/00
U.S. Cl. 128—172.1 **5 Claims**

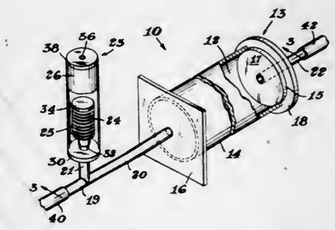
Microbicidal effects are provided by stimulating the activity of certain compositions by exposing them to light energy in the visible or ultraviolet range of the electromagnetic spectrum.

3,557,784
SYRINGE
Walter A. Shields, 38-09-24th St., Jamaica, N.Y. 11101
Filed Dec. 24, 1968, Ser. No. 786,610
Int. Cl. A61m 11/00
U.S. Cl. 128—173 **11 Claims**

A syringe comprising a barrel carrying a cartridge containing a liquid medicament and closed at one end by a penetrable closure and the opposite end provided with a plunger slidable in the cartridge. A piercing member is slidably mounted on the barrel to pierce the penetrable closure and permit the discharge of the liquid medicament upon pushing the plunger into the cartridge. The plunger of the cartridge is pushed into the cartridge by spring actuated mechanism mounted in the barrel contiguous to the cartridge plunger and retained in compressed condition by latch members of resilient material and actuated into and out of engagement with the spring actuated mechanism by a pair of manipulating members slidable over the latch members and removable from the latch members and the barrel for the removal of the spring actuated mechanism and the replacement of a spent cartridge.



3,557,785
GAS ADMINISTRATION APPARATUS
William D. McQueen, Walnut Creek, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Feb. 28, 1968, Ser. No. 708,830
Int. Cl. A61m 17/00
U.S. Cl. 128—188 **6 Claims**



The invention provides an apparatus for administration of gases to animals for purposes such as anesthesia, the administration apparatus comprising a first constant-volume subchamber and a second variable-volume subchamber, the volume of the second subchamber varying in response to changes in the constant-volume subchamber pressure, with means for varying the volume of the second subchamber in response to gas pressure changes in the first subchamber and means for placing an animal in respiratory communication with the first subchamber. The device is adapted to be connected to a closed system intermittent gas source device of a conventional type. The chamber is adapted for administration of gases to animals independently of their tidal volume or respiration rate.

3,557,786
ADMINISTRATION APPARATUS FOR INTRAVENOUS SUBSTANCES
Courtland H. Barr, Sr., Los Angeles; Courtland H. Barr, Jr., La Canada, Calif.; John W. Barr, Wheeling, Ill., and James W. Lucas, Los Angeles, Calif., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois
Filed June 18, 1968, Ser. No. 737,889
Int. Cl. A61m 5/46
U.S. Cl. 128—214 **3 Claims**

An improved drip chamber having a filter positioned around the outlet for use in intravenous liquid administration apparatus. The filter is comprised of a woven sheet of plastic

monofilament, such as nylon, and is folded intermediately thereof to form filter leaves. The folder filter sheet is positioned over the drip meter outlet, between the drip chamber walls and heat sealed thereto.

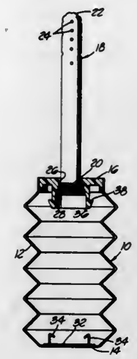


3,557,787
DISPOSABLE SYRINGE
Milton J. Cohen, 5437 Connecticut Ave., Washington, D.C.
Filed May 28, 1968, Ser. No. 732,622
Int. Cl. A61m *05/22*
U.S. Cl. 128—220 **10 Claims**



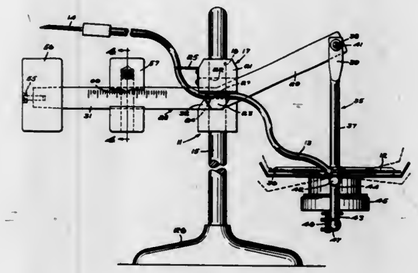
A syringe device formed of inner and outer tubular members with the inner member adapted to be telescoped within the outer member and sealed therefrom by a resilient, thin seal. The inner member has a planar flange surface on its forward end and across which the thin seal extends. The thin seal has passage means therethrough in sealing relation to the flange surface. The outer member is formed with a rupturable seal having an injection needle in alignment therewith for rupture in use with the inner tubular member. The inner member is adapted to contain a liquid carrier and the outer tubular member a dry medicant to be taken up with the carrier for injection whereby the materials are freshly mixed immediately prior to injection for operation of the device.

3,557,788
DISPOSABLE SYRINGE
Betty J. Swartz, 407 Mavis Dr., Los Angeles, Calif. 90065
Filed Mar. 8, 1968, Ser. No. 711,566
Int. Cl. A61m *1/00*
U.S. Cl. 128—232 **5 Claims**



A syringe having a collapsible canister whereby the canister after being completely collapsed is locked in the collapsed position so that it may not be reused, and an injector nozzle conveniently packaged within the interior of the canister prior to use so that the entire package provides a convenient container and syringe, the nozzle being extendable when prepared for use.

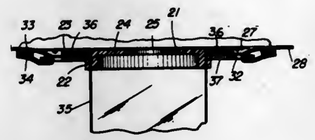
3,557,789
THERAPEUTIC FLUID FLOW CONTROL APPARATUS
Edward J. Poitras, 198 Highland St., Holliston, Mass. 01746
Filed Nov. 20, 1967, Ser. No. 684,433
Int. Cl. A61m *1/00*
U.S. Cl. 128—275 **14 Claims**



A device which automatically both agitates an anticoagulant medium with inflowing blood during a blood collection process and terminates the process after a predetermined quantity of blood has been collected. The device includes a weight longitudinally slidable on a lever type scale arm to permit accurate selection of the blood quantity collected.

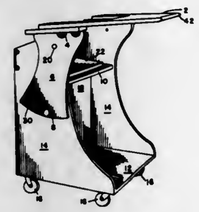
3,557,790
ILEOSTOMY AND LIKE APPLIANCES
Raul C. Hauser, Eatontown, N.J. (2151 E. Lincoln Hwy. Apt. D-10 Levittown, Pa. 19056)
Filed Nov. 28, 1967, Ser. No. 686,169
Int. Cl. A61f *5/44*
U.S. Cl. 128—283 **7 Claims**

This application discloses a care-free all plastic, substantially weightless, pliable yet protective ileostomy appliance consisting of a nylon outer plate which fits over a disposable expanded polystyrene inner disc. The disc is held against the skin surrounding a stoma and a disposable plastic pouch is clamped between the plate and the disc. The inexpensive



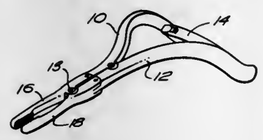
daily disposable disc is provided with indented sides and the plate with registering slots. Each end of a belt enters a slot from beneath and loops back over the plate to retain the appliance in position.

3,557,791
SURGICAL SUPPORT
Michael Duffy, 2424 Foxhall Road N.W., Washington, D.C.
Filed June 6, 1968, Ser. No. 735,505
Int. Cl. A61b *17/00*
U.S. Cl. 128—303 **6 Claims**



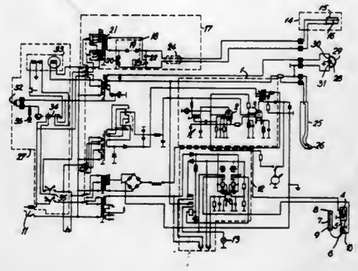
A support for use in surgical procedure, especially microsurgical procedures, comprising a body support and an attached forearm support wherein the forearm support is adjustable in at least two directions.

3,557,792
SEPTAL MORSELIZER
Frank F. Rubin, 795 Southern Artery, Quincy, Mass. 02169
Filed Aug. 7, 1968, Ser. No. 750,790
Int. Cl. A61b *17/00*
U.S. Cl. 128—319 **1 Claim**



A pliers-type of surgical instrument is provided with narrow jaws adapted to enter human nostrils on both sides of the septum. The mutually opposed faces of the jaws have pyramided teeth and recesses which interfit when the jaws come together. This morselizes and masticates the cartilage of the septum simultaneously on both sides. When the cartilage is thus morselized, the ELASTIN or BRAIN of the cartilage which is responsible for causing the cartilage to return to its original shape maintaining its architectural form is cut, permitting its reconstitution into a new shape which it thereafter maintains.

3,557,793
METHOD FOR CRUSHING STONES IN URINARY BLADDER AND INSTRUMENT FOR SAME
Jury Grigorievich Ediny, Rovenskaya ulitsa 7, kv. 58; Oleg Gavrilovich Balaev, Prospect 40-letia Oktyabrya, 100,kv. 174, and Boris Kirillovich Gostkin, ulitsa Erevanskaya, 14, kv. 35, Kiev, U.S.S.R.
Filed Apr. 6, 1965, Ser. No. 445,879
Int. Cl. A61b *17/00*
U.S. Cl. 128—328 **4 Claims**



A method for crushing stones in the urinary bladder comprises successive multiple mechanical actions on the stone to be crushed by a working organ vibrating at ultrasonic frequency and hydraulic impacts formed by electrical discharge in the liquid medium which surrounds the stones. An instrument for effecting the method comprises elongated flexible ultrasonic and electrohydraulic lithotrites and respective ultrasonic drive means and electrical pulse means for exciting the lithotrites which have uniform systems of groundings and remote control.

3,557,794
ARTERIAL DILATION DEVICE
Robert E. Van Patten, Dayton, Ohio, assignor to the United States of America as represented by the Secretary of the Air Force
Filed July 30, 1968, Ser. No. 748,737
Int. Cl. A61m *29/00*
U.S. Cl. 128—345 **4 Claims**



An improved catheter is disclosed in which the length of the active portion of the instrument is divided longitudinally into four or more beams, preferably of rectangular cross section. The beams are constituted of spring steel and are held between two abutments on the catheter, one of which is adapted to be retracted toward the other by an actuator wire controlled by a micrometer screw. The beams are positioned independently of one another and normally rest snugly about a metal tubing so that when the abutment is caused to move the compressive force causes the beams to flex outwardly except at their ends since the tubing prevents any movement inwardly. The beams therefore execute a smooth flexing effect and define an enlarged outline which, when contained in a blood vessel, artery, etc., causes a dilation of that member. When the pull in the actuator wire is released at the micrometer screw, the beams spring back into their normal rest position to allow ready retraction of the catheter. A standard form of strain gage using the Wheatstone Bridge principle may be applied to the actuator wire to determine the counterforce exerted by the blood vessel against the deployment of the dilator.

3,557,795
SUTURE PROVIDED WITH WOUND HEALING COATING

Winfred Hirsch, Plainview, N.Y., assignor to Edward Weck & Company, Inc., Long Island City, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 531,768, Mar. 4, 1966, now abandoned. This application June 19, 1968, Ser. No. 738,146
Int. Cl. A61l 17/00
U.S. Cl. 128—335.5 14 Claims

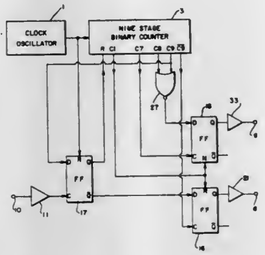


Sutures coated with a wound-healing, nontoxic metal, such as aluminum or magnesium, are described as are methods for coating sutures with such material.

3,557,796
DIGITAL COUNTER DRIVEN PACER

John W. Keller, Jr.; Reese S. Terry, Jr., Miami, and Gomer L. Davies, Fort Lauderdale, Fla., assignors to Cordis Corporation, Miami, Fla., a corporation of Florida

Filed Mar. 10, 1969, Ser. No. 805,714
Int. Cl. A61n 1/36
U.S. Cl. 128—419 12 Claims



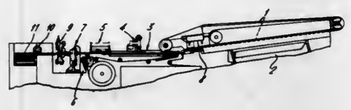
The cardiac pacer disclosed herein employs a digital counter driven by a relatively high frequency oscillator to time intervals which simulate various cardiac functions. When allowed to cycle repetitively, the counter provides a relatively slow, fixed rate mode of operation. However, the counter may be reset under certain conditions by ventricular signals to provide a demand mode of operation and by atrial signals under certain other conditions to provide a so-called synchronized mode of operation. Noise rejection circuitry is also disclosed.

3,557,797
CONTINUOUS ROD CIGARETTE-MAKING MACHINES AND CONTROL SYSTEMS THEREFOR

David Theodore Nelson Williamson, and Michael Aren Pym, Deptford, London, England, assignors to The Molins Organization Limited, London, England, a British Company

Continuation of application Ser. No. 366,007, May 8, 1964, now abandoned. This application Feb. 14, 1969, Ser. No. 802,732
Int. Cl. A24c 5/26, 5/31
U.S. Cl. 131—21 5 Claims

Electrical control circuitry for a cigarette-making machine of the continuous rod type including a solenoid for moving a seam heater element into operative position, after a predetermined delay activating another solenoid to actuate a rod breaking mechanism, and after a further delay activating a detector device which stops the machine whenever a portion



of the cigarette rod which has passed the heating means is not properly sealed.

3,557,798
THE SMOKING TASTE OF TOBACCO STEMS

John T. Ashworth, and Leonard V. Kielpinski, Richmond, Va., assignors to The American Tobacco Company, New York, N.Y., a corporation of New Jersey

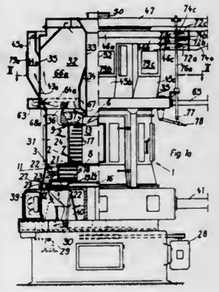
No Drawing. Filed Mar. 7, 1968, Ser. No. 711,234
Int. Cl. A24b 03/18, 03/12
U.S. Cl. 131—140 5 Claims

The smoking taste of tobacco stems is improved by a treating cycle wherein a vacuum is first drawn on the product and then the vacuum is broken by the introduction of superheated steam until air pressure of the atmosphere in the stems has returned substantially to ambient atmospheric pressure. The steam treated stems are maintained in this condition for a period of at least 24 hours.

3,557,799
DEVICE FOR STEMMING TOBACCO LEAVES

Hans Koch, Hamburg-Rahlstedt; Waldemar Wochnowski, Hamburg-Volksdorf; Willi Thiele, Geesthacht; Klaus-Georg Hackmack, Hamburg-Bergedorf; Heinz Friebel, Hamburg, Germany, and Andre Pietrucci, Fleury-Les-Aubrais, France, assignors to Service D'Exploitation Industrielle Des Tabacs Et Des Allumettes, Paris, France, a public establishment of France

Filed Feb. 25, 1969, Ser. No. 802,132
Claims priority, application France, Feb. 26, 1968, 141,284
Int. Cl. A24b 05/06, 05/10
U.S. Cl. 131—146 10 Claims

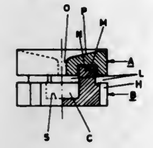


Device for stemming a downwardly flowing stream of tobacco leaves and like materials by beating in a beating zone and separating the lighter portions of the leaves from the heavier portions. In particular, the leaf stems are separated in a main separation zone and at least one secondary separation zone, through both of which an upwardly flowing separation airstream passes. The separation zones are defined by a casing which divides the separation airstream into a main airstream and at least one smaller secondary airstream. The inlet of the secondary zone is located in the main separation zone.

3,557,800
CIGARETTE FILTER

Tonino Virgili, Via F. lli Cairoli 27, and Giancarlo Capotondo, Via Oberdan 30, Ancona, Italy

Filed Jan. 23, 1969, Ser. No. 793,390
Claims priority, application Italy, Oct. 23, 1968, 231 A/68
Int. Cl. A24d 01/04; A24f 07/04, 13/06
U.S. Cl. 131—261 2 Claims



Two-part cigarette filter for insertion into the end of a cigarette. A first body has an axial aperture substantially in the form of a venturi and which has a circular groove within its downstream face, and a second body downstream of the first body defines a recessed chamber in its upstream face having a wall opposite the aperture presenting an impingement surface for smoke passing through the aperture. The second body has spaced projections circumferentially arranged and located outwardly of said surface which extend into and engage the groove. Radial apertures extend outwardly from the chamber between the projections and between the faces and longitudinal channels extend along the periphery of the second body. The radial apertures are disposed in the path of flow of smoke upstream of the impingement surface compelling reversal of the flow of smoke prior to entering the radial apertures and the longitudinal channels.

3,557,801
CIGARETTE SMOKE FILTER MATERIAL

Saunders E. Jamison, Summit, N.J., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware

Original application Oct. 14, 1965, Ser. No. 495,895, now Patent No. 3,422,176. Divided and this application Sept. 16, 1968, Ser. No. 810,404
Int. Cl. A24f 07/04
U.S. Cl. 131—266 4 Claims



A cigarette filter plug is disclosed which is made from filaments characterized by alternating regions of large and small diameter prepared by dry spinning a solution of cellulose ester containing a plasticizer and solid solvent adsorbent particles and then passing the resultant filaments over a hot surface. The solid particles found suitable may be activated charcoal, other types of activated carbon, silica gel, alumina or clay.

3,557,802
TOBACCO SMOKE FILTER ELEMENT

Ernest Marsden, Lowry Bay, Wellington, New Zealand, assignor to Larus & Brother Company, Richmond, Va.

No Drawing. Filed Aug. 4, 1967, Ser. No. 658,351
Int. Cl. A24f 07/04
U.S. Cl. 131—266 4 Claims

A cigarette smoke filter for removing Polonium 210 contained in cigarette smoke, in which finely divided aluminum particles are uniformly dispersed in a carrier base of high surface area, the particles acting to absorb Polonium 210.

3,557,803
METHOD OF MAKING A CAPILLARY PROSTHESIS

Ernest Bosshard, 1000 Lausanne, Switzerland

Filed Oct. 3, 1968, Ser. No. 764,894
Claims priority, application Switzerland, Sept. 28, 1967, Apr. 29, 1968, 13572/67;636/68
Int. Cl. A41g 3/00, 5/00
U.S. Cl. 132—5 11 Claims

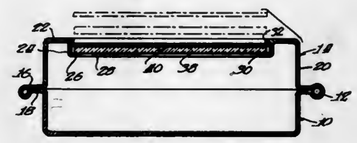


A capillary prosthesis or toupee is made by applying on the bald area of the person to be fitted at least one flexible stretched membrane, there is then applied a moldable synthetic resin which can harden on the membrane, the membrane is removed with the resin after the latter has hardened, a skullcap is cut to the desired dimensions, then there are traced on the skullcap the coordinates necessary for positioning the false hair, then there are positioned on the lower side of the skullcap means for securing the prosthesis to the cranium of the person.

3,557,804
A LADIES COMPACT

Nathan B. Lerner, Chicago, Ill., assignor to W. Braun Company, Chicago, Ill., a corporation of Illinois

Filed May 2, 1968, Ser. No. 726,163
Int. Cl. A45d 33/00
U.S. Cl. 132—83 2 Claims



The invention comprises a cover for a container, such as a lady's compact or the like, in which the cover is provided with an enlarged opening and means adjacent said opening for receiving and retaining a mirror and a disc superposed over said mirror in a recessed portion of the cover without the use of extraneous fastening means or the like.

3,557,805
APPARATUS FOR FACILITATING TO DELINEATE THE DESIRED PATTERNS OF EYEBROWS

Kimiko Hamada, No. 11-24, 2-chome Hibarigaoka, Tokyo, Japan

Filed May 27, 1969, Ser. No. 828,121
Int. Cl. A45d 40/30
U.S. Cl. 132—88.5 4 Claims

This invention relates to an apparatus for facilitating to pencil the desired patterns of the eyebrows with an eyebrow pencil, which comprises a pair of the eyebrow-shaped pieces symmetrically and detachably engaged with an elastic cord of

a headband which is tied around a woman's head to snugly fit these pieces on both eyebrow portions of the forehead so



that these pieces may be easily adjusted by means of moving a nipper of each piece.

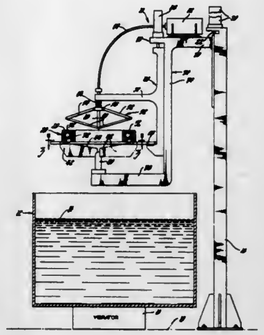
3,557,806
ORNAMENTAL HAIR COVERING AND HEADDRESS
Irene S. Blanchard, 1015 Stuart Circle, Thousand Oaks, Calif. 91360
Continuation-in-part of application Ser. No. 547,508, May 4, 1966, now abandoned. This application Dec. 6, 1968, Ser. No. 781,768
Int. Cl. A41g *5/00*
U.S. Cl. 132—101 **5 Claims**



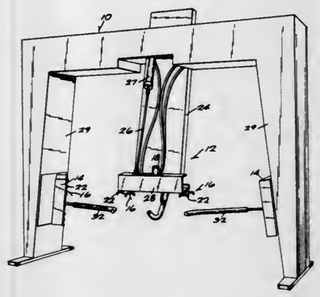
A combination turban and hair piece having fastening means on the underside and adjacent the edge thereof so that the turban may be folded around and encompass a hair piece whereby the latter will depend therefrom. One corner of the turban is adapted to be pulled through a loop on the other corner thereof to secure the turban on the wearer's head after which the hair piece may be attractively and stylishly arranged on the turban and forehead of the wearer.

3,557,807
METHOD FOR CLEANING BALL BEARINGS
Robert N. Schipke, Huron, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Aug. 23, 1967, Ser. No. 662,809, now Patent No. 3,482,584, dated Dec. 9, 1969. Divided and this application Aug. 1, 1969, Ser. No. 846,802
Int. Cl. B08b *7/02*
U.S. Cl. 134—1 **3 Claims**

A method for cleaning a ball bearing assembly that provides for placing the assembly in a bath of cleaning liquid subjected to ultrasonic vibrations and moving the bearing assembly as a unit to different positions in the bath while rotating one of the races.



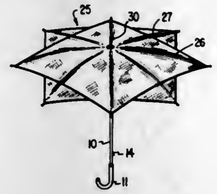
3,557,808
CAR WASHING INSTALLATION
Myron M. Gusse, 353 17th St., and Melvin E. Gusse, Winnebago Heights Malone, Rte 1, Fond Du Lac, Wis.
Continuation-in-part of application Ser. No. 591,480, Nov. 2, 1962. This application Sept. 17, 1968, Ser. No. 760,237
Int. Cl. B60s *3/04*
U.S. Cl. 134—45 **7 Claims**



An arch-type car washing installation having spraying nozzles which are directed normally inwardly and towards the entrance of the arch and which are pivoted, as the car passes through the arch, to a position pointing inwardly and towards the exit of the arch.

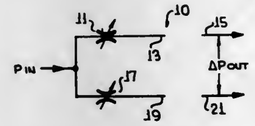
3,557,809
UMBRELLA
Teddy Colón Vázquez, and Alice Colón, Lomas Verdes, Bayamon, P.R., assignors to Universal Umbrella Mfg., Inc., a corporation of Puerto Rico
Filed June 26, 1969, Ser. No. 836,881
Int. Cl. A45b *11/00, 15/00, 25/18*
U.S. Cl. 135—20 **9 Claims**

An umbrella having a frame with two covers mounted thereon in superimposed relation, with the respective covers



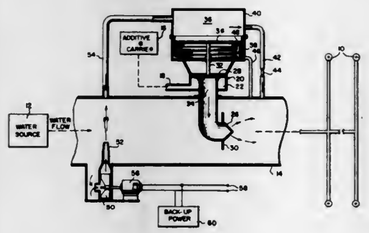
having their peripheral edges attached to the ends of alternate ones only of the ribs of the frame.

3,557,810
PRESSURE SENSOR AND TACHOMETER
Charles G. Lomas, Wheaton, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland
Filed July 12, 1968, Ser. No. 744,526
Int. Cl. F15c *1/18*
U.S. Cl. 137—1 **21 Claims**



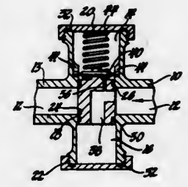
A fluidic pressure sensor utilizes the transition phenomenon of a fluid stream from laminar condition to turbulent condition. A pressure to be measured is applied to two parallel fluid circuits, each comprising a pressure-adjusting valve in series with a coaxial nozzle and receiver. The valves are adjusted so that (1) one of the streams is received quiescently turbulent while the other stream is received quiescently laminar, and (2) the pressures at the receivers are substantially equal. As the input pressure increases from the quiescent condition, the pressure at the receiver of the laminar stream increases substantially linearly while the pressure at the receiver of the turbulent stream decreases substantially linearly in an opposite sense, thereby providing a differential pressure between the receivers which varies linearly in proportion to the input pressure.

3,557,811
DYNAMIC FLOW SENSOR
William L. Livingston, Sharon, Mass., assignor to Factory Mutual Research Corporation, Turnpike, Mass., a corporation of Massachusetts
Filed Oct. 18, 1968, Ser. No. 768,862
Int. Cl. F15c *3/00, 3/04*
U.S. Cl. 137—7 **13 Claims**



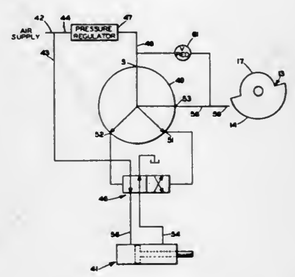
A flow sensing and control arrangement by which a jet of line fluid is continuously directed across a flow line against a biased pressure responsive device which moves to initiate a control function upon diffusion of the jet when line flow occurs. In a preferred embodiment, the pressure-responsive device controls a valve, normally closed by the jet but which opens upon the presence of line flow to introduce an additive to the flow line.

3,557,812
VALVE
Rowland L. Stedfeld, Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Original application Nov. 25, 1966, Ser. No. 596,928, now Patent No. 3,476,133. Divided and this application Aug. 15, 1969, Ser. No. 850,364
Int. Cl. F16k *17/14, 31/12*
U.S. Cl. 137—69 **3 Claims**



Valves having a reciprocable valve member disposed between two pressure chambers one supplied from a source of fluid under pressure through a relatively open passage and the other supplied through a restricted passage so that the valve responds to rapid changes in the pressure. The valve may be restrained in one position by a shear member or by an impositive detent, and may be spring biased.

3,557,813
CAM ACTUATED FLUIDIC TIMING SYSTEM
Charles R. Fegley, Laureldale, and Theodore L. Yoder, Reading, Pa., assignors to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed May 10, 1968, Ser. No. 728,268
Int. Cl. F15c *3/00*
U.S. Cl. 137—81.5 **8 Claims**

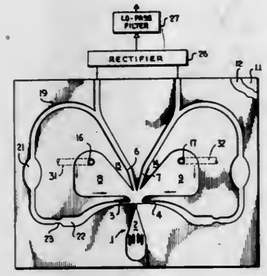


Fluidic cam sensing is achieved by sensing the peripheral surface of a timing cam by applying fluid through a duct against the peripheral surface. Different conditions of back pressure within the duct, as the timed portions of the peripheral surface of the cam pass thereby, are detected for controlling a solid state fluidic logic circuit in accordance with such conditions. A pneumatic device can be operated in accordance with such a fluidic logic circuit.

3,557,814
MODULATED PURE FLUID OSCILLATOR

Vincent F. Neradka, Rockville, Md., assignor to Bowles Engineering Corporation, Silver Spring, Md., a corporation of Maryland

Filed Apr. 26, 1968, Ser. No. 724,473
Int. Cl. F15c 1/08
U.S. Cl. 137—81.5 13 Claims

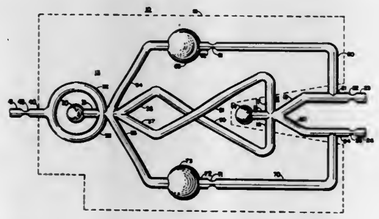


A modulated pure fluid oscillator wherein the amplitude of a cyclically deflected power stream is periodically modulated at a frequency which is substantially lower than the cyclical deflection frequency. Amplitude modulation is achieved by issuing a periodic modulation stream in interacting relation with the power stream at sufficient pressure to limit but not override the primary cyclical power stream deflections. The modulation stream is generated by feeding back portions of the power stream which are scooped into a cylindrical vent passage disposed adjacent an output passage of the oscillator, the vent passage pressure varying as a function of the power stream deflection amplitude. Fluid is exhausted from the vent passage which acts as a vortex valve in throttling exhaust fluid as a function of vent passage pressure. Flow not exhausted from the vent passage is recirculated to interact with and limit the deflection amplitude of the power stream. Limiting the deflection amplitude reduces flow into the vent passage to cause reduced pressure therein, thereby reducing the vortex valve throttling action and reducing the flow of recirculated fluid interacting with the power stream. Consequently, the amplitude of power stream deflections increases and the modulation cycle starts over again. The modulation frequency, being dependent on vent passage pressure can be varied either by varying the power stream pressure of controlling the fluid exhaust from the vortex valve.

3,557,815
CONTROL APPARATUS

Jeffrey M. Lazar, South St. Paul, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware

Filed Aug. 28, 1967, Ser. No. 663,821
Int. Cl. F15c 1/12
U.S. Cl. 137—81.5 4 Claims

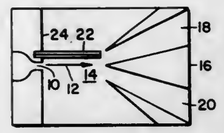


Apparatus having a proportional fluidic amplifier and a bistable amplifier for converting a proportional fluidic signal to a digital fluidic signal.

3,557,816
TEMPERATURE SENSITIVE FLUIDIC DEVICE

Donald A. Small, Castine, Maine, assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Nov. 25, 1968, Ser. No. 778,430
Int. Cl. F15c 3/08
U.S. Cl. 137—81.5 18 Claims

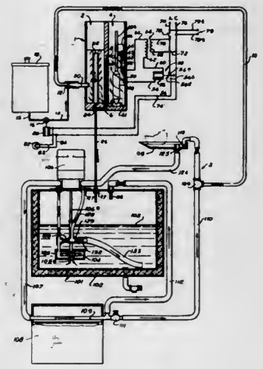


A sensing device for the direct conversion of analogue temperature information to fluidic analogue or digital pressure information. A thermally deformable element is disposed so as to apportion a fluid stream, issuing from a nozzle into an interaction region, into one or more fluid outlet passages as a function of the temperature sensed by the element. The outlet fluid pressure is thereby varied as a function of temperature, which temperature is generated by the fluid, a medium being tested by the element, or an electrical current flowing in a resistance path in thermal contact with the element.

3,557,817
CONTROL FOR MIXING FLUIDS OF DIFFERENT SPECIFIC GRAVITY

Edwin H. Royse, 4740 Vicksburg St., Dallas, Tex. 75207

Filed May 5, 1969, Ser. No. 821,873
Int. Cl. B41l 25/00
U.S. Cl. 137—91 19 Claims

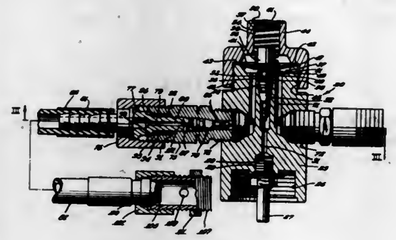


A hydrometer-actuated control for mixing dampening fluid comprising water and other chemical ingredients mixed with alcohol to be applied to the plate of a lithographic printing press. The control device comprises a mixing chamber, in which alcohol and dampening fluid are mixed, adapted to remove air bubbles therefrom; a test chamber having a hydrometer freely floating in a sample solution drawn from the mixing chamber; and an electrical conductor on the hydrometer which moves with the hydrometer relative to the surface of the sample solution to actuate a relay to open and close a solenoid operated valve to regulate flow of alcohol to the mixing chamber.

3,557,818
FUEL REGULATOR FOR PROPANE APPLIANCES

William J. Rohde, Sycamore, Ill., assignor to Olin Corporation, Stamford, Conn., a corporation of Virginia. by mesne assignment

Filed Aug. 14, 1968, Ser. No. 752,704
Int. Cl. G05d 16/06
U.S. Cl. 137—118 8 Claims

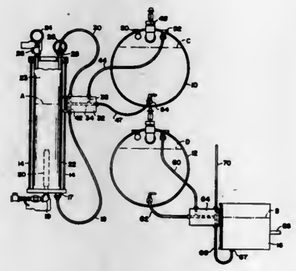


A fuel regulator for a propane appliance wherein a preset spring biased valve member such as a "tire valve" is disposed in series between an inlet from a propane source and a plurality of separate outlets and is controlled by a diaphragm regulator so that gaseous fuel may be supplied to each of the plurality of separate outlets at a constant pressure.

3,557,819
LIQUID LEVEL CONTROL DEVICE

Albert Singleton, 7360 Brookside Parkway, Middleburg Heights, Ohio

Filed Nov. 6, 1968, Ser. No. 773,789
Int. Cl. G01n 17/00
U.S. Cl. 137—206 5 Claims

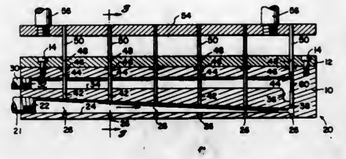


A liquid level control device for an air saturation tower in a corrosion testing apparatus which includes an airtight liquid supply tank. A liquid exit from the tank leads to a passageway extending from near the lower side of the tank, through a fitting, to the inlet of the tower near the corrosion-testing apparatus. An air passageway extends from the upper side of the tower through the fitting to an air entrance in the tank situated above the liquid exit. Both the liquid and air passageways converge into a single horizontal passageway in the fitting. When the liquid in the tower is below the desired level, the passageway in the fitting is so oriented that it will be partially unobstructed by water and thus be opened to air flow. This stream of released air flows into the airtight tank, allowing liquid to flow therefrom and restore the liquid level of the tower. When the rising water reaches the desired level, it fills the horizontal passageway thereby sealing off the air passageway and preventing further liquid flow. A vertical adjustment of the fitting allows an operator to control the liquid level within the tower.

3,557,820
LIQUID DISTRIBUTION APPARATUS

Dale E. Jackson, and Carl C. Perkins, Jr., Prairie Village, Kans., assignors to Butler Manufacturing Company, Kansas City, Mo., a corporation of Missouri

Filed Aug. 28, 1968, Ser. No. 755,860
Int. Cl. B05b 15/02
U.S. Cl. 137—244 10 Claims

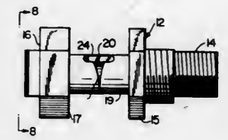


A manifold has a first inlet means for connection with a liquid to be distributed, this inlet means being in communication with a plurality of spaced outlet holes through which the liquid is dispensed. A second inlet means is adapted to be connected with a cleaning solution, and valve means is provided for selectively connecting the second outlet means with the outlet holes. A plurality of individual plungers are reciprocably mounted within the manifold, each of the plungers having a sliding fit with one of the outlet holes for closing the outlet holes and for forcing out any particles which tend to clog the outlet holes.

3,557,821
BY-PASS VALVE

William J. Siegel, Silver Spring; Linus E. Wallgren, Rockville; Loring E. Young, Frederick, and John Ravinsky, Rockville, Md., assignor to Pace, Incorporated, Silver Spring, Md., a corporation of the District of Columbia.

Filed Aug. 1, 1969, Ser. No. 846,715
Int. Cl. F16k 15/04, 17/04
U.S. Cl. 137—269.5 10 Claims



The present invention is directed to a flow control bypass valve adapted to bleed off up to about 90 percent of the gas passing through a gas line. The structure involves a bypass gas outlet aperture in a cylindrical valve body through which the gas flows and a spring biased ball check valve assembly mounted for rotational movement around the valve body so that the intake port of the check valve can be placed into any desired degree of registry with the bypass outlet or act to expose the bypass outlet to the open atmosphere to any desired extent.

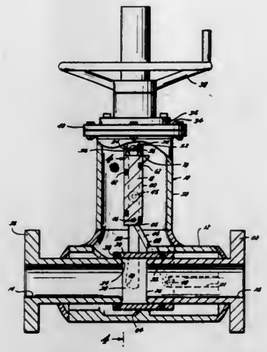
3,557,822
GATE VALVE

Clyde H. Chronister, 4 Kings Row, Rte. 14, Houston, Tex.

Filed May 8, 1969, Ser. No. 823,103
Int. Cl. F16k 43/00, 5/14
U.S. Cl. 137—315 15 Claims

A gate valve having an inlet and outlet conduit extending into a housing and spaced from each other to provide an opening therebetween with a sleeve telescoping with the inlet and outlet conduits and a valve gate positioned for transverse movement into and out of the opening with a sleeve actuating arm pivotally connected to the gate and to the sleeve whereby movement of the gate into the opening moves the sleeve away from the opening and movement of the gate out of the opening moves the sleeve over the opening thereby providing a through conduit-type gate valve in which the gate

seals may be changed while the line is in operation. Means for moving the valve gate past the plane of travel of the arm pivot connection to the sleeve for retracting the sleeve towards and against the gate for increasing the sealing pressure and providing a two-way sealing valve. Coacting wedge surfaces on the housing and on both sides of the gate for



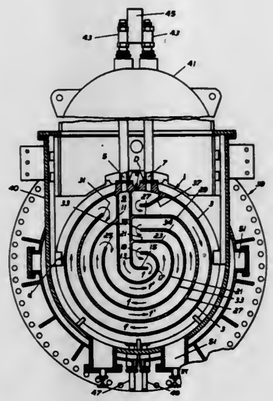
wedging the gate against the end of the inlet conduit when the gate is moved into the opening for increasing the sealing pressure on the gate. Stem actuating means connected to the gate by a limited and loosely engaging pivoting connection so that the gate may be moved transversely into the opening and also longitudinally.

3,557,823

WATER COOLED VALVE DISK FOR GATE VALVES

Hugh B. Carr, McMurray, and Norman F. Bradel, Scott Township, Allegheny County, Pa., assignors to S. P. Kinney Engineers, Inc., Carnegie, Pa., a corporation of Pennsylvania

Filed May 13, 1969, Ser. No. 824,230
Int. Cl. F16k *49/00*
U.S. Cl. 137—340 **9 Claims**



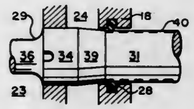
A water-cooled valve disk is provided in the usual form of a circular hollow body with a peripheral wall in which two transversely extending flow-confining walls form a channel and extend from the peripheral wall to the central area of the disk with a port in the periphery opening into said channel and there are a plurality of concentric flow-confining walls, the outermost one of which is spaced from the peripheral wall and the innermost one of which surrounds and provides a passage into the central area, alternate concentric walls beginning with the outer one being joined at one end to one of said transversely extending walls and terminating in spaced relation to the other of said transverse walls, an intervening concentric wall extending from the other of said transverse walls toward but terminating in spaced relation to the first of said transverse walls, and a second port opening through the periphery of the disk adjacent the first port into the channel between the peripheral wall and the outermost concentric wall.

3,557,824

SPOOL CONTROL VALVE

Robert D. Krehbiel, and Warren E. McCammond, Hutchinson, Kans., assignors to The Cessna Aircraft Company, Wichita, Kans., a corporation of Kansas

Filed Nov. 1, 1968, Ser. No. 772,668
Int. Cl. F16k *25/04*
U.S. Cl. 137—375 **2 Claims**



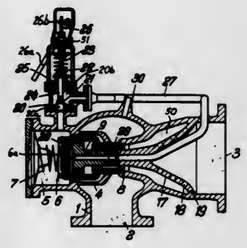
A fluid control valve including a spool whose end exposable to corrosion environment is tapered to a reduced diameter and coated with corrosion resistant material. The reduced diameter facilitates fast, economical final machining and sizing of the spool without damaging the protective coating, for selective fitting within a fluid control valve body bore.

3,557,825

PILOT-CONTROLLED RELIEF VALVE

Carl Bischoff, 1, Augusta-Anlage 52, 68 Mannheim, Germany

Filed July 24, 1969, Ser. No. 844,421
Claims priority, application Germany, July 27, 1968, B766,22
Int. Cl. F16k *31/163, 31/143*
U.S. Cl. 137—489 **10 Claims**



A pilot-controlled relief valve wherein the fluid filling the inlet of the body of the main valve is maintained at main system pressure and is normally sealed from an outlet by a cylindrical valve member which is slidable along a fixed piston and defines with the body a pressure chamber in communication with the inlet. The fluid which fills the pressure chamber tends to maintain the valve member in sealing engagement with a ring-shaped seat of the body. The valve member defines with the piston a compartment which can be connected with the inlet by a pilot valve when the latter responds to a predetermined maximum fluid pressure in the pressure chamber whereby the fluid in the compartment

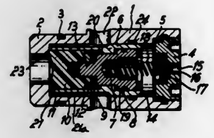
moves the valve member away from sealing position. The movements of the valve member toward and away from sealing position are braked by fluid which enters a damping chamber between the valve member and the piston when the valve member is moved away from seat. The damping chamber communicates with the outlet by way of a space provided in the body and separated from the outlet by an apertured baffle.

3,557,826

SAFETY VALVE FOR PROTECTING HYDRAULIC MINE PROPS AGAINST OVERLOADS

Heinz Albrecht, Kunostrasse 4, Castrop-Rauxel, Germany

Filed Aug. 26, 1968, Ser. No. 755,350
Claims priority, application Germany, Sept. 6, 1967, P1583109.1
Int. Cl. E21d *15/51;* **F16k** *15/02*
U.S. Cl. 137—516.29 **6 Claims**



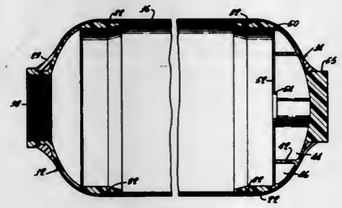
A safety valve which is adapted to protect hydraulic mine props against overloads. This valve has an elastomeric block which is supported at one end by a gas pressure cushion and the other end engages a seat and is adapted to regulate slots on the seat through which the liquid pressure medium can flow out of the pressure chamber of the prop.

3,557,827

PRESSURE VESSEL FOR WATER CONDITIONER ASSEMBLY

Robert E. Marsh, 1707 North Prospect 13A, Milwaukee, Wis. 53200

Filed Oct. 31, 1967, Ser. No. 679,304
Int. Cl. B01d *27/12;* **B65d** *7/42*
U.S. Cl. 137—590 **7 Claims**



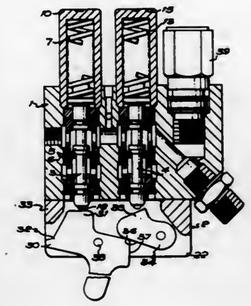
A lightweight filament-wound pressure vessel. The vessel includes a central cylindrical shell and a pair of end caps adapted to fit into the opposite ends of the shell. The central shell and cylindrical skirts of the end caps form a smooth external junction. The assembly is overwound with a fiberglass filament to provide the desired bursting strength of the vessel.

3,557,828

VALVE BLOCK WITH SPRING-LOADED VALVES

David B. Smith, Shefield, England, assignor to A. G. Wild & Co. Limited

Filed Oct. 25, 1968, Ser. No. 770,534
Claims priority, application Great Britain, Oct. 27, 1967, 48958/67
Int. Cl. F16k *11/10, 31/524*
U.S. Cl. 137—596.1 **7 Claims**



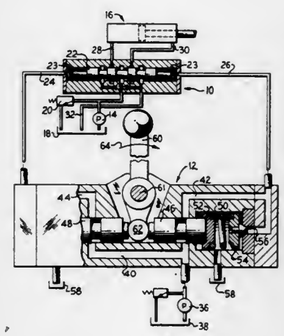
A valve block, particularly suitable for controlling hydraulically powered self-advancing mine roof supports comprises at least one pair of valve consisting of an inlet valve normally urged into closed position by a spring, and an outlet valve, normally urged into open position by a spring, the valves being suitable for association with pairs of conventional spring-urged valves, i.e., both inlet and outlet normally closed and cam means operable on the valves such that the valves may or may not be moved into a set position.

3,557,829

PILOT VALVE FOR ACTUATING A MAIN CONTROL OF THE HYDRAULIC CIRCUIT

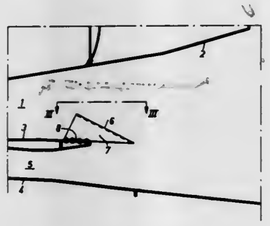
Lloyd D. Finley, Lockport, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California

Filed Sept. 11, 1969, Ser. No. 857,166
Int. Cl. F15b *13/042*
U.S. Cl. 137—596.2 **3 Claims**



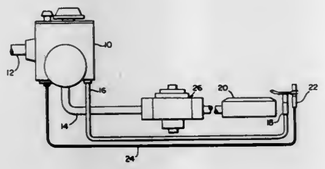
A pilot valve for use in a bridge type circuit which is employed to actuate a control valve in a main control circuit and in which control of pressures in the bridge circuit is the function of simple poppet valves. The valves are closed by spring pressure augmented by fluid pressure in the pilot system. Varying the pressure behind the two valves permits one of them to open to reduce pressure on one side of the main valve and increase pressure on the other side.

3,557,830
DEVICE FOR FORCED MIXING OF PARALLEL FLUID FLOWS
John A. Raw, Bushey, Hertfordshire, England, assignor to Svenska Flygmotor Aktiebolag, Trollhattan, Sweden, a joint stock company of Sweden
Filed June 17, 1969, Ser. No. 834,013
Claims priority, application Sweden, June 17, 1968, 8191/68
Int. Cl. F02k *3/02*
U.S. Cl. 137—604 2 Claims



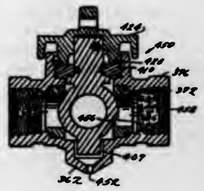
A device for forced mixing of parallel fluid flows by means of guide vanes such as for mixing hot and cold gaseous flows in turbine-jet engines, said guide vanes consisting of a plurality of triangular discs turned with a corner opposite the direction of flow and having the base as trailing edge and located with said corner spaced from a partition between said flows, at the end edge of which partition said discs are mounted at such angle of attack to the direction of flow that they are approaching the border area between said flows as seen from said corner towards said trailing edge, the side edges of said triangular discs being located each in a side plane disc disposed in the direction of flow and by means of which said triangular disc is supported from said partition.

3,557,831
PRESSURE REGULATING APPARATUS WITH BALANCING MEANS
Jay R. Katchka, Long Beach, Calif., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Jan. 12, 1968, Ser. No. 697,412
Int. Cl. F23n *1/00*
U.S. Cl. 137—613 15 Claims



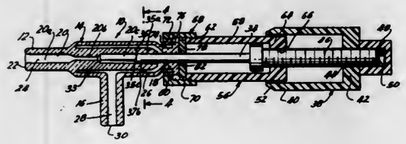
A flow control system including a normally closed balanced pressure regulator located downstream from an automatic control device and wherein the normally closed balanced pressure regulator includes a valve, a closure spring which maintains the valve in a normally closed position, an actuating diaphragm which senses inlet pressure when the automatic control device is open to overcome the force of the closure spring and slowly open the valve, a regulating diaphragm for regulating outlet pressure, and a balancing diaphragm or a self-balancing vane.

3,557,832
BALL VALVES
Frank H. Mueller; Wilbur R. Leopold, Jr., and John J. Smith, Decatur, Ill., assignors to Mueller Co., Decatur, Ill., a corporation of Illinois
Original application Dec. 10, 1964, Ser. No. 417,735, now Patent No. 3,437,106, dated Apr. 8, 1969. Divided and this application Nov. 26, 1968, Ser. No. 794,822
Int. Cl. F16k *11/08*
U.S. Cl. 137—625.22 6 Claims



A ball valve is provided with resilient annular seats between the ball and housing through passageway. The housing includes a cylindrical upstanding wall surrounding the laterally directed key receiving opening. An annular spacer is received between the housing, peripherally of the lateral opening and a retainer on the wall for the key. The key is provided with a cap, secured to the key with a blind pin.

3,557,833
MICROMETRIC CAPILLARY VALVE WITH TAPERED PASSAGE
Roger Gilmont, Douglaston, N.Y., assignor to Roger Gilmont Instruments Inc., Great Neck, N.Y., a corporation of New York
Filed Apr. 16, 1968, Ser. No. 721,709
Int. Cl. F16k *47/04*; F15d *1/10*
U.S. Cl. 137—625.3 9 Claims

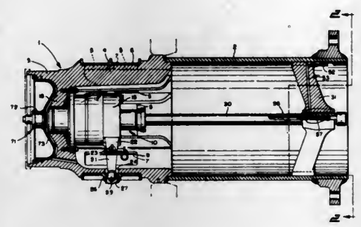


An adjustable valve for controlling fluid flow at appreciable rates comprises a tapered passage between inlet and outlet ports, in which passage an elongated member is axially slidable with appreciable clearance, thereby to vary the rate of fluid flow through said passage. In order to maintain the required members, radial orientation of the member within the passage, inwardly extending elements are provided in the passage which contact the outer surface of the member, while fluid flow clearances are defined between the member and the inner surface of the passage. The end of the passage remote from the member may be narrowed to define a seat with which the tip of the member cooperates to provide a positive-off feature.

3,557,834
ROTATION DAMPER AND ACTUATOR
Erwin H. Hartel, Brunswick, and Louis C. Hrusch, Chesterland, Ohio, assignors to The Cleveland Pneumatic Tool Company, Cleveland, Ohio, a corporation of Ohio
Filed Sept. 20, 1968, Ser. No. 761,240
Int. Cl. F16k *17/32, 17/04, 31/16*
U.S. Cl. 137—625.31 14 Claims

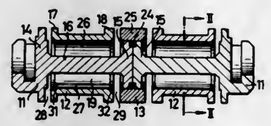
A rotation damper and actuator including piston con-

nected both to a stationary housing and rotor housing by tog-



gle linkages thus to effect rotation of the rotor housing during axial and rotary movements of the piston.

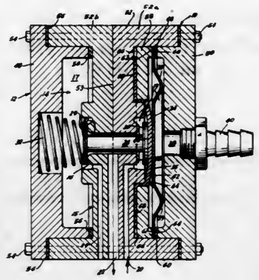
3,557,835
COMPOSITE VALVE MEMBER
Joachim Heiser, Bernhausen; Hans Helfensdorfer, Stuttgart-Fasanenhof; Diether Slowak, Ludwigsburg, and Klaus Sopha, Stuttgart, Germany, assignors to Robert Bosch G.m.b.H., Stuttgart, Germany
Filed May 23, 1968, Ser. No. 731,404
Claims priority, application Germany, June 1, 1967, B9281911/47g
Int. Cl. F16k *11/07*
U.S. Cl. 137—625.48 12 Claims



A valve body for use in hydraulic slide valves consists of a female member and a male member. The female member is constructed as a sleeve and the male member includes an elongated first portion extending through the sleeve and defining with the inner circumferential wall surface thereof at least one longitudinally extending open-ended passage, and two additional portions respectively rigid with the ends of the first portion located adjacent to but slightly spaced from the opposite axial ends of the sleeve and defining with the latter to substantially radial gaps communicating with opposite ends of the longitudinal passage.

3,557,836
DIAPHRAGM VALVE
Aaron Kutz, Forest Hills, N.Y., assignor to Fluidic Controls Corporation, South Hackensack, N.J., a corporation of New Jersey
Filed Oct. 8, 1968, Ser. No. 765,952
Int. Cl. F16k *11/02*
U.S. Cl. 137—625.66 21 Claims

A valve member of a diaphragm valve engages a diaphragm of a relatively small area, that diaphragm in turn being acted upon by a control diaphragm of a larger area against which a control signal fluid is applied to actuate the valve member. The surface of the smaller area diaphragm is acted upon by the external-controlled fluid and thus effectively isolates the control diaphragm from the controlled fluid. As a result of the different areas of the two diaphragms, the control signal acting upon the control diaphragm is effective to actuate the valve member even though the pressure of

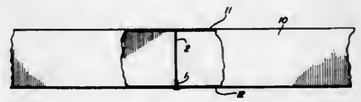


the control signal fluid may be equal to or less than (as well as greater than) the pressure of the controlled fluid.

3,557,837
MODULATING VALVE
Harry L. Giwosky, Milwaukee, Wis., assignor to Controls Company of America, Melrose Park, Ill., a corporation of Delaware
Filed Jan. 21, 1969, Ser. No. 792,651
Int. Cl. F16k *1/52*
U.S. Cl. 137—630.14 4 Claims

As the valve moves towards its seat the dished resilient face seats first so flow is then confined to passing through the slots in the face. As further closing movement occurs the slots are gradually seated against the backing plate to gradually cut off flow until the slots are completely blocked. The percentage of maximum flow for a given valve opening movement more closely follows the ideal.

3,557,838
DUCT STIFFENER
Arthur P. Savage, RFD 2, Woodbine, Md. 21797
Filed Feb. 18, 1969, Ser. No. 800,171
Int. Cl. F16l *55/00*
U.S. Cl. 138—108 17 Claims



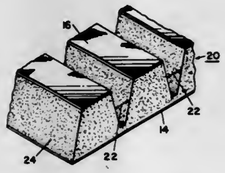
A duct stiffener device for blind insertion into sheet metal ducts which consists of a rod affixed to a sheet metal type screw.

3,557,839
PRESSURE VESSEL WITH LAMINATED WALL STRUCTURE RESISTANT TO HYDROGEN ATTACK
Yoshimitsu Uto; Taizo Yamazaki, Hiroshima-shi, and Toshikazu Shinkawa, Asa-Gun, Horishima-ken, Japan, assignors to Mitsubishi Jukogyo Kabushiki Kaisha, Tokyo, Japan
Filed Mar. 1, 1967, Ser. No. 619,713
Int. Cl. F16l *9/14*
U.S. Cl. 138—143 **1 Claim**



A pressure vessel which is adapted to be exposed to a hydrogen atmosphere on either its interior or exterior side includes a plurality of longitudinally elongated cylindrical units which are arranged end-to-end and joined together by a continuous annular weld which extends from the interior to the exterior of the vessel. At least one of the units comprises a laminate of a plurality of tubular vessel plates which are arranged one within the other and which are joined together by the weld which joins the units together. The plate on the side of the vessel which is exposed to hydrogen is covered by a protective plate which extends over the weld. The weld seam joining the protector plate to the side of the vessel which is exposed to hydrogen and the protective plate are of a material which is resistant to hydrogen attack. A pressure equalizing hole extends through all of the vessel plates of the laminate and is covered by the protective plate on the side which is exposed to hydrogen.

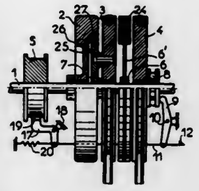
3,557,840
CELLULAR PLASTIC FOAM INSULATION BOARD STRUCTURES
Richard C. Maybee, Oakville, Ontario, Canada, assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
Filed May 9, 1968, Ser. No. 727,778
Int. Cl. F16l *9/14*
U.S. Cl. 138—149 **13 Claims**



Preformed cellular plastic foam insulation board structures are provided typically with a hand deformable outer skin surface. In the preferred embodiment, the preformed cellular plastic is polyurethane foam which may appear as a sandwich configuration between inner and outer hand deformable skin surfaces. Various insulation configurations are also provided for insulating line pipe, combinations of traced pipes, joints, unions, ducts, and the like.

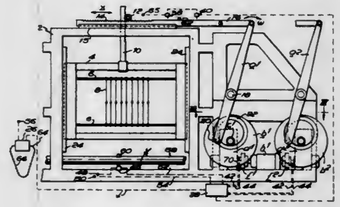
3,557,841
MECHANISM FOR STARTING A WEAVING MACHINE
Albert E. Moessinger, Epalinges, Vaud, Switzerland
Continuation-in-part of application Ser. No. 538,777, Mar. 30, 1966, now abandoned. This application Jan. 24, 1969, Ser. No. 793,746
Int. Cl. D03d *51/02*
U.S. Cl. 139—1 **7 Claims**

A rapid starting mechanism for looms of the type where the shuttle is launched through the shed at a speed proportional to the speed of the loom, includes a speed regulator drive wheel which is coupled to the main shaft of the loom when the loom main shaft is in operation and which is instantly uncoupled from the shaft when the loom main shaft is



stopped. A planetary gear assembly connects the drive wheel to the main shaft of the loom and can be mounted concentrically of the main shaft of the loom or concentrically of the drive member of an electric motor connected to the coupling mechanism by belts and pulleys.

3,557,842
DOBBIES FOR WEAVING LOOMS
Ian S. Porter, Barnsley, England, assignor to Wilson & Longbottom Limited, Barnsley, England, a corporation of Great Britain
Filed Sept. 19, 1968, Ser. No. 760,864
Claims priority, application Great Britain, Sept. 22, 1967, 43255/67
Int. Cl. D03c *13/00, 5/00*
U.S. Cl. 139—55 **9 Claims**

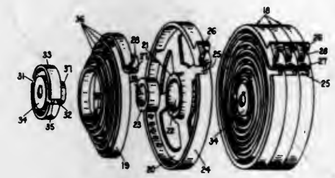


In a dobby for a weaving loom each heald frame is vertically reciprocable by movement of a respective linkage moved by a respective rotatable shedding cam. A continuously rotating electric motor drives the shedding cam through a clutch when the clutch is engaged, but the cam ceases to be rotated and the heald frame halts when the clutch is disengaged. The clutches are engaged in a predetermined sequence to give a desired shedding motion in response to programmed engage clutch instructions in a program read by a program reader in a electrical circuit controlling engagement and disengagement of the clutches. When a clutch is engaged the heald frame is either raised or lowered and when it reaches either of its fully raised or fully lowered positions the linkage operates a switch to disengage the clutch so as to halt the heald frame at the raised or lowered position until the next engage clutch instruction is received to move the frame.

3,557,843
LOOM HARNESS MECHANISM
Roy H. Rehbein, Jr., and Raymond D. Whiting, Hopedale, Mass., assignors to North American Rockwell Corporation, Pittsburgh, Pa., a corporation of Delaware
Filed Jan. 22, 1969, Ser. No. 793,116
Int. Cl. D03c *13/00*
U.S. Cl. 139—89 **3 Claims**

A spiral harness spring for a loom having axially directed

biasing means for maintaining the coils thereof in radial



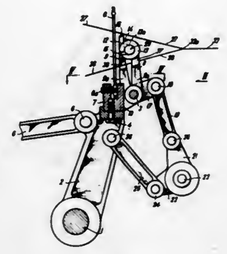
alignment and to prevent lateral movement thereof relative to its enclosing sheave.

3,557,844
APPARATUS FOR PRODUCING A FABRIC WITH A LONGITUDINAL SEAM
Carl F. Libby, Stoughton, Mass., assignor to John D. Riordan, Hopkinton and Gertrude C. Libby, Stoughton, Mass., Trustees of the Libby Family Trusts
Filed Sept. 30, 1968, Ser. No. 763,528
Int. Cl. D03d *47/06, 47/42*
U.S. Cl. 139—124 **4 Claims**

A narrow web loom of the type having a weft-laying finger at each side of the warp shed to enter the shed to lay weft loops therein is provided with a knitting needle located at some point between the sides of the warp shed to catch and knit loops of weft yarn simultaneously introduced into the shed by the fingers with previously introduced loops. This results in a woven web with a knitted longitudinal seam spaced from both side edges of the web.

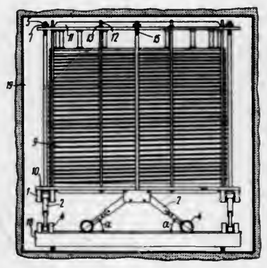
3,557,845
GUIDING DEVICE FOR PICKED WEFT THREADS
Vladimir Svaty, and Jiri Libansky, Liberec, Czechoslovakia, assignors to Elitex-Zavody Textilniho Strojirenstvi Generalini Reditelstvi, Liberec, Czechoslovakia
Filed July 7, 1969, Ser. No. 839,452
Claims priority, application Czechoslovakia, July 4, 1968, PV4913-68
Int. Cl. D03d *47/30*
U.S. Cl. 139—127 **12 Claims**

Pneumatically picked weft threads are guided by a row of alternating first and second guide members which have aligned guide openings having outlet gaps which are angularly staggered so that the outlet gap of each guide member is crossed by a portion of an adjacent guide member. In this picking position, the guide openings form a guide passage which is substantially closed about the periphery thereof. When the guide members are moved out of the warp shed, the warp threads retain the picked weft thread in the warp



shed, and the weft thread passes successively through the rows of outlet gaps of alternate guide members.

3,557,846
APPARATUS FOR AXIAL COMPRESSION OF WINDINGS
Yakov Zinovievich Checheljuk, Dnepropetrovskoe Shosse, 62; Gennady Ivanovich Pshenichny, Ulitsa Kremlevskaya, 27, kv.8, and Ivan Pavlovich Yakimenko, Ulitsa Schastlivaya. 5, kv.11, Zaporozhie, U.S.S.R.
Filed Nov. 7, 1968, Ser. No. 774,015
Int. Cl. B21f *45/00*
U.S. Cl. 140—71 **3 Claims**

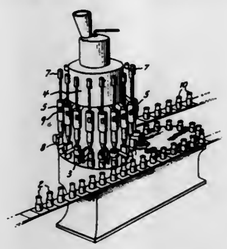


An apparatus for the axial compression of windings in electrical machines and power transformers, during the manufacture thereof, is provided with a plurality of mechanisms for developing a compressive force. Each mechanism includes at least one arm having a free lower end adapted to slidingly engage a surface. The arms are each inclined at an acute angle relative to the surface. The mechanisms further include a vertically extending rod for transmitting a compressed force to the winding. The rod is connected at its lower end to the upper ends of the arms such that the weight of the winding acts to decrease the acute angle of the arms with the surface whereby the rod is pulled down to produce a desired axial compressed force.

3,557,847
DISPENSING APPARATUS FOR PARTICULATE MATTER
Carl G. Hebel, 390 Jefferson Ave., Haworth, N.J., and Robert F. Bardsley, 24 Council Place, Harrington Park, N.J.
Filed Oct. 3, 1967, Ser. No. 672,534
Int. Cl. B65b *31/00*
U.S. Cl. 141—54 **13 Claims**

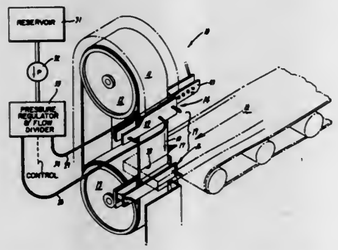
A dispensing apparatus has been designed which is suitable for handling friable, particulate matter and is adaptable for use on relatively high-speed packing lines. The apparatus consists essentially of a weigh bucket and a product supply unit. Flow of product into the weigh bucket from the supply unit is controlled by a bulk and dribble gate which is moved

vertically within the supply unit permitting first a rapid or bulk flow and then a slow or dribble flow of product. The weigh bucket moves together with a plunger valve, vertically down while it is being filled. After the predetermined weight



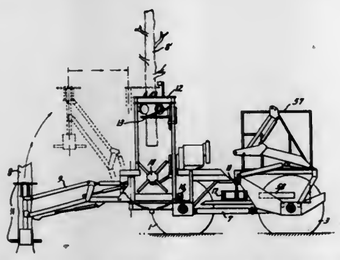
of product has been received, the plunger valve moves vertically independently of the bucket allowing product to discharge from the weigh bucket. The apparatus is compact and has less moving parts than most net weighing devices.

3,557,848
SAWING MACHINE AND SYSTEM
Herbert Leslie Wright, Box 179, Philo, Calif. 95466
Filed Jan. 29, 1968, Ser. No. 701,163
Int. Cl. B27b *11/02*; **B23d** *21/14*; **B27b** *5/28*
U.S. Cl. 143—160 **2 Claims**



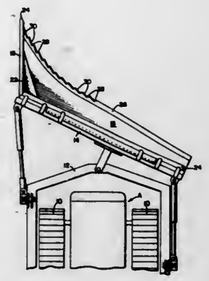
A cyclic saw having a thin, flexible, broad band blade, of tapered thickness, guided by fluid bearings coacting with the side faces of the band blade.

3,557,849
TREE HARVESTER
Edwin O. Martinson, Milwaukee, Wis., assignor to Koehring-Waterous, Ltd., Brantford, Ontario, Canada, a corporation of Canada.
Original application May 4, 1967, Ser. No. 636,215, now Patent No. 3,516,462. Divided and this application Dec. 11, 1969, Ser. No. 884,171
Int. Cl. A01g *23/02*
U.S. Cl. 144—3 **4 Claims**



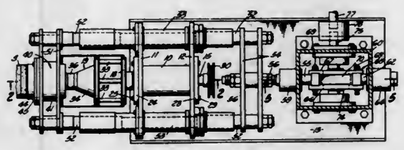
A tree-harvesting machine of the articulated vehicle type is equipped with a mechanism for advancing logs from the forward to the rearward vehicle unit and for automatically aligning the logs lengthwise with the rear vehicle unit when the units are in a relatively angled condition, as for steering.

3,557,850
LAND CLEARING BLADE
Neal Owens, 6 Audubon Place, and Lee H. Johnson, 1338 Audubon St., New Orleans, La.
Filed June 10, 1968, Ser. No. 735,851
Int. Cl. A01g *23/02*
U.S. Cl. 144—34 **8 Claims**



A land-clearing or tree-cutting blade adapted for attachment horizontally to the front of a dozer head and a leading cutting edge for the blade curving forwardly of the width of the blade, the curved cutting edge being interrupted by spaced substantially straight cutting edges normal to the longitudinal axis of the dozer whereby to provide a combined shearing and chiselling action as the blade is thrust through a tree.

3,557,851
CUTTER FOR PINEAPPLE SEGMENTS
Masato Tsutsumi, Kahului, Maui, Hawaii, assignor to Maui Land & Pineapple Company, Inc., Kahului, Maui, Hawaii, a corporation of Hawaii
Continuation of application Ser. No. 631,783, Apr. 18, 1967, now abandoned. This application Apr. 30, 1969, Ser. No. 824,730
Int. Cl. A23n *7/00*
U.S. Cl. 146—6 **10 Claims**



An axially reciprocating shell contains radial knives which cut annular slices of pineapple into segments. A rotary tubular knife projecting axially into the shell cuts each segment while the segmented slices are still within the shell. The diameter of the tubular knife employed determines whether the inner, outer, or intermediate portions of the segmented slices are cut. The shell is reciprocated by an eccentric mechanism, with the rotary support for the tubular knife being interposed between the eccentric mechanism and the shell.

3,557,852
PROCESS OF PEELING FOOD PRODUCTS
Austin C. Wagenknecht, Minneapolis, Minn., assignor to General Mills, Inc., a corporation of Delaware
No Drawing. Filed Apr. 30, 1968, Ser. No. 725,486
Int. Cl. A23n *7/02*
U.S. Cl. 146—233 **5 Claims**

Unpeeled potatoes are placed into an aqueous solution of 3.0 percent to 13.5 percent of active chlorine having an initial pH level of 7 to 13.5, after a predetermined time (which is dependent upon such active chlorine and pH levels) the potatoes are removed from such aqueous solution, and after such removal the chlorinated flavors absorbed by the potatoes are neutralized.

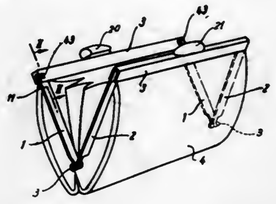
3,557,853
SANITARY NAPKIN HOLDER
Mary Henning Jones, 935 Gordan Lane, Birmingham, Mich.
Filed May 1, 1969, Ser. No. 821,031
Int. Cl. B65d *29/00*, *33/24*
U.S. Cl. 150—7 **9 Claims**



A holder for a sanitary napkin in the form of a cloth bag that can be folded flat when empty and which can be expanded when a sanitary napkin is inserted therein. A closure flap extends from the upper edge of a rear panel of the bag which is foldable across the top of the bag and over a portion of the front surface of the front panel of the bag and can be secured in place by interengageable fastening strips mounted on the closure flap and on the front of the bag. The bag may be constructed from a single piece of cloth folded to define front, rear and side panels cooperable to define a recess for receiving a sanitary napkin. The bag is constructed so that it can be adhesively secured together with flap folds and overlapping edge portions of panels to provide an economical, efficient construction.

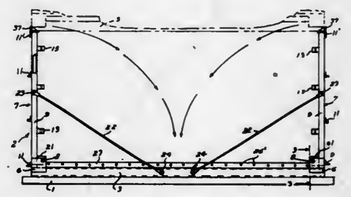
3,557,854
LADY'S HANDBAG, POUCH OR PURSE
Georg Reitzel, Altenmittlau, Kreis, Gelnhausen, Germany, assignor to Drescher & Kiefer, Altenmittlau, Kreis, Gelnhausen, Germany, a firm of Germany. a part interest and Randolph-Rand Corporation, New York, N.Y., a corporation of New York. a part interest
Filed Nov. 18, 1968, Ser. No. 776,422
Claims priority, application Austria, Aug. 22, 1968, A8199/68
Int. Cl. A45c *3/06*, *13/04*
U.S. Cl. 150—29 **6 Claims**

A lady's handbag, pouch or purse is assembled by first securing the respective rims of the body material used for the body of the bag, pouch or purse to elongate beaded holders and then sliding the beads of the holders into correspondingly profiled crossbars of the frame for the bag, pouch or purse. The hinged legs of two frame halves are secured to the crossbars by sliding enlarged portions at the free ends of the legs into the ends of the crossbars in which



they are secured by indenting the bar material at the ends thereof.

3,557,855
PALLET HAVING HINGED END PANELS AND FLEXIBLE COVER MEMBERS
Joseph L. Weingarten, and Stephen R. Mehaffie, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force
Filed Mar. 7, 1969, Ser. No. 805,300
Int. Cl. A45c *7/00*, *13/00*, *220/7*; **B65d** *7/12*
U.S. Cl. 150—49 **8 Claims**

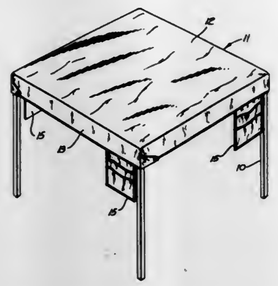


A rectangular collapsible boxlike mail carrier which may be mounted on a standard-type cargo pallet and which includes a main, cargo-supporting floor member equipped with depending tunnels or channels to receive spaced forklift blades and provide support for rigid end panels which are hinged to fold downwardly toward each other and the floor member, flexible sidewalls reinforced with battens that telescope between the corner posts of the end panels, and a flexible reinforced cover secured to the top of one of the sidewalls and adapted to be drawn down over the top of the carrier and which is detachably secured to the top of the other sidewall. The cover has attached end and side flaps which cover, overlap and protect the top, side and end edges of the carrier. Socket means are also provided at the top of the corner posts of the end panels for receiving and stacking a similar carrier thereon against accidental displacement.

3,557,856
TABLE COVER
Bertha F. Berman, 99-06 67th Road, Forest Hills, N.Y. 11375
Filed Nov. 26, 1968, Ser. No. 779,186
Int. Cl. A47b *97/00*
U.S. Cl. 150—52 **2 Claims**

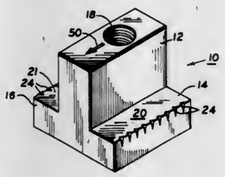
A table cover which is particularly suitable for card tables is provided with pockets located adjacent the corners of the cover and attached to the cover, so that the pockets extend downwardly when the cover is placed on the table. Each cover section of the cover has an angular portion carrying a snap fastener element which may be connected to one of

several complementary shaped fastener elements, so that a single cover may be arranged to fit tables of different sizes.



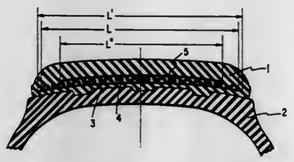
The pockets can be permanently sewn to the cover or removably connected to the cover.

3,557,857
T-NUTS
Henry F. Swenson, 22 Homehill Lane, Roseland, N.J. 07068
Filed Dec. 17, 1968, Ser. No. 784,434
Int. Cl. F16b *39/22, 39/282*
U.S. Cl. 151—20 4 Claims



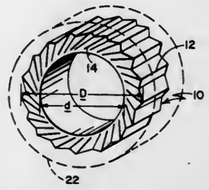
A T-nut for use in slots of machine tool tables and the like includes a threaded hole disposed at an angle to the upper surfaces of the extending wings of the T-nut. The upper surfaces of the extending wings of the T-nut are provided with toothed or knurled surfaces to insure that the engaged surface does not slide in the T-grooves of the worktable when the T-nut is tightened against this groove.

3,557,858
TREAD RING FOR REMOVABLE TREAD TIRES
Giuseppe Lugli, and Luigi Maiocchi, Milan, Italy, assignors to Pirelli S. p. A., Milan, Italy
Filed Oct. 15, 1969, Ser. No. 866,774
Claims priority, application Italy, Oct. 25, 1966, 29-262-A66
Int. Cl. B60c *11/02*
U.S. Cl. 152—187 4 Claims



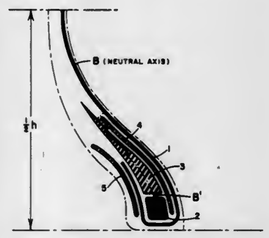
A tread ring for a pneumatic tire of the removable tread type, having an armor resistant to tension in the longitudinal direction of the tread ring, and two strips of metal cords parallel to one another in each strip, disposed along two directions crossed with respect to the midcircumferential plane of the tread ring and extending at angles to said plane. One of the strips extends internally and the other externally with respect to the armor.

3,557,859
VARIABLE PRESSURE PNEUMATIC VEHICLE TIRE
Ronald Markey Brenhouse, 528 Green St., Cambridge, Mass.
Filed Dec. 20, 1966, Ser. No. 603,294
Int. Cl. B60c *23/00*
U.S. Cl. 152—330 8 Claims



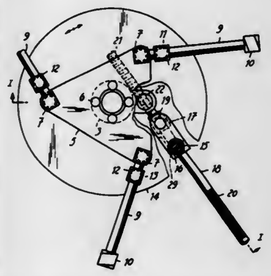
A tire including speed responsive means for varying effective tire pressure in proportion to vehicle speed and a tube having a variable dimension in combination with speed responsive means for varying said dimension in proportion to speed.

3,557,860
RADIAL TIRE BEAD CONSTRUCTION
Luigi Maiocchi, Milan, Italy, assignor to Pirelli, S.p.A., Milan, Italy
Filed Apr. 25, 1969, Ser. No. 819,346
Claims priority, application Italy, Apr. 30, 1968, 15,898
Int. Cl. B60c *15/06*
U.S. Cl. 152—362 6 Claims



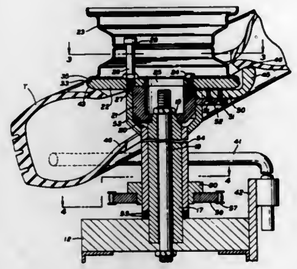
A pneumatic tire of the radial carcass type having reinforced sidewalls in the region adjacent to the bead rings.

3,557,861
APPARATUS FOR FIXING WHEELS OF VEHICLES FROM WHICH A TIRE HAS TO BE REMOVED
Victor Duquesne, 42-44 Quellinstr., Antwerp, Belgium
Filed Mar. 8, 1968, Ser. No. 711,762
Claims priority, application Belgium, Feb. 14, 1968, 47685
Int. Cl. B06c *25/06*
U.S. Cl. 157—1.24 7 Claims



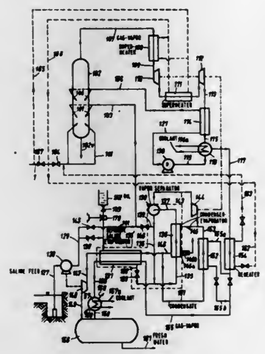
The present apparatus is for retaining a wheel between moveable claws when it is necessary to remove or mount a tire thereon.

3,557,862
TIRE MOUNTING MACHINE
Harold S. Mains, Akron, Ohio, assignor to The City Machine and Wheel Company, Akron, Ohio, a corporation of Ohio
Filed Aug. 4, 1969, Ser. No. 847,050
Int. Cl. B60c *25/06*
U.S. Cl. 157—1.24 10 Claims



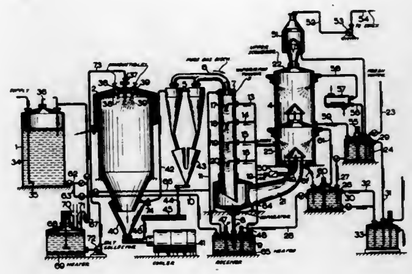
A machine for mounting tubeless tires on wheel rims in which a platform for supporting a rim in horizontal position has a peripheral notch for facilitating "buttoning" a tire casing thereover to a position below the platform, and a cam lug is rotatably mounted on the platform to progressively raise a tire bead over the lower rim flange and position the bead on the adjacent bead seat of the rim, said cam lug being automatically stopped at a predetermined position at the end of one revolution.

3,557,863
PROCESS AND APPARATUS FOR OBTAINING FRESH WATER FROM SALINE WATER
Rudolf Becker, Munich, Germany, assignor to Linde Aktiengesellschaft, Hollriegelskreuth, Germany
Filed Mar. 25, 1968, Ser. No. 715,887
Claims priority, application Germany, Apr. 26, 1967, 53360
Int. Cl. B01d *1/06, 1/12, 1/16*
U.S. Cl. 159—4 42 Claims



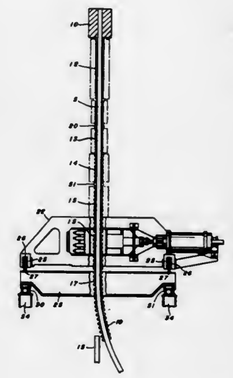
For extracting fresh water from saline water, saline water is injected into a hot, high-pressure gaseous stream directed into an evaporation chamber from which the vapor-gas mixture generated therein is withdrawn from the upper portion, and from a lower portion precipitated salts and mineral constituents are withdrawn in a solid, liquid and/or concentrated dissolved form. The vapor-gas mixture is engine-expanded in at least one stage and a fresh water condensate is extracted therefrom by cooling.

3,557,864
APPARATUS FOR THE PRODUCTION OF GRANULAR SOLIDS FROM DILUTE SOLUTIONS OR SUSPENSIONS
Leo Berg, Alstadten near Cologne, Germany, assignor to Knapsack Aktiengesellschaft, Knapsack near Cologne, Germany, a corporation of Germany
Filed Dec. 3, 1968, Ser. No. 780,758
Claims priority, application Germany, Dec. 20, 1967, 1,729,232
Int. Cl. B01d *1/16*
U.S. Cl. 159—4 4 Claims



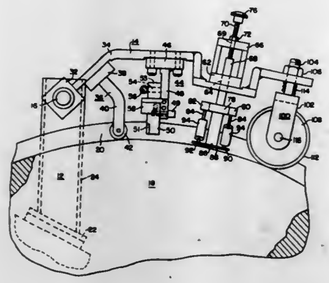
Apparatus for the production of granular solids from dilute solutions or suspensions, in which the solids are dissolved by concentrating or thickening them by means of a heat carrier in a vaporization zone so as to obtain a concentrate, precipitating the solid, and atomizing the concentrate in a spray zone wherein the gas issuing from the spray zone is used as the heat carrier in the vaporization zone.

3,557,865
MECHANISM FOR MEASURING LOADS ON PINCH ROLLS OF CONTINUOUS-CASTING MACHINE
Francis Gallucci, North Huntington Township, Westmoreland County, Pa., and Jaroslav Speransky, Robinson Township, Allegheny County, Pa., assignors to United States Steel Corporation, a corporation of Delaware
Filed Mar. 18, 1968, Ser. No. 713,753
Int. Cl. B22c *19/04*
U.S. Cl. 164—150 4 Claims



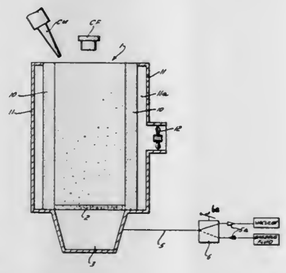
A mechanism for measuring line loads at the pinch rolls of a continuous-casting machine. Pinch rolls are supported on load cells which are connected to a recorder. Load cells measure weight at pinch rolls, which weight varies inversely as the line load enables operator to control force on slab and prevent overloading at the pinch rolls.

3,557,866
APPARATUS FOR APPLYING THERMAL BARRIER AND RELEASE AGENT TO A CONTINUOUS CASTING WHEEL
Henry Barrow, Lancaster; Jack E. Schmidt, Bowmansville; Robert E. Fromson, Williamsville, and Fred C. Staskiewicz, Buffalo, N.Y., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 18, 1968, Ser. No. 776,464
Int. Cl. B22d *11/12*
U.S. Cl. 164—158 **7 Claims**



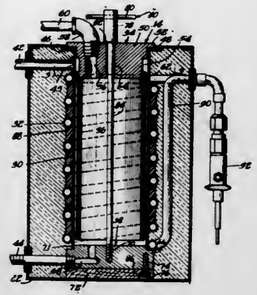
Apparatus is described for uniformly applying a combined thermal barrier and release agent to the peripheral groove of a continuous casting wheel. The apparatus includes a limiting member for determining the proper height of the applicators, a wheel trimming member, sidewall applicators and a base applicator.

3,557,867
CASTING APPARATUS
Erich Krzyzanowski, Frankenthal/Pfalz, Germany, assignor to Grunzweig & Hartmann Aktiengesellschaft, Ludwigshafen (Rhine), Germany
Continuation-in-part of application Ser. No. 795,570, Jan. 31, 1969. This application June 4, 1969, Ser. No. 830,326
Int. Cl. B22d *27/16*
U.S. Cl. 164—255 **6 Claims**



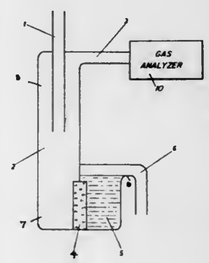
A casting apparatus. A body of granular material is confined in a container and a stream of gaseous fluid is introduced into the bottom of the container to impart to the granular material a state at least approaching fluidization. Into the thus-agitated material a form is introduced consisting of a material which is subject to consumption on contact with a molten metal. Admission of gaseous fluid is terminated to permit settling and compacting of the granular material about the form. Molten metal is introduced into the form to assume the configuration of the same while simultaneously consuming the form. The circumferential wall of the container is gas permeable and gaseous fluids in the container, particularly combustion gases resulting from the consumption of the material of the form, is aspirated through the gas-permeable circumferential wall to the exterior of the container.

3,557,868
HEAT EXCHANGER
Alfred K. Burkell, Westchester, Ill., assignor to Graymills Corporation, Chicago, Ill., a corporation of Illinois
Filed July 14, 1969, Ser. No. 841,244
Int. Cl. F16f *1/34*
U.S. Cl. 165—71 **11 Claims**



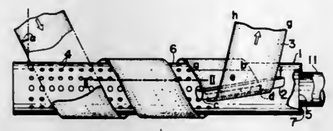
A heat exchanger for cooling a liquid. The heat exchanger includes a cylindrical outer shell which has a cooling coil in thermal conductive contact with the outer surface of the outer shell. A cylindrical inner shell is mounted within the outer shell with the outer surface of the inner shell being a short distance to the inner surface of the outer shell. A plug is positioned in one end of the outer shell and said plug is spaced from the adjacent end of the inner shell to allow liquid to flow between the end of the inner shell and the plug. An inlet is connected to the other end of the outer shell to allow liquid to flow between the inner and outer shells toward the space between the one end of the inner shell and the plug. An outlet is connected to the other end of the inner shell to carry away liquid from the interior of the inner shell, which liquid has been cooled during its flow between the inner and outer shells.

3,557,869
CONDENSATE DRAINING DEVICE
Hans Weimann, Kriftel, and Alois Ruse, Stierstadt, Germany, assignors to Hartmann and Braun Aktiengesellschaft, Frankfurt am Main, Germany, a corporation of Germany
Filed Nov. 12, 1968, Ser. No. 774,970
Claims priority, application Germany, Nov. 15, 1967, P1,648,930
Int. Cl. F28b *3/00*
U.S. Cl. 165—111 **5 Claims**



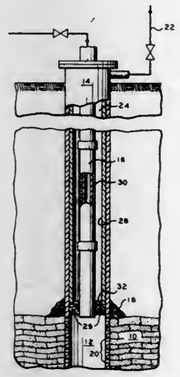
Device for removal of condensate from analysis gas ahead of an analyser wherein condensate forms when collected in the bottom of one container and migrates to the bottom of an adjacent container through a large number of capillary sized passageways, the adjacent container being provided with an overflow member at a height above the passageways.

3,557,870
DRYING APPARATUS FOR FLEXIBLE SUPPORTS
Motoharu Kuroki, and Akira Takagi, Kanagawa, Japan, assignors to Fuji Photo Film Co. Ltd., Tokyo, Japan
Filed June 26, 1969, Ser. No. 836,726
Claims priority, application Japan, July 18, 1968, 50,666/68
Int. Cl. F26b *13/20*
U.S. Cl. 165—115 **7 Claims**



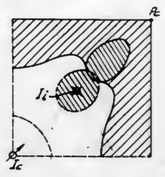
An apparatus for drying a flexible support having cylindrical air chambers with air inlets and air outlets for supporting the support as it moves in a helical path around the air chambers and air cushion roller means arranged such that the helical path of the support and the path of the support around the roller is substantially equivalent to the plane tangent of both paths.

3,557,871
INSULATED CASING AND TUBING STRING IN AN OIL WELL FOR A HOT FLUID DRIVE
Harry W. Parker, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Original application June 12, 1967, Ser. No. 645,442, now Patent No. 3,451,479. Divided and this application Sept. 30, 1968, Ser. No. 763,608
Int. Cl. E21b *17/00, 43/24*; **E16b** *9/14*
U.S. Cl. 166—57 **9 Claims**



Tubing and casing strings in a well penetrating an oil stratum to be produced by hot fluid drive, such as with steam, are coated on the walls thereof forming the annulus by packing off the annulus adjacent or near the stratum, filling the annulus with an aqueous solution of a water-soluble inorganic salt, such as borax, sodium carbonate, sodium sulfate, and mixtures thereof, preferably containing a binder, and injecting a hot fluid through the tubing string into the stratum to evaporate water from the solution in the annulus while venting steam therefrom at the wellhead and deposit a substantial coat of the salt in solid form on the walls of the annulus.

3,557,872
SWEEP IMPROVEMENT BY USE OF A STATIC BLOCK BETWEEN INJECTION AND PRODUCTION WELLS TO DELAY CUSP FORMATION
George M. Wood, Houston, Tex., assignor to Texas Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 24, 1968, Ser. No. 786,566
Int. Cl. E21b *43/16, 43/20*
U.S. Cl. 166—245 **13 Claims**



A barrier comprising a slug of a fluid more viscous than formation hydrocarbons is injected via a well between the injection and production wells to retard the formation of the usual cusp at the interface between the injected driving and formation fluids as it advances toward a production well.

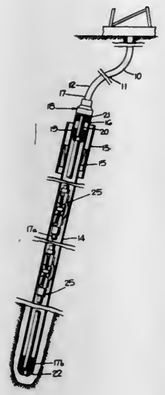
3,557,873
METHOD FOR IMPROVING THE INJECTIVITY OF WATER INJECTION WELLS
William D. Owens, South Pasadena, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California
No Drawing. Filed July 29, 1968, Ser. No. 748,181
Int. Cl. E21b *43/22*
U.S. Cl. 166—274 **14 Claims**

The injection rate of water into water injection wells that exhibit low injectivity because of oil saturation in the formation adjacent to the well can be increased by introducing a small quantity of soluble oil into the well, and thereafter displacing the soluble oil into the formation with subsequently injected flood water. This treatment removes almost all of the oil from the formation adjacent to the well, thereby increasing the relative permeability of the formation to water.

3,557,874
METHOD OF DRILLING AND COMPLETING A GAS WELL
Vaughan W. Rhoades, and Eugene D. Glass, Tulsa, Okla., assignors to Cities Service Oil Company, Tulsa, Okla., a corporation of Delaware
No Drawing. Filed Sept. 30, 1969, Ser. No. 862,506
Int. Cl. E21b *21/04, 33/14, 43/26*
U.S. Cl. 166—281 **13 Claims**

The well is drilled and cased to slightly above the gas-producing horizon. Drilling within the gas-producing horizon is performed by use of a nonaqueous drilling fluid. If the well is not sufficiently productive the adjacent formation is subjected to at least one stimulation by an explosive and test for adequate production. A hydraulic fracture network is induced by use of nonaqueous fracturing fluid, if appropriate stimulation is not achieved by the explosive means. The problem of irreversible wellbore damage created by water base drilling muds and aqueous fracturing fluids is avoided. Formation permeability restrictions in the vicinity of the wellbore are overcome by the use of the nonaqueous well completion technique.

3,557,875
METHOD AND APPARATUS FOR VIBRATING AND CEMENTING A WELL CASING
Kenneth W. Solum, Long Beach, and James R. Solum, Huntington Beach, Calif., assignors to B & W Incorporated, Torrance, Calif., a corporation of California
Filed Apr. 10, 1969, Ser. No. 814,947
Int. Cl. E21b 33/14
U.S. Cl. 166—286 19 Claims

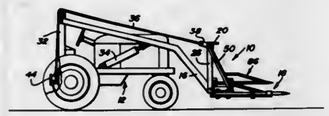


A device adapted to be mounted on a drill pipe and inserted in a well casing with a radially movable impact member resiliently urged into engagement with the casing and repeatedly moved away from engagement and released for causing an impact upon rotation of the drill pipe while the device is resiliently held from rotating relative to the casing. The method of cementing or gravel packing the casing in the well by the use of such devices to vibrate the casing while the cement slurry or gravel is pumped through the drill pipe and into the annulus surrounding the casing and including the step of clearing the cement slurry from the drill pipe by a following plug pumped down the drill pipe.

3,557,876
METHOD AND COMPOSITION FOR DRILLING AND CEMENTING OF WELLS
Art Tragesser, Houston, Tex., assignor to The Western Company of North America, Fort Worth, Tex., a corporation of Delaware
No Drawing. Filed Apr. 10, 1969, Ser. No. 815,221
Int. Cl. E21b 21/04, 33/138, 33/14
U.S. Cl. 166—292 10 Claims

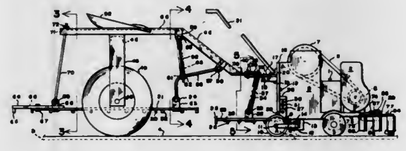
A drilling fluid for oil and gas wells which can be converted to a cementitious material suitable in well-cementing operations. The preferred drilling fluid has a water base and contains pozzolan and sufficient colloidal clay to form a thin but effective filter cake on the walls of the borehole during the drilling operation. When desired, an alkaline earth hydroxide, such as calcium hydroxide, is introduced into the drilling fluid to form a cementitious material for use in the borehole, for example, for cementing the casing in the borehole.

3,557,877
POWERED ROCK PICKER
Marvin G. Hoffman, R.F.D. Route, Carrington, N. Dak. 58421
Filed May 7, 1968, Ser. No. 727,294
Int. Cl. A01b 43/00
U.S. Cl. 171—63 13 Claims



A tractor mounted rock-picking device comprising a plurality of plate braced forwardly projecting picking teeth rigidly affixed to a vertical backstop which is in turn pivotally mounted on a pair of powered lift arms for both vertical and angular adjustment.

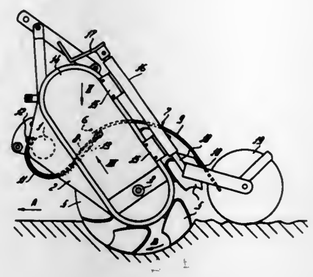
3,557,878
ROLL-FORMING DEVICE FOR SOD STRIPS
Carl F. Schuman, Utica, Mich., assignor to Ryan Equipment Company, St. Paul, Minn., a corporation of Minnesota
Filed Jan. 11, 1968, Ser. No. 697,229
Int. Cl. A01b 45/04
U.S. Cl. 172—20 20 Claims



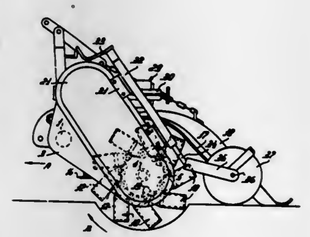
A self-propelled tractor having a blade periodically reciprocable at predetermined intervals to transversely sever sod strips, and to frictionally engage and draw upwardly a severed end of such sod strip as the blade withdraws, attached by a connector assembly to pull a wheeled frame; a first sod roll-forming rack suspended from said connector assembly to engage the uplifted end of sod initiating a first stage of sod roll formation, and a second rack suspended beneath said wheeled frame rearwardly of said first rack to engage a partially formed roll of sod in succession to said first rack to initiate and carry to completion a final stage of sod roll formation, said second rack having a rearward extension adjustable for final engagement with a nearly completed roll of sod to ensure that each completed sod roll will have the loose end of the strip at the top; said tractor has adjustably mounted at its forward end an assembly of vertically disposed rollers to encounter and displace from the path of the advancing construction, sod rolls formed from an adjoining strip of sod by prior travel of the construction.

3,557,879
CULTIVATING IMPLEMENTS
Cornelis Van Der Lely, 7 Brueschenrain, Zug, Switzerland, and Ary Van Der Lely, 10 Weverskade, Maasland, Netherlands
Continuation of application Ser. No. 810,935, Mar. 25, 1969, now abandoned, which is a continuation-in-part of application Ser. No. 546,779, May 2, 1966, now abandoned.
Int. Cl. A01b 33/12
U.S. Cl. 172—32 7 Claims

An agricultural implement having a frame and a soil-working member with a drive shaft mounted on the frame. A resilient baffle for displaced soil is arranged to the rear of the implement. A change speed transmission is connected to the drive shaft which in turn is connectable to a source of power.



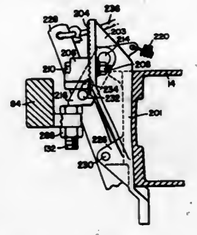
3,557,880
SOIL-CULTIVATING IMPLEMENTS
Ary Van Der Lely, 10 Weverskade, Maasland, and Cornelis Johannes Gerardus Bom, 36, Esdoorlaan, Rozenburg, Netherlands
Filed Oct. 6, 1967, Ser. No. 673,358
Claims priority, application Netherlands, Oct. 13, 1966, 6614376
Int. Cl. A01b 33/00
U.S. Cl. 172—91 9 Claims



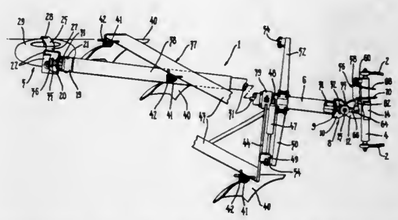
The soil-working members can be moved through the ground in a direction which is the same or opposite to the implement's direction of travel with a transmission adjustment: The soil-working members can be pivotally mounted between two supports so that they extend transverse to the direction of travel.

3,557,881
OPENING-UP STOP LATCHING MECHANISM FOR MOLDBOARD PLOWS
James Franklin Sullivan, East Moline; Loren Glenn Arnold, Rock Island, and Howard Christian Esbeck, Moline, Ill., assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Continuation-in-part of application Ser. No. 579,652, Sept. 15, 1966, now Patent No. 3,481,407. This application Oct. 23, 1967, Ser. No. 677,211
Int. Cl. A01b 63/22
U.S. Cl. 172—413 11 Claims

An opening-up stop-latching mechanism for a plow having a frame mounted on a front furrow wheel for movement between a raised transport position and a lowered plowing position, the stop mechanism normally being biased to a normal plowing position, but movable to an opening-up position which is automatically disengaged by the movement of the frame from its lowered working position to its raised transport position.

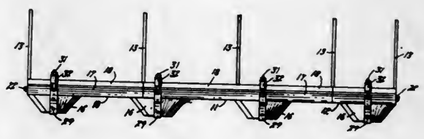


3,557,882
SEMIMOUNTED TURNOVER PLOW WITH STEERABLE WHEEL
Clarence B. Richey, Fresno, Calif., assignor to Massey-Ferguson Inc., Des Moines, Iowa, a corporation of Maryland
Filed Apr. 10, 1968, Ser. No. 720,203
Int. Cl. A01b 3/28
U.S. Cl. 172—223 4 Claims



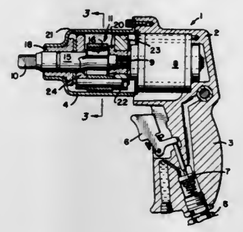
A semimounted, two-way turnover plow including a frame connected at its forward end with a tractor hitch, and having a steerable wheel supporting its trailing end. A remotely operable hydraulic ram at the forward end of the frame controls the position of the wheel with respect to the frame through a control shaft to positively steer the trailing end. The wheel also responds to changes in direction of the tractor to steer the trailing end of the frame in accordance with such changes.

3,557,883
SEED BED FORMING IMPLEMENT
Benjamin A. Shader, Golden, Colo., assignor to The Eversman Mfg. Company, Denver, Colo.
Filed Aug. 1, 1968, Ser. No. 749,458
Int. Cl. A01b 13/02
U.S. Cl. 172—701 6 Claims



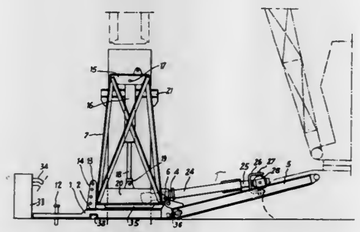
A plurality of elongated panels selectively and detachably joined together in end-to-end relation to form an elongated, flat-bottomed bed-leveling element, of any desired length, which is positioned across and drawn along a plurality of plant rows, said panels having upturned forward and rear edges to which downwardly-extending furrow-forming shells are clamped in adjustable spaced-apart relation.

3,557,884
IMPACT WRENCH MECHANISM
Edward L. Allen, Athens, Pa., assignor to Ingersoll-Rand Company, New York, N.Y., a corporation of New Jersey
Filed June 24, 1969, Ser. No. 836,019
Int. Cl. B25d *15/00*
U.S. Cl. 173—93.5 **4 Claims**



A rotary impact wrench mechanism having a hammer including a hammer carrier carrying a pivoted hammer dog rotating around an anvil. The hammer carrier includes a pair of axially spaced plates interconnected by the pivot pin for the hammer dog fitting in aligned bores in the plates with a loose fit allowing the pivot pin and hammer dog to rock slightly along the axis of the pivot pin.

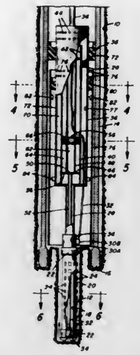
3,557,885
APPARATUS FOR SINKING AND EXTRACTING TUBING
Henri Cales, Paris, France, assignor to Societe Francaise De Construction De Bennes Automatiques Benoto, Paris, France
Filed May 27, 1968, Ser. No. 732,392
Claims priority, application France, May 29, 1967, 108/70
Int. Cl. E21b *7/02, 19/08*
U.S. Cl. 173—159 **3 Claims**



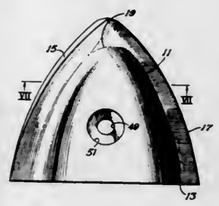
Apparatus for sinking or extracting well tubing comprises a frame supporting a tower from which are suspended hydraulic jacks that in turn suspend a clamping collar for the tubing. The jacks serve to provide the vertical force for sinking or extracting the tubing; and in addition, the clamping collar is oscillated about its upright axis by means of a reciprocatory hydraulic motor carried on draft structure pivotally connected to the frame. The tower is adjustable as to its upright angle for vertical or inclined drilling and may be folded down for transport.

3,557,886
METHOD AND APPARATUS FOR MEASURING IN SITU THE EARTH STRESS AT A PRESELECTED SUBTERRANEAN AREA
James H. Cobbs, Tulsa, Okla., assignor to Fenix & Scisson, Inc., Tulsa, Okla., a corporation of Oklahoma
Filed June 30, 1969, Ser. No. 837,477
Int. Cl. E21b *47/12*; **G01b** *5/30*
U.S. Cl. 175—50 **6 Claims**

This invention relates to a method and apparatus for measuring in situ the earth stress at a preselected subterranean area. More particularly, the invention relates to a method and apparatus of measuring the earth stress at a preselected subterranean area including drilling a large diameter borehole in the earth's surface to a point immediately above the preselected area, drilling a small diameter borehole from the bottom of the large diameter borehole into the preselected area, positioning into the small borehole an expandable sleeve having a plurality of strain rosettes thereon, injecting cement exteriorly of the expandable sleeve, applying hydraulic pressure to the interior of the expandable sleeve to expand the same against the wall of the small diameter hole whereby the strain rosettes are cemented to the earth's structure forming the circumference of the small diameter borehole, and drilling the large diameter borehole into the preselected area with a tubular drill which axially receives the expandable sleeve and the portion of the earth's structure immediately adjacent thereto, the distortion of the structure forming the wall of the small diameter borehole being reflected by the strain rosettes as the large diameter borehole is drilled.

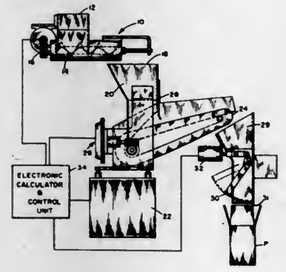


3,557,887
AUGER-TYPE PILOT BIT
John V. Watson, Fort Worth, Tex., assignor to Watson Manufacturing Company, Fort Worth, Tex.
Filed Sept. 19, 1967, Ser. No. 668,915
Int. Cl. E21b *9/06*
U.S. Cl. 175—421 **3 Claims**



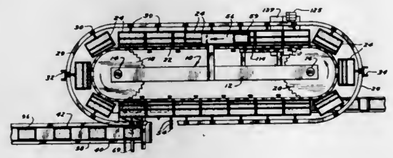
Following is disclosed a drill bit especially adapted for use as a pilot bit in drilling foundation holes and which has a substantially conical body. Two blade portions, spaced 180° apart, extend from the body in spiral fashion from a common joining region adjacent the apex of the body. Each blade has a concave leading surface of small radius in transverse cross section and a trailing surface of larger radius than that of the body. The blades terminate beyond the apex of the body, being connected with a substantially horizontal line tangential with their cutting edges. Further, a connection means is disclosed having a depression in the base of the body, with a first region having in transverse cross section two opposite, parallel sides connected at each end with a curved surface substantially parallel with the exterior surface of the body. A second region extends from the first region toward the apex of the body and is substantially rectangular in transverse cross section with its end region facing the blades. A male connection member registers with said depressions and is secured therein by a fastener which extends through the bit body.

3,557,888
METHOD FOR AUTOMATICALLY WEIGHING POURABLE GOODS
Adolf Stambera, Stuttgart-Bad Canstatt, West Germany, assignor to Fr. Hesser Maschinenfabrik A.G., Stuttgart-Bad, Cannstatt, West Germany, a corporation of West Germany
Filed Feb. 1, 1968, Ser. No. 702,327
Claims priority, application Germany, Feb. 4, 1967, H 61,753
Int. Cl. G01g *13/00*
U.S. Cl. 177—1 **3 Claims**



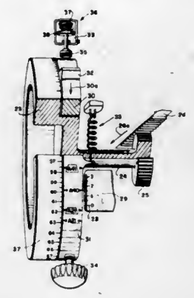
A dosaging machine is charged with a quantity of pourable goods which feeds an overload of the goods by means of a dosaging screw into a weighing receptacle. The overload quantity exceeds the desired, final predetermined quantity. The goods in the weighing container, which is placed on a scale, are weighed and discharged from the container into a receiving receptacle until the discharged quantity reaches the aforementioned predetermined weight. The operation is electronically controlled and uses a calculator for properly sequencing each step of the operation.

3,557,889
METHOD FOR FILLING CONTAINERS WITH PREDETERMINED QUANTITIES OF MATERIAL
Jack J. Rejsa, Minneapolis, Minn., assignor to The Pillsbury Company, Minneapolis, Minn., a corporation of Delaware
Filed Dec. 15, 1967, Ser. No. 690,872
Int. Cl. G01g *13/00*
U.S. Cl. 177—1 **5 Claims**



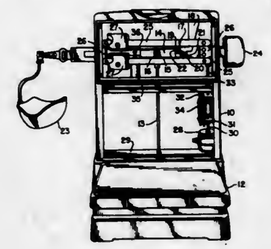
Apparatus for accurately filling packages with granular or fluid material composed of a dispenser for underfilling the packages, a scale for checking the deficiency and a supplemental filling receptacle composed of several sections each containing a different measured quantity of material, e.g. ⅛-, ¼- and ½-oz. quantities. The scale is connected to gates provided in each section of the receptacle for emptying predetermined sections into the package in the proper combination to bring the weight of the package to the target weight in accordance with the measured deficiency. Several receptacles positioned at spaced intervals on an endless chain conveyor are filled at one station and dumped at a second station into the underfilled packages.

3,557,890
DEVICE FOR SEQUENTIALLY WEIGHING PREDETERMINED AMOUNTS OF MATERIALS
Gustaf Lennart Lilljeforss, Lidingo, and Oystein Gunnar Skalleberg, Jakobsberg, Sweden, assignors to AGA Aktiebolag, Lidingo, Sweden, a corporation of Sweden
Filed Feb. 18, 1970, Ser. No. 12,384
Claims priority, application Sweden, Mar. 11, 1969, 3281/69
Int. Cl. G01g *19/24, 1/36*
U.S. Cl. 177—1 **7 Claims**



A weighing device for weighing predetermined amounts of materials sequentially introduced into a container which contains residual amounts of the materials. The device includes scale means to set the counterweight on a balance arm such that the arm will balance when the correct amount of a first material is added to the container. The device further includes scale means to add an increment of moment to the balance arm when the arm is in a balanced position after introduction of the correct amount of the first material. The increment of moment added corresponds to the amount of the second material required to be added to the container and this amount is indicated when the arm is rebalanced. The scale means comprise a wheel operable to add moment to the arm in an amount indicated by a scale on the periphery of the wheel. The wheel is movable relative to a fixed scale which indicates the measured residual quantity of the second material in the container. A ring is mounted on said wheel and contains a third scale indicating the correct amount of the second material.

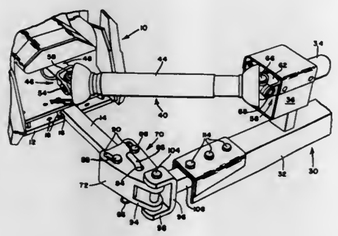
3,557,891
ELECTRICAL COUNTING SCALE
John R. Klopfenstein, Toledo, Ohio, assignor to The Reliance Electric and Engineering Company, Toledo, Ohio, a corporation of Ohio
Filed Sept. 11, 1968, Ser. No. 759,011
Int. Cl. G01g *19/00*
U.S. Cl. 177—30 **6 Claims**



An electrical counting scale comprising a single transducer for both weighing a known number of sample pieces of like

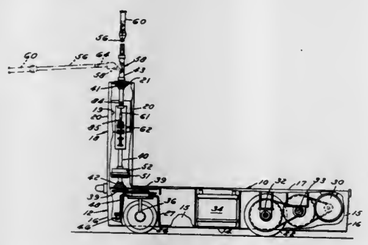
weight and an unknown number of said pieces to be counted. Load indicating means electrically connected to the transducer indicates load upon the scale in terms of the number of said pieces to be counted. Calibrating means are provided for so calibrating the load indicating means in accordance with the number of sample pieces and a ratio factor that the single transducer performs both of the foregoing weighing functions.

3,557,892
HITCH ADAPTER
Donald E. Burrough, Ottumwa, Iowa, assignor to Deere & Company, Moline, Ill., a corporation of Delaware
Filed May 2, 1969, Ser. No. 821,348
Int. Cl. B60d *1/00*
U.S. Cl. 180—14 **9 Claims**



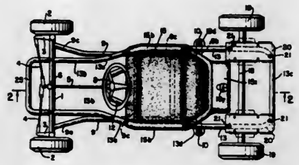
An agricultural tractor has a drawbar with a vertical pin and a rearward PTO shaft a predetermined distance forward of the drawbar pin. A trailing PTO-driven implement has a fore-and-aft tongue and an input drive shaft connected to the tractor PTO shaft through a telescoping drive assembly, which includes front and rear universal joints. The implement tongue is connected to the drawbar through a hitch adapter which provides articulation between the tractor and the implement about a vertical axis rearwardly of the vertical drawbar pin, so that the vertical axis of articulation is equidistant from the two universal joints, providing constant speed in the implement drive shaft regardless of the degree of articulation between the tractor and implement.

3,557,893
AUTOMATIC AND MANUALLY CONTROLLED VEHICLE
James P. Kohls, Detroit, Mich., assignor to Jervis B. Webb Company, a corporation of Michigan
Filed Feb. 12, 1968, Ser. No. 704,779
Int. Cl. B62d *51/04, 5/04;* **B60k** *27/00*
U.S. Cl. 180—19 **13 Claims**



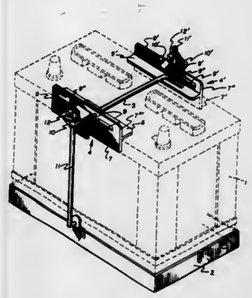
A manual control system for a self-propelled vehicle of the type having an automatic steering servosystem capable of causing the vehicle to follow a guide path, in which a tiller, pivoted on a vertical steering shaft, is biased to a normal inoperative position substantially aligned therewith. Movement of the tiller to an operative position automatically closes a switch which operates to deactivate the automatic steering system, disconnect the steering servomotor and activate a control unit operated by a handle on the tiller for regulating the vehicle propulsion.

3,557,894
RESILIENT FRAME FOR RACING GOCART
Donald E. Hanley, 1900 Reynolds St., Butte, Mont., and Charles L. Hogensen, 1320 W. 5th St., Anaconda, Mont.
Substitute for application Ser. No. 430,915, Feb. 8, 1965, now abandoned. This application Mar. 13, 1969, Ser. No. 816,144
Int. Cl. B60k *5/00*
U.S. Cl. 180—64 **14 Claims**



The gocart chassis has a front wheeled axle to which the front ends of the legs of a U-shaped main frame are welded. A rear wheeled axle disposed below the rear end of the main frame is connected to the main frame by means which prevent metal-to-metal contact so as to eliminate shock and vibration, the connecting means also forming a mount for a motor to rotate the rear axle. A U-shaped seat frame of shorter length than the main frame has the front ends of its legs also welded to the front axle, the seat frame lying for the most part below and within the width of and free from touching the main frame. The rear end of the seat frame is connected to the overlying legs of the main frame by means which prevent metal-to-metal contact so as to eliminate shock and vibration. A combined seat and gas tank is secured to the seat frame free from contact with the main frame thereby allowing full flexibility of the main frame. Steering means for the front wheels is mounted on the seat frame and front axle in advance of the seat.

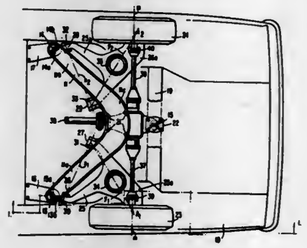
3,557,895
BATTERY SECURING MEANS
Frank W. Thomas, 100 Dairy Road, Baltimore, Md. 21120
Filed Jan. 24, 1969, Ser. No. 793,682
Int. Cl. B60r *18/02*
U.S. Cl. 180—68.5 **4 Claims**



A securing means for batteries, particularly for use with motor vehicles, wherein is provided a support for receiving the base or bottom of the battery and a holddown arrangement in which there is provided battery-engaging members adapted to engage the opposite top edges of the battery having a plurality of horizontal openings therethrough and including at least one clamping element in the form of a long bolt having one end secured to the battery support, or to a portion of the vehicle adjacent the support, and the other

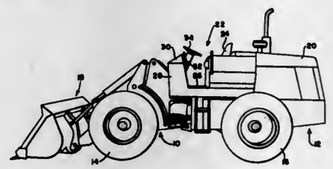
end of the bolt being threaded to receive a nut wherein the bolt extends vertically to a point at least adjacent the upper surface of the battery and is connected with the battery-engaging members by means of a hooked clip adapted to engage any one of the horizontal openings in the battery-engaging member, said hook members having a vertical aperture therethrough to receive the threaded ends of the bolts whereby the battery-engaging members may be forced downwardly on the battery by the nut, and means for adopting at least one of the battery-engaging members to a modified form of holddown in the form of a bracket for securing the battery to the support.

3,557,896
REAR AXLE SUSPENSION OF MOTOR VEHICLES
Josef Mueller, Stuttgart-Riedenberg; Joachim Sorsche, Stuttgart-Schonberg, and Hans-Karl Daur, Stuttgart-Bad Cannstatt, Germany, assignors to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Nov. 9, 1967, Ser. No. 681,619
Claims priority, application Germany, Nov. 11, 1966, D51522
Int. Cl. B60g *11/00*
U.S. Cl. 180—73 **27 Claims**



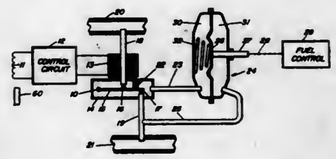
A rear axle suspension for motor vehicles in which the axle unit consists of an axle gear housing and of a support body, whereby the support body is of approximately V-shape with the V-tip extending over the axle gear housing at least within proximity of the wheel center axis, and in which the axle unit is elastically supported at the vehicle superstructure in three points; namely, near the rear of the axle gear housing and at the forward ends of the leg portions of the support body while the half-axles, constructed as thrust or inclined guide members are pivotally supported at the leg portions of the V-shaped support body.

3,557,897
VEHICLE INSTRUMENT PANEL COVER
James M. Conner, South Pasadena, Calif.; Harold G. Borsheim, and Laurence G. Safe, Dubuque, Iowa, assignors to Deere & Company, Moline, Ill., a corporation of Delaware
Filed Sept. 27, 1968, Ser. No. 763,080
Int. Cl. B60k *35/00*
U.S. Cl. 180—90 **5 Claims**



A four-wheel drive articulated loader has an elevated operator's station with a pair of forward instrument panels facing the operator on opposite sides of the steering wheel. A pair of instrument panel covers are mounted on transverse hinges below the instrument panels to swing between an open position, wherein they are folded back and latched under the instrument panel, and a closed position, wherein they are locked over the instrument panel.

3,557,898
VEHICLE TOP SPEED LIMITER
Raymen F. Emery, Lutherville; Samuel P. Mirabile; Michael Slavin, and George T. Bata, Baltimore, Md., assignors to The Bendix Corporation, a corporation of Delaware
Filed Nov. 5, 1968, Ser. No. 773,598
Int. Cl. B60k *31/00*
U.S. Cl. 180—108 **9 Claims**



A system for preventing the velocity of a vehicle from exceeding a predetermined maximum irrespective of the intentional or accidental actions of the driver. The system is designed such that as the vehicle approaches a maximum predetermined speed the acceleration of the vehicle is limited until the maximum speed is obtained, at which time the vehicle can no longer be accelerated. A valve connects a rolling diaphragm air motor between the intake manifold and the exhaust system of the vehicle such that the air motor is sensitive to the pressure differential across these two elements. When the vehicle is below the maximum speed both sides of the air motor are subject to the exhaust pressure and consequently no motion is obtained from the motor. As the vehicle approaches the maximum speed, the one side of the air motor is gradually changed from exhaust pressure to the lower pressure present in the intake manifold. This causes a diaphragm in the air motor to move a mechanical lever. This lever is connected to the fuel control system from the driver. The mechanical linkage between the fuel control system and the air motor is designed such that the driver can neither intentionally nor accidentally override the effects of the limiting system.

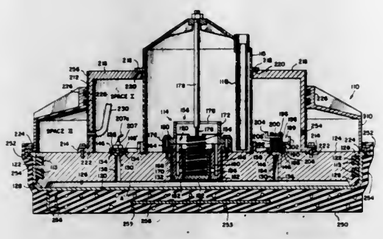
3,557,899
RIOT CONTROL DEVICES EMPLOYING A MODULATED STIMULUS FREQUENCY
Edward G. Longinette, 5323 Lucas and Hund Road, St. Louis, and Charles W. Porter, 5035 Oleatha, St. Louis, Mo.
Filed Jan. 10, 1967, Ser. No. 608,322
Int. Cl. G10k *10/00;* **A01m** *29/00*
U.S. Cl. 181—.5 **12 Claims**



An apparatus and method for forcibly dispersing animals having a brain resting frequency by generating a stimulus frequency in the audible frequency spectrum which is a mul-

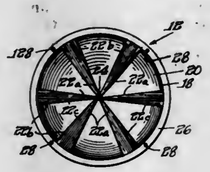
tiple of the brain resting frequency and applying the stimulus frequency to the brain of an animal having a resting frequency, and also modulating the stimulus frequency at the brain resting frequency.

3,557,900
GAS EXPLODER WITH COMPRESSIBLE RESILIENT COUPLING STRUCTURE
Lauren G. Kilmer, Tulsa, Okla., assignor to Atlantic Richfield Company, a corporation of Pennsylvania
Filed Oct. 9, 1968, Ser. No. 766,277
Int. Cl. G01v *1/04*
U.S. Cl. 181—0.5 **2 Claims**



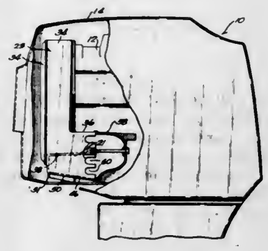
An apparatus, which propagates a seismic pulse at a rigid unyielding surface by the explosion of a combustible mixture in a chamber having a rigid bottom and a rigid top resiliently fastened together to permit limited vertical movement therebetween, has a pulse-coupling means comprising a compressible, resilient pad, preferrably of molded polyurethane, on said bottom for coupling seismic pulse energy from the rigid bottom to the rigid unyielding surface. Such an apparatus transmits to the rigid unyielding surface a seismic pulse of lower frequency and higher duration than the same apparatus without the compressible, resilient coupling pad.

3,557,901
SOUND DIFFUSER FOR LOUDSPEAKER AND LOUDSPEAKER INCORPORATING SAME
Richard Owen Young, 1110 S. Scoville Ave., Oak Park, Ill.
Filed Sept. 9, 1969, Ser. No. 856,268
Int. Cl. G10k *13/00*; **H04r** *1/28*
U.S. Cl. 181—31 **11 Claims**



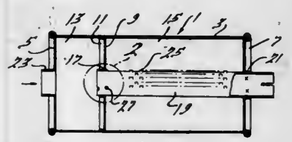
A sound diffuser unit comprising a plurality of spaced radially arranged, spokelike members which lie in a common plane. The unit is adapted to be supported in front of, or mounted directly on a loudspeaker. In the preferred embodiment, each of the spokelike members has tapered, angularly positioned, sound impinging surfaces which converge toward the loudspeaker cone and come together along a sound wave dividing line so that a portion of the sound emanating from the loudspeaker will impinge on the surfaces and will be deflected in different directions thereby to provide a greater sound dispersion pattern than can normally be obtained from the loudspeaker.

3,557,902
AIR INTAKE SILENCER
Neil F. Brown, Antioch, Ill., and James F. Stulac, Racine, Wis., assignors to Outboard Marine Corporation, Waukegan, Ill., a corporation of Delaware
Filed July 30, 1968, Ser. No. 748,827
Int. Cl. F01n *7/10*, *1/10*; **F02b** *77/00*
U.S. Cl. 181—35 **10 Claims**



Disclosed herein is a marine propulsion device having an air intake silencer in the form of a housing defining, in part, an air induction passage including an air supply or expansion chamber in communication with the carburetor inlets for each cylinder. The expansion chamber contains sufficient air to supply engine air requirements for more than one piston stroke thereby reducing pressure pulsations in the induction passage and intake noises. Engine noises are decreased by a sound-absorbing pad located in a connecting passage between the expansion chamber and carburetor inlets.

3,557,903
MUFFLER HAVING MECHANICAL CONNECTION OF TUBE TO PARTITION
Eldred G. Straw, Grass Lake, Mich., assignor to Tenneco Inc., Houston, Tex., a corporation of Delaware. by mesne assignments
Filed Sept. 26, 1967, Ser. No. 670,574
Int. Cl. F01n *7/18*
U.S. Cl. 181—48 **5 Claims**

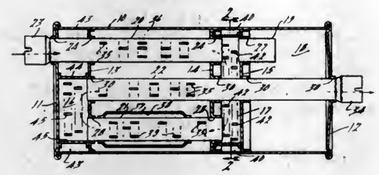


A mechanical connection of a gas flow tube to a partition in lieu of spot welding is provided by means of angularly spaced projections, preferably louvers, which engage one side of a muffler partition and deformed nibs on an end of the tube engaging the end of an annular neck on the partition.

3,557,904
AUTOMOBILE EXHAUST MUFFLER
Darwin E. Grote, Howell, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Dec. 22, 1969, Ser. No. 886,839
Int. Cl. F01n *1/08*, *7/18*
U.S. Cl. 181—54 **8 Claims**

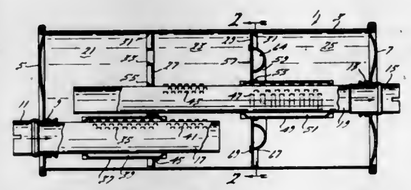
An exhaust gas muffler comprises a housing containing a pair of laterally spaced exhaust conduits opening into a transverse turnaround passage within the housing for conducting exhaust gas transversely from one conduit to the other. A portion of the turnaround passage laterally of the openings of

the conduits thereinto comprises a high frequency tuning chamber separated from the remainder of the turnaround



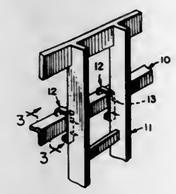
passage by a partition perforated to provide an acoustical coupling between the two portions of the turnaround passage to attenuate high frequency sound waves in the exhaust gas.

3,557,905
TUNING TUBE
Paul A. Rutt, Jackson, Mich., assignor to Tenneco Inc., Houston, Tex., a corporation of Delaware, by mesne assignments
Filed June 19, 1969, Ser. No. 834,824
Int. Cl. F01n *1/02*, *1/12*
U.S. Cl. 181—59 **5 Claims**



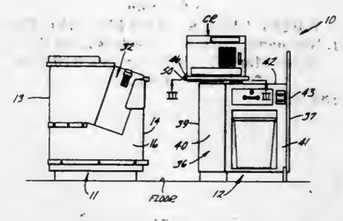
A tuning tube for an exhaust gas muffler is formed by attaching a semicircular channellike member to a transverse partition.

3,557,906
BED LADDER ARRANGEMENT
Kenneth H. Gutner, c/o Kelin Enterprises, Inc., 1530 Old Skokie Road, Highland Park, Ill. 60035
Continuation of application Ser. No. 746,484, July 22, 1968, now abandoned. This application July 23, 1969, Ser. No. 844,075
Int. Cl. E06c *1/36*
U.S. Cl. 182—206 **2 Claims**



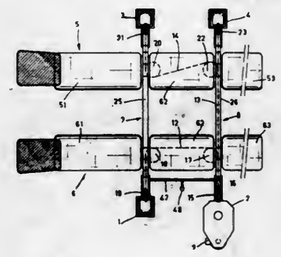
A ladder arrangement for a bunk bed having an angle iron frame, the ladder having a stabilized hook of specified geometry so that disengagement of the ladder hook from the bed rail can only be achieved by rotating the ladder outwardly at least about 10°

3,557,907
CHECKOUT COUNTER WITH PIVOTED CASH REGISTER
Garth Close, Lubbock, Tex., assignor to United Steel and Wire Company, Battle Creek, Mich., a corporation of Michigan
Filed June 9, 1969, Ser. No. 831,368
Int. Cl. E04h *3/04*
U.S. Cl. 186—1 **9 Claims**



A checkstand system having a pair of spaced-apart counters which define a shopping cart unloading zone so arranged that a patron may push one of the shopping carts into the unloading zone for purposes of having the merchandise therein removed from the shopping cart, checked by the cashier and placed on the first counter. A cash register is mounted on the second counter and is supported for pivotal movement toward the shopping cart unloading zone for positioning the cash register close to the shopping cart to permit the cashier from a single work station to (1) remove the selected merchandise from the shopping cart, (2) register the cost thereof on the cash register and (3) place same on the first counter. The cash register is then pivotable away from the shopping cart unloading zone for removing same from the position closely adjacent the shopping cart. This permits the shopping cart then to move through the space between the first and second counters to remove it from the unloading zone and permits the next shopping cart to be received into the unloading zone.

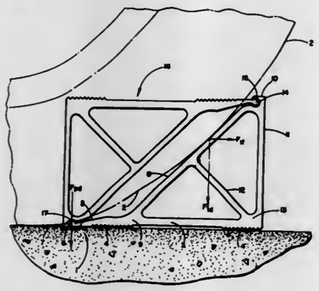
3,557,908
HOISTING INSTALLATION FOR VEHICLES
Julio Villars, Versoix, Switzerland, assignor to Etablissements J. Villars S.A., Versoix, Switzerland, a company of Switzerland
Filed Aug. 19, 1968, Ser. No. 753,443
Claims priority, application Switzerland, Aug. 25, 1967, 11,991/67
Int. Cl. B66f *7/00*
U.S. Cl. 187—8.54 **4 Claims**



This disclosure concerns a vehicle-hoisting installation having a first carrying assembly carried by a four-column support structure which has a device for driving this first carrying assembly. A second carrying assembly independent from the first but supported by the first carrying assembly when it

is not hooked to the columns by hooking means, allows the vehicle be supported by the second assembly at points other than the wheels thereof, to maintain the vehicle in a raised position when the first carrying assembly is lowered. The second carrying assembly includes at least two bars which are directed transversely with respect to the direction along which the vehicle is engaged on the installation, and which are disposed within the longitudinal distance between the vehicle wheels.

3,557,909
WHEEL CHOCK WITH PINCHED TIP
Charles J. Neumann, 3816 N. Snowden, Long Beach, Calif.
Filed Mar. 27, 1969, Ser. No. 810,939
Int. Cl. B60t *3/00*
U.S. Cl. 188—32 **1 Claim**

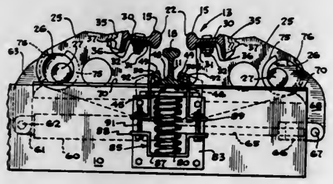


The wheel chock includes a base plate with a raised tip at the end of the plate adjacent to the wheel. The chock also includes a slanted surface inclined at an angle away from the base plate and the tip for providing a contact surface for the wheel when the chock is pushed into position with the tip pinched between the wheel and the ground surface.

The slanted surface is reinforced and supported against the base for opposing the contact force of the wheel. The bottom of the plate is serrated to improve the gripping force of the chock against the ground. The tip and the slanted surface are located relative to each other so that the wheel contacts the slanted surface after the tip has been pinched between the wheel and the ground surface.

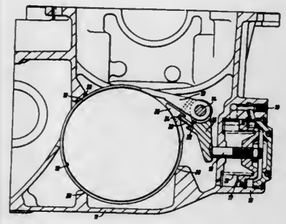
In one embodiment, a slot is provided at the upper end of the slanted surface. The slot is configurate for mating with a raised tip of a second chock so that the two chocks can be assembled together in reverse order for easy storage and/or shipment.

3,557,910
RAILROAD CAR RETARDERS
Rosser L. Wilson, Mahwah, N.J., assignor to Abex Corporation, New York, N.Y., a corporation of Delaware
Filed June 3, 1969, Ser. No. 830,020
Int. Cl. B61k *7/06*
U.S. Cl. 188—62 **5 Claims**



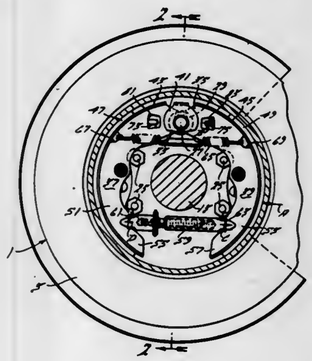
A railroad car retarder, adapted for installation in a classification yard or the like, and of the weight-compensating type, is so constructed as to include an artificial wheel load specifically designed to improve operation of the car retarder from the standpoint of lightly loaded vehicles. This artificial preload may be a spring.

3,557,911
BAND BRAKES
Keith Ellard, Warwickshire, England, assignor to Automotive Products Company, Limited, Leamington Spa, Warwickshire, England
Filed Nov. 22, 1968, Ser. No. 778,067
Claims priority, application Great Britain, Nov. 23, 1967, 53303/67
Int. Cl. F16d *49/12*
U.S. Cl. 188—77 **2 Claims**



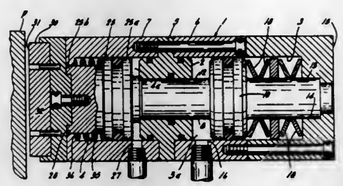
In a band brake comprising a brake band having a fixed anchorage at one end and brake actuating means acting on the other end, the actuating means acts on the band through means exerting a reaction, corresponding to the applying load, on the fixed anchorage, which reaction acts in opposition to the torque load applied to the anchorage by the brake band so as to reduce the resultant load on the anchorage.

3,557,912
DUO-SERVO DRUM BRAKE AND MECHANICAL ACTUATING MEANS THEREFOR
James E. MacAfee, Troy, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Feb. 3, 1969, Ser. No. 795,790
Int. Cl. F16d *51/22*
U.S. Cl. 188—78 **1 Claim**



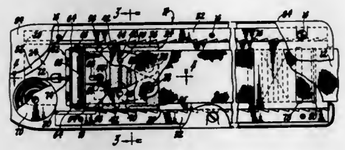
This disclosure relates to a manually operated parking brake for a disc brake for automotive vehicles. Duo-servo arcuate shoes are connected for manually actuated engagement with the internal annular peripheral surface of the disc and an adjustable link extends between the two shoes radially inwardly from their ends to increase the output force from the brake.

3,557,913
COMBINATION SERVICE AND PARK FLUID OPERATED BRAKE
Leveret C. Russler, Milwaukee, Wis., assignor to Harnischfeger Corporation, Milwaukee, Wis., a corporation of Wisconsin
Filed Mar. 3, 1969, Ser. No. 803,542
Int. Cl. F16d *65/14*
U.S. Cl. 188—106 **1 Claim**



A fluid operated combination brake having a fluid operated service brake for applying variable braking force to a moving part, and also having a locking device for the brake which has mechanical means to lock the moving part when it is to be held stationary or in the event of a power failure; the locking device is hydraulically released against the bias of the mechanical means.

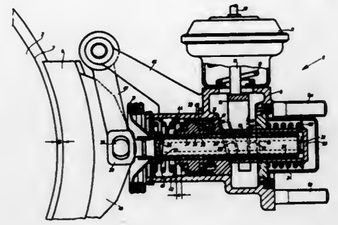
3,557,914
ELONGATED BELT RETRACTOR AND STOP MEANS
Akira Tanaka, Northridge, Calif., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Feb. 12, 1969, Ser. No. 798,594
Int. Cl. B60f *7/12*
U.S. Cl. 188—134 **6 Claims**



An elongated belt-locking retractor includes a support on which is mounted a pair of elongated toothed racks and a slide which reciprocates on the support between the racks. The slide has pawls which in an extended position mate with the racks but which are normally retracted against a stop by a spring. A cam for driving the pawls into the racks is mounted to the slide for motion with or motion relative to the slide depending on the differential rate of acceleration between the cam and the slide. A belt passes around the cam and acceleration of the belt accelerates the cam as the belt moves. If the rate of acceleration is less than a predetermined rate, the cam and the slide reciprocate as a unit allowing the belt to move freely. If the rate of acceleration is greater, the cam moves relative to the slide, driving the pawls into the racks to lock the slide and thereby lock the belt.

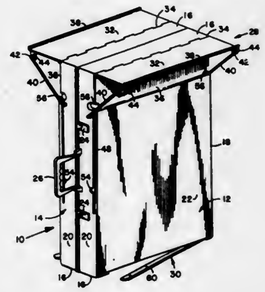
3,557,915
BRAKE SHOE ADJUSTING MECHANISM FOR A RAILWAY VEHICLE BRAKING UNIT
Hans Pollinger, Munich, Germany, assignor to Knorr-Bremse GmbH, Munich, Germany, a corporation of Germany
Filed Nov. 15, 1968, Ser. No. 776,049
Claims priority, application Germany, Mar. 1, 1968, 1680381
Int. Cl. F16d *65/56*
U.S. Cl. 188—203 **1 Claim**

A braking unit has a housing mounted on the spring supported frame of a railway vehicle. A fluid pressure actuator is mounted on the housing and through a translating mechanism within the housing moves a brake shoe into braking engagement with the peripheral surface of the vehicle wheel. The brake shoe is mounted on the end of a cylindrical spindle which is slidably mounted within a casing which in turn is slidably carried within the housing. Within the housing



there is a mechanism interconnecting the spindle and the casing in such a manner to adjust the play between the disengaged brake shoe and the vehicle wheel to a predetermined distance from either direction in immediate response to any variation from this play.

3,557,916
COMBINED CARRYING CASE AND DISPLAY STAND
William V. Stowell, 12 Longfellow Drive, Huntington Station, N.Y. 11746
Filed Dec. 16, 1968, Ser. No. 784,151
Int. Cl. A47b *3/10*
Cl. 190—11 **12 Claims**

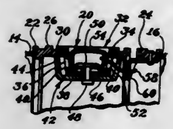


A carrying case and including leaves thereon operable to and from extended positions and when in the extended position providing a table surface, and support legs included on the carrying case for maintaining standing stability of the same.

3,557,917
SUITCASE
Arnold Kaplan, 1319 Auerbach Ave., Hewlett Harbor, N.Y.
Filed Aug. 30, 1968, Ser. No. 756,680
Int. Cl. E05b *65/52*
U.S. Cl. 190—49 **9 Claims**

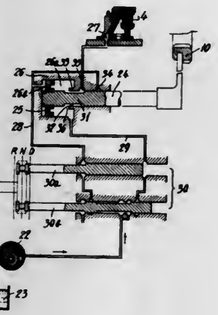
Luggage of the type comprising a pair of interlocking shell members provided with recessed locking and latching means.

The locking/latching device is placed in a recessed cup. Fastening means normally covered by a lock member extends



through the shell to an internal channel. The assembly is simply installed with a minimum of labor.

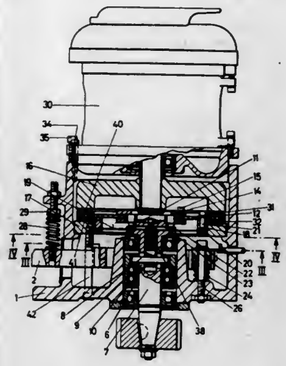
3,557,918
APPARATUS FOR CONTROLLING THE OPERATION OF A SHIFT MEMBER AND INPUT CLUTCH IN A GEAR TYPE TRANSMISSION
Akira Akima, Tokyo; Kazuyoshi Yoshida, and Shigeo Ujihara, Saitama-ken, Japan, assignors to Honda Giken Kogyo Kabushiki Kaisha, Chuo-ku, Tokyo, Japan
Filed Feb. 26, 1969, Ser. No. 802,603
Int. Cl. F16d *67/00*
U.S. Cl. 192—3.5 **2 Claims**



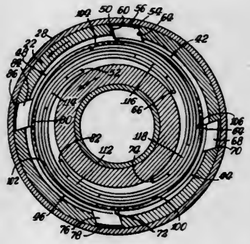
An operating cylinder for a shift member is supplied with pressure fluid from a source thereof by the manual operation of a valve, the shift member being connected to a piston in the cylinder and being displaced by the pressure fluid thereby to displace the shift member to an operative position. A rod connects the piston and shift member and is provided with a groove which serves to deliver pressure fluid to a passage leading to an operating cylinder of a clutch only when the piston approaches the end of its stroke and the shift member has been brought to operative position.

3,557,919
CLUTCH AND BRAKE FOR WEAVING MACHINES
Franz Speich, Windisch, Switzerland, assignor to Geroge Fischer Ltd., Brugg, Aargau, Switzerland
Filed Dec. 2, 1968, Ser. No. 780,410
Claims priority, application Switzerland, Dec. 4, 1967, 16991/67
Int. Cl. F16d *67/02*
U.S. Cl. 192—14 **7 Claims**

The invention pertains to a driving unit, particularly for weaving machines, having a clutch disc in a housing, the clutch disc being axially displaceable between a flywheel arranged of the shaft of a motor coupled to the unit and a fixed brake ring in the housing. This unit is to a great extent independent of the motor coupled to it and control is confined to the unit, the motor serving as a source of motive power only.



3,557,920
BAND CLUTCH CONSTRUCTION
Ernest U. Lang, and Edwin E. Mallory, Niles, Mich., assignors to National-Standard Company, Niles, Mich., a corporation of Delaware
Filed Dec. 12, 1968, Ser. No. 783,288
Int. Cl. F16d *41/20*
U.S. Cl. 192—41 **7 Claims**

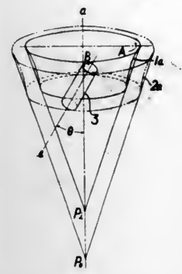


In a band clutch of the overrunning type, the clutch bands are spaced apart to avoid burr entanglement at the side edges of adjacent clutch bands.

3,557,921
ONE-WAY CLUTCH
Nobuo Takada, Tokyo, Japan, assignor to Koyo Seiko Company, Limited, Osaka, Japan
Filed Mar. 25, 1969, Ser. No. 810,170
Claims priority, application Japan, Mar. 29, 1968, 43/20776
Int. Cl. F16d *41/07*
U.S. Cl. 192—45 **5 Claims**

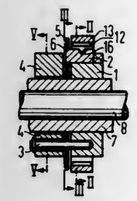
A one-way clutch performs free running and serves as an antifriction bearing while inner or outer race formed in the shape of a taper roller bearing is being driven in a positive direction. Between the inner and outer races are interposed rollers which are appropriately inclined with respect to the

generating line of both of the race surfaces. When either one of the races is about to rotate in the opposite direction,



the rollers act as wedges between the races to effect clutch action.

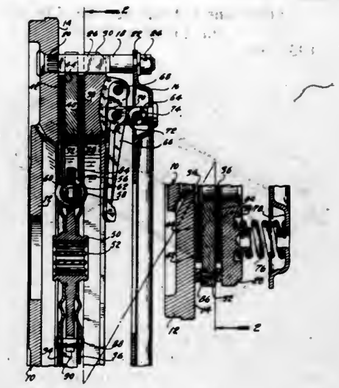
3,557,922
CENTRIFUGAL GOVERNOR FOR A MULTIPLE-SPEED HUB
Hans Joachim Schwerdhoefer, Schweinfurt Am Main, Germany, assignor to Fichtel & Sachs AG, Schweinfurt AM Maim, Germany
Filed July 2, 1969, Ser. No. 838,524
Claims priority, application Germany, July 4, 1968, 1,755,878
Int. Cl. F16d *23/00, 43/06;* **F16b** *3/74*
U.S. Cl. 192—64 **10 Claims**



A pawl-and-ratchet coupling in a multiple-speed bicycle hub which is engaged and disengaged to shift the transmission ratio of the hub is controlled by cams on an annular control member interposed axially between the pawl carrier of the coupling and flyweights pivotally mounted on axial pins fastened to the pawl carrier and passing through the control member. The control member is moved angularly relative to the pawl carrier by a pin on one of the flyweights engaging a recess in the control member so that the cams on the control member retract or release the pawls of the coupling as the centrifugal forces acting on the flyweights increase and decrease.

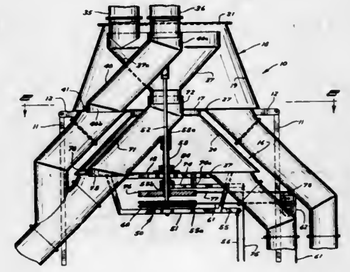
3,557,923
MULTIPLE DISC CLUTCH WITH CUSHIONED ENGAGEMENT
Claude H. Nickell, Dearborn, Mich., assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware
Filed May 27, 1969, Ser. No. 828,175
Int. Cl. F16d *13/54*
U.S. Cl. 192—70.14 **4 Claims**

A neutral clutch mechanism for a power transmission mechanism in an automotive vehicle driveline comprising a pair of friction clutch discs carried by a common clutch hub, a primary pressure plate disposed at one side of one of the clutch discs, the engine flywheel being on one side of the other clutch disc, a secondary pressure plate between the clutch discs, the pressure plates on the flywheel having a predetermined clearance therebetween which is maintained by spring elements carried by the auxiliary pressure plate,



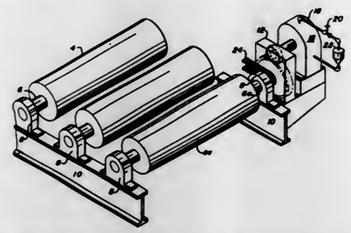
and an axial linkage with a relatively high mechanical advantage for actuating the pressure plates.

3,557,924
GRAIN DISTRIBUTOR
William A. Schlagel, Jr., Minneapolis, assignor to Alfred H. Huehn, Cambridge, Minn., 0 and Schlagel Inc., Minneapolis, Minn., a corporation of Minnesota
Filed Sept. 30, 1968, Ser. No. 763,635
Int. Cl. B65g *53/04*
U.S. Cl. 193—23 **4 Claims**



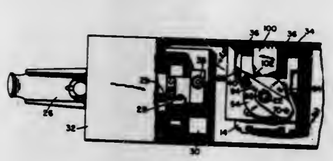
This invention relates to materials handling devices and more particularly to a grain distributor for discharging grains into selected storage bins. The unit includes a pair of housings mounted in generally vertical relation to one another, each housing provided with a plurality of outlets for discharging into the grain bins. Chute members are arranged in each of the housings and are shiftable therein to permit discharge to a selected discharge outlet. A pair of inlets are provided and one of the inlets directs grain through a discharge outlet in the first housing and the second inlet provides through a controlled flow situation with grain flow through the first housing into the second housing where it is again discharged into one of the selected discharge outlets. It is possible to discharge simultaneously from both housing sections into the same bin. Means are provided for positively controlling and containing the flow of grain at all times to prevent dust from rising and the chutes are designed for slip fit between sections thereof to ensure this dust rising prevention. Control means for lifting internal chute sections of each of the housings are provided exteriorly of the unit and positive setting of the chutes to discharge into the proper discharge outlet are provided through locating elements formed to coact between the housings and the individual chutes.

3,557,925
HYDRAULIC BRAKE FOR CONVEYOR ROLLERS
Ralph A. Zulauf, Scott Township, Allegheny County, Pa., assignor to United States Steel Corporation, a corporation of Delaware
Filed June 7, 1968, Ser. No. 735,257
Int. Cl. B65g 13/075
U.S. Cl. 193—35 2 Claims



The invention relates to a braking system for gravity-type idler roller conveyors which functions to control the speed of roller rotation which is caused by the movement of material along the conveyor. The disclosed apparatus includes a centrifugal hydraulic pump mechanically connected with one or more of the idler rollers of the conveyor. The pump is connected with an idle hydraulic circuit having a throttle valve, orifice, or other control means therein for regulating the flow of hydraulic fluid therealong. Through adjustment of the control means, any desired resistance against roller rotation may be established.

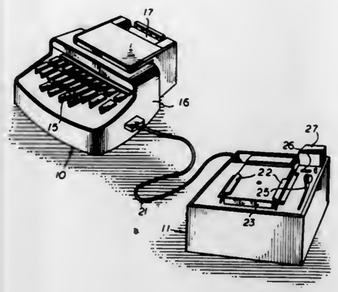
3,557,926
COIN CONTROLLED CYCLE STARTER
Mitchell A. Hall, Ft. Thomas, Ky., assignor to Monarch Tool & Manufacturing Company, Covington, Ky., a corporation of Ohio
Filed Jan. 9, 1969, Ser. No. 790,051
Int. Cl. G07f 1/00
U.S. Cl. 194—1 18 Claims



The coin-controlled cycle starter utilizes a standard single-coin slide for activating the machine controlled by the starter, although more than one proper coin or token is required to effect an activation. Without any change in the standard slide, it is caused to collect two or more coins for each machine activation, this being accomplished by the simple addition of a second ratchet wheel to the cycle starter mechanism.

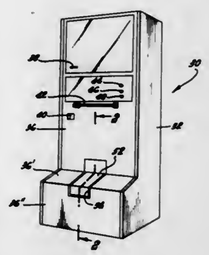
3,557,927
STENOGRAPHIC TRANSCRIPTION SYSTEM
Robert T. Wright, Libertyville; Richard A. Michals, Skokie; Frank H. Mozer, Roselle, and Ralph E. Zumbahlen, Chicago, Ill., assignors to Stenographic Machines, Inc., Skokie, Ill., a corporation of Delaware
Filed Dec. 8, 1967, Ser. No. 689,079
Int. Cl. B41j 3/26
U.S. Cl. 197—9 7 Claims

A computer transcription system for stenography is described. The system includes a conventional shorthand machine which has been modified to produce an electrical output. The modification is described in detail. A magnetic



tape recorder which receives the electrical output of the shorthand machine is described in detail.

3,557,928
AUTOMATIC SHOE SHINE APPARATUS
Robert H. Cromwell, Sr., 13535 Bayliss Road, Los Angeles, Calif.; William T. Trevaskis, 13531 Bayliss Road, Los Angeles, Calif., and Garland J. Dupler, 21046 Roscoe Blvd., Canoga Park, Calif.
Filed Oct. 16, 1968, Ser. No. 768,125
Int. Cl. G07f 5/10
U.S. Cl. 194—9 16 Claims



An automatic shoe shine apparatus, including a sequencer to selectively move a plurality of carriage assemblies having brushes and buffers as well as spray wax connected thereto to prebrush a shoe, apply a spray coating of wax of preselected color to said shoe, and repeat the movement of said crank arms to buff and polish said shoe for a predetermined number of times.

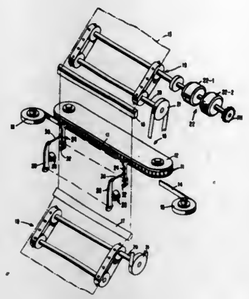
ERRATUM

For Class 197—9 see:
Patent No. 3,557,927

3,557,929
PROGRAMMED LINE PITCH PRINTER
Frederick W. Schaaf, Owego, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 15, 1968, Ser. No. 729,272
Int. Cl. B41j 15/00
U.S. Cl. 197—133 3 Claims

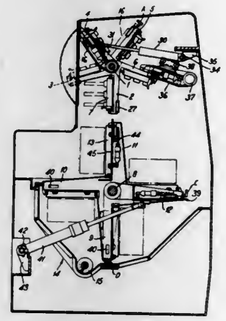
A carriage control system provides programmed selection between values of line pitch at which a printer is to operate. Selection of one or the other of two values of line pitch is

made by detecting the presence or absence of a flag bit in the first address position of a carriage control buffer used to



store coded representations of channel skip commands which determine the skip operations of the printer carriage.

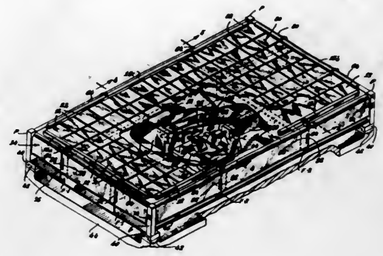
3,557,930
MECHANISM FOR EFFECTING INTERMITTENT ROTATION
David T. N. Williamson, and William Wood, London, England, assignors to Molins Machine Company Limited, London, England, a corporation of Great Britain
Filed Oct. 21, 1968, Ser. No. 769,146
Claims priority, application Great Britain, Oct. 25, 1967, 48,625
Int. Cl. B23q 5/22; B65g 29/00
U.S. Cl. 198—19 4 Claims



Mechanism for rotating in steps a member having a number of equally-spaced radial paddles. The paddles may be used in a machine tool to carry palleted workpieces or tool magazines for loading into the machine tool.

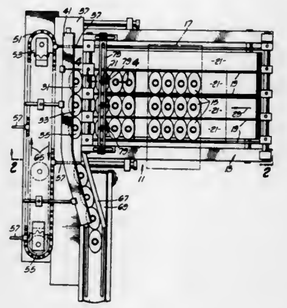
3,557,931
ARTICLE TRANSFER APPARATUS
John Fernandez, 453 Glenbrook Road, Stamford, Conn. 06906
Filed Mar. 26, 1968, Ser. No. 716,137
Int. Cl. B65g 47/52
U.S. Cl. 198—20 12 Claims

An article transfer means for articles of any kind, which may or may not be free to roll, and particularly for large bulky articles such as storage containers, automobiles and the like for receiving a load from any one of four directions and delivering it in any of four directions. A load-supporting member or pad is associated with two angularly related flexible means in such a way that the pad may be selectively moved with one or the other of said means, along an endless path, over and partly around a supporting structure or frame in either direction. The assembly of pad and supporting



frame are mounted on a base and may be slid or "thrown" a short distance relative to the base, in any of four directions, toward and away from another surface, from or to which a load is to be received or delivered.

3,557,932
CONTAINER UNSCRAMBLER
Herman Laub, III, 244 North San Marino Ave., San Gabriel, Calif. 91775
Filed Apr. 8, 1968, Ser. No. 719,442
Int. Cl. B65g 47/26
U.S. Cl. 198—32 3 Claims

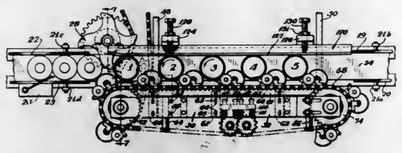


A container-unscrambling machine is disclosed for arranging a carton full of empty plastic bottles into a single file so that they are ready to be conveyed to a bottle filling machine. The unscrambler is of a type known in the trade as an inliner unscrambler because of its ability to line up the bottles in a single file.

3,557,933
ARTICLE SPOTTING DEVICE
Clifford D. Sopher, Peoria, Ill., assignor to General Methods Corporation, a corporation of Illinois and Fleming-Potter Company, Inc., a corporation of Illinois
Filed July 12, 1968, Ser. No. 744,581
Int. Cl. B65g 19/02, 47/24
U.S. Cl. 198—33 29 Claims

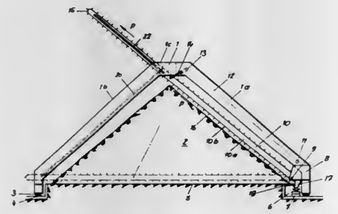
A bottle-spotting device which rotates a bottle about its vertical longitudinal axis as it is conveyed along a conveyor path and engages a spot on the bottle to precisely orient that bottle. Friction rails on one side of the conveyor path cooperate with pusher elements mounted on a pair of endless chains on the opposite side of the conveyor path to impart rotation to the bottle. A bottle-spotting lug is mounted on one of the endless chains and is adapted to engage the spot on the bottle and stop rotation once the bottle has rotated to

the desired position. A star wheel is used to feed the bottles into the spotting device at a metered rate. A switching circuit



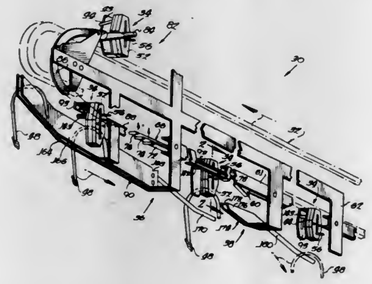
is provided for starting the spotting operation only when a predetermined number of bottles are ready for a spotting operation.

3,557,934
FRAME-TYPE DUMP SCRAPERS
Fritz Schade, Dortmund, Germany, assignor to Gustav Schade Maschinenfabrik, Dortmund, Germany
Filed Feb. 3, 1969, Ser. No. 796,130
Claims priority, application Germany, Feb. 12, 1968, 1,556,682
Int. Cl. B65g *65/28*
U.S. Cl. 198—36 **7 Claims**



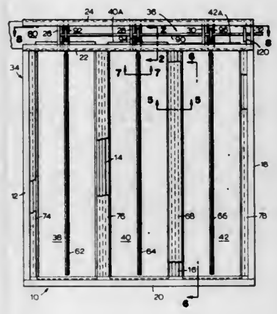
A dump scraper includes a frame having spaced-apart base portions adapted to be movably mounted on opposite sides of a dump. The frame includes legs extending upwardly toward one another from the base portions. A one-piece boom is pivoted to one of the base portions for pivotal movement in a vertical plane parallel to the legs. The boom receives support from the legs against substantial lateral deflection.

3,557,935
CONVEYING APPARATUS
Rudolph F. Gerisch, 1317 Portsmouth Ave., Westchester, Ill.
Filed June 13, 1968, Ser. No. 736,641
Int. Cl. B65g *47/46*
U.S. Cl. 198—38 **44 Claims**



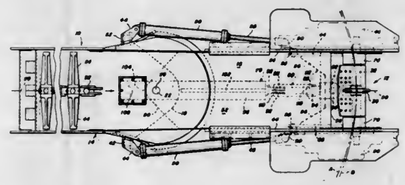
Disclosed herein is a conveying system or apparatus for transporting articles, such as hangers, along predetermined paths to a plurality of delivery stations. In one form the apparatus includes a drive assembly for moving the articles to the selected delivery stations, a plurality of elongated guides or strips which form guide paths extending to the delivery stations, and a control assembly connected to the drive assembly. The control assembly includes a follower which extends into a guide path to detect when the article is at the selected delivery station and to release the article at the selected delivery station. In other forms the guides or strips can be omitted and other mechanism is provided to cooperate with the control assembly.

3,557,936
CONVEYOR
David H. VanTuyl, Palo Alto, Calif., assignor to Clemco-Clementina Ltd., San Francisco, Calif., a general partnership
Filed Sept. 17, 1968, Ser. No. 760,254
Int. Cl. B65g *37/00*
U.S. Cl. 198—82 **10 Claims**



Disclosed herein is a conveyor structure having three pans which are in side-by-side relationship and each of which is movable fore and aft independent of the others. Rotating cam means are provided for moving each pan aft, letting each pan move forward, and stopping such forward movement relatively suddenly. By continued repeating of the rotation of the cam means, particles which fall on the pans are fed forwardly thereof, and onto a lateral pan which moves in a manner similar to the movement of any one of the three pans, but lateral to the direction of that movement.

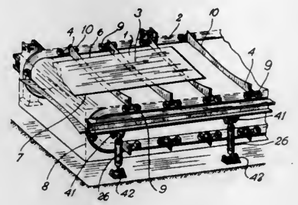
3,557,937
TENSIONING APPARATUS FOR AN ENDLESS CONVEYOR
Norman D. Kahre, Hoyleton, Ill., assignor to National Mine Service Company, Pittsburgh, Pa., a corporation of West Virginia
Filed Oct. 18, 1968, Ser. No. 768,754
Int. Cl. B65g *41/00*
U.S. Cl. 198—109 **9 Claims**



This disclosure relates to an endless conveyor that includes a fixed frame and a laterally swingable end frame. The end frame pivots about a first vertical pivot axis and has a longitudinally movable bracket carrying a drive sprocket and a drive shaft adjacent the material discharge end. A push rod is pivotally connected to the fixed frame at a second vertical

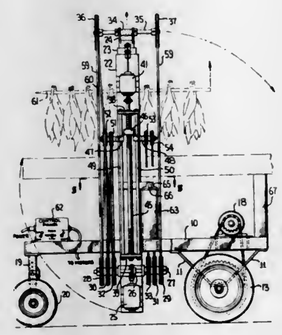
pivot axis spaced forwardly from the first vertical pivot axis. The other end of the push rod is connected to the movable bracket so that lateral movement of the end frame moves the bracket member longitudinally in the end frame toward the discharge end to exert a tension on an endless conveyor positioned in the frames and reeved about the drive sprocket.

3,557,938
DRYING CONVEYOR
Egon Verner Christensen, Copenhagen, Denmark, assignor to H. Nielsen & Son Maskinfabrik A/S, Copenhagen, Denmark
Filed Apr. 24, 1968, Ser. No. 723,819
Claims priority, application Denmark, May 23, 1967, 2687/67
Int. Cl. B65g *21/00, 15/30*
U.S. Cl. 198—126 **2 Claims**



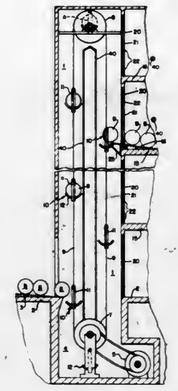
Drying Conveyor for use in combination with an automatic painting plant for plate-shaped objects, said objects being carried in the painting plant by means having points of contacts cooperating with edges of said objects, said points of contacts defining a horizontal plane for the movement of the object; said drying conveyor having a carrying frame being provided with lifting means which are displaceable and adjustable in vertical direction in relation to the support of the carrying frame in dependence of the width of the plate-shaped objects and their position in the drying conveyor for bringing the moving plate-shaped objects to flush with said horizontal plane.

3,557,939
TOBACCO CONVEYOR
Rex Lyons, 500 Andrea St., Lexington, Ky. 40503
Filed Apr. 3, 1969, Ser. No. 813,098
Int. Cl. B65g *15/22*
U.S. Cl. 198—139 **5 Claims**



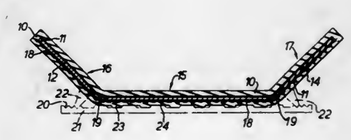
The invention consists of a tobacco conveyor adapted to elevate tobacco in a barn for curing, said conveyor including a conveyor support consisting of telescopic channel sections that are vertically adjustable by a chain drive, a supporting carriage for horizontally moving the conveyor in a confined space, and electric motors for supplying the power for all moving components.

3,557,940
BARREL ELEVATOR
Harry T. Rogers, New Haven, and James H. Rogers, Louisville, Ky., assignors to Mac Manufacturing Company Inc., Lebanon Junction, Ky., a corporation of Kentucky
Filed Oct. 11, 1968, Ser. No. 766,923
Int. Cl. B65g *1/04, 47/34*
U.S. Cl. 198—157 **6 Claims**



Discloses a barrel elevator, including a vertically oriented endless conveyor trained over an upper and lower sprocket and containing a series of cradles suspended therefrom in which the barrels are loaded on the ascending side of said conveyor and unloaded on the descending side of said conveyor. Discloses means and methods for automatically and gravitationally unloading barrels at a preselected level by means of an inclined unloading member extending from an unloading station to a point past the perpendicular through the center of gravity of the barrel lying on its side in said cradle so as to separate the barrel from the cradle and gravitationally roll said barrel down the inclined member. Guide rods, vertically disposed behind the swinging cradles, prevent barrels from tipping out of the cradles to fall down into the shaft.

3,557,941
CONVEYOR BELT
Ian M. Thomson, Crowthorne, England, assignor to Solar Thomson Engineering Company Limited, Camberley, Surrey, England
Filed Nov. 4, 1968, Ser. No. 772,946
Claims priority, application Great Britain, Nov. 7, 1967, 50649/67
Int. Cl. B65g *15/30, 15/40*
U.S. Cl. 198—193 **10 Claims**

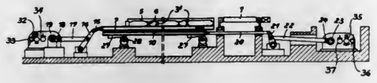


A self-troughing conveyor belt made of flexible material comprising a series of laterally extending reinforcing members embedded therein, each reinforcing member comprising three metal strips disposed in end to end relationship in a nylon tube whereby the ends of the metal strips are restrained from breaking through the belt due to relative movement between the strips.

3,557,942
MEANS FOR COOLING AND TRANSVERSELY CONVEYING METAL SHEETS

Karl-Heinz Simon, Langenfeld; Wilhelm Beckmann, Taingen; Gunter Bohn, Dusseldorf-Oberkassel, and Adolf Meitz, Ratingen-Tiefenbroich, Germany, assignors to Schloemann Aktiengesellschaft, Dusseldorf, a German Company.

Filed Aug. 21, 1968, Ser. No. 754,243
Claims priority, application Germany, Aug. 29, 1967, 41224
Int. Cl. B65g *25/04*
U.S. Cl. 198—219 **3 Claims**

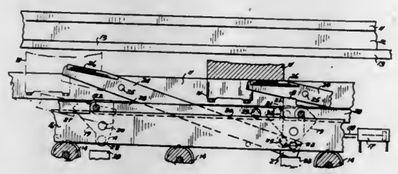


Apparatus with stationary supporting gratings, and with supporting gratings movable reversibly by control members, for cooling and transversely conveying metal sheets deposited upon a support carried by rollers, with the interposition of inclined guiding tracks, so arranged that the movable gratings will be raised when they are displaced forward and lowered when they are displaced rearward, the forward and lifting movement of the movable gratings being followed by a rearward and lowering movement, and then by a partial forward stroke which brings the upper edge of the movable gratings up to the level of the upper edge of the stationary gratings, the inclination of the guiding tracks being interrupted by a horizontal section in a position which corresponds to that position of the rollers in which the upper edge of the movable gratings is flush with the upper edge of the flush gratings.

3,557,943
AUTOMATIC ACCUMULATING TRANSFER MECHANISM

Richard Broser, Royal Oak, Mich., assignor to Accum-Matic Systems, Inc., Detroit, Mich., a corporation of Michigan, by mesne assignment.

Filed Oct. 5, 1966, Ser. No. 584,445
Int. Cl. B65g *25/08*
U.S. Cl. 198—221 **4 Claims**



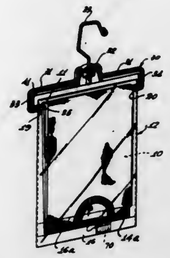
An accumulating transfer machine provides means for automatically advancing all workpieces located rearwardly of an empty work station on a single-stroke cycle of the transfer bars. This is accomplished by a detector bar which senses the absence of a workpiece and sets up the next rearward dog, which in turn is interconnected to all of the remaining rearward dogs to similarly set them up into workpiece-engaging position.

3,557,944
GARMENT HANGER AND BAG

Walton B. Crane, Sherman Oaks, Calif., assignor to Allied Plastics Company, Los Angeles, Calif., a corporation of California.

Filed Oct. 31, 1968, Ser. No. 772,267
Int. Cl. B65d *85/18*
U.S. Cl. 206—7 **1 Claim**

A combination of garment hanger and plastic bag, wherein the garment is folded over and then inserted into an open end of the bag, the fold inwards. The hanger has two arms and a hanger bar therebelow, suspended from the extremities of the bar. The bar can be disconnected at one end, thrust

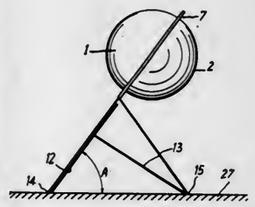


through one edge of the bag, through the fold on the garment, and then out through the other edge of the bag, after which the then protruding end of the bar is reconnected to the hanger.

3,557,945
TRANSPARENT DISPLAY UNIT

Herve A. Gourio, Saint Die, Vosges, France, assignor to Societe Anonyme Financiere & Auxiliaire Du Textile, Paris, France

Filed June 23, 1969, Ser. No. 835,501
Claims priority, application France, Oct. 15, 1968, 169918
Int. Cl. B65d *5/52, 73/00*
U.S. Cl. 206—45.24 **4 Claims**



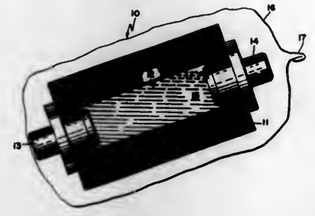
The display unit comprises two transparent spherical segments which are preferably half spheres. Annular flanges formed at the edges of said segments are applied against each other and imprisoned between two superposed walls of sheet material which are joined together and form a support. The spherical segments project from both faces of the support through corresponding openings formed in both walls of the support. Essentially, only those parts of the two walls of the support which are located near the edges of the two spherical segments are joined together. The other parts can be moved away from each other so as to form a stand.

3,557,946
PACKAGE OF RECORDING PAPER

Sylvester C. Sviokla, Brockton, Mass.

Filed Jan. 22, 1969, Ser. No. 793,131
Int. Cl. B65d *85/66;* **B65h** *75/02*
U.S. Cl. 206—47 **4 Claims**

This invention relates to a package of recording paper and, more particularly, to apparatus for assuring that a chemically-treated paper which, during transportation, storage, and

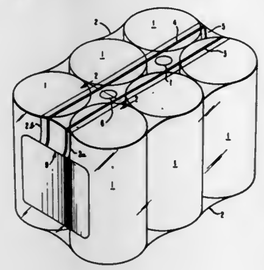


use, remains moist and maintains its sensitivity and ability to record properly.

3,557,947
MULTIPLE CONTAINER PACKAGE

Joseph D. Greenwell, Wilmington, Del., assignor to E.I. du Pont De Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Apr. 19, 1968, Ser. No. 722,662
Int. Cl. B65d *65/02*
U.S. Cl. 206—65 **10 Claims**

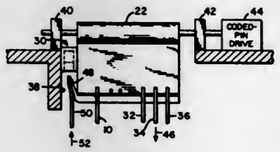


A package of a plurality of cans arranged in adjacent linear rows and overwrapped in a heat-shrunken tubular web of thermoplastic film having joined overlapping web layers on the top of the package with finger holes within the area of the joined overlapped web layers located above the void spaces formed within the can groupings.

3,557,948
MOMENTUM-TRANSFER CARD BRAKE

Le Roy E. Gerlach, Minneapolis, Minn., and Gary B. Woehler, Minneapolis, Minn., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware

Filed May 29, 1969, Ser. No. 828,861
Int. Cl. B65h *31/00*
U.S. Cl. 209—80.5 **10 Claims**

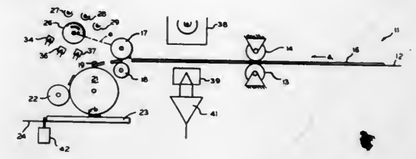


A momentum-transfer card brake for use in card- or document-handling apparatus is described. The momentum-transfer card brake shown, utilizes a mass matched to the mass of the card of documents with which the card brake is associated, with the card brake having an impact means upon which a card in motion empinges. The momentum-transfer card brake is arranged in a housing in a relaxed position, and includes means for stopping the card brake and returning to its relaxed position after impact by a moving card.

3,557,949
AUTOMATIC MAIL SORTER

Harold Washington, Broadview, Ill.

Filed Jan. 22, 1968, Ser. No. 699,605
Int. Cl. B07c *3/14*
U.S. Cl. 209—111.7 **19 Claims**

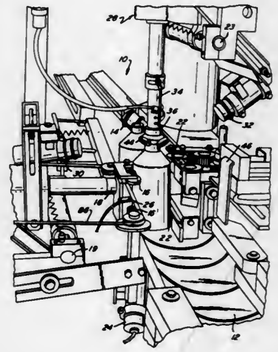


Automatically sorts bulk mailings into common groups. Optically scans address labels and recognizes "codes" on the labels, such as changes in the zip codes. A solenoid is activated in response to codes. The solenoid forces an envelope with "code" thereon out of alignment to indicate a new common group.

3,557,950
PHOTO-ELECTRIC CRACK DETECTOR FOR GLASS BOTTLES

Whitney Powers, Pine City, N.Y., assignor to Powers Manufacturing Inc., Emyra, N.Y., a corporation of New York

Filed Sept. 24, 1968, Ser. No. 762,070
Int. Cl. B07c *5/342*
U.S. Cl. 209—111.7 **11 Claims**



Apparatus for photoelectrically detecting cracks or flaws in the bottoms, necks, or lips of glass bottles while being rotated and traversed in single line through a test path, storing the effect of a signal resulting from the presence of such a defect, and utilizing said stored effect to cause ejection of defective bottles after they pass beyond the test area.

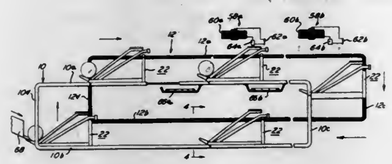
3,557,951
SCALE GRADING MEANS

Boris Knisch, P.O. Box 77, Estelle Manor, N.J. 08319

Filed Sept. 16, 1968, Ser. No. 762,275
Int. Cl. B07c *5/24*
U.S. Cl. 209—121 **17 Claims**

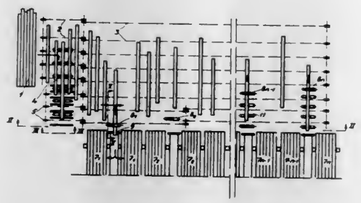
A scale-grading means for grading articles such as eggs according to weight comprising a conveyor continuously mova-

ble in a closed path and passing a plurality of grading stations, the conveyor carrying a plurality of article weighers, each article weigher including a cradle which supports an article and an ejector which is adapted to eject the article from the cradle. Each of the grading stations includes magnetic



means which operates the ejector of the cradle depending on the weight of the article in the cradle, the magnetic means at each station causing the ejection of an article of different weight so that articles of substantially the same weight are ejected at the same station thereby grading the articles according to weight.

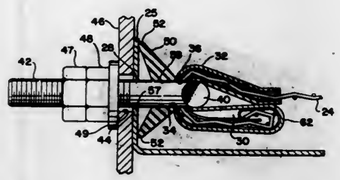
3,557,952
APPARATUS FOR HANDLING SAWN TIMBER
Olli Heikinheimo, Helsinki, Finland, assignor to Plan-Sell Oy, Helsinki, Finland, a corporation of Finland
Filed Apr. 16, 1968, Ser. No. 721,656
Claims priority, application Finland, Apr. 19, 1967, 1157/67
Int. Cl. B07c *7/04*
U.S. Cl. 209—125 **6 Claims**



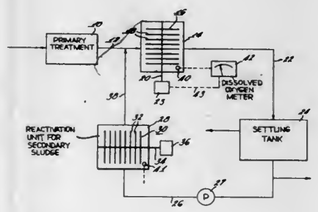
The present invention relates to an apparatus for handling sawn timber of the type comprising an elongated conveyor for carrying timber pieces transversally of their longitudinal direction, a plurality of storage pockets placed at one side of the conveyor, and mechanical means for the automatical transfer of each timber piece to a selected storage pocket according to the dimension and/or quality class of the timber piece concerned.

3,557,953
TENSIONED SCREEN WITH SEAL
Louis E. Hubach, Aurora, Ohio, and Edgar E. Gardner, Willoughby, Ohio, assignors to W. S. Tyler, Inc., Cleveland, Ohio, a corporation of Ohio
Filed Dec. 24, 1968, Ser. No. 786,670
Int. Cl. B07b *1/48*
U.S. Cl. 209—404 **10 Claims**

A seal and screen combination including a hook strip along opposite edges of the screen. The screen is held taut between opposed support walls by T-shaped bolts extending through aligned apertures in the hook strip and screen and through the adjacent wall. Disposed between the hook strip edges of the screens and the walls are seal strips having concave surfaces facing the walls and including a portion for sealingly engaging the walls.



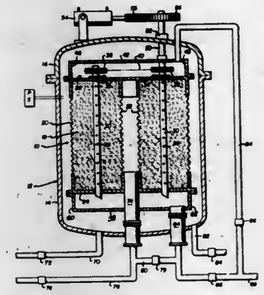
3,557,954
SEWAGE TREATMENT APPARATUS AND METHOD
Fredrick M. Welch, Oconomowoc, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Continuation of application Ser. No. 726,852, May 6, 1968, now abandoned. This application July 16, 1969, Ser. No. 858,554
Int. Cl. C02c *1/10*
U.S. Cl. 210—17 **4 Claims**



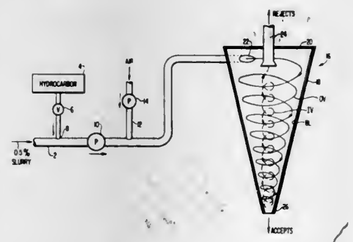
A sewage treatment apparatus and method including a biological treatment tank having a rotating biological contactor therein, with means for conducting the mixed liquor discharged from the biological treatment tank to a clarifier or settling tank which separates the mixed liquor into secondary sludge and effluent. In various embodiments the secondary sludge, the effluent, and the mixed liquor are respectively recycled in series with a reactivating device to the input of the biological treatment tank. The reactivating device may comprise a rotatable two-phase contactor. Means are provided for measuring the dissolved oxygen content of the mixed liquor and for varying the speed of rotation of the rotating biological contactor as a function of the measured dissolved oxygen content to control the dissolved oxygen content of the mixed liquor. The speed of rotation of the two-phase contactor may also be varied as a function of the measured dissolved oxygen content.

3,557,955
METHOD OF AND APPARATUS FOR FILTERING
Gene Hirs, Birmingham, and Richard H. Wykoff, Livonia, Mich., assignors to Hydromation Engineering Company, Livonia, Mich., a corporation of Michigan
Continuation-in-part of application Ser. No. 671,903, July 26, 1967, now abandoned, and a continuation-in-part of 681,391, Nov. 8, 1967, now abandoned, and a continuation-in-part of 552,736, May 25, 1966, now abandoned. This application Jan. 9, 1968, Ser. No. 696,624
Int. Cl. B01d *27/74, 39/04*
U.S. Cl. 210—67 **26 Claims**

The invention provides a method of and apparatus for filtering which provides the filtering of extremely small particles, greater dirt retention in the filter medium, higher flow rates through the filter medium, a smaller volume of filter medium, and improved backflushing or backwashing to obtain a cleaner medium. The medium is composed of finely divided particulate material which in the preferred embodiment is polyvinyl chloride, polyethylene or wood sawdust, these materials being light and having great strength to provide stable, fine particles capable of being backflushed. While the apparatus can assume many different configurations, liquid permeable retainers preferably are provided at both the inlet and outlet sides of the filter medium. Where the filter medium is located between retainers, it is important to reverse the liquid flow at least through the inlet retainer during backflushing to remove any deposits from that retainer. As will be described, it is possible to use only one liquid permeable retainer together with agitation and hydraulic flow during backflushing to provide a simplified filter which is effective in some applications. The invention also features backflushing of a particulate filter medium which is very compact and contains relatively great dirt loads. Such backflushing utilizes both mechanical and hydraulic forces, and may be accomplished in several different ways. The media can be compacted, if desired, to reduce the size of the voids therein, thereby increasing the effectiveness of the filter medium in entrapping and holding extremely small particles of dirt therein. The filter medium is compacted prior to the filtration operation, such compaction being accomplished in any one of several ways, e.g. by the use of fluid pressure or a differential flow rate.

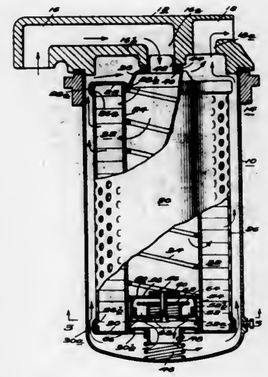


3,557,956
METHOD FOR DE-INKING AND REMOVAL OF CERTAIN CONTAMINANTS FROM RECLAIMED PAPER STOCK
Harry J. Braun, Neenah, and Stanley A. Dunn, Verona, Wis., assignors to Bergstrom Paper Company, a corporation of Wisconsin. by direct and mesne assignment
Filed Jan. 28, 1970, Ser. No. 6,468
Int. Cl. B01d *21/26*
U.S. Cl. 210—84 **10 Claims**



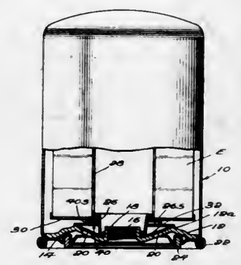
In centrifugal cleaning and deinking of reclaimed defibered paper stock which contains certain contaminants of about the same specific gravity as the fibers, a fluid is introduced into a slurry of the stock to treat those contaminants selectively and cause them to assume the characteristics of lighter solids so that they are retained in the inner part of the vortex of the cleaner while the fibers migrate to the outer part of the vortex.

3,557,957
FILTER ASSEMBLY HAVING A TWO-WAY BYPASS VALVE THEREIN
Jesse A. Baldwin, Kearney, Nebr., assignor to J.A. Baldwin Manufacturing Company, Kearney, Nebr., a corporation of Wisconsin
Filed May 31, 1968, Ser. No. 733,710
Int. Cl. B01d *35/14, 27/10*
U.S. Cl. 210—130 **5 Claims**



A two-way bypass valve unit for incorporation into the lower-end of the so-called center tube of a lubricating oil filter element which, by providing either inside-to-outside or outside-to-inside oil bypass flow through the filter makes it immaterial which of the head passages providing for oil flow to and from the filter serves as the oil inlet passage and which as the oil outflow passage.

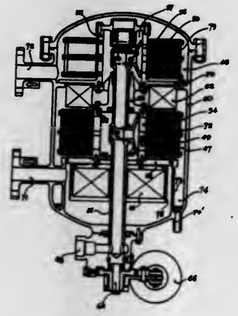
3,557,958
ANTI-DRAINBACK VALVE MEANS FOR OIL FILTERS
Jesse A. Baldwin, Kearney, Nebr.
Filed Sept. 27, 1968, Ser. No. 763,173
Int. Cl. B01d *27/00*
U.S. Cl. 210—136 **4 Claims**



Antidrainback valve means for automotive engine mounted oil filters comprising a valve element in the form of an annulus of flexible rubberlike material secured along its inner edge to the inner face of the filter shell base plate and extending radially outwardly therefrom in normal covering relation to the oil inlet openings provided in said base plate and having outer edge diameter slightly greater than that of a circular line form seat provided therefor on the inner face of the base plate, and annular spring means interposed and reactive between the filter element within the filter shell and

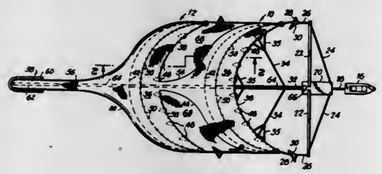
said outer peripheral portion of said valve annulus normally to maintain said peripheral portion seated on said line form seat.

3,557,959
FILTER FOR VISCOUS FLUIDS
Jacques Muller, 123 Avenue du General de Gaulle, La Garenne-Colombes, France
Filed Jan. 23, 1969, Ser. No. 793,404
Claims priority, application France, Feb. 5, 1968, 138,630
Int. Cl. B01d *35/12, 25/32*
U.S. Cl. 210—142 **4 Claims**



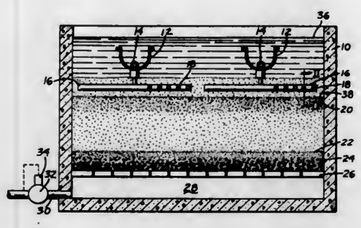
Filtering or separating equipment, particularly that type in which a filter device consists of stacks of grooved strips through which the fluid is passed, the device having heating means to react against the fluid and having self-contained cleaning means which automatically and rapidly effect cleaning of the filter elements used in the equipment one at a time, while the filtering occurs, said cleaning means being automatically driven.

3,557,960
OIL SKIMMING APPARATUS
Hugh J. Fitzgerald, Austin, and Ernest H. Koepf, Dallas, Tex., assignors to Ocean Pollution Control, Inc., Dallas, Tex., a corporation of Texas. by mesne assignments
Filed Dec. 16, 1969, Ser. No. 885,566
Int. Cl. E02b *15/04*
U.S. Cl. 210—242 **8 Claims**



Apparatus for removing a film of oil from a large body of water comprising a pair of generally similar funnel assemblies, one positioned behind and in the wake of the other with a harness for towing the same along their common central axis, each funnel assembly having an impermeable cover with spaced floats to support its wide leading edge above the water to capture the oil with the rest of the cover being supported on the floating oil, depending skirts at the tapered trailing edges of the cover to funnel the oil inwardly toward its apex, an enclosing sack of reinforcing netting covering the top and bottom of the apparatus, a sump to receive the oil from the apex of the rearward assembly, and a pump to transfer the oil from the sump to a storage barge.

3,557,961
SAND FILTER
Fred E. Stuart, Sr., 1157 Belaire Drive, Daytona Beach, Fla.
Filed Nov. 4, 1968, Ser. No. 773,044
Int. Cl. B01d *23/16*
U.S. Cl. 210—272 **4 Claims**



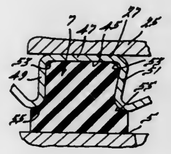
A method and apparatus for filtering water through a sand bed filter in which a layer of pulverized anthracite coal having a particle size larger than that of the sand particles is placed on top of the sand bed of the filter for the purpose of breaking up the floc in the water being filtered whereby the floc penetrates more deeply into the sand bed resulting in a longer service life for the filter bed before backwashing thereof is required.

3,557,962
REVERSE OSMOSIS FABRIC
Arthur L. Kohl, Woodland Hills, Calif., assignor to North American Rockwell Corporation
Filed June 28, 1968, Ser. No. 740,867
Int. Cl. B01d *31/00*
U.S. Cl. 210—321 **8 Claims**



An improved reverse osmosis fabric having hollow fibers arranged in a predetermined pattern, either woven or nonwoven, that is relatively flexible yet provides a stable fabric configuration.

3,557,963
SEAL FOR THROWAWAY FILTER
Robert J. Offer, Racine, Wis., assignor to Tenneco Inc., Houston, Tex., a corporation of Delaware, by mesne assignments
Filed July 21, 1966, Ser. No. 566,781
Int. Cl. B01d *35/02, 27/08*
U.S. Cl. 210—443 **7 Claims**

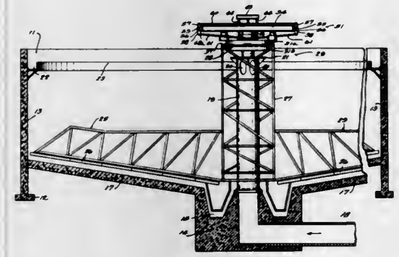


A throwaway filter for attachment by motion parallel to its axis to a flat base extending at right angles to its axis has an annular gasket coaxial with the filter axis that is compressed against the flat base by axial movement and has a tapered projecting portion that engages the seating surface with an initial circular line contact.

ERRATUM

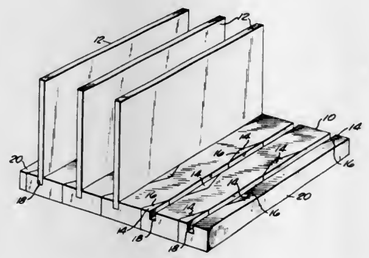
For Class 210—512 see:
Patent No. 3,558,484

3,557,964
ELEVATABLE SCRAPER DRIVE FOR CIRCULAR GRAVITY THICKENER
Gilbert W. Quast, Brookfield, Wis., assignor to Rex Chainbelt Inc., Milwaukee, Wis., a corporation of Wisconsin
Filed Feb. 20, 1970, Ser. No. 012,922
Int. Cl. B01d *21/20*
U.S. Cl. 210—531 **4 Claims**



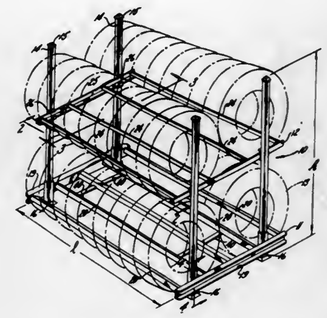
The rotating underwater structure of the gravity thickener comprises two scraper arms and a central vertical cage. The cage is secured above water to a gear housing which is slidable on a rigid vertical cylindrical column. Opposite tension rods are connected to the gear reducer housing and an equalizing mechanism carried by and extending horizontally from the upper end of the column and prevent rotation of the gear reducer. The entire structure and reducer is raised and lowered hydraulically as required.

3,557,965
MATING BASE MEMBERS FOR AN EXPANDABLE VERTICAL DESK FILE OR THE LIKE
Kristian Agerholm, W. 34433 Nickel Point, Oconomowoc, Wis. 53066
Filed Mar. 17, 1969, Ser. No. 807,612
Int. Cl. B42f *17/00*
U.S. Cl. 211—11 **1 Claim**



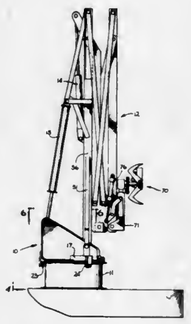
Base members of symmetrical shape have projections and recesses in the longitudinally extending sides of such members. These projections and recesses are complementary and interfit when the base members are placed side by side. A groove opening extends downwardly from a surface of and extending across each projection. When two base members are interfitted side by side the grooves in each projection are axially aligned. A vertical partition or other locking member is seated in such aligned grooves to lock adjacent base members and support the partition.

3,557,966
PYRAMID KNOCKDOWN RACK WITH ADJUSTABLE SHELF FOR TIRE STORAGE
Leroy F. Skubic, Long Beach, Ind., assignor to The Paltier Corporation
Filed June 23, 1969, Ser. No. 835,496
Int. Cl. A47f *7/04*
U.S. Cl. 211—24 **7 Claims**



A pyramid-type tiering rack for tire storage having removable vertical posts which are shorter than the length of the rack so that they may be compactly stored in the rack base when not used, but which may be assembled to form a structure taller than the length of said rack and thus capable of storing large tractor-size tires or double layers of regular-size tires. The rack includes a shelf that is removably supported in an elevated position on said vertical posts by means of C-shaped retainer brackets which limit vertical and horizontal movement of said shelf with respect to said bracket without auxiliary fasteners.

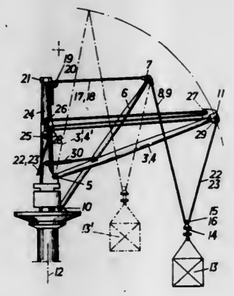
3,557,967
ARTICULATED CRANE
Doyle L. Madole, 9948 Glenoaks, Los Angeles County, Calif.
Filed Mar. 10, 1969, Ser. No. 805,444
Int. Cl. B66c *23/58*
U.S. Cl. 212—55 **9 Claims**



An articulated crane is disclosed herein having a turntable base pivotally and rotatably supporting an expandable boom. The boom comprises four beams pivotally connected together substantially at their adjacent ends and adapted to be folded together in a compact storage position and to be extended outwardly from the base so that its free end is cantilevered away from said base. The boom further includes crossover braces pivotally secured between the two innermost beams and the two outermost beams so as to provide a scissorslike extension and retraction of the beams. Hydraulic

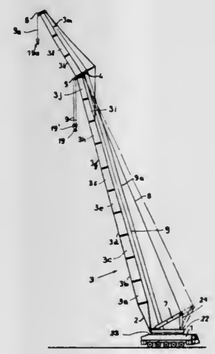
piston and cylinder assemblages are pivotally interconnected between the base and the first beam of the plurality for effecting initial extension of the boom while a second piston and cylinder assemblage effects refined positioning and extension of the boom via the scissorslike mechanism. Means are operably carried on the extreme free end of the boom for engaging cargo or products intended to be lifted or transferred from one location to another.

3,557,968
SHIPS HOISTING GEAR FOR HEAVY LOADS
Hans Thaeter, Bremen, Germany, assignor to Atlas-MaK Maschinenbau G.m.b.H., Kiel-Friedrichsort, Germany, a firm
Filed Dec. 24, 1968, Ser. No. 786,625
Claims priority, application Germany, Jan. 19, 1968, A29083
Int. Cl. B66c *23/00*
U.S. Cl. 212—58 **3 Claims**



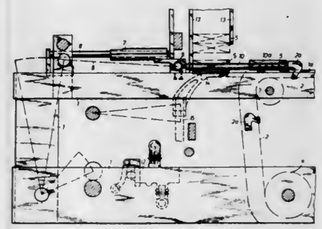
The invention provides a ships' hoisting gear for heavy loads, in the form of twin booms or derricks stayed from a mast for luffing and slewing and cooperating to hoist a common lifting beam carrying a load. The gear comprises an auxiliary luffing boom between the two booms or derricks, and hoisting ropes which are taken from the booms or derricks over pulleys on said lifting beam to the head of the auxiliary luffing boom to which their ends are anchored.

3,557,969
OUTRIGGER MAST FOR CRANE
Heinrich Wilhelm Heyer, Straelen, Germany, assignor to Coles Krane G.m.b.H., Duisburg-Meiderich, Germany, a corporation of Germany
Filed Apr. 3, 1968, Ser. No. 718,518
Claims priority, application Germany, Apr. 6, 1967, P1,279,904
Int. Cl. B66c *23/62*
U.S. Cl. 212—144 **5 Claims**



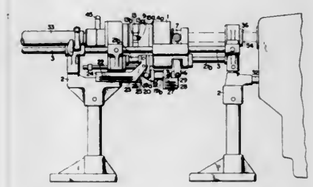
An outrigger mast for a crane is composed of a multiplicity of tapering, preferably complementarily frustopyramidal segments of substantially identical height but progressively decreasing cross sections detachably interconnected at adjoining faces, alternate segments being capable of nesting in one another, a roller-carrying header, removably secured to the top segment of the mast or of a section thereof, is adjustable to fit segments of different sizes.

3,557,970
APPARATUS FOR WITHDRAWING PACKAGES FROM A CONTINUOUSLY CIRCULATING CONVEYOR CHAIN
Otto Niepmann, Gevelsberg, Westphalia, Germany, assignor to Maschinenfabrik Fr. Niepmann & Co., Gevelsberg, Westphalia, Germany
Filed July 17, 1968, Ser. No. 745,481
Claims priority, application Germany, July 18, 1967, M 74 803
Int. Cl. B65g *57/30*
U.S. Cl. 214—1 **3 Claims**



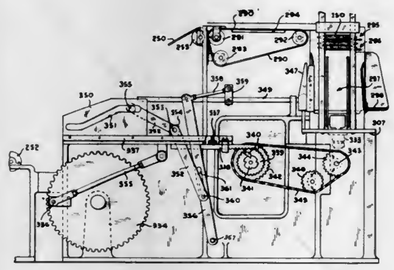
A device for withdrawing packages of soft material with easily crushed articles therein, in which the respective package conveyed by a conveyor is picked up by suction pipe means, preferably located on both sides of the conveyor. The suction pipe means are provided with suction holes through which a suction effect is exerted upon the package so as to hold the package by means of the suction effect whereupon the suction pipe means is moved to a depositing area where the suction effect exerted by the suction pipe means upon the package is eliminated so that the package is released and by corresponding transfer means is conveyed to a storage place or the like.

3,557,971
BAR FEED MECHANISM FOR LATHE
Hirofumi Tomiyama, 1000 Akiwa, Ueda-shi, Japan
Filed Apr. 15, 1969, Ser. No. 816,305
Int. Cl. B23q *5/26*
U.S. Cl. 214—1.4 **3 Claims**



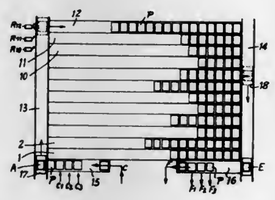
A novel construction of a bar-feed mechanism for lathe such as a turret lathe is composed of a main structure of the mechanism slidable on a guide means supported by a base structure, an operational tubular member slidably and freely rotatably included in said main structure, a lever means pivotably mounted on said main structure for driving said operational tubular member longitudinally and reciprocatingly in said main structure, a seizing means which seizes and releases the bar material in cooperation with the advance and retraction of said operational tubular member, a hydraulic cylinder provided traversingly between an end of the lever means and said main structure, and another hydraulic cylinder which shifts the main structure for a predetermined distance along the guide.

3,557,972
MECHANISM FOR THE STACKING OF ARTICLES
Charles T. Banks, Neenah, Wis., assignor to Kimberly-Clark Corporation, Neenah, Wis., a corporation of Delaware
Original application Mar. 6, 1967, Ser. No. 621,015, now Patent No. 3,494,001. Divided and this application May 19, 1969, Ser. No. 825,852
Int. Cl. B65g *57/06*
U.S. Cl. 214—6K **1 Claim**



A machine for making embossed segments of fluff and placing them onto one side of the internal pad of sanitary napkins and wrapping gauze around the pad and segment. The machine includes provision for high-speed operation including a two-speed acceleration apparatus for starting the internal pads from rest, apparatus for tacking end tabs of the gauze to the rest of the pad to prevent wind effects on them and a double-gated sanitary napkin stacking apparatus.

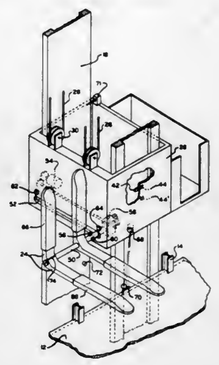
3,557,973
AUTOMATIC TRANSFER DEVICE DESIGNED FOR A DYNAMIC STORAGE INSTALLATION
Christian Edmand Bussienne, Louviers, and Dominique Christian Mary, Codebec-les-Elbeuf, France, assignors to "-Constructions Mills-K", Saint-Quen, France
Filed Nov. 15, 1968, Ser. No. 776,073
Claims priority, application France, Nov. 23, 1967, 129,312
Int. Cl. B65g *1/06*
U.S. Cl. 214—16 **3 Claims**



The present invention relates to dynamic storage installations of the type including a plurality of storage channels along which pallets or other loads may be conveyed.

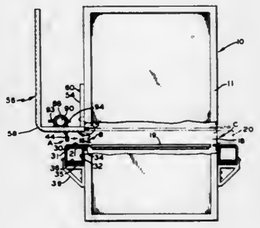
The instant invention more particularly provides a transfer carriage adapted for introducing or removing the loads at the ends of any preselected channel; said transfer carriage includes centering means enabling it to make an exact connection at said ends.

3,557,974
STORAGE APPARATUS AND CONTROL MEANS THEREFOR
George K. Ostrander, Angelica, N.Y., assignor to The Air Preheater Company, Inc., Wellsville, N.Y., a corporation of Delaware
Filed Jan. 30, 1969, Ser. No. 795,231
Int. Cl. B65g *1/06*
U.S. Cl. 214—16.4 **5 Claims**



Material handling apparatus for transporting loads to and from selected storage locations and having a mode of operation providing automatic loading or unloading of a load at any one of a plurality of storage locations. The automatic control system includes means for establishing an initial reference point for each of said storage locations, means for determining the load condition of the material handling apparatus, and means to then effect an unload or load motion of the material handling apparatus, in response to the presence or absence of a load thereon. The loading and unloading of a load is accomplished in a rapid and accurate manner and avoids sliding contact between the load and the material handling apparatus.

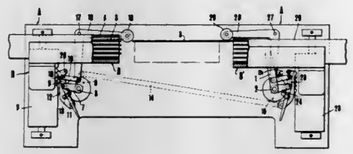
3,557,975
PUSHER ASSEMBLY FOR FREEZERS
Pasquale Amerio, Ringwood, N.J., assignor to St. Regis Paper Company, New York, N.Y., a corporation of New York
Filed Mar. 13, 1969, Ser. No. 806,982
Int. Cl. B65g *1/06*
U.S. Cl. 214—16.4 **9 Claims**



In a freezer having contact freezer plates which are vertically movable into register with a front charging opening, a pusher assembly for intermittently feeding a single row of boxes from a conveyor through said opening and for alternatively removing all the boxes from each plate through a discharge opening, for example, when the freezer is to be defrosted said assembly including a pusher bar movable generally in the plane of said charging opening, a plurality of drive rods for advancing the pusher bar, trackways extending forwardly from the front of the freezer supporting said rods

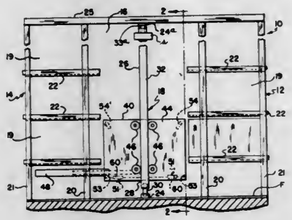
for sliding movement and a pusher frame secured at the forward ends of said drive rods.

3,557,976
VERTICAL FEEDER FOR MAGAZINE IN MAGAZINE FEED
Masahide Isobe, Miura-Gun, Japan, assignor to Tokyo Sokuhan Kabushiki Kaisha, Koza-gun, Japan
Filed July 2, 1969, Ser. No. 838,504
Claims priority, application Japan, Aug. 19, 1968, 43/58991
Int. Cl. B65g *65/36*
U.S. Cl. 214—16.4 **6 Claims**



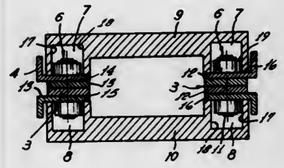
A vertical feeder for a magazine in a magazine feed apparatus comprises a bell crank pivotally mounted on a shaft secured to a frame for checking up the accommodated article. The bell crank actuates the engagement and disengagement of a ratchet claw in a corresponding ratchet groove provided on a slide member for the magazine receiving rack. The ratchet claw is adapted to be interlocked by means of a link with the lateral stroke of the lateral feeding device for the apparatus for lifting the magazine.

3,557,977
LOAD DETECTING DEVICE FOR WAREHOUSING SYSTEM
Wayne G. Atwater, Willoughby, and Sanford Saul, Cleveland, Ohio, assignors to The Triax Company, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 23, 1968, Ser. No. 769,801
Int. Cl. B65g *1/06*
U.S. Cl. 214—16.4 **17 Claims**



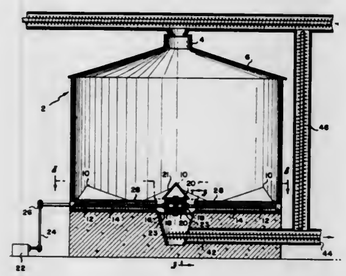
A warehousing system comprising a storage frame with a plurality of load storage locations in said storage frame and with a powered load carrier adapted for inserting loads into and removing loads from the storage locations. The load carrier includes an extractor mechanism for handling loads at the selected storage location, and load detection means is provided on the load carrier for determining if a selected storage location is occupied by a load, prior to the actuation of the extractor mechanism for placing a load carried thereby into the selected storage location. Such load detection means comprises a movable support member adapted for movement from an inactive position where it is out of coaction with the storage frame to an active position where it is disposed beneath the selected storage location in the storage frame, and energy beam sensing means coacting with the movable support member in the active position of the latter, for checking to see if a load is already in the selected storage location. If no load is in the selected storage location, the energy beam sensing means is energized causing actuation of the extractor whereby the load is deposited in the selected storage location. If the energy beam sensing means is maintained deenergized by a load already in the selected storage location, then the extractor mechanism is prevented from becoming actuated, and in the embodiment illustrated, the load carrier is returned to its starting position.

3,557,978
SHEARING ARM FOR CUTTING FORAGE CONTAINED IN SILOS
Augusto Comelli, San Pietro a Ponti, Italy, assignor to Carlo Erba S. P. A., Milan, Italy, a corporation of Italy
Filed Aug. 13, 1968, Ser. No. 752,234
Claims priority, application Italy, Feb. 14, 1968, 2721
Int. Cl. B65g *65/42*
U.S. Cl. 214—17 **4 Claims**



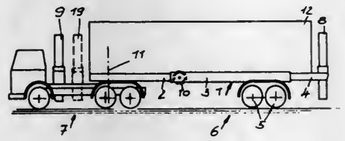
An improved shearing arm is disclosed for cutting forage contained in bottom discharge type silos, to be mounted in conjunction with the extraction channels located at the bottom of said silos, wherein the body consists of two elements, one upper and one lower, determining and limiting two couples of oppositely located seats, one for each branch of the chain of the arm, and the single pivots of the links of the chain, bearing the forage cutting blades, are guided, and hence the chain itself over its entire extent, said elements being mounted on the known means which govern the angular movement along the axis of the silo. The chain of this shearing arm is fully protected in its upper and lower parts, and partially on the sides.

3,557,979
GRAIN DRYING BIN
Warren Gene Zortman, R.R.2, Box 31, Onawa, Iowa 51040
Filed Nov. 20, 1968, Ser. No. 777,336
Int. Cl. B65g *65/46, 69/20*
U.S. Cl. 214—17 **4 Claims**



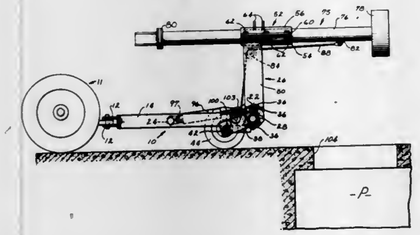
A grain drying bin including: a housing, a sectored floor for said housing, an opening in said floor for removing grain from said housing, said sectored floor having alternating peaks and valleys, and conveyor means associated with each of said valleys for removing grain from said valleys and depositing said grain in said floor opening; the walls of said valleys define an angle of 18—28 degrees with the horizontal; cover means associated with each of said conveyor means spaced above said conveyor means and spaced from the walls of said valleys for permitting dry grain to reach said conveyor means and for preventing moist grain from reaching said conveyor means; and including means associated with said floor opening for conveying dry grain to a discharge area.

3,557,980
VEHICLE FOR TRANSPORTING LOADS
Kaspar Klaus, 46, Schlacthofstrasse 894, Memmingen, Germany
Continuation of application Ser. No. 754279, Aug. 21, 1968, now abandoned. This application Dec. 11, 1969, Ser. No. 880,499
Int. Cl. B60p *1/48*
U.S. Cl. 214—77 **2 Claims**



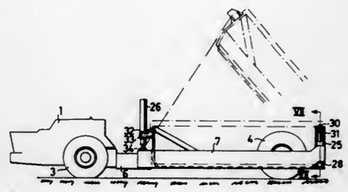
A vehicle, such as an articulated truck for transporting loads and more especially large loads such as containers in which the frame or chassis of the semitrailer is defined by a number of components which are telescopically adjustable and lockable to allow for different sized containers. The foremost and rearmost components are provided with lifting devices.

3,557,981
LIQUID MANURE PUMP TRANSPORT DEVICE
Shaun A. Seymour, Ephrata, Pa., assignor to Sperry Rand Corporation, New Holland, Pa., a corporation of Delaware
Filed Feb. 26, 1969, Ser. No. 802,461
Int. Cl. B66c *23/00*
U.S. Cl. 214—146.5 **8 Claims**



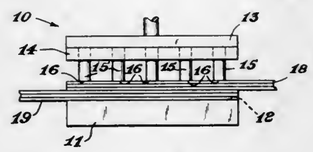
A liquid manure pump transport device comprising a chassis structure, a support means pivotally mounted on the chassis structure, said support means having ground engaging wheels mounted thereon, and hydraulic means connected between the chassis and the support means for pivoting support means with respect to the chassis structure between a transport position and an operable position wherein the wheels are lifted off the ground and the support means form a stable platform for locating a pump in a liquid manure pit when the device is in the operable position.

3,557,982
TRANSPORT VEHICLES FOR LOAD-CARRYING PURPOSES
Sune Torsten Henriksson, Lingonstigen 2; Ake Malmgren, Tvargatan 5; Ragnar Ludvig Muotka, Krykogatan 46, and Lars Harald Widegren, Lararegatan 14, Kiruna, Sweden
Filed Oct. 7, 1968, Ser. No. 765,368
Int. Cl. B65g *65/02*
U.S. Cl. 214—300 **4 Claims**



A transport vehicle for load-carrying purposes and consisting of a power vehicle and a trailer hingedly connected thereto, said trailer having a wheel-supported U-shaped outer stationary frame open to the rear and a U-shaped inner frame open to the rear and supported for vertical movements within said outer frame, said vehicle being distinguished in that a raising and carrying means for the inner frame in the form of a pressure fluid operated power cylinder is mounted at the rear end of each of the limbs of the outer frame as well as centrally at the frontal transverse portion of said outer frame.

3,557,983
JOINING OF LAMINATES
Robert R. Hayes, Euclid, and Barry L. Laidman, Cleveland, Ohio, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Mar. 14, 1968, Ser. No. 712,904
Int. Cl. B23k *21/00*
U.S. Cl. 29—470.1 **8 Claims**

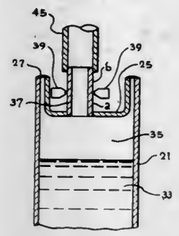


Thermoplastic-coated metal foils are joined to provide electrical continuity by pressing under high pressure between flat surfaces.

3,557,984
PREPARATION OF CLOSURES
Richard E. Rice, Arlington, Mass., assignor to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York. by mesne assignments
Filed Aug. 11, 1967, Ser. No. 659,910
Int. Cl. B23k *31/02*
U.S. Cl. 29—481 **4 Claims**

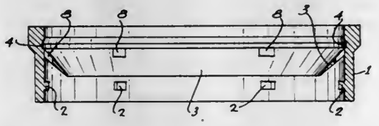
An opening in a tubular member, e.g., a steel tube, is sealed by pressing the walls thereof together while they are at

an elevated temperature and in contact with hydrogen. In a preferred embodiment, the steel tube is part of a heat storage



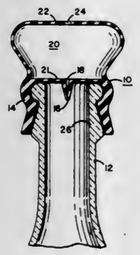
vessel, which vessel is filled with or substantially filled with alkali metal hydroxide and in which hydrogen gas is present.

3,557,985
TAMPER-PROOF PLASTIC CLOSURE CAP AND METHOD OF MAKING SAME
Marcel Louis St. Denis, 3102 Bliss Road, and Andrew Raoul St. Denis, 3541 Rankin, Windsor, Ontario, Canada
Filed June 2, 1969, Ser. No. 829,346
Int. Cl. A61j *1/00*; **B65d** *55/02*
U.S. Cl. 215—9 **5 Claims**



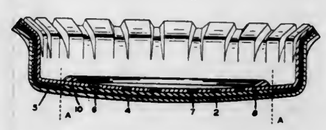
A two-piece closure cap for self-locking tamperproof containers consisting of (*a*) a resilient molded plastic cylindrical part having an integrally formed resilient ring member extending inwardly from the interior cylindrical surface and a plurality of integrally formed radially inwardly extending lugs spaced around the interior cylinder surface below the ring member and (*b*) a separate top closure for the cap consisting of a disc which fits into an annular recess in the interior cylindrical surface of the cylindrical part.

3,557,986
PRESSURIZING CLOSURE DEVICE
William T. Poole, Jr., 7351 Brodiaea Way, La Jolla, Calif.
Filed Feb. 24, 1969, Ser. No. 801,329
Int. Cl. B65d *41/18, 51/16, 81/24*
U.S. Cl. 215—37 **4 Claims**



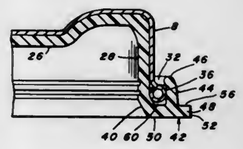
A pressurizing closure device for closing the opening in a container that contains a carbonated liquid or beverage, which closure device seals the opening and provides a simple resilient air cavity with check valve openings that is successively squeezed forcing air through the closure device into the container and repressurizing the gas volume above the carbonated liquid.

3,557,987
CROWN CLOSURE HAVING REMOVABLE LINER
Benjamin H. Singer, Jr., Lititz, Pa., assignor to Kerr Glass Manufacturing Corporation, Los Angeles, Calif., a corporation of Nevada. by mesne assignments
Filed Oct. 25, 1968, Ser. No. 770,713
Int. Cl. B65d *23/00, 53/00*
U.S. Cl. 215—40 **3 Claims**



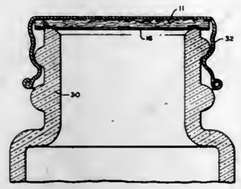
A removable liner structure for a crown closure consists of a sandwich wherein printed matter is contained between two layers constituting the sandwich. The inside of the rigid shell of the crown is provided with a varnish coat followed by an adherence coating in the area of the skirt. This is then followed by the sandwich structure constituting the removable liner with the indicia between the two layers forming the sandwich. A ringseal is then provided over the sandwich.

3,557,988
CLOSURE ASSEMBLY
Glenn O. Tribe, and Walter C. Riesen, Jr., Richmond, Ind., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Apr. 21, 1969, Ser. No. 817,648
Int. Cl. B65d *43/02, 23/00, 53/00*
U.S. Cl. 215—46 **9 Claims**



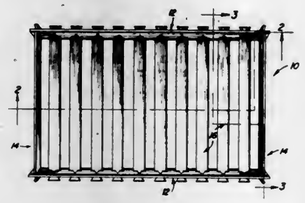
An outer closure member having a top panel and depending skirt portion. An inner closure member composed of a different material having an annular vertical wall disposed within the outer closure member and a radially outwardly directed flange integrally formed with the lower marginal edge of the annular vertical wall. An upstanding wall segment on the flange cooperating the flange and the annular vertical wall to define an upwardly open channel. The marginal end of the outer member skirt portion resiliently retained within the channel to prevent accidental relative separation of the outer and inner members but permitting intentional mechanical separation. The outer closure member may be a metal closure having an integral opening device and the inner closure member may be a molded resilient plastic material and adapted to serve both as a gasket and reclosure.

3,557,989
PERMEABLE CLOSURE LINER
Edward C. Balda, East Hartford, Conn., assignor to Scott Plastics Corporation, Hartford, Conn., a corporation of Connecticut
Filed May 19, 1969, Ser. No. 825,609
Int. Cl. B65d *51/16, 23/00, 53/00*
U.S. Cl. 215—56 **2 Claims**



Vapor permeable films for packaging having low, medium or high controlled breathing rates for gasses and vapors are prepared by blending latex emulsions having minimum film formation temperatures no less than about 50° C. with latex emulsions having minimum formation temperatures no greater than about 25° C. in polymer component ratios selected for controlling the degree of breathing or porosity to within a predetermined range, and coating the mixture on a fibrous sheet material with subsequent drying at room temperature or accelerated drying at elevated temperatures.

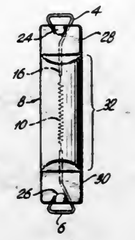
3,557,990
KNOCKDOWN PACKING TRAY
John Athanasios Lipiros, 301 West 45th St., New York, N.Y.
Filed Feb. 24, 1969, Ser. No. 801,736
Int. Cl. B65d *9/12*
U.S. Cl. 217—43 **6 Claims**



A packing tray wherein the sides and ends, and the slats, utilized in forming the bottom and top thereof, are provided as a disassembled package and capable of being interlocked into a packing tray for goods of various types without utilizing nails, adhesive, or similar mechanical fastening means. The components are interlocked through the provision of dovetail locking heads on the opposite ends of selected components for reception within tapered openings provided in others of the components, the heads and openings being so configured as to provide a positive interlocking nested relationship therebetween whereby a high degree of stability is introduced.

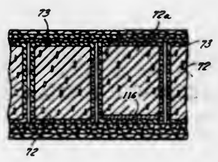
3,557,991
ELECTRIC LAMP ENVELOPE WITH PINCH-SEALED PORTION
Leslie Wittek, Belleville, N.J., assignor to Wagner Electric Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 662,026, Aug. 21, 1967, now abandoned. This application Aug. 20, 1968, Ser. No. 756,730
Int. Cl. H01k *61/30, 1/28*
U.S. Cl. 220—2.1 **10 Claims**

A lamp envelope is formed with either one or more protrusions or one or more recesses or a combination of one or more protrusions with one or more recesses integral with the pinch-sealed portion or portions thereof in order to compensate for either an excess or deficiency in volume of glass. Uniform envelope length is thus achieved, thereby ensuring



that the contact wires extending from the pinch-sealed ends of the glass envelope have the proper clearance from the envelope. In addition, internal stresses within the envelope are reduced.

3,557,992
UNITARY MOLDED PLASTIC STRUCTURE
John F. Reeves, Milwaukee, Wis., assignor to Litewate Transport Equipment Corporation, Milwaukee, Wis., a corporation of Delaware
Continuation-in-part of application Ser. No. 733,053, May 29, 1968, now abandoned. This application Mar. 13, 1969, Ser. No. 808,372
Int. Cl. B65d *25/18*
U.S. Cl. 220—9 **10 Claims**



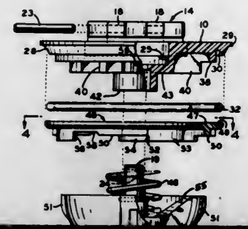
A method and apparatus for molding insulated reinforced plastic structures for use as refrigerated cargo containers and truck or trailer bodies. The insulated reinforced plastic structures have substantially parallel opposed sides and are molded as a unitary structure in a single molding operation. Glass fiber reinforcing materials, which include an insulating core material, are placed in the bottom of a female mold and up against the sides. A somewhat loose fitting mandrel braced vertically but which may later be expanded laterally, is lowered down in between the materials at the sides and on top of materials at the bottom. Further glass fiber reinforcing materials, including a core material are placed on top of the mandrel. A male mold is lowered in place on top of these materials but somewhat short of full final closing. A free flowing liquid plastic resin is pumped within the space defined by the male and female molds and the mandrel. The free flowing liquid plastic resin impregnates the glass fiber reinforcing and wets the surfaces of the core material. The male mold is closed fully downward and the mandrel expanded fully laterally, compressing the glass fiber reinforcing and compacting the entire material assembly in its final form. The liquid plastic resin then hardens, the molds are opened, and the molding is removed from the mold.

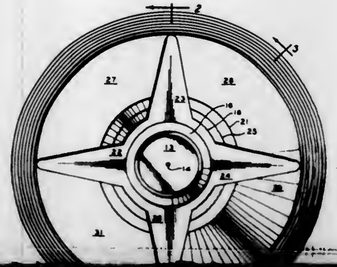
3,557,993

AIRCRAFT FUEL TANK CLOSURE CAP

Chester C. DePew, Farmingdale, N.Y., assignor to Tridair Industries, Redondo Beach, Calif.

Filed June 24, 1968, Ser. No. 739,544
Int. Cl. B65d *45/00, 41/06*
U.S. Cl. 220—25 3 Claims





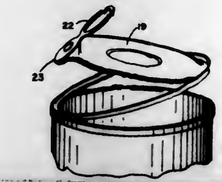
the lid is forced on a container, but maintaining the top of the lid in a horizontal position when a plurality of filled and

3,557,997

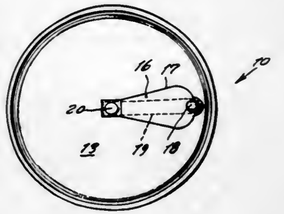
EASY OPENING CONTAINER

Thomas R. Stanley, Brookfield, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Continuation of Ser. No. 795,809, Feb. 3, 1969, now abandoned. This application Jan. 22, 1970, Ser. No. 6,027
Int. Cl. B65d *17/24*
U.S. Cl. 220—54 5 Claims



secured thereto, the button being used to urge the tab downwardly so to rip the score line, and the underside of the

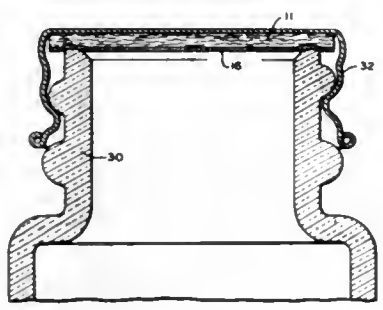


tab having a leaf spring pulling the tab the leaf spring takes its normal curved shape and thus open in the can.

3,557,989
PERMEABLE CLOSURE LINER

Edward C. Balda, East Hartford, Conn., assignor to Scott Plastics Corporation, Hartford, Conn., a corporation of Connecticut

Filed May 19, 1969, Ser. No. 825,609
Int. Cl. B65d *51/16, 23/00, 53/00*
U.S. Cl. 215—56 **2 Claims**

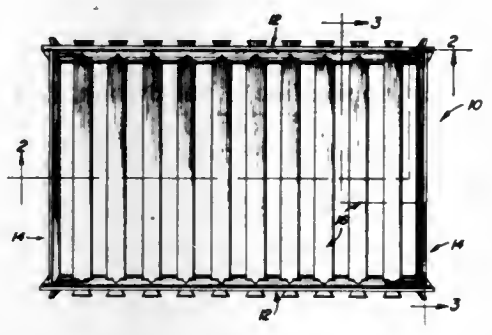


Vapor permeable films for packaging having low, medium or high controlled breathing rates for gasses and vapors are prepared by blending latex emulsions having minimum film formation temperatures no less than about 50° C. with latex emulsions having minimum formation temperatures no greater than about 25° C. in polymer component ratios selected for controlling the degree of breathing or porosity to within a predetermined range, and coating the mixture on a fibrous sheet material with subsequent drying at room temperature or accelerated drying at elevated temperatures.

3,557,990
KNOCKDOWN PACKING TRAY

John Athanasios Lipiros, 301 West 45th St., New York, N.Y.

Filed Feb. 24, 1969, Ser. No. 801,736
Int. Cl. B65d *9/12*
U.S. Cl. 217—43 **6 Claims**



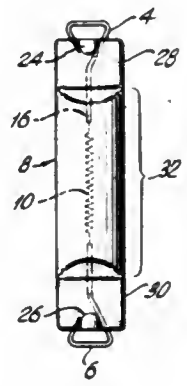
A packing tray wherein the sides and ends, and the slats, utilized in forming the bottom and top thereof, are provided as a disassembled package and capable of being interlocked into a packing tray for goods of various types without utilizing nails, adhesive, or similar mechanical fastening means. The components are interlocked through the provision of dovetail locking heads on the opposite ends of selected components for reception within tapered openings provided in others of the components, the heads and openings being so configured as to provide a positive interlocking nested relationship therebetween whereby a high degree of stability is introduced.

3,557,991
ELECTRIC LAMP ENVELOPE WITH PINCH-SEALED PORTION

Leslie Wittek, Belleville, N.J., assignor to Wagner Electric Corporation, a corporation of Delaware

Continuation-in-part of application Ser. No. 662,026, Aug. 21, 1967, now abandoned. This application Aug. 20, 1968, Ser. No. 756,730
Int. Cl. H01k *61/30, 1/28*
U.S. Cl. 220—2.1 **10 Claims**

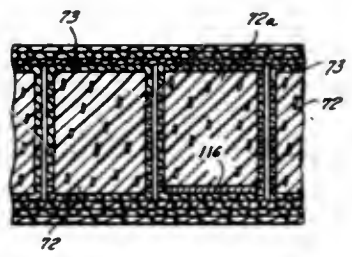
A lamp envelope is formed with either one or more protrusions or one or more recesses or a combination of one or more protrusions with one or more recesses integral with the pinch-sealed portion or portions thereof in order to compensate for either an excess or deficiency in volume of glass. Uniform envelope length is thus achieved, thereby ensuring that the contact wires extending from the pinch-sealed ends of the glass envelope have the proper clearance from the envelope. In addition, internal stresses within the envelope are reduced.



3,557,992
UNITARY MOLDED PLASTIC STRUCTURE

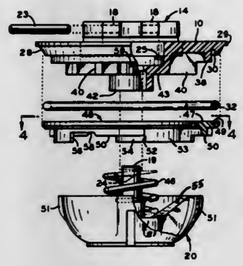
John F. Reeves, Milwaukee, Wis., assignor to Litewate Transport Equipment Corporation, Milwaukee, Wis., a corporation of Delaware

Continuation-in-part of application Ser. No. 733,053, May 29, 1968, now abandoned. This application Mar. 13, 1969, Ser. No. 808,372
Int. Cl. B65d *25/18*
U.S. Cl. 220—9 **10 Claims**



A method and apparatus for molding insulated reinforced plastic structures for use as refrigerated cargo containers and truck or trailer bodies. The insulated reinforced plastic structures have substantially parallel opposed sides and are molded as a unitary structure in a single molding operation. Glass fiber reinforcing materials, which include an insulating core material, are placed in the bottom of a female mold and up against the sides. A somewhat loose fitting mandrel braced vertically but which may later be expanded laterally, is lowered down in between the materials at the sides and on top of materials at the bottom. Further glass fiber reinforcing materials, including a core material are placed on top of the mandrel. A male mold is lowered in place on top of these materials but somewhat short of full final closing. A free flowing liquid plastic resin is pumped within the space defined by the male and female molds and the mandrel. The free flowing liquid plastic resin impregnates the glass fiber reinforcing and wets the surfaces of the core material. The male mold is closed fully downward and the mandrel expanded fully laterally, compressing the glass fiber reinforcing and compacting the entire material assembly in its final form. The liquid plastic resin then hardens, the molds are opened, and the molding is removed from the mold.

3,557,993
AIRCRAFT FUEL TANK CLOSURE CAP
Chester C. DePew, Farmingdale, N.Y., assignor to Tridair Industries, Redondo Beach, Calif.
Filed June 24, 1968, Ser. No. 739,544
Int. Cl. B65d 45/00, 41/06
U.S. Cl. 220—25 3 Claims



An aircraft fuel tank closure cap assembly including a cap with a sealing ring received in an annular recess in the cap, a retaining ring for the sealing ring and a rotatable clamping member with jaws which underlie the fuel tank adapter, and constructed entirely from plastic material.

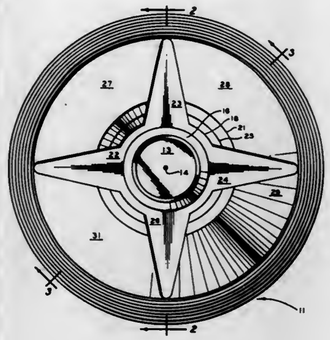
3,557,994
PRESSURE TANK FLOATING DIAPHRAGM
Harley L. West, 720 Kingston Drive, Yukon, Okla. 73099
Continuation-in-part of application Ser. No. 691,420, Dec. 18, 1967, now abandoned. This application Aug. 22, 1969, Ser. No. 852,440
Int. Cl. B65d 8/18
U.S. Cl. 220—26 2 Claims



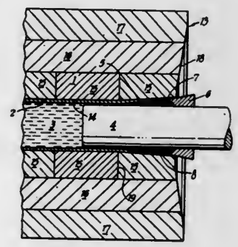
A float, formed by two discs of flexible sheet material, diametrically substantially equal to the inside diameter of a water tank are flatly joined together inwardly of their peripheries to form a plurality of concentric annular airspaces between the discs. A length of tubing forming an endless ring is placed between the sheets of material within the outermost airspace. The float is placed within a pressure water tank and floats on the water at its interface with the air thereabove.

3,557,995
UPWARDLY EXPANSIBLE PLASTIC VENTED LID
Salustiana S. Mirasol, Jr., Kansas City, and George E. MacEwen, Gladstone, Mo., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed Nov. 12, 1968, Ser. No. 774,946
Int. Cl. B65d 41/20, 41/06
U.S. Cl. 220—42 6 Claims

A plastic lid is provided with an inverted U-shaped rim adapted to fit on the open ends of a plurality of containers having differently shaped ends, said lid having a vent, and an annular groove with radial-shaped groove arms permitting the lid to bulge upwardly and relieve internal pressure when the lid is forced on a container, but maintaining the top of the lid in a horizontal position when a plurality of filled and lidded containers are stacked one upon another, with the base of one container on the lid of another container.

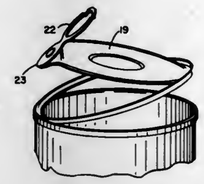


3,557,996
HIGH-PRESSURE VESSELS
William Henry Campbell, Newcastle upon Tyne, and John Antony Pennell, Cumberland, England, assignors to Vickers Limited, London, England, a British company
Filed July 22, 1968, Ser. No. 746,623
Claims priority, application Great Britain, July 21, 1967, 33,785/67
Int. Cl. B65d 53/00
U.S. Cl. 220—46 9 Claims



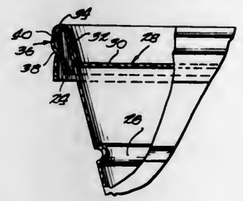
A high-pressure vessel having a borelike high-pressure cavity with an outwardly flared open end closable by a plug and a seal assembly inserted into the open cavity end. This seal assembly incorporates an outer ring with a lipped leading end and a frustoconical outer surface, which ring can be wedged into the flared cavity around the plug, and inner sealing ring means embracing the plug within the outer ring lip.

3,557,997
EASY OPENING CONTAINER
Thomas R. Stanley, Brookfield, Ill., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York
Continuation of Ser. No. 795,809, Feb. 3, 1969, now abandoned. This application Jan. 22, 1970, Ser. No. 6,027
Int. Cl. B65d 17/24
U.S. Cl. 220—54 5 Claims



An easy opening container having a score line formed along the chuck wall of the end closure to eliminate sharp exposed edges after separation of the end closure panel along the score line.

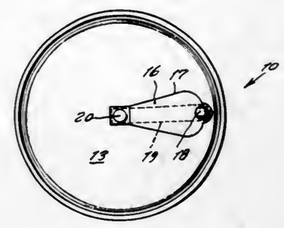
3,557,998
WIDE MOUTH CONTAINER AND CLOSURE HAVING INTEGRAL OPENING MEANS
Stafford D. Collie, Kansas City, Mo., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed Jan. 2, 1969, Ser. No. 788,368
Int. Cl. B65d 17/24, 43/02
U.S. Cl. 220—54 7 Claims



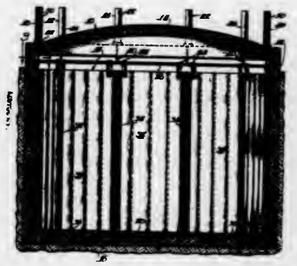
An improved seal between a wide mouth and its closure is obtained by providing a continuous resilient exterior skirtlike flange depending from the lip of the container and a corresponding flange on the closure. The closure flange has an annular rib which sealingly engages and forces the continued container flange resiliently inwardly. A score line above the rib and a tear tab integral with the portion of the closure below the score line combine to permit the lower portion of the closure flange to be removed to facilitate removal of the remaining portions of the closure from the container.

3,557,999
PUSH-BUTTON SELF-OPENER CAN
Pedro Chagoyen, 73—04—31st Ave., Jackson Heights, N.Y.
Filed Feb. 24, 1969, Ser. No. 801,311
Int. Cl. B65d 17/24, 17/00, 43/16
U.S. Cl. 220—54 7 Claims

An easy opener container comprising a metal can having one end wall with a scored tab within the central area thereof, the tab having an upwardly domed push button secured thereto, the button being used to urge the tab downwardly so to rip the score line, and the underside of the tab having a leaf spring pulling the tab the leaf spring takes its normal curved shape and thus open in the can.



3,558,000
METALLIC LINER SYSTEM
Eugene P. McCann, Tewksbury, Mass.; Bertram E. Eakin, Naperville; John L. Cranmer, Jr., Chicago, Ill.; Eugene P. McCann, Tewksburg, and Bertram E. Eakin, Naperville, Mass., assignors to Institute of Gas Technology, a non-profit corporation of Illinois
Filed Dec. 4, 1968, Ser. No. 781,060
Int. Cl. B65d 25/14
U.S. Cl. 220—63 10 Claims

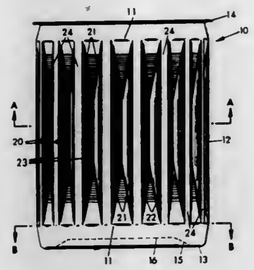


A liner system for retaining liquid in a storage tank. The liner system includes a continuous metallic liner which has sides which are substantially coextensive with the sidewalls of the tank and a bottom which is substantially coextensive with the floor of the tank. Upright expansion joints, provided in the sides of the liner, compensate for expansion and contraction of the sides in a circumferential direction and expansion joints, provided in the bottom of the liner, compensate for expansion and contraction in the bottom of the liner. Hanger members are secured to the upper portion of the tank and are resiliently mounted thereto. The upper end of the sides of the liner engage the resiliently mounted hangers so as to compensate for expansion and contraction of the liner in a vertical direction.

3,558,001
THERMOPLASTIC CONTAINER
Robert R. Fritz, Santa Ana, Calif.; George R. Ingram, Houston, Tex., and Lawrence D. Barr, Eloy, Ariz., assignors to Esso Research and Engineering Company, a corporation of Delaware
Continuation-in-part of application Ser. No. 623,448, Mar. 15, 1967, now abandoned. This application Aug. 7, 1969, Ser. No. 848,317
Int. Cl. B65d 7/42
U.S. Cl. 220—67 2 Claims

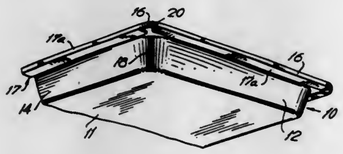
Thermoplastic containers having a single open end of improved vertical strength properties are secured by employing

a series of interconnected, vertically disposed supporting columns as part of the wall of the container. Preferably, the supporting columns extend laterally, outwardly from the non-column containing surface of the container sidewall. Each of the columns comprises two substantially identical isosceles trapezoids, each having a base and a side opposite therefrom



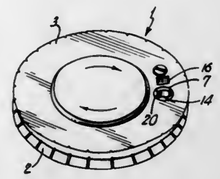
of from 25 to 75 percent of the length of the base, and an elongated rectangular member of a length substantially equal to the length of the base of the trapezoids. The rectangular member is positioned between and connected to the bases of the trapezoids. Successive columns are interconnected along the side opposite the base of the trapezoids.

3,558,002
BAKING PAN HAVING TOP REINFORCING FLANGES
Nils Kauri Lindgren, Stockholm, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Feb. 26, 1969, Ser. No. 802,386
Claims priority, application Sweden, Feb. 29, 1968, 2598/68
Int. Cl. B65d *7/42*
U.S. Cl. 220—74 **3 Claims**



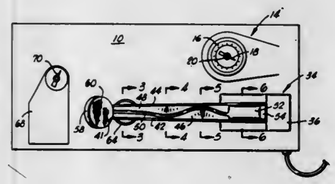
This invention relates to an open top multisided baking pan having a bottom and upstanding sidewalls and a flat top flange which flares outward at the open top of the pan, the top flange including straight sections of uniform width and corners therebetween. A rim depends downward from the outer peripheral edge of the top flange. From the bottom of the rim straight sections of a bottom flange extend inward toward the sidewalls, the adjacent ends of such straight sections of the bottom flange being separated from one another at regions beneath the corners of the top flange. Each corner of the top flange is stiffened and reinforced by a zone thereof which extends outward beyond an arc of a circle connecting the outer peripheral edges of adjacent straight sections of the top flange and having the same center of radius of curvature as that of the inner peripheral edge of the corner of the top flange. Also, the ends of adjacent straight sections of the bottom flange are disposed beneath the outward extending zone of each corner of the top flange to further stiffen and reinforce the top flange at each corner. Alternatively, the width of the top flange at the corners is greater than at the straight sections, the radius of curvature of the outer peripheral edge of each corner of the top flange being less than the radius of curvature of its inner peripheral edge.

3,558,003
TABLET DISPENSER WITH CALENDAR INDEX
Edmund A. Jones, Somerville, N.J., assignor to Ortho Pharmaceutical Corporation, a corporation of New Jersey
Filed Apr. 28, 1969, Ser. No. 819,579
Int. Cl. B65d *83/04*
U.S. Cl. 221—2 **5 Claims**



A tablet dispenser having a continuous tablet channel is provided, the channel terminating in a tablet dispensing aperture. Rotation of the cover of the dispenser with respect to the base exerts pressure on a tablet follower disposed at the tablet channel and thus urges the tablet towards and into the tablet dispensing aperture.

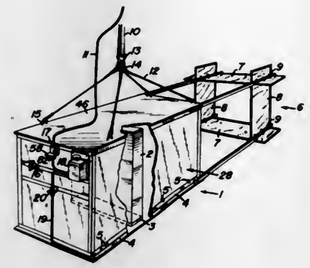
3,558,004
ARTICLE DISPENSING APPARATUS WITH AUTOMATIC DRIBBLE FEED
Harry S. Boyd, Jr., Norman, and David M. Boyd, 1214 Barkley Ave., Norman, Okla.
Filed Mar. 18, 1969, Ser. No. 808,187
Int. Cl. G07f *11/00*
U.S. Cl. 221—7 **19 Claims**



Apparatus for dispensing a predetermined number of small, solid, objects, such as pills, including a hopper having a grooved spout extending from one side of the hopper, a vibrating device for vibrating the hopper to move the objects through the spout, a concussion or impact-type detector positioned in the path of the objects so that the objects consecutively impinge on the detector, and a counter connected to the detector for counting the objects consecutively impinging on the counter. The groove in the spout is sinuous and inclined to assure that a plurality of the objects will not be discharged from the spout simultaneously, and the hopper is mounted in a vibrating bed. The detector is electrically connected to the counter through a sensitive microphonic amplification system which permits relatively high speed detection and counting.

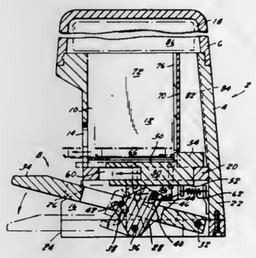
3,558,005
AERIAL CHEMICAL DISPENSER
Royale R. Crabtree, Towson; Charles W. Beeker, Baltimore; Larry T. Shaff, Bel Air; Michael A. Mancini, Joppa, and Joseph C. Phell, Joppa, Md., assignor to the United States of America as represented by the Secretary of the Army.
Filed Nov. 6, 1968, Ser. No. 773,824
Int. Cl. G07f *11/06*
U.S. Cl. 221—90 **33 Claims**

An aerial chemical dispenser and method of dissemination comprising a dispensing means; a guidance system fixedly attached to the dispensing means; chemical material loaded within container means, said container means having a rupturable bottom and mounted by hanger means within the



dispensing means; fallaway door means to rupture the dispensing means bottom; and reliable and reusable electrically activated explosive detent structure for initiating door fallaway.

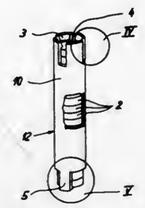
3,558,006
BUTTER PAT DISPENSER
Benjamin Redmond, 520 East 77th St., New York, N.Y., and Leila R. Chenkin, 525 East 86th St., New York, N.Y.
Filed Nov. 18, 1968, Ser. No. 776,574
Int. Cl. A47f *1/08*
U.S. Cl. 221—150 **11 Claims**



A dispenser suitable for use on a dining table for dispensing to the ultimate consumer individual packages of food, such as butter pat packages. The dispenser includes means to maintain the food packages in a refrigerated state and a dispensing mechanism adapted to sequentially dispense the bottom food package from a vertical stack of pats.

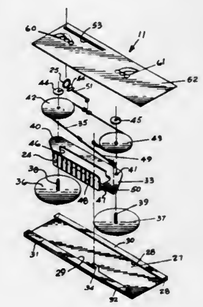
3,558,007
CONTAINER FOR DISPENSING CASINGLESS PROPELLANT CHARGE ELEMENTS
Hans-Dieter Seghezzi, Mittlefeld, Liechtenstein, and Herbert Rangger, Frastanz, Austria, assignors to Hilti Aktiengesellschaft, Schaan, Furstentum, Liechtenstein
Filed Jan. 21, 1969, Ser. No. 792,577
Claims priority, application Germany, Feb. 16, 1968, H61776
Int. Cl. B65h *5/00*
U.S. Cl. 221—232 **8 Claims**

A dispensing device for casingless propellant charge elements is formed by a longitudinally extending container forming a passageway for holding the charge elements in serial alignment with either the walls of the container or inwardly extending projections at the ends of the passageway holding the charge elements in the container. A dispensing member can be arranged to hold the container for dispensing individual charge elements. Further, individual containers



can be packaged within a box containing a divider for spacing the container apart.

3,558,008
DISPENSING PACKAGE AND SUBASSEMBLY THEREFOR
Ricardo Noda, 5520 King Arthur Court Apt. 14, Westmont, and Manuel R. Espino, 210 Henry St., Elgin, Ill.
Filed May 1, 1969, Ser. No. 820,825
Int. Cl. A24f *15/16;* **B65d** *83/02*
U.S. Cl. 221—260 **10 Claims**



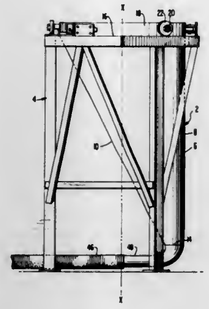
A dispensing package has a casing from which packaged articles are partially removed in sequence by a subassembly of a guide support plate, a shorter plate, having a lateral extension through a slot in the casing and with an upturned flange outside the casing, a pair of longitudinally spaced pulleys rotatably mounted on the shorter plate by pins extending upwardly from the shorter plate, and followers mounted on the shorter plate and engaging the guide plate. A cord is secured at one end to the support plate, passed about the pulleys, and secured at its other end to one end of an elastic band connected at its other end to the shorter plate. A pusher rod with an upturned finger at its free end is connected to the cord between the pulleys.

3,558,009
OSCILLATING ROCKER HOPPER AND METHOD
Clarence F. Carter, Danville, Ill., assignor to Carter Engineering Company, Danville, Ill., a corporation of Illinois
Filed July 19, 1968, Ser. No. 746,188
Int. Cl. B67d *5/64*
U.S. Cl. 222—1 **10 Claims**

A method of feeding particulate material which utilizes a vertically extending hopper configured to cause material within the hopper to move gravitationally down to a lower outlet opening of the hopper. The method includes a step of subjecting the hopper to cycles of oscillating transverse motion in a predetermined, generally horizontal path to impose a side-to-side horizontal throwing action on the material within the hopper. Additionally, the hopper is subjected to cycles of oscillating rocking motion about a generally

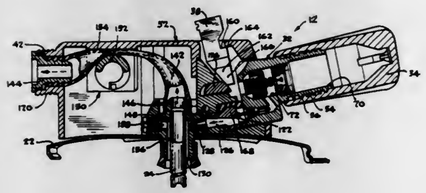
horizontal axis at periods occurring during the cycles of transverse motion.

An apparatus which is intended for feeding particulate material. The apparatus includes a vertically extending hopper having wall means for confining the material and for moving it gravitationally towards a lower opening. Frame



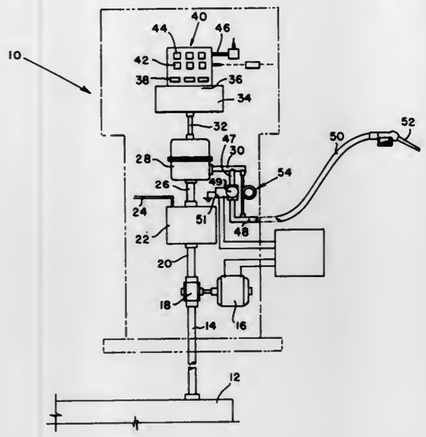
means support the hopper for limited movement. Oscillating means connected with the frame means and with the hopper applies an oscillating transverse motion to the hopper. Rocking means also connected with the hopper and the frame means applies vertical rocking oscillation to the hopper at some time during each cycle of the transverse motion.

3,558,010
COMBINATION FLUID PRESSURE SUPPLY AND REGULATOR UNIT
Richard D. Zenger, Downers Grove, and Raymond M. Traczyk, Chicago, Ill., assignors to National Can Corporation, Chicago, Ill., a corporation of Delaware
Filed Feb. 4, 1969, Ser. No. 796,418
Int. Cl. B67b *7/24*
U.S. Cl. 222—5 **11 Claims**



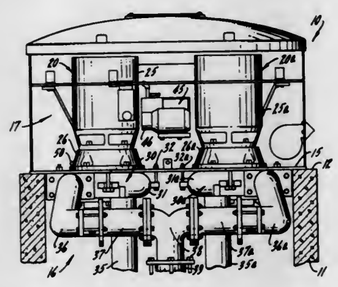
A dispensing system for use with a container of a product to be dispensed, in which the system includes a combination fluid pressure supply and regulator unit for detachable association with a dispenser unit received on a product container, in which the combination dispenser unit is removably locked in position engaging the dispenser unit associated with the container. The combination supply and regulator unit includes a pressure regulator unit and a discharge valve which is actuated to supply pressure to the container only when the supply and regulator unit is locked in position of use within the dispenser. Removing the supply and regulator unit closes the valve therein, and the combination unit may then be used in association with another similar container and dispenser. The dispenser includes a product discharge means including a dip tube, a product outlet, a valve for controlling product flow, and a valve for preventing escape of pressurizing fluid from the container.

3,558,011
FLOW CONTROL DEVICE WITH RESTRICTED TERMINAL DELIVERY
James A. Tracy, 1602 Gracewood Drive, Greensboro, N.C.
Filed Aug. 21, 1968, Ser. No. 754,203
Int. Cl. B65d *5/38*
U.S. Cl. 222—20 **8 Claims**



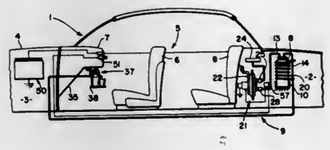
A control device for altering the delivery of fluid from a reservoir through a fluid dispenser in response to a generated signal decrease in fluid flow prior to delivery termination of a predetermined quantity of fluid to avoid motor overrun and computer inaccuracy. The device comprises a pressure sensitive capillary tube connected in parallel with the main solenoid operated valve passing fluid from the reservoir to the fluid dispenser.

3,558,012
PUMP STATION CONSTRUCTION
Frank G. Weis, Kansas City, Mo., assignor to Ecodyne Corporation, Chicago, Ill., a corporation of Delaware. by mesne assignments
Continuation-in-part of application Ser. No. 763,257, Sept. 27, 1968, now abandoned. This application Nov. 6, 1969, Ser. No. 874,426
Int. Cl. B67d *5/32*; **F04b** *41/06*
U.S. Cl. 222—54 **10 Claims**



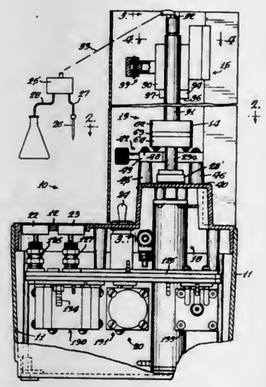
A pump station assembly for vertical shaft, centrifugal sewage pumps or the like. The assembly seats in a standard four-foot manhole with a lower wet section below a deck plate and an upper dry section above the deck plate. Attached to the underside of the deck plate are the volute, with enclosed impeller, intake and discharge nozzle of the pump. The motor, adapter and impeller can be quickly removed, as a single unit, for cleanup or seal replacement. The upper dry section includes the pump motor with a vertical shaft extending down through the deck plate to drive the impeller. A vacuum priming system mounted above the deck plate is utilized to start the pump. A thermostat controls a solenoid-operated valve to dump all liquid in the pump back into the lower wet section if the temperature of the liquid falls below a predetermined level.

3,558,013
FLUID DISPENSER ASSEMBLY FOR AUTOMOBILES
John C. Ponzo, 10508 Glenville Ave., Cleveland, and Joseph Tkach, 6481 Glenwillow Drive, North Royalton, Ohio
Filed May 6, 1968, Ser. No. 726,879
Int. Cl. B67d *5/08, 5/14*
U.S. Cl. 222—61 **9 Claims**



A fluid dispenser assembly for automobiles and the like including a diaphragm-type pump for dispensing the liquid from a container by compressed air. A control circuit prevents dispensing of the liquid until the ignition of the automobile is turned on.

3,558,014
AUTOMATIC PROPORTIONER
Orin Lew Wood, Murray; Gale H. Thorne, and William P. Davis, Salt Lake City, Utah, assignors to Bio-Logics, Inc., Salt Lake City, Utah, a corporation of Delaware. by mesne assignments
Filed Oct. 15, 1968, Ser. No. 767,709
Int. Cl. B67d *5/56*
U.S. Cl. 222—134 **17 Claims**



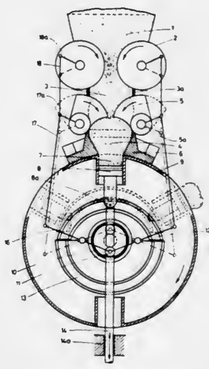
An actuator and control circuit for a standard syringe having calibration rods, including a first stop selectively engageable with one calibration rod and a second stop engageable with the other calibration rod so that the former stop can be moved out of the way of an abutment carried by the actuator permitting the actuator to drive the syringe and the abutment to the second stop, there also being provided a valve for selectively communicating the syringe with either a reagent conduit or a sample conduit with a control circuit for the actuator, valve and the movable stop which moves the movable stop into engagement with its associated calibration rod and drives the abutment toward the movable stop while the valve connects the syringe to the reagent conduit, and thereafter under manual control releases the movable stop, shifts the valve to a position connecting the syringe to the sample conduit and drives the actuator and abutment to the second stop, and thereafter in response to a manually operable delivery control retracts the actuator and maintains the valve in a position connecting the sample conduit to the syringe thereby discharging both the sample and the reagent through the sample conduit.

3,558,015
HIGH FLOTATION MATERIALS DELIVERY TRACTOR
Robert D. Hardesty, Route 1, Spangle, Wash.
Filed June 25, 1969, Ser. No. 836,446
Int. Cl. B60p *1/56*
U.S. Cl. 222—136 **10 Claims**



A high flotation materials delivery vehicle and tractor adapted to pull plural agricultural implements and having a compartmented tank effective to discharge both liquid and/or dry chemicals independently or in mixtures and in selected quantities, the operator being so placed as to conveniently operate the tractor, observe the towed implements and the chemical discharge.

3,558,016
AUTOMATIC DOUGH DISPENSING APPARATUS
Ludwig Beinhofer, Rugierstr. 11, Nuremberg, Germany
Filed Feb. 25, 1969, Ser. No. 801,999
Int. Cl. G01f *11/06*
U.S. Cl. 222—218 **9 Claims**

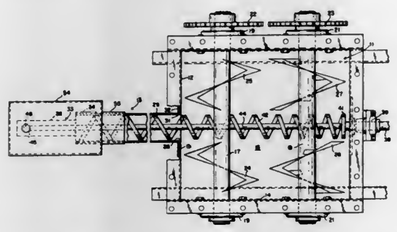


A dough dispensing apparatus in which the dough is fed intermittently downwardly by a feeding mechanism into the open ends of a plurality of cylinders which extend radially in an intermittently rotating horizontal drum and in each of which a cam-controlled plunger is slidable which in its retracted position determines the exact amount of dough which this cylinder may receive from the feeding mechanism when temporarily stopped underneath the discharge opening of the feeding mechanism, and which, when the drum is further rotated, ejects the dough from the respective radial cylinder.

3,558,017
MATERIAL FEED APPARATUS

Vahn J. Soojian, Pompton Lakes, and Richard H. Jackson, Glen Rock, N.J., assignors to Howe Richardson Scale Company, Clifton, N.J., a corporation of Delaware

Filed Apr. 1, 1968, Ser. No. 717,839
Int. Cl. B65g *33/08*
U.S. Cl. 222—342 6 Claims

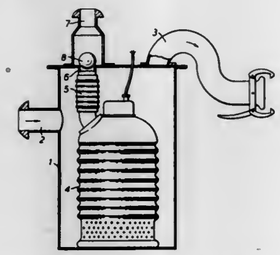


Particulate and particularly wet sticky loose material is dispensed from a receptacle containing a mass of the material by a rotating hollow feed screw conveyor in the form of a hollow coil structure rotated about its longitudinal axis, and a floating scraper rod extending longitudinally within the relatively rotating coil structure eliminates buildup of material within the screw and thereby prevents undesired reduction of the feed rate and eventual feed stoppage. The invention insures a substantially uniform feed rate of the material.

3,558,018
WATER POCKETS, NAMELY RESERVOIRS FOR STORING WATER RECEIVED FROM UNDERGROUND WATER PUMPING EQUIPMENT

Heinrich Hudig, Celle-Altencelle, Germany, assignor to Firma Hudig K G,, Celle-Altencelle, Germany, a German body corporate

Filed Nov. 25, 1968, Ser. No. 778,488
Claims priority, application Germany, June 29, 1968, H63190
Int. Cl. F04b *23/04;* B17d *5/110*
U.S. Cl. 222—385 1 Claim



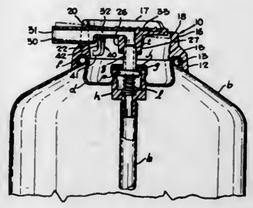
A water pocket for use in connection with the removal of water from a well includes a galvanized tank having an inlet and an air outlet disposed above the inlet. A submerged sludge pump serves to pump water through an additional outlet having a nonreturn valve therein. The tank can be mounted on the top of a well casing.

3,558,019
UNITARY NOZZLE, ACTUATOR AND GUARD FOR PRESSURIZED DISPENSERS

Richard C. Hug, St. Louis, Mo., assignor to Clayton Corporation, St. Louis, Mo., a corporation of Missouri

Filed Nov. 14, 1968, Ser. No. 775,780
Int. Cl. B65d *83/00*
U.S. Cl. 222—402.22 3 Claims

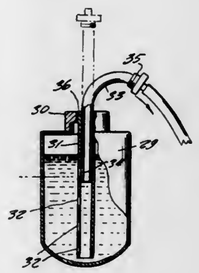
A one-piece nozzle, actuator and guard for pressurized dispensing containers is especially adapted for use with tilt-opening valves. A spout actuator portion has a central inlet underlying a disc part, and has a forward-extending spout. This passes freely over an integral circular wall portion which mounts onto the container rim. These two portions are connected by a pair of flexible leg portions, which extend supporting downward from the disc and outward to the wall portion. Their flexibility permits not only tilting of the spout actuator portion with the valve stem, but also takes up any misalignment between the stem and the container rim.



3,558,020
SYPHON LIQUOR FLASK

Daniel D. Russell, 260 W. 123rd St., New York, N.Y. 10027

Filed Nov. 19, 1968, Ser. No. 776,880
Int. Cl. B67d *3/18*
U.S. Cl. 222—416 1 Claim

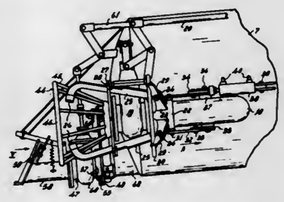


A pivotable liquor flask having means to allow drinking therefrom by positioning the flask at a distance from a drinking person, the device comprising a flask into the upper end of which a hose is inserted downward into the flask so to allow drawing of the liquor content therefrom by a syphon action.

3,558,021
SPREADING IMPLEMENTS WITH INLET VALVE OPERATOR

Ary Van Der Lely, 10, Weverskade, Maasland, Netherlands

Filed Nov. 1, 1968, Ser. No. 772,509
Claims priority, application Netherlands, Nov. 3, 1967, 6,714,944
Int. Cl. B67d *3/00*
U.S. Cl. 222—483 22 Claims

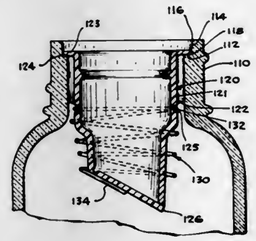


This invention relates to implements for the spreading of liquid and semiliquid materials, such implements comprising a mobile container with an inlet port for introducing material to be spread into the container. The material may, for example, be liquid manure. The inlet port has a valve closure member which is operative by a remote control. An outlet with a closure member is also operative by the remote control. A hydraulic system can be connected to a coupling member which connects the inlet with a supply duct.

3,558,022
CONTAINER SAFETY CLOSURE

Walter J. Zytko, Walnut Creek, Calif., assignor to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

Continuation-in-part of application Ser. No. 647,544, June 20, 1967, now abandoned. This application June 12, 1968, Ser. No. 747,403
Int. Cl. B65d *5/72*
U.S. Cl. 222—490 5 Claims

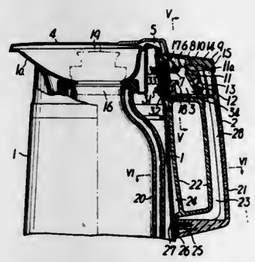


A safety closure insertable within the neck of a container and depending a short distance into the container to be used in conjunction with a dropper-dispenser for dispensing liquids from the container. The safety closure is sealed to the container with a flange compressed by the container, the closure having sidewalls depending from said flange along the neck of the container and terminating in a bottom opening and a movable closure element urged into a closed position by spring action.

3,558,023
LID ACTUATING DEVICE

Kikuchi Yoshito, Nishinomiya, Japan, assignor to Tiger Vacuum Bottle Industrial Company, Limited, Kadoma, Osaka Prefecture, Japan

Filed May 6, 1969, Ser. No. 822,265
Claims priority, application Japan, May 8, 1968, 43/38,026;43/38025
Int. Cl. B65d *47/00, 25/28*
U.S. Cl. 222—556 10 Claims

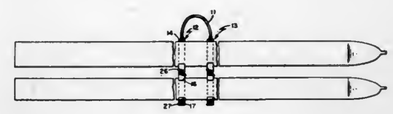


A container is provided with a lid supported on the container case in the manner of a lever and a press member pivoted to an upper end portion of a handle. The press member has two stepped portions to be brought into engagement with the end of lever on the lid. When the press member is depressed in normal operation, the lid is opened to such an extent that the contents can be poured out and when further depressed, the press member brings the lid to full-opened position.

3,558,024
CARRYING DEVICE FOR SKIS

Stephen W. Walsh, 671 Moody St., Waltham, Mass. 02154

Filed Nov. 20, 1968, Ser. No. 777,238
Int. Cl. A45f *5/10*
U.S. Cl. 224—45 1 Claim

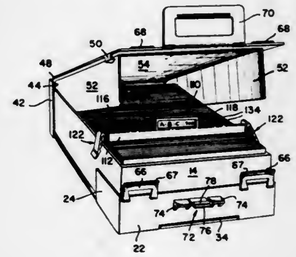


The invention contemplates a carrying device for a pair of skis which is adapted to secure the skis side by side in a common plane. The device is comprised of a pair of clamping assemblies which are mounted on either side of the center of balance of the skis. The upper half of each clamping assembly is formed in two parts having shoulders which prevent the skis from moving edgewise. A cord which serves as a handle is strung between the assemblies.

3,558,025
CARRYING CASE

Morton Blake, 140-17 84th Drive, Jamaica; John S. Hill, 71 Winthrop Drive, Peekskill; Warren R. Crane, 46 S. Magnolia St., Pearl River, N.Y., and Stefan A. Bloom, 1 Horsehill Road, Cedar Knolls, N.J.

Filed May 28, 1969, Ser. No. 828,689
Int. Cl. A45c *11/00*
U.S. Cl. 224—49 25 Claims



The present invention relates to a carrying case for a partially filled or full box of cards and its adaptability to be carried with other similar cases. The case comprises a top wall and a bottom wall being hingedly connected to a rear plate and each having a front face adapted to be fastened together about the box of cards disposed between the upper and lower plates. A plurality of handles are hingedly connected to the front face of the carrier and adapted to be used in conjunction with at least one abutment means on the front face of the carrier so that one, two or three carrying cases may be carried at one time. A separator connectable within the card-carrying box for separating various categories or holding a multiplicity of cards in one position adjacent an empty portion in the box.

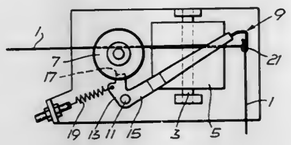
3,558,026
YARN FEEDER

Karl Isac Joel Rosen, 39 Villagatan 41, Ulricehamn, Sweden

Filed Sept. 24, 1968, Ser. No. 762,073
Claims priority, application Germany, Sept. 25, 1967, 1,635,902
Int. Cl. B65h *23/18*
U.S. Cl. 226—39 2 Claims

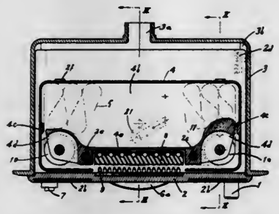
A yarn feeder with a friction roller for the yarn, the friction roller being driven with a peripheral speed larger than

the yarn speed, which comprises an axle, and a friction roller rotatably mounted on the axle and adapted to loop yarn once about the friction roller. Brake means are provided which have an adjustable braking force. Means are arranged for



sensing the yarn tension following the friction roller, and the sensing means is coupled with the brake means such, that an increase of the yarn tension causes a reduction of the braking effect.

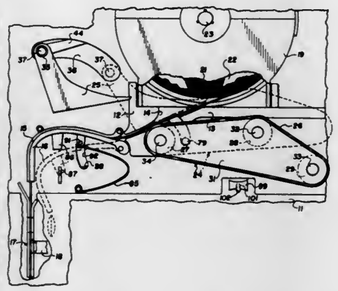
3,558,027
STATION-SELECTOR MAGAZINE
Jean Jullien-Davin, Valence, France, assignor to Crouzet, Paris, France, a French Company
Filed Jan. 10, 1969, Ser. No. 790,244
Claims priority, application France, Jan. 18, 1968, 136,592
Int. Cl. G11b *15/29*
U.S. Cl. 226—90 **7 Claims**



Station-selector magazine which is suitable for use on board aircraft for storing the coordinates of a plurality of characteristic stations marking a flight path for the utilization of said coordinates in the digital computer of a navigation system, said coordinates being indicated on a recording medium which is capable of moving under the action of transfer means in front of visual observation means and photoelectric reading means and which can thus be read visually and photoelectrically, wherein said magazine comprises a casing which is intended to be fixed on a support such as the instrument panel of an aircraft, a removable drawer which is housed within said casing and capable of being locked in the utilization position being provided at the front end with photoelectric reading means and at the bottom with positioning means for receiving a loading unit, said unit being adapted to contain on the one hand the coordinate recording medium and on the other hand means for transferring said recording medium manual-control means mounted within a bottom compartment of said drawer and serving to actuate the means for transferring the coordinate recording medium which is incorporated in said loading unit.

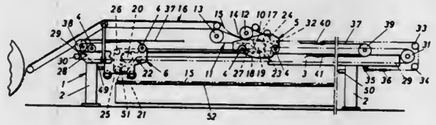
3,558,028
CONTROL DEVICE FOR SELF-THREADING MOTION PICTURE PROJECTOR
Leslie J. Bunting, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
Filed Apr. 28, 1969, Ser. No. 819,769
Int. Cl. G03b *1/58*
U.S. Cl. 226—91 **4 Claims**

A self-threading cartridge loaded motion picture projector is equipped with a simple mechanical control device which latches the film stripping and threading elements of the projector in their respective operative positions. When the leading end of the film has entered the film gate and has been engaged by a film-advancing member, the control device is unlatched in response to the resulting tensioning of the film



between the gate and the supply reel, thereby causing the stripping and threading elements to be returned automatically to their respective inoperative positions so that the film can be projected.

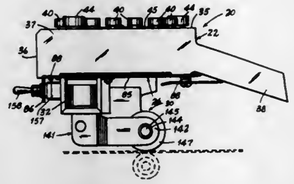
3,558,029
MACHINE FOR CROSSWISE DEPOSITION OF CARDED WEBS AND A CARDED WEB MANUFACTURED BY MEANS OF THE MACHINE
Bernt Hugo Manns, Halmstad, Sweden, assignor to Nordiska Maskinfilt Aktiebolaget, Halmstad, Sweden, a corporation of Sweden
Filed June 3, 1969, Ser. No. 829,992
Claims priority, application Sweden, June 7, 1968, 7661/68
Int. Cl. B65h *54/76*
U.S. Cl. 226—108 **4 Claims**



A machine for crosswise deposition of carded webs and the like which are advanced on a feeder belt onto a continuously driven discharge belt. This latter belt is positioned below the feeder belt and travels in a direction essentially at right angles to the direction of movement of the feeder belt. The machine also comprises two conveyor belts interposed between the feeder belt and the discharge belt and these two belts are driven at the same speed and at a constant tension. Means are provided to advance the carded web on these conveyor belts under forced guidance such that said carded web is deposited on the discharge belt evenly and without formation of folds.

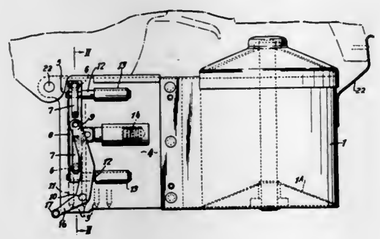
3,558,030
CONTROL MECHANISM FOR ELECTRICAL TAPE-DISPENSING MACHINE
Herbert W. Hempel, Belleville, and Forrest G. Hill, East St. Louis, Ill., assignors to Marsh Stencil Machine Company, Belleville, Ill., a corporation of Illinois
Filed Aug. 22, 1968, Ser. No. 754,600
Int. Cl. B65h *17/22*
U.S. Cl. 226—135 **12 Claims**

A novel tape-length selector or control mechanism for electrical tape-dispensing machines comprising a head cover casting supporting on the top a plurality of tape-length selector pushbuttons disposed in a circle, a novel 16-pole switch supported beneath said casting for selective actuation by said pushbuttons, a diode logic board or diode selective switching board disposed beneath and secured to the casting supporting the said switch in cooperative relation for selective energization thereby, a computer board assembly supported beneath the diode logic board including a binary multistage counter which is conditioned for counting by said diode logic board upon selective energization thereof, a normally open reed-type pulse switch electrically connected with the



counter, a measuring wheel rotatably engaged by fed tape, a permanent magnet mounted for rotation by the measuring wheel adapted to close the pulse switch twice per revolution of the measuring wheel, a transformer for supplying low voltage to a rectifier for direct current to the counter and diode logic board, an on-off and random operation switch, and integrating circuitry.

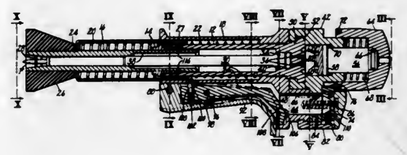
3,558,031
NAIL AND LIKE MAGAZINES
Malcolm Edwin Hillier, Deal, England, assignor to Gaston E. Marbaix Limited, Basingstoke, England, a British company
Filed Dec. 4, 1967, Ser. No. 687,853
Claims priority, application Great Britain, Dec. 7, 1966, 54725/66
Int. Cl. B27f *7/06*
U.S. Cl. 227—7 **13 Claims**



There is described feed mechanism for a pneumatic fastener gun, in which an actuator is adapted to contact the surface of the workpiece and thus to operate the intermittent feed of nails which are assembled like a belt and stored in a magazine.

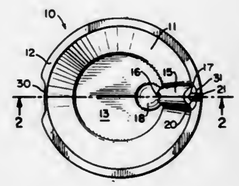
3,558,032
HAMMER IGNITION EXPLOSIVE TOOLS WITH SAFETY MEANS
Richard W. Oefinger, Shelton, Conn., assignor to U S M Corporation, Flemington, N.J., a corporation of New Jersey
Filed June 12, 1969, Ser. No. 832,751
Int. Cl. B25c *1/14*
U.S. Cl. 227—8 **10 Claims**

When employed for driving fasteners or the like the tool has a muzzle end yieldably engageable with the work and a hinged housing carrying an element for striking the charge. A barrel breech end receives the charge when the housing is open and holds the charge for ignition when the housing is closed. Safety mechanisms controlled by a hand grip releasably locks the housing in operative position relative to



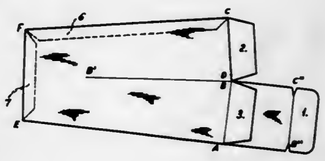
the barrel and prevents firing of the charge unless the muzzle end is first thrust against the work by means of the grip.

3,558,033
DISPOSABLE DRINKING CUP
Louis D. Leeds, 630 Park Ave., New York, N.Y. 10021
Filed Apr. 22, 1969, Ser. No. 818,211
Int. Cl. B65d *3/00, 1/08, 5/00*
U.S. Cl. 229—7 **9 Claims**



A beverage container of the type having a body member and a base member at one extremity includes a rigid, telescoping drinking straw secured to the inside surface of the body; to enable the nesting of a plurality of such containers, the body may be fashioned in a frustoconical configuration and have two longitudinal recesses, one on the inside surface which accommodates the telescoping straw and the other on the outside surface which conforms complementally to the straw of a second container upon nesting; alternatively, the container may include a rigid cover fixedly secured to the body which cover includes a separable portion that is oriented to register with the telescoping straw to permit its extension upon removal of the separable portion.

3,558,034
PRISMATIC PACKAGE OR CONTAINER
Emmanuel A. Benachi, Geneva, Switzerland, assignor to Cartorhone S.A., Geneva, Switzerland, a company of Switzerland
Filed Nov. 8, 1968, Ser. No. 774,460
Claims priority, application Switzerland, Nov. 10, 1967, 15765/67
Int. Cl. B65d *5/00*
U.S. Cl. 229—8 **4 Claims**

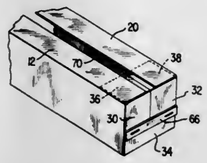


A substantially prismatic package has one end closed by a lid with a flap having the polygonal shape of the base of the prism and the other extremity of the prism being formed by linking along two edges of two sides of the prism.

3,558,035
IMPERFORATE CARTON WITH INTEGRAL HANDLES

Douglass M. Stegner, Baltimore, Md., assignor to Baltimore Box Company, Baltimore, Md., a corporation of Virginia

Filed June 3, 1968, Ser. No. 734,157
Int. Cl. B65d 5/22, 5/46
U.S. Cl. 229—33 5 Claims

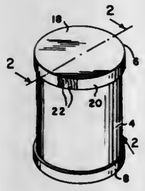


An improved carton which includes a one-piece bottom wall and carrying handles which do not require openings communicating with the interior thereof, and the blank from which the carton is assembled. The carton is fabricated from a unitary blank which includes a series of successively hingedly connected parallelogram panels which form the bottom wall, a pair of opposed side walls, and the top wall. The panel forming the bottom wall has a given width, while the top wall is formed of two panels, each of a width determined by considerations of whether they overlap, gap, or just meet. The sidewall forming panels each have a first flap panel at each end thereof which fold inwardly to form a pair of opposed end walls. At each end of the bottom wall-forming panel is a second flap panel which fold inwardly to overlie the first flap panels and is secured thereto. The upper portion of the second flap panel can be folded outwardly upon itself and secured thereto to form handles. The first flap panels each have a third flap panel hingedly attached thereto which fold inwardly to form top securing flaps.

3,558,036
CLOSURE FOR CONTAINERS

John M. DeVoe, Nashville, Tenn., assignor to United States Tobacco Company, New York, N.Y., a corporation of New Jersey

Filed Oct. 25, 1968, Ser. No. 785,429, Division of Ser. No. 601,136, Dec. 12, 1966, Patent No. 3,408,902.
Int. Cl. B65d 43/00, 5/64
U.S. Cl. 229—43 3 Claims



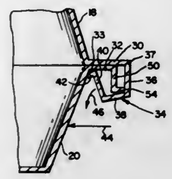
A closure for a container comprising metallic foil and paper which are bonded together to form the closure. The closure is formed in a punch press to form a number of ridges in the foil which are forced into the mating surface of dampened paper. After the paper dries and shrinks, the ridges are intimately interlocked into the fibers of the paper.

3,558,037
LOCKING DEVICE FOR EGG CARTONS

James M. Andrews, Pittsburgh, Pa., assignor to Sinclair-Koppers Company, Pittsburgh, Pa., a partnership of Delaware

Filed May 9, 1969, Ser. No. 823,331
Int. Cl. B65d 85/32, 1/24
U.S. Cl. 229—44 8 Claims

A locking device for an egg carton having an integrally hinged tray and cover. The locking device includes a U-shaped and longitudinally extending bar having a first leg hinged to the front of a protruding lip on the bottom of the cover's front wall and extending downwardly in front of the tray when the bar is in locked position; a bottom leg extending rearwardly from the bottom of the first leg; and a second

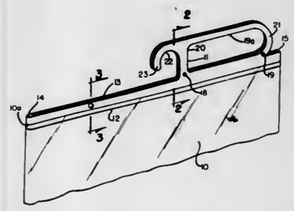


leg extending upwardly from the inner edge of the bottom leg. The carton is locked shut by pivoting the bar under a protruding lip on the top of the tray's front wall and wedging the free longitudinal edge of the bar's second leg into the angular channel between the tray's front wall and its protruding lip.

3,558,038
COMBINED HOOK AND HANDLE

Daniel E. Gelles, Kerhonkson, and Seymour Kamins, Oceanside, N.Y., assignors to CTP Industries Inc., Brooklyn, N.Y., a corporation of New York

Filed Dec. 23, 1968, Ser. No. 786,242
Int. Cl. B65d 33/06
U.S. Cl. 229—54 10 Claims



A reusable plastic bag and particularly a combined closure and carrying means for such a bag. The closure and carrying means comprises two elongate strip portions which are heat-sealed to respectively opposing walls of the bag mouth, and with fastening or locking means on the adjacent faces to permit sealing of the mouth of the bag. The closure and carrying means comprises two handgrip defining bow portions, each of which is joined with, and extends laterally outward of a respective one of the elongate strips, and are adapted to overlie each other when the bag mouth is closed; however, the two bow portions are not centered along the length of the respective elongate strips, but are rather positioned off-center. Integrally formed with each bow portion is a hook which is formed as an elongation of the upper part of each bow portion, and each hook is centrally disposed relative to the elongate strips to permit each bag to be hung in a balanced position from a rod or the like.

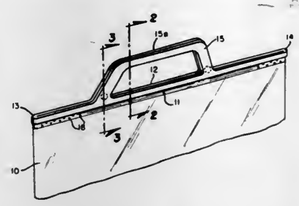
3,558,039
CARRYING BAG

John Schmidt, Copenhagen, Denmark, assignor to CTP Industries, Inc., New York, N.Y., a corporation of New York

Filed Aug. 7, 1968, Ser. No. 750,791
Int. Cl. B65d 33/06
U.S. Cl. 229—54 3 Claims

A reusable plastic bag formed of a thin film thermoplastic material and with a combined closure and carrying means also formed of thermoplastic material which is secured to the bag wall at the open mouth thereof. The thin film material of

the bag walls, and the thermoplastic material of which the closure and carrying means is formed, may be made of different type thermoplastic materials, which ordinarily do not effectively heatdseal to each other. To effect securing of the carrying and closure means to the bag walls, the carrying and

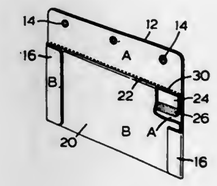


closure means is provided with elongate strip portions, which have integrally molded thereon a large number of pointed projections, or knurls so that when heat is applied along the joining surfaces of the bag walls and the thermoplastic strips, the ends of the pointed projections or knurls are deformed to thereby secure the thin film to the elongate strips.

3,558,040
TWO-WAY ENVELOPE

Lloyd H. Krueger, 35 Widdicombe Hill, Apt. 604, Weston, Ontario, Canada

Filed May 26, 1969, Ser. No. 827,768
Claims priority, application Canada, May 25, 1968, 020,950
Int. Cl. B65d 27/06
U.S. Cl. 229—73 1 Claim



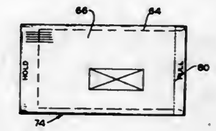
A two-way envelope that is particularly suitable for use with automatic envelope stuffing, or inserting equipment. The envelope includes a pair of panels joined by a common fold line which forms the bottom edge of the envelope. A foldable closure flap extends from the edge of each panel which is opposite said fold line. One of the panels has a pair of side flaps which are sealed to the other panel to keep the two panels in opposed relation. Both closure flaps are provided with adhesive, but one of the closure flaps initially is tucked into the envelope, without its adhesive being activated, and the envelope is sealed by the other closure flap. After the envelope is opened, it may be resealed by activating the adhesive of said one closure flap and applying it to the opposite panel.

3,558,041
ENVELOPE AND DETACHABLE MESSAGE FORM

Eugene J. Buescher, 2229 Entity Ave., St. Louis County, Mo.

Original application June 26, 1967, Ser. No. 648,894, now Patent No. 3,442,185. Divided and this application Dec. 4, 1968, Ser. No. 803,499
Int. Cl. B65d 27/34
U.S. Cl. 229—85 1 Claim

A method for producing mailable materials comprising printing messages on continuous data process forms, separating the layers of the forms into individual sheets containing a message, positioning the individual sheets in substantially complete alignment, cutting said sheets to produce an unformed material and forming unformed material into a mailable container. Another aspect of the invention comprises an envelope formed and perforated in a manner to enable the detachment of a part of the envelope and removal of a

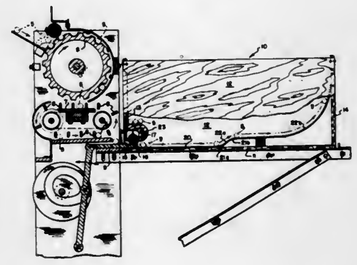


message which was originally an integral part of the envelope.

3,558,042
CIGAR ACCUMULATOR TRAY

Vernon Corbin Stant, and Jasper Dwight Caldwell, Richmond, Va., assignors to The American Tobacco Company, New York, N.Y.

Filed Apr. 30, 1969, Ser. No. 820,597
Int. Cl. B65d 85/12
U.S. Cl. 232—1 4 Claims

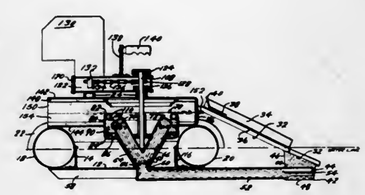


A cigar accumulator tray has a design such that it can be bottom loaded adjacent one end where an entrance slot is provided for sidewise forced entrance of one cigar at a time under and past an axially aligned resilient roll positioned inside the tray adjacent the slot and thence upwardly along a stepped bottom wall.

3,558,043
ORE CONCENTRATOR

Harry E. Smith, 10114-115th Avenue S.E., and Leo A. Smith, 2216 Dayton Avenue N.E., Renton, Wash. 98055

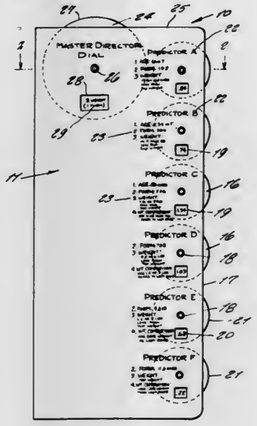
Continuation-in-part of application Ser. No. 407,629, Oct. 30, 1964, now abandoned. This application Sept. 26, 1968, Ser. No. 777,938
Int. Cl. B04b 11/00
U.S. Cl. 233—21 7 Claims



This invention is a centrifugal ore concentrating vessel mounted for rotation about an axis and provided with the plurality of feed means which extend through the base of the vessel and are rotatable with the rotation of the vessel. The feed means define a common feed inlet opening below the base and plural discharge openings within the vessel. Further,

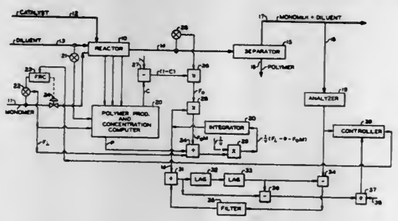
this centrifugal ore concentrating vessel may be used to separate solids from liquids so as to purify the liquid.

3,558,044
RACE COMPUTER
Ronald Hitchings, P.O. Box 5715, Carmel, Calif. 93921
Filed Mar. 24, 1969, Ser. No. 809,714
Int. Cl. G06c *3/00*
U.S. Cl. 235—88 **3 Claims**



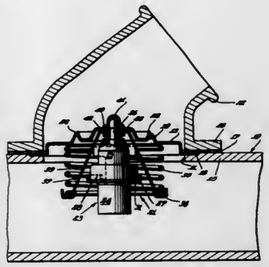
A calculator for selecting a racehorse in a horserace, the calculator comprising a series of predictor dials each of which is assigned for a particularly identified age, form and weight of horse, and some of which also are for a particular weight comparison; each dial giving a numerical figure result; and the calculator also including a single master director dial which is set for each operation identified thereby.

3,558,045
CONTROL SYSTEM FOR CHEMICAL REACTIONS
Dexter E. Smith, and Elmer C. Miller, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Substitute for application Ser. No. 618,069, Feb. 23, 1967, now abandoned. This application Mar. 22, 1968, Ser. No. 715,407
Int. Cl. G05b *17/00*; **C08d** *3/04*
U.S. Cl. 235—151.12 **10 Claims**



A chemical conversion process is controlled by calculating the concentration of a reactant within the reactor, such as by means of heat balance computations. The actual concentration of this reactant in the reactor effluent, or in the reactor, is measured by an analyzer. The calculated concentration and the measured concentration are compared, and the resulting signal is employed to control a reaction variable, such as feed rate of a reactant.

3,558,046
THERMOSTAT
Douglas E. Kelly, Northfield, Ill., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed Oct. 22, 1968, Ser. No. 769,531
Int. Cl. F01p *7/16*
U.S. Cl. 236—34 **5 Claims**



A water flow control thermostat having an orifice closing poppet retained in a closed position by spring means acting against a brace. The brace and poppet are attached to the movable arm of a heat-responsive expansible element by means of a fusible low-melting point metal rivet. Movement of the arm in response to temperature increase compresses the spring and opens the poppet. Overheating of the system results in melting of the fusible rivet, releasing the brace and causing the thermostat to fail in a full open position.

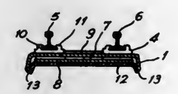
3,558,047
ENERGY CONVERSION METHOD
Hans Wolfgang Nuernberg, and Gerhard Wolff, Juelich, Germany, assignors to Kernforschungsanlage Juelich G.m.b.H., Juelich, Germany
No Drawing. Filed Feb. 15, 1968, Ser. No. 705,606
Claims priority, application Germany, Feb. 17, 1967, K61481
Int. Cl. F24d *7/00*
U.S. Cl. 237—12 **12 Claims**

The energy obtained by operation of a high temperature nuclear reactor is utilized by heating in the operating high temperature nuclear reactor a heat exchange medium to a sufficiently high temperature so that by indirect heat exchange between the thus-heated heat exchange medium and a suitable reactant an endothermic chemical reaction of the reactant or reactants may be maintained. Such endothermic reaction is carried out and thereby a reaction product is formed which may be reconverted into the initial reactant or reactants by being subjected to an exothermic reaction. Whenever heat is required, the reaction product is subjected to exothermic reaction in indirect heat exchange with a medium which is to be heated. Thereby heat derived from the operation of the high temperature nuclear reactor can be made available at any desired time by carrying out the exothermic reaction under simultaneous reconversion of the reaction product into the reactant or reactants, and the latter may then be again subjected to the endothermic chemical reaction by indirect heat exchange with the heat exchange medium which has been heated in the high temperature nuclear reactor.

3,558,048
MANUFACTURE OF TRACKS FOR ELECTRIC TOY RAILWAYS
Francisco Roig Bach, San Felix 2, Sabadell, Barcelona, Spain
Filed Oct. 22, 1968, Ser. No. 769,599
Claims priority, application Spain, Nov. 2, 1967, 346,698
Int. Cl. A63h *19/30*
U.S. Cl. 238—10 **6 Claims**

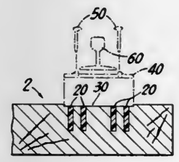
The present invention relates to improvements in the manufacture of tracks for electric toy railways wherein a metallic piece is die-cut to show protruding fins imitating railway sleepers which are supported on dielectric pieces very similar in their looks to actual concrete blocks, these

dielectric pieces serving to provide an electrical insulation between the rails and the metallic fins and to permit electri-



cal connection of the toy railway network to power supply lines on any number of electric phases.

3,558,049
REINFORCED WOOD RAILROAD TIE
Charles J. Pennino, Monroeville, Pa., assignor to Koppers Company, Inc., a corporation of Delaware
Continuation-in-part of application Ser. No. 710,105, Mar. 4, 1968, now abandoned. This application Jan. 22, 1969, Ser. No. 793,089
Int. Cl. E01b *2/00*, *3/26*, *9/42*
U.S. Cl. 238—29 **6 Claims**

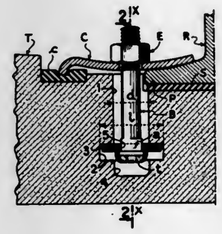


A wooden structure having a load-bearing surface for supporting a load is reinforced with reinforcing members disposed beneath the load-bearing surface and embedded in the wooden structure. The reinforcing members are composed of a nonshrinking material having a compressive strength greater than the wood and bonded to the wood.

ERRATUM

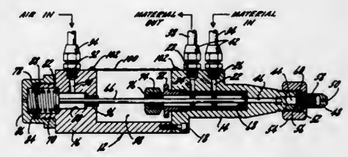
For Class 238—349 see:
Patent No. 3,558,060

3,558,050
RAIL SUPPORT DEVICE
Roger Paul Sonneville, 5 Rue Maurice Ravel 92, Saint Cloud, France
Filed Oct. 18, 1968, Ser. No. 768,689
Claims priority, application France, Oct. 31, 1967, 126493
Int. Cl. E01b *9/30*
U.S. Cl. 238—349 **8 Claims**



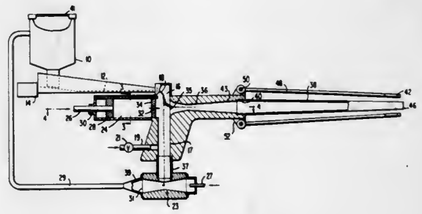
Railway track support device wherein the tie has a substantially vertical passageway for receiving the head and a part of the shank of a tightening-down bolt of rail-fastening means and a substantially horizontal passageway intersecting the vertical passageway. An elastically yieldable metal strip is interposed between said head and the upper face of the horizontal passageway. This strip bears on said upper face when a nut is tightened on said bolt.

3,558,051
MULTI-MATERIAL SPRAY GUN, SPRAY COATING SYSTEM AND METHOD OF QUICKLY CHANGING THE MATERIAL BEING SPRAYED
Jay H. Strickler, Shaker Heights, and Richard C. Watson, Mayfield Heights, Ohio, assignors to Inland Steel Company, Chicago, Ill., a corporation of Delaware
Filed Nov. 2, 1967, Ser. No. 680,183
Int. Cl. B05b *17/00*
U.S. Cl. 239—1 **6 Claims**



A multimaterial spray gun characterized by its ability to quickly change from one material to another by spraying through a single nozzle which includes a body having *n* chambers each adapted to receive respective different ones of *n* preselected materials, a common discharge nozzle having a spray passage therethrough, means coupling the spray passage to each of the *n* chambers and valves for selectively opening and closing the coupling means, a spray coating system using the spray gun wherein the material being sprayed utilizes a part of the system while another portion of the system is simultaneously being flushed to remove the previously sprayed material and a method for quickly changing from one material being sprayed to another.

3,558,052
METHOD AND APPARATUS FOR SPRAYING ELECTROSTATIC DRY POWDER
John P. Dunn, Elmira, N.Y., assignor to F.I.N.D. Inc., Elmira, N.Y., a corporation of New York
Filed Oct. 31, 1968, Ser. No. 772,320
Int. Cl. B05b *5/02*
U.S. Cl. 239—3 **19 Claims**

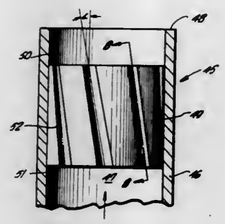


Dry nonconductive powder passes from a hopper by means of a vibrating plate through an adjustable, nonclogging eductor and is directed by means of a current of air issuing through a rectangular orifice from a variable volume plenum chamber into a venturi. The powder particles pass into the entrance of the venturi in a stream of air having a rectangular flow pattern or cross section and from the venturi through a discharge nozzle and from the discharge nozzle onto a substrate to be coated. Corona wires are located in the proximity of the issuing end of the discharge nozzle so as to charge the powder particles in order to direct them onto a substrate. A positive draft is maintained downstream from the venturi entrance and serves to pick up excess powder particles which are pneumatically conveyed back to the feed hopper.

3,558,053
AERATING LIQUID DISCHARGE NOZZLES

John O. Hruby, Jr., Burbank, Calif., assignor to Rain Jet Corporation, Burbank, Calif., a corporation of California

Continuation-in-part of application Ser. No. 691,111, Dec. 8, 1967, now abandoned, which is a continuation-in-part of application Ser. No. 492,389, Oct. 4, 1965, now abandoned.
This application Dec. 9, 1968, Ser. No. 784,541
Int. Cl. B05b 17/08
U.S. Cl. 239—17 12 Claims

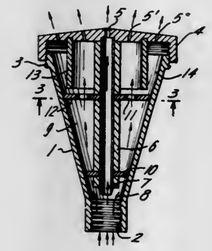


A family of aerating liquid discharge nozzles, each of which has the feature that it contains no moving parts and includes a hollow body defining a liquid inlet at one end and an outlet opening at the other end. The body has an internal chamber arranged in communication with both the inlet and outlet ends of the body. A plug, having substantial length between opposite end surfaces, is disposed across the chamber adjacent the body outlet end and defines constricted liquid outlet means from the body. The body outlet opening has an area greater than the area of the liquid outlet means defined by the plug.

3,558,054
ORNAMENTAL SPRAY HEAD ASSEMBLY FOR OBTAINING VARIOUS FLOW PATTERNS

Christian Ragot, 5, Rue Bouvaist F.70, Vesoul, France

Filed July 25, 1968, Ser. No. 747,696
Claims priority, application France, July 24, 1967, 115392
Int. Cl. B05b 17/08
U.S. Cl. 239—17 8 Claims

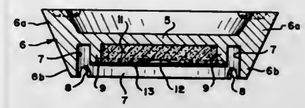


An ornamental spray head assembly is disclosed for obtaining a variety of different flow patterns. The spray head assembly comprises a plurality of compartments each in communication with different spray orifices and means are provided for sequentially and cumulatively providing fluid communication between the compartments to obtain various flow patterns. The spray orifices are located in a spray head which is manually rotated to obtain the desired flow pattern.

3,558,055
SPACE DEODORIZER AND THE LIKE

Samuel Storchheim, Forest Hills, N.Y., assignor to Alloys Research & Manufacturing Corporation, Jamaica, N.Y., a corporation of Delaware

Filed Oct. 15, 1968, Ser. No. 767,712
Int. Cl. A61l 9/04
U.S. Cl. 239—54 4 Claims

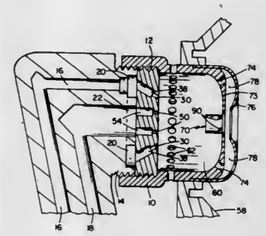


A device for imparting deodorizing vapors or the like to the ambient atmosphere comprises a sintered aluminum powder shape the top and side portions of which are substantially nonporous and the interior portion of which is porous and in fixed sintered contact with the undersurface of the top portion, the side portion having openings which permit escape of volatilized deodorant or the like from entrainment in the porous interior portion to the ambient atmosphere.

3,558,056
STREAMING NOZZLE

Nathaniel Hughes, Beverly Hills, Calif., assignor to Energy Sciences, Inc., El Segundo, Calif., a corporation of California

Filed Nov. 22, 1968, Ser. No. 778,200
Int. Cl. B05b 3/14
U.S. Cl. 239—102 7 Claims

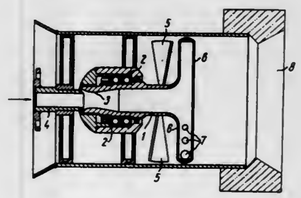


Imploding a stream of compressible fluid under pressure at the outlet of a supersonic nozzle sculpted in boundary layer.

3,558,057
TURBINE BURNER

Rustam Berovich Akhmedov, Massiv Chilanzar, Kvartal 9, dom 22, kv.55, and Faizulla Karimovich Rashidov, Massiv Chilanzar, Kvartal 9, dom 39, kv.30, Tashkent, U.S.S.R.

Filed July 11, 1968, Ser. No. 744,128
Int. Cl. B05b 3/06
U.S. Cl. 239—261 4 Claims



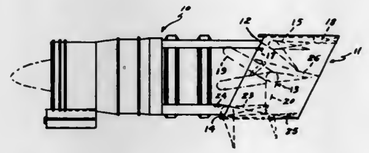
A turbine burner including a housing in which is journaled a hollow shaft, which shaft is provided with a longitudinal

channel in the form of a venturi tube. A fixed gas inlet manifold is supported in the housing and extends into the converging section of the venturi tube and is spaced therefrom. A perforated exhaust manifold is fixed on the hollow shaft in communication therewith, through which perforations the gas is exhausted and directed outwardly into the housing for imparting a torque onto the hollow shaft so that the hollow shaft is rotated thereby.

3,558,058
THRUST VECTORABLE SUPERSONIC NOZZLE

Dean J. Lennard, Cincinnati; Donald Frederick Keck, Fairfield, and Alfred Lingen, Cincinnati, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force

Filed Mar. 14, 1969, Ser. No. 808,047
Int. Cl. B64c 15/04
U.S. Cl. 239—265.39 10 Claims

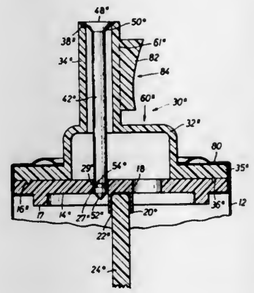


A transonic/supersonic thrust vectorable jet engine nozzle having a variable geometry exhaust nozzle flap arrangement adjustable between horizontal and vertical flight modes of operation, and combined into a single component permitting the location of the exhaust nozzle and thrust diverter at the same location relative to the center of gravity of the aircraft.

3,558,059
AUTOMATICALLY CLOSING VALVE FOR PRESSURE VESSELS CONTAINING PASTES OF LIQUIDS

Artur Pfaff, 55 Hohenzollernring 5, Cologne, and Richard Friedrich, 5 Waldstrasse 5471, Wassenach, Andernach, Germany

Filed Dec. 23, 1968, Ser. No. 785,975
Int. Cl. B05b 7/32; F23d 13/04
U.S. Cl. 239—337 7 Claims

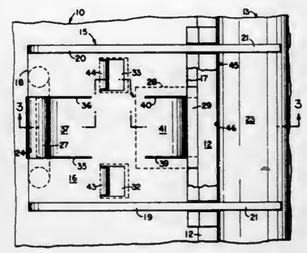


The invention relates to an automatically closing valve for pressure vessels containing pastes or liquids, which valve consists of a valve seat which is constructed on a nozzle consisting of flexible material, and by a rigidly mounted valve piston consisting of inflexible material and extending through the nozzle, together with a valve disc cooperating with the valve seat, the nozzle and the piston being so disposed that the valve seat and the valve disc are pressed against one another in the resting position owing to the flexibility of the nozzle.

3,558,060
RAIL FASTENER

Maurice J. Crespo, 17438 Via Corona, San Lorenzo, Calif.

Filed Apr. 21, 1969, Ser. No. 817,643
Int. Cl. E01b 9/34, 9/48
U.S. Cl. 238—349 8 Claims

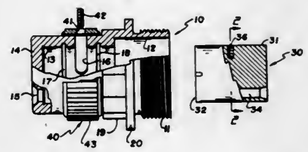


Apparatus for holding a rail to gage on a concrete tie, in which the tie has two depressions in the upper surface with cast-in-place anchor members in the depressions. A channel-shaped rail fastener, provided with extensions thereon to overlie the rail flange, is positioned on the tie and is provided with downwardly depending hook members which resiliently hook under the anchor members to hold the fastener to the tie.

3,558,061
HOSE NOZZLE

Erik Hansen, 8839 Government Road, Burnaby, British Columbia, Canada

Filed Nov. 18, 1968, Ser. No. 776,689
Int. Cl. A62c 31/02
U.S. Cl. 239—394 9 Claims



A fire fighter's hose nozzle with a plurality of differently sized apertures adapted to be brought, selectively, into an operating position to vary the range and pattern of the spray produced by the nozzle.

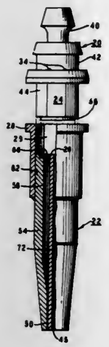
3,558,062
GAS TORCH TIP

Robert O. See, Middletown, N.J., assignor to Air Reduction Company Incorporated, New York, N.Y., a corporation of New York

Filed Nov. 12, 1968, Ser. No. 774,743
Int. Cl. F23d 11/16
U.S. Cl. 239—419.3 6 Claims

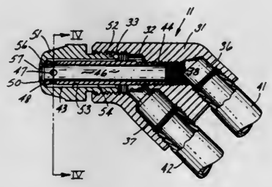
An expendable flame tip for a gas-fired torch is made separable from the gas-mixing rear portion whereby a series of different size tips may be used with a single-mixed portion and only the front end of the torch need be replaced in the event of damage to the tip. The tip portion is formed from two tubular members by inserting one such tubular member within the other and swaging them together (over mandrels if

desired). The torch tip is thus manufactured without the need of the now used expensive drilling operations as the gas



passageways are formed by grooves formed in the tubular members.

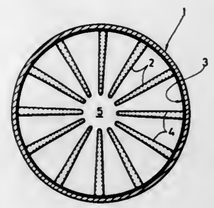
3,558,063
SPRAY NOZZLE
Myron F. Goff, 6404 Thelma, R. R. #4, Antwerp Township, Van Buren County, Mich. 49079
Filed Sept. 24, 1968, Ser. No. 761,914
Int. Cl. B05b *7/06*
U.S. Cl. 239—425 **6 Claims**



A nozzle for mixing a stream of pressurized viscous material, such as cold liquid asphalt, with pressurized air and thereby discharging the viscous liquid material in a fine spray for coating a surface such as the roof of a building.

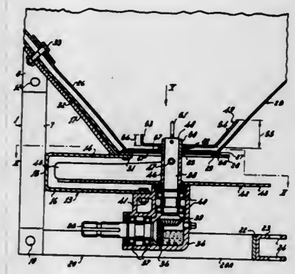
3,558,064
INJECTION PROPULSION DEVICE
Carl-Helmut Dederra; Manfred Lechner, Munich, and Werner Malburg, Ottobrunn, Germany, assignors to Bolkow Gesellschaft mit beschran-Kter, Haftung Postabholfact, Munich, Germany
Continuation of application Ser. No. 555,068, June 3, 1966, now abandoned. This application May 26, 1969, Ser. No. 828,014
Int. Cl. B05b *1/26*
U.S. Cl. 239—544 **7 Claims**

An injection device or conduit for injecting liquid fuel components into a gaseous fuel component which traverses a combustion chamber of a jet propulsion engine includes a single trough-shaped member having an open end which is closed by a planar member. The planar member includes at least one bore drilled therethrough which extends substantially perpendicular to the surface of the planar member and forms an injection orifice. The trough-shaped member may be substantially V-shaped in cross section or U-shaped or even partially cylindrical. The planar member may be a flat plate or a plate having at least two portions extending obliquely from each other to form an obtuse angle with respect to each other. In one embodiment, the planar member includes a wall portion forming a partition in said



trough member dividing it into two separate channels or, as in another embodiment, the planar member includes two wall portions dividing the trough-shaped member into three flow channels.

3,558,065
SPREADING IMPLEMENTS
Cornelis Van Der Lely, 7 Bruschenrain, Zug, Switzerland
Filed June 10, 1968, Ser. No. 735,847
Claims priority, application Netherlands, June 16, 1967, 6,708,370
Int. Cl. A01c *19/00*
U.S. Cl. 239—661 **18 Claims**



This invention relates to spreading implements of the kind comprising a frame movable over the ground, a hopper or other container for material to be spread and a member for spreading the material, the hopper or other container accommodating an agitator which is connected to a shaft located adjacent a lower region of the hopper or other container.

3,558,066
ULTRASONIC EXTRACTION OF VIABLE ANTIGENS FROM GRAM POSITIVE BACTERIA
Howard Alliger, 10 Ponderosa Drive, Melville, N.Y. 11746
Filed Jan. 21, 1969, Ser. No. 792,663
Int. Cl. B02c *17/16, 19/16;* **A61k** *23/00*
U.S. Cl. 241—2 **9 Claims**

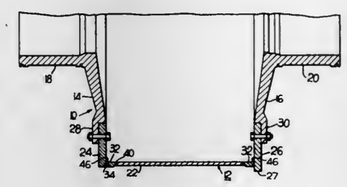
A method of extracting antigens from Gram Positive bacteria cells including injecting ultrasonic energy into a solution of live Gram Positive bacteria contained in a narrow cylindrical vessel cooled by a cooling bath maintained at a temperature less than 0°C. After immersing the tip of an ultrasonic probe into the solution, the probe is energized and the solution is maintained at a temperature close to 0°C. The tip of the probe is removed from the solution after an interval of

time necessary to release the appropriate antigens or enzymes from said bacteria cells, and thereafter the antigens



are separated, usually as a solution in the medium from the residue of the bacteria cells.

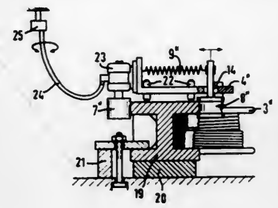
3,558,067
GRINDING MILL OR THE LIKE HAVING REINFORCED SHELL AND METHOD OF MAKING SAME
Raymond C. Jenness, Milwaukee, Wis., assignor to Allis-Chalmers Manufacturing Company, Milwaukee, Wis.
Filed Sept. 30, 1968, Ser. No. 763,754
Int. Cl. B02c *17/18*
U.S. Cl. 241—179 **8 Claims**



A grinding mill or the like having a reinforced shell, and method of making same, including a shell formed of a cylindrical shell plate and having either radially outwardly or radially inwardly turned shell flanges. A cylindrical reinforcing plate is positioned contiguous each axial end of the shell plate and the corresponding shell flange to reinforce the shell in the high stress shell flange-shell plate region. The reinforcing plate or ring is integrally joined to the shell plate and to the shell flanges by a weld or welds, whereby the shell plate, the reinforcing ring members and the shell flanges form an integral structure.

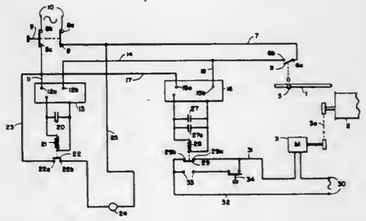
3,558,068
COIL WINDING APPARATUS
Cord Albrecht, Erlangen, Germany, assignor to Siemens Aktiengesellschaft, Berlin and Erlangen, Germany, a corporation of Germany
Filed June 21, 1966, Ser. No. 559,172
Claims priority, application Germany, Aug. 31, 1965, S99,147
Int. Cl. H01f *41/06*
U.S. Cl. 242—7.07 **19 Claims**

Coil winding apparatus includes a stationary device and a movable device, one of the devices including a coil frame of curved noncircular configuration and the other device including a carriage. A mechanism is operatively connected to the movable device for moving it relative to the stationary device. A guide structure is aligned with and has a configuration conforming to that of the coil frame and a pair of guide members carried by the carriage guidingly engages the guide structure so as to thereby guide the movable device, during movement thereof by the moving mechanism, along a path conforming to the configuration of the frame. A supply source for a filamentary structure to be coiled onto the frame is carried by the carriage, and elastic force-storing means such as a spring urges the guide members and the guide structure into engagement with each other so as to maintain the carriage and coil frame at least approximately at the same orientation one relative to the other and direct the filamentary structure tangentially onto the frame while issuing from the supply source at a location situated at a substan-



tially constant distance from the location where the filamentary structure is wound onto the frame, whereby a substantially constant length of the filamentary structure extends from the supply source tangentially to the frame during winding of the filamentary structure thereon.

3,558,069
SAFETY SYSTEM FOR STRAND TAKE-UP MACHINES
Charles Feder, Riverdale, N.Y., assignor to Phelps Dodge Copper Products Corporation, New York, N.Y., a corporation of Delaware
Filed Apr. 1, 1969, Ser. No. 811,939
Int. Cl. B65h *63/00*
U.S. Cl. 242—36 **5 Claims**

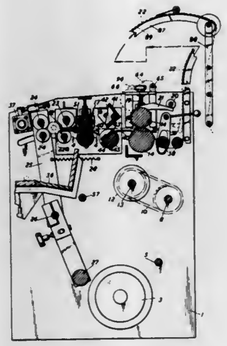


A conventional traverse mechanism distributes the strand uniformly on the takeup reel as the latter is driven, and the shaft which drives the traverse actuates a switch periodically as the shaft rotates. The switch is associated with a current source and means for storing an electrical charge, so that each actuation of the switch causes the storing means to be electrically charged and thereby maintain a relay energized during the time intervals between actuations of the switch. If the traverse ceases to operate for any reason, the switch remains unactuated and thus allows the electrical charge in the storing means to decrease to the point where the relay is deenergized, thereby operating an alarm device and/or stopping the motor which drives the takeup reel.

3,558,070
AUTOMATIC MEASURING, CUTTING AND ROLLING MACHINE FOR WEBS OF PAPER OR THE LIKE
Leonard Gabriels, Hollinwood, Oldham, England, assignor to Frastan (Hollinwood) Limited, a corporation of Great Britain
Filed Nov. 29, 1968, Ser. No. 780,010
Int. Cl. B65h *19/20*
U.S. Cl. 242—56 **5 Claims**

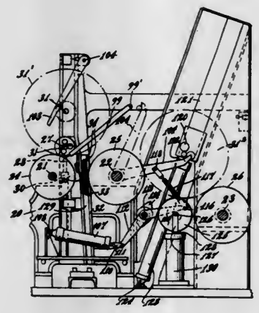
An automatic web-measuring, cutting and rolling-up machine of the type having cutting mechanism disposed transversely of the web during its passage from one to the other of two pairs of driven rollers, the second of which pairs delivers said web to deliver said mechanism including a

roller-carrying gate adapted for automatic displacement as the diameter of the roll of web increases and for subsequent positive displacement to discharge the finished roll, is characterized in that the winding speed of the machine and the operation of the cutting mechanism are automatically controlled through the medium of a measuring unit driven



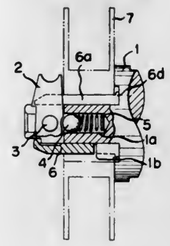
directly or indirectly by the incoming web, and preferably including cam-operated switches which respectively control electromagnetic clutch means for driving the first and second pairs of rollers and electrical means for causing actuation of the cutting and gate-opening mechanism during each operating cycle of the machine.

3,558,071
CUTTER FOR SHEET WINDER
William Russell Clark, Jenkintown, Pa., assignor to Eddystone Machinery Company, Chester, Pa., a corporation of Pennsylvania
Filed Apr. 21, 1969, Ser. No. 817,791
Int. Cl. B65h *19/20*
U.S. Cl. 242—56 **6 Claims**



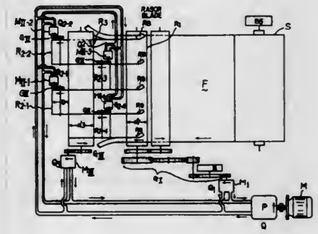
A cutter for a winder for sheet material having a cutter frame provided with a track at the top, cutters in the track, one or preferably both being supported on a set of rollers which engage in longitudinal slots in the cutters, the cutters relatively reciprocating. In the preferred form both cutters float on their rollers free from engagement with the bottom of the track.

3,558,072
ADAPTER FOR 8 MM MOVIE PROJECTOR
Shigeo Wakahara, Kanagawa-ken, Japan, assignor to Nippon Kogaku K. K., Tokyo, Japan, a corporation of Japan
Filed Dec. 5, 1968, Ser. No. 781,311
Claims priority, application Japan, Dec. 13, 1967, utility model 42/104608
Int. Cl. B65h *17/02*
U.S. Cl. 242—68.3 **2 Claims**



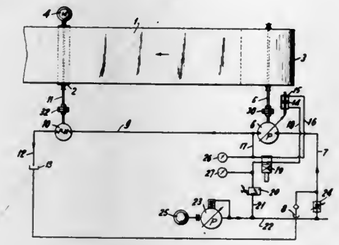
The present invention provides a reel adapter for 8 mm movie projector, and the improvement resides in the provision of a groove and flange portion formed on an adapter ring and a projection formed on the reel stopper plate so that the adapter ring can be stopped when the reel stopper plate is raised or lowered optionally, and the adapter ring can also be stopped when the reel for the super 8 mm film is inserted or removed.

3,558,073
DIFFERENTIAL WINDING UP SYSTEM
Hideo Mukai, Kyoto, Japan, assignor to Nishimura Seisakusho Co., Ltd., Kyoto, Japan, a corporation of Japan
Continuation-in-part of application Ser. No. 538,648, Mar. 30, 1966, now abandoned. This application Mar. 26, 1968, Ser. No. 716,118
Int. Cl. B65h *77/00*
U.S. Cl. 242—75.53 **5 Claims**



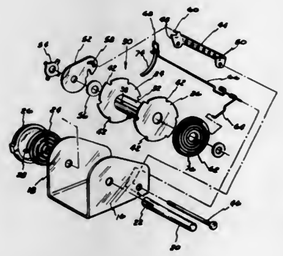
A differential winding up system which achieves automatic control during the winding operation with a substantially constant speed characteristic and a gradually reducing tension characteristic. The system includes a supply roll, a winding roll, and delivery means for delivering the material to be unwound from the supply roll and wound on to the winding roll, and has differential transmission means for imparting a plurality of differentially divided outputs from a single drive power source to the delivery means and to the driving means for the winding roll. The differential transmission means includes a plurality of motors connected in parallel with a single pump and either a fluid transmission or differential gear system. The winding roll may be driven concurrently from both its center shaft and the surface thereof.

3,558,074
TENSION CONTROL FOR UNWINDING A WEB SUPPLY REEL
Franz Held, Gross-Zimmern, Germany, assignor to Maschinenfabrik Goebel G.m.b.H., Darmstadt, Germany
Filed Nov. 13, 1968, Ser. No. 775,369
Claims priority, application Germany, Nov. 14, 1967, P1,574,397.
Int. Cl. B65h *77/00*
U.S. Cl. 242—75.53 **6 Claims**



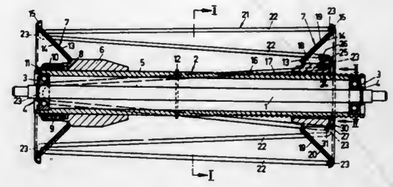
A device for automatically maintaining a predetermined tension of a web which is being unwound from a reel includes an unwind shaft which is rotatable, for example, in conjunction with a drawoff roller for pulling the web off the reel. The unwind shaft is connected to a rotating hydraulic device such as a pump having a discharge which is influenced by a regulating device. The discharge of the pump is led to a volume or quantity control device which is directly or indirectly connected to the drawoff roller. The fluid pressure in the conduit between the pump and the volume or quantity control is exerted on one side of the regulating device. The fluid pressure produced by an additional pump and controlled by an adjustable valve is exerted on the other side of the regulating device. The differences between said pressures effects the adjustment of the discharge volume of the pump. With such an arrangement, the pressures acting upon the regulating device determine the web tension of the material being unwound.

3,558,075
AUTOMATIC LOCKING RETRACTOR WITH SPIRAL CAM AND FRICTION CLUTCH
Robert W. Stoffel, Ferndale, Mich., assignor to Jim Robbins Seat Belt Co., Troy, Mich.
Filed Oct. 14, 1968, Ser. No. 767,110
Int. Cl. B65h *75/48*
U.S. Cl. 242—107.4 **14 Claims**



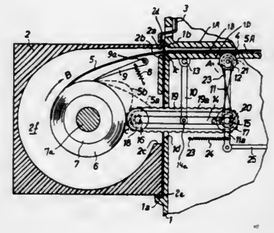
An automatic locking seat belt retractor is disclosed having a reel for retracting the belt, a pawl connected to the reel by a clutch such that the pawl is operative to lock the reel against rotation in the belt-unwinding direction, and a cam and follower arrangement for preventing the pawl from being moved to its locking position unless the reel has been rotated through a position in which a predetermined quantity of belt has been unwound.

3,558,076
WINDING-OFF BOBBIN FOR YARN, PARTICULARLY FOR SHRUNKEN YARN
Ignace Ciniglio, 40, Haldenstrasse 6000, Luzern, Switzerland
Filed Oct. 9, 1968, Ser. No. 766,205
Claims priority, application Switzerland, Nov. 16, 1967, 16047/67
Int. Cl. B65h *75/20, 75/24*
U.S. Cl. 242—118.11 **3 Claims**



Winding-off bobbin has a zigzag cylindrical frame, for holding the yarn package, of spring wire held between two conical flanges movable along a hollow axle. The frame is free to move up and down the flanges so as vary its diameter to accommodate any possible change in the package inner diameter, whereby the package is satisfactorily held on the bobbin at all times.

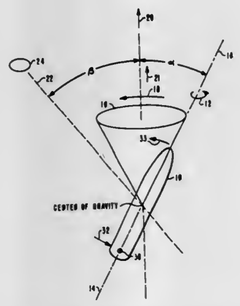
3,558,077
THREADING DEVICE FOR MOTION PICTURE FILM OR THE LIKE
Hans Heinen, Munich, Germany, assignor to AGFA-Gevaert Aktiengesellschaft, Leverkusen, Germany
Filed Aug. 22, 1968, Ser. No. 754,566
Claims priority, application Germany, Aug. 31, 1967, 1,547,068
Int. Cl. G03b *1/04*; **G11b** *15/32*
U.S. Cl. 242—192 **12 Claims**



The housing of a motion picture projector defines a film path in which the film must advance toward the gate. The film is stored on a reel which is installed in a magazine and its leading end can be fully concealed in the interior of the magazine. The housing and the magazine accommodate portions of an automatic film threading device which causes the leading end of the film to enter the film path irrespective of the position of such leading end prior to threading. The threading device comprises a guide which is installed in the magazine to bear against the outermost convolution of convoluted film and can direct the leading end into the film path when the leading end is caused to assume a predetermined angular position with reference to the axis of the reel. A drive of the threading device can rotate the reel in a sense to pay out the film and to move the leading end to predetermined position in response to operation of the film transporting mechanism. This drive comprises an endless belt which is provided with external ribs adapted to engage and to entrain the leading end if the latter happens to be located between the belt and the guide when the threading operation is started. If the leading end is already located downstream of the belt, the reel is simply rotated until the leading end

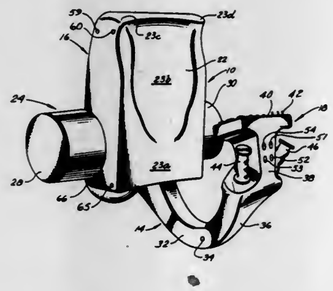
reaches the guide and is caused to enter the film path so as to move into the range of a driven member in the film transporting mechanism.

3,558,078
SPACE VEHICLE ATTITUDE CONTROL
Andre Lanzaro, Berkeley, Calif., assignor to Whittaker Corporation, Los Angeles, Calif., a corporation of California
Filed Aug. 21, 1967, Ser. No. 662,130
Int. Cl. B64g *1/00*
U.S. Cl. 244—1 **8 Claims**



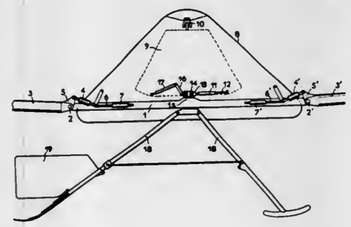
A system for controlling the attitude of a space vehicle which undergoes both spinning and coning motion wherein first and second gating means are serially coupled to deliver operating power to a thrust producing device mounted on the vehicle to generate a torque for reorienting the vehicle only when both gate means are simultaneously energized. The first gate means is energized by a first sensing device responsive to the spin orientation of the vehicle relative to the desired attitude in order to pass power for actuating the thrust producing device to produce at an appropriate point in the spin orbit an incremental torque tending to reorient the spin axis toward alignment with the desired heading. The second gate means is energized by a second sensing means responsive to the orientation of the vehicle in its coning orbit relative to the desired attitude in order to deliver the power pulses passed by the first gating means to actuate the thrust producing device only during predetermined portions of each coning orbit where the vehicle heading is closest to the desired heading.

3,558,079
MANEUVERING SPACE VEHICLES
Loren E. Curriston, La Habra, and Heinz Fornoff, Glendale, Calif., assignors to North American Rockwell Corporation
Filed Aug. 30, 1967, Ser. No. 664,497
Int. Cl. B64g *1/20*
U.S. Cl. 244—1 **23 Claims**



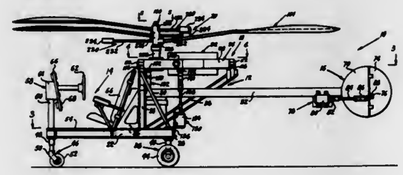
A maneuvering space vehicle providing automatic attitude control, propulsion, life support, and communication for an astronaut in a zero gravity environment. The apparatus includes (a) a backpack containing devices for performing these functions and (b) a control unit connected with the backpack and spaced forwardly thereof for reception of the astronaut therebetween. A plurality of thrusters are mounted on the housing and on the control unit to provide six degrees of motion, i.e., translational thrust along three axes and torque about three axes.

3,558,080
AEROSPACE VEHICLE
Marcel Kretz, Paris, France, assignor to Giravions Dorand, Suresnes, France, a company of France
Filed Jan. 30, 1968, Ser. No. 701,765
Claims priority, application France, Feb. 23, 1967, 96185
Int. Cl. B64c *27/00*
U.S. Cl. 244—17.11 **8 Claims**



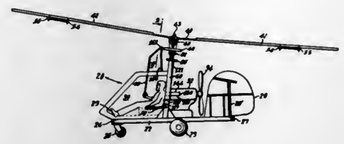
The invention disclosed concerns means for effecting reentry of a space vehicle and it consists basically in providing a casing for the vehicle body, which casing is rotatable relative to the body and has an autogyrating rotor blade system. The body and the casing are controlled for relative angular orientation or the body and casing as an assembly are orientated by controlling such assembly relatively to the blade system.

3,558,081
AIRBORNE VEHICLES
Paul E. Williams, Purcellville, Va., assignor to Airmarine Corporation, Washington, D.C., a corporation of Delaware
Continuation-in-part of application Ser. No. 501,809, Oct. 22, 1965, now abandoned. This application Feb. 20, 1969, Ser. No. 800,936
Int. Cl. B64c *27/06, 11/18*
U.S. Cl. 244—17.19 **8 Claims**



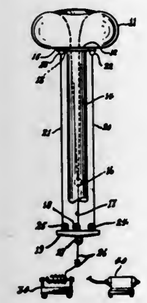
An airborne vehicle provided with a rotor assembly consisting of a hub and a plurality of blades spaced axially of the hub, each blade including an inboard section having a forwardly inclined torque vector and an outboard section having a rearwardly inclined torque vector, the chord of the inner section being greater than that of the outer section.

3,558,082
ROTARY WING AIRCRAFT
Ralph F. Bennie, 6710 Doolittle Drive Edwards AFB, Calif.
Filed July 16, 1968, Ser. No. 745,200
Int. Cl. B64c *27/72*
U.S. Cl. 244—17.25 **17 Claims**



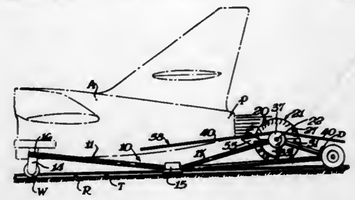
The aircraft includes rocket engines mounted on a warpable rotating wing for operating same in a helicopter mode and an engine and propeller mounted on the fuselage for operation of the aircraft in an autogyro mode. Cyclic and collective pitch controls operate through a swash plate, including a flexible membrane, which controls a movable servotab to cause aerodynamic warping of the wing. Thrust vector controls or spoilers are mounted aft of the rocket engines to control the effective thrust therefrom.

3,558,083
METHOD AND APPARATUS FOR OPERATING A TETHERED NATURAL SHAPE BALLOON TO, AT, AND FROM HIGH ALTITUDE
William F. Conley, Tallmadge; Jerome J. Vorachek, Barberton, Ohio, and James A. Menke, Prior Lake, Minn. assignors to, by mesne assignments to the United States of America as represented by the Secretary of the Air Force
Filed May 12, 1969, Ser. No. 823,645
Int. Cl. B64b *1/50*
U.S. Cl. 244—33 **5 Claims**



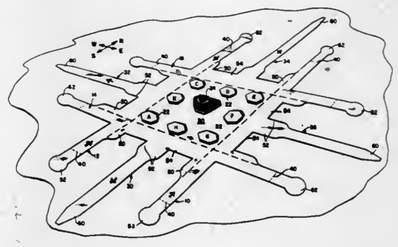
A tethered natural shape balloon is operated to, at and from a high altitude, i.e. 100,000 feet, by top-loading, rather than by conventional bottom-loading. A loading cable is attached at one end to a fitting at the inner top surface of the balloon and is attached at the other end to a remotely actuable motorized reel-and-brake assembly mounted on the top surface of a base plate. Other cables connect the bottom of the balloon to remotely actuable motorized reel-and-brake assemblies also mounted on the top surface of the base plate. The tether line is attached at one end by a fitting to the bottom surface of the base plate and is attached at the other end to a winch, which also serves as an anchoring means. As altitude and corresponding external pressure change, the configuration, i.e. volume and shape, is changed and controlled by paying out or reeling in the cables to prevent high and unequal stress of the balloon envelope material.

3,558,084
GAS TURBINE
Robert B. Cotton, 1503 Old Orchard Road, Media, Pa. 19063
Continuation-in-part of application Ser. No. 557,448, June 14, 1966, now Patent No. 3,400,903. This application June 5, 1968, Ser. No. 734,815
Int. Cl. B64f *104*
U.S. Cl. 244—63 **12 Claims**



A gas flow turbine for use in conjunction with a jet engine includes a series of radially disposed blades mounted about a periphery of a circular support wheel. The edges of the blades are substantially free of obstruction to minimize impediment to the flow of gas directed against them. This causes the turbine wheel to derive a substantial thrust from the gas flowing against it without materially impeding such flow. A convenient form of such turbine includes slightly curved blades centrally mounted in cantilever manner to a rotatable disc with their ends extending therefrom. Despite the minimal reaction imparted to the wheel by the gases, substantial energy is derived from the gases discharged from a jet engine without materially reducing the engine's efficiency. The turbine's energy may be advantageously utilized for a multitude of purposes including general augmentation of jet engine thrust, particularly for improving efficiency of launching thrust and auxiliary uses in conjunction with jet engine exhaust including electric power generation.

3,558,085
AIRPORT SURFACE LAYOUT
John W. Magill, 664 N. Michigan Ave., Chicago, Ill. 60611
Filed Dec. 19, 1968, Ser. No. 785,162
Int. Cl. B64f *1/00*
U.S. Cl. 244—114 **1 Claim**

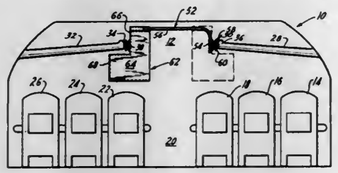


An airport surface layout including a system of separate takeoff and landing runways which are oriented in accordance with predominantly prevailing winds, together with separate geographically located terminals and a central control tower.

3,558,086
FOOD AND BEVERAGE DISPENSER FOR PASSENGER AIRCRAFT
Stanley W. Kraly, R.D. 1, Wexford, Pa. 15090
Filed Aug. 22, 1968, Ser. No. 754,677
Int. Cl. B64d *11/04*
U.S. Cl. 244—118 **6 Claims**

This disclosure relates to a method and apparatus for serving food and beverages in a passenger aircraft. Each luggage

rack has a rail member extending longitudinally in the passenger compartment forming a pair of spaced parallel rails. A pair of dispenser supports have wheels mounted above and below one of the rails and laterally extending arm portions. A food and beverage dispenser has pairs of spaced wheels rotatably mounted on a rear vertical wall above and below the other rail. The dispenser has a pair of lateral tube members in which the arm portions of the supports are telescopically positioned to support the food and beverage dispenser for longitudinal movement along the rails in the passenger compartment. The food and beverage dispenser is preferably constructed so that it extends over the passenger seats so that

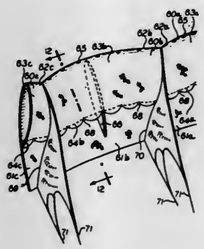


the aisle between the seats remains unobstructed. The dispenser is positioned on the rails adjacent the galley and filled with trays of food. The dispenser is then moved along the rails to the opposite end of the passenger compartment and the trays of food are distributed to the passengers in the vicinity. The empty dispenser is then moved back to the vicinity of the galley and again refilled with trays of food. The refilled dispenser is again moved along the rails to a location where the trays are distributed. The dispenser can also be used to dispense beverages before, during or after the meal and may be used to collect the trays and beverage containers.

3,558,087
PARACHUTE

David T. Barish, New York, N.Y., assignor to Barish Associates, Inc., New York, N.Y.

Continuation-in-part of application Ser. No. 618,888, Feb. 27, 1967, now Patent No. 3,480,238. This application May 22, 1969, Ser. No. 826,784
Int. Cl. B64d *17/02*
U.S. Cl. 244—142 21 Claims

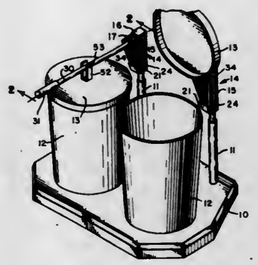


A flexible clothlike airfoil-shaped parachute capable of glide and soar which has a canopy made of a clothlike material which is limp and non-self-supporting in the uninflated (not in flight) condition, which parachute canopy has a leading edge and a trailing edge and suspension lines depending from said canopy sufficient to support a load. The leading edge of the canopy is of a clothlike material, arcuate in cross section and may be made up of a portion of the canopy which is folded back and affixed to the remaining canopy to form a three-dimensional, generally airfoil shape, or a section thereof. This airfoil shape has apertures in the arcuate leading edge thereof which permit air to enter into the space formed between the folded and affixed flap, the leading edge and the remainder of the canopy while such canopy is in flight.

3,558,088
TRASH CAN HOLDERS WITH IMPROVED LID FASTENERS AND SPRING-LOADED BREAK-OVER HANDLE DEVICE

Roy W. Sherley, Abilene, Tex., assignor to Roy W. Sherley, by mesne assignment

Filed Oct. 16, 1968, Ser. No. 768,116
Int. Cl. B65d *51/00*
U.S. Cl. 248—147 1 Claim

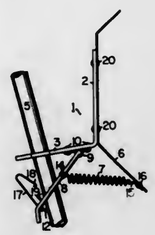


A trash can holder for selectively maintaining lids of trash cans in either raised or lowered position, and wherein there is provided improved lid fasteners as well as a spring-loaded breakover handle device.

3,558,089
RELEASABLE BRACKET

Stoyan P. Michailov, c/o Mikeloff Bros., 4514 San Fernando Road, Glendale, Calif. 91024

Filed June 12, 1969, Ser. No. 832,745
Int. Cl. F21s *1/12*
U.S. Cl. 248—230 5 Claims



A bracket for securing a cantilever load at selected elevations on a vertical standard. In the clamped position the load acts to clamp the bracket to the standard. This is enhanced by a spring loaded arm which also exerts a force on the standard and provides additional clamping security when the assembly is subjected to random mechanical shocks. A leaf spring clip retains the arm in the unlocked position for accomplishing vertical adjustment of the bracket on the standard.

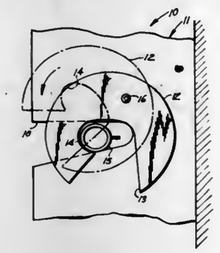
3,558,090
BARREL LOCK FOR GUN RACK

James W. Bird, 3321 Dillon Ave., Cheyenne, Wyo. 82001

Filed Dec. 16, 1968, Ser. No. 783,997
Int. Cl. A47b *81/00*
U.S. Cl. 248—309 1 Claim

A device particularly for, but not limited to rotary vertical gun racks. This device when the barrel of the gun is urged

against the flat surface of the disc forming the lock, it will automatically rotate the disc, the outer portion partially encom-

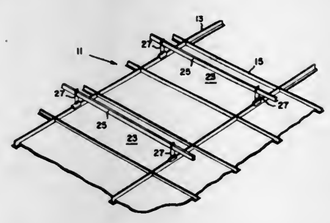


passing the barrel and preventing it from falling out of the rack if the rack is rotated fast.

3,558,091
CHANNEL-BEAM CLAMP

William R. Bush, Downingtown, Pa., assignor to Bundy Corporation, Detroit, Mich., a corporation of Michigan

Filed Nov. 18, 1968, Ser. No. 776,677
Int. Cl. E04b *5/52*
U.S. Cl. 248—317 2 Claims

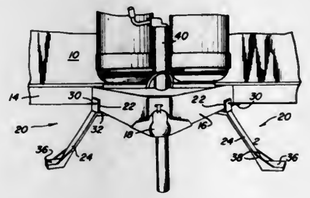


In a suspended ceiling grid system, a channel-beam clamp comprising a C-shaped body member having a channel-receiving notch, a top tab extending downwardly and adapted to hook over a channel, a locking tab adapted to be bent to a vertical position to lock the clamp around the channel, attachment prongs having jaws adapted to clamp a bulb of a ceiling grid member, an inverted U-shaped locking skirt adapted to be slid downwardly over the attachment prongs so that said legs lock the jaws in position on the bulb, and a lance formed in one of the prongs for preventing upward movement of the locking skirt.

3,558,092
TRAILER FRAME STABILIZING SUPPORT

Lee B. Hanson, P.O. Box 283, Pittsburgh, Kans. 66762

Continuation-in-part of application Ser. No. 781,809, Dec. 6, 1968, now abandoned. This application Apr. 20, 1970, Ser. No. 30,118
Int. Cl. B60s *9/00*
U.S. Cl. 248—352 11 Claims



A combined stabilizer and support for the frame of a trailer or the like including two pairs of footed angled strut supports, each removably received in a receptacle and bracket which is mounted on a portion of the trailer frame. The footed strut may be formed of two members, including a primary leg in the bracket and a footed member telescopically received in the primary leg. A toggle lever and/or locking screw system provide multiple, stable positions for extension of the footed member from the primary leg.

3,558,093
VACUUM MEMORY HOLDING DEVICE

Hendrik F. Bok, North Dartmouth, Mass., assignor to Epec Systems Corporation, New Bedford, Mass., a corporation of Massachusetts

Filed July 29, 1969, Ser. No. 847,526
Int. Cl. F16m *13/00*
U.S. Cl. 248—362 9 Claims

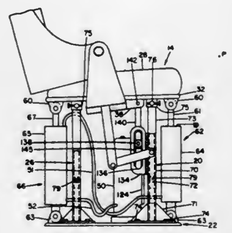


A vacuum memory holding device of the type used as a tray for rigidly supporting a plurality of waferlike objects in a spray-coating chamber. The device includes a top plate having a plurality of apertures as a support for each one of the wafers and a bottom vacuum chamber from which the vacuum is drawn. The vacuum chamber includes a resilient wall which is collapsed as the vacuum is drawn and serves to hold the vacuum independently and rigidly support the waferlike objects during the spray-coating operation without being connected to the vacuum-drawing source.

3,558,094
VEHICLE SEAT HAVING OPTIMUM ANGULAR MOTION CHARACTERISTICS

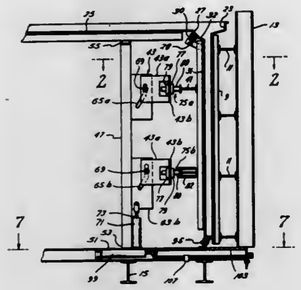
Arthur O. Radke, Milwaukee; Donald J. Zach, Greenfield, and Garth O. Hall, New Berlin, Wis., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

Filed July 16, 1969, Ser. No. 842,257
Int. Cl. A47c *3/38*; B60n *1/02*
U.S. Cl. 248—372 9 Claims



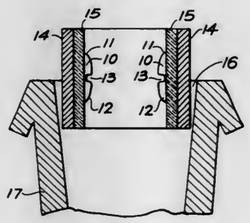
A seat having a cushion part, a base part, a spring means biasing the cushion part vertically away from the base part, guides restraining the relative movement of the cushion with respect to the base in both lateral and fore and aft directions, and forward and rear shock absorbers divided into upper and lower compartments by pistons and respectively connected to the forward and rear portions of the cushion part. The upper surface area of the piston of the rear shock absorber is equal to the area of the lower surface of the piston of the forward shock absorber multiplied by the ratio of the respective distances from the knee point of a seat occupant to the front portion of the cushion part and from the knee point of a seat occupant to the rear portion of the cushion part. A connection tube joins the lower compartment of the forward shock absorber and the upper compartment of the rear shock absorber.

3,558,095
BUILDING WALL APPARATUS
Nixon McNiel, Corpus Christi, Tex., assignor to Ben D. Marks, Corpus Christi, Tex., a part interest
Filed Jan. 10, 1968, Ser. No. 696,759
Int. Cl. B28b 7/22
U.S. Cl. 249—13 4 Claims



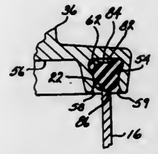
A building wall forming apparatus for constructing a complete room or building section in monolithic form. The apparatus, which is of unitary construction, includes spaced inner and outer wall means supported on a common framework with the volume between the wall means being adapted to receive a cementatious material. The ceiling is defined by an upper plate supported above the inner wall means in contacting relation therewith. The inner wall means also includes inner corner wall means. Both the inner wall means and inner corner wall means are fixedly connected to cam-operated actuator units, there being an actuator unit disposed at each interior corner of the apparatus. The actuator units are hydraulically operated to cause simultaneous retraction of the inner wall means and the inner corner wall means pivotally about their corner edges. Similarly, the outer wall means are operatively connected in movable manner to support sections, the support sections being adapted to expand or move outwardly by operation of hydraulic pistons. After pouring and curing of the cementatious material, the inner wall means and inner corner wall means are retracted by the cam operated actuator units and the outer wall means are expanded by operation of the hydraulic pistons, thereby permitting removal of the monolithic cementatious body from the apparatus. Due to the unitary construction of the apparatus and consequent portability, it may be moved from one job site to another both quickly and easily.

3,558,096
GROOVE FORMING ADDITIONS FOR THE INNER WALLS OF HOT TOPS
Michael D. LaBate, 115 Hazen Ave., Ellwood City, Pa. 16117
Filed May 31, 1968, Ser. No. 733,716
Int. Cl. B22d 7/10
U.S. Cl. 249—197 3 Claims



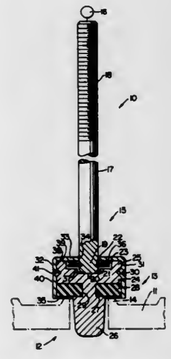
Elements having groove forming configurations therein for application to the inner metal receiving surfaces of hot tops as applied to ingot molds and the like in the casting of ingots to provide configurations on the neck of the cast ingot facilitating its engagement with the mold stripping apparatus.

3,558,097
VALVE
Joseph H. DeFrees, 414 Liberty St., Warren, Pa. 16365
Filed May 16, 1968, Ser. No. 729,661
Int. Cl. F16k 25/00
U.S. Cl. 251—88 8 Claims



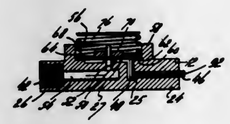
A fluid discharge control valve for an outlet port of a fluid storage tank. The valve includes a manifold body with an inlet tube positioned in one side of the body, with the outer end of such tube being connected to the tank outlet port. The inlet tube has a valve seat on its inner end. A valve mounting tube is disposed on an opposed side of the manifold body opposite the inlet tube. A valve assembly is secured to the outer end of the valve mounting tube and extends into the body. Such valve assembly includes a valve disc selectively engageable with the valve seat to control fluid flow thereby. The valve disc has an annular groove formed in its surface opposite said seat, such groove containing a sealing gasket engageable with the valve seat. The gasket, in cross-sectional configuration, has an air cavity disposed in the surface opposite the sealing surface to provide a bubble-tight seal at low sealing pressures. The manifold body is formed of stock material rectangular in cross-sectional configuration.

3,558,098
VALVE CONSTRUCTION MEANS
Louis M. Puster, Knoxville, Tenn., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed June 2, 1969, Ser. No. 829,498
Int. Cl. F16k 25/00
U.S. Cl. 251—88 16 Claims



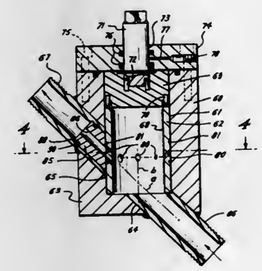
A valve construction having a valve stem provided with a free end telescoped within an opening means in a closed end of a cup-shaped member, a valve poppet being disposed in the cup-shaped member and having a valve member at the open end of the cup-shaped member for seating against a valve seat. A spring means is disposed between the closed end of the cup-shaped member and the valve stem to tend to urge the free end of the valve stem into engagement with the valve poppet while permitting swivel action therebetween, the cup-shaped member having the side wall means between the closed and open ends thereof staked into recess means of the valve poppet to secure the valve construction together.

3,558,099
SOLENOID ACTUATED VALVE
Anthony Dominic Giorgi, Chesapeake; Edward Junior Duke, and Harold Dean Conrad, Portsmouth, Va., assignors to Virginia Chemicals Inc., Portsmouth, Va., a corporation of Maine
Filed Aug. 28, 1969, Ser. No. 853,782
Int. Cl. F16k 31/02
U.S. Cl. 251—129 1 Claim



An assembly for dispensing portions of a gaseous vapor and including a valving body having a dispensing conduit, which is opened and closed by means of a solenoid-actuated plunger contactable with a valving diaphragm. As the solenoid reciprocates the plunger, pressure is relieved upon the adjoining valving pin which, in turn, enables gaseous pressure to urge the diaphragm away from the dispensing conduit permitting gaseous flow.

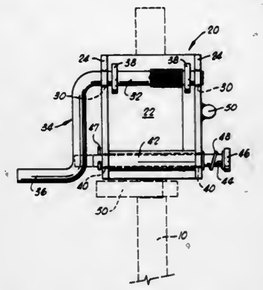
3,558,100
MULTIPLE ORIFICE ROTARY CONTROL VALVE
Eldon E. Hulsey, 5747 Warm Springs, Houston, Tex. 77035
Continuation-in-part of application Ser. No. 604,414, Dec. 23, 1966, now Patent No. 3,443,793, dated May 13, 1969. This application Jan. 23, 1968, Ser. No. 699,947
Int. Cl. F16k 5/10
U.S. Cl. 251—207 14 Claims



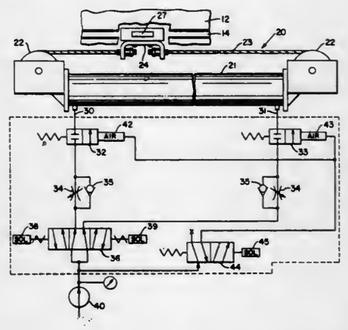
A rotary control valve having a control member provided with a plurality of circumferentially spaced, fixed area orifices having their axes disposed at an angle to the axis of rotation for selective registry with a flowway through the valve disposed at the same angle to the axis of rotation, whereby to provide straight-line flow through the valve at all orifice settings.

3,558,101
STRING TENSIONING DEVICE
Hubert L. Ward, 2326 C Court, Enid, Okla. 73701
Filed June 18, 1968, Ser. No. 738,017
Int. Cl. B66f 3/08
U.S. Cl. 254—51 6 Claims

A string tensioning device for use in tensioning a string or cord used in grade level establishment and similar operations, the device including a back plate having a pair of substantially parallel flanges extending normal to the side edges thereof, and having a stake receiving sleeve secured thereto. Secured to one of the flanges and projecting outwardly therefrom in a direction substantially normal to the plane of the back plate is a wagging handle. A crank arm extends parallel to the back plate and is rotatably journaled in the flanges. A stop pin is spaced from, and extends substantially parallel to the crank arm and is slidably mounted in the flanges attached to the back plate. The stop pin has a head thereon and a spring which resiliently opposes axial sliding movement of the stop pin in the flanges. The stop pin is of a length such that it can be forced against the resilient bias of the spring into a position where one end of the stop pin opposite its head is interposed in the path of movement of the crank arm so that the crank arm can be prevented from rotating by contact with the stop pin.



3,558,102
THEATER STAGE SET CONTROL SYSTEM
William M. Cruse, 333 N. Norton Ave., Los Angeles, Calif. 90004
Filed Jan. 10, 1969, Ser. No. 790,263
Int. Cl. B66f 3/24
U.S. Cl. 254—93 12 Claims

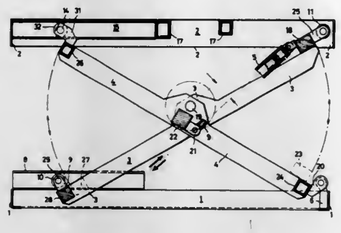


An arrangement for determining and controlling the location and movement of properties (props) and portions of the scenery of a stage set by pneumatic means.

3,558,103
SCISSOR ACTION HOIST WITH COMPONENTS SHAPED SO AS TO NEST WITHIN ONE ANOTHER
Alois Lodige, Frankfurter Weg 13, Paderborn, Germany
Filed Sept. 25, 1967, Ser. No. 670,332
Claims priority, application Germany, Sept. 26, 1966, L54642
Int. Cl. B66f 3/22
U.S. Cl. 254—122 12 Claims

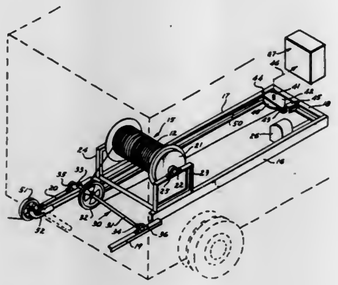
The invention is concerned with scissor-action hoist assemblies in which the ends of the scissor arms are secured by ar-

ticulation brackets to an upper platform to be raised and a lower base, the ends of the arms preferably being connected by frame members to form at least one closed substantially rigid scissor assembly, and the arms, articulation brackets



and frame members being fitted together so that in the retracted position the scissor-arm angle is very small, nil or negative and at least some of the members overlap in a common plane.

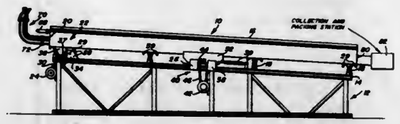
3,558,104
HOISTING DEVICE
Charles F. McGinty, Houston, Tex., assignor to Schlumberger Technology Corporation, New York, N.Y., a corporation of Texas
Filed June 7, 1968, Ser. No. 735,233
Int. Cl. B66d *1/36*
U.S. Cl. 254—190 **7 Claims**



A hoisting device for use in well logging and including a frame having a winch mounted thereon, a fixed sheave mounted to one side of said winch and an oscillating sheave mounted on the other side of said winch, cable on said winch extending around said oscillating sheave and underneath said winch to said fixed sheave, and another sheave mounted for swiveling movement about an axis passing generally through said fixed sheave, said cable extending from said fixed sheave to said other sheave and then toward the well bore.

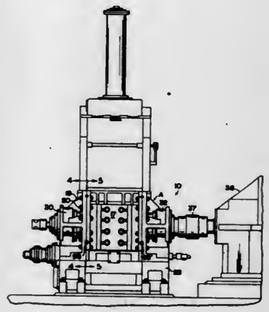
3,558,105
CAN COOLING APPARATUS
Thomas A. Moritz, Strawberry Ave., Vineland, N.J. 08360
Filed May 29, 1968, Ser. No. 733,010
Int. Cl. B01f *15/06*
U.S. Cl. 259—2 **6 Claims**

An inclined enclosed chute is mounted upon a coil spring suspension. Individual motor driven means cause transverse and longitudinal vibration of the chute. A water spray system is disposed in spaced relationship to the bottom of the chute. Heated containers enter through a port in the upper end of the inclined chute and are subjected to the simultaneous effects of agitation and cooling due to the vibrating and water spray systems, respectively. An exit port is provided in the



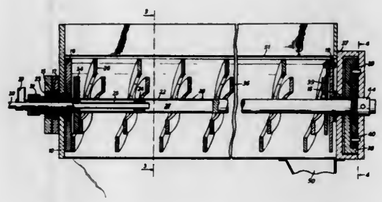
lower end of the chute for further distribution of containers passing therethrough.

3,558,106
PLASTIC MIXER
James T. Matsuoka, Brecksville, Ohio, assignor to Intercole Automation, Inc., Cleveland, Ohio, a corporation of Ohio
Filed June 17, 1968, Ser. No. 737,678
Int. Cl. B01f *7/02*
U.S. Cl. 259—109 **6 Claims**



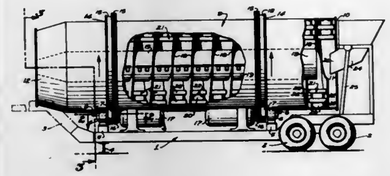
An apparatus for mixing rubbers, elastomers, plastics and similar materials preferably of the internal mixer type, such as a Banbury type mixer, having a mixing chamber formed by side and end frame members detachably bolted together with at least one side frame member extending between the end frame members and keyed thereto by keys removable from the exterior of the apparatus so that the side frame member can be removed and replaced with no movement of the end frame members.

3,558,107
FOAMING AGENT MIXER AND METHOD
William Thomas Williams, Broomham, Catsfield, near Battle, Sussex, England
Filed July 29, 1968, Ser. No. 748,470
Int. Cl. B28c *5/12*
U.S. Cl. 259—148 **5 Claims**



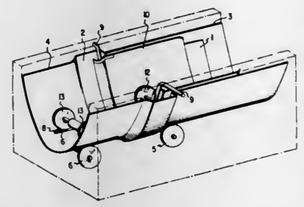
A mixing apparatus comprising a casing containing two rotatably mounted helices one within the other and means for rotating the helices, that the arrangement being such that as they rotate the axial distance between adjacent points on the helices continuously varies.

3,558,108
CONTINUOUS CONCRETE MIXER
Robert E. Jackson, New Port Beach, Calif., assignor to Challenge-Cook Bros., Incorporated, Industry, Calif., a corporation of California
Filed Sept. 27, 1968, Ser. No. 763,167
Int. Cl. B28c *5/18*
U.S. Cl. 259—177 **9 Claims**



A continuous concrete mixer in which a concrete mix, including water, if fed continuously into one end of a horizontal tubular drum and the prepared concrete is continuously discharged from the other end of the drum; the drum being rotatably mounted on a semitrailer chassis and contains a continuous helical conveying blade joined to the walls of the drum and to a central tube; there being mixing blades extending from the drum wall into the space between the convolutions of the conveying blades.

3,558,109
SHEET MATERIAL PROCESSING APPARATUS
Mitsutaka Sofue, Tokyo, Japan, assignor to Fuji Shashin Film Kabushiki Kaisha
Filed Oct. 14, 1968, Ser. No. 767,172
Claims priority, application Japan, Oct. 19, 1967, 42/67409
Int. Cl. F27b *9/28*
U.S. Cl. 263—3 **8 Claims**

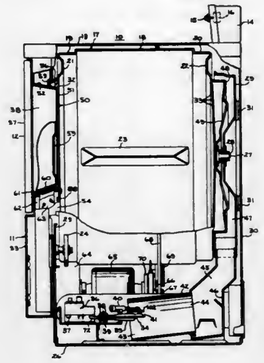


A sheet material processing apparatus wherein a sheet of material is held in a curved position so as to have a curved cross section in a plane perpendicular to the direction in which it is fed and processed.

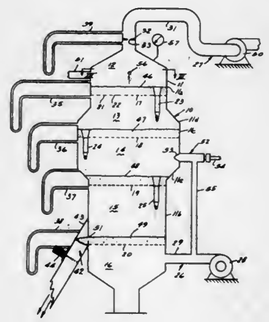
3,558,110
GAS HEATED AUTOMATIC CLOTHES DRYER WITH THERMISTOR FLAME SENSOR CIRCUIT
Gerald J. Kushner, Louisville, Ky., assignor to General Electric Company, a corporation of New York
Filed July 2, 1969, Ser. No. 838,387
Int. Cl. F27b *17/00;* **F26b** *21/06*
U.S. Cl. 263—10 **2 Claims**

A control circuit is provided to control the operation of a gas-heated automatic clothes dryer having a positive temperature coefficient thermistor positioned to sense burning of gas within the burner and to correspondingly control the supply of gas to the burner.

An electrically operated valve for supplying gas to the burner is controlled by a time delay bimetal switch having a bimetal heater in electrical series with the thermistor whereby the output of the bimetal heater depends upon the resistance of the thermistor. The increased resistance of the thermistor in the presence of flame is effective to disable the bimetal heater from opening the bimetal switch thereby maintaining gas flow to the burner, the heater, unless disabled by the thermistor, being effective to open the bimetal switch and deenergize the valve after a predetermined interval, thereby to terminate gas flow to the burner in the absence of flame.



3,558,111
METHOD AND APPARATUS FOR CONTROLLING THE FLOW OF A FLUIDIZED MATERIAL FROM A LOW PRESSURE CHAMBER TO A HIGH PRESSURE CHAMBER
Hazelton H. Avery, Aurora, Ill., assignor to Barber-Greene Company, Aurora, Ill., a corporation of Illinois
Filed Dec. 17, 1968, Ser. No. 784,417
Int. Cl. F27b *15/02*
U.S. Cl. 263—21 **17 Claims**



A method and apparatus for treating material in a fluidized condition including a method and device for transferring material from a fluidized bed in a low-pressure chamber to a high-pressure chamber without disrupting the pressure differential therebetween. The transfer of the material is accomplished by a valve having a large end disposed in the low-pressure chamber and a restricted orifice extending into the high-pressure chamber so that a gaseous medium of the high-pressure chamber entering the orifice will be expanded to

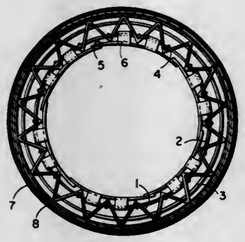
decrease its velocity and pressure to allow the passage of material from the low-pressure chamber into the high-pressure chamber.

3,558,112
DOOR UNIT FOR HEAT TREATING APPARATUS
James C. Gaede, Belvidere, Ill., assignor to Alco Standard Corporation, Valley Forge, Pa., a corporation of Ohio
Filed July 7, 1969, Ser. No. 839,382
Int. Cl. F27b 9/02; F23m 7/00
U.S. Cl. 263—36 7 Claims



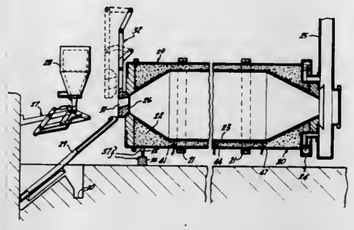
Opposing openings in two-walled enclosures of heat treating furnaces are closed by two doors which are mounted on a common carriage for movement first vertically across the openings and then laterally into pressing engagement with the walls of the enclosures. One of the doors is mounted for lateral floating on the carriage and is spring-biased away from the carriage to enable such door to adjust automatically to the position of the respective enclosure without interfering with continued movement of the carriage and the other door.

3,558,113
RADIATION SHIELDS FOR FURNACES
Gerolf Strohmeier, and Alfred Pohler, Reutte, Austria, assignors to Schwarzkopf Development Corporation, New York, N.Y., a corporation of New York
Filed Dec. 31, 1968, Ser. No. 788,195
Claims priority, application Austria, Jan. 5, 1968, A122/68
Int. Cl. F23n 9/00; F27d 21/00
U.S. Cl. 263—50 5 Claims



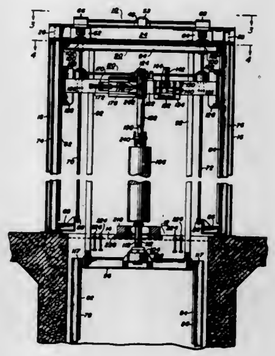
This invention relates to radiation shields for furnaces. Such shields are made of a removable ray protection element and a plurality of foil layers.

3,558,114
PHOSPHORUS RECOVERY FEED CONTROL METHOD
Walter C. Saeman, Hamden, Conn., assignor to Olin Corporation, a corporation of Virginia
Continuation-in-part of application Ser. No. 727,115, Mar. 18, 1968, now Patent No. 3,479,138, dated Nov. 18, 1967, which is a continuation-in-part of application Ser. No. 398,306, Sept. 22, 1964, now abandoned. This application Sept. 23, 1969, Ser. No. 860,198
Int. Cl. F27b 7/00
U.S. Cl. 263—52 8 Claims



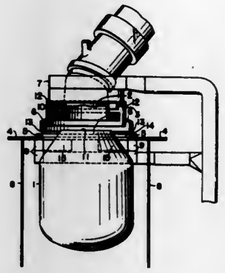
Phosphorus values in the form of P_2O_5 are recovered from phosphate ores reacted with carbon, silica and oxygen-containing gas in a rotary furnace having a vitreous lining held in place centrifugally and wherein placement of feed is controlled to maintain uniform covering of said lining.

3,558,115
ROLL HEAT TREATING APPARATUS
Joseph H. Soneki, Bethlehem, and Robert L. Myers, Coppersburg, Pa., assignors to Bethlehem Steel Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 658,097, Aug. 3, 1967, which is a division of application Ser. No. 575,736, Aug. 29, 1966, now Patent No. 3,504,896. This application Aug. 4, 1967, Ser. No. 658,403
Int. Cl. C21d 1/66
U.S. Cl. 266—4 7 Claims



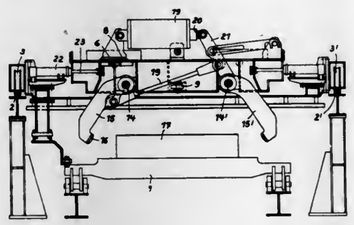
A carriage, vertically movable with respect to fixed heating and quenching rings, vertically supports a roll having a bore therein. A coolant is forced upwardly through the bore while the roll is progressively heated and quenched by driving the roll downwardly through the rings. After quenching, the roll is submerged in a coolant and laterally repositioned therein.

3,558,116
WASTE GAS LEAKAGE PREVENTIVE DEVICE IN THE BASIC OXYGEN FURNACE
Yasuhiro Yagi, Okayama-shi; Masashi Kawana, Kurashiki-shi, and Takashi Kosukegawa, Okayama-shi, Japan, assignors to Kawasaki Steel Corporation and Kawasaki Dockyard Co., Ltd.
Filed Oct. 7, 1968, Ser. No. 765,606
Int. Cl. C21c 5/40
U.S. Cl. 266—15 4 Claims



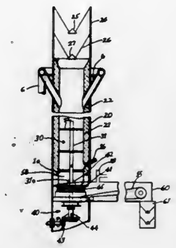
A movable cylindrical shield is slidably mounted on the lower end of a hood over the open end of a converter and cooperates with fluent filled channels to provide a gas tight seal. In action, suction pipes are provided to collect any gas which is not collected by the hood.

3,558,117
GAS CUTTING DEVICE FOR SEVERING HORIZONTALLY DELIVERED MATERIAL
Walter Hess, Dusseldorf, Germany, assignor to Schloemann Aktiengesellschaft, Dusseldorf, Germany, a company of Germany
Filed Dec. 3, 1968, Ser. No. 780,803
Claims priority, application Germany, Dec. 27, 1967, 1,627,625
Int. Cl. B23k 7/10
U.S. Cl. 266—23 9 Claims



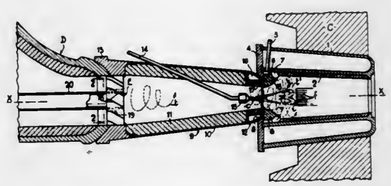
A gas cutting device for severing horizontally delivered material, comprising a longitudinal carriage travelling with the material to be cut, and a transverse carriage carrying clamping means and cutting burners, the transverse carriage being supported by bearing balls, the lower ball races of which are mounted upon transverse members extending over the track width of the longitudinal carriage, and the upper ball races being arranged on the transverse carriage, and at least either the upper ball races or the lower ball races being plane and comparatively broad.

3,558,118
APPARATUS FOR THE GASEOUS REDUCTION OF PELLETIZED AND LUMP IRON ORES
Ronald F. Jensen, Houston, Tex., and William E. Marshall, Middletown, Ohio, assignors to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio
Filed May 20, 1968, Ser. No. 730,478
Int. Cl. F27d 7/02
U.S. Cl. 266—29 9 Claims



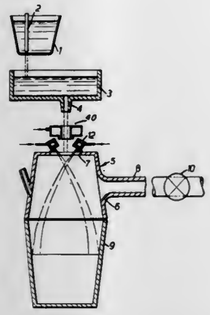
Apparatus for the gaseous reduction of pelletized and lump iron ores consisting of a shaft type furnace in which rotating means vertically disposed within the furnace assist in the descent of the ores and provide for a uniform distribution of the ascending reducing gases.

3,558,119
DEVICE FOR THE INJECTION OF LIQUID FUELS INTO BLAST FURNACES
Roger Demalander, deceased, late of Maidieres, France, by Jacqueline Demalander, (legal administratrix), Maidieres, France, assignors to Centre De Recherches De Pont-A-Mousson, Maidieres, France, a corporation of France
Filed Dec. 4, 1968, Ser. No. 781,715
Claims priority, application France, Dec. 8, 1967, 131 478
Int. Cl. C21b 7/16
U.S. Cl. 266—41 18 Claims



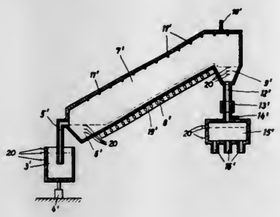
Liquid fuel injecting device for in particular a blast furnace comprising, in combination with the wind blowing nozzle and the tuyere, refractory elements arranged on a circle between the downstream end of the nozzle and the upstream end of the tuyere where they constitute the neck and divergent part of a Venturi structure, the convergent part being constituted by the nozzle. A liquid fuel supply conduit is carried by the nozzle and terminates in a sprayer disposed in the vicinity of and on the axis of the Venturi neck. Means are provided for imparting a gyratory motion to the wind blown by the nozzle.

3,558,120
REFINING OF FERROUS METALS
David A. Whetton, Worksop, England, assignor to The British Iron and Steel Research Association
Filed Sept. 20, 1967, Ser. No. 669,022
Claims priority, application Great Britain, Sept. 23, 1966, 42550/66
Int. Cl. C21c 7/00
U.S. Cl. 266—34 8 Claims



Apparatus for refining molten metal including angularly adjustable nozzles for oxidizing gas to shatter a stream of molten metal.

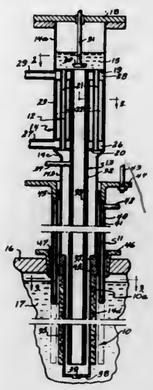
3,558,121
APPARATUS FOR TREATING OF STEEL OR OTHER METALS, ESPECIALLY FOR CONTINUOUS CASTING
Helmut Lenne, Dusseldorf, Germany, assignor to Klockner-Werke A G, Duisburg, Germany
Filed Sept. 18, 1968, Ser. No. 760,567
Claims priority, application Germany, Sept. 28, 1967, 1,583,263
Int. Cl. C21c 7/10; B22d 27/16
U.S. Cl. 266—34 7 Claims



Apparatus by which molten steel or other metal is deslagged and the air and other gasses absorbed by the hot metal during production are exhausted preparatory to the casting process and is especially adapted for use with a continuous casting process.

3,558,122
LIQUID METAL PURIFIER
Robert A. Jaross, Sandwich, Ill., assignor to the United States of America as represented by the United States Atomic Energy Commission
Filed May 26, 1969, Ser. No. 827,842
Int. Cl. C22b 9/02
U.S. Cl. 266—37 5 Claims

A device for removing oxides from liquid metals consists of a vertically disposed, double-walled tube, an outer shell concentric with and surrounding the double-walled tube, a heat exchanger at the top of the device, a metal oxide collector at the lower end of the device, and a double-walled thermal barrier movable alongside of the metal oxide collector. The device is mounted in the top of a tank containing the liquid metal with the metal oxide collector immersed in the liquid metal. A heat exchange fluid flows upwardly in the double-walled tube, through the heat exchanger, and downwardly in the annulus between the double-walled tube and the outer shell, thereby cooling the metal oxide collector. Metal oxide precipitates on the metal oxide collector and is prevented from redissolving in the liquid metal by moving the thermal barrier to cover part of the metal oxide collector.

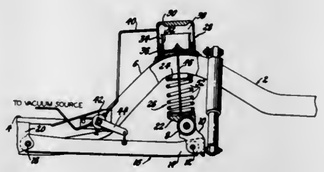


3,558,123
COMPOSITE SPRING ASSEMBLY
Ming-Chih Yew, Utica, Mich., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed Oct. 23, 1968, Ser. No. 769,905
Int. Cl. B60g 11/58
U.S. Cl. 267—34 5 Claims

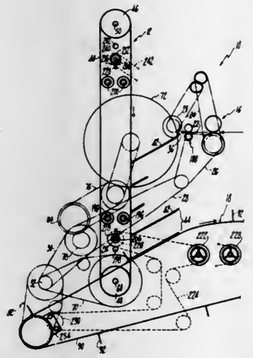
A vehicle suspension system in which a vacuum energized auxiliary spring is arranged in opposed relation to a primary suspension spring disposed in compression between the sprung and unsprung mass of the vehicle, with the auxiliary spring being operatively connected to one of the masses by an element which is linearly stable in tension and collapsible in compression.

3,558,124
HOLDER FOR A CIRCULAR WORKPIECE SUBJECT TO EXPANSION AND CONTRACTION
David S. McMichael, Crown Point, Ind., assignor to United States Steel Corporation, a corporation of Delaware
Filed Aug. 7, 1968, Ser. No. 750,921
Int. Cl. B23q 3/14; B23b 31/40
U.S. Cl. 269—48.1 5 Claims

Apparatus for supporting a workpiece while it is undergoing expansion or contraction in a manufacturing process. Through a unique linkage-type support for the workpiece, the apparatus maintains the workpiece centered about its central axis in spite of expansion or contraction. The invention is particularly useful in holding large metal rings or conical metal workpieces, such as blast furnace hopper rings, bells, and hoppers while they are being heated prior to applying abrasive-resistant coverings.

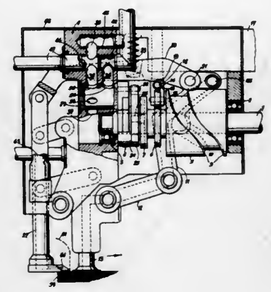


3,558,125
VERTICAL COLLATOR
Charles Aaron, West Caldwell, and Edward A. Stroud, Wharton, N.J., assignors to Cameron Machine Company, Dover, N.J., a corporation of New York
Filed July 23, 1968, Ser. No. 746,914
Int. Cl. B65h 39/02
U.S. Cl. 270—58 24 Claims



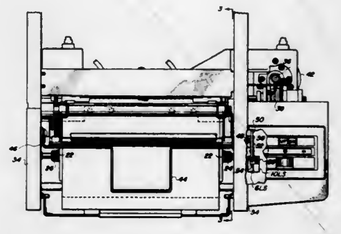
The collator of this invention comprises sheet collecting compartments defined by forks mounted on a prestressed, pretensioned precision chain having a vertical run confronting a downstream end of a sheet flow path. Precision sheet separation into identical complements in each sheet collecting compartment is achieved on a mass production basis by resilient stabilizing means embracing a portion of the chain in its vertical run in captured relation to positively ensure that the tip of each fork is driven past the oncoming sheets in a common vertical path in timed relation to a sheet separating member upstream of the forks in the sheet flow path.

3,558,126
DRIVING MEANS FOR THE CONTROL OF FEEDING DEVICES OF SHEET MATERIAL
Jaroslav Jiruse, Blansko, Czechoslovakia, assignor to Adamovske strojirny, narodni podnik, Adamov, Czechoslovakia
Filed Aug. 20, 1968, Ser. No. 754,041
Claims priority, application Czechoslovakia, Aug. 21, 1967, PV5968-67
Int. Cl. B65h 3/08
U.S. Cl. 271—26 7 Claims



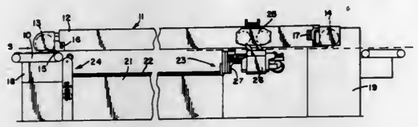
Apparatus for the pneumatic feeding of individual sheets from a sheet stack to printing machines, in which the drive is derived from a driving shaft, the axis of which is parallel to the sheet stack and in direction of supply of the sheets. The driving shaft supports a number of cams transmitting motion to individual mechanisms of the feeding device and controlling vacuum and pressurized air supply for different functional purposes which are all located in a common housing.

3,558,127
SHEET HANDLING APPARATUS
Roy E. Blewitt, Jr., Southport, Conn., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Nov. 19, 1968, Ser. No. 777,204
Int. Cl. B65h 1/00
U.S. Cl. 271—62 6 Claims



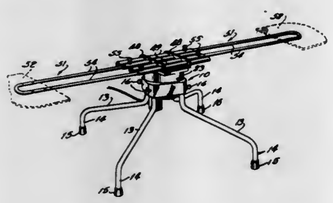
Sheet-handling apparatus for retaining a stack of sheet material at a predetermined level so that the topmost sheet may be forwarded therefrom by cooperable sheet-forwarding means. The apparatus includes a sensor bar pivotal into contact with the topmost sheet in the stack. The pivotal motion of the sensor bar controls two switches so that the upward motion of the stack will cause the opening of the first of the switches to reduce the speed of further upward movement of the stack. Continued pivotal movement of the sensor bar, caused by the slow movement of the stack, then opens the second switch to stop the stack at a predetermined height.

3,558,128
SHEET PILER WITH STAGGER STOP MECHANISM
Dario Buccicone, Gary, Ind., assignor to Bucciconi Engineering Co., Inc., Gary, Ind., a corporation of Indiana
Filed Feb. 24, 1969, Ser. No. 801,659
Int. Cl. B65h *31/34*
U.S. Cl. 271—86 **20 Claims**



An end stop bumper structure for an overhead conveyor-type sheet piling machine which is mounted on a support adjustable longitudinally of the machine and which comprises an L-shaped main frame with the long leg thereof disposed horizontally for reciprocating movement on track forming rollers on the support and with the short leg disposed vertically for mounting a bumper pad against which sheets are thrown for piling below the conveyor, and a force-absorbing fluid cylinder on the support having the piston thereof connected to the frame for cushioning the movement caused by the sheets striking the vertical face of the bumper pad. The bumper pad arrangement includes a relatively wide one-piece pad member for use during normal nonstagger piling which is adapted to be removably mounted on the vertically disposed short leg of the L-shaped frame in overlying relation to a multisection bumper pad assembly which is employed for stagger piling, the latter comprising top side pad sections and a center pad section which is mounted on a movable carriage forming frame arranged to be moved in a vertical path and then in a horizontal path defined by tracks on the main frame so that it may be moved upwardly for a substantial distance and then swung into a horizontal, out-of-the-way position where it will not interfere with the passage of sheets over the top of the bumper structure, with the side pad sections being moved to a retracted, nonoperative, out-of-the-way position upon movement of the center pad section to the horizontal position.

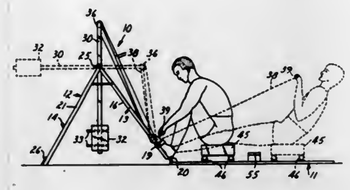
3,558,129
CHILDREN'S MERRY-GO-ROUND
Charles L. Curry, 332 Pleasant View Drive, Hurst, Tex. 76053
Filed Jan. 31, 1969, Ser. No. 796,648
Int. Cl. A63g *1/10*
U.S. Cl. 272—39 **2 Claims**



A merry-go-round for children having electrical driving means and having extensible and retractible seat arms and foldable leg members adapting the structure to be compactly collapsed for storage and transportation.

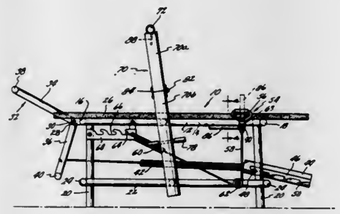
3,558,130
EXERCISING DEVICE USING PENDULUM WEIGHT AND PULLEY SYSTEM
Franklin C. Anderson, 557 Ridge Road, Owatonna, Minn. 55060
Filed June 6, 1968, Ser. No. 735,011
Int. Cl. A63b *69/06*
U.S. Cl. 272—72 **5 Claims**

A frame having a horizontal portion with a wheeled seat positioned thereon and movable longitudinally therealong and an inverted V-shaped portion pivotally attached to one end of the horizontal portion, an elongated arm pivotally attached at the apex of the inverted V-shaped portion with a weight affixed to one end and adjustable as to the size and position thereof, and pulley and rope means affixed between the inverted V-shaped portion of the frame adjacent the



junction thereof with the horizontal portion and the free end of the elongated arm so that pulling on one end of the rope causes the arm to pivot and the weight to rise. By measuring the length of stroke (the length the rope is pulled and the distance the wheeled seat is moved) and the amount and position of weight at the end of the arm, the work accomplished can be accurately calculated.

3,558,131
EXERCISE APPARATUS
Richard R. Dragon, 54 Hill St., Suffield, Conn. 06078
Filed Apr. 14, 1969, Ser. No. 815,910
Int. Cl. A63b *21/00, 21/10, 23/04*
U.S. Cl. 272—83 **8 Claims**



Exercise apparatus is described incorporating a combination of adjustable leg and arm exercising features. Mounted on one end of a table is a pivotal leg exerciser which is engaged by the ankle and pivoted against an adjustable spring force. Mounted on the sides of the table are hand grips attached by cables to adjustable springs for exercising the arms, shoulders and chest. Mounted above the table is a bar which is to be pressed up with the legs against the force of an adjustable spring. This bar may be pivoted downwardly from its normal leg exercising position to a lowered position for pressing with the arms. The hand grips are attached to the bar to provide the resisting force in this lowered position. In either the raised or lowered position the bar is supported so that it cannot accidentally fall on the person exercising.

3,558,132
GUN DRAWING TIMING APPARATUS
Melvin J. Miller, 7189 Dawn Ave. South, Inver Grove Heights, Minn. 55075
Filed Oct. 14, 1968, Ser. No. 767,402
Int. Cl. A63f *9/02*
U.S. Cl. 273—1 **2 Claims**

A quick draw-timing apparatus for a hand gun consisting of an electrical-timing clock, a starting switch in circuit with said clock, a solenoid-actuated brake shoe to mechanically stop said clock, a target, a switch in connection with and actuated by said target upon the impact of a projectile, said target switch closing a circuit to energize said solenoid, said solenoid being arranged to break said starting switch circuit and deenergize said clock and to actuate said brake shoe to mechanically stop said clock.

3,558,133
PICKUP GAME ELEMENTS
Lawrence Reiner, One Hickory Lane, Woodbury, and Philip Scheyer, Spring Valley, N.Y., to said Scheyer assignor to said Reiner
Filed Feb. 12, 1968, Ser. No. 704,872
Int. Cl. A63b *71/04*
U.S. Cl. 273—1 **4 Claims**



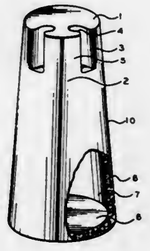
Game device consisting of a plurality of cup-shaped elements placed on a surface with the opening down and in a predetermined configuration. Each cup is marked with a different letter or number. The base of the cup, which faces upwardly in use, is provided with a plurality of circular ribs about its periphery to prevent a user's foot from slipping. The cups are stepped on by the game player who simultaneously picks up adjacent cups in numerical or alphabetical order.

3,558,134
BALL THROWING ACCURACY TRAINING APPARATUS
Harry H. Holtsma, 8 Virginia Court, Wayne, N.J. 07040
Filed Oct. 28, 1968, Ser. No. 771,243
Int. Cl. A63b *69/40*
U.S. Cl. 273—26 **2 Claims**

Apparatus to teach ball throwing accuracy comprising a pair of spaced-apart standards stretched between which is a removable guide wire having threaded thereon diametrically apertured balls adapted to be grasped for throwing along the guide wire in teaching arm movements for improved throwing accuracy. The standards are adjustable as to height to suit the height of any particular trainee to be taught.

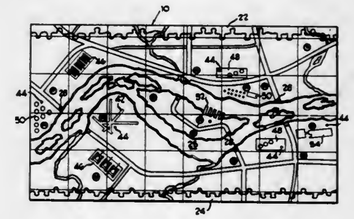


3,558,135
FOOTBALL BLOCKING DUMMY
Robert L Rees, and George E. Williams, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware.
Filed June 13, 1968, Ser. No. 736,731
Int. Cl. A63b *67/00*
U.S. Cl. 273—55 **8 Claims**



As an article of manufacture, a football blocking dummy useful in teaching the fundamentals of blocking and tackling is provided which has in the upper portion of the article integrally positioned therein a grasping means which protects the hands, wrists, and fingers of the individual holding the dummy from injury caused by the force of another individual who blocks or tackles the dummy.

3,558,136
DOUBLE JIG-SAW PUZZLE GAME
Norman T. McFarland, Urbana, Ill., assignor to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed Feb. 12, 1968, Ser. No. 704,699
Int. Cl. A63f *3/00*
U.S. Cl. 273—130 **2 Claims**



A double jigsaw puzzle game wherein two opposing players or teams are provided with identically cut and illustrated, but differently colored, pieces of a scene. A playing board is provided which also includes the scene depicted by the assembled playing pieces. Each player starts with one of the opposite edge portions of the scene on the board and attempts to complete a major portion of the scene by placing the pieces properly on the board in advance of his opponent. As

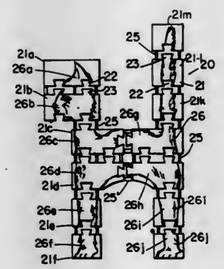
a player progresses with the placement of contiguous pieces of the puzzle, he is credited with scores as indicated on certain of the puzzle pieces. Further there is provided a plurality of playing pieces for each player which he may advantageously place on indicated sections of the puzzle scene as such sections are completed by the player. A starting strip is formed along each of two opposite sides of the board, the inner edges of these strips interlocking with puzzle pieces having a complementary configuration.

3,558,137
GAME BOARD WITH APERTURES AND SELECTIVELY MATING PIECES THEREFOR
Bernard Progin, 12c, Avenue Henri Golay, 1200 Geneva, Switzerland
Filed Sept. 18, 1968, Ser. No. 760,618
Int. Cl. A63f *3/02*
U.S. Cl. 273—131 **7 Claims**



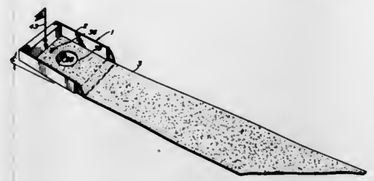
A game of battles consisting of two plates one for each of two players, each plate formed with holes extending through and through. The game is played with two sets of pawns, respectively offensive pawns and defensive pawns. The offensive pawns are meant to be introduced in the holes by one of the plate faces while the defensive pawns are meant to be introduced in the holes by the other face of the plates. The pawns are further of two groups: on group comprising half the offensive pawns formed with a conical recess at one end adapted to mate with a conical projection formed on half the defensive pawns so that when two of such mating pawns are inserted into a hole, they completely fill that hole: the other group comprising the other half of the offensive pawns which are formed with conical projections at the end thereof adapted to mate with conical recesses formed on the remaining half of the defensive pawns, again so that when these two mating pawns are inserted in a hole they completely fill that hole and such that when an offensive pawn of one group is inserted in a hole already containing a defensive pawn of the other group, the offensive pawn only and visibly partially fills that hole.

3,558,138
METHOD OF PRODUCING AN ASSEMBLY PUZZLE
Jerome H. Lemelson, 85 Rector St., Metuchen, N.J. 08840
Filed Sept. 5, 1968, Ser. No. 757,662
Int. Cl. A63f *9/10*
U.S. Cl. 273—157 **4 Claims**



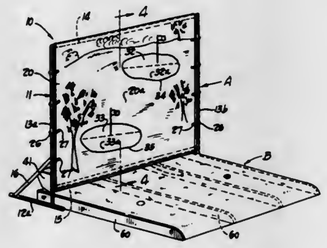
An assembly puzzle toy having separate components shaped to permit edgewise abutment assembly thereof. The components are molded in an exploded arrangement of the figure which is to be assembled with gates holding the components in place. Decorating material is applied to the exploded figure so that when the gates are removed and the components are assembled, the decorating material cooperates to form a recognizable figure. The exploded arrangement of the figure serves as an assembly aid for the person who is to assemble the components.

3,558,139
AMUSEMENT DEVICES
John R. Brandell, and Nick C. Kategian, Glenview, Ill., assignors to Brandell Products Corporation, Rosemont, Ill., a corporation of Illinois
Filed Apr. 21, 1969, Ser. No. 817,971
Int. Cl. A63b *67/02, 57/00*
U.S. Cl. 273—176 **5 Claims**



An amusement device embodying a novel carton and a runner, which may be disposed in the carton in folded position for storage, or which may be disposed in extended position of use, the device affording a practice-putting device, or the like. The bottom wall of the carton includes a scored cutout portion which is adapted to be swung downwardly and rearwardly into latching engagement with a rearward opening in the bottom wall to thus form a ball-receiving opening in the bottom wall and a support for holding the carton at an acute angle to a supporting surface. The carton includes a front wall which is movable from a first vertically extending position wherein tabs thereon engage the carton's sidewalls and bottom wall to a horizontally extending position wherein tabs thereon are retained in guiding engagement between the two plies of material which form the sidewalls. The runner includes a ball-receiving opening which is adapted to be aligned with the ball-receiving opening in the carton's bottom wall when the runner is in its extended use position overlying the bottom wall and the front wall in its horizontally extending position. A rear wall of the carton includes cut lines which permit U-shaped tabs to be moved outwardly therefrom to provide brackets for supporting a decorative flag.

3,558,140
GOLFING TARGET INCLUDING A SLIT ALONG THE BOUNDARY OF A SIMULATED GREEN
Philip Romeo, 29508 Bruce Drive, Willowick, Ohio 44094
Filed Apr. 23, 1969, Ser. No. 818,552
Int. Cl. A63b *69/36, 67/02, 63/00*
U.S. Cl. 273—181 **9 Claims**



A golf game simulating apparatus comprises a generally vertical frame having a sheetlike member attached thereto with at least a simulated golf green depicted on its forward face. The sheetlike member is slit along the lower and side boundaries of the simulated golf green so that a golf ball striking the simulated golf green passes through the slit and falls along the rear face of the sheet member.

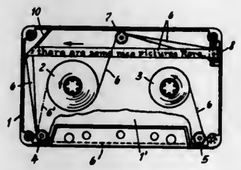
A golf ball guiding structure is provided to direct the balls forwardly of the sheet member on to a simulated putting green adjacent the vertical frame.

3,558,141
MAGNETIC RECORDING AND REPRODUCING APPARATUS
Shigeo Suzuki, Tokyo-to, Japan, assignor to Beltek Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan
Filed Nov. 14, 1967, Ser. No. 682,779
Claims priority, application Japan, Nov. 25, 1966, 41/107571
Int. Cl. G11b *21/08*
U.S. Cl. 274—4 **1 Claim**



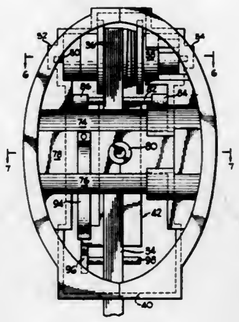
Fine adjustments of the position of a magnetic head relative to the recording tracks of a tape in a magnetic recording and reproducing apparatus are accomplished by the combination of a support member supporting the magnetic head, a threaded shaft supporting the support member, and a mechanism for adjustably rotating the threaded shaft.

3,558,142
RECORDING TAPE MAGAZINE
Hans Poessl, Kloten, Switzerland, assignor to Eduard Ritter, Zurich, Switzerland
Filed July 8, 1968, Ser. No. 743,062
Claims priority, application Switzerland, July 19, 1967, 10277/67
Int. Cl. G11b *5/00*
U.S. Cl. 274—4 **1 Claim**



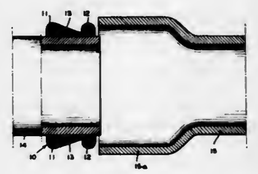
There is disclosed a magazine for recording tape which is of the type comprising a magazine housing and a windoff spool and windup spool disposed in such magazine housing. A recording tape is guided along a predetermined path of travel between the windoff spool and the windup spool. The magazine housing incorporates means defining a viewing area along the path of travel for the recording tape in order to render visible visual markings provided on the recording tape in synchronism with the reproduction or playback of acoustical information on the recording tape.

3,558,143
SOUND REPRODUCING MEANS
Gunars Licitis, Lombard; Peter Aleksa, and Marvin I. Glass, Chicago, Ill., assignors to Marvin Glass & Associates, Chicago, Ill., a partnership
Filed June 24, 1968, Ser. No. 739,313
Int. Cl. G11b *21/08, 25/06*
U.S. Cl. 274—11 **5 Claims**



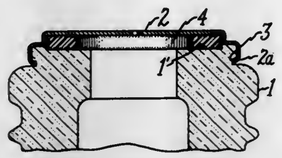
A sound reproducing means for use with a tape recording of the type having sound grooves adapted for engagement by a stylus. The tape portion includes a plurality of messages or sounds arranged in generally parallel grooves, and the tape is adapted to be wound on a reel mounted for rotation within a housing which also includes a stylus or needle and a sound diaphragm associated with the needle. The tape recording is disposed for manual movement across the point of the stylus, to thereby effect reproduction of one of the recorded messages, and the tape reel is spring-biased to effect rewinding of the tape after it has been withdrawn from the housing and then released.

3,558,144
MECHANICAL FLEXIBLE TELESCOPIC JOINT SEAL
Herbert O. Corbett, Cincinnati, and Raymond C. Karczewski, Carrollton, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Filed Aug. 1, 1969, Ser. No. 846,786
Int. Cl. F16j *15/06*
U.S. Cl. 277—208 **8 Claims**



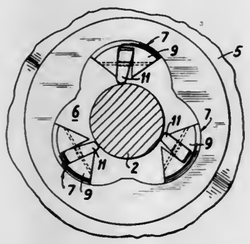
A gasket for producing a fluidproof joint between a pair of telescoping elements, the gasket comprising a pair of spaced rings or beads connected by a substantially thinner web portion, all produced from flexible and compressible elastomeric material. Desirably the web portion is angularly disposed and merges with the upper circumferential periphery of one of the spaced rings and with the lower circumferential periphery of the other of said rings and the surfaces of the two rings and web are circumferentially knurled.

3,558,145
SEALING GASKET
Francis J. Charewicz, Lanesboro; Eugene K. Steele, Dalton, and Frank S. Nichols, Pittsfield, Mass., assignors to General Electric Company, a corporation of New York
Filed Oct. 7, 1968, Ser. No. 765,288
Int. Cl. B65d *53/00*; F16j *15/00*; F16k *41/00*
U.S. Cl. 277—228 **4 Claims**



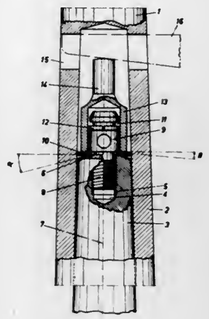
A compound gasket formed of a single piece of resilient material is provided with a resilient inner core and softer, more plastic, surface areas. The plastic surface areas of the gasket are adapted to flow readily into and around depressions and irregularities on surfaces of a lightning arrester end assembly when mounted thereon to provide a fluidtight seal for the assembly; while the more resilient inner-core portion of the gasket is adapted to retain its resilience during the long life span demanded of lightning arrester sealing gaskets. In a preferred embodiment of the invention, the sealing gasket is formed by a reversion process in which predetermined portions of the surface of the gasket are subjected to a controlled temperature after the gasket is cured, thereby causing these surface portions to revert, or become partially uncured, and thus, change to a softer state than the inner resilient core of the gasket.

3,558,146
KEYLESS CHUCK
Dale Martin Mayers, 912 Hollywood Place, West Palm Beach, Fla.; Duane D. Cook, 1126 Valley Road, Wayne, N.J.
Filed Apr. 2, 1968, Ser. No. 718,139
Int. Cl. B23b *31/19*
U.S. Cl. 279—28 **5 Claims**



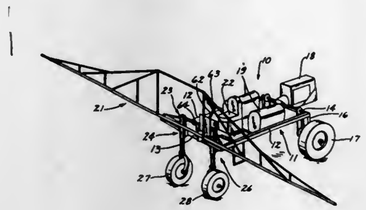
A keyless chuck assembly, wherein the chuck grips the tool shank solely as a result of the torque produced by the resistance of the workpiece to the turning movement of the chuck. In a first embodiment, the gripping members are preferably shaped in the form of a wedge which is laterally displaced by the torque against one side of the slot and simultaneously cammed into permanent gripping engagement with the cylindrical surface of the tool shank, the side of the slot serving as a stop for limiting the gripping pressure between the shank and the wedge. In a second embodiment, the gripping members are preferably shaped in the form of a triangle, the sides of which terminate opposite the base in a pair of opposed gripping ears. Either a clockwise or counterclockwise torque will laterally displace the second gripping member against one of the sides of the slot and simultaneously cam one of the gripping ears into permanent gripping engagement with the cylindrical surface of the tool shank. Each side of the slot serves as a stop for limiting the gripping pressure between the shank and the associated gripping ear of the triangular gripping member.

3,558,147
CONE HEAD
Ture Johansson, Goteborg, Sweden, assignor to Eriksbergs Mek Verkstads Aktiebolag, Hisingen, Goteborg, Sweden
Filed Nov. 19, 1968, Ser. No. 776,900
Claims priority, application Sweden, Nov. 29, 1967, 16,341/67
Int. Cl. B23b *31/06, 31/44*
U.S. Cl. 279—103 **4 Claims**



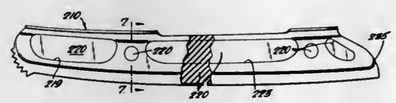
Cone heads for the shaft ends of machine tools are retained by friction within a correspondingly shaped mounting at the end of a driving part. If the tool during use will be subjected to pulling stresses, the friction may be insufficient to retain the tool. In order to obtain a satisfactory locking, the present design proposes the use of a spring washer mounted at the top of the cone head and adapted to engage the internal wall of the mounting when the cone head is introduced therein. A tubular member carried by means at the top of the cone head is designed to exert pressure on the washer to deform the same when it is desired to withdraw the cone head.

3,558,148
FRONT WHEEL SUSPENSION SYSTEM FOR A VEHICLE HIGH CLEARANCE FRAME
Cyril Rodney Johnson, Clarion, Iowa, assignor to Hagie Manufacturing Company, Clarion, Iowa, a corporation of Iowa
Filed Mar. 26, 1969, Ser. No. 810,615
Int. Cl. B60g *19/06*
U.S. Cl. 280—6.11 **5 Claims**



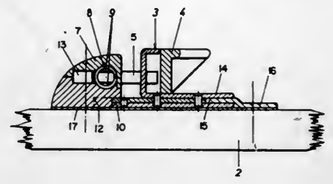
The high clearance frame includes a front transverse member. The suspension system includes a pair of suspension units corresponding to the front steering wheels. Each suspension unit includes an upright cylinder and piston assembly wherein the cylinder is rigidly mounted on the front member and the piston rod is projected outwardly from the lower end of the cylinder for connection with an upright wheel carrying member that is guidably supported on the front member for axial and rotational movement. The fluid chambers formed by the pistons at the upper ends of the cylinders are interconnected by a common fluid line to form a closed fluid reservoir. In response to either front wheel encountering a surface irregularity, one fluid chamber is expanded concurrently with the contraction of the other fluid chamber to maintain the front transverse member in a substantially horizontal position.

3,558,149
ELASTOMERIC-BONDED ICE SKATE
Russell A. Weldenbacker, 32 S. Wyoming Ave., Box 153, Haverford, Pa. 19041
Filed Mar. 19, 1970, Ser. No. 21,023
Int. Cl. A63c *1/32*
U.S. Cl. 280—11.12 **10 Claims**



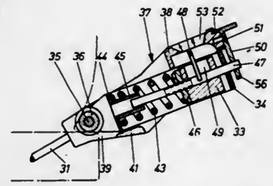
An ice skate is provided with an elastomeric-bonded structure which is economical to manufacture and which possesses safety features. The bonded ice skate comprises a pair of thin side members each having upright portions and laterally extending portions shaped to form complementary sole and heel plates when the upright portions are bonded together in side-by-side relation by means of rubber or another elastomer. In one embodiment, a thin metallic runner element having a hollow-ground edge is bonded by rubber centrally between the upright portions of the metallic side members in a manner which permits it to move vertically relative to the side members thereby to provide a shock-absorbent ice skate. In another embodiment, the central runner element is omitted and the ice-engaging edges are formed on the bottoms of the side members.

3,558,150
SAFETY TOE IRON FOR SKI BINDINGS
Hannes Marker, 51–53 Haupstr., 81 Garmisch-Partenkirchen, Germany
Filed Feb. 24, 1969, Ser. No. 801,560
Claims priority, application Germany, Feb. 28, 1968, 1,678,281
Int. Cl. A63c *9/00*
U.S. Cl. 280—11.35 **4 Claims**



The soleholder member is slidably mounted in a guide which extends transversely to the longitudinal direction of the ski and said soleholder member is movable in said guide against the force of at least one spring element and is movable forwardly after a predetermined transverse displacement. The spring element holds the soleholder member in its normal position and returns the soleholder member to said normal position when a displacement has been effected. The soleholder member comprises a pedal, which is arranged to engage the forward end portion of the sole of the skiing boot from below. The free end of the pedal is held on a toe iron member which is fixed to the ski. The free end of the pedal is held on said toe iron member with freedom of sliding movement in a plane which is parallel to the ski.

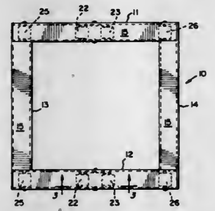
3,558,151
REAR TIGHTENER FOR SAFETY SKI BINDINGS
Bernd Payrhammer, 5 Gartenstrasse, 8105 Farchant, Germany
Filed Apr. 15, 1969, Ser. No. 816,288
Claims priority, application Germany, Mar. 7, 1969, 1,911,740
Int. Cl. A63c *9/08*
U.S. Cl. 280—11.35 **4 Claims**



A skiing boot pusher is disposed substantially between the legs of a U- or V-shaped retaining frame and is held on the same for pivotal movement about an axis which is transverse to the longitudinal axis of the ski and parallel to the tread of the ski. The free ends of the legs constitute guides for two tension elements, by which the rear tightener is held on the ski and which act on the pusher through the intermediary of at least one spring, which spring or springs produce the force for holding down the heel and the contact pressure by which the toe portion of the skiing boot is forced against a retaining device. A safety clutch is provided between the pusher and retaining frame and prevents a pivotal movement of the two parts relative to each other when the rear tightener is ready for use whereas it is disengaged to disconnect the two parts in response to

an overload. The pusher extends rearwardly beyond the axis on which it is pivoted to the retaining frame and forms a two-armed lever having a forward arm which has a free end engageable with the heel of the boot. The other arm of the lever forms a guide which extends in the longitudinal direction of the lever and is in guiding engagement with a slider, to which the tension elements are connected. Each spring has one end bearing on the slider and another end bearing on a fixed part of the pusher. The clutch member carried by the pusher consists of a pin, which is mounted in the slider for longitudinal movement therein. The clutch member carried by the retaining frame consists of a locking member, which can be arbitrarily released. The pin is nonrotatably mounted in the slider and on a screw-threaded portion carries a knurled nut, which is disposed between the slider and that end of the spring which bears on the slider.

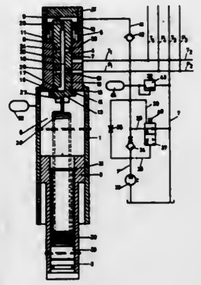
3,558,152
PALLET DOLLY
Ray P. Miles, 8575 W. Melody Lane, Macedonia, Ohio 44056, and Andrew E. Szucs, 4479 W. 226th St., Fairview Park, Ohio 44126
Filed Sept. 27, 1968, Ser. No. 763,312
Int. Cl. B62b *3/00*
U.S. Cl. 280—47.16 **1 Claim**



The invention relates to a pallet dolly of simplified construction which comprises a box frame containing parallel U-shaped members as part of the frame. Within each U-shaped member at its midsection, there is provided a pivotable saddle device containing a pair of rollers. A roller is also provided at each end of the U-shaped member. The end rollers are mounted slightly above the midsection rollers to enable the dolly to be tipped forward or backward on the end rollers for maneuverability.

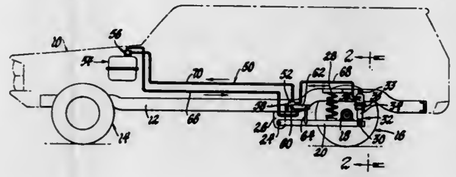
3,558,153
HYDROPNEUMATIC RESILIENT STRUT OR THE LIKE PROVIDED WITH LEVEL REGULATING MEANS LOCATED WITHIN THE CYLINDER HOUSING
Gunter Strauff, Kaarst, Germany, assignor to Langen & Co., Dusseldorf, Germany
Filed Dec. 23, 1968, Ser. No. 786,054
Int. Cl. B60g *15/12*
U.S. Cl. 280—124 **3 Claims**

A hydropneumatic resilient strut or the like adapted for arrangement between a wheel supporting means and a vehicle body in which the cylinder housing is provided with a level regulating means so constructed and dependent upon the relative position of the piston rod in the cylinder to establish in a first regulating position a fluid flow between a pressure line leading to the piston space and in a second regulating position a flow in a line provided between the piston space and a drain line. In a third regulating position, namely, a neutral position, the fluid flows are blocked and a continuously operative spring means functions to move the control piston of the level regulating means into a position corresponding to the first regulating position while an extension spring means operative only within a certain stroke range related to the piston or piston rod serves to move the control piston into the



second regulating position in opposition to the force of the spring means.

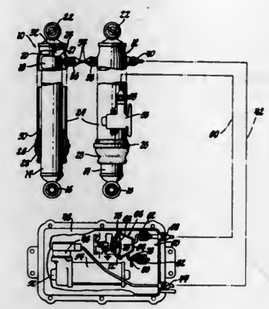
3,558,154
COMBINATION VALVE AND ELECTRIC SWITCH ASSEMBLY FOR AUTOMATIC VEHICLE LEVELING SYSTEM
George W. Jackson, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 1, 1969, Ser. No. 820,724
Int. Cl. B60g *11/56*
U.S. Cl. 280—124 **5 Claims**



In preferred form, a combination valve and electric switch assembly on an air tank enclosing a compressor. The interior of the tank is connected to an outlet in the assembly. The assembly includes a normally closed check valve that is connected by the assembly to the compressor inlet. A pressure responsive switch in communication with the check valve completes an energization circuit for an electric compressor drive motor when the inlet is supercharged and opens the check valve so the compressor will charge the tank. The switch includes an overtravel mechanism and spring detent arrangement for producing snap opening and closure of the electrical switch of the assembly in response to changes in sensed pressure.

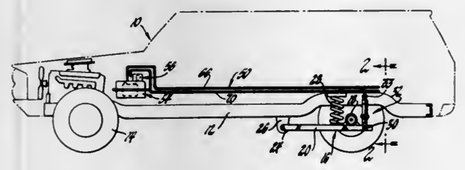
3,558,155
SEMIAUTOMATIC, OPEN LOOP LEVELING SYSTEM
George W. Jackson and James E. Whelan, Dayton, Ohio, assignors to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 1, 1969, Ser. No. 820,726
Int. Cl. B60g *11/56*
U.S. Cl. 280—124 **5 Claims**

In preferred form, a semiautomatic vehicle leveling system including fluid spring means connected between the sprung and unsprung mass of a vehicle for maintaining a predetermined height relationship therebetween. It includes an electric motor driven compressor having an inlet connected to atmosphere and an outlet in direct communication with the fluid spring means. The drive motor is energized by circuit means including a first circuit having a manually operated start switch to momentarily energize the drive motor. The circuit means further in-



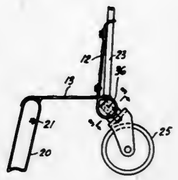
cludes a second circuit having a relay operated switch therein which completes an energization holding circuit for the drive motor. The system further includes a mechanical height controller responsive to changes in the height relationship of the sprung and unsprung mass to exhaust fluid from the fluid spring means. A flow sensing unit includes means responsive to a predetermined exhaust of fluid to condition the relay operated switch so as to deenergize the motor when the vehicle is level.

3,558,156
AUTOMATIC VEHICLE LEVELING SYSTEM INCLUDING ELECTRICALLY OPERATED PUMP DOWN COMPRESSOR
George W. Jackson, Dayton, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed May 1, 1969, Ser. No. 820,970
Int. Cl. B60g *11/56*
U.S. Cl. 280—124 **4 Claims**



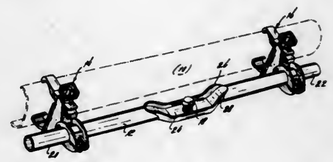
In preferred form, an automatic vehicle leveling system including a fluid spring between the chassis and the axle assembly that is selectively connected to a precharged pressure tank through a closed loop supply system including a height controller having three position valve means. An electrically operated compressor within the storage tank in cooperation with the multi-position height controller produces a rapid pump down of the fluid spring when static load is removed. Concurrently the compressor will precharge the tank for subsequent leveling use when the vehicle chassis is loaded.

3,558,157
FOLDABLE TROLLEY
Kurt Otto Bernhard Neumann, 2/7 Grafton Crescent, Dee Why, New South Wales, Australia
Filed Mar. 18, 1969, Ser. No. 808,165
Int. Cl. B62b *11/00*
U.S. Cl. 280—36 **3 Claims**



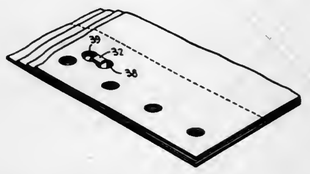
A foldable trolley having two hinge members which are locked in their operating or load carrying position upon part rotation of wheel mounting brackets carrying wheels for supporting the trolley. The hinge members are shaped so that in the folded position they form a space for a handle member.

3,558,158
COMPRESSION HITCH BAR ASSEMBLY
John C. Abromavage, Tempe, and James W. Ryden, Phoenix, Ariz., assignors to Arcos, Inc., Phoenix, Ariz., a corporation of Oregon
Filed June 23, 1969, Ser. No. 835,487
Int. Cl. B60d *1/14*
U.S. Cl. 280—502 **10 Claims**



A hitch bar assembly of the type supporting a ball socket for towing a trailer and including compression clamps encircling the hitch bar and engageable with the towing vehicle rear bumper.

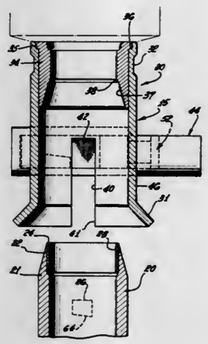
3,558,159
MANIFOLD FORMS
William R. Wakeman, Niagara Falls, and William D. Waffner, Erie, N.Y., assignors to Moore Business Forms, Inc., Niagara Falls, N.Y., a corporation of Delaware
Filed May 28, 1968, Ser. No. 732,597
Int. Cl. B411 *1/26*
U.S. Cl. 282—11.5 **1 Claim**



This invention provides a new way of attaching carbonless copying sheets in layered assembly, each sheet except one outer sheet having a coating on one side. The

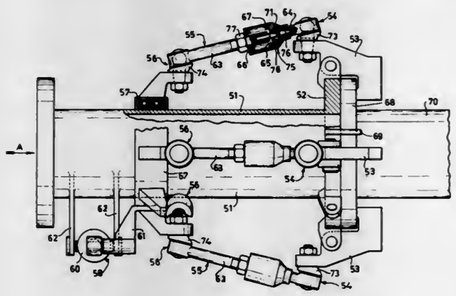
attachment is by adhesive applied to an uncoated surface of one outer sheet and the joining of it with an uncoated surface of the other outer sheet by an appropriate structure to get a secure adhesive bond to hold the sheets in assembled relationship.

3,558,160
EXTERNAL WELLHEAD CONNECTOR MEANS
Chester B. Falkner, Whittier, Calif., assignor to Deep Oil Technology, Inc., Long Beach, Calif., a corporation of California
Filed Nov. 14, 1968, Ser. No. 775,872
Int. Cl. F16l *19/00*
U.S. Cl. 285—18 **10 Claims**



A connector means for a subsea wellhead assembly wherein wellhead members may be quickly releasably connected by means of externally actuated interlocking means comprising a locking bolt disposed and accessible at the outer surface of an outer barrel means and a lock lug on an inner mandrel means provided with wedge surface engagement with a wedge surface on the locking bolt.

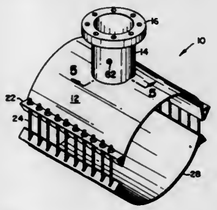
3,558,161
PIPE-CONNECTING DEVICE
Giorgio Bormioli, Via Galileo Galilei 11, Padova, Italy
Filed June 5, 1968, Ser. No. 734,819
Claims priority, application Italy, June 10, 1967, 17,065/67; May 21, 1968, 16,757/68
Int. Cl. F16l *23/00*
U.S. Cl. 285—27 **7 Claims**



A connecting device for pipings, especially for piping on board an oil tanker and piping installed on a harbour pier, is disclosed, which permits the rapid making and undoing of a connection between said pipings. The device essentially comprises a multiple, spider-like, flange gripping mechanism which can be actuated either hydraulically or mechanically, according to two respective preferred embodiments of the invention.

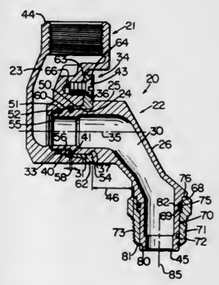
The advantage of a rapid connection or disconnection of two such pipings can be appreciated especially on account of the risks of fire hazards and breakages due to rough sea and the like.

3,558,162
TAPPING SLEEVE
Peter E. Ferrai, South San Francisco, Calif., and Robert B. Williams, Texarkana, and Charles W. Livingston, Douglassville, Tex., assignors to Smith-Blair Inc., San Francisco, Calif., a corporation of California
Filed Nov. 18, 1968, Ser. No. 776,652
Int. Cl. F16l *41/00*
U.S. Cl. 285—93 **1 Claim**



A tapping sleeve for large diameter conduits comprised of a curved upper body having an opening fixed to a tubular outlet member. The end portions of the body are provided with lug members for retaining bolts connected to a lower body member or bales for holding the sleeve on a pipe. The lug members are integral elongated metal pieces with separate rows of slots and openings that are aligned when each lug member is bent along a longitudinal line between the slots and openings. The upper body is constructed with a slot on its inner surface around said opening for a resilient sealing member that forms a fluid tight seal between the body section and the conduit to which the sleeve is attached.

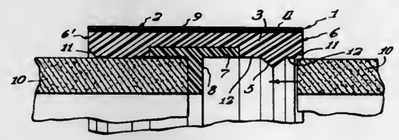
3,558,163
SWIVEL CONNECTER FOR TUBING
Glenn E. Moore and James L. Hughes, Cincinnati, Ohio, and Frank G. Lamping, Dayton, Ky., assignors to Dover Corporation, Cincinnati, Ohio, a corporation of Delaware
Filed Jan. 6, 1969, Ser. No. 789,195
Int. Cl. F16l *27/02*
U.S. Cl. 285—168 **12 Claims**



A swivel connecter for tubing having an inlet portion and a substantially L-shaped outlet portion fastened to the inlet portion in a simple and economical manner

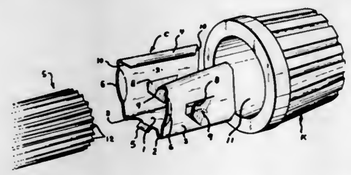
wherein the L-shaped outlet portion is rotatable relative to the inlet portion about an axis common with a leg of the L-shaped outlet portion. One of the portions of the swivel connecter may also be provided with an adapter which is rotatable relative to such one portion about an axis transverse the common axis and through an angle of 360°.

3,558,164
PIPE COUPLING
Richard F. Havell, Crystal Lake, Ill., assignor to National Clay Pipe Institute, Crystal Lake, Ill., a not-for-profit corporation of Illinois
Filed Dec. 11, 1968, Ser. No. 783,057
Int. Cl. F16l *21/00, 49/00*
U.S. Cl. 285—236 **8 Claims**



A coupling for plain-end pipe is disclosed which comprises a unitary sleeve of elastomeric material such as rubber or urethane reinforced by a flexible tubular sheath of plastic or fiber glass. Near each end of the coupling, the inner surface of the elastomeric sleeve is provided with bead portions to grip and seal the pipe. The inner portion of the sleeve has a centrally located annular ring extending inwardly therefrom which may be removable and which serves as a pipe end stop.

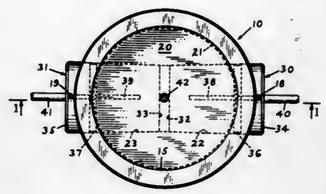
3,558,165
CLIPS TO HOLD KNOBS ON SHAFTS
Robert Graham Lundergan, Camp Hill, Pa., assignor to AMP Incorporated, Harrisburgh, Pa.
Filed Aug. 6, 1968, Ser. No. 750,647
Int. Cl. F16d *1/06*
U.S. Cl. 287—53 **10 Claims**



A clip to hold a knob on a shaft has a generally U-shaped configuration tapered from one end to the other and it is adapted to fit within a hollowed section of the knob. Projections with sharpened ends dig into the wall of the hollowed section to secure the clip therein and the free ends of the legs of the clip are inwardly directed to frictionally engage the shaft as the shaft moves within the clip, the base and legs of the clip being outwardly deformed by the shaft causing the free ends to dig into the shaft.

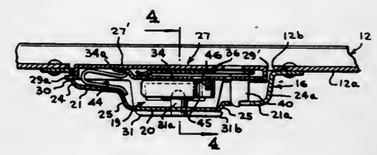
3,558,166
PRESSURE VESSEL CLOSURE
Donald E. Witkin, Warren, Pa., assignor to National Forge Company, Irvine, Pa., a corporation of Delaware
Filed Aug. 8, 1969, Ser. No. 848,596
Int. Cl. A47j *36/10*; B65d *45/00*
U.S. Cl. 292—256 **3 Claims**

A closure for a pressure vessel in which the closure plug fits within the open end of the vessel and in which the vessel walls and closure plug have aligned holes on opposite sides which accommodate tapered closure pins. The closure pins are provided with annular grooves which span the juncture between the vessel and plug. Each



closure pin also has a narrow axial groove in its outer surface to accommodate an alignment bar which insures proper pin positioning.

3,558,167
COMBINED LATCH AND LOCK MECHANISM
Wallace E. Atkinson, Petersburg, Va., assignor to Long Manufacturing Co., Inc., Petersburg, Va., a corporation of Virginia
Filed Apr. 25, 1969, Ser. No. 819,156
Int. Cl. E05b *65/52*; E05c *1/10, 1/14*
U.S. Cl. 292—228 **14 Claims**

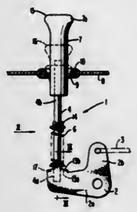


A combined latch and lock mechanism for luggage and the like, including a cup member to be mounted on the underside of a luggage wall under an aperture to define a well aligned with the aperture and a latching member in the well hinged at one end to the cup member and having a front surface which is substantially flush with the exterior plane of the luggage wall in latching position. The latching member has top and bottom flanges defining keeper apertures and tongues inwardly adjacent keeper slots in upper and lower walls of the cup member to interlock with a keeper loop which enters either of the keeper slots. A spring is stressed by the keeper loop when entering into latching position to automatically eject the keeper upon release of the keeper loop.

3,558,168
MECHANISM FOR LOCKING A MOTOR VEHICLE DOOR LOCK
Rudolf Andres, Sindelfingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed Jan. 27, 1969, Ser. No. 794,147
Claims priority, application Germany, Feb. 1, 1968, 1,653,962
Int. Cl. E05b *1/02*
U.S. Cl. 292—347 **15 Claims**

An arrangement for securing the locked position of a motor vehicle door-lock which includes a locking rod that is connected on the inside of the door with a bell-crank, itself connected with the door-lock mechanism; the locking rod projects with its actuating knob through an aperture provided in the lower window frame and

is adapted to be displaced into the locking position by pressure in the axial direction; in the pressure (push-in) direction the locking rod is yieldingly arranged with re-



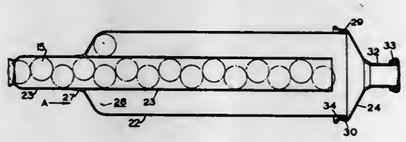
spect to the bellcrank by way of a pre-stressed spring but is rigidly arranged with respect to the bellcrank in the return (pulling) direction.

3,558,169
RECORD HANDLING DEVICE
Richard A. Onanian, 105 Wildwood Ave., Arlington, Mass. 02174
Filed July 29, 1968, Ser. No. 748,276
Int. Cl. B65g *7/12*
U.S. Cl. 294—16 **10 Claims**



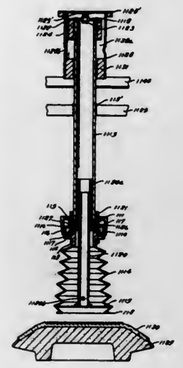
A device for picking up individual phonograph records from a stack of records and for holding the selected record so that the fingers do not touch the playing surface of the record, consists of a fold of rigid material which defines an open envelope the two sides of which are not in registry so that each does not cover the other and as a result a portion of each side extends beyond the edge of the other side. The extending portion of each side of the fold, called a tab, tapers to a knife-like edge so that one tab can readily be placed along the top edge of a selected record, then the holder is turned so that the other tab slides under the selected record and the holder is then pushed onto the record until the edge of the record abuts the back of the holder.

3,558,170
BALL RETRIEVERS
Stephen Stanworth, Albert Mills North, Barrowford, Lancashire, England
Filed Apr. 4, 1968, Ser. No. 718,778
Claims priority, application Great Britain, Apr. 11, 1967, 16,522/67
Int. Cl. A47f *13/06*
U.S. Cl. 294—19 **6 Claims**



A ball retriever comprising a plastics tube having an open inlet end and a deformable portion at said inlet end for allowing the passage of balls into said tube.

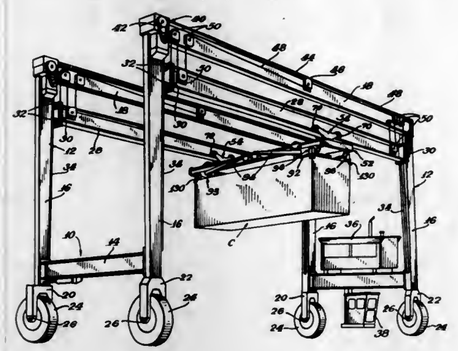
3,558,171
PNEUMATIC ARRANGEMENT FOR TRANSFERRING ARTICLES
Alfred Netsch, Erwin Weber, and Wolfgang Ullrich, Selb, Germany, assignors to Gebruder Netzsch Maschinenfabrik, Selb, Germany
Filed Nov. 15, 1968, Ser. No. 776,231
Claims priority, application Germany, Nov. 15, 1967, 1,683,923
Int. Cl. B66c *1/02*
U.S. Cl. 294—64 **15 Claims**



A pneumatic arrangement by which an article is raised through the application of a suction force. The raising suction force is generated through the contraction of a bellows which expels the air from its interior, and the subsequent expansion of the bellows so as to create a partial vacuum within the interior. The bellows is brought into contact with the article to be raised prior to the contraction and expansion process. A spring adjustment device permits adjustment in the suction force so that the vacuum within the bellows becomes neutralized when an article heavier than a predetermined weight adheres to the bellows. The vacuum within the bellows is also gradually neutralized when the article is to be redeposited after being raised so that the depositing procedure is accomplished in a gradual manner for the purpose of protecting fragile articles.

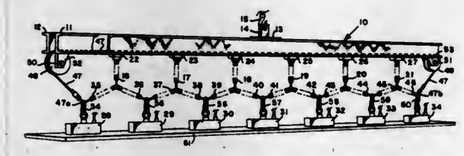
3,558,172
LOAD HANDLING APPARATUS
Gerald P. Lamer, Rothschild, Elliott S. Burdick, Schofield, and Forrest V. Swanson, Wausau, Wis., assignors to Drott Manufacturing Corporation, a corporation of Wisconsin
Filed June 28, 1968, Ser. No. 740,927
Int. Cl. B60p *1/64*
U.S. Cl. 294—67 **3 Claims**

A load handling apparatus for lifting loads either from the bottom or from the top. The apparatus is the type which has a pair of spaced upright inverted U-shaped support frames for straddling a load. A grapple frame is movably carried by the support frames. A pair of movable carriages are mounted on opposite ends of the grapple frame. A pair of arms are swingably mounted on opposite sides of each of the carriages for engaging the underside of a load. A pair of latch members are also mounted at opposite sides of each of the carriages for engaging the top portion of a load. The latch means are inoperative when the arms are operative while the arms are inoperative when the latch means are operative. The mounting of the latch means on the carriage is spaced from the mounting of the arms to the carriage so that the lift arms



operate free of the latch means and the latch means operate free of the lift arms.

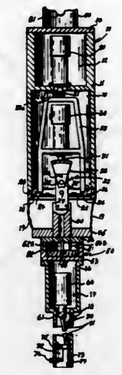
3,558,173
EQUALIZING HANGER BEAM
Bernhard A. Palm, Los Angeles, Calif., assignor to Buck Manufacturing Company, Los Angeles, Calif., a corporation of Delaware
Filed Nov. 4, 1968, Ser. No. 773,232
Int. Cl. B66c *1/02*
U.S. Cl. 294—81 **7 Claims**



An equalizing hanger beam arrangement employing a plurality of load gripping devices which may be either magnetic or vacuum, and which are supported from one or more beams or beam arrangement by a system of interconnected chains or similar flexible linkages that may assume various angular relationships with respect to each other depending upon the attitude or condition of the load gripped by the devices. In one embodiment selected ones of these linkages which are positioned adjacent the ends of the beam are connected to a cable or chain which is supported on the ends of the beam by sheaves or pivoted members thereby providing automatic adjustment of the end linkages of the hanger system.

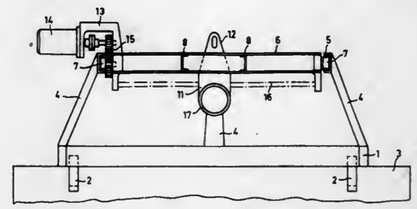
3,558,174
VELOCITY GAGE PLACEMENT TOOL ASSEMBLY
Michael G. Robinson, Riverside, Calif., assignor to the United States of America as represented by the Secretary of the Air Force
Filed July 5, 1968, Ser. No. 742,765
Int. Cl. E21b *23/00*
U.S. Cl. 294—86.13 **2 Claims**

A placement tool assembly to remotely place, level and release a velocity gage or other level-sensitive device in a deep and near-vertical hole in the earth. The assembly includes means for lowering the assembly and the velocity gage within the hole, a placement tool, a remote control panel with leads to the placement tool, and an external power source to the remote control panel. The placement tool includes two gearmotors to level the velocity gage, within the hole, in each of two orthogonal horizontal axes, a mercury level sensing device for indicating when the velocity gage is level, and a solenoid to hold the



velocity gage during placement and leveling and to release it after placement and leveling. The remote control panel provides switches for controlling the gearmotors which level the velocity gage, visual means for determining when the velocity gage is level, and a switch for releasing the correctly positioned velocity gage.

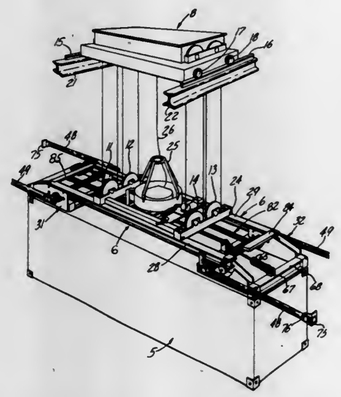
3,558,175
DEVICE FOR ADJUSTING THE SUSPENDING POINT OF A SUSPENDED OBJECT
Johan Arne Mattson, Vasteras, Sweden, assignor to Paul Anderson Industries Aktiebolag, Vasteras, Sweden, a corporation of Sweden
Continuation-in-part of application Ser. No. 645,374, June 12, 1967. This application Aug. 20, 1968, Ser. No. 754,089
Claims priority, application Sweden, June 15, 1967, 8,177/67
Int. Cl. E66c *1/00*
U.S. Cl. 294—67 **4 Claims**



This invention concerns a device for automatically adjusting the suspension point of a suspended object, e.g., of a container suspended in a crane, by displacing a suspending block along a beam mounted onto said object so as to bring the suspension point of the object into a desired position relative to the center of gravity of the object. The invention consists of gravity operated means sensing the position of the object and control means actuated by these sensing means to control the connection and disconnection of a source of power and a driving mechanism operating the displacement of the suspending block along the beam or, in combination, the displacement of the suspending block along the beam and of the beam relative to the object. The main embodiment comprises a vertical bar hinged to the suspending block

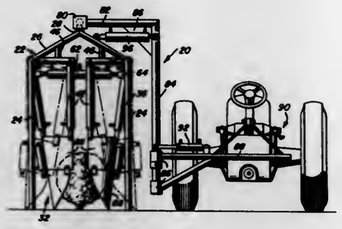
and to the suspension or hoisting device, sensing means being provided for sensing the angle between said bar and arms fixedly mounted on the suspending block and actuating control means controlling the action of the driving mechanism.

3,558,176
EXPANDABLE SPREADER AND GRAPPLING DEVICE FOR CARGO CONTAINERS AND TRAILERS
Jack E. Fathauer and Donald R. Whiteman, Roxboro, N.C., assignors to Midland-Ross Corporation, Cleveland, Ohio, a corporation of Ohio
Filed Oct. 7, 1968, Ser. No. 765,404
Int. Cl. B66c *1/00*
U.S. Cl. 294—67 **7 Claims**



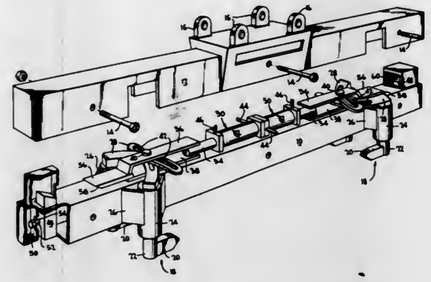
A cargo-handling device which embodies essential features of a cargo-container spreader equipped with both grappling mechanism and top-lifting latching mechanism, and constructed to be adjustably extendable in its lengthwise direction to adapt the device for lifting highway trailers and cargo containers of various lengths.

3,558,177
PLANT DIGGING MACHINE
William C. Snead, Rte. 1, Belton, Mo. 64012
Filed Oct. 10, 1968, Ser. No. 766,419
Int. Cl. B65d *51/00*
U.S. Cl. 294—70 **14 Claims**



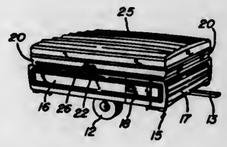
A digging machine for shrubs, small trees, and the like, including a pair of opposed arcuate digging blades mountable for lateral movement toward and away from each other so as to be positionable about a plant to be dug. The actual driving and retraction of the blades are controlled by both pneumatic and hydraulic rams with the entire machine being mountable upon a tractor or the like through a conventional three-point hitch. Each of the arcuate blades includes a lower hingedly mounted arcuate portion which is selectively movable, through a hydraulic ram, into a position directly underlying the plant subsequent to an initial driving of the blades so as to effectively sever the roots of the involved plant and form a ball of soil or dirt to be removed with the plant.

3,558,178
HYDRAULIC RAIL LIFTER
Glenn E. Taylor, 1345 Bankhead Ave., Atlanta, Ga. 30318
Filed Dec. 12, 1968, Ser. No. 783,323
Int. Cl. B66c *1/00*
U.S. Cl. 294—81 **9 Claims**



A rail lifter comprising a rigid elongated beam to be supported and manipulated from a crane or other conventional material lifting and handling device. A pair of laterally opposed grippers are supported at adjacent opposite ends of the beam for angular movement to and from operative positions in which they project beneath the beam in spaced relation below it to thus project beneath the rail head of a rail to provide support for the latter. The grippers are actuated through crank arms which are linked to the piston rods of hydraulic units arranged for extension and retraction movement parallel to the beam and in a manner to produce the desired angular movement of the said grippers. In order to avoid longitudinal slippage of the rail through the grippers, the rail head is thrust firmly downwardly against the grippers by plungers guided for vertical movement on the beam and actuated by cam means carried by the plunger rod at locations to engage and depress the plungers only after the grippers have moved beneath the rail head.

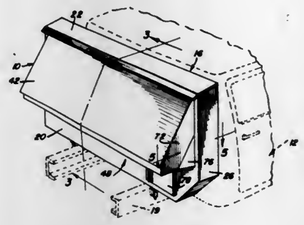
3,558,179
CAMPING VEHICLE WITH RETRACTABLE CONSOLE
Raymond Ernest Sonet, Brussels, Belgium, assignor to Ward Manufacturing, Inc., Hamilton, Ohio, a corporation of Ohio
Filed Sept. 17, 1968, Ser. No. 760,199
Int. Cl. B60p *3/34*
U.S. Cl. 296—23 **8 Claims**



A camping trailer including a body which supports a set of extendable beds and a cover movable between

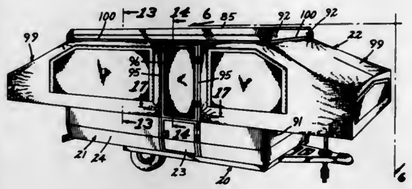
collapsed and elevated positions, is equipped with a utility console supported by a set of pivotable arms for movement between a retracted position within the body and a position spaced outwardly from the body through an intermediate elevated position within the body.

3,558,180
BED ATTACHMENT FOR TRACTOR CABS
Dean E. Algire, 764 Upper Fredericktown Road, Mount Vernon, Ohio 43050
Filed May 27, 1969, Ser. No. 828,311
Int. Cl. B60p *3/34*
U.S. Cl. 296—23 **10 Claims**



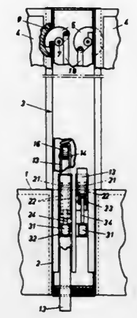
A collapsible bunk bed unit mountable on the rear of a tractor cab as an attachment therefor. The unit includes a main body which incorporates a lower storage compartment and an upper bed-receiving compartment within which the bed itself can be selectively stored vertically or positioned horizontally. Protective paneling is hingedly engaged between the main body and the bed support frame so as to extend rearwardly from the main body in a bed covering manner when the bed is opened for use and so as to fold inwardly and form an enclosure for the rear of the main body when the bed is collapsed.

3,558,181
COLLAPSIBLE TENT TRAILER
Wilbur E. Peterson, Harmony, Minn., assignor to Harmony Enterprises, Inc., Harmony, Minn., a corporation of Minnesota
Filed June 19, 1968, Ser. No. 738,200
Int. Cl. B60p *3/34*
U.S. Cl. 296—27 **4 Claims**



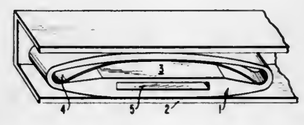
A trailer having a generally box-like body thereon with a pair of wing members slideably engaged at the upper edges for simultaneous sliding movements horizontally outwardly with a roof attached thereto so that outward movement of the wing members causes upward movement of the roof into a serviceable position and inward movement of the wing members causes downward movement of the roof to form a top for the trailer.

3,558,182
LOCKING MEANS FOR THE SIDEBOARDS OF A TRUCK PLATFORM
Goran Rosen, Radagatan 5, Lidkoping, Sweden
Filed Sept. 10, 1968, Ser. No. 758,876
Claims priority, application Sweden, Sept. 13, 1967, 12,617/67
Int. Cl. B62d *25/00*
U.S. Cl. 296—36 **4 Claims**



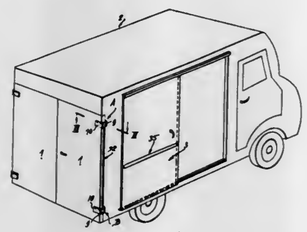
In order to detachably connect tubular posts to the edge portion of a truck platform the latter at appropriate portions in provided with vertically spaced straps and gudgeons, respectively. The post is, at its lower end, provided with a journal body adapted to cooperate with the gudgeon, and when the post is placed thereon and swung towards the platform, the strap will enter an opening arranged in the side wall of the post intended to be turned towards the platform. A vertically displaceable bolt is located in the post above the opening and is connected to operating means designed to bring the bolt into locking position when the post has reached contact with the platform. The operating means may be connected to members designed to lock the sideboards to the post.

3,558,183
SLIDE SHOE STRUCTURES OF SYNTHETIC PLASTIC MATERIAL FOR SLIDING ROOFS OF MOTOR VEHICLES
Gerhard Sigmund, Stuttgart-Vaihingen, Germany, assignor to Daimler-Benz Aktiengesellschaft, Stuttgart-Unterturkheim, Germany
Filed July 31, 1968, Ser. No. 748,990
Claims priority, application Germany, Aug. 3, 1967, 1,630,330
Int. Cl. B60j *7/02*
U.S. Cl. 296—137 **13 Claims**



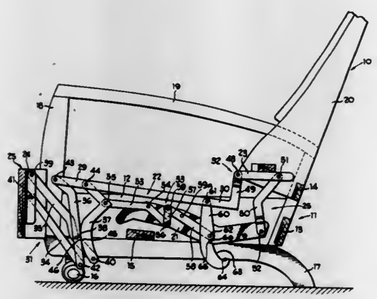
A slide structure made from synthetic plastic material for sliding roofs of motor vehicles, which slides in profile members and is provided with an aperture or recess within which is arranged at least one prestressed spring.

3,558,184
HINGED DEVICE FOR PIVOTING PANEL, PARTICULARLY FOR MOTOR VEHICLE DOOR
Alain Edouard Plegat, Asnieres, France, assignor to Societe Anonyme des Usines Chausson, Asnieres, France, a company of France
Filed June 14, 1968, Ser. No. 751,645
Claims priority, application France, June 5, 1967, 109,103
Int. Cl. B60j 5/12
U.S. Cl. 296—146 3 Claims



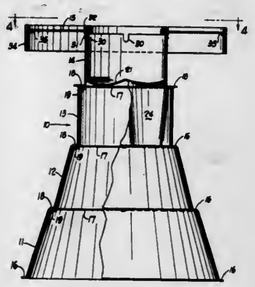
Hinged device for pivoting panel having at least two hinge assemblies connecting a pivoting panel to a support, said two assemblies each comprising a plate forming a connecting rod which is hinged, on the one hand, to the pivoting panel and, on the other hand, to the support and connecting means being provided for connecting said plates forming connecting-rods so that they are constantly aligned between each other whatever the angle formed by the pivoting panel in relation to the support.

3,558,185
RECLINING CHAIR MECHANISM
Ned W. Mizelle, High Point, N.C., assignor to General Steel Products, Inc., a corporation of North Carolina
Filed Sept. 10, 1968, Ser. No. 758,843
Int. Cl. A47c 1/034
U.S. Cl. 297—84 14 Claims



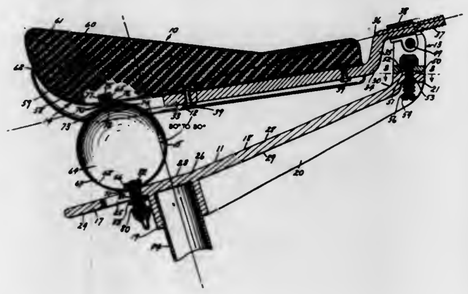
A mechanism for use in a reclining chair for selectively disposing the chair seat and back in a chair-forming upright position, a reading, or television viewing, intermediate position, and an extreme, or full, reclining position. The chair includes leg rest means which is retracted in the upright position and elevated to support the occupant's legs in each of the intermediate and full reclining positions.

3,558,186
MULTIPURPOSE STACKABLE HIGH CHAIR
William S. Shore, 28126 Gates Mills Blvd., Pepper Pike, Ohio 44124, and Ronald A. Godes, 29249 N. Hilltop, Orange, Ohio 44022
Filed May 16, 1969, Ser. No. 825,148
Int. Cl. A47c 4/00
U.S. Cl. 297—136 4 Claims



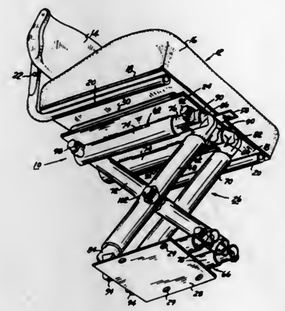
A child's high chair consisting of a plurality of hollow cylinders of successively smaller diameter, a chair, and a feeding tray. The cylinders being adapted to be stacked, one upon the other, and secured together, to form a high base for the chair and the feeding tray mounted thereon. When disassembled, the several components being nestable, one within the other, to form a compact carrying package of which the feeding tray forms the cover.

3,558,187
BICYCLE SEAT
Milton Morse, 1 Horizon Road, Fort Lee, N.J. 07024
Filed Mar. 11, 1969, Ser. No. 806,084
Int. Cl. B62j 1/26
U.S. Cl. 297—199 6 Claims



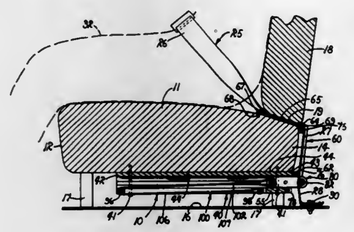
A bicyle seat having a lower frame element fixed to the seat post of a bicycle frame, and an upper frame element supporting a seat connected at the forward end thereof for relative pivotal movement with respect to the lower frame element about two mutually perpendicular axes, whereby the seat may pivot about a longitudinal axis to a limited degree as the user shifts his weight as the cycle is pedalled. Resilient means in the form of an inflated ball interconnects the seat element and the lower frame element in a vertical plane passing through one axis of rotation.

3,558,188
ADJUSTABLE SEATS
Howard V. Groh, Clawson, and James E. Kelly, Grosse Pointe Park, Mich., assignors to Craft Metal Corporation, Warren, Mich., a corporation of Michigan
Filed Oct. 14, 1968, Ser. No. 767,452
Int. Cl. A47c 3/34
U.S. Cl. 297—346 10 Claims



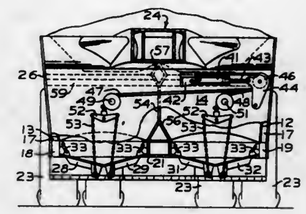
An adjustable seat for use in automotive vehicles which is supported on a collapsible and expandable pantograph-type pedestal having locking means to lock the seat in any desired expanded or collapsed position and which is further provided with a horizontal slide and lock mechanism for adjustable fore and aft movement of said seat.

3,558,189
RETRACTOR FOR SEAT BELTS
Walter G. Preston, Tulare, Calif., assignor of one-half to John T. Posey, Pasadena, Calif.
Filed Aug. 15, 1968, Ser. No. 752,954
Int. Cl. A62b 35/00; B60r 21/10
U.S. Cl. 297—388 6 Claims



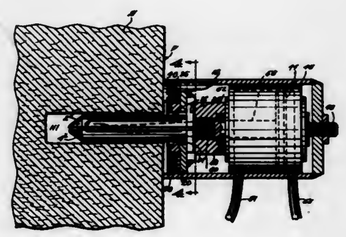
A retractor for seat belts of automotive vehicles and the like adapted to be mounted beneath the seat of such a vehicle providing a belt take-up and guiding mechanism having a portion extended between the seat and the backrest portion thereof affording a substantially frictionless path of travel for the belt during movement between its retracted and extended positions and including tension means for said belt take-up mechanism which is effective fully to retract the belt and which permits unrestricted extension of the belt while maintaining a substantially constant rate of pull throughout the full extent of belt movement between its fully retracted and fully extended positions.

3,558,190
BOTTOM DUMP TRANSPORT VEHICLE
Robert A. Peterson, San Leandro, Calif., and Frank A. Grooss, Morton, Ill., assignors to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Dec. 20, 1968, Ser. No. 785,597
Int. Cl. B60p 1/56
U.S. Cl. 298—33 1 Claim



A large capacity, transport vehicle having reduced overall height and center of gravity with improved unloading characteristics includes a body having three reinforcing beams arranged longitudinally along its center and two sides. Two side-by-side pairs of oppositely hinged doors extend longitudinally through the body and are pivoted respectively to the center beam and one of the side beams. Means are included for opening and closing the two pairs of doors. The door arrangement effectively permits substantial reduction in the vehicle draft. The arrangement of the three beams provides strength in the body for supporting loads as great as 100 tons or more. This feature is exemplified in a preferred embodiment where the beams extend rearwardly of the body and are secured to an axle supporting the rear of the vehicle. In this preferred embodiment, the rear wheels may be arranged generally within the lateral dimension of the body.

3,558,191
MEANS FOR APPLYING WEDGING FORCES TO MINERALS AND OTHER BODIES
Ralph A. Fletcher, Bedford, N.H., and Joseph R. Oliver, Lowell, Mass., assignors to H. E. Fletcher Co., Westford, Mass., a corporation of Massachusetts
Filed Jan. 23, 1969, Ser. No. 793,348
Int. Cl. E21c 37/04
U.S. Cl. 299—22 4 Claims



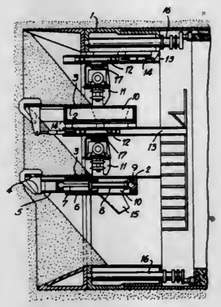
Sustained and rapidly augmented wedging forces are applied to a drilled stone body by means of a fluid power-actuated reciprocating wedge apparatus to carry out a controlled and highly effective splitting action. The reciprocating wedge apparatus includes a spring-loaded wedge device, a wedge retaining structure and a driver mecha-

nism for transmitting driving forces to the wedge device. The wedge device is of the plug and feather class in which a pair of wedge feathers and a centrally disposed wedge plug are designed to be located in a drilled hole with the wedge retaining structure and driver mechanism being supported externally of the drilled hole in some convenient manner. The wedge retaining structure resiliently contains the wedge feathers in a normally contracted position against the wedge plug. A fluid power-actuated piston, arranged within the driver mechanism is connected to the wedge plug and operates to force the wedge plug into and out of a wedging position between the pair of resiliently contained wedge feathers. The wedge feathers return to a normally contracted position when the wedge plug is retracted and all parts are removable from the drilled hole as a compact unit which can be employed in successive wedging operations.

3,558,192
SHIELD FOR TUNNELING IN UNSTABLE GROUNDS

Vasily Pavlovich Shmakov, Ul. Marshala Birjuzova 26, kv. 22; Vitaly Alexeevich Eremin, Bagrationovsky proezd 2, kv. 48; Semen Borisovich Kvasha, Begovaya ul. 38, kv. 36; Natalia Grigorievna Kaganovich, Ul. Myaskovskogo 16/8, kv. 17; Tatiana Nikolaevna Dobrenyakina, Leninsky prospekt 25, kv. 52; Viktor Nikolaevich Vanjushin, Ul. Udaltsova 10, kv. 168; Petr Vasilievich Sakharov, Starozykovsky proezd 4, kv. 51; Boris Pavlovich Voronov, Naberezhnaya Maxima Gorkogo 4/22, kv. 170; Vasily Dementievich Polezhaev, Leningradsky prospekt 62, kv. 122; Pavel Semenovich Smetankin, Ul. Chkalova 24/30, kv. 20; Evgeny Pavlovich Sobolev, Ul. Chernyakhovskogo 6, kv. 41; Kazimir Stanislavovich Yanchevsky, Ul. Obraztsova 12, kv. 14; Mikhail Semenovich Grishin, Novokuznetskaya ul. 24, kv. 33; Pavel Semenovich Burtsev, Bolshoi Chudov per. 8–a, kv. 64; and Pavel Alexeevich Chasovitin, Leningradsky prospekt 62, kv. 198, all of Moscow, U.S.S.R.

Filed Aug. 9, 1968, Ser. No. 751,624
Int. Cl. E01g *3/03*
U.S. Cl. 299—33 **4 Claims**

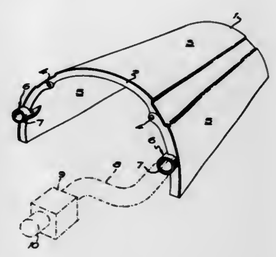


A tunneling shield comprises a skin in which horizontal girders are rigidly fixed such that the girders divide the shield into decks. Sliding platforms movable longitudinally of the skin are provided for reducing the ground resistance when the shield is forced thereinto and for keeping the ground talus from crumbling. The platforms are forced into the ground separately from the shield skin and subsequent to each shield cut and pivotal scraper conveyers are mounted above the platform for removal of excavated ground.

3,558,193
TUNNELLING OR MINING MACHINE CANOPY WITH VENTILATION DUCTS

Andrew W. Howarth, Darlington, England, assignor to Greenside Machine Company Limited

Filed Feb. 7, 1969, Ser. No. 797,454
Claims priority, application Great Britain, Feb. 9, 1968, 6,655/68
Int. Cl. E01g *3/03*
U.S. Cl. 299—33 **3 Claims**

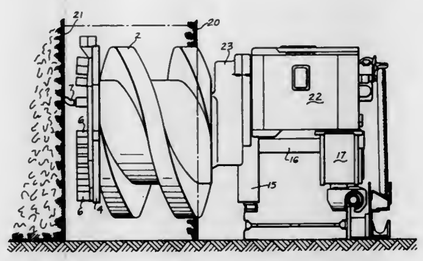


A canopy for a tunnelling or mining machine comprises a plurality of ducts or pipes extending longitudinally of the canopy and adapted to transport dust laden air from the region in advance of the machine to the rear of the machine where the air passes into means for further transport and/or dust collection, with means to draw the dust laden air along the ducts or pipes.

3,558,194
END PLATE FOR CUTTER SHAFTS

Otto Renzing and Dieter Jahn, Bochum, Germany, assignors to Gebr. Eickhoff, Maschinenfabrik und Eisengiesserei m.b.H., Bochum, Germany

Filed June 2, 1969, Ser. No. 829,247
Claims priority, application Germany, June 1, 1968, E 27,095
Int. Cl. E21c *25/10*
U.S. Cl. 299—87 **5 Claims**

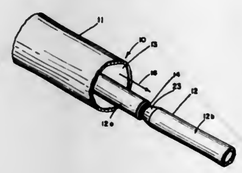


An end plate member for a cutter roller to be used in connection with mining operations which cutter roller has a basic roller body provided with helical follower strips forming helical passages therebetween, said end plate member having an outer diameter approximately equalling the diameter of said basic roller body and being equipped with a plurality of radially outwardly protruding surface sections corresponding in number to the number of said follower strips and each preferably having a shape corresponding to the shape of the end face area of a follower strip, the inner end face of said end plate member being detachably connectable to the basic roller body while the outer end face and the peripheral surface of said end plate member are equipped with tool holders for receiving and holding cutting tool means for cutting the rock or the like to be mined.

3,558,195
PNEUMATIC CONVEYOR

Andras Kanics, Planegg, Germany, assignor to Dr. Wolfang Fendt, Grafelfing, Germany

Filed Aug. 7, 1968, Ser. No. 750,964
Claims priority, application Germany, Aug. 12, 1967, 1,556,045
Int. Cl. B65g *53/04*
U.S. Cl. 302—24 **7 Claims**

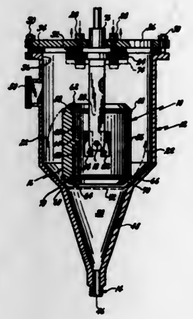


A pneumatic pipe line conveyor consisting of an outer conveyor tube and a gas supply tube of smaller diameter within the conveyor tube and resting on the lower portion thereof. There is a plurality of gas discharge openings along the gas supply tube and deflecting surfaces are provided adjacent the openings to deflect the discharged gases in substantially the direction of movement of bulk material through the conveyor tube. The energy of the discharged gas thus assists in moving the bulk material through the conveyor tube.

3,558,196
METHOD AND APPARATUS FOR GROWING CRYSTALS

John L. Sampson, Lexington, Mass., assignor to the United States of America as represented by the Secretary of the Air Force

Filed Oct. 18, 1968, Ser. No. 768,627
Int. Cl. B65g *53/40*
U.S. Cl. 302—59 **4 Claims**

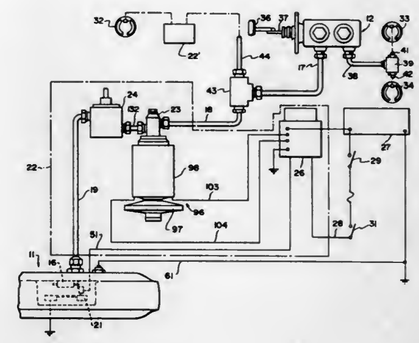


A powder dispensing assembly for delivering powdered crystal growing constituents to the crystal forming zone of a conventional Verneuil crystal growing apparatus. The assembly comprises a dual-chambered powder dispensing container rotatable about a horizontal axis and adapted to be positioned vertically above a Verneuil burner for the introduction of powdered feed constituents to the crystal growing zone thereof.

3,558,197
VEHICLE BRAKING SYSTEM

Frederick E. Lueck, Birmingham, and Michael J. Denholm, Dearborn Heights, Mich., and William J. Borowski, Crestwood, Steven M. Kroml, Summit, and Michael A. Gasperi, Homewood, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware

Filed Sept. 25, 1968, Ser. No. 762,382
Int. Cl. B60t *8/08*
U.S. Cl. 303—21 **18 Claims**

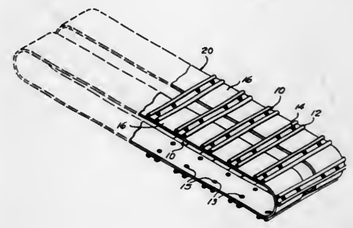


A braking system is provided with antiskid means including reciprocating apparatus for lowering and raising the pressure in a hydraulic brake cylinder by cyclically releasing and returning fluid from and to the brake cylinder. The frequency at which fluid is released is determined by a pulse generating circuit. The pressure exerted during the return of fluid to the cylinder is determined by a linear spring motor having a compound spring rate. The rates of pressure drop and pressure rise in the brake cylinder are regulated by a flow control valve having a variable orifice permitting rapid pressure drop and gradual pressure rise.

3,558,198
ENDLESS TRACK FOR MOTOR DRIVEN VEHICLES

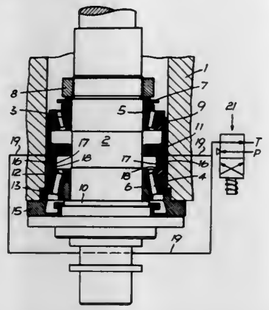
Fujihiko Tomita, Shizuoka-ken, Japan, assignor to Yamaha Hatsudoki Kabushiki Kaisha, Shizuoka-ken, Japan

Filed Nov. 1, 1968, Ser. No. 772,702
Int. Cl. B62d *55/26*
U.S. Cl. 305—35 **5 Claims**



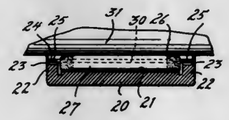
An endless track having transverse treads secured by fastening elements such as bolts or rivets appended with quenched and hardened projections jutting beyond ground-touching edges of the treads and, therefore, preventing the endless track from slipping sidewise.

3,558,199
WORK SPINDLE FOR TOOLS
Ernst Raiser, Rommelsbach, and Walter Christner, Hulben, Germany, assignors to Burkhardt & Weber K.G., Reutlingen, Germany, a firm
Filed Sept. 5, 1968, Ser. No. 757,618
Claims priority, application Germany, Sept. 8, 1967, 1,602,718
Int. Cl. F11c *35/06*
U.S. Cl. 308—207 **2 Claims**



A very simple device for varying the bearing clearance of a tapered-roller bearing of a work spindle so as to be the most suitable for different speeds of the spindle consisting of a plurality of small cylinders containing pistons which act in the axial direction upon one of the races of the bearing by means of a pressure medium, the pressure of which may be varied.

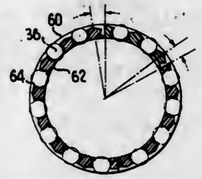
3,558,200
ROLLER BEARING AND METHOD
Victor L. Barr, Jenkintown, Pa., assignor to Roller Bearing Company of America, West Trenton, N.J., a corporation of New Jersey
Filed June 25, 1969, Ser. No. 836,421
Int. Cl. B21d *53/10;* **F16c** *33/66*
U.S. Cl. 308—187 **7 Claims**



In a roller bearing having rollers provided with a cylindrical mid-length section and crown sections at opposite ends, the crown section has surfaces contrasting in color with the mid-length sections. The surfaces on the crown section preferably have superior adherence for lubricant as compared with the mid-section. The rollers may be manufactured by coating the entire outside with a layer having a different color from the steel, for example a black layer, and having a preferential adherence to lubricant in the preferred embodiment, and then removing the coating from the mid-length sections of the rollers, while retaining it on the crown sections.

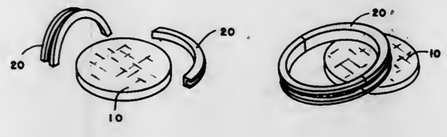
3,558,201
UNIT PRELOADED ROLLER BEARING
Byron T. Virtue, Litchfield, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine
Filed Sept. 10, 1968, Ser. No. 758,740
Int. Cl. F16c *13/00*
U.S. Cl. 308—212 **8 Claims**

This disclosure relates to a roller bearing unit which is preloaded whereby there is a minimum of shake of a shaft mounted therein. The bearing includes a plurality of rows of rollers with the rollers being in rolling engagement with inner and outer races. One of the races is provided with a separate raceway for each row of rollers and these raceways have their axes offset from the axis of the bearing whereby although it is not feasible to



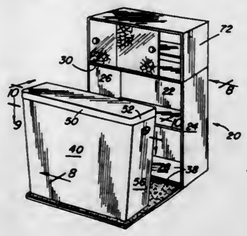
tightly fit the rollers between the races, each of the raceways has a portion which is disposed closer than normal to the other race so as to provide a preloading effect at this point between the two races. By equally circumferentially spacing these points, a full supporting of a shaft is facilitated.

3,558,202
COMPOSITE BEARING AND PROCESS OF MANUFACTURE
Walter P. Lipscomb and Robert Z. Schreffler, Chester, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
Filed Feb. 13, 1969, Ser. No. 799,023
Int. Cl. F16c *27/00*
U.S. Cl. 308—238 **10 Claims**



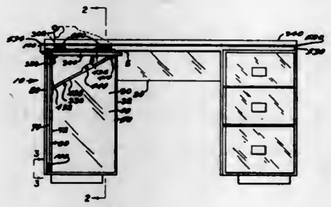
A section of bearing surface material formed on a mandrel is wrapped on its outer side with multi-constituent yarn which is heated to produce fusion and shrinkage thereof whereby a composite bearing having the shape of the mandrel is produced.

3,558,203
COLLAPSIBLE BAR AND CABINET THEREFOR
Niles N. Alter, Hoffman Estates, Ill., assignor to Richard Nelson, Chicago, Ill.
Filed June 11, 1969, Ser. No. 832,067
Int. Cl. A47b *96/18, 9/00*
U.S. Cl. 312—140.2 **4 Claims**



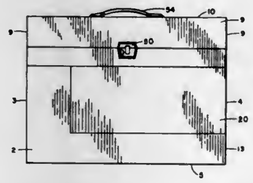
A unitary compact collapsible bar and cabinet therefor, with the bar portion of the device spaced away therefrom when in open position and integrally and pivotally connected to a cabinet for ready pivotal opening and closing of the bar into or out of the cabinet.

3,558,204
DESK ASSEMBLY
Verna Sue Elliot, 1925 S. 40th St., Omaha, Nebr. 68105
Filed Aug. 16, 1968, Ser. No. 753,092
Int. Cl. A47b *21/00*
U.S. Cl. 312—208 **9 Claims**



A desk assembly of the kind having a typewriter supporting shelf slidable from an inner storage position outwardly to a use position and in which the typewriter supporting shelf is hinged to a carrier which latter is slidably attached to the desk frame itself by telescoping slide or trackway means.

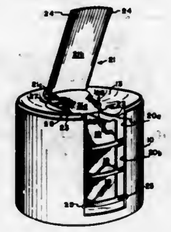
3,558,205
MEDICAMENT CONTAINER
Curtis F. Mueller, P.O. Box 99, Prairie du Sac, Wis. 53578
Filed July 22, 1969, Ser. No. 843,338
Int. Cl. A47b *81/00*
U.S. Cl. 312—209 **10 Claims**



A rigid, box-type receptacle for medicaments contains numerous small drawers sliding in one direction and a single, larger drawer sliding in a second direction. The large drawer is provided with extending members to support rolls of surgical tape with their axes extending vertically. A door to retain the small drawers in place opens hingeably downwards and then slides inwardly below the drawers. A lid is provided which contains a plurality of shelves and adjustable partitions.

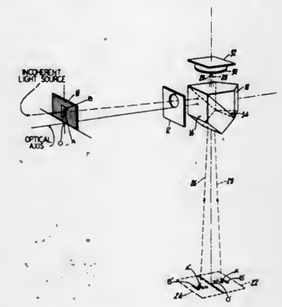
3,558,206
CONTAINER
Keith Duane Erickson, 1170 Elgin Ave., Salt Lake City, Utah 84106
Filed Oct. 22, 1968, Ser. No. 769,550
Int. Cl. A47b *81/00*
U.S. Cl. 312—290 **8 Claims**

A compartmentized container having a cylindrical housing with a ring-like base and a shouldered top such that the units can be readily stacked; a plurality of rotatable, nested compartments; a pivoted door providing access to each of the compartments as they are rotated; and



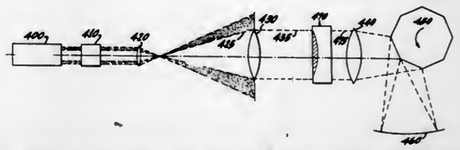
a dished top surface adapted to support a handle such that it does not obstruct stacking of the containers.

3,558,207
HOLOGRAM SYSTEM EMPLOYING INCOHERENT LIGHT
Harvey R. Worthington, Jr., Cambridge, Mass., assignor, by mesne assignments, to Searle Medidata Inc., Waltham, Mass., a corporation of Delaware
Filed Dec. 6, 1966, Ser. No. 599,466
Int. Cl. G02b *27/00*
U.S. Cl. 350—3.5 **5 Claims**



Apparatus for producing a hologram utilizing a noncoherent light source. A unitary prism system is operative to divide the light from each point of an object into two separate beams and to direct the separate beams to a common region of a photosensitive surface to produce thereon a hologram of each object point.

3,558,208
OPTICAL COMPENSATING FILTER WITH SELECTIVE RADIAL ABSORPTION DISTRIBUTION
Kenneth C. Hudson, Philadelphia, Pa., assignor to RCA Corporation, a corporation of Delaware
Original application Oct. 11, 1967, Ser. No. 674,614, now Patent No. 3,465,347, dated Sept. 2, 1969. Divided and this application Mar. 27, 1969, Ser. No. 829,832
Int. Cl. G02b *5/22*
U.S. Cl. 350—8 **4 Claims**



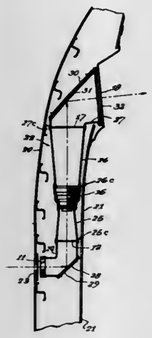
There is disclosed an optical filter, primarily for use within a laser recorder, which operates to selectively ab-

sorb portions of a light beam of nonuniform intensity passing therethrough so as to result in the emergence therefrom of a light beam of uniform intensity.

3,558,209
OPTICAL VIEWING SYSTEM FOR AIRCRAFT WINDOW

Doric I. Trufanoff, North Massapequa, Joseph Cooper, Franklin Square, and Fred H. Krebs, Elmont, N.Y., assignors to Kollsman Instrument Corporation, Syosset, N.Y., a corporation of New York

Filed Nov. 13, 1968, Ser. No. 775,329
Int. Cl. G02b *23/08*
U.S. Cl. 350—9 **2 Claims**



A periscopic type of optical viewing window arrangement for an SST aircraft is shown wherein all passengers see a virtual image of a real image that is presented on a projection screen. The arrangement utilizes an objective lens associated with a miniature external window and utilizes a Fresnel magnifying lens for presenting the magnified virtual image.

3,558,210
DOUBLE REFRACTING INTERFERENCE MICROSCOPE

Francis Hughes Smith, Surrey, England, assignor to Vickers Limited, London, England, a British company

Filed July 30, 1969, Ser. No. 846,205
Claims priority, application Great Britain, Aug. 2, 1968, 37,087/68
Int. Cl. G02b *21/14*
U.S. Cl. 350—12 **7 Claims**

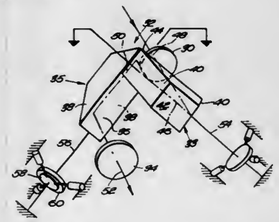


In an interference microscope of the kind in which an illuminating beam of light is divided into two beams by virtue of double-refraction optically prior to incidence on the specimen and is recombined by further, compensatory, double refraction optically after transmission through the objective lens of the microscope, variable double-refracting means consisting of a serial train of birefringent optical components are employed for dividing each ray in the illuminating beam into two double-refracted rays having a variable relative angular inclination and a longitudinal movable real or virtual intersection point which inclination and intersection point are pre-selectable in different combinations by adjustment of the geometrical relationship existing between the components. In this way an invariant geometrical relationship between the divided rays emerging from the objective may be maintained thus permitting the use of a range of different objective lenses.

3,558,211
MECHANICAL MEANS FOR INERTIALLY STABILIZING OPTICAL SYSTEM AGAINST IMAGE MOTION

William E. Westell, Weston, Mass., assignor to Baird-Atomic, Inc., Cambridge, Mass., a corporation of Massachusetts

Filed May 8, 1968, Ser. No. 727,550
Int. Cl. G02b *23/00*
U.S. Cl. 350—16 **12 Claims**

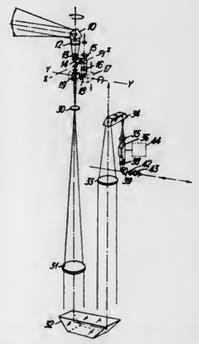


In order to isolate the image produced by an optical system from angular vibration or the like, at least one of the optical components is established as a predetermined inertial mass, the inertial mass is mounted on a resilient suspension of predetermined compliance, and the inertial mass is connected to a damping control of predetermined rate.

3,558,212
GYROSCOPICALLY STABILIZED OPTICAL SYSTEMS

David Scarth Ritchie, Glasgow, Scotland, assignor to Barr & Stroud Limited

Filed Jan. 28, 1969, Ser. No. 794,525
Claims priority, application Great Britain, Mar. 3, 1968, 11,932/68
Int. Cl. G02b *23/00*
U.S. Cl. 350—16 **6 Claims**

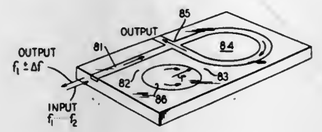


An optical system providing a line of sight stabilized relative to a sighting graticule for cross-roll and pitch movements of a vehicle mounting the system. The light path through the system including two gyro-stabilized reflecting surfaces, one stabilized about each of the axes of movement.

3,558,213
OPTICAL FREQUENCY FILTERS USING DISC CAVITY

Enrique A. J. Marcatili, Rumson, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Apr. 25, 1969, Ser. No. 819,266
Int. Cl. G02b *5/14;* **H01p** *3/20, 5/14*
U.S. Cl. 350—96 **8 Claims**

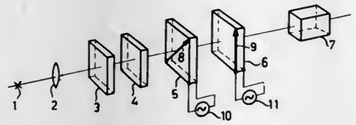


This application describes a variety of circuit components for use at optical frequencies. Each of the components is formed from one or more transparent dielectric strips embedded in a transparent substrate of slightly lower refractive index. By suitably shaping and locating the guiding strips, modulators, directional couplers, and a variety of filters can be realized. Tuning arrangements are also disclosed.

3,558,214
DEVICE FOR CONVERTING CIRCULARLY POLARIZED RADIATION INTO PLANE POLARIZED RADIATION WITH A ROTATING PLANE OF POLARIZATION

Hendrik de Lang, Delft, and Gijsbertus Bouwhuis and Pieter Kramer, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, a corporation of Delaware

Filed Sept. 24, 1968, Ser. No. 762,107
Claims priority, application Netherlands, Oct. 10, 1967, 6713762
Int. Cl. G02f *1/18*
U.S. Cl. 350—150 **19 Claims**

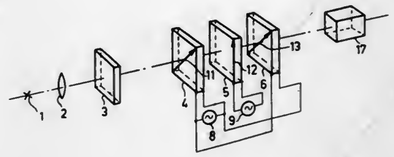


A device for converting circular polarised radiation into plane-polarised radiation having a plane of polarisation rotating at a substantially constant speed features serially arranged anisotropic elements such as electro-optically or magneto-optical crystals. Each of the elements has its main directions in a selected angle with the main directions of the other crystals. To at least one crystal is applied an electromagnetic field, which has a selected phase relationship to the fields applied to the other crystals, if any.

3,558,215
APPARATUS FOR CONVERTING LINEARLY POLARIZED RADIATION WITH A FIXED PLANE OF POLARIZATION INTO LINEARLY POLARIZED RADIATION WITH A ROTATING PLANE OF POLARIZATION

Hendrik de Lang, Delft, and Pieter Kramer and Gijsbertus Bouwhuis, Emmasingel, Eindhoven, Netherlands, assignors to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Nov. 8, 1968, Ser. No. 774,349
Claims priority, application Netherlands, Nov. 9, 1967, 6715244
Int. Cl. G02f *1/18*
U.S. Cl. 350—150 **11 Claims**

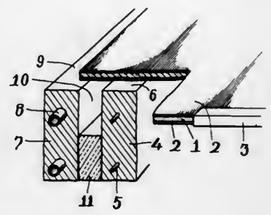


An apparatus for converting a beam of light having an arbitrary plane of polarization into a beam having a slowly rotating plane features at least three serially disposed optical elements. The elements can be either magneto or electro-optical elements. An electro-magnetic field is applied to at least one element. If more than one element has such an applied field, then the fields have a 90 degree phase shift for the adjacent elements.

3,558,216
POLYETHYLENE DIFFRACTION GRATING AND METHOD OF MANUFACTURE THEREOF

Katsuya Kubota, Tokyo, Japan, assignor to Agency of Industrial Science Technology, Tokyo, Japan

Filed Sept. 25, 1968, Ser. No. 762,506
Int. Cl. B29d *11/00;* **B32b** *23/08, 27/32;* **G02b** *5/18*
U.S. Cl. 350—162 **7 Claims**

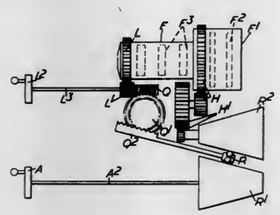


A method of manufacturing polyethylene diffraction grating in which a high or medium density polyethylene film held between cellophane films or polyimide films is passed at a constant velocity over and maintained in close contact with heating zone and cooling zone which are maintained at predetermined temperatures.

ERRATUM

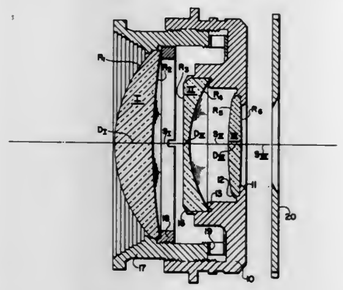
For Class 350—164 see:
Patent No. 3,559,090

3,558,217
CONTROL DEVICES FOR OPTICAL OBJECTIVES OF VARIABLE EQUIVALENT FOCAL LENGTH
John Denzil Barr and Dexter Robert Plummer, Leicester, England, assignors to Rank Precision Industries Limited, trading as The Rank Organisation, Rank Taylor Hobson Division, Leicester, England, a British company
Original application Jan. 16, 1964, Ser. No. 338,147, now Patent No. 3,399,943. Divided and this application June 26, 1968, Ser. No. 740,206
Claims priority, application Great Britain, Jan. 18, 1963, 2,281/63
Int. Cl. G02b 15/00
U.S. Cl. 350—187 5 Claims



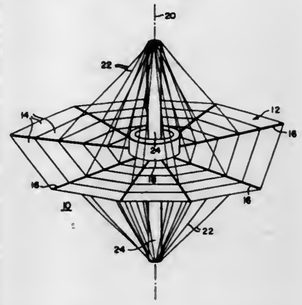
Control device for zoom objectives having focussing controls, said device comprising a mechanical or hydraulic variable ratio transmission, and mechanical means through which the ratio of said transmission is varied by movement of the zoom control element to maintain the apparent sensitivity of the focussing control within predetermined limits.

3,558,218
THREE-ELEMENT TELEPHOTO OBJECTIVE LENS
David S. Grey, Lexington, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware
Filed Dec. 1, 1967, Ser. No. 687,167
Int. Cl. G02b 7/04, 9/16
U.S. Cl. 350—226 15 Claims



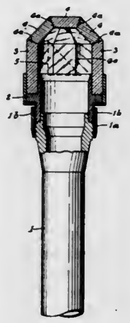
Telephoto triplet objective lens systems are disclosed wherein the frontal element facing the longer conjugate is a positive meniscus lens of relatively high power and thickness. The intermediate element is a negative dispersing lens having a concave surface facing in the direction of the shorter conjugate and whose opposed surface has a radius of curvature which (in absolute value) is substantially greater than the focal length. The Abbe value of the optical medium comprising the rearward element on the side of the shorter conjugate is less than 0.70 of the Abbe value of the frontal element.

3,558,219
ERECTABLE REFLECTOR CONSTRUCTION
Arthur G. Buckingham, Baltimore, and Frank C. Rushing, Ellicott City, Md., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed May 10, 1967, Ser. No. 637,419
Int. Cl. G02b 5/08
U.S. Cl. 350—292 5 Claims



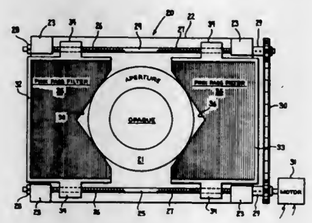
An erectable reflector construction having a hub with a plurality of multi-hinged radial arms attached at their one end to the hub and having corresponding rigid segments between which extend thin flexible reflector membranes. In the stored state during transport into space, the arms are folded accordian-like the hub and the reflector membranes are rolled up between respective sections of the folded arms. In the released state during erection in space, torsion spring means on the arm hinges act as motor means which cause the arm sections to unfold to continuous aligned positions and the membranes to unfurl and stretch taut into flat configurations disposed in a common plane.

3,558,220
VIEWING HEAD FOR PERISCOPES
Walter Werner, Konigsbronn, Wurttemberg, Germany, assignor to Carl Zeiss-Stiftung, doing business as Carl Zeiss, Heidenheim on the Brenz, Wurttemberg, Germany, a corporation of Germany
Filed Apr. 6, 1964, Ser. No. 358,147
Claims priority, application Germany, Apr. 10, 1963, Z 10,044
Int. Cl. G02b 23/00
U.S. Cl. 350—319 6 Claims



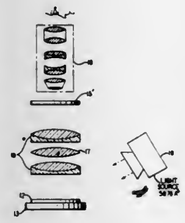
1. A viewing head for a periscope having a hood comprising a plurality of glass bodies directly cemented together, said hood having an inner surface formed by a number of plane faces arranged at different inclinations to each other, said hood also having an outer surface formed by the same number of plane faces as said inner surface, each one of outer plane faces being parallel to an associated inner plane face of said inner surface.

3,558,221
PINK-PASS FILTER MEANS FOR CONTINUOUSLY ADJUSTING THE SPECTRAL CONTENT OF A HEAT RADIATING OBJECT
Donald A. Jessup, Goleta, Calif., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 18, 1968, Ser. No. 779,305
Int. Cl. G02b 5/22
U.S. Cl. 350—315 6 Claims



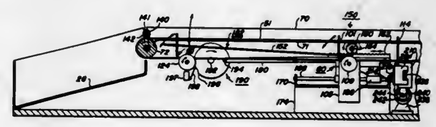
A variable aperture filter having a pair of pink-pass filters mechanically supported on a means to be adjustably controlled to advance and retract the filters over the aperture in a light path of infrared radiation to adjustably control the balance of yellow and pink radiation from an infrared target radiation source to suppress or minimize background and reflected radiation and pass pink target radiation.

3,558,222
PHOTOLITHOGRAPHY APPARATUS AND METHOD
Kenneth M. Poole, Bernardsville, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Feb. 6, 1968, Ser. No. 703,452
Int. Cl. G03b 27/32
U.S. Cl. 355—18 3 Claims



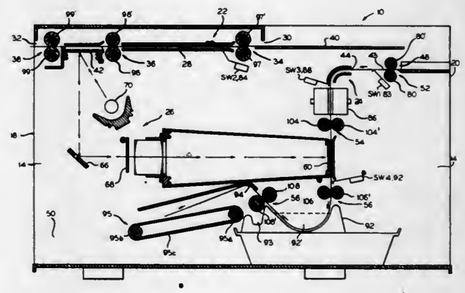
A photolithographic mask is registered with a pattern contained on the surface of a semiconductor wafer coated with photoresist material by reflecting light to which the photoresist is insensitive from the wafer surface and imaging the wafer surface onto the mask by means of a primary lens and a supplementary lens, observing the mask and the wafer surface pattern simultaneously through a microscope, and moving the mask to register it with respect to the wafer surface pattern. The supplementary lens is then removed and light of a frequency to which the photoresist is photosensitive is directed through the mask and imaged by the primary lens onto the wafer surface. The focal length of the primary and supplementary lens together at the frequency used during registration is substantially equal to the focal length of the primary lens alone at the optical frequency used during photographic exposure of the photoresist.

3,558,223
DOCUMENT CENTERING APPARATUS
Kent W. Hemphill, Rochester, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed Oct. 25, 1968, Ser. No. 770,478
Int. Cl. G03b 27/62
U.S. Cl. 355—23 9 Claims



Apparatus for centering a document being transported from a first to a second station. The document is conveyed to and centered by two guide rods affixed to guide blocks. A driving means is operatively coupled to one of the guide blocks which, in turn, is coupled to the other guide block. As the document contacts the two guide rods, the driving means is energized and the guide rods are withdrawn as the document is photograhed to prevent the guide rods from casting a shodaw on the document. The guide rods are then returned to their initial position. Means are also provided for adjusting the guide rods to accommodate for various size documents.

3,558,224
PHOTOCOPY MACHINE HAVING AN INPUT FEED CONTROL
Karl M. Murgas, Lincolnwood, and Burton Greenberg and Otto A. Clark, Chicago, Ill., assignors to ICP, Inc., Skokie, Ill., a corporation of Illinois
Filed July 18, 1968, Ser. No. 745,842
Int. Cl. G03g 15/00
U.S. Cl. 355—51 3 Claims



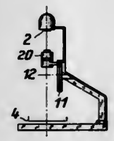
A copy paper machine for reproducing increments of a moving original document onto a simultaneously moving single sheet of copy paper. Two paper-sensing switches wired in parallel, one in the document path and one in

the copy path, control the copy sheet feeding. The original document commences its movement after the sheet of copy paper is fed into the machine. Initially, a roller means advances the copy paper into the copy paper pathway a first predetermined distance, and then stops. Then, the original begins its movement across the original document pathway, and after moving a second predetermined distance, the roller means restarts and again advances the copy paper. A second sheet of copy paper may be advanced by the roller means for at least said first distance after the trailing edge of the copy paper moves past the first distance or before the trailing edge of the original moves past the second distance.

3,558,225
OPTICAL PHOTO OPPOSING APPARATUS

Kurt Kirchhoff, 45 Luttkamp, 53 Hamburg, Germany

Filed May 17, 1968, Ser. No. 730,123
Claims priority, application Germany, May 22, 1967, 1,572,314
Int. Cl. G03b 27/68
U.S. Cl. 355—52 11 Claims

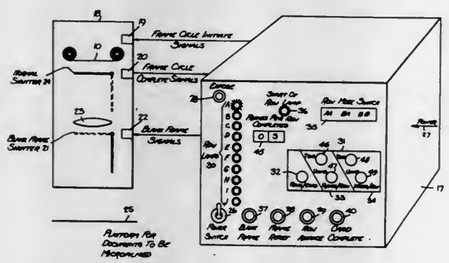


The optical photo opposing apparatus contains a composite objective which produces image types in an enlarged or reduced scale. A constant distance between type plane and image plane and simultaneous sharp focusing with image size variation simplifies operation of the apparatus. The enlargement and reduction range is broadened by swiveling the objective through 180 degrees. Additional optical means can be inserted into an air space in the path of rays in the objective whereby modification, especially distortion or rotation of the imaged types with respect to the original types, can be obtained.

3,558,226
INDICATOR AND CONTROL APPARATUS FOR USE WITH INFORMATION RECORDING DEVICE

Dixon Riggs and David T. Peerson, New York, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

Filed May 16, 1968, Ser. No. 729,769
Int. Cl. G03b 27/32
U.S. Cl. 355—54 42 Claims

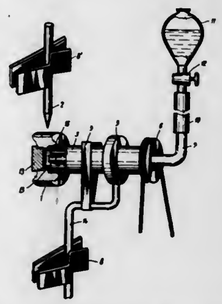


An indicating and control apparatus for use with a microfilm camera of the type designed for producing an extended film having multiple successive microfilm image frames and occasional blank frames, the film subsequently to be separated into strips of film having a standardized number of frames so that such strips may be used to form rows of a microfiche card. The apparatus includes a monitor system which indicates to the operator, the frame and row order required by the microfiche card format as he operates the camera and control system which automatically actuates certain filming operations. The apparatus may be adjusted to accommodate a variety of formats of microfiche cards having different numbers of rows and frames per row, including or omitting title rows.

3,558,227
DEVICE FOR SPECTRAL ANALYSIS OF A SOLUTION

Rarodmir Tlalka, Prague, Czechoslovakia, assignor to Ceskoslovenska akademie ved, Prague, Czechoslovakia

Filed Sept. 26, 1968, Ser. No. 762,927
Claims priority, application Czechoslovakia, Oct. 16, 1967, 7,311/67
Int. Cl. G01j 3/30
U.S. Cl. 356—86 9 Claims

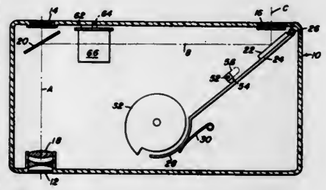


A device for spectral analysis of a solution with a porous rotary disk electrode and a back electrode. The rotary electrode is closed on one side and on the other side it is provided with a supply duct for the solution to be analysed and connected with a tubular drive shaft through which passes an inlet tube communicating with a container of the solution. The specific resistance of the rotary electrode is preferably 1000 to 5000$\mu\Omega$·cm. and its apparent porosity is 0.5 to 30%.

3,558,228
MULTI-PURPOSE RANGING DEVICE INCLUDING A MOVABLE INDEXING MEMBER

Marvin P. Hodges, 82 Shirewood Drive, Rochester, N.Y. 14625

Continuation-in-part of application Ser. No. 542,136, Apr. 12, 1966. This application Dec. 16, 1968, Ser. No. 795,383
Int. Cl. G01c 3/12
U.S. Cl. 356—17 13 Claims

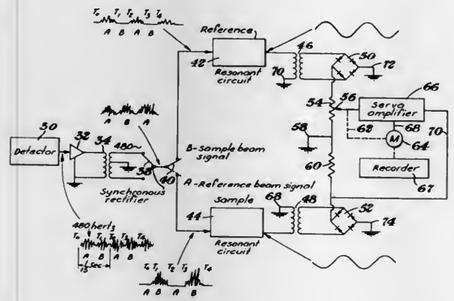


A multi-purpose ranging device for selectively translating a distance determination or golf green inclination into useful information for uses such as hunting and golfing, and functioning as a magnifying monocular lens system. The ranging device has mechanism for personalizing the device so that it will accurately indicate the useful information for a particular individual, rifle, or the like.

3,558,229
METHOD FOR OBTAINING IMPROVED OUTPUT SIGNALS FROM A DUAL BEAM SPECTROMETER

Franklin J. Karle, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed May 2, 1969, Ser. No. 821,219
Int. Cl. G01j 3/42
U.S. Cl. 356—95 4 Claims



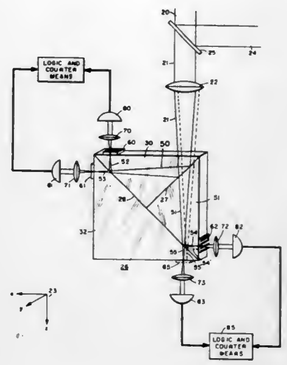
This invention relates to method and means for obtaining an improved output signal from a dual beam electrical ratioing infrared spectrometer. The output signal is obtained by comparing the sample beam signal (measuring beam) to the reference beam signal standard beam). The spectrometer uses a single radiation source. The source beam is alternatively directed at 15 hertz rate through the reference and the sample paths of the instrument. The two beams are recombined and form a single output signal from the detector. The output signal is amplified and separated into its two components by a synchronous rectifier. The two signals are compared to obtain the ratio of sample to reference signal strength, which is a measure of energy absorption in the sample. Since the two energy beams are alternate 15 hertz half cycles, the output signal of each is displaced in time by $\frac{1}{30}$ sec. and cannot be directly compared. Each time separated signal is connected to a parallel resonant tuned transformer. The windings are tuned to 15 hertz and have a high Q. The Q factor is a quality of the resonant circuit, $Q=wL/R$, and determines the frequency bandwidth and the decay time constant of the circuit. Since the output signal frequency is only 15 hertz, the two signals can be directly compared by phase inversion of one of the signals.

3,558,230
LIGHT BEAM DEFLECTION SENSOR

Vernon J. Fowler, East Meadow, N.Y., assignor to General Telephone & Electronics Laboratories Incorporated, a corporation of Delaware

Filed May 28, 1969, Ser. No. 828,679
Int. Cl. G01b 11/26, 27/14
U.S. Cl. 356—138 10 Claims

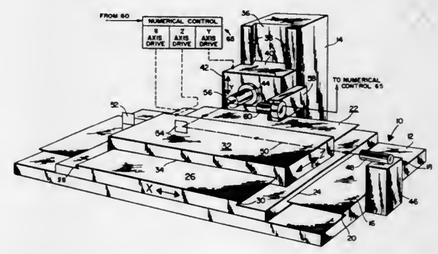
An apparatus for detecting the two-dimensional deflection of an input light beam from a reference direction. The input beam is divided into four split beams by a prism block. Each of the split beams passes through one of four ruled gratings mounted on the block. Detecting means received the light outputs from the gratings and compare them to determine the input beam deflection.



3,558,231
MACHINE ZERO LOCATOR

Joseph F. Bakel, Lyndhurst, Va., assignor to General Electric Company, a corporation of New York

Filed Oct. 3, 1967, Ser. No. 672,572
Int. Cl. G01b 11/26
U.S. Cl. 356—152 10 Claims



A three-dimensional zero position locator utilizing a laser, mirrors and a quad-photodetector. Some of the mirrors are mounted on platforms movable relative to the laser source and the quad-photodetector. The platforms are moved until the laser beam reflected from the mirrors lies in the center of the face of the quad detector thereby establishing a fixed point which can always be relocated.

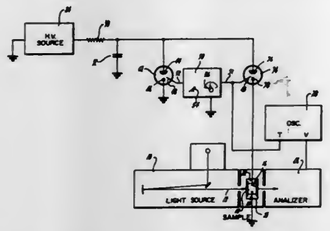
3,558,232
HEATING APPARATUS FOR REACTION KINETICS INVESTIGATIONS

Victor J. MacCosham, Menlo Park, Calif., assignor to Beckman Instruments, Inc., a corporation of California

Filed Apr. 13, 1967, Ser. No. 630,615
Int. Cl. G01n 25/00
U.S. Cl. 356—244 3 Claims

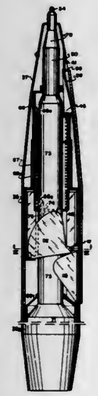
A high capacity voltage source is coupled across the sample cell electrodes by a spark gap tube triggered by a first pulse output from pulse generator. After an interval the voltage source is shorted out through a second

spark gap tube triggered by a second pulse output from the generator. The current pulse passed through the sam-



ple during the interval causes a rapid increase in temperature by joule heating.

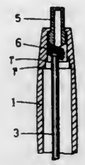
3,558,233
ROTARY ACTUATING MECHANISM FOR WRITING INSTRUMENT
Nathan A. Zepell, 1359 Santa Terisita Drive, Santa Barbara, Calif. 93105
Filed Apr. 21, 1969, Ser. No. 817,782
Int. Cl. B43k *24/04*
U.S. Cl. 401—106 **10 Claims**



The clip ball is manually pressed inwardly to contact a pair of crank arms that straddle a cartridge and rotate to press against a shoulder of the cartridge to extend the writing tip. A compression spring normally retracts the writing tip within the barrel. The clip is not only hinged to the barrel but also slides so that the clip ball can be moved out of alignment with the crank arms when the pen is not in use. This provides a safety against accidental extension of the writing tip.

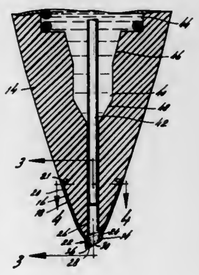
3,558,234
RETRACTABLE BALLPOINT PEN
Werner Kranich, Rosstal, near Nuremberg, Germany, assignor to A. W. Faber-Castell, Stein, near Nuremberg, Germany, a firm of Germany
Filed Mar. 25, 1969, Ser. No. 810,169
Claims priority, application Germany, Mar. 29, 1968, 1,761,066; Nov. 16, 1968, 1,809,398
Int. Cl. B43k *24/08*
U.S. Cl. 401—112 **6 Claims**

The specification describes a retractable ballpoint pen, in which a tiltable control member is interposed between the axially pressable operating pushbutton and the refill. When the pushbutton is pressed the control member is urged forward against a spring and laterally so that a latch thereon engages an abutment. Subsequently the control member tilts and is retained also by a second



latch engaging a second abutment. When the pushbutton is pressed again, the first latch releases and the control member tilts back to disengage the second latch and the control member and refill retract.

3,558,235
STYLOGRAPHIC WRITING PEN WITH BARREL NIB REINFORCMENT COVER
Edward Bok, New Bedford, Mass., assignor to Dike, Inc., Washington, D.C., a corporation of the District of Columbia
Filed Feb. 13, 1969, Ser. No. 798,961
Int. Cl. B43k *1/06*
U.S. Cl. 401—258 **2 Claims**



A stylographic writing pen, whereby a reinforced barrel nib jacket acts as the pen stylus in the capillary passage of which stylus a cleaning stem is reciprocably movable.

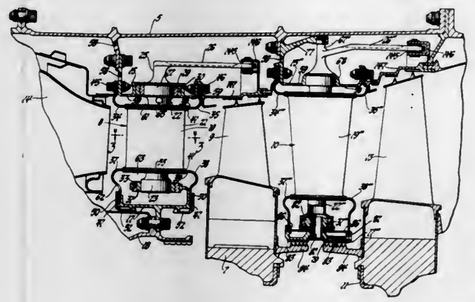
3,558,236
SELF-PURGING REGENERATIVE TURBINE PUMP
Simon Bylsma, Des Moines, Iowa, assignor to Delavan Manufacturing Company, Des Moines, Iowa, a corporation of Iowa
Filed Sept. 10, 1968, Ser. No. 758,725
Int. Cl. F04d *1/00, 1/06*
U.S. Cl. 415—53 **8 Claims**



A self-purging regenerative turbine pump so constructed that internal clearance spaces and cavities are continuously purged during operation of the pump,

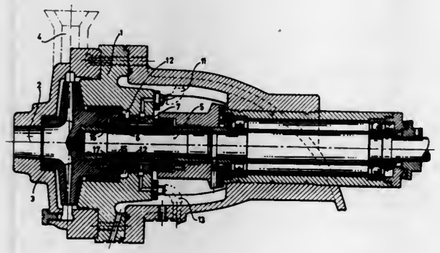
thereby permitting the pumping of contaminated liquids. Clearance spaces between the ends of the impeller and the adjacent surfaces of the housing, and between the periphery of the impeller and the stripper wall of the housing are slightly thicker than the size of contaminants entrained in the liquid being pumped. The first-mentioned spaces communicate with a seal cavity, and the seal cavity has means of free hydraulic communication with the inlet of the pump to insure a continuous flow of purging liquid as long as the pump is in operation.

3,558,237
VARIABLE TURBINE NOZZLES
Earle R. Wall, Jr., Indianapolis, Ind., assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 25, 1969, Ser. No. 836,423
Int. Cl. F01d *25/12, 25/26, 25/02*
U.S. Cl. 415—115 **21 Claims**



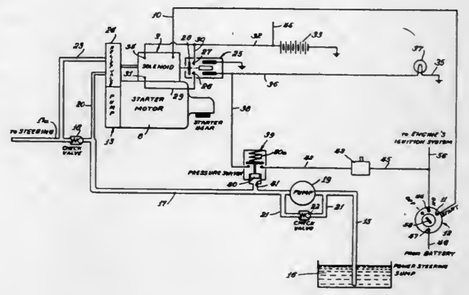
Turbine nozzle structures with variable setting vanes and shroud structures to support the vanes, having porous facings which are adapted for transpiration cooling by air flowing through the facings. Arrangements for mounting the facings on the structural rings of the shrouds and for supporting the parts with freedom for relative expansion. Also, arrangements for sealing against undue leakage between the pivoting vanes and the shroud facings.

3,558,238
CENTRIFUGAL PUMPS
Cornelis H. J. van Herpt, Stiphout, Netherlands, assignor to N.V. Koninklijke Nederlandsche Machinefabriek voorheen E. H. Begemann, Helmond, Netherlands
Filed Oct. 7, 1968, Ser. No. 765,318
Claims priority, application Netherlands, Oct. 6, 1967, 6713596
Int. Cl. F02f *11/00;* **F04d** *29/00*
U.S. Cl. 415—169 **7 Claims**



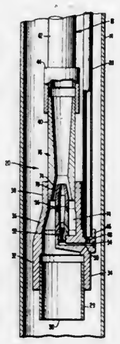
A centrifugal pump having a ring with thread of screw in the slit between the wall of the pump housing and the hub of the impeller. The depth of the recesses formed by the thread increasing from the rear side of the impeller into the direction of the end of the hub of the impeller for a ring being provided in the wall of the pump house and decreasing if the ring is provided on the hub.

3,558,239
POWER STEERING BACK-UP PRESSURE SYSTEM
Samuel Shiber, Chicago, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Illinois
Filed June 25, 1969, Ser. No. 836,557
Int. Cl. F04b *41/06, 49/00, 49/10*
U.S. Cl. 417—3 **6 Claims**



The present invention comprises a pressure sensitive switch, that is operably associated with the ignition switch in a manner such that when the servo pump for power steering is not operating, the pressure sensitive switch connects a circuit that will provide current from the battery to the starter motor which operates an auxiliary hydraulic pump for the power steering system.

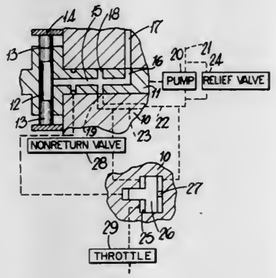
3,558,240
GAS OPERATED DEEP WELL PUMP
Lincoln Harry Snodgrass, New Orleans, La., assignor to Orbit Flow, Inc., Paradis, La., a corporation of Louisiana
Filed July 22, 1968, Ser. No. 746,393
Int. Cl. F04f *5/22*
U.S. Cl. 417—174 **2 Claims**



Disclosed is a gas operated induction pump for pumping liquids and/or slurries from the bottom of a well. An orifice is positioned adjacent the bottom of the well and enclosed by a mixing chamber and nozzle. Introduction of a gas into the orifice under pressure greater than the hydrostatic head in the well causes the gas to pick

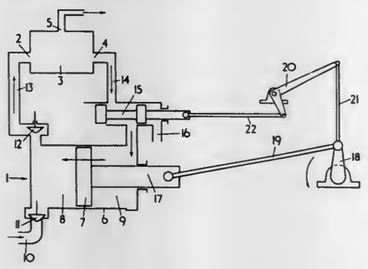
up and mix with the surrounding liquid or slurry to give "body" to the mixture which then picks up more liquid or slurry at the nozzle. The discharge tube increases in size toward the top of the well to utilize the energy of the expanding gas in the mixture.

3,558,241
LIQUID FUEL PUMPING APPARATUS FOR SUPPLYING FUEL TO INTERNAL COMBUSTION ENGINES
Ivor Fenne, Greenford, Middlesex, England, assignor to C.A.V. Limited, London, England, a British company
Filed Mar. 4, 1969, Ser. No. 804,082
Claims priority, application Great Britain, Mar. 8, 1968, 11,378/68
Int. Cl. F04b *23/12*
U.S. Cl. 417—206 **7 Claims**



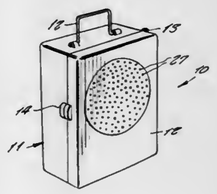
A fuel pumping apparatus including a pumping chamber having an outlet through which fuel flows during an injection stroke, a stepped shuttle slidable within a complementary shaped bore, the narrower end of said bore being in communication with the pumping chamber, means acting to urge the stepped shuttle towards the narrower end of the bore and throttle means for controlling the escape of fluid from the portion of the bore defined between the wider portion of the shuttle and the step in the bore during movement of the shuttle towards the narrower end of the bore, whereby the quantity of fuel flowing through the outlet can be controlled.

3,558,242
PUMP FOR DESALINATION PLANT
William Dixon Jenkyn-Thomas, London, England, assignor to Petersen Candy International Limited, London, England, a British company
Filed Mar. 4, 1969, Ser. No. 804,081
Int. Cl. F04b *9/02*
U.S. Cl. 417—374 **2 Claims**



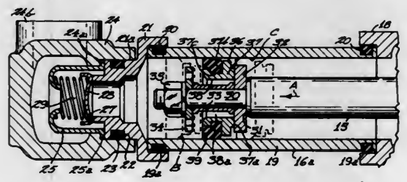
The invention comprises a pump for a desalination plant operating by the process of reverse osmosis, which is driven by a piston engine operated by the pressure of rejected liquid of the process, and may be formed with a common cylinder in which the piston of the engine is coupled to the piston of the pump by a common piston rod. Alternatively the pump and the engine may have a common cylinder and a common piston. Whichever is the case suitable valves are provided for connecting the chambers of the engine and the piston in appropriate manner as the pump rotates.

3,558,243
PORTABLE FAN
John A. Trapp, 2531 Leslie, Detroit, Mich. 48238
Filed Dec. 2, 1968, Ser. No. 780,391
Int. Cl. F04b *17/00*
U.S. Cl. 417—411 **3 Claims**



A portable fan that is contained within a carrying case so that it may be conveniently transported to places for use, the case including a compartment for dry cell batteries and a manually operable three-speed switch in electric circuit with a fan motor.

3,558,244
HIGH PRESSURE PUMP
Ryoji Uchiyama, Ichikawa, Japan, assignor to Maruyama Mfg. Co., Ltd., Tokyo, Japan
Filed Sept. 3, 1968, Ser. No. 756,852
Int. Cl. F16n *7/12;* **F16j** *11/04;* **F04b** *7/00*
U.S. Cl. 417—511 **1 Claim**

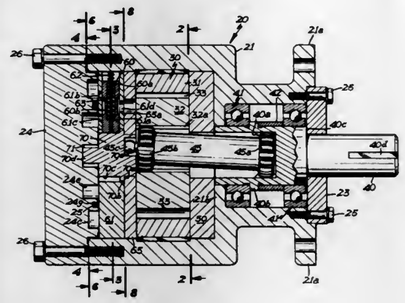


A high pressure pump with a self-centering piston loose on the piston rod carrying valve valving in cooperation with the piston.

3,558,245
ROTARY MOTOR OR PUMP
Joseph A. Bolduc, Eden Prairie, Minn., assignor to Hydro-Comp., Inc., Hopkins, Minn., a corporation of Minnesota
Filed Dec. 15, 1969, Ser. No. 885,187
Int. Cl. F01c *1/02*
U.S. Cl. 418—61 **16 Claims**

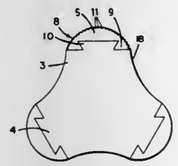
A fluid motor or pump of the orbiting Gerotor type in which valving is accomplished through the use of reciprocating pistons. The pistons are selectively reciprocated in

response to either relative orbital movement or relative rotation between the rotor and stator to connect the fluid input with expanding Gerotor chambers and fluid output with contracting Gerotor chambers. The pistons may be



disposed for reciprocation on an axis radial to the longitudinal axis of the Gerotor unit, or they may be disposed for reciprocation on an axis parallel to and spaced from the longitudinal axis of the Gerotor unit.

3,558,246
ROTARY PUMP FOR VISCOUS FLUIDS
Rudi Philipp, Saint-Ingbert, Germany, assignor to Eisenwerke Kaiserslautern G.m.b.H., Kaiserslautern, Germany
Filed Dec. 23, 1968, Ser. No. 786,247
Claims priority, application Germany, Nov. 7, 1968, P 18 07 392.2
Int. Cl. F04c *5/00, 15/00*
U.S. Cl. 418—117 **6 Claims**



A rotary Root's type pump for conveying viscous fluids with corrosive properties in which each of two rotors has a body of metal to which strips of a non-corrosive and wear-resistant plastic are removably secured which form at least the outwardly projecting rotor heads which are slidable along the inner wall of the pump housing which is provided with a coating of enamel and along the core or the reduced parts between the heads of the other rotor.

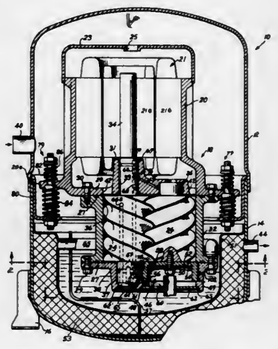
3,558,247
METHOD AND DEVICE FOR ADJUSTING THE LATERAL CLEARANCE IN A ROTARY DISPLACEMENT PUMP
Berthold Gaertner, Rueil-Malmaison, France, assignor to Bronzavia, Courbevoie, France, a French body corporate
Filed Nov. 22, 1968, Ser. No. 778,114
Claims priority, application France, Nov. 28, 1967, 129,912
Int. Cl. F01c *1/08, 19/08*
U.S. Cl. 418—131 **16 Claims**

Rotary displacement pump having at least one rotary element. Two side-wall members are disposed in the pump housing on each side of the rotary element. At least one of the side-wall members is axially movable relative to the housing and to the rotary element. One face of the movable side-wall member is subjected on at least a part of its face, to a pressure in the neighbourhood of the delivery pressure of the pump and means apply on at least



a part of the other face of the movable side-wall member a regulated back-pressure whose magnitude determines the magnitude of the lateral clearance between the rotary element and the side-wall members.

3,558,248
SCREW TYPE REFRIGERANT COMPRESSOR
Sidney A. Parker, Fort Worth, Tex., assignor to Lennox Industries Inc., a corporation of Iowa
Filed Jan. 10, 1968, Ser. No. 790,212
Int. Cl. F04c *27/02, 29/02, 17/12*
U.S. Cl. 418—88 **11 Claims**

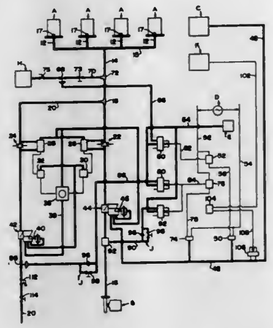


A refrigerant screw compressor incorporating valve means constructed and arranged to rotate with the screws to provide a variable compression ratio responsive to conditions of the refrigeration system in which the compressor is used. The screws may be provided with a preselected variable skew for maintaining adequate fluid flow through the valve means with a minimum pressure drop. Lubricant is supplied to the working space within which the screws operate from a sump within the compressor casing by pump means within the screws for increasing screw compression performance.

3,558,249
METHOD AND APPLICATION FOR PREVENTING FLASHBACK IN PREMIX GAS BURNER SYSTEMS
David Cope, Salem, Ohio, assignor to The Electric Furnace Company, Salem, Ohio, a corporation of Ohio
Filed May 13, 1969, Ser. No. 824,214
Int. Cl. F23n *5/24*
U.S. Cl. 431—12 **10 Claims**

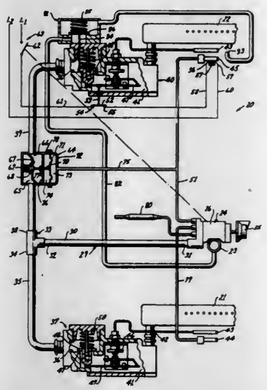
A gas burner system includes premixing means for mixing air and fuel to a combustible mixture before

delivery through a conduit to a gas burner port. The system includes a measuring means for measuring the flow rate of the combustible mixture through the burner port and further includes diluting means which injects inert gas into the flow line to the burner and maintains



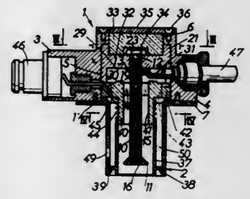
flow rate of the mixture through the burner port above its flame propagation velocity. The measuring means and diluting means cooperate with control means which actuates the diluting means when the flow rate of the mixture through the burner ports is not substantially greater than its flame propagation velocity.

3,558,250
FUEL CONTROL SYSTEM FOR A COOKING APPARATUS OR THE LIKE
Charles D. Branson, Greensburg, Pa., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware
Filed Dec. 10, 1968, Ser. No. 782,531
Int. Cl. F23q *9/08*
U.S. Cl. 431—61 **17 Claims**



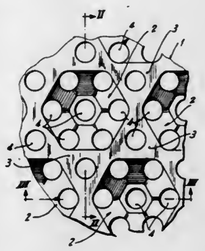
This disclosure relates to a control system for a bake burner and a broil burner of a domestic oven or the like wherein a control device is adapted to interconnect a source of fuel to a conduit means leading to the bake burner and the broil burner, the conduit means having fluid pressure operated valve means therein intermediate the control device and at least one of the burners with the valve means being so constructed and arranged that the same will direct the fuel issuing thereto from the control device to that one burner only when the selector means of the control device is set for operation of that one burner.

3,558,251
HIGH TENSION IGNITER PLUGS
Louis Jules Bauger, Vanves, Roland Robert Charles Beyler, Levallois-Perret, Adolphe Robert Lefebvre, La Rochette, Herve Alain Quillevere, Issy-les-Moulineaux, and Michel Bernard Schenher, Paris, France, assignors to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation, Paris, France
Filed Feb. 24, 1969, Ser. No. 801,546
Claims priority, application France, Feb. 27, 1968, 141,430
Int. Cl. F23q *3/00*
U.S. Cl. 431—266 **7 Claims**



An igniter plug comprising inner and outer electrodes defining therebetween an annular passage ending in an annular gap for development of ignition sparks. A gas is fed to the passage for emergence through the gap. A whirling motion is imparted to the gas in the passage to give the sparks a like whirling movement. Alternatively or additionally, the operative end portion of the inner electrode forms are outwardly flaring deflector for the flow of gas to promote the formation of an ignition flame.

3,558,252
RADIATING ELEMENT
Domingo C. Roca, Navarra, Spain, assignor to Industrias del Hogar, S.A., Navarra, Spain
Filed July 29, 1968, Ser. No. 748,492
Int. Cl. F23d *3/12*
U.S. Cl. 431—328 **9 Claims**



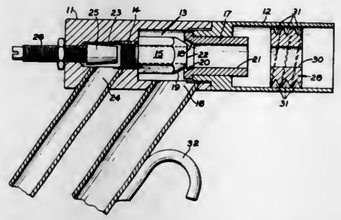
A radiant element provided with a face from which infrared rays are to be emitted, fitted with a plurality of polygon-shaped cavities, the side faces of which have a predetermined degree of inclination convergent toward the interior, the total area of the inner side surfaces being greater than the cross-sectional areas of the associated cavity, so that the available area from which infrared rays can be emitted is thereby increased. The cavities are each provided with several feeding ducts, the outlets of which are staggered in different planes within the respective cavity, to supply each cavity with a combustible gaseous fluid under pressure, so that when undergoing combustion in the respective outlets, the flames are at different levels from the general plane of the front face at which feeding further conduits have their outlets, whereby an autopiloting effect of the inner flames towards the outside flames and vice-versa is created, as a consequence of which the addition of primary air to the combustible mix is enriched

so obtaining a more complete combustion and, therefore, improved performance, and avoiding possible leaks and small explosions of portions of non-burned gas at the outlets of the ducts.

ERRATA

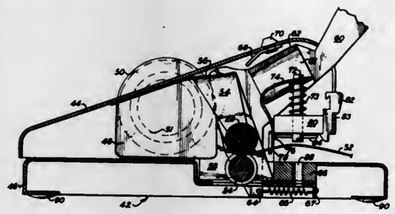
For Classes 83—176 thru 239—177 see: Patent Nos. 3,558,254 thru 3,558,258

3,558,253
BLOW PIPES
Wilfred C. Smith, Hackman's Gate, near Clent, and Richard W. J. Cox, Kidderminster, England, assignors to William Allday and Company Limited, Stourport-on-Severn, Worcestershire, England, a British company
Filed Nov. 26, 1968, Ser. No. 779,144
Claims priority, application Great Britain, Dec. 2, 1967, 54,941/67
Int. Cl. F23d *15/02*
U.S. Cl. 431—353 **7 Claims**



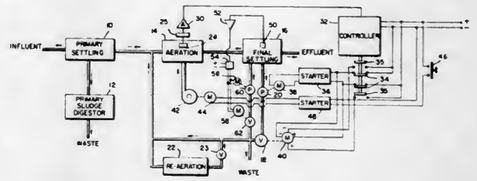
A blowpipe head for burning gas fuel, for example natural gas, in combination with pressurized air having a chamber for connection to gas fuel and air supplies and a burner tube in which mixed gas fuel and air is burnt; wherein a restricted venturi throat passage leading from the chamber to the burner tube is axially aligned with an air nozzle in the chamber to direct a jet of the pressurized air through the throat, so that gas fuel fed into the chamber is drawn through the throat and mixed with the air.

3,558,254
REINFORCEMENT APPLICATOR
John J. Cahill, Shongum Lake, N.J., assignor of thirty-three and one-third percent to Eugene M. Bond, Washington, D.C.
Continuation-in-part of application Ser. No. 571,457, Aug. 10, 1966, now Patent No. 3,457,815, which is a continuation-in-part of application Ser. No. 425,327, Jan. 13, 1965, now Patent No. 3,289,509. This application Sept. 10, 1968, Ser. No. 758,806
The portion of the term of the patent subsequent to Dec. 6, 1983, has been disclaimed
Int. Cl. B65h *57/14, 51/10;* B32b *31/18*
U.S. Cl. 83—176 **10 Claims**



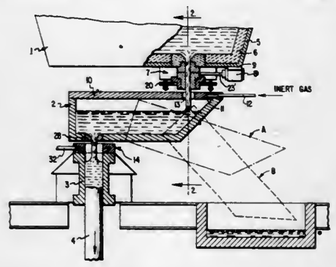
The disclosed invention is directed to a new and novel roll means for advancing pressure-sensitive tape in an applicator. Desirably, the applicator is of the type wherein individual sections of tape may be dispensed, secured and simultaneously punched with a hole through both the secured tape and the sheet.

3,558,255
CONTROL SYSTEM FOR WASTE WATER TREATMENT PLANTS
Thomas A. Rose, La Grange, Ill., assignor to Keene Corporation, a corporation of Delaware
Filed Jan. 26, 1970, Ser. No. 5,765
Int. Cl. B01d *21/10*
U.S. Cl. 210—96 **22 Claims**



A control system for a sewage plant having multiple tanks in which sewage is treated prior to discharging it to a receiving stream. A device in one tank detects and measures the concentration of suspended solids therein and provides an output signal representative of the amount of solids. System components respond to the signals and selectively control operation of a pump and valve in a line interconnecting two of the tanks for returning activated sludge at uniform or varying flow rates, from one tank to another to aid in the sewage decomposition process, and/or pumping the activated sludge to waste. The control components also control the delivery of air to the tank being treated. By utilizing a system of this type, the suspended solids concentration can be closely held within tolerable limits and thereby provide effluent of the desired quality to a receiving stream.

3,558,256
APPARATUS FOR THE CONTINUOUS CASTING OF METALS
Klaus Bick, Paderborn, Germany, and Bernhard Tinnes, Zollikon, Zurich, Switzerland, assignors to Paderwerk Gebruder Benteler, Kreis Paderborn, Germany
Continuation-in-part of applications Ser. No. 497,342, now Patent No. 3,433,288, and Ser. No. 497,343, both Oct. 18, 1965. This application Mar. 8, 1968, Ser. No. 711,629
Claims priority, application Germany, Oct. 21, 1964, P 35,320; Oct. 23, 1964, P 35,344
The portion of the term of the patent subsequent to Mar. 18, 1986, has been disclaimed
Int. Cl. B22d *11/10*
U.S. Cl. 164—281 **26 Claims**



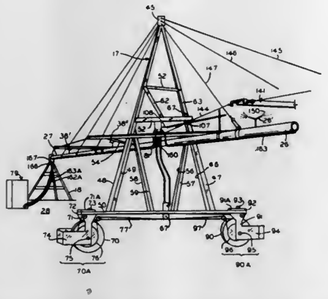
An apparatus for the continuous casting of metals wherein an intermediate ladle is provided between a casting ladle and a casting mold to transfer molten metal

from the former to the latter. The intermediate ladle is swingable about a vertical axis to and from an operative position and is tiltable about a horizontal axis to and from a checking and emptying position.

3,558,257
SPRINKLING PROCESS AND APPARATUS THEREFOR

Harold Jay Harris, Seminole, Tex., assignor to Gifford-Hill-Western, a division of Gifford-Hill & Co., Inc., Dallas, Tex., a corporation of Delaware

Continuation-in-part of application Ser. No. 787,311, Jan. 3, 1969. This application Oct. 21, 1969, Ser. No. 868,182
The portion of the term of the patent subsequent to Dec. 16, 1986, has been disclaimed
Int. Cl. A26c *1/06*; B05b *17/00*; B44d *1/08*
U.S. Cl. 239—1 **12 Claims**

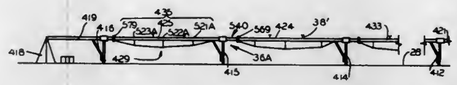


A combination of irrigation sprinkler supporting pipe sections and movable pipe supporting towers rigidly united with traction sensitive motors on each tower station, the units of movable towers and the pipe therebetween powered to move continuously and evenly in a preset formation in a circular pattern and thereby distribute irrigation water in an even and predictable manner over undulating as well as flat ground.

3,558,258
MOBILE SPRINKLER CONTROL APPARATUSES

James Burl Johnson, Jr., Lubbock, Tex., assignor to Gifford-Hill-Western, a division of Gifford-Hill & Co., Inc., Dallas, Tex., a corporation of Delaware

This application is a continuation-in-part of Ser. No. 868,181, which is a continuation-in-part of Ser. No. 868,182, which is a continuation-in-part of Ser. No. 787,311, Jan. 3, 1969, now Patent No. 3,484,046. This application Oct. 21, 1969, Ser. No. 868,183
The portion of the term of the patent subsequent to Dec. 16, 1986, has been disclaimed
Int. Cl. B05b *3/00*
U.S. Cl. 239—177 **8 Claims**



Combination of irrigation sprinkler supporting pipe sections and movable pipe supporting towers rigidly united with motors on each tower station, each section of pipe pivotally connected to the next, an improved motor control for each tower connected to the section of pipe outboard thereof so as to be readily adjusted as well as responsive to the uphill and downhill as well as retarded and advanced position of that tower, and thereby distribute irrigation water in an even and predictable manner over undulating as well as flat ground.

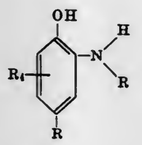
CHEMICAL

3,558,259
HUMAN HAIR DYEING WITH AMINOPHENOLS

Gregoire Kalopissis, Paris, and Andree Bugaut, Boulogne-sur-Seine, France, assignors to L'Oreal, Paris, France

No Drawing. Continuation-in-part of application Ser. No. 293,282, July 8, 1963. This application June 12, 1967, Ser. No. 645,520
Claims priority, application France, July 11, 1962, 903,703; July 3, 1963, 940,212
Int. Cl. A61k *7/12*
U.S. Cl. 8—10.2 **9 Claims**

The process of using and compositions containing dyes, which are suitable for one step dyeing of hair and keratin fibers without requiring the use of separate dye modifiers which are exceptionally color stable, having the formula:

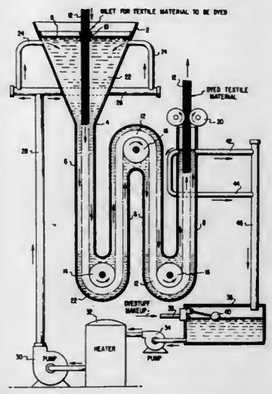


in which R is selected from the group consisting of hydrogen and alkyl, R_1 is selected from the group consisting of hydroxy and alkyl, and R_4 which can be in position 5 or 6 on the ring is selected from the group consisting of hydrogen, halogen, hydroxy and alkyl.

3,558,260
METHOD FOR THE RAPID AND CONTINUOUS DYEING OF MIXTURES OF TEXTILE MATERIALS

Julius Hermes, 905 Jefferson Circle, Martinsville, Va. 24112

Filed May 8, 1968, Ser. No. 727,388
Int. Cl. D06p *3/82*
U.S. Cl. 8—21 **2 Claims**



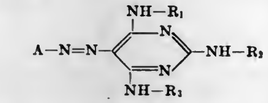
Textile materials and films are rapidly and continuously dyed by subjecting them to the action of a hot aqueous dye liquor containing benzyl alcohol when the textile material is nylon or polyester, propylene carbonate or dipropylene carbonate (especially the latter) when the textile material is acrylic, or wool; or a mixture of benzyl alcohol and propylene carbonate or dipropylene carbonate (especially the latter) when the textile material is a mixture of nylon or polyester with one of the others just named, including wool.

3,558,261
5-ARYLAZO-PYRIMIDINE POLYESTER DYES

Hans Ackermann, 41 Essigstrasse; Werner Bossard, 65 Wenkenstrasse; Jacques Voltz, 3 Schutzenrain; and Hans Wegmuller, 18 Kornfeldstrasse, all of Riehen, Switzerland

No Drawing. Filed July 22, 1966, Ser. No. 567,057
Int. Cl. C09b *27/00*; D06p *1/02, 3/34*
U.S. Cl. 8—41 **6 Claims**

The present invention concerns processes for the dyeing of hydrophobic organic fibers consisting of linear macromolecular esters of aromatic polycarboxylic acids with polyvalent alcohols, or of cellulose ester, with new, water-dispersible but only slightly water-soluble azo dyestuffs free from ionogenic groups which dissociate in water having the formula:



wherein

A represents carbocyclic or heterocyclic aryl, one of R_1, R_2 and R_3 represents unsubstituted or non-ionogenically substituted phenyl and each of the other R substituents represents hydrogen or alkyl, cycloalkyl or phenalkyl, each of the latter three substituents being unsubstituted or non-ionogenically substituted.

The present invention also comprises, as an industrial product, dyed hydrophobic organic fibers produced according to the dyeing process of the present invention.

3,558,262
PACKAGING AND STORING REGENERATED COLLAGEN SUTURES

Richard Joseph Duffy, Port Chester, N.Y., and Francesco DeMaria, Wilton, Conn., assignors to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Original application May 8, 1967, Ser. No. 636,591, now Patent No. 3,483,286, dated Dec. 9, 1969. Divided and this application Oct. 31, 1969, Ser. No. 873,137
Int. Cl. A61l *17/00*; D01f *5/00*
U.S. Cl. 8—94.11 **1 Claim**

Regenerated collagen sutures of unusual strength and surgically desirable characteristics are obtained by cleaning young beef tendons, grinding while frozen, treating with trypsin, washing in water, treating with the sodium salt of ethylenediamine tetracetic acid, washing with water, dispersing the collagen to form an aqueous gel, which may contain some ethanol, with hydrochloric acid, at a pH of about 2.3 to 3.3 to form a spinnable gel of about 0.86% solids, extruding into a dehydrating, coagulating ammoniacal solvent-water bath, pressure rolling to expel the solvent-water, and at least partially drying. The solvent may be ethanol or acetone. The ribbon is treated with pyrogallol, or other polyhydric phenol, the pyrogallol treated with hexavalent chromium, then the chromium is reduced further with a bisulfite, to the trivalent state, and the double tanned ribbon twisted and stretched and dried to form the suture. The unusual strength developed is protected by storing in a 3–4% water in isopropanol tubing fluid until ready for use. The double tan gives not only a high initial strength, but causes the suture, when used, to retain an adequate proportion of its initial strength for at least 15 days in muscular tissue. The smaller sizes hold until healing occurs in corneal tissue in eye operations.

3,558,263
POTASSIUM IODIDE CROSS-LINKING INHIBITOR FOR N-METHYLOLACRYLAMIDE

William Frederick Baitinger, Jr., Hillsborough Township, Somerset County, N.J., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Oct. 1, 1968, Ser. No. 764,347
Int. Cl. C08g *51/56*; D06m *13/40*
U.S. Cl. 8—116.3 **10 Claims**

A method for inhibiting cross-linking of cellulose when N-methylolacrylamide is reacted with cellulosic textile materials in the presence of acid-acting catalysts, which comprises the use of potassium iodide with or without cupric chloride. An aqueous textile finishing composition for permanent press cellulosic textiles containing N-methylolacrylamide, an acid-acting catalyst and potassium iodide, with or without cupric chloride.

3,558,264
SHRINKPROOFING KERATINIC TEXTILE MATERIALS THROUGH REACTION WITH POLYISOCYANATES IN CONJUNCTION WITH ACTIVE HYDROGEN CONTAINING COMPOUNDS

Emile E. Habib, Spartanburg, S.C., assignor to Deering Milliken Research Corporation, Spartanburg, S.C., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 230,712, Oct. 5, 1962. This application July 3, 1963, Ser. No. 292,774
Int. Cl. D06m *3/02, 13/42*
U.S. Cl. 8—127.6 **9 Claims**

Keratinic fibers are modified with polyisocyanates in conjunction with polyfunctional coreactants to improve the shrink resistance, dyeability and settability thereof and uniform or blended textile structures made therefrom.

3,558,265
PREVENTION OF FELTING AND SHRINKING OF WOOL-CONTAINING TEXTILE MATERIAL

Ernesto Pantaleoni, Milan, Italy, assignor to Lanerossi S.p.A., Milan, Italy

Filed Feb. 16, 1968, Ser. No. 705,981
Claims priority, application Italy, Feb. 25, 1967, 794,088
Int. Cl. D06l *1/00*
U.S. Cl. 8—142 **12 Claims**

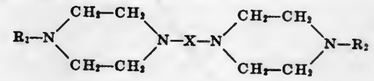
Wool-containing textile material is treated for prevention of shrinkage and felting by soaking in a solution of sulphoryl chloride in a volatile organic solvent, normally immiscible with water, for a short time to cause impregnation, wringing the material to remove excess solution, and, after temporary storing to allow the shrinkage prevention reaction to occur, removing the solution, preferably by washing with hot water.

3,558,266
POLYURETHANE COMPOSITION STABLED TO GAS FADING AND PROCESS FOR PREPARING SAME

Alois Kleemann and Ernst Model, Basel, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Filed Oct. 10, 1966, Ser. No. 585,291
Claims priority, application Switzerland, Oct. 14, 1965, 14,199/65
Int. Cl. D06p *3/24, 5/00*
U.S. Cl. 8—165 **4 Claims**

Fastness to gas fading of dyeings and plastics sensitive thereto is improved by treatment with:



3,558,267

METHOD FOR DYEING HIGH-TEMPERATURE-RESISTANT POLYAMIDES AND POLYIMIDES

Bruno Wilhelm Langenfeld, Waldkirch, Germany, assignor, by mesne assignments, to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 2, 1967, Ser. No. 657,750
Claims priority, application Germany, Aug. 4, 1966, 1,619,560
Int. Cl. D06p 5/06
U.S. Cl. 8—172 4 Claims

Filaments of aromatic polyamides and aromatic polyimides that structurally withstand temperatures of over 150° C. are difficult to dye by conventional techniques, but are readily dyed at temperatures over 100° C., preferably 120 to 160° C., in a solution of a dye in a polar organic solvent that contains oxygen in the molecule, preferably N,N-dialkylcarboxylic acid amides such as N,N-dimethylformamide. The filaments can be led through a narrow conduit in which the dye solution is held. The filaments can be mixed with other filaments and fibers that are not materially damaged by the dye solution, and such mixtures subjected to the dyeing treatment.

3,558,268

PROCESS FOR RECOVERING RHENIUM VALUES FROM ION EXCHANGE MATERIALS

John D. Prater and Ronald N. Platzke, Salt Lake City, Utah, assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York

Filed Nov. 13, 1967, Ser. No. 682,345
Int. Cl. C01g 47/00; C22b 59/00
U.S. Cl. 23—22 11 Claims

Rhenium values are extracted from aqueous solutions in conventional manner with ion exchange materials. The rhenium values are then recovered from the ion exchange material by contacting the rhenium-bearing material with an aqueous thiocyanate solution, such as a 1 molar solution of ammonium thiocyanate. Pure crystals of ammonium perrhenate are obtained directly from the thiocyanate solution by crystallization.

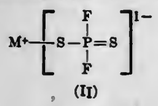
3,558,269

PHOSPHORO- AND PHOSPHONOFLUORIDO-THIOIC ACIDS AND THEIR SALTS

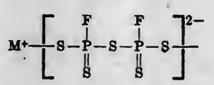
Herbert W. Roesky, Gottingen, Germany, assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 569,810, Aug. 3, 1966. This application Mar. 5, 1968, Ser. No. 715,466
Int. Cl. C01d 11/00; C01f 1/00
U.S. Cl. 23—50 16 Claims

Claimed are phosphonofluoridothioic acids and their salts, useful as reducing agents, of the formulas:

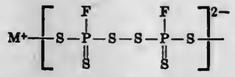


(II)



(III)

and



(IV)

in which M is hydrogen, a metal, or specified types of onium cations; preparation of those in which M is an alkali metal by reacting P_4S_{10} with an alkali metal fluoride in the presence of (a), for (II), acetonitrile, (b), for (III), water, and (c), for (IV), ethylene glycol dimethyl ether; and in preparation of (II), when M is an alkali metal, by reacting SPF_3 with an alkali metal fluoride in the presence of acetonitrile.

3,558,270

MACROSCOPIC FIBERS OF SPINEL

Wallace W. Pultz, Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York

Filed Jan. 26, 1968, Ser. No. 701,018
Int. Cl. C01f 7/02
U.S. Cl. 23—52 8 Claims

This invention relates to the manufacture of macroscopic-sized fibers of spinel ($MgO \cdot Al_2O_3$) through a vapor phase interaction between MgO, Al_2O_3, carbon, chlorine, and SiO_2 wherein SiO_2 or SiO acts as a nucleating agent or crystallization catalyst. The interaction between the components is carried out at temperatures between about 1375°–1525° C. at partial pressures of chlorine between about 25–300 mm. of mercury.

3,558,271

METHOD OF PREPARING CATALYTICALLY ACTIVE $TiCl_3$

Benedetto Calcagno, 33 Via Grazioli, Milan, Italy

No Drawing. Continuation-in-part of application Ser. No. 566,220, July 19, 1966. This application June 25, 1969, Ser. No. 836,645
Int. Cl. C10g 23/02
U.S. Cl. 23—87 8 Claims

A process for preparing catalytic titanium trichloride by reducing titanium tetrachloride by means of an organometallic compound of aluminum or magnesium in an aliphatic or alkyl-aryl ether. The reaction mixture is generally aged at a temperature from 20° to 200° C. for a time period of from 0.2 to 3.0 hours, and the resulting solid titanium trichloride product is recovered and washed in anhydrous organic solvent.

3,558,272

TREATMENT OF THIOSULFATE-CONTAINING SOLUTIONS WITH HYDROGEN IN THE PRESENCE OF A NICKEL SULFIDE CATALYST

Peter Urban, Northbrook, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Aug. 15, 1968, Ser. No. 752,792
Int. Cl. C01b 17/06; C01c 1/20
U.S. Cl. 23—137 12 Claims

A water-soluble thiosulfate compound is reduced to elemental sulfur by contacting an aqueous solution of the thiosulfate compound and hydrogen with a solid catalyst comprising nickel sulfide at reduction conditions including a temperature of about 100 to about 300° C. and a pressure of about 100 to about 3000 p.s.i.g. Typically, the elemental sulfur produced by the reduction step is recovered in the form of a polysulfide which can, if desired, be decomposed to separate elemental sulfur.

3,558,273

PREPARATION OF TITANIUM PHOSPHATE PLATELETS

Henry N. Beck, Walnut Creek, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 632,933, Apr. 24, 1967. This application Mar. 5, 1969, Ser. No. 812,528
Int. Cl. C01b 25/00; C08k 1/02
U.S. Cl. 23—105 10 Claims

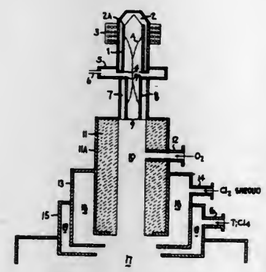
The present invention relates to a novel titanium phosphate product of thin platelet configuration and to preparation of the plates by reacting, in the presence of water; a titanium source material and a phosphate source material under controlled reaction conditions.

3,558,274

PROCESS OF PREPARING PIGMENTARY METAL OXIDE WITH ELECTRIC ARC

Calvin B. Holden, Doylestown, Ohio, assignor to PPG Industries, Inc., a corporation of Pennsylvania

Continuation-in-part of application Ser. No. 400,644, Oct. 1, 1964. This application Nov. 17, 1967, Ser. No. 683,839
Int. Cl. C01g 23/04; B01k 1/00; H05b 7/06
U.S. Cl. 23—202 22 Claims



Metal oxides, such as titanium dioxide, are prepared by vapor phase oxidation of corresponding metal halides in a reaction space supplied with heat energy from a gaseous stream heated by electrical energy. Electrically generated gaseous plasmas, such as arc plasmas and electrodes of homogeneous construction for conducting electric arcs are described.

3,558,275

PROCESS FOR PREPARING DIBORANE

Gerald H. Reifenberg, Hightstown, and William J. Considine, Somerset, N.J., assignors to M & T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed July 3, 1968, Ser. No. 742,201
Int. Cl. C01b 6/10
U.S. Cl. 23—204 3 Claims

The process of this invention for preparing diborane, B_2H_6, comprises reacting as reactants stannane, SnH_4, and a complex comprising boron trihalide and a Lewis base, maintaining said reactants together in a reaction mixture, and separating diborane, B_2H_6, from said reaction mixture.

3,558,276

PROCESS FOR PRODUCING FORMED CARBON ARTICLES

Sugio Otani, Kiryu-shi, Japan, assignor to Kureha Kagaku Kogyo Kabushiki Kaisha, Tokyo-to, Japan

No Drawing. Filed Jan. 31, 1968, Ser. No. 701,827
Claims priority, application Japan, Feb. 3, 1967, 42/6,563
Int. Cl. C01b 31/04
U.S. Cl. 23—209.1 5 Claims

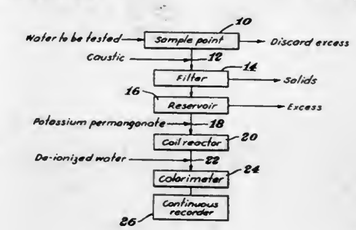
An inexpensive tar or pitch is transformed by a known treatment into a modified pitch having a hydrogen-to-carbon atomic ratio of from 0.2 to 0.6 and a softening point of at least 170 degrees C., which modified pitch in granular form is pressure formed into a formed article, which is then treated in an inert gas, whereupon a carbon formed article having a graphitization characteristic in the range of from easy graphitizability to difficult graphitizability and a structural texture in the range of from glass-like state to porous state is obtained. Prior to carbonization, the formed article is preferably heated in an oxygen-containing atmosphere to temperature of about 200 to 330° C.

3,558,277

METHOD OF MONITORING THE AMOUNT OF BIODEGRADABLE ORGANICS IN LIQUID

Johnnie D. Laman and Glenn R. Wessels, Lake Jackson, Tex., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

Filed Dec. 7, 1967, Ser. No. 688,881
Int. Cl. G01n 31/02, 33/18
U.S. Cl. 23—230 8 Claims



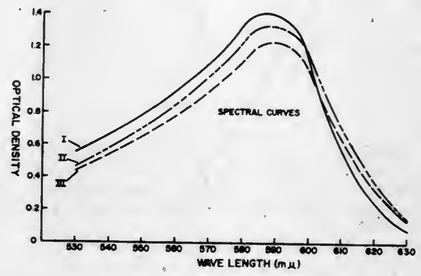
Method for continuously monitoring the amount of biodegradable organics in aqueous material, comprising adding caustic to precipitate any magnesium, calcium, copper or iron that may be present, filtering or otherwise separating out the precipitate, adding a permanganate solution (usually potassium permanganate) to the filtrate (precipitate free material), passing the filtrate through the sample cell of a colorimeter, and measuring the color change (in millivolts) on a continuous recorder as a function of the amount of biodegradable material in the aqueous sample being tested. This method is especially useful in determining the chemical oxygen demand in waste water streams, and performs such measurement in less than one hour as compared to a matter of 6–8 hours or more for other known methods.

3,558,278

DETERMINATION OF ALBUMIN

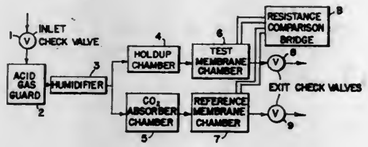
Allan Lee Louderback, Temple City, and Nancy Ann Taylor, Canoga Park, Calif., assignors to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware

Filed Dec. 26, 1967, Ser. No. 693,418
Int. Cl. G01m 21/22, 31/22, 33/16
U.S. Cl. 23—230 8 Claims



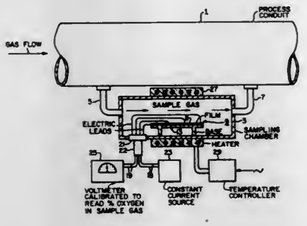
A reagent and method for the determination of albumin in liquids employing the addition of brom cresol purple in a buffered solution to an albumin-containing substance and measurement of changes in optical density.

3,558,279
ELECTROCHEMICAL SENSOR DEVICE
Wayne A. McRae, Lexington, Mass., Stuart G. McGriff, Alexandria, Va., and Frank B. Leitz, Weston, Mass., assignors to Ionics, Incorporated, Watertown, Mass.
Filed June 20, 1967, Ser. No. 647,480
Int. Cl. G01n *31/04*
U.S. Cl. 23—254 12 Claims



An instrument for measuring the concentration of a weakly water-ionizable gaseous component such as carbon dioxide which may be contained in an ambient atmosphere. Such device is independent of the temperature and total pressure of the atmosphere and is based on the measurable changes occurring in the electrical properties of an ion-exchange material when in the presence of the particular gas to be measured.

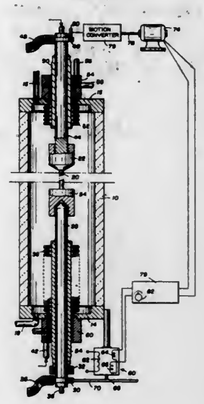
3,558,280
SOLID STATE OXYGEN GAUGE
Armand J. Panson and Roswell J. Ruka, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Nov. 5, 1968, Ser. No. 773,466
Int. Cl. G01n *31/06*
U.S. Cl. 23—254 10 Claims



An oxygen gauge which includes a solid state oxygen sensitive element in the form of a mixed valence oxide compound that exhibits a change in electrical resistance as a function of the change in the oxygen partial pressure of a sample gas.

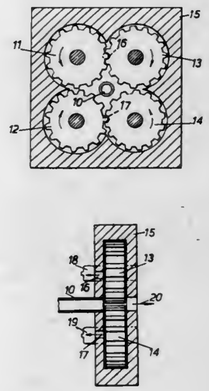
3,558,281
APPARATUS FOR MINIMIZING STRESS IN A HEATED SEMICONDUCTOR FILAMENT
Lawrence D. Dyer, Richardson, Tex., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed July 11, 1968, Ser. No. 744,028
Int. Cl. B01j *17/00*
U.S. Cl. 23—273 16 Claims

Stresses are relieved in a heated semiconductor filament by a system that includes means for positioning the filament holders with respect to each other. A semiconductor filament is supported at opposite ends by holders which are adjustably mounted to the end plates of a deposition chamber. These adjustable mountings may take the form of a bellows attached to the end plate and fastened to an electrode which connects a source of electrical energy to the filament holder. As the filament expands due to heating, one of the electrodes moves, and this movement



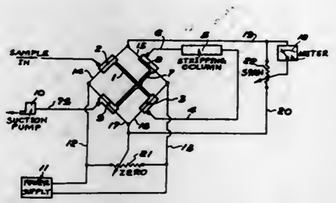
is sensed by a motion transducer which generates a signal proportional to the electrode movement. The output of the motion transducer drives a power operator to position one of the two electrodes to allow for the filament expansion. Thus, the stresses in the filament due to expansion are minimized.

3,558,282
POLYMERISATION APPARATUS
Ronald Evans, Pontypool, England, assignor to Imperial Chemical Industries Limited, London, England, a corporation of Great Britain
Filed Nov. 20, 1967, Ser. No. 684,220
Claims priority, application Great Britain, Nov. 30, 1966, 53,570/66
Int. Cl. B01d *19/00*
U.S. Cl. 23—285 2 Claims



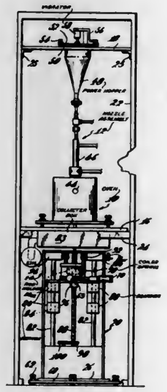
Separator for molten polymer flowing in two phase annular flow with a higher velocity gas including at least one orifice and separate means to establish a pressure gradient in the area of the orifice.

3,558,283
DETERMINATION OF REACTIVE HYDROCARBONS IN AIR
William R. Freeman, Pittsburgh, Pa., and Karl J. Bombaugh, Framingham, Mass., assignors to Mine Safety Appliances Company, Pittsburgh, Pa.
Filed June 9, 1967, Ser. No. 646,150
Int. Cl. G01n *25/22*
U.S. Cl. 23—232 6 Claims



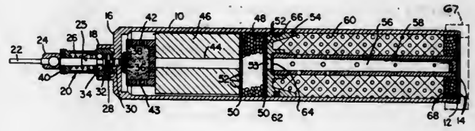
Reactive hydrocarbons (RH) in automotive exhaust gases are determined by the difference in heat effect of combustion upon the gases with and without their content of RH. Preferably, this is accomplished by subjecting a stream of the exhaust gases to combustion, then removing the RH from the stream and again subjecting it to combustion, the content of reactive hydrocarbons being determined as a function of the difference in the heats of combustion before and after removal of the RH. The RH removal is effected by passage of the gases through a body of acid-resistant granular material impregnated with an anhydrous solution of sulfuric acid and an alkali metal dichromate.

3,558,284
CRYSTAL GROWING APPARATUS
Elbridge B. Wallis, Lynn, Mass., assignor to American Science and Engineering, Inc., Cambridge, Mass., a corporation of Massachusetts
Filed May 5, 1967, Ser. No. 636,342
Int. Cl. B01g *17/24*
U.S. Cl. 23—273 7 Claims



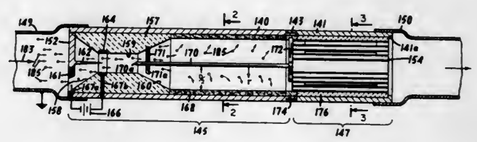
A crystal growing apparatus comprising a refractory furnace in which one end of a refractory rod is held and within which there is a nozzle by means of which molten crystal forming material is deposited on the rod. The crystal forming material is in the form of power and is liquefied in an oxygen-hydrogen flame at the end of the nozzle. As the crystal grows at the end of the rod the latter is retracted.

3,558,285
PROPELLANT GAS GENERATOR
Thomas Q. Ciccone, Langhorne, Pa., Wilmer White, Haddonfield, N.J., and James F. Kowalick, Southampton, Pa., assignors to the United States of America as represented by the Secretary of the Army
Filed Oct. 1, 1969, Ser. No. 862,733
Int. Cl. B01j *7/00*
U.S. Cl. 23—281 8 Claims



A gas generator constructed to utilize a composition of matter including a body of carbonaceous material to chemically process a propellant gas and increase the total pressure of the gas in an inflatable item supplied by the generator, and decrease any subsequent pressure drop.

3,558,286
ELECTROGASDYNAMIC PRECIPITATOR WITH CATALYTIC REACTION
Meredith C. Gourdine, West Orange, N.J., assignor to Gourdine Systems, Incorporated, Livingston, N.J., a corporation of Delaware
Original application June 16, 1967, Ser. No. 655,977. Divided and this application Jan. 13, 1969, Ser. No. 790,570
Int. Cl. B03c *3/45*; F01n *3/00, 3/14*
U.S. Cl. 23—288 4 Claims



Methods and apparatus for ridding undesired gaseous components and entrained particles from an exhaust flow, in which gaseous flow received from an electrogasdynamic particle-removing precipitator is contacted with a catalyst to bring about a reaction between the gaseous components. The precipitator includes corona discharge electrodes for creating a discharge to charge the particles electrically, an intermediate dielectric conduit and a larger conductive porous tubular collector for trapping the charged particles precipitated by space charge field or by an applied electric field between the tubular collector electrode and a central passive electrode. Thereafter the gas

flow is contacted with a conductive catalyst assembly in the form of a coiled ribbon to react the gaseous components.

3,558,287

PROCESS OF PRODUCING MICROCRYSTALLINE LIPOPHILIC AND HYDROPHILIC AMMONIUM NITRATE

Marcel Vercauteren, Lima, Peru, assignor to Hirtenberger Patronen-, Zundhutchen- und Metal-Warenfabrik Aktiengesellschaft, Hirtenberg, Austria, a corporation of Austria

No Drawing. Filed Oct. 18, 1967, Ser. No. 676,021
Claims priority, application Austria, Nov. 18, 1966, A 10,696/66
Int. Cl. B01d *9/02*; C01b *21/48*
U.S. Cl. 23—300 4 Claims

A method of producing microsrystalline ammonium nitrate by crystallizing concentrated or saturated solutions of ammonium nitrate in the presence of salts of primary amino alkanes in an amount of from 0.1 to 5% by weight, having chain-lengths ranging from C_8 to C_{18}, and in the presence of salts of amino alkanols in an amount of from 0.2 to 5% by weight, at a temperature between 20° and 90° C.

3,558,288

EXTRACTION OF METAL IONS FROM ACIDIC AQUEOUS SOLUTION USING AN AMINE AND A CARBOXYLIC ACID

Raymond C. Burrows, Minneapolis, Minn., assignor to Ashland Oil & Refining Company, Ashland, Ky., a corporation of Kentucky

No Drawing. Filed Apr. 15, 1965, Ser. No. 448,276
Int. Cl. B01d *11/04*
U.S. Cl. 23—312 4 Claims

Aqueous solutions of a variety of heavy metal cations, particularly exemplary of which is copper, are extracted by contact with an immiscible hydrocarbon having dissolved therein an amine and a monocarboxylic acid to provide a hydrocarbon phase containing the extracted metal values in the form of readily decomposable complexes thereof.

3,558,289

CHAIN FORM CLIP

Joseph J. Cervenka, 428 E. Crescent, Elmhurst, Ill. 60126, and Marvin E. Hetzel, 177 Michaux Road, Riverside, Ill. 60546

Filed Feb. 12, 1968, Ser. No. 704,606
Int. Cl. B21c *37/00*
U.S. Cl. 29—193.5 5 Claims



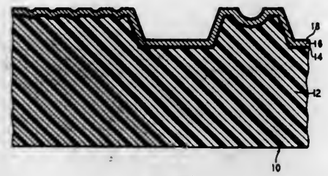
Clip to be attached to a shield can for attaching the can to a support, where the clips may be formed in continuous chain form, and the clip includes metal piercing or tabs that pierce the can and are bent over to secure the clip to the can.

3,558,290

PLATED PLASTIC PRINTING PLATES

Frederick L. Baier, High Bridge, and John B. Wheeler III, Somerville, N.J., assignors to Union Carbide Corporation, a corporation of New York

Filed Apr. 2, 1968, Ser. No. 718,112
Int. Cl. B32b *15/08*
U.S. Cl. 29—195 6 Claims



A metal-plated plastic printing plate is provided which is a considerable improvement in durability over conventional plastic printing plates, and their predecessors, the lead stereotypes and zinc originals.

3,558,291

JET FUEL ADDITIVE

Richard G. Abowd, Jr., Farmington, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 20, 1968, Ser. No. 785,799
Int. Cl. C10l *1/30*
U.S. Cl. 44—68 11 Claims

A method of reducing manganese containing deposits formed on the surfaces of jet engines from burning fuel containing organomanganese compound as a smoke reducer is described. The deposits are reduced by adding an antimony compound to the organomanganese containing fuel.

3,558,292

JET FUEL ADDITIVE

Richard G. Abowd, Jr., Farmington, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

No Drawing. Filed Dec. 20, 1968, Ser. No. 785,803
Int. Cl. C10l *1/24*
U.S. Cl. 44—68 9 Claims

A method of reducing manganese-containing deposits formed on the surfaces of jet engines from burning fuel containing organomanganese compounds as a smoke reducer is described. The deposits are reduced by adding a non-metallic organic sulfur compound to the organomanganese-containing fuel. The manganese-containing deposit is substantially reduced by the sulfur additive.

Cyclopentadienyl manganese tricarbonyl compounds are useful organomanganese compounds; dialkylxanthates are useful organic sulfur compounds.

3,558,293

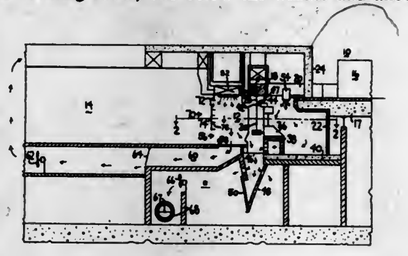
MANUFACTURE OF FIBER GLASS

George B. Zurhelde, Upper St. Clair, Pa., assignor to PPG Industries, Inc., a corporation of Pennsylvania

Filed Aug. 1, 1967, Ser. No. 657,622
Int. Cl. C03b *37/00*
U.S. Cl. 65—2 3 Claims

In the art of manufacturing glass fibers and strands, fibers are drawn from bushings containing a quantity of molten glass supplied from an elongated forehearth connected to a glass melting tank. The fibers from each bushing are grouped into a strand and collected on a driven rotating member of a winder. The drawing or forming room is separated and sealed from the furnace hall by a wall and ceiling and opens into the processing room

of the factory. The roof of the forming room is defined in part by forehearth structure. An air curtain separates the forming room from the processing room, the air being delivered from a location in front of the bushings between the rooms and in a generally downwardly direction. An additional but smaller quantity of air is delivered from a location behind the bushings, also in a generally downwardly direction and past the motor of the winder, so as to cool the same. Reduced pressure zones are established by variable speed fans and dampers below the floor of the forming room, one below the winder and another



at a location spaced laterally therefrom substantially in line with the air curtain. That air which is entrained with the fibers and strand and passes the winder is exhausted below the winder and substantially in line with the path of the strand; a major percentage of the air of the air curtain is exhausted at the other low pressure zone in front of the strand path and is recirculated in the air supply system. All delivered air is directed generally downwardly; the fibers and strand entrain air by their movement; however, no air from a supply is specifically directed to the strands.

ERRATA

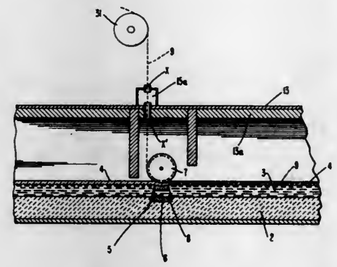
For Class 65—33 see:
Patent Nos. 3,557,575 and 3,557,576

3,558,294

MANUFACTURE OF ARMORED GLASS

Robert Touvay, Paris, France, assignor to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France

Filed Feb. 20, 1968, Ser. No. 706,837
Claims priority, application France, Feb. 21, 1967, 95,780
Int. Cl. C03b *13/12, 18/00*
U.S. Cl. 65—51 13 Claims



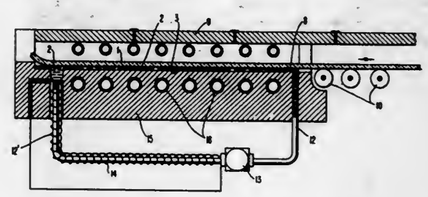
Armored glass of improved appearance and superior optical qualities is produced by inserting the armor into the glass while it is floating on the surface of a molten metal bath. Sophisticated apparatus is provided for the purpose.

3,558,295

METHOD AND APPARATUS FOR THE SUPPORT AND TRANSPORTATION OF GLASS

Albert Bezombes, Ivan Peyches, and Pierre Tissier, Paris, France, assignors to Compagnie de Saint-Gobain, Neuilly-sur-Seine, France

Filed Feb. 26, 1963, Ser. No. 261,098
Claims priority, application France, Mar. 1, 1962, 889,640, 889,641; Jan. 5, 1963, 920,547
Int. Cl. C03b *9/00, 18/00*
U.S. Cl. 65—66 43 Claims



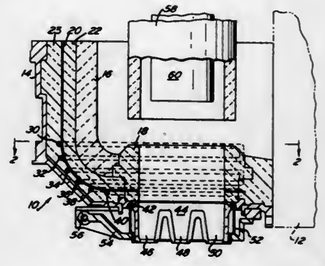
Apparatus for the handling of flat glass which comprises a floor adapted to carry a sheet of glass, means to form a sheet of glass, to lay it on the floor, and move it over the floor, and a liquid medium interposed and acting as a bearing between the floor and the sheet consisting essentially of molten metal in just sufficient thickness when balanced between the surface tension of the metal and the force of gravity acting on the sheet to carry the sheet out of contact with the floor. A method of making flat glass wherein a sheet of flat glass is formed from molten glass and is deposited on and moved over the receiving floor of a solid bed, the step which comprises interposing between the sheet and the floor a support of molten metal of thickness measured above the floor not substantially greater than that of the glass sheet, not larger than the glass sheet, and so disposed as to separate the sheet from the floor, cooling the sheet progressively as it advances over the floor until it can be handled without damage by other handling means, and transferring the glass to other handling means.

3,558,296

MOLTEN GLASS FEEDER AND METHOD OF CONTROLLING THE FLOW OF MOLTEN GLASS THERETHROUGH

Robert S. Bracken, Vineland, N.J., assignor to Maul Bros. Inc., Millville, N.J., a corporation of New Jersey

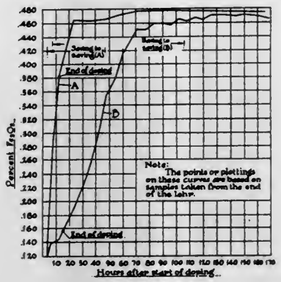
Filed May 22, 1968, Ser. No. 731,006
Int. Cl. C03b *5/16, 5/26*
U.S. Cl. 65—128 6 Claims



A molten glass feeder and method of controlling the flow of glass through the feeder. The feeder has a refractory spout spaced inwardly of a casing with a heat reflecting shield interposed between the casing and spout and

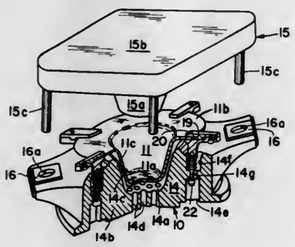
with electric means for heating the shield. Three streams of molten glass are discharged through an orifice ring as the shield is heated to a temperature of between 100° and 400° above the normal operating temperature of the shield resulting from the temperature of the molten glass.

3,558,297
METHOD FOR CHANGING OVER FROM ONE GLASS TO ANOTHER GLASS WHILE SIMULTANEOUSLY BUBBLING
Delmar E. Carney, Sequim, Wash., and Wilbur F. Brown, Toledo, Ohio, assignors to Libbey-Owens-Ford Company, Toledo, Ohio, a corporation of Ohio
Filed Oct. 10, 1966, Ser. No. 585,369
Int. Cl. C03b *5/16*
U.S. Cl. 65—134 **13 Claims**



Changing a tank furnace from a first glass being produced therein to production of a second glass having an appreciably higher iron content by charging into the molten glass at the melting end the regular batch material for producing the higher iron second glass, along with a portion of the deficiency of iron oxide in the furnace before the start of the changeover as compared to the iron oxide content therein for production of the second glass, and simultaneously bubbling fluid through the molten glass in the upstream portion of the furnace.

3,558,298
THERMOPLASTIC MATERIAL PRESSING APPARATUS
Arieh Carmi, George D. Parsons, and Thomas J. Rayeski, Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Jan. 8, 1968, Ser. No. 696,289
Int. Cl. C03b *11/06*
U.S. Cl. 65—356 **29 Claims**



Apparatus for use in press-forming thermoplastic material and comprising a mold or mold assembly including a relatively thin-walled first mold member or insert having a surface not contacted by said material and a second or back-up member having a relatively massive portion including a surface precisely conforming to said surface of the first member, such members being supported for actuation thereof between a first or partially nested relationship, one within the other, with said surfaces facing and spaced apart from each other, and a second or fully nested relationship in which said surfaces are in intimate contact for heat transfer and deformation resistance purposes. Said back up member embodies a plurality of passages extending through said portion thereof for at times supplying thermal conditioning fluid to the space existing between said surfaces when said members are in other than their fully nested relationship.

3,558,299
PROCESS FOR RENDERING PARTICULATE UREA SUBSTANTIALLY NONCAKING AND COMPOSITION
Herbert A. Baskin, 143 Holmes Ave., Covington, Tenn. 38019
No Drawing. Continuation-in-part of application Ser. No. 489,755, Sept. 23, 1965. This application Dec. 26, 1967, Ser. No. 693,151
Int. Cl. C05c *9/00*
U.S. Cl. 71—28 **6 Claims**

In abstract this invention is directed to a composition of matter consisting essentially of particulate urea coated with about 3–5% of a conditioner selected from the group consisting of finely divided clay, talc, mica, vermiculite, powdered nutshells, and pulverized corncobs blended with urease, the conditioner containing about 1000–2000 Sumner units per 100 grams of conditioner, the composition being substantially noncaking, all as recited hereinafter.

3,558,300
FOLIAR FERTILIZATION WITH AMMONIUM POLYPHOSPHATE
Joachim J. Wagner, Morristown, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Mar. 14, 1969, Ser. No. 807,452
Int. Cl. C05b *11/12*
U.S. Cl. 71—34 **7 Claims**

Foliar application of aqueous solutions of ammonium polyphosphate to field crops which have received adequate ground applications of essential plant nutrients affords a significant increase in crop yield and resistance to normal and superimposed stress in comparison with additional conventional ground application of solid or liquid phosphate-containing fertilizers.

3,558,301
HERBICIDAL PHOSPHORUS PENTAFLUORIDE-SUBSTITUTED NITRILES ADDUCT COMPLEXES
Mervin E. Brokke, Richmond, Calif., and George E. Lukes, deceased, late of El Cerrito, Calif., by John Hazzard, administrator, Kentfield, Calif., and Duane R. Arneklev, Sunnyvale, Calif., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware
No Drawing. Original application Apr. 20, 1965, Ser. No. 450,264, now Patent No. 3,438,983, dated Apr. 15, 1969. Divided and this application Sept. 18, 1968, Ser. No. 798,480
Int. Cl. A01n *9/36*
U.S. Cl. 71—86 **6 Claims**

Method of combatting weeds with compounds which are adduct complexes of phosphorus pentafluoride and contain substituted nitriles corresponding to the formula

$$[R—(CH_2)_n—C{\equiv}N\cdot PF_5]$$

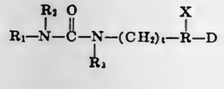
in which *n* is an integer from 1 to 3, inclusive, and R is hydrogen, lower alkoxy, monpholino, and substituted amino in which the substituents are hydrogen, lower alkyl, lower alkenyl or cycloboxyl.

3,558,302
STABLE OIL-DITHIOCARBAMATE DISPERSIONS
Robert H. Salvesen, Clark, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 689,305, Dec. 11, 1967. This application Dec. 20, 1968, Ser. No. 785,743
Int. Cl. A01n *9/00, 9/02, 9/12*
U.S. Cl. 71—97 **5 Claims**

Stable oil-dithiocarbamate formulations, methods for their formulation, and methods for their application to banana plants to increase banana yield. Preferred dispersions comprise a thixotropic system of manganese ethylenebisdithiocarbamate or mixtures thereof with zinc ethylenebisdithiocarbamate or a source of zinc ion in oil in which there are also contained small amounts of lecithin, water, and an emulsifier, such as an alkylated aryl polyether alcohol like Triton X–155, Triton X–100, Triton X–45, etc., or a sorbitan monolaurate polyoxyethylene derivative, such as Tween 60 to enable the final dispersions to have viscosities ranging from about 2,000 to about 50,000 cps. at temperatures of between about 60° and 120° F.

3,558,303
SUBSTITUTED 1,3-DICYCLOALKYLUREAS FOR CONTROLLING ANNUAL WEED GRASSES
Richard J. Gobeil, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del.
No Drawing. Continuation-in-part of application Ser. No. 474,175, July 22, 1965. This application Oct. 20, 1967, Ser. No. 676,719
Int. Cl. A01n *9/20, 9/36, 13/00*
U.S. Cl. 71—120 **6 Claims**

Controlling annual weed grasses with compounds of the formula:

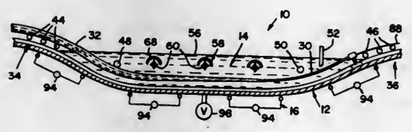


wherein:

R is cycloalkyl or bicycloalkyl;
R_1 is substituted or unsubstituted phenyl, cycloalkyl or bicycloalkyl;
R_2 and R_3 are hydrogen or $(CH_2E)_zR_4$;
R_4 is hydrogen or alkyl;
t is 0 or 1;
E is oxygen or sulfur;
X and D are hydrogen, halogen, methyl or ethyl;
z is less than 6.

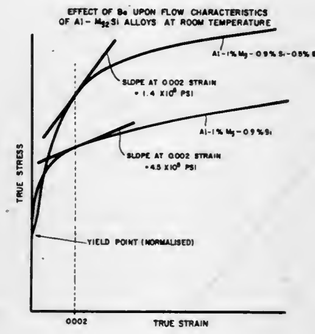
A typical compound is 1-methoxymethyl-1-(2-methylcyclohexyl)-3-phenylurea useful for controlling annual weed grasses.

3,558,304
METHOD FOR SEPARATING LEAD FROM A LEAD COATED CABLE
Stephen J. McIntyre, 2508 Fillmore St., San Francisco, Calif. 94115
Filed Dec. 7, 1967, Ser. No. 688,917
Int. Cl. C22b *7/00, 13/00;* **C23c** *1/06*
U.S. Cl. 75—63 **6 Claims**



Apparatus and a method for separating a number of different materials initially bound together and separable from each other by the application of heat. The bound materials are moved into and through a mass of molten lead along a predetermined path and for a time sufficient to cause the separation of the materials from each other. The teachings of the invention are especially adapted for removing the coating from elongated lead-coated members, such as electrical cables. The molten lead in the lead mass is circulated to provide a substantially uniform temperature distribution throughout. Also, vibratory motion is imparted to the molten lead to facilitate the separation of the materials from each other. The dross of the molten lead in the lead mass is kept from being moved out of the lead mass with one of the materials after the materials have been separated from each other.

3,558,305
CHILL CAST PARTICULATE COMPOSITES
Leonard B. Griffiths, North Reading, Mass., assignor to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Continuation-in-part of application Ser. No. 597,401, Nov. 11, 1966. This application Sept. 15, 1967, Ser. No. 667,910
Int. Cl. C22c *25/00*
U.S. Cl. 75—150 **16 Claims**



A ductile and high strength chill cast beryllium composite composed essentially of beryllium particles substantially surrounded by an alloy matrix of aluminum-magnesium-silicon. The composite consists essentially of about 85–60% by weight beryllium, about 39.5–13% by weight aluminum, about 3.6–0.10% by weight magnesium, and about 1.5–0.08% by weight silicon. Within the ranges of proportions of elements contributing to the ductility and strength of the composite, two different alloy matrix species arise. One of the alloy matrix species contains an excess of silicon to magnesium to a degree whereby the matrix alloy may be categorized as silicon rich with respect to the magnesium content. In the silicon rich alloy matrix substantially all of the magnesium will combine with the silicon. The remaining alloy matrix species contains an excess of magnesium to silicon to a degree whereby the matrix alloy may be categorized as magnesium rich with respect to the silicon content. The mechanical properties of the composites embodying the silicon rich alloy matrix and the magnesium rich alloy matrix, such as ductility and strength, are outstanding; however, the ductility and strength characteristics of the composites embodying the silicon rich alloy matrix are more outstanding than the ductility and strength characteristics of the composites embodying the magnesium rich alloy matrix.

3,558,306
ELECTROLESSLY DEPOSITED MAGNETIC COBALT ALLOYS
Joseph S. Mathias, Riverton, N.J., and Joseph J. McGee, Colwyn, Pa., assignors to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Original application Mar. 9, 1966, Ser. No. 532,945, now Patent No. 3,416,932, dated Dec. 17, 1968. Divided and this application Mar. 29, 1968, Ser. No. 717,215
Int. Cl. C22b *23/04*; C22c *19/00*; C22d *1/14*
U.S. Cl. 75—170 4 Claims
An electroless plating solution useful for the electroless deposition of a magnetic cobalt alloy comprises an aqueous solution containing cobalt ions, such as may be provided by cobalt sulfate, a reducing agent, such as may be provided by sodium hypophoshite, a pH control agent, such as Rochelle Salt, together with an amount of aluminum sulfate $Al_2(SO_4)_3 \cdot 18H_2O$ or potassium titanium oxalate $K_2TiO(C_2O_4)_2 \cdot 2H_2O$ dissolved in said solution in an amount in the range 5–100 grams per liter and 4–100 grams per liter, respectively.

ERRATUM

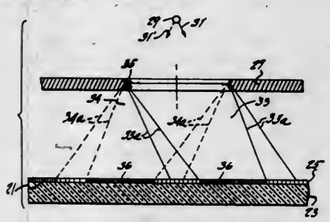
For Class 316—19 see:
Patent No. 3,558,975

3,558,307
ELECTROSTATIC IMAGE REPRODUCTION WITH PRE-EXPOSURE
Lee A. Carlson, Ashland, Mass., assignor to Dennison Manufacturing Company, Framingham, Mass., a corporation of Nevada
Filed Oct. 7, 1966, Ser. No. 585,108
Int. Cl. G03g *13/22*
U.S. Cl. 96—1 10 Claims
A method for forming a latent electrostatic image on a photoconductive plate wherein the plate is uniformly pre-exposed to electromagnetic radiation having a low intensity such that the charge acceptance of the plate to an applied electrostatic charge is at least about 80% of its charge acceptance if the plate were not so pre-exposed. Preferably such pre-exposure should be used in conjunction with an image exposure in which substantially all the light struck areas of the plate retain a measurable amount of charge.

3,558,308
PROCESS FOR PRODUCING PHOTOGRAPHIC IMAGES WITH PHOTOSENSITIVE MATERIALS AND PRODUCTS PRODUCED THEREBY
Gerald Matthew Fletcher, Arlington, Mass., assignor to Itek Corporation, Lexington, Mass., a corporation of Delaware
Filed July 13, 1967, Ser. No. 653,148
Int. Cl. G03c *5/04*
U.S. Cl. 96—27 25 Claims
This invention relates to a process of producing photographic images using photosensitive materials which have been presensitized by exposure to activating radiation so that the photosensitive substrate becomes sensitive to wavelengths of radiation to which the substrate is usually not sensitive. The photosensitive material which becomes reversibly activated upon exposure to activating radiation but preferably remains unchanged after such exposure is hereinafter referred to as a photoconductor. The presensitized photoconductor is exposed to a pattern of deactivation to form a latent image thereon corresponding to the pattern. For example, the presensitized photoconductor is exposed to a pattern of light to which the presensitized photoconductor is sensitized to form a latent image and, after decay of the latent image, the photoconductor is flooded with similar light to form a positive latent image of the pattern which is developed by known methods, e.g. using image-producing agents, to obtain the visible image of the pattern.

3,558,309
PHOTOPOLYMERISATION OF ETHYLENICALLY UNSATURATED ORGANIC COMPOUNDS
Urbain Leopold Laridon, Wilrijk, and Gérard Albert Delzenne, Sur- Gravenwezel, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company
No Drawing. Filed July 11, 1968, Ser. No. 743,948
Claims priority, application Great Britain, Aug. 8, 1967, 36,394/67
Int. Cl. G03c *1/68*
U.S. Cl. 96—35.1 18 Claims
Photopolymerisation of ethylenically unsaturated organic compounds using compounds containing an oxime ester group as an initiator.

3,558,310
METHOD FOR PRODUCING A GRAPHIC IMAGE
Edith E. Mayaud, Lancaster, Pa., assignor to RCA Corporation, a corporation of Delaware
Filed Mar. 29, 1967, Ser. No. 626,752
Int. Cl. G03c *5/36*
U.S. Cl. 96—36.1 12 Claims



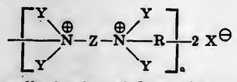
A method for producing a graphic image upon a supporting surface. The method may be used particularly to produce a light-absorbing matrix on the faceplate of a color television picture tube. In the method, a negative-acting photoresist may be used to produce a positive graphic image; or a positive-acting photoresist may be used to produce a negative graphic image.

3,558,311
PHOTOGRAPHIC MATERIAL COMPRISING LIGHT-SENSITIVE POLYMERS AND PHOTODEGRADATION PROCESS
Gérard Albert Delzenne, 's Gravenwezel, and Urbain Leopold Laridon, Wilrijk, Belgium, assignors to Gevaert-Agfa N.V., Mortsel, Belgium, a Belgian company
No Drawing. Filed July 11, 1968, Ser. No. 743,947
Claims priority, application Great Britain, Aug. 8, 1967, 36,393/67
Int. Cl. G03c *1/68*
U.S. Cl. 96—36.3 6 Claims
Light-sensitive materials comprising a polymer containing oxime ester groups and photographic processes comprising photodegradation of the polymer.

3,558,312
PROCESS FOR FABRICATING MULTIPLE IMAGE PHOTOGRAPHIC MASTERS
Franz Ucko, St. Paul, Minn., assignor to Control Data Corporation, Minneapolis, Minn., a corporation of Minnesota
Filed Mar. 14, 1967, Ser. No. 623,074
Int. Cl. G03c *5/04*
U.S. Cl. 96—41 1 Claim
A process for producing photographic masters of a design having a plurality of basic geometrical patterns which may occur a number of times. A basic pattern is prepared as magnified artwork forming the object of a pinhole camera. The pinhole board of the camera is selectively covered and multiple images of the object are produced at reduced size at the photosensitive image plane. These steps are repeated for each basic pattern to produce a photographic plate having multiple images of several basic patterns thereon.

3,558,313
WATER WASH FOR STABILIZED SILVER HALIDE PHOTOGRAPHIC MATERIALS
Shunichiro Tsuchida, Tomiaki Miyata, and Michihiko Takahashi, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
Filed Feb. 24, 1966, Ser. No. 529,696
Claims priority, application Japan, Feb. 24, 1965, 40/10,328
Int. Cl. G03c *5/26, 5/38*
U.S. Cl. 96—50 3 Claims
An improved process for stabilizing a developed silver halide light-sensitive material utilizing a thiocyanate or thiourea which further comprises subjecting the light-sensitive material to a washing bath treatment wherein the washing fluid comprises water as the sole component which is utilized to remove stabilizing agents, the washing bath being conducted for a period of time shorter than sixty seconds after exposing, developing and stabilizing said light-sensitive material.

3,558,314
PROCESS FOR INCREASING THE SENSITIVITY OF PHOTOGRAPHIC SILVER HALIDE EMULSIONS
Harald Hueckstaedt, Cologne - Stammheim, Wilhelm Saleck, Schildgen, Bergisch Gladbach, and Herbert Mueller and August Randolph, Leverkusen, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Nov. 4, 1966, Ser. No. 591,974
Int. Cl. G03c *1/08, 5/26*
U.S. Cl. 96—66.3 6 Claims
Light-sensitive silver halide material containing as a sensitizer a water soluble quaternary compound having the general formula:



wherein Y is a radical selected from the group consisting of alkyl, phenylalkyl, hydroxyalkyl, alkoxyalkyl, acyloxyalkyl, aminoalkyl, alkylaminoalkyl and acylaminoalkyl, the alkyl group of the radical having up to 18 carbon atoms; R and Z are divalent organic radicals, at least one of which is a polyalkylene oxide group, X is an anion and *n* is a number from 2 to 100 and a process for improving the sensitivity of a light-sensitive silver halide emulsion.

3,558,315
EDGE-FOG-PREVENTION METHOD FOR PHOTOGRAPHIC LIGHT-SENSITIVE FILMS
Haruo Takenaka, Teppei Ikeda, and Katsuharu Furukawa, Minami-Ashigara-machi, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
Filed Aug. 31, 1967, Ser. No. 664,662
Claims priority, application Japan, Aug. 31, 1966, 41/57,487
Int. Cl. G03c *1/84, 3/02*
U.S. Cl. 96—78 7 Claims
By forming continuous or intermittent nicks or narrow grooves in the opposite edge areas of a photographic light-sensitive film and pouring a dye or pigment in the nicks or grooves, the formation of edge fog can be prevented.

3,558,316
PHOTOGRAPHIC MATERIAL CONTAINING AN OPTICAL BRIGHTENING AGENT
Wolfgang Keberle and Werner Verburg, Leverkusen, and Friedhelm Müller, Odenthal, Germany, assignors to Agfa-Gevaert Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed July 9, 1968, Ser. No. 743,312
Claims priority, application Germany, July 22, 1967, A 56,339
Int. Cl. G03c *1/92*
U.S. Cl. 96—82 5 Claims
A photographic material which contains a water-insoluble optical brightening agent mixed with an anionic polyurethane heterogeneously dispersed in a gelatin layer.

This invention relates to photographic material which contains an optical brightening agent and which comprises at least one gelatin-containing photographic layer the physical properties of which are improved by the use of water-insoluble optical brightening agents contained in anionic polyurethanes which serve as carriers.

3,558,317
STYRYLQUINOLINE/HALOGEN LIBERATING LIGHT SENSITIVE COMPOSITION FOR USE IN LASER RECORDING
Victor P. Petro, Brecksville, and Richard A. Fotland, Lyndhurst, Ohio, assignors to Horizons Incorporated, a division of Horizons Research Incorporated, a corporation of Ohio
No Drawing. Filed Jan. 8, 1968, Ser. No. 696,100
Int. Cl. G03c *1/72*
U.S. Cl. 96—90 6 Claims
A photosensitive composition consisting essentially of a mixture including

(1) a styrylquinoline, such as (4-p-dimethylamino-styrylquinoline)
(2) an activator (CHI_3 or CBr_4)
(3) a tertiary phenol (di-tert-butyl-cresol)
(4) a fog inhibitor (triarylstibine)
(5) a weak organic base (arylamine)
(6) a resin binder (polystyrene)

which composition is characterized by a photographic speed substantially equivalent to that of high resolution silver film used for laser recording and which is responsive to lasers exhibiting peak outputs in the region of 4000 A. to 5000 A.

3,558,318
LIGHT-SENSITIVE DIAZOTYPE MATERIAL WHICH COMPRISE ARYL - SUBSTITUTED ACYLACETONITRILES OR ESTER OR AMIDE DERIVATIVES OF SAID ARYL-SUBSTITUTED ACYLACETONITRILES AS COUPLING COMPONENTS
John M. Sheehan, Springfield, Mass., assignor to Tecnifax Corporation, Holyoke, Mass., a corporation of Massachusetts
No Drawing. Filed July 18, 1968, Ser. No. 745,697
Int. Cl. G03c *1/58*
U.S. Cl. 96—91 9 Claims
Light-sensitive diazotype material having coating compositions thereon, said compositions comprise at least one light-sensitive diazonium compound and an aryl-substituted acylacetonitrile, an ester derivative of such an acylacetonitrile or an amide derivative of such an acylacetonitrile as a coupling component for said diazonium compound.

3,558,319
COLOR PHOTOGRAPHIC SILVER HALIDE EMULSION CONTAINING MAGENTA COUPLERS
Tsutomu Hamaoka, Kazuya Sano, Makoto Yoshida, Yasushi Oishi, and Takeshi Hirose, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Kanagawa, Japan
Filed July 12, 1967, Ser. No. 652,891
Claims priority, application Japan, July 13, 1966, 41/45,814
Int. Cl. G03c *1/40*
U.S. Cl. 96—100 **14 Claims**

A color photographic silver halide emulsion containing 1 - aryl-3-(m-acylaminophenylureido)-5-pyrazolone as a magenta coupler wherein the acyl group has 18 to 25 carbon atoms and the aryl group has at least one substituent at the ortho position, the substituent being chosen from the class consisting of halogens, alkyl groups and alkoxyl groups.

3,558,320
DIRECT POSITIVE SILVER HALIDE EMULSIONS CONTAINING 3 - NITROSOINDOLE CYANINE DYES
Leslie G. S. Brooker and John D. Mee, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed Aug. 14, 1967, Ser. No. 660,173
Int. Cl. G03c *1/36*
U.S. Cl. 96—101 **26 Claims**

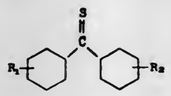
Direct positive emulsions are spectrally sensitized with cyanine dyes derived from 1,2-disubstituted 3-nitrosoindoles.

3,558,321
PHOSPHORIC ACID ESTERS OF POLYOXYALKYLENATED GELATIN AS SENSITIZERS
E Scudder Mackey and Fritz Dersch, Binghamton, N.Y., and Fred S. Eiseman, Maplewood, N.J., assignors to GAF Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 6, 1967, Ser. No. 607,669
Int. Cl. G03c *1/28*
U.S. Cl. 96—107 **6 Claims**

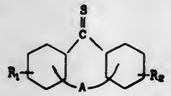
Sensitizersfor light-sensitive photographic silver halide emulsions comprising water-soluble phosphoric acid esters of polyoxyalkylenated gelatin.

3,558,322
PHOTOACTIVATABLE COMPOSITIONS AND LAYERS CONTAINING ARYLTHIOKETONES
Roxy Ni Fan, East Brunswick, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 30, 1968, Ser. No. 772,054
Int. Cl. G03c *1/68*
U.S. Cl. 96—115 **10 Claims**

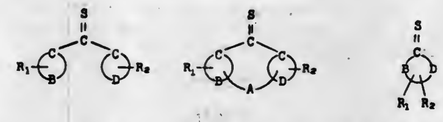
Photoactivatable systems, such as those containing photopolymerizable compositions, exhibiting improved photospeed and/or color-forming properties contain thioketones of the following types: (1) aryl and substituted aryl thioketones



where R_1, R_2=H, alkyl, alkoxy, alkylamino, halogen, etc., (2) condensed or heterocondensed aromatic thioketones



where R_1, R_2 are the same as above; A=a covalent bond or an atom or group of atoms (C, O, S) necessary to make a condensed ring, and (3) heteroaromatic thioketones



where R_1, R_2, A are the same as above; B, D=atom or group of atoms (C, O, S, N) necessary to make an aromatic heterocyclic or condensed aromatic heterocyclic rings.

3,558,323
VITAMIN-CONTAINING COMPOSITION IN BEADLET FORM
Marco Alfred Cannalonga, Fort Lee, and Norman Cohen, West Paterson, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey
No Drawing. Continuation-in-part of application Ser. No. 613,403, Feb. 2, 1967. This application June 12, 1969, Ser. No. 832,828
Int. Cl. A23l *1/30*
U.S. Cl. 99—11 **11 Claims**

A vitamin-containing composition in beadlet form comprising (a) a modified gelatin product, (b) edible, saturated oil, (c) fat soluble vitamin-containing material, and (d) alpha-tocopherol.

3,558,324
METHOD FOR PREPARING A MULTICOLORED MEAT LIKE PRODUCT
John A. Page and Robert C. Dechaine, Minneapolis, Minn., assignors to General Mills, Inc., a corporation of Delaware
Filed Aug. 25, 1967, Ser. No. 663,373
Int. Cl. A23j *1/14*
U.S. Cl. 99—17 **10 Claims**

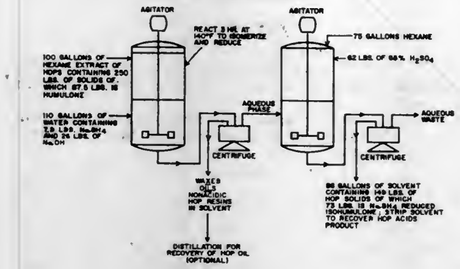
A process for producing a multicolored meat like product from a textured protein derived from vegetable protein. The protein is continuously colored with edible dyes in selective portions to simulate the various colors of multicolored meat products such as chicken.

3,558,325
ALCOHOLIC BEVERAGES
Andrew A. Recsei, 633 Tabor Lane, Santa Barbara, Calif. 93103
No Drawing. Filed May 2, 1968, Ser. No. 726,227
Int. Cl. C12g *3/06*
U.S. Cl. 99—30 **13 Claims**

Salts of glycine and alanine are useful for improving the smoothness, mellowness and flavor of alcoholic beverages. The use of these salts improves the palatability of all alcoholic beverages regardless of original quality.

3,558,326
PROCESS FOR ISOMERIZING AND PURIFYING HOP EXTRACTS
Donald H. Westermann, Brookfield, and William C. Herwig and William J. Durant, Milwaukee, Wis., assignors to Miller Brewing Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Sept. 21, 1967, Ser. No. 669,467
Int. Cl. C12c *9/02*
U.S. Cl. 99—50.5 **2 Claims**

A hop extract substantially free from waxes, oils, and nonacidic hop components is prepared by treating a water-immiscible solvent solution of hop extract with an aqueous alkaline solution to isomerize acid hop components in the aqueous phase. The waxes, oils, and nonacidic hop components enter the nonaqueous phase and are removed with the latter. The aqueous phase is acidified, more



solvent is added, and the hop acids enter the solvent phase and are recovered therefrom. The extract is used in making beer of improved light stability.

3,558,327
PROCESS OF QUICK TEMPERING CEREAL GRAINS
Harley E. Watkins, Golden, Colo., assignor to Pet Incorporated, St. Louis, Mo., a corporation of Delaware
No Drawnig. Filed Mar. 20, 1968, Ser. No. 714,412
Int. Cl. A23l *1/10*
U.S. Cl. 99—80 **6 Claims**

A process of quick tempering grain to eliminate the usual hold period while the moisture content of the grain comes to equilibrium comprising the steps of raising the moisture content of the grain above that required for milling, and passing the grain through a microwave field to reduce the moisture level of the grain to that required for milling. The grain is ready for milling immediately after leaving the microwave field.

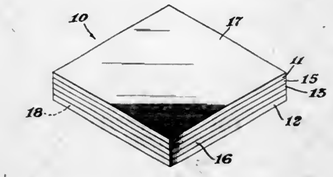
3,558,328
FERMENTING WHEY AND PRODUCING SOY SAUCE FROM FERMENTED WHEY
Anthony J. Luksas, Chicago, Ill., assignor to Beatrice Foods Co., Chicago, Ill., a corporation of Delaware
No Drawing. Filed July 8, 1968, Ser. No. 743,014
Int. Cl. A23c *21/00;* **A23l** *1/22*
U.S. Cl. 99—145 **6 Claims**

Whey is fermented with a combination of a lactase enzyme and *Saccharomyces cerevisiae* under aerobic conditions with agitation to obtain a fermented type soy sauce. This can be mixed with nonfermented soy sauce of hydrolyzed vegetable protein to give a fermented oriental type soy sauce flavor.

3,558,329
PROCESS FOR PRESERVING MELONS
Alfred G. Hess, Santee, Calif., assignor to Hess Research and Development Corporation, a corporation of California
No Drawing. Filed July 1, 1968, Ser. No. 741,259
Int. Cl. A23b *7/16*
U.S. Cl. 99—154 **3 Claims**

A process for preserving melons by treating them with tetraiodoethylene, either with or without a pre-treatment step with a bacteriostat, and by covering the treated melons with a sealed and relatively close fitting cover or bag member which is water proof or water resistant, whereby the melons have an extended life of at least four to five times their usual life expectancy in the absence of such treatment.

3,558,330
PACKAGING FILM AND PACKAGE
Almar T. Widiger, Midland, and Lloyd E. Lefevre, Bay City, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed Sept. 21, 1967, Ser. No. 669,430
Int. Cl. B65b *25/06;* **B32b** *27/08*
U.S. Cl. 99—174 **4 Claims**



A packaging film particularly suited for machine overwrapping of oxygen-sensitive materials is prepared by simultaneous extrusion of film having an inner barrier layer such as a Saran resin composition and having outer layers of materials of widely differing sealing characteristics, and a package of a comestible and the film.

3,558,331
EASY PEEL FOOD CASINGS
Elio E. Tarika, Flossmoor, Ill., assignor to Union Carbide Corporation, a corporation of New York
No Drawing. Filed Feb. 7, 1968, Ser. No. 703,530
Int. Cl. A22c *13/00*
U.S. Cl. 99—176 **9 Claims**

A release agent is applied to the interior wall of a length of tubular food casing as the food casing is being shirred. The food casing having the release agent applied thereto exhibits improved peelability characteristics from a food product stuffed and processed therein.

3,558,332
LOW FIRING PHOSPHATE-BONDED ALUMINA DIELECTRIC HAVING IMPROVED ADHESION TO METAL
Relva C. Buchanan, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
No Drawing. Filed June 17, 1968, Ser. No. 737,342
Int. Cl. C04b *33/00*
U.S. Cl. 106—39 **5 Claims**

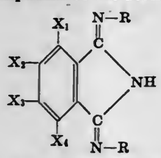
An alumina dielectric of fine grained structure and high tensile strength containing from about 2% to about 12% by weight of a glassy phase which bonds the finely divided alumina grains together, the glassy phase containing at least 1% calcium phosphate and one or more flux additives, consisting of lithium silicate, zinc silicate, calcium silicate or magnesium silicate in an amount equal to the calcium phosphate and formed through reactive sintering at from about 1350° C. up to 1460° C. which is 50–200° less than that of alumina per se (1550° C.). The dielectric which adheres to noble metals is characterized by high electrical volume resistivity of 10^{12}–10^{14} ohm-cm., low dissipation factor, low thermal expansion from 65 to 67.6 in./in. ° C. and high density from 3.40 to 3.86 gm./cu. cc. The shrinkage of the preferred embodiments is about 17.0–18.0% in comparison with a shrinkage 18.5% for alumina to which no flux is added. Surface roughness values as low as 2 to 4 microinches are achieved.

3,558,333
PHOTOCHROMIC TITANATE MATERIAL AND A METHOD FOR MAKING THE SAME
Malcolm D. Beals, Fanwood, and Leon Merker, Metuchen, N.J., assignors to National Lead Company, New York, N.Y., a corporation of New Jersey
No Drawing. Filed Feb. 21, 1968, Ser. No. 707,315
Int. Cl. C04b 35/00
U.S. Cl. 106—42 11 Claims

This invention describes a new and novel composition of matter which exhibits photochromic properties when said material is exposed alternately to a blue light and yellow light. The composition of matter comprises strontium titanate or calcium titanate containing small quantities of either MoO_3 or WO_3 plus Fe_2O_3, NiO, Co_2O_3 or MnO_2. The composition may be prepared either as powdered or compressed multicrystalline material or as a massive monocrystalline body.

3,558,334
PROCESS FOR THE PIGMENTING OF HIGH-MOLECULAR ORGANIC PRODUCTS
Andre Pugin, Riehen, Kurt E. Burdeska, Basel, and Alfred Staub, Binningen, Basel-Land, Switzerland, assignors to J. R. Geigy A.G., Basel, Switzerland
No Drawing. Continuation-in-part of application Ser. No. 451,606, Apr. 28, 1965. This application Feb. 6, 1968, Ser. No. 703,249
Claims priority, application Switzerland, Apr. 30, 1965, 5,665/65
Int. Cl. C08b 29/04; C08f 45/14; C08g 51/14
U.S. Cl. 106—165 30 Claims

A process for the pigmenting of high-molecular organic products, new pigments usable in that process, processes for the production of such pigments and colored high-molecular organic materials containing such new pigments are disclosed. The new pigmenting process comprises incorporation into the high molecular organic materials a colored compound of the formula



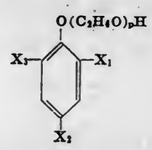
wherein each of X_1, X_2, X_3 and X_4 represents chlorine or bromine and R represents an unsubstituted, a non-ionogenically substituted or a condensed phenyl radical.

3,558,335
WELL CEMENTING COMPOSITIONS
Joseph U. Messenger, Dallas, Tex., assignor to Mobil Oil Corporation, a corporation of New York
No Drawing. Original application Apr. 4, 1966, Ser. No. 539,752, now Patent No. 3,467,193, dated Sept. 16, 1969. Divided and this application June 2, 1969, Ser. No. 829,781
Int. Cl. C04b 7/00, 7/02
U.S. Cl. 106—90 10 Claims

This specification discloses cement compositions comprising hydraulic cement in admixture with a turbulence inducer and silica or diatomaceous earth particles having sizes within the range of about 0.1 to about 44 microns in diameter. The turbulence inducer and silica or diatomaceous earth particles are present in the composition in amounts within the ranges of 0.1 to 2.0 percent by weight and 0.5 to 10.0 percent by weight, respectively, based upon the amount of hydraulic cement present. Also disclosed is a cement slurry of a consistency less than 30 poises containing hydraulic cement, water in an amount within the range of 27 to 115 percent by weight based upon the amount of cement present, and turbulence inducer and silica or diatomaceous earth particles in the amounts described above. This slurry retains an adequate yield point and yet can be flowed in turbulence at relatively low flow rates. Thus it is especially suitable for use in well cementing operations.

3,558,336
VISCOSE ADDITIVES
Byron N. Baer, Newark, Del., assignor to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Original application Sept. 1, 1965, Ser. No. 488,816. Divided and this application July 25, 1969, Ser. No. 845,095
Int. Cl. C08b 21/20
U.S. Cl. 106—165 14 Claims

A viscose composition and a method of regenerating cellulosic structures from same is disclosed. Said composition containing from about 0.5 to about 6 weight percent, based on cellulose content of the viscose, of a compound characterized by the generalized chemical formula



wherein one of the substituents X_1, X_2, and X_3 is an alkyl radical containing from 1 to 3 carbon atoms and the other two substituents conform to the formula

$$—CH_2NR(C_nH_{2n}NR)_xR$$

wherein each R is independently selected from the group consisting of hydrogen, alkyl radicals containing from 1 to 4 carbon atoms and the radical $(C_2H_4O)_pH$, wherein n is an integer from 1 to 3, and x is an integer from 0 to 3 and p may be any number including 0 in any occurrence, such that the ratio of all p's to the number of nitrogen atoms in any molecule does not exceed 30; or the quaternary ammonium derivatives of the compounds characterized by said formula.

3,558,337
FINE PARTICLES
William Richard Barnes, "Wintrena," York Drive, Grappenhall, Cheshire, England, and Donald Barby, Arlington, Manor Park, Great Barrow, Chester, Cheshire, England
Filed Dec. 7, 1967, Ser. No. 688,777
Claims priority, application Great Britain, Dec. 8, 1966, 55,110/66
Int. Cl. C09c 1/28
U.S. Cl. 106—288 6 Claims

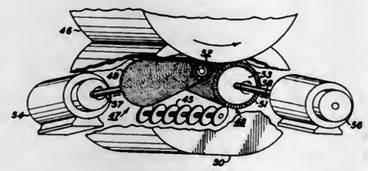
A process for the production of activated submicron silica in which silica is vaporised in a plasma generator and subjected to a controlled quench in the presence of a hydrogen containing compound to produce thixotropically or hydrophobically activated silica.

3,558,338
IMAGE DEVELOPMENT SYSTEM
Frederick J. Stryker, San Jose, and Otto Kornei, Monte Sereno, Calif., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Mar. 26, 1968, Ser. No. 716,236
Int. Cl. B41m 5/02; B44d 5/04
U.S. Cl. 117—1.7 2 Claims

An improvement for reproducing onto a copy paper the latent oil image of an original which has been produced by the reduced layer formation (RLF) process,

which comprises treating the original with an alkali metal iodide containing liquid, transferring the latent image of the original onto a copy paper and rendering the transferred latent oil image visible by applying a starch containing solution to the copy paper.

3,558,339
METHOD OF AND APPARATUS FOR STIPPLING
John M. Randall, Fairport, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed May 20, 1968, Ser. No. 730,510
Int. Cl. G03g 13/08, 15/08
U.S. Cl. 117—17.5 4 Claims



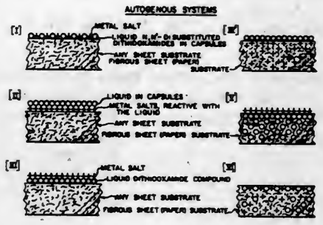
A method of stippling a development brush by making the brush cone-shaped and oscillating it in a plane coincident with its geometric axis to change the degree of interference between the brush and the surface being developed.

3,558,340
PROCESS FOR COATING MODELLING CLAY AND PRODUCT PRODUCED THEREBY
Herman Spector, 75 Central Park W., New York, N.Y. 10023
No Drawing. Filed Jan. 18, 1968, Ser. No. 698,707
Claims priority, application Great Britain, Jan. 20, 1967, 3,034/67
Int. Cl. B44c 3/04; B44d 1/094, 1/26
U.S. Cl. 117—26 7 Claims

Process for hard coating and rendering permanent, objects of non-hardening oil based clay, and the product produced thereby, wherein oil base modelling clay is given a hard coat by rubbing a dry powder of wood flour and plaster of paris thereon, painting the surface with a mixture of this powder and polyvinyl acetate, and allowing the painted surface to cure. If desired, a metallic coating may be provided by further painting on a coating of a fine metal powder suspended in polyvinyl acetate.

3,558,341
PRESSURE-SENSITIVE RECORD MATERIAL
Paul S. Phillips, Jr., Dayton, Ohio, assignor to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Apr. 1, 1968, Ser. No. 717,568
Int. Cl. B41m 5/22
U.S. Cl. 117—36.2 8 Claims

This invention relates to pressure-sensitive record material comprising substrate sheet material supporting pressure-rupturable marking-liquid-containing capsules sufficient in number and liquid content to yield a visually continuous image pattern when ruptured by a pattern of image marking pressure, said capsules being arranged in the record material in apposition to solid co-reactant material which, on contact with the liquid, forms an intensely-colored reactant sludge of neutral hue, the inventive merit being that the liquid contents of the capsules is a single liquid compound or mixtures of liquid compounds without diluent or dispersant, every molecule of the liquid



capsule contents being reactive with the available solid material to produce the sludge-like mark.

3,558,342
DEVELOPMENT PROCESS FOR PERMANENTLY FIXING AN IMAGE ON AN ELECTROPHOTOGRAPHIC COPYING MATERIAL
Takayoshi Tanno and Itsuo Ikeda, Tokyo, Japan, assignors to Kabushiki Kaisha Ricoh, Tokyo, Japan, a corporation of Japan
No Drawing. Filed Dec. 3, 1968, Ser. No. 780,901
Claims priority, application Japan, Dec. 12, 1967, 42/79,631
Int. Cl. G03g 13/20, 13/22
U.S. Cl. 117—37 6 Claims

A process for developing an electrophotographic copying material comprising the steps of:

dipping an electrophotographic copying material in a liquid developer consisting of a carrier liquid and a toner dispersed therein, said copying material having an electrostatic latent image on a photoconductive layer formed on one surface of a support with a binder, said developer being prepared by dispersing, in said carrier liquid, a kneaded mixture consisting of pigment particles, a resinous polarity regulating agent and a dye insoluble in said carrier liquid,

wetting a surface of a visible toner image formed on said photoconductive layer with a solvent capable of dissolving said dye,

and then drying the resultant wetted copying material to fix a visible image consisting of said dye in said photoconductive layer and said support sheet.

3,558,343
DISPERSION STRENGTHENED TITANIUM CARBIDE AND METHOD FOR MAKING SAME
James R. Darnell, Dallas, and Paul C. Goundry and Gene F. Wakefield, Richardson, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware
Filed Aug. 18, 1966, Ser. No. 573,238
Int. Cl. C23c 11/02, 11/08
U.S. Cl. 117—46 2 Claims

A method of forming a titanium carbide matrix having a ductile metal dispersed therein by chemical vapor deposition of titanium carbide from hydrogen reduction of a titanium halide and a carbon halide at elevated temperatures. The ductile metal is generated within the reactor as a halide and transported to the deposition site by an inert gas carrier, where the elemental titanium, carbon, and ductile metal react to form a deposit of titanium carbide containing the ductile metal. The ductile metal halide vapor is initially separated from the titanium halide and carbon halide vapor stream to prevent premature reduction of the ductile metal chloride.

3,558,344
CARBONACEOUS COATING FOR CARBON FOAM
George R. Peterson, Andersonville, and Clifton E. Stooksbury, Clinton, Tenn., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Apr. 19, 1968, Ser. No. 722,537
Int. Cl. B44d *1/09*
U.S. Cl. 117—46 5 Claims

The structural integrity of high- or low-density carbon foam is improved by providing the latter with a protective carbonaceous coating. The protective coating is provided by applying to exposed surfaces of a carbon foam structure a mixture of graphite flour and a thermoplastic resin dissolved in a suitable solvent. The coating mixture is dried at a relatively low temperature to remove excess solvent and then heated to a temperature sufficient to carbonize the resin and form the coating.

3,558,345
FLUOROCARBON RESIN TO GLASS BONDING
George Baum, Corning, and John G. Koelling, Big Flats, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York
No Drawing. Filed Mar. 7, 1968, Ser. No. 711,207
Int. Cl. C03c *17/32*
U.S. Cl. 117—54 14 Claims

Method of bonding a fluorocarbon resin to the surface of a silicate glass having free, available silanol groups by means of an intermediate amino-functional silane coupling agent and the product formed thereby.

3,558,346
DOUBLE GLAZED CERAMIC SUBSTRATES
Stewart L. Plumley, Painted Post, N.Y., assignor to Corning Glass Works, Corning, N.Y., a corporation of New York
Filed Mar. 27, 1968, Ser. No. 716,435
Int. Cl. C04b *41/12*
U.S. Cl. 117—68 14 Claims

A glazed ceramic body which is especially useful as a microcircuit substrate. The two planar surfaces of the ceramic body are coated with glazes having softening points which differ to such an extent the glazes can be applied in consecutive steps, the first applied glaze remaining unmarred during the firing of the second applied glaze.

3,558,347
PROCESS FOR PREPARING HIGHLY REACTIVE LEAD COMPOUND PARTICLES
Robert D. Gray, Gloucester, and Simon E. Mayer, Lexington, Mass., assignors, by mesne assignments, to PPG Industries, Inc., a corporation of Pennsylvania
Application June 5, 1968, Ser. No. 749,898, which is a division of application Ser. No. 430,488, now Patent No. 3,442,923. Divided and this application Mar. 13, 1969, Ser. No. 833,215
Int. Cl. C23c *1/10*
U.S. Cl. 117—100 9 Claims

A process is described for preparing highly reactive lead alloys having a high sodium content on the surface and a lower content below the surface by alloying finely divided lead particles having an average particle size of between 1 to 300 microns, preferably 1 to 40 microns, with molten alkali metal at elevated temperatures, i.e., 100 to 300° C. in an inert gas atmosphere. Contact of the particles of lead and alkali metal in the presence of an inert finely-divided solid material such as silica is described. The particles of lead and alkali metal are also shown contacted in the presence of an inert liquid material such as a hydrocarbon oil.

3,558,348
DIELECTRIC FILMS FOR SEMICONDUCTOR DEVICES
Myron J. Rand, Bethlehem, Pa., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Apr. 18, 1968, Ser. No. 722,336
Int. Cl. H01l *1/02*
U.S. Cl. 117—106 3 Claims

Mixed silicon oxide-silicon nitride films of particular compositions are vapor deposited controllably on semiconductor devices by a reaction process in nitrogen at between 700–900° C. using silane (SiH_4) and nitric oxide (NO) as the reactants. The composition of the deposited film is a function of the ratio of reactant concentrations. Particular compositions yield films which combine minimal stress, resistance to penetration of contaminants, and etchability.

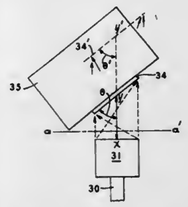
3,558,349
ADHERENT COATINGS BY IMMERSION PLATING FROM NON-AQUEOUS SOLUTIONS
David S. Kneppel, Needham, Mass., assignor to Whittaker Corporation, Nuclear Metals Division, West Concord, Mass.
No Drawing. Filed Apr. 1, 1968, Ser. No. 717,950
Int. Cl. C23c *3/00*
U.S. Cl. 117—130 5 Claims

A method of applying adherent plated coatings on articles containing at least one of the metals selected from the group consisting of aluminum, beryllium, titanium, niobium and zirconium includes the steps of (1) immersing the article in a methanol solution of a halide of the plating metal, and (2) removing the article from the solution when the desired plated coating is obtained.

3,558,350
METHOD OF FORMING A COMPOSITE OF BORON FIBERS AND POLYIMIDE
John K. Fincke, Spring Valley, Ralph E. DeBrunner, Kettering, and Glenn R. Wilson, Dayton, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 593,743, Nov. 14, 1966. This application Sept. 8, 1969, Ser. No. 856,919
Int. Cl. B32b *15/08, 27/34*; D04h *1/64*
U.S. Cl. 117—132 6 Claims

A hard, rigid composite obtained by depositing on fibrous boron a liquid polyimide-forming composition in an inert solvent, drying and curing up to 500° C.

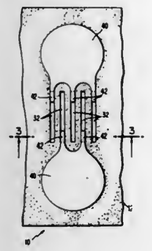
3,558,351
THIN SEMICONDUCTOR FILMS
Norman F. Foster, Allentown, Pa., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Dec. 19, 1968, Ser. No. 785,228
Int. Cl. C23c *13/04*; H01v *7/02*
U.S. Cl. 117—201 7 Claims



The specification describes a method for depositing thin films of piezoelectric materials in which the crystallographic orientation is controlled by adding a hydrocarbon

to the vacuum chamber when initiating deposition and by controlling the angle at which the depositing ions, atoms or molecules meet the substrate. By this method highly oriented films of zinc oxide, adapted for piezoelectric operation in the shear mode, can be produced.

3,558,352
METALLIZATION PROCESS
Paul P. Castrucci, David De Witt, Vir A. Dhaka, and Walter E. Mutter, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 27, 1966, Ser. No. 589,931
Int. Cl. H01l *1/14, 5/02*
U.S. Cl. 117—212 8 Claims



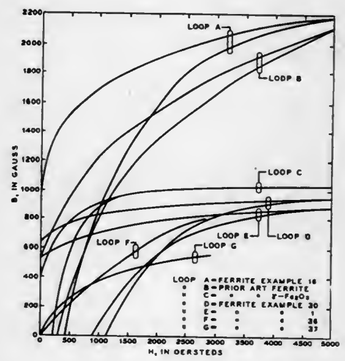
A semiconductor device and a method for forming a semiconductor device wherein the ohmic contact is in the order of microns in width. A first metal is formed in the opening in the protective coating which acts as the ohmic contact to the semiconductor device. A second metal may be applied only over the first metal by electroless or electroplating techniques to increase the conductivity of the ohmic contact. Finally, an external land metal layer is deposited over a relatively large area of the protective coating in the area of the ohmic contact with finger-like extensions of the land metal layer contacting the ohmic contact by short overlaid areas. The external land is the only metal layer in the process formed which requires a photographic mask. The process, therefore, is not limited by present day photoengraving techniques.

3,558,353
MAGNETIC RECORDING MEDIUM
Shigehisa Harada and Terumi Kojima, Kawasaki-shi, Japan, assignors to Nippon Columbia Kabushikikaisha (Nippon Columbia Co., Ltd.), Tokyo, Japan, a corporation of Japan
Filed Aug. 23, 1967, Ser. No. 662,797
Claims priority, application Japan, Aug. 31, 1966, 41/57,393
Int. Cl. H01f *10/02*
U.S. Cl. 117—235 1 Claim



A magnetic recording medium having a non-magnetic base and a magnetic paint coated thereon, the magnetic paint consisting of a powdered magnetic material, a mixture of a polyester resin having a reactive hydroxyl group and a polyurethane prepolymer including an isocyanate group reactive with the hydroxyl group and a rubber material yielding an effect corresponding to a vulcanizing effect by reaction with the materials making up the mixture.

3,558,354
MAGNETIC TAPES COMPRISING FERRI-MAGNETIC MATERIALS
Robert H. Lindquist, Berkeley, and Bernard F. Mulaskey, Pinole, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 745,565, July 17, 1968, which is a continuation-in-part of application Ser. No. 260,964, Feb. 21, 1963. This application Apr. 14, 1969, Ser. No. 815,836
Int. Cl. H01f *10/02*
U.S. Cl. 117—235 3 Claims



Magnetic recording tape comprising a supporting material and a coating comprising a plurality of particles, each of said particles comprising a ferrimagnetic material substantially surrounded by an antiferromagnetic material, said ferrimagnetic material being magnetically coupled to said antiferromagnetic material by exchange anisotropy, each of said particles having an average particle size below 1 micron, a pore volume above 0.02 cc. per gram and a surface area above 2 square meters per gram.

3,558,355
PROCESS FOR ENHANCEMENT OF SWEETNESS OF SUGARS
Kanzo Okazaki, Shigeharu Kohno, Isao Yamatsu, Kunishige Sugiyama, and Seigo Ueyama, Tokyo, Japan, assignors to Eisai Kabushiki Kaisha, Tokyo, Japan
No Drawing. Filed July 12, 1968, Ser. No. 744,345
Int. Cl. C13k *1/00, 3/00, 9/00*
U.S. Cl. 127—46 1 Claim

Process for partial interconversion of glucose into fructose which is sweeter than the glucose by contacting an aqueous solution of glucose with a mixture of or a concomitant existence of a strongly basic anion exchange resin and a moderately basic anion exchange resin, both resins being in their hydroxyl form, at a moderate temperature and for a time sufficient to establish an equilibrium state between the glucose and fructose. By virtue of the concomitant use of the aforementioned resins, an increased conversion velocity of glucose into fructose is obtained without injurious side reaction products which would bring about contamination, coloration and objectionable flavor of the final product.

ERRATUM

For Class 134—1 see:
Patent No. 3,557,807

3,558,356
NICKEL-ZINC BATTERY SYSTEM WHICH IS NEGATIVE LIMITED DURING CHARGING THEREOF

Ernest M. Jost, Plainville, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Feb. 28, 1967, Ser. No. 619,468
Int. Cl. H01m *35/02*
U.S. Cl. 136—6 **6 Claims**

A sealed nickel-zinc battery system is shown in which the charge capacity of the positive nickel electrode somewhat exceeds the charge capacity of the negative zinc electrode for preventing the evolution of oxygen at the positive electrode during charging of the battery system, the battery system being characterized by a sharp change in negative electrode potential and slight evolution of hydrogen at the negative electrode when the negative electrode is fully charged and by supported membrane means for venting hydrogen gas from within the battery system.

3,558,357
SOLID-ELECTROLYTE CELL WITH TELLURIUM OR SELENIUM ELECTRODE AND Ag_3SI OR $RbAg_4I_5$ ELECTROLYTE

Takehiko Takahashi, 4–81 Ueda Umemorizaka, Tenpakucho, Showa-ku, Nagoya-shi, Japan, and Osamu Yamamoto, 55 1-chome, Naruko-cho, Midori-ku, Nagoya-shi, Aichi-ken, Japan

No Drawing. Filed Jan. 17, 1969, Ser. No. 792,150
Claims priority, application Japan, Mar. 30, 1968, 43/20,819
Int. Cl. H01m *35/02*
U.S. Cl. 136—6 **12 Claims**

A laminated assembly of a thin solid electrolyte of $RbAg_4I_5$, or Ag_3SI sandwiched between a thin anode of silver or a material containing silver and a thin cathode of tellurium, selenium, or a material containing tellurium or selenium. The electrolyte and cathode can be easily formed by vacuum evaporation deposition. A layer-built solid-electrolyte cell can be readily fabricated by successive repetitions of the vacuum evaporation procedure to build up a plurality of unit cells in stacked formation.

3,558,358
NICKEL-ZINC SECONDARY BATTERY

Chester A. Ropp, Jr., Carterville, Mo., assignor to Eagle-Picher Industries, Inc., Cincinnati, Ohio, a corporation of Ohio

Filed Mar. 10, 1969, Ser. No. 805,461
Int. Cl. H01m *35/00, 3/00*
U.S. Cl. 136—6 **5 Claims**

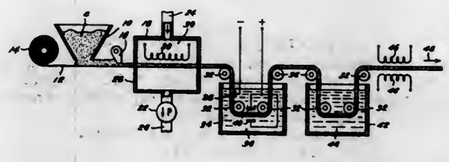
A secondary battery including positive electrodes comprising nickel and negative electrodes comprising zinc immersed in a caustic electrolyte, the negative zinc electrode being enclosed in an electrode wrapper fabricated of polyvinyl alcohol which is impermeable to zincate ions while being permeable to hydroxyl ions as is necessary to sustain ionic conduction involved in electro-chemical battery action.

3,558,359
METHOD FOR FORMING BATTERY ELECTRODE PLATES

Ernest M. Jost, Plainville, Mass., assignor to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Filed Dec. 20, 1967, Ser. No. 692,189
Int. Cl. H01m *43/04;* **B01k** *1/00;* **C23c** *3/04*
U.S. Cl. 136—24 **13 Claims**

A method for forming nickel and cadmium battery electrode plates for use in sealed, rechargeable nickel-cadmium batteries and the like is shown to comprise the steps of spreading monohydrate or dihydrate cadmium or nickel nitrate powders upon a porous, sintered metal



plaque, melting said powders for impregnating the plaque with the nitrate, and converting the nitrate materials to electrochemically active nickel and cadmium materials within the plaque pores to form battery plaques.

3,558,360
FUEL CELL COMPRISING A STABILIZED ZIRCONIUM OXIDE ELECTROLYTE AND A DOPED INDIUM OR TIN OXIDE CATHODE

Edward F. Sverdrup, Jeannette, and Albert D. Glasser and David H. Archer, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

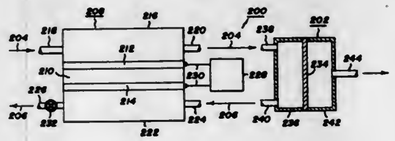
Filed Jan. 8, 1968, Ser. No. 696,352
Int. Cl. H01m *27/00*
U.S. Cl. 136—86 **9 Claims**

A fuel cell having an electrolyte composed of a ridged ceramic material that conducts current by diffusion of oxygen ions at about 1,000° C., having a fuel electrode on one side of the electrolyte and an air electrode on the opposite side thereof, and the air electrode being composed of one of the materials including indium oxide and tin oxide which is doped to be an electronic conductor having a resistivity of less than 10^{-3} ohm-centimeters.

3,558,361
SYSTEM AND PROCESS FOR SELECTIVELY DIVERTING AN ELECTROCHEMICALLY CONSUMABLE AND REGENERABLE FLUID

Clinton C. Christianson, Danvers, Mass., assignor to General Electric Company, a corporation of New York

Filed Dec. 1, 1967, Ser. No. 687,327
Int. Cl. H01m *27/14*
U.S. Cl. 136—86 **33 Claims**

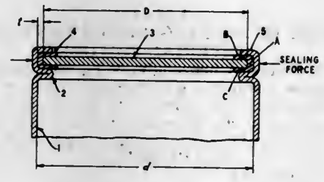


A fluid stream is pumped to and from a receiving zone. A cell bridges the fluid stream upstream and downstream of the receiving zone and has one electrode in contact with the fluid stream upstream of the receiving zone and a second electrode in contact with the fluid stream downstream of the receiving zone. The electrodes are ionically communicated by an electrolyte.

3,558,362
BATTERY SEAL

Edwin J. McHenry, Millington, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Nov. 18, 1968, Ser. No. 776,468
Int. Cl. H01m *1/02*
U.S. Cl. 136—133 **1 Claim**

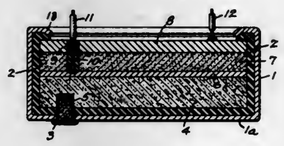


The specification describes an improved seal for a hermetically sealed battery. The design of the receptacle is essentially that commonly used for cylindrical or D size alkaline batteries. The improvement in the seal involves constructing the can and the cover from different materials. If the materials are properly selected on the basis of their thermal coefficients of expansion the stress on the sealing gasket as the result of thermal cycling over the normal ambient range can be minimized.

3,558,363
THERMAL CELL

Philip J. Franklin, Washington, D.C., assignor to the United States of America as represented by the Secretary of the Army

Filed Feb. 8, 1952, Ser. No. 270,732
Int. Cl. H01m *21/14*
U.S. Cl. 136—83 **15 Claims**



4. A reserve-type battery cell device comprising in combination: a container, a heat resistant liner in said container, an anode affixed in one end of said container and forming a closure therefor, a cathode affixed in the opposite end of said container and forming a closure therefor, an electrolyte material normally in the solid state in contact with said cathode, a heat producing compound positioned in said container between and in contact with said anode and said electrolyte material, said compound being of the class of compounds which become conductive when ignited and have non-gaseous combustion products, and electric igniter means affixed to said anode and projecting into said heat producing compound, said igniter means being adapted to ignite said compound, said compound and said electrolyte material being so constructed and arranged so that ignition of said compound causes sufficient heat to be applied to said electrolyte material to activate said battery cell device.

3,558,364
LEAK-PROOF GALVANIC CELL EMPLOYING GRANULAR ANION EXCHANGE COMPOUND SEPARATOR

Winfried Krey, Neunheim, Germany, assignor to Varta Gesellschaft mit beschrankter Haftung, Ellwangen (Jagst), Germany

Continuation-in-part of application Ser. No. 676,499, Oct. 19, 1967. This application Oct. 16, 1969, Ser. No. 866,883
Claims priority, application Germany, Oct. 16, 1968, P 18 03 302.8
Int. Cl. H01m *21/00, 3/00*
U.S. Cl. 136—83 **12 Claims**

A leak-proof electric cell is formed by arranging a separator layer consisting of a granular swellable anion exchange compound or a mixture of such anion and cation exchange compounds between the negative electrode and the depolarizer of the cell.

The cell is made by applying a suspension of the anion exchange compound in a solution of a binding agent to the inner wall of a cup-shaped metal electrode, preferably a zinc cup electrode and then removing the solvent so as to leave a uniform film on the inner wall of the electrode cup.

3,558,365
METHOD OF PREPARING THIN CATALYST-SILVER ELECTRODES

Joseph C. Duddy, Trevose, Pa., assignor to ESB Incorporated, a corporation of Delaware

No Drawing. Filed Jan. 22, 1968, Ser. No. 699,332
Int. Cl. H01m *13/08;* **B22f** *7/00, 1/00*
U.S. Cl. 136—120 **2 Claims**

A thin electrode is prepared by: (a) mixing together a Raney catalyst-alloy, an oxide of silver, and a binder; (b) shaping the mixture onto a thin conductive grid; (c) reducing the oxide of silver to metallic silver; (d) dissolving the soluble metal from the Raney catalyst-alloy; and (e) burning the structure to remove the binder and to sinter the catalyst and silver together with each other and with the grid. Preferably steps (c) and (d) are combined by immersing the shaped structure in a reducing-dissolving solution such as a aqueous formaldehyde-potassium hydroxide solution. In step (e) the binder acts as the fuel for the sintering. Water and hydrogen absorbed by the structure during steps (c) and (d) function to keep the temperature of the sintering step low so that the silver particles do not coalesce, and to suppress and inhibit oxidation of the catalyst. Step (e) may be performed in open air with any convenient flame.

3,558,366
METAL SHIELDING FOR ION IMPLANTED SEMICONDUCTOR DEVICE

Martin P. Lepselter, New Providence, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

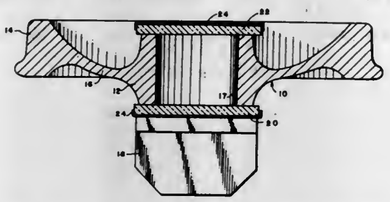
Filed Sept. 17, 1968, Ser. No. 760,161
Int. Cl. H01l *7/54*
U.S. Cl. 148—1.5 **10 Claims**

Described herein is a process involving the use of metal masking against ion bombardment in the formation of semiconductor devices. In particular, the metal mask is oxidized in situ, subsequent to the ion bombardment, in order to protect the device. Especially useful for the mask are those metals which expand upon oxidation, in order to protect the edges of the P-N junctions formed by the ion bombardment.

3,558,367
WHEEL COOLING

Bernard John Eck, Elmhurst, Ill., assignor to AMSTED Industries Incorporated, Chicago, Ill., a corporation of Delaware

Filed Oct. 18, 1967, Ser. No. 676,274
Int. Cl. C21d *1/70, 9/34*
U.S. Cl. 148—3 **3 Claims**



In the cooling of a steel railway wheel having relatively thick hub and tread portions and a relatively thin plate portion, it is important that undue stresses are not set up in the plate portion, and simultaneously, that the tread hardens for good wear qualities while the hub remains soft for easy machinability. This problem is solved by air cooling the wheels, the hubs of which have been covered by an insulating material, until the hubs are at a temperature below the critical transformation temperature which is approximately 1230° F.

3,558,368
TEXTILE PIRN

Walter G. Zelley and Charles J. Walton, Lower Burrell, Pa., assignors to Aluminum Company of America, Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Filed Nov. 12, 1968, Ser. No. 775,113
Int. Cl. C23f *7/06, 7/02*
U.S. Cl. 148—6.27 **8 Claims**

A tubular aluminum textile pirn having a ground finished surface with a thin silicate coating thereon. The outermost 1000 angstroms of pirn surface contain at least 0.7 percent silicon.

3,558,369
METHOD OF TREATING VARIABLE TRANSITION TEMPERATURE ALLOYS

Frederick E. Wang, Silver Spring, and William J. Buehler, Bethesda, Md., assignors to the United States of America as represented by the Secretary of the Navy

Continuation-in-part of application Ser. No. 579,185, Sept. 9, 1966. This application June 12, 1969, Ser. No. 843,887
Int. Cl. C22f *1/18;* **C22c** *15/00*
U.S. Cl. 148—11.5 **2 Claims**

Metal alloys of the formulas $TiNi_xCo_{1-x}$, $TiCo_xFe_{1-x}$, wherein x is an integer from 0 to 1 undergo martensitic transitions over a very wide temperature range from less than 4° K. to 1000° K. The metal alloys are worked and heat treated to effect a reversion back to an original configuration as the result of the martensitic transition of the alloys due to the heat treatment.

3,558,370
RETARDED AGING RIMMED STEEL

Robert E. Boni, Middletown, Ohio, assignor to Armco Steel Corporation, Middletown, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 9, 1967, Ser. No. 659,337
Int. Cl. C22c *29/00, 39/02, 39/50*
U.S. Cl. 148—36 **5 Claims**

This invention relates to a method for producing a rimmed steel whereby the steel's aging characteristics have been retarded for at least 90 days. Specifically, the invention is concerned with the teeming practice in the production of low carbon rimming steel, whereby approximately .02% vanadium is added to the mold near the end of the teeming, and the poured ingot is capped shortly thereafter with about one pound aluminum per ton of steel. The subsequently processed product is characterized by 2½% or less yield point elongation up to 90 days after temper rolling and with good surface quality.

3,558,371
METHOD OF MAKING PERMANENT MAGNET MATERIAL POWDERS

Joseph J. Becker, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed May 20, 1968, Ser. No. 730,577
The portion of the term of the patent subsequent to Mar. 17, 1987, has been disclaimed
Int. Cl. H01f *1/06*
U.S. Cl. 148—101 **6 Claims**

The grinding of bulk permanent magnet material to powder can result in a relatively low value of the maximum coercive force obtainable. By the present method involving immersion of such bulk material for a short time in nitric acid, hydrochloric acid, sulfuric acid, phosphoric acid, or acetic acid, powder particles are produced which have high coercive forces.

3,558,372
METHOD OF MAKING PERMANENT MAGNET MATERIAL POWDERS

Joseph J. Becker, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

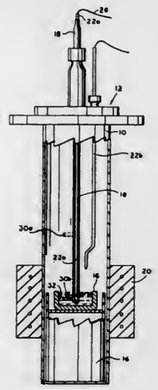
No Drawing. Filed Jan. 31, 1968, Ser. No. 701,840
Int. Cl. H01f *1/06*
U.S. Cl. 148—101 **8 Claims**

The coercive force of a cobalt-rare earth intermetallic compound is greatly enhanced by chemically treating the compound in finely-divided form so as to smooth the surfaces of the individual particles.

3,558,373
INFRARED DETECTING MATERIALS, METHODS OF PREPARING THEM, AND INTERMEDIATES

Jerry W. Moody, Worthington, Ohio, and Francis J. Reid, Syosset, N.Y., assignors to Avco Corporation, Cincinnati, Ohio, a corporation of Delaware

Filed June 5, 1968, Ser. No. 734,715
Int. Cl. H01l *7/38*
U.S. Cl. 148—171 **4 Claims**

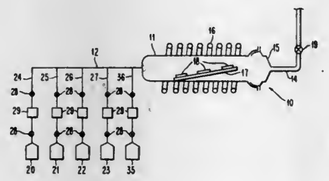


Infrared detector material is formed by the epitaxial growth of a single crystal alloy of the two III–V compounds InAs and InSb on an InAs substrate. In the method of such growth, a liquid solution is prepared with excess indium solvent, InSb, and sufficient InAs to saturate the indium at 500° C. The InAs substrate, oriented in the [III] direction is immersed in the solution, and the substrate and the solution are brought to equilibrium at approximately 500° C. Slowly lowering the solution temperature causes a single crystal to be epitaxially grown on the substrate as a solid homogeneous InAs-InSb solution. Composition of the crystal is a function of solution composition and may be controlled by dissolving selected quantities of InSb in the solution.

3,558,374
POLYCRYSTALLINE FILM HAVING CONTROLLED GRAIN SIZE AND METHOD OF MAKING SAME

David W. Boss, Beacon, Ven Y. Doo, Poughkeepsie, and William N. Patterson, Hopewell Junction, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Jan. 15, 1968, Ser. No. 697,911
Int. Cl. H01l *7/36*
U.S. Cl. 148—174 **27 Claims**



A film of a polycrystalline material is deposited pyrolytically on an electrically insulating surface of a substrate. By controlling the rate of deposition of the material on the substrate and the temperature of the substrate, the grain size of the polycrystalline film is regulated so that PN junctions having a sharp reverse biased breakdown may be formed therein.

3,558,375
VARIABLE CAPACITY DIODE FABRICATION METHOD WITH SELECTIVE DIFFUSION OF JUNCTION REGION IMPURITIES

William E. Engeler, Scotia, N.Y., assignor to General Electric Company, a corporation of New York

Filed Sept. 18, 1968, Ser. No. 760,613
Int. Cl. H01l *7/44*
U.S. Cl. 148—175 **16 Claims**

A variable capacity diode with a hyperabrupt P-N junction is fabricated by cutting a hole thorugh an oxide coating atop a P-type semiconductor layer epitaxially grown on a more heavily doped P-type semiconductor substrate, into the epitaxially grown layer. A strongly N-type region containing both donor impurities and faster diffusing acceptor impurities is then grown epitaxially in the hole from the semiconductor at the bottom of the hole. The substrate is then heated to cause the more rapidly diffusing acceptor impurities to diffuse into the epitaxially grown layer ahead of the more slowly diffusing donor impurities and form a narrow region of P+ conductivity, resulting in the desired N+P+PP+ structure.

3,558,376
METHOD FOR CONTROLLED DOPING BY GAS OF FOREIGN SUBSTANCE INTO SEMICONDUCTOR MATERIALS

Otto Schmidt and Klaus Wartenberg, Erlangen, and Konrad Reuschel, Pretzfeld, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany

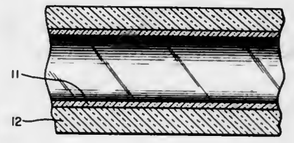
Filed Jan. 5, 1967, Ser. No. 607,413
Claims priority, application Germany, Jan. 7, 1966, S 101,329
Int. Cl. H01l *7/36, 7/44*
U.S. Cl. 148—189 **8 Claims**

Controlled process for introducing foreign substances, e.g. dopants and recombination centers, into a molten semiconductor body by directing foreign substance in gaseous form in the immediate vicinity of the melt.

3,558,377
PROCESS OF MANUFACTURING A CHANNEL-MULTIPLIER PLATE

Anthony J. Tantillo, Harwood Heights, Ill., assignor to Zenith Radio Corporation, a corporation of Delaware

Filed Nov. 9, 1967, Ser. No. 681,683
Int. Cl. C03c *25/06*
U.S. Cl. 156—25 **3 Claims**

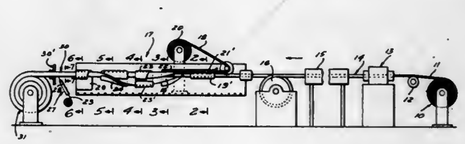


A channel-multiplier plate has a multiplicity of channel elements individually having a hollow core that is soluble in an etchant and a superposed outer layer that is relatively insoluble in that etchant. One end of the channel plate is immersed in a bath of the etchant with the channel elements projecting above the surface of the bath. The dimensions of the channel elements and the properties of the etchant result in the channels filling with the etchant under the influence of capillary action. Thereafter, the plate is taken from the bath and the etchant dissolves the inner core of each channel.

3,558,378
ARMORED CABLE AND METHOD OF MAKING THE SAME

Israel H. Marantz, Forest Hills, N.Y., assignor to Columbia Cable & Electric Corporation, Brooklyn, N.Y., a corporation of New York

Filed July 12, 1967, Ser. No. 652,815
Int. Cl. H01b *13/06*
U.S. Cl. 156—54 **2 Claims**



This invention relates to an improved armored cable and to the method of making the same.

3,558,379

REINFORCING MATRICES WITH SILICA-SHEATHED SILICON CARBIDE FIBERS

Wallace W. Pultz, Painted Post, and Charles C. Smith, Jr., Corning, N.Y., assignors to Corning Glass Works, Corning, N.Y., a corporation of New York

No Drawing. Filed Dec. 21, 1967, Ser. No. 692,266
Int. Cl. B32b *25/02*
U.S. Cl. 156—62.2 3 Claims

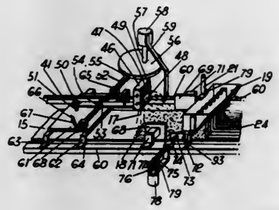
The invention relates to a method for improving the bonding of silica-sheathed, silicon carbide fibers to various matrices such as plastics and rubbers to thereby enhance the reinforcing action of these fibers upon the matrices. This improvement in bonding action is accomplished by subjecting the fibers to a high vacuum, e.g., less than about 100 microns of mercury, to remove adsorbed surface gases and expose very reactive surface portions. The matrix material can then chemically react with the active sites on the surface of the fibers such that very strong bonds are developed therebetween.

3,558,380

METHOD OF MANUFACTURING IMPREGNATED FIBRE MATERIAL IN SHEET FORM

Francis Harold Pook, Sale, England, assignor to Fibreglass Limited, Liverpool, Lancashire, England, a corporation of Great Britain

Filed Aug. 8, 1968, Ser. No. 751,180
Claims priority, application Great Britain, Aug. 10, 1967, 36,732/67
Int. Cl. D21j *1/08*; B29j *5/02*
U.S. Cl. 156—62.2 10 Claims



A layer of reinforcing fibres is impregnated with flowable bonding material by forming spaced strips of the bonding material on the layer which sink individually through the layer and spread at the bottom of the layer to unite the strips before the bonding material completely impregnates the layer.

3,558,381

METHOD OF MAKING BUTTONHOLES

William D. Colianni, 4179 W. Barry Ave., Chicago, Ill. 60641

Filed May 18, 1967, Ser. No. 639,350
Int. Cl. A41h *25/00*
U.S. Cl. 156—73 4 Claims

Buttonholes are formed in synthetic textile material, either pure or blended with natural filaments, by using ultrasonic energy to fuse or bond the textile material in areas where buttonholes are to be located and then slitting these elongated areas either after or during ultrasonic bonding. If multiple thicknesses of material are involved, they will be fused or bonded together when subjected to ultrasonic energy.

3,558,382

METHOD AND APPARATUS FOR MAKING A TRIM STRIP

Richard P. Doerer, Ypsilanti, Mich., assignor to Van Dresser Corporation, Warren, Mich., a corporation of Michigan

Filed June 27, 1967, Ser. No. 649,157
Int. Cl. B32b *3/04*
U.S. Cl. 156—93 10 Claims

The method and apparatus of this invention have been developed for making a trim strip of the type which may be used for furniture or automotive seat cushions and seat backs. The trim strip is composed of an elongated strip of flexible material reinforced with one or more covered strands.

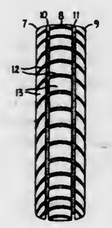
The strand or strands are covered by a suitable material such for example as plastic or adhesively applied paper or fabric tapes. The strip of flexible material is guided into adjacent relation with the covered strand or strands and folded over the covered strand of strands and secured thereto to provide a continuous length of trim strip material which may be severed in predetermined lengths.

3,558,383

RETREADING OF TIRE COVERS

Daniel Lejeune, Clermont-Ferrand, France, assignor to Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie, Clermont-Ferrand, France

Filed July 15, 1968, Ser. No. 744,956
Claims priority, application France, July 20, 1967, 115,077
Int. Cl. B29h *5/04, 19/00*
U.S. Cl. 156—96 9 Claims



A tire is retreaded by applying bands of tread material in rings circumferentially of the carcass, then rotating the tire while subjecting the positioned bands to a uniform rolling pressure of at least .5 kg./cm.², and finally vulcanizing the assembly.

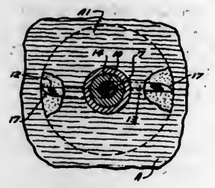
3,558,384

METHOD OF REPAIRING DAMAGED CARPETING

Jacob A. Ronning, 3543 Irving Ave. S., Minneapolis, Minn. 55408

Filed Apr. 21, 1967, Ser. No. 632,629
Int. Cl. B32b *35/00*
U.S. Cl. 156—98 4 Claims

A method and tool for repairing damaged carpeting in which the tool is operated to sever a damaged section of pile from its underlying base material, applying an adhesive to the upper surface of the base material exposed by such severing, replacing the damaged section with a transposed section of pile matching the damaged section in contour and color, except for the damaged portion thereof, and pressing the thus transposed section of pile into adhering contact with said adhesive bearing surface of base material.

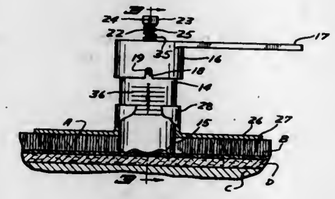


3,558,385

METHOD FOR REPAIRING DAMAGED CARPETING

Jacob A. Ronning, 3543 Irving Ave. S., Minneapolis, Minn. 55408

Filed July 3, 1967, Ser. No. 650,927
Int. Cl. B32b *35/00*
U.S. Cl. 156—98 4 Claims



Means and method for repairing spot damaged carpeting while it is on the floor, and in which the carpeting has a base layer supporting a layer of upstanding pile, by passing a rotating cutting tool down through both layers and about the damaged spot to remove a circular core of the carpeting, similarly cutting down through an undamaged piece of carpeting corresponding in size, diameter and color to the damaged area to form a replacement core, temporarily spreading the pile about the circular opening from which the damaged core has been removed, inserting the undamaged core downwardly into such opening while such pile is held spread and until the base layer of the core is contiguous with the edge of the surrounding carpeting base, and securing such contiguous base layer edges together with an adhesive.

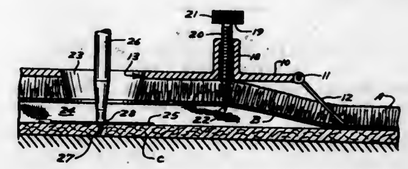
3,558,386

METHOD FOR REPAIRING DAMAGED CARPETING

Jacob A. Ronning, 3543 Irving Ave. S., Minneapolis, Minn. 55408

Filed July 27, 1967, Ser. No. 656,482
Int. Cl. A47g *27/02*; B32b *35/00*
U.S. Cl. 156—98 3 Claims

Repairing spot damaged carpeting while it is on the floor, and in which the carpeting is of the type having a layer of base material supporting a thickness of pile, by cutting and removing the damaged section, cutting an undamaged section corresponding in size, contour and color to the damaged section, lifting the carpeting around the opening from which the damaged section has been removed to create a space thereunder, inserting an adhesive sheet down through the opening and spreading it in said space, for binding contact with the base material adjacent the opening, lowering the lifted carpet portion to its initial position, and then transposing the section of undamaged carpeting into the opening previously occupied by the damaged section and pressing it into binding contact with the inserted adhesive sheet.



3,558,387

RADIATION-CURABLE COMPOSITIONS

Robert W. Bassemir, Jamaica, N.Y., and Daniel J. Carlick, Berkeley Heights, Richard Dennis, East Rutherford, and Gerald Feig, Springfield, N.J., assignors to Sun Chemical Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 556,568, June 10, 1966. This application Nov. 24, 1967, Ser. No. 685,305
Int. Cl. B32b *17/00*; C08f *1/16*; C08d *1/00*
U.S. Cl. 156—99 34 Claims

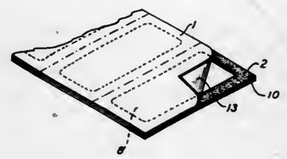
A photopolymerizable composition comprising at least one ester of an ethylenically unsaturated acid and a dihydric or trihydric alcohol, and having in addition thereto a film forming compound selected from aryl sulfonamide-formaldehyde resins and cetyl vinyl ether in the presence of photoinitiators consisting of acyloin and acyloin derivatives, and methods of use thereof, such as laminating and coating.

3,558,388

ADHESIVE APPLYING PROCESS

Robert P. Somerville, Toronto, Ontario, Canada, assignor to Litton Business Systems of Canada Ltd., Ottawa, Ontario, Canada

Filed Mar. 18, 1968, Ser. No. 713,841
Int. Cl. G03c *11/14*
U.S. Cl. 156—108 10 Claims



A process for producing a continuous strip of spirit duplicating labels each having a border of pressure sensitive adhesive proximate all four edges thereof.

In order to place the adhesive on a strip of labels, a laminae is formed of two sheets of adhesive resistant paper with a sheet of pressure sensitive adhesive therebetween.

Apertures are punched in the laminae and then one sheet of the adhesive resistant paper is removed and a strip of spirit duplicating paper affixed to the adhesive in its place. The paper and adhesive are then severed, but not the strip of release paper so that individual labels are formed on the release paper, each of which will have

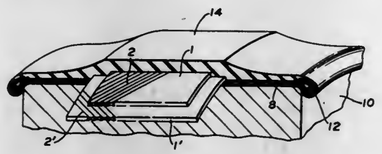
a border of adhesive adjacent all four edges surrounding an adhesive free central area.

Then when a label is to be used, it is removed from the strip of release paper and affixed to a surface, such as a punch card.

3,558,389
METHOD OF BUILDING A BELTED RADIAL PLY TIRE

William Bezbatchenko, Jr., Cuyahoga Falls, Ohio, assignor to The General Tire & Rubber Company, a corporation of Ohio

Original application July 27, 1967, Ser. No. 658,014. Divided and this application Jan. 28, 1969, Ser. No. 819,502
Int. Cl. B29h *17/14*
U.S. Cl. 156—126 **2 Claims**

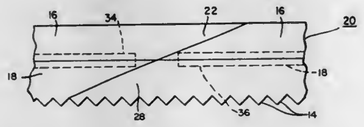


The invention provides for the building of a belted radial ply tire in a "one-stage" process wherein the cords of the circumferential belt will "pantograph" to the final desired low crown angle upon expansion.

3,558,390
PROCESS FOR MANUFACTURING POWER TRANSMISSION BELTS OF SYNTHETIC MATERIAL

Fernand Habegger, Biel-Benken, Switzerland, assignor to Habasit Ltd., Reinach-Basel, Switzerland, a corporation of Switzerland

Filed Feb. 7, 1967, Ser. No. 614,455
Int. Cl. B29d *29/02*
U.S. Cl. 156—137 **6 Claims**



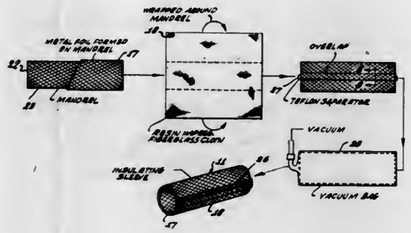
A coating of synthetic material is bonded to the armor of a belt comprising two strips of synthetic material. The coated armor is sandwiched between the strips of synthetic material and the armor and strips of synthetic material are then bonded together to form a length of belting. The length of belting is then formed into an endless belt by fusing or bonding together opposed opposite end portions of the strips of synthetic material, without bonding the armor.

3,558,391
HIGH TEMPERATURE DUCT INSULATOR AND METHOD OF MAKING SAME

John F. Peyton, Long Beach, Juan Gonzalez, Jr., Garden Grove, and Robert B. Trelease, Los Angeles, Calif., assignors to Federal-Mogul Corporation, Detroit, Mich., a corporation of Michigan

Filed Apr. 13, 1967, Ser. No. 630,619
Int. Cl. B65h *19/00*
U.S. Cl. 156—171 **8 Claims**

This is a reflective air gap insulator for high temperature ducts in aircraft. An annular air gap is defined between the duct to be insulated and a reflective laminate insulating sleeve consisting of extremely thin aluminum foil and a lightweight resin impregnated glass cloth. Rigidizing of the thin laminate is best achieved by a pattern of impressions formed into the foil and the overlying resin impregnated fabric. Longitudinally of the duct system, spaced offset members are mounted within the annular space to maintain the insulator and duct in coaxial alignment in order to define the air gap for insulation. For straight duct sections, cylindrical insulating sleeves with one longitudinal joint are employed. For Y's, T's and other irregular sections of duct, half shell sections of insulator are employed with a pair of opposite longitudinal joints.



The insulator is laid up on a tool surface including any preferred form of rigidizing pattern, which receives first the foil and then the resin impregnated cloth. The laminate is subjected to pressure for finally forming the foil into intimate, smooth, unbroken and continuous association with the rigidizing pattern of the mandrel and of the overlying cloth onto the foil and rigidizing pattern formed on the foil. The warp and woof or other pattern of the cloth are also intimately impressed into the foil. While still so pressed, the assembly is cured at an elevated temperature. A high temperature thermosetting resin, such as phenolic, is preferred, although others may be utilized. This resin is preferably black pigmented to improve emissivity of heat.

3,558,392
PROCESS FOR THE CONTINUOUS MANUFACTURE OF POROUS WRITING TIPS

Elden Lucerne Goodenow, Los Angeles, James O'Sullivan, Culver City, and Daniel W. Seregely, Los Angeles, Calif., assignors to The Gillette Company, Boston, Mass., a corporation of Delaware

Filed June 27, 1966, Ser. No. 560,405
Int. Cl. B43k *1/12*; **D04h** *3/14*
U.S. Cl. 156—180 **7 Claims**

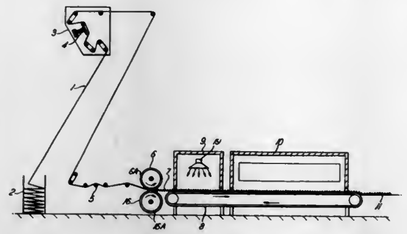


A method of making elongated, rod-like objects adapted for use as points for writing instruments. Steps include positioning a bundle of parallel strands of synthetic fibers in desired relation by drawing the bundle through a heat setting zone to establish dimensions and cross-section of final object and establish longitudinally extending channels, and subsequently increasing the strength of the objects by immersion in a dilute resin solution and heating to evaporate solvent and to cure the resin.

3,558,393
PROCESS FOR THE PREPARATION OF PADDING MATERIAL

Robert Bolliand and Claude Saligny, Lyon, France, assignors to Societe Rhodiaceta, Paris, France, a French body corporate

Filed Nov. 13, 1967, Ser. No. 682,097
Claims priority, application France, Nov. 15, 1966, 83,700
Int. Cl. D06m *15/70*
U.S. Cl. 156—181 **5 Claims**

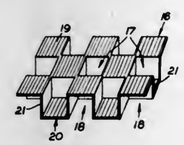


The invention relates to padding material for upholstery and the like, and a method of manufacture thereof in which a large number of continuous, preferably crimped, chemical filaments are arranged side-by-side to form a flat sheet. The sheet is formed into deep undulations, e.g. by passing between rollers rotating at different peripheral speeds and the undulations are sprayed with a resin which is then hardened to fix the undulations in position.

3,558,394
METHOD OF MAKING A THREE DIMENSIONAL CONFIGURED LAMINATED ARTICLE

Hans-Jörg Marby, 4805 Brake, Bielefeld, Germany

Filed May 19, 1969, Ser. No. 825,606
Int. Cl. B31f *1/20*
U.S. Cl. 156—210 **3 Claims**



A mold for forming moldable materials into three-dimensional shapes (which may be geometric, non-geometric, symmetrical or asymmetrical), comprising a pair of complemental upper and lower molding forms or platens, each fabricated from a flexible material, the forms being adapted to be shaped into complemental three-dimensional configurations and each carrying three-dimensional pattern elements permanently or detachably connected thereto so as to protrude therefrom.

3,558,395
METHOD OF MAKING A LAMINATED DECORATIVE SHEET

Alain Edouard Plegat, Asnieres, France, assignor to Societe Anonyme des Usines Chausson, Asnieres, France, a company of France

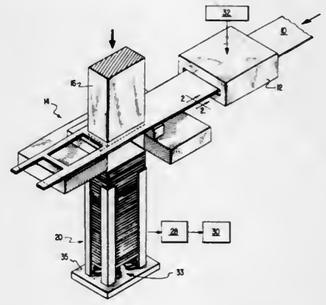
Filed Dec. 18, 1967, Ser. No. 691,507
Claims priority, application France, Jan. 4, 1967, 89,973
Int. Cl. B29b *1/14*
U.S. Cl. 156—246 **5 Claims**

Process for making stratified sheets, plates and other objects and synthetic resin intended to have a glossy or dull appearance in which a support is prepared, one face of this support being subjected to a preliminary polishing, then to a controlled frosted glass operation, a nonpolymerized resin is sprayed on to said face, said resin being charged with a colored pigment or a porous decorative element being spread on said resin said porous element is then impregnated by the resin, successive coats of reinforcement are also impregnated with resin and the polymerizing of the whole is proceeded with before withdrawing the stratified assembly from its support.

3,558,396
METHOD OF FORMING PRECISION LAMINATED ELECTRICAL COMPONENTS

Ivanhoe P. Denyssen, 2000 Linwood Ave., Apt. 19R, Fort Lee, N.J. 07024

Filed Dec. 26, 1967, Ser. No. 693,545
Int. Cl. B32b *31/00*
U.S. Cl. 156—250 **10 Claims**

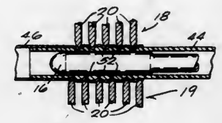


The disclosure relates to a method of forming precision laminated electrical components wherein a dry curable powder is dissolved in a volatile solvent and then applied as a coating on a sheet material blank. The volatile solvent is permitted to vaporize leaving a dry uncured surface coating on the blank after which time the blank is severed to produce a plurality of coated substrates or laminae that are stacked to produce an uncured laminated component which is subsequently cured.

3,558,397
METHOD OF MAKING A TUBE-TO-BAG CONNECTION

James L. Clark, Whitefish Bay, Wis., assignor to Plastronics, Inc., Milwaukee, Wis., a corporation of Wisconsin

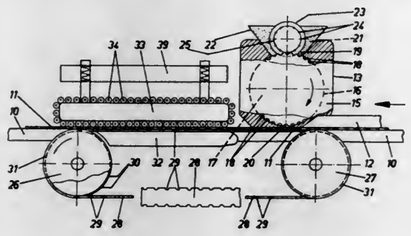
Filed Feb. 15, 1968, Ser. No. 705,802
Int. Cl. B29c *17/00*
U.S. Cl. 156—272 **4 Claims**



A tube-to-bag connection comprising a plastic container having a nipple portion into which a plastic tube is inserted. A probe type welding electrode is then inserted into the end of the tube to a position wherein the tip portion of the probe is located within the nipple portion of the

plastic container. A pair of outer electrodes or jaw assemblies are positioned around the exterior of the nipple portion. Such jaw assemblies are comprised of a plurality of plate members having aligned notches therein. The plates of the respective jaw assemblies when closed become interleaved one with the other with the edges of the notches in line contact with the exterior surface of the nipple. The welding step is performed by introducing a high frequency welding current between the central probe electrode and the outer jaws.

3,558,398
APPARATUS FOR THE EDGE-TO-EDGE GLUEING OF VENEERS
Gerhard Ortel, Rietberg, Germany, assignor to Firma Heinrich Kuper, Westphalia, Germany
Filed Aug. 14, 1968, Ser. No. 752,624
Int. Cl. B29c *19/00*
U.S. Cl. 156—304 **10 Claims**



A method for the edge-to-edge glueing of veneers, wherein a powdered glue or adhesive is introduced in a measured dose into a gap between adjacent veneers and then the powered glue or adhesive is heated until it sets whilst the veneer edges are pressed together.

3,558,399
PROCESS FOR HEAT SEALING SARAN COATED POLYOLEFIN FILM
George W. Turner, Miami, Fla., assignor to Arnold Cellophane Corporation, Miami, Fla., a corporation of Florida
No Drawing. Filed Mar. 6, 1968, Ser. No. 710,731
Int. Cl. C09j *5/02*
U.S. Cl. 156—308 **3 Claims**

There is provided a process for heat sealing saran coated polyolefin film comprising coating the film with at least one sealable coating and heat sealing the film. The preferred sealable coatings are formulated with polymers selected from ethylene vinyl acetate and acrylates, terpene resins, coumarone indene resins, butadiene/styrene latex and mixtures thereof. Further, the preferred formulations contain 1% to 40% wax.

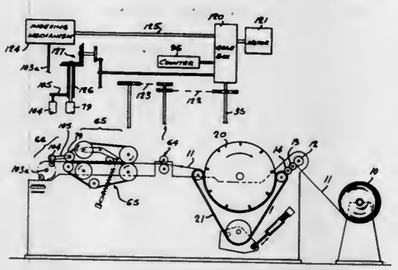
3,558,400
APPARATUS AND PROCESS FOR MAKING ROLLS OF BAGS
Steven J. Horvath and Willard O. Burgoon, both of 1021 Rangeview Road, Port Credit, Ontario, Canada, and James T. Hastings, 49 Clarence St., Brantford, Ontario, Canada
Filed Nov. 16, 1967, Ser. No. 683,706
Claims priority, application Canada, Nov. 21, 1966, 976,008
Int. Cl. B29c *27/06*; B65h *75/28*
U.S. Cl. 156—380 **1 Claim**

The machine consists of

(a) a rotating drum around which tubes of polyethylene stock are led and heated at intervals to seal the tubes into separate bags,

(b) a perforator for making lines of perforations adjacent the seals,

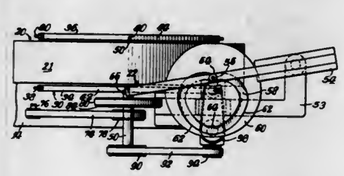
(c) a separator for tearing a line of perforations occasionally to form strips of bags of a desired length, and



(d) a mechanism for winding each length of bags onto a roll,

(e) an electrostatic device being employed to aid starting of each new bag length on a roll.

3,558,401
BREAKER WINDING MACHINE
Leon J. Cole, Niles, Mich., assignor to National-Standard Company, Niles, Mich., a corporation of Delaware
Filed Mar. 10, 1969, Ser. No. 805,439
Int. Cl. B29h *17/20*
U.S. Cl. 156—397 **4 Claims**

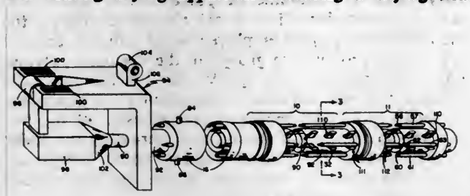


A breaker winding machine for automatically winding a cord onto a rotating collapsible building drum by means of a traverse arm assembly that swings back and forth across the drum. Two circular pinwheel assemblies having equal diameters that are less than the drum's diameter mounted on either side of the drum on a common drive shaft, which is offset from the drum's axis such that its equally spaced pins ride above the peripheral surface of the drum for an arcuate segment during each revolution. The pinwheel assemblies being driven at a speed relative to the drum's rotation and operating in conjunction with the swinging action of the traverse arm to form the edge of the breakers.

3,558,402
TUBE COATING APPARATUS
Herman Curtis Allen, Medford, and Charles Arthur De Virgilio, Roslindale, Mass., assignors to Bird & Son, Inc., East Walpole, Mass., a corporation of Massachusetts
Filed Apr. 18, 1968, Ser. No. 722,303
Int. Cl. B31c *3/00, 11/04*
U.S. Cl. 156—425 **20 Claims**

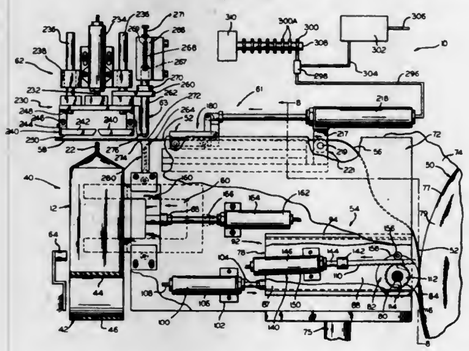
Tube forming apparatus comprising a stationary cantilever arbor having a free end and means for continuously wrapping strip-sheet material about the arbor continuously to form a tube and advance the tube beyond the free end, a tube coating unit mounted on the free end

of the arbor for coating the interior surface of the formed tube as it continuously advances beyond said free end, and coating drying apparatus including a drying head



defining a plurality of axially and radially-spaced, radially-facing drying apertures and means for supplying drying air to said drying head.

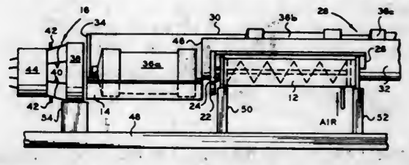
3,558,403
APPARATUS FOR OVER-LABELING GABLE TOP CONTAINERS
Edward H. Richie, 4327 Elm St., and John F. McAlpine, P.O. Box 337, Lincoln St., both of Downers Grove, Ill. 60515
Filed Jan. 19, 1968, Ser. No. 699,155
Int. Cl. B65b *51/14*; B65c *3/18*
U.S. Cl. 156—478 **8 Claims**



The invention is concerned with a method and apparatus for over-labeling gable top containers or cartons for milk and the like in which the containers are fed past a labeling station at which they are consecutively halted for application thereto of the label across the top thereof. A strip of labels is intermittently fed from a roll, in timed sequence to the presence of a container to be labeled at said labeling station, to dispose the label forming segment of the strip in lable applying position over the halted container, after which the label is severed from the strip and pressed against the container top to apply it thereto, with the label being oriented to extend transversely of the container peak.

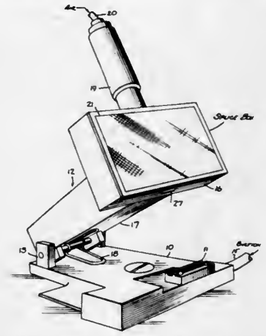
3,558,404
APPARATUS FOR APPLYING A LABEL TO A CONTAINER BY MOVING THE CONTAINER THROUGH RESILIENT FINGERS HAVING THE LABEL MOUNTED THEREON
Dean W. Metcalf, Grand Prairie, Tex., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed May 31, 1968, Ser. No. 733,440
Int. Cl. B65c *3/08*
U.S. Cl. 156—484 **2 Claims**

A label is applied to a container by first placing the label over the small end of a conical-shaped, expansion device. Next the container is moved through the large end of the conical-shaped device and as the container approaches the small end it will expand both the small end



and the label. As the container continues on it will pass through the label until it is in the correct position.

3,558,405
FILM OR TAPE SPLICER APPARATUS
Orlando Louis Seda, New York, N.Y., assignor to Sarex Corporation, North Bergen, N.J., a corporation of Delaware
Filed May 9, 1969, Ser. No. 823,303
Int. Cl. B31f *5/00*; G03d *15/04*
U.S. Cl. 156—506 **9 Claims**

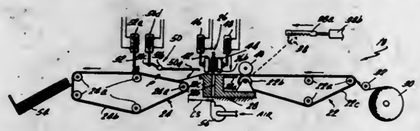


Tape splicer apparatus in which the butted ends of two tapes to be joined are held in a fixture. Also provided is a retractable splicer assembly in a position normally raised above the fixture, the assembly including a die plate having a die opening therein and a punch adapted to enter the opening. The arrangement is such that when the assembly is lowered over the fixture, the die opening, whose profile corresponds to that of the desired splicing piece, lies in precise registration with the butted ends of the tapes. Extending through a channel passing over the die opening is an adhesive splicing tape which is transported intermittently between a feed roll disposed on one side of the die plate and a take-up roll disposed on the other side thereof. Associated with the splicer assembly is an operating mechanism which, when actuated, first acts to index the take-up roll to present an uncut section of the splicing tape over the die opening, and then functions to drive the punch through the die opening, thereby cutting a splicing piece from said section and pressing the piece onto the butted ends of the tapes.

3,558,406
BOTTOM SEAL CONTOUR BAG MANUFACTURE
Emanuel Kugler, 124 Richmond Place, Lawrence, N.Y. 11559
Filed Oct. 23, 1967, Ser. No. 677,189
Int. Cl. B32b *31/08, 31/20*
U.S. Cl. 156—515 **2 Claims**

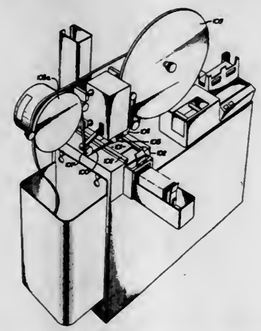
Apparatus for manufacturing plastic bags having a sealed bottom edge in the operation of which a transversely applied line of heat sealing simultaneously provides such bottom edge while cleanly severing each bag from the supply length of plastic. In prior art practice such a

line of heat sealing is avoided to prevent tacking of the plastic to the supporting feed belt of the apparatus which



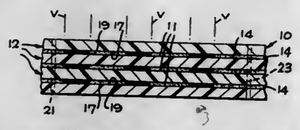
adversely effects feed movement of the plastic through the bag-making apparatus.

3,558,407
PRE-FORMED CHARACTER APPLICATION TO BASE MATERIAL
Louis M. Ballard, Arcadia, and Andrew M. McInnis, Covina, Calif., assignors, by mesne assignments, to Rusco Industries, Inc., Los Angeles, Calif., a corporation of Delaware
Filed Nov. 28, 1967, Ser. No. 686,081
Int. Cl. B30b *15/06*; B32b *31/18*
U.S. Cl. 156—580 **13 Claims**



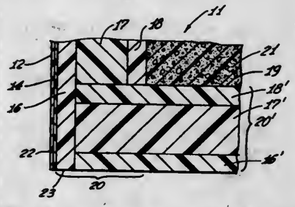
The disclosure concerns method and apparatus for forming solid embossed indica on sheets or cards, involving separation of selected embossments from a tape or tapes and adherence of such separated embossments to selected surface areas of the sheets or cards.

3,558,408
PLASTIC LAMINATE AND BONDING MATERIAL THEREFOR
Vern E. Hamilton, Palos Verdes Estates, and Luther M. Roseland, Santa Ana, Calif., assignors, by mesne assignments to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland
Filed Mar. 31, 1965, Ser. No. 444,310
Int. Cl. B32b *27/08, 27/26*; G02b *5/20*
U.S. Cl. 161—3 **4 Claims**



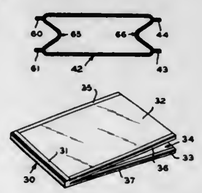
Laminate comprising a plurality of layers of transparent plastic film selected from the group consisting of polycarbonate and polystyrene, adhesively bonded together by a cured transparent urethane polymer containing uncured epoxy resin, and preferably also including a chlorinated biphenyl, particularly suited for production of a transparent light filter body, each of the layers of such light filter body having a grid pattern thereon and forming a multiplicity of viewing cells, said light filter body being adapted to fit over a cathode ray tube; and an adhesive formulation employed for bonding such laminate at room temperature, containing urethane polymer, epoxy resin, a polyamine or polyol curing agent, and preferably also including a chlorinated byphenyl, the amount of curing agent employed being sufficient to react only with the isocyanate groups in the urethane polymer at room temperature, the epoxy resin functioning in the urethane polymer adhesive formulation as a plasticizer, the epoxy resin also improving the adhesion of the formulation to the plastic sheets, and increasing the index of refraction of the cement bond to more closely approach the index of refraction of the polystyrene and polycarbonate transparent films.

3,558,409
LAMINATED STRETCH FORM DIE
Antone M. Guerreiro, Hawthorne, Calif., assignor to Northrop Corporation, Beverly Hills, Calif., a corporation of California
Filed Mar. 13, 1967, Ser. No. 622,631
Int. Cl. B32b *1/04*
U.S. Cl. 161—44 **2 Claims**



An article of manufacture constructed of synthetic resins designed to replace "kirksite" dies and dies constructed of similar materials utilized extensively in stretch forming operations. The article may be constructed as a dry-lubricant filled plastic shell or skin, the inner surface of which is successively coated with a plurality of layers of resin mix containing a reinforcing agent. The remaining internal portion or cavity of the article is filled with a rigid foam system. The article is completed by applying coats of resin mix—as described above—to the lower portion of the article thereby enclosing the foam system and sealing the article. The method of constructing the article is also disclosed herein.

3,558,410
EXTRUSION METHOD AND APPARATUS FOR THE EXTRUSION OF RECTANGULAR TUBES OF THERMOPLASTIC SHEET
John J. Quackenbush, Monroe, and Herbert O. Corbett, Bridgeport, Conn., assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
Original application June 28, 1965, Ser. No. 467,609, now Patent No. 3,398,432, dated Aug. 27, 1968. Divided and this application Mar. 14, 1968, Ser. No. 810,912
Int. Cl. B32b *1/04*
U.S. Cl. 161—44 **2 Claims**



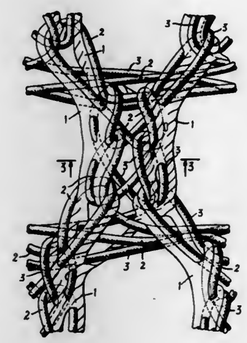
A tubular plastic bag having a rectangular cross-section formed from a continuously extruded rectangular tube of plastic material.

3,558,411
PATTERNED ARTICLES MADE OF FILAMENTS INCLUDING SEGMENTS OF DIFFERING COLOR, AND METHOD OF MAKING THE SAME
Cornelis W. Beelien, 1e Const. Huygensstraat 59, Amsterdam, Netherlands
Continuation-in-part of abandoned application Ser. No. 402,974, Oct. 9, 1964. This application Aug. 2, 1968, Ser. No. 749,763
Int. Cl. B32b *5/12*
U.S. Cl. 161—60 **12 Claims**



Patterned articles of thermoplastic or other material are formed of filaments, each filament including a series of segments of differing color or other property. The filaments are positioned beside one another with segments in each filament aligned transversely with segments in transversely contiguous filaments to establish the pattern. The filaments are produced as portions of a continuous strand which is spirally wrapped or folded to position portions of the strand beside one another to transversely align the segments. The pattern extends through the thickness of the article, so it cannot be destroyed by surface wear. Continuous strands can be produced by extrusion or other method.

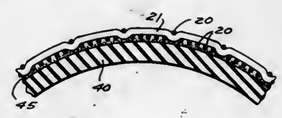
3,558,412
FABRIC CONTAINING MELTED AND UNMELTED YARNS AND METHOD FOR MAKING THE SAME
Milton Kurz, 461 Barnard Ave., Cedarhurst, N.Y. 11516
Filed Dec. 26, 1967, Ser. No. 693,309
Int. Cl. D04b *39/00*; D06m *15/00*
U.S. Cl. 161—89 **7 Claims**



The specification describes a fabric and a method of making a fabric containing throughout both meltable elements and nonmeltable elements or elements having a higher melting point, and in which the fabric is subjected to a temperature sufficient to soften or melt only the meltable or lower melting point elements and then cooled, thereby imparting to the fabric increased stability, stiffness, shape retention, abrasion resistance, tensile strength and longevity by reason of interlocking by the low melting point elements with the other elements while retaining desirable characteristics of the said other elements.

The specification also describes a novel yarn which embodies both the meltable elements and either nonmeltable elements or elements having a higher melting point than the meltable elements.

3,558,413
TENNIS BALL COVER CLOTH
John J. Wall, Lewiston, Maine, assignor to Albany International Corp., Albany, N.Y., a corporation of New York
Filed Jan. 24, 1968, Ser. No. 700,280
Int. Cl. D03d *1/00, 15/00*; A63b *34/06*
U.S. Cl. 161—91 **2 Claims**

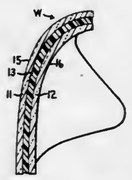


A tennis ball covering cloth incorporating therein a percentage of fibers or filaments formed of an olefin, such as polypropylene, which is heat treated within a predetermined temperature range to lock the olefin fibers into position with respect to the remaining fibers in the cloth.

3,558,414
VIBRATION DAMPING METAL LAMINATES
Armand Francis Lewis, Fairfield, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Continuation-in-part of application Ser. No. 462,942, June 10, 1965. This application Sept. 3, 1968, Ser. No. 757,130
Int. Cl. B32b *3/30*; G10k *11/00*
U.S. Cl. 161—117 **10 Claims**

Vibration damping metal laminates comprising at least two metal layers bonded together with a rubbery adhesive, wherein at least one of said layers is striated, are disclosed.

3,558,415
GLASS WINDOW HAVING A COMPRESSIVELY STRESSED OUTER GLASS SHEET
Raymond G. Rieser, Lower Burrell, and Joseph Chabal, Curtisville, Pa., assignors to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 13, 1969, Ser. No. 790,537
Int. Cl. B32b *1/00, 7/02, 17/10*
U.S. Cl. 161—125 **5 Claims**

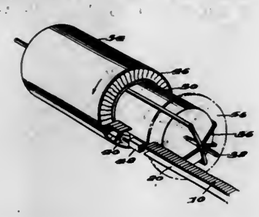


A laminated safety glass window having an outward facing glass ply chemically tempered to provide a surface compression stress zone extending inward between 50 and 500 microns in the direction of the glass sheet thickness and an inward facing glass ply of chemically tempered glass having surfaces provided with compression stress zones extending inward between 10 and 75 microns in said thickness direction. The compression stress zone of the outer glass ply is thicker than those of the inner glass ply.

3,558,416
SELF-SUPPORTING ANNULAR PACK OF BONDED FIBERS

Robert Lee Craven, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Application July 2, 1968, Ser. No. 742,976, now Patent No. 3,485,693, dated Dec. 23, 1969, which is a continuation-in-part of application Ser. No. 454,301, May 10, 1965. Divided and this application Aug. 8, 1969, Ser. No. 848,572
Int. Cl. B65h 55/02; D04h 1/74
U.S. Cl. 161—143 3 Claims



A self-supporting annular pack of parallelized, crimped, bonded fibers positioned radially with respect to the axis of the annulus is produced by positioning the fibers in a rotating receiving member which holds the fibers in an annular space to form indexed rows of the fibers, and thereafter bonding the fibers. The fiber pack can be cut to form seamless self-supporting fiber sheet material, which has numerous uses, e.g., as blankets and apparel linings.

3,558,417
WATER-REPELLANT RESINOUS FOAM

Ival O. Salyer, James L. Schwendeman, and Charles E. McClung, Dayton, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Feb. 14, 1968, Ser. No. 705,312
Int. Cl. B32b 7/00; B44d 1/08, 1/94
U.S. Cl. 161—160 4 Claims

A buoyant member for a collapsible buoyant device, comprising (1) an inner open-cell flexible resinous foam surface-coated with a compound selected from the group consisting of stearic acid, lead stearate, and zinc stearate and (2) an outer water-impermeable membrane.

3,558,418
BLOCKING-RESISTANT PLASTICIZER ARTICLES, COMPOSITIONS AND PROCESSES

Erland C. Porter, Jr., Dayton, Ohio, and Hans F. Huber, Wiesloch, Germany, assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland

No Drawing. Filed May 22, 1968, Ser. No. 731,265
Int. Cl. B32b 5/16, 5/30
U.S. Cl. 161—162 24 Claims

This disclosure is directed to (1) blocking-resistant, particulate, tackifying plasticizer solids, each having a randomly-shaped solid core of tackifying plasticizer, and a substantially continuous, solid-retaining, comparatively hard covering of higher melting polymeric material; (2) heat-activatable plasticized thermoplastic adhesives containing a profusion of individually covered plasticizer solids distributed uniformly therein; (3) articles of manufacture, e.g., prepasted wallpaper and wall coverings, containing said adhesive coated, impregnated, joined, secured, or otherwise applied to a suitable substrate material, e.g., conventional wallpaper base stock (prefilled or unfilled), conventional washable wall covering material (plasticized polyvinyl chloride deposited on and/or into the viewed side of the cloth); (4) processes for making the blocking-resistant, particulate, tackifying plasticizer solids; (5) processes for making articles (3); (6) processes for applying prepasted articles (3) to a base(s), e.g., walls of plaster, conventional gypsum dry-wall, wood, etc.; and (7) composite articles of manufacture comprising a base to be covered, decorated, protected, etc., with the articles (3) adhered or otherwise secured thereto, e.g., prewall-papered decorative panelling where the wallpaper on the adjacent base panels is prematched, permanent or semi-permanent records, e.g., comprised of paper containing printed matter or indicia which is preserved by lamination with a protective film, layer or sheet using the heat sealable adhesive (2) as the laminant.

3,558,419
COMPOSITE FILAMENTS AND FIBERS

Kaoru Okazaki, Asaharu Nakagawa, and Kenji Sugii, Nagoya, Japan, assignors to Toyo Rayon Kabushiki Kaisha, Tokyo, Japan, a corporation of Japan

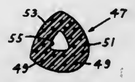
No Drawing. Filed May 27, 1968, Ser. No. 732,105
Int. Cl. D02g 1/18, 3/36
U.S. Cl. 161—173 24 Claims

Composite fibers in which at least two polymeric components are arranged in intimate mutual contact along the fiber length, and at least one of the said components is a fiber-forming polyester, and the other of the said components is a polyether-polyamide-block-copolymer composed of linear polyamide segments and polyalkylene ether segments, the polyalkylene ether segment content of the copolymer being 3 to 85% by weight, and the polyalkylene ether segment content of the composite fibers being 0.3 to 30% by weight.

3,558,420
HOLLOW FILAMENTS

James E. Opfell, Colonial Heights, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

Filed Aug. 17, 1967, Ser. No. 661,348
Int. Cl. D01d 5/24
U.S. Cl. 161—176 3 Claims



A hollow filament of synthetic polymer material is disclosed consisting of a sheath surrounding a longitudinally extended cavity. The sheath comprises a continuous phase polyamide polymer containing dispersed therein a polyester in the form of microfibers lying predominantly in the direction of the axis of the filament.

3,558,421
COATED CONCRETE ARTICLE

Rowland S. Hartzell, Gibsonia, Pa., and Gene Gerek, Oswego, Ill., assignors to PPG Industries, Inc., Pittsburgh, Pa., a corporation of Pennsylvania

No Drawing. Continuation-in-part of application Ser. No. 528,347, Feb. 18, 1966. This application Nov. 25, 1968, Ser. No. 778,749
Int. Cl. B32b 13/02, 13/14
U.S. Cl. 161—182 6 Claims

Composite coated concrete articles having a surface coating of a cured or other resinous material comprise a cementitious base and adherently bonded thereto a layer of asbestos sheet material which is coated with an organic coating. Such articles can be obtained by curing the cementitious base while in contact with the uncoated side of pre-coated asbestos sheet material to produce concrete articles in which the coated asbestos sheet material is directly bonded to the concrete with exceptional adhesion.

3,558,422
GLASS LAMINATE AND BONDING MATERIAL THEREFOR

Vern E. Hamilton, Palos Verdes Estates, and Luther M. Roseland, Santa Ana, Calif., assignors, by mesne assignments, to McDonnell Douglas Corporation, Santa Monica, Calif., a corporation of Maryland

Filed June 7, 1965, Ser. No. 461,647
Int. Cl. B32b 17/10, 27/38, 27/40
U.S. Cl. 161—185 6 Claims

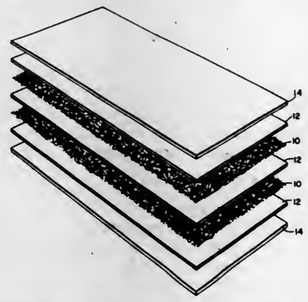


Glass laminate, e.g., a high strength safety glass or acoustical glass, adhesively bonded together by a cured transparent urethane polymer containing uncured epoxy resin, and preferably also including a chlorinated biphenyl, providing a tough adhesive layer highly adherent to the glass substrates and strongly resisting delamination of the glass layers; and an adhesive formultaion employed for bonding such glass laminate at room temperature, containing urethane polymer, epoxy resin, a polyamine or polyol curing agent, and preferably also including a chlorinated biphenyl, the amount of curing agent employed being sufficient to react only with the isocyanate groups in the urethane polymer at room temperature, the epoxy resin functioning in the urethane polymer adhesive formulation as a plasticizer, the epoxy resin also improving the adhesion of the formulation to the glass plates, and increasing the index of refraction of the cement bond to more closely approach and match the index of refraction of the glass plates.

3,558,423
LOW LOSS ELECTRICAL PRINTED CIRCUIT BOARD COMPRISING POLYOLEFIN, FIBERGLASS AND METALLIC FOIL

Louis F. Rossetti, Jr., Arlington, Mass., assignor to Electronized Chemicals Corp., Burlington, Mass., a corporation of Delaware

Filed Oct. 16, 1967, Ser. No. 675,523
Int. Cl. B32b 15/08, 17/10; C09j 5/00
U.S. Cl. 161—203 4 Claims



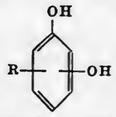
This disclosure describes an inexpensive, low loss, high temperature resistant, easily fabricated, polyethylene-fiberglass, dielectric material suitable for use in microwave frequency communication devices and the process for making the same. This material may be fabricated so as to be useful as printed circuit boards, strip transmission lines, insulating components and the like.

3,558,424
THERMOPLASTIC POLYESTER RESIN FILMS BONDED TOGETHER TO FORM A LAMINATE USING CERTAIN DIHYDROXY BENZENE COMPOUNDS AS THE BONDING AGENT

Edward Peter Welerter, Massapequa, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine

No Drawing. Filed Aug. 27, 1968, Ser. No. 755,713
Int. Cl. B32b 27/36; C09j 3/16
U.S. Cl. 260—33.4 8 Claims

A laminate comprising two layers of a film of a linear thermoplastic polyester resin bonded together by means of a bonding layer of a compound having the formula:

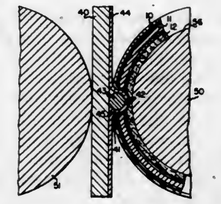


wherein R is a member selected from the group consisting of hydrogen, alkyl groups containing from 1 to 4 carbon atoms, chlorine and bromine.

3,558,425
LAMINATED TAPE FOR PRINTING WITH A PRESSURE TRANSMITTING TOP LAYER TO SEVER AN INTERMEDIATE BRITTLE LAYER

Bernard J. Massari, 725 Hart Drive, Somerville, N.J. 08876

Filed Feb. 24, 1967, Ser. No. 618,540
Int. Cl. B32b 27/10, 27/36
U.S. Cl. 161—232 18 Claims



A three layer laminated printing tape having an upper carrier layer to be embossed but uncut, an intermediate stencil layer to be cut during embossing of the outer layer and a lower support layer to be selectively cut or uncut in an arrangement such that the carrier and stencil layers may be stripped from the support layer and applied to a surface following which the carrier layer may be removed to leave the cut portions of the stencil layer adhering to the surface in the form of printing or ornamentations. A die plate of sheet material with a raised rounded die cutting ridge thereon is used to press and emboss through the outer layer to cut and separate the inner layer to the desired configuration and a machine for selecting a desired die plate and feeding it with the laminated tape through pressure rollers to accomplish the desired results is provided.

3,558,426
TREATMENT OF WASTE LIQUORS FROM PULP AND PAPER MILLS

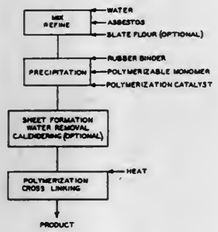
Howard V. Hess, Glenham, and Edward L. Cole, Fishkill, N.Y., assignors to Texaco Inc., New York, N.Y., a corporation of Delaware

Filed Nov. 29, 1968, Ser. No. 780,043
Int. Cl. D21c 11/00, 11/02
U.S. Cl. 162—30 9 Claims

Process for heat treatment of waste liquors from pulp and paper mills wherein waste liquor is heated by direct contact with hot hydrocarbon liquid to a temperature in

the range of 400 to 700° F. under sufficient pressure to prevent vaporization of water thereby converting water soluble organic material to a water insoluble solid product, or coke, which is separated from treated aqueous liquid effluent of low chemical oxygen demand (COD) suitable for reuse in the production of cooking liquor for the pulping process or disposal in lakes or streams without significant water pollution.

3,558,427
ASBESTOS SHEET MATERIAL AND PROCESS FOR MANUFACTURE
John W. Baymiller, Lancaster, Pa., assignor to Armstrong Cork Company, Lancaster, Pa., a corporation of Pennsylvania
Filed June 19, 1968, Ser. No. 738,256
Int. Cl. D21h *5/18*
U.S. Cl. 162—155 **8 Claims**



A beater saturation process wherein a rubber binder is deposited on asbestos fibers in an aqueous slurry. To the asbestos fiber-rubber binder slurry is added from 2–25% by weight, based on the weight of the fibers, of a polymerizable monomer having at least two olefinically unsaturated bonds in the monomer molecule and from 1½–10% by weight, based on the weight of the polymerizable monomer, of a polymerization catalyst. After the sheet has been formed, the polymerizable monomer is polymerized by subjecting the formed sheet to sufficient heat to bring about the polymerization. A tough strong sheet results.

3,558,428
METHOD IN THE MANUFACTURE OF CHEMOMECHANICAL PULPS
Arne Johan Arthur Asplund, 20 Tykovagen, Lidingo 3, Sweden, and Karl Nicolaus Cederquist, 14 Kryssarvagen, Nasbypark, Sweden
No Drawing. Continuation-in-part of application Ser. No. 369,001, May 20, 1964. This application Dec. 29, 1967, Ser. No. 694,415
Claims priority, application Sweden, May 21, 1963, 5,634/63
Int. Cl. D21c *3/06, 3/26*
U.S. Cl. 162—19 **6 Claims**

A method of producing high yield pulp by impregnating wood chips or other lignocellulose containing material with a solution selected from the group consisting of alkaline hydroxides and alkaline carbonates, at a temperature below 100° C. The impregnated chips are cooked in a digester in an atmosphere of saturated steam at a temperature exceeding 100° C. and under corresponding superatmospheric pressure, while simultaneously introducing sulfur dioxide into the digester for a period of time ranging from 1–20 minutes and in sufficient quantity to react with the base contained in the wood chips to form an alkali sulfite compound. The thus cooked or digested wood chips are then defibrated under substantially the same pressure and temperature conditions prevailing in the cooker. The preferred impregnation temperature is from 30–40° C. and the preferred cooking temperature is from 160–180° C.

3,558,429
METHOD FOR MANUFACTURING NONWOVEN FIBROUS PRODUCTS FROM GEL FIBERS
Thomas C. Spence, Yorktown, Va., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Original application July 26, 1966, Ser. No. 567,846, now Patent No. 3,436,304, dated Apr. 1, 1969. Divided and this application July 25, 1968, Ser. No. 747,455
The portion of the term of the patent subsequent to Apr. 1, 1986, has been disclaimed and dedicated to the Public
Int. Cl. D21h *5/12, 11/00*
U.S. Cl. 162—157 **3 Claims**

A process for preparing a dry, nonwoven fibrous sheet comprising:

(a) forming a web of self-bonding gel fibers of thermoplastic, fiber-forming polymer of acrylonitrile, said gel fibers having a gel network structure that has never been completely collapsed by drying and that consists essentially of interconnecting capillary spaces intimately intertwined with a fibrillar structure of polymeric material, and subjecting said web to a combination of superatmospheric pressure, a temperature of at least 25° C., and time, which combination is not sufficient to cause dry fibers of said polymer to fuse but which is sufficient to produce a web having a rewet tensile strength of at least about 0.05 lb./in./oz./sq. yd.;
(b) subjecting said web to drying conditions which cause said gel fibers to collapse while maintaining said web substantially free of forces tending to restrain shrinkage of said web; and
(c) recovering a dry, nonwoven fibrous sheet.

The product is useful as a textile fabric in the preparation of a variety of materials ranging from hard, boardy sheets to soft, fluffy fabrics to stretchable, tough fabrics.

3,558,430
PROCESS FOR THE LOOSENING OF DEAD HAIRS IN FUR PELTS
Rolf Monshelmer, Darmstadt-Eberstadt, and Ernst Pfielderer, Darmstadt-Arheilgen, Germany, assignors to Rohm & Haas G.m.b.H., Darmstadt, Germany
No Drawing. Filed Feb. 27, 1968, Ser. No. 708,536
Claims priority, application Germany, Mar. 3, 1967, R 45,420
Int. Cl. C12b *1/00*
U.S. Cl. 195—6 **7 Claims**

Uniformly loosening dead hairs in fur pelts without loosening the short hairs of the underfur by treating the soaked pelts with a proteolytic enzyme at a weakly acid to weakly alkaline pH until the dead hairs are loosened but before the short hairs are loosened.

3,558,431
OXIDATION PROCESS
Charles T. Goodhue and James R. Schaeffer, Rochester, N.Y., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey
No Drawing. Filed May 8, 1968, Ser. No. 727,722
Int. Cl. C12d *13/00*
U.S. Cl. 195—49 **13 Claims**

A method of microbially oxidizing a polyhydric branched chain alkanol containing at least one primary alcohol group such as pentaerythritol, using a new microorganism *Flavobacterium oxydans* (ATCC No. 21,245) in a nutrient medium which supports growth of said microorganism.

3,558,432
WAXOLYTIC ENZYME PREPARATION
Richard M. Lycette, Villa Park, Ill. (19 Brentwood Road, Augusta, Maine 04330)
No Drawing. Filed Jan. 24, 1968, Ser. No. 700,027
Int. Cl. C07g *7/028, 7/022*
U.S. Cl. 195—66 **10 Claims**

A method for the prepartion and purification of cerase, a wax decomposing enzyme, where the impure cerase is found in crude extracts of whole larvae of the wax moth or found in a crude bacteriological medium, a salts-wax medium or through mold fermentation. The method of purification includes the addition of toluene to the raw cerase material to increase the yields of the enzyme, centrifuging to remove debris, precipitating proteins with ammonium sulfate and centrifuging, dialysis against cold water, precipitation by adding acetone, removing acetone from supernatant, adding a solvent, adjusting the pH and extracting in a chromatogram, migrating the enzyme by electrophoresis and drying the formed crystals. The cerase enzyme is utilized as an antituberculous agent.

3,558,433
PROCESS FOR PURIFICATION OF CHYMOPAPAIN
Ivan J. Stern, Morton Grove, Ill., assignor to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware
Filed Nov. 7, 1967, Ser. No. 681,200
Int. Cl. C07g *7/022*
U.S. Cl. 195—66 **7 Claims**

Process for purifying chymopapain by chromatography of an aqueous extract of crude chymopapain or papaya latex with carboxymethyl substituted cross-linked dextran copolymer equilibrated with aqueous buffer solution followed by eluting with aqueous buffer solution having about the same pH as, but greater ionic strength than, the buffer used for equilibrating the chromatographic column.

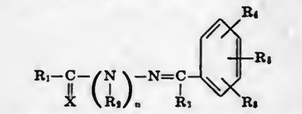
3,558,434
STIMULATION OF THE GROWTH OF MICROORGANISMS
Robert J. Herschler, Camas, Wash., assignor to Crown Zellerbach Corporation, San Francisco, Calif., a corporation of Nevada
No Drawing. Application Apr. 13, 1966, Ser. No. 542,189, now Patent No. 3,361,555, which is a continuation-in-part of applications Ser. No. 346,366, Feb. 10, 1964, and Ser. No. 344,558, Feb. 13, 1964. Divided and this application Mar. 10, 1967, Ser. No. 622,088
Int. Cl. C12b *1/20, 3/14;* **C12d** *13/01*
U.S. Cl. 195—81 **15 Claims**

Process for stimulating the growth of microorganisms by employing an effective amount of dimethyl sulfoxide in the growth medium.

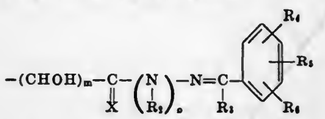
3,558,435
DIAGNOSTIC AGENTS FOR USE IN THE DETERMINATION OF HYDROPEROXIDES AND OF PEROXIDATE-ACTIVE SUBSTANCES AND METHODS FOR MANUFACTURING AND USING THE SAME
Hans-Georg Rey, Mannheim-Waldhof, Hans Wielinger, Mannheim, and Peter Rieckmann, Mannheim-Waldhof, Germany, assignors to Boehringer Mannheim Gesellschaft mit beschrankter Haftung, Mannheim-Waldhof, Germany, a corporation of Germany
No Drawing. Filed Aug. 4, 1967, Ser. No. 658,329
Claims priority, application Germany, Sept. 1, 1966, B 88,720
Int. Cl. G01n *31/14, 31/22*
U.S. Cl. 195—103.5 **21 Claims**

There are disclosed diagnostic agents suitable for use in carrying out rapid analytical determinations of the presence and/or concentration of hydroperoxide, substances which react with the liberation of hydrogen peroxide, peroxidase and peroxidate-active substances. The diagnostic agents of the invention are adapted for use in test procedures involving optical instruments such as colormeters and photometers and also in test procedures involving test papers.

The diagnostic agents as taught herein comprise an indicator i.e., chromogen, which is oxidized by hydrogen peroxide and peroxidase or peroxidate active substances to form a dyestuff whose intensity is dependent on the concentration of the peroxide, peroxidase or peroxidate active substance present in the test sample. The indicator i.e., chromogen is a compound of the formula:



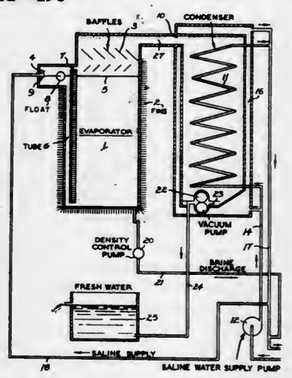
wherein R_1 is amino or an aliphatic, araliphatic, aromatic or heterocyclic radical which may carry one or more substituents, or a group having the formula:



wherein R_2 is hydrogen, an aliphatic, aromatic or heterocyclic radical which may carry one or more substituents, R_3 is hydrogen, alkyl or phenyl and may be mono- or poly substituted, R_4 is amino, hydroxy or alkoxy, R_5 and R_6 are each hydrogen, amino, hydroxy, alkoxy or alkyl, X is oxygen, sulfur or imino which may be substituted by a group as defined by R_1, n is 0 or 1, m is 0, 1 or 2; and wherein X and R_1 and R_2 or R_1 and R_3 can be joined together to form a ring.

The diagnostic agents can be used for analytical determinations involving, for example, glucose, galactose, amino acids, uric acid, peroxide, hemoglobin, peroxidase, etc. in samples, for example, constituting biological fluids such as blood, urine, spinal fluid, etc., milk, cosmetic and drug formulations, etc.

3,558,436
DISTILLATION APPARATUS FOR DESALINISATION OF SALINE WATER TO RECOVER FRESH WATER AS CONDENSATE
Norman L. Foley, Modbury, South Australia, and Alwyn H. Cheney, Panorama, South Australia, Australia, assignors to Auscoteng Pty. Ltd., North Adelaide, South Australia, Australia
Filed July 30, 1968, Ser. No. 748,817
Int. Cl. B01d *3/10;* **C02b** *1/06*
U.S. Cl. 202—196 **5 Claims**



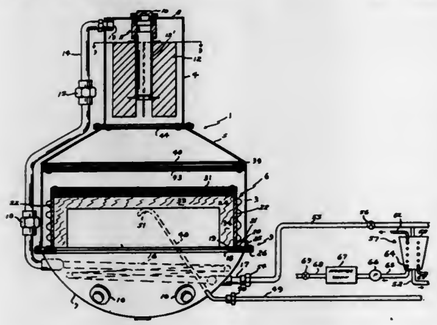
An apparatus for effecting desalination in which an evaporator at ambient temperature has produced in it a

pressure vacuum sufficient to boil the water, a condenser connected thereto and maintained at condensing conditions but at a somewhat reduced pressure as the evaporator, air entrained in the water being removed from the condenser to maintain the reduced pressure.

3,558,437
RADIOACTIVE ISOTOPE DISTILLATION SYSTEM FOR RECOVERING WATER FROM WASTE IN A SPACECRAFT

Courtney A. Metzger, Springfield, and Albert B. Hearld, Dayton, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force

Filed June 11, 1969, Ser. No. 832,114
Int. Cl. B01d *3/00*
U.S. Cl. 202—200 **10 Claims**



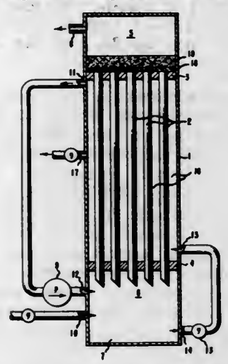
There is disclosed an improved system for obtaining potable water from human waste and involving two evaporators having a waste inlet in common and a vapor outlet in common but segregated functionally by suitably positioned control valves. Each evaporator is of cylindrical shape, formed of several compartments of different diameters, two of which are secured together by a conical housing. The lowermost compartment is hemispherical in shape and is detachably secured to the adjacent compartment. There are four isotopes in the lowermost compartment, also a single isotope in the uppermost compartment. The waste material is pumped into the lowermost compartment where it is heated and the vapor is forced to pass through, in succession, a heavy layer of "wicking" material, also a pair of horizontally disposed filters, in addition to a circumferential filter. Upon reaching the uppermost compartment, the vapor is heated by the single isotope enclosed in a casing from which a number of vanes radiate to distribute the heat. The space between the vanes is filled with an oxidizing catalyst. The vapor is fed into a coiled pipe located in the lowermost compartment where it gives up its heat to the surrounding waste material. The vapor is then conducted through a water cooled condenser, and finally to a storage tank for consumption. The hemispherical compartment receives the semi-solid precipitate and is adapted to be cleaned by the astronaut by removing the same at the detachable connection, after a "switch over" to the other evaporator has been effected by the various valves.

3,558,438
DISTILLATION PROCESS AND APPARATUS

Leland C. Schoenbeck, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Filed Oct. 30, 1968, Ser. No. 771,827
Int. Cl. B01d *3/00*
U.S. Cl. 203—26 **10 Claims**

A process for separating a lower boiling fraction as a vapor from a mixture of compounds by a novel open tube wetted wall distillation process in a multitube still, provided with vapor recompression of vaporized reflux

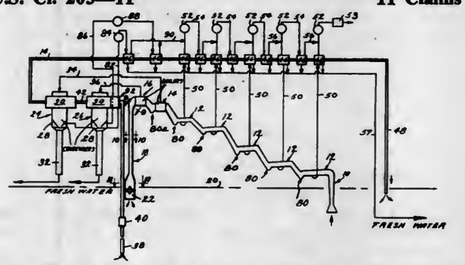


condensate to combine the heating and cooling operation, and an apparatus utilized in said distillation.

3,558,439
WATER DESALTING PROCESS AND APPARATUS

James H. Anderson, 1615 Hillock Lane, York, Pa. 17403

Filed Dec. 28, 1967, Ser. No. 694,195
Int. Cl. B01d *1/28;* **C02b** *1/06*
U.S. Cl. 203—11 **11 Claims**



Apparatus and method for obtaining fresh water from sea water by deaerating and evaporating a stream of warm surface sea water and condensing the vapor. Evaporation is effected by subjecting the stream of warm surface water to a vacuum, the latent heat of vaporization being supplied by the warm water itself. The low pressure water vapor is then condensed by passing it in heat exchange relationship with a stream of relatively cold sea water obtained from deep in the sea. Deaeration of the sea water prior to evaporation is effected by elevating the stream of warm sea water above sea level and exposing it to stages of increasing vacuum.

3,558,440
METHOD OF SEPARATING THE RARE EARTHS BY FRACTIONAL CO-DISTILLATION OF THEIR VOLATILE CHELATE DERIVATIVES

Charles W. Harris, Dayton, Robert E. Sievers, Fairborn, and Kent J. Eisentraut, Xenia, Ohio, assignors to the United States of America as represented by the Secretary of the Air Force

No Drawing. Filed June 4, 1968, Ser. No. 734,192
Int. Cl. B01d *3/34;* **C01f** *17/00*
U.S. Cl. 203—38 **5 Claims**

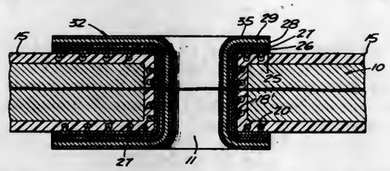
A method of separating by fractional distillation two or more non-volatile compounds of rare earths comprising the steps of converting the compounds of the rare earths to their corresponding volatilizable chelate, distilling a mixture of the chelates and a co-distilling agent to obtain enriched fractions of said chelates in said agent,

collecting said enriched fractions, acidifying each of said fractions to form (a) a water-rare earth salt phase and (b) a co-distilling agent and ligand phase, and collecting the rare earth salt by stripping the rare earth salt of water.

3,558,441
METHOD OF MAKING A METAL CORE PRINTED CIRCUIT BOARD

Donald H. Chadwick, Northridge, and Ruben T. Apodaca, Inglewood, Calif., assignors to International Electronic Research Corporation, Burbank, Calif., a corporation of California

Filed Nov. 1, 1968, Ser. No. 772,517
Int. Cl. C23b *5/48, 5/60;* **C23f** *17/00*
U.S. Cl. 204—15 **17 Claims**



The invention is involved in a method for making a metal core printed circuit board which includes applying multiple layers of synthetic plastic resin material to a sheet of metal, then treating the surface of the plastic material in such a way as to provide an acceptable bond, followed by applying sundry layers of different metals, first to the plastic surface and then one upon another followed by the imposition of a circuit pattern, the removal of materials from areas intermediate the circuit pattern, and the application of an appropriate overlay of unlike metal to the circuit pattern, thereby to provide a finished circuit board.

3,558,442
ELECTROPLATING A DUCTILE ZINC-NICKEL ALLOY ONTO STRIP STEEL

Edward J. Roehl, Warren, and Robert H. Dillon, Trumbull County, Ohio, assignors to Wheeling-Pittsburgh Steel Corporation, Pittsburgh, Pa., a corporation of Delaware

No Drawing. Filed Jan. 31, 1969, Ser. No. 795,713
Int. Cl. C23b *5/32, 5/58*
U.S. Cl. 204—28 **3 Claims**

A method of electroplating a nickel-zinc alloy on a steel strip is described, in which the plating bath is maintained within a selected pH range, through use of a preselected ratio of nickel to zinc in the bath, and a preselected plating current density, whereby an electroplated coating is formed having a nickel content of from 9.5 to 12.5%, which coating has a low internal stress, and increased resistance to corrosion.

3,558,443
SEQUENTIAL CHLORINATED HYDROCARBON-CHROMIC ACID PRECONDITIONING FOR PLATING POLYOLEFIN ARTICLES

Habet M. Khelghatian, Springfield, and James L. Jezl, Swarthmore, Pa., and James E. Fitzpatrick, New Castle, Del., assignors to Avisun Corporation, Philadelphia, Pa., a corporation of Delaware

No Drawing. Filed May 3, 1967, Ser. No. 635,696
Int. Cl. C23b *5/60*
U.S. Cl. 204—30 **7 Claims**

In a process for electroplating polyolefin articles wherein the article is treated with an etching solution comprising a strong mineral acid, followed by treatment with a tin salt, a noble metal salt solution, and an electroless nickel or copper plating solution, followed by electroplating, the adhesion of the metal to the article is enhanced by contacting the article with a chlorinated hydrocarbon prior to contacting with the etching solution.

3,558,444
DYE TEST FOR DETECTING STRAINED AREAS IN MOLDED PLASTICS

James E. Fitzpatrick, New Castle, Del., and Habet M. Khelghtian, Springfield, Pa., assignors to Avisun Corporation, Philadelphia, Pa., a corporation of New Jersey

No Drawing. Filed Oct. 11, 1968, Ser. No. 766,997
Int. Cl. C23b *5/60*
U.S. Cl. 204—30 **11 Claims**

A method for qualitatively determining the surface strains in a molded plastic article, the strains being related to the plateability of said article, by contacting said article with a disperse dye solution having small dye particles, so as to stain said article, the depth and uniformity of shade of the stained article being an indication of the surface strains in the plastic article.

3,558,445
METHOD OF PRODUCING COATINGS ON HARD METAL BODIES

Walter Rix and Grete Dix, Essen, Germany, assignors to Fried. Krupp, Gesellschaft mit beschrankter Haftung, Essen, Germany

No Drawing. Filed May 26, 1967, Ser. No. 641,474
Claims priority, application Germany, June 2, 1966, 1,521,166
Int. Cl. C23b *5/52;* **C23f** *17/00*
U.S. Cl. 204—37 **10 Claims**

A solid solution layer of one or more of the metals titanium, vanadium, tantalum, or columbium, or their carbides, is formed on the surface of a hard metal body, such as tungsten carbide, by heating the hard metal body in contact with the coating metal, or an alloy, or a readily decomposable compound thereof, at a temperature above about 900° C., or by electrolytic deposition, followed by heating.

3,558,446
PRINTING SYSTEM FOR ANODIZED ALUMINUM

Carl B. Blake, Bronx, and Adolph Fuerst, Brooklyn, N.Y., assignors to Martin Marietta Corporation, New York, N.Y., a corporation of Maryland

No Drawing. Filed June 28, 1968, Ser. No. 740,852
Int. Cl. B41m *1/10, 1/14;* **C23f** *17/00*
U.S. Cl. 204—38 **5 Claims**

An ink system for four-color (multicolor) printing of anodized aluminum by gravure techniques comprising use in the ink system of a specially selected group of colorants. The colorants which include Orasol Yellow, Orasol Scarlet, Oracet Blue B, Orasol Red, Aviation Oil Blue, Latyl Cerise B, Sudan Yellow, Fluorol 7 GA, Grasol Blue and Neozapon Blue, are each adapted to cooperate with each other in matters of penetration of the anodic film on aluminum, in reasonably equivalent resistance to the fading effects of light and in other respects peculiar to the successful multicolor printing of anodized aluminum.

3,558,447
METHOD AND COMPOSITION FOR ELECTROPLATING CADMIUM

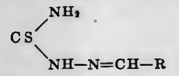
Tibor Joachim, Vernon, and Merton M. Beckwith, Tolland, Conn., assignors to Conversion Chemical Corporation, Rockville, Conn., a corporation of Connecticut

No Drawing. Filed Sept. 4, 1968, Ser. No. 757,504
Int. Cl. C23b *5/10, 5/12*
U.S. Cl. 204—50 **9 Claims**

An aqueous bath for producing ductile, adherent cadmium electrodeposits upon metallic surfaces contains cadmium ion, ammonium chloride and an aminopolyacetic acid chelating agent. The bath is highly conductive and operable at low voltages, and has a pH which is acidic or slightly alkaline.

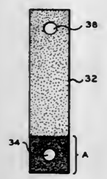
3,558,448
METHOD OF ELECTROPLATING ZINC AND ELECTROLYTE THEREFOR
Maurice Roger Accaries, Bourg-la-Reine, and Maurice Emile Girard, Paris, France, assignors to Compagnie des Compteurs, Paris, France, a French company
No Drawing. Filed Oct. 1, 1968, Ser. No. 764,337
Claims priority, application France, Oct. 18, 1967, 124,825
Int. Cl. C23b 5/12
U.S. Cl. 204—55 10 Claims

An acidic electrolytic solution for depositing zinc on various parts comprising, in a demineralized aqueous support, a hydrated zinc sulfate, an ammonium sulfate, a thio-semicarbazone compound attached to a thio-urea group as a brightening agent, and a non-ionic moistening agent. To obtain the brightening agent, a phenol aldehyde is made to react with thio-urea in a hydroalcoholic medium, a thiosemicarbazide compound is prepared, which is dissolved in a hydroalcoholic solution and which is added to the product of the phenol-aldehyde and thio-urea reaction so as to obtain a compound of the formula:



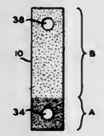
attached to an $NH_2—CS—NH_2$ group, R being a carbonaceous radical of a phenol-aldehyde or of its ether-oxide derivatives.

3,558,449
PROCESS FOR ELECTROCHEMICAL FLUORINATION
William V. Childs, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
Filed June 24, 1968, Ser. No. 739,509
Int. Cl. B01k 3/00
U.S. Cl. 204—59 4 Claims



In an electrochemical fluorination process wherein the reaction takes place within the confines of a porous electrode element, the lower portion of this element is impregnated with a surfactant having a fluorocarbon radical having a terminal $—CF_3$ group.

3,558,450
PROCESS FOR ELECTROCHEMICAL CONVERSION
Benedict H. Ashe, Jr., and William V. Childs, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
Filed June 24, 1968, Ser. No. 739,510
Int. Cl. B01k 3/00
U.S. Cl. 204—59 8 Claims



In an electrochemical process, the reaction takes place within the confines of a porous electrode element in which the pores of the lower portion have a lower effective size than the pores of the upper portion.

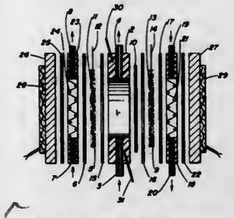
3,558,451
ELECTROLYSIS CELL CURRENT EFFICIENCY
Rudolf E. Svadlenak, Lewiston, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 29, 1967, Ser. No. 663,977
Int. Cl. C22d 3/06
U.S. Cl. 204—68 1 Claim

A fused salt electrolysis cell bath is subjected to at least one thaw-freeze cycle, a thaw consisting essentially of melting the cell bath by heating the bath to a temperature above the melting point of said bath, and a freeze consisting essentially of solidifying the melted bath by cooling said melted bath to a temperature below the melting point of the bath.

3,558,452
ELECTROLYSIS CELL CURRENT EFFICIENCY WITH SOLID OXIDIZING AGENTS
Rudolf E. Svadlenak, Lewiston, N.Y., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 29, 1967, Ser. No. 663,978
Int. Cl. C22d 3/06
U.S. Cl. 204—68 5 Claims

A fused salt electrolysis cell bath is treated with a solid oxidizing agent, such as sodium chlorate, to improve current efficiency of the fused salt electrolysis cell.

3,558,453
PREPARATION OF ALKENE HALIDES
Jaspal Singh Mayell, Stamford, Conn., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
Filed Feb. 12, 1968, Ser. No. 704,822
Int. Cl. C07b 9/00
U.S. Cl. 204—81 9 Claims

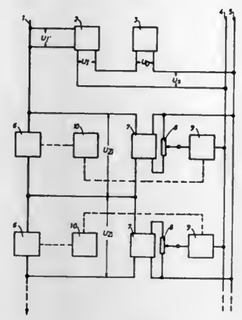


There is provided a one step electrolytic process for manufacture of monohalogenated alkenes by electrolyzing in an electrolytic cell an aqueous solution of a metal halide between two gas-pervious, liquid-impervious electrodes. An oxygen-containing gas is impinged on the surface of one of the electrodes while an alkene is impinged on the surface of the second electrode and a monohalogenated alkene is recovered.

3,558,454
METHOD OF REGULATING VOLTAGE AND ELIMINATING SHORT CIRCUITS IN CELLS FOR THE ELECTROLYSIS OF ALKALI METAL CHLORIDES
Rolf Schäfer, Krefeld-Urdingen, Wilm Reerink, Heribert Schaffrath, and Karl-Heinrich Schmitt, Krefeld-Bockum, and Arthur Terlinden, Rheinhausen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed June 26, 1968, Ser. No. 740,200
Claims priority, application Germany, July 4, 1967, 1,567,955
Int. Cl. C01b 1/08
U.S. Cl. 204—99 5 Claims

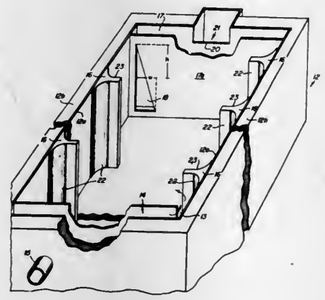
Method of regulating voltage and eliminating short circuits between electrodes in cells used for electrolysis

of alkali metal chloride, by the steps of establishing a reference voltage derived from a component uneffected by load and a component proportional to the electrolysis current of the cell such that the reference voltage simu-



lates the cell voltage throughout the entire load range, continuously comparing automatically the cell voltage with the reference voltage, and adjusting the cell voltage in dependence upon deviations from the reference voltage.

3,558,455
ELECTROLYTE-CIRCULATING, ELECTROLYTIC CELL
Wayne R. Sorensen and William M. Tuddenham, Salt Lake City, Utah, assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York
Filed Mar. 4, 1968, Ser. No. 710,153
Int. Cl. B01k 3/00; C22d 1/00, 1/02
U.S. Cl. 204—105 15 Claims



An electrolytic cell constructed for effective circulation of electrolyte relative to the electrodes. Electrolyte-deflecting stub baffles or fins are provided for the respective cathodes at corresponding locations alternating between opposite sides of the cell. Each deflector has a flow-deflecting surface, leading from a side wall of the cell to an area near the adjacent end of a corresponding cell cathode. Such surface preferably comprehends both faces of the cathode in its sweep, with its tip extending to or slightly overlapping the cathode. The electrolyte inlet to and outlet from the cell are advantageously of special formation, as are the deflectors themselves.

3,558,456
PREPARATION OF NITRONIUM PERCHLORATE
Julian Lakritz, Rahway, and John R. Lovett, Edison, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Feb. 2, 1960, Ser. No. 6,319
Int. Cl. B01j 1/10; C01b 7/02
U.S. Cl. 204—157.1 3 Claims

1. The method for preparing nitronium perchlorate which comprises, forming a gaseous reaction mixture by adding to a gaseous stream of ozonized oxygen an amount of chlorine dioxide gas which is just kept from turning the resulting mixed stream to a yellow green color, said yellow green color being caused by adding an excess of chlorine dioxide, and adding to said stream of ozonize oxygen and chlorine dioxide, a stream of nitrogen tetroxide gas in an amount which makes the resulting mixture have a brownish color as the resulting mixture flows through a reaction zone, but adjusted to just below the point at which the brownish color appears in the resulting gaseous product stream leaving the reaction zone, reacting the ozone with the chlorine dioxide and with the nitrogen tetroxide in said reaction zone at a reaction temperature in the range of 10° to 35° C. under anhydrous reaction conditions in a reaction period of about 2 seconds to about 1 minute to form nitronium perchlorate which is carried as a solid white product by the effluent gas stream from said reaction zone.

3,558,457
HYDROXYSULFONATE PRODUCTION
Clarence L. Furrow, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed May 22, 1967, Ser. No. 640,376
Int. Cl. B01j 1/10; C07c 143/10
U.S. Cl. 204—158 7 Claims

Improved yields of hydroxysulfonates are obtained by contacting an epoxide and a bisulfite in the presence of a chemical free radical initiator or electromagnetic radiation of 1000–8000 angstroms. The hydroxysulfonates produced are desirable detergent surfactants.

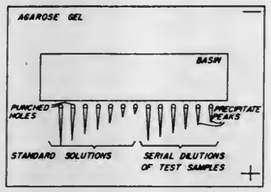
3,558,458
PREPARATION OF AROMATIC ACIDS
Herman S. Bloch, Skokie, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Feb. 12, 1968, Ser. No. 704,564
B01j 1/10; C07c 63/00
U.S. Cl. 204—158 9 Claims

Aromatic acids are prepared by treating an alkyl aryl ketone with water at an elevated temperature in the presence of a reaction promoting agent. The reaction promoting agent may comprise an alkaline catalyst, a transistion metal salt, or actinic light.

3,558,459
DIAGNOSTIC AGENTS AND METHOD FOR IMMUNO-ELECTROPHORETIC ASSAY OF MAMMALIAN GAMMA GLOBULINS
Bengt Ragnar Gustaf Granstrand, Vallentuna, and Nils Hugo Vihelm Nihlen, Bromma, Sweden, assignors to AB Kabi, Stockholm, Sweden, a corporation of Sweden
Filed Nov. 13, 1967, Ser. No. 682,231
Claims priority, application Sweden, Nov. 25, 1966, 16,212/66
Int. Cl. B01d 13/00
U.S. Cl. 204—180 10 Claims

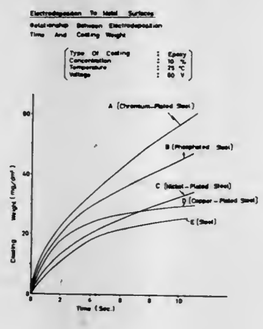
A method of enhancing the electrophoretic mobility of immunologically adequate mammalian source anti-

gamma globulins without impairment of the immunological reactivity, comprising admixing said antigamma



globulins with an aliphatic acylating agent whereby said globulins are chemically blocked.

3,558,460
PROCESS FOR SURFACE TREATMENT OF STEEL STRIP
Hiromu Uchida, Hideshi Sato, and Takashi Ihara, Himeji-shi, Japan, assignors to Nippon Steel Corporation, Tokyo, Japan
Filed Jan. 23, 1967, Ser. No. 611,064
Claims priority, application Japan, Jan. 26, 1966, 41/4,488
Int. Cl. B01k *5/02;* **C23b** *13/00*
U.S. Cl. 204—181 **5 Claims**

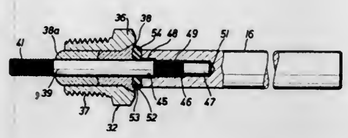


A process for the surface treatment of steel strip by passing a steel strip containing a chromic acid coating through a tank and electrodepositing on said strip an organic film. The film is applied while the strip is moving at high speed. The resulting strip is characterized by improved properties, i.e., improved corrosion resistance, ease of fabrication, etc.

3,558,461
THIN FILM RESISTOR AND PREPARATION THEREOF
George I. Parisi, Murray Hill, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Oct. 28, 1968, Ser. No. 771,001
Int. Cl. C23c *15/00*
U.S. Cl. 204—192 **5 Claims**

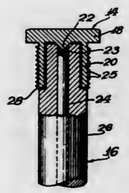
Thin film tantalum based resistors evidencing a temperature coefficient of resistance of −200 p.p.m./° C. and the attributes of tantalum nitride (Ta_2N) resistors are obtained by reactive sputtering of tantalum in the presence of oxygen and nitrogen followed by anodization and thermal pre-aging of the resultant deposited film. Resistors so fabricated match the positive temperature coefficient of capacitance of β-tantalum capacitors, thereby permitting the preparation of tantalum nitegrated circuits with a small and constant frequency response over a wide range of temperature.

3,558,462
PROBE ASSEMBLY FOR CORROSION TESTS
Homer M. Wilson, Houston, Tex., assignor to Petrolite Corporation, St. Louis, Mo., a corporation of Delaware
Filed Oct. 3, 1968, Ser. No. 764,884
Int. Cl. G01n *27/46*
U.S. Cl. 204—195 **7 Claims**



This specification discloses a metallic test probe assembly having a body containing a plurality of passageways which carry insulating members with glass elements. Metallic terminal pins extend through the glass elements and mount field replaceable identical metallic electrodes in side-by-side relationship. Insulating fluid seals are engaged in fluid tightness between the end surfaces of the glass elements and the electrodes. Electrically conductive means interconnect the pins to form circuits through the electrodes during polarization measurements. The conductive means are insulated from one another and the test probe body. The probe assembly may be readily installed in any piping system carrying corrosive fluids without introducing any weakness into such piping. The probe assembly does not require a recalibration of measuring facilities after electrode replacement.

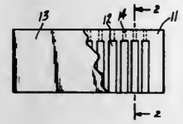
3,558,463
WATER HEATER TANK ANODE CONSTRUCTION
Carl G. Strobach, Clarendon Hills, and William E. Fahey, Oak Lawn, Ill., assignors, by mesne assignments, to Rheem International, Inc., a corporation of Delaware
Filed Feb. 7, 1968, Ser. No. 703,681
Int. Cl. C23f *13/00*
U.S. Cl. 204—197 **4 Claims**



A water tank anode assembly is connected to a coupling in a water tank wall to provide a secure mechanical and electrical connection between the tank and the anode assembly. The anode assembly includes an anode

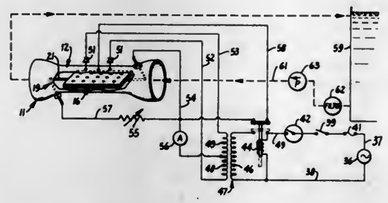
and a cap. The cap has a threaded outer cylindrical portion screwed into the tank coupling. A conical projection on the interior of the anode cap is imbedded in a center conducting rod of the anode to provide electrical contact between the cap and anode. The anode material surrounding the rod is mechanically and electrically connected with the interior of the cylindrical section of the cap by threads and a conductive adhesive material. Alternatively the conductive adhesive alone insures the interconnection of the cap and anode.

3,558,464
ELECTROLYTIC CELL WITH SLOTTED ANODE
Peter A. Danna, Milford, Conn., assignor to Olin Corporation, a corporation of Virginia
Filed Mar. 25, 1968, Ser. No. 715,688
Int. Cl. C22d *1/04*
U.S. Cl. 204—219 **10 Claims**



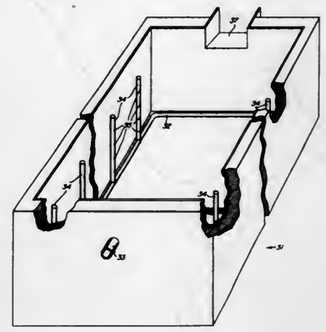
Novel anodes for use in electrolytic cells have generally vertical slots in the lower portion of the anode which are open at the bottom of the anode and closed at the ends of the slots with a plurality of gas conducting channels connecting the top of the slots with the upper surface of the anode.

3,558,465
ELECTROLYTIC CELL
Donald Colvin, San Francisco, and Vernon A. Schultz, El Sobrante, Calif., assignors to Simplex Manufacturing Co., Richmond, Calif., a corporation of California
Continuation-in-part of applications Ser. No. 378,411, June 26, 1964, and Ser. No. 536,439, Mar. 22, 1966. This application Apr. 15, 1968, Ser. No. 721,501
Int. Cl. B01k *3/00, 3/04*
U.S. Cl. 204—228 **15 Claims**



An electrolytic cell for making chlorine solutions from aqueous chloride solutions for chlorinating swimming pools and designed for self-descaling of the cathode, in which the cathode is formed with its active cathodic surface containing a metal between zinc and magnesium inclusive in the electromotive series such as zinc, aluminum and magnesium, and the anode contains a member of the platinum family at the active anodic surface thereof, said cell also having circuit means for intermittently impressing a direct electric potential between said anode and said cathode, with the circuit also being adapted to provide a controlled circuit between the anode and cathode when the electric potential is turned off.

3,558,466
ELECTROLYTIC CELL
Joseph M. Lebrizzi, Salt Lake City, and Daniel M. Lewis, Magna, Utah, and Kent F. Marquardson, Kearny, Ariz., assignors to Kennecott Copper Corporation, New York, N.Y., a corporation of New York
Filed Mar. 4, 1968, Ser. No. 710,040
Int. Cl. B01k *3/00*
U.S. Cl. 204—275 **11 Claims**

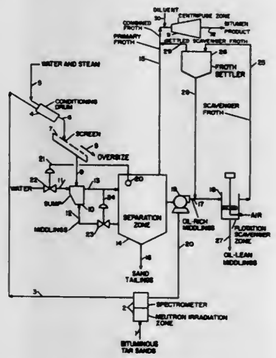

5'
3'
1'
3'
3'
3

the deposition chamber in a further evacuable region. The further region is reduced in pressure when a radio frequency voltage is applied to the electrode so as to prohibit earthy discharges.

3,558,468
METHOD OF EXTRACTING MATERIALS
William S. D. Wise, Cheltenham, England, assignor to Coal Industry (Patents) Limited, London, England
No Drawing. Filed June 13, 1969, Ser. No. 833,183
Claims priority, application Great Britain, June 21, 1968, 29,744/68
Int. Cl. C10g *1/00*
U.S. Cl. 208—8 **11 Claims**

A carbonaceous material e.g. coal or coal tar, is treated with a fluid e.g. benzene or ethylene respectively, at supercritical conditions to extract part or all of the carbonaceous content which is subsequently released by reducing the pressure.

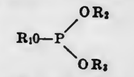
3,558,469
HOT WATER PROCESS
Chester N. White, Moylan, and Junior West Loveland, Media, Pa., assignors to Great Canadian Oil Sands Limited, Toronto, Canada, a corporation of Canada
Filed July 9, 1968, Ser. No. 743,500
Int. Cl. C10q *1/04*
U.S. Cl. 208—11 **10 Claims**



The specification discloses a method of determining the processability of bituminous tar sands and regulating the amount of water mixed with tar sands in a hot water process according to the determined ease of processability of the sands. By the invention the aluminum content of the sands is determined and related to the clay content of the sands. The sands clay content is used as a variable for determining the amount of water and reagent to be mixed with the sands in the hot water process.

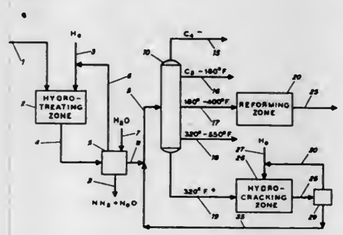
3,558,470
ANTIFOULANT PROCESS USING PHOSPHITE AND ASHLESS DISPERSANT
Bruce G. Gillespie, Cranford, and Jack Ryer, East Brunswick, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 694,039, Dec. 28, 1967. This application Nov. 25, 1968, Ser. No. 778,751
Int. Cl. C10g *9/16*; C10l *1/26*; C23f *14/00*
U.S. Cl. 208—48 **13 Claims**

Mineral hydrocarbon feedstocks which are subjected to elevated temperatures of the order of 200° to 1300° F. and which have a tendency to form deposits by reason of such heating have added thereto minor amounts, of the order of 1 to 400 parts per million by weight, as a pretreatment, of a condensation product of a long chain alkyl or alkenyl monocarboxylic acid, dicarboxylic acid or anhydride thereof, having a number average molecular weight between about 600 and about 5000, and at least one polyalkylene polyamine and an additional small amount of a phosphorous acid or a mono-, di- or triorganic phosphite ester having the formula:



wherein R_1 is hydrogen or a hydrocarbon radical such as alkyl, aryl, alkaryl, cyclo alkyl, alkenyl, aralkyl or simple chlorinated substituents thereof and R_2 and R_3 are hydrogen or are selected from the same group as shown for R_1. Best antifoulant results are obtained where the condensation product and the phosphorous compound as admixtures or as the prereacted compound of these two types of additives are added to those feedstocks which contain oxidized hydrocarbons and/or unsaturated hydrocarbons.

3,558,471
HYDROTREATING CATALYST COMPRISING AN ULTRASTABLE CRYSTALLINE ZEOLITIC MOLECULAR SIEVE COMPONENT, AND METHODS FOR MAKING AND USING SAID CATALYST
James R. Kittrell, El Cerrito, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed Sept. 13, 1968, Ser. No. 759,672
Int. Cl. C10g *13/04*
U.S. Cl. 208—59 **17 Claims**

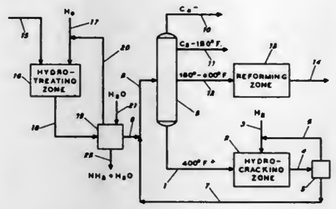


A catalyst comprising an ultra-stable crystalline zeolitic molecular sieve component substantially free of any catalytic metal or metals, a silica-containing gel component, a Group VI hydrogenating component, and a Group VIII hydrogenating component, and methods for making and using said catalyst.

3,558,472
HYDROCRACKING CATALYST COMPRISING A CRYSTALLINE ZEOLITIC MOLECULAR SIEVE COMPONENT, A GROUP VIII COMPONENT AND RHENIUM, AND PROCESS USING SAID CATALYST
James R. Kittrell, El Cerrito, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 737,964, June 18, 1968. This application Sept. 24, 1968, Ser. No. 762,089
Int. Cl. C10g *11/02*
U.S. Cl. 208—60 **9 Claims**

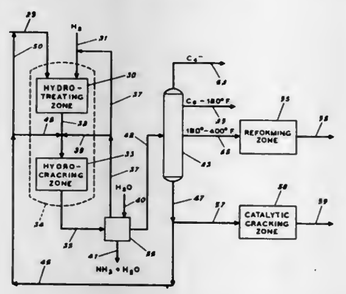
A hydrocracking catalyst comprising a crystalline zeolitic molecular sieve cracking component, 0.01 to 2.0 weight percent, based on said cracking component and calculated as the metal, of a hydrogenating component selected from platinum, palladium and iridium and compounds of platinum, palladium and iridium, and 0.01 to

2.0 weight percent, based on said cracking component and calculated as the metal, of a hydrogenating component



selected from the group consisting of rhenium and compounds of rhenium, and processes using said catalyst.

3,558,473
HYDROCRACKING CATALYST COMPRISING A LAYERED CLAY-TYPE CRYSTALLINE ALUMINOSILICATE COMPONENT, A GROUP VIII COMPONENT AND MANGANESE OR TECHNETIUM, AND PROCESS USING SAID CATALYST
Sigmund M. Csicsery, Lafayette, and James R. Kittrell, El Cerrito, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Filed Mar. 24, 1969, Ser. No. 809,617
The portion of the term of the patent subsequent to Oct. 20, 1987, has been disclaimed
Int. Cl. C10g *37/02*
U.S. Cl. 208—60 **22 Claims**

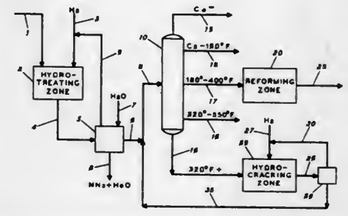


A hydrocracking catalyst comprising a layered clay-type crystalline aluminosilicate cracking component, 0.01 to 2.0 weight percent, based on said cracking component and calculated as the metal, of a hydrogenating component selected from platinum and compounds thereof, palladium and compounds thereof, and iridium and compounds thereof, and 0.01 to 10.0 weight percent, based on said cracking component and calculated as the metal, of a hydrogenating component selected from the group consisting of manganese and compounds thereof and technetium and compounds thereof, and processes using said catalyst.

3,558,474
SLURRY PROCESS FOR HYDROREFINING PETROLEUM CRUDE OIL
William K. T. Gleim, Island Lake, and John G. Gatsis, Des Plaines, Ill., assignors to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed Sept. 30, 1968, Ser. No. 763,923
Int. Cl. C10g *13/02*
U.S. Cl. 208—108 **5 Claims**

A catalytic slurry process for hydrorefining a hydrocarbonaceous charge stock containing hydrocarbon-insoluble asphaltenes. The slurry is a mixture of the charge stock and from about 1.5% to about 25.0% by weight of finely-divided solid particles of nonstoichiometric vanadium sulfide. The process is effected continuously, and preferably in an upflow system wherein the slurry is introduced at a lower portion of a reaction chamber, and the product effluent withdrawn from an upper portion.

3,558,475
HYDROTREATING CATALYST AND PROCESS
Joseph Jaffe, Berkeley, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 757,430, Sept. 4, 1968, which is a continuation-in-part of application Ser. No. 749,836, Aug. 2, 1968. This application Dec. 8, 1969, Ser. No. 883,184
Int. Cl. C10g *13/02*
U.S. Cl. 208—111 **13 Claims**



A catalyst comprising a crystalline zeolitic molecular sieve component substantially free of any catalytic metal or metals, a silica-containing gel component, a Group VI hydrogenating component and a Group VIII hydrogenating component, and processes using said catalyst.

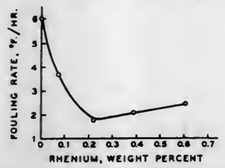
3,558,476
CATALYTIC CRACKING PROCESS
Leroy V. Robbins, Jr., Joseph S. Anderson, and Clark E. Adams, Baton Rouge, La., assignors to Esso Research and Engineering Company, a corporation of Delaware
Continuation-in-part of application Ser. No. 453,617, May 6, 1965. This application June 12, 1968, Ser. No. 744,287
Int. Cl. C10g *11/02*
U.S. Cl. 208—120 **30 Claims**

A hydrocarbon conversion catalyst composition comprising a physical admixture of a conventional, amorphous, silica-containing cracking catalysts and a crystalline alumino-silicate zeolite suspended in an inorganic oxide gel matrix. The catalyst is particularly useful in the catalytic cracking of hydrocarbon feeds. When so used, the catalyst composition is more active and more selective than would be predicted from a consideration of its relative composition.

3,558,477
REFORMING WITH A PLATINUM-RHENIUM CATALYST
Harris E. Kluksdahl, San Rafael, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
Continuation-in-part of application Ser. No. 639,719, May 19, 1967, which is a continuation-in-part of application Ser. No. 560,166, June 21, 1966, now abandoned. This application May 14, 1968, Ser. No. 729,079
The portion of the term of the patent subsequent to Dec. 10, 1985, has been disclaimed
Int. Cl. C10g *35/08*
U.S. Cl. 208—138 **4 Claims**

A reforming process utilizing as a catalyst a composition of matter comprising a porous solid carrier in association with 0.1 to 3.0 weight percent platinum, and 0.1 to 3.0 weight percent rhenium with a rhenium to platinum

atomic ratio of less than 1.0. The platinum and rhenium are disposed on the surface of the carrier by impregnation



with water soluble compounds of the metals, followed by simultaneous reduction of the compounds.

3,558,478
LUBRICATION SYSTEM AND OIL FILTER THEREFOR
Jerome Geyer, Elizabeth, and Shih-En Hu, Westfield, N.J., assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Feb. 11, 1969, Ser. No. 798,431
Int. Cl. C10m *11/00;* **B01d** *39/00*
U.S. Cl. 208—179 **14 Claims**

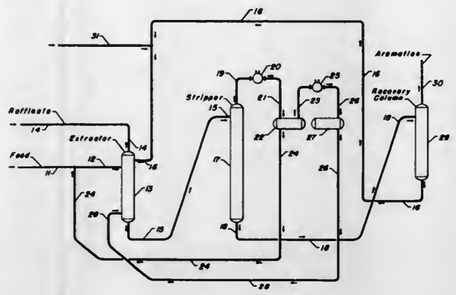
Lubricating oil used in internal combustion engines involves the circulation and recirculation of the oil from the engine through an oil filter and the return of the filtered oil to the engine. The novel system and treatment contains a filter cartridge within the filter chamber which cartridge is charged with retained discrete particles of at least one relatively oil-insoluble solid inorganic compound selected from the group consisting of the iodides of alkali metal and alkaline earth metals, including magnesium, with or without their admixture with transition metal compounds and/or inorganic compounds containing reducing anions such as those containing sulfur or phosphorus therein. The passage of the circulating oil in the system may be, optionally, through a chamber in the circulating oil system which is ahead of or after the oil filter, which chamber retains the solid discrete particles of such a compound or mixture of compounds and in place of or in addition to such compounds being placed within the oil filter.

3,558,479
LOW PRESSURE REGENERATIVE REFORMING PROCESS FOR HIGH PARAFFIN FEEDS
Robert L. Jacobson, Pinole, and Robert D. Vanselow, Kensington, Calif., assignors to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 740,566, June 27, 1968. This application June 16, 1969, Ser. No. 833,777
Int. Cl. C10g *35/08*
U.S. Cl. 208—139 **9 Claims**

A naphtha feed containing at least 50 volume percent paraffins is reformed to high octane gasoline products at a pressure less than about 100 p.s.i.g. in the presence of hydrogen with a catalyst comprising from 0.01 to 3 weight percent platinum and 0.01 to 5 weight percent rhenium associated with a porous inorganic oxide. The reforming process is periodically discontinued to permit regeneration of the catalyst to restore substantially its initial activity.

3,558,480
LIGHT AND HEAVY REFLUX STREAMS IN SOLVENT EXTRACTION OF AROMATICS
Donald B. Broughton, Evanston, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed Oct. 28, 1968, Ser. No. 771,246
Int. Cl. C10g *21/22*
U.S. Cl. 208—318 **2 Claims**

Process for separating and recovering aromatic hydrocarbons, such as benzene, from a hydrocarbon feed mixture via an improved solvent extraction technique. The preferred solvent comprises sulfolane and the extraction

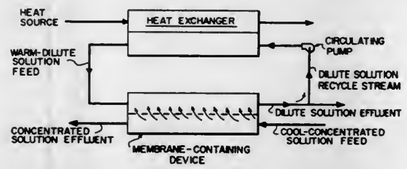


zone is refluxed with a specific non-aromatic hydrocarbon stream.

ERRATUM

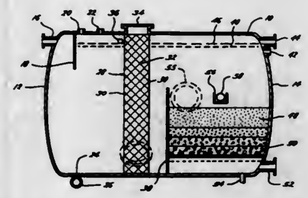
For Class 210—17 see:
Patent No. 3,557,954

3,558,481
METHOD FOR THE SEPARATION OF LIQUIDS
William Thomas Furgerson, 20 Rainier Court, York, Pa. 17402
Filed Feb. 4, 1969, Ser. No. 796,452
Int. Cl. B01d *13/00*
U.S. Cl. 210—22 **3 Claims**



An improved method and apparatus for separating a solvent from the solution which comprises imposing a temperature difference between a more concentrated and less concentrated solution separated by a permeable membrane thereby creating a free energy driving force.

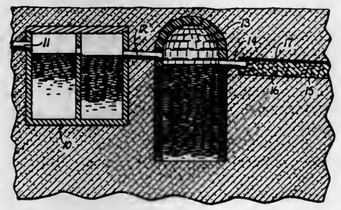
3,558,482
WATER PURIFICATION
Charles E. De Young, Houston, Tex., assignor to Smith Industries, Inc., Houston, Tex., a corporation of Texas
Filed July 31, 1968, Ser. No. 749,146
Int. Cl. B01d *13/00*
U.S. Cl. 210—23 **13 Claims**



A system and method for removal of oil, sand and other impurities from water, wherein water containing such impurities is moved at a very low velocity to allow

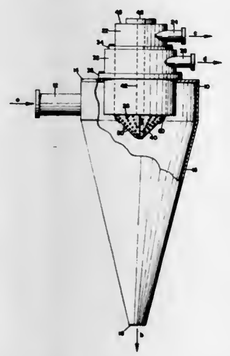
heavy solid particles to drop out and light solid particles to float to the surface where they may be removed, the water then being passed through a filter wall which is preferentially wetted by oil so that diffused oil particles in the water will coalesce on the filter material to make large oil particles which are washed loose from the filter material. These large oil particles are then directed upwardly toward an oil layer on top of the water, and the water is then moved downwardly at a velocity lower than the escape velocity of the oil particles, thereby allowing the oil particles to float upwardly to the oil layer. The water is then preferably passed through a granular filter bed of graphite or the like before being removed from the container as clean water.

3,558,483
CHEMICAL TREATING PROCESS FOR SEWAGE SYSTEMS
Paul T. Dodgson, 5239 N. Sequoia Drive, Fresno, Calif. 93785
Filed Feb. 6, 1969, Ser. No. 796,998
Int. Cl. C02c *1/40*
U.S. Cl. 210—62 **5 Claims**



A process for treating sewage disposal systems having a septic tank and subterranean passageways for dispersing digested sewage, the process including emulsifying a chlorinated benzene, passing the emulsified chlorinated benzene through the septic tank for application to the passageways for restoring the dispersing properties thereof.

3,558,484
SEPARATING APPARATUS
Wayne F. Carr, Rte. 2, Branson Road, Oregon, Wis. 53575
Filed Dec. 11, 1969, Ser. No. 884,188
Int. Cl. B04c *5/10*
U.S. Cl. 210—512 **1 Claim**



A means and method for controlling the separation of good fibers from fiber bundles and mineral dirt, within a centrifugal separator, by disposing within the accept flow path a screen for separating elements or impurities of a higher specific gravity and/or greater shape than that of the accepted mixture.

3,558,485
FIRE FIGHTING COMPOSITION COMPRISING AN ASBESTOS CONTAINING SLURRY
John E. Skvarla, Lewiston, N.Y., assignor to Union Carbide Corporation, New York, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 556,586, June 10, 1966. This application July 2, 1969, Ser. No. 838,679
Int. Cl. A62c *3/02*
U.S. Cl. 252—7 **3 Claims**

A method of reducing the flammability of forests, shrubbery, grass and the like by coating such materials with an asbestos containing slurry.

3,558,486
FIRE FIGHTING COMPOSITIONS WITH ASBESTOS THICKENING AGENT
William W. Morgenthaler, Maryland Heights, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
No Drawing. Filed May 6, 1968, Ser. No. 727,050
Int. Cl. C09k *3/28*
U.S. Cl. 252—8.1 **9 Claims**

A fire retardant composition is disclosed which comprises from about 10% to about 50% of a particular type of asbestos and from about 50% to about 90% of a fire retardant salt, the weight ratio of the asbestos to salt being from about 1:1 to about 1:10. Aqueous mixtures containing specified levels of the fire retardant compositions have a suitable viscosity which enables the mixtures to impart effective fire retardancy to combustible objects when such mixtures are dropped from the air.

3,558,487
DRILLING FLUID ADDITIVES
Charles A. Stratton, Copan, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Dec. 31, 1963, Ser. No. 334,906
Int. Cl. C10m *3/34*
U.S. Cl. 252—8.5 **17 Claims**

Improved well drilling fluids containing a small but effective amount of a thinning agent selected from the group consisting of certain sulfonated polyhydric phenols and certain sulfonated polyhydric naphthols capable of being oxidized to a quinone, certain metal salts of said phenols and said naphthols, and oxidation products obtained upon oxidation of said phenols, said naphthols, and said metal salts of said phenols and said naphthols; and methods of drilling a well using said drilling fluids.

3,558,488
PROTECTIVE AND LUBRICATING COMPOSITION
Howard G. Mann, Seal Beach, Calif., assignor to North American Rockwell Corporation
No Drawing. Filed Mar. 7, 1968, Ser. No. 711,183
Int. Cl. C10m *5/02*
U.S. Cl. 252—28 **12 Claims**

A composition comprising a mixture of boron nitride powder and colloidal silica in a substantially volatile carrier is described. This material is coated on a beryllium surface and the volatile carrier evaporated to leave a dry film lubricant. The dry film lubricant is particularly useful for high temperature forming of beryllium and in

addition provides oxidation protection thereby obviating need for a protective environment and minimizing safety hazards.

3,558,489
EMULSIFIABLE LUBRICATING COMPOSITIONS
Howard J. Matson, Harvey, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Feb. 14, 1968, Ser. No. 705,286
Int. Cl. C10m *3/40*
U.S. Cl. 252—32.5 **11 Claims**

An oil-in-water emulsion having superior lubricating and cooling properties is comprised of about 50–99 weight percent water and about 1 to 50 weight percent of an oleaginous component containing a mineral oil, an unsaturated fatty ester of a monohydric alcohol, and an alkanolamine salt of an aliphatic alcohol polyalkyleneoxy phosphate ester acid. It is preferred that the mineral oil have a viscosity of about 100 to 2000 SUS at 100° F., and typically the alkanolamine used to form the salt of the phosphate ester can be triethanolamine. The viscosity of the emulsion and an improvement in its adhesive properties can be obtained by including a hydrocolloid in the water of the emulsion.

3,558,490
STYRYL PHOSPHORODITHIOATE ESTERS TO BE USED AS ANTIOXIDANTS IN LUBRICATING OIL
Warren Lowe, El Cerrito, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed May 31, 1968, Ser. No. 733,310
Int. Cl. C10m *1/48, 3/42*
U.S. Cl. 252—46.6 **6 Claims**

Styryl esters of O,O-di(alkylphenyl) phosphorodithioic acid are provided as antiwear and antioxidant agents for high temperature surfaces in lubricating oils.

3,558,491
LUBRICATING OIL COMPOSITIONS
Benjamin T. Fowler, Abingdon, and Eric J. Lewis, Wantage, England, assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Nov. 15, 1967, Ser. No. 684,900
Claims priority, application Great Britain, Nov. 21, 1966, 52,043/66
Int. Cl. C10m *1/44*
U.S. Cl. 252—49.8 **13 Claims**

This invention relates to a process for the preparation of phosphorus-containing di-, tri-, tetra-, and hexa-esters, and complex esters by reaction of carboxylic acid esters with phosphorus containing acid, the resulting phosphorus-containing esters per se, and the use of said phosphorus-containing esters as load-carrying agents for lubricating oils, particularly ester lubricating oils.

3,558,492
FERROMAGNETIC CHROMIUM OXIDE RECORDING MEMBERS AND COMPOSITIONS STABILIZED WITH TERTIARY AMINE-CONTAINING POLYMERS
Stephen Proskow, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Continuation-in-part of application Ser. No. 665,022, Sept. 1, 1967, which is a continuation-in-part of application Ser. No. 661,379, Aug. 17, 1967. This application June 11, 1969, Ser. No. 832,080
Int. Cl. G03g *9/02, 13/08;* **H01f** *1/37*
U.S. Cl. 252—62.54 **40 Claims**

Described are magnetic recording members containing a ferromagnetic chromium oxide dispersed in a non-magnetic organic polymeric binder system having improved stability achieved by incorporation in the binder of a basic synthetic polymer having tertiary amino nitrogen and the compositions of matter useful for making the recording members (and other magnetic devices).

3,558,493
LITHIUM FERRITES
Donald G. Wickham, Malibu, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California
No Drawing. Filed May 5, 1969, Ser. No. 821,957
Int. Cl. C04b *35/26;* **C01d** *11/02;* **C01g** *49/00*
U.S. Cl. 252—62.61 **4 Claims**

In making lithium ferrites wherein lithium carbonate or oxide is combined with an iron oxide, processing time is materially reduced by incorporating lithium chloride in the mixture. The lithium chloride causes the lithium carbonate to become very reactive and attack the iron oxide rapidly. After firing to form the desired lithium ferrite, the lithium chloride is dissolved out of the mass with water or other solvent.

3,558,494
ETHYLENE PROPYLENE COPOLYMER SYNTHETIC INSULATING OILS AND PROCESSES FOR MAKING THEM
Henri Gourlaouen and Marcel Ostyn, Mont-Saint-Aignam, Seine-Maritime, France, assignors to Esso Research and Engineering Company, a corporation of Delaware
No Drawing. Filed Oct. 25, 1968, Ser. No. 770,844
Claims priority, application France, Oct. 25, 1967, 125,874
Int. Cl. C07c *3/18, 5/02;* **H01b** *3/22*
U.S. Cl. 252—63 **17 Claims**

Ethylene/propylene copolymers prepared in the presence of organo metallic catalysts are distilled and the fraction distilling above 450° C. is hydrogenated to form a dielectric oil.

3,558,495
MULTI-PURPOSE CLEANER
Harry W. Mace, Milford, Conn., assignor to Aerosol Techniques Research Center, Inc., Milford, Conn., a corporation of New York
Filed Jan. 24, 1969, Ser. No. 793,795
Int. Cl. C11d *17/08*
U.S. Cl. 252—90 **2 Claims**

A valved tin-plated aerosol can containing a pressurized gas propellant and a multi-purpose liquid cleaning composition which is dispensed in the form of a stable pressure-breakable foam. The composition is composed of a critically proportioned mixture of a triethanolamine lower alkyl (C8–12) benzene sulphonate, sodium orthosilicate, tetrapotassium pyrophosphate, a diethanolamine-fatty acid amide wherein the fatty acid is lauric acid and/or cocoa acid, ethylene glycol monobutylether, ortho phenyl phenol, 4-chloro-2-cyclopentyl phenol, a volatile hydrocarbon containing 8–11 carbon atoms and water.

3,558,496
THICKENED LIQUID BLEACH AND PROCESS FOR PREPARING SAME
Barney Joseph Zmoda, 999 Carteret Road, Somerville, N.J. 08876
No Drawing. Filed Nov. 13, 1967, Ser. No. 682,640
Int. Cl. C11d *7/54*
U.S. Cl. 252—95 **5 Claims**

A bleach solution comprising an inorganic bleach solution such as sodium hypochlorite thickened with a mixture of a clay capable of being positively charged and a clay capable of being negatively charged.

3,558,497
LAUNDRY DETERGENT COMPOSITIONS CONTAINING A PERBORATE AND A PEROXYMONOPERSULFATE
Bernard C. Lawes, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Aug. 3, 1967, Ser. No. 658,287
Int. Cl. C11d *3/65;* **D06l** *3/00*
U.S. Cl. 252—99 **8 Claims**

Solid laundry detergent compositions containing an anionic or non-ionic detergent; an alkaline builder, preferably a phosphate such as sodium tripolyphosphate or tetrasodium pyrophosphate; and 1.5 to 30 weight percent of a mixture of sodium perborate and a water-soluble peroxymonosulfate, in which mixture the weight ratio of peroxymonosulfate active oxygen:perborate active oxygen is from 1:8 to 1:1.

3,558,498
GRANULAR DETERGENT COMPOSITION CONTAINING ENZYMES AND ENVIRONMENTAL CONTROL COMPONENTS
Jean-Pierre D. B. Eymery and Harold H. Beyer, Springfield Township, Hamilton County, Ohio, assignors to The Procter & Gamble Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 29, 1967, Ser. No. 686,403
Int. Cl. C11d *3/04*
U.S. Cl. 252—135 **8 Claims**

Granular detergent composition containing enzymes and environmental control components wherein the environmental control components are selected from the group consisting of sodium perborate trihydrate, anhydrous trisodium phosphate, anhydrous calcium sulfate and mixture thereof; and soluble or dispersible proteins having a molecular weight of between about 5,000 and 1,000,000 in an effective amount to stabilize the enzymes in the granular detergent composition in combination with a component selected from the group consisting of sodium perborate trihydrate, anhydrous trisodium phosphate, anhydrous calcium sulfate and mixtures thereof.

3,558,499
ANTI-REDEPOSITION AGENTS
Thomas J. Galvin and Francis A. Hughes, Wilmington, Del., assignors to Atlas Chemical Industries, Inc., Wilmington, Del., a corporation of Delaware
No Drawing. Continuation of application Ser. No. 528,835, Feb. 21, 1966. This application July 1, 1969, Ser. No. 842,796
Int. Cl. C11d *3/22*
U.S. Cl. 252—137 **8 Claims**

Built detergent compositions containing an anti-redeposition agent selected from the group consisting of graft copolymers of a polymerizable monomer and a water soluble or water dispersible polymeric material or a physical blend of a polymerized monomer and a water soluble or water dispersible polymeric material.

3,558,500
METHOD FOR THE CONTROL OF SCALE USING N,N-DIMETHYLAMIDES OF 18 CARBON UNSATURATED CARBOXYLIC ACIDS
Cecil George Hollis, Germantown, and Richard William Lutey, Memphis, Tenn., assignors to Buckman Laboratories, Inc., Memphis, Tenn., a corporation of Tennessee
No Drawing. Filed Feb. 7, 1968, Ser. No. 703,548
Int. Cl. C02b *5/06;* **C07c** *103/12;* **C08h** *9/00*
U.S. Cl. 252—180 **12 Claims**

The addition of N,N-dimethylamides of 18 carbon unsaturated carboxylic acids to an aqueous system is effective in controlling scale.

3,558,501
PROCESS FOR THE CHLOROHYDRINATION OF ALLYLTRIMETHYLAMMONIUM CHLORIDE
Thomas A. McGuire and Charles L. Mehltretter, Peoria, Ill., assignors to the United States of America as represented by the Secretary of Agriculture
Filed May 1, 1969, Ser. No. 820,754
Int. Cl. C07c *87/30*
U.S. Cl. 252—182 **3 Claims**

Allyltrimethylammonium chloride reacted with hypochlorous acid in aqueous solution at 25° to 32° C. forms a mixture of monochlorohydroxypropyltrimethylammonium chlorides in nearly quantitative yield with essentially no formation of dichloropropyltrimethylammonium chloride. The product is of value for reaction with starch and cellulose to produce industrial cationic polysaccharides.

3,558,502
CHEMILUMINESCENT PROCESS
Alfred F. Tatyrek, Maplewood, and Burton Werbel, West Orange, N.J., assignors to the United States of America as represented by the Secretary of the Army
No Drawing. Filed Nov. 7, 1967, Ser. No. 681,113
Int. Cl. C09k *1/02, 3/00*
U.S. Cl. 252—186 **18 Claims**

In a process of producing light by a tetrakis (dimethylamino) ethylene and oxygen reaction, the improvement of adding an alkali metal, metallic alkyl or metallic hydride thereto to increase the total light output thereof.

3,558,503
STABLE BROMO-SULFAMATE COMPOSITION
Robert D. Goodenough and John Place, Midland, Mich., and Christ F. Parks, Tulsa, Okla., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed July 22, 1968, Ser. No. 746,275
Int. Cl. C01b *11/20;* **C09k** *3/00*
U.S. Cl. 252—187 **12 Claims**

The present disclosure relates to novel bromine solutions and to a process for producing said solutions which comprises treating aqueous solutions of bromine with a nitrogen-containing bromine stabilizer and an alkali metal or alkaline earth hydroxide at controlled pH levels. The resulting solutions are relatively non-corrosive and substantially resistant to degradation and/or decomposition of the bromine values contained therein. The solutions also retain an acceptable capacity for oxidation and bactericidal activity.

3,558,504
METHOD OF PREPARING AN ACTIVE MEDIUM FOR A LIQUID LASER
Charles Brecher, Flushing, and Kenneth W. French, Mineola, N.Y., assignors to General Telephone & Electronics Laboratories Incorporated, a corporation of Delaware
Filed Dec. 5, 1968, Ser. No. 781,471
Int. Cl. C09k *1/04, 1/08*
U.S. Cl. 252—301.4 **11 Claims**

A method for the preparation of a liquid laser medium containing an aprotic phosphorus oxychloride solvent acidified by the addition of a Lewis acid. A rare earth compound is dissolved in the aprotic solvent by the addition of water which reacts with the phosphorus oxychloride to promote solvation of the rare earth ions and increase the concentration thereof. The solution is returned to an aprotic state by distilling off all hydrogen-containing species from the solution. The resultant solution is an active laser medium having a relatively low threshold.

3,558,505
WATER-EMULSIFIABLE COMPOSITION
Adolf Mlot-Fijalkowski, Elmwood Park, Ill., assignor to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware
No Drawing. Filed June 20, 1967, Ser. No. 647,340
Int. Cl. B01j *13/00*
U.S. Cl. 252—312 9 Claims

A water-emulsifiable liquid composition having a non-aqueous oily liquid portion and an emulsifying agent or surfactant mixed therewith to render the composition water-emulsifiable or water-washable, and additionally containing a cyclic terpene alcohol, e.g. alpha terpineol, or a mixture of isomeric tertiary and secondary cyclic terpene alcohols, to increase the water tolerance of said composition to such an extent that a stable, clear or transient liquid emulsion is formed when as much as 5 to 100% by volume of water is incorporated into said composition. The water-emulsifiable liquid composition is particularly adapted for use in the penetrant method of nondestructive testing, either as an emulsifier or as a penetrant (when having dissolved therein a dye or dyes to give the penetrant color under "white" or "black" light).

3,558,506
GELLING MIXTURES FOR SOLUBLE SILICATES
Bernard Bonnel, Lyon, and Ghislain Schwachhofer, Miribel, France, assignors to Progil, Paris, France, a corporation of France
No Drawing. Filed Mar. 17, 1967, Ser. No. 623,820
Claims priority, application France, Mar. 24, 1966, 47,083
Int. Cl. B01j *13/00*; C09j *1/02*; E02d *3/12*
U.S. Cl. 252—316 4 Claims

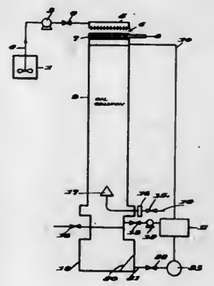
A new gelling mixture for alkali metal silicates to render them suitable for soil consolidation and stabilization, the gelling agent being a mixture of methyl formate, methyl acetate and methyl propionate which may also contain methanol.

3,558,507
METHOD OF FORMING MINIATURE CAPSULES
Ludwig Harbort, Hannover, Germany, assignor to Gunther Wagner Pelikan-Werke, Hannover, Germany
No Drawing. Filed Apr. 4, 1967, Ser. No. 628,279
Claims priority, application Germany, Apr. 15, 1966, W 41,358; May 20, 1966, W 41,622
Int. Cl. B01j *13/02*; B44d *1/02*; C09b *67/00*
U.S. Cl. 252—316 11 Claims

The invention is concerned with the formation of very tiny or miniature capsules which envelop liquid substances that may contain solids such as, for example, soot or pigments. In accordance with the invention, the capsules are formed from a dispersion system which contains a cellulose ester such as, for example, cellulose acetobutyrate, the liquid substance to be encapsulated, a medium, to wit, water, and an alkaline substance which reacts by saponification with the cellulose ester to form a film which is insoluble in the water and in the liquid material to be encapsulated.

3,558,508
PREPARATION OF SPHEROIDAL ALUMINUM OXIDE GELS
Carl D. Keith, Summit, and Kurt W. Cornely, Westfield, N.J., assignors to Engelhard Industries, Inc.
Continuation of application Ser. No. 513,393, Dec. 13, 1965. This application Feb. 4, 1969, Ser. No. 805,086
Int. Cl. B01j *13/00, 11/06, 11/44*
U.S. Cl. 252—317 28 Claims

Spherical aluminum oxide gels are made by feeding drops of a coagulable aqueous slurry of hydrous alumina into a column of a water-immiscible liquid, e.g., mineral oil, which can be maintained at close to ambient temperature. The hydrous alumina is prepared by hydrolysis of finely divided aluminum having a surface area of about 75,000 to 1,000,000 square millimeters per gram, and the hydrolysis medium is acidic from the presence of a non-oxidizing acid for instance, formic acid. The hydrous alumina feed has a ratio of alumina monohydrate to amorphous hydrous alumina of at least 0.5/1 and the alumina monohydrate has a crystallite size of less than 65 A. Ammonia can be added to the column to aid the coagulation. Other solids, for instance, calcined alumina, alumina trihydrate, silica or carbon can be incorporated in the aqueous slurry as can aluminum oxychloride. Drying and calcination of the coagulated hydrous alumina provides adsorptive solids with advantageous characteristics when used, for instance, as catalyst components.



3,558,509
MEANS FOR RAISING THE AUTOGENOUS IGNITION TEMPERATURE OF CARBON DISULFIDE
Tadeusz K. Wlewiorowski, New Orleans, and David J. Miller, Gretna, La., assignors to Freeport Sulphur Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 23, 1967, Ser. No. 610,831
Int. Cl. C23g *5/02*; E21b *43/00*
U.S. Cl. 252—364 17 Claims

The autogenous ignition temperature of carbon disulfide can be elevated above that of pure carbon disulfide by incorporating an amount of from about 0.1% to about 10% by weight, preferably between about 0.2% and 5%, of an additive selected from the class consisting of dimethyl sulfoxide and organic sulfides and disulfides having the formulae RSR′ and RSSR′, respectively, wherein R and R′ are alkyl or alkenyl radicals each containing up to about 5 carbon atoms, inclusive.

3,558,510
METHOD FOR RAISING THE AUTOGENOUS IGNITION TEMPERATURE OF CARBON DISULFIDE
David J. Miller, Gretna, and Tadeusz K. Wlewiorowski, New Orleans, La., assignors to Freeport Sulphur Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Jan. 23, 1967, Ser. No. 610,830
Int. Cl. C23g *5/02*; E21b *43/00*
U.S. Cl. 252—364 5 Claims

The autogenous ignition temperature of carbon disulfide can be elevated above that of pure carbon disulfide by incorporating an amount of from about 0.1% to about 10% by weight, preferably between about 0.2% and 5%, of an additive selected from the class consisting of iodine, bromine and ethyl alcohol.

3,558,511
LUBRICATING OIL COMPOSITION
Calvin F. Rueping, Beaumont, Tex., assignor to Texaco Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Nov. 17, 1967, Ser. No. 683,780
Int. Cl. C01m *1/24, 1/38*
U.S. Cl. 252—37.2 5 Claims

A gear oil composition comprising a major amount of a mineral lubricating oil containing lead napthenate and sulfurized sperm oil as exterme pressure additives, and from 1 to 2.5% by weight of free napthenic acid, based on the weight of the composition, said free acid being effective to improve the water separation properties of the gear oil without degrading oxidation stability and extreme pressure characteristics.

3,558,512
ADDITIVE FOR INHIBITING CAKING AND FREEZING OF SODIUM CHLORIDE AND FOR INHIBITING CORROSION IN THE PRESENCE OF SODIUM CHLORIDE BRINE
Charles H. Jacoby, Grosse Ile, and Frank V. Whelply, Dearborn, Mich., assignors to International Salt Company, Clark Summit, Pa.
No Drawing. Filed May 10, 1966, Ser. No. 548,837
The portion of the term of the patent subsequent to Apr. 16, 1985, has been disclaimed
Int. Cl. C09k *3/18*
U.S. Cl. 252—383 2 Claims

A surface active agent, calcium chloride, ferrocyanide ion and borax admixed to provide an additive for inhibiting caking, freezing and inhibiting corrosion with respect to partculate sodium chloride.

3,558,513
FLUORINATED CYCLOHEXYLAMINE DERIVATIVES AND COMPOSITIONS EMBODYING THE SAME
Maurice S. Baseman, 5890 Hobart St., Pittsburgh, Pa. 15217
No Drawing. Filed July 18, 1967, Ser. No. 654,090
Int. Cl. C23f *11/00*
U.S. Cl. 252—392 7 Claims

The reaction product of hexafluoroisopropanol with monocyclohexylamine or dicyclohexylamine, or mixtures of both, have been produced. These reaction products have been found to be unusually effective as corrosion inhibitors. The reaction products can be used alone or carried in or on the surface of paper, pl stics or other solid materials; they can be added to hydrocarbons, oils, greases, hydraulic fluids and other liquid carriers, either in solution or in suspension, and they prevent rusting of ferrous metals or corrosion of other metals.

3,558,514
REDUCTIVE GAS REGENERATION OF METAL IMPREGNATED COKED CATALYST
Hans U. Schutt, Berkeley, Calif., assignor to Shell Oil Company, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 29, 1968, Ser. No. 725,194
Int. Cl. B01j *11/02*
U.S. Cl. 252—411 5 Claims

A process for non-oxidative regeneration of coked hydroconversion catalysts characterized by incorporating on a coked catalyst a hydrogenation metal compound (preferably in situ) followed by contact with hydrogen and preferably hydrogen plus hydrogen sulfide at elevated temperatures.

3,558,515
COMPLEXES OF Mn, Tc, AND Re WITH ORGANOALUMINUM AS OLEFIN REACTION CATALYSTS
Edmund T. Kittleman and Ernest A. Zuech, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 635,669, May 3, 1967. This application Mar. 28, 1968, Ser. No. 717,026
Int. Cl. C07c *3/62*
U.S. Cl. 252—429 10 Claims

A catalyst active for the olefin reaction including olefin disproportionation comprising a compound of rhenium, manganese or technetium complexed with a selected complexing agent (e.g., triphenylphosphine) and combined with an organoaluminum compound (e.g., ethylaluminum dichloride).

3,558,516
CHOLESTEROL DETERMINATION REAGENT OF FERRIC PERCHLORATE, SULFURIC ACID AND ETHYL ACETATE
Donald R. Wybenga, Alhambra, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed May 8, 1968, Ser. No. 727,700
Int. Cl. G01n *33/16*
U.S. Cl. 252—408 11 Claims

A stable reagent for the determination of cholesterol in biological fluids is prepared by dissolving ferric perchlorate in a mixture of an ester solvent, preferably ethyl acetate, and sulfuric acid. The reagent has improved stability and specificity properties. Methods of preparing the reagent and using it in the determination of cholesterol are disclosed.

3,558,517
COMPLEXES OF Fe, Ru, Os, Rh OR Ir WITH ORGANOALUMINUMS AS OLEFIN REACTION CATALYSTS
William B. Hughes and Ernest A. Zuech, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Continuation-in-part of applications Ser. No. 635,688, May 3, 1967, Ser. No. 696,109, Jan. 8, 1968, and Ser. No. 717,025, Mar. 28, 1968. This application Mar. 24, 1969, Ser. No. 810,021
Int. Cl. C07c *3/62*
U.S. Cl. 252—429 19 Claims

A homogeneous catalyst active for the olefin reaction including olefin disproportionation comprising a compound of ruthenium, iron, osmium, rhodium, or iridium complexed with a selected complexing agent (e.g. triphenylphosphine) and combined with an organoaluminum compound (e.g., methylaluminum sesquihalide).

3,558,518
COMPLEXES OF Mo AND W, CONTAINING NO WITH ORGANOALUMINUMS AS OLEFIN REACTION CATALYSTS
Ernest A. Zuech, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Continuation-in-part of applications Ser. No. 635,700, May 3, 1967, and Ser. No. 694,873, Jan. 2, 1968. This application Mar. 28, 1968, Ser. No. 717,023
Int. Cl. C07c *3/62*
U.S. Cl. 252—429 15 Claims

A catalyst active for the olefin reaction including olefin disproportionation comprising a compound of molybdenum or tungsten complexed with NO and a selected complexing agent (e.g. triphenylphosphine) and combined with an organoaluminum compound (e.g. methylaluminum sesquichloride).

3,558,519
ALUMINUM NICKEL CATALYST COMPOSITION
Nhu Hung Phung, Antony, and Gilles Lefebvre, La-Celle-St.-Cloud, France, assignors to Institut Francais du Petrole des Carburants et Lubrifiants, Rueil-Malmaison, France
No Drawing. Filed Jan. 10, 1968, Ser. No. 696,716
Claims priority, application France, Jan. 11, 1967, 90,771
Int. Cl. C07c *3/10;* C08d *1/14, 3/04*
U.S. Cl. 252—429 2 Claims
A catalytic composition comprising an admixture of at least one compound selected from the group consisting of AlR_2X, $AlRX_2$, $Al_2R_3X_3$, AlR_3, $AlR(OR')X$, $AlR_2(OR')$ and $AlR(OR')_2$ with an organometallic complex resulting from contacting a complex having the formula RPX_4 AlX_3 with a nickel compound, X being a halogen atom and R and R' being monovalent hydrocarbon radicals.

3,558,520
COMPLEXES OF Cu, Ag AND Au WITH ORGANOALUMINUMS AS OLEFIN REACTION CATALYSTS
Donald H. Kubicek and Ernest A. Zuech, Bartlesville, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 635,693, May 3, 1967. This application Mar. 28, 1968, Ser. No. 717,024
Int. Cl. C07c *3/62*
U.S. Cl. 252—429 14 Claims
A catalyst active for the olefin reaction including olefin disproportionation comprising a compound of copper, silver, or gold complexed with a selected complexing agent (e.g., triphenylphosphine) and combined with an organoaluminum compound (e.g., methylaluminum sesquichloride).

3,558,521
ALKOXYALKOXY VANADIUM COMPOUNDS AND THEIR USE IN COORDINATION CATALYSIS
Henry E. Berkheimer, Heritage Park, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Original application June 30, 1966, Ser. No. 561,765, now Patent No. 3,413,325, dated Nov. 26, 1968. Divided and this application June 2, 1968, Ser. No. 735,200
Int. Cl. C08f *15/04, 15/40*
U.S. Cl. 252—431 7 Claims
Coordination catalyst for the polymerization of olefins comprising the reaction product of selected alkoxyalkoxy vanadium compounds having the formula

$$[R—O—Y—O]_bVX_{4-b}$$

where R is alkyl, is alkylene, X is chlorine or bromine and *b* is an integer of 1 to 4 inclusive, mixed with at least six moles of an organoaluminum reducing agent, preferably in the presence of halogen.

3,558,522
HEMATOLOGY CONTROL STANDARD COMPRISING WASHED RED BLOOD CELLS AND SYNTHETIC LATEX PARTICLES
Allan L. Louderback, Temple City, and Young Youbne, Los Angeles, Calif., assignors to Baxter Laboratories, Inc., Morton Grove, Ill., a corporation of Delaware
No Drawing. Filed Mar. 5, 1969, Ser. No. 804,681
Int. Cl. G01n *33/16*
U.S. Cl. 252—408 6 Claims
A hematology control standard for the calibration of blood cell counting apparatus and a method for the preparation thereof by admixing predetermined amounts of washed red blood cells and synthetic latex particles having a 5 to 15 micron particle size range in a fluid suspension of a known amount of serum albumin.

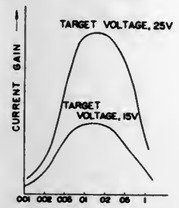
3,558,523
HYDROCARBON ISOMERIZATION CATALYST
Richard E. Rausch, Mundelein, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 819,114, Apr. 24, 1969. This application June 16, 1969, Ser. No. 833,786
Int. Cl. B01j *11/74*
U.S. Cl. 252—439 5 Claims
Isomerizable hydrocarbons are isomerized using a catalytic composite comprising a combination of a platinum group component, a tin component, and a rhenium component with a porous carrier material. A catalytic composite comprising a platinum group component, a tin component, a rhenium component, and a Friedel-Crafts metal halide component combined with a refractory inorganic oxide is also disclosed.

3,558,524
SILICA ADSORBENTS FROM ACID TREATED WOLLASTONITE
Edith M. Flanigen, Buffalo, N.Y., assignor to Union Carbide Corporation, a corporation of New York
Continuation-in-part of application Ser. No. 636,158, May 4, 1967, which is a division of application Ser. No. 460,406, June 1, 1965. This application Aug. 7, 1968, Ser. No. 750,885
Int. Cl. B01j *11/62*
U.S. Cl. 252—450 2 Claims
Amorphous silica-$CaCl_2$ composition adsorbents are derived from wollastonite by leaching with an aqueous hydrochloric acid solution of from 2.5 to 3.0 normality at from 15° C. to 60° C. The adsorbent product is characterized by being readily regenerated.

3,558,525
CATALYST MANUFACTURE METHOD
Edward D. Noble, San Rafael, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware
No Drawing. Filed Oct. 17, 1968, Ser. No. 768,498
Int. Cl. B01j *11/40*
U.S. Cl. 252—453 7 Claims
Method of calcining a hydrogel containing catalyst component precursors, to impart improved properties to the finished catalyst, comprising accomplishing the calcining in a calcination vessel supplied during at least a major portion of the calcination time with not more than 3 cubic feet of purge gas per hour per pound of catalyst.

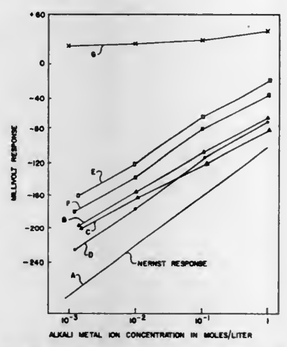
3,558,526
CEMENT MATRIX RADIATION SHIELDING COMPOSITIONS CONTAINING CALCIUM COMPOUNDS
William Cornelius Hall, Albany Turnpike, Central Valley, N.Y. 10917, and John Merriam Peterson, Foleman Road, Rock Tavern, N.Y. 12575
No Drawing. Filed Aug. 1, 1967, Ser. No. 657,494
Int. Cl. C04b *35/68*
U.S. Cl. 252—478 6 Claims
A radiation shielding composition consisting essentially of a material selected from the group consisting of calcium carbonate, calcium oxide, calcium hydroxide, and mixtures thereof uniformly dispersed throughout a cement matrix.

3,558,527
METHOD OF PRODUCING CATHODOCONDUCTIVE TARGET FROM SELENIUM AND AN ALKALI METAL
Eiichi Maruyama, Hachioji-shi, Tokyo-to, Mitsuru Oikawa, Suginami-ku, Tokyo-to, and Tsutomu Komoda, Hachioji-shi, Tokyo-to, Japan, assignors to Kabushiki Kaisha Hitachi Seisakusho, Tokyo-to, Japan, a joint-stock company of Japan
Original application Mar. 25, 1965, Ser. No. 442,587. Divided and this application Sept. 27, 1967, Ser. No. 679,954
Claims priority, application Japan, Apr. 3, 1964, 39/18,548
Int. Cl. H01b *1/00*
U.S. Cl. 252—500 1 Claim



A method of producing a cathodoconductive material from selenium and an alkali metal activator by melting.

3,558,528
ALKALI METAL ION SENSITIVE GLASS
Richard P. Buck, Chapel Hill, N.C., and Robert W. Nolan, South Laguna, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Nov. 4, 1968, Ser. No. 773,171
Int. Cl. C03c *3/04;* H01b *1/06*
U.S. Cl. 252—520 5 Claims



A soda-silicate glass containing about 6 to 9 mole percent of an admixture of ZrO_2 and TiO_2. The glass has exceptionally low electrical resistance and is sensitive to alkali metal ions, such as potassium and sodium ions. The glass is particularly suited for formation into ion sensitive bulbs of glass electrodes utilized for measuring alkali metal ion concentrations of solutions.

3,558,529
URETHANE POLYMERS HAVING IMPROVED STIFFNESS-TEMPERATURE PROPERTIES
Robert D. Whitman, St. Albans, W. Va., and Frederick P. Reding, Stamford, Conn., assignors to Union Carbide Corporation, a corporation of New York
Filed May 3, 1967, Ser. No. 635,746
Int. Cl. C08g *22/44, 22/14*
U.S. Cl. 260—2.5 4 Claims
Urethane polymers are produced from a mixture of incompatible polyols. The mixture contains at least one low molecular weight polyol having a hydroxyl number of from about 420 to about 650 and at least one high molecular weight polyol having a hydroxyl number of from about 34 to 56; the ratio of hydroxyl numbers of the polyols in the mixture being at least 10:1. The urethane polymers are useful as crash padding, insulation, etc.

3,558,530
FOAMED AND FOAMABLE COPOLYMERS
Günter Schröder, Ober-Ramstadt-Eiche, and Wolfgang Ganzler, Darmstadt, Germany, assignors to Rohm & Haas G.m.b.H., Darmstadt, Germany
No Drawing. Filed July 25, 1967, Ser. No. 655,766
Claims priority, application Germany, July 29, 1966, R 43,794
Int. Cl. C08f *15/36, 37/18, 47/10*
U.S. Cl. 260—2.5 12 Claims
Improvement in uniformity of foaming copolymers of (A) acrylic or methacrylic acid and (B) acrylonitrile, acrylamide, methacrylonitrile or methacrylamide and, if desired, (C) additional comonomer in the presence of 3 to 20 percent urea or dimethylurea by dissolving in the monomer mix, before copolymerization, 0.5 to 10 percent by weight of a vinyl copolymer.

3,558,531
PROCESS FOR CLOSED-CELL RIGID POLYURETHANE FOAMS
Ival O. Salyer, Dayton, and Robert T. Jefferson, Carrollton, Ohio, assignors, by mesne assignments, to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Mar. 28, 1968, Ser. No. 716,992
Int. Cl. C08g *41/04*
U.S. Cl. 260—2.5 5 Claims
Isotropic low-density closed-cell rigid polyurethane foams are prepared from polyether polyols and polyisocyanates, using a cyclopentane-acetone mixture as a pneumatogen and finely-powdered polyethylene as a nucleating agent.

3,558,532
METHOD FOR MAKING ETHYLENE POLYMER FOAMS
Donald J. Sundquist and Nicholas W. Howell, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed Apr. 10, 1968, Ser. No. 720,392
Int. Cl. C08f *29/04, 47/10*
U.S. Cl. 260—2.5 7 Claims
The invention relates to improvements in the production of ethylene polymer foams, and pertains especially to nucleating agents for controlling the size of the cells and the resiliency of the foam.

3,558,533
VINYL COMPOSITION AND METHOD OF MAKING SAME
Leo Feit, 49 Daventry Court, Killarney, Johannesburg, Republic of South Africa
No Drawing. Filed Feb. 10, 1969, Ser. No. 798,112
Int. Cl. C08f *47/10;* C08v *1/20*
U.S. Cl. 260—2.5 9 Claims
Vinyl compositions having anti-slip properties, resistance to exudation of plasticizer and high capacity for fillers, pigments and other dry components, comprise (a) 100 parts by weight of vinyl polymer or copolymer; (b) 40 to 180 parts by weight of plasticizers including 1½ to 15 parts by weight of epoxidized oil polyester of a molecular weight of 600 to 1000 and not less than 20 parts by weight of an ester such as butyl benzyl phthalate; (c) ½ to 5 parts by weight of a mixture of 20–80% by

weight of a higher fatty acid ester having 15–19 carbon atoms in the fatty acid chain with the balance para-coumarone-indene resin, petroleum resin, and/or ethylcellulose; and (d) one to 180 parts by weight of fillers, pigments, etc.

3,558,534
MOLDING EXPANDABLE ALKENYL AROMATIC POLYMER BEADS

Michal Niechwiadowicz, 80 Clover Leaf Road, and Arnold B. Finestone, 20 Grove Ave., both of Leominster, Mass. 01453

No Drawing. Continuation-in-part of application Ser. No. 640,396, May 22, 1967. This application Mar. 21, 1969, Ser. No. 809,378

Int. Cl. C08f *47/10*; C08j *1/26*

U.S. Cl. 260—2.5 **8 Claims**

Expandable alkenyl aromatic polymers which do not acquire or retain a static charge are prepared by incorporating a small amount of rubbery polymer into the expandable polymer.

3,558,535
COATING COMPOSITIONS COMPRISING AN EPOXIDIZED FATTY ESTER OF A CYCLIC POLYOL AND AN ACIDIC POLYESTER

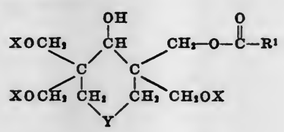
Brian M. Rushton, Minneapolis, and Oliver A. Ossanna, Bloomington, Minn., assignors to Ashland Oil, Inc., Ashland, Ky., a corporation of Kentucky

No Drawing. Filed Sept. 10, 1968, Ser. No. 782,496

Int. Cl. C07d *7/00*; C09d *3/64, 3/74*

U.S. Cl. 260—22 **15 Claims**

An epoxidized fatty acid ester of a cyclic polyol such as that of the formula:



wherein:

X is H or



Y is —O—, —S—, or —CH_2—,

R^1 is an epoxidized fatty radical, such as those derived from tall oil fatty acids.

A composition of matter comprising the above epoxidized fatty esters and an acidic polyester. These compositions of matter are useful as coating compositions and paint substitutes, when applied to substrates.

3,558,536
AQUEOUS LATEX PAINTS INTERNALLY PRIMED WITH HYDROXY FUNCTIONAL PARTIAL ESTERS OF RESINOUS POLYHYDRIC ALCOHOLS

Kazys Sekmakas, Chicago, Ill., assignor to De Soto Inc., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Aug. 16, 1967, Ser. No. 660,930

Int. Cl. C09d *3/80, 5/02*

U.S. Cl. 260—23 **11 Claims**

Synthetic polymer latex coating compositions are internally primed by incorporating in the aqueous phase of the latex an hydroxy functional hydrophilic resin produced by esterifying a resinous polyhydric alcohol, such as a solution copolymer of styrene and allyl alcohol, with a long-chain fatty acid. The fatty acid is used in an amount to esterify at least 25% of the hydroxy groups. Carboxy functionality can be incorporated by adducting unsaturated carboxylic acids with unsaturation in the fatty acid, or by reacting a polycarboxylic monoanhydride with residual hydroxy groups on the polyhydric alcohol. The carboxy functionality is provided in substantial excess of the acidity which is finally desired. Reaction with a stoichiometric deficiency of monoepoxide is then had to reduce the acid number to at least about 70 and to generate hydroxy groups remote from the backbone of the polymer. The hydroxy value is at least 15 and provides the necessary hydrophilicity. The resulting hydrophilic resins can be dispersed in water with the aid of a base in the form of very fine particles despite the low acid number and high proportion of hydrophobic fatty acid.

3,558,537
IMPARTING ANTIFOGGING PROPERTIES TO POLYVINYL CHLORIDE RESINS AND COMPOSITIONS THEREFOR

Arthur C. Hecker, Forest Hills, and Stuart Donald Brilliant, Brooklyn, N.Y., assignors to Argus Chemical Corporation, Brooklyn, N.Y., a corporation of Delaware

No Drawing. Filed Jan. 2, 1968, Ser. No. 694,802

Int. Cl. C08f *29/18, 45/62*

U.S. Cl. 260—23 **16 Claims**

A polyvinyl chloride resin antifogging composition is provided capable of improving the resistance of the resin to fogging, comprising a partial ester of polyglycerol with an unsaturated monocarboxylic aliphatic acid having from about eight to about twenty-four carbon atoms. The polyglycerol partial ester retains at least 25% of its free hydroxyl groups. Othere additives can be incorporated as well, such as a polyvinyl chloride resin epoxy plasticizer, and other heat stabilizers to improve resistance of the resin to heat deterioration. Polyvinyl chloride resin compositions are also provided, comprising such polyglycerol partial ester antifogging agents.

3,558,538
MASTIC COMPOSITIONS BASED ON ETHYLENE-PROPYLENE COPOLYMERS OR ON ETHYLENE-PROPYLENE-NON-CONJUGATED DIENE TERPOLYMERS

Friedrich Wollrab and Maurice Gerkens, Brussels, Belgium, assignors to Solvay et Cie Societe Anonyme, Brussels, Belgium, a Belgian corporation

Filed July 3, 1967, Ser. No. 650,697

Claims priority, application Belgium, July 13, 1966, 30,807; Jan. 16, 1967, 38,515; Mar. 2, 1967, 40,749; Mar. 16, 1967, 41,088

Int. Cl. C08f *37/00*

U.S. Cl. 260—23 **27 Claims**

Non-hardening and surface hardening mastics are provided. The non-hardening mastics are composed of an elastomeric ethylene-propylene copolymer or ethylene-propylene-non-conjugated diene terpolymer, a mineral oil and a filler. The surface hardening mastics are additionally composed of a drying oil.

3,558,539
STABILIZER COMPOSITIONS EMPLOYING FATTY ACID METAL SALTS, EPOXIDIZED MATERIAL, AND ORGANO PHOSPHITES

Perley M. Irish, Jr., Hampden, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Feb. 21, 1968, Ser. No. 707,311

Int. Cl. C08f *29/18, 29/24, 45/62*

U.S. Cl. 260—23 **19 Claims**

A five-component polyvinyl chloride stabilizer system utilizing metal salts of long-chain monocarboxylic fatty acids, epoxidized organic material, tri-substituted organo-monophosphite and tri-substituted organo polyphosphite. The resulting blends, when heat fused to produce articles such as containers, display superior processing stability.

3,558,540
PLASTIC IMPRESSION COMPOSITIONS

Eugene J. Molnar, 713 S. Stone Ave., La Grange, Ill. 60525

No Drawing. Continuation-in-part of application Ser. No. 607,883, Jan. 9, 1967. This application Nov. 13, 1968, Ser. No. 775,489

Int. Cl. C08f *21/04, 45/34*

U.S. Cl. 260—23 **6 Claims**

New plastic compositions are disclosed which can be used for taking impressions while the composition is in its plastic stage, said composition including a solid resin and a solvent system which includes an extender and a benzyl radical compound such as benzyl alcohols, benzyl ethers, benzyl ketones, benzyl aldehydes, and benzyl esters. The solvent system leads to a controlled early setting, and imparts improved properties to the plastic composition for taking impressions, particularly of living anatomical structures.

3,558,541
METHOD FOR AGGLOMERATING LATICES WITH AN ANHYDRIDE

William O. Dalton, Ludlow, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Oct. 23, 1967, Ser. No. 677,078

Int. Cl. C08d *7/10, 5/02*; C08f *29/12*

U.S. Cl. 260—23.7 **9 Claims**

There is disclosed a process for agglomerating latices of a polymer to provide larger particles. An acid anhydride is admixed with an aqueous latex of a polymer which contains an organic acid salt emulsifying agent for the latex and the admixture is allowed to stand for a period sufficient to hydrolyze the acid anhydride and produce agglomeration of the polymer particles. Thereafter, the latex is stabilized with emulsifying agent.

3,558,542
AQUEOUS DISPERSION OF POLYVINYLIDENE CHLORIDE CONTAINING ETHYLENE/VINYL ALKANOATE COPOLYMER AND WAX

John William McDonald, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed July 8, 1968, Ser. No. 743,004

Int. Cl. C09j *3/26*

U.S. Cl. 260—27 **10 Claims**

A coating based on a polymer of vinylidene chloride and formed from a vinylidene chloride polymer based dispersion has an increased heat-sealable range when an ethylene/vinyl alkanoate copolymer and wax are added thereto. Optionally, other polymeric materials can be added.

3,558,543
POLYVINYL PYRROLIDONE PIGMENT "SHOCK" REDUCER

Gordon Totty, Lunenburg, Worcester, Mass., assignor to Borden, Inc., New York, N.Y., a corporation of New Jersey

No Drawing. Filed Nov. 9, 1966, Ser. No. 592,996

Int. Cl. B01f *3/10*

U.S. Cl. 260—29.6 **5 Claims**

1. A method for producing pigment shock in pigmented paper coating composition when admixing and alkaline pH pigment portion comprising coating grade clays and a polyvinyl alcohol adhesive portion to form said pigmented paper coating, comprising, admixing said portions in the presence of a water soluble polymer comprising at least 20% by weight of the polymer selected from the group consisting of polyvinyl pyrrolidone, lower alkyl derivatives of polyvinyl pyrrolidone and copolymers of ethenoid bond monomers with vinyl pyrrolidone and said polymer being present in proportion of at least 0.005%–2% by weight of the pigment portion solids.

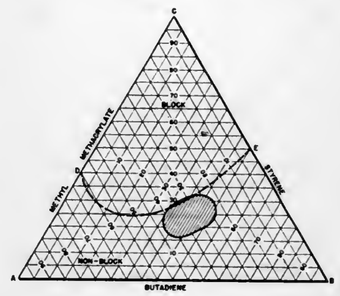
3,558,544
LATEX COATINGS FOR ELECTROSTATIC AND PHOTOCONDUCTIVE PURPOSES

Albert J. Cole, New Hanover Township, Pa., and George P. Rowland, Akron, Ohio, assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Filed Aug. 1, 1966, Ser. No. 569,301

Int. Cl. C08d *7/02*; C09d *3/64*

U.S. Cl. 260—29.7 **10 Claims**



An aqueous latex coating composition comprising an interpolymer of methyl methacrylate, butadiene and styrene and having dissolved therein from about 0.5 to about 2.5 percent by weight of a surfactant mixture consisting of (1) a salt selected from the group consisting of alkali metal and ammonium salts of alkyl sulfates, alkyl aryl sulfonates and mixtures thereof, and (2) a salt selected from the group consisting of the alkali metal and ammonium salts of fatty acids.

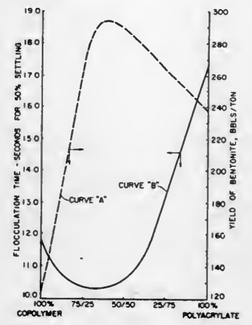
3,558,545
LOW SOLIDS DRILLING FLUID

James L. Lummus, Tulsa, Okla., assignor to Pan American Petroleum Corporation, Tulsa, Okla., a corporation of Delaware

Continuation of application Ser. No. 637,985, May 12, 1967, which is a continuation-in-part of application Ser. No. 392,627, Aug. 27, 1964. This application Mar. 27, 1968, Ser. No. 738,663

Int. Cl. C08f *3/44, 3/64, 3/90, 15/38, 45/06, 47/18*

U.S. Cl. 260—29.6 **8 Claims**



A combination of a polyacrylate and an acrylate-acrylamide copolymer is used to beneficiate bentonite but flocculate other clays in low-solids drilling fluid. Both polymers have molecular weights above about 2 million but below about 20 million. A process using a dilution step makes possible applying the polymers to high-solids muds. Each polymer may be used alone in some cases.

3,558,546
ADHESIVE CEMENT
Joe R. Winney, Stow, and Leon F. Fiedler, Cuyahoga Falls, Ohio, assignors to the B. F. Goodrich Company, New York, N.Y., a corporation of New York
No Drawing. Continuation-in-part of application Ser. No. 416,112, Dec. 4, 1964. This application Oct. 9, 1967, Ser. No. 674,010
Int. Cl. C08g *51/26, 51/34*
U.S. Cl. 260—30.4 2 Claims

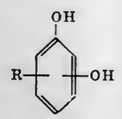
An adhesive cement comprising (a) a bonding phase consisting essentially of a novolak resin component and a rubber polymer component which may be a butadiene-acrylonitrile copolymer with from 10 to 50 percent by weight bound acrylonitrile, a linear polyesterurethane or a polyacrylate and (b) a solvent phase for dissolving the bonding phase which is comprised essentially of solvents other than ketones and nitro solvents. The bonding phase contains from 40 to 200 parts by weight of the novolak resin per 100 parts by weight of rubber polymer. The cement contains from 5 to 50 percent by weight of solvent.

3,558,547
PIGMENTED ELASTOMER-BASED COATING COMPOSITIONS
Max Kronstein, New York, N.Y., assignor to Research Corporation, New York, N.Y., a non-profit corporation of New York
No Drawing. Filed June 28, 1968, Ser. No. 740,980
Int. Cl. B32b *15/08*; C08f *45/00*
U.S. Cl. 260—31.2 7 Claims

Compositions comprising vulcanizable elastomeric resin, pigment, carbon black and sulfur mu dispersed in solvent cure at ambient temperatures to form mechanically strong and durable coatings.

3,558,548
SHAPED OBJECT COMPRISING A SOLID SOLUTION OF CERTAIN QUANTITIES OF A LINEAR THERMOPLASTIC POLYESTER RESIN DISSOLVED IN CERTAIN DIHYDROXY BENZENE COMPOUNDS
Edward P. Weierter, Massapequa, N.Y., assignor to American Cyanamid Company, Stamford, Conn., a corporation of Maine
No Drawing. Continuation-in-part of application Ser. No. 755,713, Aug. 27, 1968. This application Jan. 2, 1969, Ser. No. 788,648
Int. Cl. B32b *27/36*; C08f *45/34*
U.S. Cl. 260—33.4 10 Claims

A shaped object comprising a solid solution of from about 2% to 20% by weight of a linear thermoplastic polyester resin dissolved in a dihydroxy benzene compound having the formula:



wherein R is a member selected from the group consisting of hydrogen, alkyl groups containing from 1 to 4 carbon atoms, chlorine and bromine.

3,558,549
CLOTH TREATING PROCESS AND COMPOSITION
Harry A. Smith, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
Filed July 18, 1968, Ser. No. 745,943
Int. Cl. C08g *15/00*
U.S. Cl. 260—33.8 5 Claims

This invention relates to a treating composition for cloth which renders such cloth oil and water repellent. The composition is a combination of a standard fluorocarbon resin treating agent for cloth combined with an interpolymer of hexafluoroacetone.

3,558,550
SINTERINGS OF POLYTETRAFLUOROETHYLENE LOADED WITH TITANIUM AND THE PREPARATION THEREOF
Guiseppe Zuliani, Merano, and Miniato Socci, Milan, Italy, assignors to Montecatini Edison S.p.A., Milan, Italy, a corporation of Italy
No Drawing. Filed Jan. 24, 1968, Ser. No. 700,033
Int. Cl. C08f *45/04*
U.S. Cl. 260—41 2 Claims

Described are sinterings of polytetrafluoroethylene loaded with titanium and the preparation thereof. Said sinterings are useful for the construction of mechanical elements having high anticorrosive characteristics coupled with mechanical properties superior to those of the nonimpregnated polytetrafluoroethylene sinterings.

Also described is the preparation of sinterings of polytetrafluoroethylene resins loaded with titanium. This process is characterized by the following steps:

Preliminary mixing of the polytetrafluoroethylene resin powder, having a granulometric size of between 0.25μ and 600μ, and metallic titanium micropowder with a granulometric size between 40μ and 200μ, in a ratio varying from 10–50% by weight of titanium with respect to the mixture. Preforming the mixture with a volume reduction of about 4:1, by compression in suitable molds at a pressure comprised between 4000 and 6000 kg./cm.^{2}. Sintering the compacted mixture by slowly heating in an oven, to a temperature between 300° and 450° C. for from 1 to 3 hours. And gradually cooling down the sintering to room temperature in order to avoid deformations and cracks.

3,558,551
NUCLEATION OF 1-OLEFIN POLYMERS WITH PHTHALOCYANINE PIGMENTS
Dixie E. Gilbert, Bartlesville, and Tommy G. Poff, Cushing, Okla., assignors to Phillips Petroleum Company, a corporation of Delaware
No Drawing. Filed Mar. 18, 1968, Ser. No. 714,074
Int. Cl. C08f *45/14*
U.S. Cl. 260—41 9 Claims

The crystal structure of 1-olefin polymers is altered by the addition of between 0.0005 an 0.005 weight percent of a phthalocyanine pigment.

3,558,552
AMIDE OF DIAMINES AS AGE RESISTERS FOR POLYMERS
Ronald B. Spacht, Hudson, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed Oct. 2, 1967, Ser. No. 672,028
Int. Cl. C08f *45/60*
U.S. Cl. 260—45.9 6 Claims

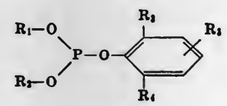
Certain salicyloyl derivatives such as N-phenyl-N'-salicyloyl-p - phenylenediamine and N-phenyl-N'-3-tertiarybutyl salicyloyl - p - phenylenediamine as antioxidants for oxidizable polymers.

3,558,553
POLYAMIDE STABILIZATION WITH COPPER, MERCAPTOBENZOTHIAZOLE AND HALIDE COMPOUNDS
Robert A. Hayes, Cuyahoga Falls, and Joseph H. Tazewell, Akron, Ohio, assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio
No Drawing. Filed Sept. 3, 1968, Ser. No. 757,128
Int. Cl. C08g *1/56*
U.S. Cl. 260—45.75 10 Claims

The disclosure of this application comprises a process for stabilizing polyamides, such as polycaprolactam (nylon-6) and polyhexamethylene adipamide (nylon-66) against thermal decomposition and the thermally stabilized compositions produced thereby. This stabilization is effected by the use of a three-component system which is particularly adapted to avoid the plating of copper on other metals when the stabilized composition comes into contact with such other metals. The stabilization of this invention is effected by the combination of 10–60, preferably 25–50, parts per million of copper in the form of a soluble copper compound, and 0.05–5, preferably 0.1–2, parts per hundred of certain halide compounds, such as potassium iodide, and 0.05–5 parts, preferably 0.1–2 parts, per hundred of mercaptobenzothiazole (MBT). This combination has a synergistic effect in stabilizing the polyamide even though the copper compound is used in such extremely low amount.

3,558,554
OXIDATIVELY STABLE POLYOLEFIN COMPOSITION
Tsuneto Kuriyama, Fukuoka, and Toshihiko Kuroda, Shigeru Tanba, and Tetsuzo Murakami, Yokkaichi-shi, Japan, assignors to Yoshitomi Pharmaceutical Industries, Ltd., Osaka, Japan, and Mitsubishi Petrochemical Co., Ltd., Tokyo, Japan
No Drawing. Filed June 8, 1967, Ser. No. 644,499
Claims priority, application Japan, June 9, 1966, 41/36,917
Int. Cl. C08f *45/58*
U.S. Cl. 260—45.85 2 Claims

A polyolefin composition containing as a stabilizer, alone or with other stabilizers, an organo phosphite having the following general formula:

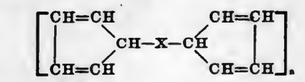


wherein R_1 and R_2 each represents a member selected from the group consisting of substituted and unsubstituted alkyl, cycloalkyl, aryl, alkaryl, aralkyl, and aliphatic thio ether groups and R_3, R_4 and R_5 each represents a member selected from the group consisting of hydrogen and alkyl, cycloalkyl, aryl, alkaryl and aralkyl groups, at least one of said R_3 and R_4 being a tertiary butyl group.

Suitable organo phosphites include, for example, di-n-butyl (2-t-butyl-cresyl)phosphite di - n - hexyl(2-t-butyl-m - cresyl)phosphite, di-n-hexyl(2-t-butyl-p-cresyl)phosphite, di-n-octyl(2-t-butyl-p1cresyl)phisphite, di-n-butyl 3,4-di-t-butyl-phenyl)phosphite, di-n-butyl-(2,6-di-t-butyl-p-cresyl)phosphite, di-phenyl(2-t-butyl - p - cresyl)phosphite, tri-(2-t-butyl-p-cresyl)phosphite, di - (ethylthioethyl)-(2-t-butyl-p-cresyl)phosphite, di-(octylthioethyl)(2-t-butyl-p-cresyl)phosphite, and tri(2,4 - di-t-butylphenyl)phosphite.

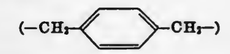
3,558,555
CHLOROPRENE POLYMERS CONTAINING ALPHA, OMEGA - BIS - CYCLOPENTADIENYL ANTIOZONANTS
Wilhelm Franz Gruber, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Oct. 31, 1968, Ser. No. 772,420
Int. Cl. C08f *45/58*
U.S. Cl. 260—45.95 8 Claims

Elastomeric chloroprene polymers, for use under severe flexing and stretching conditions and particularly at elevated temperatures, are given enhanced stability against deterioration by ozone by incorporating therein about from 1 to 15 parts, per 100 parts of chloroprene polymer, of an alpha,omega-bis-cyclopentadienyl compound having the structure:

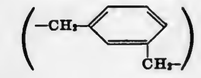


wherein n is a number from 1 to 10 and X is a divalent carbon-containing radical from the group consisting of

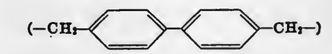
(a) α,α'-p-xylylene



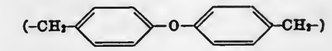
(b) α,α'-m-xylylene



(c) 4,4'-biphenylenedimethylene



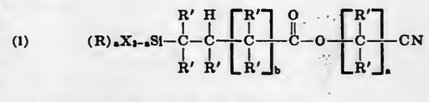
(d) 4,4'-oxydiphenylenedimethylene



and (e) aliphatic radicals, containing up to 20 carbon atoms, which may be branched, unbranched, saturated or unsaturated cyclic or acyclic containing from 0 to five intralinear oxygen atoms.

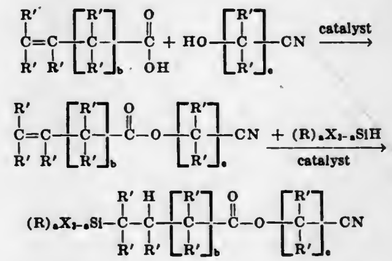
3,558,556
AMINOALKYLESTERALKYLPOLYSILOXANES
Abe Berger, Schenectady, and Jalal S. Jaleel, Albany, N.Y., assignors to General Electric Company, a corporation of New York
No Drawing. Filed July 17, 1968, Ser. No. 745,377
Int. Cl. C08f *11/04*
U.S. Cl. 260—46.5 10 Claims

Cyanoalkylesteralkylsilanes within the scope of the formula:

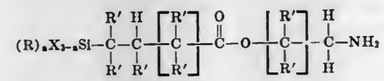


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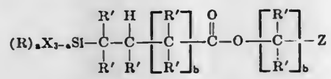
are made by the following reactions:



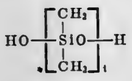
Aminoalkylesteralkylsilanes of the formula:



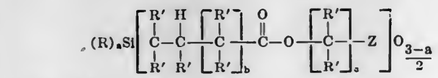
are made by hydrogenating the corresponding nitrile. A compound within the scope of the formula,



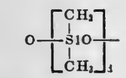
is reacted with a silanol stopped fluid of the formula,



to produce a copolymer containing



units and



blocks. In the above formulas, R is an organic radical, R' is an organic radical or hydrogen, X is a hydrolyzable group, Z is a



or a —CN radical, *a* has a value of 0 to 2, *b* has a value of 0 to 4, *c* has a value of one to 5, and *d* has a value of 5 to 500. The copolymer containing cyanoalkylesteralkylsilane units is useful as a solvent resistant protective coating material. The copolymer containing aminoalkylesteralkylsilane units is the primary ingredient of a detergent resistant car polish.

3,558,557

COPOLYESTERS, THEIR PRODUCTION AND USES

Josef Hrach, Winfried Zeschmar, Gottfried Morawetz, and Dominik Mach, Kufstein, Austria, assignors, by mesne assignments, to Sandoz Ltd., Basel, Switzerland, a corporation of Switzerland

No Drawing. Filed Oct. 6, 1967, Ser. No. 673,302
Claims priority, application Austria, Oct. 10, 1966, A 9,476/66
Int. Cl. C08f *5/00, 7/10*
U.S. Cl. 260—47 **7 Claims**

The invention relates to thermoplastic copolyesters composed of the radicals of aromatic dicarboxylic acids (a), aliphatic or alicyclic dioles (b), the oxalkylation products of compounds having two phenolic hydroxyl groups in the molecule (c) and compounds with more than two carboxylic acid groups or aliphatic hydroxyl groups in the molecule (d), which are highly suitable for the manufacture of fibres, filaments, films or moulded products.

3,558,558

CURABLE MIXTURES OF EPOXIDE RESINS AND ALKYL SUBSTITUTED UREAS

Daniel Porret, Binningen, and Juergen Habermeier, Allschwill, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Oct. 6, 1969, Ser. No. 864,157
Claims priority, application Switzerland, Oct. 11, 1968, 15,239/68
Int. Cl. C08g *30/14*
U.S. Cl. 260—47 **8 Claims**

Hot-curable moulding, coating and adhesive compositions which are storage-stable at room temperature and which contain a polyepoxide compound, for example a liquid polyglycidyl ether of bisphenol A and, as a latent curing agent, a C_1–C_4-alkylurea, for example N-monomethylurea, N,N'-dimethylurea or tetramethylurea. As a rule 0.2–0.7 mol of alkylurea are used per epoxide equivalent. In order to obtain perfect castings, the cure should be carried out stepwise by gradual warming, with the mixtures being exposed to gradually rising temperatures in the range of 100–180° C., and the temperature must, especially in the range of 120–150° C., only be raised in small steps.

3,558,559

AROMATIC AMINE MODIFIED NOVOLAC RESINS IN COMBINATION WITH AROMATIC POLYCARBOXYLIC COMPOUNDS

John R. Le Blanc, Wilbraham, Mass., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Jan. 21, 1969, Ser. No. 792,818
Int. Cl. C08g *5/18*
U.S. Cl. 260—51.5 **6 Claims**

Thermosettable polymeric compositions incorporating an amine modified novolac resin and an aromatic polycarboxylic compound. When thermoset by heat, these compositions display improved thermal stability.

3,558,560

COMPOSITION CONSISTING OF NOVOLAC RESINS AND AROMATIC POLYCARBOXYLIC COMPOUNDS

Rodney M. Huck, Longmeadow, and John R. Le Blanc, Wilbraham, Mass., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Jan. 21, 1969, Ser. No. 792,811
Int. Cl. C08g *5/18*
U.S. Cl. 260—59 **6 Claims**

Thermosettable polymeric compositions incorporating a novolac resin and an aromatic polycarboxylic compound. When thermoset by heat, these compositions display improved thermal stability.

3,558,561

TERPOLYMERS OF PERHALOACETONES, LOWER ALKYLENE OXIDES AND PROPYLENE SULFIDE

Harry A. Smith, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed June 18, 1968, Ser. No. 737,819
Int. Cl. C08g *15/00*
U.S. Cl. 260—63 **4 Claims**

This invention relates to a terpolymer composition comprising interpolymers of perhaloacetone, a lower alkylene oxide and propylene sulfide.

3,558,562

PROCESS FOR FORMING WATER-SOLUBLE POLYAMIDES

David E. Kramm, Laurel, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Nov. 21, 1967, Ser. No. 684,627
Int. Cl. C08g *9/04*
U.S. Cl. 260—72 **3 Claims**

A synthetic linear water-soluble polyamide is formed by the reaction of equimolar proportions of iminodiacetonitrile and formaldehyde in the presence of an acid and water to form a polyamide which is watersoluble in the base form or the acid salt form. The polyamide can be reacted with acrylonitrile, acrylamide or acrylic acid to put a substituent on the secondary amine nitrogen. The nitrile or the amide may be hydrolyzed to the acid which readily forms salts. All products are water soluble.

3,558,563

CARBAMYLALKYLATED POLYESTER RESIN

Arthur L. Cunningham, Park Forest, Ill., assignor to The Sherwin-Williams Company, Cleveland, Ohio, a corporation of Ohio

No Drawing. Filed Oct. 17, 1967, Ser. No. 675,801
Int. Cl. C08g *9/20*
U.S. Cl. 260—72 **12 Claims**

Polyesters of a polycarboxylic acid and a polyhydric alcohol and containing free OH groups are condensed with an alpha-beta unsaturated acid amide to carbamylalkylate the polyester to produce a novel carbamylalkylated polyester. This may then be alkylolated by treatment with a low molecular weight aldehyde to produce a thermosetting resin useful as a protective coating or as a component in a coating composition. The resultant product may be denominated an N-alkylolated amidolakyl ether of an hydroxyl containing polyester.

3,558,564

THERMOSETTING COATING COMPOSITION OF AN ORGANIC POLYISOCYANATE AND A POLYMER HAVING PENDANT HYDROXYL CONTAINING ESTER GROUPS

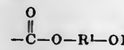
Joseph A. Vasta, Woodbury, N.J., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Mar. 27, 1969, Ser. No. 811,254
Int. Cl. C08g *22/16, 51/22*
U.S. Cl. 260—77.5 **14 Claims**

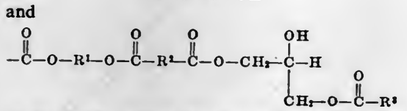
A thermosetting coating composition of a urethane polymer that cures into a durable, flexible coating is the subject of this invention; the film-forming constituents of the coating composition are

(1) an organic polyisocyanate, and

(2) a polymer that has a backbone of polymerized ethylenically unsaturated monomers and has attached directly to its backbone ester groups of the following structure



and



or an isomer thereof, wherein R^1, R^2 and R^3 are hydrocarbon radicals; this novel coating composition is particularly useful as a high quality industrial finish and can be used to paint autos, trucks, aircraft, railway equipment and the like.

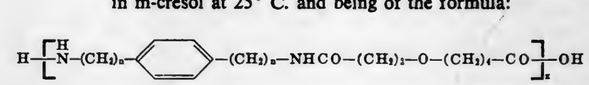
3,558,565

POLYAMIDES FROM OXADICARBOXYLIC ACIDS AND DIAMINES CONTAINING AROMATIC NUCLEUS

Kazuo Saotome, Tokyo, Hiroshi Komoto, Ichikawa-shi, and Kenichiro Sato, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

No Drawing. Continuation-in-part of application Ser. No. 749,927, July 31, 1968, which is a continuation of application Ser. No. 405,840, Oct. 22, 1964. This application Oct. 7, 1969, Ser. No. 864,891
Claims priority, application Japan, Nov. 5, 1963, 38/59,219; Feb. 13, 1964, 39/7,366, 39/7,367; Mar. 26, 1964, 39/16,483
Int. Cl. C08g *20/00*
U.S. Cl. 260—78 **5 Claims**

Novel polyamides melting between 190° and 220° C., having an intrinsic viscosity of 0.5 or more when measured in m-cresol at 25° C. and being of the formula:



wherein *n* is 1 or 2 and *x* is the degree of polymerization.

3,558,566

MIXED POLYMERIZATES FROM VINYL CHLORIDE AND FUMARIC ACID ESTERS AND PROCESS FOR THEIR PREPARATION

Thomas Balwé, Johann Bauer, and Joseph Heckmaier, Burghausen, Upper Bavaria, Germany, assignors to Wacker-Chemie G.m.b.H., Munich, Germany, a corporation of Germany

No Drawing. Filed Nov. 27, 1968, Ser. No. 779,617
Claims priority, application Germany, Dec. 5, 1967, P 17 45 566.2
Int. Cl. C08f *1/11, 15/24*
U.S. Cl. 260—78.5 **3 Claims**

Mixed polymerizates containing from 80% to 100% by weight of a copolymerizate of vinyl chloride and fumaric acid esters of aliphatic alcohols characterized in that at least part of said aliphatic alcohols are monohydric aliphatically-unsaturated alcohols containing at least 11 carbon atoms as well as the process of preparing the mixed polymerizates. The mixed polymerizates form clear molded bodies of high tensile strength and elasticity.

3,558,567

PROCESS FOR THE PRODUCTION OF NYLON 6

Ian C. Twilley, Petersburg, David W. H. Roth, Jr., Chester, and Robert A. Lofquist, Richmond, Va., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Filed Dec. 28, 1967, Ser. No. 694,044
Int. Cl. C08g *20/00*
U.S. Cl. 260—78 **8 Claims**

Nylon-6 having a low cyclic oligomer content is produced by heating a mixture of epsilon-caprolactam and water (together with property-modifying additives and chain-terminating agents, if desired) to effect reaction of epsilon-caprolactam at a rate determined by the maximum concentration of cyclic oligomers desired in the product, a slower rate resulting in a lower cyclic oligomer content. When less than about 45% of the epsilon-caprolactam is reacted and the mixture has gone through a maximum end group concentration, the rate of polymerization can be increased and evaporative conditions can be applied to remove water and excess monomer without further increasing the concentration of cyclic oligomers.

3,558,568

PRODUCTION OF LACTAM-LACTONE COPOLYMERS

Hidehiko Kobayashi, Tokyo, Hiroshi Komoto, Iruma-gun, and Shinichi Ishida, Tokyo, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan

Filed June 19, 1967, Ser. No. 646,905
Claims priority, application Japan, June 22, 1966, 41/40,040, 41/40,043
Int. Cl. C08g *20/18*
U.S. Cl. 260—78 13 Claims

The copolymerization of at least one lactam with at least one lactone at temperatures of about 20 to 250° C. in the presence of alkali metal, magnesium or derivatives of either as initiators. The lactams should have at least 4 carbon atoms in the ring and the lactones at least about 3 carbon atoms in the ring. A solvent, such as aliphatic, aromatic, alicyclic hydrocarbons or cyclic ethers may be used. The alkali metal, magnesium or derivatives thereof, initiators may be in the form of their reaction products with lactam or lactam-lactone mixtures.

3,558,569

PRODUCTION OF POLYAMIDE FILAMENTS HAVING A HIGH DEGREE OF POLYMERIZATION

Michio Goto, Mihara-shi, and Takao Nishimura, Kawasaki-shi, Japan, assignors to Teijin Limited, Osaka, Japan, a corporation of Japan

No Drawing. Filed Mar. 28, 1968, Ser. No. 716,989
Int. Cl. C08g *20/14*; D01d *5/10*
U.S. Cl. 260—78 6 Claims

Fiber-forming polyamides containing no more than about 0.2% by weight water are melt-spun in the presence of between about 0.01% by weight and about 2.0% by weight of an alkyl ester of phosphorous acid. The dwell time, S, in minutes, of the polyamide at melt-spinning temperature T, in degrees centigrade, is maintained within the limits of the following relationship:

$$S=\frac{980-3T}{20}\pm 2$$

The resulting filaments have a molecular weight greater than that of unspun polyamide and exhibit a high degree of tensile strength and resistance to wet-heat.

3,558,570

TELOMERS OF STYRENE AND MALEIC ACID ANHYDRIDE AND PROCESS FOR PREPARING THEM

Helmut Rinno, Lorsbach, Taunus, and Gerhard Werner, Hofheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

Continuation-in-part of application Ser. No. 458,458, May 24, 1969, which is a continuation of application Ser No. 802,743, Feb. 17, 1969. This application Aug. 25, 1969, Ser. No. 852,894
Claims priority, application Germany, May 30, 1964, F 43,023
Int. Cl. C08f *1/08, 19/02*
U.S. Cl. 260—78.5 7 Claims

A process for preparing telomers of styrene and maleic acid anhydride of a molecular weight of less than 2500 is disclosed. Polymerization is effected at a temperature of 160° C. to 270° C. in the presence of a radical-forming catalyst and a chain-terminating solvent which may be benzene or a benzene substituted only by one or more methyl groups. The polymerization is preferably carried out at an elevated pressure.

3,558,571

PROCESS OF PREPARING AROMATIC POLYAMIDES BY SOLID PHASE THERMAL POLYMERIZATION OF UREA AND URETHANE DERIVATIVES OF AROMATIC AMINO ACIDS

Roe C. Blume, Highland Woods, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed May 15, 1969, Ser. No. 825,040
Int. Cl. C08g *20/32*
U.S. Cl. 260—78 4 Claims

High molecular weight all-aromatic polyamides are prepared in a solid phase thermal polymerization of urethane and urea derivatives of aromatic amino acids. The resultant polymer is useful in the formation of shaped articles (e.g., fibers).

3,558,572

PROCESS FOR POLYMERIZING BETA-LACTONES IN THE PRESENCE OF POLY(BETA-LACTONE) PREPOLYMER INITIATORS

Franciscus J. F. van der Plas and Willem M. Wagner, Amsterdam, Netherlands, assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Mar. 29, 1968, Ser. No. 717,394
Claims priority, application Great Britain, Apr. 14, 1967, 17,197/67
Int. Cl. C03g *17/017*
U.S. Cl. 260—78.3 13 Claims

Poly(beta-lactones) are prepared by polymerizing one or more beta-lactones (beta-propiolactones) in a liquid hydrocarbon diluent having a boiling point below 300° C. in the presence of a solid carboxylic anion-containing initiator which is substantially insoluble in the diluent, is free of active hydrogen, and is prepared by reacting a beta-lactone with a nucleophilic agent as hereinafter more fully described such as the tertiary phosphines, stifines, arsines, in the molar ratio of beta-lactone to nucleophilic agent of 20:1 to 1:40.

3,558,573

NOVEL POLYESTERS FROM HYDRAZINES AND LACTONES AND A PROCESS FOR THEIR PRODUCTION

Wolf-Dieter Wirth, Cologne-Stammheim, and Erwin Müller, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Apr. 21, 1969, Ser. No. 818,058
Claims priority, application Germany, Apr. 30, 1968, P 17 70 300.3
Int. Cl. C08g *17/017*
U.S. Cl. 260—78.3 3 Claims

Hydroxyl polyesters having a molecular weight of from about 300 to about 20,000 are prepared by polymerizing a lactone having from 7 to 9 members in the ring in the presence of a hydrazine. The polyesters are suitable for plasticizers and stabilizers for polyvinyl chloride or as a reactant with polyisocyanate to prepare polyurethanes.

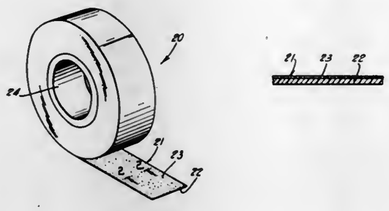
3,558,574

ACRYLATED ADHESIVE PRODUCTS

Donald F. Doehnert, Millington, N.J., assignor to Johnson & Johnson, a corporation of New Jersey

Filed Dec. 9, 1968, Ser. No. 782,153
Int. Cl. C08f *15/40, 37/00, 47/12*
U.S. Cl. 260—78.5 21 Claims

Acrylate pressure-sensitive adhesive products based on an adhesive copolymer of monomers comprising a major amount of a medium chain length alkyl acrylate monomer, preferably a minor amount of a cohesion inducing short chain monomer, a minor amount of a substituted acrylamide, about 0.5–5.0 parts by weight of the total monomer solids, preferably about 1–3 parts of the total monomers, of maleic enhydride, and a very small amount of a polymerizable cross-linking monomer. The monomers



are copolymerized in a suitable organic solvent to form a stable adhesive copolymer solution. A suitable cross-linking catalyst, such as an organo-metalic salt catalyst, then added to the adhesive solution just prior to coating on the desired backing sheet and the copolymer is cross-linked in situ as the sheet is processed.

3,558,575

PROCESS FOR THE PRODUCTION OF COPOLYMERS FREE OF BLOCK POLYSTYRENE

Norman F. Keckler, Stow, Ohio, assignor to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

Continuation of application Ser. No. 810,920, Mar. 24, 1969, which is a continuation of application Ser. No. 583,815, Oct. 3, 1966. This application Jan. 5, 1970, Ser. No. 507
Int. Cl. C08f *19/08*
U.S. Cl. 260—83.7 1 Claim

Butadiene and styrene are copolymerized to produce a rubber using hydrocarbon lithium catalyst with a low percentage content of block styrene by carrying out the reaction at an elevated temperature and adding the monomers to the reaction mixture at such a rate that there is a substantial rise in the temperature adiabatically due to the heat of the reaction.

3,558,576

PROCESS FOR THE PRODUCTION OF FINELY DIVIDED STYRENE-BUTADIENE COPOLYMERS

Wolfgang Weller, Bulle, Switzerland, assignor to Coathylene S.A., Fribourg, Switzerland, a corporation of Switzerland

No Drawing. Filed Feb. 6, 1968, Ser. No. 703,276
Claims priority, application Austria, Feb. 9, 1967, A 1,259/67
Int. Cl. C08d *5/00*; C08f *1/92*
U.S. Cl. 260—85.1 6 Claims

A process for the production of finely divided styrene-butadiene copolymers from a corresponding coarser copolymer composition which comprises dissolving the coarser material in a homogeneous solvent mixture which consists of at least one solvent for the copolymer and at least one non-solvent for the copolymer, the non-solvent part having a higher boiling point than that of the solvent; thereafter removing from the mixture by vacuum distillation the solvent portion to an extent at least sufficient that the dissolved copolymer is precipitated in the form of a dispersion, and finally purifying the material thus precipitated by treating it with further non-solvent which is homogeneously miscible with the residual liquid.

3,558,577

TEMPERATURE CONTROL OF VINYL ESTER POLYMERIZATION IN AN AQUEOUS EMULSION

Raymond N. Fleck, West Covina, and Donald C. Young, Fullerton, Calif., assignors to Union Oil Company of California, Los Angeles, Calif., a corporation of California

No Drawing. Filed June 25, 1968, Ser. No. 739,669
Int. Cl. C08f *15/24, 1/13*
U.S. Cl. 260—87.1 9 Claims

Temperature control of aqueous emulsion copolymerization of vinyl esters is achieved by refluxing liquids such as ethane, propane and Freons from the reaction mixture and applying external cooling. The liquid may be bled or vented from the system if reaction conditions warrant.

3,558,578

SOLUTION GRADE PVC—COPOLYMERS PREPARED BY SUSPENSION POLYMERIZATION EXHIBITING ENHANCED LIGHT STABILITY AND LOW HAZE

Paul Kraft, Yonkers, William F. Keller, Dobbs Ferry, and Siegfried Altscher, Monsey, N.Y., assignors to Stauffer Chemical Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 4, 1968, Ser. No. 782,733
The portion of the term of the patent subsequent to May 12, 1987, has been disclaimed
Int. Cl. C08f *15/24, 15/30*
U.S. Cl. 260—87.1 10 Claims

A method is provided for the suspension of polymerization of "solution grade" vinyl chloride/vinyl acetate copolymer exhibiting enhanced ultraviolet light stability and relatively low haze. The method comprises polymerizing vinyl chloride and from about 1 to 25% by weight vinyl acetate in the presence of a catalytic amount of a "hot catalyst," from about 0.03 to about 0.3% of a methyl cellulose suspending agent and either benzene or toluene. The reaction is conducted at a temperature of from 0° C. to 90° C. The hot catalyst has a ten hour half-life temperature of less than 60° C.

3,558,579

SHAPED ARTICLES OF IMPROVED DYEABILITY CONSISTING ESSENTIALLY OF A POLYOLEFIN AND A SULFONATED ARYL PHOSPHATE

Joseph Di Pietro, West Millington, N.J., assignor to Celanese Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 30, 1965, Ser. No. 468,581
Int. Cl. C08f *15/04, 3/10*
U.S. Cl. 260—88.2 7 Claims

A composition of improved dye receptivity comprising a polymer capable of being formed into shaped articles and a sulfonated aryl phosphate or an aryl phosphate alkali metal sulfonate.

3,558,580

THIN ORIENTED PLASTIC STRIPS AND TAPE

Keith L. Orser, Auburn, N.Y., assignor to Columbian Rope Company, Auburn, N.Y., a corporation of New York

Original application July 5, 1962, Ser. No. 207,718, now Patent No. 3,290,420, dated Dec. 6, 1966. Divided and this application July 20, 1966, Ser. No. 584,635
Int. Cl. B32b *27/06, 27/32*; C08f *15/04*
U.S. Cl. 260—88.2 4 Claims

A plastic tape of uniform thickness of orientable polymeric material drawn from its original length to a fully stretched and oriented condition in which the width to thickness ratio of the oriented tape is greater than that obtained by freely stretching the original length of material longitudinally to its natural draw ratio. This tape is produced by pulling a length of the orientable material in an

oriented condition through an elongated, confined passage in a manner to stretch the original length to a permanently elongated length in an oriented condition and in which the narrowest dimension of the confined passage establishing the thickness of the fully oriented tape is less than the thickness which the original length of oriented material would assume when longitudinally freely drawn to its natural draw ratio.

3,558,581
PROCESS FOR THE MANUFACTURE OF POLYVINYLMETHYLAMINES

Claus Beermann, Neu-Isenburg, Horst Schnabel, Hofheim, Taunus, and Dieter Ulmschneider, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Oct. 11, 1968, Ser. No. 766,942
Claims priority, application Germany, Oct. 20, 1967, P 17 20 737.3
Int. Cl. C08f *3/84, 3/86, 3/90*
U.S. Cl. 260—89.7 **3 Claims**

Poly-N-vinyl-N-methylamine and copolymers of N-vinyl-N-methylamine with compounds polymerizable under the action of a free radical liberating catalyst are produced by hydrolysis of homo- or copolymers of N-vinyl-N-methylformamide with mineral acids.

3,558,582
CHLORINATED POLYVINYLIDENE FLUORIDE

Robert Bacskai, Berkeley, Calif., assignor to Chevron Research Company, San Francisco, Calif., a corporation of Delaware

No Drawing. Filed Nov. 13, 1967, Ser. No. 682,594
Int. Cl. C08f *3/22, 3/24, 3/26*
U.S. Cl. 260—92.1 **4 Claims**

Chlorinated normally solid polyvinylidene fluoride containing about 2 to 35% by weight chlorine. These chlorinated polymers are clearer than unchlorinated polyvinylidene fluoride. They also adhere better to metals than the unchlorinated material. They are useful for making shaped objects and laminates.

3,558,583
EXTRUSION RESIN

Richard G. Alsup, Vienna, W. Va., and John A. Ross, Media, Pa., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 407,857, Oct. 30, 1964. This application Sept. 13, 1967, Ser. No. 667,359
Int. Cl. C08f *1/88, 3/24*
U.S. Cl. 260—92.1 **13 Claims**

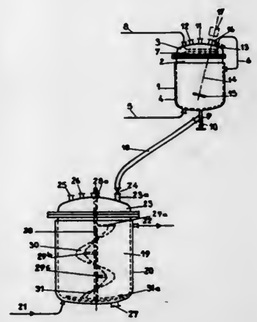
The molding rate and the strength of moldings of fluorocarbon resins, e.g. polytetrafluoroethylene, are improved by partially sintering the resins (10–50%) by heating the resins at a temperature in the range 332–338° C.

3,558,584
MANUFACTURE OF POLYVINYL CHLORIDE

Jean Claude Thomas, Lyon, France, assignor to Produits Chimiques Pechiney-Saint-Gobain, Paris, France

Filed Oct. 25, 1966, Ser. No. 589,326
Int. Cl. C08f *1/04, 3/30, 15/30*
U.S. Cl. 260—92.8 **1 Claim**

Method and apparatus for the polymerization in mass of polyvinyl chloride and mixtures thereof with vinyl acetate, wherein polymerization is carried out in two stages, namely, in a first stage at relatively rapid rate for a relatively short period of time, and in a second stage at a slower rate for a more extended time period. In the second stage polymerization is effected in an autoclave having a vertical axis of symmetry and a helical mixing blade rotating coaxially of the axis of the tank, and having an effective diameter only about one-half the internal diameter of the tank. The blade is rotated at a relatively slow rate but effective to move a column of the mixture continuously rising in and along the axis. This results in a tubular column of the mixture descend-



ing by gravity in contact with the temperature-controlled walls of the tank. The result is precise temperature control, improved product, reduced time of production, saving in power, and reduced cost of installations for the production per unit mass of completed product, as compared to prior art procedures and installations.

3,558,585
POLYMERIZATION OF VINYL CHLORIDE

Jean Chatelain, Lyon, and Georgette Steinbach-Van Gaver, Cornod par Arinthod, France, assignors to Produits Chimiques Pechiney-Saint-Gobain, Paris, France

No Drawing. Filed July 24, 1968, Ser. No. 747,070
Claims priority, application France, July 26, 1967, 115,801
Int. Cl. C08f *1/04, 1/62, 3/30*
U.S. Cl. 260—92.8 **11 Claims**

Vinyl chloride is polymerized alone or with compatible monomers in mass, at low temperature with an initiator of oxido-reduction type including a peroxy compound which liberates active oxygen and a reducer of the class of the sulfinates being of the formula:



each R being one of a class consisting of hydrogen and the linear radicals of the formula C_nH_{2n+1}.

3,558,586
POLYMERIZATION PROCESS AND CATALYST SYSTEM

Lawrence M. Fodor, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Feb. 14, 1968, Ser. No. 705,520
Int. Cl. C08f *1/56, 3/10*
U.S. Cl. 260—93.7 **10 Claims**

Utilization of a catalyst system formed by admixing (a) a compound of the formula R_nAlX_{3-n}; (b) a titanium trichloride-aluminum trichloride complex of the approximate formula $TiCl_3 \cdot \frac{1}{3}AlCl_3$; and (c) a phosphite having the formula $(R'O)_3P$ or a phosphonite having the formula $(RO)_2PR$ in the polymerization of 1-olefins results in the production of polymers having higher modulus and lower xylenes-soluble content. In the above formulas, R is

selected from alkyl, cycloalkyl, and aryl groups, and combinations thereof, having from 1 to 12 carbon atoms, R' is selected from mono- or dihalo-substituted alkyl, cycloalkyl, and aryl groups and combinations thereof having from 1 to 12 carbon atoms, and *n* is 1 or 2.

3,558,587
THREE-COMPONENT CATALYTIC SYSTEM INCLUDING A HYDROCARBYL SILANE

John W. Bayer and Edgardo Santiago, Toledo, Ohio, assignors to Owens-Illinois, Inc., a corporation of Ohio

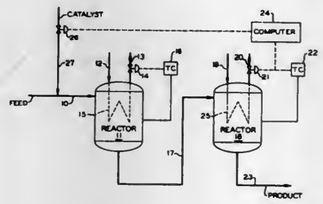
No Drawing. Continuation-in-part of application Ser. No. 306,329, Sept. 3, 1963. This application Jan. 26, 1968, Ser. No. 700,744
Int. Cl. C08f *1/56, 3/02*
U.S. Cl. 260—93.7 **4 Claims**

This invention relates to the polymerization of olefins by using a three-component catalytic system containing VCl_3 or titanium tetrachloride or titanium trichloride, an organoaluminum compound such as triethylaluminum and an organosilane selected from the group consisting of triethylsilane, triphenylsilane, diphenylsilane, and tri-n-hexylsilane. The aforementioned organosilanes contain at least one silicon-hydrogen bond and are used such that the ratio of the number of silicon atoms to the number of aluminum atoms are 0.78–3.26 in a VCl_3 catalyst and 1.73–2.13 in a titanium trichloride or tetrachloride catalyst, and the number of vanadium or titanium atoms are present in a ratio of 0.95–1.09 in a vanadium catalyst and 1.02 to 1.09 in a titanium catalyst relative to the total number of aluminum and silicon atoms.

3,558,588
EXOTHERMIC PROCESS CONTROL

Earl H. Gray, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Continuation-in-part of application Ser. No. 452,533, May 3, 1965. This application Mar. 5, 1969, Ser. No. 814,873
Int. Cl. C08d *1/14, 1/18;* **B08d** *3/08*
U.S. Cl. 260—94.2 **4 Claims**



A multi-stage exothermic process, such as the polymerization of butadiene, is controlled by adjusting the heat removal from each stage in response to temperature measurements of materials in the individual reactors. The catalyst addition to the first reactor is regulated in response to the heat removal from a downstream stage.

3,558,589
PROCESS FOR DEPOLYMERIZING POLYMERS

Tristram Walker Bethea and Adel Farhan Halasa, Akron, Ohio, assignors to The Firestone Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Nov. 18, 1968, Ser. No. 776,798
Int. Cl. C08d *5/04;* **C08f** *27/26*
U.S. Cl. 260—94.7 **11 Claims**

Homopolymers of conjugated dienes containing 4 or 5 carbon atoms, including natural rubber, and copolymers thereof with vinyl aromatic compounds, including both emulsion polymers and solution polymers, are depolymerized by treatment with a salt of a transition metal and an organometallic. The reaction may be accelerated by including an olefin. The process is used for lowering the molecular weight of a polymer, particularly a polymer of such high molecular weight that it is difficultly processible. It is also applicable to the removal of gel or other deposit of high molecular weight from a polymerization reactor.

3,558,590
DERIVATIVES OF 8-LYSINE VASOPRESSIN N-ACYLATED WITH SMALL GLYCINE CONTAINING PEPTIDES

Joseph H. Cort, Karel Jost, Evzen Kasafirek, Josef Rudinger, Frantisek Sorm, and Milan Zaoral, Prague, Czechoslovakia, assignors to Ceskoslovenska Akademie Ved, Prague, Czechoslovakia

No Drawing. Continuation of application Ser. No. 476,189, July 30, 1965. This application July 30, 1968, Ser. No. 754,117
Claims priority, application Czechoslovakia, Aug. 1, 1964, 4,399/64
Int. Cl. A61k *27/00;* **C07c** *103/52;* **C07d** *93/36*
U.S. Cl. 260—112.5 **5 Claims**

An anti-shock peptide compound of the general formula

R. Cys. Phe(X). Phe—Glu(NH_2). Asp(NH_2)Cys. Pro.

NHCHCO. GlyNH$_2$
Y

wherein X is H, CH_3, CH_2CH_3, OH or OCH_3, Y is an aliphatic chain of a length between 2 and 5 carbons and having a basic group at the end (W), the said basic group being selected from the group consisting of amino, methylamino, dimethylamino and guanidino, R is a peptide chain of 2 to 4 alphaamino acid residues and including at least one glycine, all other of said residues being in L configuration. A preferred compound is N-glycyl-glycyl-8-lysine-vasopressin. The compounds of the invention are made by reducing a peptide of the general formula

Z^1. R. Cys(Z^3). Phe(X). Phe. Glu(NH_2). Asp(NH_2). Cys(Z^4).

PRO. NHCHCO. GlyNH$_2$
YZ^3

wherein X, Y and R are as above, Z^1 and Z^2 are protective groups respectively, for the said basic group, of the aliphatic chain and the terminal amino group of the peptide chain. and Z^3 and Z^4 are protective groups for SH, the said reaction being carried out with an agent adapted to remove these said protective groups Z^1, Z^2, Z^3 and Z^4, followed by oxidizing the resulting compound in an aqueous solution.

3,558,591
HEAT INSULATORS FOR USE IN THE CASTING OF MOLTEN METAL

Michael Robert Yendrek, Cleveland, and Robert Richard Dzurilla, Seven Hills, Ohio, assignors to Foseco International Limited, Birmingham, England, a British company

No Drawing. Filed July 3, 1969, Ser. No. 839,041
Claims priority, application Great Britain, July 4, 1968, 32,019/68
Int. Cl. B28b *7/36;* **C08g** *37/03, 37/18, 51/04, 51/18*
U.S. Cl. 260—17.2 **4 Claims**

Compositions of matter suitable for use in the production of hot top linings and the like comprise 15 to 50% by weight of fibrous material, 40 to 80% of refractory filler and 0.5 to 10% of a binder material. The fibrous material is wholly inorganic fibrous material or contains up to 40% of its weight of organic fibrous material, and the

refractory filler consists in whole or in part of diatomaceous earth, bubble alumina, hollow silica microspheres, calcined rice husks or pozzolana (bubbled aluminosilicate).

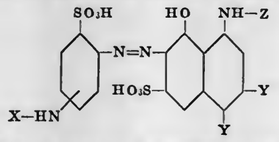
3,558,592

PHENYL-AZO-NAPHTHOL DYES

Rene de Montmollin, Riehen, Switzerland, assignor to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Dec. 12, 1967, Ser. No. 689,775
Claims priority, application Switzerland, Dec. 15, 1966, 17,918/66, 17,919/66
Int. Cl. C07c *107/08;* **C09b** *29/30*
U.S. Cl. 260—199 **12 Claims**

The invention relates to monoazo dyestuffs which, in the form of the free acid, correspond to the formula



in which one of the symbols Y represents a hydrogen atom and the other symbol Y represents a sulphonic acid group, Z represents an acyl grouping and X represents an α-bromacrylic grouping, an α,β-dibromopropionyl grouping, a mono- or dinitrochlorobenzoyl or a mono- or dinitrobenzenesulphonyl grouping.

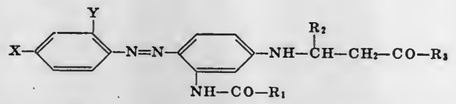
3,558,593

WATER-INSOLUBLE MONOAZO DYESTUFFS AND PROCESS FOR PREPARING THEM

Helmut Lindner, Frankfurt am Main, Karl Sommer, Konigstein, Taunus, and Heinz Schmidt, Kelkheim, Taunus, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed July 18, 1967, Ser. No. 654,086
Claims priority, application Germany, July 30, 1966, F 49,836
Int. Cl. C07c *107/06;* **C09b** *29/04*
U.S. Cl. 260—207.1 **6 Claims**

Water-insoluble monoazo dyestuffs of the general formula



wherein X represents a nitro or nitrile group, Y represents a hydrogen or halogen atom, or a nitro or nitrile goup, R_1 represents a lower alkyl or phenyl radical, R_2 represents a methyl, phenyl, chlorophenyl, hydroxyphenyl or methylenedioxyphenyl radical, and R_3 represents a methyl, phenyl, hydroxyphenyl or lower alkoxy group, and a process for preparing said dyestuffs.

3,558,594

ERYTHROMYCIN ALIPHATIC SULFATE

Peter Hadley Jones and Ronald Gay Wiegand, Lake Forest, and Alexander Hing Chinn Chun, Waukegan, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed Sept. 4, 1968, Ser. No. 757,510
Int. Cl. C07c *47/18*
U.S. Cl. 260—210 **4 Claims**

Among new aliphatic sulfate salts of erythromycin, the n-octadecyl sulfate salt especially exhibits not only sustained uniform blood serum levels in humans that are superior to other known salt forms, but also is so nearly tasteless that when administered as an aqueous suspension or as a chewable tablet, it lacks the objectionable pronounced and prolonged bitter taste experienced with erythromycin base and other acid addition salts. Hence, chewable tablets, uncoated tablets and aqueous suspensions are readily acceptable as oral dosage forms.

3,558,595

2'-CYCLIC ESTERS AND 5'-CYCLIC ESTERS OF 3'-DEOXY - 3' - DIHYDROXYPHOSPHINYLMETHYL - β - D - RIBOFURANOSYLNUCLEOSIDE DERIVATIVES AND INTERMEDIATES THEREFOR

Gordon H. Jones, Palo Alto, and John G. Moffatt, Los Altos, Calif., assignors to Syntex Corporation, Panama, Panama, a corporation of Panama

No Drawing. Filed Feb. 28, 1969, Ser. No. 803,417
Int. Cl. C07d *51/52, 51/54*
U.S. Cl. 260—210 **13 Claims**

This invention relates to 5'-cyclic esters of 3'-deoxy-3'-dihydroxyphosphinylmethyl - β-D-ribofuranosyl nucleosides and 2'-cyclic esters of 3'-deoxy-3'-dihydroxyphosphinylmethyl-β-D-ribofuranosyl nucleosides which are valuable pharmacological agents. For example, they are useful in regulating and controlling metabolism and for producing metabolic deficiencies in biological systems. This invention also relates to 3-phosphinylmethylfuranose and 3' - deoxy-3'-dihydroxyphosphinylmethyl-β-D-ribofuranosyl nucleoside intermediates for preparing these cyclic esters.

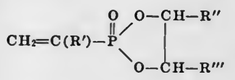
3,558,596

FIRE-RESISTANT CELLULOSIC MATERIALS AND A METHOD OF PREPARATION

Donald N. Demott, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed July 22, 1969, Ser. No. 843,823
Int. Cl. C08b *3/22, 27/58*
U.S. Cl. 260—218 **10 Claims**

Fire-resistant, cross-linked cellulosic materials are prepared by reacting a cellulosic material with a vinylphosphonate having the structural formula:



wherein R', R'' and R''' are hydrogen or hydrocarbon groups. Said fire-resistant materials are useful in the textile, wood and paper industries.

3,558,597

PROCESS FOR THE PRODUCTION OF SUGAR ESTERS

Hanswilli von Brachel and Manfred Schön, Offenbach am Main, Germany, assignors to Cassella Farbwerke Mainkur Aktiengesellschaft, Frankfurt am Main, Fechenheim, Germany, a company of Germany

No Drawing. Filed July 22, 1968, Ser. No. 746,292
Claims priority, application Germany, Aug. 4, 1967, C 43,039
Int. Cl. C07c *69/32*
U.S. Cl. 260—234 **4 Claims**

Transesterification of sugar with a fatty acid ester in the presence of a basic transesterification catalyst at temperature and pressure conditions designed to distill off

alcohol by-product and thereby eliminate the need of an inert solvent reaction medium and its inherent disadvantages.

3,558,598

METHOD FOR IMPROVING CITRUS OIL RECOVERY

Donald E. Epperson, Diamond Bar, and Peter L. Douglas, Glendora, Calif., and Ronald B. McKinnis, Winterhaven, Fla., assignors to Automatic Machinery & Electronics, Inc., Covina, Calif., a corporation of California

No Drawing. Continuation-in-part of application Ser. No. 714,331, Mar. 19, 1968. This application June 10, 1968, Ser. No. 735,528
Int. Cl. C09f *11/00*
U.S. Cl. 260—236.6 **11 Claims**

1. In the process of recovering citrus peel oil wherein the oil is expressed from the peel of the fruit in the presence of water to provide a dilute emulsion containing said oil, the dilute emulsion is fed to a desludging operation which removes most of the insoluble solids and concentrates said oil emulsion into a cream, and the cream is then fed to a polishing operation to break the cream emulsion and separate the citrus peel oil from said cream to produce a clear citrus peel oil; the improvement comprising mechanically thinning said cream to reduce the viscosity thereof prior to subjecting the same to said polishing operation to facilitate separation of said oil from said cream by said polishing operation and thereby improve the recovery of said oil from said cream in said polishing operation.

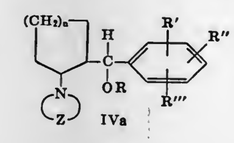
3,558,599

1-[2-(α-ALKOXYBENZYL AND SUBSTITUTED BENZYL)CYCLOALKYL]HETEROCYCLIC AMINES

Jacob Szmuszkovicz, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Filed June 13, 1966, Ser. No. 556,892
The portion of the term of the patent subsequent to Mar. 3, 1987, has been disclaimed
Int. Cl. C07d *41/04*
U.S. Cl. 260—239 **21 Claims**

New 1,3-aminoether of the Formula IV*a*:



wherein *n* has the value of 1 to 4, inclusive, wherein



represents a heterocyclic amino radical containing from 5 to 10 nuclear atoms, inclusive, wherein R is an alkyl containing from 1 to 6 carbon atoms, inclusive, wherein R', R'' and R''' are selected from the group of substituents consisting of hydrogen, halogen, alkyl and alkoxy containing from 1 to 6 carbon atoms, inclusive, are prepared. The new compounds of Formula IV*a* per se, as well as in the form of acid addition salts have diuretic activity and some of them have anti-hyperglycemic activity. Compounds of Formula IV*a* are thus useful to produce diuresis in mammals and also are useful as oral antidiabetic agents.

3,558,600

ALKYL SULFATE SALTS OF 1-(p-CHLOROBENZHYDRYL)-4-METHYLHOMOPIPERAZINES

Adolph Oscar Geiszler, Mundelein, and Peter Hadley Jones, Lake Forest, Ill., assignors to Abbott Laboratories, North Chicago, Ill., a corporation of Illinois

No Drawing. Filed July 28, 1967, Ser. No. 656,674
Int. Cl. C07d *53/02*
U.S. Cl. 260—239 **2 Claims**

Novel long chain alkyl sulfate salts of 1-(p-chlorobenzhydryl)-4-methylhomopiperazine are disclosed. These salt forms mask the bitter taste associated with the free base and soluble acid-addition salt forms of this compound thereby enabling the preparation of an oral dosage form of this antihistaminic and bronchodilating agent.

3,558,601

PENICILLINS AND THEIR PREPARATION

Bertil Åke Ekström and Olof Harald Sjöberg, Sodertalje, Sweden, assignors to Aktiebolaget Astra, Sodertalje, Sweden, a company of Sweden

No Drawing. Filed Dec. 4, 1967, Ser. No. 687,423
Claims priority, application Great Britain, Dec. 28, 1966, 57,987/66; Mar. 29, 1967, 14,332/67
Int. Cl. C07d *99/16*
U.S. Cl. 260—239.1 **13 Claims**

A new class of penicillins in which the side chain contains a phosphinylamino or phosphinothiolylamino group. The compounds are antimicrobially active. Methods of synthesis are described.

3,558,602

6-(AMINOCYCLOPENTENE - 1 - CARBOXAMIDO) PENICILLANIC ACIDS AND DERIVATIVES THEREOF

Harvey E. Alburn, West Chester, and Norman H. Grant, Wynnewood, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed Nov. 20, 1968, Ser. No. 777,482
Int. Cl. C07d *99/16*
U.S. Cl. 260—239.1 **2 Claims**

This is concerned with 6-(1-aminocyclopentene-1-carboxamido)penicillanic acids and 6-(4-oxo-1,3-diazaspiro[4,4]nonen - 3 - yl)penicillanic acids having potent activity against gram-negative and gram-positive microorganisms.

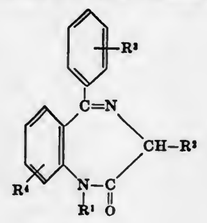
3,558,603

PROCESS FOR PRODUCING BENZODIAZEPINE DERIVATIVES

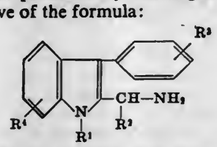
Hisao Yamamoto, Nishinomiya-shi, Shigeho Inaba, Takarazuka-shi, Tadashi Okamoto, Ashiya-shi, Toshiyuki Hirohashi, Kobe, Kikuo Ishizumi, Minoo-shi, Michihiro Yamamoto, Takarazuka-shi, Isamu Maruyama, Minoo-shi, Kazuo Mori, Kobe, and Tsuyoshi Kobayashi, Minoo-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Nov. 27, 1968, Ser. No. 779,619
Claims priority, application Japan, Dec. 1, 1967, 42/77,238; Feb. 13, 1968, 43/8,953
Int. Cl. C07d *53/06*
U.S. Cl. 260—239.3 **5 Claims**

Benzodiazepine derivatives having excellent tranquillizing effects and represented by the formula:



wherein R^1 is hydrogen, lower- (C_1–C_3) alkyl, lower (C_1–C_3) haloalkyl, lower (C_3–C_5) alkenyl or (C_5–C_8) cycloalkylmethyl; R^2 is lower (C_1–C_3) alkyl, benzyl or phenyl; R^3 and R^4 each is hydrogen, halogen, lower (C_1–C_3) alkyl, lower (C_1–C_3) haloalkyl or lower (C_1–C_3) alkoxy; are produced by reacting a 2-aminomethylindole derivative of the formula:



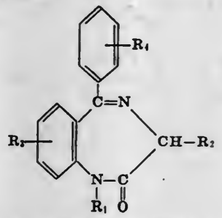
wherein R^1, R^2, R^3 and R^4 have the same meanings as defined above, or a salt thereof with an appropriate oxidizing agent.

3,558,604
PROCESS FOR PRODUCING BENZODIAZEPINE DERIVATIVES

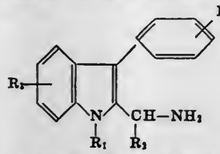
Hisao Yamamoto, Nishinomiya-shi, Shigeho Inaba, Takarazuka-shi, Tadashi Okamoto, Ashiya-shi, Toshiyuki Hirohashi, Kobe, Kikuo Ishizumi, Minoo-shi, Michihiro Yamamoto, Takarazuka-shi, Isamu Maruyama, Minoo-shi, Kazuo Mori, Kobe, and Tsuyoshi Kobayashi, Minoo-shi, Japan, assignors to Sumitomo Chemical Company, Ltd., Osaka, Japan, a corporation of Japan

No Drawing. Filed Feb. 25, 1969, Ser. No. 802,259
Int. Cl. C07d *53/06*
U.S. Cl. 260—239.3 **4 Claims**

Benzodiazepine derivatives useful as tranquillizers, muscle-relaxants, spasmolytics or hypnotics and represented by the formula:



wherein R_1 and R_2 signify individually a hydrogen atom or a lower alkyl group; R_3 signifies a hydrogen atom, a halogen atom, a nitro group, a lower alkyl group or a trifluoromethyl group; and R_4 signifies a nitro group or a trifluoromethyl group, are prepared by oxidizing a 2-aminomethylindole derivative represented by the formula:



wherein R_1, R_2, R_3 and R_4 have the same meanings as defined above.

3,558,605
PYRAZOLO[3,4-e][1,4]DIAZEPIN-7-(1H)-ONE COMPOUNDS

Horace A. De Wald and Donald E. Butler, Ann Arbor, Mich., assignors to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed May 14, 1969, Ser. No. 824,687
Int. Cl. C07d *53/02*
U.S. Cl. 260—239.3 **6 Claims**

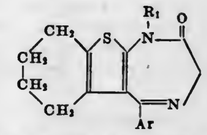
[Pyrazolo 3,4-e][1,4]diazepin-7(1H) - one compounds, substituted in the 1-position by methyl or ethyl, in the 3-position by lower alkyl or chlorine, in the 4-position by phenyl, o-fluorophenyl, or o-chlorophenyl, and optionally in the 8-position by methyl; salts thereof; and their production by (a) reacting a 4-aroyl-5-(2-phthalimidoacetamido)pyrazole with hydrazine, (b) reacting a 5-(2-haloacetamido)-4-aroylpyrazole or a 5-[2-(alkyl- or arylsulfonyloxy)acetamido]-4-aroylpyrazole with ammonia, (c) cyclizing a 5-(2-aminoacetamido)-4-arolpyrazole, (d) reacting a 5-amino-4-benzimidoylpyrazole with a haloacetyl halide in the presence of a base, and (e) reacting one of the 8-unsubstituted pyrazolodiazepinones with a methylating agent in the presence of a base to produce one of the 8-methyl pyrazolodiazepinones. The compounds of the invention are useful as anticonvulsant and anti-anxiety agents.

3,558,606
TETRAHYDROBENZOTHIENODIAZEPINONE COMPOUNDS

Francis J. Tinney, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Original application Feb. 6, 1969, Ser. No. 797,274. Divided and this application Sept. 2, 1969, Ser. No. 854,790
Int. Cl. C07d *53/02, 63/18*
U.S. Cl. 260—239.3 **5 Claims**

Tetrahydrobenzothienodiazepinone compounds having the formula



and salts thereof; where R_1 is hydrogen or methyl, and Ar is phenyl, o-fluorophenyl, o-chlorophenyl, or 2-thienyl; and their production by (a) reacting a 3-aroyl-2-(2-haloacetamido)tetrahydrobenzothiophene or a salt thereof with ammonia, (b) reacting a 3-aroyl-2-(2-phthalimidoacetamido)tetrahydrobenzothiophene with anhydrous hydrazine, (c) reacting a 2-(2-aminoacetamido)-3-aroyltetrahydrobenzothiophene salt with a base, and (d) reacting one of the tetrahydrobenzothienodiazepinone compounds wherein R_1 is hydrogen with a methylating agent in the presence of a base. The compounds of the invention are useful as anticonvulsant and anti-anxiety agents.

3,558,607
1,3,5(10)-ESTRATRIENE DIESTERS

Nicholas Gueritee, Paris, France, assignor to Societe Theramex, Paris, France, a corporation of France

No Drawing. Continuation-in-part of application Ser. No. 577,528, Sept. 6, 1966. This application Jan. 18, 1968, Ser. No. 698,696
Int. Cl. C07c *173/10*
U.S. Cl. 260—239.5 **15 Claims**

New diesters of 1,3,5(10)-estratriene are provided which are characterized by trophic and anabolic activity with little or no hormonal activity. The diesters are prepared from the corresponding mono-esterified hydroxy compounds. The ester groupings are only in the 3,17-positions. The ester group in the 17-position is nicotinoyloxy while that in the 3-position may vary. The 3-hydroxy-17-nicotinoyloxy compound is also a part of the invention.

3,558,608
20-[N-(N',N' - DISUBSTITUTED AMINOALKYL) FORMAMIDO]-5α-PREGNAN-3β-OLS AND Δ^5 DERIVATIVES THEREOF

Paul D. Klimstra, Northbrook, Ill., assignor to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed Dec. 30, 1968, Ser. No. 794,468
Int. Cl. C07c *173/10*
U.S. Cl. 260—239.5 **6 Claims**

20 - [N - (N', N' - disubstituted aminoalkyl)formamido] - 5α - pregnan - 3β - ols and Δ^5 derivatives thereof are prepared by reaction of the corresponding 20-[N-(N',N'-disubstituted aminoalkyl)amino] compounds with a formylating reagent. These formamido compounds display useful pharmacological properties, e.g., anti-inflammatory, anti-bacterial, anti-protozoal and anti-algal.

3,558,609
AZIDO AZOMETHINES FOR REPROGRAPHIC COPYING COMPOSITIONS

Hans Ruckert, Wiesbaden-Schierstein, Germany, assignor to Kalle Aktiengesellschaft, Wiesbaden-Biebrich, Germany

No Drawing. Filed Mar. 10, 1967, Ser. No. 622,096
Claims priority, application Germany, Mar. 12, 1966, K 58,704
Int. Cl. C09b *23/00;* **C07d** *109/00;* **G03c** *1/52*
U.S. Cl. 260—240 **10 Claims**

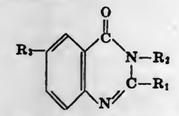
This invention relates to novel azido azomethines, to a reprographic copying composition containing such azido azomethines, and to a process for making a printing plate from a supported light-sensitive layer containing such azido azomethines.

3,558,610
QUINAZOLINONE DERIVATIVES

Hermann Breuer and Erich Cohnen, Regensburg, and Egon Roesch, Tegernheim, Germany, assignors to E. R. Squibb & Sons, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Filed Dec. 18, 1967, Ser. No. 691,176
Claims priority, application Germany, Dec. 30, 1966, P 16 70 416.8
Int. Cl. C07d *87/16*
U.S. Cl. 260—240 **7 Claims**

This invention relates to new quinazolinone derivatives having the general formula



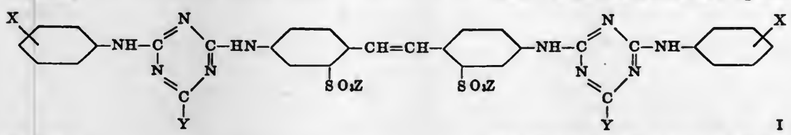
compounds which are useful as antiinflammatory agents and antimicrobial agents.

3,558,611
NOVEL STILBENE DERIVATIVES

Fritz Fleck, Bottmingen, Switzerland; assignor to Sandoz Ltd., Basel, Switzerland, a corporation of Switzerland

No Drawing. Filed Feb. 19, 1968, Ser. No. 706,613
Int. Cl. C07d *55/24*
U.S. Cl. 260—240 **3 Claims**

Novel asymmetric bis-triazinylamino-stilbenes of the Formula I



in which

one X signifies a hydrogen atom, and
the other X signifies a chlorine atom in the 2-, 3- or 4-position,
Y signifies a methylamino, dimethylamino, β-hydroxyethylamino, N-methyl - N - β - hydroxyethylamino or morpholino radical, and
Z signifies a cation forming atom or group,

are produced and their use in their brightening of textiles, e.g. polyamide fibres, cotton, linen, regenerated cellulose, is exemplified whereby undyed or white goods become brightened and goods dyed in delicate pastel shades become more brilliant.

3,558,612
SUBSTITUTED PHENOXYACETIC ACIDS

Stephen J. Kuhn and Janet E. Ilavsky, Sarnia, Ontario, Canada, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 22, 1968, Ser. No. 731,292
Int. Cl. C07c *65/02;* **C07d** *63/12*
U.S. Cl. 260—240 **10 Claims**

Disclosed are aryl derivatives of 4-carbonylvinylphenoxyacetic acid wherein the aryl group is attached to the carbonyl function and represents naphthyl, thienyl, indanyl, phenyl, or substituted phenyl. These compounds are useful as pesticides.

3,558,613
SUBSTITUTED PARATOLYLOXYACETIC ACIDS

Stephen J. Kuhn and Janet E. Ilavsky, Sarnia, Ontario, Canada, assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed May 22, 1968, Ser. No. 731,295
Int. Cl. C07c *65/02;* **C07d** *85/42*
U.S. Cl. 260—240 **2 Claims**

Disclosed are substituted p-tolyloxyacetic acids wherein the substituent is attached to the p-methyl group of the tolyl moiety and represents 1-oxo-2-indanylidene and 2-phenyl - 5 - oxo-2-oxazolin-4-ylidene. These compounds are useful as pesticides.

3,558,614
SYNTHESIS OF TETRANUCLEAR DYES

Philip W. Jenkins, Rochester, N.Y., assignor to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Sept. 5, 1967, Ser. No. 665,274
Int. Cl. C09b *23/00*
U.S. Cl. 260—240.1 **12 Claims**

Tetranuclear dyes derived from a 2-imidazolin-4-one, a 2-imidazolin-4-thione and a 2-imidazolin-4-selenone are prepared in good yields by condensing a quaternized merocyanine dye derived from a 2-imidazolin-4-one, a 2-imidazolin-4-thione or a 2-imidazolin-4-selenone with (1) a dialkoxyalkyl ester of an organic acid, (2) a trialkoxy alkane or aryl compound, (3) a 3,3-dialkoxy-1-alkoxypropene, (4) a 1-anilino-5-phenylimino-1,3-pentadiene or (5) a second quaternized merocyanine dye derived from a 2-imidazolin-4-one, a 2-imidazolin-4-thione or a 2-imidazolin-4-selenone, each having substituted on the carbon in the 2-position a group such as a β-acetanilidovinyl group, a 4-acetanilido-1,3-butadienyl group, and a 6-acetanilido-1,3,5-hexadienyl group.

3,558,615
N-OXAZOLIDINE- AND N-TETRAHYDRO-1,3-OXAZINE-CARBOXANILIDES

George R. Haynes, Modesto, Calif., and Donald D. Phillips, Westfield, N.J., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 8, 1968, Ser. No. 743,021
Int. Cl. C07d *87/06*
U.S. Cl. 260—244 **9 Claims**

Certain N-(oxazolidine)- and N-(tetrahydro-oxazine)-carboxanilides are described which have microbicidal activity.

3,558,616

2-ALKANOYL OR BENZOYL-3-TERTIARYAMINO ALKOXY-BENZOTHIOPHENES

Arne Elof Brandstrom, Goteborg, and Stig Åke Ingemar Carlsson, Molnlycke, Sweden, assignors to Aktiebolaget Hassle, Goteborg, Sweden, a company of Sweden

No Drawing. Continuation-in-part of application Ser. No. 553,616, May 31, 1966. This application Nov. 10, 1969, Ser. No. 875,501
Claims priority, application Sweden, June 1, 1965, 7,128/65
Int. Cl. C07d *87/46*
U.S. Cl. 260—247.1 8 Claims

Benzothiophene derivatives having the structural formula described below, a method for their preparation and pharmaceutical preparations containing them. These preparations are useful as analgesic, antipyretic, antiinflammatory antitussive agents, as local anaesthetics and antispasmodic and antihistaminic agents. They have these properties combined with relatively low toxicity. They may therefore, be used for the relief of pain, inflammation, pyresis of various origins, or tussive irritation.

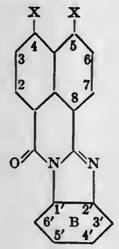
3,558,617

DYESTUFFS DERIVED FROM NAPHTHOYLENE-BENZIMIDAZOLES

Robert Frederic Michel Sureau, Enghien-les-Bains, and Marie Josephe Jeanne Alicot, Soisy-sous-Montmorency, France, assignors to Ugine Kuhlmann, Paris, France

No Drawing. Filed July 14, 1967, Ser. No. 653,317
Claims priority, application France, July 22, 1966, 70,397
Int. Cl. C07d *87/42*
U.S. Cl. 260—247.2 3 Claims

Dyestuffs of the formula



(I)

in which one X represents a hydrogen atom and the other a



radical wherein R_1 and R_2 each represent hydrogen or an alkyl, cycloalkyl, aryl or aralkyl group, but not simultaneously an aryl group, or R_1 and R_2 together with the nitrogen to which they are linked form a heterocyclic nucleus. The preparation of such dyestuffs and their use in the colouration of fibres based on polyamides, polyurethanes, polyesters, cellulose acetate or cellulose triacetate.

3,558,618

NOVEL 4H-PYRAZINO(1,2-a)PYRIMIDINE-4-ONES

Donald L. Trepanier, Indianapolis, Ind., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Apr. 1, 1968, Ser. No. 717,911
Int. Cl. C07d *57/24*
U.S. Cl. 260—247.2 7 Claims

This invention is directed to novel 4H-pyrazino(1,2-a) pyrimidin-4-ones, and their mineral acid salts, and to a method for their preparation. The new compounds are useful as antidepressants in animals.

3,558,619

PRODUCTION OF N-FORMYLMORPHOLINE OR N-ACETYLMORPHOLINE

Herwig Hoffmann, Frankenthal, Pfalz, Ernst Fuerst, Neustadt, and Herbert Toussaint, Frankenthal, Pfalz, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Aug. 27, 1968, Ser. No. 755,749
Claims priority, application Germany, Aug. 31, 1967, 1,670,266
Int. Cl. C07d *87/34*
U.S. Cl. 260—247.7 7 Claims

Production of N-formylmorpholine or N-acetylmorpholine which comprises mixing morpholine with formic acid or acetic acid and distilling off the water formed from the reaction mixture in a column, a zone having a temperature of from 130° to 150° C. being maintained in the column above the point of supply and a zone having a temperature of from 210° to 230° C. being maintained below the point of supply. N-formylmorpholine and N-acetylmorpholine are suitable as extractants for aromatic hydrocarbons from hydrocarbon mixtures.

3,558,620

ANTHRAQUINONE REACTIVE DYESTUFFS

Hans-Samuel Bien, Burscheid, Erich Klauke, Odenthal-Hahnenberg, and Klaus Wunderlich, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed May 24, 1968, Ser. No. 731,710
Claims priority, application Germany, June 2, 1967, F 52,584
Int. Cl. C07d *55/46*
U.S. Cl. 260—249 13 Claims

Anthraquinone reactive dyestuffs useful in dyeing hydroxyl and nitrogen-containing textiles having a nucleus consisting of a substituted or unsubstituted 1-amino-2-sulfo-4 [substituted or unsubstituted (4'-amino- or alkylene amino-triazinyl) analino] anthraquinone. The dyestuffs show improved fastness properties.

3,558,621

ANTHRAQUINONE REACTIVE DYESTUFFS

Hans-Samuel Bien, Burscheid, Erich Klauke, Odenthal-Hahnenberg, and Klaus Wunderlich, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed May 24, 1968, Ser. No. 731,712
Claims priority, application Germany, June 2, 1967, F 52,582
Int. Cl. C07d *55/46*
U.S. Cl. 260—249 13 Claims

Anthraquinone reactive dyestuffs useful in dyeing hydroxyl and nitrogen-containing textiles having a nucleus consisting of a 1-amino-2-sulfo-4-(substituted or unsubstituted) 4'-amino or alkyleneamino, triazinyl (sulfonanalino) anthraquinone. The dyestuffs show improved fastness properties.

3,558,622

PROCESS FOR THE PRODUCTION OF 2,4-DIAMINO-6-ALKYLTHIO-s-TRIAZINE

Walter Rufener, Zurich, Switzerland, Raoul Berger, Saint-Louis-la-Chaussee, France, and Jean Riethmann, Allschwil, Basel-Land, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of New York, and J. R. Geigy A.G., Basel, Switzerland, a corporation of Switzerland

No Drawing. Filed July 25, 1968, Ser. No. 747,448
Int. Cl. C07d *55/20*
U.S. Cl. 260—249.8 9 Claims

2,4 - diamino - 6 - alkylthio-s-triazines are prepared by reacting 2,4-diamino-6-chloro-s-triazines with alkali-metal alkylmercaptide in an aqueous medium. The reactions are effected at elevated temperature and under pressure. An illustrative embodiment is the reaction of 2,4-bis-isopropylamino-6-chloro-s-triazine with sodium methylmercaptide to yield 2,4-bis-isopropylamino-6-methylthio-s-triazine.

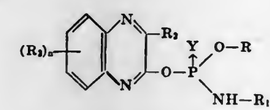
3,558,623

AMIDE PHOSPHORIC AND THIOPHOSPHORIC ACID AMIDE ESTERS

Hans Helfenberger, Reinach, Basel-Land, Switzerland, assignor to Sandoz Ltd., Basel, Switzerland, a corporation of Switzerland

No Drawing. Filed Jan. 12, 1968, Ser. No. 697,331
Claims priority, application Switzerland, Jan. 13, 1967, 513/67
Int. Cl. C07d *51/78*
U.S. Cl. 260—250 19 Claims

Pesticidal agents constituted by novel phosphoric and thiophosphoric acid amide esters of the formula



(I)

wherein

R is lower alkyl (e.g. methyl, ethyl, propyl, butyl, etc.),
R_1 is lower alkyl (1 to 4 carbon atoms),
R_2 is hydrogen atom or the methyl or methoxy radical,
R_3 is a hydrogen atom, a halogen atom, a lower alkyl radical or the nitro radical,
Y is O or S, and
n is 1 or 2,

are prepared and spraying powders and aqueous emulsions containing them are used to protect beans and other plants from plant pests; tests showing both dry and direct spraying contact effect and feed effect against *Bruchidius obtectus, Anagesta kuehniella,* and *Carausius morosus* are given.

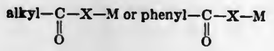
3,558,624

3-CARBOXYLIC ACID AMIDO-QUINOXALINE-1,4-DI-N-OXIDES

Kurt Ley, Odenthal-Globusch, Ulrich Eholzer, Cologne-Stammheim, Roland Nast, Cologne-Buchheim, Karl Georg Metzger, Wuppertal-Elberfeld, and Dieter Fritsche, Wuppertal-Vohwinkel, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed Oct. 2, 1968, Ser. No. 764,613
Claims priority, application Germany, Oct. 4, 1967, F 53,366
Int. Cl. C07d *51/78*
U.S. Cl. 260—250 22 Claims

Compounds, and compositions containing them, are provided for controlling bacterial infections caused by gram-positive and gram-negative bacteria. The compounds are 3-carboxylic acid amido-quinoxaline-1,4-di-N-oxides exemplified by 2-acetoxymethyl-3-carboxylic acid ethylamidoquinoxaline-di-N-oxide and its congeners prepared by reacting a 2-halomethyl-3-carboxylic acid amido-quinoxaline-1,4-di-N-oxide, wherein halo is chloro or bromo, with a monocarboxylic acid alkali salt in an organic solvent with or without water present at 40–160° C. The salt is of the type



3,558,625

PYRAZINECARBOXYALDEHYDES AND METHOD FOR THEIR PREPARATION

Roger J. Tull, Metuchen, Edward W. Tristram, Cranford, and Edward J. J. Grabowski, Iselin, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 31, 1968, Ser. No. 772,397
Int. Cl. C07d *51/76*
U.S. Cl. 260—250 6 Claims

A process is described for the preparation of novel 5-lower alkoxypyrazinecarboxaldehydes which have utility as fungistatic agents. The process comprises treating 2-trichloromethylpyrazine with an alkali metal alkoxide in the corresponding alkanol or other inert solvent.

3,558,626

2-[4 - (DIPHENYL-2-PYRIMIDINYL)PHENOXY] LOWER ALIPHATIC MONOCARBOCYCLIC ACIDS AND ESTERS

Rudolf G. Griot, Florham Park, N.J., assignor to Sandoz-Wander, Inc., Hanover, N.J., a corporation of Delaware

No Drawing. Filed July 8, 1968, Ser. No. 743,002
Int. Cl. C07d *51/36*
U.S. Cl. 260—251 7 Claims

This invention relates to derivatives of aliphatic acids, e.g. 2-[4-(4',6'-diphenyl-2-pyrimidinyl)phenoxy]lower aliphatic monocarbocyclic acids and the corresponding lower alkyl esters. Compounds are useful as hypolipidemics.

3,558,627

6 - AMINO - URACIL - 5 - CARBONAMIDO - N-SULFONAMIDES AND PROCESS FOR THEIR PREPARATION

Otto Scherer, Bad Soden, Taunus, and Friedhelm Kluge, Frankfurt am Main, Germany, assignors to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany, a corporation of Germany

No Drawing. Filed Sept. 29, 1967, Ser. No. 671,585
Claims priority, application Germany, Oct. 5, 1966, F 50,358
Int. Cl. C07d *51/30*
U.S. Cl. 260—256.5 11 Claims

6-amino-uracil-5-carbonamido-N-sulfonamides having diuretic activity and process for their preparation.

3,558,628

CERTAIN 2,4-DIAMINO-6-QUINAZOLINE-SULFONAMIDES

John Davoll, Shepperton, England, assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Filed Nov. 13, 1968, Ser. No. 775,504
Claims priority, application Great Britain, Dec. 8, 1967, 56,054/67
Int. Cl. C07d *51/48*
U.S. Cl. 260—256.5 5 Claims

2,4-diamino-6-quinazolinesulfonamides and salts thereof, in which the sulfonamide nitrogen is optionally sub-

stituted by lower alkyl or benzyl, useful as pharmacological agents exhibiting anti-malarial activity, and their production by reacting 2,4-diaminoquinazoline-6-sulfonyl chloride or an acid-addition salt thereof with ammonia or a lower alkyl- or benzyl-substituted amine.

3,558,629

2-HALO-4-(1-PIPERAZINYL)-BENZALDEHYDES AND RELATED COMPOUNDS

Sydney Archer, Bethlehem, and David Rosi, East Greenbush, N.Y., assignors to Sterling Drug, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 444,848, Apr. 1, 1965, now Patent No. 3,379,620. This application Aug. 31, 1967, Ser. No. 664,628

Int. Cl. C07d *51/70*

U.S. Cl. 260—268 **2 Claims**

4 - [amino-(polycarbon-lower-alkyl)-amino] - 2-halobenzyl alcohols and lower-alkyl ethers thereof have schistosomacidal activity. The benzyl alcohols are prepared: by reduction of the corresponding benzaldehydes or lower-alkyl benzoates; by microbiological oxidation of the corresponding 4-substituted-amino-2-halotoluenes; or, for the compounds where polycarbon-lower-alkyl is ethylene, by reducing the corresponding lower-alkyl 4 - (aminoacetylamino)-2-halobenzoates or by reducing the corresponding 4 - (aminoacetylamino)-2-halobenzyl alcohols. The ethers are prepared by heating the benzyl alcohols with a lower-alkanol in the presence of an acid. Novel intermediate 2-halo-4-(1-piperazinyl)-benzaldehydes are prepared by formylation of 3 - (1-piperazinyl)-halobenzenes with an N,N-disubstituted-formamide, e.g., dimethylformamide, in the presence of a phosphorus oxyhalide.

3,558,630

PROCESS FOR PREPARING 3,5-DIOXO-1-PIPERAZINEACETAMIDE AND NITRILOTRIACETIC ACID TRIAMIDE

Joseph D. Moyer, Silver Spring, Md., assignor to W. R. Grace & Co., New York, N.Y., a corporation of Connecticut

No Drawing. Filed Sept. 20, 1967, Ser. No. 673,245

Int. Cl. C07d *51/68*

U.S. Cl. 260—268 **3 Claims**

Nitrilotriacetic acid is reacted with an amide to form 3,5-dioxo-1-piperazineacetamide which is reacted with ammonia or ammonium hydroxide to form nitrilotriacetic acid triamide.

3,558,631

BENZHYDRYLOXYCYCLOPROPYL HETEROCYCLIC AMINES

Carl Kaiser, Haddon Heights, N.J., and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Original application Jan. 6, 1966, Ser. No. 519,012, now Patent No. 3,462,491, dated Aug. 19, 1969. Divided and this application Apr. 22, 1969, Ser. No. 818,385

Int. Cl. C07d *51/70*

U.S. Cl. 260—268 **7 Claims**

Benzhydryloxycyclopropyl heterocyclic amines wherein the benzhydryl moiety may be halogen, lower alkyl, lower alkoxy, lower alkylthio, lower alkylsulfonyl or trifluoromethyl substituted and the heterocyclic amine is pyrrolidine, piperidine, N'-methylpiperazine, N'-(β-hydroxyethyl)-piperazine or N'-(β-acetoxyethyl)-piperazine have mild tranquilizing and antidepressant activity. The compounds are generally prepared via the benzhydryloxy cyclopropanecarboxylic acids.

3,558,632

2-(BENZONAPHTHYRIDIN-2-YL ACYL) BENZONAPHTHYRIDINES

James L. Diebold, Havertown, and Milton Wolf, West Chester, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 581,706, Sept. 26, 1966. This application Sept. 16, 1968, Ser. No. 760,069

Int. Cl. C07d *39/00*

U.S. Cl. 260—287 **10 Claims**

This invention concerns 2-(tetrahydrobenzonaphthyridin-2-yl acyl)tetrahydrobenzonaphthyridines; 2-(octahydrobenzonaphthyridin-2-yl acyl)octahydrobenzonaphthyridines; 2-(octahydrobenzonaphthyridin-2-yl acyl)tetrahydrobenzonaphthyridines; and 2-(tetrahydrobenzonaphthyridin-2-yl acyl)octahydrobenzonaphthyridines which have demonstrated activity as antibacterial agents.

3,558,633

PROCESS FOR OXIDIZING BORON COMPOUNDS WITH AMINE-N-OXIDES

Roland Koster, Mulheim (Ruhr), Germany, assignor to Studiengesellschaft Kohle m.b.H., Mulheim (Ruhr), Germany

No Drawing. Filed Apr. 6, 1967, Ser. No. 628,833

Claims priority, application Germany, Apr. 9, 1966, P 12 94 964.3-42

Int. Cl. C07f *5/02, 5/04*

U.S. Cl. 260—290 **13 Claims**

Process of oxidizing organo borane compounds containing BC-, BH- or BN-linkages by reacting such compounds with secondary or tertiary amine oxides or hydrates thereof at temperatures from about room temperature to about 120° C.

3,558,634

CERTAIN PYRIDYL ESTERS OF SCOPOLAMINE

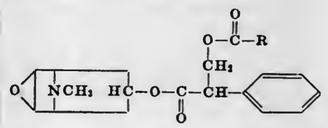
Sheldon Levy, Merrick, and Frank P. Marchese, Bronxville, N.Y., assignors to Revlon, Inc., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 775,180, Nov. 12, 1968. This application Apr. 24, 1969, Ser. No. 819,124

Int. Cl. C07d *43/06*

U.S. Cl. 260—292 **11 Claims**

Scopolamine derivatives of the formula



wherein R is pyridyl or a fluoro- or trifluoro-phenyl and their N-oxides and acid addition and quaternary ammonium salts have strong antiperspirant activity of long duration.

3,558,635

PROCESS FOR THE PREPARATION OF PHOSPHONAMIDES

Henri Marie Normant, Paris, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate

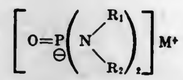
No Drawing. Filed Nov. 20, 1967, Ser. No. 684,499

Claims priority, application France, Nov. 29, 1966, 85,816; May 11, 1967, 106,120

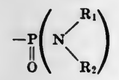
Int. Cl. C07f *9/44*

U.S. Cl. 260—293 **2 Claims**

The invention relates to alkali metal diamidophosphites of formula:



where R_1 and R_2 are organic radicals and M is an alkali metal, which can be prepared by reacting a halogenophosphonamide with an alkali metal, for example sodium, in a suitable solvent. Examples of suitable diamidophosphites are sodium N,N,N',N'-tetramethyldiamidophosphite, N,N,N',N'-tetraethyldiamidophosphite and dipiperidinophosphite. The invention also relates to a process for converting the diamidophosphites into organic compounds containing the



group by reacting them with a reactive ester. The phosphonamide products are useful as pesticides.

3,558,636

1-(THIANAPHTHENYL- OR BENZOFURANYL-ALKANOYL)-4-PHENYL-4-PIPERIDINOLS

Carl Kaiser, Haddon Heights, N.J., and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Application Sept. 22, 1967, Ser. No. 669,707, now Patent No. 3,476,760, which is a continuation-in-part of application Ser. No. 620,628, Mar. 6, 1967. Divided and this application Oct. 10, 1969, Ser. No. 865,474

Int. Cl. C07d *29/34*

U.S. Cl. 260—293.4 **7 Claims**

1-(thianaphthenylalkyl or benzofuranylalkyl)-4-phenyl-4-piperidinols, prepared by various methods starting with a halomethylthianaphthene or benzofuran, or a thianaphthene- or benzofuranalykanoic acid. 4-phenyl-4-piperidinols are condensed with acid halides, ester anhydrides, or diazoketones to give amides, which are reduced to the products with lithium aluminum hydride. Esters are prepared by acylation of the piperidinols. Tetrahydropyridines are prepared by dehydration of the piperidinols. The piperidinol and tetrahydropyridine compounds have tranquilizing activity, while the esters have analgesic activity.

3,558,637

1-(THIANAPHTHENYL- OR BENZOFURANYLAL-KYL)-4-PHENYL-4-PIPERIDINOL ESTERS

Carl Kaiser, Haddon Heights, N.J., and Charles L. Zirkle, Berwyn, Pa., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Application Sept. 22, 1967, Ser. No. 669,707, which is a continuation-in-part of application Ser. No. 620,628, Mar. 6, 1967. Divided and this application Oct. 10, 1969, Ser. No. 865,476

Int. Cl. C07d *29/34*

U.S. Cl. 260—293.4 **3 Claims**

1-(thianaphthenylalkyl or benzofuranylalkyl)-4-phenyl-4-piperidinols, prepared by various methods starting with a halomethylthianaphthene or benzofuran, or a thianaphthene- or benzofuranalkanoic acid. 4-phenyl-4-piperidinols are condensed with acid halides, ester anhydrides, or diazoketones to give amides, which are reduced to the products with lithium aluminum hydride. Esters are prepared by acylation of the piperidinols. Tetrahydropyridines are prepared by dehydration of the piperidinols. The piperidinol and tetrahydropyridine compounds have tranquilizing activity, while the esters have analgesic activity.

3,558,638

3-CYANO-1,2,3,4,5,6-HEXAHYDRO-2,6-METHANO-3-BENZAZOCINES

Frank H. Clarke, Jr., Armonk, and Fred B. Block, Hartsdale, N.Y., assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

No Drawing. Continuation-in-part of applications Ser. No. 635,291, Apr. 10, 1967, and Ser. No. 661,528, Aug. 18, 1967, the latter being a continuation-in-part of application Ser. No. 465,143, June 18, 1965, now Patent No. 3,341,538, which in turn is a continuation-in-part of application Ser. No. 332,296, Dec. 20, 1963. This application Oct. 3, 1968, Ser. No. 764,968

Int. Cl. C07d *39/00*

U.S. Cl. 260—294.3 **17 Claims**

3 - cyano - 1,2,3,4,5,6 - hexahydro - 2,6 - methano-3 - benzazocine derivatives which are analgesics and chemical intermediates are prepared via treatment of a 3-methyl-1,2,3,4,5,6-hexahydro-2,6-methano - 3 - benzazocine with cyanogen bromide. Urea derivatives obtained from these intermediates can be used in analgesic compositions.

3,558,639

1-(2-HYDROXY-2-PHENYLETHYL)-2-[2-(TERTIARY AMINO)ETHYL]PIPERIDINES

Frederick K. Kirchner, Bethlehem, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 550,618, May 17, 1966. This application Oct. 15, 1969, Ser. No. 866,744

Int. Cl. C07d *29/28*

U.S. Cl. 260—294.7 **12 Claims**

1-[1-(R^1)-2-(R^2) - 2 - hydroxy-2-phenylethyl] - 2-[2-(B=N—)ethyl]piperidines which decrease spontaneous activity in mice are prepared by reduction of the carbonyl moiety of the corresponding 1-[1-(R^1)-2-oxo-2-phenylethyl]-2-[2-(B=N—)ethyl]pipidines, or by reacting the latter with a Grignard reagent or organolithium reagent, R^2MgX or R^2Li. Alternatively, 2-[2-(B=N—)ethyl]piperidine is interacted with 1-(R^1)-2-(R^2)-2-phenyl-1,2-epoxyethane.

3,558,640

CERTAIN PYRIDYL AND THIAZOLYL METHYLTHIOPROPIONIC ACIDS AND DERIVATIVES

Tsung-Ying Shen, Westfield, and Conrad P. Dorn, Jr., Plainfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Dec. 20, 1967, Ser. No. 691,926

Int. Cl. C07d *31/50, 91/34*

U.S. Cl. 260—294.8 **5 Claims**

This invention relates to the preparation of aryl and heteroarylmethylthiopropionic acids, the non-toxic pharmaceutically acceptable salts, esters, amides and the reduced carbonyl products of these aryl and heteroarylmethylthiopropionic acids and derivatives. The compounds of this invention are useful as anti-inflammatory agents and may be used in the treatment of diseases which are susceptible to such agents.

3,558,641
CERTAIN PYRIDYL SALICYLIC ACID DERIVATIVES

Lewis H. Sarett, Princeton, and William V. Ruyle, Scotch Plains, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey

No Drawing. Filed Oct. 6, 1967, Ser. No. 673,273
Int. Cl. C07d *31/44*
U.S. Cl. 260—295 **1 Claim**

New salicylic acid compounds, particularly 5-(heterocyclic)-salicylic acid derivatives and process for their preparation are claimed. The new 5-(heterocyclic)salicylic acid compounds described have anti-inflammatory, anti-pyretic and analgesic activity.

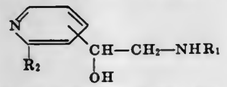
3,558,642
CERTAIN LOWER-ALKYL AMINO METHYL HALO PYRIDINE METHANOLS AND DERIVATIVES THEREOF

David Hartley, Lawrence H. C. Lunts, and Paul Toon, London, England, assignors to Allen & Hanburys Limited, London, England

No Drawing. Filed Dec. 10, 1968, Ser. No. 782,753
Claims priority, application Great Britain, Dec. 21, 1967, 58,013/67
Int. Cl. C07d *31/34*
U.S. Cl. 260—295 **5 Claims**

A novel class of therapeutically useful 1-(pyridyl)-2-aminoethanols and methods for their preparation have been found.

The derivatives are of the Formula I



(I)

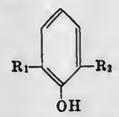
and include the aromatic N-oxides and physiologically acceptable acid addition salts thereof, in the formula R_2 is a halogen atom and R_1 is an alkyl group containing from 1 to 6 carbon atoms.

3,558,643
CERTAIN 4,4'-DIOXY-DIPHENYL-(2-PYRIDYL)-METHANES

Gianfranco Pala, Milan, Italy, assignor to Istituto de Angeli S.p.A., a corporation of Italy

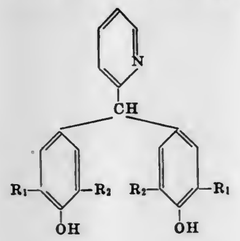
No Drawing. Filed May 16, 1967, Ser. No. 638,755
Int. Cl. C07d *31/28*
U.S. Cl. 260—297 **5 Claims**

In a process for the preparation of 4,4'-dioxy-diphenyl-(2-pyridyl)-methane, the stage of condensation of a compound selected from 2-pyridinaldehyde and a reactive derivative thereof, in the presence of a condensing agent with a phenol of formula:



(I)

where R_1 and R_2 represent a halogen or hydrogen atom and at least one of the substituents R_1 or R_2 is a halogen atom—with formation of a compound of general formula:



(II)

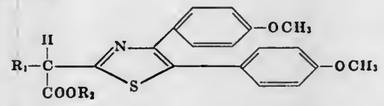
the groups R_1 and R_2 in each benzene ring being as above defined; and the stage of dehalogenation of the so obtained compound of Formula II by Nichel-Raney alloy in the presence of caustic alkalis.

3,558,644
2-SUBSTITUTED-4,5-DIANISYLTHIAZOLES

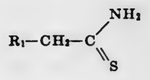
Daniel Lednicer, Kalamazoo, Mich., assignor to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Original application Sept. 26, 1966, Ser. No. 581,747, now Patent No. 3,458,526. Divided and this application Oct. 17, 1968, Ser. No. 768,538
Int. Cl. C07d *91/32*
U.S. Cl. 260—302 **2 Claims**

Antiinflammatory 2-substituted-4,5-dianisylthiazoles of the formula:



wherein R_1 is hydrogen, lower alkyl or phenyl and R_2 is methyl or ethyl are prepared by treating α-bromo-deoxyanisoin with a thioamide of the formula



wherein R_1 is defined as above and treating the resulting products consecutively with (1) butyllithium, (2) carbon dioxide, (3) diazomethane or diazoethane. The anti-inflammatory products are inter alia useful in treating dermatites of nonbacterial origin.

3,558,645
2-[4-(4',5-DIPHENYL - 2 - IMIDAZOLYL)-PHENOXY] LOWER ALIPHATIC MONOCARBOXYLIC ACIDS

Rudolf G. Griot, Florham Park, N.J., assignor to Sandoz-Wander, Inc., a corporation of Delaware

No Drawing. Filed July 8, 1968, Ser. No. 743,038
Int. Cl. C07d *49/36*
U.S. Cl. 260—309 **3 Claims**

2-[4-(4',5'-diphenyl-2-imidazolyl)-phenoxy]lower aliphatic monocarboxylic acids and the corresponding lower alkyl esters and a process for their production are described. These compounds are useful as hypolipidemics.

3,558,646
2-OXO-3-INDOLINYLIDENE HYDRAZIDES OF ALKANOIC ACIDS

Francois T. Bruderlein, Montreal, Quebec, Canada, assignor to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed June 17, 1968, Ser. No. 738,380
Int. Cl. C07d *27/40*
U.S. Cl. 260—325 **51 Claims**

There are disclosed herein the 2-oxo-3-indolinylidene hydrazides of butyric, isobutyric, isovaleric, 3,3-dimethylbutyric, hexanoic, decanoic, cyclopropanecarboxylic, cyclobutanecarboxylic, cyclopentanecarboxylic, and cyclohexanecarboxylic acids, optionally substituted in position 1 with methyl or phenyl groups and in position 5 with bromo or nitro groups.

The compounds are useful as anti-convulsant and anti-inflammatory agents of low toxicity, and methods for their preparation and for their use are also disclosed.

3,558,647
2-(2-AMINOPHENYL)-PHTHALIMIDINES

Theodore S. Sulkowski, Narberth, and Albert A. Mascitti, Norristown, Pa., assignors to American Home Products Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Original application Mar. 14, 1967, Ser. No. 622,920, now Patent No. 3,466,297, dated Sept. 9, 1969. Divided and this application Mar. 3, 1969, Ser. No. 825,472
Int. Cl. C07d *27/50*
U.S. Cl. 260—325 **8 Claims**

The present invention is concerned with 2-(2-aminophenyl)phthalimidines and 2 - (2 - aminophenyl)isoindolines. These 2-(2-aminophenyl)phthalimidines are useful intermediates in the preparation of their corresponding 2-(2-aminophenyl)isoindolines which are pharmacologically efficacious as anti-convulsants.

3,558,648
1-(2-AMINOPHENYL)ISOINDOLIN-3-ONES

Goetz E. Hardtmann, Florham Park, and Hans Ott, Convent Station, N.J., assignors to Sandoz-Wander, Inc., a corporation of Delaware

No Drawing. Application Jan. 3, 1966, Ser. No. 521,239, now Patent No. 3,475,449, dated Oct. 28, 1969, which is a continuation-in-part of application Ser. No. 463,378, June 11, 1965. Divided and this application July 2, 1969, Ser. No. 857,250
Int. Cl. C07d *27/50*
U.S. Cl. 260—325 **7 Claims**

Disclosed are isoindolo[2,1 - d][1,4]benzodiazepin - 6-(7H)-ones pharmaceutically active and useful as sedatives, sedative/hypnotics, tranquilizers, anticonvulsants and antidepressants. Also disclosed are various processes and intermediates including the compounds which are 1-(2-aminophenyl)isoindolines, 1-(2-aminophenyl)isoindoline-3-ones, 2'-aminobenzophenone-2-carboxylic acids, 2-(2-aminobenzoimidoyl)benzamides and 5 - methylmorphanthridin-6(5H)-ones.

3,558,649
2-(AMINOALKYL)-1-PHENYLISOINDOLINES

Werner Metlesics, Clifton, and Leo Henryk Sternbach, Upper Montclair, N.J., assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Continuation-in-part of application Ser. No. 487,619, Sept. 15, 1965. This application Jan. 30, 1967, Ser. No. 612,321
Int. Cl. C07d *27/48*
U.S. Cl. 260—326.1 **26 Claims**

Novel 1 - phenyl - 2 - aminoalkylisoindoline derivatives have been prepared and shown to exhibit useful anorexigenic properties.

3,558,650
PHTHALIMIDOMETHYL ISOTHIOCYANATE

Gerhard Zumach and Bertram Anders, Cologne-Stammheim, Ferdinand Grewe, Burscheid, Engelbert Kuhle, Bergisch Gladbach, and Helmut Kaspers, Leverkusen, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Filed May 16, 1968, Ser. No. 729,547
Claims priority, application Germany, June 13, 1967, F 52,666
Int. Cl. C07d *27/52*
U.S. Cl. 260—326 **1 Claim**

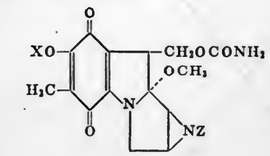
Phthalimidomethyl isothiocyanate which possesses fungicidal properties and which may be produced by reacting the corresponding N-chloromethyl-phthalimide, optionally in the presence of a solvent, with a compound which donates the thiocyanate group, e.g. trimethylsilyl isothiocyanate, and alkali metal and ammonium thiocyanates.

3,558,651
1a-ACYL-7-ACYLOXY-9a-METHOXY-MITOSANES

Masanao Matsui, Tokyo, Keizo Uzu, Sunto-gun, Shizuoka-ken, and Shigetoshi Wakaki, Tokyo, Japan, assignors to Kyowa Hakko Kogyo Co., Ltd., Tokyo, Japan, a corporation of Japan

Continuation-in-part of application Ser. No. 470,725, July 9, 1965. This application Sept. 9, 1968, Ser. No. 758,287
Claims priority, application Japan, July 10, 1964, 39/38,919
Int. Cl. C07d *27/36*
U.S. Cl. 260—326.3 **4 Claims**

Compounds of the formula:



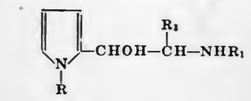
wherein X is H or R'CO, Z is H or R'CO and R' is lower alkyl or monocyclic carbocyclic aryl. These compounds are produced by a hydrolysis reaction in alkaline solution.

3,558,652
N-MONOSUBSTITUTED PYRRYL-AMINOETHANOLS

Uberto M. Teotino and Davide Della Bella, Milan, Italy, assignors to Whitefin Holding S.A., Lugano, Viale C. Cattaneo, Switzerland

No Drawing. Filed May 8, 1967, Ser. No. 636,625
Claims priority, application Great Britain, May 17, 1966, 21,778/66
Int. Cl. C07d *27/26*
U.S. Cl. 260—326.5 **1 Claim**

Compounds acting on the central nervous system, on the autonomic nervous system and on the cardiovascular system, comprised in the formula:



wherein R is selected in the group comprising alkyl, aryl and arylalkyl radicals which may be substituted by at least one radical selected in the group comprising halogen atoms, alkyl, hydroxy, alkoxy, trifluoromethyl, nitro, amino, mono- or di-alkylamino radicals; R_1 is selected in the group comprising hydrogen, alkyl and cycloalkyl radicals; R_3 is selected in the group comprising hydrogen and alkyl radicals and their salts with organic and inorganic acids and alkyl halides.

3,558,653
DIALKYLAMINOALKYL-INDOLINES

William E. Coyne and John W. Cusic, Skokie, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed May 20, 1968, Ser. No. 730,623
Int. Cl. C07d *27/40, 27/38*
U.S. Cl. 260—326.11 **4 Claims**

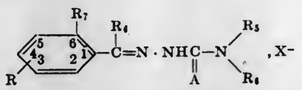
1-aminoalkyl-3,3-diphenyl-indolines and indolinones are described herein. They possess anti-inflammatory, antibacterial, anti-protozoal, and anti-algal activity. The indolinones are prepared by the alkylation of the N-unsubstituted compounds while the indolines are obtained by the reduction of the corresponding indolinone.

3,558,654
SEMICARBAZONE AND THIOSEMICARBAZONE QUATERNARY SALTS

David George Bamford, London, David Frederick Biggs, Loughton, Peter Chaplen, Grays, Michael Davis, Upminster, and David John Sheffield, Wickford, England, assignors to May & Baker Limited, Dagenham, Essex, England, a British company

No Drawing. Filed Aug. 14, 1967, Ser. No. 660,225
Claims priority, application Great Britain, Aug. 23, 1966, 37,800/66; July 7, 1967, 31,375/67
Int. Cl. C07c *157/00*; C07d *27/04*
U.S. Cl. 260—326.83 17 Claims

Semicarbazone and thiosemicarbazone quaternary salts of the formula:



wherein R represents a group $R_1R_2R_3N^+$ in the 3- or 4-position of the benzene radical, in which R_1, R_2 and R_3 each represent a lower alkyl group or R_1 and R_2, together with the nitrogen atom to which they are attached, represent a saturated, monocyclic heterocyclic group, R_4 represents a hydrogen atom, an alkyl or alkenyl group containing a maximum of 12 carbon atoms, or a cycloalkyl group containing 3 to 8 carbon atoms, A represents an oxygen or sulphur atom, R_5 and R_6 each represent a hydrogen atom or a lower alkyl group, with the proviso that R_4, R_5 and R_6 are not simultaneously hydrogen atoms, R_7 represents a hydrogen atom or R_7 and R_4 linked together represent a trimethylene chain $—(CH_2)_3—$, and X^- represents a pharmaceutically acceptable anion, are useful as neuromuscular blocking agents.

3,558,655
BENZO[b]THIOPHENEACETIC ACID COMPOUNDS

James S. Kaltenbronn, Ann Arbor, Mich., assignor to Parke, Davis & Company, Detroit, Mich., a corporation of Michigan

No Drawing. Continuation-in-part of application Ser. No. 752,805, Aug. 15, 1968. This application June 25, 1969, Ser. No. 836,593
Int. Cl. A61k *27/00*; C07d *63/22*
U.S. Cl. 260—330.5 6 Claims

4-phenylbenzo[b]thiophene - 2 - acetic acids, 7-phenylbenzo[b]thiophene - 3 - acetic acids, 7 - phenylbenzo[b] thiophene - 4 - acetic acids, 2-phenylbenzo[b]thiophene-6-acetic acids, 3-phenylbenzo[b]thiophene-7-acetic acids, 4-phenylbenzo[b]-thiophene-7-acetic acids, 7-cyclohexylbenzo[b]thiophene-3-acetic acids, and 7-cyclohexylbenzo-[b]thiophene-4-acetic acids, optionally substituted in the phenyl group by halogen or methyl and on the α-carbon by lower alkyl; carboxylate salts thereof; and their production by the hydrolysis of a correspondingly substituted carboxylic acid precursor. The compounds of the invention are useful as anti-inflammatory agents.

3,558,656
GLYCEROL TRICHLOROETHYL CARBONATE AND DERIVATIVES

Francis R. Pfeiffer, Delran, and Jerry A. Weisbach, Cherry Hill, N.J., assignors to Smith Kline & French Laboratories, Philadelphia, Pa., a corporation of Pennsylvania

No Drawing. Filed Apr. 19, 1968, Ser. No. 722,538
Int. Cl. C07d *13/06*
U.S. Cl. 260—340.9 1 Claim

1,2 and 2,3-diacylglycerols are prepared from sn-glycerol 1,2-acetonide via the intermediate sn-glycerol 1,2-acetonide 3-(2,2,2-trichloroethyl) carbonate, which rearranges in acid to give sn-glycerol 2,3-carbonate.

3,558,657
TETRAOXATRICYCLONONANES, TETRAOXATRICYCLODECANES AND PROCESS FOR PREPARATION

Herbert E. Johnson, South Charleston, W. Va., assignor to Union Carbide Corporation, a corporation of New York

No Drawing. Filed Oct. 30, 1967, Ser. No. 679,168
Int. Cl. C07d *13/00*
U.S. Cl. 260—340.9 5 Claims

There is described a process for producing 2,4,6,8-tetraoxatricyclo[3.3.1.$0^{3,7}$]nonanes and 2,4,6,8 - traoxatricyclo[3.3.2.$0^{3,7}$]decanes by reacting 1,2-dicarbonyl compounds with, respectively, 1,3-dicarbonyl compounds or 1,4-dicarbonyl compounds in the presence of an acid catalyst. The process is illustrated by the reaction of glyoxal with either 2,4-pentanedione or 2,5 - hexanedione to form, respectively, 1,5-dimethyl-2,4,6,8 - tetraoxatricyclo[3.3.1.$0^{3,7}$]nonane or 1,5 - dimethyl-2,4,6,8-tetraoxatricyclo[3.3.2.$0^{3,7}$]decane.

3,558,658
2H,5H-PYRANO(3,2-c)(1)BENZO-PYRAN-4(3H),5-DIONES

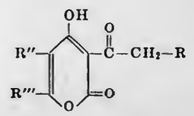
John S. McIntyre, Sarnia, Ontario, Canada, assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Mar. 3, 1967, Ser. No. 620,221
Int. Cl. A01n *9/28*; C07d *21/00*
U.S. Cl. 260—343.2 6 Claims

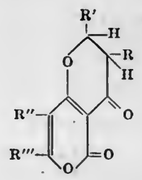
The present invention is concerned with the condensation of an aldehyde of the formula:



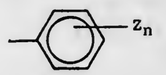
with a pyrone or coumarin compound of the formula:



to obtain novel products of the following formula:



in the above and succeeding formulae in the present specification and claims, R represents alkyl of from 1 to 10, both inclusive, carbon atoms or a phenyl radical of the formula:



wherein Z represents methyl, bromo, chloro, or hydroxy and *n* represents an integer from 0 to 1, both inclusive; R' represents phenyl, substituted phenyl, naphthyl, 9-anthryl, 9-phenanthryl, styryl, 2-furyl, 2-thienyl, or 1-methyl-2-pyrrolyl; and R'' represents hydrogen and R''' represents hydrogen, methyl, or phenyl, or R'' and R''', taken together, jointly represent a four-carbon-atom divalent radical which with the two carbon atoms upon which R'' and R''' are substituents constitutes a six-carbon-atom unsaturated ring.

3,558,659
PROCESS FOR THE PREPARATION OF PYROCINE

Marc Julia, Paris, France, assignor to Rhone-Poulenc S.A., Paris, France, a French body corporate

No Drawing. Filed Oct. 9, 1967, Ser. No. 673,994
Claims priority, application France, Oct. 12, 1966, 79,723; Feb. 24, 1967, 96,477, 96,478
Int. Cl. C07d *5/06*
U.S. Cl. 260—343.6 1 Claim

Pyrocine, an intermediate in the preparation of chrysanthemic acid, is made by cyclizing 2-carboxy-4,4,6-trimethyl-2,5-heptadienoic acid.

3,558,660
HALOVINYL-SUBSTITUTED SATURATED-CARBOXYLIC ACIDS AND ANHYDRIDES

Louis Schmerling, Riverside, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 668,672, Aug. 18, 1967, which is a continuation-in-part of abandoned application Ser. No. 577,140, Sept. 6, 1966, which in turn is a continuation-in-part of abandoned application Ser. No. 260,849, Feb. 23, 1963. This application Nov. 19, 1969, Ser. No. 878,234
Int. Cl. C07c *61/16*
U.S. Cl. 260—346.3 6 Claims

Chlorovinylation of aliphatic and cycloaliphatic carboxylic acids by condensation thereof with polychloroolefins. The products resulting therefrom are useful as chemical intermediates for the production of insecticides, flame retardants and resins.

3,558,661
PROCESS FOR THE PRODUCTION OF 1,2,4-DITHIAZOLIDINES

Gerhard Zumach and Wolfgang Weiss, Cologne-Stammheim, and Engelbert Kühle, Bergisch Gladbach, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany

No Drawing. Continuation of application Ser. No. 550,939, May 18, 1966. This application Nov. 7, 1969, Ser. No. 871,552
Claims priority, application Germany, June 23, 1965, F 46,411
Int. Cl. C07d *87/46*
U.S. Cl. 260—247.1 5 Claims

A 1,2,4-dithiazolidine compound and process for producing compounds of the type by reacting chlorocarbonylsulphenyl chloride with an o-monothiocarbamate at a temperature of about 0–100° C. The resulting compounds are useful as insecticides.

3,558,662
5-NITRO-2-THIAZOLE-2-OXAZOLIDINONES

Hans Bruderer, Riehen, and Rudolf Rüegg, Bottmingen, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed July 18, 1968, Ser. No. 745,705
Claims priority, application Switzerland, Aug. 4, 1967, 11,057/67
Int. Cl. C07d *85/28*
U.S. Cl. 260—306.8 9 Claims

3-(2-thiazolyl)-2-oxazolidinones which are useful as anthelmintics and their method of production from the reaction product of a 2-amino-thiazole with an ester of a haloformic acid including intermediates in this process.

3,558,663
METHOD FOR CATALYTIC DEHYDROGENATION OF 2,3-DIHYDRO INDOLE

Jan Magnus Bakke, Karlskoga, Sweden, assignor to Aktiebolaget Bofors

No Drawing. Filed July 24, 1968, Ser. No. 747,081
Claims priority, application Sweden, Aug. 4, 1967, 11,119/67
Int. Cl. C07d *27/56*
U.S. Cl. 260—319.1 1 Claim

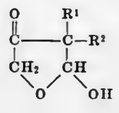
Indole is prepared by the catalytic dehydrogenation of 2,3-dihydro indole in the presence of a platinum or palladium catalyst in the absence of a hydrogen acceptor.

3,558,664
DIHYDRO-5-HYDROXY-4,4-DIALKYL-3 (2H)-FURANONES

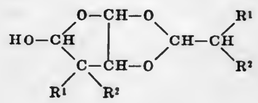
Alfred G. Robinson, Alden E. Blood, and Hugh J. Hagemeyer, Jr., Longview, Tex., assignors to Eastman Kodak Company, Rochester, N.Y., a corporation of New Jersey

No Drawing. Filed Feb. 12, 1969, Ser. No. 798,810
Int. Cl. C07d *5/04*
U.S. Cl. 260—347.8 10 Claims

Hydroxy furanones having the general formula



wherein R^1 and R^2 are the same or different alkyl groups of 1 to 10 carbon atoms are prepared by thermal decomposition of compounds having the formula



wherein R^1 and R^2 are as previously described. The thermal decomposition of the starting material is preferably effected at a temperature in the range of 120° C. to 200° C. in the presence of an alkali metal salt of an organic acid. The hydroxy furanones are useful solvents and intermediates for the preparation of polyols useful, for example, as solvents and in the manufacture of polyesters.

3,558,665
EPOXIDIZED PEROXIDES

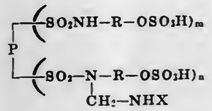
Ronald L. Friedman and Roger N. Lewis, Pinole, Calif., assignors to Argus Chemical Corporation, a corporation of Delaware

No Drawing. Filed Mar. 3, 1966, Ser. No. 531,370
Int. Cl. C07c *73/00*, *73/02*
U.S. Cl. 260—348 26 Claims

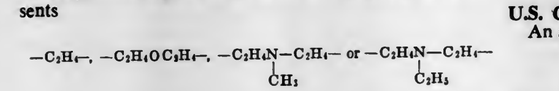
Acyl peroxides containing epoxy groups that are provided by the conversion of carbon-to-carbon double bonds in ethylenically unsaturated peroxide intermediates to the corresponding epoxidized structures. The epoxy peroxides are useful as catalysts, for example, in the preparation of epoxy resins.

3,558,666
PHTHALOCYANINE DYESTUFFS
Gerhard Back, Lorrach, Germany, assignor to Ciba Limited, Basel, Switzerland, a Swiss company
No Drawing. Continuation-in-part of application Ser. No. 801,171, Feb. 20, 1969, which is a continuation-in-part of application Ser. No. 653,008, July 13, 1967. This application Dec. 9, 1969, Ser. No. 883,630
Claims priority, application Switzerland, July 6, 1966, 9,820/66
Int. Cl. C07d *27/76;* **C09b** *47/04*
U.S. Cl. 260—314.5 **2 Claims**

This invention relates to phthalocyanine dyestuffs corresponding to the formula



in which P represents a nickel- or cooper-phthalocyanine residue, containing the substituents in 3'-position, R represents



X represents chloracetyl, bromacetyl, β-chloropropionyl, β-bromopropionyl, α,β-dichloropropionyl, α,β-dibromopropionyl, acryl, α-chloracryl or α-bromacryl, *m* and *n* each represents an integer of at least 1 and *n*+*m* represents an integer of at least 3 and not greater than 4.

3,558,667
BENZOFURANS FROM O-PHENYL KETOXIMES
Aram Mooradian, Schodack, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 637,056, May 9, 1967, which is a continuation-in-part of application Ser. No. 596,395, Nov. 23, 1966. This application Nov. 1, 1968, Ser. No. 772,868
Int. Cl. C07d *5/42*
U.S. Cl. 260—346.2 **11 Claims**

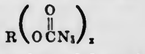
Benzofurans are prepared by heating above approximately 50° C. an O-phenyl ketoxime in an acidic medium where the O-phenyl group is unsubstituted at one position ortho to the position containing the O-linkage and is substituted at either one or both of the para- and other ortho-positions by an electron withdrawing group. The benzofurans have pharmacological properties, e.g., anti-inflammatory activity, and chemotherapeutic properties, e.g., antibacterial activity.

3,558,668
CURABLE POLYEPOXIDES FROM PHOSPHORIC ACIDS
Richard Hochreuter, Basel, and Kurt Hofer, Basel-Land, Switzerland, assignors to Sandoz Ltd., Basel, Switzerland, a corporation of Switzerland
No Drawing. Filed Jan. 30, 1969, Ser. No. 795,334
Claims priority, application Switzerland, Feb. 19, 1968, 2,372/68
Int. Cl. C08g *30/02*
U.S. Cl. 260—348.6 **5 Claims**

The production of phosphorus containing polyepoxides is described by the reaction of ortho-, pyro- or polyphosphoric acid first with from 2 to 40 mols of ethylene oxide, then with from 2 to 6 mols of an epihalohydrin, for example epichlorohydrin or 1-chloro-2,3-epoxypropane, followed by dehydrohalogenation with an alkali, e.g. potassium or sodium hydroxide, to give the required polyepoxide. Apart from examples showing the production of three of these polyepoxides, examples are also given of providing an antistatic impregnation on textile fabrics of polyester material by coating these fabrics through immersion in an impregnating bath containing the polyepoxide—or an immediate precursor thereof in the presence of an alkali—and a hardener constituted by a polyglycoldiamine and then hardening by treating the coated fabric at a temperature of about 140 to 150° C.

3,558,669
ORGANIC COMPOUNDS CONTAINING 2 TO 4 AZIDOFORMATE GROUPS
David S. Breslow, Munich, Germany, assignor to Hercules Incorporated, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of applications Ser. No. 172,815, Feb. 12, 1962, now Patent No. 3,211,752, and Ser. No. 247,878, Dec. 28, 1962. This application Dec. 14, 1964, Ser. No. 418,278
Int. Cl. C07c *117/02*
U.S. Cl. 260—349 **4 Claims**

An azidoformate having the formula



where *x* is a whole number of 2 to 4 and R is selected from the group consisting of alkylene, cycloalkylene, arylene, arylenedialkylene, alkylene, diarylene, cycloalkylene, dialkylene, oxydialkylene, thiodialkylene, alkylene poly (oxyalkylene), alkylene bis(polyoxyalkylene), and carbyl tetrakis (alkylene oxyalkylene), said R radicals containing at least one carbon atom per azidoformate group. The compounds are useful for cross-linking polymers.

3,558,670
TETRA-α-SUBSTITUTED ANTHRAQUINONES
Walter Hohmann and Heinrich Vollman, Leverkusen, Hans-Samuel Bleu, Burscheld, and Gunter Gehrke, Cologne-Flittard, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Coutinuation of application Ser. No. 527,502, Feb. 15, 1966. This application Nov. 20, 1968, Ser. No. 777,466
Claims priority, application Germany, Feb. 19, 1965, F 45,295
Int. Cl. C09b *1/56*
U.S. Cl. 260—380 **4 Claims**

Quinizarin dyestuffs having anilino, substituted anilino or benzylamino substituents in the 5-position and phenyl mercapto or substituted phenyl mercapto substituents in the 8-position, particularly useful for dyeing synthetic fibers, e.g. polyethylene terephthalate.

3,558,671
FLUORO- AND CYANO-SUBSTITUTED 7,7,8,8-TETRACYANOQUINODIMETHANS AND INTERMEDIATES THERETO
Elmore Louis Martin, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 514,385, Dec. 16, 1965. This application Aug. 30, 1967, Ser. No. 664,315
Int. Cl. C07c *121/50*
U.S. Cl. 260—396 **12 Claims**

7,7,8,8-tetracyanoquinodimethans substituted with fluoro or cyano groups in the ring can be made by a three-step process comprising: (1) reacting a substituted para-

dihalobenzene with a hydrocarbyl mono-substituted malononitrile having at least one aliphatic hydrogen β to the $CH(CN)_2$ group, in the presence of an alkali metal, an alkaline earth metal or their hydrides; (2) thermally decomposing the intermediate formed in (1) to a substituted dihydrotetracyanoquinodimethan ($STCNQH_2$); (3) oxidizing the intermediate $STCNQH_2$ to a substituted 7,7,8,8-tetracyanoquinodimethan, (STCNQ).

The compounds ($STCNQH_2$) form colored salts with quaternary ammonium compounds which are useful as dyes. The compounds (STCNQ) form charge-transfer salts with cations and complexes with Lewis bases which are useful as chemical reagents, as dyes or pigments.

3,558,672
SYNTHESIS OF DL-19-NORPREGNA-4,16-DIENE-3,20-DIONE
William S. Johnson, Portola Valley, Calif., and Sydney Archer, Bethlehem, N.Y., assignors to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
No Drawing. Filed Aug. 5, 1968, Ser. No. 749,945
Int. Cl. C07c *169/22*
U.S. Cl. 260—397 **11 Claims**

dl-19-norpregna-4,16-diene-3,20-dione, the racemate of a known steroid, is prepared as follows: 2-(7,11-dimethyl-trans,trans - dodeca-3,7,11-trienyl)-3-methylcyclopent-2-en-1-one is reduced to the corresponding 1-ol compound, the latter cyclized with a strong acid to yield *dl*-3,17-dimethyl-A-nor-D-homoestra-3,16-diene, which is ozonized to give 1α-(3-oxobutyl)-5β-formylmethyl-6α-(2-oxopropyl) - 6β - methyl-3,4,4aβ,5,6,7,8,8aα-octahydro-2(1H)-naphthalenone, and the latter cyclized with acid or base.

3,558,673
10β-AMINO-19-NOR-PREGNANES AND METHOD FOR THE PREPARATION THEREOF
Pietro de Ruggieri, Carmelo Gandolfi, and Umberto Guzzi, Milan, Italy, assignors to Ormonoterapia Richter, S.p.A., Milan, Italy, a corporation of Italy
No Drawing. Filed Oct. 23, 1967, Ser. No. 677,065
Claims priority, application Italy, Oct. 29, 1966, 29,420/66
Int. Cl. C07c *169/36*
U.S. Cl. 260—397.1 **15 Claims**

10β-amino-steroids of the pregnane series and a method for the preparation thereof.

3,558,674
6,7-METHYLENE AND 6,7-HALOMETHYLENE PREGNANES AND 19-NORPREGNANES AND PROCESSES FOR THEIR PREPARATION
Colin C. Beard, Freeport, Grand Bahama Island, and Alexander D. Cross, Mexico City, Mexico, assignors to Syntex Corporation, Panama, Panama, a corporation of Panama
No Drawing. Continuation-in-part of applications Ser. No. 486,226, Sept. 9, 1965, now Patent No. 3,338,928; Ser. No. 499,092, Oct. 20, 1965; and Ser. No. 634,411, Apr. 11, 1967, now Patent No. 3,438,977. This application Apr. 1, 1969, Ser. No. 819,512
The portion of the term of the patent subsequent to Apr. 15, 1986, has been disclaimed
Int. Cl. C07c *169/34*
U.S. Cl. 260—397.4 **23 Claims**

6,7-methylene-, 6,7-monohalomethylene, and 6,7-dihalomethylene-3-keto-Δ^4-pregnanes and 19-norpregnanes optionally containing double bond unsaturation at the C–1,2 position and/or hydrogen, methyl, chloro or fluoro at C–6, and/or methylene, methyl, chloro, fluoro, hydroxy or acyloxy at C–16, and/or hydrogen, hydroxy or acyloxy at C–17, which compounds exhibit progestational activities and processes for the preparation of such compounds.

3,558,675
STEROID CARBONATES AND PROCESS
Lewis H. Sarett, Princeton, and Thomas B. Windholz, Westfield, N.J., assignors to Merck & Co., Inc., Rahway, N.J., a corporation of New Jersey
No Drawing. Continuation of application Ser. No. 620,656, Mar. 6, 1967. This application June 30, 1969, Ser. No. 842,788
Int. Cl. C07c *167/28*
U.S. Cl. 260—397.4 **3 Claims**

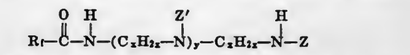
The invention disclosed herein is concerned generally with novel steroid carbonates and processes for preparing them. More particularly, it relates to 17-alkyl, aryl and aralkyl) carbonate esters of 17α-hydroxy-20-keto-steroids of the saturated and unsaturated pregnane series; and with processes for preparing these saturated and unsaturated 17α-hydroxy-20-keto-pregnane-17-carbonates by first reacting the free 17α-hydroxy-steroid with an organo metallic compound, and then reacting the metal 17-olate thus produced with an alkyl chloroformate, aryl chloroformate or aralkyl chloroformate. These new 17α-hydroxy-20-keto-pregnane-17-(alkyl, aryl and aralkyl) carbonates possess progestational activity and are valuable as esterus regulating agents.

3,558,676
FATTY ACID CHROMIUM COMPLEX SALTS AND COMPOSITIONS THEREOF
Edward E. Doherty, P.O. Box 2332, Buford, Ga. 30518
No Drawing. Filed Apr. 19, 1967, Ser. No. 631,851
Int. Cl. C07c *143/90;* **C11d** *1/28*
U.S. Cl. 260—400 **13 Claims**

This invention is a method for producing a water repelling composition comprising reacting a fatty acid metallic salt with basic chromic sulphate and the composition itself.

3,558,677
FLUORINATED AMIDE-VINYL SULFONE ADDUCTS
Richard F. Sweeney, Randolph Township, Morris County, and Alson K. Price, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Aug. 1, 1968, Ser. No. 749,305
Int. Cl. C07c *143/90;* **C11d** *1/28*
U.S. Cl. 260—401 **15 Claims**

Fluorinated amide-vinyl sulfone adducts, useful as oil- and water-repellency agents, have the structural formula



wherein R_f is a fluorinated isoalkoxyalkyl radical; *x* and *y* are integers from 2 to 6 and 1 to 4, respectively; Z is H, an acyl radical R_fCO— wherein R_f is as described above, or a vinyl sulfone radical; Z' is H, an acyl radical R_fCO— wherein R_f is as described above, a vinyl sulfone radical or a radical having the formula $—C_xH_{2x}NHZ$ wherein *x* and Z are as described above; there being at least one acyl radical R_fCO— and one vinyl sulfone radical in the molecule represented by Z and Z'.

3,558,678
PROCESS FOR PREPARING CARBOXYLIC ACID SOAPS FROM ALCOHOLS
Robert J. Fanning, Baton Rouge, La., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Oct. 11, 1968, Ser. No. 766,959
Int. Cl. C08h *17/36*
U.S. Cl. 260—413 **8 Claims**

The caustic fusion process for producing carboxylic acid soaps from alcohols is improved by employing a preliminary heat treatment of the reactants prior to the

actual fusion reaction, the heat treatment or pretreatment being characterized by the performance thereof at a temperature or over a temperature range up to but usually somewhat below that at which a significant evolution of gas or vapor material from reactants, diluents or products is experienced at a pressure up to about 300–400 p.s.i.g. A principal result of performing the heat treatment is that when the main caustic fusion reaction to produce soaps is subsequently performed, forcefully liberating the normal copious quantities of by-product hydrogen at higher pressures than the 300–400 p.s.i.g., unreacted alcohols are not stripped out, reaction is faster, and higher yields of product soaps are obtained. Although this treatment is useful with individuals or combinations of alcohols of a wide range of molecular weights such as alcohols having from about 2 to about 30 carbon atoms per molecule, this process is particularly advantageous with the more volatile lower alcohols, particularly those having from about 6 to about 8 carbon atoms per molecule whose soaps and acids are highly desired for ester production.

3,558,679

PROCESS FOR THE EXTRACTION OF THE UNSAPONIFIABLE FRACTION OF VEGETABLE OILS

Pierre Queval, Sainte-Genevieve-des-Bois, France, assignor to Laboratoires Laroche Navarron, Levallois, France, a French body corporate

No Drawing. Filed Feb. 16, 1968, Ser. No. 705,893
Claims priority, application Japan, Sept. 22, 1967, 42/60,569
Int. Cl. C11b *3/06*
U.S. Cl. 260—425 **4 Claims**

The invention relates to a process for the extraction of the unsaponifiable fraction of vegetable oils by saponification followed by solvent extraction; this fraction, which is useful in human therapeutics, as additive for foods, etc., is prepared according to the invention, by submitting the vegetable oil itself, or the methyl esters of the fatty acids it contains to a dry saponification with lime, extracting in the cold with ethyl alcohol the mass from the saponification reaction and removing the alcohol from the alcohol extract to collect the desired unsaponifiable fraction.

3,558,680

FERROCENE DERIVATIVE

Lawrence R. Moffett, Jr., Huntsville, and Julius D. Capps, Opelika, Ala., assignors to Thiokol Chemical Corporation, Bristol, Pa., a corporation of Delaware

No Drawing. Filed Sept. 27, 1962, Ser. No. 227,653
Int. Cl. C07f *15/02*
U.S. Cl. 260—439 **1 Claim**

1. 2 - (2-n-butoxyethoxy)ethyl(cyclopentadienyl)iron-cyclopentadienylcarboxylate.

3,558,681

METHOD FOR THE PRODUCTION OF METHYLPHENYLCYCLOTRI- AND TETRASILOXANES

Alexandra Grigorievna Kuznetsova, 3 Vladimirskaya ul. 3, kv. 48; Sergei Alexandrovich Golubtsov, 3 Vladimirskaya ul. 4a, kv. 89; and Vladimir Ivanovich Ivanov, Leninsky prospekt 103, korp. 169, kv. 41, all of Moscow, U.S.S.R.

No Drawing. Filed Dec. 18, 1968, Ser. No. 784,907
Int. Cl. C07f *7/08*
U.S. Cl. 260—448.2 **2 Claims**

A method of producing methylphenylcyclotri- and tetrasiloxanes characterized in that methylphenyldichlorosilane or methylphenyldialkoxysilane is subjected to hydrolytic condensation followed by thermal degradation of the formed methylphenylsiloxane oligomers in the presence of lithium hydroxide or lithium silanolate.

3,558,682

2,3,5 - TRIOXOCYCLOPENTANEHEPTANOIC ACID, DERIVATIVES THEREOF AND INTERMEDIATES THERETO

Raphael Pappo, Skokie, and Christopher J. Jung, Morton Grove, Ill., assignors to G. D. Searle & Co., Chicago, Ill., a corporation of Delaware

No Drawing. Filed June 24, 1968, Ser. No. 739,159
Int. Cl. C07c *61/36, 69/74*
U.S. Cl. 260—468 **10 Claims**

2,3,5-trioxocyclopentaneheptaroic acid and derivatives thereof useful by virtue of their pepsin-inhibitory, anti-ulcerogenic, anti-microbial, e.g. anti-bacterial and anti-protozoal, and dicotyledonous seed germination-inhibitory properties.

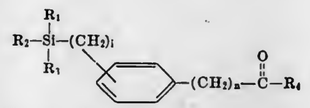
3,558,683

ORGANOSILICON CONTAINING CARBOXYLIC ACID DERIVATIVES

Igal Belsky, Ramat-Gan, and David Gertner and Albert Zilkha, Jerusalem, Israel, assignors to Yissum Research Development Company, Jerusalem, Israel, a company of Israel

No Drawing. Filed Mar. 20, 1967, Ser. No. 624,150
Claims priority, application Israel, Mar. 23, 1966, 25,441
Int. Cl. C07f *7/02*
U.S. Cl. 260—448.2 **3 Claims**

Amides, ureides, thioureides and guanidine derivatives of the following general formula, and to processes for the preparation of these compounds.



wherein the benzene ring is substituted in the ortho, meta or para position by radical containing a tri-substituted silyl group ($R_1R_2R_3Si$), R_1, R_2 and R_3 are alkyl or aryl groups, same or different having up to 10 carbon atoms, *n* is zero or a whole number from 1 up to 10, R_4 is a residue of ammonia, hydroxylamine, hydrazine or N-alkyl or aryl substituted hydrazine, or a primary or a secondary amine whether substituted or unsubstituted, aliphatic aromatic or heterocyclic, or the residue or urea, thiourea or guanidine, or their substituted derivatives, all said residues being connected through nitrogen to the C=O group; *i* is zero or one. These materials serve as central nervous system depressants.

3,558,684

PROCESS FOR THE MANUFACTURE OF ALKENYL ISOCYANATES

Hanswilli von Brachel, Offenbach am Main, and Erwin Herrmann, Frankfurt am Main, Germany, assignors to Cassella Farbwerke Mainkur Aktiengesellschaft, Frankfurt am Main, Germany

No Drawing. Filed Jan. 16, 1968, Ser. No. 698,123
Claims priority, application Germany, Jan. 18, 1967, C 41,254
Int. Cl. C07c *119/04*
U.S. Cl. 260—453 **8 Claims**

Preparation of alpha-beta alkenyl isocyanate by reacting corresponding alkenyl halide with cyanate of alkali metal or alkaline earth metal in aprotic polar solvent, is sharply improved by adding to the reaction mixture a

catalytic quantity of metallic copper or of acceptable cuprous compound such as the halides, along with a substantially non-polar inert solvent.

3,558,685

SUBSTITUTED THIOL CARBAMATES

Hans Osieka and Karl-Heinz Koenig, Ludwigshafen (Rhine), Adolf Fischer, Mutterstadt, Pfalz, and Erich Flickinger, Frankweiler, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Feb. 20, 1968, Ser. No. 706,781
Claims priority, application Germany, Mar. 9, 1967, P 16 42 218.7
Int. Cl. C07c *155/08*; A01n *9/12*
U.S. Cl. 260—455 **2 Claims**

Substituted N-isobutynylthiol carbamates and methods for controlling unwanted plants with same without injuring crop plants.

3,558,686

METHOD FOR PREPARING BORON TRI(THIOALKYL) COMPOUNDS BY REACTION OF BORON OXYHALIDES WITH ALKYLMERCAPTANS

David W. Young, Hammond, Ill., assignor to Sinclair Research, Inc., New York, N.Y., a corporation of Delaware

No Drawing. Original application Oct. 16, 1963, Ser. No. 316,504, now Patent No. 3,423,359, dated Jan. 21, 1969. Divided and this application July 26, 1967, Ser. No. 656,029
Int. Cl. C07f *5/04*
U.S. Cl. 260—462 **9 Claims**

Boron thioalkyl compound, for example trimethyl thioborate, are prepared by reacting boron oxyhalides with alkylmercaptans at elevated temperatures. The alkylmercaptan contains from 1–20 carbon atoms. These boron thioalkyl compounds may be incorporated into synthetic polymers to provide compositions having improved antioxidant or thermal characteristics.

3,558,687

HYDROCARBON OXIDATION WITH BORON ADDITIVES

Joseph L. Russell, Ridgewood, N.J., assignor to Halcon International, Inc., a corporation of Delaware

Filed Aug. 4, 1966, Ser. No. 570,339
Int. Cl. C07c *35/08*; C07f *5/04*
U.S. Cl. 260—462 **8 Claims**

In a process for the oxidation of hydrocarbons, the improvement wherein the effluent gases are washed with a first stream of hydrocarbon to de-entrain boron materials, and the gases then contact a second stream of hydrocarbon to heat this second stream, and passing this heated hydrocarbon to the oxidation reactor.

3,558,688

PREPARATION OF ALLYLIC NITRILES FROM ALLYLIC ESTERS AND HCN IN THE PRESENCE OF ZERO-VALENT NICKEL CATALYSTS

William C. Drinkard, Jr., Kynlyn, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Oct. 26, 1967, Ser. No. 678,185
Int. Cl. C07c *121/30*
U.S. Cl. 260—465.9 **12 Claims**

Claimed is the novel process for the preparation of allylic nitriles, e.g., allyl cyanide, from HCN and an allylic ester, e.g., allyl acetate, in the presence of a zero-valent nickel catalyst, e.g., $Ni[P(OC_6H_5)_3]_4$, and, optionally, an aprotonic Lewis acid, e.g., $ZnCl_2$.

3,558,689

ALPHA-(HYDROXY OR ACYLOXY-4,7-METHANO-INDENYL) ESTERS AND ACIDS

Morris Dunkel, Paramus, N.J., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

No Drawing. Filed Feb. 23, 1967, Ser. No. 617,865
Int. Cl. C07c *61/32, 69/74*
U.S. Cl. 260—468 **11 Claims**

Novel alpha-(hydroxy or acyloxy 4,7-methano-indenyl) esters or acids useful as perfume ingredients prepared basically by a Reformatsky-type reaction of corresponding methanoindenones with α-haloesters.

3,558,690

SUBSTITUTED DERIVATIVES OF 2-ANILINO-PHENYLACETIC ACIDS AND A PROCESS OF PREPARATION

Alfred Sallmann, Bottmingen, and Rudolf Pfister, Basel, Switzerland, assignors to Geigy Chemical Corporation, Ardsley, N.Y., a corporation of New York

Continuation-in-part of applications Ser. No. 782,206, and Ser. No. 782,473, both Dec. 9, 1968, and Ser. No. 625,326, Mar. 23, 1967. Said Ser. No. 782,206, being a continuation-in-part of said application Ser. No. 625,326, and Ser. No. 539,829, Apr. 4, 1966. This application Sept. 29, 1969, Ser. No. 861,571
Claims priority, application Switzerland, Apr. 8, 1965, 4,961/65; Feb. 25, 1966, 2,770/66; Mar. 30, 1966, 4,626/66; Dec. 20, 1967, 17,891/67, 17,892/67, 17,893/67
Int. Cl. C07c *101/44*
U.S. Cl. 260—471 **27 Claims**

Substituted 2-anilinophenylacetic acids, their esters and salts have desirable absorption patterns for protecting the skin against the irritating effect of ultraviolet light. The compounds are also antiinflammatory agents. Typical embodiments are 2 - (2,6 - dichloroanilino)-phenylacetic acid, the sodium salt thereof and the methyl ester thereof.

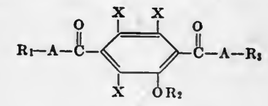
3,558,691

PREPARATION OF 2-ALKOXY TRIHALO-TEREPHTHALATES

William J. Pyne, Painesville, Ohio, assignor to Diamond Shamrock Corporation, a corporation of Delaware

No Drawing. Filed Aug. 28, 1967, Ser. No. 663,525
Int. Cl. C07c *67/00*
U.S. Cl. 260—473 **5 Claims**

An improved process prepares compounds of the general formula:



wherein A is sulfur or oxygen, X is halogen, R_2 is alkyl, and R_1 and R_3 are hydrogen or alkyl. The reaction is carried out, in a virtually anhydrous co-solvent liquid medium, with a metal alkoxide and a compound precursor having four aromatic ring halogens. One solvent is an alcohol and the other solvent is an inert, moderately high boiling liquid readily miscible with both the alcohol solvent and the metal alkoxide.

3,558,692
PRODUCTION OF VINYL ACETATE FROM ETHYLENE
Harry B. Copelin, Niagara Falls, and Melvin J. Freamo, North Tonawanda, N.Y., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Filed Feb. 17, 1964, Ser. No. 345,064
Int. Cl. C07c *67/04*
U.S. Cl. 260—497 7 Claims

A cyclic two-stage method of preparing vinyl acetate which comprises reacting in a first stage ethylene with a working solution which in its oxidized state is an acetate acid solution including a cupric salt, a palladium II salt and chloride or bromide ions within certain critical concentration limits and contacting in a second stage the reduced working solution from the first stage with oxygen in a reaction zone wherein back-mixing of the working solution is effected.

3,558,693
PREPARATION OF ALKYLSULFONATES
Burton M. Rein, Piscataway, and John D. Behun, Scotch Plains, N.J., assignors to Mobil Oil Corporation, a corporation of New York
No Drawing. Filed Aug. 19, 1966, Ser. No. 573,481
Int. Cl. C07c *87/30*
U.S. Cl. 260—501.15 8 Claims

A process of preparing alkylsulfonates and their quaternary ammonium salts is disclosed. The process comprises the reaction of a quaternary ammonium bisulfite with an olefin.

3,558,694
PESTICIDALLY ACTIVE KETO ACID SUBSTITUTED CHLORINATED POLYCYCLIC KETONE $C_{10}Cl_{10}O$
Theodore Largman, Morristown, and Peter Edward Newallis, Morris Plains, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 23, 1966, Ser. No. 604,149
Int. Cl. C07c *61/36, 65/20*
U.S. Cl. 260—514 2 Claims

Pesticidally active adducts of decachlorooctahydro-1,3,4-metheno-2H-cyclobuta(cd)-pentalen-2-one with alkylidene, cycloalkylidene and phenylene keto acids, and method for controlling pests therewith.

3,558,695
PROCESS FOR PREPARING METHACRYL AMIDE-METHACRYLIC ACID MIXTURES
Makoto Sudo, Tokyo, Yasumasa Yamamoto and Masao Kobayashi, Ohtake-shi, Kenichi Yamasaki, Musashino-shi, and Minoru Ikeda, Ohtake-shi, Japan, assignors to Mitsubishi Rayon Co., Ltd., Tokyo, Japan, a corporation of Japan
Filed June 23, 1967, Ser. No. 648,380
Claims priority, application Japan. June 29, 1966, 41/41,797
Int. Cl. C07c *51/08, 103/08*
U.S. Cl. 260—526 9 Claims

A process for preparing methacrylic acid and derivatives thereof by mixing acetone cyanhydrin with concentrated sulfuric acid and then subjecting the mixture to dehydration in which the mixing and dehydration operations are effected at 2 or more stages, wherein the first stage, the mixing operation is effected using a sulfuric acid to acetone cyanhydrin molar ratio of at least 1.5:1; in the subsequent stage, the mixing operation is effected while so controlling said molar ratio as to gradually become closer to 1:1; and in the final stage, the mixing operation is effected while controlling said molar ratio to at least 1:1.

3,558,696
PRODUCTION OF α,β-DIHALOACRYLIC ACIDS OR THEIR SALTS
Franz Reicheneder, 5 Homburger Strasse, Ludwigshafen (Rhine), Germany
No Drawing. Filed July 18, 1967, Ser. No. 654,059
Claims priority, application Germany, July 28, 1966, P 15 68 152.4
Int. Cl. C07c *57/06*
U.S. Cl. 260—539 6 Claims

A process for the production of α,β-dihaloacrylic acids or their salts in which dihalomaleic acids or their anhydrides, acid salts, esters or hemiesters are heated in the presence of inert solvents to temperatures of 110° to 180° C. The α,β-dihaloacrylic acids are used for the production of pharmaceuticals.

3,558,697
PREPARATION OF ALKYLPHOSPHONOTHIOIC DIHALIDES
James B. Hinkamp, Birmingham, and Vincent F. Hnizda, Huntington Woods, Mich., assignors to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Sept. 8, 1967, Ser. No. 666,475
Int. Cl. C07f *9/42*
U.S. Cl. 260—543 12 Claims

Alkyphosphonothioic dihalides are prepared in improved yields by reacting an alkyl aluminum sesquihalide with a thiophosphoryl halide in the absence of a hydrocarbon solvent. The reaction need not be carried out with pure thiophosphoryl halide. Instead, the thiophosphoryl halide can be in the mixture produced by reacting posphorous trihalide and sulfur with an aluminum trihalide catalyst.

3,558,698
PERFLUOROALKANESULFONAMIDES N-SUBSTITUTED BY A PLURALITY OF CARBOCYCLES
Joseph Kenneth Harrington, Edina, Donald C. Kvam, North Oaks, Arthur Mendel, Vadnais Heights, and Jerry E. Robertson, North Oaks, Minn., assignors to Minnesota Mining and Manufacturing Company, St. Paul, Minn., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 588,338, Oct. 21, 1966. This application June 30, 1969, Ser. No. 837,899
Int. Cl. C07c *143/74*; A01n *9/16*
U.S. Cl. 260—556 5 Claims

N-substituted perfluoroalkanesulfonamides in which the sulfonamide nitrogen substituent is a group containing a plurality of carbocycles and selected from cycloalkanoylphenyl, naphthyl, anthroquinonyl, fluorenonyl and N-(naphthyl)carbamylphenyl. Also included are salts of these compounds, compositions containing the compounds and processes for their preparation and use. The compounds are active as herbicides and plant growth modifiers.

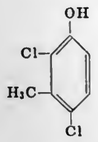
3,558,699
2-AMINO-4-PHENYLSULFONYL-BENZENESULFONAMIDE
Jorgen A. Christensen, Virum, and Jorgen Buus Lassen, Glostrup, Denmark, assignors to A/S Ferrosan, Soborg, Denmark, a firm
No Drawing. Filed Oct. 29, 1968, Ser. No. 771,627
Claims priority, application Great Britain, Nov. 3, 1967, 50,141/67
Int. Cl. A61k *27/00*; C07c *143/80*
U.S. Cl. 260—556 1 Claim

2-amino-4-phenylsulfonyl-benzenesulfonamide has a remarkable anticonvulsive effect, paired with absence of sedative effect. Its toxicity is low.

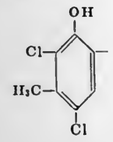
It is produced by Friedel-Crafts reaction between 4-chloro-3-nitrobenzenesulfonic-acid chloride and benzene, sulfidizing to form the disulfide compound, oxidation, amination and reduction of the nitro groups.

3,558,700
LIGHT SENSITIVE COLOR MATERIALS
Shiro Kimura, Makoto Yoshida, Momotoshi Tsuda, and Akio Okumura, Minami-Ashigara-machi, Kanagawa, Japan, assignors to Fuji Shashin Film Kabushiki Kaisha, Minami-Ashigara-machi, Kanagawa, Japan, a corporation of Japan
No Drawing. Filed Oct. 12, 1966, Ser. No. 586,028
Claims priority, application Japan, Oct. 12, 1965, 40/62,163
Int. Cl. C07c *103/33*
U.S. Cl. 260—559 2 Claims

2. A color coupler compound represented by the formula:

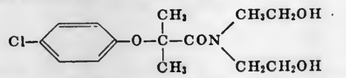


wherein Q represents a coupler residual group capable of coupling with the oxidation product of a color developer and (S) means "secondary," said coupler residual group being represented by the formula:



3,558,701
4'-CHLORO-2-PHENOXY-2-METHYL-N,N-BIS-(β-HYDROXYETHYL)PROPIONAMIDE
Joseph Nordmann, Paris, and Henri Blaise Swierkot, Bondy, France, assignors to Ugine Kuhlmann, Paris, France
No Drawing. Filed Nov. 29, 1968, Ser. No. 780,178
Claims priority, application France, Dec. 1, 1967, 130,567
Int. Cl. C07c *103/33*
U.S. Cl. 260—559 1 Claim

4'-chloro-2-phenoxy - 2 - methyl-N,N-bis-(β-hydroxyethyl)-propionamide of the formula



and the esters of this compound. The propionamide and its esters are useful for the treatment of hepatic disorders in human beings.

3,558,702
METHOD FOR PURIFYING DIMETHYLFORMAMIDE RECOVERED FROM ACRYLONITRILE POLYMERIZATION PROCESSES IN THE COMMERCIAL PRODUCTION OF POLYACRYLONITRILE FIBERS AND YARNS
Alberto Pasin, Cesano Maderno, and Silvano Borgo, Chieti, Italy, assignors to SNIA Viscosa Società Nazionale Industria Applicazioni Viscosa S.p.A., an Italian company
No Drawing. Continuation-in-part of application Ser. No. 512,779, Dec. 9, 1965. This application Nov. 24, 1967, Ser. No. 685,277
The portion of the term of the patent subsequent to Oct. 14, 1986, has been disclaimed
Int. Cl. C07c *103/36*
U.S. Cl. 260—561 9 Claims

A method is disclosed for purifying dimethylformamide, which has been obtained by recovery thereof in substantially non-aqueous condition from a process for spinning acrylonitrile polymers and copolymers to produce fibers and yarns, comprising treating the impure dimethylformamide by contacting it with two different ion-exchange resins which are insoluble in dimethylformamide, one of which is selected from the group of strongly acidic resins consisting of sulphonated styrene-divinyl benzene copolymers, and the other of which is selected from the group consisting of resins having quaternary ammonium groups in hydroxide form and of resins having aliphatic amino groups.

3,558,703
CATALYTIC HYDROGENATION OF DIAMINODIPHENYL ALKANES OR ETHERS
Karl Adam, Erich Haarer, Karl Merkel, and Kurt Pilch, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Mar. 1, 1967, Ser. No. 619,598
Claims priority, application Germany, Mar. 9, 1966, P 15 68 087.2; Aug. 20, 1966, P 15 68 164.8; Sept. 30, 1966, P 15 68 188.6
Int. Cl. C07c *85/14*
U.S. Cl. 260—563 7 Claims

A process for the catalytic hydrogenation of diaminodiphenyl alkanes or ethers, which may be substituted in the nuclei or on nitrogen, in the presence of hydrogenation catalysts, particularly those containing cobalt and manganese. Hydrogenation is carried out in the absence of alkaline earth metal oxides at temperatures of 140 to 300° C. and pressures of 150 to 700 atmospheres. Cyclic ethers having an oxygen atom in the ring, or cyclohexylamine which may be substituted on the nitrogen atom, are used as solvents. The solvent concentration is 30 to 90% by weight based on the total of solvent and compound to be hydrogenated. Diaminodicyclohexyl alkanes or ethers are suitable for the production of high polymers.

3,558,704
4-METHYLCUBANEAMINES
Walter A. Gregory, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
No Drawing. Continuation-in-part of application Ser. No. 434,693, Feb. 23, 1965. This application Oct. 4, 1967, Ser. No. 672,704
Int. Cl. A61k *27/00*; C07c *87/40*
U.S. Cl. 260—563 6 Claims

This invention relates to 4-methylcubane-1-amine, 4-methylcubane - 1-methylamine, certain amino and α,α-amino derivatives of these compounds as well as the non-toxic acid-addition salts of said compounds as novel compounds and the pharmacological use of said compounds as antiviral agents in animals, particularly against influenza virus infections.

3,558,705
2,2,2-TRICHLORO-ETHYLIDENANILINES
Hans-Georg Schmelzer, Cologne-Stammheim, Eberhart Degener, Leverkusen, Gunter Unterstenhofer, Opladen, Horst Tarnow, Leverkusen, and Ingeborg Hammann, Cologne, Germany, assignors to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
No Drawing. Filed Oct. 25, 1967, Ser. No. 677,878
Claims priority, application Germany, Oct. 28, 1966, F 50,561
Int. Cl. C07c *119/00*
U.S. Cl. 260—566 10 Claims

N-(2,2,2-trichloro-ethylidene)-anilines which possess acaricidal properties and which may be produced by reacting the corresponding sulfinylanilines with chloral.

3,558,706
ALKYLATION OF AROMATIC PRIMARY AMINO GROUP

Stephen B. Hamilton, Jr., Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

No Drawing. Filed Mar. 14, 1968, Ser. No. 712,920
Int. Cl. C07c *85/02, 87/62*
U.S. Cl. 260—577 4 Claims

The amino group of an anilino derivative can be alkylated with an aliphatic alcohol carrying out the reaction between the ingredients in the vapor phase in the presence of a magnesium oxide catalyst at elevated temperatures. The compositions prepared by this process are useful as dyes and dye intermediates, as antiseptics, as intermediates in organic syntheses, and in the manufacture of resins, varnishes, etc.

3,558,707
PROCESS FOR PREPARING FLUOROANILINES

John W. Churchill and Ehrenfried H. Kober, Hamden, and Peter H. Scott, Guilford, Conn., assignors to Olin Corporation, a corporation of Virginia

No Drawing. Filed Sept. 9, 1968, Ser. No. 758,602
Int. Cl. C07c *85/10*
U.S. Cl. 260—580 5 Claims

Fluoroanilines are prepared by the deoxygenation and hydrofluorination of the corresponding nitrobenzenes which are reacted in anhydrous hydrogen fluoride at 0° to 230° C. under pressures of from 15 to 1500 p.s.i.a. in the presence of certain deoxygenating agents containing phosphorus or sulfur.

3,558,708
1,7-BIS(DIFLUORAMINO)-2,4,6-TRINITRO-2,4,6-TRIAZAHEPTANE

Robert K. Armstrong, Glassboro, and Gerald L. Brennan, Woodbury, N.J., assignors to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Aug. 19, 1963, Ser. No. 303,725
Int. Cl. C07c *111/00*
U.S. Cl. 260—583 4 Claims

1. 1,7-bis(difluoramino) - 2,4,6 - trinitro - 2,4,6-triazaheptane.

2. A process for the preparation of 1,7-bis(difluoramino))-2,4,6-trinitro-2,4,6-triazaheptane comprising mixing difluoroamine with a solution of 1,7-diacyloxy-2,4,6-trinitro-2,4,6-triazaheptane in a halogenated alkane in the presence of a strongly acidic cation exchange resin, holding the mixture at a temperature of about 50° C. for at least 72 hours, separating the resin, and removing volatile materials by distillation.

3,558,709
PROCESS FOR THE PREPARATION OF AMINES OR DIAMINES BY THE CATALYTIC HYDROGENATION OF NITRILES AND DINITRILES

Günter Höckele, Marl, Germany, assignor to Chemische Werke Huels A.G., Marl, Germany

No Drawing. Filed Apr. 19, 1968, Ser. No. 722,576
Int. Cl. C07c *85/12*
U.S. Cl. 260—583 8 Claims

In a process for the preparation of an amine by the catalytic hydrogenation of a nitrile, the improvement comprising employing as the catalyst a composite catalyst consisting essentially of a support of a large-pore α-aluminum oxide having a crystalline proportion of α-aluminum oxide of more than 70% by weight, a specific surface of between 0.5 and 30 $m.^2/g.$, and a water absorption of between 30 and 60 $cm.^3/100$ g.; and coated on said support cobalt in a proportion of about 5–35% of the total catalyst.

3,558,710
PREPARATION OF AMINE OXIDES IN NONPOLAR SOLVENT

Joseph S. Stalloraitis, Chicago, Ill., and Charles S. Wilhelmy, Morris Plains, N.J., assignors, by mesne assignments, to Armour Industrial Chemical Company, a corporation of Delaware

No Drawing. Filed Nov. 30, 1967, Ser. No. 686,805
Int. Cl. C07c *85/16, 135/02*
U.S. Cl. 260—584 7 Claims

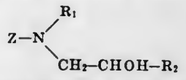
Substantially anhydrous amine oxides are prepared by reacting a tertiary amine such as di-2-hydroxy ethyl coco amine with hydrogen peroxide in a nonpolar solvent such as benzene and removing water from the reaction mass azeotropically.

3,558,711
TERTIARY N-ALKYL-N-(2-HYDROXYALKYL)-POLYHYDROXY-ALKYLAMINES

Hans-Werner Eckert, Dusseldorf, and Arnold Heins, Hilden, Rhineland, Germany, assignors to Henkel & Cie., G.m.b.H., Dusseldorf-Holthausen, Germany, a corporation of Germany

Filed Jan. 26, 1968, Ser. No. 700,891
Claims priority, application Germany, Feb. 9, 1967, H 61,792
Int. Cl. C07c *91/00, 91/06, 93/02*
U.S. Cl. 260—584 4 Claims

As a textile softening agent, an N-alkyl-N-(2-hydroxyalkyl)-polyhydroxyalkylamine and corresponding quaternary compounds, said amines have the formula:



and being characterized by the fact that Z is a polyhydroxyalkyl of 3–6 carbon atoms, R_1 is an alkyl of 8–18 carbon atoms, and R_2 is an alkyl of 6–18 carbon atoms, R_1+R_2 having 24–36 carbon atoms in total.

3,558,712
METHOD FOR THE SYNTHESIS OF ZEAXANTHINS, XANTHOPHYLIS, AND 3-OXO-BETA CAROTENE

Joseph Donald Surmatis, West Caldwell, N.J., and Armin Walser, Arlesheim, Switzerland, assignors to Hoffmann-La Roche Inc., Nutley, N.J., a corporation of New Jersey

No Drawing. Filed Feb. 23, 1967, Ser. No. 617,787
Int. Cl. C07c *45/00, 49/44*
U.S. Cl. 260—586 5 Claims

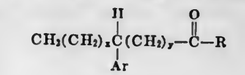
Method by which zeaxanthins, xanthophylls and 3-oxo-beta carotene can be synthesized from the condensation product of mesityl oxide and aceto-acetic ester as well as new and novel intermediates produced in the synthesis. Zeaxanthin and xanthophyll are known coloring agents for foodstuffs, including beverages, pharmaceutical and cosmetic preparations. Furthermore, through the use of the condensation product of mesityl oxide and aceto-acetic acid, new compounds for coloring foodstuffs, including beverages, pharmaceutical and cosmetic preparations are produced.

3,558,713
PHENYL AND NAPHTHYL SUBSTITUTED ALKYL

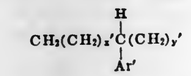
Eugene J. Miller, Jr., Wheaton, Harlan E. Tiefenthal, Western Springs, and Richard A. Reck, Hinsdale, Ill., and Robert E. Malec, Birmingham, Mich., assignors to Armour Industrial Chemical Company, Chicago, Ill., a corporation of Delaware

No Drawing. Filed Sept. 23, 1968, Ser. No. 761,856
Int. Cl. C07c *49/76, 49/82*
U.S. Cl. 260—590 9 Claims

Arylaliphatic ketones having the formula



wherein Ar is an aromatic group, x is an integer from 0 to 18, y is an integer from 1 to 19, and the sum of x and y is an integer from 8 to 19 and R is selected from the group consisting of normal-alkyl radicals having from 1 to 4 carbon atoms, an aromatic group, and



wherein x',y' and Ar' are selected from the groups defined under x, y and Ar respectively.

The arylaliphatic ketones of this invention are especially useful as synthetic lubricants.

3,558,714
PROCESS FOR THE PREPARATION OF HEXANE-3,4-DIOL-2,5-DIONE

George H. Buchi, Cambridge, Mass., and Edouard Demole, Geneva, Albert Yakeb Eschenmoser, Kusnacht, Zurich, and Alan F. Thomas, Vernier, Geneva, Switzerland, assignors to Firmenich & Cie, Geneva, Switzerland

No Drawing. Filed June 12, 1968, Ser. No. 736,268
Claims priority, application Switzerland, June 16, 1967, 8,620/67
Int. Cl. C07c *49/12*
U.S. Cl. 260—594 2 Claims

Hexane-3,4-diol-2,5-dione is prepared by reducing and coupling pyruvaldehyde with a chemical reducing agent.

3,558,715
BIS(PENTABROMOCYCLOPENTADIENYL) AND METHOD OF MAKING THE SAME

Carleton W. Roberts and Stanley D. McGregor, Midland, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Aug. 2, 1968, Ser. No. 749,589
Int. Cl. C07c *17/24, 23/24*
U.S. Cl. 260—648 1 Claim

The invention concerns bis(pentabromocyclopentadienyl), a new compound having the empirical formula $C_{10}Br_{10}$ and relates to a method of making the same.

3,558,716
METHOD OF PRODUCING BETA-BRANCHED ALDEHYDES

Friedrich Engelhardt and Wolfgang Schritt, Hamburg, Germany, assignors to Deutsche Erdol-Aktiengesellschaft, Hamburg, Germany

No Drawing. Filed Jan. 24, 1966, Ser. No. 522,384
Claims priority, application Germany, Dec. 14, 1965, D 46,359
Int. Cl. C07c *45/20*
U.S. Cl. 260—601 12 Claims

Beta-branched aldehydes are produced by dimerization of at least one primary alcohol having a CH_2 group in beta position, by forming a reaction mixture consisting essentially of at least one primary alcohol having a CH_2 group in beta position to the hydroxyl group and of a dehydrogenation catalyst consisting essentially of at least one metal oxide selected from the group consisting of oxides of copper, zinc, lead, chromium, molybdenum, tungsten and manganese, and basically activated with a substance selected from the group consisting of zinc oxide, cadmium oxide and the oxides and hydroxides of the alkali and alkaline earth metals, the catalyst being present in an amount of at least about 5 grams per mol of the alcohol and sufficient to cause at elevated temperature conversion of said alcohol into the aldehyde, and heating the reaction mixture at a temperature and for a period of time sufficient to cause conversion of the alcohol into the aldehyde, and evaporation of at least about 80% of the amount of water formed upon complete conversion of the at least one alcohol into the beta-branched aldehyde, the latter having a number of carbon atoms corresponding to the combined number of carbon atoms of the two alcohol molecules which are thus subject to dimerization.

3,558,717
STABLE FORMALDEHYDE PRODUCT AND PROCESS FOR PREPARING IT

Kurt Theurer, Petersburg, Va., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Continuation-in-part of application Ser. No. 295,215, July 15, 1963. This application May 11, 1967, Ser. No. 637,618
Int. Cl. C07c *47/04*
U.S. Cl. 260—606 4 Claims

A process for stabilizing essentially methanol free aqueous formaldehyde solution against polymer precipitation and acidic increase utilizing additives from the group consisting of hydroquinone, hydroquinone monomethyl-ether, 2,6-di-tert-butyl-4-methyl phenol, 2-tert-butyl-4-hydroxyanisole and 3-tert-butyl-4-hydroxyanisole. All of these additives cause color change in the formaldehyde solution with the exception of 2,6-ditertiary butyl-4-methyl phenol.

3,558,718
PROCESS OF STABILIZING TRIALKYL BORANES

Albert Gross, Frankfurt am Main, Germany, assignor to Kulzer & Co. G.m.b.H., Bad Homburg, Germany, a corporation of Germany

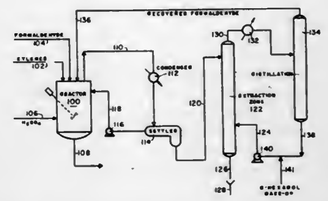
No Drawing. Filed May 22, 1968, Ser. No. 731,263
Claims priority, application Germany, May 24, 1967, K 62,362
Int. Cl. C07f *5/02;* B01j *11/82*
U.S. Cl. 260—606.5 2 Claims

Trialkyl boranes are prevented from spontaneously igniting by adding thereto a stabilizing agent comprising an organic compound of divalent sulfur. These stabilized compounds find utility as catalysts.

3,558,719
RECOVERY OF AQUEOUS FORMALDEHYDE BY EXTRACTION WITH AN ALKANOL FOLLOWED BY DISTILLATION

Harry E. Cler, Baytown, Tex., assignor to Esso Research and Engineering Company

Original application Oct. 14, 1965, Ser. No. 495,961, now Patent No. 3,423,368, dated Jan. 21, 1969. Divided and this application May 27, 1968, Ser. No. 732,349
Int. Cl. C07c *45/24*
U.S. Cl. 260—606 7 Claims

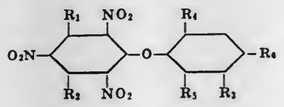


An aqueous formaldehyde-containing stream such as one from the sulfuric acid catalyzed condensation of aro-

matic hydrocarbon and formaldehyde is extracted with an alcohol having at least 4 carbon atoms at a temperature below the alcohol-formaldehyde dissociation temperature, the alcohol extractant being separated from the aqueous stream and distilled under specific conditions to recover the formaldehyde.

3,558,720
FLUORO-ALKYL-SUBSTITUTED POLYNITRO DIPHENYL ETHERS AND A PROCESS FOR PREPARING THE SAME
Josef J. Schmidt-Collerus, Denver, Colo., Don N. Gray, Towson, Md., and George W. Jordan, Jr., Palo Alto, Calif., assignors to the United States of America as represented by the Secretary of the Air Force
No Drawing. Filed Jan. 28, 1964, Ser. No. 340,833
Int. Cl. C07c *43/28*
U.S. Cl. 260—612 **7 Claims**

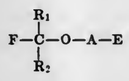
1. The compounds having the formula:



wherein R_1, R_2 and R_3 each represent a member selected from the group consisting of hydrogen, a monovalent lower alkyl radical, and a fluoro-substituted monovalent lower alkyl radical provided that at least one of the substituents R_1, R_2 and R_3 is a fluoro-substituted monovalent lower alkyl radical; and R_4, R_5 and R_6 each represent a member selected from the group consisting of hydrogen and a nitro radical.

3,558,721
METHOD FOR THE PREPARATION OF FLUORINATED ETHERS
Charles Cheng-Yu Yao, Newark, N.J., assignor to Allied Chemical Corporation, New York, N.Y., a corporation of New York
No Drawing. Filed Dec. 22, 1967, Ser. No. 692,694
Int. Cl. C07c *41/04, 41/06*
U.S. Cl. 260—614 **7 Claims**

In a method for preparing fluorine-containing ethers of the formula



wherein R_1 and R_2 are independently either fluorine or certain fluorine-containing aliphatic radicals, or, taken together, form a fluorine-containing cycloaliphatic structure, with the proviso that only one of R_1 or R_2 may be fluorine, wherein A is a linear, branched chain or cyclic alkylene or haloalkylene radical, and wherein E is Cl, Br or I, by reacting a fluorinated ketone or acyl fluoride with an ionizable inorganic fluoride to form an organic fluoride salt, and reacting the organic fluoride salt with an olefin and a halogen to form the fluorine-containing ether, yields are improved, reaction times are shortened, and by-product formation is reduced by improvements comprising use of superatmospheric reaction pressure, or use of superatmospheric reaction pressure together with observation of certain critical reactant molar ratios, and/or operation within certain temperature limits.

3,558,722
PROCESS FOR THE PREPARATION OF α,ω-DICHLOROPOLYALKYLENE OXIDES
Hidehiko Kobayashi and Kiichiro Sasaguri, Tokyo, Yoshihisa Fujimoto, Fukuoka, Saitama-ken, and Jyoji Ibata, Musashino-shi, Japan, assignors to Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan, a corporation of Japan
No Drawing. Continuation-in-part of application Ser. No. 505,416, Oct. 27, 1965. This application Aug. 3, 1967, Ser. No. 658,025
Claims priority, application Japan, Oct. 29, 1964, 39/61,068; Feb. 27, 1965, 40/10,940; Apr. 2, 1965, 40/18,921; June 2, 1965, 40/32,164
Int. Cl. C07c *41/00, 41/02*
U.S. Cl. 260—615 **20 Claims**

A process for the production of high purity α,ω-dichloro-polyalkylene oxides having an average molecular weight of from 508 to 5770 from tetrahydrofuran or a mixture thereof with one other cyclic ether. Said process comprises polymerizing said cyclic ether or ethers with a binary catalyst consisting of thionyl chloride and a specific Lewis acid, such as antimony pentachloride, stannic chloride, such as antimony pentachloride, stannic chloride, etc., then removing or deactivating said Lewis acid component and thereafter heat-treating the polymerization product in the presence of thionyl chloride.

3,558,723
HIGH TEMPERATURE CHLORINATION OF DIBROMODIFLUOROMETHANE
Ralph A. Davis, Midland, and Ronald G. Tigner, North Bradley, Mich., assignors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware
No Drawing. Filed June 9, 1969, Ser. No. 831,763
Int. Cl. C07c *17/10, 19/08*
U.S. Cl. 260—653 **12 Claims**

Disclosed is a process for converting dibromodifluoromethane to bromochlorodifluoromethane and dichlorodifluoromethane. Dibromodifluoromethane is reacted with chlorine or hydrogen chloride at temperatures within the range of from about 400° to 900° C. Unexpectedly, the foregoing reaction does not result in the disproportionation of the halogenated starting material. The process provides an efficient means for recovering the halogen values of undesired or excess products from other manufacturing processes.

3,558,724
INORGANIC PROCESS FOR PRODUCING HYDROCARBON COMPOUNDS BY REACTION OF HYDROGEN AND CRYSTALLINE CARBONATES
Charles A. Salotti, 660 Riverhill Drive, Athens, Ga. 30601
No Drawing. Filed Aug. 30, 1968, Ser. No. 756,407
Int. Cl. C07c *9/00*
U.S. Cl. 260—676 **8 Claims**

The process for producing hydrocarbon compounds wherein a crystalline carbonate material, such as calcite, dolomite and siderite, is heated in a pressurized hydrogen atmosphere to provide for a chemical reaction between the hydrogen and the carbonate crystal surface resulting in useful hydrocarbon compounds.

3,558,725
PREPARATION OF XYLITOL
Shigeharu Kohno and Isao Yamatsu, Tokyo, and Seigo Ueyama, Saitama Prefecture, Japan, assignors to Eisai Kabushiki Kaisha, Tokyo, Japan
No Drawing. Filed Feb. 27, 1968, Ser. No. 708,496
Int. Cl. C07c *31/26*
U.S. Cl. 260—635 **1 Claim**

Novel process for the preparation of xylitol by catalytic hydrogenation of a xylose-containing solution which has been obtained by hydrolyzing degradation of cotton seed hulls or husks, the process being characterized by the fact that said xylose-containing solution is directly

subjected to the catalytic hydrogenation after purification through consecutive treatments of the crude solution first with an acidic cation exchange resin and then with a medium basic anion exchange resin.

3,558,726
NITRO-SUBSTITUTED PHENYLCYCLOPROPANES
Herman A. Bruson, Woodbridge, and Howard L. Plant, Milford, Conn., assignors to Olin Corporation, a corporation of Virginia
No Drawing. Filed Sept. 30, 1968, Ser. No. 763,911
Int. Cl. C07c *79/12*; A01n *9/20*
U.S. Cl. 260—646 **7 Claims**

Nitro-substituted phenylcyclopropanes are prepared by reacting a phenylcyclopropane, such as 1-chloro-1-bromo-2-phenylcyclopropane with a nitration acid. The compounds of this invention are useful as fungicides, insecticides or herbicides. Further, they are useful as additives for plastics to form compositions resistant to fungi and algae atacks in soils and aquatic media.

3,558,727
PRODUCTION OF HEXABROMOCYCLODODECANE
Herbert Jenkner and Otto Königstein, Cologne-Deutz, Germany, assignors to Chemische Fabrik Kalk G.m.b.H., Cologne-Kalk, Germany
No Drawing. Filed Mar. 18, 1968, Ser. No. 714,011
Claims priority, application Germany, May 12, 1967, C 42,327
Int. Cl. C07c *13/02, 17/02*
U.S. Cl. 260—648 **6 Claims**

Method of producing hexabromocyclododecane by reacting cyclododecatriene with bromine in the presence of polar solvents wherein the cyclododecatriene and the bromine are introduced into the solvent at spatially separated locations and the reaction mixture is vigorously stirred.

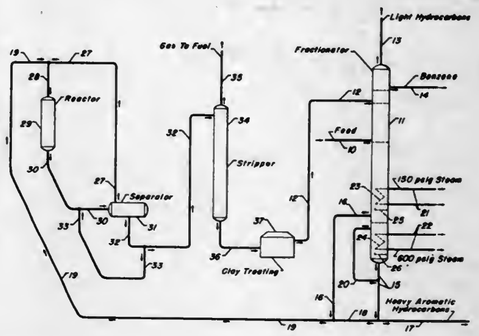
3,558,728
PREPARATION OF DIHYDRONAPHTHALENE COMPOUNDS
Lloyd M. Watson and William R. Birchall, Cincinnati, Ohio, assignors to National Distillers and Chemical Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Aug. 18, 1967, Ser. No. 661,538
The portion of the term of the patent subsequent to June 10, 1986, has been disclaimed
Int. Cl. C07c *5/10*
U.S. Cl. 260—667 **6 Claims**

A process is provided for the hydrogenation of aromatic hydrocarbons having a naphthalene nucleus, using metallic sodium and a lower aliphatic alcohol as the source of hydrogen, employing sodium with an average particle size within the range from about 0.5 to about 50 microns, dispersed in an inert diluent.

A process is also provided for the preparation of alfin polymers by polymerization of an unsaturated organic compound in the presence of an alfin catalyst, employing as the molecular weight modifier the crude dihydronaphthalene dissolved in an inert diluent that is obtained in this by hydrogenation.

3,558,729
DEALKYLATION OF ALKYLAROMATIC HYDROCARBONS
Richard R. De Graff, Arlington Heights, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
Filed May 16, 1968, Ser. No. 729,719
Int. Cl. C07c *3/58*; B01d *3/34*
U.S. Cl. 260—672 **8 Claims**

Process for producing benzene by catalytic hydrodealkylation of toluene. The process is particularly adapted to accept, as a feedstock, relatively low concentration toluene, e.g., aromatics extract from catalytic reformate, comprising 50–80 mol percent toluene and the remainder mainly benzene and xylenes. The additional distillation capacity to separate benzene from the toluene feed may

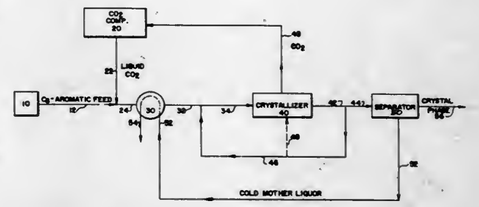


be built into the dealkylator product still. The product still is modified to withdraw the toluene recycle stream from a plate between two reboilers and the toluene feed is introduced to the still below the inlet for dealkylator product.

3,558,730
AROMATIC HYDROCARBON SEPARATION BY ADSORPTION
Richard W. Neuzil, Downers Grove, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware
No Drawing. Filed June 24, 1968, Ser. No. 739,176
Int. Cl. C07c *7/12*; C10g *25/06*
U.S. Cl. 260—674 **10 Claims**

A process for the separation of para-xylene from a mixture of at least one other xylene isomer using a synthetically prepared crystalline aluminosilicate faujasite adsorbent. A feed mixture comprising at least two xylene isomers is passed through a bed of faujasite adsorbent wherein one xylene isomer is preferentially adsorbed within the adsorbent. A desorption step is then used to desorb the adsorbed feed component.

3,558,731
PARAXYLENE CRYSTALLIZATION
Eldred E. Young, Concord, Calif., Robert L. Wege, South Houston, Tex., and Frederick Kunreuther, Scarsdale, N.Y., assignors to Shell Oil Company, New York, N.Y., a corporation of Delaware
Filed Sept. 18, 1968, Ser. No. 760,462
Int. Cl. C07c *7/14*
U.S. Cl. 260—674 **2 Claims**



Paraxylene is separated from xylene mixtures by premixing the xylene mixture with liquid carbon dioxide, precooling the resulting carbon dioxide-xylenes mixture by

heat exchange with cold mother liquor effluent, contacting the chilled carbon dioxide-xylene feed mixture with a recycle slurry containing paraxylene crystals, and subsequently cooling and crystallizing p-xylene from the resulting slurry-containing mixture by evaporation of the carbon dioxide.

3,558,732
AROMATIC HYDROCARBON SEPARATION BY ADSORPTION

Richard W. Neuzil, Downers Grove, Ill., assignor to Universal Oil Products Company, Des Plaines, Ill., a corporation of Delaware

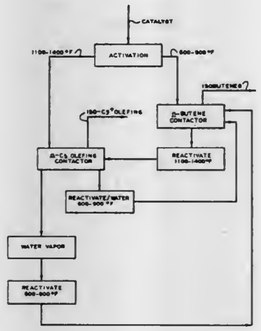
No Drawing. Continuation-in-part of application Ser. No. 739,176, June 24, 1968. This application May 12, 1969, Ser. No. 823,932
Int. Cl. C07c 7/12; C10g 25/04
U.S. Cl. 260—674 **14 Claims**

An improved adsorptive-separation process for separating at least one C_8 aromatic isomer from a hydrocarbon feed containing a mixture of C_8 aromatic isomers which process employs a crystalline aluminosilicate adsorbent to selectively adsorb one C_8 aromatic isomer from the feed. The improvement basically comprises employing toluene as a desorbent to increase the selectivity of the crystalline aluminosilicate thereby allowing a more efficient separation with higher purity extract streams.

3,558,733
OLEFIN ISOMERIZATION PROCESS WITH ALUMINA OF CONTROLLED WATER CONTENT

John W. Myers, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

Filed July 30, 1969, Ser. No. 845,956
Int. Cl. C07c 5/24
U.S. Cl. 260—683.2 **15 Claims**



Alumina catalysts are activated at 600 to 900° F. for increased skeletal isomerization of n-butenes. Further, these catalysts are used in a versatile blocked process for skeletal isomerization of both n-butenes and higher n-olefins. The catalysts can be activated at 1100 to 1400° F. for the skeletal isomerization of higher n-olefins and subsequently exposed to moisture and reactivated at 600 to 900° F. for n-butenes. Alternatively, the reaction for the n-butenes can be obtained by adding a controlled amount of water to the catalyst. Optionally, the catalyst can be first activated for n-butenes, and subsequently prepared for the higher n-olefins by reactivating at 1000 to 1400° F.

3,558,734
ISOMERIZATION OF OLEFINS

John W. Myers, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed Aug. 26, 1968, Ser. No. 755,440
Int. Cl. C07c 5/24
U.S. Cl. 260—683.2 **10 Claims**

A process for the isomerization of olefins in which a halogen-containing compound or water is introduced into the catalyst zone either continuously or intermittently to improve conversion and selectivity.

3,558,735
DEHYDROGENATION OF ETHANE

William Q. Beard, Jr., Wichita, Kans., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia

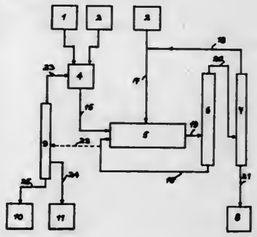
No Drawing. Continuation-in-part of application Ser. No. 800,360, Feb. 11, 1969, which is a continuation of application Ser. No. 444,403, Mar. 31, 1965. This application July 30, 1969, Ser. No. 846,270
Int. Cl. C07c 11/04, 17/10; B01j 11/40
U.S. Cl. 260—683.3 **21 Claims**

An ethane to ethylene oxydehydrogenation process and catalyst therefor which is composed of a low concentration of copper halide with rare earth halides, the ratio of rare earth halides to copper halide being greater than 1:1. Other preferred catalyst components include alkali metal halide and manganese halide.

3,558,736
PROCESS FOR THE PRODUCTION OF 3-METHYL PENTENES FROM ETHENE

Normann Bergem, Oslo, Ulf Blindheim, Skedsmokorset, Olav-Torgeir Onsager, Bekkestua, and Hagbarth Wang, Oslo, Norway, assignors to Sentralinstitutt for Industriell forskning, Oslo, Norway

Filed Aug. 16, 1967, Ser. No. 661,004
Claims priority, application Norway, Aug. 26, 1966, 164,462
Int. Cl. C07c 3/10
U.S. Cl. 260—683.15 **1 Claim**



Ethylene is converted to 3-methylpentene using a catalyst system comprising a compound of a metal from Group 8 of the periodic table, a Lewis acid compound of a metal from Group 2 and/or 3 of the periodic table, and a Lewis base compound of the elements of Group 5 and/or 6 of the periodic table. The reaction product consists essentially of normal butene and 3-methylpentene, the 3-methylpentene is recovered, and all or a part of the normal butene is recycled to the reaction zone.

3,558,737
OLEFIN POLYMERIZATION

George S. Saines, Fishkill, N.Y., assignor to Texas Development Corporation, New York, N.Y., a corporation of Delaware

No Drawing. Filed July 26, 1968, Ser. No. 747,807
Int. Cl. C07c 3/20
U.S. Cl. 260—683.15 **10 Claims**

A process for the polymerization and co-polymerization of propylene and butenes by contacting the olefin

with a catalyst composed of gamma-alumina and chlorine or bromine having a surface area of 75 to 150 square meters per gram and about 3.0 to 15.0 weight percent chlorine and bromine. Polymerization is conducted at temperatures ranging from about −20° C. to about 50° C. such that liquid polymers and co-polymers having an average molecular weight of at least 800 are provided which are useful as additives for lube oils, caulking compounds and gasoline additives.

3,558,738
OLEFIN DIMERIZATION

Howard E. Dunn, Bartlesville, Okla., assignor to Phillips Petroleum Company, a corporation of Delaware

No Drawing. Filed May 5, 1969, Ser. No. 822,053
Int. Cl. C07c 3/10
U.S. Cl. 260—683.15 **9 Claims**

An olefin is dimerized by contact with a catalyst formed from an organoaluminum compound and one of the following nickel complexes:

(a) a nitrosyl nickel complex;
(b) a N,N-dihydrocarbyldithiocarbamato nickel complex;
(c) a [bis]pyridinecarboxylato nickel complex;
(d) a thiobisphenol nickel complex;
(e) thiobisphenol nickel amine complex; or
(f) an amine-N-oxide nickel complex.

3,558,739
ACCELERATOR SYSTEMS COMPRISING 2-(AMINOPOLYTHIO)-THIAZOLE AND THIURAMS

Herbert N. Kagarise, Mogadore, Ohio, assignor to The Goodyear Tire & Rubber Company, Akron, Ohio, a corporation of Ohio

No Drawing. Filed Aug. 29, 1968, Ser. No. 756,297
Int. Cl. C08f 27/06
U.S. Cl. 260—79.5 **10 Claims**

Sulfur vulcanization systems and accelerator systems containing specific 2-(aminodithio) - thiazoles and 2-(aminotrithio)-thiazoles, such as 2 - (morpholinodithio)-benzothiazole and 2-(morpholinotrithio) - benzothiazole and specific thiuram compounds, such as tetramethylthiuram disulfide; polymers containing said systems; and a method for vulcanizing polymers by heating the unvulcanized polymer in the presence of said systems.

3,558,740
HIGH IMPACT STRENGTH POLYMERS

Erich Behr and Johannes Schneider, Troisdorf, Germany, assignors to Dynamit Nobel AG, Troisdorf, Germany, a corporation of Germany

No Drawing. Filed Nov. 22, 1967, Ser. No. 684,961
Claims priority, application Germany, Nov. 28, 1966, D 51,659; Aug. 18, 1967, D 53,882
Int. Cl. C08g 43/02
U.S. Cl. 260—823 **7 Claims**

Blend of a polyphenylene oxide polymer and a polyether with diphenylsulfone- and bisphenol A-units in proportion of about 5 to 60 weight percent of the latter to produce a moldable product having a synergistically higher impact strength than either component alone.

3,558,741
IMIDO-SUBSTITUTED ORGANOPOLYSILOXANE COMPOSITIONS

Fred F. Holub and Milton L. Evans, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York

No Drawing. Filed May 5, 1969, Ser. No. 821,966
Int. Cl. C08f 35/02; C08g 31/24, 47/10
U.S. Cl. 260—827 **9 Claims**

Curable organopolysiloxane compositions are provided and a method for making them, comprising organopolysiloxane having one or more aliphatically unsaturated imido organo radicals attached to silicon through a carbon-silicon bond. The curable organopolysiloxane compositions can be in the form of blends of such imido-substituted organopolysiloxane in combination with at least one olefinically unsaturated monomer, such as N-phenylmaleimide, bismaleimide, styrene, etc., or at least one polymer, such as polycarbonate, polyvinylchloride, etc., or mixtures thereof.

3,558,742
CARBOXY TERMINATED POLYLACTAM AND A DIEPOXIDE

Rolf Schmid, Muenchenstein, Friedrich Lohse, Allschwil, and Hans Batzer, Arlesheim, Switzerland, assignors to Ciba Limited, Basel, Switzerland, a company of Switzerland

No Drawing. Filed Aug. 30, 1968, Ser. No. 756,354
Claims priority, application Switzerland, Sept. 11, 1967, 12,701/67
Int. Cl. C08g 45/12
U.S. Cl. 260—830 **13 Claims**

A curable composition which can be converted into crystalline plastics at an elevated temperature, characterized in that it contains long-chain polyamide-dicarboxylic acids of the formula

$$HOC-A-C-OH$$
$$\quad\;\|\quad\;\|$$
$$\quad\;O\quad\;O$$

where A represents a polyamide residue which contains at least 2 carboxylic acid amide groups and in which branched or linear alkylene and/or alkenylene residue alternate with the carboxylic acid amide groups, as well as diepoxy compounds and, if desired, also antioxidants, and in which for every epoxide group equivalent 0.7 to 1.2, preferably 0.9 to 1.0 equivalent of carboxyl groups is present.

3,558,743
ASHLESS, OIL-SOLUBLE DETERGENTS

Joseph A. Verdol, Dalton, Ill., and Donald J. Carrow, Louisville, Ky. (both % Sinclair Research Inc., 400 E. Sibley Blvd., Harvey, Ill. 60426)

No Drawing. Application June 4, 1968, Ser. No. 734,209, now Patent No. 3,493,520, dated Feb. 3, 1970, which is a continuation-in-part of application Ser. No. 487,624, Sept. 15, 1965. Divided and this application Mar. 17, 1969, Ser. No. 816,477
Int. Cl. C08g 37/16; C08f 27/08, 3/48
U.S. Cl. 260—848 **12 Claims**

Ashless lubricating oil detergents are provided by the reaction product of

(A) a carboxylic acid or acid anhydride containing addition copolymer having at least two carboxylic acid or acid anhydride groups,
(B) an amine,
(C) an alkylated phenol, and
(D) an aldehyde.

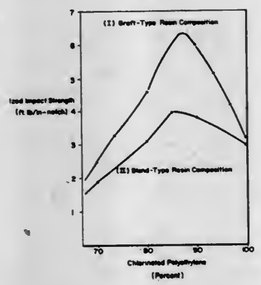
3,558,744
PROCESS FOR MAKING POLYELECTROLYTE COMPLEX RESIN

Alan S. Michaels, Lexington, Michael J. Lysaght, Arlington, and Stephen A. Splitz, Scituate, Mass., assignors to Amicon Corporation, Lexington, Mass., a corporation of Massachusetts

No Drawing. Filed Jan. 5, 1968, Ser. No. 695,856
Int. Cl. C08f 33/08, 47/00
U.S. Cl. 260—874 **5 Claims**

A process for making and purifying polyelectrolyte complex resins wherein a heating step is used before the washing of said resin, said heating step contributing to the formation of a particularly easily-filterable form of resin and advantageously carried out at least above the glass transition temperature of the backbone polymers from which the polyelectrolyte complex resin is formed.

3,558,745
THERMO-PLASTIC RESIN COMPOSITIONS
Masao Ogawa and Shigeo Hayashi, Tokyo, Japan, assignors to Showa Denko Kabushiki Kaisha, Tokyo, Japan
Filed Jan. 4, 1968, Ser. No. 695,659
Claims priority, application Japan, Jan. 20, 1967, 42/3,634
Int. Cl. C08f *19/18, 29/24*
U.S. Cl. 260—876 20 Claims



A thermoplastic resin composition comprising (a) a ternary system resin prepared by graft polymerizing from 2 to 17% by weight of a mixture of an acrylonitrile monomer and a styrene monomer to from 83 to 98% by weight of chlorinated polyethylene and (b) a vinyl chloride resin.

3,558,746
HOT-MELT ADHESIVES OF STYRENE AND AN ACRYLIC ESTER GRAFTED UNTO A POLYSTYRENE BY BULK POLYMERIZATION
Wolfgang Sliwka, Weinheim, Bergstrasse, and Guenther Immel, Ludwigshafen (Rhine), Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany
No Drawing. Filed Feb. 17, 1967, Ser. No. 616,787
Claims priority, application Germany, Feb. 23, 1966, P 15 69 909.9
Int. Cl. C08f *15/40, 19/00*
U.S. Cl. 260—885 9 Claims

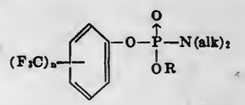
Hot-melt adhesives based on graft polymers in which a mixture consisting of styrene for the most part and esters of acrylic or methacrylic acid is polymerized onto a backbone polymer consisting of polystyrene or a copolymer of styrene and for the most part acrylic or methacrylic esters, the said esters being derived from primary and/or secondary alkanols having 3 to 12 carbon atoms, are very stable even in th molten state, are particularly tough, and have an especially low viscosity in the molten state.

3,558,747
DIHYDROCARBYLHYDROXYPHENYL PHOSPHORUS-CONTAINING ANTIOXIDANTS
Bernard R. Meltsner, Royal Oak, Mich., assignor to Ethyl Corporation, New York, N.Y., a corporation of Virginia
No Drawing. Filed Jan. 30, 1967, Ser. No. 612,317
Int. Cl. B01j *1/16*; C07f *9/12, 9/30*
U.S. Cl. 260—953 10 Claims

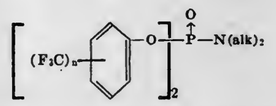
Dihydrocarbylhydroxyphenyl aryl or alkyl phosphonites, phosphonates, phosphates, phosphites, phosphinates, phosphinites, phosphorothionates, and phosphinothionates are antioxidants. The effectiveness of these antioxidants is enhanced by use in combination with a dihydrocarbylthiodialkanoate such as dilaurylthiodipropionate (DLTDP). The stabilizers are especially useful in polypropylene.

3,558,748
FLUORINE-CONTAINING PHOSPHORAMIDATES
Edward S. Blake and Ralph E. De Brunner, Dayton, and David R. Dalton, Columbus, Ohio, assignors to Monsanto Research Corporation, St. Louis, Mo., a corporation of Delaware
Filed Nov. 23, 1964, Ser. No. 412,989
The portion of the term of the patent subsequent to Aug. 26, 1986, has been disclaimed
Int. Cl. C07f *9/24*; C09k *3/00*
U.S. Cl. 260—955 12 Claims

Trifluoromethylphenyl dialkylphosphoramidates of the formulas



and



wherein *n* is 1 or 2, and R is the fluorine-substituted radical

$$-(CH_2)_x(CF_2)_yCF_2Z$$

x being 1–4, *y* being 0–5 and Z being either fluorine or hydrogen; useful as functional fluids having fire-retardant properties.

3,558,749
METHOD FOR THE PRODUCTION OF THE AMMONIUM NITRATE COMPONENT OF AN NH_4NO_3-CONTAINING EXPLOSIVE OF HIGH DETONATION SPEED
Viktor Rank, Linz (Danube), Hans Tentschert, Leonding, near Linz (Danube), and Harald Junker and Kurt Allgeuer, Linz (Danube), Austria, assignors to Osterreichische Stickstoffwerke Aktiengesellschaft, Linz, Austria
No Drawing. Original application Jan. 30, 1967, Ser. No. 612,308. Divided and this application July 5, 1968, Ser. No. 742,703
Claims priority, application Austria, Feb. 2, 1966, A 927/66
Int. Cl. C06b *1/04*
U.S. Cl. 264—3 1 Claim

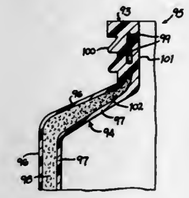
The ammonium nitrate component of an oil- and NH_4NO_3-containing explosive of high detonation speed is manufactured from an inadequately porous commercial form of ammonium nitrate by grinding the latter, separating from the ground material the fraction having a particle size of from 0.05 to 0.125 mm., compressing this fraction into a mass having an "open porosity" of at least 10% by weight, comminuting the resultant porous mass, and separating out the fraction having a particle size of from 0.5 to 2 mm. The latter is subsequently half-filled by impregnation with oil such as diesel oil or spindle oil.

3,558,750
METHOD OF MAKING NUCLEAR FUEL BODIES
Dwight E. Davis, Escondido, Dennis W. Stevens, San Diego, and Geoffrey R. Tully, Jr., Poway, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission
No Drawing. Filed Feb. 7, 1968, Ser. No. 703,573
Int. Cl. G21c *21/00*
U.S. Cl. 264—.5 7 Claims

A method for making nuclear fuel bodies using coated nuclear fuel particles. A chamber of the desired size is filled with a packed bed of coated particles which may be compacted to a desired density. A carbonaceous binder including an organic resin plus filler is injected into

the chamber under sufficient fluid pressure to flow through and occupy the interstices of the packed particulate bed. Curing of the resin and subsequent pyrolysis provides a solid carbonaceous nuclear fuel body. The body may be formed in situ within a fuel chamber of a fuel element portion.

3,558,751
METHOD OF MAKING A FOAMED CONTAINER HAVING AN INTEGRAL NECK PORTION
Thomas R. Santelli, Sylvania, Ohio, assignor to Owens-Illinois, Inc., a corporation of Ohio
Continuation-in-part of application Ser. No. 847,144, Oct. 19, 1959. This application July 22, 1964, Ser. No. 389,511
Int. Cl. B29d *27/00*
U.S. Cl. 264—45 4 Claims



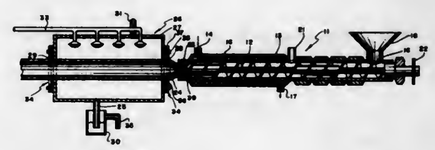
A method for producing a foamed plastic container having a body portion and a neck portion which are integrally formed. The body portion is essentially cellular and the neck portion is essentially noncellular. The body portion has a dense skin on its surface. The container is blow molded from an injection molded parison.

3,558,752
FOAMED RESINS PRODUCTION
Durgacharan Sen, Cwmbran, England, assignor to Monsanto Chemicals Limited, London, England, a British company
No Drawing. Continuation-in-part of application Ser. No. 679,545, Oct. 31, 1967. This application Nov. 21, 1968, Ser. No. 777,875
Claims priority, application Great Britain, Nov. 1, 1966, 48,833/66
Int. Cl. B29d *27/00*; C08f *47/10*
U.S. Cl. 264—51 7 Claims

A process for preparing foamed thermoplastic resins having a fine, uniform cell size by extruding into a zone of lower pressure a heat-softened foamable thermoplastic resin containing a volatile blowing agent under pressure and a nucleating agent comprising orthoboric acid. The nucleating agent preferably also comprises a wax or a finely-divided inert solid such as silica or talc.

3,558,753
METHOD OF PRODUCING A POROUS RESIN BY WITHDRAWING GAS FROM A FOAM EXTRUDATE WHILE IT IS IN A SEMI-MOLTEN STATE
Frank E. Edlin, Tempe, Ariz., assignor to International Plastics, Inc., a corporation of Kansas
Filed Nov. 13, 1967, Ser. No. 682,210
Int. Cl. B29d *27/00*
U.S. Cl. 264—54 8 Claims

Molding powder of a polymeric resin having intrinsic acid properties, such as methyl methacrylate acrylonitrile-butadiene-styrene terpolymer, is admixed with a decomposable chemical compound to produce a resulting mixture which is then extruded to form an extrudate. The extrudate is passed through a reduced pressure cooling zone while still in a semi-molten state to remove the gaseous components of the decomposed chemical compound. Upon removing the solidified extrudate from the reduced pressure cooling zone a porous article is produced immediately and without further processing.

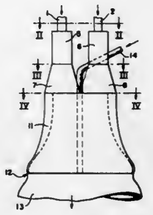


3,558,754
PROCESS OF MANUFACTURING HOSE PIPES
Michel Martin, Reims, France, assignor to Eau et Feu Societe Anonyme, Reims, France
Filed Feb. 27, 1968, Ser. No. 708,554
Int. Cl. B29h *7/14*
U.S. Cl. 264—94 5 Claims



A method of hose manufacture which consists in introducing into a textile jacket an impermeable lining tube having a composite flowable surface layer, and then subjecting the assembly to internal pressure and to heat followed by external pressure to cause the outer part of the surface layer to form flexible sheets around the yarns of the jacket and the inner part of the surface layer thereafter to exude through the outer part to form an abrasion-resistant cover on the hose.

3,558,755
MANUFACTURE OF LAYERED SYNTHETIC PRODUCTS
Theodorus F. Laban, Rheden, and Bertus H. Zandstra, Arnhem, Netherlands, assignors to American Enka Corporation, Enka, N.C., a corporation of Delaware
Filed Mar. 10, 1969, Ser. No. 805,586
Claims priority, application Netherlands, Mar. 15, 1968, 6803692
Int. Cl. B29f *3/12*
U.S. Cl. 264—95 8 Claims



A process for producing a synthetic polymeric product made up of a plurality of layers of alternately different component polymers which comprises forming at least one multi-layer stream of parallel flat polymeric layers, passing a stream of the parallel flat layers into either half of

an annular space to form two sub-streams, causing the sub-streams to coalesce to form a main annular stream of uninterrupted annular polymeric layers, and thereafter extruding the main stream through an extrusion opening, and cooling the extruded stream. The thinnest layer of the multi-layer stream has a thickness not less than about one millimeter.

3,558,756

PROCESS OF MAKING GELATIN WOOL FILTER

Clifton Aldridge, Jr., Creve Coeur, and Robert D. Howell, Ellisville, Mo., assignors to McDonnell Douglas Corporation, St. Louis, Mo., a corporation of Maryland

No Drawing. Filed Mar. 4, 1969, Ser. No. 804,291
Int. Cl. B01d *39/16*
U.S. Cl. 264—101 7 Claims

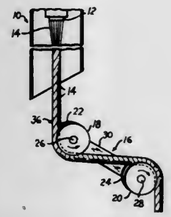
A gelatin wool filter comprising gelatin fibers naturally arranged in a filter pad for filtering up to about 99% of particles of 0.3 micron and larger, said filter being soluble in water. The process includes the steps of dissolving gelatin in water, adding to alcohol, drying, forming into a filter and gas sterilizing.

3,558,757

FALSE TWISTING

Russell Owens Denyes, Maplewood, and Joseph Hermano Santangelo, Morristown, N.J., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware

Original application July 2, 1964, Ser. No. 379,878, now Patent No. 3,470,583, dated Oct. 7, 1969. Divided and this application Apr. 29, 1969, Ser. No. 841,173
Int. Cl. D02g *1/20*
U.S. Cl. 264—103 10 Claims



The process includes extruding a liquid fiber-forming material through a spinnerette into a spinning cabinet containing a gaseous medium to form a multiplicity of tacky filaments. The filaments are withdrawn from the spinning cabinet through an outlet remote from the spinnerette. The filaments are then passed in guiding contact with a guide means, preferably moveable, so positioned that the direction of movement of the filaments is changed from the original line of movement to a path of travel lying substantially in a plane intersecting the original line of movement at a small angle.

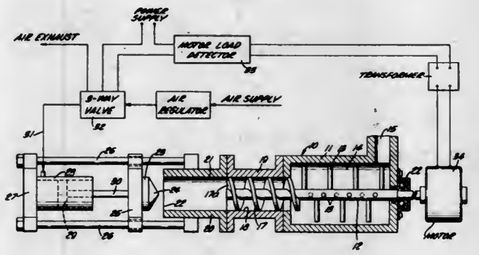
3,558,758

PROCESS FOR PREPARING CERAMIC CLAY GRANULES

Paul H. Wendt, Arcadia, and David F. Latta, Long Beach, Calif., assignors to Pacific Clay Products, Los Angeles, Calif., a corporation of California

Continuation of application Ser. No. 392,718, Aug. 28, 1964. This application May 10, 1967, Ser. No. 637,439
Int. Cl. C04b *33/04, 33/20;* B29b *1/02*
U.S. Cl. 264—108 1 Claim

Clay particles of micron or submicron size and containing 5 to 10 percent moisture are fed into one end of a confining passage by applying shear forces thereto, under pressure, in a direction transverse to the passage, which compacts the clay by orienting the microscopic clay "flakes" so that they lie substantially in parallel direction, and such orientation is maintained as the clay is pushed along the passage which is of uniform sectional area and shape. At the other end of the passage the compacted clay



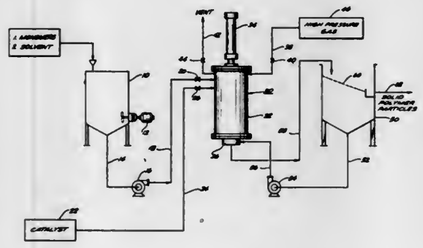
is deflected radially outwardly in all radial directions to break the mass up into chunks or bodies without disturbing the orientation of the flakes in the bodies. These chunks are then further broken up into granules without disturbing the interior particle orientation for use in forming desired shapes by isostatic pressing.

3,558,759

POLYMERIZATION METHOD

Amir M. Sarem, Yorba Linda, Calif., assignor to Union Oil Company of California, Los Angeles, Calif., a corporation of California

Filed May 6, 1968, Ser. No. 726,840
Int. Cl. B01j *2/20;* B29c *17/14*
U.S. Cl. 264—142 12 Claims



A method for producing particulated gelatinous substances, such as gelatinous polymers, and solutions of these materials in which the gel is formed in a reaction chamber equipped with a hydraulically actuated piston and perforate extrusion head and the gelatinous product is subsequently extruded into a stream of solvent or non-solvent liquid flowing at relatively high velocity on the exterior of the perforate head. The gelatinous substance is displaced from the reaction chamber by introducing a fluid into the reaction chamber above the piston at a sufficiently elevated pressure to displace the substance from the chamber through the perforate extrusion head. The hydraulic pressure actuating the piston is adjusted to maintain the piston in pressure balance during the extrusion operation. Gravitational forces acting upon the piston cause it to rest upon the upper surface of the gelatinous mass and to advance downwardly through the

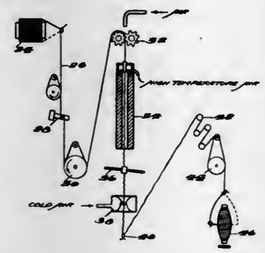
reactor as the gel is displaced from the chamber. The method of this invention is particularly suited for the preparation of aqueous polymer solutions useful as flooding agents in the recovery of petroleum by water flooding, and is especially adapted for installation at the site of a water injection well.

3,558,760

PROCESS FOR SPINNING TWO COMPONENT POLYAMIDE FILAMENTS

Earl Herbert Olson, Wilmington, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

Continuation-in-part of application Ser. No. 754,828, Aug. 23, 1968, which is a continuation-in-part directed to subject matter divided from application Ser. No. 465,121, June 18, 1965, now Patent No. 3,399,108, the latter being a continuation-in-part of application Ser. No. 335,187, Jan. 2, 1964, which is a continuation-in-part of application Ser. No. 202,611, Jan. 14, 1962, which in turn is a continuation-in-part of application Ser. No. 132,449, Aug. 18, 1961, all abandoned. This application Dec. 17, 1969, Ser. No. 886,034
Int. Cl. B29f *3/10;* D01d *5/22*
U.S. Cl. 264—168 9 Claims



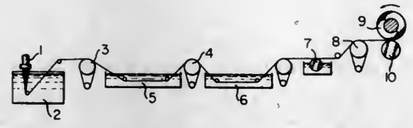
The production of a crimpable filament by drawing, heat relaxing, cooling and stretching a melt spun composite of eccentrically disposed, differentially shrinkable components of different nylon compositions. Crimp developed in the heat relaxing step is pulled out in the stretching step, leaving the filament crimpable.

3,558,761

METHOD FOR MANUFACTURING ACRYLONITRILE FILAMENTS

Yoshijiro Tabara, Nobuhide Teranishi, Shigeru Kikuchi, Kunito Ono, and Shoji Imao, Otake-shi, Japan, assignors to Mitsubishi Rayon Co., Ltd. and Mitsubishi Vonnel Co., Ltd., both of Tokyo, Japan, both companies of Japan

Filed Mar. 27, 1968, Ser. No. 716,382
Int. Cl. D01f *7/00*
U.S. Cl. 264—182 6 Claims



An improved method for manufacturing acrylonitrile filaments containing at least 85% by weight of acrylonitrile by spinning filaments, applying secondary stretching upon the primarily stretched filaments while heating, applying preheating upon the secondary stretched filaments and, finally, applying additional heat treatment upon the filaments. The heating temperature in all heat treatments should be controlled to a predetermined relation.

The filaments manufactured are provided with less unevenness of thickness, uniform dyeability, excellent conformity to dyeing, and improved mechanical properties. So-called dry-wet spinning method is particularly favorable for obtaining the filaments in the present invention.

3,558,762

PRODUCTION OF SHEETING AND FILM

Ernst Koehnlein and Peter Bauer, Ludwigshafen, and Karl Stange, Hambach, Germany, assignors to Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany

No Drawing. Filed Mar. 3, 1969, Ser. No. 804,011
Claims priority, application Germany, Mar. 21, 1968, P 17 78 014.2
Int. Cl. B29d *23/04*
U.S. Cl. 264—209 5 Claims

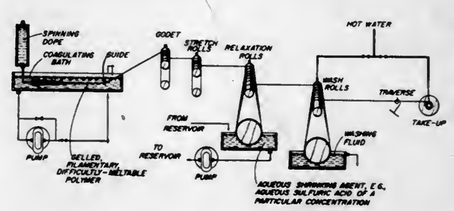
A process for the production of sheeting or film wherein a mixture is prepared from (a) a polyisobutylene, (b) an ethylene polymer, (c) a filler, (d) a carbon black and (e) a slip additive at elevated temperature and this mixture, while still hot, is supplied to an extruder and shaped into tubular sheeting and film at elevated temperature.

3,558,763

PROCESS FOR TREATING WET SPUN FILAMENTS WITH SHRINKING AGENTS

Richard G. Quynn and Saunders E. Jamison, Summit, and Simon E. Sobering, West Orange, N.J., assignors to Celanese Corporation, a corporation of Delaware

Filed June 16, 1965, Ser. No. 464,317
The portion of the term of the patent subsequent to June 18, 1985, has been disclaimed
Int. Cl. B29c *25/00*
U.S. Cl. 264—210 4 Claims



A method of treating filamentary materials formed from difficultly meltable polymers (amide) and particularly to the step of relaxing the shaped wet formed filament by contacting the filament for a period of time and at a temperature sufficient to improve the dye receptivity of the fiber with a strong inorganic acid shrinking agent of a specified concentration. More particularly, aqueous solutions of sulfuric acid, hydrochloric acid and phosphoric acid are used as the shrinking agent.

3,558,764

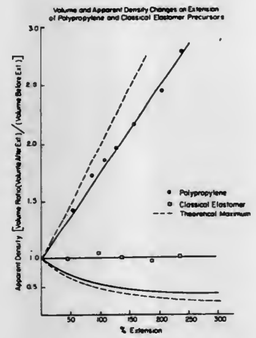
PROCESS FOR PREPARING MICROPOROUS FILM

Robert B. Isaacson, Rahway, N.J., and Harvey S. Bierenbaum, Worcester, Mass., assignors to Celanese Corporation, New York, N.Y., a corporation of Delaware

Continuation-in-part of application Ser. No. 577,439, Sept. 6, 1966. This application June 23, 1969, Ser. No. 835,367
Int. Cl. D01d *5/12*
U.S. Cl. 264—210 7 Claims

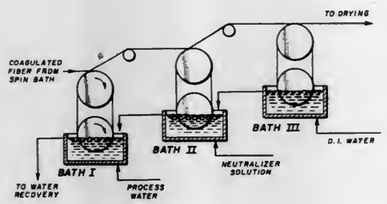
A method is disclosed and claimed for the production of polymeric films (e.g. polyethylene, polypropylene or

polyacetal films) characterized by an open-cell structure and an apparent density lower than the actual density of the original polymers. Such products are prepared by first extruding a film, next drawing down this film at a high



rate, then annealing it and cold drawing it and finally heat-setting the cold drawn film. The thus-produced polymeric films are particularly useful for such applications as microporous membranes.

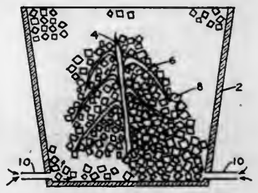
3,558,765
WASHING AND NEUTRALIZATION PROCESS FOR SYNTHETIC FIBERS
Albert H. Bruner, Pensacola, Fla., and Thomas B. Truscott, Decatur, Ala., assignors to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Oct. 30, 1967, Ser. No. 678,904
Int. Cl. D01f *3/08*; B29b *11/22*
U.S. Cl. 264—233 **6 Claims**



Acrylic fibers having good whiteness and being non-corrosive to textile machinery are produced by extruding a solution of the acrylic polymer in an organic solvent containing stabilizing acids, then neutralizing the acid in the resulting fiber while washing residual solvent from the fiber.

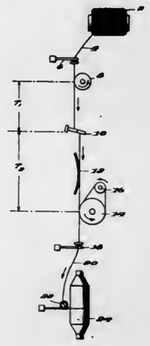
3,558,766
PROCESS FOR PRESERVING BIOLOGICAL SPECIMENS
Harold L. Halpert, 1007 Downs Drive, Silver Spring, Md. 20904
Filed Sept. 30, 1965, Ser. No. 491,742
Int. Cl. B29c *6/02, 9/00*
U.S. Cl. 264—275 **4 Claims**

A process for embedding a biological specimen in plastic to avoid handling a dry fragile specimen. In one form of the invention the specimen is supported in lumps of plastic and is dried while so supported. The lumps are then partially dissolved by a monomer of the plastic and then polymerized. In a second form of the invention the



specimen is supported and dried on a sheet of plastic and then a mixture of a monomer and polymer is poured over the specimen and the mixture polymerized.

3,558,767
CONTROLLED POLYAMIDE FILAMENT STRETCHING PROCESS
Florencio Gopez, Jr., Newark, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware
Filed Nov. 19, 1968, Ser. No. 776,875
Int. Cl. D02j *1/22*
U.S. Cl. 264—290 **2 Claims**



High draw ratios can be achieved to yield high-strength polyamide hosiery yarn which exhibits uniform luster by maintaining the ratio

$$\frac{T_1 - T_2}{Dd}$$

at less than 1.02 grams per denier-cm. T_1 is the tension on a filament approaching the draw zone; T_2 is the tension on a filament receding from the draw zone; D is the drawn denier of the filament and d is the diameter of the draw pin or snubbing element in cm.

3,558,768
SUSTAINED RELEASE PHARMACEUTICAL COMPOSITIONS
Kenneth R. Klippel, Clarkstown Township, Rockland County, N.Y., assignor to Sterling Drug Inc., New York, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 548,882, May 10, 1966. This application Dec. 19, 1969, Ser. No. 886,480
Int. Cl. A61k *27/12*
U.S. Cl. 424—21 **8 Claims**

Oral sustained release pharmaceutical compositions comprising a tablet composed of a core comprising a

medicament distributed in a matrix consisting of a compressed blend of a hydrophilic gum and corn protein and a shell comprising a medicament distributed in a matrix consisting of a compressed blend of hydrophilic gums.

3,558,769
COMPOSITIONS FOR DENTAL PROPHYLAXIS
Alfred R. Globus, Long Island City, N.Y., assignor to Guardian Chemical Corporation, Long Island City, N.Y., a corporation of Delaware
No Drawing. Original application Sept. 24, 1965, Ser. No. 490,128, now Patent No. 3,452,049. Divided and this application Dec. 30, 1968, Ser. No. 801,890
Int. Cl. A61k *7/16*
U.S. Cl. 424—54 **10 Claims**

Compositions for removing soft tartar and other calcium deposits from teeth comprising a tooth paste or tooth powder and a monocalcium monomagnesium poly lower alkanol amino ethylene diamine tetra acetate: glucono citrate complex as sequestering and chelating agent.

3,558,770
WOUND TREATING COMPOSITION EMPLOYING AN ENZYME MODIFIED CASEIN
Arthur L. Gordon, Des Plaines, and Samuel M. Weisberg, Wilmette, Ill., assignors to Kraftco Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Sept. 1, 1967, Ser. No. 667,063
Int. Cl. A61k *27/00, 19/00*
U.S. Cl. 424—80 **6 Claims**

A composition and method of making same is provided which is suitable for cosmetic or pharmaceutical use. The composition contains casein which has been modified by subjecting the casein to treatment with a proteolyltic enzyme. The proteolytic enzyme hydrolyzes the casein into polypeptides, and other related protein fragments. The enzyme-modified casein may then be mixed with suspending, stabilizing and preservative agents, such as carrageenan, polyvinyl pyrrolidone and methyl parasept, to provide an improved composition for cosmetic or pharmaceutical use.

3,558,771
PROCESS FOR USING EGGSHELL COMPOSITIONS FOR PROMOTING WOUND HEALING
Leslie L. Balassa, Tomahawk Lake, Blooming Grove, N.Y. 10914
No Drawing. Continuation-in-part of application Ser. No. 619,007, Feb. 27, 1967. This application Feb. 12, 1968, Ser. No. 704,539
Int. Cl. A61k *17/00*
U.S. Cl. 424—95 **5 Claims**

Wound healing compositions and the process of healing wounds with such compositions are described. The compositions comprise finely divided membrane-free eggshells or an admixture of eggshells and eggshell membranes.

3,558,772
METHOD FOR PREPARING PANCREATIC HEPARINOIDS
Pietro Bianchini, Modena, Italy, assignor to Micron di Bianchini Dottor Pietro & Co.—S.N.C., Modena, Italy
No Drawing. Filed July 13, 1967, Ser. No. 653,030
Int. Cl. A61k *17/00*
U.S. Cl. 424—110 **11 Claims**

A method for preparing pancreatic heparinoids, according to which triturated pancreas is subjected to an enzymatic proteolysis in the presence of bacterial flora inhibitors and out of air contact, after which the unprocessed and residual proteinous parts are separated, the product is treated with a polar organic solvent, then allowed to decant and wherein the hypophase is collected, said hypophase having a high content of low molecular weight heparinoid.

3,558,773
CRYSTALLINE KALLIKREIN-INACTIVATOR AND PROCESS FOR PREPARING THE SAME
Fritz Schultz, Wuppertal-Sonnborn, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Feb. 21, 1967, Ser. No. 617,652
Claims priority, application Germany, Feb. 23, 1966, F 48,504
Int. Cl. A61k *17/00, 27/00*
U.S. Cl. 424—177 **7 Claims**

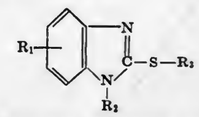
Substantially pure crystalline kallikrein-inactivator is provided which is essentially free from amorphous material and inorganic salts. Such crystalline substance is distinguished from the previously obtained crystalline material which is impure. A method for obtaining the crystals is provided wherein an aqueous solution of KI preparation is adjusted to pH above 9 and the substance crystallized therefrom. The crystalline KI permits the reversible inactivation of tryspin, chymotrypsins, fibrinolysin (plasmin) and kallikrein. Pharmaceutical compositions containing the crystalline substance are likewise provided. They are active as anti-fibrinolytic agents.

3,558,774
METHOD OF TREATING HEPATIC ENCEPHALOPATHY
Leo H. F. Demeulenaere, Tielt, Belgium, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
No Drawing. Filed Apr. 1, 1969, Ser. No. 812,293
Int. Cl. A61k *27/00*
U.S. Cl. 424—180 **4 Claims**

Reduction of the symptoms of hepatic encephalopathy by the rectal administration of lactulose.

3,558,775
THERAPEUTICAL COMPOSITION CONTAINING MERCAPTO-BENZIMIDAZOLES
Etienne Fournier, Paris, France, assignor to Laboratoires Cassenne, Paris, France, a French body corporate
No Drawing. Filed Feb. 29, 1968, Ser. No. 709,215
Claims priority, application France, Mar. 7, 1967, 97,671
Int. Cl. A61k *27/00*
U.S. Cl. 424—232 **10 Claims**

The invention relates to a therapeutical composition having in particular an anti-inflammatory and anti-pyretic activity and a depressant activity on the central nervous system, characterized in that it comprises, as active ingredient, a compound of formula:



(I)

wherein R_1 is a hydrogen or halogen atom, R_2 is hydrogen, an acyl group or an alkyl group, and R_3 is hydrogen or a lower alkyl group, an acyl group, a $—CH_2—COOH$ group, a β-di-loweralkyl-amino-loweralkyl group, a N-morpholino or N-piperidino group, or a pharmaceutically acceptable acid addition salt of said compound or a quaternary ammonium salt of said compound, and a therapeutically administrable vehicle.

3,558,776

PHARMACEUTICAL COMPOSITION COMPRISING 17α - ETHYNYL - 17β - HYDROXY - 7α - METHYL-5(10)-ESTRENE-3-ONE

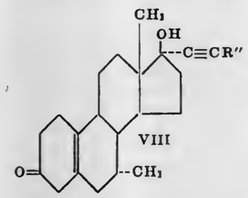
J Allan Campbell, John C. Babcock, and John E. Pike, Kalamazoo, Mich., assignors to The Upjohn Company, Kalamazoo, Mich., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 623,223, Mar. 15, 1967. This application June 14, 1968, Ser. No. 736,949

Int. Cl. C07c *169/08*

U.S. Cl. 424—243 4 Claims

This invention relates to the novel gonadotropin inhibiting (anti-fertility) compounds, $\Delta^{5(10)}$ - 3 - keto - 7α-methyl-17β-hydroxy-17α-alkynylestrenes, having the Formula VIII



wherein R'' is selected from the group consisting of hydrogen and alkyl of from one through four carbon atoms.

3,558,777

PHARMACOLOGIC PROCESSES AND COMPOSITIONS CONTAINING AZASPIRODECANEDIONES AND AZASPIROUNDECANEDIONES

Yao Hua Wu, Evansville, Ind., assignor to Mead Johnson & Company, Evansville, Ind., a corporation of Delaware

No Drawing. Continuation-in-part of application Ser. No. 607,908, Jan. 9, 1967, now Patent No. 3,398,151, which is a continuation-in-part of abandoned application Ser. No. 523,945, Feb. 1, 1966. This application June 21, 1968, Ser. No. 738,848

Int. Cl. A61k *27/00*

U.S. Cl. 424—250 16 Claims

8 - (4 - phenyl - 1 - piperazinylalkylene)-8-azaspiro [4,5]decane-7,9-diones having up to three substituents in the phenyl ring and the corresponding 3-azaspiro[5,5]undecane-2,4-dione derivatives are useful in therapeutic processes in mammals where a psychotropic including tranquilizer, muscle relaxant, analgetic, anti-allergic, capillary protectant, anti-inflammatory, anti-emetic, hypothermic, or antipyretic action is required. The phenyl substituents are alkoxy, alkyl, alkylthio, halogen, CF_3, NH_2, alkanoamido, and alkylsulfonamido. Alkylene is from 2 to 6 carbon atoms and may contain —O— or —C≡C—.

3,558,778

METHODS AND COMPOSITIONS FOR USE IN ANIMAL HUSBANDRY

Robert L. Klingbail, deceased, late of Midland, Mich., by Marion Ruth Klingbail, administratrix, Midland, Mich., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Filed Oct. 27, 1966, Ser. No. 590,098

Int. Cl. A61k *27/00*

U.S. Cl. 424—245 17 Claims

Disclosed are methods and compositions for the control of animal parasites which employ as the active component a thiazolium compound or a complex of the thiazolium compound and (A) a phenolic compound; (B) a urea compound; or (C) a metal salt compound.

3,558,779

ANTI-SECRETORY COMPOSITIONS CONTAINING XANTHEN DERIVATIVES AND USES THEREFOR

Stewart Sanders Adams, Bernard John Armitage, Norman William Bristow, and Bernard Vincent Heathcote, Nottingham, England, assignors to Boots Pure Drug Company Limited, Nottingham, England, a British company

No Drawing. Continuation-in-part of application Ser. No. 643,057, June 2, 1967. This application Aug. 23, 1967, Ser. No. 662,586

Claims priority, application Great Britain, Sept. 2, 1966, 39,384/66; Apr. 5, 1967, 15,692/67

Int. Cl. A61k *9/00, 9/04*

U.S. Cl. 424—283 9 Claims

Therapeutic compositions of use in treating peptic ulcer contain as an essential active component a compound selected from xanthydrol, thiaxanthydrol, 9-xanthenylamine, 9-thiaxanthenylamine and certain derivatives thereof.

3,558,780

INSECTICIDAL COMPOSITION AND METHOD OF USE CONTAINING FERROCENYLMETHYLAZIDE

Donald E. Bublitz, Concord, Calif., assignor to The Dow Chemical Company, Midland, Mich., a corporation of Delaware

No Drawing. Original application Mar. 5, 1968, Ser. No. 710,625, now Patent No. 3,511,858. Divided and this application Nov. 3, 1969, Ser. No. 871,125

Int. Cl. A01n *9/20*

U.S. Cl. 424—226 2 Claims

Disclosed is the new compound ferrocenylmethylazide which is useful as an insecticide.

3,558,781

DIPROPYLACETAMIDO-2-PYRIMIDINE IN COMPOSITIONS AND METHODS FOR INDUCING SEDATION OR TRANQUILIZATION

Henry E. Meunier, Grenoble, and Pierre Luc Eymard, Fontaine, France, assignors to Laboratories J. Berthier S.A., Grenoble, France, a French company

No Drawing. Continuation-in-part of application Ser. No. 675,063, Oct. 13, 1967. This application Sept. 5, 1969, Ser. No. 855,776

Claims priority, application France, Oct. 20, 1966, 80,800

Int. Cl. A61k *27/00*

U.S. Cl. 424—251 5 Claims

2-dipropylacetamido pyrimidine is described as a tranquilizing agent.

3,558,782

NEMATOCIDAL COMPOSITIONS

Alfred J. Rutkowski, Colonia, N.J., assignor to Esso Research and Engineering Company, a corporation of Delaware

No Drawing. Filed Oct. 10, 1966, Ser. No. 585,315

Int. Cl. A01n *9/00, 9/38*

U.S. Cl. 424—291 3 Claims

Copper or mercury salts of carboxylic acids, preferably neo-acids, can be successful utilized as nematocides.

3,558,783

METHOD OF INHIBITING THE GROWTH OF BACTERIA AND FUNGI WITH ORGANOANTIMONY COMPOUNDS

John R. Leebrick, Old Lyme, Conn., and Nathaniel L. Remes, Livingston, N.J., assignors to M&T Chemicals Inc., New York, N.Y., a corporation of Delaware

No Drawing. Continuation of abandoned application Ser. No. 362,483, Apr. 24, 1964, which is a continuation-in-part of abandoned application Ser. No. 241,023, Nov. 29, 1962. This application Jan. 16, 1968, Ser. No. 698,356

Int. Cl. A01n *9/00*

U.S. Cl. 424—296 4 Claims

A method is provided for inhibiting the growth of bacteria and fungi by applying thereto organoantimony compounds.

3,558,784

ANTHELMINTIC COMPOSITIONS AND METHODS OF CONTROLLING PARASITIC HELMINTHS IN ANIMALS

Friedrich Paltauf, Graz, Austria, and Alfred Margot and Paul Brenneisen, Basel, Switzerland, assignors to Geigy Chemical Corporation, Greenburgh, N.Y., a corporation of Delaware

No Drawing. Continuation of application Ser. No. 516,096, Dec. 23, 1965. This application Sept. 21, 1967, Ser. No. 669,653

Claims priority, application Switzerland, Dec. 30, 1964, 16,868/64, 16,869/64

Int. Cl. A61k *27/00*

U.S. Cl. 424—302 18 Claims

Compositions and methods for controlling helminths utilizing isothiocyano derivatives of diphenylethers, -thioethers, -sulfoxides and -sulfones.

3,558,785

AQUEOUS SOLUTION WITH HIGH CONTENT OF CALCIUM SUITABLE FOR VETERINARY USE AND METHOD TO PRODUCE SUCH A SOLUTION

Sven Axel Eriksson, Sodertalje, and Max Fischler, Enskede, Sweden, assignors to Aktiebolaget Astra, Sodertalje, Sweden, a Swedish company

No Drawing. Continuation-in-part of application Ser. No. 424,803, Jan. 11, 1965. This application Nov. 2, 1966, Ser. No. 591,436

Int. Cl. A61k *27/00*

U.S. Cl. 424—317 8 Claims

A composition of matter of calcium gluconate, calcium lactate and calcium formate, in a molar ratio of 1:1:3.5, respectively. An aqueous solution made therefrom containing about 6 to 10 weight percent calcium and a method for treating paresis in ruminant animals by administering such composition are also disclosed.

3,558,786

FEED COMPOSITION AND ITS UTILIZATION

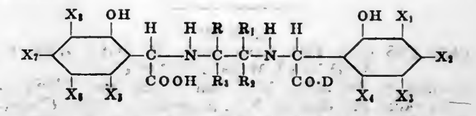
Robert T. McCarty, Fort Worth, Tex., assignor to Geigy Chemical Corporation, a corporation of New York

No Drawing. Filed Aug. 15, 1963, Ser. No. 302,472

Int. Cl. A23k *1/16*

U.S. Cl. 424—319 15 Claims

1. A fowl-feed composition manifesting enhanced feed conversion over a corresponding ordinary feed for fowls, which composition comprises an ordinary feed for fowls as by far its major portion and incorporated therein a minor portion generally under about one-half percent by weight of the feed composition of at least one feed conversion enhancing agent in an amount from at least sufficient to enhance the feed conversion of the composition to below that which produces toxic manifestations under the conditions of use with the specific specie of fowl; which feed conversion enhancing agent has the formula:



wherein any of R through R_3 separately is a member of the class consisting of hydrogen, an alkyl group having under 13 carbon atoms, a hydroxy(lower)alkyl group, and one of the pairs of (i) R and R_1 and (ii) R_2 and R_3 being a divalent lower polyalkylene group having under 5 carbon atoms; and any of X_1 through X_8 is a member of the class consisting of hydrogen, an alkyl group with one through ten carbon atoms, a lower alkoxy, lower hydroxyalkyl, carboxyl, hydroxyl, nitro, free amino, cyano, and sulfo group, and a halogen; and D is a member of the class consisting of the free amino and hydroxyl group.

3,558,787

METHODS AND COMPOSITIONS FOR CONTROLLING PLANT-PATHOGENIC FUNGI UTILIZING 1,4-DIHYDRO-9,10-ANTHRAQUINONES

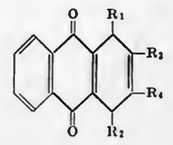
Jesse Harmon, Hockessin, Del., assignor to E. I. du Pont de Nemours and Company, Wilmington, Del., a corporation of Delaware

No Drawing. Filed Jan. 23, 1968, Ser. No. 699,792

Int. Cl. A01n *9/24*

U.S. Cl. 424—331 6 Claims

Plant-pathogenic fungi can be effectively controlled by applying to the area of infestation or anticipated infestation one or more compounds of the formula



wherein

R_1 and R_2 are each selected from hydrogen, alkyl of 1 to 3 carbon atoms and alkenyl of 2 to 4 atoms or R_1 and R_2 together form a methylene or ethylene group and

R_3 and R_4 are each selected from hydrogen and methyl.

These compounds are particularly effective in the control of fungi of the class Phycomycetes.

3,558,788

NEW ANTIBACTERIAL AND ANTIFUNGAL COMPOSITIONS

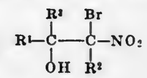
Nigel George Clark, Betty Croshaw, and David Frank Spooner, Nottingham, England, assignors to Boots Pure Drug Company Limited, Nottingham, England, a British company

No Drawing. Filed Feb. 23, 1965, Ser. No. 434,615

Int. Cl. A61k *27/00*

U.S. Cl. 424—343 5 Claims

Antibacterial and antifungal compositions having as active ingredient a compound of the formula



wherein R^1 is hydrogen, alkyl of 1–12 C-atoms or phenyl alkyl of up to 10 C-atoms, R^3 is hydrogen or R^1 and R^3 together with the shared C atom form a cycloalkyl ring of 5–7 C-atoms and R^2 is hydrogen, methyl, ethyl, hydroxy methyl or bromine and their use in combating bacteria

on skin and in preserving medical, toilet and cosmetic preparations from bacterial deterioration.

3,558,789

PROCESS FOR THE CONTROL OF BOLL WEEVIL AND BOLL WORM WITH TDE

Gordon S. Batchelor, Mountain Lakes, and Edwin F. Hawkins, Morristown, N.J., assignors to Allied Chemical Corporation, New York, N.Y., a corporation of New York

No Drawing. Original application June 21, 1967, Ser. No. 647,616, now Patent No. 3,480,710, dated Nov. 25, 1969. Divided and this application May 15, 1969, Ser. No. 856,509

Int. Cl. A01n *9/36, 9/34;* **A01m** *19/00*

U.S. Cl. 424—354 **3 Claims**

A process of combatting boll worm in cotton by spraying the cotton with a 1,1-dichloro-2,2-bis parachlorophenyl ethane, commonly known as TDE, dissolved in cyclohexanone.

3,558,790

ANIMAL FEED COMPOSITIONS AND METHODS

Gino J. Marco, Webster Groves, Mo., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware

No Drawing. Filed Oct. 23, 1967, Ser. No. 677,083

Int. Cl. A61k *27/00*

U.S. Cl. 424—356 **11 Claims**

Animal feed compositions containing at least one growth-promoting compound selected from the group consisting of saturated and mono- and polyolefinically unsaturated monocycloaliphatic hydrocarbons of at least 6 and not more than 20 carbon atoms.

ELECTRICAL

3,558,791

CUPOLA FURNACE

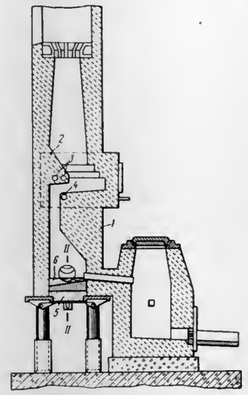
Vladimir Alexandrovich Grachev, U1. Uritskogo, 74, kv. 9; Anatoly Alexeevich Cherny, U1. Tsiolkovskogo, 41, kv. 32, Penza; Lev Mikhailovich Marienbakh, Bolshaya Cherkizovskaya, 5, Korp. 1, kv. 73, Moscow, and Ivan Lukich Kurbatsky, U1. Volodarskogo, 74, kv. 4, Penza, U.S.S.R.

Filed Feb. 6, 1967, Ser. No. 614,311

Claims priority, application U.S.S.R., Feb. 8, 1966, 1,054,928

Int. Cl. H05b *7/10*

U.S. Cl. 13—9 **4 Claims**



A cupola furnace is provided with at least one tunnel extending from the combustion chamber at the bottom of the shaft, for the combustion of gases passing electrodes in the tunnel which produce arc discharge, and for conveying the combustion gases to said combustion chamber.

3,558,792

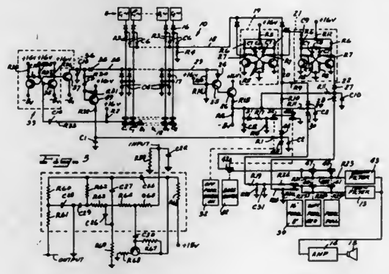
ELECTRONIC ORGAN CIRCUIT FOR SIMULATING GUITAR

Alberto E. Kniepkamp, Chicago, Ill., assignor to Chicago Musical Instrument Co., Lincolnwood, Ill., a corporation of Delaware

Filed Aug. 30, 1968, Ser. No. 756,558

Int. Cl. G10h *1/02, 5/00*

U.S. Cl. 84—1.01 **11 Claims**



A monophonic or a polyphonic set of organ pedal keyswitches are connected to control electrical signals from tone signal sources, and to direct the tone signals through a filter which passes fundamental bass frequencies, the filter being connected through an amplifier to a speaker. Each key switch is arranged to operate a pedal-cancel circuit for terminating any previously played sustained note that is still sounding. A transistor switch and discharge capacitor are provided which are controlled by the key-switches through the pedal cancel circuit for transferring selected electrical signals to a second filter which passes somewhat higher frequencies, especially the second harmonic, to the same or similar amplifier and speaker. The duration of the signals passing through the second filter is short and is thus electrically or acoustically superimposed on the fundamental signal, thereby simulating the percussive sound of a guitar, especially a bass guitar.

3,558,793

EXPRESSION PEDAL ASSEMBLY FOR AN ELECTRONIC MUSICAL INSTRUMENT PREFERABLY WITH PRESSURE AND/OR LIGHT SENSITIVE SENSORS

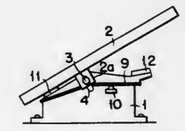
Seiji Nakada, Hamamatsu-shi, and Masakatsu Iijima, Hamamatsu-shi, Japan, assignors to Nippon Gakki Seizo Kabushiki Kaisha, Hamamatsu-shi, Japan, a corporation of Japan

Filed July 14, 1969, Ser. No. 841,241

Claims priority, application Japan, July 15, 1968, 43/49515;43/49516

Int. Cl. G10c *3/14;* **G10h** *1/02*

U.S. Cl. 84—1.01 **7 Claims**



An expression pedal assembly involves a pedal capable of being rotated as well as pressed downward flatly, and sensors, preferably a pressure sensitive resistor and/or a photocell, which are operated according to the extent to which the pedal is rotated or pressed downward flatly, so that said sensors cause tone signals to be controlled, thereby to produce desired musical effects.

3,558,794

BASS REGISTER KEYING SYSTEM

George H. Hadden, Islington, Toronto, Canada, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio

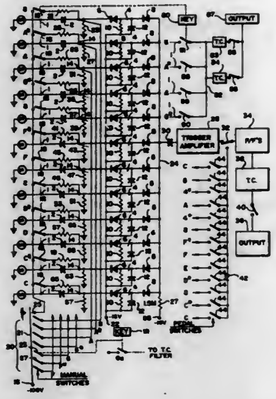
Original application July 1, 1965, Ser. No. 468,767, now Patent No. 3,470,306, dated Sept. 30, 1969. Divided and this application Sept. 30, 1969, Ser. No. 862,194

Int. Cl. G01h *1/06*

U.S. Cl. 84—1.01 **1 Claim**

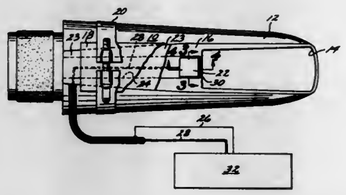
A note an octave or two octaves below the lowest note of a chord played on the accompaniment manual of an organ is produced by a frequency-dividing flip-flop triggered by a signal selected from the chord notes by use of a preferential type of mechanical switch. This switch is comprised of a series of movable contacts parallel to, and actuated respectively by, playing keys in the lower section of the accompaniment manual. Thereby, when a chord is played, a note corresponding only with the lowest or root note of the group of keys actuated is sounded. The pitch range of such a switch is only about seven semitones, so if, as is preferable in a root tone system, about an octave and a half of semitones is to be included, some means must be provided for extending the range to about 19 semitones. The preferred extension, in accordance with the invention, is to parallel the movable contacts with ordinary make-break key switches actuating diode

gates preferentially biased by scaling voltage dividers. Means are provided to have one preferential system override the



other, so that a double preference is exercised, operative simultaneously over the entire 19 semitones.

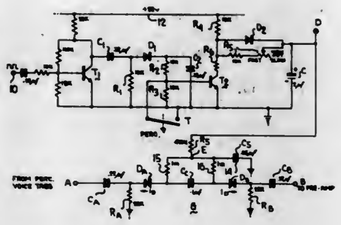
3,558,795
REED MOUTHPIECE FOR MUSICAL INSTRUMENT WITH PIEZOELECTRIC TRANSDUCER
Lester M. Barcus, 252 Tivoli, and John F. Berry, 4020 Fountain St., Long Beach, Calif.
Filed Apr. 26, 1968, Ser. No. 724,358
Int. Cl. G10d *9/02*; **G10h** *3/00*
U.S. Cl. 84—1.14 **9 Claims**



A mount for the reed of a musical instrument, in the form of a mouthpiece for instruments such as the clarinet, the mount including a transducer which utilizes piezoelectric material positioned for engagement by the reed to produce electrical signals in response to vibratile movements of the reed.

3,558,796
TOUCH PERCUSSION FOR ELECTRONIC ORGAN WITH BACK-TO-BACK DIODE GATES
Michael R. Harris, Cincinnati, Ohio, assignor to D. H. Baldwin Company, Cincinnati, Ohio, a corporation of Ohio
Filed Nov. 13, 1968, Ser. No. 775,320
Int. Cl. G10h *1/02*
U.S. Cl. 84—1.26 **5 Claims**

An electronic organ system in which tone signals deriving from percussive voice tabs are passed through a slow percussive linear diode gate to an amplifier and loudspeaker. The percussive voices are provided by either percussive gates or key switches individual to tone sources and have relatively fast decays following release of key switches. The individual percussive gates remain open while key switches are closed. The slow percussive gate is common to all the percussive voices and is either (1) normally open and gradually closed during any tone or (2) is normally closed and is rapidly opened and then gradually closed in response to onset of any tone regardless of whether other tones are then present, by means of a novel gating wave generator. The system utilizing percussive gates as tone generators is particularly useful in



simulating piano tones since if a key is held down a long sustain results, which cuts off fairly rapidly if the key is released, but which is percussive, if a key is actuated staccato, with a short sustain.

3,558,797
RECORDER
John W. Wolford, North Madison, Ohio, assignor to The Grossman Music Corporation, Cleveland, Ohio
Filed Mar. 10, 1969, Ser. No. 805,621
Int. Cl. G10d *7/02*
U.S. Cl. 84—384 **3 Claims**

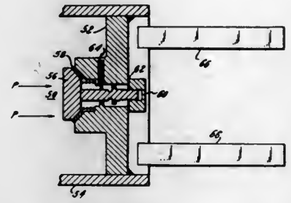


A recorder having a free standing wind passage tube in its bell section of uniform wall thickness the length thereof.

3,558,798
INTERNAL CHECK VALVE FOR GAS INSULATED TRANSMISSION SYSTEM
Roy H. Albright, Greensburg, Pa., assignor to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware
Filed May 28, 1969, Ser. No. 828,588
Int. Cl. H02g *5/06*
U.S. Cl. 174—10 **7 Claims**

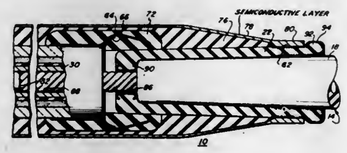
An internal check valve for gas-insulated transmission systems which permits retention of the high dielectric gas in individual bus-section units during shipment and during the joining of adjacent sections to form an installation. The check valve is internal to the bus section, and is operable

upon gas filling a joining splice section to remove the gas retention seal and allow for the relatively free passage of gas



between adjoining bus sections until the gas pressures therein are equalized.

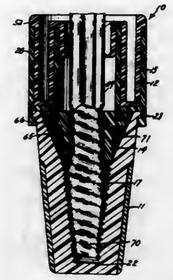
3,558,799
COUPLING
Asa Ren Lee, Cranford, N.J., assignor to Thomas & Betts Corporation, Elizabeth, N.J., a corporation of New Jersey
Continuation-in-part of application Ser. No. 690,517, Dec. 14, 1967, now abandoned. This application June 17, 1969, Ser. No. 834,055
Int. Cl. H02g *3/00*
U.S. Cl. 174—73 **24 Claims**



A coupling comprised of two concentrically mounted sleeves, the inner one of which can be deformed to grasp members placed therein. The two sleeves are sealed to one another adjacent their ends to form an enclosed space therebetween which is filled by a substantially noncompressible, resilient material and a substantially noncompressible material. The introduction of further noncompressible material, from an external source, through a port in the outer tube to the enclosed space causes deformation of the inner sleeve. Various insulators, corona shields and moisture seals complete the coupling assembly.

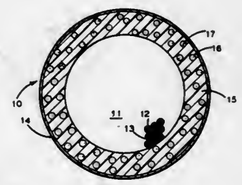
3,558,800
SEALING PIGTAIL CONNECTOR CONSTRUCTION
Benedict L. Wallis, 445 East 68th St., New York, N.Y., and Michael Gold, 80 Oak Drive, Roslyn, N.Y.
Substitute for application Ser. No. 579,084, Sept. 13, 1966, now abandoned. This application Feb. 3, 1970, Ser. No. 8,346
Int. Cl. H02g *15/08*
U.S. Cl. 174—87 **2 Claims**

This invention relates generally to the field of electrical pigtail connectors of the type used to maintain twisted-wire conductive pigtails in twisted configuration, and provide an insulated joint thereat. Devices of this general type are known in the art, and the invention lies in specific constructional details permitting the formation of a joint which will be



impervious to water, moisture, ambient atmosphere, vibration, shock, and the like.

3,558,801
WATERPROOF ELECTRICAL CABLE AND METHOD OF MAKING SAME
Bernd Eilhardt, Vinnhorst, and Diethart Pelz, Langenhagen, Germany, assignors to Kabel-und Metallwerke Gutehoffnungshutte Aktiengesellschaft, Hannover, Germany, a corporation of Germany
Filed Sept. 17, 1969, Ser. No. 858,833
Claims priority, application Germany, Sept. 27, 1968, 1,790,202
Int. Cl. H01b *7/18*
U.S. Cl. 174—102 **4 Claims**

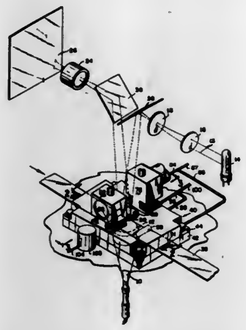


A flexible waterproof electrical communications cable, having a filling disposed between the cable core and the sheath thereof; the filling being constituted of a synthetic-resin foam and which is of the open cell type; water-swellable particle matter being distributed within the cells of the foam.

3,558,802
FIXABLE PHOTOCHROMIC DISPLAY APPARATUS
William A. Stein, Palos Verdes Peninsula, and Robert J. Cirillo, Torrance, Calif., assignors to The National Cash Register Company, Dayton, Ohio, a corporation of Maryland
Filed Jan. 4, 1968, Ser. No. 695,653
Int. Cl. G11b *7/28*; **G03b** *27/32*
U.S. Cl. 178—15 **11 Claims**

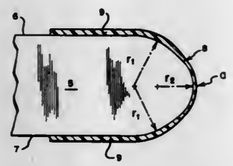
An apparatus adapted to receive a filmstrip having a coating of a saccharin-containing photochromic material, includes a central chamber wherein a cathode ray tube imaging means produces reversably opaque image areas on the normally transparent filmstrip. Means are provided to expose the filmstrip to sulfur dioxide gas which affects the photochromic material to render the entire exposed portion of the filmstrip opaque. Means are provided to evacuate the gas and to apply heat which reverses the effect of the gas in those areas that

were transparent at the time of exposure. The image areas that were temporarily rendered opaque by the cathode ray tube imaging means remain permanently fixed. The apparatus has a filmstrip inlet chamber and film strip outlet



chamber connected to vacuum exhaust system. Leakage of the sulfur dioxide gas from the central chamber is drawn out of the apparatus through the exhaust system before it can escape into the atmosphere.

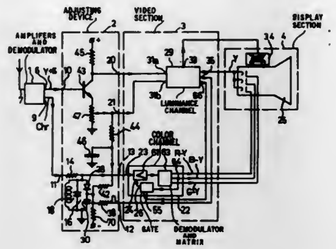
3,558,803
MAGNET STRIP CONDUCTOR
Donald H. Osborn, Rome, and Robert F. Freeman, Boonville, N.Y., assignors to Revere Copper and Brass Incorporated, New York, N.Y., a corporation of Maryland
Filed Aug. 26, 1969, Ser. No. 853,034
Int. Cl. H01b *7/08;* **H01j** *27/32*
U.S. Cl. 174—119 **3 Claims**



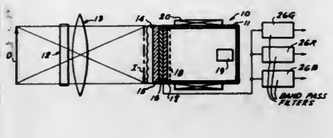
A magnet strip conductor comprising a thin strip of electrically conductive metal whose edges are contoured to be tangent to the adjoining flat faces of the strip and to have an intermediate portion having a smaller radius of curvature than the tangent portion, all of the flat and contoured surfaces of the strip being completely covered with a coating of insulating material.

3,558,804
AGC CIRCUIT FOR A COLOR TELEVISION RECEIVER
Peter Johannes Hubertus Janssen; Wouter Smeulers, and Wilhelmus Martinus Mathijssen, Emmasingel, Eindhoven, Netherlands, assignors to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware. by mesne assignments
Filed July 13, 1967, Ser. No. 653,253
Claims priority, application Netherlands, July 1, 1967, 6709190
Int. Cl. H04n *9/48*
U.S. Cl. 178—5.4 **5 Claims**

A color television receiver has a color channel which includes two parallel signal paths and means for switching the signal paths so that the color information signals pass only one path and reference carrier signals pass only to other paths. The color signal path includes adjustable attenuator for adjusting the ratio between the color signals and reference signals. A control voltage derived from the reference signals is continuously applied to a controlled amplifier outside of the switched paths in order that the ratio is not affected by the control voltage.



3,558,805
COLOR SIGNAL GENERATING APPARATUS
Toshiro Watanabe, Zushi-shi, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed June 14, 1967, Ser. No. 646,045
Claims priority, application Japan, June 15, 1966, 41/38671
Int. Cl. H04n *5/26*
U.S. Cl. 178—5.4 **15 Claims**

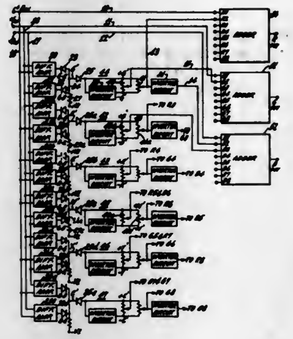


In a color video signal generating apparatus employing a single monochrome image pickup tube, an assembly of separating lenses disposed in front of the face plate of the tube to divide a real image of an object to be televised into stripelike image elements which are projected on the photoconductive layer of the tube and extend substantially at right angles to the scanning direction, and a color filter arrangement disposed in front of the separating lens assembly and having several filtering regions respectively passing light of different wavelength ranges to include, in each stripelike image element, corresponding color components; such filtering regions are arranged so that, considered in the direction across each stripelike image element, one of the color components is of substantially uniform intensity and other color components have different numbers of variations of intensity, whereby the image pickup tube produces a composite color video signal composed of nonfrequency modulated and different frequency modulated color video signals which can be easily frequency separated to obtain signals corresponding to color primaries.

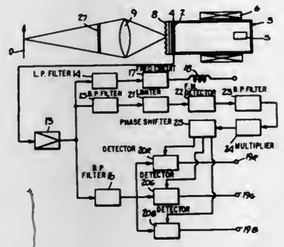
3,558,806
MATRIXING APPARATUS
John F. Monahan, Moorestown, and Robert A. Dischert, Burlington, N.J., assignors to RCA Corporation, a corporation of Delaware
Filed Apr. 1, 1968, Ser. No. 717,655
Int. Cl. H04n *9/52*
U.S. Cl. 178—5.4 **13 Claims**

Matrixing apparatus for performing masking operations in a color television system wherein the relative amplitudes of color difference signals derived from component color signals are compared to obtain control voltages, and wherein

the control voltages so obtained are selectively added to or subtracted from individual component color signals to effectively change the hue and saturation of the original color information.

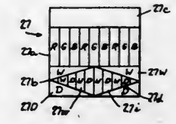


3,558,807
COLOR VIDEO PICKUP SYSTEM WITH MEANS FOR GENERATING A FREQUENCY MODULATED INDEXING SIGNAL HIGHER IN FREQUENCY THAN THE VIDEO INFORMATION
Hiromichi Kurokawa, Yokohama-shi, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed June 4, 1968, Ser. No. 734,387
Claims priority, application Japan, June 10, 1967, 42/37055/67
Int. Cl. H04m *5/42*
U.S. Cl. 178—5.4 **14 Claims**



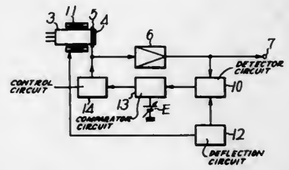
In a color video signal generating apparatus in which a filter having regions respectively selecting light of different wavelength ranges and a screen having separating lenses are optically interposed between an object to be televised and a single image pickup tube to cause such separating lenses to coact with the filter in dividing an image of the object into color components which are projected onto said tube in such manner that said color components when successively encountered in the line scanning direction can respectively become chrominance signals having a predetermined color subcarrier frequency and being of the same frequency band, there are provided index image forming means to form index images on the image pickup tube which, when successively encountered in the line scanning direction, produce in the tube output frequency or angle modulated index signals having a carrier frequency which bears a predetermined relationship to the color subcarrier frequency and a frequency band which is different than the frequency band of the chrominance signals, and the positions of the respective color components in the chrominance signals are indicated by the index signals to permit the extraction from the tube output of color video signals.

3,558,808
COLOR VIDEO SIGNAL GENERATING APPARATUS
Hiromichi Kurokawa, Yokohama-shi, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed June 7, 1968, Ser. No. 735,218
Claims priority, application Japan, June 10, 1967, 42/37057
Int. Cl. H04n *9/06, 9/22*
U.S. Cl. 178—5.4 **18 Claims**



In a color video signal generating apparatus in which a filter having regions respectively selecting light of different wavelength ranges and a screen having separating lenses are optically interposed between an object to be televised and a single image pickup tube to cause such separating lenses to coact with the filter in dividing an image of the object into color components which are projected onto said tube in such manner that said color components can respectively become chrominance signals of the same frequency band in the electrical output of the tube which is composed of successive signals corresponding to the intensities of light successively encountered in a line scanning direction, index image forming means are provided to form on the image pickup tube index images which, when successively encountered in said line scanning direction, produce in said output an amplitude modulated index signal having a higher carrier frequency and a different frequency band than the chrominance signals, and the positions of the color components in the chrominance signals are indicated by such index signals to permit the extraction from said output of color video signals.

3,558,809
AUTOMATIC DARK CURRENT CONTROL SYSTEM FOR PICKUP TUBES EMPLOYING A LIGHT INHIBITING STRIP MOUNTED ON THE PICKUP TUBE FACE PLATE
Takao Aoki, Kanagawa-ken, Japan, assignor to Sony Corporation, Tokyo, Japan, a corporation of Japan
Filed July 30, 1968, Ser. No. 748,714
Claims priority, application Japan, Aug. 1, 1967, 42/49445
Int. Cl. H04n *5/44, 5/38*
U.S. Cl. 178—5.4 **4 Claims**

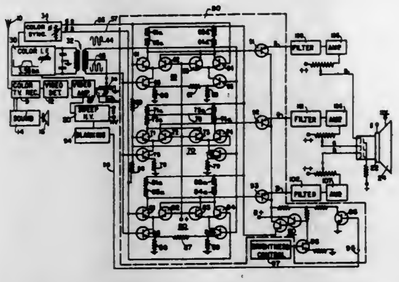


An automatic dark current control system for a pickup tube including an opaque region provided on the pickup tube face plate, means for detecting an output signal corresponding to the opaque region, and means for controlling a target voltage with the detected signal.

3,558,810
COLOR TELEVISION SIGNAL DEMODULATION SYSTEM
Gildo Cecchin, Niles, and Francis H. Hilbert, River Grove, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Feb. 10, 1969, Ser. No. 797,973
Int. Cl. H04n *9/50*
U.S. Cl. 178—5.4 **18 Claims**

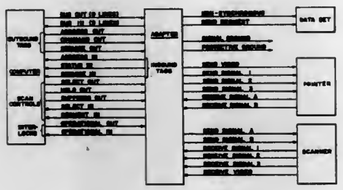
A silicon monolithic integrated circuit consisting of three sets of full-wave, synchronous, switched demodulators is used

to demodulate the red, blue and green color signals present in a composite television signal. Each of the demodulators consists of two pairs of switching transistors with the transistors in each of the pairs being rendered alternately conductive by a reference signal derived from the reference oscillator in a color television receiver. The phase of the red and the blue reference oscillator signals are obtained in a conventional manner, and the phase for the green reference signal is obtained by adding a predetermined portion of the red and blue signals together in a resistive adder to provide the green oscillator signal. The color signals are supplied in alternate phase to the two pairs of switching transistors in



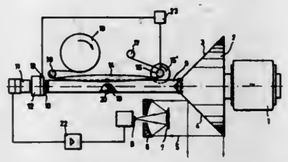
each of the demodulators, and the brightness signal components are applied equally or push-push to the switching transistors of the demodulators through an input transistor for each of the demodulators. In order to provide the proper relative amounts of gain for three demodulators, the red and blue signal demodulators have shunting resistance circuits connected across the input transistor circuits; and the green demodulator has a shunt connected across equal taps on voltage dividers connected to the outputs thereof. Since the brightness signal components are balanced with respect to the shut devices, the brightness signal passes through all of the demodulators unaffected by the shunting circuits.

3,558,811
GRAPHIC COMMUNICATION ELECTRICAL INTERFACE SYSTEM
Albert J. Montevecchio, East Rochester; William D. Bartron, and Thomas H. Galster, Rochester, N.Y., assignors to Xerox Corporation, Rochester, N.Y., a corporation of New York
Filed May 25, 1967, Ser. No. 641,226
Int. Cl. H04n *1/32, 1/36, 1/42*
U.S. Cl. 178—6 **27 Claims**



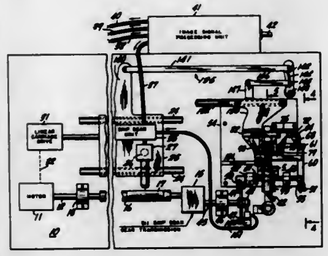
An interface adapter unit for converting facsimile graphic communication information signals directly applicable to a central processing unit or computer, and vice versa. In a Read mode, information obtained by the scanning of a document by a conventional facsimile graphic scanning system is converted to computer format language for application directly by a computer or the like. In a Write mode, information from a computer can be converted directly to a form applicable by a conventional facsimile graphic printing system.

3,558,812
AERIAL RECONNAISSANCE SYSTEM
Leo Heinrich Josef Franz Beckmann, and Leendert Van Den Berg, Delft, Netherlands, assignors to N. V. Optische Industrie "De Oude Delft", Delft, Netherlands, a corporation of Netherlands
Filed Nov. 13, 1967, Ser. No. 682,342
Claims priority, application Netherlands, Nov. 14, 1966, 6,615,997
Int. Cl. H04n *1/04, 3/06, 5/86*
U.S. Cl. 178—6.7 **7 Claims**



Infrared aerial reconnaissance system of the line scanning type in which, for a wide range of velocity-altitude ratio (v/h) conditions, objectionable line patterns in the strip photograph produced by the flying spot recorder are avoided by varying the width of the spot traces on the film with the rate at which the film is moved past the exposure station.

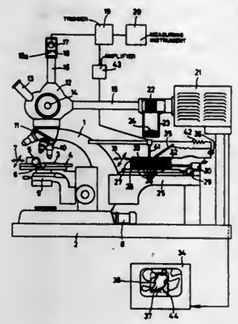
3,558,813
MECHANISMS AND CIRCUITS FOR FACSIMILE REPRODUCING SYSTEMS
Byron L. Barkman, Milford; William West Moe, Stratford, and Austin Ross, Monroe, Conn., assignors to Printing Developments, Inc., New York, N.Y., a corporation of New York
Filed Jan. 16, 1968, Ser. No. 698,255
Int. Cl. H04n *5/84*
U.S. Cl. 178—6.7 **7 Claims**



A cylindrically-shaped copy sheet is rocked forward and back during and synchronously with the first and second, respectively, of two consecutive revolutions of a drum carrying film sheets. During the forward rocking, the copy sheet is line scanned and tone values detected by such scanning are converted into intensity modulations of light beams produced by glowlamps and scanning the film sheets to expose color separations thereon of the original. During the second revolution, the glowlamps are extinguished by transistorized circuits providing a firing voltage pulse for restarting the lamps. Also during the second revolution, the copy sheet and film sheet are each moved an axial step to permit generation of congruent raster scanning patterns over all sheets. Means are provided to adjust the enlargement ratio.

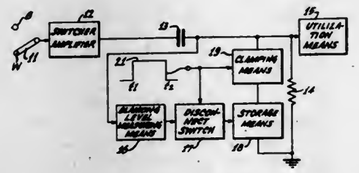
The copy sheet is bent into cylindrical shape by pressing it against a template surface such that part of the sheet is backed by the surface and part projects into the scanning light beam therefor. The sheet is axially displaced relative to such beam by sliding the sheet over such surface.

3,558,814
METHOD AND APPARATUS FOR PLOTTING A SPECIFIC AREA OF AN OBJECT UNDER AN OBSERVATION INSTRUMENT
James L. Engle, Oberkochen, Wurttemberg, Germany, assignor to Carl Zeiss-Stiftung, doing business as Carl Zeiss, Wuerttemberg, Germany, a corporation of Germany
Filed Mar. 8, 1968, Ser. No. 711,711
Claims priority, application Germany, Mar. 11, 1967, Z12,F49
Int. Cl. B43l *13/10;* **H01j** *3/14;* **H04n** *7/18*
U.S. Cl. 178—6.8 **6 Claims**



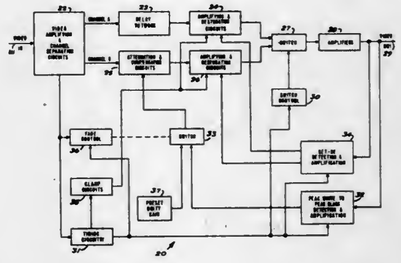
This is a method and apparatus for measuring and plotting points in a specific area of an object wherein a larger area is scanned point by point and electric measuring and plotting means is used to measure and plot successive points as they are scanned. The actuation of the measuring and plotting means is controlled by a sensing peg moving over a surface, synchronously with the scanning of correspondingly successive points on the object. Said surface is formed by a layer of electrically conductive material on an insulating base and the conductive material is removed along a closed line around the image of the specific area to be measured and plotted, thereby to electrically insulate that portion of the surface from the surrounding portion. One of the surface portions and the sensing peg are connected in an electric circuit that is arranged to actuate the measuring and plotting means when the sensing peg is on the surface portion corresponding to said specific area and to take said means out of operation when the peg is on the other surrounding surface portion.

3,558,815
VIDEO SIGNAL SWITCHING STEP SUPPRESSOR
Arthur J. Banks, Cherry Hill, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Apr. 1, 1968, Ser. No. 717,625
Int. Cl. H04n *5/18*
U.S. Cl. 178—7.1 **5 Claims**



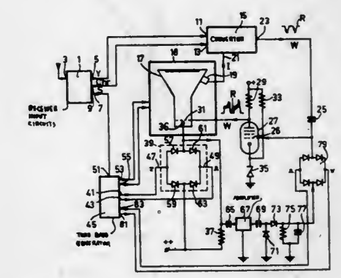
The video signal switcher has an input which is switched from a first to a second source of video signal and an output which is coupled by a capacitor to utilization means. The output terminal of the capacitor is clamped to a reference potential during a period when both video signals are at blanking level. Following the initiation of, and during, the clamping period the input of the switcher is transferred from the first to the second video signal source so that the capacitor receives a charge corresponding to any difference between the blanking level potential of the second video signal and the reference potential. In one embodiment, the reference potential corresponds to the blanking level potential of the first video signal. In a second embodiment, the reference potential is ground and the coupling circuit between the clamping means and the utilization means includes boosting means for the low frequency video signals. In a third embodiment, a negative feedback is provided from the output of the low frequency boosting means to the input of the video signal switcher.

3,558,816
AUTOMATIC GAIN CONTROL VIDEO AMPLIFIER
Richard S. Wise, Boulder, Colo., assignor to Ball Brothers Research Corporation, Boulder, Colo., a corporation of Colorado
Filed Feb. 28, 1967, Ser. No. 619,223
Int. Cl. H04n *5/52*
U.S. Cl. 178—7.2 **24 Claims**



A device providing channel separation of a video signal with the video on one channel being held at unity gain and the gain of the video on the other channel being controlled by an AGC circuit, the video on said channels being recombined thereafter to provide a composite video output signal. The device automatically compensates for video level variations by adjusting the amplitude of peak-white to peak-black video, and at the same time, adjusts video setup to maintain a uniform video output signal. A memory circuit is also incorporated for providing unity gain during absence of an incoming video signal.

3,558,817
TELEVISION RECEIVER HAVING AUTOMATIC MINIMUM BEAM CURRENT CONTROL
Pieter Marinus Van den Avoort, and Peter Johannes Hubertus Janssen, Emmasingel, Eindhoven, Netherlands, assignors to U. S. Philips Corporation, New York, N.Y., a corporation of Delaware by mesne assignments
Filed June 14, 1968, Ser. No. 737,081
Claims priority, application Netherlands, June 16, 1967, 6,708,375
Int. Cl. H04n *5/18*
U.S. Cl. 178—7.5 **8 Claims**



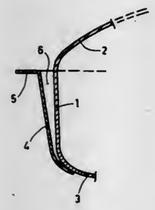
A television receiver circuit includes a beam current measuring circuit in the cathode circuit of the display tube for

producing a control signal for stabilizing the beam current. An electronic switch is also connected in the cathode circuit to bypass the measuring circuit. The switch is bilaterally conductive.

3,558,818
METHOD OF STRENGTHENING A TELEVISION DISPLAY TUBE

Floris DeBoer, Emmasingel, Eindhoven, Netherlands, assignor to U. S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Jan. 8, 1968, Ser. No. 696,238
Claims priority, application Netherlands, Jan. 18, 1967, 6700756
Int. Cl. H01j *29/28, 61/50;* **H01k** *1/28*
U.S. Cl. 178—7.82 **3 Claims**

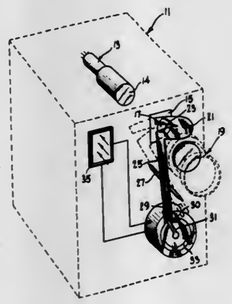


A method of strengthening a cathode-ray tube against implosion in which a metal band and the conical portion of the cathode-ray tube adjoining the window are provided with an adhesive layer containing a reducing agent compatible with a redox system used to harden a combination of a polyester and a monomer. The metal band is placed around the conical portion of the tube and the space therebetween filled with a polyester, a monomer, a redox system, and a filler. The polyester mass is subsequently hardened at ambient temperatures.

3,558,819
AUTOMATIC IRIS FOR A TELEVISION CAMERA

Mervin W. LaRue, Jr., Barrington, Ill., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed Nov. 7, 1967, Ser. No. 681,134
Int. Cl. H64n *5/19*
U.S. Cl. 178—7.92 **1 Claim**



The illustrated apparatus is adapted for controlling the amount of illumination impinging upon the light-sensitive element of a vidicon television camera tube. The apparatus includes a light-sensitive cell which is connected to the terminals of a rotary meter for controlling the opening of an iris and thereby the illumination impinging upon the light-sensitive element of the camera tube. The iris aperture is shaped to maintain the smallest opening possible consistent with adequate image contrast and the iris is further designed to completely interrupt the illumination striking the face of the vidicon tube under extreme luminance conditions.

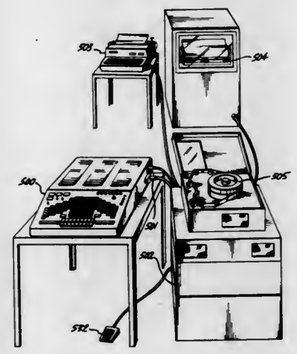
ERRATUM

For Class 178—15 see:
Patent No. 3,558,802

3,558,820
STENOGRAPHIC MACHINE AND SYSTEM

Gustaf A. Baisch, and James L. Eberle, Seattle, Wash., assignors to The Boeing Company, Seattle, Wash., a corporation of Delaware

Filed June 7, 1968, Ser. No. 735,447
Int. Cl. H04l *13/08*
U.S. Cl. 178—17.5 **31 Claims**



An improved stenographic machine and system is disclosed, and more particularly a machine which enables a stenographer to provide substantially immediately a transcribed record of the information given orally to the stenographer. A novel stenographic keyboard assembly is disclosed which provides output data signals to the electronic data processing section of the system, which in turn controls a printer or similar output device. One specific embodiment of the invention is disclosed as a verbatim reporting machine wherein the operator is provided with a keyboard somewhat similar in size to a conventional keyboard of a typewriter but having a unique arrangement of a plurality of keys with redundancy of most letters in the alphabet being provided. Details of the electronic system for processing the keyboard signals are also disclosed.

A need has long existed for equipment which would permit the automatic preparation of a written record of the oral statements of individuals, as for example in the field of court reporting and elsewhere. While much effort has been devoted to solving the problem of going directly from spoken English to a written record thereof there presently exists no equipment which will automatically and accurately provide a typewritten record of all spoken words. Thus stenographers are presently used in all courts of record as well as in most industries for purposes of recording verbatim the conversations which transpire. In an attempt to reduce the problems associated with an individual utilizing a pencil for taking stenographic notes there have been developed a multiplicity of stenographic machines. Voice recording equipment is also in widespread usage for permitting the stenographer to type at his or her leisure the information contained on the sound recording. A major problem of this type of procedure is the long time delay associated with obtaining a written record of the oral proceedings.

A prime example of the drawback associated with presently available verbatim reporting systems is that associated with obtaining a transcript of the proceedings taking

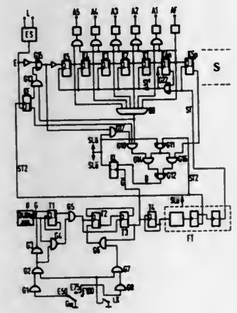
place in a courtroom. For example, if a court is in session from 8:00 a.m. to noon, it is presently impossible for the attorneys and the judge to have available for their use during the lunch period an accurate written record of all statements made during the morning. In the case of taking depositions as well as in the case of preparing verbatim reports of any given business meeting it is most inconvenient for the participants to be forced to wait as much as several days for the stenographer to transcribe the voluminous notes taken either by pencil or by stenographic machine.

Another area where machines of the type disclosed herein will find substantial use is in the field of recording in machine control format the contents of written data. With the present equipment a person can read data and operate the present equipment to thereby obtain the desired record at a speed which heretofore has not been possible.

3,558,821
TELEPRINTER DEVICE UTILIZING RECEIVER FORMED FROM ELECTRONIC CIRCUITS

Roman Lutz, and Herbert Vogl, Munich, Germany, assignors to Siemens Aktiengesellschaft, Berlin and Munich, Germany, a corporation of Germany

Filed Jan. 27, 1969, Ser. No. 794,028
Claims priority, application Switzerland, Feb. 12, 1968, 2,066/68
Int. Cl. H04l *13/08, 15/24*
U.S. Cl. 178—17.5 **7 Claims**



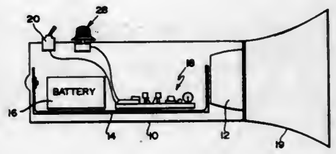
A teleprinter device utilizing a receiver formed from electronic circuits and constructed as a shift register, for use with an electromechanical printing mechanism, and employing a frequency generator which is adjustable to provide various operating speeds, the shift register having shift, start and reset circuits which are cooperable with a blocking circuit connected to said shift register to prevent further change, following entry of the last symbol step, in the shift register until release thereof in response to a control impulse, whereby the data is stored in the register, from the middle of the last symbol step, for a period of 1.25 step lengths.

3,558,822
ACOUSTIC LOCATOR

Stephen L. Moshier; William B. Van Lennep, and Edmund G. Perry, Cambridge, Mass., assignors to Listening Incorporated, Arlington, Mass., a corporation of Massachusetts

Filed May 22, 1968, Ser. No. 731,039
Int. Cl. G01s *9/46*
U.S. Cl. 179—1 **1 Claim**

My disclosure is of a device for projecting a beam of high frequency, staccatolike, acoustic pulses which, when directed toward a distant object capable of reflecting an echo, will enable the user to determine the distance and character of the object by interpreting the quality of the echo. The device includes a housing in which is contained a loudspeaker, an electrical pulse-generating circuit connected to the speaker

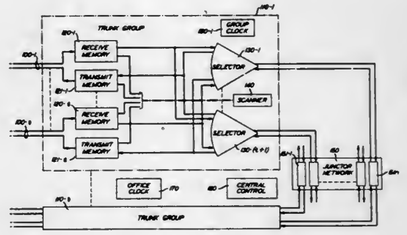


and a horn associated with the speaker for confining the acoustic pulse in a directional beam.

3,558,823
TANDEM OFFICE SWITCHING SYSTEM

Martin B. Brilliant, Holmdel, and Frits Elenbaas, Fairhaven, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York

Filed July 1, 1968, Ser. No. 741,579
Int. Cl. H04j *3/00*
U.S. Cl. 179—15 **14 Claims**



A telephone tandem office switching system accommodating information received in multiplexed digital form is disclosed. A combination time and space division network employing two signal transmission rates, distinct from the rate employed on the interoffice trunks, transfers the information through the tandem office. Also the number of digits per time division multiplex channel is varied during transit to facilitate internal control functions.

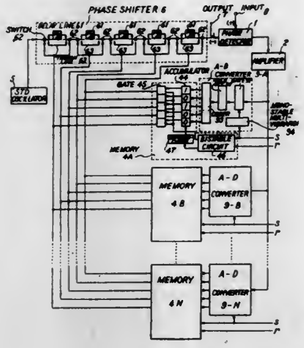
3,558,824
TIME-DIVISIONAL PHASE SYNCHRONIZING APPARATUS FOR A TIME-DIVISIONAL MULTIPLE SIGNAL OF BURST MODE

Akira Ogawa, Kawasaki-shi; Takuro Muratani, and Kunishi Nosaka, Tokyo-to, Japan, assignors to Kokusai Denshin Denwa Kabushiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan

Filed Oct. 4, 1968, Ser. No. 765,079
Claims priority, application Japan, Oct. 6, 1967, Feb. 2, 1968, 42/64045;43/6053
Int. Cl. H04j *3/06*
U.S. Cl. 179—15 **3 Claims**

A time-divisional phase synchronizing apparatus is provided using a phase lock loop for a time-divisional multiple signal of burst mode including signals from a plurality of stations. A memory means is provided in the phase lock loop to separately store phase information of the signals of respective stations in each frame of the time-divisional multiple signal of burst mode, and a phase shifter is connected in the phase lock loop to time divisionally control the phase position of the output of an oscillator. The oscillator generates a stable frequency signal substantially equal to the frequency signal of

the multiple signal in accordance with the contents of the memory means so that reference waves to be applied to de-

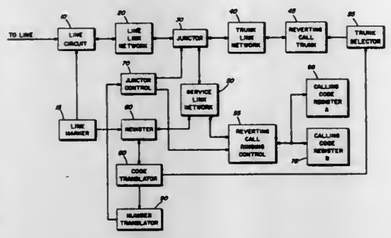


tect the signals of respective stations can be derived from the phase lock loop.

3,558,825
REVERTING CALL ARRANGEMENT

William W. Pharis, Rochester, N.Y., assignor to Stromberg-Carlson Corporation, Rochester, N.Y., a corporation of Delaware

Filed May 9, 1967, Ser. No. 637,220
Int. Cl. H04m *13/00*
U.S. Cl. 179—17 12 Claims



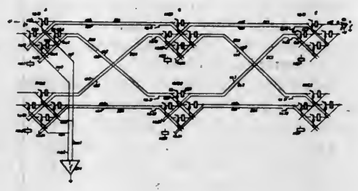
A reverting call arrangement providing a reverting call-ringing control and a calling code register on a time share basis separate from the required reverting call trunk with the calling code register and reverting call-ringing control both providing special supervisory tone signals to the subscriber line circuit and the calling code register having a special timing circuit for automatic release thereof.

3,558,826
GUIDE WIRE CONTROL CIRCUIT ARRANGEMENT FOR A MULTISTAGE CROSSPOINT NETWORK

Heinz Schluter, Kornwestheim, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 18, 1967, Ser. No. 676,119
Claims priority, application Germany, Nov. 2, 1966, ST 26,061
Int. Cl. H04q *3/42*
U.S. Cl. 179—18 3 Claims

A switching network is provided for establishing a connecting path through a plurality of cascaded switching stages. The crosspoint relays which are to be energized are series-connected in a starting circuit via holding wires and setting wires as well as via contacts of switching multiple marking relays. Only one relay is required per switching multiple, and that

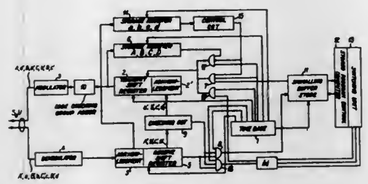


relay has a contact at each input row and output column of the switching multiple.

3,558,827
TELEPHONE SWITCHING SYSTEM WITH INDEPENDENT SIGNALLING CHANNELS EMPLOYING TIME-DIVISION MULTIPLEX

Pierre M. Lucas, 20 rue Tariel, Issy-les-Moulineaux; Jacques M. Dondoux, 1 rue du Docteur Magnan; Jean F. Duquesne, 120 rue de Javel, Paris, and Jean-Marie L. Laprevote, 12 Residence Billebois Mareuil, Rosny-Sous-Bois, France

Filed May 8, 1968, Ser. No. 727,606
Claims priority, application France, May 5, 1967, 105,429
Int. Cl. H04j *3/12*
U.S. Cl. 179—18 3 Claims

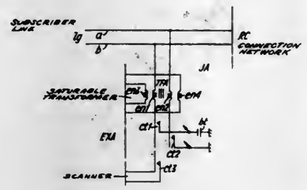


Branched telephone switching system including a principal exchange, intermediate subsidiary exchanges connected to the principal exchange through first information and signalling trunk channels and terminal subsidiary exchanges connected to said intermediate subsidiary exchanges through second information and signalling trunk channels and to the principal exchange through said first and second serially connected information and signalling channels. The information trunk channels and the signalling trunk channels are separate channels. The principal exchange comprises means for transmitting signalling code words to the subsidiary exchanges in successive first time slots respectively assigned thereto and means for receiving signalling code words from the subsidiary exchanges in successive second time slots respectively assigned thereto. Each intermediate and terminal subsidiary exchange comprises means for transmitting signalling code words to the principal exchange in the second time slots assigned to it and means for receiving signalling code words from the principal exchange in the first time slots assigned to it. The intermediate subsidiary exchanges comprise means for switching from the principal exchange towards a given terminal subsidiary exchange the signalling code words occurring in the first time slots assigned to this terminal subsidiary exchange and means for switching from a given terminal subsidiary exchange towards the principal exchange the signalling code words occurring in the second time slots assigned to the former.

3,558,828
ELECTRONIC SCANNERS

Pierre R. L. Marty, Paris, and Roger L. Dousset, Plessis-Robinson, France, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed July 22, 1968, Ser. No. 746,515
Claims priority, application France, July 21, 1967, 115,138
Int. Cl. H04q *3/24*
U.S. Cl. 179—18 9 Claims

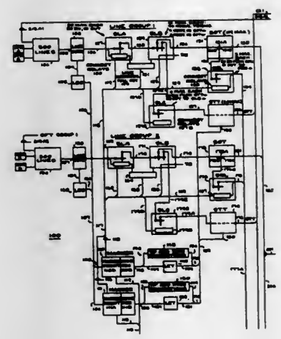


In a large capacity common-controlled telephone network utilizing crosspoint matrix switching, a scanning and testing system is provided. The present scanner reads the condition of subscriber line conditions and most importantly detects changes in condition by means of a display contact and a transformer associated with each crosspoint.

3,558,829
CROSSBAR TELEPHONE SWITCHING SYSTEM WITH MARKER AND PROCESSOR STORED PROGRAM CONTROL

Enn Aro; Thomas K. Cheney; James J. Dankowski; Clifford M. Fearn; Carl B. Nennerfelt; Albert D. Patterson; Robert W. Sharland, and James A. Watts, Galion, Ohio, assignors to North Electric Company, Galion, Ohio, a corporation of Ohio

Filed June 13, 1968, Ser. No. 736,634
Int. Cl. H04q *3/54*
U.S. Cl. 179—18 48 Claims

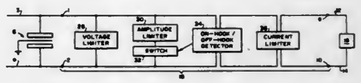


A telephone central office switching system in which communication paths are established over crossbar switches controlled by line group markers and group selector markers and which includes special features trunks. Logic for the special features trunks, interoffice trunks, and operator's trunks are concentrated in supervisory control units having a wired program; bulk memory in the form of magnetic cores with magnetic drum backup, changeable from the outside world, is provided for storage of data relative to called number information received, number group and translation functions, status of special features trunks, class of calls, line and trunk identification, etc.; and in which registering, translating, sending, control of supervisory control units, and other functions are processor controlled by means of a stored program which is changeable from the outside world to provide modified operation or new features.

3,558,830
OVERVOLTAGE TRANSMISSION LINE PROTECTOR

Warren G. Bender, Wellesley, Mass., assignor to Communication Technology Inc., Burlington, Mass., a corporation of Massachusetts

Continuation-in-part of application Ser. No. 777,860, Nov. 21, 1968, now abandoned. This application Apr. 9, 1969, Ser. No. 814,552
Int. Cl. H04m *1/00*; H02h *9/00*
U.S. Cl. 179—81 23 Claims

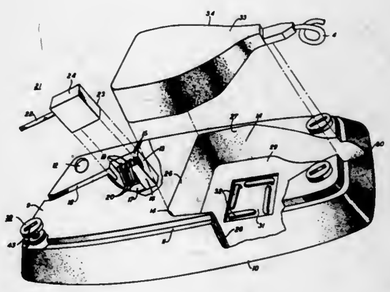


A telephone line is connected to local transmitting equipment through a protective device including an amplitude limiter. The amplitude limiter is effectively shunt-connected with the local equipment for the talking or transmitting mode, that is, when circuits are established for dialing or voice frequency, tone or pulsed data transmissions to the line, but not effectively shunt-connected for the ringing mode, that is, when circuits are established for bell operation on an incoming ringing signal.

3,558,831
TELEPHONE SET BASE STRUCTURE WITH EXTERIOR PLUG CAVITIES IN THE BASE BOTTOM SECURED BY A DETACHABLE BASEPLATE

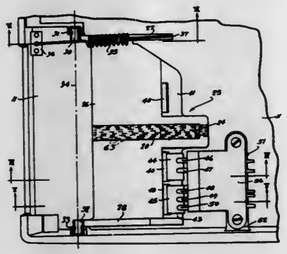
Robert E. Prescott, Rumson, and Cornelius Tanis, Colts Neck, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Apr. 18, 1968, Ser. No. 722,426
Int. Cl. H04m *1/02*
U.S. Cl. 179—100 6 Claims



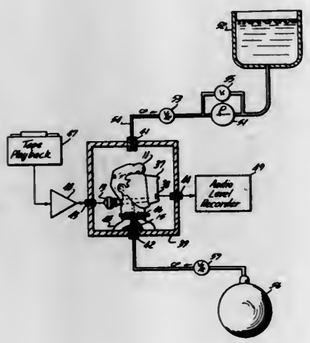
The line cord and handset cord plugs of a telephone base are fixedly mounted in jacks within exterior cavities of the base bottom. The baseplate is detachably secured to the base by the feet which are rotatable. In addition to locking the plugs into their cavities, the baseplate mass serves as a convenient vehicle for imparting added weight for stability to the base.

3,558,832
TELEPHONE HOOK SWITCH
David R. Bonis; Harry M. Coumans, and Wesley N. Willis, London, Ontario, Canada, assignors to Northern Electric Company Limited, Montreal, Quebec, Canada
Filed May 24, 1968, Ser. No. 731,763
Int. Cl. H04m *1/08*
U.S. Cl. 179—159 10 Claims



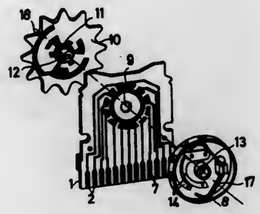
The telephone handset in its hung-up condition operates an actuator assembly which is rotatably mounted in the telephone base and provided with contacting surfaces that cooperate with resilient contact leaves supported in a mounting block fixed to the base. A tension spring is arranged with its line of action close to the center of rotation of the actuator assembly to urge the assembly towards its projecting position, the force applied on the assembly being smaller in the depressed than in the projecting position. The contact leaves are so arranged that they engage the contacting surfaces in the projecting position and counteract the spring force.

3,558,833
UNDERWATER MICROPHONE TESTING DEVICE
William W. McCrory, Jr., and Earl Kent Hunter, Panama City, Fla., assignors to the United States of America as represented by the Secretary of the Navy
Filed Feb. 13, 1969, Ser. No. 799,031
Int. Cl. H04r *29/00*
U.S. Cl. 179—175.1 10 Claims



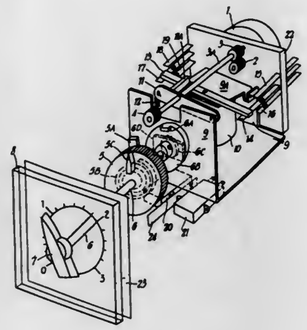
This invention pertains to an apparatus and method of objectively testing microphones mounted in diving masks as an integral part thereof. The apparatus comprises an especially made manikin, a pressurized chamber, a source of recorded audio test signals, and an indicator device.

3,558,834
PRESELECTING SWITCH
Alfred Zielke, Peine, Germany, assignor to Elmeg Elektro-Mechanik, GmbH, Peine, Germany
Filed May 1, 1969, Ser. No. 820,807
Claims priority, application Germany, May 6, 1968, 1,765,357
Int. Cl. H01h *19/58*
U.S. Cl. 200—11 16 Claims



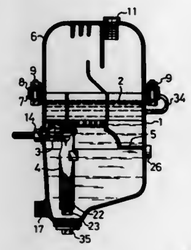
A miniature preselecting switch comprising a switch plate and two discs at both sides of the switchplate and rigidly connected to each other by a shaft rotatably extending through an aperture in the switchplate and together forming a selecting wheel adapted to be turned to different positions relative to the switchplate. Each disc is provided either with contact springs or printed contact strips which are adapted to engage respectively either with associated contact strips or contact springs on each side of the switchplate so that at each adjustment of the selecting wheel two different circuit connections may be produced.

3,558,835
TIMING DEVICE
Jerzy Kazimierz Cuchla, Harlow, England, assignor to Electrical Remote Control Company Limited, Harlow, Essex, England, a British Company
Filed June 26, 1968, Ser. No. 740,231
Claims priority, application Great Britain, Dec. 13, 1967, 56,734/67
Int. Cl. H01h *7/08*
U.S. Cl. 200—38 12 Claims



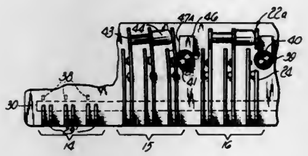
A timing device has a timing cam driven by a miniature electric motor through a clutch. Fixed directly to the forward axial end face of an output gearwheel of the clutch is an indicating member about the axis of turning of which extends an at least part-annular scale giving a visual indication of the progress of timing. A spring urges the clutch to engage but is prevented by a spring-loaded armature of a solenoid of a relay from producing such engagement. However, on energization of the solenoid, the armature moves to allow the spring to produce such engagement. The spring-loading of the armature is provided by leaf-spring contact members on which the armature acts mechanically by way of an electrically insulating bar.

3,558,836
CIRCUIT BREAKER
Minoru Barada, and Keiji Shimada, Shizuoka-ken, Japan, assignors to K. K. Meidensha, Tokyo, Japan
Filed June 25, 1969, Ser. No. 836,437
Claims priority, application Japan, July 5, 1968, 43/47401;43/47402
Int. Cl. H01h *33/68*
U.S. Cl. 200—150 7 Claims



A circuit breaker having an oil-filled tank of insulating material carrying the fixed breaker contact and a shaft by means of which an elongated movable contact may be pivoted into an upright position of circuit-closing engagement with the fixed contact.

3,558,837
PRETENSIONED CONTACT SPRINGS FOR PUSHBUTTON CONSOLES
James F. Bayer, Jr., Union, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York
Filed July 9, 1968, Ser. No. 743,508
Int. Cl. H01h *1/50*
U.S. Cl. 200—166 9 Claims



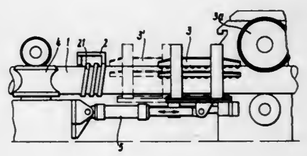
A pretensioned contact switch includes alternate long and short contact springs that have first legs partially embedded in corresponding parallel aligned slots of a plastic insulating base and secured therein. A first plastic stop affixed to and protruding from the base abuts a tab extending down from a second leg of the short contact spring to tension the short contact spring. A second plastic stop affixed to and protruding from the base abuts against a second leg of the long contact spring to place the long contact spring in tension. Push-button-actuated means move the second leg of the long contact spring away from the second plastic stop toward the second leg of the short contact spring to close the contact switch.

3,558,838
CONTACT BREAKER ASSEMBLIES
William Lawrence Fry, Kings Norton, Birmingham, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British Company
Filed Mar. 25, 1969, Ser. No. 810,189
Claims priority, application Great Britain, Mar. 29, 1968, 15,175/68
Int. Cl. H01h *9/00, 9/10*
U.S. Cl. 200—166 3 Claims



A contact breaker assembly in which a plate carries a fixed contact, and an insulating heel member mounted for pivotal movement relative to the plate carries a movable contact which is movable into and out of engagement with the fixed contacts. A spring urges the heel member to pivot in a direction to engage the movable contact with the fixed contact. The movable contact is secured to a metal shell which is engaged with the heel member, and the spring is defined by a metal strip, one end of which is engaged in a groove in the heel member. The metal strip and heel member are provided with means to secure the spring and the shell to the heel member.

3,558,839
APPARATUS FOR CONTINUOUSLY WELDING THE LONGITUDINAL SEAM OF STEEL TUBES
Willi Oppermann, Duisburg, Germany, assignor to Mannesmann Aktiengesellschaft, Duesseldorf, Germany, a corporation of Germany
Filed Apr. 3, 1968, Ser. No. 718,462
Claims priority, application Germany, Apr. 7, 1967, M73497
Int. Cl. H05b *5/00;* B23k *31/06*
U.S. Cl. 219—8.5 2 Claims

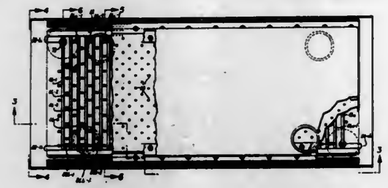


A method and apparatus for continuously welding the longitudinally seam of steel tubes, comprising a welding apparatus, and an arrangement for forming a split tube from steel strip and feeding the split tube to the welding apparatus, the arrangement comprising a stationary forming apparatus, and a movable shaping apparatus interposed between the welding apparatus and the stationary forming apparatus whereby the movable forming apparatus is moved close to the welding apparatus for starting the welding operation and is moved away from the welding apparatus and toward the stationary forming apparatus for the continuous welding operation.

3,558,840
MICROWAVE HEATER AND APPLICATOR THEREFOR

Donald A. Dunn, Atherton, and Peter D. Jurgensen, San Carlos, Calif., assignors to Genesys Systems, Inc., Mountain View, Calif., a corporation of California

Filed June 26, 1969, Ser. No. 836,809
Int. Cl. H05b 9/06, 5/00
U.S. Cl. 219—10.55 16 Claims

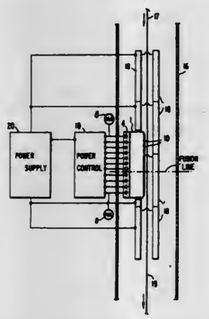


A microwave heater for heating sheet material or material that can be carried in sheet form including an applicator having a two-dimensional microwave circuit including an array of elongate conducting elements forming a modified meander type slow wave structure supported on a quarter wave-length conducting stubs over a ground plane and transversely fed by a coaxial coupler through an aperture in the ground plane. A circuit is also provided for supplying a gas to remove vapor or moisture from material being heated.

3,558,841
APPARATUS FOR DETERMINING THE BOUNDARY BETWEEN DISPARATE LIGHT-EMITTING AREAS

Isadore Moskowitz, Baltimore, Md., assignor to Bethlehem Steel Corporation, a corporation of Delaware

Filed July 18, 1968, Ser. No. 745,829
Int. Cl. H05b 5/00; G01n 21/32
U.S. Cl. 219—10.61 2 Claims

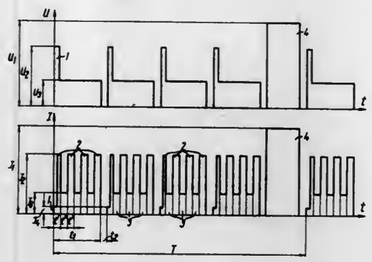


A photoelectric apparatus for determining the boundary between areas giving off different amounts of light, e.g. the fusion line on a tinplate strip moving through a fusion furnace where unfused matte surfaced tinplate becomes fused bright surface tinplate. The apparatus contains several photoelectric cells and the boundary's position is indicated where a difference occurs in the outputs of adjacent cells. The cells are aligned with the output ends of light-conveying conduits whose input ends face portions of the areas on both sides of the boundary. Only light rays parallel to the axes of the conduits are allowed to pass through them, so that only light from those portions of the area directly in line with the conduits stimulates the cells. The apparatus may include gates adapted to adjust the size of the openings at the input ends of the conduits, and which are preset to regulate the amount of light impinging on each of the cells. In this manner, the gates may compensate for differences in cell sensitivity or provide a desired pattern of cell outputs.

3,558,842
METHOD OF ELECTROEROSIVE MACHINING OF CURRENT-CONDUCTING MATERIALS AND A DEVICE FOR EFFECTING SAME

Abram Lazarevich Livshits, Profsojuznaya ul. 62. Korp, 2, kv. 69, and Mark Shmulevich Otto, Leningrad skoe shosse, kvarta 11, Korp. 3. kv. 139, Moscow, U.S.S.R.

Filed Mar. 6, 1967, Ser. No. 621,031
Int. Cl. B23p 1/08
U.S. Cl. 219—69 6 Claims

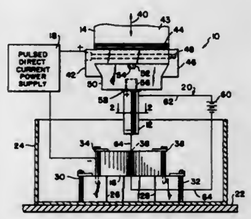


The electroerosive machining of current conducting materials which is effected by a series of impulses each having an amplitude-fluctuating intricate form which breaks through the erosion gap, evaporates, melts down and throws off metal from the molten pool, partially evacuates the products of erosion from the working gap and forms a protective film from the products of the working liquid cracking on the tool electrode. There may be employed an additional impulse having a current and a voltage amplitude two to 10 times greater for finally removing the erosion products.

3,558,843
MEANS FOR AND METHOD OF ELECTRICAL MACHINING WITH A HEATED ELECTRODE

Thomas J. O'Connor, 100 Morgan Road, Ann Arbor, Mich. 48104

Filed Apr. 17, 1967, Ser. No. 631,329
Int. Cl. B23p 1/08, 1/04
U.S. Cl. 219—69 10 Claims

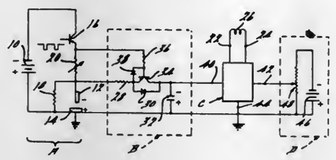


The method of electrically machining conducting workpieces to produce a better finish with lower electrode wear and greater stock removal, using an electrode including a core of high electrical resistance material coated with a low electrical resistance material, and including heating the electrode during machining and providing a positive polarity for the electrode relative to the workpiece and the apparatus therefor. When the electrode material has semiconductor properties it is polarized to provide maximum conductivity between the electrode and workpiece with the electrode positive. The principles of coating, heating and polarizing the electrode during electrical machining may be separately employed.

3,558,844
ELECTRICAL DISCHARGE MACHINING SERVO CONTROL CIRCUIT

Walter Lobur, Clawson, Mich., assignor to Elox Inc., Troy, Mich., a corporation of Delaware

Filed Apr. 24, 1968, Ser. No. 723,760
Int. Cl. B23p 1/14
U.S. Cl. 219—69 4 Claims

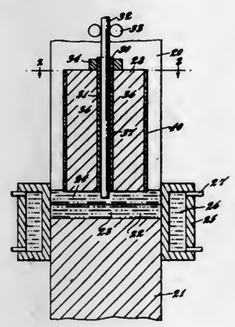


A circuit for providing function control for electrical discharge machining apparatus wherein a servofeed control means or the like has its operation related to gap condition during machining pulse on-time only. A gap voltage signal-sensing network and a reference voltage network are employed with the servofeed means operable responsive to their difference. An additional means is incorporated in the circuit for holding the signal sensed at a relatively constant level between machining power pulses.

3,558,845
ELECTROSLAG WELDING NOZZLE AND PROCESS

James E. Norcross, Media, Pa., assignor to Arcos Corporation, Philadelphia, Pa., a corporation of Pennsylvania

Filed Mar. 26, 1969, Ser. No. 810,498
Int. Cl. B23k 9/18, 25/00
U.S. Cl. 219—73 10 Claims



An electroslag welding nozzle having a guide opening toward the middle and wing bars extending out at different sides, the nozzle being enrobed with an adhering coating of electroslag welding flux. In the electroslag welding process the nozzle is stationary and greatly increases the thickness of permissible vertical welds which can be made with a single electrode without horizontal oscillation.

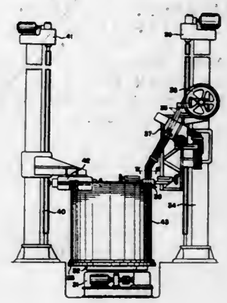
3,558,846
METHOD OF AND APPARATUS FOR CONSTRUCTING SUBSTANTIALLY CIRCULAR CROSS SECTION VESSEL BY WELDING

Akira Ujile, Kobe-shi, Japan, assignor to Mitsubishi Jukogyo Kabushiki Kaisha, Chiyoda-ku, Tokyo, Japan

Filed Mar. 15, 1967, Ser. No. 623,300
Claims priority, application Japan, Apr. 4, 1966, 41/21,092
Int. Cl. B23k 9/04
U.S. Cl. 219—76 12 Claims

A thick-walled, substantially circular cross section vessel, such as a pressure vessel, is fabricated solely from deposited weld metal. Formation of the vessel is effected by the progressive deposition of molten weld metal to form a continuous helical strip whose axially adjacent convolutions are contiguous, with the deposited molten weld metal being progressively deposited along, and solidified in contact with, already solidified metal so that the heat of the freshly deposited molten weld metal can be utilized to heat treat progressively the solidified metal along which the molten metal is progressively deposited. The deposited weld metal is force cooled immediately after deposition and the convolutions are progressively mechanically trimmed, to preset inner and outer diameters, immediately after they are formed.

The apparatus includes a turntable type of support rotated, relative to the source of molten weld metal, about the axis of



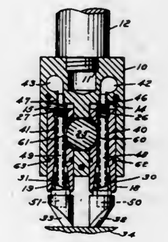
the tubular body to be formed. During such rotation, the source of molten weld metal is moved progressively parallel to such axis so as to form the aforementioned helical strip by conjoint rotation of the support and of the body as it is formed and axial displacement of the source of weld metal. The support may be mounted for rotation about a horizontal axis, in which case the support is moved axially at a rate coordinated with its rate of rotation. Alternatively, the support may be rotated about a vertical axis and, in such case, the source of molten weld metal is moved upwardly as the vessel wall is formed.

Various welding processes may be used for depositing the weld metal, and among these may be mentioned electroslag welding, SIGMA welding, submerged arc welding and TIG welding.

3,558,847
ELECTRIC RESISTANCE WELDING ELECTRODE HOLDER FOR HOLDING TWO ELECTRODES IN BALANCED FORCE CONTACT

Robert B. Width, Rochester, Mich., assignor to Tuffaloy Products, Inc., Detroit, Mich., a corporation of Michigan

Filed June 4, 1968, Ser. No. 734,364
Int. Cl. B23k 11/10, 11/30
U.S. Cl. 219—87 3 Claims



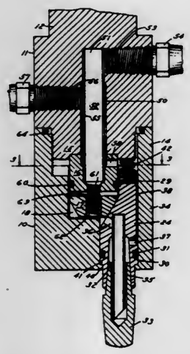
A variable condition compensating and equalizing dual electrode holder having cam-surfaced pistons supporting the

electrodes and a barrel cam coacting with the cam surfaces on the pistons. The pistons are resiliently extended by springs and one piston retracts upon contact until the other piston makes contact with the workpiece in advancing movement of the holder. This action is permitted by transverse movement of the barrel. Further inward movement of the pistons due to advancing movement of the holder locks the pistons in their different extensions against the barrel. Further advancing movement of the holder presses the electrodes into equal contact with the workpiece. Coolant circulation is provided by tubular pistons and coaxial tubes and transferring coolant across the holder body through the barrel cam cavity from side apertures in the tubular pistons.

3,558,848
ELECTRIC RESISTANCE WELDING ELECTRODE HOLDER THREE ELECTRODES IN BALANCED FORCE CONTACT

Robert B. Width, Rochester, Mich., assignor to Tuffaloy Products, Inc., Detroit, Mich., a corporation of Michigan

Filed June 4, 1968, Ser. No. 734,471
Int. Cl. B23k *11/10, 11/30*
U.S. Cl. 219—87 **1 Claim**



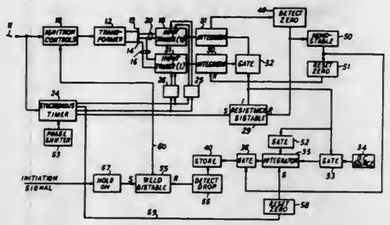
An electric resistance welding electrode holder for holding three electrodes against a workpiece in substantially equal engagement to make substantially equal welds. Retractable pistons support the electrodes and are moved into the holder body by electrode engagement with the workpiece in the advancement of the holder. The pistons have cam surfaces at their inner ends coacting with a common intermediate cam. Different distances of retracting or axial inward movement of the pistons is compensated by the cam shifting transversely and making engagement at different rise points on the cam surfaces of the pistons. The cam locks the pistons in their self-adjusted position and further advancement of the holder forces the electrodes into substantially equal mechanical engagement and electrical contact with the workpiece to make substantially equal welds. The holder has coolant circulation means leading through the common cam chamber communicating with the electrodes and circulation means leasing around the common cam chamber communicating with the electrodes.

3,558,849
WELDING CONTROL

Reginald Catherall; Anthony John Ley, and Rodney Walter Levinge, Farnborough, England, assignors to The Solartron Electronic Group Limited, Farnborough, England, a corporation of the United Kingdom

Filed Apr. 10, 1968, Ser. No. 720,208
Claims priority, application Great Britain, Apr. 11, 1967, 16491
Int. Cl. B23k *11/24*
U.S. Cl. 219—110 **22 Claims**

The duration of a resistance-welding operation is controlled by deriving two successions of electrical signals which depend upon voltage across and the current through the electrodes respective, deriving from the first and second signals a succession of third signals dependent upon the impedance of the workpiece, detecting the difference between each third

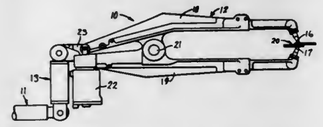


signal and the next succeeding third signal, and stopping the welding operation when the difference reaches a predetermined amount.

3,558,850
WELDING SYSTEM WITH AUTOTRANSFORMER BETWEEN CABLE AND GUN

Chester F. Leathers, Portage, Mich., assignor to Cal Manufacturing Company, Incorporated, Portage, Mich., a corporation of Michigan

Filed July 11, 1968, Ser. No. 744,154
Int. Cl. B23k *11/24;* **H01h** *71/28*
U.S. Cl. 219—116 **6 Claims**



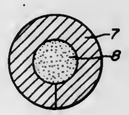
An electric welding device having a pair of relatively removable electrodes and auto transformer means releasably connected in circuit with said electrodes for reducing the voltage across said electrodes. Said auto transformer means includes housing means having first and second nonaligned exterior surfaces, said first surface having a pair of spaced-apart lugs thereon and said second surface having a single lug having a thickness equal to the spacing between said pair of lugs on said first surface.

The auto transformer windings are constructed so that a solid metal connection is provided between the lugs, which connection constitutes the primary winding conductors. The secondary winding conductors are interdigitated with said primary winding conductors.

3,558,851
SPECIAL WELDING ELECTRODES

Takeshi Oku, Suita-shi, Japan, assignor to Matsushita Electric Industrial Co., Ltd., Osaka, Japan, a corporation of Japan

Filed May 15, 1967, Ser. No. 638,270
Claims priority, application Japan, Jan. 23, 1967, 42/5331
Int. Cl. B23k *35/22*
U.S. Cl. 219—146 **1 Claim**



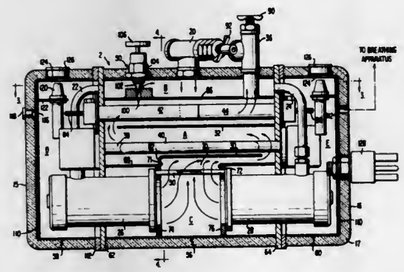
Special welding electrode consisting of a composite wire and adapted for use in CO_2 shield gas arc welding, said weld-

ing electrode comprising a tubular outer casing of mild steel having a central hollow and a filler enclosed in said central hollow and composed of ferromanganese in an amount not less than 1.0 percent but not more than 2.2 percent based on manganese of the weight of the electrode, ferrosilicon in an amount not less than 0.3 percent but not more than 0.9 percent based on silicon of the weight of the electrode, ferroaluminum in an amount not less than 0.05 percent but not more than 0.8 percent based on aluminum of the weight of the electrode, an arc stabilizer consisting of a salt or oxide of alkali metal in an amount not less than 0.1 percent but not more than 3.0 percent of the weight of the electrode and the remainder of iron powder which may be added as required.

3,558,852
ELECTRIC HEATING APPARATUS FOR SUPPLYING HEATED FLUID TO A DIVER'S CLOTHING

Leroy N. Larenzo, Houston, Tex., and Mark P. Banjavich, New Orleans, La., assignors to Taylor Diving & Salvage Co., Inc., New Orleans, La., a corporation of Louisiana

Filed June 20, 1968, Ser. No. 738,458
Int. Cl. B63c *11/28;* **H05b** *3/82*
U.S. Cl. 219—211 **4 Claims**



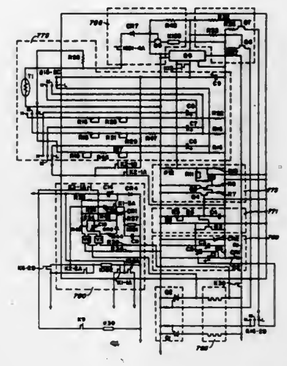
A method which is intended to supply heated fluid to divers' clothing of the type including a fluid inlet connection communicating with internal fluid circulation passages in the clothing. The method includes the steps of pumping fluid from a source thereof into an enclosed chamber and directing the fluid in a flow path through the chamber to an outlet communicating with the inlet to the diver's clothing. Heat is supplied to the fluid in the flow path to raise the temperature of the fluid. The temperature of the fluid in the flow path subsequnt to heating is sensed and the supply of heat to the fluid is reduced whenever the sensed temperature exceeds a predetermined value.

A heating unit which is intended to supply heated fluid to divers' clothing of the type provided with a fluid inlet connection communicating with internal fluid circulation passages in the clothing. The unit includes a housing having an enclosed main chamber. Pump means connected with the housing includes a pump inlet communicating with a source of the fluid and a pump outlet communicating with the main chamber for pumping the fluid therethrough. Chamber outlet means in the housing communicates with the main chamber and is adapted to be connected to the inlet connection of the diver's clothing. The pump outlet and the chamber outlet means are positioned at opposite ends of a fluid flow path through the main chamber. Heating means connected with the housing extends into the flow path for supplying heat to the fluid therein. Temperature responsive means connected with the housing extends into the flow path at a point downstream of the heating means. The temperature responsive means is operatively connected with the heating means to reduce the heat supplied thereby when the temperature of the fluid exceeds a predetermined value.

3,558,853
FUSER SYSTEM FOR COPYING MACHINE

Gary L. Schluntz, Penfield, N.Y., assignor to Xerox Corporation, Rochester, N.Y., a corporation of New York

Filed May 14, 1969, Ser. No. 824,540
Int. Cl. G03g *13/20;* **H05b** *1/02*
U.S. Cl. 219—216 **5 Claims**



Fusing apparatus for heating developed images on copy sheets moving through an automatic copying machine at variable rates including a conveyor for transporting copy sheets having fusible images thereon at variable rates past a plurality of heater elements, a first circuit for generating ramp signals at a predetermined duration, and a second circuit including a thermistor responsive to changes in temperature and at least two voltage dividing networks each corresponding to a different fusing temperature. A zero cross pulse generator and comparator responsive to input signals from said first and second circuits emits signals when the output signals of said first circuit means exceeds that of said second means and a third circuit including at least one triac coupled to at least a portion of said heater elements receives signals from said zero cross pulse generator and comparator and applies power to said heater elements in accordance with a preselected copy travel rate.

3,558,854
MINIATURE ELECTRIC SOLDERING IRON

William Jordan Siegel, Silver Spring, and Linus Eugene Wallgren, Rockville, Md., assignors to Pace, Inc., Silver Spring, Md., a corporation of District of Columbia

Filed Nov. 7, 1968, Ser. No. 774,066
Int. Cl. H05b *3/02;* **B23k** *3/04*
U.S. Cl. 219—233 **9 Claims**

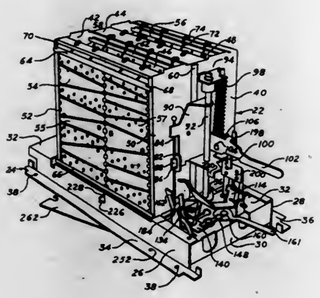


The present invention relates to a pencil grip thermal tool particularly suited for miniature soldering work. The working tool tip is made movable relative to the pencil grip by incorporating a movable spring-biased electrical connector assembly inside the pencil grip. This relative movement offers a skilled electronic repair technician a good tactile feel for actual contact between the tool and workpiece.

3,558,855
ELECTRIC FOOD TOASTER

Frank Stanek, and Joseph Pavelka, Jr., St. Louis, Mo., assignors to The Toastswell Company, Saint Louis, Mo., a company of Missouri

Filed Apr. 25, 1968, Ser. No. 724,170
Int. Cl. F27d 11/00
U.S. Cl. 219—385 10 Claims

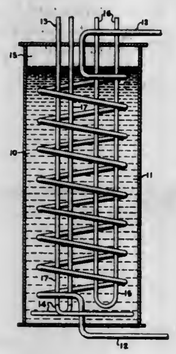


An electrically energized toaster for toasting food substances such as bread and the like having elements and a thermostatically controlled mechanism for timing the toasting cycle. The heating elements are removable without the necessity of removing the cover of the unit so that the heating elements may be cleaned, repaired, or replaced by persons having little or no experience in the repair of toaster structures. The thermostatic controlled timing sequence is made variable by a slice carrier release mechanism which is actuated by a toggle linkage to achieve a greater range of toasting time than is ordinarily available in food toasters.

3,558,856
USE OF HEATED LEG

Willis Thompson Lawrence, Winchester, and George Warren Webb, Revere, Mass., assignors to Hooker Chemical Corporation, Niagara Falls, N.Y., a corporation of New York, by mesne assignments

Original application Nov. 13, 1967, Ser. No. 682,192, now Patent No. 3,475,596. Divided and this application May 23, 1969, Ser. No. 839,129
Int. Cl. H05b 1/02
U.S. Cl. 219—492 5 Claims

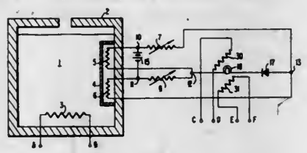


An independent leg heater is disposed in a heat storage material to melt some of the material and provide an escape channel for the bulk of said material as it liquefies. Special heater circuitry provides for the regulation of heating periods for the independent leg heater (1) to apply heat automatically prior to activation of the main heating elements, (2) to stop the application of heat when the heat storage material is molten to prevent overheating in the upper region of the storage material surrounding the leg heater (3) to shut down the entire system if the leg heater fails to operate.

3,558,857
TEMPERATURE CONTROL SYSTEM USING A NONREENTRANT TEMPERATURE-SENSITIVE BRIDGE TRANSDUCER

Warren L. Braun, Harrisonburg, Va., assignor to Adamson Company, Richmond, Va., a corporation of Ohio

Filed Dec. 18, 1968, Ser. No. 784,740
Int. Cl. H05b 1/02
U.S. Cl. 219—499 7 Claims

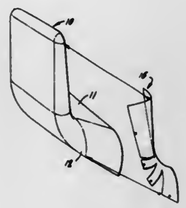


A Wheatstone bridge element including temperature-sensitive resistors is placed in or adjacent to a fluid which is to be temperature controlled and is energized at its input nodes. A diode and light source or a diode and an amplifier for driving a light source are connected across the output nodes of the bridge. A high-current triac is triggered by the charging of an RC circuit in which a resistive element is photocontrolled by the light source. Power control by the triac is used to control heating the fluid.

3,558,858
FLEXIBLE PLANAR HEATING UNIT ADAPTED FOR MOUNTING ON COMPLEX CURVED SURFACES

Emil J. Luger, Jr., San Francisco, Calif., assignor to Delta Control Inc., San Francisco, Calif., a corporation of California

Filed June 30, 1969, Ser. No. 837,638
Int. Cl. H05b 3/36
U.S. Cl. 219—528 3 Claims

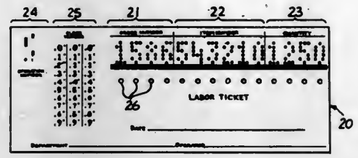


A sheetlike, flexible heating unit of the semiconductive type having a central body portion provided with bus bar means and spaced protruding arms each having a bus bar at the tip thereof, said unit being adapted to be fitted tightly against an underlying curved surface of nonsimple configuration without engendering any substantial folding or overlapping of the heating unit.

3,558,859
AUTOMATIC READING SYSTEM FOR RECORD MEDIA HAVING ENCODED DATA

Frederick W. Dilsner, Deerfield; Aaron B. Aronson, Glenview, and John E. Jones, Winnetka, Ill., assignors to Cummins-Chicago Corporation, Chicago, Ill., a corporation of Illinois

Filed Dec. 4, 1967, Ser. No. 687,883
Int. Cl. G01n 21/30; G06k 7/10, 19/00
U.S. Cl. 235—61.11 15 Claims

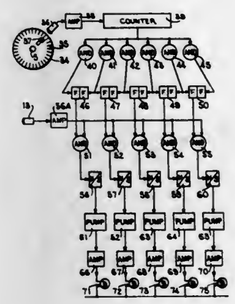


A data processing system for automatically reading characters represented by code indicia in prescribed fields on record media in any of a plurality of different codes. The illustrative system is designed to read any of three different perforated codes, including both legible and illegible codes, as well as three different printed or marked codes, such as the conventional bar code and marked code. The system includes a program panel which is used to select the prescribed fields in four different document formats. Then in response to the selection of a particular document format on the control panel, the reading system is automatically conditioned to read the correct codes in the prescribed fields. As the documents are transported through the reading system, photosensitive reading elements automatically respond to the selected codes in the prescribed fields to produce output signals representing the characters in response to the code indicia representing such characters.

3,558,860
DOCUMENT FEEDING SYSTEMS

John Bauldreay, Royston; David Gordon Boulter, Gamlingay near Sandy, and Frederick Thomas Chiles, Biggleswade, England, assignors to International Computers and Tabulators Limited, Putney, London, a British Company

Filed Dec. 29, 1967, Ser. No. 694,448
Claims priority, application Great Britain, Jan. 6, 1967, 908/67
Int. Cl. G06k 13/06
U.S. Cl. 235—61.11 17 Claims

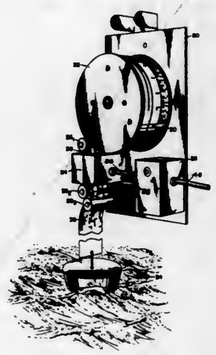


In a document feeding device, the passage of each document past a fixed point produces a signal which is combined with timing signals. The resultant output signal indicates the timing of that document relative to a number of possible document timing increments. The signals for each timing increment are summed on a weighted basis to provide an indication of the distribution of document timing over a number of documents. The summed signals may be used to operate a visual display to facilitate manual adjustment of the document feed, or they may be used to control a servosystem which provides automatic adjustment.

3,558,861
DISPLACEMENT MEASURING SYSTEM

William O. Collins; Dan P. Hunt, and Leroy D. Wilder, Las Vegas, Nev., assignors to EG & G, Inc., Bedford, Mass., a corporation of Massachusetts

Filed May 8, 1968, Ser. No. 727,416
Int. Cl. G06k 7/10; G01r 21/30; G01b 11/22
U.S. Cl. 235—61.11 11 Claims

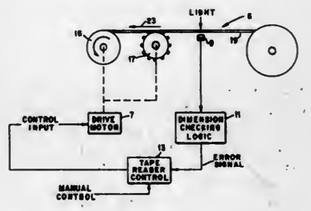


A displacement measurement system having a support; a storage reel, reader head and electronics package mounted on the support and an elongated tape threaded through the reader head with one end connected to the storage reel and its other end connected to the object, the displacement of which is to be measured. The tape has a plurality of groups of light conduits spaced along its length at predetermined intervals, with the conduits of each group coded to indicate linear displacement or a function related thereto. A set of photodetectors indicate the passage of light through the tape where the conduits are located.

3,558,862
CIRCUIT FOR DIMENSIONAL VERIFICATION OF PUNCHED TAPES

David E. McMillan, Billerica, Mass., assignor to the United States of America as represented by the United States Atomic Energy Commission

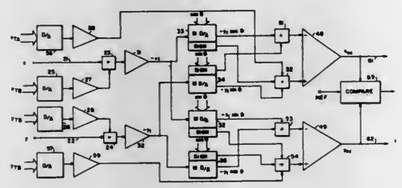
Filed Apr. 15, 1969, Ser. No. 816,235
Int. Cl. G06k 5/04, 7/10; G01b 5/16
U.S. Cl. 235—61.7 2 Claims



A circuit has been provided for verifying punched tapes used in digital data storage to determine whether the spacing between lines of information is within tolerance. A photodiode is exposed successively by the tapes' sprocket holes, thus developing a signal whose duration is proportional

to the "dark time" between the holes. This signal is compared on a time basis with a generated timing signal based on the number of constant frequency clock pulses registered by a binary counter and produces an error signal which is used to turn the tape reader "off" upon detecting an increase or decrease in the dark time.

3,558,863
COORDINATE CONVERTER USING MULTIPLYING DIGITAL-TO-ANALOG CONVERTERS
Roy M. Williams, Jr., and John R. Longland, Nashua, N.H., assignors to Sanders Associates, Inc., Nashua, N.H., a corporation of Delaware
Filed Mar. 27, 1969, Ser. No. 811,092
Int. Cl. G06j *1/00;* **G06g** *7/22*
U.S. Cl. 235—150.52 **6 Claims**



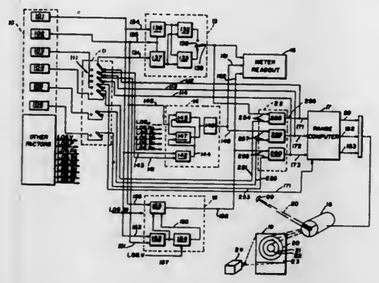
A coordinate converter used in a display system for generating deflection voltages capable of rotating and/or translating one or more images on the screen of a cathode ray tube is described. More particularly, the converter uses four multiplying digital to analogue converters each of which combines one analogue voltage representing one of the initial coordinates, *x* or *y*, with one binary digital input in two's complement form which represents either the sine or the cosine of the rotation angle. The outputs of these converters are combined to solve the coordinate rotation equations. Incremental voltages representing the desired translation may be added before and/or after the rotation computation.

3,558,864
REFERENCE POINT DETERMINING SYSTEM
Walter K. French, Montrose, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 29, 1965, Ser. No. 517,381
Int. Cl. G06j *11/00*
U.S. Cl. 235—150 **10 Claims**



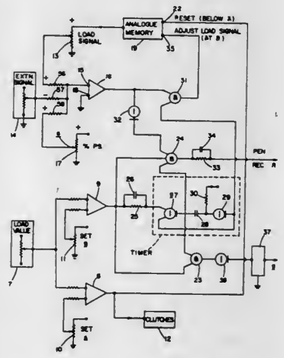
A system for determining a reference point in a fingerprint pattern by means of determining the average relative center of curvature of the ridges of the pattern by means of a curve follower, differentiators for X and Y with respect to time, a divider for *dx/dy* and the output therefrom passing to a squarer and a differentiator. The second derivative output is passed to a divider and the squarer and a unit generator go to an adder connected to a three-half power generator, whose output is also connected to the latter divider. The divider outputs are multiplied by cosine and since values and added to X and Y values respectively for integration if less that a maximum radius value. These values are passed to sample and hold circuits at the end of a complete fingerprint scan.

3,558,865
WEAPONS EFFECT DISPLAY SYSTEM
Carl W. Berndt, Danville; Frederick Reinecker, Jr., and Willis G. Downing, Jr., Livermore, Calif., assignors to The United States of America as represented by the United States Atomic Energy Commission
Filed Mar. 31, 1967, Ser. No. 628,244
Int. Cl. G03b *29/00*
U.S. Cl. 235—151 **3 Claims**



A system for displaying simulated post detonation "effects" of a nuclear device on a geographical map. Comprising a geographical plotter and a multiplicity of analogue computers for storing the functional relationships between yield characteristics of a nuclear device, manner of detonation and environmental conditions on one hand, and the "effects" resulting from detonation on the other. In response to input signal data corresponding to the variables of these functional relationships, the analogue computers issue output signals representative of the associated magnitudes and ranges of the "effects" and concurrently therewith such range signals are utilized to project and superimpose variable dimensional figures onto a geographical map by means of the plotter. The area on the map encompassed by each figure indicates the geographical extent subjected to the corresponding simulated nuclear detonation "effect."

3,558,866
PROOF STRESS INDICATOR
Barrie Kenneth Poulson, High Wycombe, England, assignor to Instron Limited, High Wycombe, England, a corporation of Great Britain
Filed Feb. 12, 1968, Ser. No. 704,686
Claims priority, application Great Britain, Feb. 15, 1967, 7357/67
Int. Cl. G01b *5/30;* **G06g** *7/00*
U.S. Cl. 235—151.3 **8 Claims**

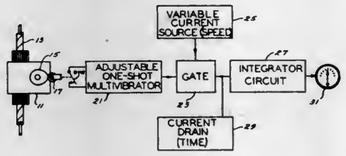


A proof stress indicator for use with a stress/strain testing apparatus in which there is produced during the testing of a specimen two electrical signals which are respective analogues of the increases in the stress and strain of the specimen above the particular values thereof obtained at a selected earlier stage of the testing and being operable for providing a response when the strain electrical signal has increased above the stress electrical signal by an amount which is an analogue of a preselected proof stress percentage.

ERRATUM

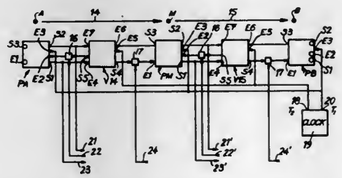
For Class 235—151.12 see:
Patent No. 3,558,045

3,558,867
INTEGRATING COMPUTER
Henry D. Pahl, Jr., 99 Cross St., Belmont, Mass. 02178
Filed Oct. 16, 1968, Ser. No. 768,047
Int. Cl. G06g *7/18, 7/48*
U.S. Cl. 235—183 **7 Claims**



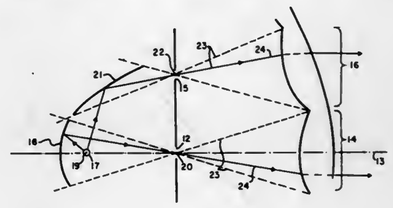
An integrating computer is disclosed which continuously computes time of deviation from that elapsed time which would be required to maintain a preselected average speed over the distance actually traveled. A preselected current which is an inverse function of the preselected average speed is applied to an integrator for a preselected interval each time a unit of distance is traversed. A current in the opposite direction is applied to the integrator continuously to represent the passage of time. The integrator accordingly provides an output signal which varies substantially in proportion to the time of deviation from that elapsed time which would be required to maintain the preselected average speed.

3,558,868
METHOD AND SYSTEM FOR FINDING OR PLOTTING AN OPTIMUM PATH
Jacques Sauvan, Paris; Jacques Berthelemy, Thorigny, and Pierre Germain Rene Boue, Saint Mery par Champeaux, France, assignors to Societe Anonyme: Societe Nationale d'Etude et de Construction de Moteurs d'Aviation S.N.E.C.M.A., Paris, France
Filed Feb. 27, 1967, Ser. No. 618,906
Claims priority, application France, Feb. 26, 1966, 51268
Int. Cl. G06g *7/48, 7/62;* **G06j** *1/00*
U.S. Cl. 235—185 **18 Claims**



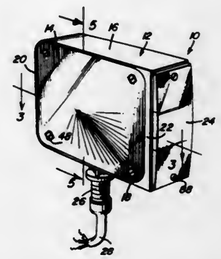
Nodal and link elements are arranged to simulate a system between which a path is to be formed, the link element including, selectively, time delays in accordance with characteristics of the interconnections between nodal points of the system. A point, or set of points forms a departure point, and a single, or a set of points forms an arrival point. A signal applied (under control of a clock) to a node will propagate along the links from node-to-node, in accordance with the timing of the delaying circuits on the links. Once a signal is applied to the node, the node is inhibited from accepting other signals, so that the shortest (smallest delay) path from a departure to an arrival point is established. A tracing signal is then propagated along a parallel path from the departure to the arrival point, so that the path can be displayed.

3,558,869
DRIVING LIGHT
Robert E. Levin, Hamilton, Mass., assignor to Sylvania Electric Products Inc., a corporation of New York
Filed June 19, 1967, Ser. No. 646,910
Int. Cl. B60g *1/00, 3/00*
U.S. Cl. 240—7.1 **2 Claims**



A driving light having a sharp beam cutoff suitable for automobiles and the like, a multiple array of apertures being used with a multiple-zone lens, where each zone of the lens is associated with an aperture, and each lens-aperture combination has an associated element in the condensing system. A condensing system consisting of a series of elliptical reflectors. Each reflector takes light from a source at one focus and reflects it to a second focus which will be at the rear focus of the lens of a lens-aperture combination.

3,558,870
SIDE MARKER TURN INDICATOR LAMP
Charles R. Morrison, Frewsburg, N.Y., assignor to Truck-Lite Company, Inc., a corporation of New York
Filed Dec. 9, 1968, Ser. No. 782,175
Int. Cl. B60q *1/32*
U.S. Cl. 240—8.2 **4 Claims**

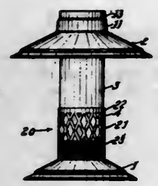


A double faced signal lamp assembly has a built-in, auxiliary side marker lamp. The lamp body supports a socket for a based bulb within the cutout of a central web to provide illumination from opposite faces of the lamp assembly through colored lens covers, while a smaller, wedge-type bulb is supported within a receptacle formed in one side of the lamp body periphery to provide side marker illumination.

3,558,871
SIGNAL LAMP
Herbert J. Rogers, Los Angeles, Calif.
Filed July 7, 1969, Ser. No. 839,527
Int. Cl. F21v *35/00*
U.S. Cl. 240—13 **5 Claims**

The signal lamp is for use in cafes, night club tables, restaurant tables, cocktail lounges and other locations for the

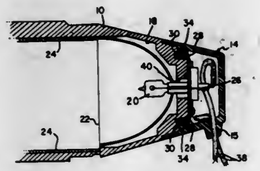
purpose of signalling a waiter when service is desired. The lamp includes a grill-type sleeve frictionally slidable upon an illuminated holder and movable to an upper or a lower position on said holder. The sleeve has an opaque band which stops illumination and indicates when the sleeve is raised that service is desired.



3,558,872
AUTOMOTIVE DRIVING LIGHT

Harold L. Hough, and David R. Dayton, Beverly, Mass., assignors to Sylvania Electric Products, Inc., a corporation of Delaware

Filed Sept. 9, 1968, Ser. No. 758,328
Int. Cl. F21r *13/04*
U.S. Cl. 240—41.3 **3 Claims**



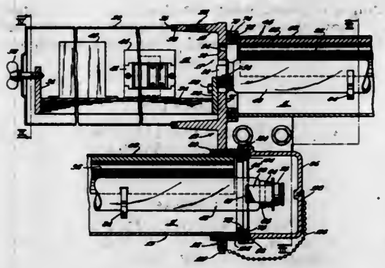
A combination weatherproof and pressure relief cover for an automotive lighting fixture is herein described. The cover or boot, as it is called, covers the lamp receiving end of the fixture. An internal molded O-ring is formed on the inner surface of the boot which seats within a dovetail-shaped groove on the fixture canister, thereby locking the cover to the canister. Due to the resilient material of the cover, excessive pressures built up within the fixture can escape by way of the pliable locking O-ring of the boot. When the internal pressure is relieved sufficiently, the locking O-ring reseats itself in the groove. This arrangement assures a weathertight seal and prevents contaminants such as dust and moisture from entering the fixture.

3,558,873
TUNNEL LIGHTING FIXTURE

Ross David Smith, Brampton, Ontario, Canada, assignor to The Pyle-National Company, Chicago, Ill., a corporation of New Jersey

Filed Sept. 27, 1967, Ser. No. 670,913
Int. Cl. H05b *33/02*
U.S. Cl. 240—51.11 **12 Claims**

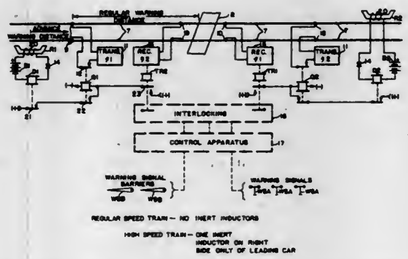
A sealed compact fluorescent lamp fixture for restricted space conditions such as tunnels which includes a reflector within a transparent tube surrounding the lamp, and wherein the sealing is adjustable and the required ballast and lamp are readily accessible for replacement purposes. A plurality of individual fluorescent and ballast fixtures constructed and interconnected in a string for wall mounting such that a substantially continuous and horizontal illuminating line is provided with reduced glare.



3,558,874
SIGNALS AT HIGHWAY CROSSINGS FOR HIGH SPEED TRAINS

John E. Freehafer, Pittsford, N.Y., assignor to General Signal Corporation, Rochester, N.Y., a corporation of New York

Filed Oct. 18, 1968, Ser. No. 768,633
Int. Cl. B61l *1/02, 29/32*
U.S. Cl. 246—126 **13 Claims**



The system differentiates between high speed trains and regular trains by having inductive means partly on the car and partly on the wayside for the high speed trains, while the regular speed trains cooperate with detector track circuit apparatus on the wayside for initiating the warning signals at the highway crossing. The inductive means on the wayside is located considerably in advance of the detector track circuit apparatus, but acts through such apparatus for initiating the warning signals. The warning signals given at the crossing continue their operation until the train has passed the highway. In one form of the invention, the car-carried equipment includes a radio transmitter which is initiated when the train passes the wayside inductive means. The transmission of such radio signal initiates the warning at the highway crossing and also causes the transmission of a return radio signal. If such return radio signal is promptly received, the train can continue in the usual fashion; but, if such return signal is not received within a predetermined length of time, the apparatus then causes an automatic application of the train brakes. This form also withholds the return radio signal for stopping the train if a vehicle is stalled on the railroad track at the crossing.

3,558,875
DEFECTIVE CAR EQUIPMENT DETECTING DEVICES FOR RAILWAYS

Marion Gleskieng, 1333 S. Franklin St., Denver, Colo. 80201

Filed Dec. 30, 1968, Ser. No. 787,849
Int. Cl. B61l *3/04*
U.S. Cl. 246—169 **15 Claims**

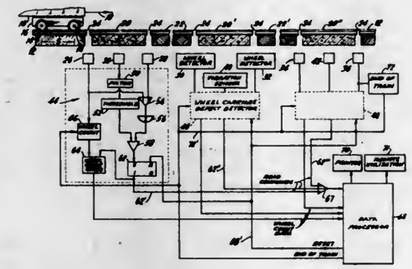
A light source and a photocell mounted upon opposite sides of each rail of railway track to produce an independent ray over each rail, said two rays being in alignment with each other transversally of said track and means for producing one signal when both rays are simultaneously intercepted, such as by the wheels of a passing train, and a second different signal when either one of said rays is independently intercepted such as by dragging equipment depending from said train.



3,558,876
TRAIN WHEEL DEFECT DETECTOR

Leonard Tillman, Douglaston, and Arthur J. Glazar, Kings Park, N.Y., assignors to Servo Corporation of America, Hicksville, N.Y., a corporation of New York

Filed Oct. 16, 1968, Ser. No. 777,957
Int. Cl. B61l *1/06*
U.S. Cl. 246—169 **10 Claims**

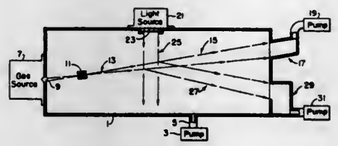


A railroad wheel defect-detecting device is described. An accelerometer senses the vibrations induced in a test rail by a railroad wheel traveling thereon. The test rail is vibrationally isolated from adjacent train tracks and ground vibrations to permit sensing of train wheel defects such as flat spots on wheels, loose couplings, dragging equipment and the like. Defects are recognized when the sensed vibrations exceed preselected maximum tolerable levels, said levels being fixed or automatically regulated to compensate for varying train conditions. Identification of each wheel having a defect is provided as well as optional car identification.

3,558,877
METHOD AND APPARATUS FOR MASS SEPARATION BY SELECTIVE LIGHT ABSORPTION

Jerome Pressman, Lexington, Mass., assignor to GCA Corporation, Bedford, Mass., a corporation of Delaware

Filed Dec. 19, 1966, Ser. No. 602,855
Int. Cl. H01j *39/34*
U.S. Cl. 250—41.9 **10 Claims**

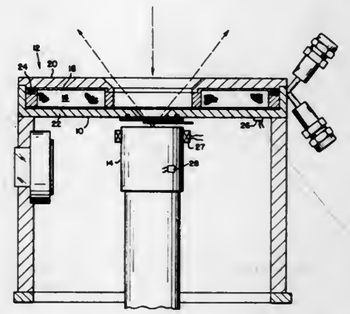


A method of separating isotopes one of which selectively absorbs light of a predetermined wavelength comprising directing a beam of light across a gaseous beam comprising a mixture of the isotopes to deflect the selectively absorbing species, and collecting the deflected species. Apparatus comprising an evacuable chamber, in which there is a molecular beam source of particles including particles selectively absorbing light at a given wavelength and other particles that do not absorb light at that wavelength, means for directing a beam of light across the beam, and collecting means disposed to collect the species separated by the beam.

3,558,878
METHOD OF REDUCING SPECIMEN CONTAMINATION IN AN ELECTRON PROBE BY COOLING THE OBJECTIVE LENS

Hermann Neuhaus, La Canada, Calif., assignor to Applied Research Laboratories, Inc., Sunland, Calif., a corporation of Delaware

Filed July 17, 1968, Ser. No. 745,427
Int. Cl. H01j *37/14*; **G01n** *23/22*
U.S. Cl. 250—49.5 **3 Claims**

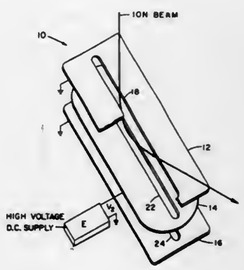


An electron microprobe including a magnetic objective lens for focusing an electron beam upon a specimen, and means for cooling the lens to a temperature below about −20°. It is found that operating results are greatly improved by maintaining the lens cold and the specimen warm. Contamination of the specimen, particularly by carbonaceous materials, can be reduced by more than an order of magnitude without compromise with the operational features of the instrument.

3,558,879
ELECTROSTATIC DEFLECTOR FOR SELECTIVELY AND ADJUSTABLY BENDING A CHARGED PARTICLE BEAM

James D. Larson, Upton, and John A. Benjamin, Stony Brook, N.Y., assignors to The United States of America as represented by the United States Atomic Energy Commission

Filed Mar. 12, 1968, Ser. No. 712,568
Int. Cl. H01j *37/00, 39/34*
U.S. Cl. 250—49.5 **1 Claim**

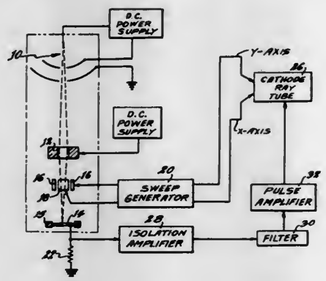


An electrostatic deflector consisting of a central plate and a pair of outer plates spaced from and parallel to each other. Each plate is provided with a slot for line of sight passage through the deflector and the central plate is charged at a high constant voltage with respect to the outer plate.

3,558,880
APPARATUS FOR DISPLAYING THE IMAGE ELECTRON SIGNAL FROM A SCANNING ELECTRON MICROPROBE

Richard N. Kniseley, Ames, Iowa, and Dean Van Zuuk, Sunnyvale, Calif., assignors to The United States of America as represented by the United States Atomic Energy Commission

Filed Aug. 8, 1968, Ser. No. 751,099
Int. Cl. H01j 37/00; G01n 23/00
U.S. Cl. 250—49.5 3 Claims

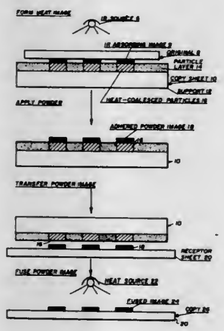


In a scanning electron microprobe wherein an electron beam is scanned over the surface of a specimen in a partial vacuum to generate an image electron signal therefrom, the generated image electron signal is filtered to accept only high-frequency components thereof. A cathode-ray tube whose X and Y axis sweeps are synchronized with the scan of the electron beam over the specimen has its display intensity modulated by the high-frequency components of the image electron signal.

3,558,881
THERMOGRAPHIC IMAGE FORMATION UTILIZING A COPY SHEET OF DISCRETE THERMOPLASTIC PARTICLES AND A POWDER DEVELOPER

Robert M. Gold, Brooklyn, N.Y., assignor to Keuffel & Esser Company, Hoboken, N.J., a corporation of New Jersey

Filed Oct. 2, 1964, Ser. No. 401,215
Int. Cl. G03b 41/00
U.S. Cl. 250—65 2 Claims



A copying process wherein a copy sheet comprising a support and layer thereon of discrete thermoplastic particles is exposed to infrared radiation while in heat conductive contact with an original bearing an infrared absorbing image, thereby causing the coalescence of the particles in the areas corresponding to the original image. A finely divided thermoplastic powder is applied to the exposed copy sheet and selectively adheres to the coalesced areas, thereby forming a powder image. The powder image is then transferred to a receptor sheet.

3,558,882
WATER MISCIBLE PENETRANT REMOVER

Adolf Mlot-Fijalkowski, Elmwood Park, Ill., assignor to Magnaflux Corporation, Chicago, Ill., a corporation of Delaware

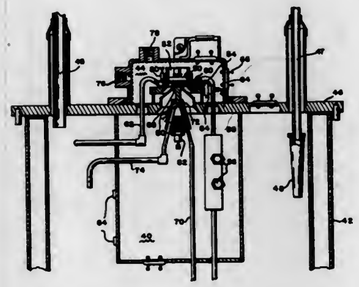
No Drawing. Filed Dec. 31, 1968, Ser. No. 788,339
Int. Cl. G01n 21/38
U.S. Cl. 250—71 11 Claims

A liquid composition for the removal of residual films of an oil-based colored penetrant, especially a fluorescent penetrant, from the surface of a workpiece undergoing tests for surface discontinuities. The composition is effective in a 75 to 100 percent concentrated form when used in a dip, or dip and drain, or a static form of application to the residual penetrant film by dissolving or emulsifying the penetrant so that it can be flushed off with water alone. When the concentrate is diluted with water to a range of between 15 and 75 percent vigorous agitation is required, while spray applications are recommended for concentrations as low as 0.2 percent, or preferably from 0.5 to 15 percent. Spraying causes the removal of the residual penetrant as a result of impingement, turbulence and displacement. Warm or hot water is used in diluting the concentrate to bring the temperature of the diluted composition to between about 100° and 140° F., and preferably between 100° and 120° F., to facilitate the substantially complete removal of any residual film of a fluorescent penetrant, especially from rough surfaces. My composition, as a concentrate consists essentially of a liquid, water-soluble nonionic surfactant, or mixture of surfactants; a water-immiscible aromatic hydrocarbon solvent having a KB value of at least 70; and a normally liquid, water-miscible glycol-ether type of coupler. The resulting homogeneous clear liquid composition is preferably one that is infinitely miscible with water at between 40° and 140° F. without exhibiting a cloud effect within those temperature limits.

3,558,883
COUNTER FOR CONDENSIBLE RADIOACTIVE GASES

Robert W. Bench, Chatham; Arthur M. Feibush, Westfield, and Carl T. Schubauer, Middlesex, N.J., assignor to the United States of America, as represented by the Secretary of the Air Force

Filed June 7, 1968, Ser. No. 735,329
Int. Cl. G01t 1/16
U.S. Cl. 250—83 1 Claim

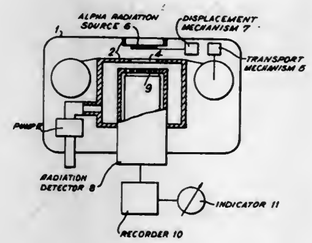


A system for measuring the radiation emitted from a condensible radioactive gas. A specimen of the gas to be measured is introduced into a vacuumtight environment which also contains the detector for making the measurements. A cold spot is produced in proximity to the detector and a portion of the gas is condensed thereon, and measured in condensed state. A Dewar flask containing liquid nitrogen or other suitable refrigerant provides the cooling medium for producing the cold spot. Various arrangements of the cold spot vacuum chamber and the sample chamber in their relation to the Dewar flask are shown. Modifications of the basic idea deal with the location of the sample chamber and the cold spot vacuum chamber relative to the Dewar flask.

3,558,884
INSTRUMENT FOR DETERMINING THE WEIGHT AND ACTIVE CONCENTRATION OF AEROSOLS

Valentin Grigorievich Babich, Leningradskoe shosse, 54, kv. 253; Alexander Kuzmich Kursky, 1 Krasnoselsky per., 5, kv. 7; Konstantin Petrovich Markov, 3 Baltilsky per., 4, korp. 1, kv. 8; Nikoali Vasilievich Ryabov, 2 Pavlovsky per., 10a, kv. 10, and Konstantin Nikolaevich Stas, 4 ul. Oktyabrskogo polya, 1, kv. 20, Moscow, U.S.S.R.

Filed Jan. 8, 1968, Ser. No. 696,421
Int. Cl. G01n 23/06
U.S. Cl. 250—43.5 3 Claims

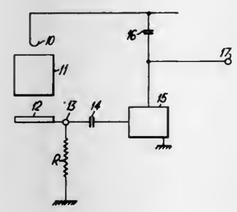


An instrument for monitoring industrial atmospheres for determining the weight and active concentration of aerosols, in which the weight of the dust precipitate collected on a filter is determined by the rate of absorption of the radiation of an external alpha particle radioactive source, and the active concentration of the aerosol is determined by measuring the background radiation of the sample. The radiation source and the detector are disposed directly in a gas conduit on both sides of the filter element, on which the aerosol samples are being collected. In order to measure the background radiation of the sample, the radioactive source can be withdrawn from the gas conduit. The instrument is furnished with a collimator in order to reduce the influence of the background activity of the sample on the measurements of the dust concentration.

3,558,885
SCANNING MICROSCOPE WITH FEEDBACK MEANS TO MAINTAIN A CONSTANT TARGET CURRENT

John P. W. Flemming, Harlow, Essex, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed Oct. 8, 1968, Ser. No. 765,925
Claims priority, application Great Britain, Oct. 25, 1967, 48468/67
Int. Cl. H01j 37/26; G01n 23/04
U.S. Cl. 250—49.5 4 Claims



The invention includes a scanning mirror microscope having a feedback control loop between target and cathode to stabilize the target current. It is then possible to obtain a quantitative plot of the target voltage by scanning an electron beam over the target surface.

The invention also includes a scanning electron microscope having a feedback control loop between the target and the output of a velocity analyzer of secondary electrons emitted from the target to obtain the same quantitative plot.

In either case, examination tests on semiconductor integrated circuits are made possible.

3,558,886
METHOD OF DISCOVERING IMPERFECTIONS IN BONDED LAMINATED STRUCTURES

David Carver, 14132 Runnymede St., Van Nuys, Calif. 91405

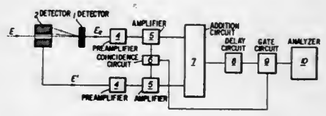
No Drawing. Filed Apr. 23, 1969, Ser. No. 818,782
Int. Cl. G01n 21/16
U.S. Cl. 250—65 10 Claims

The method of making and recording a nondestructive test of a bonded and/or brazed structure wherein a temperature sensitive coating is applied to the surface of the test structure after which heat energy is exposed to the coated surface, resulting in a visible isothermal pattern which denotes any imperfections in the bond. The coating is then physically marked to record any area of imperfection. The coating is then removed from the structure in substantially a single piece, thereby forming a permanent record as to the quality of the bond and the location of any imperfections in the structure.

3,558,887
APPARATUS FOR MEASURING OF QUANTUM RADIATION

Harald Hick, and Karl Rumpold, Vienna, Austria, assignors to Osterreichische Studiengesellschaft Fur Atomenergie Ges. M. B. H., Vienna, Austria, a corporation of Austria

Filed Nov. 3, 1967, Ser. No. 680,460
Claims priority, application Austria, Nov. 4, 1966, A 10237/66
Int. Cl. G01t 1/24
U.S. Cl. 250—833 2 Claims



An apparatus for measuring of quantum radiation, particularly of gamma radiation, which comprises a first detector for the primary radiation, and a second detector for the back-scattering radiation. A coincidence circuit and a measuring device are also provided. The first and second detectors are connected with the measuring device by means of the coincidence circuit. Both detectors have a high resolving power in spite of a complicated response function, and an adding device is connected with the detectors and the output of the adding device is connected with the measuring device.

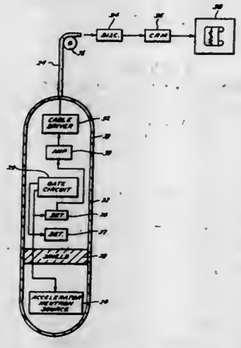
3,558,888
NEUTRON WELL LOGGING METHOD AND APPARATUS

Arthur H. Youmans, Houston, Tex., assignor to Dresser Industries, Inc., Dallas, Tex., a corporation of Delaware

Filed May 12, 1967, Ser. No. 638,145
Int. Cl. G01t 3/00
U.S. Cl. 250—83.1 23 Claims

Radioactivity method and apparatus for measuring the oil in invaded zone of an earth formation, wherein the thermal neutron capture cross section of the mud filtrate is altered to

correspond to that of the formation water, and wherein the amount of oil remaining the invaded zone is measured as a



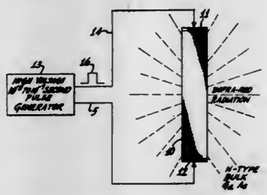
function of the macroscopic thermal neutron capture cross section of the formation.

3,558,889

BULK SEMICONDUCTOR LIGHT RADIATING DEVICE

Kern K.N. Chang, and Shing-Gong Liu, Princeton, N.J., assignors to RCA Corporation, a corporation of Delaware

Filed Nov. 2, 1966, Ser. No. 591,470
Int. Cl. H05b *33/00*
U.S. Cl. 250—88 5 Claims



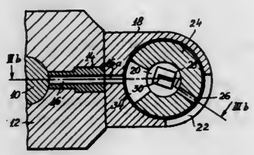
A light-radiating element, capable of emitting light pulses over a narrow frequency bandwidth, having a duration in the order of 10^{-9} to 10^{-7} seconds, is obtained from a given bulk semiconductor material of a single type conductivity, such as N-type GaAs, having ohmic electrodes in response to the application thereto through these ohmic electrodes of an electric field of a magnitude exceeding a given threshold. The pattern of radiation is almost constant over 180° in both horizontal and vertical directions.

3,558,890

LEAKAGE-PROOF NEUTRON DIFFRACTOMETER

Kazuo Yanagishita, and Akira Iwakishi, Amagasaki, Japan, assignors to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan

Filed Mar. 28, 1968, Ser. No. 716,969
Claims priority, application Japan, Mar. 31, 1967, 42/20489
Int. Cl. G21k *1/00*
U.S. Cl. 250—108 2 Claims



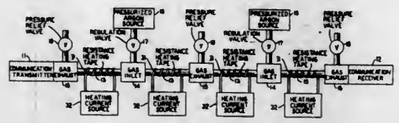
A beam of neutrons passes through a hole disposed in a stationary shield and an opening disposed in a rotatable shield contained within the stationary shield and opposed to and diverging toward the hole. The beam impinges upon a crystal positioned within the rotatable shield. The crystal reflects the incident neutrons to form a beam of monochromatic neutrons which, in turn, passes through a radial hole disposed in the rotatable shield and a circumferentially wide slot disposed in the stationary shield and the beam of monochromatic neutrons is taken out from the slot.

3,558,891

VISCOUS-FRICTION-HEATED OPTICAL GUIDING APPARATUS

Peter Kaiser, Matawan Township, Monmouth, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, Berkeley Heights, N.J., a corporation of New York

Filed Jan. 12, 1968, Ser. No. 697,442
Int. Cl. H04b *9/00*
U.S. Cl. 250—199 14 Claims



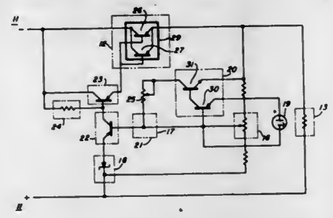
In an optical guiding apparatus employing a gas, substantially continuous focusing action is provided by producing a velocity of the gas that generates heating by viscous shear work. The resulting transverse variation of temperature and of refractive index enables the gas to provide converging focusing action. The inlet velocity of the gas preferably lies in a range between about 0.04 and 0.08 times the speed of sound; and the plurality of gas introducing means and gas exhausting means are operated at absolute pressures substantially above atmospheric pressure in order to provide focusing in a substantial length of conduit while maintaining the gas exhaust velocity below the speed of sound. Porous sections of conduit are illustratively used for introducing and exhausting the gas in a radially symmetrical fashion.

3,558,892

CONSTANT LIGHT INTENSITY SERVO CONTROL UNIT

Robert L. Seeley, San Diego, Calif., assignor to the United States of America as represented by the Secretary of the Navy

Filed Nov. 29, 1968, Ser. No. 780,942
Int. Cl. G05d *25/00*; G05f *1/56*; H05b *41/392*
U.S. Cl. 250—205 2 Claims



The present disclosure relates to devices for controlling the light intensity of a lamp, automatically, under unfavorable conditions. Electronic servocontrol circuits have been used to maintain associated circuit elements within certain operational limits. The disclosed invention, while generally being of this type, presents a rugged, compact, servocontrol unit designed to regulate the output of a storage battery to ensure a particular light intensity of a lamp contained in a pressure-resistant housing. Precise light intensity regulation, to a degree far in excess of that discernible by the human eye, is necessary where a lamp provides a source of illumination for a remotely located nephelometer, an instrument for determining the concentration or particle size of suspensions by

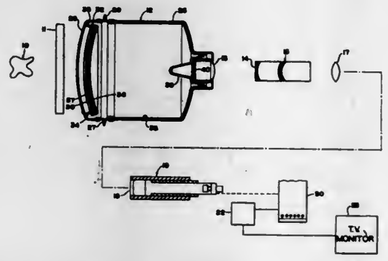
means of transmitted or reflected light. Such precise light intensity regulation is achieved by a serially connected control unit formed of a pair of parallel power transistors controlled by a first and a second feedback loop coupled to their bases. The first feedback loop compares a desired potential provided by a Zener diode to the output of the control unit and develops a first control signal that functions to change the bias on the two parallel transistors until the output of the control unit substantially equals the desired potential. A second feedback loop, having a photocell positioned to receive impinging radiation from the lamp, produces an output signal indicative of the lamp's radiation intensity. A predetermined lamp intensity, causing the photocell to give a predetermined resultant signal, causes no current feedback to the control unit. A resultant signal caused by a deviation from the predetermined lamp intensity results in the creation and the transfer of a second signal to the control unit and consequent regulation of the lamp's intensity. Thus, a circuit ensuring internal potential regulation, as well as regulation of a lamp's intensity caused by deterioration of the lamp's elements, provides more stable and precise light intensity regulation than contemporary circuits.

3,558,893

X- AND GAMMA-RAY SENSITIVE IMAGE INTENSIFICATION TUBE

Jack Ball, Chesterland, Ohio, assignor to Picker Corporation, White Plains, N.Y., a corporation of New York. by mesne assignments

Filed Jan. 30, 1967, Ser. No. 612,629
Int. Cl. H01j *31/50*
U.S. Cl. 250—213 13 Claims



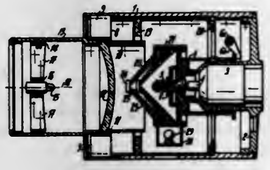
The invention relates to an X- and Gamma-ray sensitive image intensification tube for use in a so-called gamma camera or the like, which tube preferably has a single crystal input phosphor.

3,558,894

TELEMETER CHIEFLY INTENDED FOR PHOTOGRAPHIC PURPOSES

Giovanni Odone, La Rosiaz, Lausanne; Jesús deAndres, and Virgilio Cossetta, Yverdon, Switzerland, assignors to Paillard S. A., Vaud, Switzerland, a company of Switzerland

Filed Nov. 29, 1967, Ser. No. 686,554
Claims priority, application Switzerland, Dec. 15, 1966, 18,117/66
Int. Cl. H01j *3/14*
U.S. Cl. 250—216 10 Claims



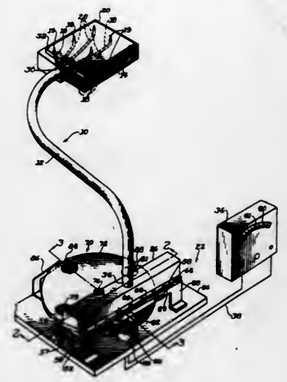
A compact telemeter measuring comparatively short distances, chiefly for photographic purposes, comprising a projector sending a beam of substantially parallel rays of light onto an object the distance of which is to be ascertained, an optical system receiving said beam after reflection on said object and the axis of which is directed in parallelism with the axis of the projector and means sensitive to the location of the point of convergence of the beam of light after it has passed through the optical system. Said means are advantageously constituted by two photocells lying on the axis of the optical system and the relative illumination of which depends on the location of said point of convergence along said axis. This relative illumination controls an electric circuit shifting the cells into a position of equal illumination defining the distance to be measured.

3,558,895

LIGHT SENSOR WITH OPTICAL LIGHT PIPING

Rudolf Hartmann, Skokie, Ill., assignor to Bell & Howell Company, Chicago, Ill., a corporation of Illinois

Filed Nov. 29, 1968, Ser. No. 780,095
Int. Cl. G02 *5/16*; H01j *39/12*
U.S. Cl. 250—220 16 Claims



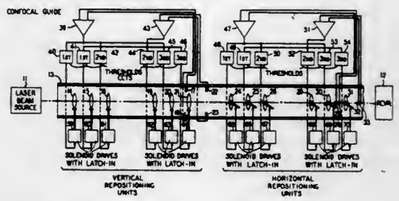
An adjustable mount adapted to selectively align exit faces of a plurality of optical fibers with a transducer to enable remote readout of light intensity at the entrant face of each fiber.

3,558,896

OPTICAL GUIDING APPARATUS WITH AUTOMATIC CONTROL OF BEAM POSITION

James C. Daly, Middletown, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York

Filed Aug. 29, 1968, Ser. No. 756,273
Int. Cl. H01j *39/07*; G01j *1/36*; H01j *39/10*
U.S. Cl. 250—208 8 Claims



In the optical guiding apparatus disclosed, the optical beam is guided and focused by solid lenses which are automatically positioned with respect to a reference axis established by the sensors. Fixed relative positioning of the

sensors permits the movement of the lenses in a small number of discrete steps, each step being substantially equal to a threshold position error of a control loop.

In a first embodiment, each sensor controls a plurality of beam-positioning lenses collectively to provide the downstream beam position correction. two-position control and three-position control are employed.

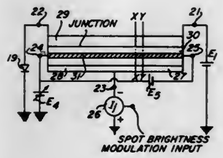
In second and third embodiments, each sensor effects compensating movements of upstream and downstream lenses to modify the beam position only locally.

3,558,897

P-N JUNCTION SCANNING DEVICE HAVING PHOTOCONDUCTORS DISPOSED ON DEVICE WITH FIELD EFFECT LAYERS FOR CONTROLLING POSITION OF SCANNING SPOT

George A. May, 2509 Tennis Cres., Vancouver, British Columbia, Canada

Filed Jan. 27, 1969, Ser. No. 793,991
Int. Cl. H01l 15/06
U.S. Cl. 250—209 17 Claims



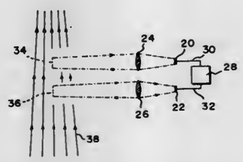
An elongated light-emitting multilayer semiconductor device having a modified metal insulator-semiconductor field effect transistor substructure producing a spot of light controllably variable in intensity and position, and scanning devices including one or more of such devices in combination with light-responsive elements.

3,558,898

FLOW MEASUREMENT SYSTEM USING TIME CORRELATION OF TWO PHOTOCELL SIGNALS

Myron J. Block, Nahant, and Alexander S. Zachor, Lexington, Mass., assignors to Block Engineering, Inc., Cambridge, Mass., a corporation of Delaware

Filed Oct. 3, 1966, Ser. No. 583,777
Int. Cl. G01n 21/26
U.S. Cl. 250—218 10 Claims



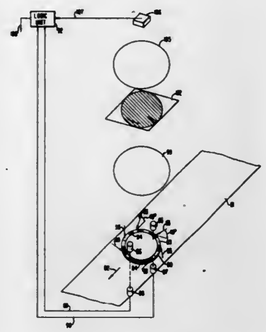
This invention is a flow measuring system using a pair of radiation detectors spaced from one another, and corresponding optical systems for imaging volume elements of a flow stream onto the radiation detectors. In one embodiment, the optical system is disposed to examine two separate volume elements spaced along the line of the flow stream. The radiation detectors provide electrical signals which are then time correlated. In another embodiment, the two optical systems have intersecting fields of view so as to examine a common volume element. One optical system is movable so that one can examine a series of common volume elements along a line substantially normal to the flow stream. The correlation of the signal from the two detectors in the latter embodiment permits measurement of the radiation profile across the flow stream.

3,558,899

SYSTEM AND METHOD FOR USING NUMERICALLY CODED ETCHED INDICIA FOR IDENTIFICATION OF PIECES OF SEMICONDUCTOR MATERIAL

Mark Morgan, and Hans R. Rottmann, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Aug. 30, 1968, Ser. No. 759,257
Int. Cl. G01n 21/30; G06k 7/00; G06m 7/00
U.S. Cl. 250—219 2 Claims



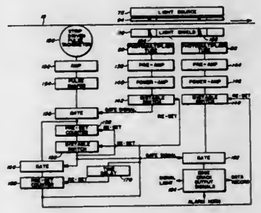
Coded indicia are placed on the surface of a piece of semiconductor material by etching discrete areas on the material. These indicia represent a numerical code which is physically represented by the etching or nonetching of predetermined ones of said discrete areas. The attenuation or enhancement of radiant flux transmitted or reflected by an etched area differs from that of the radiant flux transmitted or reflected by a nonetched area. Radiant energy is directed onto these indicia, and the transmitted or reflected radiant flux from the areas containing these indicia is measured to determine the change (i.e., attenuation or enhancement) of the radiant flux and to provide a numerical output indication corresponding to the indicia.

3,558,900

CRACK DETECTOR FOR EDGE OF MOVING STRIP WHICH DISCRIMINATES BETWEEN CRACKS AND PINHOLES

Isadore Moskowitz, Baltimore, Md., assignor to Bethlehem Steel Corporation, a corporation of Delaware

Filed Jan. 31, 1969, Ser. No. 795,511
Int. Cl. G01n 21/16
U.S. Cl. 250—219 7 Claims



A housing, positioned at an edge of a moving strip, contains a source of light disposed on one side of said strip and first and second light-sensitive means, spaced apart from each other longitudinally of said strip, disposed on the other side of said strip. A light shield, positioned adjacent said edge of the strip, comprises a shielding element having an inner edge extending beyond the edge of the strip between said strip and said light-sensitive means. First and second apertures in said shielding element, spaced apart from each other

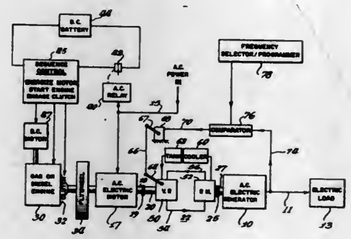
both longitudinally and laterally of said strip, permit only light from said source passing through predetermined areas of said strip to impinge on said light-sensitive means. Circuits are provided for producing an output signal indicative of a crack only when a signal produced in response to light impinging on said first light-sensitive means precedes a signal produced in response to light impinging on said second light-sensitive means by the time required for the strip to travel from said first aperture to said second aperture.

3,558,901

STANDBY POWER SYSTEM

Charles J. Jacobus, c/o Charles Equipment Co., 17 W. 601 North Avenue, Hinsdale, Ill. 60181

Filed Feb. 24, 1969, Ser. No. 801,644
Int. Cl. H02k 7/02
U.S. Cl. 290—30 6 Claims



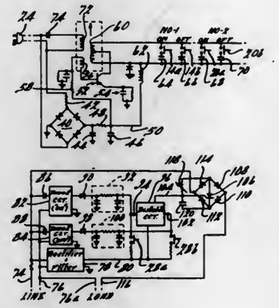
A standby power system using a hydrostatic transmission between an AC generator and motive means which is an AC motor when external power is available, and a gas or diesel engine when external power fails. The frequency output of the AC generator is compared with a standard and deviations cause a change in the volume of fluid flowing in the hydrostatic transmission in order to return the frequency to the standard.

3,558,902

REMOTE CONTROL WIRING SYSTEM

Everett R. Casey, 5845 Old Orchard Trail, Orchard Lake Village, Mich. 48033

Filed Jan. 22, 1968, Ser. No. 699,490
Int. Cl. H04g 5/12
U.S. Cl. 307—3 42 Claims



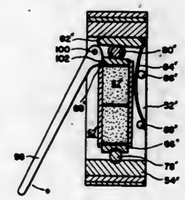
A control system for use with a conventional residential-type wiring system for providing fully independent switching of any lighting or other load from local locations and from any selected remote location or locations, together with apparatus for facilitating such control.

3,558,903

MECHANICALLY ACTUATED PIEZOELECTRIC VOLTAGE SOURCE

Norihoko Yamano, Kokubunji, Japan, assignor to Rion Kabushiki Kiasha, Tokyo, Japan

Filed June 15, 1967, Ser. No. 646,397
Claims priority, application Japan, June 25, 1966, July 7, 1966, 41/40968;41/64532
Int. Cl. H01v 7/00
U.S. Cl. 310—8.7 1 Claim



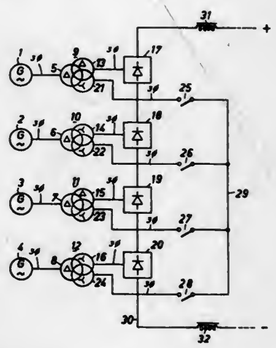
The disclosed devices include a ceramic piezoelectric element pivotable mounted at one end and having a pressure bearing member secured at the other end. A wedge member is disposed above the pressure bearing member to rollably sandwich a roller of circular cross section between both members. When the roller is forcedly rolled in a space formed between both members it will make the piezoelectric element swing about its lower end and consequently squeezes the latter, resulting in the production of high voltage by the element. During returning movement of the roller a high voltage is also produced by the piezoelectric element. The wedge may be spring loaded for the purpose of preventing the roller from loosening from two sandwiching members during service. The roller may have a cross section in the form of a regular polygon such as a regular hexagon embraced between a pair of opposed identical grooves trapezoidal in shape. Also a force may be applied directly to the piezoelectric element to swing, whereby squeezing it through rolling of the associated roller. A completely moisture proof device is also disclosed.

3,558,904

HIGH VOLTAGE DIRECT-CURRENT TRANSMISSION SYSTEM FOR A POWER STATION

Karl-Werner Kanngiesser, Viernheim, Germany, assignor to Aktiengesellschaft Brown, Boveri & Cie, Baden, Switzerland, a joint stock company

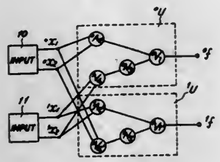
Filed Sept. 19, 1968, Ser. No. 760,860
Claims priority, application Germany, Sept. 26, 1967, 1,613,573
Int. Cl. H02j 1/02; H02m 1/12
U.S. Cl. 307—82 6 Claims



A high voltage direct current transmission system comprises a plurality of parallel arranged three-phase AC genera-

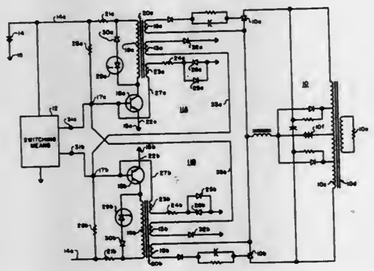
tors, a three-phase transformer connected to the output of each generator and a three-phase bridge type converter connected to the output of each transformer. The DC voltage outputs of the converters are connected in series and then fed over the transmission line system where they are then reconverted into AC. Each of the transformers includes a three-phase tertiary winding, and corresponding phases of the tertiary windings of these transformers are connected through power switches to a busbar, there being one such busbar assigned to each phase.

3,558,905
FAIL-SAFE LOGICAL SYSTEM
Shintaro Oshima, and Teruji Watanabe, Tokyo-to, Japan, assignors to Kokusai Denshin Denwa Kabuskiki Kaisha, Tokyo-to, Japan, a joint-stock company of Japan
Filed Apr. 30, 1968, Ser. No. 725,300
Claims priority, application Japan, May 2, 1967, May 2, 1967, 42/27678;42/27679
Int. Cl. H03k *19/162, 19/40*
U.S. Cl. 307—88 **5 Claims**



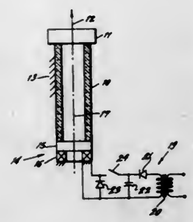
A fail-safe logical system for performing general logical functions and for generating a predetermined logical output in case of fault of any element of any elemental circuit, wherein an 0-type input unit having an allowable failure-state of 0 and a 1 type input unit having an allowable failure-state of 1, are connected to a fail-safe logical unit which is formed by fail-safe logical elemental circuits in accordance with the principle of alternate, cascade circuit arrangement, before and after a NOT circuit, to provide logical elemental circuits having different allowable failure-states.

3,558,906
FIRING CIRCUIT FOR THYRISTORS
Pantelis P. Paradissis, Amherst, Ohio, assignor to Lorain Products Corporation, a corporation of Ohio
Filed June 25, 1969, Ser. No. 836,487
Int. Cl. H03k *3/00*
U.S. Cl. 307—106 **6 Claims**



A control circuit for supplying trains of firing pulses to each of a plurality of thyristors. A plurality of oscillator circuits, having feedback windings coupled to respective outputs, supply firing pulses to respective thyristors. The order in which the different oscillator circuits are caused to produce firing pulses is controlled by a multistate switching circuit. The feedback winding of the energized oscillator circuit disables all other oscillator circuits to prevent simultaneous application of firing pulses to more than one thyristor during the time when the multistate switching circuit is changing states.

3,558,907
IMPULSE COIL SYSTEM FOR TRANSMITTING SHOCK WAVE THROUGH STATIONARY ROD
Otto Jensen, Malvern, Pa., assignor to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Jan. 22, 1969, Ser. No. 792,975
Int. Cl. H03k *3/00*
U.S. Cl. 307—108 **6 Claims**



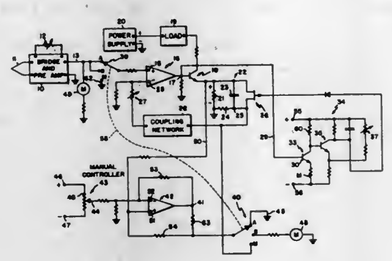
A mechanical shock signal is applied to a stationary shock-transmitting rod from an impulse coil system in which a fixed short circuited disc is connected to the bottom of the rod and has current induced therein from an adjacent stationary primary winding which is energized by a capacitor discharge. A plurality of such systems have primary windings connected in a series so that simultaneous shock forces are transmitted through the spaced rods as for the simultaneous operation of blast valves of the poles of a high voltage circuit breaker.

3,558,908
HIGH-VOLTAGE IMPULSE GENERATOR
Boris Ivanovich Kulikov; Viktor Mikhailovich Lagunov; Yury Efremovich Nesterikhin, and Vladimir Mikhailovich Fedorov, Novosibirsk, U.S.S.R., assignors to Institut Yadernoi Fiziki So An SSSR, Novosibirsk, U.S.S.R.
Filed Sept. 3, 1968, Ser. No. 756,964
Int. Cl. H02m *3/06;* **H01f** *3/04*
U.S. Cl. 307—109 **4 Claims**



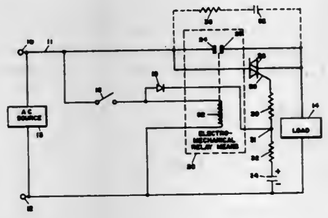
A liquid dielectric capacitor comprises three metal cylinders coaxially nested within one another so that the bottoms of the outer and inner cylinders are connected to each other while the middle cylinder has its bottom facing in the opposite direction and is mounted on the outer cylinder by means of an insulator. The firing electrode of a three-electrode controlled spark gap is immersed in the liquid filling the space between the bottom of the middle cylinder and the ends of the inner cylinder, the two cylinders serving as the working electrodes of the spark gap.

3,558,909
CONTROLLER SELECTIVELY PROVIDING AUTOMATIC OR MANUAL CONTROL
Marius A. Janson, Minneapolis, Minn., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 7, 1969, Ser. No. 839,588
Int. Cl. H01h *35/00*
U.S. Cl. 307—116 **10 Claims**



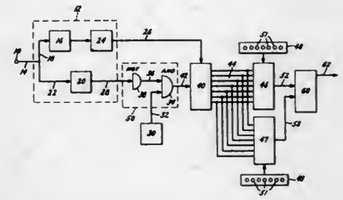
A process controller selectively providing automatic or manual control of a process element, such as a load, in accordance with the magnitude of a controllable process variable, such as temperature. A three-position switch provides an automatic, a balance and a manual position. In the automatic position an error signal is applied to the noninverting input terminal of a first amplifier whose output controls the load. A differentiating reset feedback circuit connects the output of the first amplifier to the inverting input terminal of this amplifier. In the manual position a manual controller applies a variable voltage to the inverting input terminal of a second amplifier, the output of the first amplifier is connected to the noninverting input terminal of the second amplifier, and the output of the second amplifier is connected to the inverting input terminal of the first amplifier. A reset lockout circuit is controlled by the output of the first amplifier.

3,558,910
RELAY CIRCUITS EMPLOYING A TRIAC TO PREVENT ARCING
Robert G. Dale, Tempe, and Gary V. Fay, Scottsdale, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed July 19, 1968, Ser. No. 746,149
Int. Cl. H01h *33/59*
U.S. Cl. 307—134 **13 Claims**



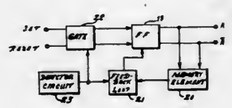
Disclosed is circuitry for controlling the flow of current from an AC source to a load and includes a bilateral semiconductor switch such as a semiconductor triac connected in parallel with the contacts of an electromechanical relay. The relay and triac are connected in series with the AC source and the load. Circuit means are connected between a gate electrode of the triac and circuit input terminals to which the AC source is connected and provides turn-on gate current for the triac prior to and during the closure of the electromechanical relay contacts to prevent effects of contact bounce. This circuit means also provides a sustaining or hold current to the triac subsequent to the opening of the relay contacts and thereby prevents contact arcing. The triac conducts before the relay contacts close and after the relay contacts open.

3,558,911
UNDERFREQUENCY RELAY
Muchuan M. Chen, Upper Darby, Pa., assignor to General Electric Company, a corporation of New York
Filed May 29, 1969, Ser. No. 828,967
Int. Cl. H01h *35/00*
U.S. Cl. 307—129 **9 Claims**



A digital underfrequency relay for load conservation and the like is provided. The relay monitors power system frequency, and when a subnormal frequency below a preset limit is detected a cyclic control signal is produced. This condition must persist continuously for a predetermined period of time before the relay will issue an underfrequency indicating output signal, and the requisite timing is accomplished by means substantially unaffected by variations in frequency during the delay period.

3,558,912
CIRCUIT FOR PROVIDING NONVOLATILE MEMORY
Edward J. Spall, Apalachin, N.Y., assignor to The United States of America as represented by the Secretary of the Air Force
Filed Aug. 22, 1968, Ser. No. 754,750
Int. Cl. H02h *7/20*
U.S. Cl. 307—202 **8 Claims**

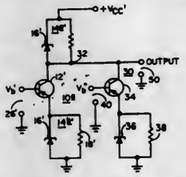


A bistable flip-flop circuit having a memory core is designed to return to a preferred state after power failure or radiation burst. A feedback loop from the memory core senses whether the preferred state is the same as the state before power failure or radiation and, if not the same, changes the state of the flip-flop circuit.

3,558,913
RAPID SWITCHING LOGIC GATES
Derek J. Hatley, Monroe County, N.Y., assignor to General Dynamics Corporation, a corporation of Delaware
Filed Aug. 28, 1967, Ser. No. 663,607
Int. Cl. H03k *19/10*
U.S. Cl. 307—206 **8 Claims**

A logic gate is described in which a transistor may be switched both on and off at extremely high speeds. The gate includes at least two pairs of elements, with each pair consist-

ing of a negative resistance device and a matching resistor. The first pair is connected in the collector circuit and the



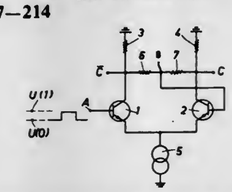
second pair is connected in the emitter circuit of the transistor.

3,558,914

SIGNAL VOLTAGE CONTROL FOR LOGIC CIRCUIT

Hans Konrad Schmidt, Konstaz, Germany, assignor to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm/Donau, Germany

Filed Dec. 19, 1968, Ser. No. 785,234
Claims priority, application Germany, Dec. 20, 1967, 1537527
Int. Cl. H03k *3/15*
U.S. Cl. 307—214 **4 Claims**



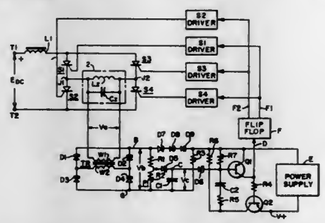
In an emitter-coupled logic circuit of the type having two transistors with their emitters connected to each other and to a common voltage source via a current supply circuit and their collectors connected via collector resistors to the other pole of the voltage source and in which a voltage of either a first or of a second value is supplied to the base of the first transistor, and in which a voltage of a value intermediate between the first and second voltages is supplied to the base of the second transistor, the improvement comprising a pair of resistors connecting the collectors of the first and the second transistors, and means electrically connecting the base of the second transistor with a point between the two resistors.

3,558,915

SELECTIVE PHASE ANGLE PULSE-GENERATING CIRCUIT

Peter Wood, and John Rosa, Pittsburgh, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 1, 1968, Ser. No. 709,634
Int. Cl. H03d *3/02*
U.S. Cl. 307—232 **10 Claims**



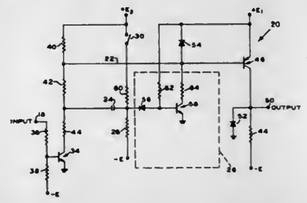
The present disclosure relates to circuitry for generating output pulses at a selected phase angle with respect to an alternating signal, such as a sinusoid, independent of the amplitude and frequency thereof and wherein the alternating signal may vary over a wide range of amplitudes and frequencies. The pulse-generating circuit is ideally adapted for use in induction heating apparatus of the type which employs an inverter drive including controlled switching devices for supplying an alternating signal to a tuned load including an induction heating coil. The circuit is operative to generate the output pulses by detecting, through peak detection for example, the substantial peak of the alternating signal and comparing a selected portion of the peak value with the instantaneous value of the alternating signal. The comparison is made in a comparison stage, including for example an active device such as a transistor or plurality of transistors, with operating power for the comparison stage being supplied from a separate power supply independent of the alternating signal. An output pulse at the selected phase angle is provided when the compared signals bear a predetermined relationship with respect to each other.

3,558,916

RESPONSIVE TO INPUT SIGNALS OF A SELECTABLE DURATION

John J. Horn, Beaverton, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed Feb. 28, 1968, Ser. No. 709,071
Int. Cl. H03k *5/20*
U.S. Cl. 307—234 **14 Claims**



A circuit selectively responsive to input signals of a given duration includes AND circuit means coupled to input terminal means via a pair of circuit paths, wherein a signal must be present on each path in order to energize the AND circuit means. The first path substantially directly connects the input terminal means to the AND circuit means. The other path includes a timing means providing an input to a normally operative amplifier, which, in turn, supplies the remaining input to the AND circuit means. An input waveform coupled via the timing means to the normally operative amplifier is effective for disabling the amplifier for a predetermined period of time. However, if the input waveform is of greater than a predetermined duration, the amplifier will return to its operative condition while the input waveform is still present, whereby a pair of inputs are simultaneously applied to the AND circuit means for causing the AND circuit means to produce an output. A selectable switching means is connected for remotely energizing the amplifier and rendering the amplifier continuously operative. When the switching means is in its energizing position, the AND circuit means will be responsive to input waveforms of shorter, as well as those of longer duration.

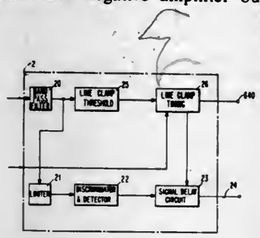
3,558,917

THRESHOLD AMPLITUDE DETECTOR ELIMINATING LOW-LEVEL NOISE EMPLOYING THRESHOLD-BIASED INTERRUPTABLE FEEDBACK FOR PROVIDING LIMITED RANGE HIGH-GAIN AMPLIFIER OPERATION

William G. Crouse, Raleigh, N.C., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Apr. 24, 1968, Ser. No. 723,763
Int. Cl. H03f *1/34*
U.S. Cl. 307—235 **8 Claims**

An improved threshold detector includes a high gain amplifier with negative feedback means and a Schmitt trigger coupled to the output of the amplifier. The feedback means includes semiconductor devices normally biased to cause (1) low gain amplification of input signal levels below a first input current threshold, (2) high gain amplification of input signal levels between the first threshold and a second, higher threshold, and (3) low gain amplification of input signal levels above the second threshold. The Schmitt trigger responds to positive and negative amplifier output signal



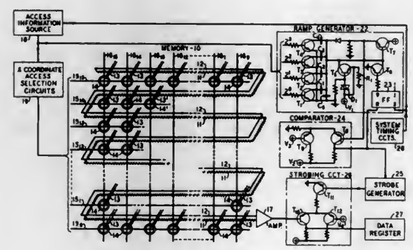
levels in the high gain region for switching back and forth between its two stable states. The detector exhibits a significant improvement in signal/noise discrimination in a communications environment.

3,558,918

PULSE DELAY CONTROL CIRCUIT USING CODE CONTROLLED RAMP VOLTAGE SLOPE TO FIX DELAY

William M. Regitz, Colonia, N.J., assignor to Bell Telephone Laboratories Inc., New York, N.Y., a corporation of New York

Original application Dec. 17, 1965, Ser. No. 514585. Divided and this application Oct. 8, 1968, Ser. No. 785,419
Int. Cl. H03k *5/20*
U.S. Cl. 307—235 **8 Claims**



A binary coded signal initiates the generation of a first signal at a variable future time and also initiates the generation of a ramp voltage at slope which is a function of the delay to the future time. Upon the attainment by the ramp of a predetermined reference voltage level a second signal is initiated in substantial coincidence with the first signal.

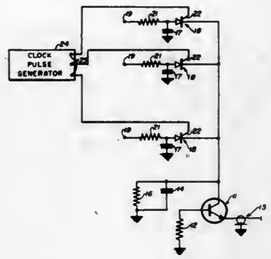
3,558,919

AVALANCHE TRANSISTOR PULSE TRAIN GENERATOR

Lamar B. Olk, Livermore, Calif., assignor to the United States of America as represented by the United States Atomic Energy Commission

Filed July 1, 1968, Ser. No. 741,762
Int. Cl. H03k *17/00*
U.S. Cl. 307—243 **5 Claims**

A circuit for generating a train of high repetition rate, fast rise time pulses with extremely accurate time separation, useful in numerous applications, such as calibration of time interval measurements. The circuit is so arranged that the desirable abrupt breakdown characteristic of an avalanche transistor is employed to derive fast rise time pulses while precise control is maintained over the times at which breakdowns are effected to insure accuracy in the interval between pulses. The circuit is capable of generating 100 volt, 1 nanosecond rise time pulses at a rate of one pulse every 75



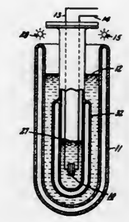
nanoseconds with less than 100 picosecond deviation in pulse separation.

3,558,920

BISTABLE PHOTOSENSITIVE DEVICE UTILIZING TUNNEL CURRENTS IN LOW RESISTIVE STATE

Ivar Giaever, Schenectady, N.Y., assignor to General Electric Company, a corporation of New York

Filed Apr. 23, 1968, Ser. No. 723,447
Int. Cl. H03k *17/70, 3/38*
U.S. Cl. 307—245 **3 Claims**



A photoconductive switch is constructed in sandwichlike form with two conductors as the outer layers and photosensitive semiconductor material as the thin inner layer. At operating temperatures, the semiconductor material having a state of high resistivity in darkness is excited by incident radiation to a state of less resistivity. During this latter state the magnitude of the electron tunneling current moving from one conductor to another across the semiconductor material is greatly increased. Means for keeping the semiconductor material in the state of less resistivity is possible as is means for readily changing the layer between the two states. In one embodiment of the switch the conductors are cooled to a superconducting state in which the unusual current-voltage characteristics of the superconductor junctions are utilized.

3,558,921

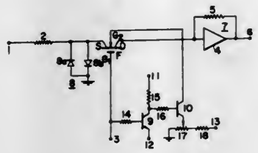
ANALOG SIGNAL CONTROL SWITCH

Norio Yokozawa, Fuchu-shi, Akinao Nara, Hachioji-shi, and Ryoichi Abe, Kodaira-shi, Japan, assignors to Hitachi, Ltd., Tokyo-To, Japan and Hitachi Electronics Company, Ltd., Kodaira-shi, Japan

Filed Jan. 23, 1968, Ser. No. 699,929
Claims priority, application Japan, Jan. 23, 1967, 42/4173
Int. Cl. H03k *17/60*
U.S. Cl. 307—251 **9 Claims**

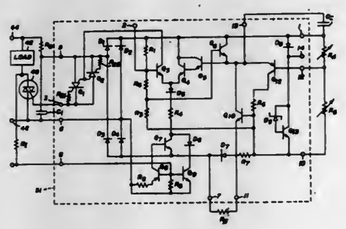
The present invention relates to an improved switch for analogue signal control employing only one insulated-gate field-effect transistor, a so called MOS-type FET device, as the control switching element, having means for electrically separating the substrate of the MOS-type FET device from ground when the device is conducting, and a voltage limiter

for limiting the input signal voltage so as to prevent undesirable leakage currents from the source electrode of the FET



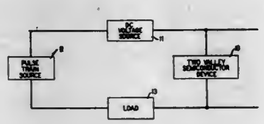
from flowing through the substrate of the FET device to ground.

3,558,922
FULL WAVE PHASE CONTROL INTEGRATED CIRCUIT
James H. Galloway, Utica, Mich., assignor to General Electric Company, a corporation of New York
Filed Mar. 15, 1968, Ser. No. 713,475
Int. Cl. H03k *17/56*
U.S. Cl. 307—252 **11 Claims**



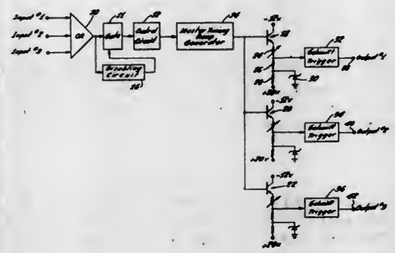
A semiconductor trigger-signal-generating circuit is provided for applications such as full-wave phase control of AC power to a load through a trigger-signal-responsive semiconductor switch. The circuit is particularly suitable for operating directly off an AC supply such as a 60 hertz AC line, and in a preferred embodiment is a semiconductor monolithic integrated circuit.

3,558,923
CIRCUIT ARRANGEMENT INCLUDING TWO-VALLEY SEMICONDUCTOR DEVICE
Michiyuki Uenohara, Scotch Plains, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Continuation-in-part of application Ser. No. 542,170, Apr. 12, 1966, now abandoned. This application Sept. 12, 1967, Ser. No. 667,295
Int. Cl. H03k *5/01*
U.S. Cl. 307—260 **2 Claims**



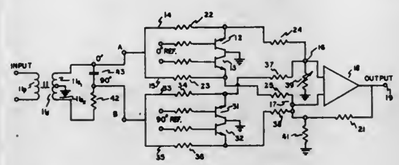
A two-valley semiconductor device, biased below the threshold voltage for triggering or sustaining oscillations, is triggered by input pulses to release an output that is an amplified or regenerated form of the input. In another embodiment an analogue signal input is encoded into a pulse position modulation train.

3,558,924
MASTER TIMING CIRCUIT FOR PROVIDING DIFFERENT TIME DELAYS TO DIFFERENT SYSTEMS
Edward Lindell, Woodland Hills, Calif., assignor to General Precision Systems Inc., a corporation of Delaware
Continuation of application Ser. No. 394,747, Sept. 8, 1964, now abandoned, which is a continuation-in-part of application Ser. No. 178,774, Mar. 9, 1962, now abandoned. This application Oct. 23, 1967, Ser. No. 683,071
Int. Cl. H03k *5/00*
U.S. Cl. 307—260 **8 Claims**



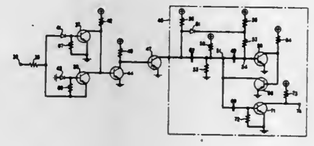
A master timing circuit is described in the following specification which includes a ramp generator and a plurality of comparator output circuits, and which is capable of providing different time delayed outputs to each of a plurality of different inputs on a time shared basis insofar as the inputs are concerned, and which is extremely stable in its operation.

3,558,925
LOW RIPPLE DOUBLE DEMODULATOR SUBJECT TO INTEGRATION
Howard Lawrence Broverman, Pittsfield, Mass., assignor to General Electric Company, a corporation of New York
No Drawing. Filed Jan. 14, 1969, Ser. No. 791,030
Int. Cl. H03k *5/00*
U.S. Cl. 307—261 **9 Claims**



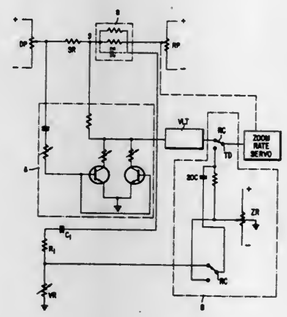
A double demodulation and amplification circuit comprising a pair of first alternately operable switching transistors coupled to and controlled by the direct and inverse outputs of a first switching potential. A summing amplifier is provided having direct and inverting input terminals and an output terminal. A first input circuit having two paths supplies a first input variable magnitude control signal to be demodulated to the respective direct and inverting input terminals of the summing amplifier, and the pair of first first switching transistors are connected across this first input circuit and are rendered alternately conductive by the first switching potential. A pair of second alternately operable switching transistors are coupled to and controlled by a second switching potential having the same wave form as the first switching potential but shifted 90° in phase with respect thereto. A second input circuit having two separate paths is provided for supplying a second input variable magnitude control signal to the respective direct and inverting input terminals of the summing amplifier with the second input control signal being similar to the first input control signal but phase shifted 90° with respect thereto. The second pair of switching transistors are connected across the second input circuit and are rendered alternately conductive by the second switching potential whereby a summation of full wave rectified and amplified control signals is obtained from the output of the summing amplifier with improved ripple content and low filtering requirements.

3,558,926
CIRCUIT FOR PROVIDING A PULSE A FIXED TIME AFTER A PREDETERMINED PER CENT COMPLETION OF AN APPLIED PULSE
Charles A. Kappenman, Wheaton, Ill., assignor to Bell Telephone Laboratories Incorporated, Murray Hill, N.J., a corporation of New York
Filed Nov. 2, 1967, Ser. No. 680,261
Int. Cl. H03k *6/04*
U.S. Cl. 307—263 **2 Claims**



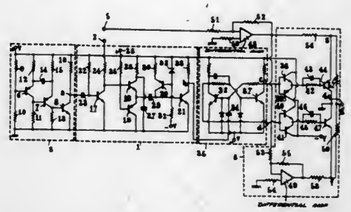
A sampling pulse generating circuit in which a waveform rising at a first rate during the presence of an input pulse is modified to rise at a second rate thereafter. When the waveform achieves a fixed value the sampling pulse is generated.

3,558,927
APPARATUS FOR CONTROLLING THE EFFECTS OF BACKLASH
Joseph Colin Whitehouse, Humberstone, Leicester, England, assignor to The Rank Organisation Limited, London, England
Continuation-in-part of application Ser. No. 578,082, Sept. 8, 1966, now abandoned. This application Dec. 9, 1968, Ser. No. 795,377
Int. Cl. H03k *5/01*; **G05g** *7/00*
U.S. Cl. 307—264 **11 Claims**



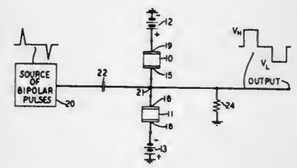
This disclosure describes an apparatus for controlling the rate at which the backlash of a mechanism is taken up. A demand signal causing rapid acceleration or rapid deceleration is modified prior to its application to the drive portion of the mechanism in an electrical or mechanical modifying system. The demand signal is modified in such a manner that it reduces or eliminates backlash to thereby reduce or eliminate the damage or noise caused by backlash.

3,558,928
CIRCUIT FOR MULTIPLYING TWO ELECTRICAL MAGNITUDES
Claude Remy, 21 Allee Circulaire, Foret de Vernon par 27, Vernon; Claude Lejannou, 2 rue d'Archimede Le Val Foure 78, Mantes-La-Jolie, and Jacques Leclere, 39 Allee des Penitents Foret de Vernon par 27, Vernon, France
Filed Nov. 5, 1968, Ser. No. 773,444
Claims priority, application France, Nov. 8, 1967, 127,374
Int. Cl. H03k *1/18*; **G06g** *7/16*
U.S. Cl. 307—265 **5 Claims**



A circuit for multiplying two electrical magnitudes, which comprises a time modulator receiving at its first input a signal corresponding to a first electrical magnitude, a monitoring oscillator producing short synchronizing pulses which is connected to the other input of said time modulator in order to produce periodic signals at the output of said time modulator, said periodic signals being delivered at the oscillator rate and having a duration proportional to the value of the first electrical magnitude, and an output stage comprising two chopper transistors, as well as an adder circuit adapted to deliver at its output a signal having a duration and an amplitude proportional to the first and second electrical magnitudes, respectively.

3,558,929
BIPOLAR PULSE REGENERATOR
Richard B. Robrock II, Matawan Township, Monmouth County, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed May 27, 1968, Ser. No. 732,385
Int. Cl. H03k *19/08*
U.S. Cl. 307—268 **2 Claims**



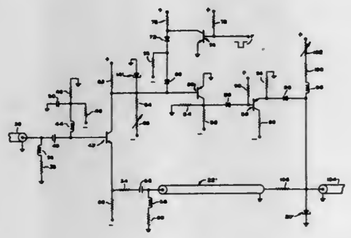
A pair of two-valley, bulk semiconductor devices is connected in series across a DC voltage source such that each of them is biased above the domain sustaining potential but below the oscillation sustaining potential. Input pulses are applied to the common junction of the two devices with a negative pulse causing domain nucleation in a first while the second remains in the ohmic state. Positive input pulses cause domain nucleation in the second device, while the first remains in the ohmic state. Since the creation of a high-field domain effects a sharp reduction in device current, the voltage at the common junction is a pulse output signal with a

positive pulse being generated in response to a positive input trigger and a negative pulse being generated in response to a negative input trigger. The width of each pulse is specified by the transit time of the domain.

3,558,930
JITTER-FREE TRIGGERING METHOD AND APPARATUS

James H. Knapton, and Henry A. Zimmerman, Beaverton, Oreg., assignors to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed Mar. 15, 1968, Ser. No. 713,452
Int. Cl. H03k *3/315*
U.S. Cl. 307—286 13 Claims

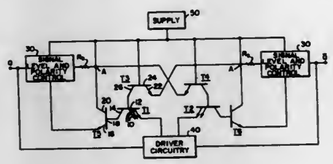


In a system for triggering an oscilloscope, an input-triggering signal is detected at the conclusion of a holdoff signal, the latter having a duration as long as the time required by the circuit to recover from triggered operation. In response to such detection, a triggerable condition for the circuit is established. The input-triggering signal is also delayed and applied for initiating another operation after such triggerable condition has been established. In this manner, a jitter which might otherwise be occasioned at the end of a holdoff period is avoided.

3,558,931
FLIP-FLOP CIRCUIT PARTICULARLY FOR INTEGRATION

Anthony J. Chernoske, Baltimore, Md., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Apr. 5, 1968, Ser. No. 719,085
Int. Cl. H03k *3/12*
U.S. Cl. 307—291 2 Claims

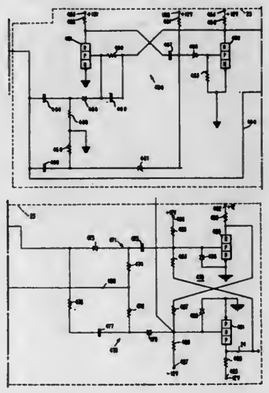


A flip-flop circuit is provided with cross-coupling using an extra transistor between an input element and a circuit point directly responsive to the inverted signal of the opposite stage. Greater speed, symmetry and ease of formation in integrated circuits are achieved.

3,558,932
DATA SHIFT CIRCUIT EMPLOYING BISTABLE AND MONOSTABLE MULTIVIBRATORS FOR PROVIDING EQUAL TIME DELAYS IN LEADING AND TRAILING EDGES OF DATA PULSES

William G. Crouse, Raleigh, N.C., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York.

Original application Apr. 15, 1965, Ser. No. 448,521, now Patent No. 3,432,616. Divided and this application Apr. 24, 1968, Ser. No. 723,814
Int. Cl. H03k *17/28*
U.S. Cl. 307—293 1 Claim

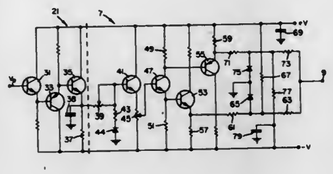


An improved delay circuit provides exactly equal time delays of both the positive and negative-going changes in the bivalued data signals applied thereto with a minimum number of components and interconnections.

3,558,933
VOLTAGE VARIABLE DELAY LINE TERMINATION

Henry O. Meyer, South San Francisco, Calif., assignor to Ampex Corporation, Redwood City, Calif., a corporation of California

Filed May 1, 1968, Ser. No. 725,804
Int. Cl. H03k *5/159*
U.S. Cl. 307—293 5 Claims

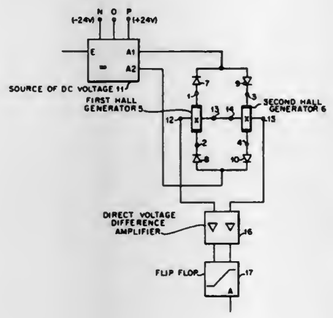


A voltage variable delay line network in which the delay of the line is dependent upon the bias, and the terminating impedance varies in accordance with the conductive state of a voltage variable termination network responsive to a signal corresponding to the bias.

3,558,934
APPARATUS FOR SENSING MAGNETIC SIGNALS

Gerhard Dorsch, Weissenbrunn, and Wolfgang Wagnerberger, Nurnberg, Germany, assignors to Siemens Aktiengesellschaft, Berlin, Germany, a corporation of Germany

Filed Nov. 15, 1968, Ser. No. 776,067
Claims priority, application Germany, Nov. 18, 1967, 1,537,418
Int. Cl. H03k *17/80*
U.S. Cl. 307—309 7 Claims

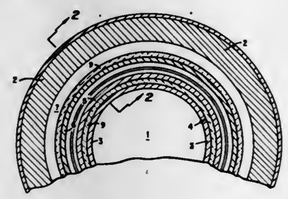


Each of a plurality of diodes couples a corresponding one of the control current electrodes of a pair of Hall generators to a corresponding one of a pair of output terminals of a source of DC voltage of reversible polarity which provides at its output terminals output voltages different from each other in polarity and each of alternately different polarity. The diodes are connected with such polarities that only one of the Hall generators at a time is provided with control current from the source of DC voltage. A direct voltage difference amplifier is connected in series with the Hall voltage electrodes of the Hall generators. A flip flop is connected to the difference amplifier.

3,558,935
GASEOUS-FUELED NUCLEAR REACTORS FOR ELECTRICAL POWER PRODUCTION

Eugene C. Gritton and Benmamin Pinkel, Santa Monica, Calif., assignors to the United States of America as represented by the United States Atomic Energy Commission

Filed Nov. 13, 1968, Ser. No. 775,250
Int. Cl. H02h *3/00*
U.S. Cl. 310—4 7 Claims

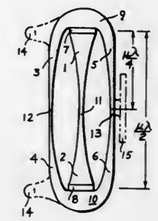


Nuclear reactors are described in which fissile fuel material in gaseous form is utilized as an energy source for the production of electrical power. The active core region of such reactors comprises gaseous fuel disposed within a cavity or cavities and surrounded by a material having both reflector and moderator properties. A high temperature liner is provided to contain the gaseous fuel while permitting it to attain temperatures where heat transfer by thermal radiation predominates within the cavity or cavities. The heat reaching the cavity wall or walls is converted to electrical energy by several methods including the use of thermionic converters immediately adjacent the wall or walls or located remotely therefrom, or by using a circulating thermodynamic working fluid in combination with the thermionic converters and passing it through a conventional turboelectric generator loop.

3,558,936
RESONANT ENERGY-CONVERSION SYSTEM

John J. Horan, 420 Quigley Ave., Willow Grove, Pa. 19090

Filed July 19, 1967, Ser. No. 654,569
Int. Cl. H01v *7/00*
U.S. Cl. 310—8.1 56 Claims

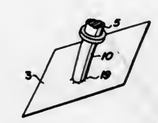


A new discipline of energy conversion and transfer involving high Q, constant-frequency, mechanical apparatus, having structure and performance analogous to those of alternating current electrical networks and permitting the injection and extraction, at choice, of electrical or mechanical energy, the mechanical energy being available at a range of impedance levels, in selected phase relationships, and in a manner compatible with fluid energy systems as well.

3,558,937
SONIC TRANSDUCER APPARATUS

Robert C. McMaster; Charles C. Libby, Columbus, and Hildegard M. Minchenko, Reynoldsburg, Ohio, assignors to The Board of Trustees of the Ohio State University, Columbus, Ohio, an institution of Higher Learning of Ohio

Filed Mar. 13, 1969, Ser. No. 815,245
Int. Cl. H01v *7/00*
U.S. Cl. 310—8.2 3 Claims



This invention relates generally to means of utilizing in a work environment a high-power, high-Q electromechanical transducer; and particularly means of loading a high-power electromechanical transducer, that is, coupling a high-power electromechanical transducer to a tool in a work environment.

ERRATUM

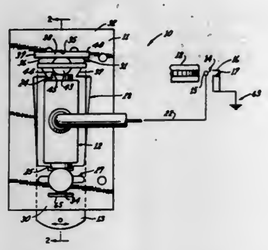
For Class 310—8.7 see:
Patent No. 3,558,903

3,558,938
PIEZOELECTRIC VOLTAGE SOURCE FOR IGNITION MEANS

Arthur L. Good, Elkhart, Ind., assignor to Robertshaw Controls Company, Richmond, Va., a corporation of Delaware

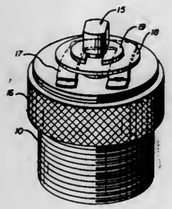
Filed Sept. 25, 1967, Ser. No. 670,245
Int. Cl. H01v *7/00*
U.S. Cl. 310—8.7 9 Claims

An ignition means for a burner means of a cooking apparatus or the like which creates electrical sparks at the pilot burner means thereof, the sparks being created by the altering of the stresses in piezoelectric crystal means that is



rocked relative to the supporting structure by a cam element disposed between the crystal means and an end surface of a supporting frame structure. The cam element is carried by a lever arm that is guided in its movement by cooperating surface means of the support frame.

3,558,939
MINIATURE VIBRATOR
Kenneth N. Olson, Carle Place, N.Y., assignor to Kollsman Instrument Corporation, Syossett, N.Y., a corporation of New York
Filed Sept. 2, 1969, Ser. No. 854,677
Int. Cl. H02k *33/02*
U.S. Cl. 310—15 **4 Claims**



For inducing antifriction vibrations in precision instruments, a miniature electromagnetic vibrator is provided which includes a cylindrical side housing of magnetic material having an upper peripheral edge providing an annular percussion surface. A core of magnetic material is press-fit within the side housing and has a wire coil circularly disposed about a portion thereof. A cup-shaped top housing is threaded upon the upper end of the side housing. An armature has a disc-shaped striker portion disposed within the top housing, the striker portion having a diameter sufficient to span the percussion surface, and has a shank portion extending upwardly from the striker through an opening in the top housing. The shank is normally held in an elevated position by a spring to provide a clearance distance between the striker and percussion surface.

3,558,940
SYNCHRONOUS MOTOR WITH DIRECTIONAL CONTROLS
Benjamin F. Chestnut, and Stephen F. Murray, Indianapolis, Ind., assignors to P. R. Mallory & Co., Inc., Indianapolis, Ind., a corporation of Delaware
Filed Nov. 13, 1968, Ser. No. 775,284
Int. Cl. H02k *7/118, 21/08*
U.S. Cl. 310—41 **14 Claims**

The combination of a synchronous motor and a one-way device which includes a cam and pawl arrangement provides a synchronous motor which is easily started in a predetermined direction, with the stator arrangement further providing a smoothly running motor. The combination further includes a detachable gear train means which when connected



to the coil bobbin of the motor, the pinion of the motor is automatically and predeterminately aligned with the input gear of the gear train.

3,558,941
PERMANENT MAGNET STEPPING MOTOR WITH SINGLE WINDING
Giorgio Visconti Brebbia, and Federico Visconti Brebbia, Via G. da Procida 6, Milan, Italy
Filed Jan. 17, 1969, Ser. No. 792,076
Claims priority, application Italy, July 4, 1968, 18560A/68
Pat. No. 838,574
Int. Cl. H02k *31/04, 37/00*
U.S. Cl. 310—49 **5 Claims**

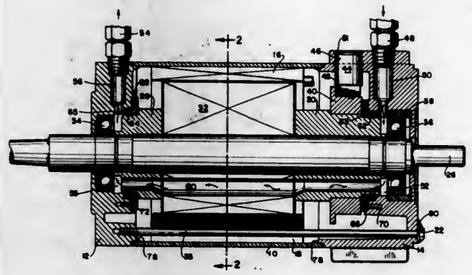


Electric stepping motor for pulse counting and positioning by angular increments of, for example, 36° a shaft in accordance with the number of pulses supplied to the motor, comprising a rotor formed of a permanent magnet radially magnetized according to a plurality of pole pairs, a first stator formed of a permanent magnet radially magnetized according to a plurality of pole pairs, a second electromagnetic stator having a plurality of poles, and an indented body of magnetically soft material having the configuration of a slotted disc which provides slots and teeth.

3,558,942
DYNAMOELECTRIC MACHINE WITH IMPROVED COOLING MEANS
Roger Gettys Hill, Racine, and Arthur J. Beutler, Greendale, Wis., assignors to Gettys Manufacturing Company, Inc., Racine, Wis., a corporation of Wisconsin
Filed June 17, 1969, Ser. No. 834,621
Int. Cl. H02k *9/10*
U.S. Cl. 310—54 **5 Claims**

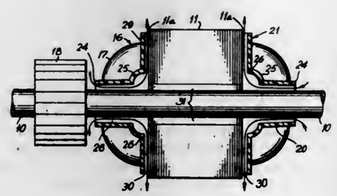
A motor having improved cooling means wherein compressed air is forced through circumferentially arrayed ducts within the rotor whenever cooling is required. The fluid passage system is such that the critical portions of the motor can be effectively sealed from the air ducts to prevent contamination. Additionally, the entire stator construction is

sealed from its environment so that in the event of internal leakage, the back pressure provided by the sealed stator



minimizes the likelihood of damage to the motor from the air coolant.

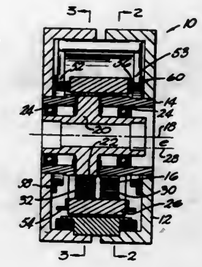
3,558,943
AIR COOLED ROTOR FOR DYNAMO-ELECTRIC MACHINE
Arne Lennart Nilsson, Stockholm, Sweden, assignor to Aktiebolaget Electrolux, Stockholm, Sweden, a corporation of Sweden
Filed Sept. 9, 1969, Ser. No. 856,307
Claims priority, application Sweden, Sept. 11, 1968, 12190/68
Int. Cl. H02k *9/04*
U.S. Cl. 310—58 **5 Claims**



An air cooled rotor for a dynamo-electric machine having insulating members formed of plastic positioned at opposing end walls of the laminated core structure of the rotor. Each insulating member has a hollow hub which is disposed about the rotor shaft to provide an axially extending passageway having an air inlet at its outer end and a disc at its opposite inner end. The discs bear against the end walls of the core structure and provide radial passageways having their inner ends communicating with the inner ends of the axially extending passageways and their outer open ends serving as air outlets. Flow of air is induced through the axially extending and radial passageways responsive to the pressure differential of air at the inlets of the axially extending passageways and air at the outlets of the radial passageways during rotation of the rotor. The flow of air through the axially extending and radial passageways effects cooling of the dynamo-electric machine.

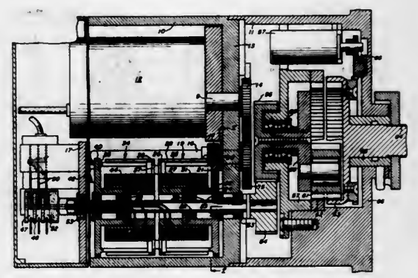
3,558,944
SELF-COMMUTATED ACTUATOR
Kenneth W. Verge, Farmington, Mich., assignor to The Bendix Corporation, a corporation of Delaware
Continuation-in-part of application Ser. No. 523,111, Jan. 26, 1966, now abandoned, Continuation-in-part of application Ser. No. 667,459, Sept. 13, 1967. This application Feb. 3, 1969, Ser. No. 795,804
Int. Cl. H02k *7/10*
U.S. Cl. 310—82 **9 Claims**

An integrated motor-transmission unit in which an output gear and a coaxial stationary gear coact with a driven eccentric ring gear that meshes therewith to provide for a direct drive of the output gear by driving the ring gear. A force vector is applied to the ring gear so as to move the ring gear



such that the axis thereof travels in an orbital path about the output gear axis, and this movement of the ring gear is utilized to provide for rotation of the force vector. In the illustrated embodiment of the invention an electromagnet and switching circuit assembly provide for this movement of the force vector.

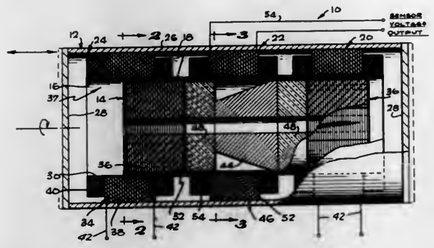
3,558,945
REVERSIBLE ELECTROMAGNETICALLY CONTROLLED DRIVE DEVICE
Robert M. Hulle, Calabasas, Calif., assignor to Clary Corporation, San Gabriel, Calif., a corporation of California
Filed Mar. 19, 1969, Ser. No. 808,551
Int. Cl. H02k *49/06*
U.S. Cl. 310—101 **2 Claims**



An electromagnetic servounit comprising two drive units connectable through a speed reducing unit to an output shaft, each drive unit comprising telescoped magnetic drive and driven members with an air gap therebetween and energizing coils for selectively setting up a magnetic flux path across the air gap of each unit whereby the output shaft is driven solely by either drive unit or jointly at a speed and torque proportional to control signals applied to both drive units.

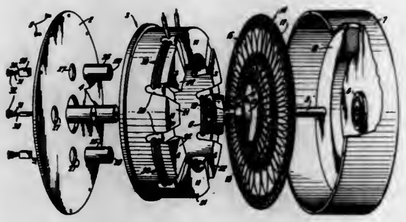
3,558,946
FORCE TRANSDUCER HAVING HYDRODYNAMIC BEARING SUPPORTED RESPONSIVE ELEMENT
Stanley A. Cory, Canoga Park, Calif., assignor to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Jan. 31, 1968, Ser. No. 702,118
Int. Cl. G01p *15/08*
U.S. Cl. 310—112 **10 Claims**

A force transducer having a barrel containing a rotor member which is positioned axially relative to the barrel by the conjoint action of the force being monitored and a resisting or biasing force on the member. The rotor member is driven in rotation to create between the member and barrel a



hydrodynamic bearing which supports the member for relatively frictionless axial movement under the influence of the monitored force. The axial position of the rotor member relative to the barrel is sensed to provide a readout related to the monitored force.

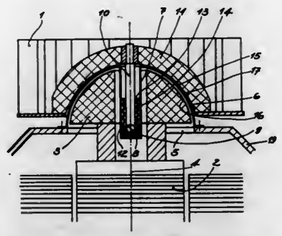
3,558,947
DISCOIDAL WIRE WOUND ARMATURES
Robert P. Burr, Lloyd Harbor, Huntington, N.Y., assignor to Circuit Research Company, Glen Cove, N.Y., a partnership of New York
Continuation of application Ser. No. 511,854, Dec. 6, 1965, now abandoned. This application Oct. 1, 1969, Ser. No. 866,074
Int. Cl. H02k *1/22*
U.S. Cl. 310—154 **2 Claims**



A DC motor including a disc armature and a permanent magnet stator providing an airgap flux density in excess of 2000 gauss. The copper density is so controlled that a flat thin annulus is located within the airgap with the crossover connections being of a high copper density to minimize armature diameter. The insulated wire pattern is fixed by means of dielectric material within the airgap. The winding is connected to a flat disc commutator.

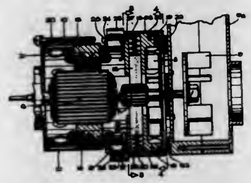
3,558,948
MAGNETIC ROTARY MACHINE
Nikolaus Laing, 35-37 Hofener Weg 7141, Aldingen, Germany
Continuation-in-part of application Ser. No. 685;931, Nov. 27, 1967, now Patent No. 3,438,328, dated Apr. 15, 1969. This application Feb. 17, 1969, Ser. No. 799,890
Int. Cl. H02k *7/08*
U.S. Cl. 310—157 **6 Claims**

A magnetic rotary machine or coupling having two axially opposed rotary magnetic elements with an air gap therebetween wherein one of the elements has a concave surface adjacent the air gap and the other element has a convex surface adjacent the air gap and where both elements have



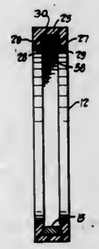
limited universal movement about a common center of the convex and concave surfaces.

3,558,949
BRUSH ASSEMBLY FOR ELECTRICAL EQUIPMENT
Philip H. Evans, Wollaston, Stourbridge, England, assignor to BSR Limited, Warley, England, a British Company
Filed Jan. 21, 1969, Ser. No. 792,864
Claims priority, application Great Britain, Jan. 27, 1968, 4363/68
Int. Cl. H01r *39/38;* **H02k** *13/00*
U.S. Cl. 310—239 **1 Claim**



A brush holder for use with an electric motor having a two-part outer casing of cylindrical form, each half having an axially extending slot running from one end so that the slots are 180° apart and the brush holder comprising an annular ring of plastics material having two brush housings formed integrally therewith 180° apart and each housing having a radially outwardly projecting part which fits in one of the slots in the casing when the annular ring is slid into the casing from one end.

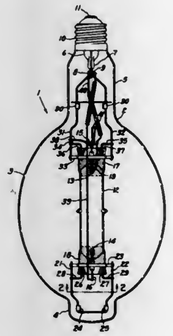
3,558,950
COIL END SUPPORT
George M. Raybould, Cleveland Heights, Ohio, assignor to Reliance Electric and Engineering Company, a corporation of Ohio
Filed July 11, 1968, Ser. No. 744,167
Int. Cl. H02k *3/46*
U.S. Cl. 310—270 **5 Claims**



The disclosure relates to a dynamoelectric machine having a winding on a rotor with the coil end turns of the winding

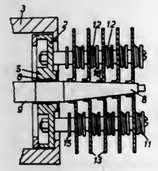
supported and secured to a ring of insulation material. The ring is made from resin impregnated tape or roving and has a cylindrical collar and two stiffening flanges disposed in a U-shape in radial cross section. The coil end turns are secured to this ring by banding tape on the outer periphery of the coil end turns and this constitutes the only support of the ring so that the ring is free floating and can move axially with changing temperatures of the coil end turns and also this free floating support permits a maximum air passage between the ring and the machine shaft for maximum cooling.

3,558,951
ARC TUBE MOUNTING WITHIN VITREOUS OUTER ENVELOPE
Leonard F. Kramel, East Cleveland, and Stanley D. Tabor, Jr., Cleveland, Ohio, assignors to General Electric Company, a corporation of New York
Filed July 15, 1968, Ser. No. 744,756
Int. Cl. H01j *61/12, 61/52*
U.S. Cl. 313—25 **2 Claims**



A high intensity jacketed discharge lamp wherein the arc tube is supported within the outer jacket by a divided mount. The mount section at each end of the arc tube comprises a metal band clamped around the wide pinch seal to which short support rods are attached. The pinch seals have blind notches in their ends which accommodate the ends of right angle braces attached to the rods. The combination of bands and braces assures the required longitudinal rigidity in the mount coupled with sufficient play to withstand shock.

3,558,952
SPRING ADJUSTABLE COOLING FINS FOR TRAVELING WAVE TUBES
Reginald William James Forbes, South Devon, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Aug. 9, 1968, Ser. No. 751,557
Claims priority, application Great Britain, Aug. 24, 1967, 39053/67
Int. Cl. H01j *25/34*
U.S. Cl. 313—45 **6 Claims**



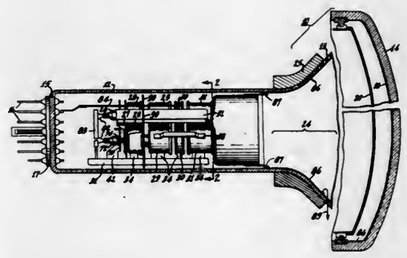
A cooling structure for an elongated heat source, such as a conoidal electron collector electrode of a traveling wave tube, has a plurality of fins secured around and along the heat source and a set of springs urging the fins into contact therewith. A centering member permits adjustment of the heat source with respect to a mounting structure.

3,558,953
BEAM LANDING ERROR CONTROL APPARATUS FOR MAGNETICALLY FOCUSED CATHODE RAY TUBES
Roy A. Minet, Lancaster, Pa., assignor to RCA Corporation, a corporation of Delaware
Filed Mar. 14, 1968, Ser. No. 712,978
Int. Cl. H01j *29/70, 31/26*
U.S. Cl. 313—76 **12 Claims**



In magnetically focused electron beam tubes transverse velocity components of the beam are introduced by the electrostatic or electromagnetic fields of the beam deflection components. By providing a pair of beam deflection components and spacing them substantially one-half focus loop length of the electron beam along the tube axis, a transverse velocity component introduced by one beam deflection component is canceled or enhanced by a transverse velocity component introduced by the other beam deflection component.

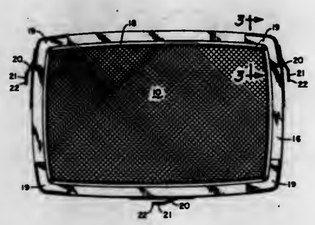
3,558,954
COLOR TUBE HAVING GROUND PLANE BETWEEN FOCUS ELECTRODES AND SCREEN GRIDS
Charles E. Lilley, Lancaster, Pa., assignor to RCA Corporation, a corporation of Delaware
Filed Oct. 17, 1967, Ser. No. 675,820
Int. Cl. H01j *29/02, 29/06, 1/00*
U.S. Cl. 313—82 **1 Claim**



A color picture tube having a glass envelope neck portion containing a triple-beam electron gun assembly, comprising a group of low-voltage electrodes and an adjacent group of high-voltage electrodes for each beam, is provided with a low-voltage suppressor ring surrounding and spaced outwardly from and disposed substantially in the plane of the beam accelerating gaps between the next adjacent low- and high-voltage electrodes, for establishing a transverse ground plane at those gaps and thereby shielding the external surfaces of the low-voltage electrodes from the high electric fields of the first high-voltage electrodes. In the example given, the low-voltage electrodes for each beam include a cathode, control grid and screen grid, and the high-voltage electrodes for each beam include two connected spaced electrodes which cooperate with an intermediate low-voltage electrode to form an "einzel" focus lens, and the suppressor ring is a wire that surrounds the accelerating gaps between the screen grids and the first high-voltage focus electrodes.

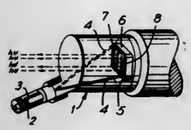
A similar suppressor ring is suggested for use in a color picture tube having a bipotential lens, or in a single-beam cathode ray tube such as those used in black-and-white television receivers.

3,558,955
SELF SUPPORTING SHADOW MASK WITH REINFORCING RIBS AND GUSSET PLATES FOR COLORED TELEVISION PICTURE TUBES
Myron C. Kirchner, Itasca, Ill., assignor to Northern Metal Products, Inc., Franklin Park, Ill., a corporation of Delaware
Filed May 1, 1969, Ser. No. 821,056
Int. Cl. H01j *29/46*
U.S. Cl. 313—85 4 Claims



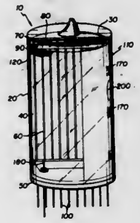
A shadow mask for colored TV picture tubes has a front section, containing the conventional foraminous or translucent area formed by a multitude of miniature apertures through which electron beams pass from the electron guns at the rear of the tube to the viewing face at the front of the tube; an imperforate margin area around the translucent area; a rearward extending wall from the edge of the margin area; and an inward directed flange formed along the rear edge of the wall. The flange contains a plurality of strengthening fragmentary gusset plate members.

3,558,956
CATHODE-RAY TUBE
Nikolai Gennadievich Basov; Oleg Vladimirovich Bogdankevich, Moscow, and Alexandr Sergeevich Nasibov, Krasnaya Pakhra, Moscous Oblast, U.S.S.R., assignors to Fizichesky Institut Imeni Lebedeva, Moscow, U.S.S.R., Leninsky prospekt
Filed Feb. 20, 1968, Ser. No. 706,877
Claims priority, application U.S.S.R., Feb. 20, 1967, 1,135,916
Int. Cl. H01j *29/18*
U.S. Cl. 313—92 11 Claims



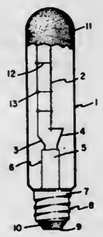
A cathode-ray tube whose screen is essentially a semiconductor quantum generator formed by an optical resonator and an active medium placed therein. The active medium is a film of semiconductor material deposited on a substrate and capable of induced light emission and amplification at the density of electrons in the beam sufficient to bring about an inversion of energy levels in the semiconductor film. One of the reflecting surfaces of the optical resonator is the surface of the film exposed to the electron beam inside of the tube envelope.

3,558,957
MULTIPLE CATHODE INDICATOR TUBE HAVING IMPROVED ANODE AND MERCURY SOURCE
Richard B. Fehnel, Basking Ridge, N.J., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Apr. 3, 1969, Ser. No. 813,257
Int. Cl. H01j *61/24*; H01k *7/04*
U.S. Cl. 313—109.5 7 Claims



An indicator tube having a stack of cathodes and a cylindrical anode enclosing the stack of cathodes. The anode includes a rear plate and a front screen. The rear anode plate is provided with at least one projecting finger which extends toward the cathodes and facilitates cathode glow, and an annular mercury capsule is secured to the rear surface of the anode plate by means of metal tabs.

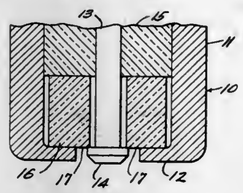
3,558,958
BLUE-RED AQUARIUM INCANDESCENT LAMP
Alexander Tartakoff, Beverly, and John Kelley Robertson, Lynn, Mass., assignors to Sylvania Electric Products Inc., a corporation of Delaware
Filed Aug. 6, 1968, Ser. No. 750,550
Int. Cl. H01j *61/40*; H01k *1/26*
U.S. Cl. 313—112 1 Claim



A lamp for lighting an aquarium to enhance the appearance of the fish and accessories. The lamp uses an incandescent tungsten filament with a coating on its envelope to absorb the green and yellow light from the filament, so that the light emitted from the lamp is mainly blue and red.

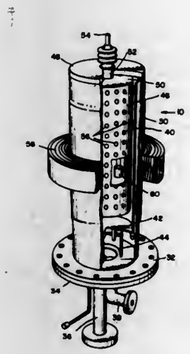
3,558,959
SILICON CARBIDE SEMI-CONDUCTOR IGNITER STRUCTURE
Edwin F. Ziemendorf, Wilson, N.Y., assignor to The Carborundum Company, Niagara Falls, N.Y., a corporation of Delaware
Continuation-in-part of application Ser. No. 545,593, Apr. 27, 1966, now abandoned. This application Apr. 24, 1968, Ser. No. 723,759
Int. Cl. H01j *19/78*; H01t *13/02*
U.S. Cl. 313—130 10 Claims

Igniter for jet and other internal combustion engines with a hot pressed, ceramic, electrically semiconducting button disposed between a center electrode and a ground electrode to provide a path along which spark discharge occurs. The button consists essentially of particles of silicon carbide bonded together by a ceramic matrix which can be alumina,



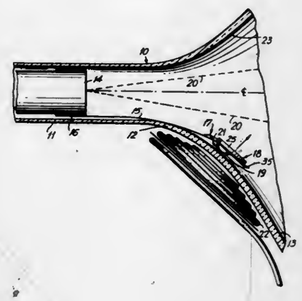
mullite, forsterite, a glass frit spinel ($MbO \cdot Al_2O_3$), a mixture of magnesium oxide and cobalt oxide, zirconium silicate, silica or the like. An igniter according to the invention is peculiarly adapted for service under severe conditions in an engine having a relatively low voltage (e.g., 3,000 volts* or less), high-energy (e.g., 1 to 20 joules) ignition system.

3,558,960
SWITCHING DEVICE
Gunter A. G. Hofmann, Los Angeles, and Ronald C. Knechtli, Woodland Hills, Calif., assignors to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware
Filed Nov. 27, 1968, Ser. No. 779,341
Int. Cl. H01j *1/50*
U.S. Cl. 313—161 6 Claims



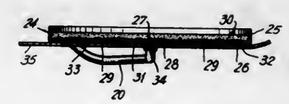
The switching device has an anode and a cathode with a gas-filled space therebetween. Conduction causes ion implantation into the cathode, sputtering and adsorption pumping, with consequent reduction in gas pressure to result in cessation of conduction when the pressure decreases below the critical value. In the present switching device, this is prevented by providing an auxiliary gas volume which contributes gas as required.

3,558,961
GETTER MOUNTING ASSEMBLY WITH ELONGATED SPRINGLIKE SUPPORT HAVING U-SHAPED CHANNEL PORTION
Edward M. Palsha, Lakewood, Ohio, assignor to Union Carbide Corporation, New York, N.Y., a corporation of New York
Filed Nov. 19, 1968, Ser. No. 776,864
Int. Cl. H01j *19/70*
U.S. Cl. 313—174 7 Claims



An improved getter assembly for mounting a getter container in an electron tube at the end of a flat springlike support arm wherein the getter container has a mounting tab and the end of the support arm is a U-shaped channel portion formed by bending opposite side portions of the strip upwards to form the legs of the channel with the mounting tab of the getter container lying in said channel and connected to the underlying end of the metallic strip.

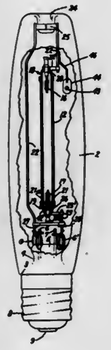
3,558,962
HIGH YIELD GETTER DEVICE
Clair W. Reash, Fairview Park, Ohio, assignor to Union Carbide Corporation, New York, N.Y., a corporation of New York
Filed Dec. 11, 1968, Ser. No. 783,029
Int. Cl. H01j *19/70*
U.S. Cl. 313—180 1 Claim



A getter device capable of providing large amounts of active getter material comprising a pan-shaped container for

holding pressed getter material and an auxiliary heating means at least partially buried in said pressed getter material.

3,558,963
HIGH-INTENSITY VAPOR ARC-LAMP
Rodney E. Hanneman, Burnt Hills; Paul J. Jorgensen, Scotia, and Richard J. Charles, Schenectady, N.Y., assignors to General Electric Company, a corporation of New York
Continuation of application Ser. No. 616,538, Feb. 16, 1967, now abandoned. This application Aug. 16, 1968, Ser. No. 753,143
Int. Cl. H01j *61/12*
U.S. Cl. 313—184 **31 Claims**



In a high-pressure vapor arc lamp wherein sodium atoms are a principal radiating specie and the arc tube is an alumina or similar ceramic, sodium can react with other substances present including the material of the arc tube itself, resulting in cleanup of sodium. This is prevented by introducing a certain metals, alloys, or metal compounds into the lamp whose function is to prevent the formation of sodium aluminate or related compounds which are directly responsible for the sodium cleanup. This requires a negative free energy or reaction for the equation of the form:

$$NaAlO_2 + xM(S) \rightarrow Na(L,G) + M_xO_{0.5}(S) + 1/2\ Al_2O_3(S)$$

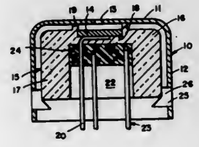
as well as sufficiently rapid reaction rates. The preferred metals for this purpose are yttrium, cerium, and lutetium.

3,558,964
HIGH CURRENT THERMIONIC HOLLOW CATHODE LAMP
John E. White, Cleveland Heights, Ohio, assignor to General Electric Company, a corporation of New York
Filed Oct. 21, 1968, Ser. No. 769,038
Int. Cl. H01j *61/06, 61/08, 61/16*
U.S. Cl. 313—211 **7 Claims**



A thermionically emitting hollow cathode for very high currents up to 400 amperes AC particularly suitable for xenon-filled wall-stabilized lamps. It comprises a hollow cylindrical body of porous tungsten, open in the direction of the arc and having a coil of tungsten wire lining the cavity walls except for a region at the rear deep within the cavity. The cavity wall but not the face nor the outside of the electrode are impregnated with emission material, suitably barium thorate. The cooler shank end of the cavity into which the electrode coil does not extend serves as a dead space into which gas can expand during the AC cycle, thereby reducing the rate of gas flow in and out of the open end.

3,558,965
CATHODE FOR TELEVISION TUBE AND METHOD OF MAKING
Laszlo Javorik; David Y. Stowell, Chicago, and Dennis M. Healy, Oak Lawn, Ill., assignors to National Video Corporation, Chicago, Ill., a corporation of Illinois
Filed Oct. 2, 1967, Ser. No. 672,272
Int. Cl. H01j *1/94, 19/48*
U.S. Cl. 313—270 **3 Claims**



Cathode for television tube and method of making wherein a generally circular ceramic body is employed to support a cathode disc in predetermined relation to the G—1 control grid.

3,558,966
DIRECTLY HEATED DISPENSER CATHODE
David L. Hill, and Lien S. Wu, Lexington, Ky., assignors to Semicon Associates, Inc., Lexington, Ky., a corporation of Kentucky
Filed Mar. 1, 1967, Ser. No. 619,690
Int. Cl. H01j *1/14;* **H01h** *1/04;* **H01j** *19/06*
U.S. Cl. 313—346 **5 Claims**

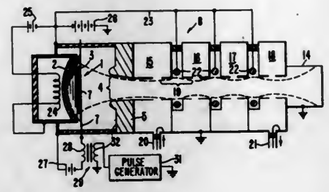


A directly heated dispenser-type cathode for microwave tubes and the like, the cathode being formed by a solid electrically conductive substrate, such as tungsten wire, the surface of which has bonded thereto a porous layer of a refractory metal whose pores are impregnated with an electron-emissive material having a low work function, such as barium oxide.

3,558,967
LINEAR BEAM TUBE WITH PLURAL CATHODE BEAMLETS PROVIDING A CONVERGENT ELECTRON STREAM
George V. Miriam, Daly City, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California
Continuation of application Ser. No. 650,893, July 3, 1967, now abandoned. This application June 16, 1969, Ser. No. 833,490
Int. Cl. H01j *25/34*
U.S. Cl. 315—3.5 **12 Claims**

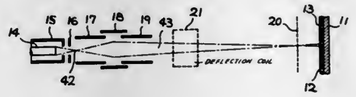
A gridded electron gun for linear beam tubes is disclosed. The electron gun includes a concave cathode emitter formed by a mosaic of a multitude of lesser cathode emitting surfaces. The lesser cathode emitting surfaces are concave with a radius of curvature substantially less than the radius of curvature of the composite cathode emitter. A multiapertured control grid is closely spaced to and shaped to conform to the concave surface of the cathode emitter. The apertures in the control grid are in alignment with the individual ones of the cathode emitting surfaces to produce a multitude of convergent beamlets passing through the apertures in the grid in

a substantially nonintercepting manner. The beamlets converge together into a confluent electron stream passing through a central aperture in an accelerating anode to form a unitary electron beam for a linear beam tube. The control grid may have a mμ of between 20 and 100 and provide grid



interception of less than 0.2 percent of the beam current. In a dispenser cathode a second grid, which is essentially identical to the control grid, is incorporated in or on the surface of the cathode either in contacting or noncontacting relation therewith.

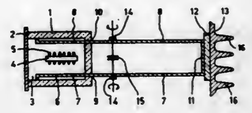
3,558,968
COLOR TELEVISION PICTURE TUBE OF THE SINGLE ELECTRON GUN TYPE
Kenjiro Takayanagi, Kamakura, Japan, assignor to Victor Company of Japan, Limited, Kanagawa-ku Yokohama City, Japan
Filed July 9, 1968, Ser. No. 743,506
Claims priority, application Japan, July 13, 1967, 42/44,871
Int. Cl. H01j *29/46*
U.S. Cl. 315—13 **8 Claims**



A color television picture tube of the single electron gun type includes an electron gun composed of a cathode for emitting electrons, control grids disposed in the neighborhood of said cathode, a first anode, and a set of electrodes constituting an electron lens for converging the electron beams emitted from said cathode. A plurality of phosphor dots of different colors are formed on the face of the tube. A shadow mask is disposed between said phosphor dots and said electron gun. An electron beam image is formed in the interior of said electron lens. Voltages on each electrode focuses the crossover point of the electron beams on the surface of said shadow-mask. By postdeflection focusing the beam at the shadow-mask is focused on said phosphor dots in positions corresponding to a plurality of portions of said electron beam.

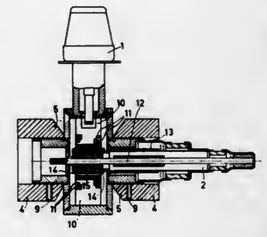
3,558,969
ELECTRON DISCHARGE TUBE HAVING AN ANODE FORMING PART OF A LECHER-LINE WITH A HEAT DISSIPATING ELEMENT
Otto G. Voss, Ahrensburg, Scheunenkoppel, Germany, assignor to U. S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Dec. 9, 1968, Ser. No. 782,023
Claims priority, application Germany, Dec. 13, 1967, 1,281,040
Int. Cl. H01j *7/46, 19/80*
U.S. Cl. 315—39 **4 Claims**

A high-power electron discharge tube having an anode forming part of a Lecher line and being cooled by heat dissipation. Means to dissipate the heat generated by the anode are located at a voltage node or at a current antinode, i.e., a



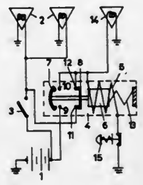
point at which, for a given frequency, the voltage is a minimum and current a maximum.

3,558,970
RESONANT CAVITY MAGNETRONS USING CATHODE HEATER CURRENTS TO INTENSIFY MAGNETIC FIELDS
Johannes Antonius van de Goor, Emmasingel, Eindhoven, Netherlands, assignors to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed May 7, 1969, Ser. No. 822,680
Claims priority, application Netherlands, May 14, 1968, 6806783
Int. Cl. H01j *25/50, 25/50*
U.S. Cl. 315—39.51 **4 Claims**



A resonant cavity magnetron having a directly heated helical cathode using its heater currents to set up magnetic fields for intensifying the externally supplied magnetic fields in the cathode-anode reaction spaces. A more efficient operation of the magnetron due to resulting homogeneous magnetic fields is realized even when the anode voltages contain strong ripples in its power supply.

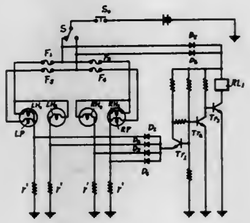
3,558,971
VEHICLE LIGHTING PLANTS
Urban Molin, Fregattvagen 15, Lidingo, Sweden
Filed Nov. 6, 1967, Ser. No. 680,745
Claims priority, application Sweden, Nov. 8, 1966, 15225/66
Int. Cl. B60q *1/02*
U.S. Cl. 315—77 **10 Claims**



An improvement in vehicle lighting plants in which an emergency lighting plant for the illumination of the roadway

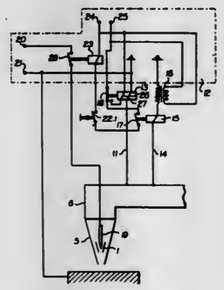
and which serves as standby equipment in the event of a failure of the main lighting plant is activated by feeding the emergency lighting plant with current via a self-retaining relay.

3,558,972
EMERGENCY LIGHTING SYSTEM FOR USING AUXILIARY LIGHT SYSTEM
Hiroshi Arai, Toyota, Japan, assignor to Toyota Jidosha Kogyo Kabushiki Kaisha, Toyota City, Aichi Prefecture, Japan, a corporation of Japan
Filed May 14, 1969, Ser. No. 824,562
Claims priority, application Japan, July 31, 1968, 43/54114
Int. Cl. B60q *1/04, 1/38*
U.S. Cl. 315—83 **10 Claims**



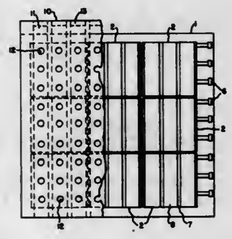
An emergency equipment to cope with the failure of headlamps while a motor vehicle is running comprising headlamps connected to a power source through a main switch and a dimmer switch, a logical circuit connected to circuits of the headlamps, and auxiliary lights connected to the power source through a relay. The emergency equipment is characterized in that when one or all of the headlamps fail while the main switch is closed, the logical circuit and hence the relay are operated, whereby the auxiliary lights are turned on.

3,558,973
PLASMA HAND BURNER WITH CONTACT PROTECTION
Rudolf Pochert; Haase Lothar; Willy Roggenbuch, and Peter Wiese, Dresden, Germany, assignors to Kjellberg Elecktroden & Maschinen GMBH in Verwaltung, Finsterwalde, Germany, a corporation of Germany
Filed Nov. 4, 1968, Ser. No. 773,239
Int. Cl. B23k *9/10*
U.S. Cl. 315—111 **6 Claims**



A circuit arrangement for plasma hand torches for fusion cutting having a contact protection which comprises a housing, a nozzle disposed in the housing and having an exit opening. A nozzle cap is in electrically conducting connection with the housing. Two conduits ground the housing at two points. A current-feeding source is electrically connected with the two conduits. One of the conduits constitutes a protection conduit and the other of the conduits constitutes an auxiliary conduit. The one of the conduits includes a current relay with first contact and the other of the conduits includes an auxiliary relay and a secondary winding of a low voltage transformer. The auxiliary relay includes a working contact disposed in series with the first contact. The plasma hand torch has an operating relay, and the operating relay is capable of being either switched off or not switched on respectively, by means of said first contact upon occurrence of a short circuit or by the working contact upon interruption of the protection conduit or of the auxiliary conduit.

3,558,974
LIGHT-EMITTING DIODE ARRAY STRUCTURE
Richard D. Stewart, Camillus, N.Y., assignor to General Electric Company, a corporation of New York
Filed Apr. 30, 1968, Ser. No. 725,307
Int. Cl. H05b *37/00*
U.S. Cl. 315—169 **8 Claims**

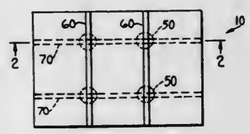


A light-emitting diode array structure in which a great number of diodes are integrally constructed and interconnected by contact electrodes on opposing faces of said diodes, said structure further presenting a readily accessible external connection to said diodes as well as accommodating light emission from said diodes. In one preferred embodiment the structure is composed of a matrix of p-si-n diodes.

ERRATUM

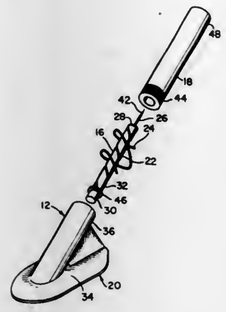
For Class 315—227 see:
Patent No. 3,558,998

3,558,975
GAS-FILLED MATRIX DISPLAY DEVICES
James A. Ogle, Paoli, Pa., assignor to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Feb. 7, 1968, Ser. No. 703,721
Int. Cl. H01j *9/18*
U.S. Cl. 316—19 **4 Claims**



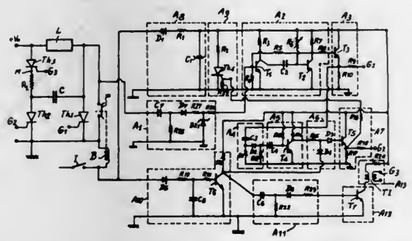
The disclosure is of a multiple gas cell display panel which includes a sandwich of a central apertured plate and top and bottom cover plates, all of glass. The central plate includes apertures arranged in rows and columns which comprise the light-producing cells of the display. The top and bottom plates are of glass and are rigid and the central plate is formed from a flexible strip of powdered glass which is cut to size, has the holes formed in it, and is then sealed in place between the top and bottom plates.

3,558,976
INTERNAL RESISTIVE STATIC DISCHARGER
Chester H. Miller, 2450 SW 18th St., Miami, and Arthur J. Brodersen, 2242 NW 2nd Ave., Gainesville, Fla.
Filed May 14, 1969, Ser. No. 824,570
Int. Cl. B64d *45/02*; **H05f** *3/00*
U.S. Cl. 317—2 **12 Claims**



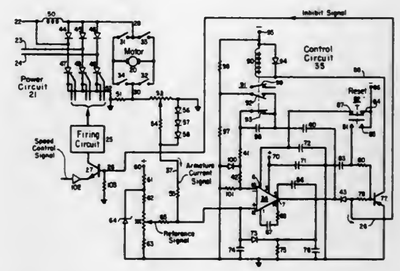
An internal resistive element static discharger including a conductive surface contact base, a nonconductive inner rod having an axially aligned needle discharge member affixed at the free end thereof and a conductive base contacting pin at the fixed end thereof, the said needle and the said pin being electrically interconnected by a length of low conductivity material and a hollow, nonconductive outer tube overfitting and protecting the said inner rod, the said outer rod threadedly engaging upon the base to urge the pin into reliable electrical contact with the conductive base.

3,558,977
HYBRID CIRCUIT BREAKER HAVING MEANS FOR DETECTING THE LEADING EDGE OF THE ARC VOLTAGE AT THE CONTACTS THEREOF
Rémy A. Beaudoin, Rueil, France, assignor to La Telemecanique Electrique, Nanterre, France
Filed Aug. 7, 1968, Ser. No. 750,867
Claims priority, application France, Aug. 16, 1967, 117857
Int. Cl. H02h *3/00*; **H01h** *9/30*
U.S. Cl. 317—11 **5 Claims**



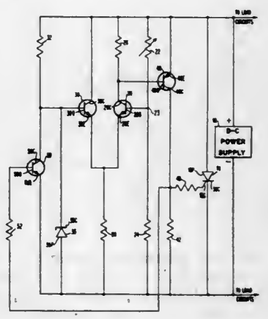
A hybrid circuit breaker comprising a pair of contacts actuated by an electromagnet, a thyristor for shunting the contacts, an extinction condenser for the shunt thyristor, an extinction thyristor adapted to control the discharge of the condenser, and a circuit for controlling the firing of the thyristors comprising a circuit for differentiating the leading edge of the arc voltage across the contacts and a monostable multivibrator responsive to the leading edge of said arc voltage for generating an impulse for firing the shunt thyristor.

3,558,978
ELECTRONIC CIRCUIT BREAKER WITH GRADUAL AND INSTANTANEOUS CUTOFF
Dudley D. Nye, Jr., Fort Lauderdale, and Thomas Pantelakis, Margate, Fla., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware, by mesne assignments
Filed May 14, 1969, Ser. No. 824,567
Int. Cl. H02h *7/08*
U.S. Cl. 317—13 **10 Claims**



A motor energizing circuit includes a power circuit with semiconductor switches controlled by a firing circuit. A control circuit compares an armature current signal against a reference signal to determine the extent of any overload. An inhibit signal is passed from the control circuit to disable the firing circuit immediately when the armature current signal indicates a substantial motor overload. The control circuit also allows a delay before inhibiting the firing circuit, when the armature current signal indicates an overload in the range below that level which causes instantaneous disabling of the firing circuit.

3,558,979
OVERVOLTAGE PROTECTION CIRCUIT
William M. Lorenz, Saugerties, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Oct. 30, 1967, Ser. No. 678,881
Int. Cl. H02h *3/00*
U.S. Cl. 317—16 **9 Claims**

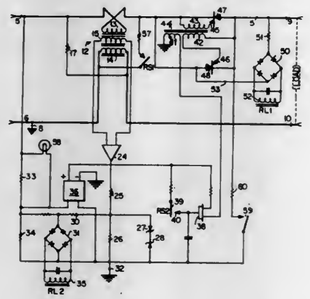


An overvoltage protection circuit for a power supply employing a latching feedback control circuit cooperating with a silicon-controlled rectifier to provide protection against overvoltage by switching the silicon controlled rectifier at a much faster than normal speed to short out the power supply in the event an overvoltage condition occurs.

3,558,980
AUTOMATIC GROUND FAULT CIRCUIT INTERRUPTER

Douglas A. Florance, Vestal; Lloyd P. Nordholm, and Stephen Foldes, Binghamton, N.Y., assignors to Flo-Root, Inc., Endicott, N.Y., a corporation of New York

Filed May 29, 1969, Ser. No. 828,836
Int. Cl. H02h 3/28, 7/26
U.S. Cl. 317—18 9 Claims

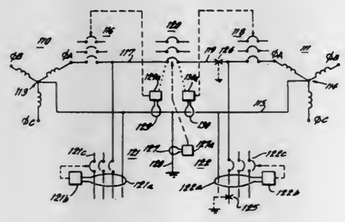


A power distribution system with automatic protection of ground fault is described. In series with both conductors of a power line are primary windings of a transformer connected in opposite phase relation. A secondary winding is energized by virtue of a predetermined reference current through one of the primary windings. A control circuit or the holding coil of a circuit breaker is energized from the secondary winding. The induced electromotive force due to reference current is canceled by ground fault leakage current which must flow through the out-of-phase primary winding effecting disconnection of the live conductor.

3,558,981
GROUND RELAY SYSTEM FOR MULTIPLE SUBSTATION PROTECTION

Stanley E. Zocholl, Holland, Pa., assignor to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware

Filed June 13, 1969, Ser. No. 832,978
Int. Cl. H02h 7/26
U.S. Cl. 317—18 9 Claims

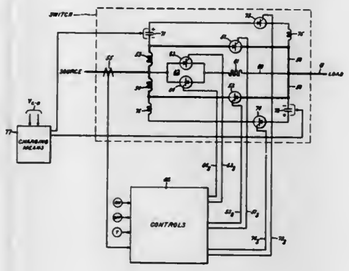


A ground relay system for multiple substation protection employing a plurality of current transformer sensors. In a three-phase electrical system, one such current transformer is connected to sense the current flow from ground to the common neutral conductor for the multiple sources employed and serves to trip a circuit breaker connecting these multiple sources in a summing relationship when a ground fault is indicated. At the same time, the remaining current transformers serve to sense the current flow in the neutral conductor of the system and relay circuits activated thereby are conditioned by the operation of the first such current transformer to trip the circuit breaker or breakers associated with that portion of the system in which a ground fault is present.

3,558,982
CURRENT LIMITING PROTECTIVE MEANS

Allan N. Greenwood, Media, Pa., assignor to General Electric Company, a corporation of New York

Filed May 29, 1968, Ser. No. 733,150
Int. Cl. H02h 3/08, 7/14
U.S. Cl. 317—20 12 Claims

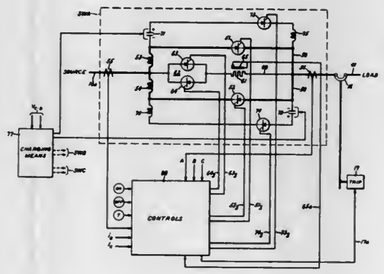


A high-speed AC electric power switch and current-limiting impedance combination suitable for interconnecting a static inverter and its load circuit is arranged to respond to an overload condition by inserting the impedance in series with the load so fast that the inverter can remain in service with its integrity unimpaired. The switch is also arranged to subsequently isolate the load circuit from the inverter in the event that the overload condition has not otherwise been relieved within a predetermined length of time.

3,558,983
CONTROLS FOR HIGH-CURRENT SOLID-STATE SWITCHES

Floyd L. Steen, Lansdowne, Pa., assignor to General Electric Company, a corporation of New York

Filed June 20, 1968, Ser. No. 738,611
Int. Cl. H02h 3/08, 7/14
U.S. Cl. 317—20 12 Claims

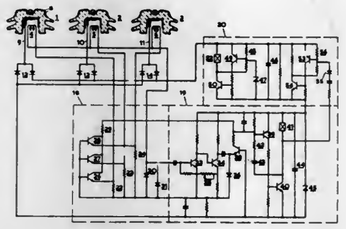


A solid-state AC switch (comprising inverse parallel thyristors) that "opens" in high-speed response to abnormally high currents is so controlled as to prevent automatic reclosing if (1) the overcurrent condition persists for longer than a predetermined length of time or (2) an appropriate opening command is received. For relatively high-current applications, inverse parallel sets of plural thyristors are used, and concurrent turn on of the thyristors of each set is promoted by jointly applying thereto composite firing signals comprising a component of relatively short duration and high magnitude superimposed on another component of long duration and relatively low magnitude.

3,558,984
A.C. SYSTEM FAULT INDICATOR

John Walter Freeman Smith, and Frederick Martin Gray, Stafford, England, assignors to The English Electric Company Limited, London, England, a British company

Filed May 22, 1968, Ser. No. 731,232
Claims priority, application Great Britain, May 23, 1967, 23842/67
Int. Cl. H02h 7/26, 3/16
U.S. Cl. 317—23 4 Claims

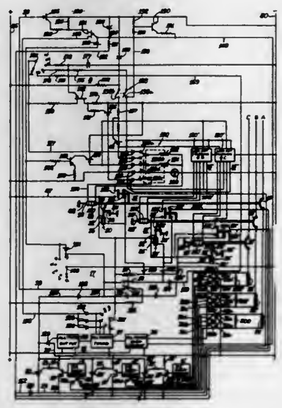


This invention relates to an AC system fault indicator, and more particularly relates to a fault indicator for overhead distribution lines, the fault indicator itself derives its electrical energy from the capacitive leakage currents through post insulators on which the line conductors are supported. A control circuit powered by this energy includes sensing coils mounted within the insulators and adjacent the conductors, the coils being operative to monitor the current through the line and an alarm circuit is provided which is operative in response to an abnormal value of the current indicative of a faulty system to effect an alarm function and to nullify this function in response to the restoration of current values indicative of a healthy system. The overhead line may be polyphase, the abnormal current being indicative of either an overload, or earth faults resulting in phase unbalance.

3,558,985
THREE PHASE REPEATING CIRCUIT INTERRUPTER HAVING CONTROL MEANS FOR INDIVIDUALLY INTERRUPTING EACH PHASE

Kenneth L. Krolski, Cudahy, and Michael J. Plichta, Milwaukee, Wis., assignors to McGrew-Edison Company, Elgin, Ill., a corporation of Delaware

Filed June 24, 1968, Ser. No. 739,294
Int. Cl. H02h 5/00
U.S. Cl. 317—24 24 Claims

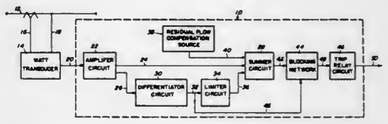


A three phase repeating circuit interrupter having an independently operable main switch means for each phase and a control means for separately opening and reclosing each switch means in response to an overcurrent condition in the phase associated with that switch means and without disturbing the closed condition of the other switch means. A separate overcurrent detecting circuit is provided for each phase and a common overcurrent detecting circuit and opening time delay circuit is provided for all phases. When an overcurrent condition is detected by one of the individual phase overcurrent detecting circuits and also by the common phase overcurrent detecting circuit, both circuits produce an output which causes opening of the main switch means in the faulted phase after a predetermined time delay provided by the opening time delay circuit. Common reclosing time delay means, closing means, sequencing means and reset means are provided for each phase. A faulted phase main switch is opened a predetermined number of times after a time delay provided by the common time delay means and reclosed a predetermined number of times after a time delay provided by the common reclose time delay means, the number of such opening and reclosing operations being determined by the common sequencing means. When the full sequence of a faulted phase is completed, its associated lockout means will lock a phase main switch means open while the other phase switch means continue closed. In the event that the fault on a phase clears before the full sequence is completed, the associated main means remains closed and the control circuit is reset after a predetermined time delay to its normal operating condition.

3,558,986
TIELINE SWING RELAY

Ferber R. Schleif, Denver, Colo., and Glenn E. Martin, Edgewater, Colo., assignors to the United States of America as represented by the Secretary of the Interior

Filed Dec. 2, 1968, Ser. No. 806,760
Int. Cl. H02h 3/28
U.S. Cl. 317—27 8 Claims



Power and rate of change of power transmitted in an electrical network are used to detect network instability. A power signal, a rate of power change signal, and a residual flow compensating signal are summed to indicate network condition. When a design maximum is exceeded a trip relay initiates sectionalization of the network. Selective response of the relay, to preclude operation by transients, is provided by limiting the rate signal, and by blocking the summation signal where design incorporated maxima are exceeded.

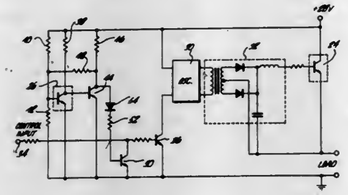
3,558,987
OVERHEATING PROTECTION CIRCUIT FOR A POWER TRANSISTOR

Edward E. Lewis, Hillsborough, Calif., assignor to Subscription Television, Inc., New York, N.Y., a corporation of Delaware, by mesne assignments

Filed Nov. 8, 1968, Ser. No. 774,346
Int. Cl. H02l 5/04
U.S. Cl. 317—33 1 Claim

There is described an arrangement in which a power transistor chip is mounted on the end of a mounting stud together with a control transistor chip. The change in the

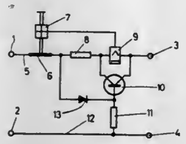
base-to-emitter voltage drop of the control transistor chip with increase in temperature is used to operate a control circuit for turning off the power transistor with any overheating of the power transistor and associated mounting stud.



3,558,988
PUSHBUTTON-OPERATED OVERLOAD CIRCUIT BREAKER

Jakob Ellenberger, Altdorf, near, Nurnberg, Germany, assignor to Ellenberger & Poensgen G.m.b.H., Altdorf near Nurnberg, a firm of Germany

Filed Apr. 23, 1969, Ser. No. 818,620
Int. Cl. H02h *3/10*
U.S. Cl. 317—33 **17 Claims**

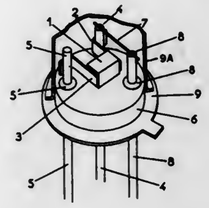


This invention relates to a pushbutton overload circuit breaker for protecting electrical components, such as semiconductor devices, which are sensitive to excess currents. In particular the invention provides a power transistor in parallel with a release device of the circuit breaker and electrical control means rendering the power transistor nonconductive when the input current exceeds a predetermined value. The electrical control means may include a control resistor and a semiconductor device connected to the base of the power transistor. In normal use of the circuit breaker a major portion of the input current will flow through the power transistor with a minor portion flowing through release device. However, when the input current exceeds the predetermined value the electrical control means will render the power transistor inoperative thus allowing all the input current to flow through the release device which trips the circuit breaker.

3,558,989
SEMICONDUCTOR PROTECTIVE DEVICE

Guy Dameme, and Gerard Fourichon, Paris, France, assignors to Societe Lignes Telegraphiques Et Telephoniques, Paris, France, a joint-stock company of France

Filed Feb. 5, 1968, Ser. No. 703,093
Claims priority, application France, Mar. 24, 1967, 100,140
Int. Cl. H02w *5/04;* **H01l** *85/00*
U.S. Cl. 317—41 **4 Claims**

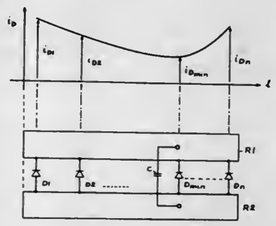


A fast acting circuit protection device includes a calibrated wire connected in series with a bar of semiconductive material and both components are housed in a vacuum tight casing filled with a controlled atmosphere. The semiconductor which may be silicon or gallium arsenide has a resistivity versus temperature characteristic which is substantially an inverted V-shape in the range from about 0 to 350° C.

3,558,990
ARRANGEMENT FOR PROTECTING SEMICONDUCTOR DEVICES CONNECTED IN PARALLEL FROM HOLE-STORAGE VOLTAGE SURGES

Hans Jurg Bossi, Nussbaumen, Switzerland, assignor to Aktiengesellschaft Brown Boveri & Cie, Baden, Switzerland, a joint stock company

Filed Feb. 26, 1968, Ser. No. 708,368
Claims priority, application Germany, Aug. 17, 1967, A56524
Int. Cl. H02h *3/18*
U.S. Cl. 317—43 **3 Claims**

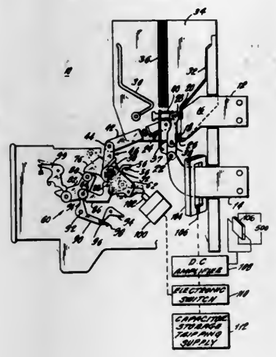


In a circuit arrangement wherein a plurality of semiconductor devices such as diodes and thyristors are electrically connected in parallel to divide the load between them, a single capacitor unit provides protection against hole-storage voltage surges and is located at, and connected in parallel with, that particular one of the semiconductor devices where the current distribution between the devices in the forward direction has its lowest value.

3,558,991
CIRCUIT BREAKER WITH HIGH SPEED TRIPPING SYSTEM

Thomas P. Brandt, Jr., Swarthmore, and Frank J. Pokorny, Hatboro, Pa., assignors to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware

Filed Aug. 30, 1968, Ser. No. 756,479
Int. Cl. H02h *1/00;* **H01h** *77/00*
U.S. Cl. 317—58 **5 Claims**

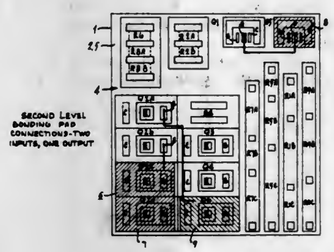


A high speed tripping system for a circuit breaker particularly useful for current limiting applications during a short circuit interruption. The tripping system includes an electronic sensing subsystem which rapidly senses the occurrence of short circuit faults and energizes an impulse coil in response thereto which in turn rotates a break-away latch to permit the movable contact arm of the breaker to rapidly rotate to its open circuit position free of the relatively high mass restraining and/or closing mechanism normally associated therewith.

3,558,992
INTEGRATED CIRCUIT HAVING BONDING PADS OVER UNUSED ACTIVE AREA COMPONENTS

Robert C. Heuner, Bound Brook, and Julius Litus, Jr., Trenton, N.J., assignors to RCA Corporation, a corporation of Delaware

Filed June 17, 1968, Ser. No. 737,760
Int. Cl. H01l *19/00*
U.S. Cl. 317—101 **3 Claims**

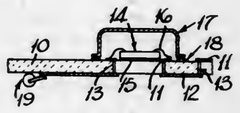


An integrated circuit having a fixed number of active and passive semiconductor elements formed in a substrate. The elements may be interconnected to provide various circuit functions, such that one or more elements are not utilized in each different interconnection arrangement. The area over the elements not utilized is employed to provide bonding pads or crossover connections, thus saving area on the substrate surface.

3,558,993
ELECTRICAL COMPONENT ASSEMBLIES WITH IMPROVED PRINTED CIRCUIT CONSTRUCTION

Ronald William Rigby, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Aug. 27, 1968, Ser. No. 755,691
Claims priority, application Great Britain, Sept. 1, 1967, 40,090/67
Int. Cl. H05k *1/04*
U.S. Cl. 317—101 **3 Claims**

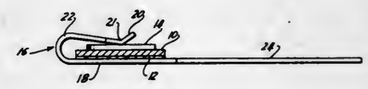


An electrical component assembly comprising a tile having circuits on both sides, a slide mounted on the tile and enclosed within a cover secured to the tile, connection between the circuits at opposite sides of the tile being made through drillings and the cover being secured to the tile at a region which is clear of circuits.

3,558,994
ELECTRICAL COMPONENT SUPPORTING STRUCTURE WITH IMPROVED MOUNTING AND ELECTRICAL CONNECTOR MEANS

Bernard Bernstein, Brooklyn, N.Y., assignor to General Instrument Corporation, Newark, N.J., a corporation of Delaware

Filed Apr. 3, 1969, Ser. No. 813,106
Int. Cl. H02b *1/04*
U.S. Cl. 317—101 **19 Claims**



A plurality of electrical units are mounted on a conductive surface of an elongated support, another surface of said support being non-conductive. The units are held in position by a plurality of individual resilient conductor members. Each conductor member has one arm engaging and urging a unit against the conductive surface, and another arm extending toward the insulated surface of the support. A lead section extends beyond the support from each conductor member. Electrical connection to the support is made by a similar conductor member which engages the conductive surface of the support at a location where no unit is mounted.

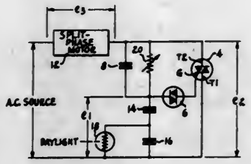
3,558,995
BIDIRECTIONAL THYRISTOR SWITCHING ON-OFF CONTROL SYSTEMS FOR AN INDUCTIVE LOAD

Merle R. Swinehart, Brookfield, Wis., assignor to Cutler-Hammer, Inc., Milwaukee, Wis., a corporation of Delaware

Filed Aug. 24, 1967, Ser. No. 663,069
Int. Cl. H01h *47/32*
U.S. Cl. 317—130 **3 Claims**

An "on-off" control system which responds to discrete, presettable value of a gradually varying condition such

as temperature, light, humidity, manually or automatically variable resistor, etc., to energize or deenergize an inductive load. By interchanging the resistance and capacitance devices from their normal positions in the firing

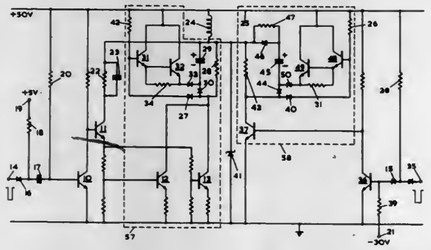


control circuit of a solid state gating type power control element of the full-wave switching type such as a "Quadrac" or "Triac," the power will be switched either on or off, at least for inductive loads, as a function of the value of the resistance.

3,558,996
SOLENOID AND ELECTRONIC DELAY CIRCUIT
Irving L. Mitchell, Rockville Centre, and Julius Lewis, Oceanside, N.Y., assignors to Ebert Electronics Corp., Floral Park, N.Y., a corporation of New York
Filed Feb. 3, 1969, Ser. No. 796,011
Int. Cl. H01h *45/00*; H05k *5/02*
U.S. Cl. 317—123 **5 Claims**

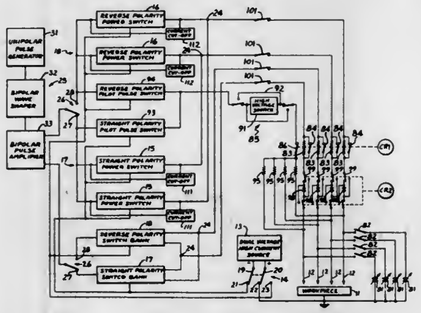
A solenoid having secured thereto an electronic delay circuit. The delay circuit is mounted on a circuit board which is supported by plastic rivets integral with a sealed container, which in turn is secured by a threaded hollow nipple to a U-shaped bracket attached at its base to the solenoid. A closure for the legs of the bracket then completes an enclosure for leads outgoing from the solenoid and circuit board.

3,558,997
ELECTRIC CONTROL CIRCUITS FOR ELECTROMAGNETIC DEVICES
Roman Derc, Stoke-on-Trent, England, assignor to English Electric Computers Limited, London, England, a British company
Filed Sept. 23, 1968, Ser. No. 761,581
Claims priority, application Great Britain, Sept. 21, 1967, 42,943/67
Int. Cl. H01h *47/32*; G05f *1/40*
U.S. Cl. 317—148.5 **6 Claims**



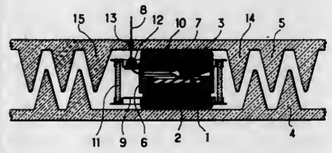
An electric control circuit for an electromagnetic device such as a clutch or a brake includes a first means for energising the coil of the device to operate the device and a second means for subsequently providing a reverse current flow through the coil whereby rapidly to reduce the energisation of the coil. The first means includes an energising circuit for the coil having a capacitor and a first controlled impedance device which is operable by a control signal to energise the coil and charge the capacitor. The second means includes a discharge circuit for the capacitor and comprises the coil and a second controlled impedance device which operates only when the first controlled impedance device is rendered inoperative. When it is required to reduce the energisation of the coil, the first controlled impedance device is rendered inoperative whereupon the second controlled impedance device automatically operates to discharge the capacitor through the coil to provide the reverse current flow therethrough.

3,558,998
REVERSIBLE POLARITY UNIVERSAL ELECTRICAL DISCHARGE MACHINING POWER SUPPLY WITH CURRENT CUT-OFF
Robert B. Bertolasi, Rockford, Ill., assignor, by mesne assignments, to Amsted Industries, Incorporated, Chicago, Ill., a corporation of Delaware
Filed May 7, 1968, Ser. No. 727,199
Int. Cl. H05b *37/00*
U.S. Cl. 315—227 **58 Claims**



A reversible polarity electrical discharge machining power supply which is selectively operable in a capacitor discharge-type or a pulse-type mode for providing machining discharges through one or more ionizable gaps each of which is defined between a respective electrode and a workpiece. For each of the electrodes there is a pair of oppositely polarized power switches to intermittently provide current flow between the electrode and a power source, and for each of the power switches there is a current cut-off circuit to interrupt an excessive current flow therethrough without affecting the operation of the other power switches.

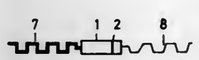
3,558,999
CAPSULE FOR A SEMICONDUCTOR COMPONENT
Rene Palies, Bagneux, France, assignor to Compagnie General d'Electricite, Paris, France, a French corporation
Filed Feb. 14, 1968, Ser. No. 705,500
Claims priority, application France, Feb. 17, 1967, 95,510
Int. Cl. H01l *1/14*
U.S. Cl. 317—234 **5 Claims**



Flat housing for a semiconductor device, constituted by a cylindrical wall enclosed by two collars surrounding the

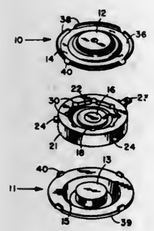
semiconductor, at least one of said collars bearing a through terminal for a wire connected to an auxiliary electrode of said semiconductor, said housing being disposed eccentrically with respect to the semiconductor device.

3,559,000
VARACTOR DIODE
Hans Keller, Freiburg, Germany, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed May 10, 1968, Ser. No. 728,145
Claims priority, application Germany, May 23, 1967, D 53,145
Int. Cl. H01l *1/14*
U.S. Cl. 317—234 **11 Claims**



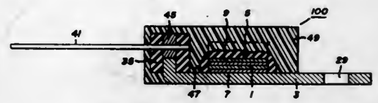
This is an invention of a varactor diode having two lead in conductors which have different geometrical shapes. These lead in conductors determine the inductance of device and hence the resonant frequency. Thus by actually shifting the diode with respect to the conductors the resonant frequency may be varied.

3,559,001
SEMICONDUCTOR HOUSING ASSEMBLY
David E. Cooper and Alvin M. Smith, Scottsdale, Ariz., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Aug. 21, 1968, Ser. No. 754,204
Int. Cl. H01l *1/12, 1/14*
U.S. Cl. 317—234 **7 Claims**



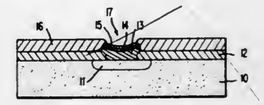
A large area junction rectifier die is supported on an annular shelf of a carrier formed of electrically insulating plastic molded material. Encased in the molded material is a ring type electrode having an outwardly extending terminal for exterior connection. A wire connects the gate electrode of an SCR to the ring type electrode. A pair of opposed flexible electrodes are pressure contactable with opposing sides of the semiconductor die and are firmly held against the carrier shelf by a unitary plastic molded ring which compresses an outward portion of the flexible contacts against the carrier. A pair of electrical contacts extending radially outward of the ring respectively contact the flexible electrodes such that axial and peripheral electrical connections can be made to each opposing side of the semiconductor die. The carrier is useful for testing the die before the assembly is completed. The carrier permits plastic encapsulation in an annular molding die such that no pressure is exerted on the semiconductor die.

3,559,002
SEMICONDUCTOR DEVICE WITH MULTIPLE SHOCK ABSORBING AND PASSIVATION LAYERS
Peter Felock, Syracuse, N.Y., assignor to General Electric Company, a corporation of New York
Filed Dec. 9, 1968, Ser. No. 782,083
Int. Cl. H01l *1/08, 1/10*
U.S. Cl. 317—234 **10 Claims**



In a rectifier a silicon crystal containing a junction is provided with a beveled periphery having a glass layer thereon which exhibits a thermal expansion differential with respect to the semiconductive crystal of less than 5×10^{-6}, a dielectric strength of at least 100 volts/mil, and an insulative resistance of at least 10^{10} ohm-cm. Silicone rubber overlies the glass layer acting as a shock protection shield and as a supplementary passivation layer. The silicone rubber exhibits a dielectric strength of at least 100 volts/mil and an insulation resistance of at least 10^{10} ohm-cm. Electrical contact to the silicon crystal is provided through a solder layer having a modulus of elasticity of less than 1.1×10^{7}.

3,559,003
UNIVERSAL METALLURGY FOR SEMICONDUCTOR MATERIALS
Pierre L. Beaudouin, Reinhard Glang, and Jacob Riseman, Poughkeepsie, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Jan. 3, 1969, Ser. No. 788,822
Int. Cl. H01l *1/14, 5/02*
U.S. Cl. 317—234 **12 Claims**

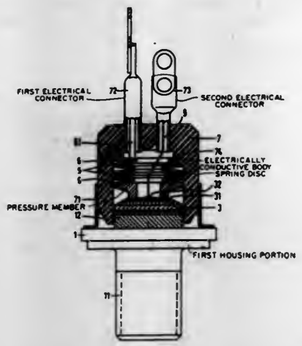


The process for making, and the structure of, an interconnection and resistor network upon a semiconductor surface. This network includes ohmic contacts to the semiconductor which comprise the combination of a Cr-SiO cermet material having a copper conductor thereon. This combination of materials is also utilized for interconnections between ohmic contacts. Where a resistor is desired along an interconnection line, the copper conductor is removed, causing the current, when an electric field is applied, to pass through the cermet material which now functions as a resistor.

3,559,004
CONNECTOR STRUCTURE FOR HOUSING OF PRESSURE-BIASED SEMICONDUCTOR DEVICE
Harry Rambeau and Fritz Kirschner, Munich, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany
Filed Jan. 28, 1969, Ser. No. 794,698
Claims priority, application Germany, Feb. 8, 1968, 1,639,402
Int. Cl. H01l *1/14*
U.S. Cl. 317—234 **10 Claims**

First and second electrical connectors pass through the housing of a semiconductor device in a gas-tight manner and are electrically insulated from the housing and from

each other. The first connector is in electrical contact with an electrically conductive body and with a first contact electrode of the semiconductor device via the con-

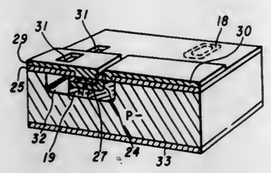


ductive body, a plurality of spring discs and a pressure member. The second connector is in electrical contact with the control electrode of the semiconductor device.

3,559,005
INTEGRATED PLANAR VARACTOR DIODE

George D. Vendelin, Richardson, and Roger R. Webster, Dallas, Tex., assignors to Texas Instruments Incorporated, Dallas, Tex., a corporation of Delaware

Continuation of application Ser. No. 589,003, Oct. 24, 1966. This application Mar. 7, 1969, Ser. No. 806,046
Int. Cl. H01l 5/00
U.S. Cl. 317—234 6 Claims



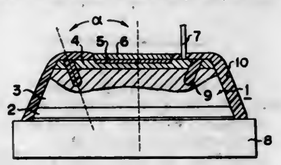
Disclosed in a planar varactor diode and a method of producing the same for integrated applications, especially at high frequencies. This diode has low leakage currents, improve reverse bias characteristics, and reduced junction and MOS capacitance. The low leakage currents are obtained by minimizing the surface perimeter of the device, the low junction capacitance is attained by reducing the junction area of the two active regions and the reduced MOS capacitance is achieved by forming a cavity beneath the contact of the anode region or by offsetting the anode region underneath the anode contact.

3,559,006
SEMICONDUCTOR DEVICE WITH AN INCLINED INWARDLY EXTENDING GROOVE

Michio Otsuka, Tokyo, and Hisayoshi Muramatsu, Kawasaki-shi, Japan, assignors to Tokyo Shibaura Electric Co., Ltd., Kawasaki-shi, Japan, a Japanese corporation

Filed Nov. 14, 1968, Ser. No. 775,827
Claims priority, application Japan, Apr. 11, 1968, 43/23,680
Int. Cl. H01l 11/10
U.S. Cl. 317—235 8 Claims

A semiconductor device having a high resistivity layer and a low resistivity layer formed on one side of said high resistivity layer, with a PN junction defined therebetween, wherein there is formed a surrounding groove extending from the low resistivity layer to the high

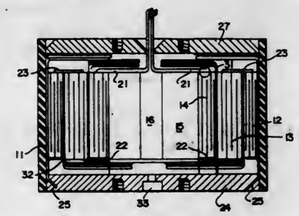


resistivity layer in a manner to incline inwardly toward the central axis of the semiconductor apparatus, with the bottom of said groove disposed in the high resistivity layer.

3,559,007
CAPACITOR WITH LOWER INDUCTANCE PER UNIT VOLUME

Edward Blank, Sharon, Mass., assignor to Tobe Deutschmann Laboratories, Inc., Canton, Mass., a corporation of Massachusetts

Filed Mar. 18, 1968, Ser. No. 713,696
Int. Cl. H01g 1/14, 3/17
U.S. Cl. 317—260 14 Claims

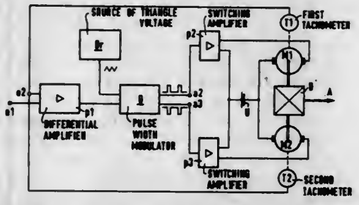


A number of contiguous capacitor windings inside an enclosing casing are connected in series between a pair of terminals.

3,559,008
VOLTAGE PROPORTIONAL SPEED CONTROL OF THE OUTPUT OF A DIFFERENTIAL GEAR CONNECTED TO TWO MOTORS UTILIZING A PULSE WIDTH MODULATOR CONTROL

Hans Stut, Lochheim, near Munich, and Reimer Emeis, Ebermannstadt, Germany, assignors to Siemens Aktiengesellschaft, a corporation of Germany

Filed June 7, 1968, Ser. No. 735,228
Claims priority, application Germany, June 9, 1967, S 110,253
Int. Cl. H02p 7/68
U.S. Cl. 318—8 5 Claims

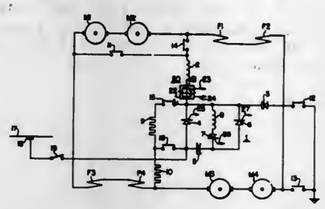


A pair of DC motors are coupled to a shaft via a differential drive. One of the motors is energized via a first motor energizing circuit which includes a first switch. The other of the motors is energized via a second motor energizing circuit which includes a second switch. Control circuitry connected to the first and second switches controls their condition in accordance with a control voltage provided by the control circuitry.

3,559,009
D.C. MOTOR CONTROL SYSTEM WHICH COMPARES THE MOTOR CURRENT WITH A REFERENCE TO CONTROL THE MOTOR SPEED

John M. Mills, Pittsburgh, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania

Filed Mar. 6, 1968, Ser. No. 711,109
Int. Cl. H02p 7/68
U.S. Cl. 318—95 8 Claims

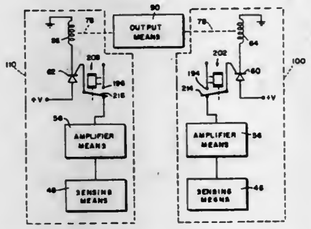


A control system for traction motors for rapid transit cars. The system includes a direct current chopper utilizing thyristors for connecting the motors to the power source and means for turning the chopper on and off as required to maintain a desired average motor current. Pulse generators provide gate pulses for the thyristors to turn the chopper on and off and the pulse generators are actuated by a control circuit which compares the motor current with a signal representing the desired motor current. The control circuit also includes means for maintaining a predetermined ripple in the motor current.

3,559,010
MEANS FOR PREVENTING CROSS-TALK EFFECTS IN A TWO-CHANNEL SYSTEM

Earl W. Springer, Box 220, Fairland, Ind. 46126

Filed Apr. 21, 1969, Ser. No. 818,012
Int. Cl. G05f 1/00
U.S. Cl. 318—110 8 Claims

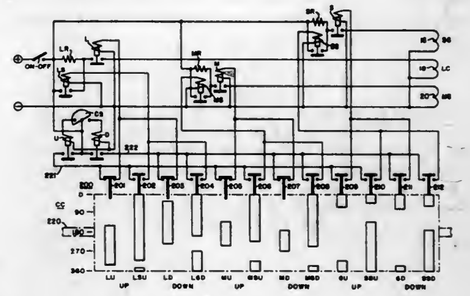


A system comprising an output means and circuit means for operating the output means, the circuit means including one network or channel for driving the output means in one direction and a second network or channel for driving the output means in the opposite direction. The one network includes a first amplifier means arranged to oscillate at a first predetermined frequency and the second network includes a second amplifier means arranged to oscillate at a second and significantly different predetermined frequency, whereby the likelihood that spurious signals developed by operation of one of said networks will cause operation of the other of said networks is substantially eliminated. Preferably, each amplifier means is a pulse-type oscillator, the output of which is controlled by an input signal charging a control capacitor to a predetermined voltage level. In one amplifier means, this capacitor provides one capacitance and, in the other amplifier means, this capacitor provides another and significantly different capacitance.

3,559,011
CONTROL SYSTEM FOR A LINEAR MOTION DEVICE

Robert F. Edwards, Murrysville, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennnsylvania

Filed Sept. 5, 1969, Ser. No. 855,595
Int. Cl. H02k 41/02
U.S. Cl. 318—135 9 Claims

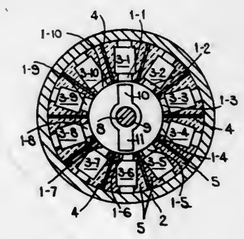


The speed of operation of a linear motion device of the magnetic jack type is increased by reducing the mechanical dropout time of the operating magnets of the device after deenergization of the operating coils of the magnets. Circuit components are utilized to apply, in the normal sequence, full voltage to each coil circuit long enough to produce the required mechanical action, then to reduce the voltage, and hence the current and the strength of the magnetic field, to some value not less than that required to hold the device mechanically in the required position. The coil circuit is then opened to initiate the mechanical dropout of the magnet and complete the cycle.

3,559,012
STEP MOTION PRODUCING APPARATUS

Barrier Andrew Gillies, Crowthorne, and Adrian John Bolton, Bengeo, England, assignors to International Computers Limited, London, England, a British company

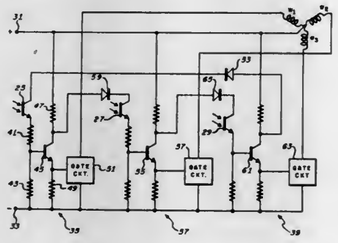
Filed Oct. 15, 1968, Ser. No. 767,686
Claims priority, application Great Britain, Oct. 19, 1967, 47,551/67
Int. Cl. H02k 37/00
U.S. Cl. 318—138 5 Claims



A stepping motor has an even number of stator poles and a two pole rotor. A shift register energizes stator pole windings, each stage of the register being connected to a pair of diametrically opposed stator pole coils. The register is pre-set to produce a stator magnetic field pattern and upon receipt of shift signals, the pattern is stepped around the stator. The stator field pattern is such that the rotor is attracted to a particular pole while poles adjacent to the particular pole and on either side thereof produce

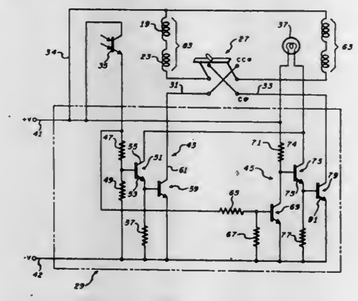
repulsive fields aiding in retaining the rotor in alignment with the particular pole. A shift signal steps the stator field pattern such that the adjacent pole in the direction of rotation produces an attractive field tending to align the rotor therewith while the particular pole and other adjacent pole produce repulsive forces also tending to step the rotor by increasing the torque applied to the rotor. The stator is produced by building a stack of star-shaped laminations, assembling the stack with coils on each leg into a cylindrical case, setting the whole in potting compound and boring out the centre of the laminations to leave independent poles.

3,559,013
COMMUTATION OVERLAP CONTROL FOR BRUSHLESS D.C. MOTOR
Ray R. Burch and William M. Casaday, Charlottesville, Va., assignors to Sperry Rand Corporation, a corporation of Delaware
Filed July 23, 1969, Ser. No. 844,126
Int. Cl. H02k *29/00*
U.S. Cl. 318—138 **9 Claims**



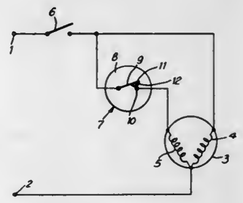
An improved steering circuit for an optically commutated brushless D.C. motor of the type in which a plurality of optical sensors are arranged so as to be sequentially illuminated as the rotor rotates. The steering circuit contains an individual switching stage for energizing each stator winding in response to the output of a given one of the optical sensors. Each sensor is coupled to the input of one swtiching stage but energized through a coupling network from an adjacent stage.

3,559,014
SINGLE SENSOR BRUSHLESS D.C. MOTOR
Rodney G. Rakes, Charlottesville, Va., assignor to Sperry Rand Corporation, a corporation of Delaware
Filed Aug. 13, 1969, Ser. No. 849,850
Int. Cl. H02k *21/08;* **H02p** *1/18*
U.S. Cl. 318—138 **8 Claims**



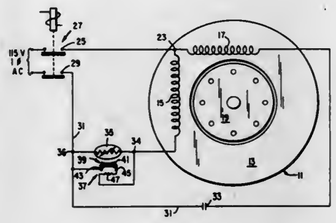
A brushless D.C. motor contains a pair of diametrically opposed stator windings and a permanent magnet rotor rotatable therebetween. A shutter mounted on the rotor shaft, interrupts the passage of light between a source and the sensor during alternate half cycles of the rotor revolution. A steering circuit directs current flow to one stator winding when the sensor is illuminated and to the other stator winding when the sensor is dark. Amplifying means in the steering circuit are electrically energized through the light source.

3,559,015
THERMIC STARTING DEVICE
Holger V. Vind, Nordborg, Denmark, assignor to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Continuation of application Ser. No. 562,168, July 1, 1966. This application Apr. 7, 1969, Ser. No. 814,211
Int. Cl. H02p *1/44*
U.S. Cl. 318—221 **2 Claims**



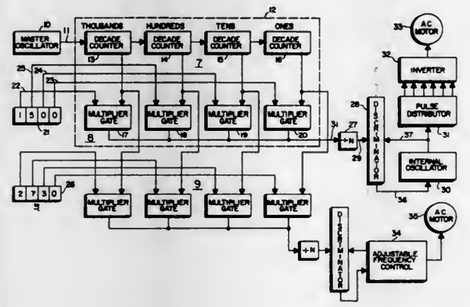
A single-phase motor having a main winding and a starting winding in a split-phase configuration. A bimetallic switch normally closed when the motor is deenergized. Gaseous heating means encloses the switch contacts and heats a movable contact of the switch when it has opened thereby keeping the switch opened so that the starting winding, in series with the switch, is maintained in an open condition so the starting winding is deenergized. The gaseous heating means is constructed as a flow discharge device.

3,559,016
PERMANENT SPLIT CAPACITOR MOTOR HAVING STARTING CURRENT CONTROL
Karl M. Gerteis, Cazenovia, N.Y., assignor to Carrier Corporation, Syracuse, N.Y., a corporation of Delaware
Continuation of application Ser. No. 686,653, Nov. 29, 1967. This application July 17, 1969, Ser. No. 849,232
Int. Cl. H02p *1/44*
U.S. Cl. 318—221 **4 Claims**



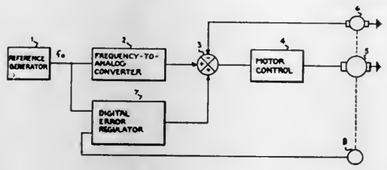
A permanent split capacitor motor is provided with a circuit having a capacitor to the auxiliary winding. The circuit to the main winding includes a current limiting negative thermistor and bypass means for the thermistor. The bypass means includes a bimetal switch which is quickly closed when subject to the thermistor heat which results as the motor approaches full starting speed. A small resistance in series with the bimetal switch keeps the switch closed.

3,559,017
PULSE SYNCHRONIZING MOTOR CONTROL
Edward H. Dinger, Waynesboro, Va., assignor to General Electric Company, a corporation of New York
Filed July 2, 1968, Ser. No. 742,004
Int. Cl. H02p *5/06*
U.S. Cl. 318—314 **31 Claims**



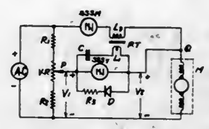
There is described a motor control system in which a master source of pulses is compared for repetition rate and phase equality with a pulse train establishing the motor speed. The system is a direct ratio system in that the exact number of master pulses capable of producing the desired motor speed is selected for comparison with the pulse train establishing the motor speed. Because the pulse selection process results in an uneven pulse train, a regularizing circuit is employed to present substantially evenly spaced master pulses to the comparison circuit. The pulse comparison circuit is a digital discriminator producing a time modulated pulse output for substantially equal repetition rate pulse trains and a direct voltage output indicative of which pulse train has the higher repetition rate when the repetition rates of the pulse trains differ.

3,559,018
TWO-LOOP CONTROL SYSTEM
Joseph A. Fournier, Erie, Pa., assignor to General Electric Company, a corporation of New York
Filed Sept. 6, 1968, Ser. No. 757,847
Int. Cl. H02p *5/06*
U.S. Cl. 318—314 **8 Claims**



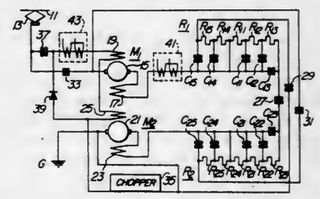
A motor is accurately controlled without system instability by providing a motor control system having two control loops, a main analog loop which is operative throughout the entire range of operation of the motor, and a second vernier loop, of the digital type, which operates over a limited range of the system to compensate for inaccuracies and drift in the main analog loop.

3,559,019
SPEED CONTROL SYSTEM OF A MOTOR AND A CIRCUIT THEREFOR
Kenzi Kato, Tokyo, Japan, assignor to Janome Sewing Machine Co., Ltd., Tokyo, Japan
Filed Apr. 12, 1967, Ser. No. 630,458
Claims priority, application Japan, Mar. 27, 1967, 42/18,606
Int. Cl. H02p *5/06*
U.S. Cl. 318—331 **6 Claims**



The invention relates to systems for controlling the speed of a motor and circuits therefor employing symmetrical semiconductor switching elements and more particularly to the circuits of relatively simple constitution in which the input terminal voltage of the motor is subject to a spaced wave control at the time of low speed thereof so as heighten the low speed control of a load having a fluctuating torque characteristic such as a sewing machine and the voltage is made to instantly respond to variations in the load of the motor, and the motor is automatically maintained at a set speed. For this purpose, there is provided a control circuit which is adapted to control the conduction phase of a symmetrical semiconductor switching element for a main circuit by means of a symmetrical semiconductor switching for ignition through a pulse transformer. In this control circuit, a voltage dividing circuit having a variable resistor is provided in parallel to the main circuit and an ignition circuit including the switching elements is connected between the wiper of the variable resistor, the pulse transformer and the motor so that the differential voltage between the set voltage dividing circuit and the speed starting voltage of the motor is applied to the switching element for ignition, and further a diode is connected in the forward direction to the voltage dividing circuit from between the pulse transformer and the motor so that the voltage applied to the terminals of the switching element for ignition becomes positively and negatively asymmetrical to make the switching function of the switching element perform only in one direction.

3,559,020
ELECTRIC MOTOR CONTROLLER DEVICE FOR ACCELERATION AND DECELERATION
Fujimaro Imaizumi, Tsutomu Ozawa, and Takasi Tsubol, Katsuta-shi, Japan, assignors to Hitachi, Ltd., Tokyo, Japan, a corporation of Japan
Filed Aug. 8, 1969, Ser. No. 848,551
Claims priority, application Japan, Aug. 9, 1968, 43/56,134
Int. Cl. H02p *1/20*
U.S. Cl. 318—405 **6 Claims**



A motor controller device comprising a motor, impedance means for controlling the armature current of said

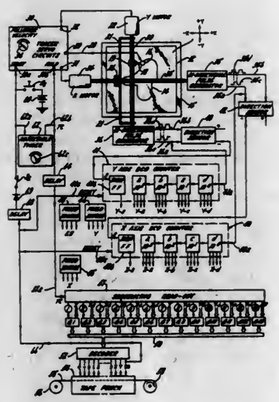
motor, a plurality of contactor means sequentially closed to short-circuit said impedance means at each desired section thereof, field control means for controlling the field condition of said motor, and control means for operating after a predetermined number of said contactor means are closed, said field control means when each of the remaining contactor means is closed.

3,559,021

METHOD AND APPARATUS FOR TRACING PATTERNS TO DEVELOP MULTIAXES NUMERICAL PROGRAMS FOR SERVO CONTROLLED MACHINE TOOLS

Darwin H. Bingham, Jr., Rockford, Ill., assignor to Ekstrom, Carlson & Co., Rockford, Ill., a corporation of Illinois

Filed Feb. 9, 1967, Ser. No. 614,943
Int. Cl. G05b *19/42, 19/24*
U.S. Cl. 318—568 **16 Claims**



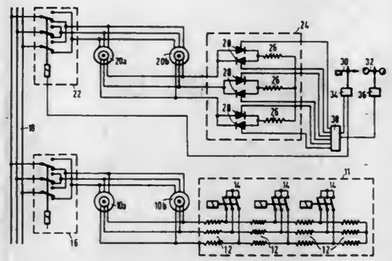
The motions of a movable element, such as the cutter of a machine tool, along a desired arbitrary and contoured path are produced by tracing a facsimile or line drawing of the path with an instrument and measuring the latter's displacements along orthogonal axes to create successive blocks of numerical information each designating commanded displacements of the element along X and Y axes. The successive blocks of numerical data are then used in a process of simultaneous linear interpolation along X and Y axes to cause the movable element to execute the desired path. The blocks of data contain no feed rate or velocity-designating information. But the feed rate of the element along the path is controlled by (a) causing the X and Y displacements for successive blocks of information during the tracing step to correspond to selectable but equal composite distance increments ΔD along the facsimile line, and (b) causing the X and Y commands in a block of data to be executed during equal successive time intervals. The velocity of the element along the path is thus always proportional to the composite tracing increment ΔD and is controlled by selecting different values for that incrment. In those situations when the chosen increment ΔD would result in attempts to drive the movable element along X or Y axis at a velocity greater than the obtainable, the time intervals for execution of a block of data are lengthened so that motions of the element take place with the maximum velocity along one of the axes.

3,559,022

AUXILIARY DRIVE ARRANGEMENT FOR VEHICLES OPERATING UNDER WIND PRESSURE

Hans Tax, 3 Potsdamer Strasse, 8 Munich 23, Germany

Filed Feb. 1, 1968, Ser. No. 702,344
Claims priority, application Germany, Feb. 6, 1967, T 33,153
Int. Cl. H02p *7/28*
U.S. Cl. 318—436 **7 Claims**



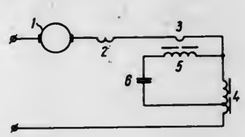
Auxiliary traction force is exerted on a traveling crane in a direction to oppose wind pressure by a reversible electric induction motor having a wound rotor and a variable resistance arrangement in circuit with the rotor windings. A vane and an anemometer are connected by transducers to the multiplier register of a computer which controls the resistance in the rotor circuit in proportion to the vector of the wind velocity in the path of the crane travel. The motor rotates in a direction determined by that of the vector, whereby the effects of wind pressure on the rate of crane travel against the wind or with the wind may be compensated for.

3,559,023

DEVICE FOR IMPROVING COMMUTATION OF DIRECT CURRENT ELECTRIC MACHINES

Sergei Petrovich Kalinichenko, Ulitsa Kosiora 6, kv. 35, Kharkov, U.S.S.R.

Filed Aug. 30, 1968, Ser. No. 756,573
Int. Cl. H01r *39/46*
U.S. Cl. 318—439 **3 Claims**



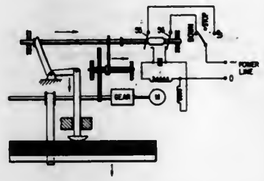
A D.C. motor has auxiliary poles supplied with rectified current and an inductive resistance is connected in series with the armature circuit of the motor. An auxiliary winding is arranged on the cores of the auxiliary poles and is connected in parallel with the inductive resistance and is connected accordantly with the winding of the auxiliary poles. An electrical capacitance is connected in series with the auxiliary winding to improve commutation of the motor. A pure resistance may be connected in series with the capacitance and an additional auxiliary winding on the cores of the poles may be connected in parallel with the inductive resistance and accordantly with the other auxiliary winding.

3,559,024

MOTOR REVERSING AND STOPPING AT LIMIT OF TRAVEL AND NUMBER OF REVOLUTIONS

Herbert Marder, Lenzkirch, Germany, assignor to Dunkermotoren Prazisions-Kleinstmotoren-Gesellschaft m.b.H., Bonndorf, Black Forest, Germany

Continuation-in-part of application Ser. No. 515,638, Dec. 22, 1965. This application Apr. 4, 1969, Ser. No. 813,624
Int. Cl. H02p *3/02*
U.S. Cl. 318—467 **5 Claims**



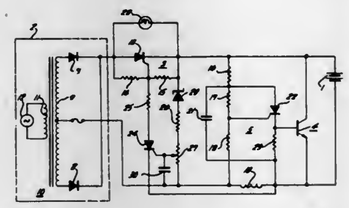
This electromotive drive is suitable for mounting at the top of a window to provide power for automatic raising and lowering of a Venetian blind. The transmission of the drive rotates a screw on which is mounted a nut. This nut operates a switching rod to shut off an electric motor when the nut has reached either end of its range of travel. Linkage means are also supplied externally protruding from the housing of the drive. Should the Venetian blind be raised before the nut shuts off the motor, the rail of the blind forces its slats against the linkage means which in turn operates the switching rod to shut off the motor earlier than would be achieved by the nut.

3,559,025

RAPID CHARGING OF BATTERIES

Wilford B. Burkett, Palisades, and John Bigbee III, Los Angeles, Calif., assignors, by mesne assignments, to McCulloch Corporation, Los Angeles, Calif., a corporation of Wisconsin

Continuation-in-part of applications Ser. No. 612,995, Jan. 31, 1967, and Ser. No. 726,060, May 2, 1968. This application July 15, 1968, Ser. No. 744,902
Int. Cl. H02j *7/10*
U.S. Cl. 320—14 **18 Claims**



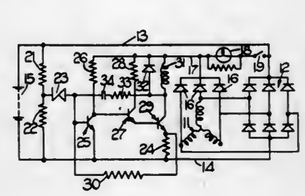
A battery is charged in a very short period of time, for example less than fifteen minutes, by applying a charging current that is in excess of the nominal one-hour rate of the battery with discharge pulses sandwiched between charge pulses, with or without a rest period between the end of the charge pulse and the beginning of a discharge pulse and the end of the discharge pulse and the beginning of a charge pulse. The discharge pulse has a peak value in excess of the nominal one-hour rate of the battery and the pulse has a short period, for example one to four microseconds, which time may be related to the time associated with the electrochemical characteristics and construction of the cell or cells of the battery being charged. The frequency of the interruptions is increased as the terminal voltage and charge of the battery increases. The charging at the high rate is terminated or converted to a trickle charge when the terminal voltage of the battery exceeds a selected voltage level associated with the desired level of charge in the battery. The disclosure relates to both the method of rapid charge and apparatus for rapid charging.

3,559,026

VOLTAGE REGULATOR UTILIZING A NEGATIVE FEEDBACK FOR STABILIZING VOLTAGE OVER A DEFINED BAND

Roger William Nolan, Redditch, Lancelot Phoenix, Birmingham, David Wiley, Walsall, and Malcolm Williams, Solihull, England, assignors to Joseph Lucas (Industries) Limited, Birmingham, England

Filed Feb. 6, 1968, Ser. No. 703,449
Claims priority, application Great Britain, Feb. 14, 1967, 7,010/67; May 10, 1967, 21,746/67
Int. Cl. H02j *7/14*
U.S. Cl. 320—39 **5 Claims**



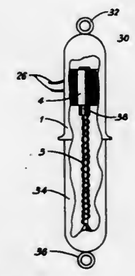
In a voltage regulator of the kind including a power transistor in series with the field winding of a generator, and a control transistor sensitive to battery voltage for determining the current flow through the control transistor, negative feedback is provided from the power transistor to control transistor to stabilise the overall gain of the regulator, so overcoming problems experienced on installation of the regulator in vehicles.

3,559,027

ELECTRIC SHOCK ABSORBER

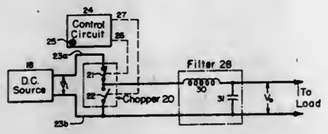
Harold B. Arsem, 5119 Shimerville Road, Clarence, N.Y. 14031

Filed Sept. 27, 1967, Ser. No. 671,038
Int. Cl. H02j *7/32*
U.S. Cl. 320—61 **4 Claims**



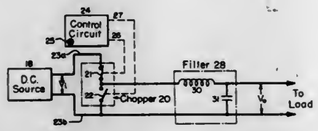
An electric shock absorber for automobiles and the like which converts the mechanical energy supplied to the shock absorber to electricity for charging a battery, rather than wasting it as heat.

3,559,028
METHOD OF CONTROLLING A DC-TO-DC CONVERTER
George H. Studtmann, Mount Prospect, and Raymond J. Yarema, La Grange Park, Ill., assignors to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 15, 1968, Ser. No. 776,109
Int. Cl. H02m *3/22*
U.S. Cl. 321—2 **8 Claims**



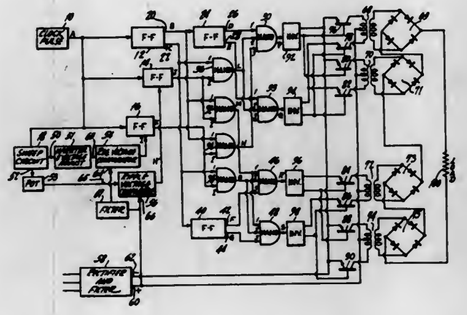
A high-power DC-to-DC converter (or "chopper") system provides an input voltage V_1 of substantially constant level to a chopper which includes a switch. The opened and closed times of the switch are controlled to pass an output voltage V_o of variable magnitude through a filter to a load. A control circuit is connected to actuate the chopper over a variable frequency range, and practical operating conditions such as heating of the switch impose an upper limit on this frequency range. The chopper is operated such that the output voltage V_o is one-half the input voltage V_1 at the maximum operating frequency of the chopper. To provide levels of output voltage V_o less than half V_1, the frequency is gradually reduced as the chopper on dwell time is maintained approximately constant or allowed to decrease. To provide levels of output voltage V_o greater than one-half the input voltage V_1, the chopper operating frequency is gradually reduced as the chopper off dwell time is maintained substantially constant or allowed to decrease. Circuit details of a control circuit for operating the chopper according to this method are set out.

3,559,029
CONTROL CIRCUIT FOR REGULATING A DC-TO-DC CONVERTER
Raymond J. Yarema, La Grange Park, Ill., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware
Filed Nov. 22, 1968, Ser. No. 778,044
Int. Cl. H02m *3/22*
U.S. Cl. 321—2 **9 Claims**



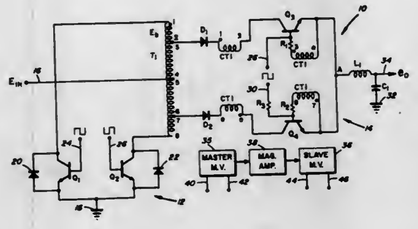
A high-power DC-to-DC converter (or "chopper") system provides an input voltage V_1 of substantially constant level to a chopper which includes a switch. The opened and closed times of the switch are controlled to pass an output voltage V_o of variable magnitude through a filter to a load. A control circuit is connected to actuate the chopper over a variable frequency range, and practical operating conditions such as heating of the switch impose an upper limit on this frequency range. The chopper is operated such that the output voltage V_o is one-half the input voltage V_1 at the maximum operating frequency of the chopper. To provide levels of output voltage V_o less than half V_1, the frequency is gradually reduced as the chopper on dwell time is maintained approximately constant or allowed to decrease. To provide levels of output voltage V_o greater than one-half the input voltage V_1, the chopper operating frequency is gradually reduced as the chopper off dwell time is maintained substantially constant or allowed to decrease.

3,559,030
PULSE WIDTH MODULATED SOLID STATE REGULATED POWER SUPPLY
Donald C. Bussard, Cinnaminson, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Nov. 27, 1968, Ser. No. 779,326
Int. Cl. H02p *13/18;* **H03k** *1/18;* **H02m** *3/22*
U.S. Cl. 321—2 **5 Claims**



A regulated power supply in which the pulse width of the current supplied to one or more output means is modulated in width in accordance with the desired output voltage. By providing one or more output means, and connecting them in series or parallel or series parallel, various loads may be supplied by fundamentally the same power supply.

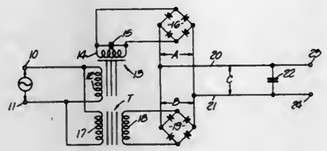
3,559,031
BUCK-BOOST VOLTAGE REGULATION CIRCUIT
Thomas A. La Vigna, Bowie, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration
Filed Oct. 6, 1969, Ser. No. 863,963
Int. Cl. H02m *3/24*
U.S. Cl. 321—2 **6 Claims**



The invention relates to a buck-boost voltage regulator wherein the output of a DC voltage source to be controlled is combined with a source of alternating current from an inverter. The resultant signal is applied to a

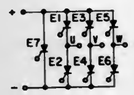
chopper circuit. The chopper circuit utilizes a pair of switching transistors alternately maintained in conduction by a single current transformer and an inductive load. The chopper circuit is designed to permit instantaneous switching between the transistors and is further designed to prevent simultaneous conduction thereof. This allows operation of the chopper circuit through a wide range of frequencies without any long commutation intervals and thereby prevents short circuits from being applied through the transformer to the inverter.

3,559,032
VOLTAGE REGULATING AND PHASE SHIFTING CIRCUITS EMPLOYING BOTH A PARAMETRIC CIRCUIT AND A TRANSFORMER TO TRANSFER ENERGY
Sylvan Dean Wanlass, Santa Ana, Calif., assignor to Wanlass Electric Company, a corporation of California
Filed Apr. 2, 1968, Ser. No. 718,105
Int. Cl. H02m *1/14, 7/02*
U.S. Cl. 321—5 **19 Claims**



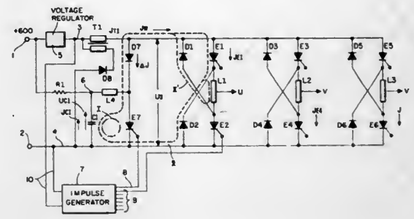
Electrical systems each employing a parametric circuit to provide a voltage 90° out of phase with an input voltage and a transformer to provide a voltage in phase with the input voltage and means to mix these two voltages to achieve a third voltage having desired attributes. The two output voltages may be rectified and mixed to produce a rectified output in which unregulated half cycle voltage envelopes are interspersed between the regulated half cycle voltage envelopes produced by the parametric circuit, thus producing in effect a double frequency rectified waveform.

3,559,033
GENERATOR FOR SUPPLYING CONTROL SIGNALS FOR STRIKING THE CONTROLLABLE RECTIFIERS OF AN INVERTED CONVERTER
Arne Jensen and Tom Kastrup Petersen, Nordborg, Denmark, assignors to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Jan. 21, 1969, Ser. No. 792,259
Claims priority, application Germany, Jan. 2, 1968, P 16 13 770.5
Int. Cl. H02m *7/52*
U.S. Cl. 321—5 **9 Claims**



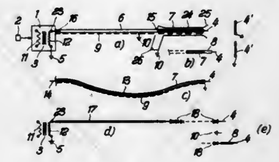
The invention relates to a generator for supplying control signals for a three phase inverted converter of the type having three pairs of jointly quenchable, controllable rectifiers. Three substantially square wave signals are generated at a predetermined frequency and displaced from each other by 120 degrees. Striking means receive the signals and separate the upper and lower halves of each square signal and sequentially directs the half waves to the converter rectifiers. Quenching means also receive the signals and sums them to form a summated signal, the summated signal being directed to the converter for jointly quenching the rectifiers.

3,559,034
INVERTED CONVERTER HAVING COMMON QUENCHING MEANS FOR ALL CONTROLLABLE RECTIFIERS
Arne Jensen and Tom Kastrup Petersen, Nordborg, Denmark, assignors to Danfoss A/S, Nordborg, Denmark, a company of Denmark
Filed Feb. 14, 1969, Ser. No. 799,158
Claims priority, application Germany, Feb. 15, 1968, P 16 13 774.9
Int. Cl. H02m *7/52*
U.S. Cl. 321—5 **3 Claims**



The invention relates to an inverted converter of the type having at least two branches with each branch containing two controllable rectifiers arranged in series. Each controllable rectifier has a free running diode associated therewith and each branch is connected to a D.C. voltage supply through a short circuit impedance. The converter has common quenching control means in parallel with the branches. The quenching control means includes a condenser which is dischargeable through a controllable quenching rectifier and a choke.

3,559,035
MEANS FOR FEEDING A CONSUMING DEVICE WITH DIRECT CURRENT FROM AN ALTERNATING SOURCE
Armin Schimmer, 1 Nobelstr., 899 Lindau (Bodensee), Germany
Filed Nov. 22, 1968, Ser. No. 778,113
Claims priority, application Germany, Nov. 24, 1967, P 16 38 861.7
Int. Cl. H02m *7/00*
U.S. Cl. 321—8 **9 Claims**



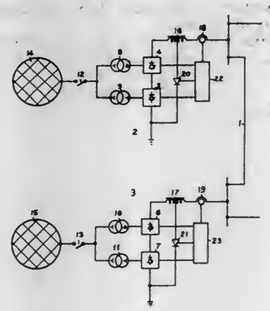
A device for safely providing direct current from an alternating current source, wherein between the output of the alternating current source and the input of a D.C. consuming device there is an elongated body which is formed as an elongated resistor member connected to the alternating source, followed by a rectifier member between the resistor and the consuming device.

3,559,036

DEVICE FOR SHORT-CIRCUIT RECLOSING IN HVDCT MULTIPOINT NETWORKS

Karl-Werner Kanngiesser, Viernheim, Germany, assignor to Aktiengesellschaft Brown, Boveri & Cie., Baden, Switzerland, a joint-stock company

Filed Sept. 18, 1968, Ser. No. 760,458
Claims priority, application Germany, Sept. 26, 1967, P 15 88 079.2
Int. Cl. H02h 7/14; H02j 1/12; H02m 1/18
U.S. Cl. 321—13 3 Claims



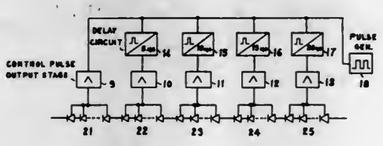
A high voltage, direct current transmission multipoint network including rectifier and inverter stations, there being a controllable short-circuit branch provided in parallel with the rectifier head stations for currents flowing in a direction counter to the flow direction of the operational current.

3,559,037

CURRENT CONVERTER ARRANGEMENT COMPRISING A PLURALITY OF CONVERTER ELEMENTS CONNECTED IN SERIES

Werner Faust, Wettingen, Switzerland, assignor to Aktiengeseilschaft Brown, Boveri & Cie., Baden, Switzerland a joint-stock company

Filed Jan. 15, 1968, Ser. No. 697,777
Claims priority, application Switzerland, Feb. 10, 1967, 2,072/67
Int. Cl. H02m 7/22
U.S. Cl. 321—27 7 Claims



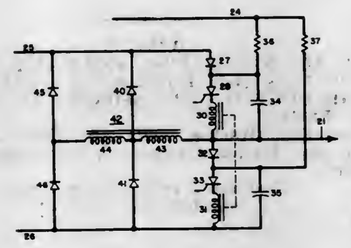
An electrical converter arrangement comprises a plurality of series-connected controllable current converter elements such as thyristors which together form one and the same path for current flow. The converter elements forming this current path are not fired simultaneously but rather are fired sequentially either singly or in groups by means of a pulse generator in cooperation with delay means interposed in the circuit connections to the various converter elements, or element groups so that the proper time delays are established for firing. By firing the converter elements in sequence, i.e. in stages, one avoids formation of undesirable steep voltage jumps. The required sequential firing delays can be obtained by use of individual delay devices having progressively longer time delays, or a ring counter can be utilized.

3,559,038

INVERTER WITH PRECHARGE CIRCUIT

Stanley Krauthamer, Monterey Park, Calif., assignor to Borg-Warner Corporation, Chicago, Ill., a corporation of Delaware

Filed May 28, 1969, Ser. No. 828,648
Int. Cl. H02m 7/52
U.S. Cl. 321—45 5 Claims



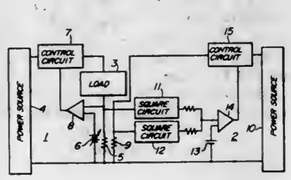
An inverter comprises a series circuit including a first diode, a first SCR, a first commutating choke winding, a second diode, a second SCR and the second commutating choke winding. Each of the two commutating capacitors is coupled in parallel with one SCR and its associated commutating choke winding. With this inverter series circuit the precharge circuit is simplified to include only a supply conductor and a pair of resistors.

3,559,039

REGULATED POWER SUPPLY WITH THERMAL COMPENSATION

Koji Nishiwaki, Katsuta-shi, and Yukichi Ueno, Mito-shi, Japan, assignors to Hitachi, Ltd., Chiyoda-ku, Tokyo-to, Japan

Filed Oct. 23, 1968, Ser. No. 769,925
Claims priority, application Japan, Oct. 25, 1967, 42/68,296
Int. Cl. G05f 1/46
U.S. Cl. 323—1 7 Claims



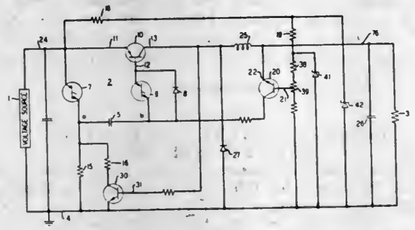
A regulated power supply of multiple ratings, which includes a resistor connected in series to the load for detecting the load current as a voltage drop across said resistor and a control circuit for regulating the load current depending on the difference between said voltage drop and a reference voltage, characterized in that another resistor is thermally coupled with said voltage detecting resistor and said another resistor is energized so that the temperature or the total power consumption in said two resistors is maintained at a constant value, thereby to eliminate a possible error due to the change in value of said current detecting resistor caused by the substantial variation of the load current when the power supply is switched to operate at another rating.

3,559,040

SWITCHING TYPE VOLTAGE REGULATOR UTILIZING PNPN DIODES TO REDUCE SWITCHING TRANSITION TIME

Hermann Fickenscher, Morristown, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Aug. 27, 1969, Ser. No. 853,246
Int. Cl. G05f 1/56; H02m 3/32
U.S. Cl. 323—22 8 Claims



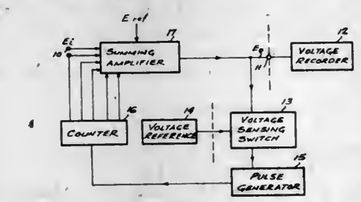
A switching type voltage regulator includes bistable devices in the regenerative circuit which controls the switching of the switching device of the regulator. The bistable devices rapidly transfer bias voltages from the storage device in the regenerative circuit to the switching device to reduce its switching transition time and therefore reduce power consumption therein.

3,559,041

CONSTANT AMPLIFICATION SUMMING AMPLIFIER VOLTAGE CONTROL CIRCUIT

Douglas F. Trigg, Ottawa, Ontario, Canada, assignor to Canadian Patents and Development Limited, Ottawa, Ontario, Canada, a corporation of Canada

Filed July 17, 1968, Ser. No. 745,558
Int. Cl. G05f 1/10
U.S. Cl. 323—100 5 Claims



A circuit for preventing a variable voltage from exceeding predetermined limits by adding a step voltage level change to the variable voltage thus maintaining the sum of the variable voltage and the added step within the predetermined range. The addition occurs in a summing amplifier to which outputs from a counting circuit preferably consisting of a string of bistable multivibrators and the variable voltage are applied as inputs.

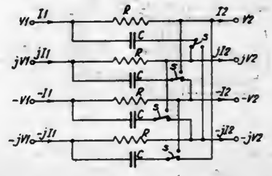
3,559,042

POLYPHASE SYMMETRICAL NETWORK

Michael John Gingell, Sawbridgeworth, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Filed May 19, 1969, Ser. No. 825,871
Claims priority, application Great Britain, June 7, 1968, 27,162/68
Int. Cl. G05f 3/04
U.S. Cl. 323—122 14 Claims

Symmetrical polyphase networks are disclosed comprising at least one polyphase network section including N single phase circuits, each of the circuits having a first impedance coupled between the input and output terminals of an associated one of the circuits. The input terminal of each one of the N circuits is also coupled to the output terminal of one of the circuits responding to an adjacent



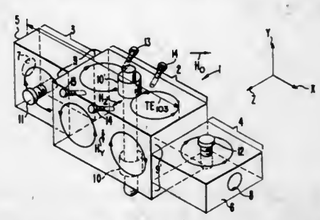
phase (leading or lagging) of the input signal by a second impedance having a different phase angle characteristic than that of the first impedance. When two or more networks are provided they are connected in cascade.

3,559,043

BIMODAL CAVITY RESONATOR AND MICROWAVE SPECTROMETERS USING SAME

James S. Hyde, Menlo Park, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed July 3, 1967, Ser. No. 650,891
Int. Cl. G01n 27/78
U.S. Cl. 324—.5 10 Claims



A central portion of the cavity is capable of supporting two resonant modes while adjoining end sections each support only one of the modes. Waveguides connected to each of the end sections couple microwave energy to the cavity to excite the two modes therein. A sample of matter is inserted into the central portion so as to be irradiated by both modes. A tuning screw in each of the end sections permits independently tuning the cavity to the resonant frequency of one of the resonant modes. Adjusting screws in the central portion of the cavity structure permit adjustment of the cross coupling between the two modes. The microwave spectrometer designs take advantage of the ability of the cavity to be independently tuned to the resonant frequencies of either mode. The several designs provide for amplitude modulation of the frequency of the pumping mode or scanning of the frequency of the pumping mode or modulation of an applied unidirectional magnetic field either with or without modulation of the frequency of the pumping mode.

3,559,044

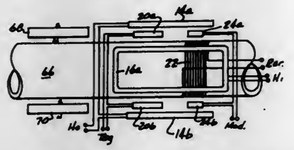
SIDE BAND DETECTION SYSTEM FOR NUCLEAR MAGNETIC RESONANCE FLOWMETERS

William H. Vander Heyden, Menomonee Falls, Wis., assignor to Badger Meter Manufacturing Company, Milwaukee, Wis., a corporation of Wisconsin

Filed Apr. 18, 1968, Ser. No. 722,366
Int. Cl. G01n 27/00; G01f 1/00
U.S. Cl. 324—.5 10 Claims

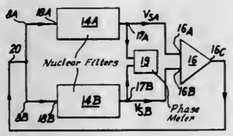
Paramagnetic fluid flowing through a conduit, which has been previously polarized by a magnetizing field, is tagged by rotating the polarization direction in spaced boluses of the fluid. At a detection station located downstream from the tagging station, means is provided for oscillating the direction of polarization with an audio

frequency signal, within a space occupied by crossed steady state and R.F. magnetic fields to induce nuclear



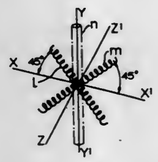
magnetic resonance. The detection of a tagged bolus is realized by the production of signals at a frequency representing a side band of the R.F. frequency, spaced from the R.F. frequency by the frequency of the audio signal, which is completely separated from the R.F. signal by means of filters.

3,559,045
NUCLEAR MAGNETIC RESONANCE MAGNETIC GRADIOMETERS
Francis Robach, St-Martin-d'Heres, and Antoine Salvi, Fontaine, France, assignors to Commissariat a l'Energie Atomique, Paris, France
Filed Dec. 6, 1968, Ser. No. 781,794
Claims priority, application France, Dec. 13, 1967, 132,121
Int. Cl. G01n *27/00*; **G01f** *1/00*
U.S. Cl. 324—.5 **9 Claims**



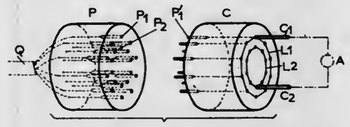
The magnetic gradiometer for measuring the difference between the magnetic fields in two areas comprises two nuclear filters located one in each area. Each nuclear filter, of the type using the Overhauser-Abragam effect, delivers an output signal which is amplified and applied to one of the two inputs of an operational amplifier. The output of the amplifier is split and applied to the input coil of the two filters. A phasemeter measures the phase difference between the inputs of the operational amplifier, which is of the summing or differential type depending upon the type of nuclear filter (crossed coils or parallel coils): the phase shift is in direct relation with the field difference.

3,559,046
EQUIVALENT COIL METHOD FOR SIMULTANEOUSLY MEASURING ELECTROMAGNETIC AND MAGNETIC TIME TRANSIENT FIELDS
William A. Robinson, Don Mills, Ontario, Canada, assignor to McPhar Geophysics Limited
Filed Dec. 9, 1968, Ser. No. 782,261
Int. Cl. G01v *3/08*
U.S. Cl. 324—8 **10 Claims**



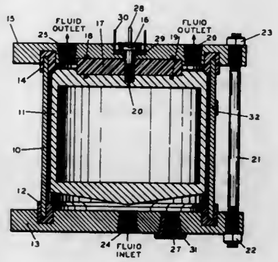
A method and apparatus for geophysical surveying utilizing the naturally occurring audio frequency transient magnetic fields and a locally generated electromagnetic field comprising utilizing mutually orthogonal receiver coils and combining voltages generated in the coils by the electromagnetic field and the transient magnetic fields in a proportion determined by their physical orientation and their pick up factors to provide process voltages for detection processing corresponding to those which would be obtained from an equivalent coil system embodying at least one pair of coils having their axes inclined at 45° to the horizontal and in 90° relation to each other to provide a measurement of any audio frequency transient magnetic field deviations created by an influencing geophysical body and a third coil having its axis at a selected selected angle θ to the horizontal, $\theta = 0°$ to 90°, to measure variations in the electromagnetic field created by such influencing geophysical body.

3,559,047
RESERVE BATTERY AND TESTING DEVICE THEREFOR
Jean-Claude Lucien Maurice Rousset, Paris, France, assignor to Societe les Piles Wonder, Saint-Ouen, Seine-Saint-Denis, France, a corporation of France
Filed Nov. 8, 1967, Ser. No. 681,457
Claims priority, application France, Nov. 14, 1966, 83,487
Int. Cl. G01n *27/42*
U.S. Cl. 324—29.5 **8 Claims**



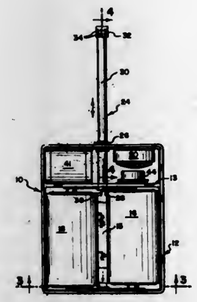
A reserve battery having a plurality of activatable cells connected in series. A plurality of test connectors are connected to the battery with one connector being connected to the input of the first series-connected cell and another connector being connected to the output of the last series-connected cell. The remaining test connectors are alternately connected between adjacent pairs of cells. A testing device is connectible to the battery for determining in a single test operation whether any of the cells have been accidentally activated prior to intentional activation of the battery.

3,559,048
SHIELDED IN-LINE ELECTRICAL MEASURING CELL
James G. Bryant, Anniston, Ala., assignor to Monsanto Company, St. Louis, Mo., a corporation of Delaware
Filed Nov. 7, 1967, Ser. No. 681,211
Int. Cl. G01r *27/02*
U.S. Cl. 324—30 **4 Claims**



An in-line electrical measuring cell comprising two concentrically disposed shielded electrodes adapted to permit measurement of the electrical properties of a fluid flowing through the annular clearance between the shielded electrodes, and a method of using the cell.

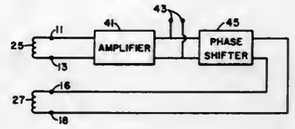
3,559,049
METHOD AND APPARATUS FOR DETECTING GASEOUS IMPURITIES IN ACCORDANCE WITH CHANGES IN SPARK BREAKDOWN POTENTIAL CAUSED THEREBY
Leonard N. Liebermann, 2644 Ellentown Road, La Jolla, Calif. 92037, and Stanley H. Lai, 4164 Hill St., San Diego, Calif. 92107
Continuation-in-part of application Ser. No. 636,352, May 5, 1967, now Patent No. 3,460,125, dated Aug. 5, 1969, which is a continuation-in-part of abandoned application Ser. No. 417,385, Dec. 10, 1964. This application July 2, 1968, Ser. No. 742,075.
Int. Cl. G01n *27/62*
U.S. Cl. 324—33 **15 Claims**



A low intensity spark discharge is periodically ignited and extinguished in a given atmosphere by applying voltage pulses across one or more pairs of electrodes disposed in the given atmosphere, which pulses have amplitudes sufficient to cause a low intensity spark discharge to occur across one of the pairs of electrodes in the presence of substantially all concentrations in the given atmosphere of gaseous impurities to be detected. A detector detects changes in the maximum electrode voltage occuring during the low intensity spark discharges from the maximum electrode voltage in the absence of gaseous impurities, which changes correspond to the presence of gaseous impurities in the given atmosphere. In one preferred embodiment of the invention, the detector includes a voltage-sensitive switch actuable by a change of more than a predetermined magnitude in the maximum electrode voltage from its value in the absence of gaseous impurities. In another embodiment, the detector includes a peak-reading voltmeter, enabling the impurity concentration to be read directly. In a further embodiment of the invention, changes in the maximum electrode voltage are converted into variations in the frequency of the voltage pulses applied to the electrodes, which frequency variations are used to indicate the presence of impurities. In a further embodiment, two pairs of electrodes are provided and a change in the maximum electrode voltage is detected by the transfer of the discharge from one electrode pair to the other.

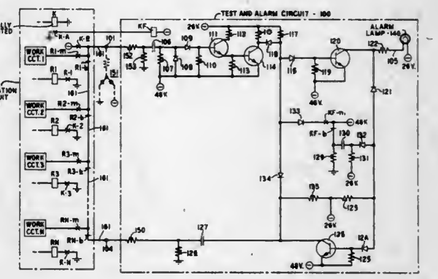
3,559,050
MOTION DETECTOR WITH TWO SEPARATE WINDINGS AND CIRCUIT INTERCONNECTING THE WINDINGS
Joseph F. Mifsud, Houston, Tex., assignor to Esso Production Research Company, a corporation of Delaware
Filed Sept. 9, 1968, Ser. No. 758,475
Int. Cl. G01p *15/08*
U.S. Cl. 324—34 **4 Claims**

A velocity-sensitive geophone is provided with two separate windings on the same coil form. The output signal produced by one winding is coupled to the other through an electrical circuit which amplifies the signal and adjusts the phase thereof. When the signal applied to the second winding is in phase with the output signal



of the first winding, the device behaves as an accelerometer, but it behaves as a very low-frequency-sensitive geophone when the signals are 90° out of phase.

3,559,051
CIRCUIT FOR TESTING THE INTEGRITY OF AN ELECTRICAL PATH BY TRANSMISSION OF A PULSE THERETHROUGH
Edward F. Mazurek, Spotswood, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill, N.J., a corporation of New York
Filed Nov. 8, 1968, Ser. No. 774,352
Int. Cl. G01r *31/02*
U.S. Cl. 324—51 **6 Claims**

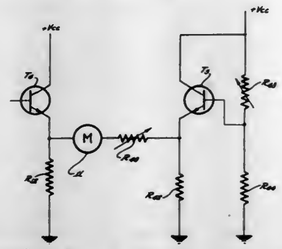


A fault detection circuit is disclosed for ascertaining the integrity of a path including a plurality of relay contacts. The circuit includes an arrangement for applying a test pulse to one end of the contact chain and to an alarm circuit. Receipt of the test pulse at the other end of the chain prevents the alarm from being fully operating and is indicative of both the continuity of the relay contact path and the absence of false crosses to battery or ground on the contact chain.

3,559,052
PUSHBUTTON MOISTURE METER FOR DETERMINING MOISTURE CONTENT IN GRAIN
George H. Fathauer, Decatur, Ill., assignor to Eaton Yale & Towne Inc., a corporation of Ohio
Filed July 17, 1968, Ser. No. 745,514
Int. Cl. G01n *27/26*
U.S. Cl. 324—61 **5 Claims**

An automatic moisture meter for calculating and indicating the moisture content of various commodities. Selector switches allow the device to be changed from one to a number of commodities. The readout meter for indicating moisture is automatically calibrated to read percent of moisture for each commodity. The invention includes a capacitive type moisture sensing circuit for measuring the moisture content of grain but provides for the insertion of a series impedance with a moisture indicating

meter for a particular grain which corresponds to the slope of the moisture characteristic curve of that particular grain and provides for the insertion of a second im-



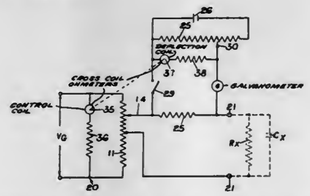
pedance in circuit with the meter so as to shift the response of the system to correspond to the particular grain being tested.

3,559,053

METHOD AND APPARATUS FOR MEASURING THE ELECTRICAL RESISTANCE OF INSULATING MATERIAL USING VERY LOW FREQUENCIES

George F. Tagg, London, England, assignor to Evershed & Vignoles Limited, Chiswick, London, England, a British company

Filed June 3, 1968, Ser. No. 734,140
Int. Cl. G01n 27/02
U.S. Cl. 324—62 6 Claims



A method of measuring the insulation resistance of a circuit having electrostatic capacitance in which a predetermined voltage of very low frequency of the order of 0.1 Hz. is applied to the circuit and substantially instantaneous measurements of the current are taken at the instants when the voltage is a maximum thus enabling the required resistance to be derived. Preferably measurements are taken of the current at the instants when the voltage is zero thus providing a measure of the capacitance under test. An instrument used in the method includes a generator capable of supplying a very low frequency alternating current to the output terminals of the instrument, a measuring circuit responding to the test current flowing and mechanism operating in synchronism with the generator for deriving from the measuring circuit a measurement of the current flowing at the required instants.

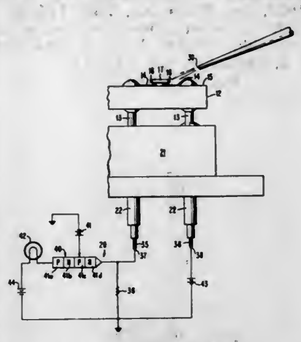
3,559,054

METHOD OF AND APPARATUS FOR MECHANICALLY AND ELECTRICALLY TESTING THE QUALITY OF JOINTS BONDING A CHIP DEVICE TO THE SURFACE OF THE SUBSTRATE OF A MICROMINIATURE MODULE

Ronald W. Bowers, Poughkeepsie, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Nov. 15, 1965, Ser. No. 507,833
Int. Cl. G01n 27/02
U.S. Cl. 324—62 1 Claim

The joints bonding a chip device to the surface of the substrate of a microminiature module are tested using means for supporting the module, a high velocity nozzle from which a high pressure, high velocity air blast is directed towards the fixedly held module and monitoring means for detecting changes in electrical resistance across the joint. It has been observed that when the chip-substrate joint of the microminiature module is subjected to a high velocity, low pressure air blast, chips very weakly bound, either at the chip to chip contact connection, or the



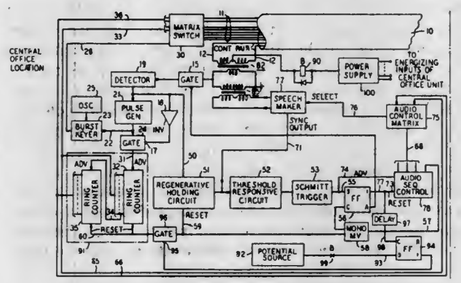
chip contact to substrate circuit pattern connection, will be blown off the substrate by the force of the air blast. Further, poor or intermittent bonded joints or connections when subjected to an air blast will undergo changes in resistance which can be detected in an appropriate circuit. Great accuracy is achieved in detecting these changes by pulsing the air blast and electrically coupling the joint to a trigger circuit, provided trigger circuit response is much shorter than pulse duration.

3,559,055

AUTOMATIC CONDUCTOR PAIR IDENTIFICATION APPARATUS TO PERMIT IDENTIFICATION OF CROSSED CONDUCTOR PAIRS BY INHIBITING THE RECYCLING OF THE IDENTIFICATION APPARATUS

Harold K. Thompson, San Anselmo, Calif., assignor to American Telephone and Telegraph Company, New York, N.Y., a corporation of New York

Filed Dec. 24, 1968, Ser. No. 786,647
Int. Cl. G01r 31/02; H04b 3/46; H04m 3/22
U.S. Cl. 324—66 7 Claims



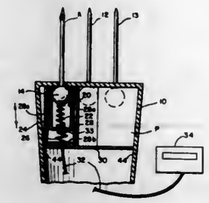
An automatic conductor pair identifier utilizes a counter to control the stepping of a signal in sequence to the conductor pairs of a multiconductor cable. Upon the detection of the signal on a conductor pair at the other end of the cable the counter stops. The count at which the counter stops represents the identification of the conductor pair on which the signal was detected. If a crossed conductor pair is detected the counter is controlled to resume counting without being reset in order to determine the higher value identification number associated with the crossed conductor pair.

3,559,056

ELECTRICAL TESTING ARRANGEMENT INCLUDING PROBE HAVING PIVOTABLE PROBE CONTACT ELEMENTS

Michael D. Easl, Philadelphia, Pa., assignor to VIMM Research Development Corporation, Philadelphia, Pa.

Continuation-in-part of application Ser. No. 669,127, Sept. 20, 1967. This application Jan. 9, 1968, Ser. No. 696,619
Int. Cl. G01r 31/02
U.S. Cl. 324—72.5 10 Claims



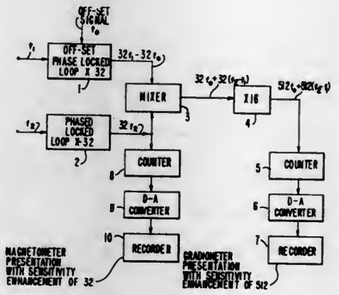
An electrical testing arrangement is provided which includes a testing probe wherein the spherical base portions of a series of pivotable contact elements are each received in a metallic mounting cylinder containing a coil spring providing resilient support. The cylinders themselves are each supported within a cylindrical space by a further coil spring. Leaf springs located in this space provide for lateral movement of the cylinders. A number of probe guides for setting or fixing the positions of the contact elements are described.

3,559,057

GRADIOMETER READOUT CIRCUIT EMPLOYING PHASE LOCKED MULTIPLIER CIRCUIT LOOPS

George R. Huggett, Sunnyvale, Calif., assignor to Varian Associates, Palo Alto, Calif., a corporation of California

Filed Nov. 8, 1967, Ser. No. 681,543
Int. Cl. G01r 23/14, 33/08
U.S. Cl. 324—79 6 Claims



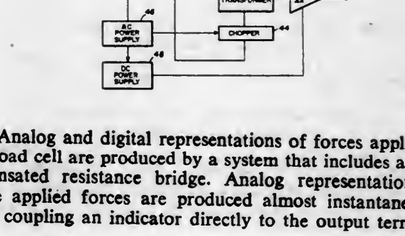
In a gradiometer readout circuit exhibiting increased signal-to-noise ratio, extended dynamic range and simplified operation providing for both analog and digital output information, there is disclosed two phase-locked loop X32 multipliers adapted to receive magnetometer signals f_1 and f_2 from two spaced apart magnetometers. One of the multipliers is of a novel off-set type for preventing the generation of a zero beat signal in the event the magnetometers' signals approach equality. The multiplied input signals are mixed and then further multiplied by an X16 multiplier. Provisions are included at the output of the X16 multiplier and one of the X32 multipliers for the conversion of gradiometer and magnetometer information of high sensitivity for providing the information for recording in either or both digital and analog form.

3,559,058

COMPENSATED ELECTRICAL MEASURING INSTRUMENT

Ludwig Ludin, Anglikon, Wohlen, Switzerland, assignor to Camille Bauer Messinstrumente Aktiengesellschaft, Wohlen (Aargau), Switzerland, a joint-stock company of Switzerland

Filed July 15, 1968, Ser. No. 745,041
Claims priority, application Germany, July 18, 1967, H 63,316
Int. Cl. G01r 17/06
U.S. Cl. 324—99 2 Claims



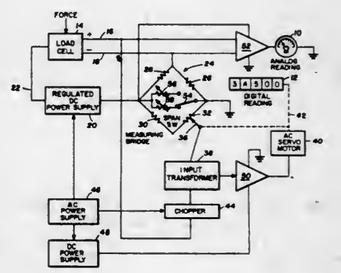
An electrical measuring instrument wherein a change in input quantity is compensated by a corresponding change in feedback from an output. Interconnected capacitors whose capacitance is dependent on voltage have their capacity altered by change of input and the altered capacities are balanced by varying the relative capacitances of a variable differential capacitor, the extent of variation to produce balance being a measure of the output.

3,559,059

FORCE INDICATING SYSTEM

Carl Martin and William C. Parker, Dallas, Tex., assignors to Space Corporation, Dallas, Tex., a corporation of Texas

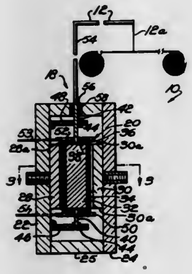
Filed July 12, 1968, Ser. No. 776,288
(Filed under Rule (47)a and 35 U.S.C. 116)
Int. Cl. G01r 17/06, 1/38
U.S. Cl. 324—99 7 Claims



Analog and digital representations of forces applied to a load cell are produced by a system that includes a compensated resistance bridge. Analog representations of the applied forces are produced almost instantaneously by coupling an indicator directly to the output terminals

of the load cell. This representation is independent of the digital representation which may not be available for several seconds after the application of a force or a change ing applied force. The digital representation is produced by the action of a servo loop and a variable resistor in one arm of the resistance bridge. A compensating network connected across opposed nodes of the resistance bridge linearizes the digital readout to produce a single scale reading for all values of force applied to the load cell.

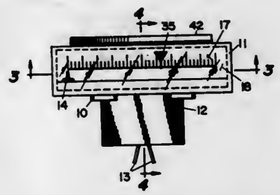
3,559,060
PERMANENT MAGNET FOR USE IN A DRIVE MECHANISM FOR AN INSTRUMENT
Ignacio P. Echeagaray, R.F.D. 1, Rte. 10 East, Oberlin, Ohio 44074
Filed Nov. 14, 1968, Ser. No. 775,712
Int. Cl. G01r *1/16*
U.S. Cl. 324—151 **5 Claims**



The present invention of a novel permanent magnet configuration for use in a measuring instrument is disclosed in a drive mechanism for driving a pen in direct proportion to control signals. The design of the permanent magnet is such that it encloses the pole pieces in a cavity located therein effecting an increase in efficiency of the magnetic flux. The magnet configuration also effectively encloses the gap within the magnet to effect and increase the sensitivity of the drive mechanism. In the illustrated embodiment the pen records the magnitude and direction of the control signals on a moving web of paper. The control signals are electrical currents which flow through a coil supported for oscillatory movement in the air gap between pole pieces of the permanent magnet. The control currents set up polarities in the coil which are repelled by the like poles of the magnet and attracted by unlike poles thereof to move the coil to a position corresponding to the magnitude and direction of the control current. The coil is drivingly connected to the pen and movement of the pen records a line on the paper which indicates the magnitude and direction of the current.

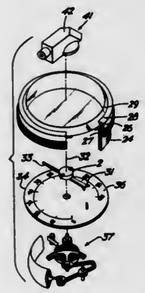
3,559,061
METER AND SET POINT IMPEDANCE IN A SINGLE HOUSING
Arthur David Cawthorne, Scottsdale, Ariz., assignor to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois
Filed Mar. 18, 1968, Ser. No. 713,928
Int. Cl. G01r *1/10*
U.S. Cl. 324—157 **6 Claims**

A meter movement supplies a visual indication on a meter face. A set point unit including a slide wire is adjustable from in front of the meter face and has an indicator in front of the meter face for indicating the set point setting. The slide wire has an impedance distribution colinear with the graduations on the meter face. The meter



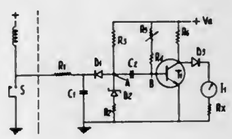
housing is in two portions, one portion supporting the meter movement and the other the set point assembly.

3,559,062
RADIAL READOUT GAUGE HAVING COOPERATING VISUAL AND AUTOMATIC SIGNIFICATION MEANS
Thomas S. Wright, 6013 Monteverde Drive, San Jose, Calif. 95120
Filed Nov. 19, 1968, Ser. No. 777,053
Int. Cl. G01d *13/26*
U.S. Cl. 324—157 **8 Claims**



Presented is a method and means for converting a radial readout gauge which normally indicates values only for visual observation to a radial readout gauge which combines visual observation of a value signified by the gauge with automatic signification of the attainment of a selected value on the gauge through electrical means.

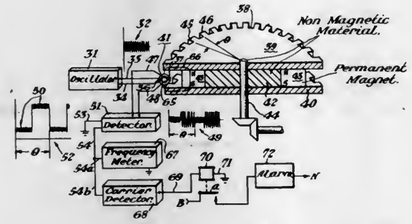
3,559,063
RPM COUNTER FOR INTERNAL COMBUSTION ENGINES
Remo Galletti, Milan, Italy, assignor to D. Olivetti & C.S.P.A., Aprilia, Italy
Filed Nov. 21, 1968, Ser. No. 777,567
Claims priority, application Italy, Nov. 24, 1967, 23,090/67
Int. Cl. G01p *3/48*
U.S. Cl. 324—169 **4 Claims**



An RPM counter for internal combustion engines which measures the interruption frequency of an external

breaker switch including a meter, a power supply, a transistor and a compensating unit for changes in battery voltage which includes a capacitor, a Zener diode and a diode, with interposed resistances in the circuit.

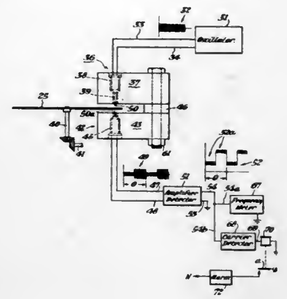
3,559,064
VELOCITY INDICATION DEVICE WITH ZERO SPEED DETECTION CAPABILITY
Reed H. Grundy, Murrysville, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennnsylvania
Filed Apr. 25, 1968, Ser. No. 724,041
Int. Cl. G01p *3/48*
U.S. Cl. 324—173 **29 Claims**



This invention relates to a pulse generator for producing electrical pulses where a rotor, possessing flux distribution qualities such that there exists at least one region of high flux density surrounded by regions of low flux density when in the presence of a magnetic field, is rotated in the vicinity of an inductor means. The rotor includes at least one magnetic means which defines one of the regions of high flux density. The inductor means has input and output terminals. A signal is impressed on the input terminals. Upon rotor rotation, electrical pulses appear at the output terminals of the inductor means. An output signal for any rotational speed is attained when the inductor means is a saturable inductor. The pulse generator is extremely compact, simple in mechanical layout, and has high resolution properties.

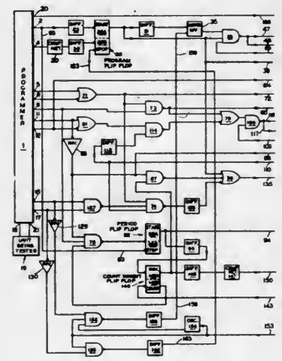
3,559,065
PHOTOELECTRIC VELOCITY INDICATOR WITH ZERO SPEED DETECTION CAPABILITY
Reed H. Grundy, Murrysville, Pa., assignor to Westinghouse Air Brake Company, Swissvale, Pa., a corporation of Pennsylvania
Filed Oct. 1, 1968, Ser. No. 764,166
Int. Cl. G01p *3/48*
U.S. Cl. 324—175 **20 Claims**

This invention relates to a signal generator for producing electrical signals in accordance with the angular velocity of a rotating element and includes a rotor, a light-emitting transmitting device, and a transducing device. The rotor possesses optical qualities such that there exists at least one region of low translucence and at least one region of high translucence when in the presence of radiant energy. The light-emitting transmitting device has a pair of input leads upon which is impressed a carrier signal. The transmitting device includes a casing which is positioned adjacent the rotor so that light rays are transmitted through an opening in the casing such that radiant energy signals are produced in accordance with the movement of the rotor. The transducing device also includes a casing which is positioned adjacent the rotor and means for receiving the radiant energy signals through an opening in the casing of the transducing device. The transducing device includes means for converting the received



radiant energy signals into corresponding electrical signals which, in turn, are applied to a pair of output leads.

3,559,066
HIGH ACCURACY PERIOD, FREQUENCY, INTERVAL AND EVENTS COUNTER
Ralph M. Pincus, Paramus, N.J., assignor to The Bendix Corporation, a corporation of Delaware
Filed Apr. 1, 1968, Ser. No. 717,545
Int. Cl. G04f *9/00;* **G01r** *23/02*
U.S. Cl. 324—186 **18 Claims**

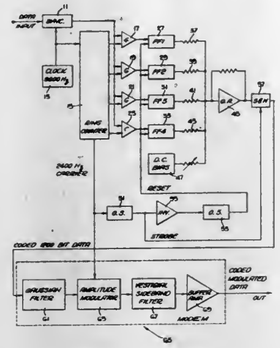


A counter network for simultaneously measuring time functions and events and in which a control circuit controlled by a programmer enables an interval counter and an events counter to simultaneously make single counts, or repeated counts for a desired time period.

3,559,067
MULTILEVEL WEIGHTED CARRIER ENCODED DIGITAL DATA TRANSMISSION SYSTEM
Leonard J. Genest and Arnold I. Klayman, Marina del Rey, Calif., assignors to Octronix, Inc., a California corporation
Filed Dec. 14, 1967, Ser. No. 690,564
Int. Cl. H04l *3/00;* **H04b** *1/68;* **H03k** *13/04*
U.S. Cl. 325—38 **3 Claims**

A data transmission system is disclosed for enabling a standard telephone channel to carry higher-than-normal pulse data rates. A data compressor is disclosed for converting two-level high-speed data into multilevel lower-speed data which can be handled by existing telephone

communication lines. A data expander is disclosed for subsequently reconverting the multilevel low-speed data

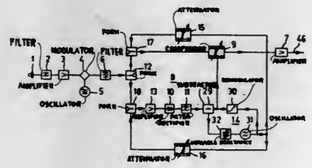


back into two-level high-speed data which is the same as the original data.

3,559,068
COMPRESSION-EXPANSION INFORMATION TRANSMISSION SYSTEM USING AN FM COMPRESSION PILOT SIGNAL

Petrus Cornelis Maria Almering and Henri Jan Velo, Hilversum, and Johannes Anton Greefkes, Emmasingel, Eindhoven, Netherlands, assignors, by mesne assignments, to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Sept. 5, 1967, Ser. No. 665,473
Claims priority, application Netherlands, Sept. 2, 1966, 6612386
Int. Cl. H04b *1/68*
U.S. Cl. 325—50 **14 Claims**



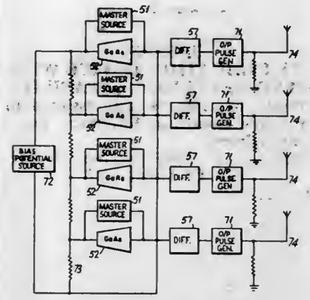
A communication system in which the transmitter is provided with a dynamic compressor, and the receiver is provided with a dynamic expander. The transmitter also transmits a control signal that is time modulated (e.g. frequency or phase) in accordance with the compression. The receiver includes means responsive to the control signal for controlling the expander.

3,559,069
ELECTRONIC PULSE DURATION MODULATION DEVICES USING TRAVELLING FIELD DOMAIN PHENOMENA

Hans Ludwig Hartnagel, Sheffield, England, assignor to National Research Development Corporation, London, England, a British corporation

Filed Dec. 6, 1968, Ser. No. 781,924
Claims priority, application Great Britain, Dec. 7, 1967, 55,810/67; July 31, 1968, 36,545/68
Int. Cl. H03k *7/08*
U.S. Cl. 325—105 **18 Claims**

In a pulse duration modulation device travelling domains are nucleated by the Gunn effect or the like and the path lengths of the domains are varied to vary the duration of signal pulses derived from the domains. In one form the domains are nucleated in response to periodic

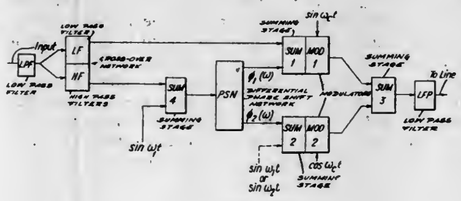


trigger pulses and the duration modulated signal pulses are utilised in a pulse phase modulator driving a phased aerial array.

3,559,070
SIGNAL TRANSMITTER FOR LIMITED BAND WIDTH TRANSMISSION SYSTEMS

John Thomas Lawrence Sharpe, Harlow, England, assignor to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware

Claims priority, application Great Britain, June 30, 1967, 30,285/67
Filed June 11, 1968, Ser. No. 736,190
Int. Cl. H04b *1/68, 1/70*
U.S. Cl. 325—136 **7 Claims**



Data transmission systems using carrier modulation for transmitting digital data signals over channels providing limited band widths. Cross-over network means provide high and low frequency components of the input signals. Means are then provided for utilizing the high and low frequency components to modulate carrier signals and transmit the high frequency component as a single side band signal and the low frequency component as a double side band signal, both using the same carrier frequency.

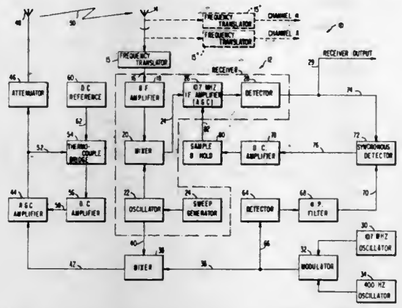
3,559,071
AUTOMATIC GAIN STABILIZATION AND CALIBRATION SYSTEM FOR A RADIO RECEIVER

Hansel B. Mead and Scott V. Campbell, Melbourne, Fla., assignors, by mesne assignments, to Teltronic Measurement Systems, Inc., New York, N.Y., a corporation of Delaware

Filed Mar. 11, 1968, Ser. No. 712,294
Int. Cl. H04b *3/46*
U.S. Cl. 325—363 **16 Claims**

Disclosed is an automatic gain stabilization and calibration system for a receiver. A receiver for monitoring local oscillator signals from television sets is provided with a directional sweep antenna and a calibrating antenna.

As the radiation pattern of the sweep antenna passes over the calibrating antenna, a calibrating signal is sent from the latter to the former. This signal is at the frequency of the receiver IF and is first mixed with a sweep oscilla-

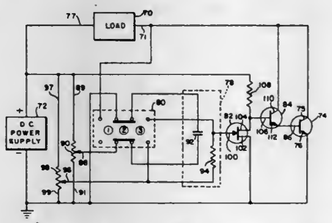


tor in the receiver. The transmitted signal passes through the receiver and is compared in a synchronous detector with the modulation on the unmixed calibrating signal. Any error output from the synchronous detector is used to correct the gain of a receiver amplifier.

3,559,072
ELECTRONIC SHUT-OFF TIMERS

Elden R. Davisson, Columbus, Ind., assignor to Arvin Industries, Inc., Columbus, Ind., a corporation of Indiana

Filed Mar. 18, 1968, Ser. No. 713,614
Int. Cl. H03k *17/28;* **H04b** *1/16*
U.S. Cl. 325—395 **2 Claims**



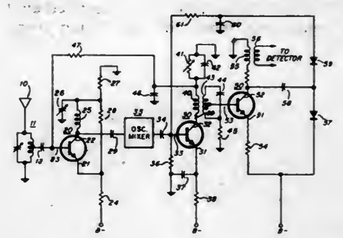
Electronic switches controlled by RC timing circuits for combination with a radio or the like to provide timed play periods of the radio. In one embodiment the switch comprises a semiconductor having its principal conducting elements connected in series with the low voltage receiver stages and low voltage power supply of a radio. An RC timing circuit is coupled to the control electrode of the semi-conductor to turn it off after a timed interval from its turn on time. In a second embodiment the electronic switch comprises a semiconductor having its principal conducting electrodes coupled between the low voltage power supply and the audio input to the volume control potentiometer of the receiver. Again, an RC timing circuit is coupled to control conduction of the semiconductor which shorts out the audio signal after a timed interval.

3,559,073
FORWARD AGC CIRCUIT

Si Kun Chang and Mohammed A. Rakha, Chicago, Ill., assignors to Admiral Corporation, Chicago, Ill., a corporation of Delaware

Filed Apr. 11, 1966, Ser. No. 541,792
Int. Cl. H04b *1/16*
U.S. Cl. 325—405 **2 Claims**

A transistorized FM receiver having conventional AGC control means for adjusting the gain of the IF amplifier. The IF amplifier acts as a DC amplifier also and includes a DC responsive circuit for supplying bias to the RF amplifier, which is operated at the maximum point on its gain

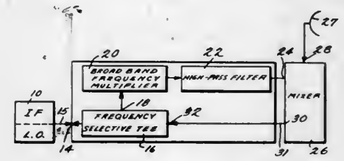


versus bias characteristic curve. The RF amplifier is forward biased in the presence of increasing signal level and driven toward saturation.

3,559,074
REMOTE LOCAL OSCILLATOR FREQUENCY MULTIPLIER

Charles H. Currie and William W. Graham, Doraville, Ga., assignors to Scientific-Atlanta, Incorporated, Atlanta, Ga., a corporation of Georgia

Filed Feb. 7, 1968, Ser. No. 703,579
Int. Cl. H04b *3/56*
U.S. Cl. 325—445 **8 Claims**



The following specification discloses a remote local oscillator frequency multiplier for use in combination with a microwave antenna receiver apparatus wherein the remote local oscillator and IF preamplifier are located at a point remote from the crystal mixer, which may be in the form of a cross-guide harmonic mixing apparatus, to increase the sensitivity of such receivers. The frequency multiplier, which is located adjacent the mixing apparatus, includes a frequency selective T for coupling the local oscillator signal to a broad band frequency multiplier and the intermediate frequency signal and the crystal current from the mixer back to the IF preamplifier. The signal from the frequency multiplier is connected to the mixer through a high-pass filter, which may be a wave guide having dimensions beyond cut-off for the fundamental local oscillator signal and any harmonics below the desired frequency to be connected to the mixer.

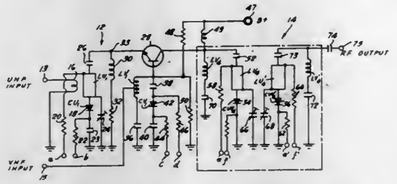
3,559,075
TUNING CIRCUIT FOR MULTI-BAND RECEIVER USING VARIABLE CAPACITANCE DIODES

Mitsunari Okazaki, Tokyo, Japan, assignor to Alps Electric Company, Limited, Tokyo, Japan, a corporation of Japan

Filed Mar. 20, 1968, Ser. No. 714,561
Claims priority, application Japan, July 13, 1967, 42/44,728
Int. Cl. H03j *3/18, 5/00*
U.S. Cl. 325—459 **8 Claims**

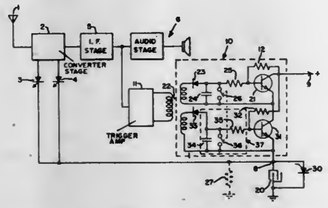
A receiver adapted to receive signals within two frequency bands comprises separate tuning means, each means being adapted to resonate at frequencies within

one of the frequency bands. The tuning means are each provided with signal sensitive capacitances having the characteristic of being operative or inoperative as a capacitor depending upon the polarity of a control signal applied thereto. The polarity of the applied control signal thereby determines which of the tuning means will be



operative thereby rendering the receiver effective to receive only signals within the selected frequency band. When a given capacitance is operative as a capacitor, the value of its capacitance may vary depending upon the magnitude of the control signal applied thereto. Hence control signal applying means can select a desired band and can effect tuning within that band.

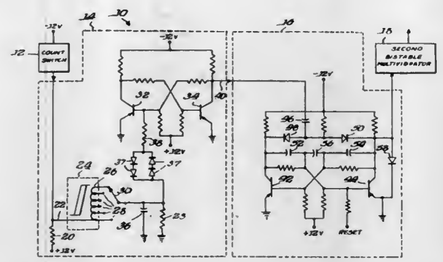
3,559,076
VARACTOR SCAN CIRCUIT WITH SCAN PREVENTION CIRCUITRY DURING BRIEF SIGNAL FADES
Joseph A. Worcester, Frankfort, N.Y., assignor to General Electric Company, a corporation of New York
Filed Feb. 29, 1968, Ser. No. 709,275
Int. Cl. H04b *1/32*
U.S. Cl. 325—470 **4 Claims**



An automatically tuned radio receiver having a frequency determining circuit including a reactive element, the capacitance of which varies with the potential applied across it. The reactive element is coupled to a capacitor network which is charged by a source connected to a control circuit comprising first and second serially connected transistors. In the absence of a received signal, the transistors conduct, and the capacitor charges. When a signal is received, it is applied to the control electrodes of the first and second transistors to turn the transistors off, so that the receiver remains tuned to the frequency of the incoming signal. Should the signal be temporarily lost, the signal is removed from the control electrodes of the transistors. However, an R-C circuit connected to the control electrode of the second transistor holds the transistor non-conductive for the duration of the R-C circuit time constant.

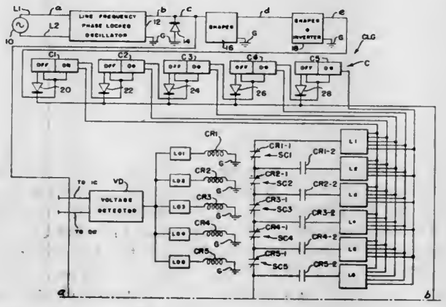
3,559,077
COUNTING CIRCUIT
Virgle E. Porter, Country Club Hills, Ill., assignor to Amtron, Inc., Midlothian, Ill., a corporation of Illinois
Filed Aug. 21, 1967, Ser. No. 661,894
Int. Cl. H03k *21/00*
U.S. Cl. 328—39 **6 Claims**

An electronic control circuit highly insensitive to noise including contact bounce, having an input circuit including a saturable magnetic core reactor with a single coil through which the input signal is applied. The input circuit is nonresponsive to input signals of a time duration less than a time duration preselected by a plurality of taps



on the coil. Connected to the input circuit are bistable multivibrator circuits with an internal capacitive feedback coupling rendering each multivibrator circuit nonresponsive to triggering by electrical signals of a frequency substantially higher than its operating frequency.

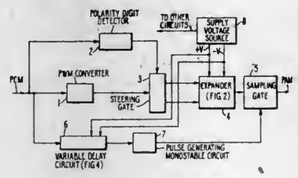
3,559,078
FREQUENCY GENERATOR
Lawrence E. Calsyn, East Moline, Ill., and Robert W. Lewis, St. Louis, Mo., assignors, by mesne asisgnments, to Gulf + Western Industries, New York, N.Y., a corporation of Delaware
Original application Sept. 1, 1964, Ser. No. 393,657. Divided and this application Feb. 9, 1968, Ser. No. 721,910
Int. Cl. H03k *3/64*
U.S. Cl. 328—63 **5 Claims**



A frequency generator which is particularly applicable for use as a portion of a master traffic controller for providing cycle length determining signals for application to local traffic controllers. To this end, there is provided a frequency signal generating means, such as a phase-locked oscillator, connected to a commercial alternating current power supply source for continuously generating a frequency signal having a fixed frequency synchronized with the line frequency of the commercial power supply source. A counter serves to continuously count the pulsations of the generated frequency signal and provide an output count signal representative of the number of pulsations counted. A count selector serves to pass a predetermined count signal which is representative of a predetermined count of pulsations of the frequency signal. A bistable device, such as a bistable multivibrator circuit, is changed from one stable state to the other by successive predetermined count signals. On-off switching means, such as a

silicon controlled rectifier, is alternately on and off in accordance with the stable conditions of the bistable device. The on-off switching means serves to alternately connect and disconnect an output circuit with a source of energy so that the output circuit carries a signal having a frequency which is dependent on the predetermined count signal, and which frequency is synchronized with the line frequency of the commercial power source.

3,559,079
NONLINEAR DECODER
Joseph Hood McNeilly, Harlow, and Roger Alan Manship, Bishop's Stortford, England, assignors to International Standard Electric Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 27, 1968, Ser. No. 716,643
Claims priority, application Great Britain, Apr. 21, 1967, 18,473/67
Int. Cl. H03k *5/20*
U.S. Cl. 328—119 **10 Claims**



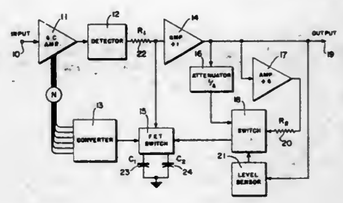
The input pulse code modulation (PCM) signal is converted to a pulse width modulation (PWM) signal whose width is proportional to the coded analog value. A capacitor is charged from a supply voltage for the duration of the PWM signal. The capacitor then discharges for a given time after which the voltage stored on the capacitor is sampled to provide an expanded pulse amplitude modulation signal. Due to supply voltage variation the capacitor can be charged too high or too low resulting in an error when the capacitor is sampled. This error is compensated for by employing a monostable circuit operating from the same supply voltage to control the time of sampling. Its time delay is adjusted to sample later if the supply voltage increases, or early if the supply voltage decreases.

3,559,080
SIGNAL RECEIVING SYSTEM
Yasuhiro Kobori and Kunio Murakami, Tokyo-to, Japan, assignors to Kaijo Denki Kabushiki Kaisha, also known as Kaijo Denki Co., Ltd., Tokyo-to, Japan, a joint-stock company of Japan
Filed Sept. 12, 1967, Ser. No. 667,171
Int. Cl. G01r *23/02*
U.S. Cl. 328—136 **5 Claims**



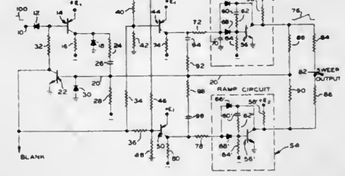
A receiving system for detecting the incoming instant of an AC signal, where the setting of a multivibrator is carried out when the instantaneous level of the signal exceeds a predetermined threshold level and the resetting of the multivibrator is carried out when the number of zero-crossings of the signal reaches a predetermined number, the system detecting the incoming instant of the signal at the resetting instant of the multivibrator.

3,559,081
FILTER CIRCUIT
Louis J. Baudino, Jr., Littleton, and James A. Bright, Denver, Colo., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Dec. 28, 1967, Ser. No. 694,194
Int. Cl. H04b *15/00*
U.S. Cl. 328—167 **8 Claims**



This circuit provides a switched filter network. The filter network is automatically switched as a function of the level of the signal into the filter. In addition, a level detecting network controls the filter network such that a predetermined signal level is prepared in anticipation of the succeeding gain switch signal.

3,559,082
CIRCUIT FOR PROVIDING A PLURALITY OF SELECTABLE SWEEP WAVEFORMS
John J. Horn, Beaverton, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon
Filed Feb. 28, 1968, Ser. No. 709,072
Int. Cl. H03k *4/50*
U.S. Cl. 328—181 **23 Claims**

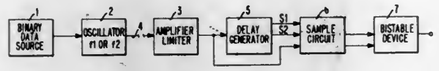


An improved sweep circuit for an oscilloscope or the like includes a plurality of sweep generators operated by a plurality of selectable gating circuits. The gating circuits are biased such that each gating circuit, except a selected gating circuit, clamps a respective sweep generator in a nonoperative condition. A common input trigger receiving circuit not only receives input triggering signals, but also forms a multivibrator with a selected gating circuit. This multivibrator is operative for causing the selected gating circuit to clamp its associated sweep generator in a nonoperative condition only for the duration of an operating period of the multivibrator, corresponding to the holdoff period desired for the sweep generator. In the multivibrator, the selected gating circuit includes the timing means for determining a holdoff timing period appropriate for the associated sweep generator. At the conclusion of the multivibrator's operating period, the selected gating circuit causes the associated sweep generator to initiate a sweep waveform. Selection of a desired sweep waveform as well as the selection of an appropriate holdoff period may thus be accomplished by means of selecting a proper gating circuit.

3,559,083
DIGITAL DEMODULATOR FOR FREQUENCY SHIFT KEYING SYSTEMS

William G. Crouse, Raleigh, N.C., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York

Filed Oct. 13, 1967, Ser. No. 675,244
Int. Cl. H04l *27/14*
U.S. Cl. 329—104 **9 Claims**

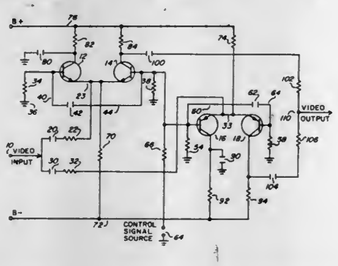


Digital logic devices respond to incoming transmission signals in a frequency shift keying system and determine the frequency of each half cycle of the incoming signal. Consequently, a maximum data transmission rate can be achieved with each half cycle of the carrier representing a bit of information. Monostable devices respond to each change in amplitude of the incoming signal and control a sampling circuit to identify the incoming signal frequency.

3,559,084
ELECTRICAL SIGNAL ATTENUATION NETWORK

Richard S. Wise, Boulder, Colo., assignor to Ball Brothers Research Corporation, Boulder, Colo., a corporation of Colorado

Filed Dec. 29, 1967, Ser. No. 694,547
Int. Cl. H03f *3/18*
U.S. Cl. 330—13 **17 Claims**



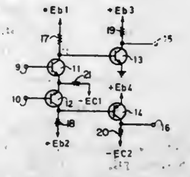
A video signal attenuator having complementary transistor pairs to attenuate a video signal by a factor determined by an applied control voltage. Each transistor pair receives the input video signal and effects across an output resistive matrix video signals as attenuated without distortion but of substantially equal amplitude and polarity, and direct current signals of substantially equal amplitude and opposite polarity so that low frequency transient signals occasioned by variations of the control voltage do not appear at the output with the attenuated video signals.

3,559,085
TRANSISTOR AMPLIFIER FOR HIGH SPEED SWEEP

Yasumori Ishijima, Tokyo, Japan, assignor to Iwatsu Electric Company Limited, Tokyo, Japan, a company of Japan

Filed May 2, 1968, Ser. No. 726,066
Claims priority, application Japan, May 4, 1967, 42/28,049
Int. Cl. H03f *3/18, 3/26*
U.S. Cl. 330—13 **4 Claims**

An improved transistor push-pull amplifier provided with two output transistors of an opposite polarity type in a common-emitter configuration and having almost equal average DC output levels. By selecting the polarity of the output transistors in accordance with the required polarity of the output voltage, and utilizing the high frequency amplifying characteristics of the output transistors when they are driven in the direction of their

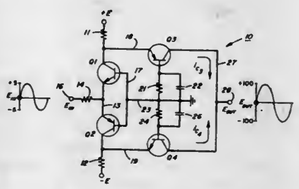


saturation region, the high speed sawtooth waveform of a cathode-ray tube oscilloscope sweep circuit provided with the transistor amplifier of the present invention can be amplified without distortion.

3,559,086
BIPOLAR VOLTAGE AMPLIFIER

Charles Clifford Wyckoff, Jr., Trenton, N.J., assignor to Western Electric Company, Incorporated, New York, N.Y., a corporation of New York

Filed Mar. 26, 1969, Ser. No. 810,633
Int. Cl. H03f *3/18, 3/26*
U.S. Cl. 330—15 **4 Claims**

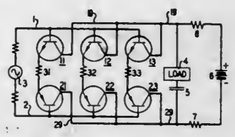


A bipolar voltage amplifier having a relatively high output voltage and a relatively high slewing rate. Input signals are applied to the emitters of a pair of serially-connected complementary transistors in common-emitter configuration. The amplified signals developed across the collectors of the first pair of transistors are fed to the emitters of a second pair of complementary transistors connected in push-pull, common-base configuration.

3,559,087
DIFFERENCE AMPLIFIER WITH PARALLEL ISOLATED EMITTER CONFIGURATION

Robert V. Goordman, Hackettstown, and Ronald C. Petersen, Bedminster, N.J., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed Aug. 19, 1969, Ser. No. 851,378
Int. Cl. H03f *3/68*
U.S. Cl. 330—15 **10 Claims**



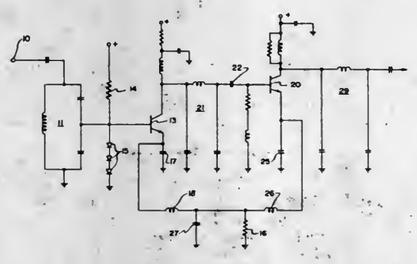
A transistor difference amplifier is disclosed in which one side thereof, called side A, contains a plurality of *n* transistor elements equal in number to the transistor elements in the other side, called side B. Moreover, each of the emitters in side A is separately electrically connected,

through a resistor for example, to a corresponding emitter in side B. The electrical midpoint, or balance point, of the electrical path defined by each emitter to emitter acts as a virtual ground. The existence of the virtual ground permits the transfer of emitter signal current from side A to side B through *n* separate emitter to emitter paths without the necessity of passing through an acual earth or chassis ground return path, thereby enabling high power handling capacity while minimizing emitter circuit lead and ground plane inductance. In addition, parasitic coupling to adjacent circuits through the ground plane is avoided.

3,559,088
TRANSISTOR AMPLIFIER WITH AUTOMATIC GAIN CONTROL

Donald L. Booth, Chicago, and William A. Schilb, Lombard, Ill., assignors to Motorola, Inc., Franklin Park, Ill., a corporation of Illinois

Filed Aug. 7, 1969, Ser. No. 848,247
Int. Cl. H03g *3/30*
U.S. Cl. 330—29 **5 Claims**

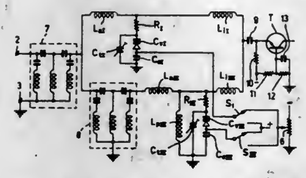


A two-stage RF transistor amplifier, operating with a class A first stage and a class C second stage has a constant DC biasing voltage on the base of the input stage transistor and a DC feedback path established by a common-emitter resistor for the transistors of both stages, in order to maintain the RF power output constant over a wide range of RF input and independent of the gain of the individual transistors.

3,559,089
CIRCUIT ARRANGEMENT FOR RECEIVING ELECTRICAL SIGNALS

Gerrit Wolf, Nijmegen, and Cornelis Johannes Maria van Gils, Emmasingel, Eindhoven, Netherlands, assignors to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware

Filed Feb. 28, 1969, Ser. No. 803,241
Claims priority, application Netherlands, Mar. 9, 1968, 6803411
Int. Cl. H03f *3/04*
U.S. Cl. 330—31 **2 Claims**

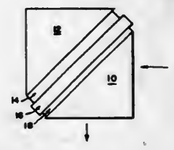


A circuit arrangement which can be tuned in which signals are applied through a signal-dissipating parallel circuit and subsequently through an inverting impedance network to a transistor arranged in common base configuration so as to obtain both a satisfactory power matching and a satisfactory noise matching. According to the invention tuning is effected by means of a variable capacity diode whose resistive losses at least partly take care of this dissipation in the parallel circuit, while series inductances are provided in order to maintain the bandwidth of the circuit arrangement constant through the tuning range (FIG. 1).

3,559,090
POLARIZATION FREE BEAM DIVIDER

Stanley J. Refermat and Arthur F. Turner, Rochester, N.Y., assignors to Bausch & Lomb Incorporated, Rochester, N.Y., a corporation of New York

Filed Oct. 8, 1968, Ser. No. 765,847
Int. Cl. G02b *1/10, 27/14*
U.S. Cl. 350—164 **4 Claims**

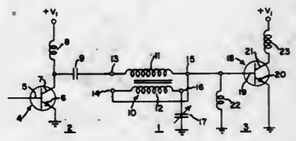


A virtually polarization free beam divider comprises two 45° optical prisms positioned with their hypotenuse surfaces facing each other with a multi-layer thin film structure positioned between the facing surfaces of the prisms. The multilayer thin film structure is composed of a first layer of a dielectric material, a second layer of a metal and a third layer of a dielectric material.

3,559,091
BROADBAND INTERSTAGE COUPLING CIRCUIT

John W. Lunden, Camillus, and James V. O'Hern, Nedrow, N.Y., assignors to General Electric Company, a corporation of New York

Filed Jan. 4, 1968, Ser. No. 695,761
Int. Cl. H03f *1/42, 1/00*
U.S. Cl. 330—165 **2 Claims**



A broadband interstage circuit for coupling two stages of amplification in the VHF and UHF region, wherein an impedance match is provided over a frequency band on the order of several hundred mHz. The circuit is composed of a transmission line transformer having a capacitor connected between one of the transformer terminals and ground. The circuit, being essentially non-dissipative, is appropriate for use with large signals and high power levels, up to many tens of watts.

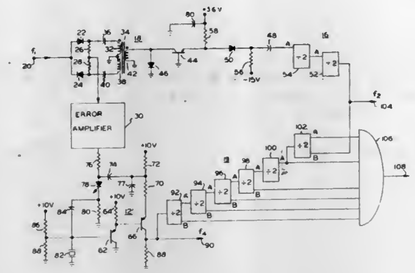
3,559,092
FREQUENCY DIVIDING SYSTEM

Stephen A. Roth, Beaverton, Oreg., assignor to Tektronix, Inc., Beaverton, Oreg., a corporation of Oregon

Filed Sept. 9, 1968, Ser. No. 758,416
Int. Cl. H03b *3/06*
U.S. Cl. 331—16 **15 Claims**

A given signal is derived in accurately timed relation with a higher frequency signal, wherein the frequency of the latter signal is other than an integral multiple of the

frequency of the given signal. A controlled signal generator produces the given signal, and the given signal is then divided down to a third frequency wherein the third frequency is desirably the largest common divisor of the given signal and the higher frequency signal. A phase



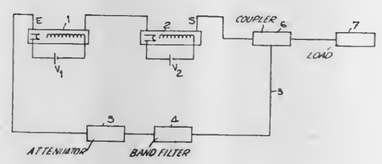
detector sampler compares the phase of the higher frequency signal with the phase of the signal at the third frequency, and correction is made in the frequency of the given signal until the proper phase relation is achieved between the given signal and the higher frequency signal.

3,559,093

NOISE GENERATOR EMPLOYING A FEEDBACK PATH AROUND TWO CASCADED TRAVELLING-WAVE TUBES

Eugène Morvan, Paris, France, assignor to CSF-Compagnie Generale de Telegraphie Sans Fil, a corporation of France

Filed Dec. 17, 1968, Ser. No. 784,445
Claims priority, application France, Dec. 21, 1967, 133,225
Int. Cl. H03b *29/00*
U.S. Cl. 331—78 3 Claims



A noise generator for production of uniformly distributed noise incorporating two travelling wave tubes in series connected by a feedback loop comprising connected in series a variable attenuator and if desired a band-pass filter.

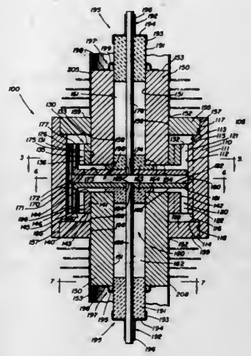
3,559,094

LOW VOLTAGE A.C. MAGNETRON

James E. Staats, Louisville, Ky., assignor to General Electric Company, a corporation of New York

Filed Dec. 30, 1968, Ser. No. 787,660
Int. Cl. H03b *9/10*
U.S. Cl. 331—86 65 Claims

There is disclosed a crossed-field discharge device including an annular first anode member having arcuate first recesses on the inner surface thereof and two annular second anode members, each having on the outer surface thereof arcuate second recesses equal in number to the first recesses and disposed respectively opposite the first recesses cooperating therewith to form interaction spaces, two axially spaced-apart cathode members each carrying secondary-emitting electron discharge members respectively disposed in the interaction spaces, means for



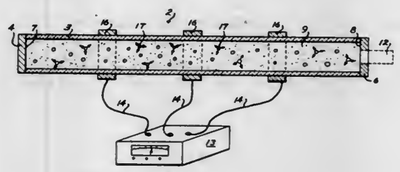
applying low frequency low voltage A.C. operating potentials to the device and starting means for the device; oscillator, amplifier and modulator circuits incorporating the devices are also disclosed.

3,559,095

NUCLEAR ENERGY PUMPED LASER

Niel E. Nielson, Los Altos, Calif., assignor to Lockheed Aircraft Corporation, Burbank, Calif.

Filed Jan. 5, 1968, Ser. No. 703,205
Int. Cl. H01s *3/09*
U.S. Cl. 331—94.5 7 Claims



A laser device is provided in which the lasing substance is pumped to an energy level consistent with lasing action by radiation from a source of nuclear energy. The source of radiation is contained within the enevelope which contains the laserable substance when such laserable substance constitutes a gaseous compound, and is supported in conjunction with the laserable substance when such laserable substance constitutes a solid. Sources of radiation found to be effective include alpha-emitting radioactive material such as polonium-210 and plutonium-238, and gamma-emitting materials such as cobalt, cesium and strontium.

3,559,096

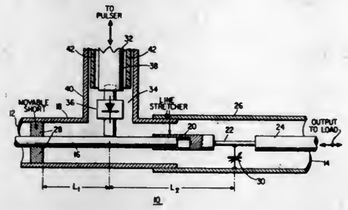
VOLTAGE TO FREQUENCY CONVERTER

Donald C. Lokerson, New Carrollton, Md., assignor to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration

Filed Dec. 20, 1968, Ser. No. 785,546
Int. Cl. H03k *3/281*
U.S. Cl. 331—113 11 Claims

A voltage controlled, variable frequency relaxation oscillator includes a pair of metal oxide semiconductor field effect transistors (MOSFET's) feeding variable currents to

transistors comprising the oscillator. The gate electrodes of the MOSFET's are connected in parallel with a frequency controlling signal source to provide a high impedance to the source. To compensate for the tendency of the MOSFET's to produce a nonlinear oscillator output fre-



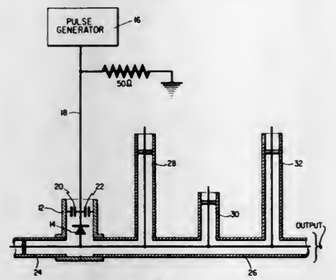
quency as a function of source signal level, special circuitry is provided. To maintain the oscillator response constant as a function of temperature and compensate for variations in the characteristics of the MOSFET's as a function of temperature, a regulator circuit including a MOSFET as a voltage reference source is provided.

3,559,097

HIGH POWER, HIGH EFFICIENCY SILICON AVALANCHE DIODE UHF AND L BAND OSCILLATOR

Kern K. N. Chang, Princeton, Hans J. Prager, Belle Mead, and Sherman Weisbrod, Trenton, N.J., assignors to RCA Corporation, a corporation of Delaware

Filed Feb. 5, 1969, Ser. No. 796,846
Int. Cl. H03b *7/06*
U.S. Cl. 331—107 3 Claims



An improved silicon avalanche diode oscillator for pulsed operation in the UHF or L band, which has an efficiency (40 percent or better) at least equal to that of vacuum tube oscillators operating at these frequencies, is obtained by utilizing at least three spaced sliding short stub tuners as part of a coaxial structure in which is situated the diode.

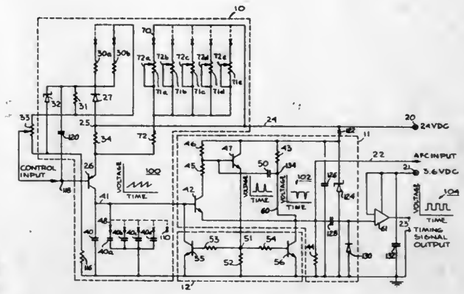
3,559,098

WIDE FREQUENCY RANGE VOLTAGE CONTROLLED TRANSISTOR RELAXATION OSCILLATOR

Richard A. Chandos, Goleta, Calif., assignor to Electro-Optical Industries, Inc., a corporation of California

Filed Oct. 10, 1968, Ser. No. 766,561
Int. Cl. H03k *3/26*
U.S. Cl. 331—111 11 Claims

A voltage controlled oscillator providing output pulses controllable in frequency over a wide range from a few hundredths of a hertz to megahertz with a high degree of accuracy and stability. The oscillator employs a transistor constant current source for charging an adjustable R-C timing circuit which triggers a feedback controlled switching transistor circuit. The switching transistor circuit activates a separate transistor discharge circuit which



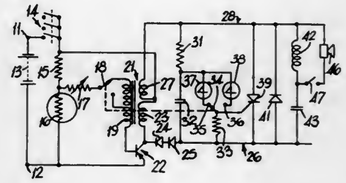
also serves for isolating the triggering input from the switching transistor during switching to allow rapid reset of the timing circuit and to improve the output waveform.

3,559,099

PULSE PRODUCING CIRCUITS

Peter David Jones, Solihull, England, assignor to Joseph Lucas (Industries) Limited, Birmingham, England, a British company

Filed Oct. 21, 1968, Ser. No. 769,094
Claims priority, application Great Britain, Feb. 10, 1965, 5,728/65
Int. Cl. A61h *31/00*
U.S. Cl. 331—111 3 Claims



A pulse producing circuit includes a pair of supply lines to which power is supplied by an oscillator. When the oscillator supplies power to the lines, it charges two capacitors at the same time. The first capacitor is connected across the lines in series with a resistor, and when the charge on this capacitor reaches a predetermined value a breakdown device conducts, and the first capacitor discharges to turn on a switch. This switch then provides a discharge path for the second capacitor which discharges through a load.

3,559,100

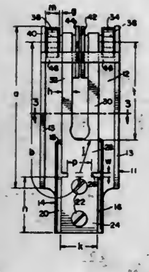
ELECTROMAGNETICALLY DRIVEN TUNING FORK

Boris F. Grib, Huntington, and George L. Vollet, Massapequa, N.Y., assignors to Philamon Laboratories, Inc., Westbury, N.Y., a corporation of New York

Filed Feb. 3, 1969, Ser. No. 795,832
Int. Cl. H03b *5/36*
U.S. Cl. 331—116 7 Claims

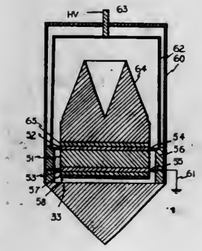
There is disclosed an electromagnetically driven tuning fork structure with a drive coil and a pickup coil disposed near the end of the tuning fork tines and on opposite sides thereof; the magnetic bias provided by the

cores of the coils is symmetric with respect to the tuning fork axis. A low reluctance magnetic circuit is provided including the base of the structure which tends to limit



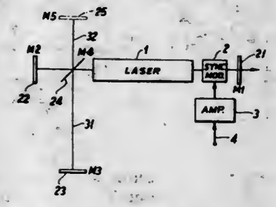
the magnetic flux from the drive coil to the side of the structure occupied by the drive coil and thus limit the influence of stray fields in the pickup coil.

3,559,101
OPTICAL ISOLATOR
Donald J. Parker, Cherry Hill, N.J., and Edward Kornstein, Belmont, Mass., assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Feb. 12, 1964, Ser. No. 344,511
Int. Cl. H01s *3/00*; G02f *1/28*
U.S. Cl. 332—7.51 **7 Claims**



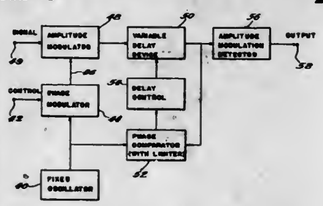
1. An optical isolator for devices that emit coherent electromagnetic radiation by stimulated emission of radiation, comprising:
(a) means, including a prism having a predetermined path for coherent radiation at a given wave length;
(b) a reflective surface of said prism in said path;
(c) a support member holding said prism;
(d) an electrostrictive member having first and second parallel surfaces mounted on said support member, said first and second surfaces being parallel to said reflective surface;
(e) an absorber mounted on one of said parallel surfaces of said electrostrictive member adjacent said reflective surface;
(f) an acoustical termination member mounted on said second of said parallel surfaces of said electrostrictive member; and
(g) means coupled to said electrostrictive member to move said absorber between one-tenth and one and one-quarter of said given wave length of said reflective surface to vary the reflectance from said reflective surface.

3,559,102
ULTRA-HIGH-SPEED LASER LIGHT PULSE GENERATOR
Atsufumi Ueki, Tokyo, Japan, assignor to Nippon Electric Company, Limited, Tokyo, Japan, a company of Japan
Filed Dec. 26, 1968, Ser. No. 786,946
Claims priority, application Japan, Dec. 29, 1967, 43/85,139
Int. Cl. H01s *3/10*
U.S. Cl. 332—7.51 **3 Claims**



A laser pulse generator is described which operates with a mode-locking device to produce light pulses in a stable manner at the mode-locking frequency. A third reflector is employed which is located in reflecting relationship with the laser pulses produced with a laser resonator and is located at a preselected distance from one of a pair of reflectors which define a laser resonator in conjunction with a lasing medium.

3,559,103
METHOD OF DELAY MODULATION
Duane H. Cooper, 804 S. Foley, Champaign, Ill. 61820
Continuation-in-part of application Ser. No. 486,077, Sept. 9, 1965. This application Oct. 5, 1965, Ser. No. 502,805
Int. Cl. H03k *7/00*
U.S. Cl. 332—9 **21 Claims**

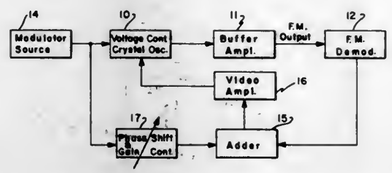


Signal delay is controlled in accordance with a control waveform by indirect coupling of the control waveform to an electrically variable delay element through a coupling system in which the control waveform is used to produce a pilot waveform which is delay-modulated with respect to a wholly periodic reference waveform. The pilot and reference waveforms are compared and one of them is further delay-modulated to produce substantial identity of the delays and at the same time delay-modulate the signal. Systems employing conventional electrically variable delay elements and systems dispensing with such elements are described.

3,559,104
WIDEBAND CRYSTAL-CONTROLLED FM MODULATOR HAVING NOISE CANCELLING FEEDBACK
Harrison Y. Miyahira and John L. Wilkerson, Torrance, Calif., assignors to TRW Inc., Redondo Beach, Calif., a corporation of Ohio
Filed Aug. 26, 1968, Ser. No. 755,063
Int. Cl. H03c *3/08, 3/22*
U.S. Cl. 332—19 **4 Claims**

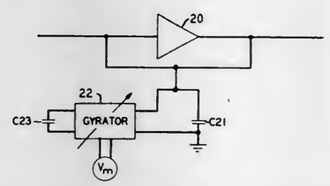
A crystal-controlled oscillator is provided with a feedback path for substantially cancelling any distortion,

spurious crystal modes or other noise that may appear in the oscillator output. To this end the feedback path includes an FM demodulator for extracting the baseband signal and any distortion which may exist. The feedback



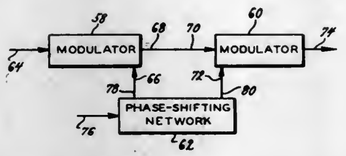
path includes an adder for comparing the input signal with the modulation signal. Preferably, the phases and amplitude of both input and demodulated signal are adjusted to be equal.

3,559,105
TWO-PART GYRATOR AS THE FEEDBACK NETWORK OF A VOLTAGE-CONTROLLED OSCILLATOR
Carl F. Kurth, Andover, Mass., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Sept. 23, 1968, Ser. No. 761,569
Int. Cl. H03c *3/22*
U.S. Cl. 332—30 **3 Claims**



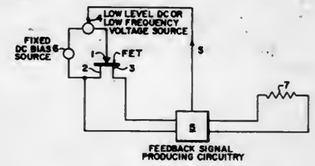
A voltage-controlled oscillator is provided which includes a gyrator circuit connected in the series feedback path of the oscillator. The gyrator, when capacitively terminated, functionally resembles an inductance and is connected as a two-port network in the feedback path.

3,559,106
MODULATOR THAT DEVELOPS AND REINFORCES ONE SIDEBAND WHILE DEVELOPING AND ATTENUATING A SECOND SIDEBAND
John R. Grindon, Hazlewood, Mo., assignor to Conductron Corporation, St. Charles, Mo., a corporation of Delaware
Filed July 17, 1967, Ser. No. 653,704
Int. Cl. H03c *1/52*
U.S. Cl. 332—41 **25 Claims**



A carrier signal is modulated by a portion of a modulating signal to develop a first sideband and a second sideband which are oppositely-disposed of a predetermined modulation axis, that carrier signal is modulated a second time by a portion of that modulating signal which has been phase-shifted a predetermined number of degrees, the second modulation of that carrier signal develops a third sideband and a fourth sideband which are oppositely-disposed of a second modulation axis that is displaced from said predetermined modulation axis by a predetermined angle, said predetermined number of degrees through which said portion of said modulating signal is phase-shifted and said predetermined angle between said modulation axes substantially totalling one hundred and eighty degrees, the first and third sidebands are combined to buck and cancel each other, the second and fourth sidebands are combined to aid and reinforce each other, and then the carrier signal and any spurious sidebands are removed to provide a single sideband suppressed-carrier signal.

3,559,107
AMPLIFIER SYSTEMS AND FET MODULATION
Martin J. Morgan, Rochester, William C. Evans, Brighton, Richard A. Rappaport, Henrietta, and Alfred N. Gutzmer, Webster, N.Y., assignors to Sybron Corporation, a corporation of New York
Filed Oct. 9, 1967, Ser. No. 673,702
Int. Cl. H03c *1/54*
U.S. Cl. 332—47 **16 Claims**

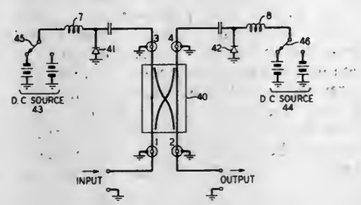


A direct current voltage is applied to the gate electrode of an FET (field effect transistor) to modulate a carrier passing through the FET between its drain and source electrode. The carrier is an alternating current from a fixed amplitude source. The resistance between drain and source of the FET varies in accordance with the amplitude of the modulating voltage, hence, the carrier becomes amplitude modulated thereby. Bias voltage is applied to the FET's gate electrode at the value required for zero temperature coefficient operation of the transistor. Variation in the net gate bias due to the modulating voltage is substantially prevented by negative feedback of the amplified and demodulated carrier voltage to the gate electrode. Further temperature compensation is provided by a Zener diode made of the same semi-conductor material as the FET and incorporated in the supply of bias voltage. The bias voltage for zero temperature coefficient operation is determined by means of the relation $R_{ds}G_m=K$, where R_{ds} is the value of the FET's drain-source resistance at the zero temperature coefficient point, G_m is the FET's forward transfer transconductance and K is a constant having the value of about 0.184.

3,559,108
COUPLER SWITCHES
Harold Seidel, Warren, N.J., assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Aug. 21, 1969, Ser. No. 851,968
Int. Cl. H01p *5/12*; H03h *7/10*
U.S. Cl. 333—7 **7 Claims**

The parasitic elements associated with switching diodes in their high and low conductivity states are dualized. In association with a quadrature hybrid coupler, one high conductivity diode and one low conductivity diode form a balanced bridge network which inhibits signal transmis-

sion. Upon switching one of the diodes so that both are in the same conductivity state, the coupler-diode network forms the equivalent of either a series-connected, series-resonant circuit, or a parallel-connected, parallel-resonant circuit, depending upon the conductivity state of the

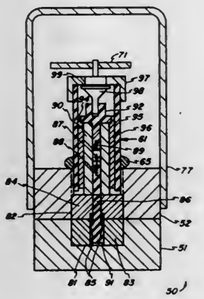


diodes. By cascading couplers, a switch having an arbitrarily high attenuation in the "open" state, and a specified band-pass characteristic in the "closed" state is produced. A similar arrangement using magic-T hybrids is also disclosed.

3,559,109
MICROWAVE SWITCH

Robert H. Matsushige, Mountain View, and Gerald Joseph Latus, Jr., Los Gatos, Calif., assignors to International Telephone and Telegraph Corporation, New York, N.Y., a corporation of Delaware

Filed Aug. 22, 1969, Ser. No. 852,171
Int. Cl. H01p 5/12; H03h 7/10
U.S. Cl. 333—7 **6 Claims**



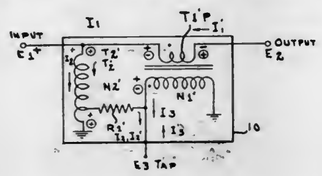
A stub on a microwave line has an electrical quarter-wave length equal to an odd integer of quarterwave lengths. The stub includes a switching diode that can change this effective electrical length to become a half-wave length or other even integer of a quarterwave lengths. This effective lengthening occurs when a bias is removed from the diode, and RF energy in the line back biases the diode to make it appear as a capacitance. Since the impedance of a microwave line reverses itself each quarterwave length, a short may be made to appear as an open, or an open may be made to appear as a short by the expedient of lengthening and shortening the effective electrical length of the line.

3,559,110
DIRECTIONAL COUPLER

Lawrence Grebe Wiley, Camp Hill, and William Dean Couper, Palmyra, Pa., assignors to AMP Incorporated, Harrisburg, Pa.

Filed Nov. 12, 1965, Ser. No. 507,506
Int. Cl. H01p 5/14
U.S. Cl. 333—10 **6 Claims**

A directional coupler is disclosed which includes a first transformer having its primary in series with a transmission line and its secondary of N_1 turns connected directly between ground and a tap to provide a sample signal output. An auto-transformer is connected between the input of the coupler and ground and has N_2 turns. An output is provided from the auto-transformer through

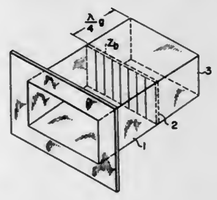


a resistance to the tap and the transformer turns N_1 and N_2 have a relationship so that current components of transmitted signals are effectively added to provide an output sample signal and current components resulting from reflected signals cancel each other.

3,559,111
ELECTRIC WAVE MATCHING ELEMENT EMPLOYING A FERRITE PLATE CONDUCTIVELY COATED ON ONE SURFACE

Kunihiro Suetake, 11 10-ban, Minami 3-chome, Meguro-ku, Tokyo, Japan, Yoshiyuki Naito, Kawasaki-shi, and Eiji Fujiwara, Tokyo, Japan; said Naito and said Fujiwara assignors to said Suetake

Filed Sept. 10, 1969, Ser. No. 856,549
Int. Cl. H01p 1/26, 1/22
U.S. Cl. 333—22 **8 Claims**

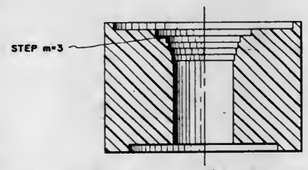


This invention pertains to a wave guide which has at least one electrical energy wave matching element disposed therein in a slanted or sloping relation with regard to the direction of wave propagation. The element, a ferrite plate, is lined with an electric conductive coating on the reverse side thereof, in the traveling direction of the electrical energy wave.

3,559,112
SHAPE DIELECTRIC INSERTS AND METHOD OF COMPENSATION FOR ABRUPT DISCONTINUITIES IN HIGH FREQUENCY COAXIAL DEVICES

George William Ziegler, Jr., Carlisle, Pa., assignor to AMP Incorporated, Harrisburg, Pa.

Continuation of application Ser. No. 633,246, Apr. 24, 1967. This application Feb. 24, 1970, Ser. No. 14,742
Int. Cl. H03h 7/38; H01p 1/00
U.S. Cl. 333—33 **4 Claims**



Compensation for electric field distortion caused by abrupt diameter changes in coaxial devices is provided by controlling the effective dielectric constant K in the zone of distortion through a lamination of dielectric materials of constants K_a and K_b with lamina of outer diameters D', D'', D''' . . . and inner diameters d', d'', d''' . . . based on the relationship

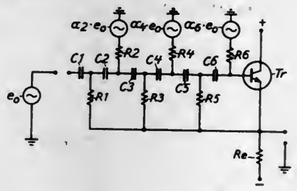
$$K = \frac{K_a \log \frac{D}{d}}{K_a \log \frac{D}{d} - (K_a - K_b) \log \frac{D'D''D'''}{d'd''d'''}}$$

A derivation of the invention method is taught and article embodiments are presented based upon this method.

3,559,113
FILTERS UTILIZING LADDER NETWORKS

Tore Torstensson Fjällbrant, Fjaras, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden, a corporation of Sweden

Filed Sept. 23, 1968, Ser. No. 761,487
Claims priority, application Sweden, Sept. 28, 1967, 13,337/67
Int. Cl. H03h 7/10
U.S. Cl. 333—70 **2 Claims**

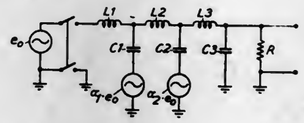


A filter comprises a plurality of capacitors connected in series between a signal source and the input of an amplifier. A plurality of resistors each having one terminal connected to a different junction of adjacent capacitors, and to the junction of an end capacitor and the input of the amplifier. The other ends of alternate resistors including the resistor connected to the amplifier junction receive signals related to the signal source; and the other end of each of the remaining resistors is connected to the output of the amplifier.

3,559,114
FILTER ARRANGEMENT CONSISTING OF A LADDER NETWORK OF REACTANCES AND A TERMINATING RESISTANCE AND SIGNAL SOURCES CONNECTED TO A SERIES ELEMENT ON THE INPUT SIDE OF THE FILTER AND TO ONE OR MORE SHUNT ELEMENTS IN SAID LADDER NETWORK

Tore Torstensson Fjällbrant, Fjaras, Sweden, assignor to Telefonaktiebolaget L M Ericsson, Stockholm, Sweden

Filed Sept. 3, 1968, Ser. No. 757,058
Claims priority, application Sweden, Sept. 19, 1967, 12,865/67
Int. Cl. H03h 7/10
U.S. Cl. 333—70 **1 Claim**

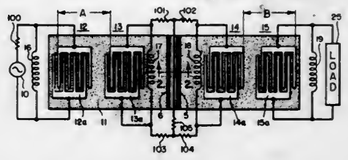


A filter comprises a ladder network of reactances connected between a signal input and a terminating resistor. One type of reactance serially connects the signal input to the terminating resistor, the second type extends from the junctions of serially connected reactances. A portion of the input signal is fed to the free end of at least some of the reactances of the second type. The magnitudes of the reactances and the required portions of the input signal are chosen in accordance with the desired transfer characteristic.

3,559,115
SURFACE-WAVE FILTER REFLECTION CANCELLATION

Adrian J. DeVries, Elmhurst, Ill., assignor to Zenith Radio Corporation, Chicago, Ill., a corporation of Delaware

Filed Feb. 28, 1968, Ser. No. 708,913
Int. Cl. H03h 9/32
U.S. Cl. 333—72 **9 Claims**

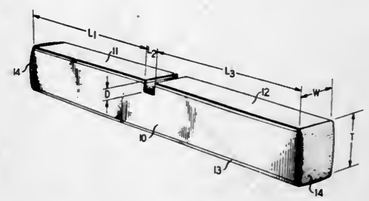


Undesired time-delayed and reduced-amplitude output signal components, due to reflected surface waves arriving at the output transducer of an acousto-electric surface-wave filter, are substantially inhibited or essentially cancelled by connecting two or more acousto-electric surface-wave filters in series. For the case of two filters in series, different effective intertransducer spacings are employed so that the second filter produces compensating reflected signal components which are equal in magnitude but counterphased with the reflected signal components produced in the first filter. These second-filter-reflected components effectively cancel the first-filter components when the two are combined in the second filter, resulting in an output signal which is relatively free from any spurious components due to reflected surface waves in the filter system. The required different effective spacings are provided either by using different actual spacings or by providing for different acoustic wave propagation velocities in the different stages. Similar compensation may be obtained in a system consisting of three or more filters.

3,559,116
PIEZOELECTRIC CERAMIC FILTER

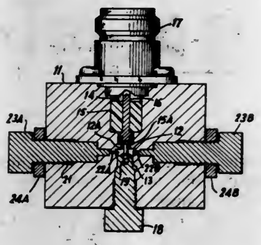
Lawson Egerton, Basking Ridge, N.J., and Thrygve R. Meeker and John D. Tauke, Allentown, Pa., assignors to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York

Filed June 6, 1969, Ser. No. 831,033
Int. Cl. H03h 7/10
U.S. Cl. 333—72 **8 Claims**



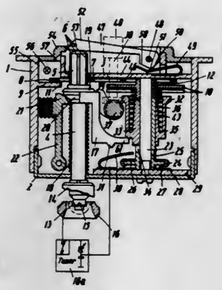
A piezoelectric ceramic filter is disclosed which comprises a pair of mechanically coupled piezoelectric ceramic resonators, each having a rectangular cross section with a thickness in the direction of polarization equal to a half wavelength at the operating frequency, a width of less than one-half the thickness and a length in the direction of coupling in excess of ten times the width. This filter has been found to be free of spurious transmission for frequencies as high as several times the center frequency. Moreover, when the filter is made from a ternary ceramic of $PbTiO_3$, $PbZrO_3$ and $PbMg_{1/3}Nb_{2/3}O_3$, it is substantially stable over a wide range of temperatures.

3,559,117
MICROWAVE SWITCHING DEVICE EMPLOYING A SEMICONDUCTOR DIODE
Shigetoki Sugimoto, Tokyo, Japan, assignor to Nippon Electric Company, Ltd., Tokyo, Japan, a company of Japan
Filed May 31, 1968, Ser. No. 733,590
Claims priority, application Japan, June 6, 1967, 42/36,135; June 23, 1967, 42/40,300; June 25, 1967, 42/48,319; Sept. 26, 1967, 42/83,440; Oct. 25, 1967, 42/69,301
U.S. Cl. 333—98 1 Claim



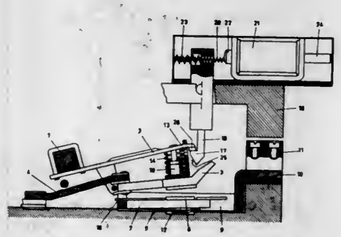
A semiconductor microwave switching device is described wherein a junction diode is placed in a waveguide and operated at least for one switch position with a bias voltage which is lower than the breakdown voltage. A specific installation of the diode in a millimeter waveguide is described.

3,559,118
SWITCHING AND TUNING DEVICE HAVING ROTATABLE PUSHBUTTON ASSOCIATED WITH EACH POTENTIOMETER
Heribert Rümmer, Ingolstadt, Werner Blumann, Nuremberg, and Richard Weist, Erlangen, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed June 10, 1968, Ser. No. 735,732
Claims priority, application Germany, June 10, 1967, P 15 91 682.2; Aug. 25, 1967, P 15 91 713.2
Int. Cl. H03j 5/32; H03h 5/12
U.S. Cl. 334—7 17 Claims



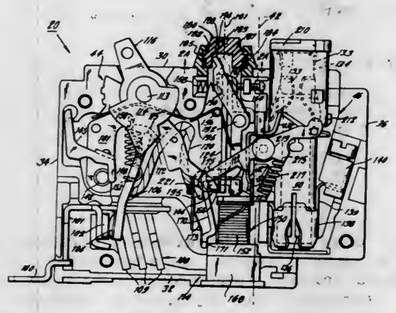
A switching and tuning device for a television or radio receiver having voltage-dependent tuning means. The device is equipped with a plurality of like switching units arranged in a housing, each of which units has a potentiometer, indicating means which show the setting of the potentiometer, push-button means associated with the potentiometer for connecting the same to the tuning means, and an acuating key which is pivotally mounted on the housing and which depresses the push-button means, The actuating key itself forms part of a cover for the housing and normally overlies the indicating means but is raisable to expose the same. Latching means coact with all of the switching units for holding the push-button means of any actuated unit in depressed position. Upon the actuation of the actuating key of a different unit, the previously depressed push-button means is released and the push-button means of the newly actuated unit is held in depressed position. As a space saving feature, the indicating means of the potentiometers, which are in the form of discs, are staggered in height and overlap each other.

3,559,119
CIRCUIT BREAKER
Wolfgang Koennecke, Bad Homburg vor der Hohe, and Gerhard Schleifenbaum, Huttental-Weidenau, Germany, assignors to Hundt & Weber G.m.b.H., Huttental-Geisweld, Germany, a corporation of Germany
Filed Mar. 4, 1969, Ser. No. 804,158
Claims priority, application Germany, Mar. 8, 1968, P 16 38 042.0
Int. Cl. H01h 77/10
U.S. Cl. 335—16 11 Claims



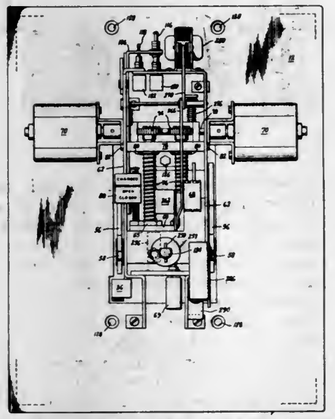
A circuit breaker having a box-like guard to the bottom of which is attached a fixed contact and having an input buss integral with and extending from one end wall.

3,559,120
CIRCUIT BREAKER WITH INTERCHANGEABLE PLUG-IN TYPE TRIP UNIT SUB-ASSEMBLY
Felix E. Myers, Cherry Hill, N.J., assignor to I-T-E Imperial Corporation, Philadelphia, Pa., a corporation of Delaware
Filed Apr. 21, 1969, Ser. No. 817,775
Int. Cl. H01h 71/74
U.S. Cl. 335—42 6 Claims



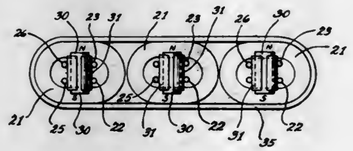
In a circuit breaker of the size and type intended for home or industrial use, an interchangeable plug-in trip unit sub-assembly is provided to readily permit a variation in the circuit breaker tripping characteristics. In the disclosed embodiments the replaceable trip unit subassembly constitutes a portion of the magnetically actuated tripping means. In one embodiment, the magnet and energizing coil is replaceable and in another embodiment the entire assembly including the energizing coil, magnet, and cooperating armature is replaceable.

3,559,121
MOTOR-DRIVEN OPERATING MECHANISM FOR CIRCUIT BREAKER
David B. Powell, Bristol, and Rodney L. Naas, Plainville, Conn., assignors to General Electric Company, a corporation of New York
Filed Mar. 3, 1969, Ser. No. 810,905
Int. Cl. H01h 3/22
U.S. Cl. 335—68 12 Claims



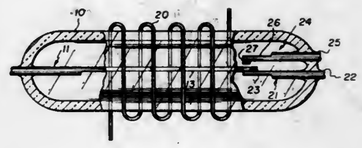
An electrical switching device of the toggle type having motor-driven means to extend, a tension spring assembly and hook means for securing a movable contact arm in an open position against the extended spring. The motor-driven means if thereafter retracted and release of the contact arm hook means causes rapid positive engagement of the contacts. Emergency manually operable means is also provided.

3,559,122
SINGLE OR MULTIPLE SWITCH ASSEMBLY WITH SINGLE MAGNET BIASING
Clayton M. Emmons, Elkhart, Ind., assignor to The Adams & Westlake Company, a corporation of Illinois
Filed June 17, 1968, Ser. No. 737,750
Int. Cl. H01h 51/22
U.S. Cl. 335—78 16 Claims



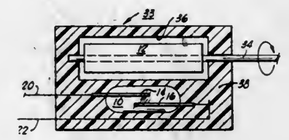
A relay consisting of a pair or pairs of magnetically polarized switches having a single biasing magnet per pair operated by a common coil, or multiples of these assemblies in a common relay. The single biasing magnet for each pair of magnetically polarized switches is utilized in such a manner that the location and varying magnetic characteristics of the magnet provide easy adjustment for single-side-stable or bi-stable operating characteristics. When in plurality form adjacent ends of permanent magnets are of like polarity.

3,559,123
NONPOLARIZED MAGNETIC REED SWITCH
Michael J. Sakatos, Union, N.J., assignor, by mesne assignments, to Sigma Instruments, Inc., Braintree, Mass., a corporation of Massachusetts
Filed Dec. 9, 1968, Ser. No. 782,248
Int. Cl. H01h 51/06, 51/28
U.S. Cl. 335—154 7 Claims



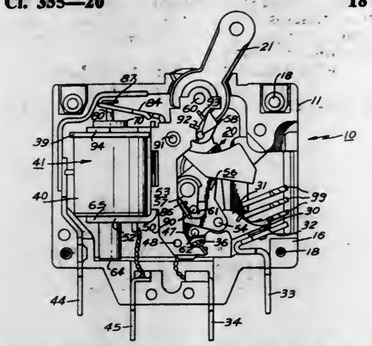
A nonpolarized, single pole, double throw dry reed switch consisting of an elongated envelope which carries three reed members, terminating, respectively, in first, second and third contact elements that are positioned wholly within the envelope. The first contact element is resilient and flexible and projects inwardly from one end of the envelope. The second and third contact elements are essentially rigid, project inwardly from the other end of the envelope and are spaced apart. The free end portion of the first contact element is positioned in the space between the second and third contact elements and normally and yieldingly makes contact with the second contact element. All reed members, including their contact elements, are homogeneously ferromagnetic. By proper selection of parameters or combinations of parameters, such as the composition and extent of annealing of the reed members and the configuration and arrangement of the contact elements, the present reed switch embodies improved operating characteristics, such as effective snap action, as compared to conventional switches of the same general type.

3,559,124
MAGNETICALLY ACTUATED REED SWITCHES
William T. Posey, Chickasha, Okla., assignor to Hermetic Switch, Inc., Chickasha, Okla., a corporation of Oklahoma
Filed Feb. 19, 1969, Ser. No. 800,473
Int. Cl. H01h 51/28
U.S. Cl. 335—205 16 Claims



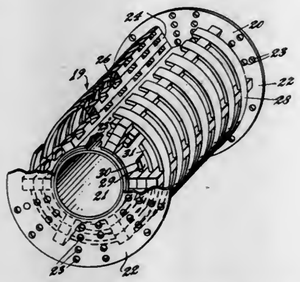
A compact reed switch device capable of extremely high sensitivity applications, the device consisting of ceramic or other magnet material polarized through a thin dimension, and being disposed adjacent a hermetically sealed reed switch assembly such that the magnet material can be rotated about the axis of a long dimension to effect sequential opening and closing of the reed switch device.

3,559,125
CIRCUIT BREAKER WITH AN UNDERVOLTAGE TRIP DEVICE
Arthur T. Ellis, Jr., Levittown, Pa., assignor to Heinemann Electric Company, Trenton, N.J., a corporation of New Jersey
Filed Jan. 15, 1969, Ser. No. 791,397
Int. Cl. H01h 83/06
U.S. Cl. 335—20 18 Claims



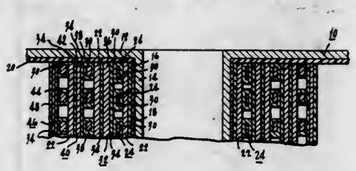
A circuit breaker comprising a pair of separable contacts and an automatically resettable mechanism, including a latch, for opening and closing the contacts. An electromagnetic device associated with the mechanism for tripping the latch and automatically opening the contacts. The electromagnetic device comprising a solenoid coil and an armature-like member engageable with the latch to unlatch the mechanism when the contacts are closed. A magnetizable core device actuatable by the coil to release the armature-like member and permit it to move away from the latch when the coil is energized above a predetermined level and for moving the armature-like member into engagement with the latch when the coil is energized below a predetermined level and the contacts are closed. Further, such circuit breaker may be used in combination with a known circuit breaker which senses an increase in energization to provide a two pole unit one of which is sensitive to an increase in energization and the other which is sensitive to a decrease in energization.

3,559,126
MEANS TO PROVIDE ELECTRICAL AND MECHANICAL SEPARATION BETWEEN TURNS IN WINDINGS OF A SUPERCONDUCTING DEVICE
James J. Drautman, Jr., Annandale, N.J., assignor, by mesne assignments, to Gardner Cryogenics Corporation, Bethlehem, Pa., a corporation of Delaware
Filed Jan. 2, 1968, Ser. No. 695,230
Int. Cl. H01f 7/22
U.S. Cl. 335—216 15 Claims



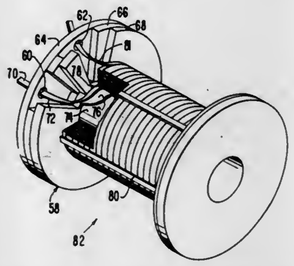
An improved superconducting magnet or coil in which the superconductor is wound and positioned by generally longitudinally extending spacers having slots for the turns and ribs between the slots, the spacers also separating layers of the winding and permitting a cryogenic medium to come in intimate contact with the turns. The spacers have an insulating or semiconducting surface and may be of a normal metal or an organic insulating material. The coil may vary in spacing of turns endwise and may vary in diameter from end to end.

3,559,127
SUPERCONDUCTIVE MAGNET CONSTRUCTION
Henry C. Schindler, East Brunswick, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed May 6, 1968, Ser. No. 726,739
Int. Cl. H01f 7/22
U.S. Cl. 335—216 4 Claims



In superconductive magnets, the magnetic field within the body of the magnet varies from point to point. Both the current conductivity and the heat conductivity of a normal metal decreases as the field to which it is subjected increases, whereby the normal coating on the ribbon, having a superconductive core, with which the magnet is wound provides less shunting action for the superconductive core of the ribbon in the high field portions of the magnet. Also, and for the same reason, the normal metal portion of the interlayer sheets which are placed between winding layers of the magnet provide less flux motion protection in the high flux field portions of the magnet than in the low field portions of the magnet. To cause the stability of the magnet to be uniform throughout its bulk, the normal metal coating on the ribbon and the normal metal sheet portion of the interlayer sheets are made thicker for the higher field portions of the magnet than for the lower field portions thereof.

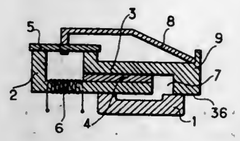
3,559,128
SUPERCONDUCTING MAGNET FOR PERSISTENT OPERATION
Floyd E. Kingston, Palo Alto, and Harry E. Weaver, Jr., Portola Valley, Calif., assignors to Varian Associates, Palo Alto, Calif., a corporation of California
Filed July 22, 1968, Ser. No. 746,542
Int. Cl. H01f 7/22
U.S. Cl. 335—216 4 Claims



An apparatus for providing a superconductive magnet of niobium-tin ribbon for persistent operation and including a novel means for allowing the coil winding ends

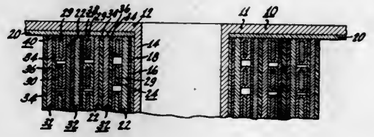
to be extracted from the winding bobbin without kinking, a novel means of splicing the ends of the superconductive ribbon to a persistent switch means, and a means for supporting the spliced ribbon outside of the intense magnetic field produced by the solenoid.

3,559,129
ADJUSTABLE ELECTROMAGNETIC RELAY
Claude Quichaud, Saint-Marcellin, France, assignor to Compagnie Generale d'Electricite, Paris, France, a French corporation
Filed Sept. 12, 1968, Ser. No. 759,458
Claims priority, application France, Sept. 17, 1967, 121,029
Int. Cl. H01f 7/08
U.S. Cl. 335—229 13 Claims



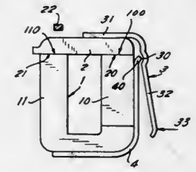
An adjustable electromagnetic relay. A movable armature is held, in its inoperative position, in contact with two magnetic poles of a yoke by means of a polarizing flux produced through the armature by a permanent magnet. An opposing action is caused by a spring which exerts on the movable armature an opposing force tending to move it away from its held position. When a flux is produced by a control winding through the armature in a direction opposite to that of the polarizing flux, the armature becomes unlocked, ceasing to restrain the opposing force and releasing the mechanical energy of the spring.

3,559,130
SUPERCONDUCTIVE MAGNET AND METHOD OF CONSTRUCTING SAME
Edward R. Schrader, Hightstown, N.J., assignor to RCA Corporation, a corporation of Delaware
Filed Dec. 10, 1968, Ser. No. 782,673
Int. Cl. H01f 7/22
U.S. Cl. 335—216 4 Claims



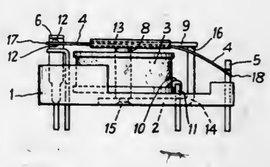
In superconductive magnets, the magnetic field within the body of the magnet varies from point to point. Superconductors with which the magnet is wound comprise a core which includes a superconductive material and a layer or coating of normal material surrounding the superconductive material for the purpose of stabilizing, to a greater or lesser degree, the superconductive magnet. Superconductive material resists penetration by an applied magnetic field and in doing so builds up local circulating currents which produce a field which opposes the applied field. The measure of opposition of a material to penetration by a magnetic field is called the magnetization of the material. The magnetization varies with the material, its geometry, and with the strength of the field applied to the material. It has been discovered that where the magnetization of the superconductive conductor with which the magnet is wound is the highest, the danger of a portion of the superconductor becoming normal is also highest. If a portion of the superconductor becomes normal, the entire magnet becomes normal unless the magnet is constructed so as to prevent this. A superconductive magnet and the method of making it is disclosed in which advantage is taken of this discovery to reduce the incidence of the magnet becoming normal due to circulating magnetization currents induced in the superconductor while resisting penetration by an applied magnetic field.

3,559,131
MAGNETIC IGNITION SYSTEM
Hans Schindler, Egelsbach, Germany, assignor to Braun Aktiengesellschaft, Frankfurt am Main, Germany
Filed Nov. 13, 1968, Ser. No. 775,399
Claims priority, application Germany, Nov. 14, 1967, P 16 29 894.5
Int. Cl. H01f 7/08
U.S. Cl. 335—229 19 Claims



A magnetic ignition system for lighters or the like wherein a horseshoe magnet normally attracts an armature and the latter is pivotable with reference to the horseshoe magnet about an axis which is externally adjacent to the horseshoe magnet. The actuating means for pivoting the armature away from abutment with the pole faces of the horseshoe magnet comprises a yieldable force transmitting device which stores energy in response to direct or indirect application of force and ultimately effects abrupt pivotal movement of the armature to thus cause a sudden collapse of magnetic flux. An induction coil surrounds a portion of the horseshoe magnet and is in circuit with electrodes which define a spark gap adjacent to the burner of the lighter.

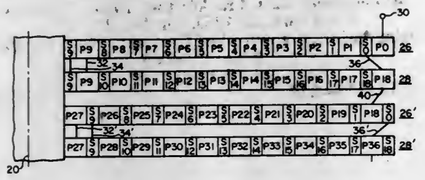
3,559,132
CONTACT SPRING RELAYS
Raymond Bernier, Paris, France, assignor to Societe Civile de Prototype Technique Electronique Soprotekel, Paris, France
Filed July 7, 1969, Ser. No. 839,186
Claims priority, application France, Mar. 28, 1969, 6,909,224
Int. Cl. H01h 51/06
U.S. Cl. 335—275 5 Claims



A contact spring relay comprising a coil, a magnetic circuit, at least two flexible conducting blades, wherein the magnetic circuit consists of an angle part, a core secured at a first branch of said angle part, an armature

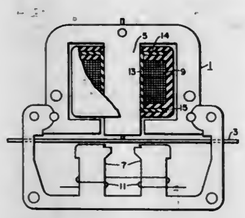
plate placed on the free end of the core and on the end of a second branch of the angle part, and a casting made of insulating material wherein the armature plate and the blades are embedded.

3,559,133
SHIELDING ARRANGEMENTS FOR ELECTRICAL WINDINGS
Robert I. Van Nice, Sharon, Pa., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 20, 1969, Ser. No. 835,015
Int. Cl. H01f *15/14*
U.S. Cl. 336—70 **20 Claims**



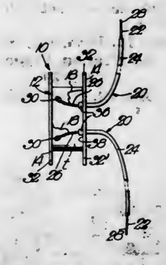
Shielding arrangements for increasing the series capacitance of electrical windings of the type having a plurality of continuous pancake type coils arranged in a stack. Each pancake coil has first and second interleaved sections, with the turns of one of the sections being part of the power circuit of the winding, and the turns of the other section being a shielding arrangement. The sections of the pancake coils are interconnected in a predetermined manner to form the power circuit through the winding, depending upon the shielding arrangement used, to reduce the magnitude of voltage oscillations produced when a surge potential is applied to the winding.

3,559,134
RANDOM WOUND ENCAPSULATED COIL CONSTRUCTION
Thomas J. Daley, Raleigh, N.C., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Aug. 8, 1967, Ser. No. 659,216
Int. Cl. H01f *27/30*
U.S. Cl. 336—96 **5 Claims**



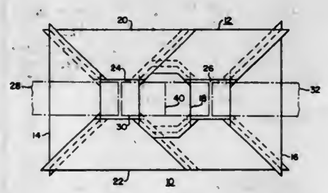
A random winding is located on a spool having a central support and having end flanges provided with ribs or perforations. An insulating material in fluid form such as an epoxy resin is applied under pressure to the winding and spool to flow between the ribs or through the perforations to compact the winding. This provides a continuous layer of the insulant in contact with the end windings and assures good resistance to electric breakdown. Insulant may be introduced in a similar way between the central spool support and the winding.

3,559,135
BOBBIN-WOUND COIL WITH CONNECTED AND ANCHORED COIL LEADS
Louis R. Burghoff, Delavan, Wis., assignor to The Bunker-Ramo Corporation, Oak Brook, Ill., a corporation of Delaware
Filed Nov. 4, 1968, Ser. No. 773,062
Int. Cl. H01f *15/10*
U.S. Cl. 336—192 **4 Claims**



A bobbin-wound electrical coil has its ends soldered to conductor ends of insulated coil leads within the peripheral confines of the bobbin, with the leads extending with a loose fit through holes in one of the opposite flanges of the bobbin, and having next to their coil-connected ends enlarged collar formations on their insulation which lock the leads against retraction from the bobbin.

3,559,136
MAGNETIC CORE STRUCTURE
Theodore R. Specht, Sharon, and Angelo A. De Laurentis, Sharpsville, Pa., assignors to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed June 20, 1969, Ser. No. 834,998
Int. Cl. H01f *27/24*
U.S. Cl. 336—217 **13 Claims**

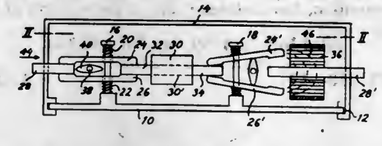


A magnetic core structure of the stacked type having a plurality of layers of metallic laminations. Each layer includes outer leg laminations, at least one inner leg lamination, and yoke laminations. Each of the ends of each inner leg lamination have the configuration of a truncated isosceles triangle, with the ends of the inner leg laminations being offset from layer to layer in a predetermined stepped-lap pattern.

3,559,137
ELECTRIC CIRCUIT BREAKER
Tage Bergman and Asbjorn Gjellan, Sundsvall, Sweden, assignors to Kafak Aktiebolag, Sundsvall, Sweden, a corporation of Sweden
Filed Mar. 19, 1969, Ser. No. 808,469
Claims priority, application Sweden, Mar. 20, 1968, 3,643/68
Int. Cl. H01h *85/48*
U.S. Cl. 337—8 **3 Claims**

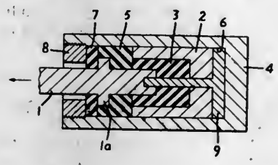
An electric circuit breaker consists of a plurality of aligned units. Each unit has two pairs of contact bridges adapted to engage stationary contact pieces. Springs press

the contact bridges against the contact pieces. The contact bridges of each pair may be opened by cams operated by axles. A fuse may be located between the pairs of contact bridges and may be connected therewith by contact



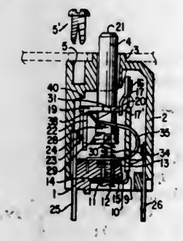
members. An arc quenching chamber is located close to the outlet pair of contact bridges. The axles are interconnected by a mechanism which provides that the outlet pair of contact bridges will be always open ahead of the inlet pair of contact bridges.

3,559,138
CURRENT LIMITING DEVICE
Toshio Itoh, Toshio Miyamoto, and Yuichi Wada, Amagasaki, Japan, assignors to Mitsubishi Denki Kabushiki Kaisha, Tokyo, Japan
Filed July 29, 1969, Ser. No. 845,861
Claims priority, application Japan, Aug. 1, 1968, 43/54,563
Int. Cl. H01h *85/06*
U.S. Cl. 337—21 **2 Claims**



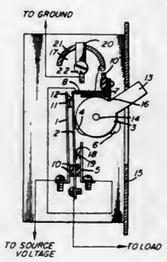
Within a tubular envelope closed at one end an electrode is supported by another electrode through a solid insulation and electrically connected to the latter electrode through a current limiting material filling a hole extending through the insulation. An annular screw engages the other end of the envelope to retain the protrusion. Alternatively the above-mentioned envelope may be formed of the latter electrode and provided with a flange for retaining the protrusion.

3,559,139
PUSH-BUTTON OPERATED OVERLOAD-CURRENT SWITCH WITH ADJUSTABLE THERMAL TRIP
Jacob Ellenberger, Altdorf, near Nuremberg, Germany, assignor to Ellenberger & Poensgen GmbH, Altdorf, near Nuremberg, Germany, a firm of Germany
Filed July 23, 1968, Ser. No. 746,934
Claims priority, application Germany, Aug. 2, 1967, E 34,515
Int. Cl. H01h *71/16*
U.S. Cl. 337—66 **9 Claims**



A push-button operated overload-current switch with an adjustable thermal trip and trip-free release, having a contact bridge constructed as an angled lever. The contact bridge is mounted freely pivotable on projections of a switch bridge rigidly connected to a switch rod and push-button under spring pressure, and is movable in the axial direction against the force of a spring producing the trip-free release, and on switching off, is brought at a casing stop into an inclined position, in which a shoulder of the contact bridge is located in the range of movement of a driver of the switch bridge, so that on the resetting movement of the push-button, the contact bridge is carried along by the switch bridge driver, and is brought to engagement behind a retention nose of the bimetallic strip. The bimetallic strip is adjustably clamped against the base by a screw arranged between spaced supporting projections. Tightening of the screw causes the strip to bend so as to lower the trip current.

3,559,140
DELAY ACTION ELECTRIC SWITCH
Horace D. Brown, Miami, Fla., assignor to Montec Corporation
Filed Aug. 4, 1967, Ser. No. 658,580
Int. Cl. H01h *61/00, 71/16*
U.S. Cl. 337—75 **5 Claims**

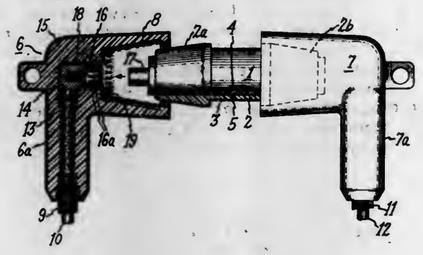


A delayed action electric switch of the domestic wall type. It is of standard size and appearance, and replaces the wall type switch commonly found in homes. It is intended as a convenience to keep an area illuminated for a brief period of time after the switch has been turned off, providing time to move from one area to another, such as from garage to house. It employs a small strip of bimetal, a metal which bends when heated. A small resistance wire is wrapped around the bimetal. When the toggle is moved to the swtich-off position, it does not, in fact, turn the switch off, but, instead, closes another set of switch contacts which causes electric current to flow through the resistance wire. Heat is thereby generated in the wire which causes the bimetal to bend. It is the bending motion of the bimetal which actually operates the switch to the off position. The heating action takes place slowly and provides the delay period after the switch is manually turned off.

3,559,141
UNDERGROUND ELECTRIC POWER CABLE FUSE HOUSING HAVING A SEMI-CONDUCTIVE CORONA SHIELD
Samuel G. Hardy, Durham, N.H., assignor to General Electric Company, a corporation of New York
Filed Oct. 23, 1969, Ser. No. 868,814
Int. Cl. H01h *85/58*
U.S. Cl. 337—224 **10 Claims**

A fuse housing for an underground electric distribution system is formed with a water-tight fuse enclosing chamber, the inner walls of which are coated with a layer

of semi-conductive material which is electrically coupled to both terminals of a fuse mounted therein. Thus, the voltage differential between the outer surface of the fuse cartridge and the inner surface of the fuse housing is reduced to a low level such that corona is not developed



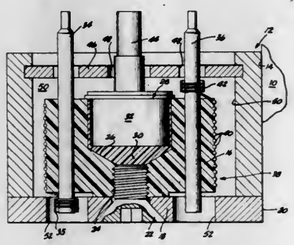
between these two surfaces. In order to limit the amount of leakage current flowing through the semi-conductive coating on the fuse housing's inner surface, the terminal-to-terminal resistance of this coating is in excess of 10 megohms.

3,559,142

ENVIRONMENT CONTROL SWITCH

Albert G. Kurisu, Anaheim, Calif., assignor to Hughes Aircraft Company, Culver City, Calif., a corporation of Delaware

Continuation of application Ser. No. 673,183, Oct. 5, 1967. This application Dec. 4, 1969, Ser. No. 878,964
Int. Cl. H01h *37/04*
U.S. Cl. 337—380 **2 Claims**



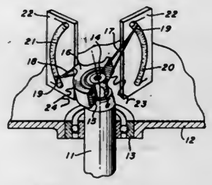
An environment control switch comprising a block of dielectric material having an electrical heating element intimately wound around the surface of the block and a temperature-sensing member embedded in the block. This combination comprises a heat-applying resistor. Appropriate electrical leads are provided to convey power to the heating element. The temperature-sensing element may be a thermostat designed to open a control circuit in response to a sensed temperature condition. By the application of electric power to the heating element a fixed amount of heat energy is applied to the block. As the environment temperature condition departs from a determined control point, the heat energy is no longer dissipated to environment at the normal rate and heats the block to cause the thermostat to open. Thus, the switch provides effective environment control.

3,559,143

APPARATUS FOR GENERATING TRIGONOMETRIC FUNCTIONS CORRESPONDING TO ANGULAR MOVEMENT

Richard R. Schaberg, Alhambra, Calif., assignor to Clary Corporation, San Gabriel, Calif., a corporation of California

Filed July 11, 1969, Ser. No. 840,990
Int. Cl. H01c *5/02*
U.S. Cl. 338—89 **4 Claims**



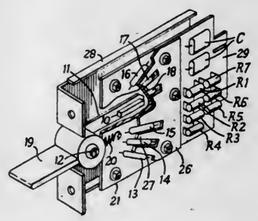
A device for generating electrical sine and cosine function signals corresponding to the angle of movement of a rotatable input shaft wherein a spindle is formed integral with one end of the shaft and at an acute angle thereto. The spindle rotatably supports a brush carrier carrying two wiper brushes located at 90 degrees to each other. The brushes wipe along respective ones of a pair of linearly wound potentiometer windings to produce output signals which are 90 degrees out of phase with each other.

3,559,144

MAGNETICALLY-SWITCHABLE VARIABLE RESISTANCE NETWORK

Anthony Leonard Isaacs, London, England, assignor to Thorn Electronics Limited, London, England

Continuation of application Ser. No. 677,277, Oct. 23, 1967. This application Sept. 22, 1969, Ser. No. 860,104
Claims priority, application Great Britain, Oct. 21, 1966, 47,432/66
Int. Cl. H01c *5/02*
U.S. Cl. 338—173 **2 Claims**



A voltage generator variable by steps in response to rotation of a manually-operable control member, which connects to various taps on a voltage divider through suitable current-limiting resistors by means of a magnetically-operable switch, the latter operating on one voltage divider unit when on a single contact and on two adjacent units when between contacts.

3,559,145

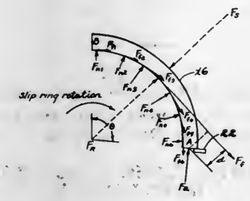
BRUSH AND BRUSH HOLDER

Glenn S. Spencer, Big Flats, N.Y., assignor to The Bendix Corporation, a corporation of Delaware

Filed Apr. 8, 1968, Ser. No. 719,644
Int. Cl. H01r *39/18*
U.S. Cl. 339—8 **5 Claims**

A brush and brush holder for use with a conventional slip ring for conducting electricity between components

when there exists a relative rotation therebetween. The brushes are loosely retained by springs in a circular brush holder with the springs providing the force to keep the brushes in contact with the slip ring. The brushes are separated from each other by only a few degrees of arc and are free to rotate with the slip ring for this short



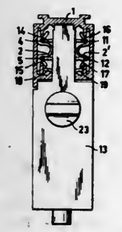
distance until they abut a stop on the brush holder. The brushes themselves have a large contact area compared to the spacing between brushes and this feature of large contact area, combined with the slight freedom of movement, provides a bi-directional brush structure having a low current density and longer life.

3,559,146

CURRENT SUPPLY RAIL ARRANGEMENT AND A CONNECTION PLUG

Rainer Valtonen, Tapiola, Finland, assignor to Oy Nokia AB, Helsinki, Finland

Filed Oct. 25, 1968, Ser. No. 770,658
Int. Cl. H01r *3/06*
U.S. Cl. 339—14 **2 Claims**



A plug is provided with a plurality of contact fingers. The fingers are resiliently supported so as to be movable from a retracted position inside the plug body to an extended position to engage the conductors and the grounded lead of the plug. Eccentrics are supported in the plug body and are engageable with the fingers to selectively displace same. A knob is provided externally of the plug and is coupled with each of the eccentrics to simultaneously displace all of the eccentrics.

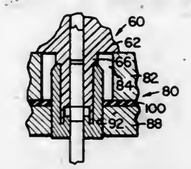
3,559,147

CONDUCTIVE STAPLE AND METHOD OF USING SAME

Thomas J. Stokes, Philadelphia, Pa., assignor to Elco Corporation, Willow Grove, Pa., a corporation of Delaware

Filed July 5, 1968, Ser. No. 742,555
Int. Cl. H01r *13/42*
U.S. Cl. 339—18 **2 Claims**

A conductive staple has a body member with an opening therein. A pair of legs are connected to, and project upwardly from the body member, said legs being disposed around the body member 180 degrees from each other. The legs of the staple are inserted through an aperture



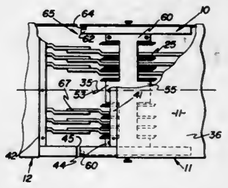
in a metal connector plate and make an electrical connection between the walls defining said aperture and an electrical contact mounted within said aperture.

3,559,148

BUSBAR COUPLER SYSTEM

Paul M. Hafer, Florence, Ky., assignor, by mesne assignments, to Arrow-Hart, Inc., Hartford, Conn., a corporation of Connecticut

Continuation-in-part of application Ser. No. 695,982, Jan. 5, 1968. This application June 11, 1969, Ser. No. 834,223
Int. Cl. H01r *13/60*
U.S. Cl. 339—22 **19 Claims**



A novel busbar coupler in combination with a busbar dust that permits a series of those combinations to be easily and simply joined electrically into an extended length busway run in an end-to-end relation and that permits easy and simple replacement of a single busbar duct in that run without removing other abutting sections from the end-to-end relationship. In combination with each busbar duct there is provided a busbar coupler which is axially movable relative to the duct's housing between a first position whereat the coupler is recessed within the housing to a point which permits transverse movement of a successive busbar duct relative to this duct when both ducts are positioned in end-to-end relation for establishing an electrical joint therebetween and a second position whereat the coupler is extended from the housing to a point which permits adjacent busbar ends of each duct to be clamped together in pairs by the coupler to establish the electrical joint. The coupler is comprised of a force frame for permitting pressure to be exerted on the pairs of adjacent busbar ends to create the pressure type electrical joint between successive busbar ducts and pressure means adjustably associated with the force frame for varying the pressure exerted to permit selective connecting and disconnecting of the electrical joint.

3,559,149

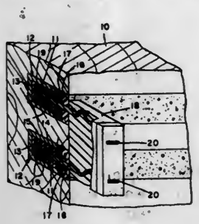
ELECTRICALLY WIRED BASEBOARD

Jack L. Shagena, Jr., 1406 Saratoga Drive, Bel Air, Md. 21014

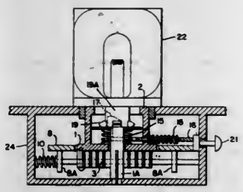
Filed Oct. 29, 1968, Ser. No. 771,485
Int. Cl. H01r *13/38*
U.S. Cl. 339—23 **5 Claims**

A baseboard having built-in electrical conductors running the length thereof to enable a tap-off to be made

at any point therealong for use of lamps, appliances and the like, the conductors in the form of spaced, parallel, insulated metal channels containing a braided mass of fine wires with a covering of resilient insulating material flush with the baseboard and a tap-off device having pointed spikes capable of readily penetrating the insulating covering and entering and making electrical contact with the fine wires in the channels.

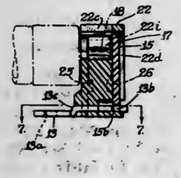


3,559,150
FLASHCUBE MOUNTING MEANS
Masahiko Iwaki, Fujisawa-shi, and Hazime Kogawa, Tokyo, Japan, assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed Mar. 19, 1969, Ser. No. 808,431
Claims priority, application Japan, Apr. 15, 1968, 43/30,367
Int. Cl. G03b *9/70, 15/02;* **H01r** *13/62*
U.S. Cl. 339—45 **4 Claims**



A flashcube mounting means for detachably mounting a flashcube is shown having a socket into which the flashcube is inserted. A resiliently mounted U-shaped locking member yields as the flashcube is inserted between the hooked legs thereof for locking the flashcube against the urging of an ejection spring within the socket. Depression of the resiliently mounted locking member frees the flashcube for ejecting it from the socket.

3,559,151
ELECTRIC DISCHARGE LAMPHOLDER
Edwin G. Gaynor, Southport, Conn., assignor to Edwin S. Gaynor, Southport, Conn.
Filed Sept. 12, 1968, Ser. No. 759,444
Int. Cl. H01r *33/08*
U.S. Cl. 339—53 **2 Claims**



A holder for releasably securing terminals of an electric discharge lamp in relation to a supporting frame. A generally box-like housing, comprising a body and a cover therefor, arranged interiorly to support opposed spring clip conductors forming terminals for contact with lead wires of an electric circuit and operative to receive and hold terminals of such a lamp in said circuit, is demountably mounted on an elongated generally plate-like member provided with means complementary with means on the body, and the cover, to lock the cover in closing position on the body, and adapted to be secured to such a frame.

3,559,152
LAMP SOCKET AND PANEL ASSEMBLY
Warren Pearce, Jr., Warren, Ohio, assignor to General Motors Corporation, Detroit, Mich., a corporation of Delaware
Filed June 7, 1968, Ser. No. 735,389
Int. Cl. H01r *9/22*
U.S. Cl. 339—60 **3 Claims**

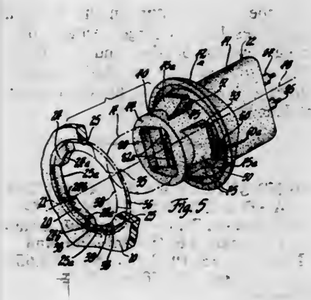


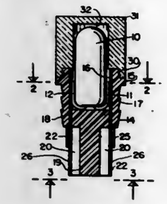
Fig. 5

In a preferred form, this disclosure relates to a lamp socket and panel assembly. The panel has an opening whose outer peripheral surface is defined by alternately spaced lands and recesses and the lamp socket is provided with a radially extending flange intermediate its ends and circumferentially spaced, radially extending lands on its forward end and with the rear faces of the lands being axially spaced from the flange a distance less than the thickness of the panel. The lamp socket is connected to the panel by aligning the lands thereon with the recesses in the panel, inserting the socket through the opening in the panel until the flange engages the panel and then rotating the socket to position the lands thereon behind the lands on the panel, the flange sealingly engaging the adjacent side of the panel when the socket is connected thereto. The socket includes axially extending ribs between the rear faces of some of its lands and the sealing flange which cooperate with the bottoms of the recesses to lock the socket in place on the panel unless manually grasped and rotated in the opposite direction and which engage a land on the panel to stop further rotation to properly position the lands on the socket behind the lands on the panel.

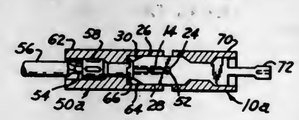
3,559,153
INDICATOR BULB MOUNTING
Louis V. Cartelli, 13—04 146th St., Whitestone, N.Y. 11357
Filed June 2, 1969, Ser. No. 829,603
Int. Cl. H01r *13/66*
U.S. Cl. 339—126 **8 Claims**

A mounting for miniature indicator light bulbs having bare wire leads is formed from two molded plastic parts, a base containing a cavity to receive the bulb, said base having longitudinal contacts extending along opposite sides

of a cylindrical lower projection of said base into the cavity to contact the leads of a bulb, and a light passing cover snapped to said base over the cavity holding a bulb therein.

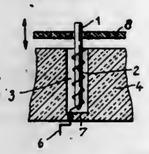


3,559,154
ELECTRICAL CONNECTORS
Akin Aksu, 739 E. 223rd St., Torrance, Calif. 90502
Filed Oct. 8, 1968, Ser. No. 765,799
Int. Cl. H01r *11/22, 13/50*
U.S. Cl. 339—213 **5 Claims**



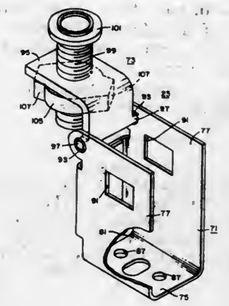
An electrical connector according to this disclosure comprises an electrically conductive body having a pair of jaws each having a contact-engaging surface. A pin contact is assembled between the jaws and engages the contact-engaging surfaces to complete an electrical connection. The jaws bias the contact-engaging surfaces against the pin contact.

3,559,155
CONTACT DEVICE
Arnold Frey, Kronskamp 106, Wedel, Holstein, Germany
Continuation of application Ser. No. 608,103, Jan. 9, 1967. This application Oct. 18, 1968, Ser. No. 781,677
Claims priority, application Germany, Jan. 10, 1966, F 48,122
Int. Cl. H01r *13/12*
U.S. Cl. 339—256 **3 Claims**



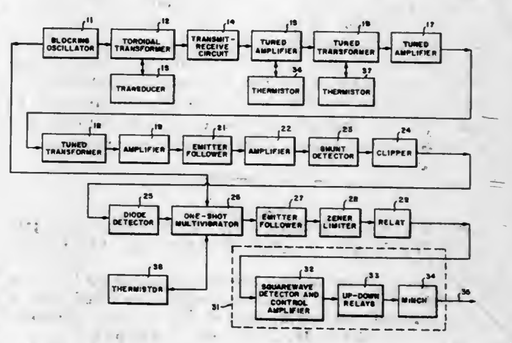
The present invention concerns a contact device, and more specifically, relates to an electrical plug socket connection characterized primarily by a helically coiled spring the inside dimensions of which in unloaded condition being slightly smaller than the outside dimension of an insertable plug. The penetrating plug which is provided with a tapered end widens the internal dimension of the spring by shortening its axial length and makes contact with the internal surface of the spring except at least the innermost coil of the spring because of its tapered end.

3,559,156
ELECTRICAL DEVICE WITH IMPROVED TERMINAL MEANS
Kenneth R. Coley, Fairfield, Conn., assignor to Westinghouse Electric Corporation, Pittsburgh, Pa., a corporation of Pennsylvania
Filed Jan. 18, 1968, Ser. No. 698,809
Int. Cl. H01r *7/12*
U.S. Cl. 339—272 **2 Claims**



An improved combination comprises an insulating housing and a clamp-type electrical terminal connector supported on the housing. The housing is formed with a cavity open at the top and at one end thereof. The terminal device, which is supported in the cavity, comprises a clamp support and clamp means supported on the clamp support for movement within a lateral dimension no greater than the distance between the barriers. With the clamp means in the open position, a conducting line, which extends through the open end of the cavity, can be moved into the supported position through the open top of the cavity. The pressure connector comprises improved means for connecting and disconnecting the conducting line to a conductor within the cavity.

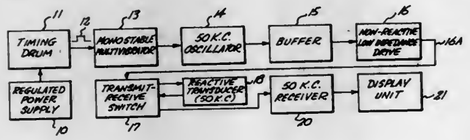
3,559,157
ALTITUDE CONTROL SYSTEM
Frederick B. Cupp, Willoughby, and Carl W. Palley, Mentor, Ohio, assignors, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed May 28, 1964, Ser. No. 371,155
Int. Cl. G01s *9/68*
U.S. Cl. 340—3 **13 Claims**



1. An echo-ranging system comprising in combination, a transducer,
a blocking oscillator coupled to said transducer,
a transmit-receive circuit effectively connected to said blocking oscillator and said transducer,

tuned amplifier means coupled to the output of said transmit-receive circuit,
a shunt detector effectively connected to the output of said tuned amplifier means,
a clipper circuit coupled to the output of said shunt detector,
a diode detector connected to the output of said clipper circuit,
a one-shot multivibrator having a pair of inputs and an output with one of the inputs thereof coupled to the output of the aforesaid blocking oscillator and with the other input thereof coupled to the output of said diode detector, and
a Zener limiter effectively connected to the output of the aforesaid one-shot multivibrator.

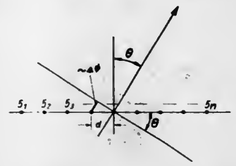
3,559,158
TRANSDUCER DRIVE AND UNDERWATER DETECTOR SYSTEM
Bruce H. Bettcher, 2814 129th SE., Bellevue, Wash. 98004
Filed Aug. 12, 1968, Ser. No. 751,859
Int. Cl. G01s *9/66*; H04b *11/00*
U.S. Cl. 340—3 **9 Claims**



A novel system is described for driving a reactive transducer such as a crystal in a manner which utilizes the full capability of the transducer and also improves the operation of the system responding to output signals from the transducer. An oscillator operating at the resonant frequency of the transducer provides driving energy via a driving circuit having essentially nonreactive characteristics at the operating frequency, the drive circuit being directly coupled to the transducer for providing coherent pulses of operating energy thereto at the resonant frequency of the transducer. In one example a push-pull transistor output stage is disclosed as isolating the frequency determining components of the oscillator from the transducer. An extremely low impedance output stage is thus utilized and serves to drive the transducer exactly at its inherent resonant frequency. The improved transducer drive system and method is disclosed as an important part of an improved underwater detection system wherein the return echo picked up by the transducer is amplified by a high Q, narrow band receiver which is similarly tuned to the resonant frequency of the transducer. Circuit diagrams as well as system block diagrams are provided.

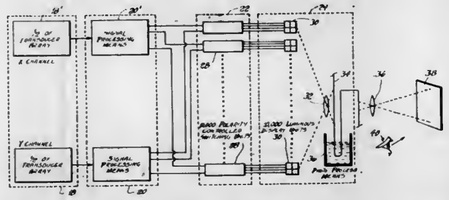
3,559,159
APPARATUS FOR VARYING THE ANGULAR DIRECTION OF A CONCENTRATED ACOUSTIC BEAM
Hermann Wilhelm August Harms and Reinhard Wilhelm Leisterer, Bremen, Germany, assignors to Fried. Krupp Gesellschaft mit beschrankter Haftung, Essen, Germany
Filed July 10, 1969, Ser. No. 840,683
Claims priority, application Germany, July 11, 1968, P 17 66 766.2
Int. Cl. G01s *9/66*
U.S. Cl. 340—5 **5 Claims**

A system for controlling the direction of propagation, and for angularly deflecting, a concentrated acoustic beam produced by a linear array of acoustic sine wave transmitters, the system controlling the direction of the concentrated acoustic beam by establishing a constant phase relationship between the sine wave signals applied to every



adjacent pair of transmitters and effecting an angular deflection of the concentrated beam by establishing a predetermined frequency difference between the waves applied to every adjacent pair of transmitters.

3,559,160
SPATIAL SURVEYING AND TARGET-DETECTION SYSTEM
Bradshaw Burnham, Rochester, N.Y., assignor, by mesne assignments, to the United States of America as represented by the Secretary of the Navy
Filed Nov. 7, 1963, Ser. No. 323,195
Int. Cl. G01s *3/00*
U.S. Cl. 340—6 **10 Claims**

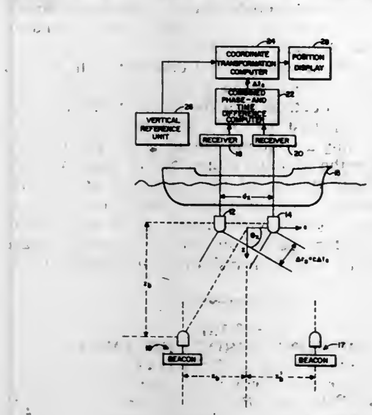


1. A target-detection system comprising, in combination: a plurality of receiving transducers arranged in a directive array, each said transducer being spaced at such distance from its nearest neighbors as to have an independent response to noise signal characteristics, said transducers being divided into two interdigitated groups and connected together to form two interdigitated half-arrays;
a beam-forming system receiving as input signals the output signals of said half-arrays and converting said signals into sets of polarized half-beam signals, each one of a set associated with a different one of said half-arrays; and
utilization means including summing means for receiving said set of polarized half-beam signals and operating upon them to give an indication as to which half-beam sets are providing polar condition permutations which, when summed over a period of time, exceed the statistical expectancy for that period of time by a significant amount.

3,559,161
ACOUSTIC POSITION REFERENCE SYSTEM
Ilmar G. Raudsep, Seattle, Wash., assignor to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Continuation-in-part of application Ser. No. 655,662, July 24, 1967. This application June 28, 1968, Ser. No. 741,191
Int. Cl. G01s *3/00, 5/18*
U.S. Cl. 340—6 **9 Claims**

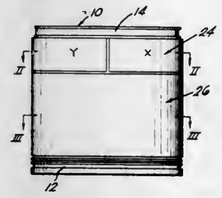
An acoustic position finding system comprising at least one underwater beacon, an array of spaced hydrophones,

and signal processing equipment. The beacon periodically transmits a signal having pulse and wave components in which the period of the wave component is substantially



shorter than the interval between pulses. The processing equipment computes the position of the array relative to the beacon from time and phase differences in signals received by individual hydrophones in the array.

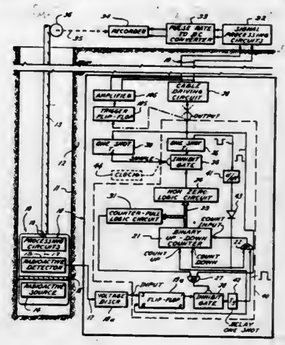
3,559,162
UNITARY DIRECTIONAL SONAR TRANSDUCER
Ernest A. Granfors, Don L. Loveless, and Charles F. Boyle, Jackson, Mich., assignors to Sparton Corporation, Jackson, Mich., a corporation of Ohio
Filed Apr. 14, 1969, Ser. No. 815,630
Int. Cl. H04r *1/32*
U.S. Cl. 340—10 **3 Claims**



An underwater sonar transducer utilizing a unitary or homogeneous cylindrical piezoelectric ceramic element having two sets of electrodes fixed thereto at separate axial regions of the piezoelectric cylinder element. One set of electrodes produces orthogonal directional bearing related voltages, and the other set of electrodes produces omnidirectional bearing related voltages.

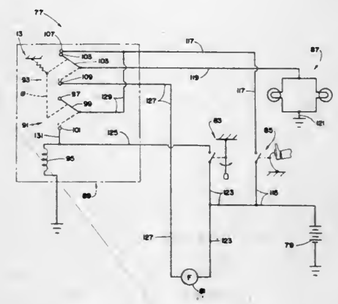
3,559,163
WELL LOGGING PULSE TRANSMISSION SYSTEM
Robert J. Schwartz, Houston, Tex., assignor to Schlumberger Technology Corporation, Houston, Tex., a corporation of Texas
Filed Aug. 10, 1967, Ser. No. 659,783
Int. Cl. G01v *1/40*
U.S. Cl. 340—18 **32 Claims**

The particular embodiments described herein as illustrative of the invention describe a technique for transmitting pulses at the maximum permissible rate of a transmission system without losing any pulses. In one form, the data pulses are stored in an up-down binary counter. The counter is examined at a specified minimum time interval to determine if any counts are present, and if so, a pulse is transmitted to the surface of the earth and one count is subtracted from the counter. Suitable means are shown for insuring that the counter is not placed in the count-up and count-down mode at the same time and to insure that the counter is not reset or cycled around by counting a pulse when it is full. In another form, the transmission rate is effectively doubled by generating a change in state for each pulse or event to be transmitted. This transmission system can be used with the pulse storage technique to further improve the



transmission rate. Other embodiments show multiplexing pulses from a plurality of pulse sources in the tool to the surface of the earth. The above-mentioned counting technique is shown utilized with these multiplexing techniques to insure that pulses are not lost during periods of high instantaneous pulse rate from one or more of the pulse sources. Means are also shown for synchronizing the decommutating operation at the surface of the earth with the commutating operation downhole, including detecting the synchronizing signals and synchronizing the frequency and phase of the downhole commutating clock with the surface decommutating clock.

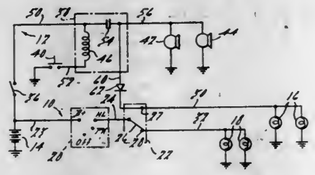
3,559,164
VEHICULAR DECELERATION SAFETY CIRCUIT MEANS
Harold R. Bancroft, 3052 Capri Road, and James Z. Boggan, 3046 Capri Road, both of Memphis, Tenn. 38118
Continuation-in-part of application Ser. No. 726,981, May 6, 1968. This application Oct. 24, 1968, Ser. No. 777,966
Int. Cl. B60q *1/44, 1/46*
U.S. Cl. 340—72 **1 Claim**



Inertia operative warning light and switch means adapted for installation in an automobile or like vehicle

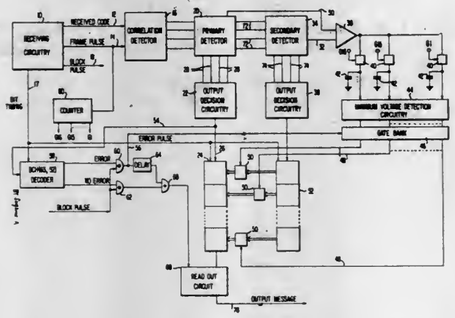
including means for producing a flashing light on the rear of the vehicle as that vehicle is being brought to an emergency stop or is being decelerated more rapidly than the deceleration in normal stops of the vehicle. The flashing rear light being adapted to signal the driver of a trailing vehicle that the leading vehicle is decelerating at a rapid rate.

3,559,165
OPTICAL-AUDIO WARNING SYSTEM
Eugene Kleemann, Detroit, Mich., assignor to Chrysler Corporation, Highland Park, Mich., a corporation of Delaware
Filed Oct. 17, 1968, Ser. No. 768,273
Int. Cl. B60q *1/14, 5/00*
U.S. Cl. 340—75 **3 Claims**



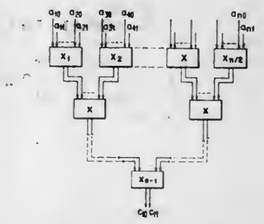
An optical-horn signalling system for automotive vehicles equipped with customary horn and multiple beam headlighting circuits and wherein operation of the horn flashes one of the headlight beam circuits when the vehicle headlight switch is open and also when the vehicle is operated with the other headlight beam circuit energized.

3,559,166
PROBABILITY ERROR CORRECTOR AND VOLTAGE DETECTOR
William G. Schmidt, Rockville, Md., assignor to Communications Satellite Corporation, a corporation of the District of Columbia
Filed June 28, 1968, Ser. No. 741,131
Int. Cl. H04l *1/00;* **G08c** *25/00*
U.S. Cl. 340—146.1 **22 Claims**



A correlation detector selects a data vector from a store of data vectors on the basis of the probability that the selected data vector was the message transmitted to the detector. The second most probable data vector is also selected and stored along with the most probable data vector. After a plurality of correlation operations the series of most probable data vectors is checked for errors. If an error is detected it is corrected on the basis of probability. The data vector and the second most probable data vector having the closest probabilities are switched causing one of the second most probable data vectors to be inserted into the series of most probable data vectors. The most probable and second most probable data vectors are selected by a primary and secondary voltage selector. A transistorized circuit receives a plurality of different input voltages and detects which input is the most positive, which is the second most positive, etc. A variation allows detection of the most negative, second most negative, smallest, etc. A bank of transistor circuits is arranged having a common output. The extreme voltage is passed to the common output by the forward biased emitter-base path of one of the transistors and reverse biases all transistors not connected to the extreme voltage input. A bank of switches responsive to the detection of the extreme voltage passes all but the extreme voltage through a second bank of transistor circuits similar to the first.

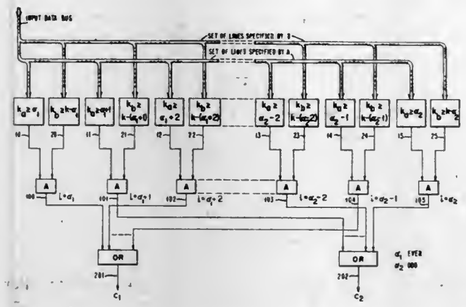
3,559,167
SELF-CHECKING ERROR CHECKER FOR TWO-RAIL CODED DATA
William C. Carter, Ridgefield, Conn., and Keith A. Duke, Wappingers Falls, and Peter R. Schneider, Peekskill, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 25, 1968, Ser. No. 747,533
Int. Cl. H03k *13/22*
U.S. Cl. 340—146.1 **8 Claims**



A series of self-checking error checking circuits are disclosed for checking two-rail logic coded data lines. The data lines are arranged as n pairs of two-rail groups. One form of the checker comprises $n-1$ basic two output blocks connected in a general tree configuration across the two-rail data lines. Each of said basic blocks has two normally complementary output lines and the last stage of the checker is a single basic block. If an invalid code is received, the two outputs will be identical. Malfunctions or failures in the checking circuit are checked by certain legitimate code signals which similarly cause an error representation in the output of the checker whereby both outputs will be identical.

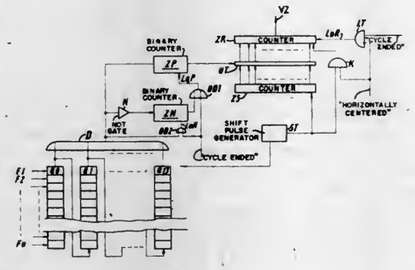
3,559,168
SELF-CHECKING ERROR CHECKER FOR k-OUT-OF-n CODED DATA
William C. Carter, Ridgefield, Conn., and Keith A. Duke, Wappingers Falls, and Peter R. Schneider, Peekskill, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed July 25, 1968, Ser. No. 747,665
Int. Cl. H03k *13/32;* **G08c** *25/00*
U.S. Cl. 340—146.1 **5 Claims**

A series of self-checking error checking circuits are disclosed for checking k-out-of-n coded data lines. The n lines are broken into two, preferably equal, groups. A logic equation is derived for each group of lines whereby, with any k-out-of-n coded data signal applied to the input, at least two complementary output signals are produced. Any error appearing in the received code will be indicated as such by non-complementary outputs from



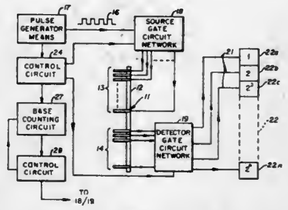
the checker in the output of the checker. Malfunctions or failures in the checking circuit are checked by certain legitimate code signals which similarly cause an error representation in non-complementary outputs at the output of the checker.

3,559,169
CIRCUIT ARRANGEMENT FOR CORRECTLY POSITIONING THE INFORMATION DERIVED FROM SCANNING A CHARACTER IN THE FIELD OF A CHARACTER READER
Hanno Gillmann and Paul Hauff, Konstanz, Germany, assignors to Telefunken Patentverwertungsgesellschaft m.b.H., Ulm (Danube), Germany
Filed Sept. 3, 1968, Ser. No. 757,043
Claims priority, application Germany, Sept. 2, 1967, P 15 49 926.0
Int. Cl. G06r *9/04*
U.S. Cl. 340—146.3 **6 Claims**



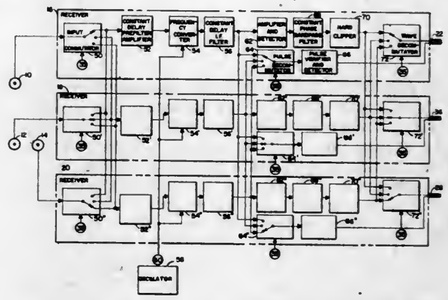
A circuit device for determining when the character reading information derived from scanning a character is in the proper position to be read by successively and cyclically shifting the binary representations associated with each succeeding row of elemental areas of the scanning field through a row of matrix elements, counting each time the row of memory elements contains a representation of the existence of a portion of the character, producing a control signal after a predetermined number of such occurrences, and then producing a reading signal after such a predetermined number of occurrences and approximately one shifting cycle after the first such occurrence.

3,559,170
METHODS AND APPARATUS FOR DATA INPUT TO A COMPUTER
William S. Barnes, 1542 Spruce St., Livermore, Calif. 94550
Filed Mar. 7, 1967, Ser. No. 625,913
Int. Cl. G06k *9/18*
U.S. Cl. 340—146.3 **21 Claims**



A method of representing numerical information in binary form wherein a plurality of dot patterns are established on a data medium and numerical weighting is given to each dot pattern by selectively joining dot pairs of the pattern with essentially straight lines, and apparatus for reading numerical information in the form set out above including apparatus which utilizes electronic pulses or sensing scanners for interrogating the space between dot pairs which can have lines drawn therebetween in order to determine the numerical weighting of a numerical dot pattern.

3,559,171
CONTROL APPARATUS HAVING SIGNAL PROCESSING THROUGH PLURAL CHANNELS
Ilmar G. Raudsep and Robert G. Clapham, Seattle, Wash., assignors to Honeywell Inc., Minneapolis, Minn., a corporation of Delaware
Filed July 24, 1967, Ser. No. 655,663
Int. Cl. H04q *5/00*
U.S. Cl. 340—147 **7 Claims**

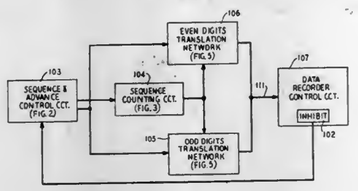


Apparatus and method for minimizing the effect of signal transmission variations caused by variations in a plurality of parallel ideally identical signal processing channels. The apparatus comprises means for periodically switching the signal between different channels so that it is processed by each channel for equal periods of time.

3,559,172
INFORMATION PRESENTATION CIRCUIT
John J. Collins, Columbus, Ohio, assignor to Bell Telephone Laboratories, Incorporated, Murray Hill and Berkeley Heights, N.J., a corporation of New York
Filed Oct. 2, 1967, Ser. No. 672,035
Int. Cl. H04q *3/47*
U.S. Cl. 340—147 **13 Claims**

A circuit for providing timing information is arranged with a pair of relay translation networks, each of which

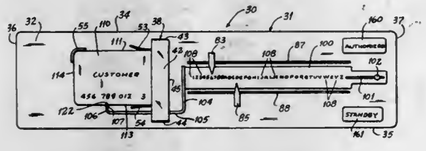
is sequentially enabled to provide a current time indication corresponding to a counted number of signals. Delay in updating the current timing information is negated by operating the relays of one translation network in response to receipt of each signal in preparation for the presentation of the next time indication while concurrently providing the current time indication through the previously operated relay contacts of the other translation network.



3,559,173
APPARATUS FOR AUTHENTICATING HOLDERS OF CARD IDENTIFICATION SYMBOLS

Joseph Leo Levasseur, St. Louis, Mo., assignor to Simcom Corporation, High Ridge, Mo., a corporation of Missouri

Filed Aug. 22, 1966, Ser. No. 580,135
Int. Cl. H04q *3/00*
U.S. Cl. 340—149 **9 Claims**



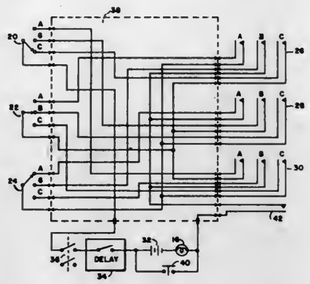
An apparatus and method for authenticating holders of identification symbols having means for comparing the correspondence between variations of a plurality of codes, at least one code variation selected from an identification means held by the holder, and another code variation selected as a function of an authorization code submitted by the holder. The identification means may include any alpha-numeric combination assigned to the holder by which the holder identifies himself from among others holding other alpha-numeric combinations, such as a credit card. The authorization code may include an alpha-numeric combination committed to memory and submitted orally by the holder.

3,559,174
CARD VERIFICATION SYSTEM

Stephen T. Braunheim, Los Angeles, Calif. (2024 Lombardy Drive, La Canada, Calif. 91011), and George J. Rebane, Alhambra, Calif. (3003 N. Auburn Court, Santa Susana, Calif. 93063)

Filed Sept. 18, 1967, Ser. No. 668,488
Int. Cl. H04q *9/00*
U.S. Cl. 340—149 **7 Claims**

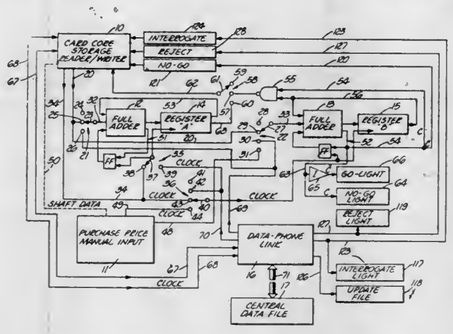
A verification system for credit cards, security area key cards, or the like in which verification is accomplished by circuit continuity through a first group of manually-selected switches, the positions of which represent a number preassigned to and retained by the rightful holder of the card, and a second group of switches actuated by randomly positioned holes or protrusions on the card surface. A modular random circuit card positioned between the first and second groups of switches may be replaced whenever it is desired to alter the random position of the switch group actuated by the card.



3,559,175
CREDIT CARD SYSTEM

Ivan Dwayne Pomeroy, 800 Hindry, Inglewood, Calif. 90301

Filed Oct. 23, 1967, Ser. No. 677,305
Int. Cl. H04q *9/00*
U.S. Cl. 340—152 **8 Claims**



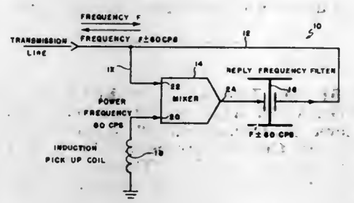
A credit card system wherein a credit card is coded both with identification and credit balance data. A data processing system reads the credit balance data at the time of a purchase. The purchase amount is automatically substracted from the credit balance, and the new balance is stored in the credit card. If the credit balance is insufficient, the data processor transmits the identification data to a central data file to update the balance whereupon the sale may be completed and a new balance stored in the card. If the balance is still insufficient after it is updated, the sale is terminated. The identification data also may be verified to detect invalid or stolen cards.

3,559,176
METHOD AND SYSTEM FOR LOCATING FAULTS IN UTILITY ELECTRICAL POWER SYSTEMS

Hugh M. Baker, Jr., Washington, D.C., and John R. Cressey, Hyattsville, Md., assignors to HB Engineering Corporation, Silver Spring, Md., a corporation of Maryland

Filed Nov. 25, 1966, Ser. No. 596,850
Int. Cl. H04q *9/00*
U.S. Cl. 340—163 **4 Claims**

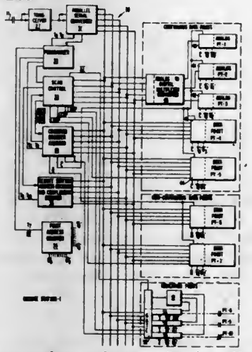
The electrical fault location method and system pertains to the monitoring of a distribution system for cyclically varying power within a determined frequency range. An interrogation frequency of a given frequency is mixed in a passive transponder with a second signal having a frequency indicative of the power frequency at a monitored point in the distribution system. A filter receives and passes the mixed frequency if the second signal is indicative of a power frequency within the determined frequency range of the cyclically varying power for the distribution system.



3,559,177
VARIABLE LENGTH, DIVERSE FORMAT DIGITAL INFORMATION TRANSFER SYSTEM

Ralph A. Benson, Peabody, Mass., assignor to General Electric Company, a corporation of New York

Filed Sept. 3, 1968, Ser. No. 756,846
Int. Cl. H04q *9/00*
U.S. Cl. 340—163 **22 Claims**



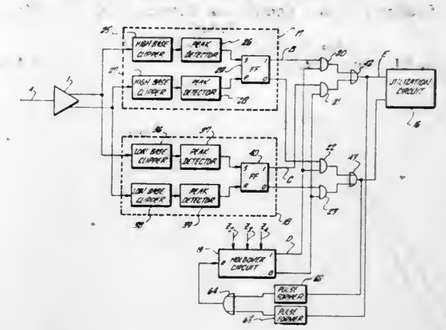
A system for continuously transferring digital information formed of variable length digital messages between first and second locations. Means at the first location call for the information. Means at the second location transfer the information as a plurality of data words. At the termination of data word transmission of either all data or a specific section of data, a last-data word is generated and decoded to reset synchronized control means at each location and initiate additional information transfer.

3,559,178
PULSE DISCRIMINATION CIRCUITRY

John A. Hibner, Sierra Madre, and Michael I. Behr, South Pasadena, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan

Filed Aug. 4, 1967, Ser. No. 658,489
Int. Cl. H03k *17/00*; **H04g** *9/00*
U.S. Cl. 340—172 **18 Claims**

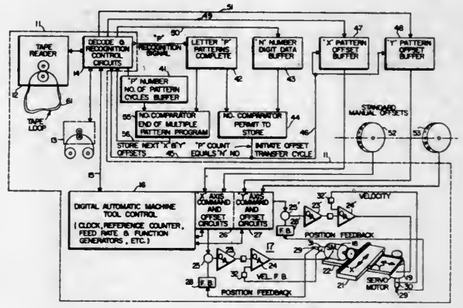
In an arrangement for discriminating a pulse signal on an amplitude basis, the threshold level at which amplitude discrimination takes place is changed from one value to another depending upon the pattern of the pulse signal. In particular for NRZ data, a high threshold level is normally maintained. After a pulse is sensed at the high threshold level, a low threshold level is substituted for the high threshold level. Amplitude discrimination continues at the low threshold level as long as pulses are sensed in each data bit cell. When a gap appears in the pulse pattern, i.e. pulses fail to appear in one or more bit cells, the high threshold level is reestablished. Both asynchronous and synchronous arrangements are disclosed for determining the occurrence of a gap in the pulse pattern to reestablish the high threshold level.



3,559,179
PATTERN CONTROLS FOR AUTOMATIC MACHINES

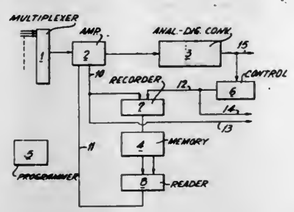
John M. Rhoades, Waynesboro, Va., assignor to General Electric Company, a corporation of New York

Filed Aug. 29, 1967, Ser. No. 664,025
Int. Cl. G05b *15/00, 19/24*
U.S. Cl. 340—172.5 **25 Claims**



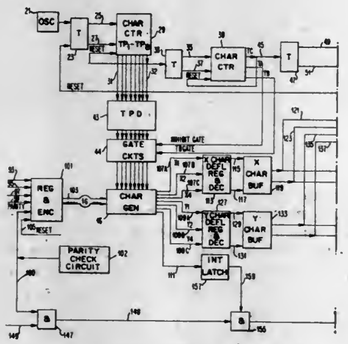
An arrangement for operating on an object with an automatic machine under control of command data recorded on a record medium such as endless tape wherein the data includes data representing a plurality of offset positions and a single repeat pattern of control to be repeatedly executed N times, at least once at each of said offset positions. A reader repeatedly reads said data from the tape and a counter continuously counts the number of times the repeat pattern has been read to provide a repeat pattern count number and logic circuitry responsive to the count number equalling a count other than N for executing the repeat pattern at the offset position corresponding to the count number.

3,559,180
ELECTRONIC MEASURING APPARATUS
Christian Georges Joly, Nantes, France, assignor, by mesne assignments, to Compagnie Generale de Geophysique, Paris, and L'Institut Francais du Petrole, des Carburants et Lubrifiants, Rueil-Malmaison, France
Filed Nov. 3, 1967, Ser. No. 680,514
Claims priority, application France, Mar. 13, 1967, 98,449
Int. Cl. G06f *9/18*; G01v *1/00*
U.S. Cl. 340—172.5 6 Claims



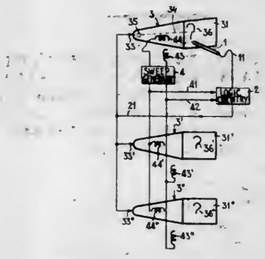
A circuit wherein an analog-to-digital converter is fed by an amplifier coupled to a multiplexer receiving measured magnitudes from a number of tracks, said amplifier being provided with a numerical gain control and being associated with a memory supplying, for each track and once during each successive cycle, the desired corrected gain to be assumed by the amplifier for the sample of the measurement fed by the multiplexer out of the corresponding track. This arrangement allows in particular measuring and recording in quick succession the voltages received by a large number of measuring devices, for instance for seismic prospecting purposes, to provide signals which it is essential to amplify and which are to be measured without saturation, even in the case of highly dynamic signals, the operation being performed in the vicinity of the maximum capacity of the computer so as to increase its accuracy.

3,559,181
CRT PARAMETER ERROR INDICATOR PANEL
Frank R. Carlock, Hyde Park, and William R. Lamoureux, Kingston, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Dec. 14, 1967, Ser. No. 690,588
Int. Cl. G06f *11/00, 3/14*
U.S. Cl. 340—172.5 3 Claims



An operator's console for a data processing system includes a cathode ray tube indicator panel for diagnostic testing and servicing. Various parameters being monitored or their encoded representations are displayed on the CRT indicator and represented by a plurality of indicators. Information transferred into the operator's console is error checked on a byte basis, and upon detection of an error, the indicator representing the byte in which the error occurs is caused to blink, thus identifying the source of the error immediately to the operator.

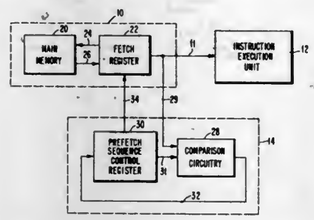
3,559,182
SYSTEM FOR TRACING SYMBOLS ON VISUAL INDICATOR WITH ORTHOGONAL SWEEP
Félix Floret, Ste.-Geneviere-des-Bois, Jean-Jacques Mayer, Paris, and Georges Peronneau, La Celle-St.-Cloud, France, assignors to T-V.T. (Thomson-C.S.F. Visualisation et Traitement des Informations), a corporation of France
Filed Dec. 20, 1967, Ser. No. 692,026
Claims priority, application France, Dec. 22, 1966, 88,471
Int. Cl. G06f *3/14*
U.S. Cl. 340—172.5 15 Claims



A luminous pencil with photoelectric pickup is manually displaced across a screen of a cathode-ray tube, illuminated by an orthogonally swept electron beam, to transmit positional pulses to a ferrite memory where the information is stored for feedback to the input of the same tube whereby the illumination is blacked out at the locations scanned by the pencil and a dark trace appears on the screen. Simultaneous or delayed transmission to other cathode-ray tubes will cause the same trace to become visible on their screens. For complete erasure of a trace, the memory may be temporarily blanked; partial erasure may be effected by retracing a portion of the image and inverting the output of the pickup to produce a selective blanking signal. Use of a multicolor tube permits selective coloring of the trace.

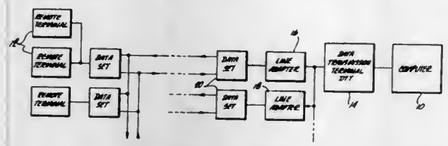
3,559,183
INSTRUCTION SEQUENCE CONTROL
Edward H. Sussenguth, Los Altos, Calif., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Feb. 29, 1968, Ser. No. 709,426
Int. Cl. G06f *7/02*
U.S. Cl. 340—172.5 15 Claims

Apparatus for recognizing the occurrence of a particular instruction in a stream of instructions and then modifying that stream of instructions is disclosed. A fetch register for receiving instructions from a main memory is provided. A prefetch sequence control register containing the address of a particular instruction, as well as the address of the next instruction to be fetched is also provided. A comparison is continuously made between the instruction address in the fetch register and in the prefetch sequence control register. Upon noting an equality between those two, the second address from the prefetch sequence control register is transferred to the fetch register and the instruction extracted from memory.



Means are also provided for inhibiting this operation and providing an address from a related register to the fetch register upon the occurrence of an equality between the address in the prefetch sequence control register and still another related register.

3,559,184
LINE ADAPTER FOR DATA COMMUNICATION SYSTEM
Robert Louis Rawlings, Diamond Bar, and Lothar Oscar Schweigl, Sierra Madre, Calif., assignors to Burroughs Corporation, Detroit, Mich., a corporation of Michigan
Filed Aug. 30, 1968, Ser. No. 756,618
Int. Cl. G06f *9/18*
U.S. Cl. 340—172.5 9 Claims



There is described an adapter for connecting the input-output buffer of a processor to a standard telephone data set for transmission between the processor and a number of remote terminals. The adapter permits automatic polling of a number of remote stations using polling information stored in the input-output buffer by the processor without intervention of the processor. The adapter provides translation between the internal six-bit code of the processing system and a standard ASCII seven-bit code for transmission to or reception from the remote terminals. The adapter is asynchronous in its operation.

3,559,185
OPTICAL SWITCH
Gerald Burns, Yorktown Heights, Archibald W. Smith, Briarcliff Manor, and William V. Smith, Chappaqua, N.Y., assignors to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed Aug. 7, 1968, Ser. No. 750,855
Int. Cl. G11c *11/42*
U.S. Cl. 340—173 7 Claims

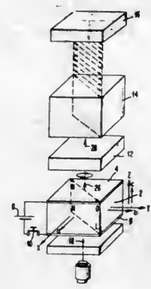
A crystalline material gadolinium molybdate,

$$Gd_2(MoO_4)_3$$

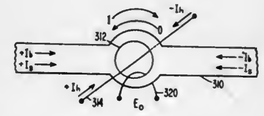
has been determined to have reversible birefringence, the sign of the birefringence depending upon the direction of polarization along the ferroelectric axis of the

$$Gd_2(MoO_4)_3$$

crystal. Thus, if the ferroelectric axis is chosen as the *c*-axis (or optical axis), the *a*-axis and *b*-axis are two other crystallographic axes that are perpendicular to such *c*-axis, and the index of refraction of light polarized along the *a*-axis is different from the index of refraction of light polarized along the *b*-axis. The property of the reversibility of the birefringence enables one to optically sense the direction of light sent through the crystal, parallel to the *c*-axis. Such a crystal can be used in various optical switching and memory devices.



3,559,186
MEMORY WITH APERTURED STRIP ELEMENTS
James C. Sagnis, Jr., Ossining, Michael Teig, Yonkers, and Robert L. Ward, Yorktown Heights, N.Y., assignors to International Business Machines Corporation, New York, N.Y., a corporation of New York
Filed Sept. 18, 1962, Ser. No. 224,415
Int. Cl. G11c *11/14, 7/00*
U.S. Cl. 340—174 9 Claims

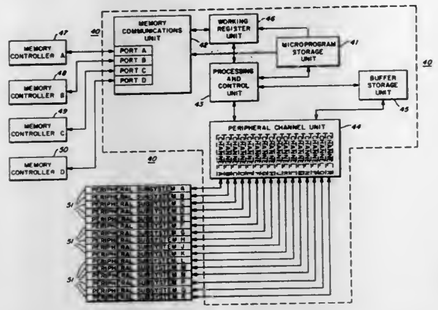


A conductive magnetic strip having one or more apertures therein. Drive apparatus is provided to establish flux states about the apertures and read apparatus is provided to alter the flux states about the apertures. Sense conductors coupled through the apertures furnish output signals.

3,559,187
INPUT/OUTPUT CONTROLLER WITH LINKED DATA CONTROL WORDS
John W. Figueroa, Palo Alto, Calif., William J. Morgan, Phoenix, Ariz., and Rolland R. Rasmussen, Ridgecrest, Calif., assignors to General Electric Company, a corporation of New York
Filed Nov. 13, 1968, Ser. No. 775,464
Int. Cl. G06f *15/16, 15/20, 3/00*
U.S. Cl. 340—172.5 6 Claims

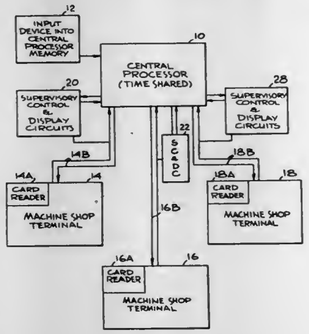
In order to increase the throughput of an input/output controller within a modular data processing system, apparatus is provided within the input/output controller for transferring information across an interface to a memory at an increased rate within the constraints imposed by the interface. Information is transferred in accordance with data control words. Means are provided whereby a first

data control word is used until its word count field is exhausted and in anticipation of this, another data control



word may be fetched in order that information transfer may continue.

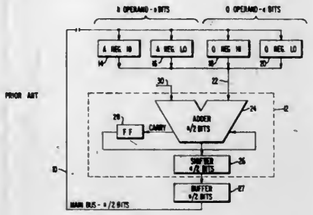
3,559,188
SUPERVISORY SYSTEM FOR TIME-SHARED NUMERICAL CONTROL SYSTEM
Thomas Proctor, Lyndhurst, Ohio, assignor, by mesne assignments, to Allen-Bradley Company, Milwaukee, Wis., a corporation of Wisconsin
Filed Feb. 29, 1968, Ser. No. 709,465
Int. Cl. G06f *15/46*
U.S. Cl. 340—172.5 **8 Claims**



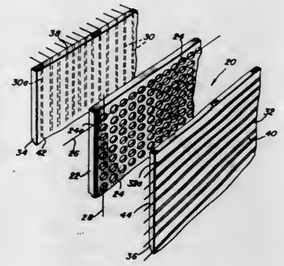
In a numerical control system of the type wherein a central processor provides control instruction, on a time-shared basis, to a plurality of remotely located numerically controlled machine tools, provision is made for gathering and processing data from the various machine tool locations of a type which is suitable for management control use.

3,559,189
SERIALIZED REGISTER DATA PROCESSING SYSTEM
William J. Patzer, Apalachin, N.Y., assignor to International Business Machines Corporation, Armonk, N.Y., a corporation of New York
Filed May 9, 1968, Ser. No. 728,025
Int. Cl. G06f *7/00*
U.S. Cl. 340—172.5 **7 Claims**

A data processing system in which the operand length is an integral multiple of the data flow width. The resultant data flow is serial-by-register, parallel-by-data-flow-width wherein each operand is stored and processed in portions each having a length or number of bits equal to the data flow width, thereby permitting operands to time share the data flow gating circuits so that the required number of logic circuits is significantly reduced.



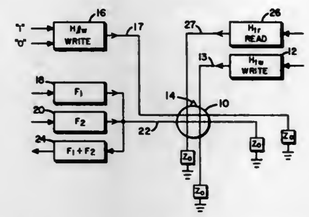
3,559,190
GASEOUS DISPLAY AND MEMORY APPARATUS
Donald L. Bitzer and Hiram Gene Slottow, Urbana, Ill., and Robert H. Willson, Ellicott City, Md., assignors to University of Illinois, Urbana, Ill., a corporation of Illinois
Continuation-in-part of application Ser. No. 521,357, Jan. 18, 1966. This application Dec. 22, 1966, Ser. No. 613,693
Int. Cl. G11c *11/28;* **H01j** *11/00*
U.S. Cl. 340—173 **33 Claims**



A plasma display apparatus for information storage and display having a bistable gaseous discharge cell with memory characteristics arising from charge storage on the cell walls. A panel array of bistable gaseous discharge cells with information transfer to and from the array being effected by electrical discharge signals selectively coupled externally of the gaseous discharge medium for controlling cell wall charges associated with the information stored in selected cells. Display apparatus having bistable gaseous discharge cells responding directly to digital information from a computer.

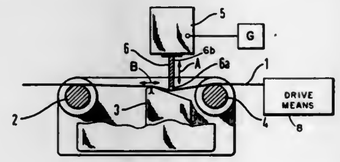
3,559,191
THIN-FERROMAGNETIC-FILM MEMORY ELEMENT USING RF MIXING FOR READOUT OPERATION
Virgil A. Ehresman, Minneapolis, Minn., assignor to Sperry Rand Corporation, New York, N.Y., a corporation of Delaware
Filed Mar. 1, 1967, Ser. No. 619,832
Int. Cl. G11c *11/14, 5/02, 7/00*
U.S. Cl. 340—174 **8 Claims**

A thin-ferromagnetic-film memory element utilizing a plurality of concurrent RF longitudinal drive fields and a pulse-like DC transverse drive field for providing a resultant sum-frequency readout signal the polarity phase



of which is indicative of the informational state of the memory element.

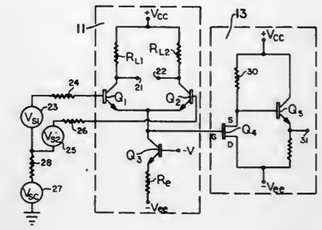
3,559,192
MAGNETIC RECORD-READ CONTROL PROCESS AND APPARATUS
Hubert Schlossbauer, Krailling, Germany, assignor to Siemens Aktiengesellschaft, Munich, Germany
Filed Mar. 3, 1967, Ser. No. 620,443
Claims priority, application Germany, Mar. 4, 1966, S 102,355
Int. Cl. G11b *5/36, 27/36*
U.S. Cl. 340—174.1 **12 Claims**



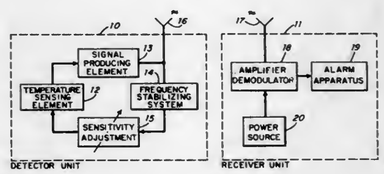
A magnetic record-read apparatus and process having supervisory control circuitry to indicate whether information is recorded correctly. Information bits are recorded on successive segments of a premagnetized magnetic tape. Each recorded bit is read and supervisory control signals are thereby produced, which are compared to the recording current, to determine if the information bit has been correctly recorded. Before advancing the magnetic tape to the next segment, an incorrectly recorded bit may be corrected. A vibrator device is utilized in operative contact with the magnetic tape to vibratably move a portion of the magnetic tape segment over the magnetic record-read head after the bit has been recorded, to generate the supervisory control signals. Evaluator means are utilized to evaluate the supervisory control signals and logic circuitry considers the evaluation with respect to the input to the recording head, to determine whether or not the information bit is correctly recorded. When the bit is recorded correctly, or when it is recorded incorrectly and is subsequently corrected, the tape is advanced to record the next information bit on the successive segment.

3,559,193
COMMON MODE SIGNAL DETECTION
Fredrick J. Savaglio, Fullerton, and Thomas C. Woods, and Allan F. Pacela, Diamond Bar, Calif., assignors to Beckman Instruments, Inc., a corporation of California
Filed Nov. 20, 1967, Ser. No. 684,406
Int. Cl. G08b *21/00;* **G01r** *19/00;* **A61b** *5/04*
U.S. Cl. 340—213 **6 Claims**

Common mode signal detection is provided in an electronic system having a differential input amplifier consisting of two active elements connected to a common constant current source by detecting a voltage produced across the constant current source in response to a common mode signal superimposed on the differential input signal. A threshold device is then employed to determine when the common mode signal exceeds a predetermined voltage level. The differential amplifier should have a common mode rejection factor sufficient to reduce unwanted differential output signals (as an equivalent differential input noise) to an amplitude not greater in order of magnitude than the input signal. An alarm system is connected to the threshold device to signal when the common mode signal exceeds the predetermined voltage level. This common mode signal detection system may be employed to particular advantage in electronic systems for monitoring biopotentials since it provides a convenient way of determining when a biopotential electrode has become detached from the subject.

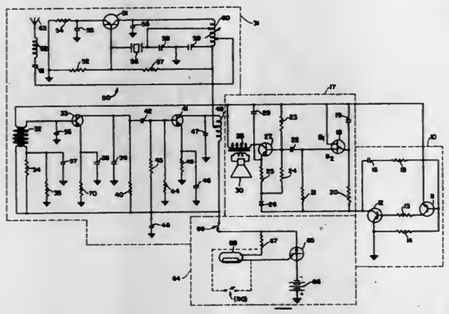


3,559,194
FIRE ALARM SYSTEM
Arthur Bisberg, Lexington, Mass., assignor, by mesne assignments, to General Eastern Corporation, Boston, Mass., a corporation of Massachusetts
Filed Sept. 13, 1967, Ser. No. 667,577
Int. Cl. G08b *17/12*
U.S. Cl. 340—224 **5 Claims**



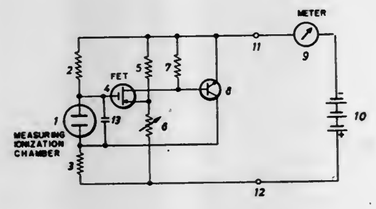
A fire alarm system which utilizes a plurality of low energy fire detection units, each operating solely from energy received from a fire and each being capable of producing and transmitting a stabilized radio frequency signal in response to an environmental temperature change resulting from a fire. A single remote alarm unit receives and demodulates the transmitted signal received from one or more detection units and produces an audible and/or visual alarm in response thereto. The sensitivity of the detection units is made adjustable and the radio frequency signal from each of such units may be appropriately modulated by an audio frequency signal. The frequency values of such radio frequency signals and/or audio frequency signals may be different for each detection unit and such signals may be suitably utilized at the receiver alarm unit to identify the location of the fire.

3,559,195
ALARM SYSTEM
Gianni A. Dotto, Dayton, Ohio, assignor to P. R. Mallory & Co. Inc., Indianapolis, Ind., a corporation of Delaware
Continuation of application Ser. No. 486,498, Sept. 10, 1965. This application Apr. 25, 1969, Ser. No. 820,042
Int. Cl. G08b 3/10
U.S. Cl. 340—224 1 Claim



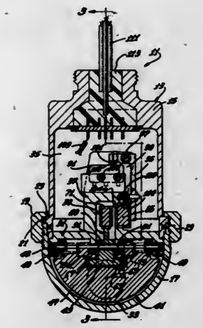
A modulated radio-frequency alarm system having a transmitter and a receiver is disclosed. The transmitter draws no power until it is triggered on by a sensor switch and an SCR. When triggered, the transmitter emits a radio frequency modulated by an interrupted audio frequency provided from a signal generator keyed by a multivibrator coder. A companion receiver intercepts the transmitted signal with a super-regenerative detector and amplifies the interrupted audio tone to give a remote indication of the triggering of the transmitter.

3,559,196
FIRE ALARM WITH BISTABLE CHARACTERISTICS
Andreas Scheidweiler, Staefa, Switzerland, assignor to Cerberus AG, Mannedorf, Switzerland, a corporation of Switzerland
Filed Dec. 27, 1967, Ser. No. 693,937
Claims priority, application Switzerland, Dec. 29, 1966, 18,751/66
Int. Cl. G08b 17/10
U.S. Cl. 340—237 10 Claims



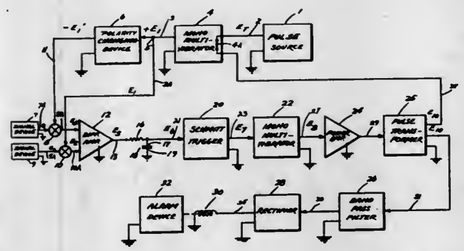
A fire alarm device exhibiting bistable characteristics, the device comprising a detector element which provides an electric signal in response to a phenomenon accompanying combustion, and an amplifying device connected with said detector element in a feedback circuit in a manner such that the appearance of an electric signal produces a change in the condition of the amplifying device which, in turn, produces a change in the potential applied to the detector element resulting in the maintenance of the change in condition of the amplifying device until such time as a re-setting operation is performed on the circuit.

3,559,197
FLOW INDICATOR
Samuel M. Jarvis, Miraleste, and Julius P. Striegler, Garden Grove, Calif., assignors to Acme Machine Works, Inc., Hawthorne, Calif., a corporation of California
Filed Mar. 29, 1968, Ser. No. 717,179
Int. Cl. G08b 21/00
U.S. Cl. 340—239 14 Claims



This disclosure describes a flow indicator which may include a housing having a flow passageway therein and a vane pivotably mounted in said housing with at least a portion of the vane lying in the flow passageway. The vane pivots in response to fluid flow through the flow passageway and means responsive to the pivotal movement of the vane provides a signal or indication of the flow condition in the passageway. Preferably, the vane includes first and second vane sections which are pivotable independently so that one of the vane sections, under relatively high flow conditions, can be pivoted to substantially reduce the amount of resistance to fluid flow provided thereby.

3,559,198
FREQUENCY RESPONSIVE MONITOR FOR A REDUNDANT CONTROL SYSTEM
Harold Moreines, Springfield, and Gunter J. Gessner, Maywood, N.J., assignors to The Bendix Corporation, a corporation of Delaware
Filed Apr. 25, 1966, Ser. No. 545,027
Int. Cl. G08b 21/00
U.S. Cl. 340—248 7 Claims



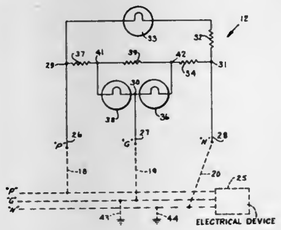
Apparatus for monitoring a control system providing redundant signals, comprising first means for providing an output at a predetermined frequency, and second means

for comparing the redundant signals provided by the control system. The second means is connected to the first means for rendering said first means effective to provide an output at a frequency other than the predetermined frequency when the difference between the compared signals exceeds a predetermined limit, whereupon an alarm is actuated for signalling a system malfunction.

3,559,199
METHOD OF AND AN APPARATUS FOR INDICATING SHORT CIRCUITS IN THE CELLS OF ELECTROLYSIS PLANTS
Rolf Schäfer, Krefeld-Urdingen, Germany, assignor to Farbenfabriken Bayer Aktiengesellschaft, Leverkusen, Germany, a corporation of Germany
Filed Aug. 15, 1967, Ser. No. 660,815
Claims priority, application Germany, Aug. 18, 1966, F 49,978
Int. Cl. G08b 21/00
U.S. Cl. 340—253 1 Claim

Short circuit indicating device for a cell of an electrolysis plant which cell has an anode and a cathode, said anode beind connected to a bus bar, wherein a ferromagnetic armature is positioned to be attracted about said bus bar by the magnetic field about said bus bar caused by a short circuit. Preferably, said ferromagnetic armature is used to activate an alarm system.

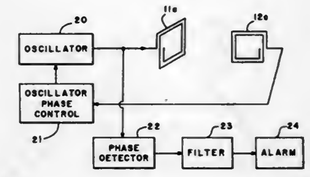
3,559,200
MONITORING UNIT FOR SIGNALLING A SPECIFIC CONDITION IN THE CIRCUITRY SUPPLYING POWER TO AN ELECTRICAL DEVICE
Nole L. Walters, Mishawaka, Ind., assignor, by mesne assignments, to Trinetics, Inc., Mishawaka, Ind., a corporation of Indiana
Filed Feb. 8, 1968, Ser. No. 704,176
Int. Cl. G08b 21/00
U.S. Cl. 340—255 6 Claims



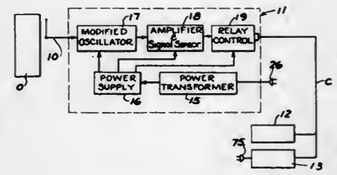
A monitoring unit for signalling a specific condition in the power supply circuitry for an electrical device. The unit has three terminals. A first signalling device is connected between the first and third terminals. A second signalling device is connected between the second and third terminals. A third signalling device is connected between the first and second terminals. A biasing circuit is connected between the first and third terminals so that the monitoring unit will issue a signal indicating only a specific condition in the power supply circuitry. The monitoring unit is housed in a housing.

3,559,201
SECURITY SYSTEM
Robert C. Hilliard, Hampton Falls, N.H., assignor to General Atronics Corporation, Wyndmoor, Pa., a corporation of Pennsylvania
Filed Jan. 3, 1967, Ser. No. 612,750
Int. Cl. G08b 13/24
U.S. Cl. 340—258 12 Claims

An oscillator driving a coil establishes an electric field between that coil and a second coil generally perpendicular thereto. Disturbances of this field by passage of an electrically conductive object are fed back from the second coil to vary the oscillator phase or frequency, and the resulting variations are utilized to indicate such object passage.



3,559,202
REMOTE SITE PROTECTIVE ALARM SYSTEM
Constantine S. Kontos, Detroit, Mich., assignor to Neo-Guard, Inc., Allen Park, Mich., a corporation of Michigan
Filed July 31, 1967, Ser. No. 657,187
Int. Cl. G08b 13/26
U.S. Cl. 340—258 19 Claims

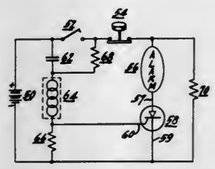


The protective system disclosed herein comprises an antenna which is placed adjacent the area to be protected, a master control and power unit which may be positioned at a remote area, and a plurality of remote signal stations positioned at desirable areas where a signal is to be produced if a foreign body is present in the area being protected. The master power and control unit comprises a source of radio frequency alternating current and, more specifically, a modified Hartley oscillator, a first secondary coil positioned adjacent the primary coil of the oscillator to which the antenna is connected, a second secondary coil adjacent the primary coil of the oscillator which is connected to an amplifier which, in turn, controls a first relay that is normally energized. The normally energized relay, in turn, controls a second relay that is normally energized at each of the remote stations. When a foreign body is present at the area being protected, a change in load of the oscillator circuit is produced causing a change in the signal supplied by the second secondary coil to the amplifier, in turn, de-energizing sucessively the relays to produce a warning signal at each remote station.

3,559,203
AGITATION SENSITIVE ALARM CIRCUIT
James R. Hall, Canoga Park, and Peter B. Korda, Los Angeles, Calif., assignors to RCA Corporation of America, a corporation of Delaware
Filed Nov. 13, 1967, Ser. No. 682,121
Int. Cl. G08b 13/12
U.S. Cl. 340—261 6 Claims

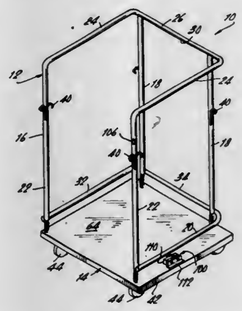
An agitation sensitive alarm circuit including sensing means formed of electrically conductive, loosely inter-

coupled links, characterized by stable and unstable impedance states; the slightest agitation being sufficient to



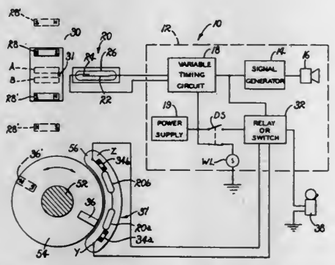
transfer said sensing means from its stable state to its unstable state.

3,559,204
AUDIO-VISIBLE ALERT SCALE SLING TRUCK
William Dashper, Weston, Ontario, Canada, assignor to Metropolitan Wire Goods Corporation, Wilkes-Barre, Pa., a corporation of New York
Filed May 9, 1968, Ser. No. 727,820
Int. Cl. G08b *21/00*
U.S. Cl. 340—272 **10 Claims**



The invention is directed to a laundry sling truck which is adapted to give off an electric audio and/or visible alarm when linen deposited in a sling, hung in said truck, reaches a predesignated weight. The truck of the invention comprises a sling housing unit and a suitable dolly therefor, in combination with weighing and alarm means.

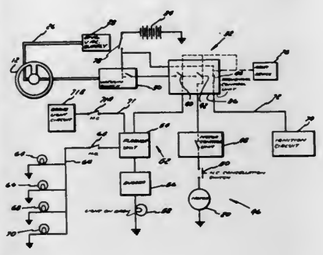
3,559,205
SAFETY APPARATUS FOR ALERTING A MOTOR VEHICLE OPERATOR
Charles E. Colby, 740 S. Locan St., Fresno, Calif. 93727
Filed Nov. 29, 1967, Ser. No. 686,660
Int. Cl. G08b *21/00*
U.S. Cl. 340—279 **3 Claims**



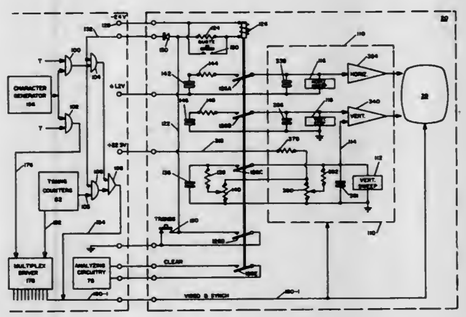
Apparatus including a signal generator for activating warning devices to alert the operator of a motor vehicle, the signal generator being controlled by circuitry including reed switch systems opened and closed by the movement of magnets with the N–S axis thereof passing across the longitudinal axis of the switch system or perpendicular to such axis for controlling a variable timing circuit or a relay.

3,559,206
VEHICLE SAFETY CONTROL SYSTEM
Leonard A. Beecham, 656 Ironwood, Ann Arbor, Mich. 48103
Filed Mar. 29, 1968, Ser. No. 717,353
Int. Cl. B60t *7/00, 7/14;* **G08b** *21/00*
U.S. Cl. 340—279 **10 Claims**

A safety control system for controlling the motion or a motor vehicle when the operator of the vehicle unintentionally relaxes his grip on the steering wheel. A vacuum operated switch connected to the engine vacuum supply by a flexible tube wrapped around the steering wheel respons to the operator releasing his grip on the steering wheel and the tube to actuate an electrical circuit which initially energizes a flasher unit, a buzzer and the vehicle's emergency lights, then de-energizes the ignition circuit and finally energizes a motor actuated member that depresses the brake pedal to bring the vehicle to a stop.



3,559,207
DATA DISPLAY SYSTEM
John D. Atkinson, Rowayton, Conn., assignor to The Bunker-Ramo Corporation, Stamford, Conn., a corporation of Delaware
Filed Jan. 16, 1967, Ser. No. 609,537
Int. Cl. H04j *3/16;* **H04g** *11/04*
U.S. Cl. 340—324 **17 Claims**

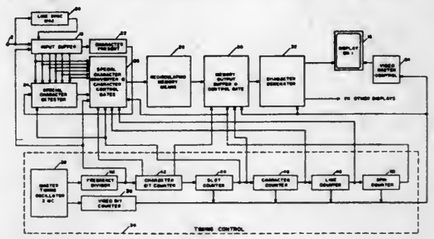


A data display system of the type wherein data is displayed in a format having at least one data line, where a separate sweep of a viewing screen is provided for each

of the data lines, and including circuitry for permitting the display format to be varied by altering various parameters of the sweep circuitry and the timing controls.

3,559,208
DATA DISPLAY MEANS
Angelo Di Giugno, Norwalk, Conn., and Joseph C. Marshall, Katonah, N.Y., assignors to The Bunker-Ramo Corporation, Stamford, Conn.
Continuation-in-part of application Ser. No. 548,127, May 6, 1966. This application Feb. 27, 1967, Ser. No. 618,730
Int. Cl. H04l *17/30*
U.S. Cl. 340—324 **31 Claims**

An information display system for presenting graphic characters in a parallel line format and adapted (1) to receive a stream of coded electrical signals representing the graphic characters, (2) to segment the stream of signals into segregated groups of characters suitable for presentation on a single display line, and (3) to place each

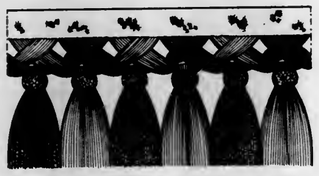


segregated group of characters on a corresponding line of a cathode-ray-tube display.

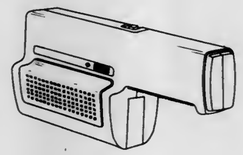
DESIGNS

JANUARY 26, 1971

219,765
FRINGE
Harold N. Schwartz, 321 E. 69th St., New York, N.Y. 10021
Filed Apr. 5, 1968, Ser. No. 11,322
Term of patent 14 years
Int. Cl. D5—*08*
U.S. Cl. D3—32

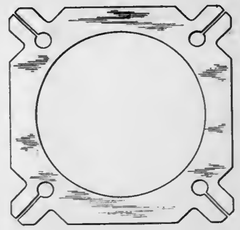


219,766
ELECTRIC BRUSH
Rudolph Bernard Zijlstra, Drachten, Netherlands, assignor to U.S. Philips Corporation, New York, N.Y., a corporation of Delaware
Filed Sept. 16, 1969, Ser. No. 19,159
Claims priority, application Switzerland Mar. 20, 1969
Term of patent 14 years
Int. Cl. D4—*02*
U.S. Cl. D4—14



219,767
TIE DOWN BRACKET FOR TRUCKS OR SIMILAR ARTICLE
Harold C. Johnson, 701 F St. W., Vale, Oreg. 97918
Filed June 25, 1969, Ser. No. 17,862
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—229

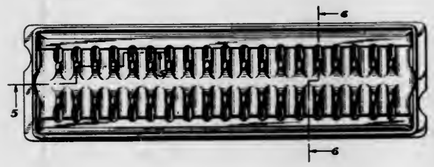
219,768
STABILIZING BRACE OR SIMILAR ARTICLE
Albert L. Conwill, Vincent, Ala., assignor to Beaunit Corporation, New York, N.Y., a corporation of New York
Filed July 30, 1969, Ser. No. 18,465
Term of patent 14 years
Int. Cl. D8—*99*
U.S. Cl. D8—233



219,769
INSULATED HOLDER FOR WIRES OR THE LIKE
George Ewing, 5740 Golden Valley Road, Minneapolis, Minn. 55427, and Bruce M. Meents, Wallingford, Conn. (Rte. 3, River Falls, Wis. 54022)
Filed Feb. 11, 1969, Ser. No. 15,737
Term of patent 14 years
Int. Cl. D8—*03*
U.S. Cl. D8—234

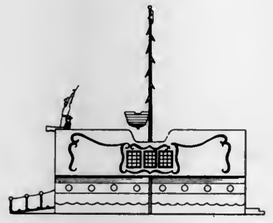


219,770
SHIPPING CONTAINER FOR LABORATORY TUBES AND THE LIKE
Thomas M. Britt, Red Bank, N.J., assignor to Owens-Illinois, Inc., Toledo, Ohio, a corporation of Ohio
Filed Aug. 13, 1969, Ser. No. 18,660
Term of patent 14 years
Int. Cl. D9—*04;* D24—*99*
U.S. Cl. D9—189

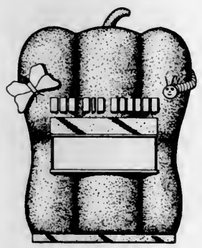


219,771
RESTAURANT BUILDING
William G. Raffetto, 329 4th St., Ellwood City, Pa. 16117
Filed Sept. 18, 1969, Ser. No. 19,209
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1

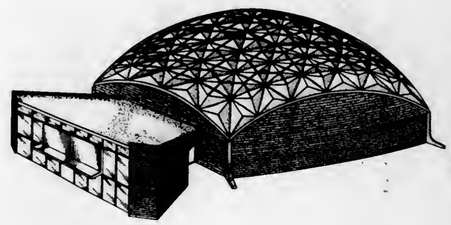




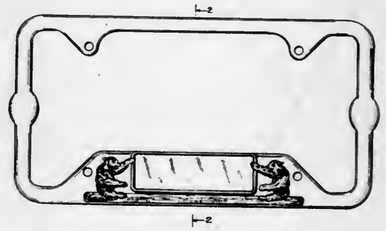
219,772
FOOD STAND
John D. Lenzi, 662 Payne Ave., St. Paul, Minn. 55106
Filed Nov. 3, 1969, Ser. No. 19,909
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



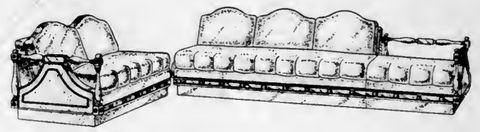
219,773
THEATER BUILDING
Pat R. Notaro, Malibu, Calif., assignor to Trans-Beacon Corporation, Beverly Hills, Calif., a corporation of Delaware
Filed Mar. 2, 1970, Ser. No. 21,690
Term of patent 14 years
Int. Cl. D25—*04*
U.S. Cl. D13—1



219,774
VEHICLE LICENSE PLATE FRAME
Broadus F. Cox, 2353 Pasadena Ave., Long Beach, Calif. 90806
Filed Aug. 21, 1969, Ser. No. 18,780
Term of patent 7 years
Int. Cl. D12—*14*
U.S. Cl. D14—6



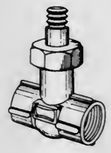
219,775
SECTIONAL SOFA
Hubert Howard Watson and Mike Stewart Watson, Galax, Va., assignors to Sawyers Furniture Company, Galax, Va., a corporation of Virginia
Filed July 31, 1969, Ser. No. 18,491
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D15—11



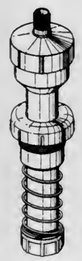
219,776
DISPENSER FOR TOILET TANKS
Edward C. Jacobs, 142 Exbourne Ave., San Carlos, Calif. 94070
Filed Oct. 27, 1969, Ser. No. 19,729
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—3



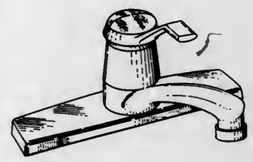
219,777
NEEDLE VALVE HOUSING
Hisayoshi Mese, Higashi Osaka-shi, Japan, assignor to Fuji Kinzoku Kosaku Kabushiki Kaisha, Osaka-shi, Japan
Filed July 7, 1969, Ser. No. 18,065
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—19



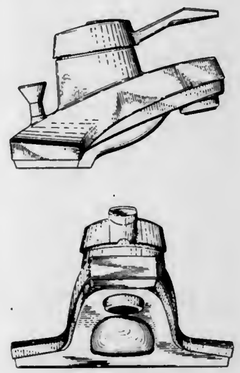
219,778
VALVE ASSEMBLY FOR POULTRY DRINKING DEVICE
David Christopher Leeming, Hill House, 22a Bereweeke Ave., Winchester, England
Filed Sept. 11, 1969, Ser. No. 19,106
Claims priority, application Great Britain June 6, 1969
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—19



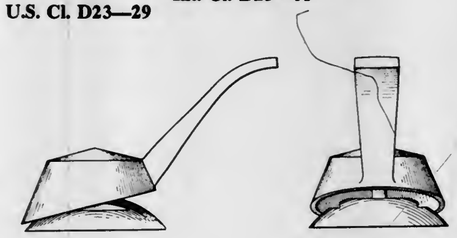
219,779
KITCHEN FITTING
James A. Tiller, Decatur, Ga., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 10, 1969, Ser. No. 20,435
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—23



219,780
LAVATORY FITTING
James E. Niemann, Louisville, Ky., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 10, 1969, Ser. No. 20,446
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—23



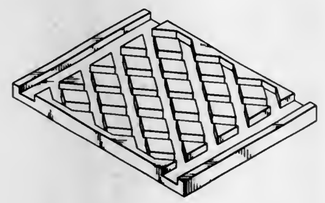
219,781
FAUCET HANDLE
James E. Niemann, Louisville, Ky., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Nov. 18, 1969, Ser. No. 20,158
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—29



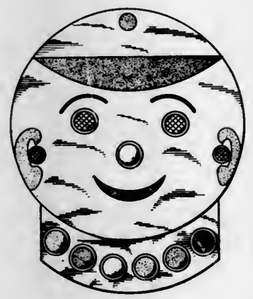
219,782
WATER CONTROL HANDLE FOR BATH AND SHOWER
James A. Tiller, Decatur, Ga., assignor to American Standard Inc., New York, N.Y., a corporation of Delaware
Filed Dec. 10, 1969, Ser. No. 20,434
Term of patent 14 years
Int. Cl. D23—*01*
U.S. Cl. D23—31



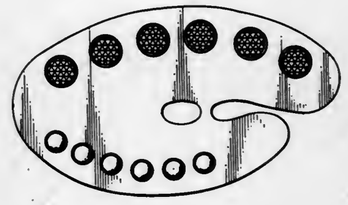
219,783
HEAT EXCHANGER OR SIMILAR ARTICLE
Horace C. McSwain, 703 Westwood, Richardson, Tex. 75080
Filed July 25, 1969, Ser. No. 18,410
Term of patent 14 years
Int. Cl. D23—*03*
U.S. Cl. D23—127



219,784
COLOR TEACHING AID
Joseph Sallak, R.R. 1, Box 85, Dyer, Ind. 46311
Filed Apr. 25, 1969, Ser. No. 16,896
Term of patent 14 years
Int. Cl. D19—*08*
U.S. Cl. D25—1



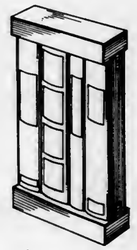
219,785
COLOR TEACHING AID
Joseph Sallak, R.R. 1, Box 85, Dyer, Ind. 46311
Filed Apr. 25, 1969, Ser. No. 16,904
Term of patent 14 years
Int. Cl. D19—*08*
U.S. Cl. D25—1



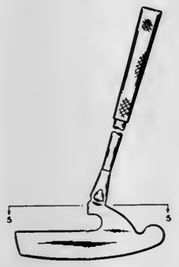
219,786
POODLE DOG FLOWER ARRANGEMENT
Raymond Prybella, 1533 S. 4th St., Philadelphia, Pa. 19147
Filed Aug. 5, 1969, Ser. No. 18,547
Term of patent 14 years
Int. Cl. D11—*04*
U.S. Cl. D29—1



219,787
FURNITURE PANEL OR SIMILAR ARTICLE
Douglas Ian MacFarlane, 20508 Clark St., Woodland Hills, Calif. 91364
Filed Aug. 18, 1969, Ser. No. 18,754
Term of patent 14 years
Int. Cl. D6—*01*
U.S. Cl. D33—1



219,788
GOLF PUTTER
Joseph P. Leone, 780 Danner St., Tallmadge, Ohio 44278
Filed Dec. 4, 1969, Ser. No. 20,359
Term of patent 14 years
Int. Cl. D21—*03*
U.S. Cl. D34—5

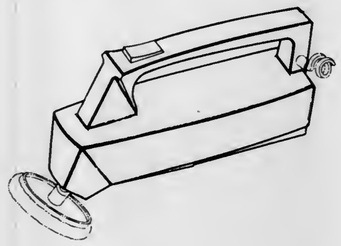


219,789
DRINKING GLASS OR SIMILAR ARTICLE
Jens H. Quistgaard, Copenhagen, Denmark, assignor to Dansk Designs, Ltd., Mt. Kisco, N.Y., a corporation of New York
Filed Jan. 26, 1970, Ser. No. 21,087
Term of patent 14 years
Int. Cl. D7—*01*
U.S. Cl. D36—8

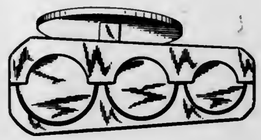




219,790
HAND SCRUBBING IMPLEMENT
Louise K. Rhodes, 6835 E. Prairie Road, Lincolnwood, Ill. 62659
Filed Nov. 3, 1969, Ser. No. 19,882
Term of patent 14 years
Int. Cl. D15—*07*
U.S. Cl. D49—13



219,791
COIN DISPENSER
Ossi E. Narhi, 203 E. 94th St., New York, N.Y. 10028
Filed Dec. 22, 1969, Ser. No. 20,593
Term of patent 14 years
Int. Cl. D20—*99*
U.S. Cl. D52—4

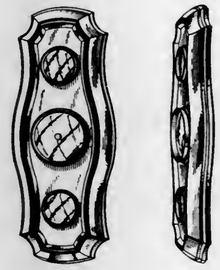




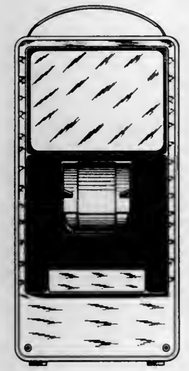
219,792
WATTHOUR METER
Raymond A. Grosso, Troy, Mich., assignor to Sangamo Electric Company, Springfield, Ill., a corporation of Delaware
Filed Nov. 5, 1969, Ser. No. 19,959
Term of patent 14 years
Int. Cl. D10—*10, 99*
U.S. Cl. D52—6



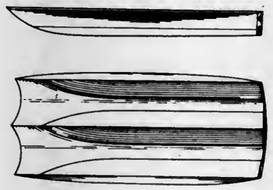
219,793
WEATHER INDICATING INSTRUMENT
C. Douglas Turnbull, Chicago, Ill., assignor to Airguide Instrument Company, Chicago, Ill., a corporation of Illinois
Filed Aug. 21, 1969, Ser. No. 18,799
Term of patent 14 years
Int. Cl. D10—*07*
U.S. Cl. D52—7



219,794
FILM STRIP VIEWER
Jay Doblin, Chicago, Ill., assignor to Whitehouse Products, Inc., Brooklyn, N.Y., a corporation of New York
Filed Jan. 14, 1970, Ser. No. 20,919
Term of patent 14 years
Int. Cl. D16—*04*
U.S. Cl. D61—1



219,795
BOAT HULL
Leonard Elliot Field, 21 Woking St., Oxford Park, Brisbane, Queensland, Australia
Filed Aug. 11, 1969, Ser. No. 18,632
Term of patent 14 years
Int. Cl. D12—*06*
U.S. Cl. D71—1



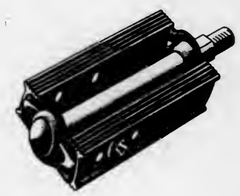
219,796
CASING FOR A MARKER PEN
Moto Shimano and Clarence D. Zierhut, Los Angeles, Calif., assignors to The Gillette Company, Santa Monica, Calif., a corporation of Delaware
Filed July 14, 1969, Ser. No. 18,199
Term of patent 14 years
Int. Cl. D19—*06*
U.S. Cl. D74—17



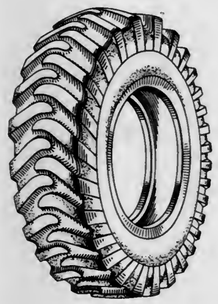
219,797
WRITING INSTRUMENT
Moto Shimano, Los Angeles, and Clarence D. Zierhut, Granada Hills, Calif., assignors to The Gillette Company, Santa Monica, Calif., a corporation of Delaware
Filed Nov. 24, 1969, Ser. No. 20,232
Term of patent 14 years
Int. Cl. D19—*06*
U.S. Cl. D74—17



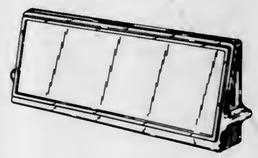
219,798
REFLECTIVE BICYCLE PEDAL
Robert F. Humlong, Maysville, Ky., assignor to Wald Manufacturing Company, Inc., Maysville, Ky., a corporation of Kentucky
Filed Feb. 24, 1970, Ser. No. 21,569
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—14



219,799
IMPLEMENT TIRE
Charles C. Sons, Jr., Peoria, Ill., assignor to Caterpillar Tractor Co., Peoria, Ill., a corporation of California
Filed Jan. 22, 1970, Ser. No. 21,038
Term of patent 14 years
Int. Cl. D12—*14*
U.S. Cl. D90—20



219,800
DISPLAY BOARD
Daniel P. Novak, Parkridge, and David R. Main, Glenview, Ill., assignors to Frank Mayer & Associates, Grafton, Wis., a corporation of Wisconsin
Filed Nov. 12, 1969, Ser. No. 20,040
Term of patent 14 years
Int. Cl. D20—*03*
U.S. Cl. D96—12



LIST OF PATENTEES

TO WHOM

PATENTS WERE ISSUED ON THE 26TH DAY OF JANUARY, 1971

NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

30% Kunik, I. Jordan: *See—*
Hutchinson, Seymour M., 3,557,456.
Aaron, Charles; and Stroud, Edward A., to Cameron Machine Company. Vertical collator. 3,558,125, Cl. 270-58.
AB Kabi: *See—*
Granstrand, Bengt Ragnar Gustaf; and Nihlen, Nils Hugo Vilhelm, 3,558,459.
Abbott Laboratories: *See—*
Barr, Courtland H., Sr.; Barr, Courtland H., Jr.; and Barr, John W., 3,557,786.
Geiszler, Adolph Oscar; and Jones, Peter Hadley, 3,558,600.
Jones, Peter Hadley; Wiegand, Ronald Gay; and Chun, Alexander Hing Chinn, 3,558,594.
Zytko, Walter J., 3,558,022.
Abe, Ryoichi: *See—*
Yokozawa, Norio; Nara, Akinao; and Abe, Ryoichi, 3,558,921.
Abex Corporation: *See—*
Wilson, Rosser L., 3,557,910.
Abowd, Richard G., Jr., to Ethyl Corporation. Jet fuel additive. 3,558,291, Cl. 44-68.
Abowd, Richard G., Jr., to Ethyl Corporation. Jet fuel additive. 3,558,292, Cl. 44-68.
Abromavage, John C.; and Ryden, James W., to Arcoa, Inc. Compression hitch bar assembly. 3,558,158, Cl. 280-502.
Accaries, Maurice Roger; and Girard, Maurice Emile, to Compagnie des Compteurs. Method of electroplating zinc and electrolyte therefor. 3,558,448, Cl. 204-55.
Accum-Matic Systems Inc.: *See—*
Broser, Richard, 3,557,943.
ACF Industries, Incorporated: *See—*
Bolte, Ronald P., 3,557,708.
Ackermann, Hans; Bossard, Werner; Voltz, Jacques; and Wegmuller, Hans. 5-Arylazo-pyrimidine polyester dyes. 3,558,261, Cl. 8-41.
Acme Machine Works, Inc.: *See—*
Jarvis, Samuel M.; and Striegler, Julius P., 3,559,197.
Adam, Karl; Haarer, Erich; Merkel, Karl; and Pilch, Kurt, to Badische Anilin- & Soda Fabrik Aktiengesellschaft. Catalytic hydrogenation of diaminodiphenyl alkanes or ethers. 3,558,703, Cl. 260-563.
Adamovske strojirny, narodni podnik: *See—*
Jiruse, Jaroslav, 3,558,126.
Adams & Westlake Company, The: *See—*
Emmons, Clayton M., 3,559,122.
Adams, Clark E.: *See—*
Robbins, Leroy V., Jr.; Anderson, Joseph S.; and Adams, Clark E., 3,558,476.
Adams, Frederick J., to Cam Gears, Ltd., mesne. Steering system. 3,557,662, Cl. 91-375.
Adams, Stewart Sanders; Armitage, Bernard John; Bristow, Norman William; and Heathcote, Bernard Vincent, to Boots Pure Drug Company Limited. Anti-secretory compositions containing xanthen derivatives and uses therefor. 3,558,779, Cl. 424-283.
Adamson Company: *See—*
Braun, Warren L., 3,558,857.
Adcraft Mfg. Co.: *See—*
Sitzberger, Frank J., 3,557,478.
Adise, Herbert H., to Computer Instruments Corporation. Tonometer with correct usage indicator. 3,557,611, Cl. 73-80.
Admiral Corporation: *See—*
Chang, Si Kun; and Rakha, Mohammed A., 3,559,073.
Advance Finishing, Inc.: *See—*
Tillotson, John G., 3,557,582.
Aerojet-General Corporation: *See—*
Martinek, Frank; and Macauley, William T., 3,557,554.
Acrosol Techniques Research Center, Inc.: *See—*
Mace, Harry W., 3,558,495.
Acrpat A.G.: *See—*
Heslop, Victor Lorraine; and Saunders, Leonard, 3,557,597.
Af Segerstad, Carl-Gustaf Hard. Device for reversing motions. 3,557,632, Cl. 74-129.
AGA Aktiebolag: *See—*
Lilljeforss, Gustaf Lennart; and Skalleberg, Oystein Gunnar, 3,557,890.
Agency of Industrial Science Technology: *See—*
Kubota, Katsuga, 3,558,216.
Agerholm, Kristian. Mating base members for an expandable vertical desk file or the like. 3,557,965, Cl. 211-11.
Agfa-Gevaert Aktiengesellschaft: *See—*
Heinen, Hans, 3,558,077.
Hueckstaedt, Harald; Saleck, Wilhelm; Mueller, Herbert; and Randolph, August, 3,558,314.
Keberle, Wolfgang; Verburg, Werner; and Muller, Friedhelm, 3,558,316.
Agnew, John D., to United States Steel Corporation. Machine tool. 3,557,646, Cl. 82-2.
Agterhuis, Hendrik B. F.: *See—*
Seymour, James O., Jr.; and Agterhuis, Hendrik B. F., 3,557,615.
Air Preheater Company, Inc., The: *See—*
Ostrander, George K., 3,557,974.
Air Reduction Company, Incorporated: *See—*
See, Robert O., 3,558,062.
Airflow Developments Limited: *See—*
Wilson, Alexander Connor; and Bagley, Peter Edward, 3,557,617.
Airmarine Corporation: *See—*
Williams, Paul E., 3,558,081.
Akaike, Seiji; Nomura, Tsutomu; Kimura, Takayoshi; and Washio, Masayuki, to Nissan Motor Company, Limited, and Atsugi Motor Parts Company, Limited. Cylindrical reciprocating compressor of horizontal type for a car-cooler of an automobile. 3,557,664, Cl. 91-499.
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Akima, Akira; Yoshida, Kazuyoshi; and Ujihara, Shigeo, to Honda Giken Kogyo Kabushiki Kaisha. Apparatus for controlling the operation of a shift member and input clutch a gear type transmission. 3,557,918, Cl. 192-3.5
Aksu, Akin. Electrical connectors. 3,559,154, Cl. 339-213.
Aktiebolaget Astra: *See—*
Ekstrom, Bertil Ake; and Sjoberg, Olof Harald, 3,558,601.
Eriksson, Sven Axel; and Fischler, Max, 3,558,785.
Aktiebolaget Bofors: *See—*
Bakke, Jan Magnus, 3,558,663.
Aktiebolaget Electrolux: *See—*
Lindgren, Nils Kauri, 3,558,002.
Nilsson, Arne Lennart, 3,558,943.
Aktiebolaget Hagglund & Soner: *See—*
Hilfing, Karl E.; and Pettersson, Nils Artur, 3,557,709.
Aktiebolaget Hassle: *See—*
Brandstrom, Arne Elof; and Carlsson, Stig Ake Ingemar, 3,558,616.
Aktiengesellschaft Brown, Boveri & Cie: *See—*
Bossi, Hans Jurg, 3,558,990.
Faust, Werner, 3,559,037.
Kanngiesser, Karl-Werner, 3,558,904.
Kanngiesser, Karl-Werner, 3,559,036.
Albany International Corporation: *See—*
Wall, John J., 3,558,413.
Albrecht, Cord, to Siemens Aktiengesellschaft. Coil winding apparatus. 3,558,068, Cl. 242-7.07
Albrecht, Heinz. Safety valve for protecting hydraulic mine props against overloads. 3,557,826, Cl. 137-516.29
Albright, Roy H., to I-T-E Imperial Corporation. Internal check valve for gas insulated transmission system. 3,558,798, Cl. 174-10.
Alburn, Harvey E.; and Grant, Norman H., to American Home Products Corporation. 6-(Aminocyclopentene-1-carboxamido) penicillanic acids and derivatives thereof. 3,558,602, Cl. 260-239.1
Alco Standard Corporation: *See—*
Gaede, James C., 3,558,112.
Alden Research Foundation: *See—*
Sviokla, Sylvester C., 3,557,946.
Aldridge, Clifton, Jr.; and Howell, Robert D., to McDonnell Douglas Corporation. Process of making gelatin wool filter. 3,558,756, Cl. 264-101.
Aleksa, Peter: *See—*
Licitis, Gunars; Aleksa, Peter; and Glass, Marvin I., 3,558,143.
Algire, Dean E. Bed attachment for tractor cabs. 3,558,180, Cl. 296-23.
Alicot, Marie Josephe Jeanne: *See—*
Sureau, Robert Frederic Michel; and Alicot, Marie Josephe Jeanne, 3,558,617.
Allday, William, and Company Limited: *See—*
Smith, Wilfred C.; and Cox, Richard W. J., 3,558,253.
Allen & Hanburys Limited: *See—*
Hartley, David; Lunts, Lawrence H. C.; and Toon, Paul, 3,558,642.
Allen, Edward L., to Ingersoll-Rand Company. Impact wrench mechanism. 3,557,884, Cl. 173-93.5
Allen, Herman Curtis; and De Virgilio, Charles Arthur, to Bird & Son, Inc. Tube coating apparatus. 3,558,402, Cl. 156-425.
Allen-Bradley Company: *See—*
Proctor, Thomas, 3,559,188.
Allgeuer, Kurt: *See—*
Rank, Viktor; Tentschert, Hans; Junker, Harald; and Allgeuer, Kurt, 3,558,749.

Allied Chemical Corporation: *See—*
Batchelor, Gordon S.; and Hawkins, Edwin F., 3,558,789.
Lipscomb, Walter P.; and Schreffler, Robert Z., 3,558,202.
Opfell, James E., 3,558,420.
Sweeney, Richard F.; and Price, Alson K., 3,558,677.
Theurer, Kurt, 3,558,717.
Twilley, Ian C.; Roth, David W. H., Jr.; and Lofquist, Robert A., 3,558,567.
Wagner, Joachim J., 3,558,300.
Yao, Charles Cheng-Yu, 3,558,721.

Allied Plastics Company: *See—*
Crane, Walton B., 3,557,944.

Alliegro, Richard A., to Norton Company. Automatic hot pressing of plates. 3,557,414, Cl. 25-142.

Alliger, Howard. Ultrasonic extraction of viable antigens from gram positive bacteria. 3,558,066, Cl. 241-2.

Allis-Chalmers Manufacturing Company: *See—*
Jenness, Raymond C., 3,558,067.
Pease, James K.; Keidel, Ralph A.; and Rao, Kattar U., 3,557,594.
Welch, Fredrick M., 3,557,954.

Allison, George F.; Moss, Dewey L.; and Pendleton, Herman L., to Eastern Metal of Elmira, Inc. Portable road sign unit. 3,557,479, Cl. 40-125.

Alloys Research & Manufacturing Corporation: *See—*
Jamison, Saunders E.; and Storchheim, Samuel, 3,558,055.

Almering, Petrus Cornelis Maria; Velo, Henri Jan; and Greefkes, Johannes Anton, to U.S. Philips Corporation, mesne. Compression-expansion information transmission system using an FM compression pilot signal. 3,559,068, Cl. 325-50.

Alps Electric Company, Limited: *See—*
Okazaki, Mitsunari, 3,559,075.

Alsup, Richard G.; and Ross, John A., to Du Pont de Nemours, E. I., and Company. Extrusion resin. 3,558,583, Cl. 260-92.1

Alter, Niles N., to Nelson, Richard. Collapsible bar and cabinet therefor. 3,558,203, Cl. 312-140.2

Altscher, Siegfried: *See—*
Kraft, Paul; Keller, William F.; and Altscher, Siegfried, 3,558,578.

Aluminum Company of America: *See—*
Tribe, Glenn O.; and Riesen, Walter C., Jr., 3,557,988.
Zelley, Walter G.; and Walton, Charles J., 3,558,368.

AMBAC Industries, Inc.: *See—*
Nystrom, Carl H., 3,557,765.

American Air Filter Company: *See—*
Kissel, Walter J., 3,557,565.

American Cyanamid Company: *See—*
Baitinger, William Frederick, Jr., 3,558,263.
Duffy, Richard Joseph; and De Maria, Francesco, 3,558,262.
Lewis, Armand Francis, 3,558,414.
Mayell, Jaspal Singh, 3,558,453.
Weierter, Edward P., 3,558,548.
Weierter, Edward Peter, 3,558,424.

American Enka Corporation: *See—*
Laban, Theodorus F.; and Zandstra, Bertus H., 3,558,755.

American Home Products Corporation: *See—*
Alburn, Harvey E.; and Grant, Norman H., 3,558,602.
Bruserlein, Francois T., 3,558,646.
Diebold, James L.; and Wolf, Milton, 3,558,632.
Sulkowski, Theodore S.; and Mascitti, Albert A., 3,558,647.

American Science and Engineering, Inc.: *See—*
Wallis, Elbridge B., 3,558,284.

American Standard, Inc.: *See—*
Ruggles, Kay L.; and Van Skyhawk, Norman, 3,557,390.

American Telephone and Telegraph Company: *See—*
Thompson, Harold K., 3,559,055.

American Tobacco Company, The: *See—*,
Simon, Karl-Heinz; Beckmann, Wilhelm; Ashworth, John T.; Bohne, Gunter; Meitz, Adolf; and Kielpinski, Leonard V., 3,557,798.
Stant, Vernon Corbin; and Caldwell, Jasper Dwight, 3,558,042.

Amerio, Pasquale, to St. Regis Paper Company. Pusher assembly for freezers. 3,557,975, Cl. 214-16.4

Amicon Corporation: *See—*
Michaels, Alan S.; Lysaght, Michael J.; and Splitz, Stephen A., 3,558,744.

AMK Subsidiary Corporation: *See—*
Cantarutti, Armindo, 3,557,650.

AMP Incorporated: *See—*
Lundergan, Robert Graham, 3,558,165.
Wiley, Lawrence Grebe; and Couper, William Dean, 3,559,110.
Ziegler, George William, Jr., 3,559,112.

Ampex Corporation: *See—*
LaRue, Mervin W., Jr., 3,558,819.
Meyer, Henry O., 3,558,933.
Wickham, Donald G., 3,558,493.

Amsted Industries Incorporated: *See—*
Bertolasi, Robert B., 3,558,998.
Eck, Bernard John, 3,558,367.

Amtron, Inc.: *See—*
Porter, Virgle E., 3,559,077.

Anders, Bertram: *See—*
Zumach, Gerhard; Anders, Bertram; Grewe, Ferdinand; Kuhle, Engelbert; and Kaspers, Helmut, 3,558,650.

Anderson, Alfred H. Stall trap for homing pigeons and the like. 3,557,484, Cl. 43-66.

Anderson, Franklin C. Exercising device using pendulum weight and pulley system. 3,558,130, Cl. 272-72.

Anderson, James H. Water desalting process and apparatus. 3,558,439, Cl. 203-11.

Anderson, Joseph S.: *See—*
Robbins, Leroy V., Jr.; Anderson, Joseph S.; and Adams, Clark E., 3,558,476.

Anderson, Paul, Industrier Aktiebolag: *See—*
Mattson, Johan Arne, 3,558,175.

Anderson, Philip C.; and Lothrop, Frank, to Feed Service Corporation. Time-controlled liquid dispenser. 3,557,759, Cl. 119-51.11

Andres, Rudolf, to Daimler-Benz Aktiengesellschaft. Mechanism for locking a motor vehicle door lock. 3,558,168, Cl. 292-347.

Andrews, James M., to Sinclair-Koppers Company. Locking device for egg cartons. 3,558,037, Cl. 229-44.

Anna-Seidov, Chary: *See—*
Oskin, Lev Ivanovich; Anna-Seidov, Chary; Zhukov, Alexandr Sergeevich; and Zadoya, Alexandr Fedoseevich, 3,557,542.

Aoki, Takao, to Sony Corporation. Automatic dark current control system for pickup tubes employing a light inhibiting strip mounted on the pickup tube face plate. 3,558,809, Cl. 178-5.4

Apodaca, Ruben T.: *See—*
Chadwick, Donald H.; and Apodaca, Ruben T., 3,558,441.

Appler, Park H.: *See—*
McFarland, Frederick R.; and Appler, Park H., 3,557,460.

Applied Research Laboratories, Inc.: *See—*
Neuhaus, Hermann, 3,558,878.

Aquino, Herman A.; Marulic, Walter J.; and Shaver, William R., to Pullman Incorporated. Hopper car construction. 3,557,714, Cl. 105-406.

Arai, Hiroshi, to Toyota Jidosha Kogyo Kabushiki Kaisha. Emergency lighting system for auxilliary light system. 3,558,972, Cl. 315-83.

Archer, David H.: *See—*
Sverdrup, Edward F.; Glasser, Albert D.; and Archer, David H., 3,558,360.

Archer, Sydney: *See—*
Johnson, William S.; and Archer, Sydney, 3,558,672.

Archer, Sydney; and Rosi, David, to Sterling Drug Inc. 2-Halo-4-(1-piperazinyl)-benzaldehydes and related compounds. 3,558,629, Cl. 260-268.

Arcoa, Inc.: *See—*
Abromavage, John C.; and Ryden, James W., 3,558,158.

Arcos Corporation: *See—*
Norcross, James E., 3,558,845.

Arendt, Paul N.; Dean, Harry D.; and Lehr, Glen J., to Libbey-Owens-Ford Company. Multiple glass sheet glazing units and their manufacture. 3,557,400, Cl. 16-2.

Argus Chemical Corporation: *See—*
Friedman, Ronald L.; and Lewis, Roger N., 3,558,665.
Hecker, Arthur C.; and Brilliant, Stuart Donald, 3,558,537.

Armco Steel Corporation: *See—*
Boni, Robert E., 3,558,370.
Jensen, Ronald F.; and Marshall, William E., 3,558,918.

Armitage, Bernard John: *See—*
Adams, Stewart Sanders; Armitage, Bernard John; Bristow, Norman William; and Heathcote, Bernard Vincent, 3,558,779.

Armour Industrial Chemical Company: *See—*
Miller, Eugene J., Jr.; Tiefenthal, Harlan E.; Reck, Richard A.; and Malec, Robert E., 3,558,713.
Stalioraitis, Joseph S.; and Wilhelmy, Charles S., 3,558,710.

Armstead, George B., Jr., to Merrow Machine Company, The. Thread cutting mechanism for sewing machine. 3,557,730, Cl. 112-252.

Armstrong Cork Company: *See—*
Baymiller, John W., 3,558,427.

Armstrong, Robert K.; and Brennan, Gerald L., to Du Pont de Nemours, E. I., and Company. 1,7-Bis(difluoramino)-2,4,6-trinitro-2,4-6- triazaheptane. 3,558,708, Cl. 260-583.

Arneklev, Duane R.: *See—*
Brokke, Mervin E.; and Lukes, George E., 3,558,301.

Arnell, Claes G., to Forsvarets Fabriksverk. Hand-grenade fuze. 3,557,701, Cl. 102-76.

Arnold Cellophane Corporation: *See—*
Turner, George W., 3,558,399.

Arnold, Loren Glenn: *See—*
Sullivan, James Franklin; Arnold, Loren Glenn; and Esbeck, Howard Christian, 3,557,881.

Aro, Enn; Chene-, Thomas K.; Dankowski, James J.; Fearn, Clifford M.; Nennerfelt, Carl B.; Patterson, Albert D.; Sharland, Robert W.; and Watts, James A., to North Electric Company. Crossbar telephone switching system with marker and processor stored program control. 3,558,829, Cl. 179-18.

Aronson, Aaron B.: *See—*
Dilsner, Frederick W.; Aronson, Aaron B.; and Jones, John E., 3,558,859.

Arrow-Hart, Inc.: *See—*
Hafer, Paul M., 3,559,148.

Arsem, Harold B. Electric shock absorber. 3,559,027, Cl. 320-61.

Arvin Industries, Inc.: *See—*
Davisson, Elden R., 3,559,072.

A/S Ferrosan: *See—*
Christensen, Jorgen A.; and Lassen, Jorgen Buus, 3,558,699.

Asahi Kasei Kigyo Kabushiki Kaisha: *See—*
Kobayashi, Hidehiko; Sasaguri, Kiichiro; Fujimoto, Yoshihisa; and Ibata, Jyoji, 3,558,722.

Asahi Kasei Kogyo Kabushiki Kaisha: *See—*
Kobayashi, Hidehiko; Komoto, Hiroshi; and Ishida, Shinichi, 3,558,568.
Saotome, Kazuo; Komoto, Hiroshi; and Sato, Kenichiro, 3,558,565.

Ashe, Benedict H., Jr.; and Childs, William V., to Phillips Petroleum Company. Process for electrochemical conversion. 3,558,450, Cl. 204-59.

Ashland Oil & Refining Company: *See—*
Burrows, Raymond C., 3,558,288.

Ashland Oil Inc.: *See—*
Rushton, Brian M.; and Ossanna, Oliver A., 3,558,535.

Ashworth, John T.: *See—*
Simon, Karl-Heinz; Beckmann, Wilhelm; Ashworth, John T.; Bohne, Gunter; Meitz, Adolf; and Kielpinski, Leonard V., 3,557,798.

Asplund, Arne Johan Arthur; and Cederquist, Karl Nicolaus. Method in the manufacture of chemo-mechanical pulps. 3,558,428, Cl. 162-19.

Atkinson, John D., to Bunker-Ramo Corporation, The. Data display system. 3,559,207, Cl. 340-324.

Atkinson, Wallace E., to Long Manufacturing Co., Inc. Combined latch and lock mechanism. 3,558,167, Cl. 292-228.

Atlantic Richfield Company: *See—*
Kilmer, Lauren G., 3,557,900.

Atlas Bolt and Screw Company, The: *See—*
Weidner, Harry C., Jr., 3,557,654.

Atlas Chemical Industries, Inc.: *See—*
Baer, Byron N., 3,558,336.
Galvin, Thomas J.; and Hughes, Francis A., 3,558,499.
Maybee, Richard C., 3,557,840.

Atlas-Mak Maschinenbau GmbH: *See—*
Thaeter, Hans, 3,557,968.

Atsugi Motor Parts Company, Limited: *See—*
Akaike, Seiji; Nomura, Tsutomu; Kimura, Takayoshi; and Washio, Masayuki, 3,557,664.

Atwater, Wayne G.; and Saul, Sanford, to Triax Company, The. Load detecting device for warehousing system. 3,557,977, Cl. 214.16.4

Aucahne, Jean; Katchka, Jay R.; and Felix, Pierre, to Robertshaw Controls Company Societe Rhodiaceta. Pressure regulating apparatus with balancing means Double twist spindle and method of twisting. 3,557,831, Cl. 57-58.86

Aucktor, Erich; and Willimek, Walther, to Lohr & Bromkamp GmbH. Homokinetic universal joint. 3,557,572, Cl. 64-8.

Auscoteng Pty., Ltd.: *See—*
Foley, Norman L.; and Cheney, Alwyn H., 3,558,436.

Automatic Machinery & Electronics, Inc.: *See—*
Epperson, Donald E.; Douglas, Peter L.; and McKinnis, Ronald B., 3,558,598.

Automative Performance, Inc.: *See—*
Probst, Stephen C., 3,557,763.

Automotive Products Company Limited: *See—*
Ellard, Keith, 3,557,911.

Avco Corporation: *See—*
Moody, Jerry W.; and Reid, Francis J., 3,558,373.

Avery, Bennett W.: *See—*
Libby, Carl F.; Avery, Bennett W.; and Kelley, Bruce W., 3,557,574.

Avery, Hazelton H., to Barber-Greene Company. Method and apparatus for controlling the flow of a fluidized material from a low pressure chamber to a high pressure chamber. 3,558,111, Cl. 263-21.

Avesta Jernverks Aktiebolag: *See—*
Baecklund, Nils Johannes, 3,557,604.

Avisun Corporation: *See—*
Fitzpatrick, James E.; and Khelghtian, Habet M., 3,558,444.
Khelghatian, Habet M.; Jezl, James L.; and Fitzpatrick, James E., 3,558,443.

A.W. Faber-Castell: *See—*
Kranich, Werner, 3,558,234.

B & W Incorporated: *See—*
Solum, Kenneth W.; and Solum, James R., 3,557,875.

Babcock, John C.: *See—*
Campbell, J Allan; Babcock, John C.; and Pike, John E., 3,558,776.

Babcock-Atlantique Societe Anonyme: *See—*
Pacault, Pierre Henri; and Mary, Francis J., 3,557,568.

Babich, Valentin Grigorievich; Kursky, Alexander Kuzmich; Markov, Konstantin Petrovich; Ryabov, Nikoali Vasilievich; and Stas, Konstantin Nikolaevich. Instrument for determining the weight and active concentration of aerosols. 3,558,884, Cl. 250-435.

Bach, Bert. Marine toilet sewage system. 3,557,388, Cl. 4-10.

Bach, Francisco Boig. Manufacture of tracks for electric toy railways. 3,558,048, Cl. 238-10.

Bachmann, Marcel: *See—*
Maurer, Max, 3,557,706.

Back, Gerhard, to Ciba Limited. Phthalocyanine dyestuffs. 3,558,666, Cl. 260-314.5

Bacskai, Robert, to Chevron Research Company. Chlorinated polyvinylidene fluoride. 3,558,582, Cl. 260-92.1

Bader, Harold, to Miracle Pet Products, Inc. Aquarium bottom and method of preparation. 3,557,754, Cl. 119-5.

Badger Meter Manufacturing Company: *See—*
Vander Heyden, William H., 3,559,044.

Badische Anilin- & Soda Fabrik Aktiengesellschaft: *See—*
Adam, Karl; Haarer, Erich; Merkel, Karl; and Pilch, Kurt, 3,558,703.

Badische Anilin- & Soda-Fabrik Aktiengesellschaft: *See—*
Hoffmann, Herwig; Fuerst, Ernst; and Toussaint, Herbert, 3,558,619.
Koehnlein, Ernst; Bauer, Peter; and Stange, Karl, 3,558,762.
Osieka, Hans; Koenig, Karl-Heinz; Fischer, Adolf; and Flickinger, Erich, 3,558,685.
Sliwka, Wolfgang; and Immel, Guenther, 3,558,746.

Baecklund, Nils Johannes, to Avesta Jernverks Aktiebolag. Method and apparatus for measuring of a gas forming part of a gas mixture, preferably for measuring the quantity of carbon of solid bodies such as steel and carbides. 3,557,604, Cl. 73-19.

Baer, Byron N., to Atlas Chemical Industries, Inc. Viscose additives. 3,558,336, Cl. 106-165.

Baer, Wolfgang, to Voith, J. M., GmbH, Firma. Bow control system for ships. 3,557,736, Cl. 114-151.

Bagley, Peter Edward: *See—*
Wilson, Alexander Connor; and Bagley, Peter Edward, 3,557,617.

Baier, Frederick L.; and Wheeler, John B., III, to Union Carbide Corporation. Plated plastic printing plates. 3,558,290, Cl. 29-195.

Baird-Atomic, Inc.: *See—*
Westell, William E., 3,558,211.

Baisch, Gustaf A.; and Eberle, James L., to Boeing Company, The. Stenographic machine and system. 3,558,820, Cl. 178-17.5

Baitinger, William Frederick, Jr., to American Cyanamid Company. Potassium iodide cross-linking inhibitor for N- methylolacrylamide. 3,558,263, Cl. 8-116.3

Bakel, Joseph F., to General Electric Company. Machine zero locator. 3,558,231, Cl. 356-152.

Baker, Hugh M., Jr.; and Cressey, John R., to HB Engineering Corporation. Method and system for locating faults in utility electrical power systems. 3,559,176, Cl. 340-163.

Bakke, Jan Magnus, to Aktiebolaget Bofors. Method for catalytic dehydrogenation of 2,3- dihydro indole. 3,558,663, Cl. 260-319.1

Balaev, Oleg Gavrilovich: *See—*
Ediny, Jury Grigorievich; Balaev, Oleg Gavrilovich; and Gostkin, Boris Kirillovich, 3,557,793.

Balassa, Leslie L. Process for using membrane-free eggshell compositions for promoting wound healing. 3,558,771, Cl. 424-95.

Balda, Edward C., to Scott Plastics Corporation. Permeable closure liner. 3,557,989, Cl. 215-56.

Baldwin, D. H., Company: *See—*
Hadden, George H., 3,558,794.
Harris, Michael R., 3,558,796.

Baldwin, J. A., Manufacturing Company: *See—*
Baldwin, Jesse A., 3,557,957.
Baldwin, Jesse A., 3,557,958.

Baldwin, Jesse A., to Baldwin, J. A., Manufacturing Company. Filter assembly having a two-way bypass valve therein. 3,557,957, Cl. 210-130.

Baldwin, Jesse A., to Baldwin, J. A., Manufacturing Company. Anti-drainback valve means for oil filters. 3,557,958, Cl. 210-136.

Ball Brothers Research Corporation: *See—*
Wise, Richard S., 3,558,816.
Wise, Richard S., 3,559,084.

Ball, Jack, to Picker Corporation, mesne. X- and gamma-ray sensitive image inensification tube. 3,558,893, Cl. 250-213.

Ballard, Louis M.; and Mc Innis, Andrew M., to Rusco Industries, Inc., mesne. Pre-formed character application to base material. 3,558,407, Cl. 156-580.

Baltimore Box Company: *See—*
Stegner, Douglass M., 3,558,035.

Balwe, Thomas; Bauer, Johann; and Heckmaier, Joseph, to Wacker-Chemie GmbH. Mixed polymerizates from vinyl chloride and fumaric acid esters and process for their preparation. 3,558,566, Cl. 260-78.5

Bamford, David George; Biggs, David Frederick; Chaplen, Peter; Davis, Michael; and Sheffield, David John, to May & Baker Limited. Semicarbazone and thiosemicarbazone quaternary salts. 3,558,654, Cl. 260-326.83

Bancroft, Harold R.; and Boggan, James Z. Vehicular deceleration safety circuit means. 3,559,164, Cl. 340-72.

Banks, Arthur J., to RCA Corporation. Video signal switching step suppressor. 3,558,815, Cl. 178-7.1

Banks, Charles T., to Kimberly-Clark Corporation. Mechanism for the stacking of articles. 3,557,972, Cl. 214-6.

Banwerk A. G.: *See—*
Keylwerth, Rudolf, 3,557,468.

Barada, Minoru; and Shimada, Keiji, to Meidensha, K.K. Circuit breaker. 3,558,836, Cl. 200-150.

Barber-Greene Company: *See—*
Avery, Hazelton H., 3,558,111.

Barby, Donald: *See—*
Barnes, William Richard; and Barby, Donald, 3,558,337.

Barcus, Lester M.; and Berry, John F. Reed mouthpiece for musical instrument with piezoelectric transducer. 3,558,795, Cl. 84-1.14

Bardsley, Robert F.: *See—*
Hebel, Carl G.; and Bardsley, Robert F., 3,557,847.

Barish Associates, Inc.: *See—*
Barish, David T., 3,558,087.

Barish, David T., to Barish Associates, Inc. Parachute. 3,558,087, Cl. 244-142.

Barkman, Byron L.; Moe, William West; and Ross, Austin, to Printing Developments, Inc. Mechanisms and circuits for facsimile reproducing systems. 3,558,813, Cl. 178-6.7

Barnes Drill Co.: *See—*
Greenberg, Donald K., 3,557,492.

Barnes, William Richard; and Barby, Donald. Fine particles. 3,558,337, Cl. 106-288.

Barnes, William S. Methods and apparatus for data input to a computer. 3,559,170, Cl. 340-146.3

Barr & Stroud Limited: *See—*
Ritchie, David Scarth, 3,558,212.

Barr, Courtland H., Jr.: *See—*
Barr, Courtland H., Sr.; Barr, Courtland H., Jr.; and Barr, John W.,3,557,786.

Barr, Courtland H., Sr.; Barr, Courtland H., Jr.; and Barr, John W., to Abbott Laboratories. Administration apparatus for intravenous substances. 3,557,786, Cl. 128-214.

Barr, Douglas W. Wave-generating apparatus. 3,557,559, Cl. 61-1.

Barr, John Denzil; and Plummer, Dexter Robert, to Rank Precision Industries Limited, t/a Rank Organisation Rank Taylor Hobson Division, The. Control devices for optical objectives of variable equivalent focal length. 3,558,217, Cl. 350-187.

Barr, John W.: *See—*
Barr, Courtland H., Sr.; Barr, Courtland H., Jr.; and Barr, John W.,3,557,786.

Barr, Lawrence D.: *See—*
Fritz, Robert R.; Ingram, George R.; and Barr, Lawrence D.,3,558,001.

Barr, Victor L., to Roller Bearing Company of America. Roller bearing and method. 3,558,200, Cl. 308-187.

Barron, Edward R.; Carlucci, Michael P.; James, Peter; Martone, Ralph; and Walsh, Justin E., to United States of America, Army. Variable infantry armor system. 3,557,384, Cl. 2-2.5

Barrow, Henry; Schmidt, Jack E.; Fromson, Robert E.; and Staskiewicz, Fred C., to Westinghouse Electric Corporation. Apparatus for applying thermal barrier and release agent to a continuous casting wheel. 3,557,866, Cl. 164-158.

Barry, David William: *See—*
Tann, Alexander Arthur; and Barry, David William,3,557,734.

Bartron, William D.: *See—*
Montevecchio, Albert J.; Bartron, William D.; and Galster, Thomas H.,3,558,811.

Baseman, Maurice S. Fluorinated cyclohexylamine derivatives and compositions embodying the same. 3,558,513, Cl. 252-392.

Baskin, Herbert A. Process for rendering particulate urea substantially non-caking and composition. 3,558,299, Cl. 71-28.

Basov, Nikolai Gennadievich; Bogdankevich, Oleg Vladimirovich; and Nasibov, Alexandr Sergeevich, to Fizichesky Institut Imeni Lebedeva. Cathode-ray tube. 3,558,956, Cl. 313-92.

Bassemir, Robert W.; Carlick, Daniel J.; Dennis, Richard; and Feig, Gerald, to Sun Chemical Corporation. Radiation-curable compositions. 3,558,387, Cl. 156-99.

Bata, George T.: *See—*
Emery, Raymen F.; Mirabile, Samuel P.; Slavin, Michael; and Bata, George T.,3,557,898.

Batchelor, Gordon S.; and Hawkins, Edwin F., to Allied Chemical Corporation. Process for the control of boll weevil and boll worm with TDE. 3,558,789, Cl. 424-354.

Batzer, Hans: *See—*
Schmid, Rolf; Lohse, Friedrich; and Batzer, Hans,3,558,742.

Bauder, Ulrich, to Fr. Hesser Maschinenfabrik, AG. Apparatus for making and filling bags. 3,557,525, Cl. 53-180.

Baudino, Louis J., Jr.; and Bright, James A., to Honeywell Inc. Filter circuit. 3,559,081, Cl. 328-167.

Bauer, Johann: *See—*
Balwe, Thomas; Bauer, Johann; and Heckmaier, Joseph,3,558,566.

Bauer, Peter: *See—*
Kochnlein, Ernst; Bauer, Peter; and Stange, Karl,3,558,762.

Bauger, Louis Jules; Beyler, Roland Robert Charles; Lefebvre, Adolphe Robert; Quillevere, Herve Alain; and Schenher, Michel Bernard, to Societe Nationale d'Etude et de Construction de Moteurs d'Aviation. High tension igniter plugs. 3,558,251, Cl. 431-266.

Bauldreay, John; Boulter, David Gordon; and Chiles, Frederick Thomas, to International Computers and Tabulators Limited. Document feeding systems. 3,558,860, Cl. 235-61.11

Baum, George; and Koelling, John G., to Corning Glass Works. Fluorocarbon resin to glass bonding. 3,558,345, Cl. 117-54.

Baum, Wilhelm, to Siemens Aktiengesellschaft. Electrical resistance body and process for its manufacture. 3,557,576, Cl. 65-33.

Baumann, Paul H.: *See—*
Daugherty, Ralph K.; and Baumann, Paul H.,3,557,523.

Bausch & Lomb Incorporated: *See—*
Refermat, Stanley J.; and Turner, Arthur F., 3,559,090.

Baxter Laboratories, Inc.: *See—*
Louderback, Allan L.; and Youhne, Young, 3,558,522.
Louderback, Allan Lee; and Taylor, Nancy Ann, 3,558,278.
Stern, Ivan J., 3,558,433.

Bayer, James F., Jr., to Western Electric Company, Incorporated. Pretensioned contact springs for push-button consoles. 3,558,837, Cl. 200-166.

Bayer, John W., to Owens-Illinois, Inc. Electrostatic stencil printing process utilizing polyester-alkyd resin powder. 3,557,691, Cl. 101-129.

Bayer, John W.; and Santiago, Edgardo, to Owens-Illinois, Inc. Three-component catalytic system including a hydrocarbyl silane. 3,558,587, Cl. 260-93.7

Baymiller, John W., to Armstrong Cork Company. Asbestos sheet material and process for manufacture. 3,558,427, Cl. 162-155.

Beall, George H.; Lugli, Giuseppe; Maiocchi, Luigi; and Rittler, Hermann L., to Corning Glass Works Pirelli S.p.A. Tread ring for removable tread tires Process for forming a basaltic glass-ceramic product. 3,557,858, Cl. 65-33.

Beals, Malcolm D.; and Merker, Leon, to National Lead Company. Photochromic titanate material and a method for making the same. 3,558,333, Cl. 106-42.

Beard, Colin C.; and Cross, Alexander D., to Syntex Corporation. 6,7-Methylene and 6,7-halomethylene pregnanes and 19-norpregnanes and processes for their preparation. 3,558,674, Cl. 260-397.4

Beard, William Q., Jr., to Ethyl Corporation. Dehydrogenation of ethane. 3,558,735, Cl. 260-683.3

Beatrice Foods Co.: *See—*
Luksas, Anthony J., 3,558,328.

Beaudoin, Remy A., to La Telemecanique Electrique. Hybrid circuit breaker having means for detecting the leading edge of the arc voltage at the contacts thereof. 3,558,977, Cl. 317-11.

Beaudouin, Pierre L.; Glang, Reinhard; and Riseman, Jacob, to International Business Machines Corporation. Universal metallurgy for semiconductor materials. 3,559,003, Cl. 317-234.

Beck, Henry N., to Dow Chemical Company, The. Preparation of titanium phosphate platelets. 3,558,273, Cl. 23-105.

Becker, Joseph J., to General Electric Company. Method of making permanent magnet material powders. 3,558,371, Cl. 148-101.

Becker, Joseph J., to General Electric Company. Method of making permanent magnet material powders. 3,558,372, Cl. 148-101.

Becker, Rudolf, to Linde Aktiengesellschaft. Process and apparatus for obtaining fresh water from saline water. 3,557,863, Cl. 159-4.

Beckman Instruments: *See—*
Savaglio, Fredrick J.; Woods, Thomas C.; and Pacela, Allan F., 3,559,193.
Buck, Richard P.; and Nolan, Robert W., 3,558,528.
MacCosham, Victor J., 3,558,232.

Beckmann, Leo Heinrich Josef Franz; and van den Berg, Leendert, to N.V. Optische Industries 'De Oude Delft'. Aerial reconnaissance system. 3,558,812, Cl. 178-6.7

Beckmann, Wilhelm: *See—*
Simon, Karl-Heinz; Beckmann, Wilhelm; Ashworth, John T.; Bohne, Gunter; Meitz, Adolf; and Kielpinski, Leonard V.,3,557,798.

Beckwith, Merton M.: *See—*
Joachim, Tibor; and Beckwith, Merton M.,3,558,447.

Beecham, Leonard A. Vehicle safety control system. 3,559,206, Cl. 340-279.

Beeker, Charles W.: *See—*
Crabtree, Royale R.; Beeker, Charles W.; Shaff, Larry T.; Mancini, Michael A.; and Pheil, Joseph C.,3,558,005.

Beelien, Cornelis W. Patterned articles made of filaments including segments of differing color, and method of making the same. 3,558,411, Cl. 161-60.

Beermann, Claus; Schnabel, Horst; and Ulmschneider, Dieter, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the manufacture of polyvinylmethylamines. 3,558,581, Cl. 260-89.7

Behr, Erich; and Schneider, Johannes, to Dynamit Nobel AG. High impact strength polymers. 3,558,740, Cl. 260-823.

Behr, Michael I.: *See—*
Hibner, John A.; and Behr, Michael I.,3,559,178.

Behun, John D.: *See—*
Rein, Burton M.; and Behun, John D.,3,558,693.

Beinhofer, Ludwig. Automatic dough dispensing apparatus. 3,558,016, Cl. 222-218.

Bell & Howell Company: *See—*
Hirtmann, Rudolf, 3,558,895.

Bell Telephone Laboratories, Inc.: *See—*
Robrock, Richard B., II, 3,558,929.

Bell Telephone Laboratories, Incorporated: *See—*
Brilliant, Martin B.; and Elenbaas, Frits, 3,558,823.
Collins, John J., 3,559,172.
Daly, James C., 3,558,896.
Egerton, Lawson; Meeker, Thrygve R.; and Tauke, John D., 3,559,116.
Fickenscher, Hermann, 3,559,040.
Foster, Norman F., 3,558,351.
Goordman, Robert V.; and Petersen, Ronald C., 3,559,087.
Kaiser, Peter, 3,558,891.
Kappenman, Charles A., 3,558,926.
Kurth, Carl F., 3,559,105.
Lepselter, Martin P., 3,558,366.
Marcatili, Enrique A. J., 3,558,213.
Mazurek, Edward F., 3,559,051.
McHenry, Edwin J., 3,558,362.
Parisi, George I., 3,558,461.
Poole, Kenneth M., 3,558,222.
Prescott, Robert E.; and Tanis, Cornelius, 3,558,831.
Rand, Myron J., 3,558,348.

Regitz, William M., 3,558,918.
Seidel, Harold, 3,559,108.
Uenohara, Michiyuki, 3,558,923.

Bellmann, Eugen, G.m.b.H.: *See—*
Kronsbein, Curt, 3,557,395.

Bellows, Alfred H., to Polaroid Corporation. Exposure control apparatus. 3,557,678, Cl. 95-53.

Belsky, Igal; Gertner, David; and Zilkha, Albert, to Yissum Research Development Company. Organosilicon containing carboxylic acid derivatives. 3,558,683, Cl. 260-448.2

Beltek Kabushiki Kaisha: *See—*
Suzuki, Shigeo, 3,558,141.

Benachi, Emmanuel A., to Cartorhone S.A. Prismatic package or container. 3,558,034, Cl. 229-8.

Bench, Robert W.; Feibush, Arthur M.; and Schubauer, Carl T., to United States of America, Air Force. Counter for condensible radioactive gases. 3,558,883, Cl. 250-83.

Bender, Warren G., to Communication Technology Inc. Overvoltage transmission line protector. 3,558,830, Cl. 179-81.

Bendix Corporation, The: *See—*
Bullen, James E., 3,557,494.
Emery, Raymen F.; Mirabile, Samuel P.; Slavin, Michael; and Bata, George T., 3,557,898.
Moreines, Harold; and Gessner, Gunter J., 3,559,198.
Pincus, Ralph M., 3,559,066.
Spencer, Glenn S., 3,559,145.
Verge, Kenneth W., 3,558,944.

Benjamin, John A.: *See—*
Larson, James D.; and Benjamin, John A.,3,558,879.

Bennett, Norman Jack: *See—*
Dickie, William Niven; and Bennett, Norman Jack,3,557,499.

Bennie, Ralph F. Rotary wing aircraft. 3,558,082, Cl. 244-17.25

Benson, Ralph A., to General Electric Company. Variable length, diverse format digital information transfer system. 3,559,177, Cl. 340-163.

Benson, Samuel L., to Victor Comptometer Corporation. Projectile with target cutting means. 3,557,702, Cl. 102-92.7

Berg, Leo, to Knapsack Aktiengesellschaft. Apparatus for the production of granular solids from dilute solutions or suspensions. 3,557,864, Cl. 159-4.

Bergem, Normann; Blindheim, Ulf; Onsager, Olav-Torgeir; and Wang, Hagbarth, to Sentralinstitutt for Industriell Forskning. Process for the production of 3-methyl pentenes from ethene. 3,558,736, Cl. 260-683.15

Berger, Abe; and Jaleel, Jalal S., to General Electric Company. Aminoalkylesteralkylpolysiloxanes. 3,558,556, Cl. 260-46.5

Berger, Raoul: *See—*
Rufener, Walter; Berger, Raoul; and Riethmann, Jean,3,558,622.

Bergman, Tage; and Gjellan, Asbjorn, to Kafak Aktiebolag. Electric circuit breaker. 3,559,137, Cl. 337-8.

Bergstrom Paper Company: *See—*
Braun, Harry J.; and Dunn, Stanley A., 3,557,956.

Berkheimer, Henry E., to Du Pont de Nemours, E. I., and Company. Alkoxyalkoxy vanadium compounds and their use in coordination catalysis. 3,558,521, Cl. 252-431.

Berkline Corporation, The: *See—*
Purkey, Fred B., 3,557,518.

Berman, Bertha F. Table cover. 3,557,856, Cl. 150-52.

Berndt, Carl W.; Rienecker, Frederick, Jr.; and Downing, Willis G., Jr., to United States of America, Atomic Energy Commission. Weapons effect display system. 3,558,865, Cl. 235-151.

Bernier, Raymond, to Societe Civile de Prototype Technique Electronique Soprotekel. Contact spring relays. 3,559,132, Cl. 335-275.

Bernstein, Bernard, to General Instrument Corporation. Electrical component supporting structure with improved mounting and electrical connector means. 3,558,994, Cl. 317-101.

Berry, John F.: *See—*
Barcus, Lester M.; and Berry, John F.,3,558,795.

Berthelemy, Jacques: *See—*
Sauvan, Jacques; Berthelemy, Jacques; and Boue, Pierre Germain Rene,3,558,868.

Bertolasi, Robert B., to Amsted Industries Incorporated, mesne. Reversible polarity universal electrical discharge machining power supply with current cut-off. 3,558,998, Cl. 315-227.

Bethea, Tristram Walker; and Halasa, Adel Farhan, to Firestone Tire & Rubber Company, The. Process for depolymerizing polymers. 3,558,589, Cl. 260-947.

Bethlehem Steel Corporation: *See—*
Moskowitz, Isadore, 3,558,841.
Moskowitz, Isadore, 3,558,900.
Soneki, Joseph H.; and Myers, Robert L., 3,558,115.

Bettcher, Bruce H. Transducer drive and underwater detector system. 3,559,158, Cl. 340-3.

Beutler, Arthur J.: *See—*
Hill, Roger Gettys; and Beutler, Arthur J.,3,558,942.

Beyer, Harold H.: *See—*
Eymery, Jean-Pierre D. B.; and Beyer, Harold H.,3,558,498.

Beyler, Roland Robert Charles: *See—*
Bauger, Louis Jules; Beyler, Roland Robert Charles; Lefebvre, Adolphe Robert; Quillevere, Herve Alain; and Schenher, Michel Bernard,3,558,251.

Bezbatchenko, William, Jr., to General Tire & Rubber Company, The. Method of building a belted radial ply tire. 3,558,389, Cl. 156-126.

Bezombes, Albert; Peyches, Ivan; and Tissier, Pierre, to Compagnie de Saint-Gobain. Method and apparatus for the support and transportation of glass. 3,558,295, Cl. 65-66.

Bianchini, Pietro, to Micron Di Bianchini Dottor Pietro & Co.-S.N.C. Method for preparing pancreatic heparinoids. 3,558,772, Cl. 424-110.

Bick, Klaus; and Tinnes, Bernhard, to Paderwerk Gebruder Benteler. Apparatus for the continuous casting of metals. 3,558,256, Cl. 164-281.

Bien, Hans-Samuel; Klauke, Erich; and Wunderlich, Klaus, to Farbenfabriken Bayer Aktiengesellschaft. Anthraquinone reactive dyestuffs. 3,558,620, Cl. 260-249.

Bien, Hans-Samuel; Klauke, Erich; and Wunderlich, Klaus, to Farbenfabriken Bayer Aktiengesellschaft. Anthraquinone reactive dyestuffs. 3,558,621, Cl. 260-249.

Bien, Hans-Samuel: *See—*
Hohmann, Walter; Vollman, Heinrich; Bien, Hans-Samuel; and Gehrke, Gunter,3,558,670.

Bierenbaum, Harvey S.: *See—*
Isaacson, Robert B.; and Bierenbaum, Harvey S.,3,558,764.

Bigbee, John, III: *See—*
Burkett, Wilford B.; and Bigbee, John, III,3,559,025.

Biggs, David Frederick: *See—*
Bamford, David George; Biggs, David Frederick; Chaplen, Peter; Davis, Michael; and Sheffield, David John,3,558,654.

Bingham, Darwin H., Jr., to Ekstrom, Carlson & Co. Method and apparatus for tracing patterns to develope multiaxes numerical programs for servo controlled machine tools. 3,559,021, Cl. 318-568.

Binjavich, Mark P.: *See—*
Larenzo, Leroy N.; and Binjavich, Mark P.,3,558,852.

Bio-Logics, Inc.: *See—*
Thorne, Gale H.; Wood, Orin Lew; and Davis, William P., 3,558,014.

Bio-Medical Sciences, Inc.: *See—*
Weinstein, Berel, 3,557,779.

Birchall, William R.: *See—*
Watson, Lloyd M.; and Birchall, William R.,3,558,728.

Bird & Son, Inc.: *See—*
Allen, Herman Curtis; and De Virgilio, Charles Arthur, 3,558,402.

Bird, James W. Barrel lock for gun rack. 3,558,090, Cl. 248-309.

Bisberg, Arthur, to General Eastern Corporation, mesne. Fire alarm system. 3,559,194, Cl. 340-224.

Bischoff, Carl. Pilot-controlled relief valve. 3,557,825, Cl. 137-489.

Bitzer, Donald L.; Slottow, Hiram Gene; and Willson, Robert H., to University of Illinois. Gaseous display and memory apparatus. 3,559,190, Cl. 340-173.

Bixby, Leo A., to Rockwell-Standard Company, mesne. Automotive drive system. 3,557,634, Cl. 74-710.5

Blake, Carl B.; and Fuerst, Adolph, to Martin-Marietta Corporation. Printing system for anodized aluminum. 3,558,446, Cl. 204-38.

Blake, Edward S.; De Brunner, Ralph E.; and Dalton, David R., to Monsanto Research Corporation. Fluorine-containing phosphoramidates. 3,558,748, Cl. 260-955.

Blake, Morton; Hill, John S.; Crane, Warren R.; and Bloom, Stefan A. Carrying case. 3,558,025, Cl. 224-49.

Blanchard, Irene S. Ornamental hair covering and headdress. 3,557,806, Cl. 132-101.

Blank, Edward, to Tobe Deutschmann Laboratories, Inc. Capacitor with lower inductance per unit volume. 3,559,007, Cl. 317-260.

Blaski, John F. Building panel construction. 3,557,509, Cl. 52-489.

Blewitt, Roy E., Jr., to Xerox Corporation. Sheet handling apparatus. 3,558,127, Cl. 271-62.

Blindheim, Ulf: *See—*
Bergem, Normann; Blindheim, Ulf; Onsager, Olav-Torgeir; and Wang, Hagbarth,3,558,736.

Blink, Robert O.; Lutzke, William C.; Holz, Frederick C.; and Schier, Robert W., to Mitchell Manufacturing Co. Portable folding tables. 3,557,720, Cl. 108-113.

Bloch, Herman S., to Universal Oil Products Company. Preparation of aromatic acids. 3,558,458, Cl. 204-158.

Block Engineering, Inc.: *See—*
Block, Myron J.; and Zachor, Alexander S., 3,558,898.

Block, Fred B.: *See—*
Clarke, Frank H., Jr.; and Block, Fred B.,3,558,638.

Block, Myron J.; and Zachor, Alexander S., to Block Engineering, Inc. Flow measurement system using time correlation of two photocell signals. 3,558,898, Cl. 250-218.

Blohm & Voss AG: *See—*
Hanssen, Uwe; and Hildebrandt, Achim, 3,557,738.

Blood, Alden E.: *See—*
Robinson, Alfred G.; Blood, Alden E.; and Hagemeyer, Hugh J., Jr.,3,558,664.

Bloom, Stefan A.: *See—*
Blake, Morton; Hill, John S.; Crane, Warren R.; and Bloom, Stefan A.,3,558,025.

Blumann, Werner: *See—*
Rummer, Heribert; Blumann, Werner; and Weist, Richard,3,559,118.

Blume, Roe C., to Du Pont de Nemours, E. I., and Company. Process of preparing aromatic polyamides by solid phase thermal polymerication of urea and urethane derivatives of aromatic amino acids. 3,558,571, Cl. 260-78.

Bodine, Albert G. Sonic method and apparatus for drying sheet veneer and the like. 3,557,466, Cl. 34-4.

Boehringer Mannheim Gesellschaft mit beschrankter Haftung: *See—*
Rey, Hans-Georg; Wielinger, Hans; and Rieckmann, Peter, 3,558,435.

Boeing Company, The: *See—*
Baisch, Gustaf A.; and Eberle, James L., 3,558,820.
Weglin, Walter, 3,557,643.

Bogdankevich, Oleg Vladimirovich: *See—*
Basov, Nikolai Gennadievich; Bogdankevich, Oleg Vladimirovich; and Nasibov, Alexandr Sergeevich,3,558,956.

Boggan, James Z.: *See—*
Bancroft, Harold R.; and Boggan, James Z.,3,559,164.

Bohne, Gunter: *See—*
Simon, Karl-Heinz; Beckmann, Wilhelm; Ashworth, John T.; Bohne, Gunter; Meitz, Adolf; and Kielpinski, Leonard V.,3,557,798.

Boik, Arnold R.; and Holk, Albert J., Jr., to Continental Can Company, Inc. Method of forming single operation rivet. 3,557,441, Cl. 29-509.

Bok, Edward, to Dike, Inc. Stylographic writing pen with barrel nib reinforcement cover. 3,558,235, Cl. 401-258.

Bok, Hendrik F., to Epec Systems Corporation. Vacuum memory holding device. 3,558,093, Cl. 248-362.

Bolduc, Joseph A., to Hydro-Comp., Inc. Rotary motor or pump. 3,558,245, Cl. 418-61.

Bolkow Gesellschaft mit beschrankter Haftung Postabholfact: *See—*
Dederra, Carl-Helmut; Lechner, Manfred; and Malburg, Werner, 3,558,064.

Bolliand, Robert; and Saligny, Claude, to Societe Rhodiaceta. Process for the preparation of padding material. 3,558,393, Cl. 156-181.

Bollig, Georg; Dopper, Otto; and Thiemann, Hans, to Schloemann Aktiengesellschaft. Device for forming workable materials. 3,557,593, Cl. 72-190.

Bolte, Ronald P., to ACF Industries, Incorporated. Articulated railway tank cars. 3,557,708, Cl. 105-4.

Bolton, Adrian John: *See—*
Gillies, Barrier Andrew; and Bolton, Adrian John,3,559,012.

Bom, Cornelis Johannes Gerardus: *See—*
van der Lely, Ary; and Bom, Cornelis Johannes Gerardus,3,557,880.

Bombaugh, Karl J.: *See—*
Freeman, William R.; and Bombaugh, Karl J.,3,558,283.

Bond, Eugene M.: *See—*
Cahill, John J., 3,558,254.

Bonhomme, Francois Robert, to Connectronics Corporation. Machines for manufacturing electric connector sockets. 3,557,428, Cl. 29-203.

Boni, Robert E., to Armco Steel Corporation. Retarded aging rimmed steel. 3,558,370, Cl. 148-36.

Bonis, David R.; Coumans, Harry M.; and Willis, Wesley N., to Northern Electric Company Limited. Telephone hook switch. 3,558,832, Cl. 179-159.

Bonnel, Bernard; and Schwachhofer, Ghislain, to Progil. Gelling mixtures for soluble silicates. 3,558,506, Cl. 252-316.

Booth, Donald L.; and Schilb, William A., to Motorola, Inc. Transistor amplifier with automatic gain control. 3,559,088, Cl. 330-29.

Boots, Edmund R.; and Willis, Weston M., said Willis assor to said Boots. Hand-holdable pacifier. 3,557,776, Cl. 128-1.

Boots Pure Drug Company Limited: *See—*
Adams, Stewart Sanders; Armitage, Bernard John; Bristow, Norman William; and Heathcote, Bernard Vincent, 3,558,779.
Clark, Nigel George; Croshaw, Betty; and Spooner, David Frank, 3,558,788.

Borden, Inc.: *See—*
Riddell, Maynard Harry; and Scharf, Charles William, 3,557,607.
Totty, Gordon, 3,558,543.

Borg-Warner Corporation: *See—*
Heathwaite, Hewart H.; Mead, Robert H.; and Paul, William T., 3,557,424.
Krauthamer, Stanley, 3,559,038.
Lueck, Frederick E.; Denholm, Michael J.; Borowski, William J.; Kroml, Steven M.; and Gasperi, Michael A., 3,558,197.
Nye, Dudley D., Jr.; and Pantelakis, Thomas, 3,558,978.
Schiber, Samuel, 3,558,239.
Studtmann, George H.; and Yarema, Raymond J., 3,559,028.
Yarema, Raymond J., 3,559,029.

Borgo, Silvano: *See—*
Pasin, Alberto; and Borgo, Silvano,3,558,702.

Bormioli, Giorgio. Pipe-connecting device. 3,558,161, Cl. 285-27.

Borowski, William J.: *See—*
Lueck, Frederick E.; Denholm, Michael J.; Borowski, William J.; Kroml, Steven M.; and Gasperi, Michael A.,3,558,197.

Borsheim, Harold G.: *See—*
Conner, James M.; Borsheim, Harold G.; and Safe, Laurence G.,3,557,897.

Bosch, Robert, G.m.b.H.: *See—*
Heiser, Joachim; Helfensdorfer, Hans; Slowak, Diether; and Sopha, Klaus, 3,557,835.
von Lowis, Alexander, 3,557,665.

Boss, David W.; Doo, Ven Y.; and Patterson, William N., to International Business Machines Corporation. Polycrystalline film having controlled grain size and method of making same. 3,558,374, Cl. 148-174.

Bossard, Werner: *See—*
Ackermann, Hans; Bossard, Werner; Voltz, Jacques; and Wegmuller, Hans,3,558,261.

Bossi, Hans Jurg, to Aktiengesellschaft Brown, Boveri & Cie. Arrangement for protecting semiconductor devices connected in parallel from hole-storage voltage surges. 3,558,990, Cl. 317-43.

Botalam: *See—*
Glasson, Jean E., 3,557,684.

Boue, Pierre Germain Rene: *See—*
Sauvan, Jacques; Berthelemy, Jacques; and Boue, Pierre Germain Rene,3,558,868.

Boulter, David Gordon: *See—*
Bauldreay, John; Boulter, David Gordon; and Chiles, Frederick Thomas,3,558,860.

Bourns, Inc.: *See—*
Jungblut, John R., 3,557,746.

Bouwhuis, Gijsbertus: *See—*
De Lang, Hendrik; Kramer, Pieter; and Bouwhuis, Gijsbertus,3,558,215.
de Lange, Hendrik; Bouwhuis, Gijsbertus; and Kramer, Pieter,3,558,214.

Bowditch, Hoel L., to Foxboro Company, The. Instrument indicator scale assembly. 3,557,748, Cl. 116-129.

Bowers, Ronald W., to International Business Machines Corporation. Method of and apparatus for mechanically and electrically testing the quality of joints bonding a chip device to the surface of the substrate of a microminature module. 3,559,054, Cl. 324-62.

Bowles, Arnold Gordon, to National Forge Company. Automated multi-cavity isostatic press. 3,557,405, Cl. 18-5.

Bowles Engineering Corporation: *See—*
Lomas, Charles G., 3,557,810.
Neradka, Vincent F., 3,557,814.

Boyd, David M.: *See—*
Boyd, Harry S., Jr.; and Boyd, David M.,3,558,004.

Boyd, Harry S., Jr.; and Boyd, David M. Article dispensing apparatus with automatic dribble feed. 3,558,004, Cl. 221-7.

Boyd, John A., to Mobilpak Corporation. Mobile compacting unit. 3,557,683, Cl. 100-7.

Boyle, Charles E.: *See—*
Granfors, Ernest A.; Loveless, Don L.; and Boyle, Charles E.,3,559,162.

Bracken, Robert S., to Maul Bros., Inc. Molten glass feeder and method of controlling the flow of molten glass therethrough. 3,558,296, Cl. 65-128.

Bradel, Norman F.: *See—*
Carr, Hugh B.; and Bradel, Norman F.,3,557,823.

Braeuninger, Karl F.; and Glaza, Gordon K., to Dow Chemical Company, The. Structural unit with X-shaped inserts. 3,557,512, Cl. 52-615.

Braginetz, Paul A., to Morris, Philip, Incorporated. Operating mechanism for clamshell type safety razor. 3,557,450, Cl. 30-60.5

Brandell, John R.; and Kategian, Nick C., to Brandell Products Corporation. Amusement devices. 3,558,139, Cl. 273-176.

Brandell Products Corporation: *See—*
Brandell, John R.; and Kategian, Nick C., 3,558,139.

Brandstrom, Arne Elof; and Carlsson, Stig Ake Ingemar, to Aktiebolaget Hassle. 2-Alkanoyl or benzoyl-3-tertiaryamino alkoxybenzothiophenes. 3,558,616, Cl. 260-247.1

Brandt, Paul H. Refrigerant metering device. 3,557,570, Cl. 62-278.

Brandt, Thomas F., Jr.; and Pokorny, Frank J., to I-T-E Imperial Corporation. Circuit breaker with high speed tripping system. 3,558,991, Cl. 317-58.

Brandt, Yale M., to Reynolds Metals Company. Method of making a package construction. 3,557,516, Cl. 53-14.

Branson, Charles D., to Robertshaw Controls Company. Fuel control system for a cooking apparatus or the like. 3,558,250, Cl. 431-61.

Braun Aktiengesellschaft: *See—*
Schindler, Hans, 3,559,131.

Braun, Harry J.; and Dunn, Stanley A., to Bergstrom Paper Company, mesne. Method for de-inking and removal of certain contaminants from reclaimed paper stock. 3,557,956, Cl. 210-84.

Braun, W., Company: *See—*
Lerner, Nathan B., 3,557,804.

Braun, Warren L., to Adamson Company. Temperature control system using a non-re-entrant temperature-sensitive bridge transducer. 3,558,857, Cl. 219-499.

Braunheim, Stephen T.; and Rebane, George J. Card verification system. 3,559,174, Cl. 340-149.

Brecher, Charles; and French, Kenneth W., to General Telephone & Electronics Laboratories Incorporated. Method of preparing an active medium for a liquid laser. 3,558,504, Cl. 252-301.4

Brenhouse, Ronald Markey. Variable pressure pneumatic vehicle tire. 3,557,859, Cl. 152-330.

Brennan, Gerald L.: *See—*
Armstrong, Robert K.; and Brennan, Gerald L.,3,558,708.

Brennan, James H., to Emhart Corporation. Method and means for marketing meat products. 3,557,567, Cl. 62-60.

Brenneisen, Paul: *See—*
Paltauf, Friedrich; Margot, Alfred; and Brenneisen, Paul,3,558,784.

Breslow, David S., to Hercules Incorporated. Organic compounds containing 2 to 4 azidoformate groups. 3,558,669, Cl. 260-349.

Breuer, Hermann; Cohnen, Erich; and Roesch, Egon, to Squibb, E. R., & Sons, Inc. Quinazolinone derivatives. 3,558,610, Cl. 260-240.

Bright, James A.: *See—*
Baudino, Louis J., Jr.; and Bright, James A.,3,559,081.

Brilliant, Martin B.; and Elenbaas, Frits, to Bell Telephone Laboratories, Incorporated. Tandem office switching system. 3,558,823, Cl. 179-15.

Brilliant, Stuart Donald: *See—*
Hecker, Arthur C.; and Brilliant, Stuart Donald,3,558,537.

Bristow, Norman William: *See—*
Adams, Stewart Sanders; Armitage, Bernard John; Bristow, Norman William; and Heathcote, Bernard Vincent,3,558,779.

British Iron and Steel Research Association, The: *See—*
Whetton, David A., 3,558,120.

British Petroleum Company Limited, The: *See—*
Pratt, Will; and Grocott, Geoffrey Joseph, 3,557,740.

Brodersen, Arthur J.: *See—*
Miller, Chester H.; and Brodersen, Arthur J.,3,558,976.

Broerman, Arthur B., to Phillips Petroleum Company. Chromatographic analysis column and method. 3,557,532, Cl. 55-67.

Brokke, Mervin E.; and Lukes, George E., deceased0 (by Hazzard, John0Arneklev, Duane R.; administrator), to Stauffer Chemical Company. Herbicidal phosphorus pentafluoride-substituted nitriles adduct complexes. 3,558,301, Cl. 71-86.

Bronzavia: *See—*
Gaertner, Berthold, 3,558,247.

Brooker, Leslie G. S.; and Mee, John D., to Eastman Kodak Company. Direct positive silver halide emulsions containing 3-nitrosoindole cyanine dyes. 3,558,320, Cl. 96-101.

Brooks, Cletus A. Automatic selective animal feeder. 3,557,757, Cl. 119-51.

Broser, Richard, to Accum-Matic Systems Inc., mesne. Automatic accumulating transfer mechanism. 3,557,943, Cl. 198-221.

Broughton, Donald B., to Universal Oil Products Company. Light and heavy reflux streams in solvent extraction of aromatics. 3,558,480, Cl. 208-318.

Broverman, Howard Lawrence, to General Electric Company. Low ripple double demodulator subject to integration. 3,558,925, Cl. 307-261.

Brown & Root, Inc.: *See—*
Hauber, Ferdinand R., 3,557,564.

Brown, Horace D., to Montec Corporation. Delay action electric switch. 3,559,140, Cl. 337-75.

Brown, Neil F.; and Stulac, James F., to Outboard Marine Corporation. Air intake silencer. 3,557,902, Cl. 181-35.

Brown, Wilbur F.: *See—*
Carney, Delmar F., and Brown, Wilbur F.,3,558,297.

Bruderer, Hans; and Ruegg, Rudolf, to Hoffmann-La Roche Inc. 5-Nitro-2-thiozole-2-oxazolidinones production. 3,558,662, Cl. 260-306.8

Bruner, Albert H.; and Truscott, Thomas B., to Monsanto Company. Washing and neutralization process for synthetic fibers. 3,558,765, Cl. 264-233.

Brunsell, Paul A.: *See—*
Dreyfus, Edward D.; and Brunsell, Paul A.,3,557,735.

Bruserlein, Francois T., to American Home Products Corporation. 2-Oxo-3-indolinylidene hydrazides of alkanoic acids. 3,558,646, Cl. 260-325.

Bruson, Herman A.; and Plant, Howard L., to Olin Corporation. Nitro-substituted phenylcylopropanes. 3,558,726, Cl. 260-646.

Bryant, James G., to Monsanto Company. Shielded in-line electrical measuring cell. 3,559,048, Cl. 324-30.

BSR Limited: *See—*
Evans, Philip H., 3,558,949.

Bublitz, Donald E., to Dow Chemical Company, The. Insecticidal composition and method of use containing ferrocenylmethylazide. 3,558,780, Cl. 424-226.

Buccicone, Dario, to Bucciconi Engineering Co., Inc. Sheet piler with stagger stop mechanism. 3,558,128, Cl. 271-86.

Bucciconi Engineering Co., Inc.: *See—*
Buccicone, Dario, 3,558,128.

Buchanan, Relva C., to International Business Machines Corporation. Low firing phosphate-bonded alumina dielectric having improved adhesion to metal. 3,558,332, Cl. 106-39.

Buchi, George H.; Demole, Edouard; Eschenmoser, Albert Yakeb; and Thomas, Alan F., to Firmenich & Cie. Process for the preparation of hexane-3,4-diol-2,5- dione. 3,558,714, Cl. 260-347.8

Buck Manufacturing Company: *See—*
Palm, Bernhard A., 3,558,173.

Buck, Richard P.; and Nolan, Robert W., to Beckman Instruments, Inc. Alkali metal ion sensitive glass. 3,558,528, Cl. 252-520.

Buckingham, Arthur G.; and Rushing, Frank C., to Westinghouse Electric Corporation. Erectable reflector construction. 3,558,219, Cl. 350-292.

Buckman Laboratories, Inc.: *See—*
Hollis, Cecil George; and Lutey, Richard William, 3,558,500.

Buehler, William J.: *See—*
Wang, Frederick E.; and Buehler, William J.,3,558,369.

Buescher, Eugene J. Envelope and detachable message form. 3,558,041, Cl. 229-85.

Bugaut, Andree: *See—*
Kalopissis, Gregoire; and Bugaut, Andree,3,558,259.

Bullen, James E., to Bendix Corporation, The. Machine tool. 3,557,494, Cl. 51-59.

Bunker-Ramo Corporation, The: *See—*
Atkinson, John D., 3,559,207.
Burghoff, Louis R., 3,559,135.
DiGiugno, Angelo; and Marshall, Joseph C., 3,559,208.

Bunting, Leslie J., to Eastman Kodak Company. Control device for self-threading motion picture projector. 3,558,028, Cl. 226-91.

Burch, Ray R.; and Casaday, William M., to Sperry Rand Corporation. Commutation overlap control for brushless D.C. motor. 3,559,013, Cl. 318-138.

Burdeska, Kurt E.: *See—*
Pugin, Andre; Burdeska, Kurt E.; and Staub, Alfred,3,558,334.

Burdick, Elliott S.: *See—*
Lamer, Gerald P.; Burdick, Elliott S.; and Swanson, Forrest V.,3,558,172.

Burgess, John A. Fuel infector sleeve cutting guide. 3,557,464, Cl. 33-180.

Burghoff, Louis R., to Bunker-Ramo Corporation, The. Bobbin-wound coil with connected and anchored coil leads. 3,559,135, Cl. 336-192.

Burgoon, Willard O.: *See—*
Horvath, Steven J.; Burgoon, Willard O.; and Hastings, James T.,3,558,400.

Burkell, Alfred K., to Graymills Corporation. Heat exchanger. 3,557,868, Cl. 165-71.

Burkett, Wilford B.; and Bigbee, John, III, to McCulloch Corporation, mesne. Rapid charging of batteries. 3,559,025, Cl. 320-14.

Burkhardt & Weber K.G.: *See—*
Raiser, Ernst; and Christner, Walter, 3,558,199.

Burnham, Bradshaw, to United States of America, Navy, mesne. Spatial surveying and target-detection system. 3,559,160, Cl. 340-6.

Burns, Gerald; Smith, Archibald W.; and Smith, William V., to International Business Machines Corporation. Optical switch. 3,559,185, Cl. 340-173.

Burr, Robert P., to Circuit Research Company. Discoidal wire wound armatures. 3,558,947, Cl. 310-154.

Burrough, Donald E., to Deere & Company. Hitch adapter. 3,557,892, Cl. 180-14.

Burroughs Corporation: *See—*
Fehnel, Richard B., 3,558,957.
Hibner, John A.; and Behr, Michael I., 3,559,178.
Ogle, James A., 3,558,975.
Rawlings, Robert Louis; and Schweigl, Lothar Oscar, 3,559,184.
Rech, Jakob, 3,557,522.
Wallace, Harry L.; and Parysek, Bruno, 3,557,694.

Burrows, Raymond C., to Ashland Oil & Refining Company. Extraction of metal ions from acidic aqueous solution using an amine and a carboxylic acid. 3,558,288, Cl. 23-312.

Burtsev, Pavel Semenovich: *See—*
Shmakov, Vasily Pavlovich; Eremin, Vitaly Alexeevich; Kvasha, Semen Borisovich; Kaganovich, Natalia Grigorievna; Dobrenyakins, Tatiana Nikolaevna; Vanjushin, Viktor Nikolaevich; Sakharov, Petr Vasilievich; Voronov, Boris Pavlovich; Polezhaev, Vasily Dementievich; Smetankin, Pavel Semenovich; Sobolev, Evgeny Pavlovich; Yanchevsky, Kazimir Stanislavovich; Grishin, Mikhail Semenovich; Burtsev, Pavel Semenovich; and Chasovitin, Pavel Alexeevich,3,558,192.

Bush, William R., to National Rolling (Bundy). Channel-beam clamp. 3,558,091, Cl. 248-317.

Bussard, Donald C., to RCA Corporation. Pulse width modulated solid state regulated power supply. 3,559,030, Cl. 321-2.

Bussienne, Christian Edmand; and Mary, Dominique Christian, to Constructions Mills-K. Automatic transfer device designed for a dynamic storage installation. 3,557,973, Cl. 214-16.

Butler, Donald E.: *See—*
De Wald, Horace A.; and Butler, Donald E.,3,558,605.

Butler Manufacturing Company: *See—*
Jackson, Dale E.; and Perkins, Carl C., Jr., 3,557,820.
Snyder, Marvin K., 3,557,503.

Bylsma, Simon, to Delavan Manufacturing Company. Self-purging regenerative turbine pump. 3,558,236, Cl. 415-53.

Byrley, Lewis R., to United States Gypsum Company. Film-cutting apparatus. 3,557,651, Cl. 83-303.

Cahill, John J., 33 1/3% to Bond, Eugene M. Reinforcement applicator. 3,558,254, Cl. 83-176.

Cal Manufacturing Company, Incorporated: *See—*
Leathers, Chester F., 3,558,850.

Calcagno, Benedetto. Method of preparing catalytically active $TiCl_3$. 3,558,271, Cl. 23-87.

Caldwell, Jasper Dwight: *See—*
Stant, Vernon Corbin; and Caldwell, Jasper Dwight,3,558,042.

Cales, Henri, to Societe Francaise de Construction de Bennes Automatiques. Apparatus for sinking and extracting tubing. 3,557,885, Cl. 173-159.

Calmac Manufacturing Corporation: *See—*
Mac Cracken, Calvin D., 3,557,515.

Calsyn, Lawrence E.; and Lewis, Robert W., to Gulf & Western Industries, mesne. Frequency generator. 3,559,078, Cl. 328-63.

Cam Gears, Ltd.: *See—*
Adams, Frederick J., 3,557,662.

Cameron Machine Company: *See—*
Aaron, Charles; and Stroud, Edward A., 3,558,125.

Camille Bauer Messinstrumente Aktiengesellschaft: *See—*
Ludin, Ludwig, 3,559,058.

Campbell, Gordon Keith Colin. Gas turbine engine with rotating combustion chamber. 3,557,551, Cl. 60-39.16

Campbell, J Allan; Babcock, John C.; and Pike, John E., to Upjohn Company, The. Pharamaceutical composition 'comprising 17α-ethynyl-17β-hydroxy-7α-methyl-5(10)-estrene-3- one'. 3,558,776, Cl. 424-243.

Campbell, Scott V.: *See—*
Mead, Hansel B.; and Campbell, Scott V.,3,559,071.
Campbell, William Henry; and Pennell, John Antony, to Vickers Limited. High pressure vessels. 3,557,996, Cl. 220-46.
Canadian International Paper Company: *See—*
Girard, Christian F., 3,557,513.
Canadian Patents and Development Limited: *See—*
Trigg, Douglas F., 3,559,041.
Cannalonga, Marco Alfred; and Cohen, Norman, to Hoffmann-La Roche Inc. Vitamin-containing composition in beadlet form. 3,558,323, Cl. 99-11.
Cantarutti, Armindo, to AMK Subsidiary Corporation, mesne. Tire material cutting apparatus. 3,557,650, Cl. 83-155.
Capotondo, Giancarlo: *See—*
Virgili, Tonino; and Capotondo, Giancarlo,3,557,800.
Capps, Julius D.: *See—*
Moffett, Lawrence R., Jr.; and Capps, Julius D.,3,558,680.
Carborundum Company: *See—*
Ziemendorf, Edwin F., 3,558,959.
Cardillo, Jerry E., to Federal-Mogul Corporation. Forging method. 3,557,587, Cl. 72-41.
Carlick, Daniel J.: *See—*
Bassemir, Robert W.; Carlick, Daniel J.; Dennis, Richard; and Feig, Gerald,3,558,387.
Carlock, Frank R.; and Lamoureux, William R., to International Business Machines Corporation. CRT parameter error indicator panel. 3,559,181, Cl. 340-172.5
Carlsmith, Lawrence A.: *See—*
Rich, John P.; and Carlsmith, Lawrence A.,3,557,583.
Carlson, Lee A., to Dennison Manufacturing Company. Xerographic image reproduction with pre-exposure. 3,558,307, Cl. 96-1.
Carlsson, Stig Ake Ingemar: *See—*
Brandstrom, Arne Elof; and Carlsson, Stig Ake Ingemar,3,558,616.
Carlucci, Michael P.: *See—*
Barron, Edward R.; Carlucci, Michael P.; James, Peter; Martone, Ralph; and Walsh, Justin E.,3,557,384.
Carmi, Arieh; Parsons, George D.; and Rayeski, Thomas J., to Corning Glass Works. Thermoplastic material pressing apparatus. 3,558,298, Cl. 65-356.
Carney, Delmar E.; and Brown, Wilbur F., to Libbey-Owens-Ford Company. Method for changing over from one glass to another glass while simultaneously bubbling. 3,558,297, Cl. 65-134.
Carney, Russell F., Jr., to Seminole Pollution Equipment Corporation. Camera device for internal inspection of pipe. 3,557,674, Cl. 95-11.
Carr, Hugh B.; and Bradel, Norman F., to Kinney, S. P., Engineers, Inc. Water cooled valve disk for gate valves. 3,557,823, Cl. 137-340.
Carr, Wayne F. Separating apparatus. 3,558,484, Cl. 210-512.
Carr, William E., to United States of America, Navy. Shock machine. 3,557,603, Cl. 73-12.
Carrier Corporation: *See—*
Gerteis, Karl M., 3,559,016.
Carrow, Donald J.: *See—*
Verdol, Joseph A.; and Carrow, Donald J.,3,558,743.
Cartelli, Louis V. Indicator bulb mounting. 3,559,153, Cl. 339-126.
Carter, Clarence F., to Carter Engineering Company. Oscillating rocker hopper and method. 3,558,009, Cl. 222-1.
Carter Engineering Company: *See—*
Carter, Clarence F., 3,558,009.
Carter, William C.; Duke, Keith A.; and Schneider, Peter R., to International Business Machines Corporation. Self-checking error checker for two-rail coded data. 3,559,167, Cl. 340-146.1
Carter, William C.; Duke, Keith A.; and Schneider, Peter R., to International Business Machines Corporation. Self-checking error checker for K-out-of N- coded data. 3,559,168, Cl. 340-146.1
Cartorhone S.A.: *See—*
Benachi, Emmanuel A., 3,558,034.
Carver, David. Method of discovering imperfections in bonded laminated structures. 3,558,886, Cl. 250-65.
Casaday, William M.: *See—*
Burch, Ray R.; and Casaday, William M.,3,559,013.
Casas-Robert, Ramon, to Mefina S.A. System for adjusting the tension of the upper thread in a sewing machine. 3,557,731, Cl. 112-254.
Cascade Industries, Incorporated: *See—*
West, Robert E., 3,557,391.
Casey, Everett R. Remote control wiring system. 3,558,902, Cl. 307-3.
Cassella Farbwerke Mainkur Aktiengesellschaft: *See—*
von Brachel, Hanswilli; and Schon, Manfred, 3,558,597.
von Brachel, Hanswilli; and Herrmann, Erwin, 3,558,684.
Castner, Charles S. Method of killing microprobes with microbicidal compounds and ultra-violet light. 3,557,783, Cl. 128-172.1
Castrucci, Paul P.; De Witt, David; Dhaka, Vir A.; and Mutter, Walter E., to International Business Machines Corporation. Metallization process. 3,558,352, Cl. 117-212.
Caterpillar Tractor Company: *See—*
Finley, Lloyd D., 3,557,829.
Libby, Carl F.; Avery, Bennett W.; and Kelley, Bruce W., 3,557,574.
Peterson, Robert A.; and Grooss, Frank A., 3,558,190.
Webster, Donald F., 3,557,549.
Catherall, Reginald; Ley, Anthony John; and Levinge, Rodney Walter, to Solartron Electronic Group Limited, The. Welding control. 3,558,849, Cl. 219-110.
Catlin, John P.; and Widener, Ted H., to Crucible Inc. Method and apparatus for shaving wire. 3,557,588, Cl. 72-45.
C.A.V. Limited: *See—*
Fenne, Ivor, 3,558,241.
Knight, Basil Edward; and Shufflebotham, David, 3,557,764.
Spalding, Edwin James, 3,557,465.
Cawthorne, Arthur David, to Motorola, Inc. Meter and set point impedance in a single housing. 3,559,061, Cl. 324-157.
Cecchin, Gildo; and Hilbert, Francis H., to Motorola, Inc. Color television signal demodulation system. 3,558,810, Cl. 178-5.4
Cederquist, Karl Nicolaus: *See—*
Asplund, Arne Johan Arthur; and Cederquist, Karl Nicolaus,3,558,428.
Celanese Corporation: *See—*
Denyes, Russell Owens; and Santangelo, Joseph Hermano, 3,558,757.
Di Pietro, Joseph, 3,558,579.
Isaacson, Robert B.; and Bierenbaum, Harvey S., 3,558,764.
Jamison, Saunders E.; and Storchheim, Samuel, 3,558,055.
Quynn, Richard G.; Jamison, Saunders E.; and Sobering, Simon E., 3,558,763.
C. E. M., Company, Inc.: *See—*
Koehl, Hans H., 3,557,402.
Centre de Recherches de Pont-A-Mousson: *See—*
Demalander, Roger, 3,558,119.
Cerberus AG: *See—*
Scheidweiler, Andreas, 3,559,196.
Certipak Corporation: *See—*
Pierce, Chester J., Jr., 3,557,521.
Cervenka, Joseph J.; and Hetzel, Marvin E. Chain form clip. 3,558,289, Cl. 29-193.5
Ceskoslovenska akademie ved: *See—*
Cort, Joseph H.; Jost, Karel; Kasafirek, Evzen; Rudinger, Josef; Sorm, Frantisek; and Zaoral, Milan, 3,558,590.
Tlalka, Rarodmir, 3,558,227.
Cessna Aircraft Company, The: *See—*
Krehbiel, Robert D.; and McCammond, Warren E., 3,557,824.
C.G.S. Scientific Corporation, Inc.: *See—*
Ferran, Robert J., 3,557,621.
Chabal, Joseph: *See—*
Rieser, Raymond G.; and Chabal, Joseph,3,558,415.
Chadwick, Donald H.; and Apodaca, Ruben T., to International Electronic Research Corporation. Method of making a metal core printed circuit board. 3,558,441, Cl. 204-15.
Chagoyen, Pedro. Push-button self-opener can. 3,557,999, Cl. 220-54.
Challenge-Cook Bros., Incorporated: *See—*
Jackson, Robert E., 3,558,108.
Chandos, Richard A., to Electro-Optical Industries, Inc. Wide frequency range voltage controlled transistor relaxation oscillator. 3,559,098, Cl. 331-111.
Chang, Kern K. N.; Prager, Hans J.; and Weisbrod, Sherman, to RCA Corporation. High power, high efficiency silicon avalanche diode UHF and L band oscillator. 3,559,097, Cl. 331-107.
Chang, Kern K.N.; and Liu, Shing-Gong, to RCA Corporation. Bulk semiconductor light radiating device. 3,558,889, Cl. 250-88.
Chang, Si Kun; and Rakha, Mohammed A., to Admiral Corporation. Forward AGC circuit. 3,559,073, Cl. 325-405.
Chaplen, Peter: *See—*
Bamford, David George; Biggs, David Frederick; Chaplen, Peter; Davis, Michael; and Sheffield, David John,3,558,654.
Charewicz, Francis J.; Steele, Eugene K.; and Nichols, Frank S., to General Electric Company. Sealing gasket. 3,558,145, Cl. 277-228.
Charles, Richard J.: *See—*
Hanneman, Rodney E.; Jorgensen, Paul J.; and Charles, Richard J.,3,558,963.
Charmglow Manufacturing Company: *See—*
Koziol, Walter, 3,557,771.
Charschan, Sidney Samuel, to Western Electric Company, Incorporated. Method of forming printed circuit board through-connections. 3,557,446, Cl. 29-625.
Chasovitin, Pavel Alexeevich: *See—*
Shmakov, Vasily Pavlovich; Eremin, Vitaly Alexeevich; Kvasha, Semen Borisovich; Kaganovich, Natalia Grigorievna; Dobrenyakins, Tatiana Nikolaevna; Vanjushin, Viktor Nikolaevich; Sakharov, Petr Vasilievich; Voronov, Boris Pavlovich; Polezhaev, Vasily Dementievich; Smetankin, Pavel Semenovich; Sobolev, Evgeny Pavlovich; Yanchevsky, Kazimir Stanislavovich; Grishin, Mikhail Semenovich; Burtsev, Pavel Semenovich; and Chasovitin, Pavel Alexeevich,3,558,192.
Chatelain, Jean; and Steinbach-Van Gaver, Georgette, to Produits Chimiques Pechiney-Saint-Gobain. Polymerization of vinyl chloride. 3,558,585, Cl. 260-92.8
Checheljuk, Yakov Zinovievich; Pshenichny, Gennady Ivanovich; and Yakimenko, Ivan Pavlovich. Apparatus for axial compression of windings. 3,557,846, Cl. 140-71.
Chemische Fabrik Kalk G.m.b.H.: *See—*
Jenkner, Herbert; and Konigstein, Otto, 3,558,727.
Chemische Werke Huels A.G.: *See—*
Hockele, Gunter, 3,558,709.
Chen, Muchuan M., to General Electric Company. Underfrequency relay. 3,558,911, Cl. 307-129.

Chene-, Thomas K.: *See—*
Aro, Enn; Chene-, Thomas K.; Dankowski, James J.; Fearn, Clifford M.; Nennerfelt, Carl B.; Patterson, Albert D.; Sharland, Robert W.; and Watts, James A.,3,558,829.
Cheney, Alwyn H.: *See—*
Foley, Norman L.; and Cheney, Alwyn H.,3,558,436.
Chenkin, Leila R.: *See—*
Redmond, Benjamin; and Chenkin, Leila R.,3,558,006.
Chernoske, Anthony J., to Westinghouse Electric Corporation. Flip-flop circuit particularly for integration. 3,558,931, Cl. 307-291.
Cherny, Anatoly Alexeevich: *See—*
Grachev, Vladimir Alexandrovich; Cherny, Anatoly Alexeevich; Marienbakh, Lev Mikhailovich; and Kurbatsky, Ivan Lukich,3,558,791.
Chestnut, Benjamin F.; and Murray, Stephen F., to Mallory, P R., & Co., Inc. Synchronous motor with directional controls. 3,558,940, Cl. 310-41.
Chevron Research Company: *See—*
Bacskai, Robert, 3,558,582.
Csicsery, Sigmund M.; and Kittrell, James R., 3,558,473.
Jacobson, Robert L.; and Vanselow, Robert D., 3,558,479.
Jaffe, Joseph, 3,558,475.
Kittrell, James R., 3,558,471.
Kittrell, James R., 3,558,472.
Kluksdahl, Harris E., 3,558,477.
Lindquist, Robert H.; and Mulaskey, Bernard F., 3,558,354.
Lowe, Warren, 3,558,490.
Noble, Edward D., 3,558,525.
Chicago Musical Instrument Co.: *See—*
Kniepkamp, Alberto E., 3,558,792.
Childs, William V.: *See—*
Ashe, Benedict H., Jr.; and Childs, William V.,3,558,450.
Childs, William V., to Phillips Petroleum Company. Process for electrochemical fluorination. 3,558,449, Cl. 204-59.
Chiles, Frederick Thomas: *See—*
Bauldreay, John; Boulter, David Gordon; and Chiles, Frederick Thomas,3,558,860.
Chivers, Thomas E., to General Mills, Inc. Process for making candy floss. 3,557,717, Cl. 107-54.
Chivers, Thomas E., to General Mills, Inc. Process for coating cereal with candy floss. 3,557,718, Cl. 107-54.
Chris, Stephen J.: *See—*
Payne, Peter R.; and Chris, Stephen J.,3,557,471.
Christensen, Egon Verner, to Nielsen, H. & Son Maskinafabrik A/S. Drying conveyor. 3,557,938, Cl. 198-126.
Christensen, Jorgen A.; and Lassen, Jorgen Buus, to A/S Ferrosan. 2-Amino-4-phenylsulfonyl-benzenesulfonamide. 3,558,699, Cl. 260-556.
Christianson, Clinton C., to General Electric Company. System and process for selectively diverting an electrochemically consumable and regenerable fluid. 3,558,361, Cl. 136-86.
Christner, Walter: *See—*
Raiser, Ernst; and Christner, Walter,3,558,199.
Chronister, Clyde H. Gate valve. 3,557,822, Cl. 137-315.
Chrysler Corporation: *See—*
Grote, Darwin E., 3,557,904.
Kleemann, Eugene, 3,559,165.
MacAfee, James E., 3,557,912.
Chuchla, Jerzy Kazimierz, to Electrica l Remote Control Company Limited. Timing device. 3,558,835, Cl. 200-38.
Chun, Alexander Hing Chinn: *See—*
Jones, Peter Hadley; Wiegand, Ronald Gay; and Chun, Alexander Hing Chinn,3,558,594.
Churchill, John W.; Kober, Ehrenfried H.; and Scott, Peter H., to Olin Corporation. Process for preparing fluoroanilines. 3,558,707, Cl. 260-580.
Ciba Limited: *See—*
Back, Gerhard, 3,558,666.
De Montmollin, Rene, 3,558,592.
Porret, Daniel; and Habermeier, Juergen, 3,558,558.
Schmid, Rolf; Lohse, Friedrich; and Batzer, Hans, 3,558,742.
Ciccone, Thomas Q.; White, Wilmer; and Kowalick, James F., to United States of America, Army. Propellant gas generator. 3,558,285, Cl. 23-281.
Cier, Harry E., to Esso Research and Engineering Company. Recovery of aqueous formaldehyde by extraction with an alkanol followed by distillation. 3,558,719, Cl. 260-606.
Ciniglio, Ignace. Winding-off bobbin for yarn, particularly for shrunken yarn. 3,558,076, Cl. 242-118.11
Circuit Research Company: *See—*
Burr, Robert P., 3,558,947.
Cirillo, Robert J.: *See—*
Stein, William A.; and Cirillo, Robert J.,3,558,802.
Cities Service Oil Company: *See—*
Rhoades, Vaughan W.; and Glass, Eugene D., 3,557,874.
City Machine and Wheel Company, The: *See—*
Mains, Harold S., 3,557,862.
Cku, Takeshi, to Matsushita Electric Industrial Co., Ltd. Special welding electrodes. 3,558,851, Cl. 219-146.
Clapham, Robert G.: *See—*
Raudsep, Ilmar G.; and Clapham, Robert G.,3,559,171.
Clark, James L., to Plastronics, Inc. Method of making a tube-to-bag connection. 3,558,397, Cl. 156-272.
Clark, Nigel George; Croshaw, Betty; and Spooner, David Frank, to Boots Pure Drug Company Limited. Antibacterial and antifungal compositions. 3,558,788, Cl. 424-343.
Clark, Otto A.: *See—*
Murgas, Karl M.; Greenberg, Burton; and Clark, Otto A.,3,558,224.
Clark, William Russell, to Eddystone Machinery Company. Cutter for sheet winder. 3,558,071, Cl. 242-56.
Clarke, Frank H., Jr.; and Block, Fred B., to Geigy Chemical Corporation. 3-Cyano-1,2,3,4,5,6,-hexahydro-2,6-methano-3- benzazocines. 3,558,638, Cl. 260-294.3
Clary Corporation: *See—*
Hulle, Robert M., 3,558,945.
Schaberg, Richard R., 3,559,143.
Clayton Corporation: *See—*
Hug, Richard C., 3,558,019.
Clemco-Clementina Ltd.: *See—*
Van Tuyl, David H., 3,557,936.
Cleveland Pneumatic Tool Company, The: *See—*
Hartel, Erwin H.; and Hrusch, Louis C., 3,557,834.
Clingerman, John LeRoy: *See—*
Grossklaus, Ronald Paul; and Clingerman, John LeRoy,3,557,473.
Close, Donald S., to Norton Company. Milking inflation shell. 3,557,755, Cl. 119-14.49
Close, Garth, to United Steel and Wire Company. Check-out counter with pivoted cash register. 3,557,907, Cl. 186-1.
Co-Operative Industries, Inc.: *See—*
Delahunty, Richard J., 3,557,434.
Coal Industry (Patents) Limited: *See—*
Wise, William S. D., 3,558,468.
Coathylene S.A.: *See—*
Weller, Wolfgang, 3,558,576.
Cobbs, James H., to Fenix & Scisson, Inc. Method and apparatus for measuring in situ the earth stress at a preselected subterranean area. 3,557,886, Cl. 175-50.
Cochran, John Richard: *See—*
Racenis, Karlis V.; and Cochran, John Richard,3,557,580.
Coe, William H., to Keystone Consolidated Industries, Inc. Extruded thread-cutting nut. 3,557,655, Cl. 85-32.
Coffin, Arthur G.: *See—*
Parker, Harry W.; Coffin, Arthur G.; and Stockbridge, Bruce W.,3,557,648.
Cohen, David. Magnetic study of bioelectric phenomena. 3,557,777, Cl. 128-2.
Cohen, Milton J. Disposable syringe. 3,557,787, Cl. 128-220.
Cohen, Norman: *See—*
Cannalonga, Marco Alfred; and Cohen, Norman,3,558,323.
Cohnen, Erich: *See—*
Breuer, Hermann; Cohnen, Erich; and Roesch, Egon,3,558,610.
Colby, Charles E. Safety apparatus for alerting a motor vehicle operator. 3,559,205, Cl. 340-279.
Cole, Albert J.; and Rowland, George P., to Firestone Tire & Rubber Company. Latex coatings for electrostatic and photoconductive purposes. 3,558,544, Cl. 260-29.7
Cole, Edward L.: *See—*
Hess, Howard V.; and Cole, Edward L.,3,558,426.
Cole, Leon J., to National-Standard Company. Breaker winding machine. 3,558,401, Cl. 156-397.
Coles Krane G.m.b.H.: *See—*
Heyer, Heinrich Wilhelm, 3,557,969.
Coley, Kenneth R., to Westinghouse Electric Corporation. Electrical device with improved terminal means. 3,559,156, Cl. 339-272.
Colianni, William D. Method of making buttonholes. 3,558,381, Cl. 156-73.
Collie, Stafford D., to Phillips Petroleum Company. Wide mouth container and closure having integral opening means. 3,557,998, Cl. 220-54.
Collins, John J., to Bell Telephone Laboratories, Incorporated. Information presentation circuit. 3,559,172, Cl. 340-147.
Collins, William J. Device and method for sampling molten metal. 3,557,624, Cl. 73-425.4
Collins, William O.; Hunt, Dan P.; and Wilder, LeRoy D., to EG & G, Inc. Displacement measuring system. 3,558,861, Cl. 235-61.11
Colon, Alice: *See—*
Vazquez, Teddy Colon; and Colon, Alice,3,557,809.
Columbia Cable & Electric Corporation: *See—*
Marantz, Israel H., 3,558,378.
Columbian Rope Company: *See—*
Orser, Keith L., 3,558,580.
Colvin, Donald; and Schultz, Vernon A., to Simplex Manufacturing Co. Electrolytic cell. 3,558,465, Cl. 204-228.
Combustion Engineering, Inc.: *See—*
Landon, William W., Jr.; and Kulik, Robert W., 3,557,616.
Romanos, Nicholas D.; and Kinyon, Brice W., 3,557,760.
Comelli, Augusto, to Erba, Carlo, S.p.A. Shearing arm for cutting forage contained in silos. 3,557,978, Cl. 214-17.
Commissariat a l'Energie Atomique: *See—*
Robach, Francis; and Salvi, Antoine, 3,559,045.
Communication Technology Inc.: *See—*
Bender, Warren G., 3,558,830.
Communications Satellite Corporation: *See—*
Schmidt, William G., 3,559,166.
Compagnie de Saint-Gobain: *See—*
Bezombes, Albert; Peyches, Ivan; and Tissier, Pierre, 3,558,295.

Touvay, Robert, 3,558,294.
Compagnie des Compteurs: *See—*
Accaries, Maurice Roger; and Girard, Maurice Emile, 3,558,448.
Compagnie General d'Electricite: *See—*
Palies, Rene, 3,558,999.
Compagnie Generale de Geophysique: *See—*
Joly, Christian Georges, 3,559,180.
Compagnie Generale d'Electricite: *See—*
Quichaud, Claude, 3,559,129.
Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie: *See—*
Lejeune, Daniel, 3,558,383.
Computer Instruments Corporation: *See—*
Adise, Herbert H., 3,557,611.
Conductron Corporation: *See—*
Grindon, John R., 3,559,106.
Conley, William F.; Vorachek, Jerome J.; and Menke, James A., to United States of America, Air Force, mesne. Method and apparatus for operating a tethered natural shape balloon to at, and from high altitude. 3,558,083, Cl. 244-33.
Connectronics Corporation: *See—*
Bonhomme, Francois Robert, 3,557,428.
Conner, James M.; Borsheim, Harold G.; and Safe, Laurence G., to Deere & Company. Vehicle instrument panel cover. 3,557,897, Cl. 180-90.
Conrad, Harold Dean: *See—*
Giorgi, Anthony Dominic; Duke, Edward Junior; and Conrad, Harold Dean, 3,558,099.
Considine, William J.: *See—*
Reifenberg, Gerald H.; and Considine, William J., 3,558,275.
Constructions Mills-K: *See—*
Bussienne, Christian Edmand; and Mary, Dominique Christian, 3,557,973.
Continental Can Company, Inc.: *See—*
Boik, Arnold R.; and Holk, Albert J., Jr., 3,557,441.
Erlandson, Paul M., 3,557,590.
Stanley, Thomas R., 3,557,997.
Voorhis, Harold W., 3,557,528.
Control Data Corporation: *See—*
Ucko, Franz, 3,558,312.
Controls Company of America: *See—*
Giwosky, Harry L., 3,557,837.
Conversion Chemical Corporation: *See—*
Joachim, Tibor; and Beckwith, Merton M., 3,558,447.
Cook, Duane D.: *See—*
Mayers, Dale Martin; and Cook, Duane D., 3,558,146.
Cooper, David E.; and Smith, Alvin M., to Motorola, Inc. Semiconductor housing assembly. 3,559,001, Cl. 317-234.
Cooper, Duane H. Method of delay modulation. 3,559,103, Cl. 332-9.
Cooper, Joseph: *See—*
Trufanoff, Doric I.; Cooper, Joseph; and Krebs, Fred H., 3,558,209.
Cope, David, to Electric Furnace Company, The. Method and application for preventing flashback in premix gas burner systems. 3,558,249, Cl. 431-12.
Copelin, Harry B.; and Freamo, Melvin J., to Du Pont de Nemours, E. I., and Company. Production of vinyl acetate from ethylene. 3,558,692, Cl. 260-497.
Copia Manufacturing Corporation: *See—*
Kaminstein, Bernard; and Joel, Henry G., 3,557,680.
Corbett, Herbert O.; and Karczewski, Raymond C., to National Distillers and Chemical Corporation. Mechanical flexible telescopic joint seal. 3,558,144, Cl. 277-208.
Corbett, Herbert O.: *See—*
Quackenbush, John J.; and Corbett, Herbert O., 3,558,410.
Cordis Corporation: *See—*
Keller, John W., Jr.; Terry, Reese S., Jr.; and Davies, Gomer L., 3,557,796.
Cornely, Kurt W.: *See—*
Keith, Carl D.; and Cornely, Kurt W., 3,558,508.
Corning Glass Works: *See—*
Baum, George; and Koelling, John G., 3,558,345.
Beall, George H.; Lugli, Giuseppe; Maiocchi, Luigi; and Rittler, Hermann L., 3,557,858.
Carmi, Arieh; Parsons, George D.; and Rayeski, Thomas J., 3,558,298.
Plumley, Stewart L., 3,558,346.
Pultz, Wallace W., 3,558,270.
Pultz, Wallace W.; and Smith, Charles C., Jr., 3,558,379.
Small, Donald A., 3,557,816.
Corns, Edwin A., to Wilson, Lee, Engineering Company, Inc. Apparatus for and method of producing strip metal. 3,557,592, Cl. 72-146.
Cort, Joseph H.; Jost, Karel; Kasafirek, Evzen; Rudinger, Josef; Sorm, Frantisek; and Zaoral, Milan, to Ceskoslovenska akademie ved. Derivatives 8-lysine-vasopressin N-acylated with small glycine containing peptides. 3,558,590, Cl. 260-112.5
Cory, Stanley A., to TRW Inc. Force transducer having hydrodynamic bearing supported responsive element. 3,558,946, Cl. 310-112.
Cotton, Robert B. Gas turbine. 3,558,084, Cl. 244-63.
Coumans, Harry M.: *See—*
Bonis, David R.; Coumans, Harry M.; and Willis, Wesley N., 3,558,832.
Couper, William Dean: *See—*
Wiley, Lawrence Grebe; and Couper, William Dean, 3,559,110.
Cox, Richard W. J.: *See—*
Smith, Wilfred C.; and Cox, Richard W. J., 3,558,253.
Coyne, William E.; and Cusic, John W., to Searle, G. D., & Co. Dialkylaminoalkyl-indolines. 3,558,653, Cl. 260-326.11
Crabtree, Royale R.; Becker, Charles W.; Shaff, Larry T.; Mancini, Michael A.; and Pheil, Joseph C., to United States of America, Army. Aerial chemical dispenser. 3,558,005, Cl. 221-90.
Craft Metal Corporation: *See—*
Groh, Howard V.; and Kelly, James E., 3,558,188.
Crane, Walton B., to Allied Plastics Company. Garment hanger and bag. 3,557,944, Cl. 206-7.
Crane, Warren R.: *See—*
Blake, Morton; Hill, John S.; Crane, Warren R.; and Bloom, Stefan A., 3,558,025.
Cranmer, John L., Jr.: *See—*
Eakin, Bertram E.; and Cranmer, John L., Jr., 3,557,558.
Eakin, Bertram E.; McCann, Eugene P.; and Cranmer, John L., Jr., 3,558,000.
Craven, Robert Lee, to Du Pont de Nemours, E. I., and Company. Self-supporting annular pack of bonded fibers. 3,558,416, Cl. 161-143.
Crespin, George T. F.; and Davies, Graham D., to Shell Oil Company. Octane rating analyzer. 3,557,487, Cl. 44-2.
Crespo, Maurice J. Rail fastener. 3,558,060, Cl. 238-349.
Cressey, John R.: *See—*
Baker, Hugh M., Jr.; and Cressey, John R., 3,559,176.
Cromwell, Robert H., Sr.; Trevaskis, William T.; and Dupler, Garland J. Automatic shoe shine apparatus. 3,557,928, Cl. 194-9.
Cronheim, Richard B. Spoon. 3,557,452, Cl. 30-325.
Croshaw, Betty: *See—*
Clark, Nigel George; Croshaw, Betty; and Spooner, David Frank, 3,558,788.
Cross, Alexander D.: *See—*
Beard, Colin C.; and Cross, Alexander D., 3,558,674.
Crouse, William G., to International Business Machines Corporation. Threshold amplitude detector eliminating low-level noise employing threshold-biased interruptable feedback for providing limited range high-gain amplifier operation. 3,558,917, Cl. 307-235.
Crouse, William G., to International Business Machines Corporation. Data shift circuit employing bistable and monostable multivibrators for providing equal time delays in leading and trailing edges of data pulses. 3,558,932, Cl. 307-293.
Crouse, William G., to International Business Machines Corporation. Digital demodulator for frequency shift keying systems. 3,559,083, Cl. 329-104.
Crouzet: *See—*
Jullien-Davin, Jean, 3,558,027.
Crown Cork & Seal Company, Inc.: *See—*
Scharf, Jerry F., 3,557,425.
Crown Zellerbach Corporation: *See—*
Hartbauer, Ellsworth A.; and Shankel, Richard, 3,557,688.
Herschler, Robert J., 3,558,434.
Crucible Inc.: *See—*
Catlin, John P.; and Widener, Ted H., 3,557,588.
Cruse, William M. Theater stage set control system. 3,558,102, Cl. 254-93.
CSF-Compagnie Generale de Telegraphie Sans Fil: *See—*
Morvan, Eugene Ellowan, 3,559,093.
Csicsery, Sigmund M.; and Kittrell, James R., to Chevron Research Company. Hydrocracking catalyst comprising a layered clay-type crystalline aluminosilicate component, a group VIII component and manganese or technetium, and process using said catalyst. 3,558,473, Cl. 208-60.
CTP Industries Inc.: *See—*
Gelles, Daniel E.; and Kamins, Seymour, 3,558,038.
Schmidt, John, 3,558,039.
Cummins-Chicago Corporation: *See—*
Dilsner, Frederick W.; Aronson, Aaron B.; and Jones, John E., 3,558,859.
Cunningham, Arthur L., to Sherwin-Williams Company, The. Carbamylalkylated polyester resin. 3,558,563, Cl. 260-72.
Cupp, Frederick B.; and Palley, Carl W., to United States of America, Navy, mesne. Altitude control system. 3,559,157, Cl. 340-3.
Curran, Bernard E., to Robertson, H. H., Company. Floor structure and building construction panel therefor. 3,557,511, Cl. 52-588.
Currie, Charles H.; and Graham, William H., to Scientific-Atlanta, Incorporated. Remote local oscillator frequency multiplier. 3,559,074, Cl. 325-445.
Curriston, Loren E.; and Fornoff, Heinz, to North American Rockwell Corporation. Maneuvering space vehicle. 3,558,079, Cl. 244-1.
Curry, Charles L. Children's merry-go-round. 3,558,129, Cl. 272-39.
Curry, William H.: *See—*
Koch, Robert L.; Thomas, Earl F.; Miklos, Joseph; and Curry, William H., 3,557,431.
Cusic, John W.: *See—*
Coyne, William E.; and Cusic, John W., 3,558,653.
Cuthbert, Walter; and Hampson, David, to Triplex Safety Glass Company Limited. Polishing of glass. 3,557,493, Cl. 51-56.
Cutler-Hammer, Inc.: *See—*
Swinehart, Merle R., 3,558,995.
Cutrona, Joseph, to World Publishing Company, The. Index notch cutting device. 3,557,451, Cl. 30-180.
Dahlstrom, Arvid. Speed reducing mechanism. 3,557,631, Cl. 74-125.5
Daimler-Benz Aktiengesellschaft: *See—*
Andres, Rudolf, 3,558,168.

Muller, Josef; Sorsche, Joachim; and Daur, Hans-Karl, 3,557,896.
Schmitz, Christian, 3,557,553.
Sigmund, Gerhard, 3,558,183.
Dale, Robert G.; and Fay, Gary V., to Motorola, Inc. Relay circuits employing a triac to prevent arcing. 3,558,910, Cl. 307-134.
Daley, Thomas J., to Westinghouse Electric Corporation. Random wound encapsulated coil construction. 3,559,134, Cl. 336-96.
Dalton, David R.: *See—*
Blake, Edward S.; De Brunner, Ralph E.; and Dalton, David R., 3,558,748.
Dalton, William O., to Monsanto Company. Method for agglomerating latices with an anhydride. 3,558,541, Cl. 260-23.7
Daly, James C., to Bell Telephone Laboratories, Incorporated. Optical guiding apparatus with automatic control of beam position. 3,558,896, Cl. 250-208.
Dameme, Guy; and Fourichon, Gerard, to Societe Lignes Telegraphiques et Telephoniques. Semiconductor protective device. 3,558,989, Cl. 317-41.
Danfoss A/S: *See—*
Jensen, Arne; and Petersen, Tom Kastrup, 3,559,033.
Jensen, Arne; and Petersen, Tom Kastrup, 3,559,034.
Vind, Holger V., 3,559,015.
Dangauthier, Marcel, to Societe Industrielle et Commerciale des Automobiles Peugeot. Transmission for an automobile vehicle or the like. 3,557,636, Cl. 74-732.
Dankowski, James J.: *See—*
Aro, Enn; Chene-, Thomas K.; Dankowski, James J.; Fearn, Clifford M.; Nennerfelt, Carl B.; Patterson, Albert D.; Sharland, Robert W.; and Watts, James A., 3,558,829.
Danna, Peter A., to Olin Corporation. Electrolytic cell with slotted anode. 3,558,464, Cl. 204-219.
Dantoni, Joseph L. Aquatic chamber. 3,557,753, Cl. 119-2.
D'Arcy, Gerald P., to United States of America, Air Force. Soil stress gauge. 3,557,612, Cl. 73-94.
Darnell, James R.; Goundry, Paul C.; and Wakefield, Gene F., to Texas Instruments, Incorporated. Dispersion strengthened titanium carbide and method for making same. 3,558,343, Cl. 117-46.
Dashper, William, to Metropolitan Wire Goods Corporation. Audiovisible alert scale sling truck. 3,559,204, Cl. 340-272.
Daugherty, Ralph K.; and Baumann, Paul H., 1/2 to Hanscom, Genevieve I., (formerly Magnuson, Genevieve I.), and 1/2 to Hanscom, Genevieve I., Magnuson, Robert, Thomson, Lois J., (formerly Duggan, Lois J.), as trustees of the estate of Magnuson, Roy M. Food feeding and packaging equipment. 3,557,523, Cl. 53-63.
Daur, Hans-Karl: *See—*
Muller, Josef; Sorsche, Joachim; and Daur, Hans-Karl, 3,557,896.
Dautman, James J. J., to Gardner Cryogenics Corporation, mesne. Means to provide electrical and mechanical separation between turns in windings of a superconducting device. 3,559,126, Cl. 335-216.
David, Charles W.; and Munson, Eugene A., to Disc Pack Corporation. Mechanical disc pack tester and method. 3,557,461, Cl. 33-174.
Davies, Gomer L.: *See—*
Keller, John W., Jr.; Terry, Reese S., Jr.; and Davies, Gomer L., 3,557,796.
Davies, Graham D.: *See—*
Crespin, George T. F.; and Davies, Graham D., 3,557,487.
Davis, Dwight E.; Stevens, Dennis W.; and Tully, Geoffrey R., Jr., to United States of America, Atomic Energy Commission. Method of making nuclear fuel bodies. 3,558,750, Cl. 264-0.5
Davis, Michael: *See—*
Bamford, David George; Biggs, David Frederick; Chaplen, Peter; Davis, Michael; and Sheffield, David John, 3,558,654.
Davis, Ralph A.; and Tigner, Ronald G., to Dow Chemical Company, The. High temperature chlorination of dibromodifluoromethane. 3,558,723, Cl. 260-653.
Davis, William P.: *See—*
Thorne, Gale H.; Wood, Orin Lew; and Davis, William P., 3,558,014.
Davisson, Elden R., to Arvin Industries, Inc. Electronic shut-off timers. 3,559,072, Cl. 325-395.
Davoll, John, to Parke, Davis & Company. Certain 2,4-diamino-6-quinazoline-sulfonamides. 3,558,628, Cl. 260-256.5
Dawson, Stuart B.: *See—*
Wilson, Alexander John; and Dawson, Stuart B., 3,557,555.
Day, Leon E.; and Garey, Edward F. Holder for use in replacing cotton picker spindles. 3,557,426, Cl. 29-200.
Dayton, David R.: *See—*
Hough, Harold L.; and Dayton, David R., 3,558,872.
Dayton Reliable Tool & Mfg. Company: *See—*
Eickenhorst, Franklin C., 3,557,599.
Dean, Harry D.: *See—*
Arendt, Paul N.; Dean, Harry D.; and Lehr, Glen J., 3,557,400.
de Andres, Jesus: *See—*
Odone, Giovanni; and de Andres, Jesus, 3,558,894.
DeBoer, Floris, to U.S. Philips Corporation, mesne. Method of strengthening a television display tube. 3,558,818, Cl. 178-7.82
De Brunner, Ralph E.: *See—*
Blake, Edward S.; De Brunner, Ralph E.; and Dalton, David R., 3,558,748.
DeBrunner, Ralph E.: *See—*
Fincke, John K.; DeBrunner, Ralph E.; and Wilson, Glenn R., 3,558,350.
Dechaine, Robert C.: *See—*
Page, John A.; and Dechaine, Robert C., 3,558,324.
Dederra, Carl-Helmut; Lechner, Manfred; and Malburg, Werner, to Bolkow Gesellschaft mit beschrankter Haftung Postabholfact. Injection propulsion device. 3,558,064, Cl. 239-544.
Deep Oil Technology, Inc.: *See—*
Falkner, Chester B., 3,558,160.
Deere & Company: *See—*
Burrough, Donald E., 3,557,892.
Conner, James M.; Borsheim, Harold G.; and Safe, Laurence G., 3,557,897.
Grossklaus, Ronald Paul; and Clingerman, John LeRoy, 3,557,473.
Sullivan, James Franklin; Arnold, Loren Glenn; and Esbeck, Howard Christian, 3,557,881.
Deering Milliken Research Corporation: *See—*
Habib, Emile E., 3,558,264.
DeFrees, Joseph H. Valve. 3,558,097, Cl. 251-88.
Degener, Eberhart: *See—*
Schmelzer, Hans-Georg; Degener, Eberhart; Unterstenhofer, Gunter; Tarnow, Horst; and Hammann, Ingeborg, 3,558,705.
De Graff, Richard R., to Universal Oil Products Company. Dealkylation of alkylaromatic hydrocarbons. 3,558,729, Cl. 260-672.
Delahunty, Richard J., to Co-Operative Industries, Inc. Tool for attaching an end fitting. 3,557,434, Cl. 29-237.
Delaney, Eric Denys. Pots for horticultural plants. 3,557,490, Cl. 47-38.1
De Lang, Hendrik; Kramer, Pieter; and Bouwhuis, Gijsbertus, to U.S. Philips Corporation. Apparatus for converting linearly polarized radiation with a fixed plane of polarization into linearly polarized radiation with a rotating plane of polarization. 3,558,215, Cl. 350-150.
de Lange, Hendrik; Bouwhuis, Gijsbertus; and Kramer, Pieter, to U.S. Philips Corporation, mesne. Device for converting circularly polarized radiation into plane polarized radiation with a rotating plane of polarization. 3,558,214, Cl. 350-150.
De Laurentis, Angelo A.: *See—*
Specht, Theodore R.; and De Laurentis, Angelo A., 3,559,136.
Delavan Manufacturing Company: *See—*
Bylsma, Simon, 3,558,236.
Della Bella, Davide: *See—*
Teotino, Uberto M.; and Della Bella, Davide, 3,558,652.
Delta Control, Inc.: *See—*
Luger, Emil J., Jr., 3,558,858.
Delzenne, Gerard Albert: *See—*
Laridon, Unbain Leopold; and Delzenne, Gerard Albert, 3,558,309.
Delzenne, Gerard Albert; and Laridon, Urbain Leopold, to Gevaert-Agfa N.V. Photographic material comprising light-sensitive polymers and photodegradation process. 3,558,311, Cl. 96-36.3
Demalander, Jacqueline: *See—*
Demalander, Roger, 3,558,119.
Demalander, Roger, deceased0 (by Demalander, Jacqueline; legal administratrix), to Centre de Recherches de Pont-A-Mousson. Device for the injection of liquid fuels into blast furnaces. 3,558,119, Cl. 266-41.
De Maria, Francesco: *See—*
Duffy, Richard Joseph; and De Maria, Francesco, 3,558,262.
Demeulenaere, Leo H., F., to U.S. Philips Corporation. Method of treating hepatic encephalopathy. 3,558,774, Cl. 424-180.
Demole, Edouard: *See—*
Buchi, George H.; Demole, Edouard; Eschenmoser, Albert Yakeb; and Thomas, Alan F., 3,558,714.
De Montmollin, Rene, to Ciba Limited. Phenyl-azo-naphthol dyes. 3,558,592, Cl. 260-199.
Demott, Donald N., to Dow Chemical Company, The. Fire-resistant cellulosic materials and a method of preparation. 3,558,596, Cl. 260-218.
Denholm, Michael J.: *See—*
Lueck, Frederick E.; Denholm, Michael J.; Borowski, William J.; Kroml, Steven M.; and Gasperi, Michael A., 3,558,197.
Dennis, Richard: *See—*
Bassemir, Robert W.; Carlick, Daniel J.; Dennis, Richard; and Feig, Gerald, 3,558,387.
Dennison Manufacturing Company: *See—*
Carlson, Lee A., 3,558,307.
Denyes, Russell Owens; and Santangelo, Joseph Hermano, to Celanese Corporation. False twisting. 3,558,757, Cl. 264-103.
Denyssen, Ivanhoe P. Method of forming precision laminated electrical components. 3,558,396, Cl. 156-250.
De Pew, Chester C., to Tridair Industries. Aircraft fuel tank closure cap. 3,557,993, Cl. 220-25.
Derc, Roman, to English Electric Computers Limited. Electric control circuits for electromagnetic devices. 3,558,997, Cl. 317-148.5
Dersch, Fritz: *See—*
Mackey, E Scudder; Dersch, Fritz; and Eisenman, Fred S., 3,558,321.
De Ruggieri, Pietro; Gandolfi, Carmelo; and Guzzi, Umberto, to Ormonoterapia Richter S.p.A. 10β-Amino-19-nor-pregnanes and method for the preparation thereof. 3,558,673, Cl. 260-397.1
De Santo, Vincent. Anti-swivel finger ring clip using low heat solder or friction attaching means. 3,557,571, Cl. 63-15.6
De Soto Inc.: *See—*
Sekmakas, Kazys, 3,558,536.
Deutsche Erdol-Aktiengesellschaft: *See—*
Engelhardt, Friedrich; and Schritt, Wolfgang. 3,558,716.

De Virgilio, Charles Arthur: *See—*
Allen, Herman Curtis; and De Virgilio, Charles Arthur,3,558,402.
deVoe, John M., to United States Tobacco Company. Closure for containers. 3,558,036, Cl. 229-43.
deVries, Adrian J., to Zenith Radio Corporation. Surface-wave filter reflection cancellation. 3,559,115, Cl. 333-72.
De Wald, Horace A.; and Butler, Donald E., to Parke, Davis & Company. Pyrazolo [3,4-e] [1,4] diazepin-7(1H)-one compounds. 3,558,605, Cl. 260-239.3
De Witt, David: *See—*
Castrucci, Paul P.; De Witt, David; Dhaka, Vir A.; and Mutter, Walter E.,3,558,352.
DeYoung, Charles E., to Smith Industries, Inc. Water purification. 3,558,482, Cl. 210-23.
Dhaka, Vir A.: *See—*
Castrucci, Paul P.; De Witt, David; Dhaka, Vir A.; and Mutter, Walter E.,3,558,352.
Diamond Shamrock Corporation: *See—*
Pyne, William J., 3,558,691.
Dick, A. B., Company: *See—*
Hoover, Stasel Keith; Knowles, James Thomas Crawford; and Wong Yan Man, Wong Kwong Fa, 3,557,696.
Dickie, William Niven; and Bennett, Norman Jack, to Formica Corporation. Movable wall panel system. 3,557,499, Cl. 52-36.
Diebold, James L.; and Wolf, Milton, to American Home Products Corporation. 2-(Benzonaphthyridin-2-yl acyl)benzonaphthyridines. 3,558,632, Cl. 260-287.
Dietert, Harry W., Co.: *See—*
Dietert, Harry W., 3,557,467.
Dietert, Harry W., to Dietert, Harry W., Co. Structure for and method of drying granular material. 3,557,467, Cl. 34-15.
DiGiugno, Angelo; and Marshall, Joseph C., to Bunker-Ramo Corporation, The. Data display means. 3,559,208, Cl. 340-324.
Dike, Inc.: *See—*
Bok, Edward, 3,558,235.
Dillon, Robert H.: *See—*
Roehl, Edward J.; and Dillon, Robert H.,3,558,442.
Dilsner, Frederick W.; Aronson, Aaron B.; and Jones, John E., to Cummins-Chicago Corporation. Automatic reading system for record media having encoded data. 3,558,859, Cl. 235-61.11
Dimentov, Jury Iosifovich: *See—*
Grinpress, Boris Lazarevich; Sakun, Ivan Akimovich; Dimentov, Jury Iosifovich; and Vainshtein, Moisei Fishelevich,3,557,687.
Dinger, Edward H., to General Electric Company. Pulse synchronizing motor control. 3,559,017, Cl. 318-314.
Di Pietro, Joseph, to Celanese Corporation. Shaped articles of improved dyeability consisting essentially of a polyolefin and a sulfonated aryl phosphate. 3,558,579, Cl. 260-88.2
Disc Pack Corporation: *See—*
David, Charles W.; and Munson, Eugene A., 3,557,461.
Dischert, Robert A.: *See—*
Monahan, John F.; and Dischert, Robert A.,3,558,806.
Dix, Grete: *See—*
Rix, Walter; and Dix, Grete,3,558,445.
Dobrenyakins, Tatiana Nikolaevna: *See—*
Shmakov, Vasily Pavlovich; Eremin, Vitaly Alexeevich; Kvasha, Semen Borisovich; Kaganovich, Natalia Grigorievna; Dobrenyakins, Tatiana Nikolaevna; Vanjushin, Viktor Nikolaevich; Sakharov, Petr Vasilievich; Voronov, Boris Pavlovich; Polezhaev, Vasily Dementievich; Smetankin, Pavel Semenovich; Sobolev, Evgeny Pavlovich; Yanchevsky, Kazimir Stanislavovich; Grishin, Mikhail Semenovich; Burtsev, Pavel Semenovich; and Chasovitin, Pavel Alexeevich,3,558,192.
Dobson, Ralph W.; and Miller, Roy W., to Pullman Incorporated. Locking container bracket. 3,557,711, Cl. 105-366.
Dodgson, Paul T. Chemical treating process for sewage systems. 3,558,483, Cl. 210-62.
Doehnert, Donald F., to Johnson & Johnson. Acrylated adhesive products. 3,558,574, Cl. 260-78.5
Doerer, Richard P., to Van Dresser Corporation. Method and apparatus for making a trim strip. 3,558,382, Cl. 156-93.
Doherty, Edward E. Fatty acid chromium complex salts and compositions thereof. 3,558,676, Cl. 260-400.
Dondoux, Jacques M.: *See—*
Lucas, Pierre M.; Dondoux, Jacques M.; Duquesne, Jean F.; and Laprevote, Jean-Marie L.,3,558,827.
Donini, Attilio; Donini, Buno; and Donini, Teodoo. Dry cleaning apparatus. 3,557,581, Cl. 68-18.
Donini, Buno: *See—*
Donini, Attilio; Donini, Buno; and Donini, Teodoo,3,557,581.
Donini, Teodoo: *See—*
Donini, Attilio; Donini, Buno; and Donini, Teodoo,3,557,581.
Doo, Ven Y.: *See—*
Boss, David W.; Doo, Ven Y.; and Patterson, William N.,3,558,374.
Dopper, Otto: *See—*
Bollig, Georg; Dopper, Otto; and Thiemann, Hans,3,557,593.
Dorn, Conrad P., Jr.: *See—*
Shen, Tsung-Ying; and Dorn, Conrad P., Jr.,3,558,640.
Dorsch, Gerhard; and Wagnerberger, Wolfgang, to Siemens Aktiengesellschaft. Apparatus for sensing magnetic signals. 3,558,934, Cl. 307-309.
Dotto, Gianni A., to Mallory, P. R., & Co. Inc. Alarm system. 3,559,195, Cl. 340-224.
Douglas, Peter L.: *See—*
Epperson, Donald E.; Douglas, Peter L.; and McKinnis, Ronald B.,3,558,598.
Dousset, Roger L.: *See—*
Marty, Pierre R.; and Dousset, Roger L.,3,558,828.
Dover Corporation: *See—*
Moore, Glenn E.; Hughes, James L.; and Lamping, Frank G., 3,558,163.
Dow Chemical Company: *See—*
Hayes, Robert R.; and Laidman, Barry L., 3,557,983.
Dow Chemical Company, The: *See—*
Beck, Henry N., 3,558,273.
Braeuninger, Karl F.; and Glaza, Gordon K., 3,557,512.
Bublitz, Donald E., 3,558,780.
Davis, Ralph A.; and Tigner, Ronald G., 3,558,723.
Demott, Donald N., 3,558,596.
Goodenough, Robert D.; Place, John; and Parks, Christ F., 3,558,503.
Karle, Franklin J., 3,558,229.
Klingbail, Robert L., 3,558,778.
Kuhn, Stephen J.; and Ilavsky, Janet E., 3,558,612.
Kuhn, Stephen J.; and Ilavsky, Janet E., 3,558,613.
Laman, Johnnie D.; and Wessels, Glenn R., 3,558,277.
McIntyre, John S., 3,558,658.
McQueen, William D., 3,557,785.
Roberts, Carleton W.; and Mc Gregor, Stanley D., 3,558,715.
Smith, Harry A., 3,558,549.
Smith, Harry A., 3,558,561.
Spangle, Lloyd B., 3,557,622.
Spence, Thomas C., 3,558,429.
Sundquist, Donald J.; and Howell, Nicholas W., 3,558,532.
Trepainier, Donald L., 3,558,618.
Widiger, Almar T.; and Lefevre, Lloyd E., 3,558,330.
Wybenga, Donald R., 3,558,516.
Downing, Willis G., Jr.: *See—*
Berndt, Carl W.; Rienecker, Frederick, Jr.; and Downing, Willis G., Jr.,3,558,865.
Dragon, Richard R. Exercise apparatus. 3,558,131, Cl. 272-83.
Drescher & Kiefer: *See—*
Reitzel, Georg, 3,557,854.
Dresser Industries, Inc.: *See—*
Youmans, Arthur H., 3,558,888.
Dreyfus, Edward D.; and Brunsell, Paul A., to Flume Stabilization Systems, Inc. Moving weight ship stabilizer. 3,557,735, Cl. 114-124.
Drott Manufacturing Corporation: *See—*
Lamer, Gerald P.; Burdick, Elliott S.; and Swanson, Forrest V., 3,558,172.
Dubuque Awning & Tent Company: *See—*
Frommelt, Cyril P.; and Frommelt, Sylvan J., 3,557,508.
Duddy, Joseph C., to ESB Incorporated. Method of preparing thin catalyst-silver electrodes. 3,558,365, Cl. 136-120.
Duffy, Michael. Surgical support. 3,557,791, Cl. 128-303.
Duffy, Richard Joseph; and De Maria, Francesco, to American Cyanamid Company. Packaging and storing regenerated collagen sutures. 3,558,262, Cl. 8-94.11
Duke, Edward Junior: *See—*
Giorgi, Anthony Dominic; Duke, Edward Junior; and Conrad, Harold Dean,3,558,099.
Duke, Keith A.: *See—*
Carter, William C.; Duke, Keith A.; and Schneider, Peter R.,3,559,167.
Carter, William C.; Duke, Keith A.; and Schneider, Peter R.,3,559,168.
Duke, Lewis H. Railway sewing machine. 3,557,728, Cl. 112-121.14
Dunkel, Morris, to Universal Oil Products Company. Alpha-(hydroxy or acyloxy-4,7-methanoindenyl)esters and acids. 3,558,689, Cl. 260-468.
Dunkermotoren Prazisions-Kleinstmotorengesellschaft mbH: *See—*
Marder, Herbert, 3,559,024.
Dunn, Donald A.; and Jurgensen, Peter D., to Genesys Systems, Inc. Microwave heater and applicator therefor. 3,558,840, Cl. 219-10.55
Dunn, Howard E., to Phillips Petroleum Company. Olefin dimerization. 3,558,738, Cl. 260-683.15
Dunn, John P., to F.I.N.D. Inc. Method and apparatus for spraying electrostatic dry powder. 3,558,052, Cl. 239-3.
Dunn, Stanley A.: *See—*
Braun, Harry J.; and Dunn, Stanley A.,3,557,956.
Dupler, Garland J.: *See—*
Cromwell, Robert H., Sr.; Trevaskis, William T.; and Dupler, Garland J.,3,557,928.
Du Pont de Nemours, E. I., and Company: *See—*
Alsup, Richard G.; and Ross, John A., 3,558,583.
Armstrong, Robert K.; and Brennan, Gerald L., 3,558,708.
Berkheimer, Henry E., 3,558,521.
Blume, Roe C., 3,558,571.
Copelin, Harry B.; and Freamo, Melvin J., 3,558,692.
Craven, Robert Lee, 3,558,416.
Fan, Roxy Ni, 3,558,322.
Gobeil, Richard J., 3,558,303.
Gopez, Florencio L., Jr., 3,558,767.
Greenwell, Joseph D., 3,557,947.
Gregory, Walter A., 3,558,704.
Gruber, Wilhelm Franz, 3,558,555.
Harmon, Jesse, 3,558,787.
Langenfeld, Bruno Wilhelm, 3,558,267.

Lawes, Bernard C., 3,558,497.
Martin, Elmore Louis, 3,558,671.
McDonald, John William, 3,558,542.
Olson, Earl Herbert, 3,558,760.
Proskow, Stephen, 3,558,492.
Roesky, Herbert W., 3,558,269.
Schoenbeck, Leland C., 3,558,438.
Svadlenak, Rudolf E., 3,558,451.
Svadlenak, Rudolf E., 3,558,452.
Vasta, Joseph A., 3,558,564.
Duquesne, Jean F.: *See—*
Lucas, Pierre M.; Dondoux, Jacques M.; Duquesne, Jean F.; and Laprevote, Jean-Marie L.,3,558,827.
Duquesne, Victor. Apparatus for fixing wheels of vehicles from which a tire has to be removed. 3,557,861, Cl. 157-1.24
Durant, William J.: *See—*
Westermann, Donald H.; Herwig, William C.; and Durant, William J.,3,558,326.
Dyer, Lawrence D., to Texas Instruments, Incorporated. Apparatus for minimizing stress in a heated semiconductor filament. 3,558,281, Cl. 23-273.
Dykeman, Edgar G.M., deceased0 (by Dykeman, Kathaleen M.; administratrix), to FMC Corporation. Pallet assembling system. 3,557,439, Cl. 29-430.
Dykeman, Kathaleen M.: *See—*
Dykeman, Edgar G.M.,3,557,439.
Dynamit Nobel AG: *See—*
Behr, Erich; and Schneider, Johannes, 3,558,740.
Dzurilla, Robert Richard: *See—*
Yendrek, Michael Robert; and Dzurilla, Robert Richard,3,558,591.
Eagle-Picher Industries, Inc.: *See—*
Ropp, Chester A., Jr., 3,558,358.
Eakin, Bertram E.; and Cranmer, John L., Jr., to Institute of Gas Technology. Insulating and waterproofing system for storage tanks. 3,557,558, Cl. 61-0.5
Eakin, Bertram E.; McCann, Eugene P.; and Cranmer, John L., Jr., to Institute of Gas Technology. Metallic liner system. 3,558,000, Cl. 220-63.
Easi, Michael D., to VIMM Research Development Corporation. Electrical testing arrangement including probe have pivotable probe contact element. 3,559,056, Cl. 324-72.5
Eastern Metal of Elmira, Inc.: *See—*
Allison, George F.; Moss, Dewey L.; and Pendleton, Herman L., 3,557,479.
Eastman Kodak Company: *See—*
Brooker, Leslie G. S.; and Mee, John D., 3,558,320.
Bunting, Leslie J., 3,558,028.
Goodhue, Charles T.; and Schaeffer, James R., 3,558,431.
Jenkins, Philip W., 3,558,614.
Parker, Harry W.; Coffin, Arthur G.; and Stockbridge, Bruce W., 3,557,648.
Riggs, Dixon; and Peerson, David T., 3,558,226.
Robinson, Alfred G.; Blood, Alden E.; and Hagemeyer, Hugh J., Jr., 3,558,664.
Eaton Yale & Towne, Inc.: *See—*
Fathauer, George H., 3,559,052.
Kelly, Douglas E., 3,558,046.
Eau Et Feu Societe Anonyme: *See—*
Martin, Michel, 3,558,754.
Eberle, James L.: *See—*
Baisch, Gustaf A.; and Eberle, James L.,3,558,820.
Eberspacher, J.: *See—*
Kofink, Siegfried, 3,557,772.
Ebert Electronics Corporation: *See—*
Mitchell, Irving L.; and Lewis, Julius, 3,558,996.
Ebner, Emanuel C., to Foto-Cube, Inc. Picture holder and display. 3,557,480, Cl. 40-152.1
Echeagaray, Ignacio P. Permanent magnet for use in a drive mechanism for an instrument. 3,559,060, Cl. 324-151.
Eck, Bernard John, to Amsted Industries Incorporated. Wheel cooling. 3,558,367, Cl. 148-3.
Eckert, Hans-Werner; and Heins, Arnold, to Henkel & Cie G.m.b.H. Tertiary N-alkyl-N-(2-hydroxyalkyl)-polyhydroxy- alkylamines. 3,558,711, Cl. 260-584.
Ecodyne Corporation: *See—*
Weis, Frank G., 3,558,012.
Eddystone Machinery Company: *See—*
Clark, William Russell, 3,558,071.
Edgington, Donald C. Graphic arts film dryer. 3,557,469, Cl. 34-151.
Ediny, Jury Grigorievich; Balaev, Oleg Gavrilovich; and Gostkin, Boris Kirillovich. Method for crushing stones in urinary bladder and instrument for same. 3,557,793, Cl. 128-328.
Edlin, Frank E., to International Plastics, Inc. Method of producing a porous resin by withdrawing gas from a foam extrudate while it is in a semi- molten state. 3,558,753, Cl. 264-54.
Edwards High Vacuum International Limited: *See—*
Jackson, Geoffrey Norman, 3,558,467.
Edwards, Robert F., to Westinghouse Electric Corporation. Control system for a linear motion device. 3,559,011, Cl. 318-135.
EG & G, Inc.: *See—*
Collins, William O.; Hunt, Dan P.; and Wilder, LeRoy D., 3,558,861.
Egerton, Lawson; Meeker, Thrygve R.; and Tauke, John D., to Bell Telephone Laboratories, Incorporated. Piezoelectric ceramic filter. 3,559,116, Cl. 333-72.
Eholzer, Ulrich: *See—*
Ley, Kurt; Eholzer, Ulrich; Nast, Roland; Metzger, Karl Georg; and Fritsche, Dieter,3,558,624.
Ehresman, Virgil A., to Sperry Rand Corporation. Thin-ferromagnetic-film memory element using RF mixing for readout operation. 3,559,191, Cl. 340-174.
Eickenhorst, Franklin C., to Dayton Reliable Tool & Mfg. Company. Multiple station plunger press. 3,557,599, Cl. 72-404.
Eilhardt, Bernd; and Pelz, Diethart, to Kabel-und Metallwerke Gutehoffnungshutte Aktiengesellschaft. Waterproof electrical cable and method of making same. 3,558,801, Cl. 174-102.
Eisai Kabushiki Kaisha: *See—*
Kohno, Shigeharu; Yamatsu, Isao; and Ueyama, Seigo, 3,558,725.
Okazaki, Kanzo; Kohno, Shigeharu; Yamatsu, Isao; Sugiyama, Kunishige; and Ueyama, Seigo, 3,558,355.
Eisenman, Fred S.: *See—*
Mackey, E Scudder; Dersch, Fritz; and Eisenman, Fred S.,3,558,321.
Eisentraut, Kent J.: *See—*
Harris, Charles W.; Sievers, Robert E.; and Eisentraut, Kent J.,3,558,440.
Eisenwerke Kaiserslautern G.m.b.H.: *See—*
Philipp, Rudi, 3,558,246.
Ekstrom, Bertil Ake; and Sjoberg, Olof Harald, to Aktiebolaget Astra. Penicillins and their preparation. 3,558,601, Cl. 260-239.1
Ekstrom, Carlson & Co.: *See—*
Bingham, Darwin H., Jr., 3,559,021.
Elco Corporation: *See—*
Stokes, Thomas J., 3,559,147.
Electric Furnace Company, The: *See—*
Cope, David, 3,558,249.
Electrica l Remote Control Company Limited: *See—*
Chuchla, Jerzy Kazimierz, 3,558,835.
Electro-Optical Industries, Inc.: *See—*
Chandos, Richard A., 3,559,098.
Electronized Chemicals Corporation: *See—*
Rossetti, Louis F., Jr., 3,558,423.
Elenbaas, Frits: *See—*
Brilliant, Martin B.; and Elenbaas, Frits,3,558,823.
Elitex-Zavody Textilniho Strojirenstri Generaline Reditelstvi. *See—*
Svaty, Vladimir; and Libansky, Jiri, 3,557,845.
Ellard, Keith, to Automotive Products Company Limited. Band brakes. 3,557,911, Cl. 188-77.
Ellenberger & Poensgen G.m.b.H.: *See—*
Ellenberger, Jacob, 3,559,139.
Ellenberger, Jakob, 3,558,988.
Ellenberger, Jacob, to Ellenberger & Poensgen G.m.b.H. Push-button operated overload-current switch with adjustable thermal trip. 3,559,139, Cl. 337-66.
Ellenberger, Jakob, to Ellenberger & Poensgen G.m.b.H. Pushbutton-operated overload circuit breaker. 3,558,988, Cl. 317-33.
Elliot, Verna Sue. Desk assembly. 3,558,204, Cl. 312-208.
Ellis, Arthur T., Jr., to Heinemann Electric Company. Circuit breaker with an undervoltage trip device. 3,559,125, Cl. 335-20.
Ellis, James C.: *See—*
Perry, Charles R.; and Ellis, James C.,3,557,463.
Elmeg Elektro-Mechanik, G.m.b.H.: *See—*
Zielke, Alfred, 3,558,834.
Elox Inc.: *See—*
Lobur, Walter, 3,558,844.
Emeis, Reimer: *See—*
Stut, Hans; and Emeis, Reimer,3,559,008.
Emerick, Robert M.; Horton, James A.; and Poticny, Joseph, to Goodyear Aerospace Corporation. Simulator having visually independent display system. 3,557,470, Cl. 35-12.
Emery, Raymen F.; Mirabile, Samuel P.; Slavin, Michael; and Bata, George T., to Bendix Corporation, The. Vehicle top speed limiter. 3,557,898, Cl. 180-108.
Emhart Corporation: *See—*
Brennan, James H., 3,557,567.
Emmons, Clayton M., to Adams & Westlake Company, The. Single or multiple switch assembly with single magnet biasing. 3,559,122, Cl. 335-78.
Energy Sciences, Inc.: *See—*
Hughes, Nathaniel, 3,558,056.
Engel, Joachim E. Cam action wrench. 3,557,645, Cl. 81-91.
Engeler, William E., to General Electric Company. Variable capacity diode fabrication method with selective diffusion of junction region impurities. 3,558,375, Cl. 148-175.
Engelhard Industries, Inc.: *See—*
Keith, Carl D.; and Cornely, Kurt W., 3,558,508.
Engelhardt, Friedrich; and Schritt, Wolfgang, to Deutsche Erdol-Aktiengesellschaft. Method of producing beta-branched aldehydes. 3,558,716, Cl. 260-601.
Engle, James L., to Zeiss-Stiftung, Carl, d/b/a Zeiss, Carl. Method and apparatus for plotting a specific area of an object under an observation instrument. 3,558,814, Cl. 178-6.8
Engle, William H. Non-mechanical closure. 3,557,413, Cl. 24-201.
English, Christopher Durrant, to Tracked Hovercraft Limited. Electromagnetically propelled vehicle. 3,557,704, Cl. 104-148.

English Electric Company Limited, The: *See—*
Smith, John Walter Freeman; and Gray, Frederick Martin, 3,558,984.
English Electric Computers Limited: *See—*
Derc, Roman, 3,558,997.
Epec Systems Corporation: *See—*
Bok, Hendrik F., 3,558,093.
Epperson, Donald E.; Douglas, Peter L.; and McKinnis, Ronald B., to Automatic Machinery & Electronics, Inc. Method for improving citrus oil recovery. 3,558,598, Cl. 260-236.6
Eppig, Henry J.: *See—*
Hart, David; Eppig, Henry J.; and Weingarten, Garry,3,557,698.
Erba, Carlo, S.p.A.: *See—*
Comelli, Augusto, 3,557,978.
Eremin, Vitaly Alexeevich: *See—*
Shmakov, Vasily Pavlovich; Eremin, Vitaly Alexeevich; Kvasha, Semen Borisovich; Kaganovich, Natalia Grigorievna; Dobrenyakins, Tatiana Nikolaevna; Vanjushin, Viktor Nikolaevich; Sakharov, Petr Vasilievich; Voronov, Boris Pavlovich; Polezhaev, Vasily Dementievich; Smetankin, Pavel Semenovich; Sobolev, Evgeny Pavlovich; Yanchevsky, Kazimir Stanislavovich; Grishin, Mikhail Semenovich; Burtsev, Pavel Semenovich; and Chasovitin, Pavel Alexeevich,3,558,192.
Erickson, Keith Duane. Container. 3,558,206, Cl. 312-290.
Eriksbergs Mek. Verkstads Aktiebolag: *See—*
Johansson, Ture, 3,558,147.
Eriksson, Sven Axel; and Fischler, Max, to Aktiebolaget Astra. Aqueous solution with high content of calcium suitable for veterinary use and method to produce such a solution. 3,558,785, Cl. 424-317.
Erlandson, Paul M., to Continental Can Company, Inc. Hydroelectric fluid forming device. 3,557,590, Cl. 72-56.
Erman Corporation: *See—*
Erman, Walter, 3,557,722.
Erman, Walter, to Erman Corporation. Incinerating method and apparatus. 3,557,722, Cl. 110-8.
Ernst & Wilhelm Bertram Fabrik Fotolechn: *See—*
Schubert, Joacim, 3,557,677.
ESB Incorporated: *See—*
Duddy, Joseph C., 3,558,365.
Esbeck, Howard Christian: *See—*
Sullivan, James Franklin; Arnold, Loren Glenn; and Esbeck, Howard Christian,3,557,881.
Eschenmoser, Albert Yakeb: *See—*
Buchi, George H.; Demole, Edouard; Eschenmoser, Albert Yakeb; and Thomas, Alan F.,3,558,714.
Espino, Manuel R.: *See—*
Noda, Ricardo; and Espino, Manuel R.,3,558,008.
Essеluhn, Werner F.; and Fegley, Charles R., to Western Electric Company, Incorporated. Methods of and apparatus for sealing a tubulation. 3,557,596, Cl. 72-367.
Esso Production Research Company: *See—*
Mifsud, Joseph F., 3,559,050.
Esso Research and Engineering Company: *See—*
Cier, Harry E., 3,558,719.
Fowler, Benjamin T.; and Lewis, Eric J., 3,558,491.
Fritz, Robert R.; Ingram, George R.; and Barr, Lawrence D., 3,558,001.
Geyer, Jerome; and Hu, Shin-en, 3,558,478.
Gillespie, Bruce G.; and Ryer, Jack, 3,558,470.
Gourlaouen, Henri; and Ostyn, Marcel, 3,558,494.
Lakritz, Julian; and Lovett, John R., 3,558,456.
Robbins, Leroy V., Jr.; Anderson, Joseph S.; and Adams, Clark E., 3,558,476.
Rutkowski, Alfred J., 3,558,782.
Salvesen, Robert H., 3,558,302.
Estlick, Raymond J., to United States of America, Navy, mesne. Anti-backlash driving mechanism. 3,557,630, Cl. 74-89.
Etablissements J. Villars S.A.: *See—*
Villars, Julio, 3,557,908.
Ethyl Corporation: *See—*
Abowd, Richard G., Jr., 3,558,291.
Abowd, Richard G., Jr., 3,558,292.
Beard, William Q., Jr., 3,558,735.
Fanning, Robert J., 3,558,678.
Hinkamp, James B.; and Hnizda, Vincent F., 3,558,697.
Meltsner, Bernard R., 3,558,747.
Evans, Milton L.: *See—*
Holub, Fred F.; and Evans, Milton L.,3,558,741.
Evans, Philip H., to BSR Limited. Brush assembly for electrical equipment. 3,558,949, Cl. 310-239.
Evans, Ronald, to Imperial Chemical Industries Limited. Polymerisation apparatus. 3,558,282, Cl. 23-285.
Evans, William C.: *See—*
Morgan, Martin J.; Evans, William C.; Rappaport, Richard A.; and Gutzmer, Alfred N.,3,559,107.
Evershed & Vignoles Limited: *See—*
Tagg, George F., 3,559,053.
Eversman Mfg. Company, The: *See—*
Shader, Benjamin A., 3,557,883.
Eymard, Pierre Luc: *See—*
Meunier, Henry E.; and Eymard, Pierre Luc,3,558,781.
Eymery, Jean-Pierre D. B.; and Beyer, Harold H., to Procter & Gamble Company, The. Granular detergent composition containing enzymes and environmental control components. 3,558,498, Cl. 252-135.
Factory Mutual Research Corporation: *See—*
Livingston, William L., 3,557,811.
Fahey, William E.: *See—*
Strobach, Carl G.; and Fahey, William E.,3,558,463.
Fahrni, Walter, to Swiss Aluminium Ltd. Interconnected sections and frames made therefrom. 3,557,514, Cl. 52-730.
Fairbanks Morse, Inc.: *See—*
Pan, Pei Tai; and Whalen, John Michael, 3,557,724.
Falkner, Chester B., to Deep Oil Technology, Inc. External wellhead connector means. 3,558,160, Cl. 285-18.
Fan, Roxy Ni, to Du Pont de Nemours, E. I., and Company. Photoactivatable compositions and layers containing arylthioketones. 3,558,322, Cl. 96-115.
Fanning, Robert J., to Ethyl Corporation. Process for preparing carboxylic acid soaps from alcohols. 3,558,678, Cl. 260-413.
Farago, George. Immersion apparatus. 3,557,749, Cl. 118-7.
Farbenfabriken Bayer Aktiengesellschaft: *See—*
Bien, Hans-Samuel; Klauke, Erich; and Wunderlich, Klaus, 3,558,620.
Bien, Hans-Samuel; Klauke, Erich; and Wunderlich, Klaus, 3,558,621.
Hohmann, Walter; Vollman, Heinrich; Bien, Hans-Samuel; and Gehrke, Gunter, 3,558,670.
Ley, Kurt; Eholzer, Ulrich; Nast, Roland; Metzger, Karl Georg; and Fritsche, Dieter, 3,558,624.
Schafer, Rolf; Reerink, Wilm; Schaffrath, Heribert; Schmitt, Karl-Heinrich; and Terlinden, Arthur, 3,558,454.
Schafer, Rolf, 3,559,199.
Schmelzer, Hans-Georg; Degener, Eberhart; Unterstenhofer, Gunter; Tarnow, Horst; and Hammann, Ingeborg, 3,558,705.
Schultz, Fritz, 3,558,773.
Wirth, Wolf-Dieter; and Muller, Erwin, 3,558,573.
Zumach, Gerhard; Anders, Bertram; Grewe, Ferdinand; Kuhle, Engelbert; and Kaspers, Helmut, 3,558,650.
Zumach, Gerhard; Weiss, Wolfgang; and Kuhle, Engelbert, 3,558,661.
Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning: *See—*
Beermann, Claus; Schnabel, Horst; and Ulmschneider, Dieter, 3,558,581.
Lindner, Helmut; Sommer, Karl; and Schmidt, Heinz, 3,558,593.
Rinno, Helmut; and Werner, Gerhard, 3,558,570.
Scherer, Otto; and Kluge, Friedhelm, 3,558,627.
Voigt, Hartmut; Malow, Egon, Hofheim; Wetzel, Walter; and Schneck, Erich, 3,557,530.
Fathauer, George H., to Eaton Yale & Towne, Inc. Push button moisture meter for determining moisture content in grain. 3,559,052, Cl. 324-61.
Fathauer, Jack E.; and Whiteman, Donald R., to Midland-Ross Corporation. Expandable spreader and grappling device for cargo containers and trailers. 3,558,176, Cl. 294-67.
Faust, Henry H.; and Faust, Peter J. Dental appliance and methods of using the same. 3,557,453, Cl. 32-2.
Faust, Peter J.: *See—*
Faust, Henry H.; and Faust, Peter J.,3,557,453.
Faust, Werner, to Aktiengesellschaft Brown, Boveri & Cie. Current converter arrangement comprising a plurality of converter elements connected in series. 3,559,037, Cl. 321-27.
Fay, Gary V.: *See—*
Dale, Robert G.; and Fay, Gary V.,3,558,910.
Fearn, Clifford M.: *See—*
Aro, Enn; Chene-, Thomas K.; Dankowski, James J.; Fearn, Clifford M.; Nennerfelt, Carl B.; Patterson, Albert D.; Sharland, Robert W.; and Watts, James A.,3,558,829.
Feder, Charles, to Phelps Dodge Copper Products Corporation. Safety system for strand take-up machines. 3,558,069, Cl. 242-36.
Federal-Mogul Corporation: *See—*
Cardillo, Jerry E., 3,557,587.
Peyton, John F.; Gonzalez, Juan, Jr.; and Trelease, Robert B., 3,558,391.
Fedorov, Vladimir Mikhailovich: *See—*
Kulikov, Boris Ivanovich; Lagunov, Viktor Mikhailovich; Nesterikhin, Yury Efremovich; and Fedorov, Vladimir Mikhailovich,3,558,908.
Feed Service Corporation: *See—*
Anderson, Philip C.; and Lothrop, Frank, 3,557,759.
Fegley, Charles R.: *See—*
Esseluhn, Werner F.; and Fegley, Charles R.,3,557,596.
Fegley, Charles R.; and Yoder, Theodore L., to Western Electric Company, Incorporated. Cam actuated fluidic timing system. 3,557,813, Cl. 137-81.5
Fehnel, Richard B., to Burroughs Corporation. Multiple cathode indicator tube having improved anode and mercury source. 3,558,957, Cl. 313-109.5
Feibush, Arthur M.: *See—*
Bench, Robert W.; Feibush, Arthur M.; and Schubauer, Carl T.,3,558,883.
Feig, Gerald: *See—*
Bassemir, Robert W.; Carlick, Daniel J.; Dennis, Richard; and Feig, Gerald,3,558,387.
Feit, Leo. Vinyl composition and method of making same. 3,558,533, Cl. 260-2.5
Felix, Pierre: *See—*
Aucahne, Jean; Katchka, Jay R.; and Felix, Pierre,3,557,831.

Felock, Peter, to General Electric Company. Semiconductor device with multiple shock absorbing and passivation layers. 3,559,002, Cl. 317-234.
Fendt, Dr. Wolfang: *See—*
Kanics, Andras, 3,558,195.
Fenix & Scisson, Inc.: *See—*
Cobbs, James H., 3,557,886.
Fenne, Ivor, to C.A.V. Limited. Liquid fuel pumping apparatus for supplying fuel to internal combustion engines. 3,558,241, Cl. 417-206.
Fenton, Matthew Robert. Paving block and paving formed therewith. 3,557,669, Cl. 94-11.
Fernandez, John. Article transfer apparatus. 3,557,931, Cl. 198-20.
Ferrai, Peter E.; Williams, Robert B.; and Livingston, Charles W., to Smith-Blair Inc. Tapping sleeve. 3,558,162, Cl. 285-93.
Ferran, Robert J., to C.G.S. Scientific Corporation, Inc. Variable capacitance detecting devices. 3,557,621, Cl. 73-398.
Ferrand, Marcel. Plant containers. 3,557,489, Cl. 47-37.
Fetzer, Richard, to Gottlieb Eppinger. Cutting apparatus for a circular knitting machine. 3,557,578, Cl. 66-140.
Fiber Industries, Inc.: *See—*
Simons, Frank Holmes, 3,557,544.
Fibreglass Limited: *See—*
Pook, Francis Harold, 3,558,380.
Fichtel & Sachs AG: *See—*
Schwerdhofer, Hans Joachim, 3,557,922.
Fickenscher, Hermann, to Bell Telephone Laboratories, Incorporated. Switching type voltage regulator utilizing PNPN diodes to reduce switching transition time. 3,559,040, Cl. 323-22.
Fiedler, Leon F.: *See—*
Winney, Joe R.; and Fiedler, Leon F.,3,558,546.
Figueroa, John W.; Morgan, William J.; and Rasmussen, Rolland R., to General Electric Company. Input/output controller with linked data control words. 3,559,187, Cl. 340-172.5
Fillacier, Jacques; and Lemonnier, Andre. Method and apparatus for selecting and reproducing colours. 3,557,472, Cl. 35-28.3
Fina, F. G., S.p.A.: *See—*
Ravasi, Angelo, 3,557,411.
Fincke, John K.; DeBrunner, Ralph E.; and Wilson, Glenn R., to Monsanto Research Corporation. Method of forming a composite of boron fibers and polyimide. 3,558,350, Cl. 117-132.
F.I.N.D. Inc.: *See—*
Dunn, John P., 3,558,052.
Finestone, Arnold B.: *See—*
Niechwiadowicz, Michal; and Finestone, Arnold B.,3,558,534.
Fink, Wolfgang: *See—*
Kuchenbecker, Hermann; Fink, Wolfgang; and Schmidt, Ludwig,3,557,693.
Finley, Lloyd D., to Caterpillar Tractor Company. Pilot valve for actuating a main control of the hydraulic circuit. 3,557,829, Cl. 137-596.2
Firestone Tire & Rubber Company: *See—*
Cole, Albert J.; and Rowland, George P., 3,558,544.
Firestone Tire & Rubber Company, The: *See—*
Bethea, Tristram Walker; and Halasa, Adel Farhan, 3,558,589.
Hayes, Robert A.; and Tazewll, Joseph H., 3,558,553.
Keckler, Norman F., 3,558,575.
Firmenich & Cie: *See—*
Buchi, George H.; Demole, Edouard; Eschenmoser, Albert Yakeb; and Thomas, Alan F., 3,558,714.
Fischer, Adolf: *See—*
Osieka, Hans; Koenig, Karl-Heinz; Fischer, Adolf; and Flickinger, Erich,3,558,685.
Fischer, Georg, Ltd.: *See—*
Speich, Franz, 3,557,919.
Fischer, Herbert Corliss, Jr.: *See—*
Fischer, Herbert Corliss; and Fischer, Herbert Corliss, Jr.,3,557,408.
Fischer, Herbert Corliss; and Fischer, Herbert Corliss, Jr. Apparatus for molding reinforced articles. 3,557,408, Cl. 18-36.
Fischler, Max: *See—*
Eriksson, Sven Axel; and Fischler, Max,3,558,785.
Fisher, Norma E. Protective head gear. 3,557,386, Cl. 2-191.
Fitzgerald, Hugh J.; and Koepf, Ernest H., to Ocean Pollution Control, Inc., mesne. Oil skimming apparatus. 3,557,960, Cl. 210-242.
Fitzpatrick, James E.; and Khelghtian, Habet M., to Avisun Corporation. Dye test for detecting strained areas in molded plastics. 3,558,444, Cl. 204-30.
Fitzpatrick, James E.: *See—*
Khelghatian, Habet M.; Jezl, James L.; and Fitzpatrick, James E.,3,558,443.
Fizichesky Institut Imeni Lebedeva: *See—*
Basov, Nikolai Gennadievich; Bogdankevich, Oleg Vladimirovich; and Nasibov, Alexandr Sergeevich, 3,558,956.
Fjallbrant, Tore Torstensson, to Telefonaktiebolaget L.M. Ericsson. Filter arrangement consisting of a ladder network of reactances and a terminating resistance and signal sources connected to a series element on the input side of the filter and to one or more shunt elements in said ladder network. 3,559,114, Cl. 333-70.
Fjallbrant, Tore Torstenssson, to Telefonaktiebolaget L.M. Ericsson. Filters utilizing ladder networks. 3,559,113, Cl. 333-70.
Flanigen, Edith M., to Union Carbide Corporation. Silica adsorbents from acid treated wollastonite. 3,558,524, Cl. 252-450.
Flannery, Frank A. Adjustable cutting tool assembly. 3,557,419, Cl. 29-105.
Fleck, Fritz, to Sandoz Ltd. Novel stilbene derivatives. 3,558,611, Cl. 260-240.
Fleck, Raymond N.; and Young, Donald C., to Union Oil Company of California. Temperature control of vinyl ester polymerization in an aqueous emulsion. 3,558,577, Cl. 260-87.1
Fleissner, Heinz, to Vepa A.G. Process for the continuous finishing of knitted fabrics and hosiery goods. 3,557,394, Cl. 8-149.1
Flemming, John P. W., to International Standard Electric Corporation. Scanning microscope with feedback means to maintain a constant target current. 3,558,885, Cl. 250-49.5
Fletcher, Gerald Matthew, to Itek Corporation. Process for producing photographic images with photosensitive materials and products produced thereby. 3,558,308, Cl. 96-27.
Fletcher, H. E., Co.: *See—*
Fletcher, Ralph A.; and Oliver, Joseph R., 3,558,191.
Fletcher, Ralph A.; and Oliver, Joseph R., to Fletcher, H. E., Co. Means for applying wedging forces to minerals and other bodies. 3,558,191, Cl. 299-22.
Flickinger, Erich: *See—*
Osieka, Hans; Koenig, Karl-Heinz; Fischer, Adolf; and Flickinger, Erich,3,558,685.
Flo-Root, Inc.: *See—*
Florance, Douglas A.; Nordholm, Lloyd P.; and Foldes, Stephen, 3,558,980.
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Floret, Felix; Mayer, Jean-Jacques; and Peronneau, Georges, to T-V.T. (Thomson-C.S.F. Visualisation et Traitement des Informations). System for tracing symbols on visual indicator with orthogonal sweep. 3,559,182, Cl. 340-172.5
Florjancic, Peter. Hydraulic drive system for injection molding machines. 3,557,663, Cl. 91-394.
Fluidic Controls Corporation: *See—*
Kutz, Aaron, 3,557,836.
Flume Stabilization Systems, Inc.: *See—*
Dreyfus, Edward D.; and Brunsell, Paul A., 3,557,735.
FMC Corporation: *See—*
Dykeman, Edgar G.M., 3,557,439.
Fodor, Lawrence M., to Phillips Petroleum Company. Polymerization process and catalyst system. 3,558,586, Cl. 260-93.7
Foldes, Stephen: *See—*
Florance, Douglas A.; Nordholm, Lloyd P.; and Foldes, Stephen,3,558,980.
Foley, Norman L.; and Cheney, Alwyn H., to Auscoteng Pty., Ltd. Distillation apparatus for desalinisation of saline water to recover fresh water as condensate. 3,558,436, Cl. 202-196.
Forbes, Reginald William James, to International Standard Electric Corporation. Spring adjustable cooling fins for traveling wave tubes. 3,558,952, Cl. 313-45.
Ford Motor Company: *See—*
Nickell, Claude H., 3,557,923.
Foreman, Clarence P.; and Knight, David W., to U.S. Baird Corporation, The. Auxiliary apparatus for elliptical turning of a workpiece on a multiple spindle chucking machine. 3,557,647, Cl. 82-3.
Formica Corporation: *See—*
Dickie, William Niven; and Bennett, Norman Jack, 3,557,499.
Fornoff, Heinz: *See—*
Curriston, Loren E.; and Fornoff, Heinz,3,558,079.
Forsvarets Fabriksverk: *See—*
Arnell, Claes G., 3,557,701.
Foseco International Limited: *See—*
Yendrek, Michael Robert; and Dzurilla, Robert Richard, 3,558,591.
Foster, Norman F., to Bell Telephone Laboratories, Incorporated. Thin semiconductor films. 3,558,351, Cl. 117-201.
Fotland, Richard A.: *See—*
Petro, Victor P.; and Fotland, Richard A.,3,558,317.
Foto-Cube, Inc.: *See—*
Ebner, Emanuel C., 3,557,480.
Fourichon, Gerard: *See—*
Dameme, Guy; and Fourichon, Gerard,3,558,989.
Fournier, Etienne, to Laboratoires Cassenne. Therapeutical composition containing mercapto-benzimidazoles. 3,558,775, Cl. 424-232.
Fournier, Joseph A., to General Electric Company. Two loop control system. 3,559,018, Cl. 318-314.
Fowler, Benjamin T.; and Lewis, Eric J., to Esso Research and Engineering Company. Lubricating oil compositions. 3,558,491, Cl. 252-49.8
Fowler, Vernon J., to General Telephone & Electronics Laboratories, Incorporated. Light beam deflection sensor. 3,558,230, Cl. 356-138.
Foxboro Company, The: *See—*
Bowditch, Hoel L., 3,557,748.
Fr. Hesser Maschinenfabrik, AG: *See—*
Bauder, Ulrich, 3,557,525.
Stambera, Adolf, 3,557,888.
Franklin, Marvin L.; and Gagle, Duane W., to Phillips Petroleum Company. Seed germination structure. 3,557,491, Cl. 47-56.
Franklin, Philip J., to United States of America, Army. Thermal cell. 3,558,363, Cl. 136-83.
Frantz, Virgil L., to Graham-White Sales Corporation. Pressure gauge testing system. 3,557,602, Cl. 73-4.
Frastan (Hollinwood) Limited: *See—*
Gabriels, Leonard, 3,558,070.

Freamo, Melvin J.: *See—*
Copelin, Harry B.; and Freamo, Melvin J.,3,558,692.
Freehafer, John E., to General Signal Corporation. Signals at highway crossings for high speed trains. 3,558,874, Cl. 246-126.
Freeman, Robert F.: *See—*
Osborn, Donald H.; and Freeman, Robert F.,3,558,803.
Freeman, William R.; and Bombaugh, Karl J., to Mine Safety Appliances Company. Determination of reactive hydrocarbons in air. 3,558,283, Cl. 23-232.
Freeport Sulphur Company: *See—*
Miller, David J.; and Wiewiorowski, Tadeusz K., 3,558,510.
Wiewiorowski, Tadeusz K.; and Miller, David J., 3,558,509.
French, Kenneth W.: *See—*
Brecher, Charles; and French, Kenneth W.,3,558,504.
French, Walter K., to International Business Machines Corporation. Reference point determining system. 3,558,864, Cl. 235-150.
Frerichs, Peter, to Olympia Werke AG. Internal gear. 3,557,633, Cl. 74-447.
Frey, Arnold. Contact device. 3,559,155, Cl. 339-256.
Friebel, Heinz: *See—*
Koch, Hans; Wochnowski, Waldemar; Thiele, Willi; Hackmack, Klaus-Georg; Friebel, Heinz; and Pietrucci, Andre,3,557,799.
Fried. Krupp Gesellschaft mit beschrankter Haftung: *See—*
Harms, Hermann Wilhelm August; and Leisterer, Reinhard Wilhelm, 3,559,159.
Rix, Walter; and Dix, Grete, 3,558,445.
Friedman, Ronald L.; and Lewis, Roger N., to Argus Chemical Corporation. Epoxidized peroxides. 3,558,665, Cl. 260-348.
Friedrich, Richard: *See—*
Pfaff, Artur; and Friedrich, Richard,3,558,059.
Fritsche, Dieter: *See—*
Ley, Kurt; Eholzer, Ulrich; Nast, Roland; Metzger, Karl Georg; and Fritsche, Dieter,3,558,624.
Fritz Buser AG, Maschinenfabrik: *See—*
Voegelin, Heinrich, 3,557,690.
Fritz, Robert R.; Ingram, George R.; and Barr, Lawrence D., to Esso Research and Engineering Company. Thermoplastic container. 3,558,001, Cl. 220-67.
Frommelt, Cyril P.; and Frommelt, Sylvan J., to Dubuque Awning & Tent Company. Loading dock shelters. 3,557,508, Cl. 52-204.
Frommelt, Sylvan J.: *See—*
Frommelt, Cyril P.; and Frommelt, Sylvan J.,3,557,508.
Fromson, Robert E.: *See—*
Barrow, Henry; Schmidt, Jack E.; Fromson, Robert E.; and Staskiewicz, Fred C.,3,557,866.
Fry, William Lawrence. Lucas, Joseph, (Industries) Limited Contact breaker assemblies. 3,558,838, Cl. 200-166.
Fuerst, Adolph: *See—*
Blake, Carl B.; and Fuerst, Adolph,3,558,446.
Fuerst, Ernst: *See—*
Hoffmann, Herwig; Fuerst, Ernst; and Toussaint, Herbert,3,558,619.
Fuji Photo Film Co. Ltd.: *See—*
Kuroki, Motoharu; and Takaoi, Akira, 3,557,870.
Fuji Shashin Film Kabushiki Kaisha: *See—*
Hamaoka, Tsutomu; Sano, Kazuya; Yoshida, Makoto; Oishi, Yasushi; and Hirose, Takeshi, 3,558,319.
Kimura, Shiro; Yoshida, Makoto; Tsuda, Momotoshi; and Okumura, Akio, 3,558,700.
Sofue, Mitsutaka, 3,558,109.
Takenaka, Haruo; Ikeda, Teppei; and Furukawa, Katsuharu, 3,558,315.
Tsuchida, Shunichiro; Miyata, Tomiaki; and Takahashi, Michihiko, 3,558,313.
Fujimori, Yoshiaki, to Kabushiki Kaisha Suwa Seikosha. Water proof case for watch. 3,557,548, Cl. 58-94.
Fujimoto, Yoshihisa: *See—*
Kobayashi, Hidehiko; Sasaguri, Kiichiro; Fujimoto, Yoshihisa; and Ibata, Jyoji,3,558,722.
Fujiwara, Eiji: *See—*
Suetake, Kunihiro; Naito, Yoshiyuki; and Fujiwara, Eiji,3,559,111.
Furgerson, William Thomas. Method for the separation of liquids. 3,558,481, Cl. 210-22.
Furrow, Clarence L., to Phillips Petroleum Company. Hydroxysulfonate production. 3,558,457, Cl. 204-158.
Furukawa, Katsuharu: *See—*
Takenaka, Haruo; Ikeda, Teppei; and Furukawa, Katsuharu,3,558,315.
Gabriels, Leonard, to Frastan (Hollinwood) Limited. Automatic measuring, cutting and rolling machine for webs of paper or the like. 3,558,070, Cl. 242-56.
Gaede, James C., to Alco Standard Corporation. Door unit for heat treating apparatus. 3,558,112, Cl. 263-36.
Gaertner, Berthold, to Bronzavia. Method and device for adjusting the lateral clearance in a rotary displacement pump. 3,558,247, Cl. 418-131.
GAF Corporation: *See—*
Mackey, E Scudder; Dersch, Fritz; and Eisenman, Fred S., 3,558,321.
Gagle, Duane W.: *See—*
Franklin, Marvin L.; and Gagle, Duane W.,3,557,491.
Gainsley, Reuben Murphy: *See—*
Gainsley, Reuben Murphy, 3,557,742.
Gainsley, Reuben Murphy, to Vickers Limited, and Gainsley, Reuben Murphy. Cargo vessels. 3,557,742, Cl. 114-235.
Gallagher, James J., to Standard Pressed Steel Co. Apparatus for applying a thermoplastic locking patch on a threaded fastener. 3,557,750, Cl. 118-308.
Galletti, Remo, to Olivetti, D., & C.S.p.A. RPM counter for internal combustion engines. 3,559,063, Cl. 324-169.
Galloway, James H., to General Electric Company. Full wave phase control integrated circuit. 3,558,922, Cl. 307-252.
Gallucci, Francis; and Speransky, Jaroslav, to United States Steel Corporation. Mechanism for measuring loads on pinch rolls of continuous-casting machine. 3,557,865, Cl. 164-150.
Galster, Thomas H.: *See—*
Montevecchio, Albert J.; Bartron, William D.; and Galster, Thomas H.,3,558,811.
Galvin, Thomas J.; and Hughes, Francis A., to Atlas Chemical Industries, Inc. Anti-redeposition agents. 3,558,499, Cl. 252-137.
Gandolfi, Carmelo: *See—*
De Ruggieri, Pietro; Gandolfi, Carmelo; and Guzzi, Umberto,3,558,673.
Ganzler, Wolfgang: *See—*
Schroder, Gunter; and Ganzler, Wolfgang,3,558,530.
Gardner Cryogenics Corporation: *See—*
Dautman, James J. J., 3,559,126.
Gardner, Edgar E.: *See—*
Hubach, Louis E.; and Gardner, Edgar E.,3,557,953.
Garey, Edward F.: *See—*
Day, Leon E.; and Garey, Edward F.,3,557,426.
Gasperi, Michael A.: *See—*
Lueck, Frederick E.; Denholm, Michael J.; Borowski, William J.; Kroml, Steven M.; and Gasperi, Michael A.,3,558,197.
Gatsis, John G.: *See—*
Gleim, William K. T.; and Gatsis, John G.,3,558,474.
Gaynor, Edwin G., to Gaynor, Edwin S. Electric discharge lampholder. 3,559,151, Cl. 339-53.
Gaynor, Edwin S.: *See—*
Gaynor, Edwin G., 3,559,151.
GCA Corporation: *See—*
Pressman, Jerome, 3,558,877.
Gebr. Bohler & Co. Aktiengesellschaft: *See—*
Schwarz, Ludwig, 3,557,589.
Gebr. Eickhoff, Maschinenfabrik und Eisengiesserei mbH: *See—*
Renzing, Otto; and Jahn, Dieter, 3,558,194.
Gebruder Netzsch Maschinenfabrik: *See—*
Netsch, Alfred; Weber, Erwin; and Ullrich, Wolfgang, 3,558,171.
Gehrke, Gunter: *See—*
Hohmann, Walter; Vollman, Heinrich; Bien, Hans-Samuel; and Gehrke, Gunter,3,558,670.
Geigy Chemical Corporation: *See—*
Clarke, Frank H., Jr.; and Block, Fred B., 3,558,638.
Kleemann, Alois; and Model, Ernst, 3,558,266.
McCarty, Robert T., 3,558,786.
Paltauf, Friedrich; Margot, Alfred; and Brenneisen, Paul, 3,558,784.
Rufener, Walter; Berger, Raoul; and Riethmann, Jean, 3,558,622.
Sallmann, Alfred; and Pfister, Rudolf, 3,558,690.
Geigy, J. R., A.G.: *See—*
Pugin, Andre; Burdeska, Kurt E.; and Staub, Alfred, 3,558,334.
Rufener, Walter; Berger, Raoul; and Riethmann, Jean, 3,558,622.
Geiszler, Adolph Oscar; and Jones, Peter Hadley, to Abbott Laboratories. Alkyl sulfate salts of 1-(p-chlorobenzhydryl)- 4-methylhomopiperazines. 3,558,600, Cl. 260-239.
Gelles, Daniel E.; and Kamins, Seymour, to CTP Industries Inc. Combined hook and handle. 3,558,038, Cl. 229-54.
General American Transportation Corporation: *See—*
Milenkovic, Veljko, 3,557,712.
General Atronics Corporation: *See—*
Hilliard, Robert C., 3,559,201.
General Dynamics Corporation: *See—*
Hatley, Derek J., 3,558,913.
General Eastern Corporation: *See—*
Bisberg, Arthur, 3,559,194.
General Electric Company: *See—*
Bakel, Joseph F., 3,558,231.
Becker, Joseph J., 3,558,371.
Becker, Joseph J., 3,558,372.
Benson, Ralph A., 3,559,177.
Berger, Abe; and Jaleel, Jalal S., 3,558,556.
Broverman, Howard Lawrence, 3,558,925.
Charewicz, Francis J.; Steele, Eugene K.; and Nichols, Frank S., 3,558,145.
Chen, Muchuan M., 3,558,911.
Christianson, Clinton C., 3,558,361.
Dinger, Edward H., 3,559,017.
Engeler, William E., 3,558,375.
Felock, Peter, 3,559,002.
Figueroa, John W.; Morgan, William J.; and Rasmussen, Rolland R., 3,559,187.
Fournier, Joseph A., 3,559,018.
Galloway, James H., 3,558,922.
Giaever, Ivar, 3,558,920.
Greenwood, Allan N., 3,558,982.
Hamilton, Stephen B., Jr., 3,558,706.
Hanneman, Rodney E.; Jorgensen, Paul J.; and Charles, Richard J., 3,558,963.

Hardy, Samuel G., 3,559,141.
Holub, Fred F.; and Evans, Milton L., 3,558,741.
Kramel, Leonard F.; and Tabor, Stanley D., Jr., 3,558,951.
Kugath, Donald A.; and Mosher, Ralph S., 3,557,627.
Kushner, Gerald J., 3,558,110.
Lunden, John W.; and O'Hern, James V., 3,559,091.
Powell, David B.; and Naas, Rodney L., 3,559,121.
Rhoades, John M., 3,559,179.
Scalzo, Michael A., 3,557,673.
Staats, James E., 3,559,094.
Steen, Floyd L., 3,558,983.
Stewart, Richard D., 3,558,974.
White, John E., 3,558,964.
Worcester, Joseph A., 3,559,076.
General Instrument Corporation: *See—*
Bernstein, Bernard, 3,558,994.
General Methods Corporation: *See—*
Sopher, Clifford D., 3,557,933.
General Mills, Inc.: *See—*
Chivers, Thomas E., 3,557,717.
Chivers, Thomas E., 3,557,718.
Page, John A.; and Dechaine, Robert C., 3,558,324.
Wagenknecht, Austin C., 3,557,852.
General Motors Company: *See—*
Mitchell, Boris John, 3,557,762.
General Motors Corporation: *See—*
Howick, Stanley O.; and Schipke, Robert N., 3,557,807.
Jackson, George W., 3,558,154.
Jackson, George W.; and Whelan, James E., 3,558,155.
Jackson, George W., 3,558,156.
Pearce, Warren, Jr., 3,559,152.
Prachar, Otakar P., 3,557,557.
Stedfeld, Rowland L., 3,557,812.
Tanaka, Akira, 3,557,914.
Tomczak, Eugene, 3,557,637.
Tuck, Robert M., 3,557,635.
Yew, Ming-Chih, 3,558,123.
General Precision Systems Inc.: *See—*
Lindell, Edward, 3,558,924.
General Signal Corporation: *See—*
Freehafer, John E., 3,558,874.
General Steel Products, Inc.: *See—*
Mizelle, Ned W., 3,558,185.
General Telephone & Electronics Laboratories Incorporated: *See—*
Brecher, Charles; and French, Kenneth W., 3,558,504.
Fowler, Vernon J., 3,558,230.
General Tire & Rubber Company, The: *See—*
Bezbatchenko, William, Jr., 3,558,389.
General-Electro Mechanical Corporation: *See—*
Speller, Thomas H., 3,557,442.
Genest, Leonard J.; and Klayman, Arnold I., to Octronix, Inc. Multilevel weighted carrier encoded digital data transmission system. 3,559,067, Cl. 325-38.
Genesys Systems, Inc.: *See—*
Dunn, Donald A.; and Jurgensen, Peter D., 3,558,840.
Gerek, Gene: *See—*
Hartzell, Rowland S.; and Gerek, Gene,3,558,421.
Gerighausen, Werner: *See—*
Perthen, Johannes; Hildebrandt, Friedrich; and Gerighausen, Werner,3,557,613.
Gerisch, Rudolph F. Conveying apparatus. 3,557,935, Cl. 198-38.
Gerkens, Maurice: *See—*
Wollrab, Friedrich; and Gerkens, Maurice,3,558,538.
Gerlach, Le Roy E.; and Woehler, Gary B., to Sperry Rand Corporation. Momentum-transfer card brake. 3,557,948, Cl. 209-80.5
Gerteis, Karl M., to Carrier Corporation. Permanent split capacitor motor having starting current control. 3,559,016, Cl. 318-221.
Gertner, David: *See—*
Belsky, Igal; Gertner, David; and Zilkha, Albert,3,558,683.
Gessner, Gunter J.: *See—*
Moreines, Harold; and Gessner, Gunter J.,3,559,198.
Gettys Manufacturing Company: *See—*
Hill, Roger Gettys; and Beutler, Arthur J., 3,558,942.
Gevaert-Agfa N.V.: *See—*
Delzenne, Gerard Albert; and Laridon, Urbain Leopold, 3,558,311.
Laridon, Unbain Leopold; and Delzenne, Gerard Albert, 3,558,309.
Geyer, Jerome; and Hu, Shin-en, to Esso Research and Engineering Company. Lubrication system and oil filter therefor. 3,558,478, Cl. 208-179.
Giaever, Ivar, to General Electric Company. Bistable photosensitive device utilizing tunnel currents in low resistive state. 3,558,920, Cl. 307-245.
Gielas, Thaddeus A. Paperboard pallet assembly. 3,557,719, Cl. 108-56.
Gieskieng, Marion W. Defective car equipment detecting devices for railways. 3,558,875, Cl. 246-169.
Gifford-Hill-Western: *See—*
Harris, Harold Jay, 3,558,257.
Johnson, James Burl, Jr., 3,558,258.
Gilbert, Dixie E.; and Poff, Tommy G., to Phillips Petroleum Company. Nucleation of 1-olefin polymers with phthalocyanine pigments. 3,558,551, Cl. 260-41.
Gillespie, Bruce G.; and Ryer, Jack, to Esso Research and Engineering Company. Antifoulant process using phosphite and ashless detergent. 3,558,470, Cl. 208-48.
Gillette Company, The: *See—*
Goodenow, Elden Lucerne; O'Sullivan, James; and Seregely, Daniel W., 3,558,392.
Markey, Joseph Thomas, 3,557,606.
Morton, Lloyd, Jr.; and O'Hare, John, 3,557,520.
Gillies, Barrier Andrew; and Bolton, Adrian John, to International Computers Limited. Step motion producing apparatus. 3,559,012, Cl. 318-138.
Gillmann, Hanno; and Hauff, Paul, to Telefunken Patentverwertungsgesellschaft m.b.H. Circuit arrangement for corrrectly positioning the information derived from scanning a character in the field of a character reader. 3,559,169, Cl. 340-146.3
Gilmont, Roger, Instruments Inc.: *See—*
Gilmont, Roger, 3,557,833.
Gilmont, Roger, to Gilmont, Roger, Instruments Inc. Micrometric capillary valve with tapered passage. 3,557,833, Cl. 137-625.3
Gingell, Michael John, to International Standard Electric Corporation. Polyphase symmetrical network. 3,559,042, Cl. 323-122.
Giorgi, Anthony Dominic; Duke, Edward Junior; and Conrad, Harold Dean, to Virginia Chemicals Inc. Solenoid actuated valve. 3,558,099, Cl. 251-129.
Girard, Christian F., to Canadian International Paper Company. Ceiling tiles with reinforcing member. 3,557,513, Cl. 52-629.
Girard, Maurice Emile: *See—*
Accaries, Maurice Roger; and Girard, Maurice Emile,3,558,448.
Giravions Dorand: *See—*
Kretz, Marcel, 3,558,080.
Girling Limited: *See—*
Wilson, Alexander John; and Dawson, Stuart B., 3,557,555.
Giwosky, Harry L., to Controls Company of America. Modulating valve. 3,557,837, Cl. 137-630.14
Gjellan, Asbjorn: *See—*
Bergman, Tage; and Gjellan, Asbjorn,3,559,137.
Glacier Metal Company Limited, The: *See—*
Herbert, Colin Wray, 3,557,744.
Glang, Reinhard: *See—*
Beaudouin, Pierre L.; Glang, Reinhard; and Riseman, Jacob,3,559,003.
Glass, Eugene D.: *See—*
Rhoades, Vaughan W.; and Glass, Eugene D.,3,557,874.
Glass, Marvin, & Associates: *See—*
Licitis, Gunars; Aleksa, Peter; and Glass, Marvin I., 3,558,143.
McFarland, Norman T., 3,558,136.
Glass, Marvin I.: *See—*
Licitis, Gunars; Aleksa, Peter; and Glass, Marvin I.,3,558,143.
Glasser, Albert D.: *See—*
Sverdrup, Edward F.; Glasser, Albert D.; and Archer, David H.,3,558,360.
Glasson, Jean E., to Botalam. Binding machine. 3,557,684, Cl. 100-26.
Glaza, Gordon K.: *See—*
Braeuninger, Karl F.; and Glaza, Gordon K.,3,557,512.
Glazar, Arthur J.: *See—*
Tillman, Leonard; and Glazar, Arthur J.,3,558,876.
Gleim, William K. T.; and Gatsis, John G., to Universal Oil Products Company. Slurry process for hydrorefining petroleum crude oil. 3,558,474, Cl. 208-108.
Globus, Alfred R., to Guardian Chemical Corporation. Compositions for dental prophylaxis. 3,558,769, Cl. 424-54.
Gobeil, Richard J., to Du Pont de Nemours, E. I., and Company. Substituted 1,3-dicycloalkylureas for controlling annual weed grasses. 3,558,303, Cl. 71-120.
Godes, Ronald A.: *See—*
Shore, William S.; and Godes, Ronald A.,3,558,186.
Goff, Myron F. Spray nozzle. 3,558,063, Cl. 239-425.
Gold, Michael: *See—*
Wallis, Benedict L.; and Gold, Michael,3,558,800.
Gold, Robert M., to Keuffel & Esser Company. Thermographic image formation utilizing a copy sheet of discrete thermoplastic particles and a powder developer. 3,558,881, Cl. 250-65.
Golubtsov, Sergei Alexandrovich: *See—*
Kuznetsova, Alexandra Grigorievna; Golubtsov, Sergei Alexandrovich; and Ivanov, Vladimir Ivanovich,3,558,681.
Gonzalez, Juan, Jr.: *See—*
Peyton, John F.; Gonzalez, Juan, Jr.; and Trelease, Robert B.,3,558,391.
Good, Arthur L., to Robershaw Controls Company. Piezoelectric voltage source for ignition means. 3,558,938, Cl. 310-8.7
Goodenough, Robert D.; Place, John; and Parks, Christ F., to Dow Chemical Company, The. Stable bromo-sulfamate composition. 3,558,503, Cl. 252-187.
Goodenow, Elden Lucerne; O'Sullivan, James; and Seregely, Daniel W., to Gillette Company, The. Process for the continuous manufacture of porous writing lips. 3,558,392, Cl. 156-180.
Goodhue, Charles T.; and Schaeffer, James R., to Eastman Kodak Company. Oxidation process. 3,558,431, Cl. 195-49.
Goodrich, B. F., Company, The: *See—*
Winney, Joe R.; and Fiedler, Leon F., 3,558,546.
Goodyear Aerospace Corporation: *See—*
Emerick, Robert M.; Horton, James A.; and Poticny, Joseph, 3,557,470.

Goodyear Tire & Rubber Company, The: *See—*
Kagarise, Herbert N., 3,558,739.
Spacht, Ronald B., 3,558,552.

Goordman, Robert V.; and Petersen, Ronald C., to Bell Telephone Laboratories, Incorporated. Difference amplifier with parallel isolated emitter configuration. 3,559,087, Cl. 330-15.

Goosman, Frederick Z. Automatic food cooking and dispensing apparatus. 3,557,682, Cl. 99-327.

Gopez, Florencio L., Jr., to Du Pont de Nemours, E. I., and Company. Controlled polyamido filament process stretching. 3,558,767, Cl. 264-290.

Gordon, Arthur L.; and Weisberg, Samuel M., to Kraftco Corporation. Wound treating composition employing an enzyme modified casein. 3,558,770, Cl. 424-80.

Gostkin, Boris Kirillovich: *See—*
Ediny, Jury Grigorievich; Balaev, Oleg Gavrilovich; and Gostkin, Boris Kirillovich,3,557,793.

Goto, Michio; and Nishimura, Takao, to Teijin Limited. Production of polyamide filaments having a high degree of polymerization. 3,558,569, Cl. 260-78.

Gottlieb Eppinger: *See—*
Fetzer, Richard, 3,557,578.

Goundry, Paul C.: *See—*
Darnell, James R.; Goundry, Paul C.; and Wakefield, Gene F.,3,558,343.

Gourdine, Meredith C., to Gourdine Systems, Incorporated. Electrogasdynamic precipitator with catalytic reaction. 3,558,286, Cl. 23-288.

Gourdine Systems, Incorporated: *See—*
Gourdine, Meredith C., 3,558,286.

Gourio, Herve' A., to Societe Anonyme Financiere & Auxiliaire du Textile. Transparent display unit. 3,557,945, Cl. 206-45.24

Gourlaouen, Henri; and Ostyn, Marcel, to Esso Research and Engineering Company. Ethylene propylene copolymer synthetic insulating oils and processes for making them. 3,558,494, Cl. 252-63.

Grabowski, Edward J. J.: *See—*
Tull, Roger J.; Tristram, Edward W.; and Grabowski, Edward J. J.,3,558,625.

Grace, W. R., & Co.: *See—*
Kramm, David E., 3,558,562.
Mc Kinney, Robert W., 3,557,531.
Moyer, Joseph D., 3,558,630.

Grachev, Vladimir Alexandrovich; Cherny, Anatoly Alexeevich; Marienbakh, Lev Mikhailovich; and Kurbatsky, Ivan Lukich. Cupola furnace. 3,558,791, Cl. 13-9.

Graf, Richard H., to Hooker Chemical Corporation. Plastic nosing for stairways. 3,557,504, Cl. 52-179.

Graham, William H.: *See—*
Currie, Charles H.; and Graham, William H.,3,559,074.

Graham-White Sales Corporation: *See—*
Frantz, Virgil L., 3,557,602.

Granfors, Ernest A.; Lovcless, Don L.; and Boyle, Charles E., to Sparton Corporation. Unitary directional sonar transducer. 3,559,162, Cl. 340-10.

Granstrand, Bengt Ragnar Gustaf; and Nihlen, Nils Hugo Vilhelm, to AB Kabi. Diagnostic agents and method for immuno- electrophoretic assay of mammalian gamma globulins. 3,558,459, Cl. 204-180.

Grant, Norman H.: *See—*
Alburn, Harvey E.; and Grant, Norman H.,3,558,602.

Gray, Don N.: *See—*
Schmidt-Collerus, Josef J.; Gray, Don N.; and Jordan, George W., Jr.,3,558,720.

Gray, Earl H., to Phillips Petroleum Company. Exothermic process control. 3,558,588, Cl. 260-94.2

Gray, Frederick Martin: *See—*
Smith, John Walter Freeman; and Gray, Frederick Martin,3,558,984.

Gray, Robert D.; and Mayer, Simon E., to PPG Industries, Inc., mesne. Process for preparing highly reactive lead compound particles. 3,558,347, Cl. 117-100.

Graymills Corporation: *See—*
Burkell, Alfred K., 3,557,868.

Great Canadian Oil Sands Limited: *See—*
White, Chester N.; and Loveland, Junior West, 3,558,469.

Greefkes, Johannes Anton: *See—*
Almering, Petrus Cornelis Maria; Velo, Henri Jan; and Greefkes, Johannes Anton,3,559,068.

Green, Roger E., to International Harvester Company. Oil anti-drainback device with bypass. 3,557,767, Cl. 123-196.

Greenberg, Burton: *See—*
Murgas, Karl M.; Greenberg, Burton; and Clark, Otto A.,3,558,224.

Greenberg, Donald K., to Barnes Drill Co. Clamping fixture for a machine tool. 3,557,492, Cl. 51-34.

Greenside Machine Company Limited: *See—*
Howarth, Andrew W., 3,558,193.

Greenwell, Joseph D., to Du Pont de Nemours, E. I., and Company. Multiple container package. 3,557,947, Cl. 206-65.

Greenwood, Allan N., to General Electric Company. Current limiting protective means. 3,558,982, Cl. 317-20.

Gregory, Gerrett W. Squeeze action wrench. 3,557,644, Cl. 81-57.39

Gregory, Walter A., to Du Pont de Nemours, E. I., and Company. 4-Methylcubaneamines. 3,558,704, Cl. 260-563.

Grewe, Ferdinand: *See—*
Zumach, Gerhard; Anders, Bertram; Grewe, Ferdinand; Kuhle, Engelbert; and Kaspers, Helmut,3,558,650.

Grey, David S., to Polaroid Corporation. Three element telephoto objective lens. 3,558,218, Cl. 350-226.

Grib, Boris F.; and Vollet, George L., to Philamon Laboratories, Inc. Electromagnetically driven tuning fork. 3,559,100, Cl. 331-116.

Griffiths, Leonard B., to Mallory, P. R., & Co., Inc. Chill cast particulate composites. 3,558,305, Cl. 75-150.

Grindon, John R., to Conductron Corporation. Modulator that develops and reinforce one sideband while developing and attenuating a second sideband. 3,559,106, Cl. 332-41.

Grinpress, Boris Lazarevich; Sakun, Ivan Akimovich; Dimentov, Jury Iosifovich; and Vainshtein, Moisei Fishelevich. Screw compressor. 3,557,687, Cl. 100-146.

Griot, Rudolf G., to Sandoz-Wander, Inc.2-[4-(Diphenyl-2-pyrimidinyl)phenoxy]lower aliphatic monocarbocyclic acids and esters. 3,558,626, Cl. 260-251.

Griot, Rudolf G., to Sandoz-Wander, Inc.2-[4-(4',5-diphenyl-2-imidazolyl)-phenoxy] lower aliphatic monocarboxylic acids. 3,558,645, Cl. 260-309.

Grishin, Mikhail Semenovich: *See—*
Shmakov, Vasily Pavlovich; Eremin, Vitaly Alexeevich; Kvasha, Semen Borisovich; Kaganovich, Natalia Grigorievna; Dobrenyakins, Tatiana Nikolaevna; Vanjushin, Viktor Nikolaevich; Sakharov, Petr Vasilievich; Voronov, Boris Pavlovich; Polezhaev, Vasily Dementievich; Smetankin, Pavel Semenovich; Sobolev, Evgeny Pavlovich; Yanchevsky, Kazimir Stanislavovich; Grishin, Mikhail Semenovich; Burtsev, Pavel Semenovich; and Chasovitin, Pavel Alexeevich,3,558,192.

Gritton, Eugene C.; and Pinkel, Benjamin, to United States of America, Atomic Energy Commission. Gaseous-fueled nuclear reactors for electrical power production. 3,558,935, Cl. 310-4.

Grocott, Geoffrey Joseph: *See—*
Pratt, Will; and Grocott, Geoffrey Joseph,3,557,740.

Groh, Howard V.; and Kelly, James E., to Craft Metal Corporation. Adjustable seats. 3,558,188, Cl. 297-346.

Grooss, Frank A.: *See—*
Peterson, Robert A.; and Grooss, Frank A.,3,558,190.

Gross, Albert, to Kulzer & Co., G.m.b.H. Process of stabilizing trialkyl boranes. 3,558,718, Cl. 260-606.5

Grossklaus, Ronald Paul; and Clingerman, John LeRoy, to Deere & Company. Drive structure for flight-type elevator. 3,557,473, Cl. 37-8.

Grossman Music Corporation, The: *See—*
Wolford, John W., 3,558,797.

Grote, Darwin E., to Chrysler Corporation. Automobile exhaust muffler. 3,557,904, Cl. 181-54.

Gruber, Wilhelm Franz, to Du Pont de Nemours, E. I., and Company. Chloroprene polymers containing alpha, omega- bis-cyclopentadienyl antiozonants. 3,558,555, Cl. 260-45.95

Gruber, Wolfgang; and Steger, Gunter, to Siemens Aktiengesellschaft. Method of producing an insulator of glass fiber reinforced cast resin. 3,557,447, Cl. 29-631.

Grundy, Reed H., to Westinghouse Air Brake Company. Velocity indication device with zero speed detection capability. 3,559,064, Cl. 324-173.

Grundy, Reed H., to Westinghouse Air Brake Company. Photoelectric velocity indicator with zero speed detection capability. 3,559,065, Cl. 324-175.

Grunzweig & Hartmann Aktiengesellschaft: *See—*
Krzyzanowski, Erich, 3,557,867.

Guardian Chemical Corporation: *See—*
Globus, Alfred R., 3,558,769.

Gueritte, Nicolas, to Societe Theramex. 1,3,5(10)-Estratriene diesters. 3,558,607, Cl. 260-239.5

Guerreiro, Antone M., to Northrop Corporation. Laminated stretch form die. 3,558,409, Cl. 161-44.

Gulf & Western Industrial Products Company: *See—*
Lind, Arthur L., 3,557,591.
Sapolsky, Roger, 3,557,686.

Gulf & Western Industries: *See—*
Calsyn, Lawrence E.; and Lewis, Robert W., 3,559,078.

Gunther Wagner Pelikan-Werke: *See—*
Harbort, Ludwig, 3,558,507.

Gusse, Melvin E.: *See—*
Gusse, Myron M.; and Gusse, Melvin E.,3,557,705.
Gusse, Myron M.; and Gusse, Melvin E.,3,557,808.

Gusse, Myron M.; and Gusse, Melvin E. Conveyor system for automotive vehicles. 3,557,705, Cl. 104-172.

Gusse, Myron M.; and Gusse, Melvin E. Car washing installation. 3,557,808, Cl. 134-45.

Gustav Schade Maschinenfabrik: *See—*
Schade, Fritz, 3,557,934.

Gutner, Kenneth H. Bed ladder arrangement. 3,557,906, Cl. 182-206.

Gutzmer, Alfred N.: *See—*
Morgan, Martin J.; Evans, William C.; Rappaport, Richard A.; and Gutzmer, Alfred N.,3,559,107.

Guzzi, Umberto: *See—*
De Ruggieri, Pietro; Gandolfi, Carmelo; and Guzzi, Umberto,3,558,673.

Haarer, Erich: *See—*
Adam, Karl; Haarer, Erich; Merkel, Karl; and Pilch, Kurt,3,558,703.

Haase, Lothar: *See—*
Pochert, Rudolf; Haase, Lothar; Roggenbuck, Willy; and Wiese, Peter,3,558,973.

Habasit Ltd.: *See—*
Habegger, Fernand, 3,558,390.

Habegger, Fernand, to Habasit Ltd. Process for manufacturing power transmission belts of synthetic material. 3,558,390, Cl. 156-137.

Haberecht, Rolf R., to Texas Instruments, Incorporated. Method of making dielectric bodies with selectively formed conductive or metallic portions and composites therewith. 3,557,440, Cl. 29-472.7

Habermeier, Juergen: *See—*
Porret, Daniel; and Habermeier, Juergen,3,558,558.

Habib, Emile E., to Deering Milliken Research Corporation. Shrinkproofing keratinic textile materials through reaction with polyisocyanates in conjunction with active hydrogen containing compounds. 3,558,264, Cl. 8-127.6

Hackmack, Klaus-Georg: *See—*
Koch, Hans; Wochnowski, Waldemar; Thiele, Willi; Hackmack, Klaus-Georg; Friebel, Heinz; and Pietrucci, Andre,3,557,799.

Hadden, George H., to Baldwin, D. H., Company. Bass register keying system. 3,558,794, Cl. 84-1.01

Hafer, Paul M., to Arrow-Hart, Inc., mesne. Busbar coupler system. 3,559,148, Cl. 339-22.

Hagemeyer, Hugh J., Jr.: *See—*
Robinson, Alfred G.; Blood, Alden E.; and Hagemeyer, Hugh J., Jr.,3,558,664.

Hagie Manufacturing Company: *See—*
Johnson, Cyril Rodney, 3,558,148.

Haisma, Jan: *See—*
van den Born, Jacobus Abraham; Haisma, Jan; and Kroon, Ferdinand Jehan Maria,3,557,566.

Hakanson, Nils L., to Plastic Coating Corporation, The. Electrophotographic developing apparatus. 3,557,752, Cl. 118-637.

Halasa, Adel Farhan: *See—*
Bethea, Tristram Walker; and Halasa, Adel Farhan,3,558,589.

Halcon International, Inc.: *See—*
Russell, Joseph L., 3,558,687.

Haley Corporation: *See—*
Wolf, Lee A., 3,557,399.

Hall, Garth O.: *See—*
Radke, Arthur O.; Zach, Donald J.; and Hall, Garth O.,3,558,094.

Hall, James R.; and Korda, Peter B., to RCA Corporation. Agitation sensitive alarm circuit. 3,559,203, Cl. 340-261.

Hall, Mitchell A., to Monarch Tool & Manufacturing Company. Coin controlled cycle starter. 3,557,926, Cl. 194-1.

Hall, William Cornelius; and Peterson, John Merriam. Cement matrix radiation shielding compositions containing calcium compounds. 3,558,526, Cl. 252-478.

Halliburton Company: *See—*
McLaughlin, Homer C., Jr.; and Koch, Ronney R., 3,557,562.

Halpert, Harold L. Process for preserving biological specimens. 3,558,766, Cl. 264-275.

Hamada, Kimiko. Apparatus for facilitating to delineate the desired patterns of eyebrows. 3,557,805, Cl. 132-88.5

Hamaoka, Tsutomu; Sano, Kazuya; Yoshida, Makoto; Oishi, Yasushi; and Hirose, Takeshi, to Fuji Shashin Film Kabushiki Kaisha. Color photographic silver halide emulsion containing magenta couplers. 3,558,319, Cl. 96-100.

Hamilton, Stephen B., Jr., to General Electric Company. Alkylation of aromatic primary amino group. 3,558,706, Cl. 260-577.

Hamilton, Vern E.; and Roseland, Luther M., to McDonnell Douglas Corporation, mesne. Plastic laminate and bonding material therefor. 3,558,408, Cl. 161-3.

Hamilton, Vern E.; and Roseland, Luther M., to McDonnell Douglas Corporation, mesne. Glass laminate and bonding material therefor. 3,558,422, Cl. 161-185.

Hammann, Ingeborg: *See—*
Schmelzer, Hans-Georg; Degener, Eberhart; Unterstenhofer, Gunter; Tarnow, Horst; and Hammann, Ingeborg,3,558,705.

Hampson, David: *See—*
Cuthbert, Walter; and Hampson, David,3,557,493.

Hanley, Donald E.; and Hogensen, Charles L. Resilient frame for racing go-cart. 3,557,894, Cl. 180-64.

Hanneman, Rodney E.; Jorgensen, Paul J.; and Charles, Richard J., to General Electric Company. High-intensity vapor arc-lamp. 3,558,963, Cl. 313-184.

Hanscom, Genevieve I.,: *See—*
Daugherty, Ralph K.; and Baumann, Paul H., 3,557,523.

Hanscom, Genevieve I., (formerly Magnuson, Genevieve I.): *See—*
Daugherty, Ralph K.; and Baumann, Paul H., 3,557,523.

Hansen, Erik. Hose nozzle. 3,558,061, Cl. 239-394.

Hansgen, Klaus, to Lohmann & Stollerfoht A.G. Highly elastic shaft coupling particularly for use in connection with elastically supported driving engines. 3,557,573, Cl. 64-13.

Hanson, Lee B. Trailer frame stabilizing support. 3,558,092, Cl. 248-352.

Hanssen, Uwe; and Hildebrandt, Achim, to Blohm & Voss AG. Closure. 3,557,738, Cl. 114-202.

Harada, Shigehisa; and Kojima, Terumi, to Nippon Columbia Kabushikikaisha (Nippon Columbia Co., Ltd.). Magnetic recording medium. 3,558,353, Cl. 117-235.

Harbort, Ludwig, to Gunther Wagner Pelikan-Werke. Method of forming miniature capsules. 3,558,507, Cl. 252-316.

Hardesty, Robert D. High flotation materials delivery tractor. 3,558,015, Cl. 222-136.

Hardtmann, Geotz E.; and Ott, Hans, to Sandoz-Wander, Inc. 1-(2-Aminophenyl) isoindolin-3-ones. 3,558,648, Cl. 260-325.

Hardy, Samuel G., to General Electric Company. Underground electric power cable fuse housing having a semi-conductive corona shield. 3,559,141, Cl. 337-224.

Harmon, Jesse, to Du Pont de Nemours, E. I., and Company. Methods and compositions for controlling plant- pathogenic fungi utilizing 1,4-dihydro-9,10- anthraquinones. 3,558,787, Cl. 424-331.

Harmony Enterprises, Inc.: *See—*
Peterson, Wilbur E., 3,558,181.

Harms, Hermann Wilhelm August; and Leisterer, Reinhard Wilhelm, to Fried. Krupp Gesellschaft mit beschrankter Haftung. Apparatus for varying the angular direction of a concentrated acoustic beam. 3,559,159, Cl. 340-5.

Harnischfeger Corporation: *See—*
Russler, Leveret C., 3,557,913.

Harrah, Robert S. Indicator device. 3,557,745, Cl. 116-70.

Harrington, Joseph Kenneth; Kvam, Donald C.; Mendel, Arthur; and Robertson, Jerry E., to Minnesota Mining and Manufacturing Company. Perfluoroalkanesulfonamides N-substituted by a plurality of carbocycles. 3,558,698, Cl. 260-556.

Harris, Charles W.; Sievers, Robert E.; and Eisentraut, Kent J., to United States of America, Air Force. Method of separating the rare earths by fractional co-distillation of their volatile chelate derivatives. 3,558,440, Cl. 203-38.

Harris, Harold Jay, to Gifford-Hill-Western, a division of Gifford-Hill & Co., Inc. Sprinkling process and apparatus therefor. 3,558,257, Cl. 239-1.

Harris, Leonard F., to United States Steel Corporation. Apparatus for machining coke-oven door jambs. 3,557,659, Cl. 90-12.

Harris, Michael R., to Baldwin, D. H., Company. Touch percussion for electronic organ with back-to-back diode gates. 3,558,796, Cl. 84-1.26

Harris-Intertype Corporation: *See—*
Lee, William H., 3,557,692.

Hart, David; Eppig, Henry J.; and Weingarten, Garry, to United States of America, Army. Photoflash bomb. 3,557,698, Cl. 102-6.

Hartbauer, Ellsworth A.; and Shankel, Richard, to Crown Zellerbach Corporation. Bundle-forming apparatus. 3,557,688, Cl. 100-218.

Hartel, Erwin H.; and Hrusch, Louis C., to Cleveland Pneumatic Tool Company, The. Rotation damper and actuator. 3,557,834, Cl. 137-625.31

Hartley, David; Lunts, Lawrence H. C.; and Toon, Paul, to Allen & Hanburys Limited. Certain lower-alkyl amino methyl halo pyridine methanols and derivatives thereof. 3,558,642, Cl. 260-295.

Hartmann and Braun Aktiengesellschaft: *See—*
Weimann, Hans; and Ruse, Alois, 3,557,869.

Hartmann, Claus Wolfgang. Packaging device for packing objects in tubular casings. 3,557,526, Cl. 53-183.

Hartnagel, Hans Ludwig, to National Research Development Corporation. Electronic pulse duration modulation devices using travelling field domain phenomena. 3,559,069, Cl. 325-105.

Hartzell, Rowland S.; and Gerek, Gene, to PPG Industries, Inc. Coated concrete article. 3,558,421, Cl. 161-182.

Hastings, James T.: *See—*
Horvath, Steven J.; Burgoon, Willard O.; and Hastings, James T.,3,558,400.

Hatley, Derek J., to General Dynamics Corporation. Rapid switching logic gates. 3,558,913, Cl. 307-206.

Hauber, Ferdinand R., to Brown & Root, Inc. Universal offshore pipeline riser clamp assembly. 3,557,564, Cl. 61-72.3

Hauff, Paul: *See—*
Gillmann, Hanno; and Hauff, Paul,3,559,169.

Hauser, Raul C. Ileostomy and like appliances. 3,557,790, Cl. 128-283.

Hauser, Seymour, to Kriesler Manufacturing Corporation, mesne. Length adjusting mechanism for watchbands. 3,557,412, Cl. 24-73.

Havell, Richard F., to National Clay Pipe Institute. Pipe coupling. 3,558,164, Cl. 285-236.

Hawkins, Edwin F.: *See—*
Batchelor, Gordon S.; and Hawkins, Edwin F.,3,558,789.

Hayashi, Shigeo: *See—*
Ogawa, Masao; and Hayashi, Shigeo,3,558,745.

Hayes, Robert A.; and Tazewll, Joseph H., to Firestone Tire & Rubber Company, The. Polyamide stabilization with copper, mercaptobenzothiazole and halide compounds. 3,558,553, Cl. 260-45.75

Hayes, Robert R.; and Laidman, Barry L., to Dow Chemical Company. Joining of laminates. 3,557,983, Cl. 29-470.1

Haynes, George R.; and Phillips, Donald D., to Shell Oil Company. N-oxazolidine- and N-tetrahydro-1,3-oxazine- carboxanilides. 3,558,615, Cl. 260-244.

Hazzard, John: *See—*
Brokke, Mervin E.; and Lukes, George E.,3,558,301.

HB Engineering Corporation: *See—*
Baker, Hugh M., Jr.; and Cressey, John R., 3,559,176.

Healy, Dennis M.: *See—*
Javorik, Laszlo; Stowell, David Y.; and Healy, Dennis M.,3,558,965.

Hearld, Albert B.: *See—*
Metzger, Courtney A.; and Hearld, Albert B.,3,558,437.

Heathcote, Bernard Vincent: *See—*
Adams, Stewart Sanders; Armitage, Bernard John; Bristow, Norman William; and Heathcote, Bernard Vincent,3,558,779.

Heathwaite, Hewart H.; Mead, Robert H.; and Paul, William T., to Borg-Warner Corporation, mesne. Method of making a composite drive wheel. 3,557,424, Cl. 29-159.2

Hebel, Carl G.; and Bardsley, Robert F. Dispensing apparatus for particulate matter. 3,557,847, Cl. 141-54.

Hecker, Arthur C.; and Brilliant, Stuart Donald, to Argus Chemical Corporation. Imparting antifogging properties to polyvinyl chloride resins and compositions therefor. 3,558,537, Cl. 260-23.

Heckmaier, Joseph: *See—*
Balwe, Thomas; Bauer, Johann; and Heckmaier, Joseph,3,558,566.

Heer, Heinrich H.: *See—*
Spoerl, Alexander; and Heer, Heinrich H.,3,557,679.

Heikinheimo, Olli, to Plan-Sell Oy. Apparatus for handling sawn timber. 3,557,952, Cl. 209-125.

Heimann, Alfred, to Kochs Adlernahmaschinen Werke AG. Throat plate for double chain stitch sewing machines. 3,557,727, Cl. 112-121.12

Heinemann Electric Company: *See—*
Ellis, Arthur T., Jr., 3,559,125.

Heinen, Hans, to Agfa-Gevaert Aktiengesellschaft. Threading device for motion picture film or the like. 3,558,077, Cl. 242-192.

Heinrich Kuper, Firma: *See—*
Ortel, Gerhard, 3,558,398.

Heins, Arnold: *See—*
Eckert, Hans-Werner; and Heins, Arnold,3,558,711.

Heiser, Joachim; Helfensdorfer, Hans; Slowak, Diether; and Sopha, Klaus, to Bosch, Robert, G.m.b.H. Composite valve member. 3,557,835, Cl. 137-625.48

Held, Franz, to Maschinenfabrik Goebel GmbH. Tension control for unwinding a web supply reel. 3,558,074, Cl. 242-75.53

Helfenberger, Hans, to Sandoz Ltd. Amide phosphoric and thiophosphoric acid amide esters. 3,558,623, Cl. 260-250.

Helfensdorfer, Hans: *See—*
Heiser, Joachim; Helfensdorfer, Hans; Slowak, Diether; and Sopha, Klaus,3,557,835.

Hell, Rudolf, Dr.-Ing., Kommanditgesellschaft: *See—*
Koll, Roman; Penza, Hans; and Sendtko, Ulrich, 3,557,675.

Hempel, Herbert W.; and Hill, Forrest G., to Marsh Stencil Machine Company. Control mechanism for electrical tape dispensing machine. 3,558,030, Cl. 226-135.

Hemphill, Kent W., to Xerox Corporation. Document centering apparatus. 3,558,223, Cl. 355-23.

Hendrickson, Jane M. Hospital gown. 3,557,385, Cl. 2-114.

Hendriks, Wilhelm F. M.; and Van Deursen, Petrus H., to Van Doorne's Automobielfabrieken, N. V. Means controlling the driving ratio of a motor vehicle. 3,557,640, Cl. 74-846.

Henkel & Cie G.m.b.H.: *See—*
Eckert, Hans-Werner; and Heins, Arnold, 3,558,711.

Henriksson, Sune Torsten; Malmgren, Ake; Muotka, Ragnar Ludvig; and Widegren, Lars Harald. Transport vehicles for load-carrying purposes. 3,557,982, Cl. 214-300.

Herbert, Colin Wray, to Glacier Metal Company Limited, The. Aft structures of marine vessels. 3,557,744, Cl. 115-34.

Hercules Incorporated: *See—*
Breslow, David S., 3,558,669.

Hermes, Julius. Method for the rapid and continuous dyeing of mixtures of textile materials. 3,558,260, Cl. 8-21.

Hermetic Switch, Inc.: *See—*
Posey, William T., 3,559,124.

Herrmann, Erwin: *See—*
von Brachel, Hanswilli; and Herrmann, Erwin,3,558,684.

Herschler, Robert J., to Crown Zellerbach Corporation. Stimulation of the growth of microorganisms. 3,558,434, Cl. 195-81.

Hershler, Abe, to Phys-Chemical Research Corporation. Humidity measuring method and apparatus. 3,557,619, Cl. 73-336.5

Herter's, Inc.:*See—*
Hofmeister, Russell N., 3,557,769.

Herubel, Jean Frederic, to Schlumberger, N., & Cie. Rubbing device for use on textile machines. 3,557,409, Cl. 19-153.

Herwig, William C.: *See—*
Westermann, Donald H.; Herwig, William C.; and Durant, William J.,3,558,326.

Heslop, Victor Lorraine; and Saunders, Leonard, to Aerpat A.G. Riverting apparatus. 3,557,597, Cl. 72-391.

Hess, Alfred G., to Hess Research and Development Corporation. Process for preserving melons. 3,558,329, Cl. 99-154.

Hess, Howard V.; and Cole, Edward L., to Texaco Inc. Treatment of waste liquors from pulp and paper mills. 3,558,426, Cl. 162-30.

Hess Research and Development Corporation: *See—*
Hess, Alfred G., 3,558,329.

Hess, Walter, to Schloemann Aktiengesellschaft. Gas cutting device for severing horizontally delivered material. 3,558,117, Cl. 266-23.

Hetzel, Marvin E.: *See—*
Cervenka, Joseph J.; and Hetzel, Marvin E.,3,558,289.

Heuner, Robert C.; and Litus, Juluus, Jr., to RCA Corporation. Integrated circuit having bonding pads over unused active area components. 3,558,992, Cl. 317-101.

Heyer, Heinrich Wilhelm, to Coles Krane G.m.b.H. Outrigger mast for crane. 3,557,969, Cl. 212-144.

Hibner, John A.; and Behr, Michael I., to Burroughs Corporation. Pulse discrimination circuitry. 3,559,178, Cl. 340-172.

Hick, Harald; and Rumpold, Karl, to Osterreichische Studiengesellschaft fur Atomenergie Ges m.b.H. Apparatus for measuring of quantum radiation. 3,558,887, Cl. 250-83.3

Hilbert, Francis H.: *See—*
Cecchin, Gildo; and Hilbert, Francis H.,3,558,810.

Hildebrandt, Achim: *See—*
Hanssen, Uwe; and Hildebrandt, Achim,3,557,738.

Hildebrandt, Friedrich: *See—*
Perthen, Johannes; Hildebrandt, Friedrich; and Gerighausen, Werner,3,557,613.

Hilfing, Karl E.; and Pettersson, Nils Artur, to Aktiebolaget Hagglund & Soner. Railway car. 3,557,709, Cl. 105-199.

Hill, David L.; and Wu, Lien S., to Semicon Associates, Inc. Directly heated dispenser cathode. 3,558,966, Cl. 313-346.

Hill, Forrest G.: *See—*
Hempel, Herbert W.; and Hill, Forrest G.,3,558,030.

Hill, Holbert R.; and Siverson, Garfield C. Portable cargo system. 3,557,569, Cl. 62-237.

Hill, John S.: *See—*
Blake, Morton; Hill, John S.; Crane, Warren R.; and Bloom, Stefan A.,3,558,025.

Hill, Roger Gettys; and Beutler, Arthur J., to Gettys Manufacturing Company. Dynamoclectric machine with improved cooling means. 3,558,942, Cl. 310-54.

Hilliard, Robert C., to General Atronics Corporation. Security system. 3,559,201, Cl. 340-258.

Hillier, Malcolm Edwin, to Marbaix, Gaston E., Limited. Nail and like magazines. 3,558,031, Cl. 227-7.

Hilti Aktiengesellschaft: *See—*
Seghezzi, Hans-Dieter; and Rangger, Herbert, 3,558,007.

Hinkamp, James B.; and Hnizda, Vincent F., to Ethyl Corporation. Preparation of alkylphosphonothioic dihalides. 3,558,697, Cl. 260-543.

Hirohashi, Toshiyuki: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadishi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,558,604.
Yamamoto, Hisio; Inaba, Shigeho; Okimoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,558,603.

Hirose, Takeshi: *See—*
Hamaoka, Tsutomu; Sano, Kazuya; Yoshida, Makoto; Oishi, Yasushi; and Hirose, Takeshi,3,558,319.

Hirs, Gene; and Wykoff, Richard H., to Hydromation Engineering Company. Method of and apparatus for filtering. 3,557,955, Cl. 210-67.

Hirsch, Winfred, to Weck, Edward, & Company, Inc. Suture provided with wound healing coating. 3,557,795, Cl. 128-335.5

Hirtenberger Patronen-, Zundhutchen-und Metall- Warenfabrik Aktiengesellschaft: *See—*
Vercauteren, Marcel, 3,558,287.

Hirtmann, Rudolf, to Bell & Howell Company. Light sensor with optical light piping. 3,558,895, Cl. 250-220.

Hitachi Electronics Company, Ltd.: *See—*
Yokozawa, Norio; Nara, Akinao; and Abe, Ryoichi, 3,558,921.

Hitachi, Ltd.: *See—*
Imaizumi, Fujimaro; Ozawa, Tsutomu; and Tsuboi, Takasi, 3,559,020.
Nishiwaki, Koji; and Ueno, Yukichi, 3,559,039.
Yokozawa, Norio; Nara, Akinao; and Abe, Ryoichi, 3,558,921.

Hitachi Zosen Kabushiki Kaisha: *See—*
Nakajima, Yasuyoshi, 3,557,560.

Hitchings, Ronald. Race computer. 3,558,044, Cl. 235-88.

Hnizda, Vincent F.: *See—*
Hinkamp, James B.; and Hnizda, Vincent F.,3,558,697.

Hochreuter, Richard; and Hofer, Kurt, to Sandoz Ltd. Curable polyepoxides from phosphoric acids. 3,558,668, Cl. 260-348.6

Hockele, Gunter, to Chemische Werke Huels A.G. Process for the preparation of amines or diamines by the catalytic hydrogenation of nitriles and dinitriles. 3,558,709, Cl. 260-583.

Hoddinott, William M., to Textron Inc. Power drive for rotatable shaft. 3,557,638, Cl. 74-625.

Hodes, William. Method of making animated manipulative toy. 3,557,436, Cl. 29-428.

Hodges, Marvin P. Multi-purpose ranging device including a movable indexing member. 3,558,228, Cl. 356-17.

Hofer, Kurt: *See—*
Hochreuter, Richard; and Hofer, Kurt,3,558,668.

Hoffman, Marvin G. Powered rock picker. 3,557,877, Cl. 171-63.

Hoffmann, Herwig; Fuerst, Ernst; and Toussaint, Herbert, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of N-formylmorpholine or N- acetylmorpholine. 3,558,619, Cl. 260-247.7

Hoffmann-La Roche Inc.: *See—*
Bruderer, Hans; and Ruegg, Rudolf, 3,558,662.
Cannalonga, Marco Alfred; and Cohen, Norman, 3,558,323.
Metlesics, Werner; and Sternbach, Leo Henryk, 3,558,649.
Surmatis, Joseph Donald; and Walser, Armin, 3,558,712.

Hofmann, Gunter A. G.; and Knechtli, Ronald C., to Hughes Aircraft Company. Switching device. 3,558,960, Cl. 313-161.

Hofmeister, Russell N., to Herter's, Inc. Bow hand rest. 3,557,769, Cl. 124-24.

Hogensen, Charles L.: *See—*
Hanley, Donald E.; and Hogensen, Charles L.,3,557,894.

Hohmann, Walter; Vollman, Heinrich; Bien, Hans-Samuel; and Gehrke, Gunter, to Farbenfabriken Bayer Aktiengesellschaft. Tetra-α-substituted anthraquinones. 3,558,670, Cl. 260-380.

Hoitsma, Harry H. Ball throwing accuracy training apparatus. 3,558,134, Cl. 273-26.

Holden, Calvin B., to PPG Industries, Inc. Process of preparing pigmentary metal oxide with electric arc. 3,558,274, Cl. 23-202.

Holk, Albert J., Jr.: *See—*
Boik, Arnold R.; and Holk, Albert J., Jr.,3,557,441.

Hollis, Cecil George; and Lutey, Richard William, to Buckman Laboratories, Inc. Method for the control of scale using N,N- dimethylamides of 18 carbon unsaturated carboxylic acids. 3,558,500, Cl. 252-180.

Holub, Fred F.; and Evans, Milton L., to General Electric Company. Imido-substituted organopolysiloxane compositions. 3,558,741, Cl. 260-827.

Holz, Frederick C.: *See—*
Blink, Robert O.; Lutzke, William C.; Holz, Frederick C.; and Schier, Robert W.,3,557,720.

Homstead, Robert H., to Peterson, Carl G., Co. In-motion vernier feed control. 3,557,639, Cl. 74-841.

Honda Giken Kogyo Kabushiki Kaisha: *See—*
Akima, Akira; Yoshida, Kazuyoshi; and Ujihara, Shigeo, 3,557,918.

Honeywell Inc.: *See—*
Baudino, Louis J., Jr.; and Bright, James A., 3,559,081.
Iwaki, Masahiko; and Kogawa, Hazime, 3,559,150.
Janson, Marius A., 3,558,909.
Lazer, Jeffrey M., 3,557,815.
Leger, Alton, Jr.; and Whitehead, Robert C., Jr., 3,557,625.
Mizrahi, Richard I., 3,557,445.
Raudsep, Ilmar G., 3,559,161.
Raudsep, Ilmar G.; and Clapham, Robert G., 3,559,171.

Hooker Chemical Corporation: *See—*
Graf, Richard H., 3,557,504.
Lawrence, Willis Thompson; and Webb, George Warren, 3,558,856.
Rice, Richard E., 3,557,984.

Hoover, Robert L., to United States of America, Army, mesne. Means for controlling the headspacing of grenade cartridges in a single-shot launcher. 3,557,482, Cl. 42-12.

Hoover, Stasel Keith; Knowles, James Thomas Crawford; and Wong Yan Man, Wong Kwong Fa, to Dick, A. B., Company. Planographic printing plate with nucleating agent and zirconium salt. 3,557,696, Cl. 101-459.

Horan, John J. Resonant energy-conversion system. 3,558,936, Cl. 310-8.1

Horizons Incorporated: *See—*
Petro, Victor P.; and Fotland, Richard A., 3,558,317.

Horn, John J., to Tektronix, Inc. Circuit responsive to input signals of a selectable duration. 3,558,916, Cl. 307-234.

Horn, John J., to Tektronix, Inc. Circuit for providing a plurality of selectable sweep waveforms. 3,559,082, Cl. 328-181.

Horton, James A.: *See—*
Emerick, Robert M.; Horton, James A.; and Poticny, Joseph,3,557,470.

Horvath, Erno: *See—*
Lammel, Kalman; and Horvath, Erno,3,557,539.

Horvath, Steven J.; Burgoon, Willard O.; and Hastings, James T. Apparatus and process for making rolls of bags. 3,558,400, Cl. 156-380.

Hough, Harold L.; and Dayton, David R., to Sylvania Electric Products, Inc. Automotive driving light. 3,558,872, Cl. 240-41.3

Howarth, Andrew W., to Greenside Machine Company Limited. Tunnelling or mining machine canopy with ventilation ducts. 3,558,193, Cl. 299-33.

Howe, Ralph S., Jr., to Textron Inc. Method for making a self-locking ring. 3,557,421, Cl. 29-148.4

Howe Richardson Scale Company: *See—*
Soojian, Vahn J.; and Jackson, Richard H., 3,558,017.

Howell, Nicholas W.: *See—*
Sundquist, Donald J.; and Howell, Nicholas W.,3,558,532.

Howell, Robert D.: *See—*
Aldridge, Clifton, Jr.; and Howell, Robert D.,3,558,756.

Howick, Stanley O.; and Schipke, Robert N., to General Motors Corporation Poma, Inc. Air washer Method for cleaning ball bearings. 3,557,807, Cl. 55-237.

Hrach, Josef; Zeschmar, Winfried; Morawetz, Gottfried; and Mach, Dominik, to Sandoz Ltd., mesne. Copolyesters, their production and uses. 3,558,557, Cl. 260-47.

Hruby, John O., Jr., to Rain Jet Corporation. Aerating liquid discharge nozzles. 3,558,053, Cl. 239-17.

Hrusch, Louis C.: *See—*
Hartel, Erwin H.; and Hrusch, Louis C.,3,557,834.

Hu, Shin-en: *See—*
Geyer, Jerome; and Hu, Shin-en,3,558,478.

Hubach, Louis E.; and Gardner, Edgar E., to Tyler, W. S., Inc. Tensioned screen with seal. 3,557,953, Cl. 209-404.

Hubbard, Charles L., to Olin Mathieson Chemical Corporation. Electro-explosive primer ignition assembly. 3,557,699, Cl. 102-28.

Huber, Hans F.: *See—*
Porter, Erland C., Jr.; and Huber, Hans F.,3,558,418.

Huck, Rodney M.; and Le Blanc, John R., to Monsanto Company. Composition consisting of novolac resins and aromatic polycarboxylic compounds. 3,558,560, Cl. 260-59.

Hudig, Heinrich, to Hudig KG, Firma. Water pockets, namely reservoirs for storing water received from underground water pumping equipment. 3,558,018, Cl. 222-385.

Hudig KG, Firma: *See—*
Hudig, Heinrich, 3,558,018.

Hudson, Kenneth C., to RCA Corporation. Optical compensating filter with selective radial absorption distribution. 3,558,208, Cl. 350-8.

Hueckstaedt, Harald; Saleck, Wilhelm; Mueller, Herbert; and Randolph, August, to Agfa-Gevaert Aktiengesellschaft. Process for increasing the sensitivity of photographic silver halide emulsions. 3,558,314, Cl. 96-66.3

Huehn, Alfred H.: *See—*
Schlagel, William A., Jr.; and Huehn, Alfred H.,3,557,924.

Hug, Richard C., to Clayton Corporation. Unitary nozzle, actuator and guard for pressurized dispensers. 3,558,019, Cl. 222-402.22

Huggett, George R., to Varian Associates. Gradiometer readout circuit employing phase locked multiplier circuit loops. 3,559,057, Cl. 324-79.

Hughes Aircraft Company: *See—*
Hofmann, Gunter A. G.; and Knechtli, Ronald C., 3,558,960.
Kurisu, Albert G., 3,559,142.

Hughes, Elbert L. Blood specimen collection assembly. 3,557,778, Cl. 128-2.

Hughes, Francis A.: *See—*
Galvin, Thomas J.; and Hughes, Francis A.,3,558,499.

Hughes, James L.: *See—*
Moore, Glenn E.; Hughes, James L.; and Lamping, Frank G.,3,558,163.

Hughes, Nathaniel, to Energy Sciences, Inc. Streaming nozzle. 3,558,056, Cl. 239-102.

Hughes, William B.; and Zuech, Ernest A., to Phillips Petroleum Company. Complexes of Fe, Ru, Os, Rh or Ir with organoaluminums as olefin reaction catalysts. 3,558,517, Cl. 252-429.

Hulle, Robert M., to Clary Corporation. Reversible electromagnetically controlled drive device. 3,558,945, Cl. 310-101.

Hulsey, Eldon E. Multiple orifice rotary control valve. 3,558,100, Cl. 251-207.

Hundt & Weber, GmbH: *See—*
Koennecke, Wolfgang; and Schleifenbaum, Gerhard, 3,559,119.

Hunt, Dan P.: *See—*
Collins, William O.; Hunt, Dan P.; and Wilder, LeRoy D.,3,558,861.

Hunter, Earl Kent: *See—*
McCrory, William W., Jr.; and Hunter, Earl Kent,3,558,833.

Hutchinson, Seymour M., 35% to Spitz, Adrian N., and 30% Kunik, I. Jordan. Combination retractor and aspirator. 3,557,456, Cl. 32-33.

Hyde, James S., to Varian Associates. Bimodal cavity resonator and microwave spectrometers using same. 3,559,043, Cl. 324-0.5

Hydro-Comp., Inc.: *See—*
Bolduc, Joseph A., 3,558,245.

Hydromation Engineering Company: *See—*
Hirs, Gene; and Wykoff, Richard H., 3,557,955.

I-T-E Imperial Corporation: *See—*
Albright, Roy H., 3,558,798.
Brandt, Thomas F., Jr.; and Pokorny, Frank J., 3,558,991.
Jensen, Otto, 3,558,907.
Myers, Felix E., 3,559,120.
Zocholl, Stanley E., 3,558,981.

Ibata, Jyoji: *See—*
Kobayashi, Hidehiko; Sasaguri, Kiichiro; Fujimoto, Yoshihisa; and Ibata, Jyoji,3,558,722.

ICP, Inc.: *See—*
Murgas, Karl M.; Greenberg, Burton; and Clark, Otto A., 3,558,224.

Ideal Toy Corporation: *See—*
Nielsen, Edwin A., 3,557,488.

Ihara, Takashi: *See—*
Uchida, Hiromu; Sato, Hideshi; and Ihara, Takashi,3,558,460.

Iijima, Masakatsu: *See—*
Nakada, Seiji; and Iijima, Masakatsu,3,558,793.

Ikeda, Itsuo: *See—*
Tanno, Takayoshi; and Ikeda, Itsuo,3,558,342.

Ikeda, Minoru: *See—*
Sudo, Makoto; Yamamoto, Yasumasa; Kobayashi, Masao; Yamasaki, Kenichi; and Ikeda, Minoru,3,558,695.

Ikeda, Teppei: *See—*
Takenaka, Haruo; Ikeda, Teppei; and Furukawa, Katsuharu,3,558,315.

Ilavsky, Janet E.: *See—*
Kuhn, Stephen J.; and Ilavsky, Janet E.,3,558,612.
Kuhn, Stephen J.; and Ilavsky, Janet E.,3,558,613.

Illert, Karl, to Siegener Maschinenbau, G.m.b.H. Universal rolling mill. 3,557,595, Cl. 72-237.

Imaizumi, Fujimaro; Ozawa, Tsutomu; and Tsuboi, Takasi, to Hitachi, Ltd. Electric motor controller device for acceleration and deceleration. 3,559,020, Cl. 318-405.

Imao, Shoji: *See—*
Tabara, Yoshijiro; Teranishi, Nobuhide; Kikuchi, Shigeru; Ono, Kunito; and Imao, Shoji,3,558,761.

Immel, Guenther: *See—*
Sliwka, Wolfgang; and Immel, Guenther,3,558,746.

Immler, Albert E.: *See—*
Simon, Friedhelm K.; and Immler, Albert E.,3,557,732.

Imperial Chemical Industries Limited: *See—*
Evans, Ronald, 3,558,282.

Improved Machinery Inc.: *See—*
Rich, John P.; and Carlsmith, Lawrence A., 3,557,583.

Inaba, Shigeho: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadishi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,558,604.
Yamamoto, Hisio; Inaba, Shigeho; Okimoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,558,603.

Inda, Floyd, to Tenneco Inc., mesne. Method of bending pipe. 3,557,585, Cl. 72-7.

Industrial Services of America, Inc.: *See—*
Schroering, John B., 3,557,685.

Industrias Del Hogar, S.A.: *See—*
Roca, Domingo C., 3,558,252.

Ingersoll-Rand Company: *See—*
Allen, Edward L., 3,557,884.

Ingram, George R.: *See—*
Fritz, Robert R.; Ingram, George R.; and Barr, Lawrence D.,3,558,001.

Ingress Manufacturing Co., Inc.: *See—*
Waldon, Vernon L., 3,557,393.

Inland Steel Company: *See—*
Strickler, Jay H.; and Watson, Richard C., 3,558,051.

Inspection Engineering and Equipment, Inc.: *See—*
Kiewicz, Frank M.; and Schneider, Alfred, 3,557,462.

Institut Francais du Petrole des Carburants et Lubrifiants: *See—*
Phung, Nhu Hung; and Lefebvre, Gilles, 3,558,519.

Institut Yadernai Fiziki So An SSSR: *See—*
Kulikov, Boris Ivanovich; Lagunov, Viktor Mikhailovich; Nesterikhin, Yury Efremovich; and Fedorov, Vladimir Mikhailovich, 3,558,908.

Institute of Gas Technology: *See—*
Eakin, Bertram E.; and Cranmer, John L., Jr., 3,557,558.
Eakin, Bertram E.; McCann, Eugene P.; and Cranmer, John L., Jr., 3,558,000.

Instron Limited: *See—*
Poulson, Barrie Kenneth, 3,558,866.

Instrumentation and Control Systems, Inc.: *See—*
Washington, Harold, 3,557,949.

Intercole Automation, Inc.: *See—*
Matsuoka, James T., 3,558,106.

International Business Machine Corporation: *See—*
Schaaf, Frederick W., 3,557,929.

International Business Machines Corporation: *See—*
Beaudouin, Pierre L.; Glang, Reinhard; and Riseman, Jacob, 3,559,003.
Boss, David W.; Doo, Ven Y.; and Patterson, William N., 3,558,374.
Bowers, Ronald W., 3,559,054.
Buchanan, Relva C., 3,558,332.
Burns, Gerald; Smith, Archibald W.; and Smith, William V., 3,559,185.
Carlock, Frank R.; and Lamoureux, William R., 3,559,181.
Carter, William C.; Duke, Keith A.; and Schneider, Peter R., 3,559,167.
Carter, William C.; Duke, Keith A.; and Schneider, Peter R., 3,559,168.
Castrucci, Paul P.; De Witt, David; Dhaka, Vir A.; and Mutter, Walter E., 3,558,352.
Crouse, William G., 3,558,917.
Crouse, William G., 3,558,932.
Crouse, William G., 3,559,083.
French, Walter K., 3,558,864.
Lorenz, William M., 3,558,979.
Morgan, Mark; and Rottmann, Hans R., 3,558,899.
Patzer, William J., 3,559,189.
Ruoff, Carl E., 3,557,444.
Sagnis, James C., Jr.; Teig, Michael; and Ward, Robert L., 3,559,186.
Sussenguth, Edward H., 3,559,183.

International Computers and Tabulators Limited: *See—*
Bauldreay, John; Boulter, David Gordon; and Chiles, Frederick Thomas, 3,558,860.

International Computers Limited: *See—*
Gillies, Barrier Andrew; and Bolton, Adrian John, 3,559,012.

International Electronic Research Corporation: *See—*
Chadwick, Donald H.; and Apodaca, Ruben T., 3,558,441.

International Harvester Company: *See—*
Green, Roger E., 3,557,767.
Vandewalle, Roger, 3,557,538.

International Plastics, Inc.: *See—*
Edlin, Frank E., 3,558,753.

International Salt Company: *See—*
Jacoby, Charles H.; and Whelply, Frank V., 3,558,512.

International Standard Electric Corporation: *See—*
Flemming, John P. W., 3,558,885.
Forbes, Reginald William James, 3,558,952.
Gingell, Michael John, 3,559,042.
Keller, Hans, 3,559,000.
Marty, Pierre R.; and Dousset, Roger L., 3,558,828.
McNeilly, Joseph Hood; and Manship, Roger Alan, 3,559,079.
Schluter, Heinz, 3,558,826.
Sharpe, John Thomas Lawrence, 3,559,070.

International Telephone and Telegraph Corporation: *See—*
Matsushige, Robert H.; and Latus, Gerald Joseph, Jr., 3,559,109.

Ionics, Incorporated: *See—*
McRae, Wayne A.; McGriff, Stuart G.; and Leitz, Frank B., 3,558,279.

Irish, Perley M., Jr., to Monsanto Company. Stabilizer compositions employing fatty acid metal salts, epoxidized material, and organo phosphites. 3,558,539, Cl. 260-23.

Isaacs, Anthony Leonard, to Thorn Electronics Limited. Magnetically-switchable variable resistance network. 3,559,144, Cl. 338-173.

Isaacson, Robert B.; and Bierenbaum, Harvey S., to Celanese Corporation. Process for preparing microporous film. 3,558,764, Cl. 264-210.

Ishida, Shinichi: *See—*
Kobayashi, Hidehiko; Komoto, Hiroshi; and Ishida, Shinichi,3,558,568.

Ishijima, Yasumori, to Iwatsu Electric Company Limited. Transistor amplifier for high speed sweep. 3,559,085, Cl. 330-13.

Ishizumi, Kikuo: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadishi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,558,604.
Yamamoto, Hisio; Inaba, Shigeho; Okimoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,558,603.

Isobe, Masahide, to Tokyo Sokuhan Kabushiki Kaisha. Vertical feeder for magazine in magazine feed. 3,557,976, Cl. 214-16.4

Istituto de Angeli S.p.A.: *See—*
Pala, Gianfranco, 3,558,643.

Itek Corporation: *See—*
Fletcher, Gerald Matthew, 3,558,308.

Itoh, Toshio; Miyamoto, Toshio; and Wada, Yuichi, to Mitsubishi Denki Kabushiki Kaisha. Current limiting device. 3,559,138, Cl. 337-21.

Ivanov, Vladimir Ivanovich: *See—*
Kuznetsova, Alexandra Grigorievna; Golubtsov, Sergei Alexandrovich; and Ivanov, Vladimir Ivanovich,3,558,681.

Iwaki, Masahiko; and Kogawa, Hazime, to Honeywell Inc. Flashcube mounting means. 3,559,150, Cl. 339-45.

Iwakishi, Akira: *See—*
Yanagishita, Kazuo; and Iwakishi, Akira,3,558,890.

Iwatsu Electric Company Limited: *See—*
Ishijima, Yasumori, 3,559,085.

Jackson, Dale E.; and Perkins, Carl C., Jr., to Butler Manufacturing Company. Liquid distribution apparatus. 3,557,820, Cl. 137-244.

Jackson, Geoffrey Norman, to Edwards High Vacuum International Limited. Relating to radio frequency sputtering. 3,558,467, Cl. 204-298.

Jackson, George W., to General Motors Corporation. Combination valve and electric switch assembly for automatic vehicle leveling system. 3,558,154, Cl. 280-124.

Jackson, George W., to General Motors Corporation. Automatic vehicle leveling system including electrically operated pump down compressor. 3,558,156, Cl. 280-124.

Jackson, George W.; and Whelan, James E., to General Motors Corporation. Semi-automatic, open loop leveling system. 3,558,155, Cl. 280-124.

Jackson, Richard H.: *See—*
Soojian, Vahn J.; and Jackson, Richard H.,3,558,017.

Jackson, Robert E., to Challenge-Cook Bros., Incorporated. Continuous concrete mixer. 3,558,108, Cl. 259-177.

Jacksonville Blow Pipe Company: *See—*
Montgomery, William T., S., 3,557,726.

Jacobson, Robert L.; and Vanselow, Robert D., to Chevron Research Company. Low pressure regenerative reforming process for high paraffin feeds. 3,558,479, Cl. 208-139.

Jacobus, Charles J. Stand-by power system. 3,558,901, Cl. 290-30.

Jacoby, Charles H.; and Whelply, Frank V., to International Salt Company. Additive for inhibiting caking and freezing of sodium chloride and for inhibiting corrosion in the presence of sodium chloride brine. 3,558,512, Cl. 252-383.

Jaffe, Joseph, to Chevron Research Company. Hydrotreating catalyst and process. 3,558,475, Cl. 208-111.

Jahn, Dieter: *See—*
Renzing, Otto; and Jahn, Dieter,3,558,194.

Jaleel, Jalal S.: *See—*
Berger, Abe; and Jaleel, Jalal S.,3,558,556.

James, Peter: *See—*
Barron, Edward R.; Carlucci, Michael P.; James, Peter; Martone, Ralph; and Walsh, Justin E.,3,557,384.

Jamison, Kenneth B., to Northrop Corporation. Metal edge finisher. 3,557,658, Cl. 90-12.

Jamison, Saunders E.; and Storchheim, Samuel, to Celanese Corporation Alloys Research & Manufacturing Corporation. Cigarette smoke filter material Space deodorizer and the like. 3,558,055, Cl. 239-54.

Jamison, Saunders E.: *See—*
Quynn, Richard G.; Jamison, Saunders E.; and Sobering, Simon E.,3,558,763.

Janome Sewing Machine Co., Ltd.: *See—*
Kato, Kenzi, 3,559,019.

Janson, Marius A., to Honeywell Inc. Controller selectively providing automatic or manual control. 3,558,909, Cl. 307-116.

Janssen, Peter Johannes Hubertus; Smeulers, Wouter; and Mathijssen, Wilhelmus Martinus, to U.S. Philips Corporation, mesne. AGC circuit for a colour television receiver. 3,558,804, Cl. 178-5.4

Janssen, Peter Johannes Hubertus: *See—*
van den Avoort, Pieter Marinus; and Janssen, Peter Johannes Hubertus,3,558,817.

Jaross, Robert A., to United States of America, Atomic Energy Commission. Liquid metal purifier. 3,558,122, Cl. 266-37.

Jarvis, Samuel M.; and Striegler, Julius P., to Acme Machine Works, Inc. Flow indicator. 3,559,197, Cl. 340-239.

Javorik, Laszlo; Stowell, David Y.; and Healy, Dennis M., to National Video Corporation. Cathode for television tube and method of making. 3,558,965, Cl. 313-270.

Jefferson, Robert T.: *See—*
Salyer, Ival O.; and Jefferson, Robert T.,3,558,531.

Jenkins, Albert William. Castors. 3,557,401, Cl. 16-26.

Jenkins, Philip W., to Eastman Kodak Company. Synthesis of tetranuclear dyes. 3,558,614, Cl. 260-240.1

Jenkner, Herbert; and Konigstein, Otto, to Chemische Fabrik Kalk G.m.b.H. Production of hexabromocyclododecane. 3,558,727, Cl. 260-648.

Jenkyn-Thomas, William Dixon, to Peterson Candy International Limited. Pump for desalination plant. 3,558,242, Cl. 417-374.

Jenness, Raymond C., to Allis-Chalmers Manufacturing Company. Grinding mill or the like having reinforced shell and method of making same. 3,558,067, Cl. 241-179.

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Jensen, Ronald F.; and Marshall, William E., to Armco Steel Corporation. Apparatus for the gaseous reduction of pelletized and lump iron ores. 3,558,118, Cl. 266-29.

Jessup, Donald A., to United States of America, Navy, mesne. Pinkpass filter means for continuously adjusting the spectral content of a heat radiating object. 3,558,221, Cl. 350-315.

Jewett, William R.; and Krzyzkowski, Charles M., to National Lead Company. Fluid pressure measuring means. 3,557,620, Cl. 73-388.

Jezl, James L.: *See—*
Khelghatian, Habet M.; Jezl, James L.; and Fitzpatrick, James E.,3,558,443.

Jiruse, Jaroslav, to Adamovske strojirny, narodni podnik. Driving means for the control of feeding devices of sheet material. 3,558,126, Cl. 271-26.

Joachim, Tibor; and Beckwith, Merton M., to Conversion Chemical Corporation. Method and composition for electroplating cadmium. 3,558,447, Cl. 204-50.

Joel, Henry G.: *See—*
Kaminstein, Bernard; and Joel, Henry G.,3,557,680.

Johansson, Carl E., to Youngstown Steel Door Company, The. Railroad car end corner construction. 3,557,715, Cl. 105-409.

Johansson, Ture, to Eriksbergs Mek. Verkstads Aktiebolag. Cone head. 3,558,147, Cl. 279-103.

Johnson & Johnson: *See—*
Doehnert, Donald F., 3,558,574.

Johnson, Cyril Rodney, to Hagie Manufacturing Company. Front wheel suspension system for a vehicle high clearence frame. 3,558,148, Cl. 280-6.11

Johnson, Herbert E., to Union Carbide Corporation. Tetraoxatricyclononanes, tetraoxatricyclodecanes and process for preparation. 3,558,657, Cl. 260-340.9

Johnson, James Burl, Jr., to Gifford-Hill-Western, a division of Gifford-Hill & Co., Inc. Mobile sprinkler control apparatuses. 3,558,258, Cl. 239-177.

Johnson, Lee H.: *See—*
Owens, Neal; and Johnson, Lee H.,3,557,850.

Johnson, William S.; and Archer, Sydney, to Sterling Drug Inc. Synthesis of dl-19-norpregna-4,16-diene-3,20-dione. 3,558,672, Cl. 260-397.

Joly, Christian Georges, to Compagnie Generale de Geophysique, and L'Institut Francais du Petrole des Carburants et Lubrifiants, mesne. Electronic measuring apparatus. 3,559,180, Cl. 340-172.5

Jones, Dennis G., to Kennametal Inc. Cutting insert. 3,557,416, Cl. 29-95.

Jones, Edmund A., to Ortho Pharmaceutical Corporation. Tablet dispenser with calendar index. 3,558,003, Cl. 221-2.

Jones, Gordon H.; and Moffatt, John G., to Syntex Corporation. 2'-Cyclic esters and 5'-cyclic ester of 3'-deoxy-3'- dihydroxyphosphinylmethyl-β-D-ribofuranosyl- nucleoside derivatives and intermediates therefor. 3,558,595, Cl. 260-210.

Jones, James B., to RCA Corporation. Repair techniques for circuit modules. 3,557,430, Cl. 29-203.

Jones, John E.: *See—*
Dilsner, Frederick W.; Aronson, Aaron B.; and Jones, John E.,3,558,859.

Jones, Mary Henning. Sanitary napkin holder. 3,557,853, Cl. 150-7.

Jones, Peter David, to Lucas, Joseph, (Industries) Limited. Pulse producing circuits. 3,559,099, Cl. 331-111.

Jones, Peter Hadley: *See—*
Geiszler, Adolph Oscar; and Jones, Peter Hadley,3,558,600.

Jones, Peter Hadley; Wiegand, Ronald Gay; and Chun, Alexander Hing Chinn, to Abbott Laboratories. Erythromycin aliphatic sulfate. 3,558,594, Cl. 260-210.

Jordan, George W., Jr.: *See—*
Schmidt-Collerus, Josef J.; Gray, Don N.; and Jordan, George W., Jr.,3,558,720.

Jorgensen, Paul J.: *See—*
Hanneman, Rodney E.; Jorgensen, Paul J.; and Charles, Richard J.,3,558,963.

Jost, Ernest M., to Texas Instruments, Incorporated. Nickel-zinc battery system which is negative limited during charging thereof. 3,558,356, Cl. 136-6.

Jost, Ernest M., to Texas Instruments, Incorporated. Method for forming battery electrode plates. 3,558,359, Cl. 136-24.

Jost, Karel: *See—*
Cort, Joseph H.; Jost, Karel; Kasafirek, Evzen; Rudinger, Josef; Sorm, Frantisek; and Zaoral, Milan,3,558,590.

Joy, Ivan L. Railway train suspension. 3,557,707, Cl. 105-1.

Joyner, Taylor B.; Mallory, Herbert D.; and Okauchi, Kinge, to United States of America, Navy. Railroad rail breaking bomb. 3,557,697, Cl. 102-2.

Julia, Marc, to Rhone-Poulenc S.A. Process for the preparation of pyrocine. 3,558,659, Cl. 260-343.6

Jullien-Davin, Jean, to Crouzet. Station-selector magazine. 3,558,027, Cl. 226-90.

Jung, Christopher J.: *See—*
Pappo, Raphael; and Jung, Christopher J.,3,558,682.

Jungblut, John R., to Bourns, Inc. Turns-counting rotary instrument dial indicator. 3,557,746, Cl. 116-115.

Junker, Harald: *See—*
Rank, Viktor; Tentschert, Hans; Junker, Harald; and Allgeuer, Kurt,3,558,749.

Jurgensen, Peter D.: *See—*
Dunn, Donald A.; and Jurgensen, Peter D.,3,558,840.

Just, George E.; and Simonovitch, Chaim, said Simonovitch assor. to said Just, George E. Intermidiates for producing prostaglandins. 3,558,688, Cl. 260-468.

K-D Manufacturing Company: *See—*
McFarland, Frederick R.; and Appler, Park H., 3,557,460.

Kabel-und Metallwerke Gutehoffnungshutte Aktiengesellschaft: *See—*
Eilhardt, Bernd; and Pelz, Diethart, 3,558,801.

Kabushiki Kaisha Hitachi Seisakusho: *See—*
Maruyama, Eiichi; Oikawa, Mitsuru; and Komoda, Tsutomu, 3,558,527.

Kabushiki Kaisha Ricoh: *See—*
Tanno, Takayoshi; and Ikeda, Itsuo, 3,558,342.

Kabushiki Kaisha Suwa Seikosha: *See—*
Fujimori, Yoshiaki, 3,557,548.

Kabushiki Kaisha Toyota Chuo Kenkyusho: *See—*
Tsukada, Koji, 3,557,628.

Kaercher, Earl J. Anchor. 3,557,739, Cl. 114-208.

Kafak Aktiebolag: *See—*
Bergman, Tage; and Gjellan, Asbjorn, 3,559,137.

Kaganovich, Natalia Grigorievna: *See—*
Shmakov, Vasily Pavlovich; Eremin, Vitaly Alexeevich; Kvasha, Semen Borisovich; Kaganovich, Natalia Grigorievna; Dobrenyakins, Tatiana Nikolaevna; Vanjushin, Viktor Nikolaevich; Sakharov, Petr Vasilievich; Voronov, Boris Pavlovich; Polezhaev, Vasily Dementievich; Smetankin, Pavel Semenovich; Sobolev, Evgeny Pavlovich; Yanchevsky, Kazimir Stanislavovich; Grishin, Mikhail Semenovich; Burtsev, Pavel Semenovich; and Chasovitin, Pavel Alexeevich,3,558,192.

Kagarise, Herbert N., to Goodyear Tire & Rubber Company, The. Accelerator systems comprising 2-(aminopolythio)- thiazole and thiurams. 3,558,739, Cl. 260-79.5

Kahre, Norman D., to National Mine Service Company. Tensioning apparatus for an endless conveyor. 3,557,937, Cl. 198-109.

Kaijo Denki Kabushiki Kaisha: *See—*
Kobori, Yasuhiro; and Murakami, Kunio, 3,559,080.

Kaiser Aluminum & Chemical Corporation: *See—*
Langewis, Cornelis; and Smith, Arthur Dean, 3,557,598.

Kaiser, Carl; and Zirkle, Charles L., to Smith Kline & French Laboratories. Benzhydryloxycyclopropyl heterocyclic amines. 3,558,631, Cl. 260-268.

Kaiser, Carl; and Zirkle, Charles L., to Smith Kline & French Laboratories. 1-(Thianaphthenyl- or benzofuranylalkanoyl)- 4-phenyl-4-piperidinols. 3,558,636, Cl. 260-293.4

Kaiser, Carl; and Zirkle, Charles L., to Smith Kline & French Laboratories. 1-(Thianaphthenyl- or benzofuranylalkyl)-4- phenyl-4-piperidinol esters. 3,558,637, Cl. 260-293.4

Kaiser, Peter, to Bell Telephone Laboratories, Incorporated. Viscous-friction-heated optical guiding apparatus. 3,558,891, Cl. 250-199.

Kalb, Paul A., to Pandick Press, Inc. Viewing device for microprint. 3,557,476, Cl. 40-95.

Kalinichenko, Sergei Petrovich. Device for improving commutation of direct current electric machines. 3,559,023, Cl. 318-439.

Kalle Aktiengesellschaft: *See—*
Ruckert, Hans, 3,558,609.

Kalopissis, Gregoire; and Bugaut, Andree, to L'Oreal. Human hair dyeing with aminophenols. 3,558,259, Cl. 8-10.2

Kaltenbronn, James S., to Parke, Davis & Company. Benzo[b]thiopheneacetic acid compounds. 3,558,655, Cl. 260-330.5

Kamins, Seymour: *See—*
Gelles, Daniel E.; and Kamins, Seymour,3,558,038.

Kaminstein, Bernard; and Joel, Henry G., to Copia Manufacturing Corporation. Combined liquid container and dispensing means. 3,557,680, Cl. 95-94.

Kanics, Andras, to Fendt, Dr. Wolfang. Pneumatic conveyor. 3,558,195, Cl. 302-24.

Kanngiesser, Karl-Werner, to Aktiengesellschaft Brown, Boveri & Cie. High voltage direct-current transmission system for a power station. 3,558,904, Cl. 307-82.

Kanngiesser, Karl-Werner, to Aktiengesellschaft Brown, Boveri & Cie. Device for short-circuit reclosing in HVDCT multipoint networks. 3,559,036, Cl. 321-13.

Kaplan, Arnold. Suitcase. 3,557,917, Cl. 190-49.

Kappenman, Charles A., to Bell Telephone Laboratories, Incorporated. Circuit for providing a pulse a fixed time after a predetermined per cent completion of an applied pulse. 3,558,926, Cl. 307-263.

Karczewski, Raymond C.: *See—*
Corbett, Herbert O.; and Karczewski, Raymond C.,3,558,144.

Karle, Franklin J., to Dow Chemical Company, The. Method for obtaining improved output signals from a dual beam spectrometer. 3,558,229, Cl. 356-95.

Kasafirek, Evzen: *See—*
Cort, Joseph H.; Jost, Karel; Kasafirek, Evzen; Rudinger, Josef; Sorm, Frantisek; and Zaoral, Milan,3,558,590.

Kaspers, Helmut: *See—*
Zumach, Gerhard; Anders, Bertram; Grewe, Ferdinand; Kuhle, Engelbert; and Kaspers, Helmut,3,558,650.

Katchka, Jay R.: *See—*
Aucahne, Jean; Katchka, Jay R.; and Felix, Pierre,3,557,831.

Kategian, Nick C.: *See—*
Brandell, John R.; and Kategian, Nick C.,3,558,139.

Kato, Kenzi, to Janome Sewing Machine Co., Ltd. Speed control system of a motor and a circuit therefor. 3,559,019, Cl. 318-331.

Kaul, Arthur A. Wall construction. 3,557,505, Cl. 52-275.

Kavibro Industries, Inc.: *See—*
Kaye, Robert J., Sr., 3,557,781.

Kawana, Masashi: *See—*
Yagi, Yasuhiro; Kawana, Masashi; and Kosukegawa, Takashi,3,558,116.

Kawasaki Dockyard Co., Ltd.: *See—*
Yagi, Yasuhiro; Kawana, Masashi; and Kosukegawa, Takashi, 3,558,116.

Kawasaki Steel Corporation: *See—*
Yagi, Yasuhiro; Kawana, Masashi; and Kosukegawa, Takashi, 3,558,116.

Kaye, Robert J., Sr., to Kavibro Industries, Inc. Vibratory facial mask. 3,557,781, Cl. 128-36.

Keberle, Wolfgang; Verburg, Werner; and Muller, Friedhelm, to Agfa-Gevaert Aktiengesellschaft. Photographic material containing an optical brightening agent. 3,558,316, Cl. 96-82.

Keck, Donald Frederick: *See—*
Lennard, Dean J.; Keck, Donald Frederick; and Lingen, Alfred,3,558,058.

Keckler, Norman F., to Firestone Tire & Rubber Company, The. Process for the production of random copolymers. 3,558,575, Cl. 260-83.7

Keene Corporation: *See—*
Rose, Thomas A., 3,558,255.

Keidel, Ralph A.: *See—*
Pease, James K.; Keidel, Ralph A.; and Rao, Kattar U.,3,557,594.

Keith, Carl D.; and Cornely, Kurt W., to Engelhard Industries, Inc. Preparation of spheroidal aluminum oxide gels. 3,558,508, Cl. 252-317.

Keller, Hans, to International Standard Electric Corporation. Varactor diode. 3,559,000, Cl. 317-234.

Keller, John W., Jr.; Terry, Reese S., Jr.; and Davies, Gomer L., to Cordis Corporation. Digital counter driven pacer. 3,557,796, Cl. 128-419.

Keller, William F.: *See—*
Kraft, Paul; Keller, William F.; and Altscher, Siegfried,3,558,578.

Kelley, Bruce W.: *See—*
Libby, Carl F.; Avery, Bennett W.; and Kelley, Bruce W.,3,557,574.

Kelly, Douglas E., to Eaton Yale & Towne, Inc. Thermostat. 3,558,046, Cl. 236-34.

Kelly, James E.: *See—*
Groh, Howard V.; and Kelly, James E.,3,558,188.

Kennametal Inc.: *See—*
Jones, Dennis G., 3,557,416.

Kennecott Copper Corporation: *See—*
Lebrizzi, Joseph M.; Lewis, Daniel M.; and Marquardson, Kent F., 3,558,466.
Prater, John D.; and Platzke, Ronald N., 3,558,268.
Sorensen, Wayne R.; and Tuddenham, William M., 3,558,455.

Kennedy, Bobby W., to United States of America, National Aeronautics and Space Administration. Filter system for control of outgas contamination in vacuum. 3,557,534, Cl. 55-75.

Kernforschungsanlage Juelich GmbH: *See—*
Nuernberg, Hans Wolfgang; and Wolff, Gerhard, 3,558,047.

Kerr Glass Manufacturing Corporation: *See—*
Singer, Benjamin H., Jr., 3,557,987.

Keuffel & Esser Company: *See—*
Gold, Robert M., 3,558,881.

Keylwerth, Rudolf, to Banwerk A. G. Method and apparatus for drying lumberboard. 3,557,468, Cl. 34-42.

Keystone Consolidated Industries, Inc.: *See—*
Coe, William H., 3,557,655.

Khelghatian, Habet M.; Jezl, James L.; and Fitzpatrick, James E., to Avisun Corporation. Sequential chlorinated hydrocarbon- chromic acid preconditioning the plating polyolefin articles. 3,558,443, Cl. 204-30.

Khelghtian, Habet M.: *See—*
Fitzpatrick, James E.; and Khelghtian, Habet M.,3,558,444.

Kielpinski, Leonard V.: *See—*
Simon, Karl-Heinz; Beckmann, Wilhelm; Ashworth, John T.; Bohne, Gunter; Meitz, Adolf; and Kielpinski, Leonard V.,3,557,798.

Kiewicz, Frank M.; and Schneider, Alfred, to Inspection Engineering and Equipment, Inc. Gaging device and system. 3,557,462, Cl. 33-174.

Kikuchi, Shigeru: *See—*
Tabara, Yoshijiro; Teranishi, Nobuhide; Kikuchi, Shigeru; Ono, Kunito; and Imao, Shoji,3,558,761.

Kilmer, Lauren G., to Atlantic Richfield Company. Gas exploder with compressible resilient coupling structure. 3,557,900, Cl. 181-0.5

Kim, Charles. Eyelash measuring device and trimmer. 3,557,653, Cl. 83-522.

Kimberly-Clark Corporation: *See—*
Banks, Charles T., 3,557,972.

Kimura, Shiro; Yoshida, Makoto; Tsuda, Momotoshi; and Okumura, Akio, to Fuji Shashin Film Kabushiki Kaisha. Light sensitive color materials. 3,558,700, Cl. 260-559.

Kimura, Takayoshi: *See—*
Akaike, Seiji; Nomura, Tsutomu; Kimura, Takayoshi; and Washio, Masayuki,3,557,664.

Kingston, Floyd E.; and Weaver, Harry E., Jr., to Varian Associates. Superconducting magnet for persistent operation. 3,559,128, Cl. 335-216.

Kinney, S. P., Engineers, Inc.: *See—*
Carr, Hugh B.; and Bradel, Norman F., 3,557,823.

Kinyon, Brice W.: *See—*
Romanos, Nicholas D.; and Kinyon, Brice W.,3,557,760.

Kirchhoff, Kurt. Optical photo opposing apparatus. 3,558,225, Cl. 355-52.

Kirchner, Frederick K., to Sterling Drug Inc.1-(2-Hydroxy-2 phenylethyl)-2-[2-(tertiary amino) ethyl]piperidines. 3,558,639, Cl. 260-294.7

Kirchner, Myron C., to Northern Metal Products, Inc. Centering and piercing process and apparatus. 3,557,649, Cl. 83-54.

Kirchner, Myron C., to Northern Metal Products, Inc. Self supporting shadow mask with reinforcing ribs and gusset plates for colored television picture tubes. 3,558,955, Cl. 313-85.

Kirschner, Fritz: *See—*
Rambeau, Harry; and Kirschner, Fritz,3,559,004.

Kissel, Walter J., to American Air Filter Company. Thermal device calibrating apparatus. 3,557,565, Cl. 62-3.

Kittleman, Edmund T.; and Zuech, Ernest A., to Phillips Petroleum Company. Complexes of Mn, Tc, and Re with organoaluminum as olefin reaction catalysts. 3,558,515, Cl. 252-429.

Kittrell, James R.: *See—*
Csicsery, Sigmund M.; and Kittrell, James R.,3,558,473.

Kittrell, James R., to Chevron Research Company. Hydrotreating catalyst comprising an ultrastable crystalline zeolitic molecular sieve component, and methods for making and using said catalyst. 3,558,471, Cl. 208-59.

Kittrell, James R., to Chevron Research Company. Hydrocracking catalyst comprising a crystalline zeolitic molecular sieve component, a group VIII component and rhenium, and process using said catalyst. 3,558,472, Cl. 208-60.

Kjellberg Elektroden & Maschinen G.m.b.H. In Verwaltung: *See—*
Pochert, Rudolf; Haase, Lothar; Roggenbuck, Willy; and Wiese, Peter, 3,558,973.

Klauke, Erich: *See—*
Bien, Hans-Samuel; Klauke, Erich; and Wunderlich, Klaus,3,558,620.
Bien, Hans-Samuel; Klauke, Erich; and Wunderlich, Klaus,3,558,621.

Klaus, Kaspar. Vehicle for transporting loads. 3,557,980, Cl. 214-77.

Klayman, Arnold I.: *See—*
Genest, Leonard J.; and Klayman, Arnold I.,3,559,067.

Kleemann, Alois; and Model, Ernst, to Geigy Chemical Corporation. Polyurethane composition stabled to gas fading and process for preparing same. 3,558,266, Cl. 8-165.

Kleemann, Eugene, to Chrysler Corporation. Optical-audio warning system. 3,559,165, Cl. 340-75.

Klimstra, Paul D., to Searle, G. E., & Co.20-[N',N'-disubstituted aminoalkyl)formamido]-5 α- pregnan-3β-ols and Δ^5 derivatives thereof. 3,558,608, Cl. 260-239.5

Klingbail, Marion Ruth: *See—*
Klingbail, Robert L.,3,558,778.

Klingbail, Robert L., deceased0 (by Klingbail, Marion Ruth; administratrix), to Dow Chemical Company, The. Methods and compositions for use in animal husbandry. 3,558,778, Cl. 424-245.

Klippel, Kenneth R., to Sterling Drug In c. Sustained release pharmaceutical compositions. 3,558,768, Cl. 424-21.

Klockner-Werke AG: *See—*
Lenne, Helmut, 3,558,121.

Kloeckener, Dieter, to Polrotor, Inc. Electrifier cylinder. 3,557,415, Cl. 26-2.

Klopfenstein, John R., to Reliance Electric and Engineering Company, The. Electrical counting scale. 3,557,891, Cl. 177-30.

Kluge, Friedhelm: *See—*
Scherer, Otto; and Kluge, Friedhelm,3,558,627.

Kluksdahl, Harris E., to Chevron Research Company. Reforming with a platinum-rhenium catalyst. 3,558,477, Cl. 208-138.

Knapsack Aktiengesellschaft: *See—*
Berg, Leo, 3,557,864.

Knapton, James H.; and Zimmerman, Henry A., to Tektronix, Inc. Jitter-free triggering method and apparatus. 3,558,930, Cl. 307-286.

Knechtli, Ronald C.: *See—*
Hofmann, Gunter A. G.; and Knechtli, Ronald C.,3,558,960.

Kneppel, David S., to Whittaker Corporation. Adherent coatings by immersion plating from non- aqueous solutions. 3,558,349, Cl. 117-130.

Kniepkamp, Alberto E., to Chicago Musical Instrument Co. Electronic organ circuit for simulating guitar. 3,558,792, Cl. 84-1.01

Knight, Basil Edward; and Shufflebotham, David, to C.A.V. Limited. Liquid fuel pumping apparatus. 3,557,764, Cl. 123-139.

Knight, David W.: *See—*
Foreman, Clarence P.; and Knight, David W.,3,557,647.

Knisch, Boris. Scale grading means. 3,557,951, Cl. 209-121.

Kniseley, Richard N.; and Van Zuuk, Dean, to United States of America, Atomic Energy Commission. Apparatus for displaying the image electron signal from a scanning electron microprobe. 3,558,880, Cl. 250-49.5

Knorr-Bremse GmbH: *See—*
Pollinger, Hans, 3,557,915.

Knowles, James Thomas Crawford: *See—*
Hoover, Stasel Keith; Knowles, James Thomas Crawford; and Wong Yan Man, Wong Kwong Fa,3,557,696.

Kobayashi, Hidehiko; Komoto, Hiroshi; and Ishida, Shinichi, to Asahi Kasei Kogyo Kabushiki Kaisha. Production of lactam-lactone copolymers. 3,558,568, Cl. 260-78.

Kobayashi, Hidehiko; Sasaguri, Kiichiro; Fujimoto, Yoshihisa; and Ibata, Jyoji, to Asahi Kasei Kigyo Kabushiki Kaisha. Process for the preparation of α, τ- dichloro-polyalkylene oxides. 3,558,722, Cl. 260-615.

Kobayashi, Masao: *See—*
Sudo, Makoto; Yamamoto, Yasumasa; Kobayashi, Masao; Yamasaki, Kenichi; and Ikeda, Minoru,3,558,695.

Kobayashi, Tsuyoshi: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadishi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,558,604.
Yamamoto, Hisio; Inaba, Shigeho; Okimoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,558,603.

Kober, Ehrenfried H.: *See—*
Churchill, John W.; Kober, Ehrenfried H.; and Scott, Peter H.,3,558,707.

Kobori, Yasuhiro; and Murakami, Kunio, to Kaijo Denki Kabushiki Kaisha. Signal receiving system. 3,559,080, Cl. 328-136.

Koch, Hans Adalbert: *See—*
Krall, Heribert; Koch, Hans Adalbert; and Vollbracht, Karl,3,557,652.

Koch, Hans; Wochnowski, Waldemar; Thiele, Willi; Hackmack, Klaus-Georg; Fricbel, Heinz; and Pietrucci, Andre, to Service d'Exploitation Industrielle des Tabacs et des Allumettes. Device for stemming tobacco leaves. 3,557,799, Cl. 131-146.

Koch, Robert L.; Thomas, Earl F.; Miklos, Joseph; and Curry, William H., to National Semiconductor Corporation. Apparatus for assembling semiconductor device components. 3,557,431, Cl. 29-203.

Koch, Ronney R.: *See—*
McLaughlin, Homer C., Jr.; and Koch, Ronney R.,3,557,562.

Kochs Adlernahmaschinen Werke AG: *See—*
Heimann, Alfred, 3,557,727.

Koehl, Hans H., to C. E. M., Company, Inc. Coiled fastening pin. 3,557,402, Cl. 16-168.

Koehnlein, Ernst; Bauer, Peter; and Stange, Karl, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Production of sheeting and film. 3,558,762, Cl. 264-209.

Koehring-Waterous, Ltd.: *See—*
Martinson, Edwin O., 3,557,849.

Koelling, John G.: *See—*
Baum, George; and Koelling, John G.,3,558,345.

Koenig, Karl-Heinz: *See—*
Osieka, Hans; Koenig, Karl-Heinz; Fischer, Adolf; and Flickinger, Erich,3,558,685.

Koennecke, Wolfgang; and Schleifenbaum, Gerhard, to Hundt & Weber, GmbH. Circuit breaker. 3,559,119, Cl. 335-16.

Koepf, Ernest H.: *See—*
Fitzgerald, Hugh J.; and Koepf, Ernest H.,3,557,960.

Kofink, Siegfried, to Eberspacher, J. Space heating apparatus. 3,557,772, Cl. 126-110.

Kogawa, Hazime: *See—*
Iwaki, Masahiko; and Kogawa, Hazime,3,559,150.

Kohl, Arthur L., to North American Rockwell Corporation. Reverse osmosis fabric. 3,557,962, Cl. 210-321.

Kohls, James P., to Webb, Jervis B., Company. Automatic and manually controlled vehicle. 3,557,893, Cl. 180-19.

Kohno, Shigeharu: *See—*
Okazaki, Kanzo; Kohno, Shigeharu; Yamatsu, Isao; Sugiyama, Kunishige; and Ueyama, Seigo,3,558,355.

Kohno, Shigeharu; Yamatsu, Isao; and Ueyama, Seigo, to Eisai Kabushiki Kaisha. Preparation of xylitol. 3,558,725, Cl. 260-635.

Kojima, Terumi: *See—*
Harada, Shigehisa; and Kojima, Terumi,3,558,353.

Kokusai Denshin Denwa Kabushiki Kaisha: *See—*
Ogawa, Akira; Muratani, Takuro; and Nosaka, Kunishi, 3,558,824.
Oshima, Shintaro; and Watanabe, Teruji, 3,558,905.

Koll, Roman; Penza, Hans; and Sendtko, Ulrich, to Hell, Rudolf, Dr.-Ing., Kommanditgesellschaft. Apparatus for controlling the passage of photomaterial through an electronic phototype setter. 3,557,675, Cl. 95-14.

Kollar, John P., 1/2 to Kollar, Thomas J. Tool holder. 3,557,417, Cl. 29-96.

Kollar, Thomas J.: *See—*
Kollar, John P., 3,557,417.

Kollsman Instrument Corporation: *See—*
Olson, Kenneth N., 3,558,939.
Trufanoff, Doric I.; Cooper, Joseph; and Krebs, Fred H., 3,558,209.

Kolozsvary, Arpad. Folded plate structures and components. 3,557,501, Cl. 52-81.

Komoda, Tsutomu: *See—*
Maruyama, Eiichi; Oikawa, Mitsuru; and Komoda, Tsutomu,3,558,527.

Komoto, Hiroshi: *See—*
Kobayashi, Hidehiko; Komoto, Hiroshi; and Ishida, Shinichi,3,558,568.
Saotome, Kazuo; Komoto, Hiroshi; and Sato, Kenichiro,3,558,565.

Konigstein, Otto: *See—*
Jenkner, Herbert; and Konigstein, Otto,3,558,727.

Kontos, Constantine S., to Neo-Guard, Inc. Remote site protective alarm system. 3,559,202, Cl. 340-258.

Koppers Company, Inc.: *See—*
Pennino, Charles J., 3,558,049.

Korda, Peter B.: *See—*
Hall, James R.; and Korda, Peter B.,3,559,203.

Kornei, Otto: *See—*
Stryker, Frederick J.; and Kornei, Otto,3,558,338.

Kornstein, Edward: *See—*
Parker, Donald J.; and Kornstein, Edward,3,559,101.

Koster, Roland, to Studiengesellschaft Kohle m.b.H. Process for oxidizing boron compounds with amine- N-oxides. 3,558,633, Cl. 260-290.

Kosukegawa, Takashi: *See—*
Yagi, Yasuhiro; Kawana, Masashi; and Kosukegawa, Takashi,3,558,116.

Kowalick, James F.: *See—*
Cicconc, Thomas Q.; White, Wilmer; and Kowalick, James F.,3,558,285.

Koyo Seiko Company, Limited: *See—*
Takada, Nobuo, 3,557,921.

Koziol, Walter, to Charmglow Manufacturing Company. Barbecue grill with tilting grid. 3,557,771, Cl. 126-25.

Kraft, Paul; Keller, William F.; and Altscher, Siegfried, to Stauffer Chemical Company. Solution grade PVC-copolymers prepared by suspension polymerization exhibiting enhanced light stability and low haze. 3,558,578, Cl. 260-87.1

Kraftco Corporation: *See—*
Gordon, Arthur L.; and Weisberg, Samuel M., 3,558,770.

Krall, Heribert; Koch, Hans Adalbert; and Vollbracht, Karl, to Technica-Guss GmbH. Apparatus for severing horizontal strands produced by continuous casting. 3,557,652, Cl. 83-319.

Kraly, Stanley W. Food and beverage dispenser for passenger aircraft. 3,558,086, Cl. 244-118.

Kramel, Leonard F.; and Tabor, Stanley D., Jr., to General Electric Company. Arc tube mounting within vitreous outer envelope. 3,558,951, Cl. 313-25.

Kramer, Pieter: *See—*
De Lang, Hendrik; Kramer, Pieter; and Bouwhuis, Gijsbertus,3,558,215.
de Lange, Hendrik; Bouwhuis, Gijsbertus; and Kramer, Pieter,3,558,214.

Kramm, David E., to Grace, W. R., & Co. Process for forming water-soluble polyamides. 3,558,562, Cl. 260-72.

Kranich, Werner, to A.W. Faber-Castell. Retractable ball point pen. 3,558,234, Cl. 401-112.

Krause, Hans Walter, to Rieter Machine Works, Ltd. Method and apparatus for parallelizing staple fibers fed to a spinning chamber. 3,557,543, Cl. 57-58.95

Krauthamer, Stanley, to Borg-Warner Corporation. Inverter with precharge circuit. 3,559,038, Cl. 321-45.

Krebs, Arthur. Cellar wall construction. 3,557,502, Cl. 52-169.

Krebs, Fred H.: *See—*
Trufanoff, Doric I.; Cooper, Joseph; and Krebs, Fred H.,3,558,209.

Krehbiel, Robert D.; and McCammond, Warren E., to Cessna Aircraft Company, The. Spool control valve. 3,557,824, Cl. 137-375.

Kreis, Egon, to Kries AG. Heat storage dish. 3,557,774, Cl. 126-246.

Kretz, Marcel, to Giravions Dorand. Aerospace vehicle. 3,558,080, Cl. 244-17.11

Krey, Winfried, to Varta Gesellschaft mit beschrankter Haftung. Leakproof galvanic cell employing granular anion exchange compound separator. 3,558,364, Cl. 136-83.
Kries AG: *See—*
Kreis, Egon, 3,557,774.
Kriesler Manufacturing Corporation: *See—*
Hauser, Seymour, 3,557,412.
Kristiansen, Svend Helge, to Nordisk Ventilator Co. Fan for the ventilation of buildings e.g. stables. 3,557,681, Cl. 98-33.
Krolski, Kenneth L.; and Plichta, Michael J., to McGraw-Edison Company. Three phase repeating circuit interrupter having control means for individually interrupting each phase. 3,558,985, Cl. 317-24.
Kroml, Steven M.: *See—*
Lueck, Frederick E.; Denholm, Michael J.; Borowski, William J.; Kroml, Steven M.; and Gasperi, Michael A.,3,558,197.
Kronsbein, Curt, to Bellmann, Eugen, G.m.b.H. Method for setting and dyeing boarded articles of synthetic fibers. 3,557,395, Cl. 8-149.2
Kronstein, Max, to Research Corporation. Pigmented elastomer-based coating compositions. 3,558,547, Cl. 260-31.2
Kroon, Ferdinand Jehan Maria: *See—*
van den Born, Jacobus Abraham; Haisma, Jan; and Kroon, Ferdinand Jehan Maria,3,557,566.
Krueger, Lloyd H. Two-way envelope. 3,558,040, Cl. 229-73.
Krzyzanowski, Erich, to Grunzweig & Hartmann Aktiengesellschaft. Casting apparatus. 3,557,867, Cl. 164-255.
Krzyzkowski, Charles M.: *See—*
Jewett, William R.; and Krzyzkowski, Charles M.,3,557,620.
Kubicek, Donald H.; and Zuech, Ernest A., to Phillips Petroleum Company. Complexes of Cu, Ag and Au with organoaluminums as olefin reaction catalysts. 3,558,520, Cl. 252-429.
Kubota, Katsuga, to Agency of Industrial Science Technology. Polyethylene diffraction grafting and method of manufacture thereof. 3,558,216, Cl. 350-162.
Kuchenbecker, Hermann; Fink, Wolfgang; and Schmidt, Ludwig, to Siemens Aktiengesellschaft. Type carrier for printers and the like. 3,557,693, Cl. 101-93.
Kugath, Donald A.; and Mosher, Ralph S., to General Electric Company. Apparatus for compensating inertial effects. 3,557,627, Cl. 73-514.
Kugler, Emanuel. Bottom seal contour bag manufacture. 3,558,406, Cl. 156-515.
Kuhle, Engelhert: *See—*
Zumach, Gerhard; Anders, Bertram; Grewe, Ferdinand; Kuhle, Engelbert; and Kaspers, Helmut,3,558,650.
Zumach, Gerhard; Weiss, Wolfgang; and Kuhle, Engelbert,3,558,661.
Kuhlmann, Ugine: *See—*
Sureau, Robert Frederic Michel; and Alicot, Marie Josephe Jeanne, 3,558,617.
Kuhn, Stephen J.; and Ilavsky, Janet E., to Dow Chemical Company, The. Substituted phenoxyacetic acids. 3,558,612, Cl. 260-240.
Kuhn, Stephen J.; and Ilavsky, Janet E., to Dow Chemical Company, The. Substituted paratolyloxyacetic acids. 3,558,613, Cl. 260-240.
Kulik, Robert W.: *See—*
Landon, William W., Jr.; and Kulik, Robert W.,3,557,616.
Kulikov, Boris Ivanovich; Lagunov, Viktor Mikhailovich; Nesterikhin, Yury Efremovich; and Fedorov, Vladimir Mikhailovich, to Institut Yadernai Fiziki So An SSSR. High-voltage impulse generator. 3,558,908, Cl. 307-109.
Kulzer & Co., G.m.b.H.: *See—*
Gross, Albert, 3,558,718.
Kunreuther, Frederick: *See—*
Young, Eldred E.; Wege, Robert L.; and Kunreuther, Frederick,3,558,731.
Kurbatsky, Ivan Lukich: *See—*
Grachev, Vladimir Alexandrovich; Cherny, Anatoly Alexeevich; Marienbakh, Lev Mikhailovich; and Kurbatsky, Ivan Lukich,3,558,791.
Kureha Kagaku Kogyo Kabushiki Kaisha: *See—*
Otani, Sugio, 3,558,276.
Kurisu, Albert G., to Hughes Aircraft Company. Environment control switch. 3,559,142, Cl. 337-380.
Kuriyama, Tsuneto; Kuroda, Toshihiko; Tanba, Shigeru; and Murakami, Tetsuzo, to Yoshitomi Pharmaceutical Industries, Ltd., and Mitsubishi Petrochemical Co., Ltd. Oxidatively stable polyolefin composition. 3,558,554, Cl. 260-45.85
Kuroda, Toshihiko: *See—*
Kuriyama, Tsuneto; Kuroda, Toshihiko; Tanba, Shigeru; and Murakami, Tetsuzo,3,558,554.
Kurokawa, Hiromichi, to Sony Corporation. Color video pick up system with means for generating a frequency modulated indexing signal higher in frequency than the video information. 3,558,807, Cl. 178-5.4
Kurokawa, Hiromichi, to Sony Corporation. Color video signal generating apparatus. 3,558,808, Cl. 178-5.4
Kuroki, Motoharu; and Takaoi, Akira, to Fuji Photo Film Co. Ltd. Drying apparatus for flexible supports. 3,557,870, Cl. 165-115.
Kursky, Alexander Kuzmich: *See—*
Babich, Valentin Grigorievich; Kursky, Alexander Kuzmich; Markov, Konstantin Petrovich; Ryabov, Nikoali Vasilievich; and Stas, Konstantin Nikolaevich,3,558,884.
Kurth, Carl F., to Bell Telephone Laboratories, Incorporated. Two-part gyrator as the feedback network of a voltage-controlled oscillator. 3,559,105, Cl. 332-30.
Kurz, Milton. Fabric containing melted and unmelted yarns and method for making the same. 3,558,412, Cl. 161-89.
Kushima, Teizo; and Ogawa, Masaya, to Minolta Camera Kabushiki Kaisha. Device for dry development in electrophotography. 3,557,751, Cl. 118-637.
Kushner, Gerald J., to General Electric Company. Gas heated automatic clothes dryer with thermistor flame sensor circuit. 3,558,110, Cl. 263-10.
Kutz, Aaron, to Fluidic Controls Corporation. Diaphragm valve. 3,557,836, Cl. 137-625.66
Kuznetsova, Alexandra Grigorievna; Golubtsov, Sergei Alexandrovich; and Ivanov, Vladimir Ivanovich. Method for the production of methylphenylcyclotri- and tetrasiloxanes. 3,558,681, Cl. 260-448.2
Kvam, Donald C.: *See—*
Harrington, Joseph Kenneth; Kvam, Donald C.; Mendel, Arthur; and Robertson, Jerry E.,3,558,698.
Kvasha, Semen Borisovich: *See—*
Shmakov, Vasily Pavlovich; Eremin, Vitaly Alexeevich; Kvasha, Semen Borisovich; Kaganovich, Natalia Grigorievna; Dobrenyakins, Tatiana Nikolaevna; Vanjushin, Viktor Nikolaevich; Sakharov, Petr Vasilievich; Voronov, Boris Pavlovich; Polezhaev, Vasily Dementievich; Smetankin, Pavel Semenovich; Sobolev, Evgeny Pavlovich; Yanchevsky, Kazimir Stanislavovich; Grishin, Mikhail Semenovich; Burtsev, Pavel Semenovich; and Chasovitin, Pavel Alexeevich,3,558,192.
Kyowa Hakko Kogyo Co., Ltd.: *See—*
Matsui, Masanao; Uzu, Keizo; and Wakaki, Shigetoshi, 3,558,651.
Laban, Theodorus F.; and Zandstra, Bertus H., to American Enka Corporation. Manufacture of layered synthetic products. 3,558,755, Cl. 264-95.
La Bate, Michael D. Groove forming additions for the inner walls of hot tops. 3,558,096, Cl. 249-197.
Laboratoires Cassenne: *See—*
Fournier, Etienne, 3,558,775.
Laboratoires Laroche Navarron: *See—*
Queval, Pierre, 3,558,679.
Laboratories J. Berthier S.A.: *See—*
Meunier, Henry E.; and Eymard, Pierre Luc, 3,558,781.
Lack, Keigh Malcolm, to Teledictor Limited. Animal identification and feed control means. 3,557,758, Cl. 119-51.
Lagunov, Viktor Mikhailovich: *See—*
Kulikov, Boris Ivanovich; Lagunov, Viktor Mikhailovich; Nesterikhin, Yury Efremovich; and Fedorov, Vladimir Mikhailovich,3,558,908.
Lai, Stanley H.: *See—*
Liebermann, Leonard N.; and Lai, Stanley H.,3,559,049.
Laidman, Barry L.: *See—*
Hayes, Robert R.; and Laidman, Barry L.,3,557,983.
Laing, Nikolaus. Magnetic rotary machine. 3,558,948, Cl. 310-157.
Lake, Howard L. Dart propelling device. 3,557,768, Cl. 124-5.
Lakritz, Julian; and Lovett, John R., to Esso Research and Engineering Company. Preparation of nitronium perchlorate. 3,558,456, Cl. 204-157.1
Laman, Johnnie D.; and Wessels, Glenn R., to Dow Chemical Company, The. Method of monitoring the amount of biodegradable organics in liquid. 3,558,277, Cl. 23-230.
Lamer, Gerald P.; Burdick, Elliott S.; and Swanson, Forrest V., to Drott Manufacturing Corporation. Load handling apparatus. 3,558,172, Cl. 294-67.
Lammel, Kalman; and Horvath, Erno, to Mezogazdasagi Gepjavito Vallalat. Device for shaking down fruit, in particular machines for collecting berry fruits. 3,557,539, Cl. 56-330.
Lamoureux, William R.: *See—*
Carlock, Frank R.; and Lamoureux, William R.,3,559,181.
Lamping, Frank G.: *See—*
Moore, Glenn E.; Hughes, James L.; and Lamping, Frank G.,3,558,163.
Landon, William W., Jr.; and Kulik, Robert W., to Combustion Engineering, Inc. Particle flow sensing device. 3,557,616, Cl. 73-228.
Lanerossi S.p.A.: *See—*
Pantaleoni, Ernesto, 3,558,265.
Lang, Ernest U.; and Mallory, Edwin E., to National-Standard Company. Band clutch construction. 3,557,920, Cl. 192-41.
Langen & Co.: *See—*
Strauff, Gunter, 3,558,153.
Langenfeld, Bruno Wilhelm, to Du Pont de Nemours, E. I., and Company, mesne. Method for dyeing high-temperature-resistant polyamides and polyimides. 3,558,267, Cl. 8-172.
Langewis, Cornelis; and Smith, Arthur Dean, to Kaiser Aluminum & Chemical Corporation. Electromagnetic feeding device. 3,557,598, Cl. 72-361.
Lanneau, Keith P.; and Parnell, James A., to Tracor, Inc., mesne. Ultrasonic acoustical analysis. 3,557,605, Cl. 73-24.
Lanzaro, Andre, to Whittaker Corporation. Space vehicle attitude control. 3,558,078, Cl. 244-1.
Laprevote, Jean-Marie L.: *See—*
Lucas, Pierre M.; Dondoux, Jacques M.; Duquesne, Jean F.; and Laprevote, Jean-Marie L.,3,558,827.
Larenzo, Leroy N.; and Binjavich, Mark P., to Taylor Diving & Salvage Co., Inc. Electric heating apparatus for supplying heated fluid to a diver's clothing. 3,558,852, Cl. 219-211.
Largman, Theodore; and Newallis, Peter Edward. Allied Chemical Corporation Pesticidally active keto acid substituted chlorinated polycyclic ketone $C_{10}Cl_{10}O$. 3,558,694, Cl. 260-514.

Laridon, Unbain Leopold; and Delzenne, Gerard Albert, to Gevaert-Agfa N.V. Photopolymerisation of ethylenically unsaturated organic compounds. 3,558,309, Cl. 96-35.1
Laridon, Urbaln Leopold: *See—*
Delzenne, Gerard Albert; and Laridon, Urbain Leopold,3,558,311.
Larson, James D.; and Benjamin, John A., to United States of America, Atomic Energy Commission. Electrostatic deflector for selectively and adjustably bending a charged particle beam. 3,558,879, Cl. 250-49.5
LaRue, Mervin W., Jr., to Ampex Corporation. Automatic iris for a television camera. 3,558,819, Cl. 178-7.92
Larus & Brother Company: *See—*
Marsden, Ernest, 3,557,802.
Lassen, Jorgen Buus: *See—*
Christensen, Jorgen A.; and Lassen, Jorgen Buus,3,558,699.
La Telemecanique Electrique: *See—*
Beaudoin, Remy A., 3,558,977.
Latta, David F.: *See—*
Wendt, Paul H.; and Latta, David F.,3,558,758.
Latus, Gerald Joseph, Jr.: *See—*
Matsushige, Robert H.; and Latus, Gerald Joseph, Jr.,3,559,109.
Laub, Herman, III. Container unscrambler. 3,557,932, Cl. 198-32.
La Vigna, Thomas A., to United States of America, National Aeronautics and Space Administration. Buck-boost voltage regulation circuit. 3,559,031, Cl. 321-2.
Lawes, Bernard C., to Du Pont de Nemours, E. I., and Company. Laundry detergent compositions containing a perborate and a peroxymonopersulfate. 3,558,497, Cl. 252-99.
Lawrence, Willis Thompson; and Webb, George Warren, to Hooker Chemical Corporation, mesne. Use of heated leg. 3,558,856, Cl. 219-492.
Lazer, Jeffrey M., to Honeywell Inc. Control apparatus. 3,557,815, Cl. 137-81.5
Leander Engineering Company Limited: *See—*
Stark, Frank H., 3,557,766.
Leathers, Chester F., to Cal Manufacturing Company, Incorporated. Welding system with autotransformer between cable and gun. 3,558,850, Cl. 219-116.
Le Blanc, John R.: *See—*
Huck, Rodney M.; and Le Blanc, John R.,3,558,560.
Le Blanc, John R., to Monsanto Company. Aromatic amine modified novolac resins in combination with aromatic polycarboxylic compounds. 3,558,559, Cl. 260-51.5
Lebrizzi, Joseph M.; Lewis, Daniel M.; and Marquardson, Kent F., to Kennecott Copper Corporation. Electrolytic cell. 3,558,466, Cl. 204-275.
Lechner, Manfred: *See—*
Dederra, Carl-Helmut; Lechner, Manfred; and Malburg, Werner,3,558,064.
Leclere, Jacques: *See—*
Remy, Claude; Lejannou, Claude; and Leclere, Jacques,3,558,928.
Lednicer, Daniel, to Upjohn Company, The. 2-Substituted-4,5 dianisylthiazoles. 3,558,644, Cl. 260-302.
Lee, Asa Ren, to Thomas & Betts Corporation. Coupling. 3,558,799, Cl. 174-73.
Lee, Shao-Tang. Watch for simultaneously indicating time in twenty-four time zones. 3,557,546, Cl. 58-42.5
Lee, William H., to Harris-Intertype Corporation. Plural independently operable motor drive arrangement in printing press. 3,557,692, Cl. 101-177.
Leebrick, John R.; and Remes, Nathaniel L., to M&T Chemicals Inc. Method of inhibiting the growth of bacteria and fungi with organoantimony compounds. 3,558,783, Cl. 424-296.
Leeds, Louis D. Disposable drinking cup. 3,558,033, Cl. 229-7.
Lefebvre, Adolphe Robert: *See—*
Bauger, Louis Jules; Beyler, Roland Robert Charles; Lefebvre, Adolphe Robert; Quillevere, Herve Alain; and Schenher, Michel Bernard,3,558,251.
Lefebvre, Gilles: *See—*
Phung, Nhu Hung; and Lefebvre, Gilles,3,558,519.
Lefevre, Lloyd E.: *See—*
Widiger, Almar T.; and Lefevre, Lloyd E.,3,558,330.
Legarra, Philip H., to Whittaker Corporation, mesne. Pressure-controlled bomb ejector for aircraft. 3,557,550, Cl. 60-26.1
Leger, Alton, Jr.; and Whitehead, Robert C., Jr., to Honeywell, Inc. Percentage fat analyzer. 3,557,625, Cl. 73-432.
Lehr, Glen J.: *See—*
Arendt, Paul N.; Dean, Harry D.; and Lehr, Glen J.,3,557,400.
Leimeister, Fabian J.: *See—*
Shurtz, Albert L.; and Leimeister, Fabian J.,3,557,672.
Leisterer, Reinhard Wilhelm: *See—*
Harms, Hermann Wilhelm August; and Leisterer, Reinhard Wilhelm,3,559,159.
Leitz, Frank B.: *See—*
McRae, Wayne A.; McGriff, Stuart G.; and Leitz, Frank B.,3,558,279.
Lejannou, Claude: *See—*
Remy, Claude; Lejannou, Claude; and Leclere, Jacques,3,558,928.
Lejeune, Daniel, to Compagnie Generale des Etablissements Michelin, raison sociale Michelin & Cie. Retreading of tire covers. 3,558,383, Cl. 156-96.
Lemelson, Jerome H. Composite extrusion apparatus and method. 3,557,403, Cl. 18-13.
Lemelson, Jerome H. Apparatus for surface forming sheet material. 3,557,407, Cl. 18-10.
Lemelson, Jerome H. Method of producing an assembly puzzle. 3,558,138, Cl. 273-157.
Lemonnier, Andre: *See—*
Fillacier, Jacques; and Lemonnier, Andre,3,557,472.
Lennard, Dean J.; Keck, Donald Frederick; and Lingen, Alfred, to United States of America, Air Force. Thrust vectorable supersonic nozzle. 3,558,058, Cl. 239-265.29
Lenne, Helmut, to Klockner-Werke AG. Apparatus for treating of steel or other metals, especially for continuous casting. 3,558,121, Cl. 266-34.
Leopold, Wilbur R., Jr.: *See—*
Mueller, Frank H.; Leopold, Wilbur R., Jr.; and Smith, John J.,3,557,832.
Lepselter, Martin P., to Bell Telephone Laboratories, Incorporated. Metal shielding for ion implanted semiconductor device. 3,558,366, Cl. 148-1.5
Lerner, Nathan B., to Braun, W., Company. Ladies compact. 3,557,804, Cl. 132-83.
Levasseur, Joseph Leo, to Simcom Corporation. Apparatus for authenticating holders of card identification symbols. 3,559,173, Cl. 340-149.
Levin, Robert E., to Sylvania Electric Products, Inc. Driving light. 3,558,869, Cl. 240-7.1
Levine, Peter A.; and Liu, Shing-Gong, to RCA Corporation. Compact, high power, high efficiency silicon avalanche diode L-band oscillator. 3,559,096, Cl. 331-107.
Levinge, Rodney Walter: *See—*
Catherall, Reginald; Ley, Anthony John; and Levinge, Rodney Walter,3,558,849.
Levy, Sheldon; and Marchese, Frank P., to Revlon, Inc. Certain pyridyl esters of scopolamine. 3,558,634, Cl. 260-292.
Lewis, Armand Francis, to American Cyanamid Company. Vibration damping metal laminates. 3,558,414, Cl. 161-117.
Lewis, Daniel M.: *See—*
Lebrizzi, Joseph M.; Lewis, Daniel M.; and Marquardson, Kent F.,3,558,466.
Lewis, Edward E., to Subscription Television, Inc., mesne. Overheating protection circuit for a power transistor. 3,558,987, Cl. 317-33.
Lewis, Eric J.: *See—*
Fowler, Benjamin T.; and Lewis, Eric J.,3,558,491.
Lewis, Julius: *See—*
Mitchell, Irving L.; and Lewis, Julius,3,558,996.
Lewis, Robert W.: *See—*
Calsyn, Lawrence E.; and Lewis, Robert W.,3,559,078.
Lewis, Roger N.: *See—*
Friedman, Ronald L.; and Lewis, Roger N.,3,558,665.
Ley, Anthony John: *See—*
Catherall, Reginald; Ley, Anthony John; and Levinge, Rodney Walter,3,558,849.
Ley, Kurt; Eholzer, Ulrich; Nast, Roland; Metzger, Karl Georg; and Fritsche, Dieter, to Farbenfabriken Bayer Aktiengesellschaft. 3-Carboxylic acid amido-quinoxaline-1,4-di-N-oxides. 3,558,624, Cl. 260-250.
Libansky, Jiri: *See—*
Svaty, Vladimir; and Libansky, Jiri,3,557,845.
Libbey-Owens-Ford Company: *See—*
Arendt, Paul N.; Dean, Harry D.; and Lehr, Glen J., 3,557,400.
Carney, Delmar E.; and Brown, Wilbur F., 3,558,297.
Libby, Carl F.; Avery, Bennett W.; and Kelley, Bruce W., to Riordon, John D.,, and Libby, Gertrude C., trustees of the Libby family Trusts Caterpillar Tractor Company. Apparatus for producing a fabric with a Spiral toothed coupling longitudinal seam. 3,557,574, Cl. 64-28.
Libby, Charles C.: *See—*
McMaster, Robert C.; Libby, Charles C.; and Minchenko, Hildegard M.,3,558,937.
Libby, Gertrude C.: *See—*
Libby, Carl F.; Avery, Bennett W.; and Kelley, Bruce W., 3,557,574.
Liberty Mutual Insurance Company: *See—*
Ohlenbusch, Cord W.; and Russell, David B., 3,557,387.
Licitis, Gunars; Aleksa, Peter; and Glass, Marvin I., to Glass, Marvin, & Associates. Sound reproducing means. 3,558,143, Cl. 274-11.
Liebermann, Leonard N.; and Lai, Stanley H. Method and apparatus for detecting gaseous impurities in accordance with changes in spark breakdown potential caused thereby. 3,559,049, Cl. 324-33.
Lilley, Charles E., to RCA Corporation. Color tube having ground plane between focus electrodes and screen grids. 3,558,954, Cl. 313-82.
Lilljeforss, Gustaf Lennart; and Skalleberg, Oystein Gunnar, to AGA Aktiebolag. Device for sequentially weighing predetermined amounts of materials. 3,557,890, Cl. 177-1.
Limmer, Herbert, to Tourpac AG. Method for the continuous production of evacuated packages and apparatus for the performance of the aforesaid method. 3,557,517, Cl. 53-22.
Lind, Arthur L., to Gulf & Western Industrial Products Company, mesne. Method and apparatus for removing and disposing of wrapping bands from bound coils. 3,557,591, Cl. 72-130.
Linde Aktiengesellschaft: *See—*
Becker, Rudolf, 3,557,863.
Ranke, Gerhard, 3,557,529.

Lindell, Edward, to General Precision Systems Inc. Master timing circuit for providing different time delays to different systems. 3,558,924, Cl. 307-260.

Lindgren, Nils Kauri, to Aktiebolaget Electrolux. Baking pan having top reinforcing flanges. 3,558,002, Cl. 220-74.

Lindner, Helmut; Sommer, Karl; and Schmidt, Heinz, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Water-insoluble monoazo dyestuffs and process for preparing them. 3,558,593, Cl. 260-207.1

Lindquist, Robert H.; and Mulaskey, Bernard F., to Chevron Research Company. Magnetic tapes comprising ferrimagnetic materials. 3,558,354, Cl. 117-235.

Lindsay, P. K., Company, Inc.: *See*—
Lindsay, Philip K., 3,557,498.

Lindsay, Philip K., to Lindsay, P. K., Company, Inc. Remotely controlled sandblaster. 3,557,498, Cl. 51-8.

Lindstrom, Carl, Gesellschaft m.b.H.: *See*—
Strausfeld, Hermann, 3,557,406.

Lingen, Alfred: *See*—
Lennard, Dean J.; Keck, Donald Frederick; and Lingen, Alfred,3,558,058.

Linnox Industries Inc.: *See*—
Parker, Sidney A., 3,558,248.

L'Institut Francais du Petrole des Carburants et Lubrifiants:*See*—
Joly, Christian Georges, 3,559,180.

Lipiros, John Athanasios. Knockdown packing tray. 3,557,990, Cl. 217-43.

Lipscomb, Walter P.; and Schreffler, Robert Z., to Allied Chemical Corporation. Composite bearing and process of manufacture. 3,558,202, Cl. 308-238.

Listening Incorporated: *See*—
Moshier, Stephen L.; Van Lennep, William B.; and Perry, Edmund G., 3,558,822.

Litewate Transport Equipment Corporation: *See*—
Reeves, John F., 3,557,992.

Litton Business Systems of Canada Ltd.: *See*—
Somerville, Robert P., 3,558,388.

Litton Industries, Inc.: *See*—
Price, Ralph E., 3,557,495.

Litus, Juluus, Jr.: *See*—
Heuner, Robert C.; and Litus, Juluus, Jr.,3,558,992.

Liu, Shing-Gong: *See*—
Chang, Kern K.N.; and Liu, Shing-Gong,3,558,889.
Levine, Peter A.; and Liu, Shing-Gong,3,559,096.

Livingston, Charles W.: *See*—
Ferrai, Peter E.; Williams, Robert B.; and Livingston, Charles W.,3,558,162.

Livingston, William L., to Factory Mutual Research Corporation. Dynamic flow sensor. 3,557,811, Cl. 137-7.

Livshits, Abram Lazarevich; and Otto, Mark Shmulevich. Method of electroerosive machining of current- conducting materials and a device for effecting same. 3,558,842, Cl. 219-69.

Lobur, Walter, to Elox Inc. Electrical discharge machining servo control circuit. 3,558,844, Cl. 219-69.

Lockheed Aircraft Corporation: *See*—
Nielson, Niel E., 3,559,095.

Lodige, Alois. Scissor action hoist with components shaped so as to nest within one another. 3,558,103, Cl. 254-122.

Lofquist, Robert A.: *See*—
Twilley, Ian C.; Roth, David W. H., Jr.; and Lofquist, Robert A.,3,558,567.

Lohmann & Stollerfoht A.G.: *See*—
Hansgen, Klaus, 3,557,573.

Lohr & Bromkamp GmbH: *See*—
Aucktor, Erich; and Willimek, Walther, 3,557,572.

Lohse, Friedrich: *See*—
Schmid, Rolf; Lohse, Friedrich; and Batzer, Hans,3,558,742.

Lomas, Charles G., to Bowles Engineering Corporation. Pressure sensor and tachometer. 3,557,810, Cl. 137-1.

Long Manufacturing Co., Inc.: *See*—
Atkinson, Wallace E., 3,558,167.

Longinette, Edward G.; and Porter, Charles W. Riot control devices employing a modulated stimulus frequency. 3,557,899, Cl. 181-0.5

Longland, John R.: *See*—
Williams, Roy M., Jr.; and Longland, John R.,3,558,863.

Lorain Products Corporation: *See*—
Paradissis, Pantelis P., 3,558,906.

L'Oreal:*See*—
Kalopissis, Gregoire; and Bugaut, Andree, 3,558,259.

Lorenz, William M., to International Business Machines Corporation. Overvoltage protection circuit. 3,558,979, Cl. 317-16.

Lothrop, Frank: *See*—
Anderson, Philip C.; and Lothrop, Frank,3,557,759.

Louderback, Allan Lee; and Taylor, Nancy Ann, to Baxter Laboratories, Inc. Determination of albumin. 3,558,278, Cl. 23-230.

Louderback, Allan L.; and Youhne, Young, to Baxter Laboratories, Inc. Hematology control standard comprising washed red blood cells and synthetic latex particles. 3,558,522, Cl. 252-408.

Loveland, Junior West: *See*—
White, Chester N.; and Loveland, Junior West,3,558,469.

Loveless, Don L.: *See*—
Granfors, Ernest A.; Loveless, Don L.; and Boyle, Charles E.,3,559,162.

Lovett, John R.: *See*—
Lakritz, Julian; and Lovett, John R.,3,558,456.

Lowe, Warren, to Chevron Research Company. Styryl phophorodithioate esters to be used as antioxidants in lubricating oil. 3,558,490, Cl. 252-46.6

Lucas, Joseph, (Industries) Limited: *See*—
Jones, Peter David, 3,559,099.
Nolan, Roger William; Phoenix, Lancelot; Wiley, David; and Williams, Malcolm, 3,559,026.
Palmer, Kenneth Percival, 3,557,660.
Rigby, Ronald William, 3,558,993.
Sheldon, Robert Cyril, 3,557,433.
Yates, Thomas Charles, 3,557,552.

Lucas, Pierre M.; Dondoux, Jacques M.; Duquesne, Jean F.; and Laprevote, Jean-Marie L. Telephone switching system with independent signalling channels employing time-division multiplex. 3,558,827, Cl. 179-18.

Luciano, Robert A.: *See*—
Rigney, William R.; Tump, Dirk; and Luciano, Robert A.,3,557,747.

Ludin, Ludwig, to Camille Bauer Messinstrumente Aktiengesellschaft. Compensated electrical measuring instrument. 3,559,058, Cl. 324-99.

Lueck, Frederick E.; Denholm, Michael J.; Borowski, William J.; Kroml, Steven M.; and Gasperi, Michael A., to Borg-Warner Corporation. Vehicle braking system. 3,558,197, Cl. 303-21.

Luger, Emil J., Jr., to Delta Control, Inc. Flexible planar heating unit on surfaces of complex curvature adapted for mounting on complex curved surfaces. 3,558,858, Cl. 219-528.

Lugli, Giuseppe: *See*—
Beall, George H.; Lugli, Giuseppe; Maiocchi, Luigi; and Rittler, Hermann L.,3,557,858.

Lukes, George E.: *See*—
Brokke, Mervin E.; and Lukes, George E.,3,558,301.

Luksas, Anthony J., to Beatrice Foods Co. Fermenting whey and producing soy sauce from fermented whey. 3,558,328, Cl. 99-145.

Lummus, James L., to Pan American Petroleum Corporation. Low solids drilling fluid. 3,558,545, Cl. 260-29.6

Lunden, John W.; and O'Hern, James V., to General Electric Company. Broadband interstage coupling circuit. 3,559,091, Cl. 330-165.

Lundergan, Robert Graham, to AMP Incorporated. Clips to hold knobs on shafts. 3,558,165, Cl. 287-53.

Lunts, Lawrence H. C.: *See*—
Hartley, David; Lunts, Lawrence H. C.; and Toon, Paul,3,558,642.

Lutey, Richard William: *See*—
Hollis, Cecil George; and Lutey, Richard William,3,558,500.

Lutz, Roman; and Vogl, Herbert, to Siemens Aktiengesellschaft. Teleprinter device utilizing receiver formed from electronic circuits. 3,558,821, Cl. 178-17.5

Lutzke, William C.: *See*—
Blink, Robert O.; Lutzke, William C.; Holz, Frederick C.; and Schier, Robert W.,3,557,720.

Lycette, Richard M. Waxolytic enzyme preparation. 3,558,432, Cl. 195-66.

Lyon, Randolph S., Jr., to Volk, Kurt H., Inc. Combination letter sheet and envelope. 3,557,519, Cl. 53-31.

Lyons, Rex. Tobacco conveyor. 3,557,939, Cl. 198-139.

Lysaght, Michael J.: *See*—
Michaels, Alan S.; Lysaght, Michael J.; and Splitz, Stephen A.,3,558,744.

MacAfee, James E., to Chrysler Corporation. Duo-servo drum brake and mechanical actuating means therefor. 3,557,912, Cl. 188-78.

Macauley, William T.: *See*—
Martinck, Frank; and Macauley, William T.,3,557,554.

MacCosham, Victor J., to Beckman Instruments, Inc. Heating apparatus for reaction kinetics investigations. 3,558,232, Cl. 356-244.

Mac Cracken, Calvin D., to Calmac Manufacturing Corporation. Roof structures of reinforced temperature- hardenable plastic and process for making same. 3,557,515, Cl. 52-741.

Mace, Harry W., to Aerosol Techniques Research Center, Inc. Multipurpose cleaner. 3,558,495, Cl. 252-90.

Mac Ewen, George E.: *See*—
Mirasol, Salustiano S., Jr.; and Mac Ewen, George E.,3,557,995.

Mach, Dominik: *See*—
Hrach, Josef; Zeschmar, Winfried; Morawetz, Gottfried; and Mach, Dominik,3,558,557.

Mackey, E Scudder; Dersch, Fritz; and Eisenman, Fred S., to GAF Corporation. Phosphoric acid esters of polyoxyalkylenated gelatin as sensitizers. 3,558,321, Cl. 96-107.

Mac Manufacturing Company, Inc.: *See*—
Rogers, Harry T.; and Rogers, James H., 3,557,940.

Madole, Doyle L. Articulated crane. 3,557,967, Cl. 212-55.

Magill, John W. Airport surface layout. 3,558,085, Cl. 244-114.

Magnaflux Corporation: *See*—
Mlot-Fijalkowski, Adolf, 3,558,505.
Mlot-Fijalkowski, Adolf, 3,558,882.

Magnuson, Robert,: *See*—
Daugherty, Ralph K.; and Baumann, Paul H., 3,557,523.

Mahoney, Jack Lawrence. Method of implanting a hearing aid. 3,557,775, Cl. 128-1.

Mains, Harold S., to City Machine and Wheel Company, The. Tire mounting machine. 3,557,862, Cl. 157-1.24

Maiocchi, Luigi: *See*—
Beall, George H.; Lugli, Giuseppe; Maiocchi, Luigi; and Rittler, Hermann L.,3,557,858.

Maiocchi, Luigi; and Muhlberg, Wolfgang, to Pirelli, S.p.A. Radial tire bead construction Measurements of longitudinal streeses in moving metal bands and devices therefor. 3,557,614, Cl. 73-144.

Malburg, Werner: *See*—
Dederra, Carl-Helmut; Lechner, Manfred; and Malburg, Werner,3,558,064.

Malec, Robert E.: *See*—
Miller, Eugene J., Jr.; Tiefenthal, Harlan E.; Reck, Richard A.; and Malec, Robert E.,3,558,713.

Mallory, Edwin E.: *See*—
Lang, Ernest U.; and Mallory, Edwin E.,3,557,920.

Mallory, Herbert D.: *See*—
Joyner, Taylor B.; Mallory, Herbert D.; and Okauchi, Kinge,3,557,697.

Mallory, P R., & Co., Inc.: *See*—
Chestnut, Benjamin F.; and Murray, Stephen F., 3,558,940.
Dotto, Gianni A., 3,559,195.
Griffiths, Leonard B., 3,558,305.

Malmgren, Ake: *See*—
Henriksson, Sune Torsten; Malmgren, Ake; Muotka, Ragnar Ludvig; and Widegren, Lars Harald,3,557,982.

Malow, Egon, Hofheim: *See*—
Voigt, Hartmut; Malow, Egon, Hofheim; Wetzel, Walter; and Schneck, Erich,3,557,530.

Mancini, Michael A.: *See*—
Crabtree, Royale R.; Beeker, Charles W.; Shaff, Larry T.; Mancini, Michael A.; and Pheil, Joseph C.,3,558,005.

Mann, Howard G., to North American Rockwell Corporation. Protective and lubricating composition. 3,558,488, Cl. 252-28.

Mannesmann Aktiengesellschaft: *See*—
Oppemann, Willi, 3,558,839.

Manns, Bernt Hugo, to Nordiska Maskinfilt Aktiebolaget. Machine for cross-wise deposition of carded webs and a carded web manufactured by means of the machine. 3,558,029, Cl. 226-108.

Manship, Roger Alan: *See*—
McNeilly, Joseph Hood; and Manship, Roger Alan,3,559,079.

Marantz, Israel H., to Columbia Cable & Electric Corporation. Armored cable and method of making the same. 3,558,378, Cl. 156-54.

Marbaix, Gaston E., Limited: *See*—
Hillier, Malcolm Edwin, 3,558,031.

Marby, Hans-Jorg. Method of making a three dimensional configured laminated article. 3,558,394, Cl. 156-210.

Marcatili, Enrique A. J., to Bell Telephone Laboratories, Incorporated. Optical frequency filters using disc cavity. 3,558,213, Cl. 350-96.

Marchese, Frank P.: *See*—
Levy, Sheldon; and Marchese, Frank P.,3,558,634.

Marco, Gino J., to Monsanto Company. Animal feed compositions and methods. 3,558,790, Cl. 424-356.

Marder, Herbert, to Dunkermotoren Prazisions-Kleinstmotorengesellschaft mbH. Motor reversing and stopping at limit of travel and number of revolution. 3,559,024, Cl. 318-467.

Margolies, Samuel L. Swimming device. 3,557,397, Cl. 9-305.

Margot, Alfred: *See*—
Paltauf, Friedrich; Margot, Alfred; and Brenneisen, Paul,3,558,784.

Marienbakh, Lev Mikhailovich: *See*—
Grachev, Vladimir Alexandrovich; Cherny, Anatoly Alexeevich; Marienbakh, Lev Mikhailovich; and Kurbatsky, Ivan Lukich,3,558,791.

Marker, Hannes. Safety toe iron for ski bindings. 3,558,150, Cl. 280-11.35

Markey, Joseph Thomas, to Gillette Company, The. Gauging system. 3,557,606, Cl. 73-37.8

Markov, Konstantin Petrovich: *See*—
Babich, Valentin Grigorievich; Kursky, Alexander Kuzmich; Markov, Konstantin Petrovich; Ryabov, Nikoali Vasilievich; and Stas, Konstantin Nikolaevich,3,558,884.

Marks, Ben D.: *See*—
McNiel, Nixon, 3,558,095.

Marquardson, Kent F.: *See*—
Lebrizzi, Joseph M.; Lewis, Daniel M.; and Marquardson, Kent F.,3,558,466.

Marsden, Ernest, to Larus & Brother Company. Tobacco smoke filter element. 3,557,802, Cl. 131-266.

Marsh, Robert E. Pressure vessel for water conditioner assembly. 3,557,827, Cl. 137-590.

Marsh Stencil Machine Company: *See*—
Hempel, Herbert W.; and Hill, Forrest G., 3,558,030.

Marshall, Donald. Washing machine. 3,557,579, Cl. 68-23.5

Marshall, Joseph C.: *See*—
DiGiugno, Angelo; and Marshall, Joseph C.,3,559,208.

Marshall, William E.: *See*—
Jensen, Ronald F.; and Marshall, William E.,3,558,118.

Martin, Carl; and Parker, William C., to Space Corporation. Force indicating system. 3,559,059, Cl. 324-99.

Martin, Elmore Louis, to Du Pont de Nemours, E. I., and Company. Fluoro- and cyano-substituted 7,7,8,8- tetracyanoquinodimethans and intermediates thereto. 3,558,671, Cl. 260-396.

Martin, Glenn E.: *See*—
Schleif, Ferber R.; and Martin, Glenn E., deceased,3,558,986.

Martin, Michel, to Eau Et Feu Societe Anonyme. Process of manufacturing hose pipes. 3,558,754, Cl. 264-94.

Martin, Robert W. Abrasive tool. 3,557,496, Cl. 51-394.

Martin-Marietta Corporation: *See*—
Blake, Carl B.; and Fuerst, Adolph, 3,558,446.

Martinek, Frank; and Macauley, William T., to Aerojet-General Corporation. Power conversion system operating on closed rankine cycle. 3,557,554, Cl. 60-94.

Martinez, Mario. Stranding machine. 3,557,540, Cl. 57-58.34

Martinson, Edwin O., to Koehring-Waterous, Ltd. Tree harvester. 3,557,849, Cl. 144-3.

Martone, Ralph: *See*—
Barron, Edward R.; Carlucci, Michael P.; James, Peter; Martone, Ralph; and Walsh, Justin E.,3,557,384.

Marty, Pierre R.; and Dousset, Roger L., to International Standard Electric Corporation. Electronic scanners. 3,558,828, Cl. 179-18.

Marulic, Walter J.: *See*—
Aquino, Herman A.; Marulic, Walter J.; and Shaver, William R.,3,557,714.

Maruyama, Eiichi; Oikawa, Mitsuru; and Komoda, Tsutomu, to Kabushiki Kaisha Hitachi Seisakusho. Method of producing cathodoconductive target from sclenium and an alkali metal material. 3,558,527, Cl. 252-500.

Maruyama, Isamu: *See*—
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadishi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,558,604.
Yamamoto, Hisio; Inaba, Shigeho; Okimoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,558,603.

Maruyama Mfg. Co., Ltd.: *See*—
Uchiyama, Ryoji, 3,558,244.

Mary, Dominique Christian: *See*—
Bussienne, Christian Edmand; and Mary, Dominique Christian,3,557,973.

Mary, Francis J.: *See*—
Pacault, Pierre Henri; and Mary, Francis J.,3,557,568.

Maschinenfabrik Fr. Niepmann & Co.: *See*—
Niepmann, Otto, 3,557,970.

Maschinenfabrik Goebel GmbH: *See*—
Held, Franz, 3,558,074.

Mascitti, Albert A.: *See*—
Sulkowski, Theodore S.; and Mascitti, Albert A.,3,558,647.

Massari, Bernard J. Laminated tape for printing with a pressure transmitting top layer to sever an intermediate brittle layer. 3,558,425, Cl. 161-232.

Massey-Ferguson Inc.: *See*—
Richey, Clarence B., 3,557,882.

Mathias, Joseph S.; and McGee, Joseph J., to Sperry Rand Corporation. Electrolessly deposited magnetic cobalt alloys. 3,558,306, Cl. 75-170.

Mathieu, Francois Joseph Henri Hubert; and Mathieu, Odile Jeanne Marie nee Maury. Apparatus for changing the curvature of a sail. 3,557,733, Cl. 114-102.

Mathieu, Odile Jeanne Marie nee Maury: *See*—
Mathieu, Francois Joseph Henri Hubert; and Mathieu, Odile Jeanne Marie nee Maury,3,557,733.

Mathijssen, Wilhelmus Martinus: *See*—
Janssen, Peter Johannes Hubertus; Smeulers, Wouter; and Mathijssen, Wilhelmus Martinus,3,558,804.

Matson, Howard J., to Sinclair Research, Inc. Emulsifiable lubricating compositions. 3,558,489, Cl. 252-32.5

Matsui, Masanao; Uzu, Keizo; and Wakaki, Shigetoshi, to Kyowa Hakko Kogyo Co., Ltd. 1a-Acyl-7-acyloxy-9a-methoxy-mitosanes. 3,558,651, Cl. 260-326.3

Matsuoka, James T., to Intercole Automation, Inc. Plastic mixer. 3,558,106, Cl. 259-109.

Matsushige, Robert H.; and Latus, Gerald Joseph, Jr., to International Telephone and Telegraph Corporation. Microwave switch. 3,559,109, Cl. 333-7.

Matsushita Electric Industrial Co., Ltd.: *See*—
Cku, Takeshi, 3,558,851.

Matt, Richard J.; and Mooers, Newman F., to Textron Inc. Method for making an antifriction bearing seal. 3,557,420, Cl. 29-148.4

Mattson, Johan Arne, to Anderson, Paul, Industrier Aktiebolag. Device for adjusting the suspending point of a suspended object. 3,558,175, Cl. 294-67.

Maui Land & Pineapple Company, Inc.: *See*—
Tsutsumi, Masato, 3,557,851.

Maul Bros., Inc.: *See*—
Bracken, Robert S., 3,558,296.

Maurer, Max, to Bachmann, Marcel. Deviation device of a towing or suspension ropeway. 3,557,706, Cl. 104-191.

May & Baker Limited: *See*—
Bamford, David George; Biggs, David Frederick; Chaplen, Peter; Davis, Michael; and Sheffield, David John, 3,558,654.

May, George A. P-N junction scanning device having photo- conductors disposed on device with field effect layers for controlling position of scanning spot. 3,558,897, Cl. 250-209.

Mayaud, Edith E., to RCA Corporation. Method for producing a graphic image. 3,558,310, Cl. 96-36.1

Maybee, Richard C., to Atlas Chemical Industries, Inc. Cellular plastic foam insulation board structures. 3,557,840, Cl. 138-149.

Mayell, Jaspal Singh, to American Cyanamid Company. Preparation of alkene halides. 3,558,453, Cl. 204-81.
Mayer & Cie., Maschinenfabrik: *See—*
Plath, Ernst-Dieter, 3,557,577.
Mayer, Jean-Jacques: *See—*
Floret, Felix; Mayer, Jean-Jacques; and Peronneau, Georges,3,559,182.
Mayer, Simon E.: *See—*
Gray, Robert D.; and Mayer, Simon E.,3,558,347.
Mayers, Dale Martin; and Cook, Duane D. Keyless chuck. 3,558,146, Cl. 279-28.
Mazurek, Edward F., to Bell Telephone Laboratories, Incorporated. Circuit for testing the integrity of an electrical path by transmission of a pulse therethrough. 3,559,051, Cl. 324-51.
Mc Alpine, John F.: *See—*
Richie, Edward H.; and Mc Alpine, John F.,3,558,403.
McCammond, Warren E.: *See—*
Krehbiel, Robert D.; and McCammond, Warren E.,3,557,824.
McCann, Eugene P.: *See—*
Eakin, Bertram E.; McCann, Eugene P.; and Cranmer, John L., Jr.,3,558,000.
McCarty, Robert T., to Geigy Chemical Corporation. Feed composition and its utilization. 3,558,786, Cl. 424-319.
McClung, Charles E.: *See—*
Salyer, Ival O.; Schwendeman, James L.; and McClung, Charles E.,3,558,417.
McCrory, William W., Jr.; and Hunter, Earl Kent, to United States of America, Navy. Underwater microphone testing device. 3,558,833, Cl. 179-175.1
McCulloch Corporation: *See—*
Burkett, Wilford B.; and Bigbee, John, III, 3,559,025.
McDonald, John William, to Du Pont de Nemours, E. I., and Company. Aqueous dispersion of polyvinylidene chloride containing ethylene/vinyl alkonoate copolymer and wax. 3,558,542, Cl. 260-27.
McDonnell Douglas Corporation: *See—*
Aldridge, Clifton, Jr.; and Howell, Robert D., 3,558,756.
Hamilton, Vern E.; and Roseland, Luther M., 3,558,408.
Hamilton, Vern E.; and Roseland, Luther M., 3,558,422.
McFarland, Frederick R.; and Appler, Park H., to K-D Manufacturing Company. Depth gauge. 3,557,460, Cl. 33-172.
McFarland, Norman T., to Glass, Marvin, & Associates. Double jig-saw puzzle game. 3,558,136, Cl. 273-130.
McGee, Joseph J.: *See—*
Mathias, Joseph S.; and McGee, Joseph J.,3,558,306.
McGinty, Charles F., to Schlumberger Technology Corporation. Hoisting device. 3,558,104, Cl. 254-190.
McGraw-Edison Company: *See—*
Krolski, Kenneth L.; and Plichta, Michael J., 3,558,985.
Racenis, Karlis V.; and Cochran, John Richard, 3,557,580.
Mc Gregor, Stanley D.: *See—*
Roberts, Carleton W.; and Mc Gregor, Stanley D.,3,558,715.
McGriff, Stuart G.: *See—*
McRae, Wayne A.; McGriff, Stuart G.; and Leitz, Frank B.,3,558,279.
Mc Guire, Thomas A.; and Mehltretter, Charles L., to United States of America, Agriculture. Process for the chlorohydrination of allyltrimethylammonium chloride. 3,558,501, Cl. 252-182.
McHenry, Edwin J., to Bell Telephone Laboratories, Incorporated. Battery seal. 3,558,362, Cl. 136-133.
Mc Innis, Andrew M.: *See—*
Ballard, Louis M.; and Mc Innis, Andrew M.,3,558,407.
McIntyre, John S., to Dow Chemical Company, The. 2H,5H-Pyrano(3,2-c) (1)benzo- pyran-4(3H),5-diones. 3,558,658, Cl. 260-343.2
Mc Intyre, Stephen J. Method for separating lead from a lead coated cable. 3,558,304, Cl. 75-63.
Mc Kinney, Robert W., to Grace, W. R., & Co. Gas-liquid chromatography method. 3,557,531, Cl. 55-67.
McKinnis, Ronald B.: *See—*
Epperson, Donald E.; Douglas, Peter L.; and McKinnis, Ronald B.,3,558,598.
McLaughlin, Homer C., Jr.; and Koch, Ronney R., to Halliburton Company. Method of forming a flexible sealant. 3,557,562, Cl. 61-41.
McMaster, Robert C.; Libby, Charles C.; and Minchenko, Hildegard M., to Ohio State University, The, Board of trustees of the. Sonic transducer apparatus. 3,558,937, Cl. 310-8.2
McMichael, David S., to United States Steel Corporation. Holder for a circular workpiece subject to expansion and contraction. 3,558,124, Cl. 269-48.1
McMillan, David E., to United States of America, Atomic Energy Commission. Circuit for dimensional verification of punched tapes. 3,558,862, Cl. 235-61.7
McNeilly, Joseph Hood; and Manship, Roger Alan, to International Standard Electric Corporation. Non-linear decoder. 3,559,079, Cl. 328-119.
McNiel, Nixon, 50% to Marks, Ben D. Building wall apparatus. 3,558,095, Cl. 249-13.
McPhar Geophysics Limited: *See—*
Robinson, William A., 3,559,046.
McQueen, William D., to Dow Chemical Company, The. Gas administration apparatus. 3,557,785, Cl. 128-188.
McRae, Wayne A.; McGriff, Stuart G.; and Leitz, Frank B., to Ionics, Incorporated. Electrochemical sensor device. 3,558,279, Cl. 23-254.
Mead, Hansel B.; and Campbell, Scott V., to Teltronic Measurement Systems, Inc., mesne. Automatic gain stabilization and calibration system for a radio receiver. 3,559,071, Cl. 325-363.
Mead Johnson & Company: *See—*
Wu, Yao Hua, 3,558,777.
Mead, Robert H.: *See—*
Heathwaite, Hewart H.; Mead, Robert H.; and Paul, William T.,3,557,424.
Medidata Sciences, Inc.: *See—*
Worthington, Harvey R., Jr., 3,558,207.
Mee, John D.: *See—*
Brooker, Leslie G. S.; and Mee, John D.,3,558,320.
Meeker, Thrygve R.: *See—*
Egerton, Lawson; Meeker, Thrygve R.; and Tauke, John D.,3,559,116.
Mefina S.A.: *See—*
Casas-Robert, Ramon, 3,557,731.
Mehaffie, Stephen R.: *See—*
Weingarten, Joseph L.; and Mehaffie, Stephen R.,3,557,855.
Mehltretter, Charles L.: *See—*
Mc Guire, Thomas A.; and Mehltretter, Charles L.,3,558,501.
Meidensha, K.K.: *See—*
Barada, Minoru; and Shimada, Keiji, 3,558,836.
Meitz, Adolf: *See—*
Simon, Karl-Heinz; Beckmann, Wilhelm; Ashworth, John T.; Bohne, Gunter; Meitz, Adolf; and Kielpinski, Leonard V.,3,557,798.
Meltsner, Bernard R., to Ethyl Corporation. Dihydrocarbylhydroxyphenyl phosphorus-containing antioxidants. 3,558,747, Cl. 260-953.
Mendel, Arthur: *See—*
Harrington, Joseph Kenneth; Kvam, Donald C.; Mendel, Arthur; and Robertson, Jerry E.,3,558,698.
Menke, James A.: *See—*
Conley, William F.; Vorachek, Jerome J.; and Menke, James A.,3,558,083.
Merck & Co., Inc.: *See—*
Sarett, Lewis H.; and Ruyle, William V., 3,558,641.
Sarett, Lewis H.; and Windholz, Thomas B., 3,558,675.
Shen, Tsung-Ying; and Dorn, Conrad P., Jr., 3,558,640.
Tull, Roger J.; Tristram, Edward W.; and Grabowski, Edward J. J., 3,558,625.
Merkel, Karl: *See—*
Adam, Karl; Haarer, Erich; Merkel, Karl; and Pilch, Kurt,3,558,703.
Merker, Leon: *See—*
Beals, Malcolm D.; and Merker, Leon,3,558,333.
Merrow Machine Company, The: *See—*
Armstead, George B., Jr., 3,557,730.
Messenger, Joseph U., to Mobil Oil Corporation. Well cementing compositions. 3,558,335, Cl. 106-90.
Metcalf, Dean W., to Phillips Petroleum Company. Apparatus for applying a label to a container by moving the container through resilient fingers having the label mounted therein. 3,558,404, Cl. 156-484.
Metlesics, Werner; and Sternbach, Leo Henryk, to Hoffmann-La Roche Inc. 2-(Aminoalkyl)-1-phenylisoindolines. 3,558,649, Cl. 260-326.1
Metropolitan Wire Goods Corporation: *See—*
Dashper, William, 3,559,204.
Metzger, Courtney A.; and Hearld, Albert B., to United States of America, Air Force. Radioactive isotope distillation system for recovering water from waste in a spacecraft. 3,558,437, Cl. 202-200.
Metzger, Karl Georg: *See—*
Ley, Kurt; Eholzer, Ulrich; Nast, Roland; Metzger, Karl Georg; and Fritsche, Dieter,3,558,624.
Meunier, Henry E.; and Eymard, Pierre Luc, to Laboratories J. Berthier S.A. Dipropylacetamido-2-pyrimidine in compositions and methods for inducing sedation or tranquilization. 3,558,781, Cl. 424-251.
Meyer, Henry O., to Ampex Corporation. Voltage variable delay line termination. 3,558,933, Cl. 307-293.
Mezogazdasagi Gepjavito Vallalat: *See—*
Lammel, Kalman; and Horvath, Erno, 3,557,539.
Michaels, Alan S.; Lysaght, Michael J.; and Splitz, Stephen A., to Amicon Corporation. Process for making polyelectrolyte complex resin. 3,558,744, Cl. 260-874.
Michailov, Stoyan P. Releasable bracket. 3,558,089, Cl. 248-230.
Michals, Richard A.: *See—*
Wright, Robert T.; Michals, Richard A.; Mozer, Frank H.; and Zumbahlen, Ralph E.,3,557,927.
Micron Di Bianchini Dottor Pietro & Co.-S.N.C.: *See—*
Bianchini, Pietro, 3,558,772.
Midland-Ross Corporation: *See—*
Fathauer, Jack E.; and Whiteman, Donald R., 3,558,176.
Mifsud, Joseph F., to Esso Production Research Company. Motion detector with two separate windings and circuit interconnecting the windings. 3,559,050, Cl. 324-34.
Miklos, Joseph: *See—*
Koch, Robert L.; Thomas, Earl F.; Miklos, Joseph; and Curry, William H.,3,557,431.
Milenkovic, Veljko, to General American Transportation Corporation. Railway trains for combination railway and passenger automobile transportation, and cars therefor. 3,557,712, Cl. 105-368.

Miles, Ray P.; and Szucs, Andrew E. Pallet dolly. 3,558,152, Cl. 280-47.16
Miller Brewing Company: *See—*
Westermann, Donald H.; Herwig, William C.; and Durant, William J., 3,558,326.
Miller, Chester H.; and Brodersen, Arthur J. Internal resistance static discharger. 3,558,976, Cl. 317-2.
Miller, David J.; and Wiewiorowski, Tadeusz K., to Freeport Sulphur Company. Method for raising the autogenous ignition temperature of carbon disulfide. 3,558,510, Cl. 252-364.
Miller, David J.: *See—*
Wiewiorowski, Tadeusz K.; and Miller, David J.,3,558,509.
Miller, Earle C., to Stoker, Riley, Corporation. Furnace for burning wet fuels and method of operating same. 3,557,723, Cl. 110-8.
Miller, Elmer C.: *See—*
Smith, Dexter E.; and Miller, Elmer C.,3,558,045.
Miller, Eugene J., Jr.; Tiefenthal, Harlan E.; Reck, Richard A.; and Malec, Robert E., to Armour Industrial Chemical Company. Phenyl and naphthyl substituted alkyl. 3,558,713, Cl. 260-590.
Miller, Melvin J. Gun drawing timing apparatus. 3,558,132, Cl. 273-1.
Miller, Roy W.: *See—*
Dobson, Ralph W.; and Miller, Roy W.,3,557,711.
Miller, Roy W., to Pullman Incorporated. Container vehicle and adjustable bracket means therefor. 3,557,710, Cl. 105-366.
Mills, John M., to Westinghouse Electric Corporation. D.C. motor control system which compares the motor current with a reference to control the motor speed. 3,559,009, Cl. 318-95.
Minchenko, Hildegard M.: *See—*
McMaster, Robert C.; Libby, Charles C.; and Minchenko, Hildegard M.,3,558,937.
Mine Safety Appliances Company: *See—*
Freeman, William R.; and Bombaugh, Karl J., 3,558,283.
Minet, Roy A., to RCA Corporation. Beam landing error control apparatus for magnetically focussed cathode ray tubes. 3,558,953, Cl. 313-76.
Minnesota Mining and Manufacturing Company: *See—*
Harrington, Joseph Kenneth; Kvam, Donald C.; Mendel, Arthur; and Robertson, Jerry E., 3,558,698.
Minolta Camera Kabushiki Kaisha: *See—*
Kushima, Teizo; and Ogawa, Masaya, 3,557,751.
Mirabile, Samuel P.: *See—*
Emery, Raymen F.; Mirabile, Samuel P.; Slavin, Michael; and Bata, George T.,3,557,898.
Miracle Pet Products, Inc.: *See—*
Bader, Harold, 3,557,754.
Miram, George V., to Varian Associates. Linear beam tube with plural cathode beamlets providing a convergent electron stream. 3,558,967, Cl. 315-3.5
Mirasol, Salustiano S., Jr.; and Mac Ewen, George E., to Phillips Petroleum Company. Upwardly-expansible plastic vented lid. 3,557,995, Cl. 220-42.
Mitchell, Boris John, to General Motors Company. Engine with variable opening inlet valve means. 3,557,762, Cl. 123-98.
Mitchell, Irving L.; and Lewis, Julius, to Ebert Electronics Corporation. Solenoid and electronic delay circuit. 3,558,996, Cl. 317-123.
Mitchell Manufacturing Co.: *See—*
Blink, Robert O.; Lutzke, William C.; Holz, Frederick C.; and Schier, Robert W., 3,557,720.
Mitsubishi Denki Kabushiki Kaisha: *See—*
Itoh, Toshio; Miyamoto, Toshio; and Wada, Yuichi, 3,559,138.
Yanagishita, Kazuo; and Iwakishi, Akira, 3,558,890.
Mitsubishi Jukogyo Kabushiki Kaisha: *See—*
Ujiie, Akira, 3,558,846.
Uto, Yoshimitsu; Yamazaki, Taizo; and Shinkawa, Toshikazu, 3,557,839.
Mitsubishi Petrochemical Co., Ltd.: *See—*
Kuriyama, Tsuncto; Kuroda, Toshihiko; Tanba, Shigeru; and Murakami, Tetsuzo, 3,558,554.
Mitsubishi Rayon Co., Ltd.: *See—*
Sudo, Makoto; Yamamoto, Yasumasa; Kobayashi, Masao; Yamasaki, Kenichi; and Ikeda, Minoru, 3,558,695.
Tabara, Yoshijiro; Teranishi, Nobuhide; Kikuchi, Shigeru; Ono, Kunito; and Imao, Shoji, 3,558,761.
Mitsubishi Vonnel Co., Ltd.: *See—*
Tabara, Yoshijiro; Teranishi, Nobuhide; Kikuchi, Shigeru; Ono, Kunito; and Imao, Shoji, 3,558,761.
Miyahira, Harrison Y.; and Wilkerson, John L., to TRW Inc. Wideband crystal-controlled FM modulator having noise cancelling feedback. 3,559,104, Cl. 332-19.
Miyamoto, Toshio: *See—*
Itoh, Toshio; Miyamoto, Toshio; and Wada, Yuichi,3,559,138.
Miyata, Tomiaki: *See—*
Tsuchida, Shunichiro; Miyata, Tomiaki; and Takahashi, Michihiko,3,558,313.
Mizelle, Ned W., to General Steel Products, Inc. Reclining chair mechanism. 3,558,185, Cl. 297-84.
Mizrahi, Richard I., to Honeywell Inc. Method of fabricating slant cores. 3,557,445, Cl. 29-603.
Mlot-Fijalkowski, Adolf, to Magnaflux Corporation. Water-emulsifiable composition 252-312.. 3,558,505, Cl.
Mlot-Fijalkowski, Adolf, to Magnaflux Corporation. Water miscible penetrant remover. 3,558,882, Cl. 250-71.
Mobil Oil Corporation: *See—*
Messenger, Joseph U., 3,558,335.
Rein, Burton M.; and Behun, John D., 3,558,693.
Rupp, Lewis A., 3,557,396.
Mobilpak Corporation: *See—*
Boyd, John A., 3,557,683.
Model, Ernst: *See—*
Kleemann, Alois; and Model, Ernst,3,558,266.
Moe, William West: *See—*
Barkman, Byron L.; Moe, William West; and Ross, Austin,3,558,813.
Moessinger, Albert E. Mechanism for starting a weaving machine. 3,557,841, Cl. 139-1.
Moffatt, John G.: *See—*
Jones, Gordon H.; and Moffatt, John G.,3,558,595.
Moffett, Lawrence R., Jr.; and Capps, Julius D., to Thiokol Chemical Corporation. Ferrocene derivative. 3,558,680, Cl. 260-439.
Molin, Urban. Vehicle lighting plants. 3,558,971, Cl. 315-77.
Molins Machine Company Limited: *See—*
Williamson, David T. N.; and Wood, William, 3,557,930.
Molins Organization Limited, The: *See—*
Williamson, David Theodore Nelson; and Pym, Michael Aren, 3,557,797.
Molla, Pietro, to S.A.F.F.A.-Societa per Azioni Fabbriche Fiammiferi ed Affini. Automatic device associated with a to-size cutter for collecting abrasive or other kind of sheets. 3,557,667, Cl. 93-93.
Molnar, Eugene J. Plastic impression compositions. 3,558,540, Cl. 260-23.
Molof, Alan H. Fluid analysis system. 3,557,608, Cl. 73-53.
Monahan, John F.; and Dischert, Robert A., to RCA Corporation. Matrixing apparatus. 3,558,806, Cl. 178-5.4
Monarch Tool & Manufacturing Company: *See—*
Hall, Mitchell A., 3,557,926.
Monsanto Chemicals Limited: *See—*
Sen, Durgacharan, 3,558,752.
Monsanto Company: *See—*
Bruner, Albert H.; and Truscott, Thomas B., 3,558,765.
Bryant, James G., 3,559,048.
Dalton, William O., 3,558,541.
Huck, Rodney M.; and Le Blanc, John R., 3,558,560.
Irish, Perley M., Jr., 3,558,539.
Le Blanc, John R., 3,558,559.
Marco, Gino J., 3,558,790.
Morgenthaler, William W., 3,558,486.
Monsanto Research Corporation: *See—*
Blake, Edward S.; De Brunner, Ralph E.; and Dalton, David R., 3,558,748.
Fincke, John K.; DeBrunner, Ralph E.; and Wilson, Glenn R., 3,558,350.
Salyer, Ival O.; Schwendeman, James L.; and McClung, Charles E., 3,558,417.
Monsheimer, Rolf; and Pfleiderer, Ernst, to Rohm & Haas G.m.b.H. Process for the loosening of dead hairs in fur pelts. 3,558,430, Cl. 195-6.
Montec Corporation: *See—*
Brown, Horace D., 3,559,140.
Montecatini Edison S.p.A.: *See—*
Zuliani, Giuseppe; and Socci, Miniato, 3,558,550.
Montevecchio, Albert J.; Bartron, William D.; and Galster, Thomas H., to Xerox Corporation. Graphic communication electrical interface system. 3,558,811, Cl. 178-6.
Montgomery, William T., S., to Jacksonville Blow Pipe Company. Incinerator. 3,557,726, Cl. 110-18.
Moody, Jerry W.; and Reid, Francis J., to Avco Corporation. Infrared detecting materials, methods of preparing them, and intermediates. 3,558,373, Cl. 148-171.
Mooers, Newman F.: *See—*
Matt, Richard J.; and Mooers, Newman F.,3,557,420.
Mooradian, Aram, to Sterling Drug Inc. Benzofurans from O-phenylketoximes. 3,558,667, Cl. 260-346.2
Moore Business Forms, Inc.: *See—*
Wakeman, William R.; and Waffner, William D., 3,558,159.
Moore, Glenn E.; Hughes, James L.; and Lamping, Frank G., to Dover Corporation. Swivel connecter for tubing. 3,558,163, Cl. 285-168.
Moorefield, Charles H.: *See—*
Moorefield, John E.,3,557,703.
Moorefield, John E., deceased0 (by Moorefield, Charles H.; executor). Railway rail handling apparatus. 3,557,703, Cl. 104-2.
Morawetz, Gottfried: *See—*
Hrach, Josef; Zeschmar, Winfried; Morawetz, Gottfried; and Mach, Dominik,3,558,557.
Moreines, Harold; and Gessner, Gunter J., to Bendix Corporation, The. Frequency responsive monitor for a redundant control system. 3,559,198, Cl. 340-248.
Morgan, Mark; and Rottmann, Hans R., to International Business Machines Corporation. System and method for using numerically coded etched indicia for identification of pieces of semiconductor material. 3,558,899, Cl. 250-219.
Morgan, Martin J.; Evans, William C.; Rappaport, Richard A.; and Gutzmer, Alfred N., to Sybron Corporation. Amplifier systems and FET modulation. 3,559,107, Cl. 332-47.
Morgan, William J.: *See—*
Figueroa, John W.; Morgan, William J.; and Rasmussen, Rolland R.,3,559,187.
Morgenthaler, William W., to Monsanto Company. Fire fighting compositions with asbestos thickening agent. 3,558,486, Cl. 252-8.1

Mori, Kazuo: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadishi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,558,604.
Yamamoto, Hisio; Inaba, Shigeho; Okimoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,558,603.
Moritz, Thomas A. Can cooling apparatus. 3,558,105, Cl. 259-2.
Morris, Philip, Incorporated: *See—*
Braginetz, Paul A., 3,557,450.
Morrison, Charles R., to Truck-Lite Company, Inc. Side marker turn indicator lamp. 3,558,870, Cl. 240-8.2
Morse, Milton. Bicycle seat. 3,558,187, Cl. 297-199.
Morton, Lloyd, Jr.; and O'Hare, John, to Gillette Company, The. Methods and apparatus for manufacturing dispensing devices. 3,557,520, Cl. 53-37.
Morvan, Eugene Ellowan, to CSF-Compagnie Generale de Telegraphie Sans Fil. Noise generator employing a feedback path around two cascaded travelling-wave tubes. 3,559,093, Cl. 331-78.
Mosher, Ralph S.: *See—*
Kugath, Donald A.; and Mosher, Ralph S.,3,557,627.
Moshier, Stephen L.; Van Lennep, William B.; and Perry, Edmund G., to Listening Incorporated. Acoustic locator. 3,558,822, Cl. 179-1.
Moskowitz, Isadore, to Bethlehem Steel Corporation. Apparatus for determining the boundary between disparate light-emitting areas. 3,558,841, Cl. 219-10.61
Moskowitz, Isadore, to Bethlehem Steel Corporation. Crack detector for edge of moving strip which discriminates between cracks and pinholes. 3,558,900, Cl. 250-219.
Moss, Dewey L.: *See—*
Allison, George F.; Moss, Dewey L.; and Pendleton, Herman L.,3,557,479.
Motorola, Inc.: *See—*
Booth, Donald L.; and Schilb, William A., 3,559,088.
Cawthorne, Arthur David, 3,559,061.
Cecchin, Gildo; and Hilbert, Francis H., 3,558,810.
Cooper, David E.; and Smith, Alvin M., 3,559,001.
Dale, Robert G.; and Fay, Gary V., 3,558,910.
Moyer, Joseph D., to Grace, W. R., & Co. Process for preparing 3,5-dioxo-1- piperazineacetamide and nitrilotriacetic acid triamide. 3,558,630, Cl. 260-268.
Mozer, Frank H.: *See—*
Wright, Robert T.; Michals, Richard A.; Mozer, Frank H.; and Zumbahlen, Ralph E.,3,557,927.
M&T Chemicals Inc.: *See—*
Leebrick, John R.; and Remes, Nathaniel L., 3,558,783.
Reifenberg, Gerald H.; and Considine, William J., 3,558,275.
Mueller Co.: *See—*
Mueller, Frank H.; Leopold, Wilbur R., Jr.; and Smith, John J., 3,557,832.
Mueller, Curtis F. Medicament container. 3,558,205, Cl. 312-209.
Mueller, Frank H.; Leopold, Wilbur R., Jr.; and Smith, John J., to Mueller Co. Ball valves. 3,557,832, Cl. 137-625.22
Mueller, Herbert: *See—*
Hueckstaedt, Harald; Saleck, Wilhelm; Mueller, Herbert; and Randolph, August,3,558,314.
Muhlberg, Wolfgang: *See—*
Maiocchi, Luigi; and Muhlberg, Wolfgang,3,557,614.
Muirhead & Co., Limited: *See—*
Tann, Alexander Arthur; and Barry, David William, 3,557,734.
Mukai, Hideo, to Nishimura Seisakusho Co., Ltd. Differential winding up system. 3,558,073, Cl. 242-75.53
Mulaskey, Bernard F.: *See—*
Lindquist, Robert H.; and Mulaskey, Bernard F.,3,558,354.
Muller, Erwin: *See—*
Wirth, Wolf-Dieter; and Muller, Erwin,3,558,573.
Muller, Friedhelm: *See—*
Keberle, Wolfgang; Verburg, Werner; and Muller, Friedhelm,3,558,316.
Muller, Jacques. Filter for viscous fluids. 3,557,959, Cl. 210-142.
Muller, Josef; Sorsche, Joachim; and Daur, Hans-Karl, to Daimler-Benz Aktiengesellschaft. Rear axle suspension of motor vehicles. 3,557,896, Cl. 180-73.
Munson, Eugene A.: *See—*
David, Charles W.; and Munson, Eugene A.,3,557,461.
Muotka, Ragnar Ludvig: *See—*
Henriksson, Sune Torsten; Malmgren, Ake; Muotka, Ragnar Ludvig; and Widegren, Lars Harald,3,557,982.
Murakami, Kunio: *See—*
Kobori, Yasuhiro; and Murakami, Kunio,3,559,080.
Murakami, Tetsuzo: *See—*
Kuriyama, Tsuneto; Kuroda, Toshihiko; Tanba, Shigeru; and Murakami, Tetsuzo,3,558,554.
Muramatsu, Hisayoshi: *See—*
Otsuka, Michio; and Muramatsu, Hisayoshi,3,559,006.
Muratani, Takuro: *See—*
Ogawa, Akira; Muratani, Takuro; and Nosaka, Kunishi,3,558,824.
Murgas, Karl M.; Greenberg, Burton; and Clark, Otto A., to ICP, Inc. Photocopy machine having an input feed control. 3,558,224, Cl. 355-51.
Murray, Stephen F.: *See—*
Chestnut, Benjamin F.; and Murray, Stephen F.,3,558,940.
Mutter, Walter E.: *See—*
Castrucci, Paul P.; De Witt, David; Dhaka, Vir A.; and Mutter, Walter E.,3,558,352.
Muzzy, Raymond J., to United States of America, Air Force. Thrust modulator for hybrid rockets. 3,557,556, Cl. 60-207.
Myers, Felix E., to I-T-E Imperial Corporation. Circuit breaker with inter-changeable plug-in type trip unit sub-assembly. 3,559,120, Cl. 335-42.
Myers, John W., to Phillips Petroleum Company. Olefin isomerization process with alumina of controlled water content. 3,558,733, Cl. 260-683.2
Myers, John W., to Phillips Petroleum Company. Isomerization of olefins. 3,558,734, Cl. 260-683.2
Myers, Robert L.: *See—*
Soneki, Joseph H.; and Myers, Robert L.,3,558,115.
Naas, Rodney L.: *See—*
Powell, David B.; and Naas, Rodney L.,3,559,121.
Naegeli, Werner, to Rieter Machine Works, Ltd. Process for winding yarn. 3,557,545, Cl. 57-156.
Naito, Yoshiyuki: *See—*
Suetake, Kunihiro; Naito, Yoshiyuki; and Fujiwara, Eiji,3,559,111.
Nakada, Seiji; and Iijima, Masakatsu, to Nippon Gakki Seizo Kabushiki Kaisha. Expression pedal assembly for an electronic musical instrument preferably with pressure and/or light sensitive sensors. 3,558,793, Cl. 84-1.01
Nakagawa, Asaharu: *See—*
Okazaki, Kaoru; Nakagawa, Asaharu; and Sugii, Kenji,3,558,419.
Nakajima, Yasuyoshi, to Hitachi Zosen Kabushiki Kaisha. Vibration damper for a hydraulic sluice-gate. 3,557,560, Cl. 61-28.
Nara, Akinao: *See—*
Yokozawa, Norio; Nara, Akinao; and Abe, Ryoichi,3,558,921.
Nasibov, Alexandr Sergeevich: *See—*
Basov, Nikolai Gennadievich; Bogdankevich, Oleg Vladimirovich; and Nasibov, Alexandr Sergeevich,3,558,956.
Nast, Roland: *See—*
Ley, Kurt; Eholzer, Ulrich; Nast, Roland; Metzger, Karl Georg; and Fritsche, Dieter,3,558,624.
National Can Corporation: *See—*
Zenger, Richard D.; and Traczyk, Raymond M., 3,558,010.
National Cash Register Company, The: *See—*
Phillips, Paul S., Jr., 3,558,341.
Porter, Erland C., Jr.; and Huber, Hans F., 3,558,418.
Stein, William A.; and Cirillo, Robert J., 3,558,802.
National Clay Pipe Institute: *See—*
Havell, Richard F., 3,558,164.
National Distillers and Chemical Corporation: *See—*
Corbett, Herbert O.; and Karczewski, Raymond C., 3,558,144.
Quackenbush, John J.; and Corbett, Herbert O., 3,558,410.
Watson, Lloyd M.; and Birchall, William R., 3,558,728.
National Forge Company: *See—*
Bowles, Arnold Gordon, 3,557,405.
Witkin, Donald E., 3,558,166.
National Lead Company: *See—*
Beals, Malcolm D.; and Merker, Leon, 3,558,333.
Jewett, William R.; and Krzyzkowski, Charles M., 3,557,620.
National Mine Service Company: *See—*
Kahre, Norman D., 3,557,937.
National Research Development Corporation: *See—*
Hartnagel, Hans Ludwig, 3,559,069.
Teasdale, James Arthur, 3,557,741.
National Rolling (Bundy): *See—*
Bush, William R., 3,558,091.
National Semiconductor Corporation: *See—*
Koch, Robert L.; Thomas, Earl F.; Miklos, Joseph; and Curry, William H., 3,557,431.
National Video Corporation: *See—*
Javorik, Laszlo; Stowell, David Y.; and Healy, Dennis M., 3,558,965.
National-Standard Company: *See—*
Cole, Leon J., 3,558,401.
Lang, Ernest U.; and Mallory, Edwin E., 3,557,920.
Nelson, Richard: *See—*
Alter, Niles N., 3,558,203.
Nennerfelt, Carl B.: *See—*
Aro, Enn; Chene-, Thomas K.; Dankowski, James J.; Fearn, Clifford M.; Nennerfelt, Carl B.; Patterson, Albert D.; Sharland, Robert W.; and Watts, James A.,3,558,829.
Neo-Guard, Inc.: *See—*
Kontos, Constantine S., 3,559,202.
Neradka, Vincent F., to Bowles Engineering Corporation. Modulated pure fluid oscillator. 3,557,814, Cl. 137-81.5
Nesterikhin, Yury Efremovich: *See—*
Kulikov, Boris Ivanovich; Lagunov, Viktor Mikhailovich; Nesterikhin, Yury Efremovich; and Fedorov, Vladimir Mikhailovich,3,558,908.
Netsch, Alfred; Weber, Erwin; and Ullrich, Wolfgang, to Gebruder Netzsch Maschinenfabrik. Pneumatic arrangement for transferring articles. 3,558,171, Cl. 294-64.
Neuhaus, Hermann, to Applied Research Laboratories, Inc. Method of reducing specimen contamination in an electron probe by cooling the objective lens. 3,558,878, Cl. 250-49.5
Neumann, Charles J. Wheel chock with pinched tip. 3,557,909, Cl. 188-32.

Neumann, Kurt Otto Bernhard. Foldable trolley. 3,558,157, Cl. 280-36.
Neuzil, Richard W., to Universal Oil Products Company. Aromatic hydrocarbon separation by adsorption. 3,558,730, Cl. 260-674.
Neuzil, Richard W., to Universal Oil Products Company. Aromatic hydrocarbon separation by adsorption. 3,558,732, Cl. 260-674.
Newallis, Peter Edward: *See—*
Largman, Theodore; and Newallis, Peter Edward,3,558,694.
Nichols, Frank S.: *See—*
Charewicz, Francis J.; Steele, Eugene K.; and Nichols, Frank S.,3,558,145.
Nickell, Claude H., to Ford Motor Company. Multiple disc clutch with cushioned engagement. 3,557,923, Cl. 192-70.14
Niechwiadowicz, Michal; and Finestone, Arnold B. Molding expandable alkenyl aromatic polymer beads. 3,558,534, Cl. 260-2.5
Nielsen, Edwin A., to Ideal Toy Corporation. Toy vehicle assembly. 3,557,488, Cl. 46-96.
Nielsen, H. & Son Maskinafabrik A/S: *See—*
Christensen, Egon Verner, 3,557,938.
Nielson, Niel E., to Lockheed Aircraft Corporation. Nuclear energy pumped laser. 3,559,095, Cl. 331-94.5
Niepmann, Otto, to Maschinenfabrik Fr. Niepmann & Co. Apparatus for withdrawing packages from a continuously circulating conveyor chain. 3,557,970, Cl. 214-1.
Nihlen, Nils Hugo Vilhelm: *See—*
Granstrand, Bengt Ragnar Gustaf; and Nihlen, Nils Hugo Vilhelm,3,558,459.
Nilsson, Arne Lennart, to Aktiebolaget Electrolux. Air cooled rotor for dynamo-electric machine. 3,558,943, Cl. 310-58.
Nippon Columbia Kabushikikaisha (Nippon Columbia Co., Ltd.): *See—*
Harada, Shigehisa; and Kojima, Terumi, 3,558,353.
Nippon Electric Company, Limited: *See—*
Ueki, Atsufumi, 3,559,102.
Nippon Electric Company, Ltd.: *See—*
Sugimoto, Shigetoki, 3,559,117.
Nippon Gakki Seizo Kabushiki Kaisha: *See—*
Nakada, Seiji; and Iijima, Masakatsu, 3,558,793.
Nippon Kogaku K.K.: *See—*
Wakahara, Shigeo, 3,558,072.
Nippon Steel Corporation: *See—*
Uchida, Hiromu; Sato, Hideshi; and Ihara, Takashi, 3,558,460.
Nishimura Seisakusho Co., Ltd.: *See—*
Mukai, Hideo, 3,558,073.
Nishimura, Takao: *See—*
Goto, Michio; and Nishimura, Takao,3,558,569.
Nishiwaki, Koji; and Ueno, Yukichi, to Hitachi, Ltd. Regulated power supply with thermal compensation. 3,559,039, Cl. 323-1.
Nissan Motor Company, Limited: *See—*
Akaike, Seiji; Nomura, Tsutomu; Kimura, Takayoshi; and Washio, Masayuki, 3,557,664.
Noble, Edward D., to Chevron Research Company. Catalyst manufacture method. 3,558,525, Cl. 252-453.
Noda, Ricardo; and Espino, Manuel R. Dispensing package and subassembly therefor. 3,558,008, Cl. 221-260.
Nolan, Robert W.: *See—*
Buck, Richard P.; and Nolan, Robert W.,3,558,528.
Nolan, Roger William; Phoenix, Lancelot; Wiley, David; and Williams, Malcolm, to Lucas, Joseph, (Industries) Limited. Voltage regulator utilizing a negative feedback for stabilizing voltage over a defined band. 3,559,026, Cl. 320-39.
Nomura, Tsutomu: *See—*
Akaike, Seiji; Nomura, Tsutomu; Kimura, Takayoshi; and Washio, Masayuki,3,557,664.
Norcross, James E., to Arcos Corporation. Electroslag welding nozzle and process. 3,558,845, Cl. 219-73.
Nordholm, Lloyd P.: *See—*
Florance, Douglas A.; Nordholm, Lloyd P.; and Foldes, Stephen,3,558,980.
Nordisk Ventilator Co.: *See—*
Kristiansen, Svend Helge, 3,557,681.
Nordiska Maskinfilt Aktiebolaget: *See—*
Manns, Bernt Hugo, 3,558,029.
Nordmann, Joseph; and Swierkot, Henri Blaise, to Ugine Kuhlmann. 4'-Chloro-2-phenoxy-2-methyl-N,N-bis-(-β-hydroxy- ethyl-)propionamide. 3,558,701, Cl. 260-559.
Normant, Henri Maric, to Rhone-Poulenc S.A. Process for the preparation of phosphonamides. 3,558,635, Cl. 260-293.
North American Rockwell Corporation: *See—*
Curriston, Loren E.; and Fornoff, Heinz, 3,558,079.
Kohl, Arthur L., 3,557,962.
Mann, Howard G., 3,558,488.
Rehbein, Roy H., Jr.; and Whiting, Raymond D., 3,557,843.
North Electric Company: *See—*
Aro, Enn; Chene-, Thomas K.; Dankowski, James J.; Fearn, Clifford M.; Nennerfelt, Carl B.; Patterson, Albert D.; Sharland, Robert W.; and Watts, James A., 3,558,829.
Northern Electric Company Limited: *See—*
Bonis, David R.; Coumans, Harry M.; and Willis, Wesley N., 3,558,832.
Northern Metal Products, Inc.: *See—*
Kirchner, Myron C., 3,557,649.
Kirchner, Myron C., 3,558,955.
Northrop Corporation: *See—*
Guerreiro, Antone M., 3,558,409.
Jamison, Kenneth B., 3,557,658.
Norton Company: *See—*
Alliegro, Richard A., 3,557,414.
Close, Donald S., 3,557,755.
Nosaka, Kunishi: *See—*
Ogawa, Akira; Muratani, Takuro; and Nosaka, Kunishi,3,558,824.
Nuernberg, Hans Wolfgang; and Wolff, Gerhard, to Kernforschungsanlage Juelich GmbH. Energy conversion method. 3,558,047, Cl. 237-12.
N.V. Industriecle Handelscombinatre Holland: *See—*
Smulders, August Hendrik Maria, 3,557,737.
N.V. Koninklijke Nederlandsche Machinefabriek voorheen E.H.: *See—*
van Herpt, Cornelis H. J., 3,558,238.
N.V. Optische Industries 'De Oude Delft': *See—*
Beckmann, Leo Heinrich Josef Franz; and van den Berg, Leendert, 3,558,812.
Nye, Dudley D., Jr.; and Pantelakis, Thomas, to Borg-Warner Corporation, mesne. Electronic circuit breaker with gradual and instantaneous cutoff. 3,558,978, Cl. 317-13.
Nystrom, Carl H., to AMBAC Industries, Inc. Fuel injection pump. 3,557,765, Cl. 123-140.
Ocean Pollution Control, Inc.: *See—*
Fitzgerald, Hugh J.; and Koepf, Ernest H., 3,557,960.
O'Connor, Thomas J. Means for and method of electrical machining with a heated electrode. 3,558,843, Cl. 219-69.
Octronix, Inc.: *See—*
Genest, Leonard J.; and Klayman, Arnold I., 3,559,067.
Odone, Giovanni; and de Andres, Jesus, to Paillard S.A. Telemeter chiefly intended for photographic purposes. 3,558,894, Cl. 250-216.
Oefinger, Richard W., to USM Corporation. Hammer ignition explosive tools with safety means. 3,558,032, Cl. 227-8.
Offer, Robert J., to Tenneco Inc., mesne. Seal for throwaway filter. 3,557,963, Cl. 210-443.
Officine Meccaniche Pavesi & C., S.p.A.: *See—*
Pavesi, Alberto, 3,557,432.
Ogawa, Akira; Muratani, Takuro; and Nosaka, Kunishi, to Kokusai Denshin Denwa Kabushiki Kaisha. Time-divisional phase synchronizing apparatus for a time-divisional multiple signal of burst mode. 3,558,824, Cl. 179-15.
Ogawa, Masao; and Hayashi, Shigeo, to Showa Denko Kabushiki Kaisha. Thermo-plastic resin compositions. 3,558,745, Cl. 260-876.
Ogawa, Masaya: *See—*
Kushima, Teizo; and Ogawa, Masaya,3,557,751.
Ogle, James A., to Burroughs Corporation. Method of making gas-filled matrix display devices. 3,558,975, Cl. 316-19.
O'Hare, John: *See—*
Morton, Lloyd, Jr.; and O'Hare, John,3,557,520.
O'Hern, James V.: *See—*
Lunden, John W.; and O'Hern, James V.,3,559,091.
Ohio State University, The: *See—*
McMaster, Robert C.; Libby, Charles C.; and Minchenko, Hildegard M., 3,558,937.
Ohlenbusch, Cord W.; and Russell, David B., to Liberty Mutual Insurance Company. Externally powered joint prosthesis. 3,557,387, Cl. 3-1.1
Oikawa, Mitsuru: *See—*
Maruyama, Eiichi; Oikawa, Mitsuru; and Komoda, Tsutomu,3,558,527.
Oishi, Yasushi: *See—*
Hamaoka, Tsutomu; Sano, Kazuya; Yoshida, Makoto; Oishi, Yasushi; and Hirose, Takeshi,3,558,319.
Okamoto, Tadishi: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadishi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,558,604.
Okauchi, Kinge: *See—*
Joyner, Taylor B.; Mallory, Herbert D.; and Okauchi, Kinge,3,557,697.
Okazaki, Kanzo; Kohno, Shigeharu; Yamatsu, Isao; Sugiyama, Kunishige; and Ueyama, Seigo, to Eisai Kabushiki Kaisha. Process for enhancement of sweetness of sugars. 3,558,355, Cl. 127-46.
Okazaki, Kaoru; Nakagawa, Asaharu; and Sugii, Kenji, to Toyo Rayon Kabushiki Kaisha. Composite filaments and fibers. 3,558,419, Cl. 161-173.
Okazaki, Mitsunari, to Alps Electric Company, Limited. Tuning circuit for multi-band receiver using variable capacitance diodes. 3,559,075, Cl. 325-459.
Okimoto, Tadashi: *See—*
Yamamoto, Hisio; Inaba, Shigeho; Okimoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,558,603.
Okumura, Akio: *See—*
Kimura, Shiro; Yoshida, Makoto; Tsuda, Momotoshi; and Okumura, Akio,3,558,700.
Oldberg Manufacturing Company: *See—*
Zmuda, Daniel A., 3,557,586.
Olin Corporation: *See—*
Bruson, Herman A.; and Plant, Howard L., 3,558,726.
Churchill, John W.; Kober, Ehrenfried H.; and Scott, Peter H., 3,558,707.
Danna, Peter A., 3,558,464.
Rohde, William J., 3,557,818.
Saeman, Walter C., 3,558,114.

Olin Mathieson Chemical Corporation: *See—*
Hubbard, Charles L., 3,557,699.
Oliver, Joseph R.: *See—*
Fletcher, Ralph A.; and Oliver, Joseph R.,3,558,191.
Olivetti, D., & C.S.p.A.: *See—*
Galletti, Remo, 3,559,063.
Olk, Lamar B., to United States of America, Atomic Energy Commission. Avalanche transistor pulse train generator. 3,558,919, Cl. 307-243.
Olson, Earl Herbert, to Du Pont de Nemours, E. I., and Company. Process for spinning two component polyamide filaments. 3,558,760, Cl. 264-168.
Olson, Kenneth N., to Kollsman Instrument Corporation. Miniature vibrator. 3,558,939, Cl. 310-15.
Olympia Werke AG: *See—*
Frerichs, Peter, 3,557,633.
Olympus Optical Co., Ltd.: *See—*
Sato, Masaaki, 3,557,780.
Onanian, Richard A. Record handling device. 3,558,169, Cl. 294-16.
Ono, Kunito: *See—*
Tabara, Yoshijiro; Teranishi, Nobuhide; Kikuchi, Shigeru; Ono, Kunito; and Imao, Shoji,3,558,761.
Onsager, Olav-Torgeir: *See—*
Bergem, Normann; Blindheim, Ulf; Onsager, Olav-Torgeir; and Wang, Hagbarth,3,558,736.
Opfell, James E., to Allied Chemical Corporation. Hollow filaments. 3,558,420, Cl. 161-176.
Oppemann, Willi, to Mannesmann Aktiengesellschaft. Apparatus for continuously welding the longitudinal seam of steel tubes. 3,558,839, Cl. 219-8.5
Orbit Flow, Inc.: *See—*
Snodgrass, Lincoln Harry, 3,558,240.
Ormonoterapia Richter S.p.A: *See—*
De Ruggieri, Pietro; Gandolfi, Carmelo; and Guzzi, Umberto, 3,558,673.
Orser, Keith L., to Columbian Rope Company. Thin oriented plastic strips and tape. 3,558,580, Cl. 260-88.2
Orshansky, Elias, Jr., to URS Systems Corporation. Fluid motor. 3,557,661, Cl. 91-184.
Ortel, Gerhard, to Heinrich Kuper, Firma. Apparatus for the edge-to-edge glucing of veneers. 3,558,398, Cl. 156-304.
Ortho Pharmaceutical Corporation: *See—*
Jones, Edmund A., 3,558,003.
Rigney, William R.; Tump, Dirk; and Luciano, Robert A., 3,557,747.
Osborn, Donald H.; and Freeman, Robert F., to Revere Copper and Brass Incorporated. Magnet strip conductor. 3,558,803, Cl. 174-119.
Oshima, Shintaro; and Watanabe, Teruji, to Kokusai Denshin Denwa Kabushiki Kaisha. Fail-safe logical system. 3,558,905, Cl. 307-88.
Osieka, Hans; Koenig, Karl-Heinz; Fischer, Adolf; and Flickinger, Erich, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Substituted thiol carbamates. 3,558,685, Cl. 260-455.
Oskin, Lev Ivanovich; Anna-Seidov, Chary; Zhukov, Alexandr Sergeevich; and Zadoya, Alexandr Fedoseevich. Twisting and forming device for pneumatic and mechanical spinning. 3,557,542, Cl. 57-58.89
Ossanna, Oliver A.: *See—*
Rushton, Brian M.; and Ossanna, Oliver A.,3,558,535.
Osterreichische Stickstoffwerke Aktiengesellschaft: *See—*
Rank, Viktor; Tentschert, Hans; Junker, Harald; and Allgeuer, Kurt, 3,558,749.
Osterreichische Studiengesellschaft fur Atomenergie Ges m.b.H.: *See—*
Hick, Harald; and Rumpold, Karl, 3,558,887.
Ostrander, George K., to Air Preheater Company, Inc., The. Storage apparatus and control means therefor. 3,557,974, Cl. 214-16.4
Ostyn, Marcel: *See—*
Gourlaouen, Henri; and Ostyn, Marcel,3,558,494.
O'Sullivan, James: *See—*
Goodenow, Elden Lucerne; O'Sullivan, James; and Seregely, Daniel W.,3,558,392.
Otani, Sugio, to Kurcha Kagaku Kogyo Kabushiki Kaisha. Process for producing formed carbon articles. 3,558,276, Cl. 23-209.1
Otsuka, Michio; and Muramatsu, Hisayoshi, to Tokyo Shibaura Electric Co., Ltd. Semiconductor device with an inclined inwardly extending groove. 3,559,006, Cl. 317-235.
Ott, Hans: *See—*
Hardtmann, Geotz E.; and Ott, Hans,3,558,648.
Otto, Mark Shmulevich: *See—*
Livshits, Abram Lazarevich; and Otto, Mark Shmulevich,3,558,842.
Outboard Marine Corporation: *See—*
Brown, Neil F.; and Stulac, James F., 3,557,902.
Owens, Neal; and Johnson, Lee H. Land clearing blade. 3,557,850, Cl. 144-34.
Owens, William D., to Union Oil Company of California. Method for improving the injectivity of water injection wells. 3,557,873, Cl. 166-274.
Owens-Illinois, Inc.: *See—*
Bayer, John W., 3,557,691.
Bayer, John W.; and Santiago, Edgardo, 3,558,587.
Santelli, Thomas R., 3,558,751.
Oy Nokia AB: *See—*
Valtonen, Rainer, 3,559,146.
Ozawa, Tsutomu: *See—*
Imaizumi, Fujimaro; Ozawa, Tsutomu; and Tsuboi, Takasi,3,559,020.
Pacault, Pierre Henri; and Mary, Francis J., to Babcock-Atlantique Societe Anonyme. Power generation apparatus. 3,557,568, Cl. 62-79.
Pace, Inc.: *See—*
Siegal, William Jordan; and Wallgren, Linus Eugene, 3,558,854.
Pace, Incorporated: *See—*
Siegel, William J.; Wallgren, Linus E.; Young, Loring E.; and Ravinsky, John, 3,557,821.
Pacela, Allan F.: *See—*
Savaglio, Fredrick J.; Woods, Thomas C.; and Pacela, Allan F.,3,559,193.
Pacific Clay Products: *See—*
Wendt, Paul H.; and Latta, David F., 3,558,758.
Paderwerk Gebruder Benteler: *See—*
Bick, Klaus; and Tinnes, Bernhard, 3,558,256.
Paeco, Inc.: *See—*
Pechenik, Stephen, 3,557,506.
Page, John A.; and Dechaine, Robert C., to General Mills, Inc. Method for preparing a multicolored meat like product. 3,558,324, Cl. 99-17.
Pahl, Henry D., Jr. Integrating computer. 3,558,867, Cl. 235-183.
Paillard S.A.: *See—*
Odone, Giovanni; and de Andres, Jesus, 3,558,894.
Pala, Gianfranco, to Istituto de Angeli S.p.A.Certain 4,4'-dioxydiphenyl-(2-pyridyl)-methanes. 3,558,643, Cl. 260-297.
Palies, Rene, to Compagnie General d'Electricite. Capsule for a semiconductor component. 3,558,999, Cl. 317-234.
Palley, Carl W.: *See—*
Cupp, Frederick B.; and Palley, Carl W.,3,559,157.
Palm, Bernhard A., to Buck Manufacturing Company. Equalizing hanger beam. 3,558,173, Cl. 294-81.
Palmer, Donald M. Tag holding device. 3,557,474, Cl. 40-10.
Palmer, Kenneth Percival, to Lucas, Joseph, (Industries) Limited. Speed sensing and controlling apparatus. 3,557,660, Cl. 91-3.
Palsha, Edward M., to Union Carbide Corporation. Getter mounting assembly with elongated spring like support having U-shaped channel portion. 3,558,961, Cl. 313-174.
Paltauf, Friedrich; Margot, Alfred; and Brenneisen, Paul, to Geigy Chemical Corporation. Anthelmintic compositions and methods of controlling parasitic helminths in animals. 3,558,784, Cl. 424-302.
Paltier Corporation, The: *See—*
Skubic, Leroy F., 3,557,966.
Pan American Petroleum Corporation: *See—*
Lummus, James L., 3,558,545.
Pan, Pei Tai; and Whalen, John Michael, to Fairbanks Morse, Inc. Incinerator. 3,557,724, Cl. 110-8.
Pandick Press, Inc.: *See—*
Kalb, Paul A., 3,557,476.
Panson, Armand J.; and Ruka, Roswell J., to Westinghouse Electric Corporation. Solid state oxygen gauge. 3,558,280, Cl. 23-254.
Pantaleoni, Ernesto, to Lanerossi S.p.A. Prevention of felting and shrinking of wool- containing textile material. 3,558,265, Cl. 8-142.
Pantelakis, Thomas: *See—*
Nye, Dudley D., Jr.; and Pantelakis, Thomas,3,558,978.
Pappo, Raphael; and Jung, Christopher J., to Searle, G. D., & Co. 2,3,5-Trioxocyclopentaneheptanoic acid, derivatives thereof and intermediates thereto. 3,558,682, Cl. 260-468.
Paradissis, Pantelis P., to Lorain Products Corporation. Firing circuit for thyristors. 3,558,906, Cl. 307-106.
Parisi, George I., to Bell Telephone Laboratories, Incorporated. Thin film resistor and preparation thereof. 3,558,461, Cl. 204-192.
Parke, Davis & Company: *See—*
Davoll, John, 3,558,628.
De Wald, Horace A.; and Butler, Donald E., 3,558,605.
Kaltenbronn, James S., 3,558,655.
Tinney, Francis J., 3,558,606.
Parker, Donald J.; and Kornstein, Edward, to United States of America, Navy, mesne. Optical isolator. 3,559,101, Cl. 332-7.51
Parker, Harry W.; Coffin, Arthur G.; and Stockbridge, Bruce W., to Phillips Petroleum Company Eastman Kodak Company. Insulated casting and tubing string in an oil well for a hot fluid drive Method and apparatus for cutting elongated material into predetermined shorter lengths. 3,557,648, Cl. 83-18.
Parker, Sidney A., to Linnox Industries Inc. Screw type refrigerant compressor. 3,558,248, Cl. 418-88.
Parker, William C.: *See—*
Martin, Carl; and Parker, William C.,3,559,059.
Parks, Christ F.: *See—*
Goodenough, Robert D.; Place, John; and Parks, Christ F.,3,558,503.
Parnell, James A.: *See—*
Lanneau, Keith P.; and Parnell, James A.,3,557,605.
Parsons, George D.: *See—*
Carmi, Arieh; Parsons, George D.; and Rayeski, Thomas J.,3,558,298.
Parsons, John T. Method of machining propeller castings relative to a plane of reference. 3,557,443, Cl. 29-558.
Parsons, Stuart L. AMP Incorporated Apparatus for crimping electrical connecting devices. 3,557,429, Cl. 29-203.

Parysek, Bruno: *See—*
Wallace, Harry L.; and Parysek, Bruno,3,557,694.
Pasin, Alberto; and Borgo, Silvano, to Snia Viscosa Societa' Nazionale Industria Applicazioni Viscosa S.p.A. Method for purifying dimethylformamide recovered from acrylonitrile polymerization processes in the commercial production of polyacrylonitrile fibers and yarns. 3,558,702, Cl. 260-561.
Patterson, Albert D.: *See—*
Aro, Enn; Chene-, Thomas K.; Dankowski, James J.; Fearn, Clifford M.; Nennerfelt, Carl B.; Patterson, Albert D.; Sharland, Robert W.; and Watts, James A.,3,558,829.
Patterson, William N.: *See—*
Boss, David W.; Doo, Ven Y.; and Patterson, William N.,3,558,374.
Patzer, William J., to International Business Machines Corporation. Serialized register data processing system. 3,559,189, Cl. 340-172.5
Paul, William T.: *See—*
Heathwaite, Hewart H.; Mead, Robert H.; and Paul, William T.,3,557,424.
Pavelka, Joseph, Jr.: *See—*
Stanek, Frank; and Pavelka, Joseph, Jr.,3,558,855.
Pavesi, Alberto, to Officine Meccaniche Pavesi & C., S.p.A. Apparatus for forming wound stators for electric motors. 3,557,432, Cl. 29-205.
Payne, Peter R.; and Chris, Stephen J., to Wyle Laboratories. Anthropodynamic dummy. 3,557,471, Cl. 35-17.
Payrhammer, Bernd. Rear tightener for safety ski bindings. 3,558,151, Cl. 280-11.35
Pearce, Warren, Jr., to General Motors Corporation. Lamp socket and panel assembly. 3,559,152, Cl. 339-60.
Pease, James K.; Keidel, Ralph A.; and Rao, Kattar U., to Allis-Chalmers Manufacturing Company. Method of making a truncated conical body. 3,557,594, Cl. 72-203.
Pechenik, Stephen, to Paeco, Inc. Imitation wood beam. 3,557,506, Cl. 52-309.
Peerson, David T.: *See—*
Riggs, Dixon; and Peerson, David T.,3,558,226.
Pelz, Diethart: *See—*
Eilhardt, Bernd; and Pelz, Diethart,3,558,801.
Pendleton, Herman L.: *See—*
Allison, George F.; Moss, Dewey L.; and Pendleton, Herman L.,3,557,479.
Pennell, John Antony: *See—*
Campbell, William Henry; and Pennell, John Antony,3,557,996.
Pennino, Charles J., to Koppers Company, Inc. Reinforced wood railroad tie. 3,558,049, Cl. 238-29.
Penza, Hans: *See—*
Koll, Roman; Penza, Hans; and Sendtko, Ulrich,3,557,675.
Perkins, Carl C., Jr.: *See—*
Jackson, Dale E.; and Perkins, Carl C., Jr.,3,557,820.
Peronneau, Georges: *See—*
Floret, Felix; Mayer, Jean-Jacques; and Peronneau, Georges,3,559,182.
Perry, Charles R.; and Ellis, James C., said Ellis assor. to said Perry. Loose leaf stencil folder for layout design. 3,557,463, Cl. 33-174.
Perry, Edmund G.: *See—*
Moshier, Stephen L.; Van Lennep, William B.; and Perry, Edmund G.,3,558,822.
Perthen, Johannes; Hildebrandt, Friedrich; and Gerighausen, Werner, said Hildebrandt and said Gerighausen assors. to said Perthen. Method of and apparatus for generating electrical voltage corresponding to a contour profile curve of a surface to be tested for roughness. 3,557,613, Cl. 73-105.
Pet Incorporated: *See—*
Watkins, Harley E., 3,558,327.
Petersen, Ronald C.: *See—*
Goordman, Robert V.; and Petersen, Ronald C.,3,559,087.
Petersen, Tom Kastrup: *See—*
Jensen, Arne; and Petersen, Tom Kastrup,3,559,033.
Jensen, Arne; and Petersen, Tom Kastrup,3,559,034.
Peterson Candy International Limited: *See—*
Jenkyn-Thomas, William Dixon, 3,558,242.
Peterson, Carl G., Co.: *See—*
Homstead, Robert H., 3,557,639.
Peterson, George R.; and Stooksbury, Clifton E., to United States of America, Atomic Energy Commission. Carbonaceous coating for carbon foam. 3,558,344, Cl. 117-46.
Peterson, John Merriam: *See—*
Hall, William Cornelius; and Peterson, John Merriam,3,558,526.
Peterson, Robert A.; and Grooss, Frank A., to Caterpillar Tractor Company. Bottom dump transport vehicle. 3,558,190, Cl. 298-33.
Peterson, Wilbur E., to Harmony Enterprises, Inc. Collapsible tent trailer. 3,558,181, Cl. 296-27.
Petro, Victor P.; and Fotland, Richard A., to Horizons Incorporated. Styrylquinoline/halogen liberating light sensitive composition for use in laser recording. 3,558,317, Cl. 96-90.
Petrolite Corporation: *See—*
Wilson, Homer M., 3,558,462.
Pettersson, Nils Artur: *See—*
Hilfing, Karl E.; and Pettersson, Nils Artur,3,557,709.
Peyches, Ivan: *See—*
Bezombes, Albert; Peyches, Ivan; and Tissier, Pierre,3,558,295.
Peyton, John F.; Gonzalez, Juan, Jr.; and Trelease, Robert B., to Federal-Mogul Corporation. High temperature duct insulator and method of making same. 3,558,391, Cl. 156-171.
Pfaff and Kendall: *See—*
Pfaff, Henry C., Jr., 3,557,422.
Pfaff, Artur; and Friedrich, Richard. Automatically closing valve for pressure vessels containing pastes of liquids. 3,558,059, Cl. 239-337.
Pfaff, Henry C., Jr., to Pfaff and Kendall. Method of forming a pole base structure. 3,557,422, Cl. 29-155.
Pfeiffer, Francis R.; and Weisbach, Jerry A., to Smith Kline & French Laboratories. Glycerol trichloroethyl carbonate and derivatives. 3,558,656, Cl. 260-340.9
Pfister, Rudolf: *See—*
Sallmann, Alfred; and Pfister, Rudolf,3,558,690.
Pfleiderer, Ernst: *See—*
Monsheimer, Rolf; and Pfleiderer, Ernst,3,558,430.
Pharis, William W., to Stromberg-Carlson Corporation. Reverting call arrangement. 3,558,825, Cl. 179-17.
Pheil, Joseph C.: *See—*
Crabtree, Royale R.; Beeker, Charles W.; Shaff, Larry T.; Mancini, Michael A.; and Pheil, Joseph C.,3,558,005.
Phelps Dodge Copper Products Corporation: *See—*
Feder, Charles, 3,558,069.
Philamon Laboratories, Inc.: *See—*
Grib, Boris F.; and Vollet, George L., 3,559,100.
Philipp, Rudi, to Eisenwerke Kaiserslautern G.m.b.H. Rotary pump for viscous fluids. 3,558,246, Cl. 418-117.
Phillips, Donald D.: *See—*
Haynes, George R.; and Phillips, Donald D.,3,558,615.
Phillips, Paul S., Jr., to National Cash Register Company, The. Pressure-sensitive record material. 3,558,341, Cl. 117-36.2
Phillips Petroleum Company: *See—*
Ashe, Benedict H., Jr.; and Childs, William V., 3,558,450.
Broerman, Arthur B., 3,557,532.
Childs, William V., 3,558,449.
Collie, Stafford D., 3,557,998.
Dunn, Howard E., 3,558,738.
Fodor, Lawrence M., 3,558,586.
Franklin, Marvin L.; and Gagle, Duane W., 3,557,491.
Furrow, Clarence L., 3,558,457.
Gilbert, Dixie E.; and Poff, Tommy G., 3,558,551.
Gray, Earl H., 3,558,588.
Hughes, William B.; and Zuech, Ernest A., 3,558,517.
Kittleman, Edmund T.; and Zuech, Ernest A., 3,558,515.
Kubicek, Donald H.; and Zuech, Ernest A., 3,558,520.
Metcalf, Dean W., 3,558,404.
Mirasol, Salustiano S., Jr.; and Mac Ewen, George E., 3,557,995.
Myers, John W., 3,558,733.
Myers, John W., 3,558,734.
Parker, Harry W.; Coffin, Arthur G.; and Stockbridge, Bruce W., 3,557,648.
Porter, Grady T., 3,557,533.
Rees, Robert L.; and Williams, George E., 3,558,135.
Ririe, Otis E., 3,557,536.
Smith, Dexter E.; and Miller, Elmer C., 3,558,045.
Stratton, Charles A., 3,558,487.
Zuech, Ernest A., 3,558,518.
Phoenix, Lancelot: *See—*
Nolan, Roger William; Phoenix, Lancelot; Wiley, David; and Williams, Malcolm,3,559,026.
Phung, Nhu Hung; and Lefebvre, Gilles, to Institut Francais du Petrole des Carburants et Lubrifiants. Aluminum nickel catalyst compostion. 3,558,519, Cl. 252-429.
Phys-Chemical Research Corporation: *See—*
Hershler, Abe, 3,557,619.
Picker Corporation: *See—*
Ball, Jack, 3,558,893.
Pierce, Chester J., Jr., to Certipak Corporation. Device for grouping receptacles and enclosing, grouped receptacles in a wrap-around carrier blank, and method. 3,557,521, Cl. 53-48.
Pierce, Robert E. Water sport vehicle. 3,557,398, Cl. 9-310.
Pietrucci, Andre: *See—*
Koch, Hans; Wochnowski, Waldemar; Thiele, Willi; Hackmack, Klaus-Georg; Friebel, Heinz; and Pietrucci, Andre,3,557,799.
Pignal, Edmond, to Societe des Fabrications Biraghi-Entrepose. Machine for guiding, forming and applying a strip spirally around a tube. 3,557,427, Cl. 29-202.
Pike, John E.: *See—*
Campbell, J Allan; Babcock, John C.; and Pike, John E.,3,558,776.
Pilch, Kurt: *See—*
Adam, Karl; Haarer, Erich; Merkel, Karl; and Pilch, Kurt,3,558,703.
Pillsbury Company, The: *See—*
Rejsa, Jack J., 3,557,889.
Pincus, Ralph M., to Bendix Corporation, The. High accuracy period, frequency, interval and events counter. 3,559,066, Cl. 324-186.
Pinkel, Benjamin: *See—*
Gritton, Eugene C.; and Pinkel, Benjamin,3,558,935.
Pirelli S.p.A.: *See—*
Beall, George H.; Lugli, Giuseppe; Maiocchi, Luigi; and Rittler, Hermann L., 3,557,858.
Maiocchi, Luigi; and Muhlberg, Wolfgang, 3,557,614.
Place, John: *See—*
Goodenough, Robert D.; Place, John; and Parks, Christ F.,3,558,503.

Plan-Sell Oy: *See—*
Heikinheimo, Olli, 3,557,952.
Plant, Howard L.: *See—*
Bruson, Herman A.; and Plant, Howard L.,3,558,726.
Plasser, Franz; and Theurer, Josef. Track position indicating apparatus. 3,557,459, Cl. 33-144.
Plastic Coating Corporation, The: *See—*
Hakanson, Nils L., 3,557,752.
Plastronics, Inc.: *See—*
Clark, James L., 3,558,397.
Plath, Ernst-Dieter, to Mayer & Cie., Maschinenfabrik. Circular knitting machine having a striping apparatus and a yarn-engaging hook. 3,557,577, Cl. 66-14.
Platzke, Ronald N.: *See—*
Prater, John D.; and Platzke, Ronald N.,3,558,268.
Plegat, Alain Edouard, to Societe Anonyme des Usines Chausson. Hinged device for pivoting panel, particularly for motor vehicle door. 3,558,184, Cl. 296-146.
Plegat, Alain Edouard, to Societe Anonyme des Usines Chausson. Method of making a laminated decorative sheet. 3,558,395, Cl. 156-246.
Plichta, Michael J.: *See—*
Krolski, Kenneth L.; and Plichta, Michael J.,3,558,985.
Plumley, Stewart L., to Corning Glass Works. Double glazed ceramic substrates. 3,558,346, Cl. 117-68.
Plummer, Dexter Robert: *See—*
Barr, John Denzil; and Plummer, Dexter Robert,3,558,217.
Pochert, Rudolf; Haase, Lothar; Roggenbuck, Willy; and Wiese, Peter, to Kjellberg Elektroden & Maschinen G.m.b.H. In Verwaltung. Plasma hand burner with contact protection. 3,558,973, Cl. 315-111.
Poff, Tommy G.: *See—*
Gilbert, Dixie E.; and Poff, Tommy G.,3,558,551.
Pohler, Alfred: *See—*
Strohmeier, Gerolf; and Pohler, Alfred,3,558,113.
Poitras, Edward J. Therapeutic fluid flow control apparatus. 3,557,789, Cl. 128-275.
Pokorny, Frank J.: *See—*
Brandt, Thomas F., Jr.; and Pokorny, Frank J.,3,558,991.
Polaroid Corporation: *See—*
Bellows, Alfred H., 3,557,678.
Grey, David S., 3,558,218.
Polezhaev, Vasily Dementievich: *See—*
Shmakov, Vasily Pavlovich; Eremin, Vitaly Alexeevich; Kvasha, Semen Borisovich; Kaganovich, Natalia Grigorievna; Dobrenyakins, Tatiana Nikolaevna; Vanjushin, Viktor Nikolaevich; Sakharov, Petr Vasilievich; Voronov, Boris Pavlovich; Polezhaev, Vasily Dementievich; Smetankin, Pavel Semenovich; Sobolev, Evgeny Pavlovich; Yanchevsky, Kazimir Stanislavovich; Grishin, Mikhail Semenovich; Burtsev, Pavel Semenovich; and Chasovitin, Pavel Alexeevich,3,558,192.
Pollinger, Hans, to Knorr-Bremse GmbH. Brake shoe adjusting mechanism for a railway vehicle braking unit. 3,557,915, Cl. 188-203.
Polrotor, Inc.: *See—*
Kloeckener, Dieter, 3,557,415.
Poma, Inc.: *See—*
Howick, Stanley O.; and Schipke, Robert N., 3,557,807.
Pomeroy, Ivan Dwayne. Credit card system. 3,559,175, Cl. 340-152.
Ponzo, John C.; and Tkach, Joseph. Fluid dispenser assembly for automobiles. 3,558,013, Cl. 222-61.
Pook, Francis Harold, to Fibreglass Limited. Method of manufacturing impregnated fibre material in sheet form. 3,558,380, Cl. 156-62.2
Poole, Kenneth M., to Bell Telephone Laboratories, Incorporated. Photolithography apparatus and method. 3,558,222, Cl. 355-18.
Poole, William T., Jr. Pressurizing closure device. 3,557,986, Cl. 215-37.
Popeil Brothers, Inc.: *See—*
Popeil, Samuel J., 3,557,449.
Popeil, Samuel J., to Popeil Brothers, Inc. Hair cutter and shaver. 3,557,449, Cl. 30-31.
Porret, Daniel; and Habermeier, Juergen, to Ciba Limited. Curable mixtures of epoxide resins and alkyl substituted ureas. 3,558,558, Cl. 260-47.
Porter, Charles W.: *See—*
Longinette, Edward G.; and Porter, Charles W.,3,557,899.
Porter, Erland C., Jr.; and Huber, Hans F., to National Cash Register Company, The. Blocking-resistant plasticizer articles, compositions and processes. 3,558,418, Cl. 161-162.
Porter, Grady T., to Phillips Petroleum Company. Apparatus and method for delivering gas samples. 3,557,533, Cl. 55-67.
Porter, Ian S., to Wilson & Longbottom Limited. Dobbies for weaving looms. 3,557,842, Cl. 139-55.
Porter, Virgle E., to Amtron, Inc. Counting circuit. 3,559,077, Cl. 328-39.
Posey, John T.: *See—*
Preston, Walter G., 3,558,189.
Posey, William T., to Hermetic Switch, Inc. Magnetically actuated reed switches. 3,559,124, Cl. 335-205.
Possl, Hans, to Ritter, Eduard. Recording tape magazine. 3,558,142, Cl. 274-4.
Poticny, Joseph: *See—*
Emerick, Robert M.; Horton, James A.; and Poticny, Joseph,3,557,470.
Poulson, Barrie Kenneth, to Instron Limited. Proof stress indicator. 3,558,866, Cl. 235-151.3
Powell, David B.; and Naas, Rodney L., to General Electric Company. Motor-driven operating mechanism for circuit breaker. 3,559,121, Cl. 335-68.
Powell, Jerald C.; and Stringer, Ray E. Method for repairing bungholes. 3,557,435, Cl. 29-401.
Powers Manufacturing Inc.: *See—*
Powers, Whitney, 3,557,950.
Powers, Whitney, to Powers Manufacturing Inc. Photo-electric crack detector for glass bottles. 3,557,950, Cl. 209-111.7
PPG Industries, Inc.: *See—*
Gray, Robert D.; and Mayer, Simon E., 3,558,347.
Hartzell, Rowland S.; and Gerek, Gene, 3,558,421.
Holden, Calvin B., 3,558,274.
Rieser, Raymond G.; and Chabal, Joseph, 3,558,415.
Zurheide, George B., 3,558,293.
Prachar, Otakar P., to General Motors Corporation. Engine air precooler and ice eliminator. 3,557,557, Cl. 60-257.
Prager, Hans J.: *See—*
Chang, Kern K. N.; Prager, Hans J.; and Weisbrod, Sherman,3,559,097.
Prater, John D.; and Platzke, Ronald N., to Kennecott Copper Corporation. Process for recovering rhenium values from ion exchange materials. 3,558,268, Cl. 23-22.
Pratt, Will; and Grocott, Geoffrey Joseph, to British Petroleum Company Limited, The. Venting arrangement for storage tanks. 3,557,740, Cl. 114-211.
Precoul, Michel, to Societe Technique de Recherches Industrielles et Mechaniques. Charging explosive projectiles, especially hollow charge projectiles. 3,557,656, Cl. 86-31.
Prescott, Robert E.; and Tanis, Cornelius, to Bell Telephone Laboratories, Incorporated. Telephone set base structure with exterior plug cavities in the base bottom secured by a detachable baseplate. 3,558,831, Cl. 179-100.
Pressman, Jerome, to GCA Corporation. Method and apparatus for mass separation by selective light absorption. 3,558,877, Cl. 250-41.9
Preston, Leonard A.: *See—*
Whitehill, Wayne W.; and Preston, Leonard A.,3,557,454.
Preston, Walter G., 1/2 to Posey, John T. Retractor for seat belts. 3,558,189, Cl. 297-388.
Preuss, Friedrich, to Roland Offsetmaschinenfabrik Faber & Schleicher A.G. Device for the fastening of a printing plate. 3,557,695, Cl. 101-415.1
Price, Alson K.: *See—*
Sweeney, Richard F.; and Price, Alson K.,3,558,677.
Price, Ralph E., to Litton Industries, Inc. Positioning mechanism for machine tool. 3,557,495, Cl. 51-165.
Printing Developments, Inc.: *See—*
Barkman, Byron L.; Moe, William West; and Ross, Austin, 3,558,813.
Probst, Stephen C., to Automative Performance, Inc. Vapor injector. 3,557,763, Cl. 123-119.
Procter & Gamble Company, The: *See—*
Eymery, Jean-Pierre D. B.; and Beyer, Harold H., 3,558,498.
Proctor, Thomas, to Allen-Bradley Company, mesne. Supervisory system for time-shared numerical control system. 3,559,188, Cl. 340-172.5
Produits Chimiques Pechiney-Saint-Gobain: *See—*
Chatelain, Jean; and Steinbach-Van Gaver, Georgette, 3,558,585.
Thomas, Jean Claude, 3,558,584.
Progil: *See—*
Bonnel, Bernard; and Schwachhofer, Ghislain, 3,558,506.
Progin, Bernard. Game board with apertures and selectively mating pieces therefor. 3,558,137, Cl. 273-131.
Prontor-Werk Alfred Gauthier, G.m.b.H.: *See—*
Wurster, Richard, 3,557,676.
Proskow, Stephen, to Du Pont de Nemours, E. I., and Company. Ferromagnetic chromium oxide recording members and compositions stabilized with tertiary amine-containing polymers. 3,558,492, Cl. 252-62.54
Pshenichny, Gennady Ivanovich: *See—*
Checheljuk, Yakov Zinovievich; Pshenichny, Gennady Ivanovich; and Yakimenko, Ivan Pavlovich,3,557,846.
Pugin, Andre; Burdeska, Kurt E.; and Staub, Alfred, to Geigy, J. R., A.G. Process for the pigmenting of high-molecular organic products. 3,558,334, Cl. 106-165.
Pullman Incorporated: *See—*
Aquino, Herman A.; Marulic, Walter J.; and Shaver, William R., 3,557,714.
Dobson, Ralph W.; and Miller, Roy W., 3,557,711.
Miller, Roy W., 3,557,710.
Spence, John H.; and van der Sluys, William, 3,557,713.
Pultz, Wallace W., to Corning Glass Works. Macroscopic fibers of spinel. 3,558,270, Cl. 23-52.
Pultz, Wallace W.; and Smith, Charles C., Jr., to Corning Glass Works. Reinforcing matrices with silica-sheathed silicon carbide fibers. 3,558,379, Cl. 156-62.2
Purkey, Fred B., to Berkline Corporation, The. Method of packaging fragile articles. 3,557,518, Cl. 53-27.
Puster, Louis M., to Robertshaw Controls Company. Valve construction means. 3,558,098, Cl. 251-88.
Pyle-National Company, The: *See—*
Smith, Ross David, 3,558,873.

Pym, Michael Aren: *See—*
Williamson, David Theodore Nelson; and Pym, Michael Aren,3,557,797.
Pyne, William J., to Diamond Shamrock Corporation. Preparation of 2-alkoxy trihaloterephthalates. 3,558,691, Cl. 260-473.
Quackenbush, John J.; and Corbett, Herbert O., to National Distillers and Chemical Corporation. Extrusion method and apparatus for the extrusion of rectangular tubes of thermoplastic sheet. 3,558,410, Cl. 161-44.
Quast, Gilbert W., to Rex Chainbelt Inc. Elevatable scraper drive for circular gravity thickener. 3,557,964, Cl. 210-531.
Quermann, Thomas R., to Sperry Rand Corporation. Pick-off and torquing device. 3,557,629, Cl. 74-5.6
Queval, Pierre, to Laboratoires Laroche Navarron. Process for the extraction of the unsaponifiable fraction of vegetable oils. 3,558,679, Cl. 260-425.
Quichaud, Claude, to Compagnie Generale d'Electricite. Adjustable electromagnetic relay. 3,559,129, Cl. 335-229.
Quillevere, Herve Alain: *See—*
Bauger, Louis Jules; Beyler, Roland Robert Charles; Lefebvre, Adolphe Robert; Quillevere, Herve Alain; and Schenher, Michel Bernard,3,558,251.
Quinlan, Joseph B.; and Vetter, Elwood, to United States of America, Army. Caseless ammunition cartridge. 3,557,700, Cl. 102-38.
Quynn, Richard G.; Jamison, Saunders E.; and Sobering, Simon E., to Celanese Corporation. Process for treating web spun filaments with shrinking agents. 3,558,763, Cl. 264-210.
Racenis, Karlis V.; and Cochran, John Richard, to McGraw-Edison Company. Washing machine transmission. 3,557,580, Cl. 68-23.7
Radke, Arthur O.; Zach, Donald J.; and Hall, Garth O., to Universal Oil Products Company. Vehicle seat having optimum angular motion characteristics. 3,558,094, Cl. 248-372.
Ragot, Christian. Ornamental spray head assembly for obtaining various flow patterns. 3,558,054, Cl. 239-17.
Rain Jet Corporation: *See—*
Hruby, John O., Jr., 3,558,053.
Raiser, Ernst; and Christner, Walter, to Burkhardt & Weber K.G. Work spindle for tools. 3,558,199, Cl. 308-207.
Rakes, Rodney G., to Sperry Rand Corporation. Single sensor brushless D.C. motor. 3,559,014, Cl. 318-138.
Rakha, Mohammed A.: *See—*
Chang, Si Kun; and Rakha, Mohammed A.,3,559,073.
Rambeau, Harry; and Kirschner, Fritz, to Siemens Aktiengesellschaft. Connector structure for housing of pressure- biased semiconductor device. 3,559,004, Cl. 317-234.
Ramney Industries Corporation: *See—*
Ramsey, Thomas J., 3,557,756.
Ramsey, Thomas J., to Ramney Industries Corporation. Containerized storing and shipping unit for animals, birds and specimens for biological study. 3,557,756, Cl. 119-15.
Rand, Myron J., to Bell Telephone Laboratories, Incorporated. Dielectric films for semiconductor devices. 3,558,348, Cl. 117-106.
Randall, John M., to Xerox Corporation. Method of and apparatus for stippling. 3,558,339, Cl. 117-17.5
Randolph, August: *See—*
Hueckstaedt, Harald; Saleck, Wilhelm; Mueller, Herbert; and Randolph, August,3,558,314.
Randolph-Rand Corporation: *See—*
Reitzel, Georg, 3,557,854.
Rangger, Herbert: *See—*
Seghezzi, Hans-Dieter; and Rangger, Herbert,3.558,007.
Rank Organisation Limited, The: *See—*
Whitehouse, Joseph Colin, 3,558,927.
Rank Organisation Rank Taylor Hobson Division, The: *See—*
Barr, John Denzil; and Plummer, Dexter Robert, 3,558,217.
Rank Precision Industries Limited: *See—*
Barr, John Denzil; and Plummer, Dexter Robert, 3,558,217.
Rank, Viktor; Tentschert, Hans; Junker, Harald; and Allgeuer, Kurt, to Osterreichische Stickstoffwerke Aktiengesellschaft. Method for the production of the ammonium nitrate component of an NH_4NO_3-containing explosive of high detonation speed. 3,558,749, Cl. 264-3.
Ranke, Gerhard, to Linde Aktiengesellschaft. Process and apparatus for the simultaneous production of acetylene and ethylene. 3,557,529, Cl. 55-43.
Rao, Kattar U.: *See—*
Pease, James K.; Keidel, Ralph A.; and Rao, Kattar U.,3,557,594.
Rappaport, Richard A.: *See—*
Morgan, Martin J.; Evans, William C.; Rappaport, Richard A.; and Gutzmer, Alfred N.,3,559,107.
Rashbaum, Abraham. Fabric damage alignment guide. 3,557,457, Cl. 33-1.
Rashidov, Faizulla Karimovich: *See—*
Akhmedov, Rustam Berovich; and Rashidov, Faizulla Karimovich,3,558,057.
Rasmussen, Rolland R.: *See—*
Figueroa, John W.; Morgan, William J.; and Rasmussen, Rolland R.,3,559,187.
Raudsep, Ilmar G., to Honeywell Inc. Acoustic position reference system. 3,559,161, Cl. 340-6.
Raudsep, Ilmar G.; and Clapham, Robert G., to Honeywell Inc. Control apparatus having signal processing through plural channels. 3,559,171, Cl. 340-147.
Rausch, Richard E., to Universal Oil Products Company. Hydrocarbon isomerization catalyst. 3,558,523, Cl. 252-439.
Ravasi, Angelo, to Fina, F. G., S.p.A. Vacuum mixer. 3,557,411, Cl. 25-41.
Ravinsky, John: *See—*
Siegel, William J.; Wallgren, Linus E.; Young, Loring E.; and Ravinsky, John,3,557,821.
Raw, John A., to Svenska Flygmotor Aktiebolag. Device forced mixing of parallel fluid flows. 3,557,830, Cl. 137-604.
Rawlings, Robert Louis; and Schweigl, Lothar Oscar, to Burroughs Corporation. Line adapter for data communication system. 3,559,184, Cl. 340-172.5
Ray, George E., to Rheem Manufacturing Company. Combustion chamber locating and securing attachment. 3,557,773, Cl. 126-144.
Raybould, George M., to Reliance Electric and Engineering Company. Coil end support. 3,558,950, Cl. 310-270.
Rayeski, Thomas J.: *See—*
Carmi, Arieh; Parsons, George D.; and Rayeski, Thomas J.,3,558,298.
RCA Corporation: *See—*
Banks, Arthur J., 3,558,815.
Bussard, Donald C., 3,559,030.
Chang, Kern K.N.; and Liu, Shing-Gong, 3,558,889.
Chang, Kern K. N.; Prager, Hans J.; and Weisbrod, Sherman, 3,559,097.
Hall, James R.; and Korda, Peter B., 3,559,203.
Heuner, Robert C.; and Litus, Juluus, Jr., 3,558,992.
Hudson, Kenneth C., 3,558,208.
Jones, James B., 3,557,430.
Levine, Peter A.; and Liu, Shing-Gong, 3,559,096.
Lilley, Charles E., 3,558,954.
Mayaud, Edith E., 3,558,310.
Minet, Roy A., 3,558,953.
Monahan, John F.; and Dischert, Robert A., 3,558,806.
Schindler, Henry C., 3,559,127.
Schrader, Edward R., 3,559,130.
Reash, Clair W., to Union Carbide Corporation. High yield getter device. 3,558,962, Cl. 313-180.
Rebane, George J.: *See—*
Braunheim, Stephen T.; and Rebane, George J.,3,559,174.
Rech, Jakob, to Burroughs Corporation. Parts handling apparatus. 3,557,522, Cl. 53-57.
Reck, Richard A.: *See—*
Miller, Eugene J., Jr.; Tiefenthal, Harlan E.; Reck, Richard A.; and Malec, Robert E.,3,558,713.
Recsei, Andrew A. Alcoholic beverages. 3,558,325, Cl. 99-30.
Reding, Frederick P.: *See—*
Whitman, Robert D.; and Reding, Frederick P.,3,558,529.
Redmond, Benjamin; and Chenkin, Leila R. Butter pat dispenser. 3,558,006, Cl. 221-150.
Reed, Frank L.: *See—*
Trent, Marty C.; and Reed, Frank L.,3,557,477.
Reerink, Wilm: *See—*
Schafer, Rolf; Reerink, Wilm; Schaffrath, Heribert; Schmitt, Karl-Heinrich; and Terlinden, Arthur,3,558,454.
Rees, Robert L.; and Williams, George E., to Phillips Petroleum Company. Football blocking dummy. 3,558,135, Cl. 273-55.
Reeves, John F., to Litewate Transport Equipment Corporation. Unitary molded plastic structure. 3,557,992, Cl. 220-9.
Refermat, Stanley J.; and Turner, Arthur F., to Bausch & Lomb Incorporated. Polarization free beam divider. 3,559,090, Cl. 350-164.
Regitz, William M., to Bell Telephone Laboratories, Incorporated. Pulse delay control circuit using code controlled ramp voltage slope to fix delay. 3,558,918, Cl. 307-235.
Rehbein, Roy H., Jr.; and Whiting, Raymond D., to North American Rockwell Corporation. Loom harness mechanism. 3,557,843, Cl. 139-89.
Reicheneder, Franz. Production of α,β-dihaloacrylic acids of their salts. 3,558,696, Cl. 260-539.
Reid, Francis J.: *See—*
Moody, Jerry W.; and Reid, Francis J.,3,558,373.
Reifenberg, Gerald H.; and Considine, William J., to M&T Chemicals Inc. Process for preparing diborane. 3,558,275, Cl. 23-204.
Rein, Burton M.; and Behun, John D., to Mobil Oil Corporation. Preparation of alkylsulfonates. 3,558,693, Cl. 260-501.5
Reiner, Lawrence; and Scheyer, Philip. Pickup game elements. 3,558,133, Cl. 273-1.
Reitzel, Georg, 1/2 to Drescher & Kiefer, and 1/2 to Randolph-Rand Corporation. Lady's handbag, pouch or purse. 3,557,854, Cl. 150-29.
Rejminger, Anders Elis Bernhard. Dials for stop watches. 3,557,547, Cl. 58-74.
Rejsa, Jack J., to Pillsbury Company, The. Method for filling containers with predetermined quantities of material. 3,557,889, Cl. 177-1.
Reliance Electric and Engineering Company: *See—*
Raybould, George M., 3,558,950.
Reliance Electric and Engineering Company, The: *See—*
Klopfenstein, John R., 3,557,891.
Wolfe, Robert L.; and Trebnik, Augustine, 3,557,423.
Remes, Nathaniel L.: *See—*
Leebrick, John R.; and Remes, Nathaniel L.,3,558,783.
Remy, Claude; Lejannou, Claude; and Leclere, Jacques. Circuit for multiplying two electrical manitudes. 3,558,928, Cl. 307-265.

Renzing, Otto; and Jahn, Dieter, to Gebr, Eickhoff, Maschinenfabrik und Eisengiesserei mbH. End plate for cutter shafts. 3,558,194, Cl. 299-87.
Research Corporation: *See—*
Kronstein, Max, 3,558,547.
Reuschel, Konrad: *See—*
Schmidt, Otto; Wartenberg, Klaus; and Reuschel, Konrad,3,558,376.
Revere Copper and Brass Incorporated: *See—*
Osborn, Donald H.; and Freeman, Robert F., 3,558,803.
Revlon, Inc.: *See—*
Levy, Sheldon; and Marchese, Frank P., 3,558,634.
Rex Chainbelt Inc.: *See—*
Quast, Gilbert W., 3,557,964.
Rey, Hans-Georg; Wielinger, Hans; and Rieckmann, Peter, to Boehringer Mannheim Gesellschaft mit beschrankter Haftung. Diagnostic agents for use in the determination of hydroperoxides and of peroxidate-active substances and methods for manufacturing and using the same. 3,558,435, Cl. 195-103.5
Reynolds Metals Company: *See—*
Brandt, Yale M., 3,557,516.
Rheem International , Inc.: *See—*
Strobach, Carl G.; and Fahey, William E., 3,558,463.
Rheem Manufacturing Company: *See—*
Ray, George E., 3,557,773.
Rhoades, John M., to General Electric Company. Pattern controls for automatic machines. 3,559,179, Cl. 340-172.5
Rhoades, Vaughan W.; and Glass, Eugene D., to Cities Service Oil Company. Method of drilling and completing a gas well. 3,557,874, Cl. 166-281.
Rhone-Poulenc S.A.: *See—*
Julia, Marc, 3,558,659.
Normant, Henri Marie, 3,558,635.
Rial, Monty H.: *See—*
Schmidt, Ronald R.; and Rial, Monty H.,3,557,500.
Rice, Richard E., to Hooker Chemical Corporation, mesne. Preparation of closures. 3,557,984, Cl. 29-481.
Rich, John P.; and Carlsmith, Lawrence A., to Improved Machinery Inc. Pulp strainer. 3,557,583, Cl. 68-181.
Richards, William T., to Union Special Machine Company. Blindstitch sewing machine. 3,557,729, Cl. 112-178.
Richey, Clarence B., to Massey-Ferguson Inc. Semi-mounted turnover plow with steerable wheel. 3,557,882, Cl. 172-223.
Richie, Edward H.; and Mc Alpine, John F. Apparatus for over-labeling gable top containers. 3,558,403, Cl. 156-478.
Riddell, Maynard Harry; and Scharf, Charles William, to Borden, Inc. Control valve for can testing apparatus. 3,557,607, Cl. 73-49.2
Rieckmann, Peter: *See—*
Rey, Hans-Georg; Wielinger, Hans; and Rieckmann, Peter,3,558,435.
Rienecker, Frederick, Jr.: *See—*
Berndt, Carl W.; Rienecker, Frederick, Jr.; and Downing, Willis G., Jr.,3,558,865.
Riesen, Walter C., Jr.: *See—*
Tribe, Glenn O.; and Riesen, Walter C., Jr.,3,557,988.
Rieser, Raymond G.; and Chabal, Joseph, to PPG Industries, Inc. Glass window having a compreessively stressed outer glass sheet. 3,558,415, Cl. 161-125.
Rieter Machine Works, Ltd.: *See—*
Krause, Hans Walter, 3,557,543.
Naegeli, Werner, 3,557,545.
Riethmann, Jean: *See—*
Rufener, Walter; Berger, Raoul; and Riethmann, Jean,3,558,622.
Rigby, Ronald William, to Lucas, Joseph, (Industries) Limited. Electrical component assemblies with improved printed circuit construction. 3,558,993, Cl. 317-101.
Riggs, Dixon; and Peerson, David T., to Eastman Kodak Company. Indicator and control apparatus for use with information recording device. 3,558,226, Cl. 355-54.
Rigney, William R.; Tump, Dirk; and Luciano, Robert A., to Ortho Pharmaceutical Corporation. Tablet dispenser. 3,557,747, Cl. 116-121.
Rinno, Helmut; and Werner, Gerhard, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Telomers of styrene and maleic acid anhydride and process for preparing them. 3,558,570, Cl. 260-78.5
Rion Kabushiki Kaisha: *See—*
Yamano, Norihoko, 3,558,903.
Riordon, John D.,: *See—*
Libby, Carl F.; Avery, Bennett W.; and Kelley, Bruce W., 3,557,574.
Ririe, Otis E., to Phillips Petroleum Company. Filter assembly. 3,557,536, Cl. 55-269.
Riseman, Jacob: *See—*
Beaudouin, Pierre L.; Glang, Reinhard; and Riseman, Jacob,3,559,003.
Ritchie, David Scarth, to Barr & Stroud Limited. Gyroscopically stablized optical systems. 3,558,212, Cl. 350-16.
Ritter, Eduard: *See—*
Possl, Hans, 3,558,142.
Rittler, Hermann L.: *See—*
Beall, George H.; Lugli, Giuseppe; Maiocchi, Luigi; and Rittler, Hermann L.,3,557,858.
Rix, Walter; and Dix, Grete, to Fried Krupp, Gesellschaft mit beschrankter Haftung. Method of producing coatings on hard metal bodies. 3,558,445, Cl. 204-37.
Robach, Francis; and Salvi, Antoine, to Commissariat a l'Energie Atomique. Nuclear magnetic resonance magnetic gradiometers. 3,559,045, Cl. 324-0.5
Robbins, Jim, Seat Belt Co.: *See—*
Stoffel, Robert W., 3,558,075.
Robbins, Leroy V., Jr.; Anderson, Joseph S.; and Adams, Clark E., to Esso Research and Engineering Company. Catalytic cracking process. 3,558,476, Cl. 208-120.
Robershaw Controls Company: *See—*
Good, Arthur L., 3,558,938.
Roberts, Carleton W.; and Mc Gregor, Stanley D., to Dow Chemical Company, The. Bis(pentabromocyclopentadienyl) and method of making the same. 3,558,715, Cl. 260-648.
Roberts, Derek Aubrey, to Rolls-Royce Limited, mesne. Dust or sand separators. 3,557,537, Cl. 55-306.
Robertshaw Controls Company: *See—*
Aucahne, Jean; Katchka, Jay R.; and Felix, Pierre, 3,557,831.
Branson, Charles D., 3,558,250.
Puster, Louis M., 3,558,098.
Robertson, H. H., Company: *See—*
Curran, Bernard E., 3,557,511.
Schafer, Kenneth A.; and Sharp, Merle F., 3,557,497.
Robertson, Jerry E.: *See—*
Harrington, Joseph Kenneth; Kvam, Donald C.; Mendel, Arthur; and Robertson, Jerry E.,3,558,698.
Robertson, John Kelley: *See—*
Tartakoff, Alexander; and Robertson, John Kelley,3,558,958.
Robinson, Alfred G.; Blood, Alden E.; and Hagemeyer, Hugh J., Jr., to Eastman Kodak Company. Dihydro-5-hydroxy-4,4-dialkyl-3 (2H)-furananes. 3,558,664, Cl. 260-347.8
Robinson, Michael G., to United States of America, Air Force. Velocity gage placement tool assembly. 3,558,174, Cl. 294-86.13
Robinson, William A., to McPhar Geophysics Limited. Equivalent coil method for simultaneously measuring electromagnetic and magnetic time transient fields. 3,559,046, Cl. 324-8.
Robrock, Richard B., II, to Bell Telephone Laboratories, Inc. Bipolar pulse regenerator. 3,558,929, Cl. 307-268.
Roca, Domingo C., to Industrias Del Hogar, S.A. Radiating element. 3,558,252, Cl. 431-328.
Rockwell-Standard Company: *See—*
Bixby, Leo A., 3,557,634.
Roehl, Edward J.; and Dillon, Robert H., to Wheeling-Pittsburgh Steel Corporation. Electroplating a ductile zinc-nickel alloy onto strip steel. 3,558,442, Cl. 204-28.
Roesch, Egon: *See—*
Breuer, Hermann; Cohnen, Erich; and Roesch, Egon,3,558,610.
Roesky, Herbert W., to Du Pont de Nemours, E. I., and Company. Phosphoro-and phosphonofluorido-thioic acids and their salts. 3,558,269, Cl. 23-50.
Rogers, Harry T.; and Rogers, James H., to Mac Manufacturing Company, Inc. Barrel elevator. 3,557,940, Cl. 198-157.
Rogers, Herbert J. Signal lamp. 3,558,871, Cl. 240-13.
Rogers, James H.: *See—*
Rogers, Harry T.; and Rogers, James H.,3,557,940.
Roggenbuck, Willy: *See—*
Pochert, Rudolf; Haase, Lothar; Roggenbuck, Willy; and Wiese, Peter,3,558,973.
Rohde, William J., to Olin Corporation, mesne. Fuel regulator for propane appliances. 3,557,818, Cl. 137-118.
Rohm & Haas G.m.b.H.: *See—*
Monsheimer, Rolf; and Pfleiderer, Ernst, 3,558,430.
Schroder, Gunter; and Ganzler, Wolfgang, 3,558,530.
Roland Offsetmaschinenfabrik Faber & Schleicher A.G.: *See—*
Preuss, Friedrich, 3,557,695.
Roller Bearing Company of America: *See—*
Barr, Victor L., 3,558,200.
Rolls-Royce Limited: *See—*
Roberts, Derek Aubrey, 3,557,537.
Romanos, Nicholas D.; and Kinyon, Brice W., to Combustion Engineering, Inc. Vapor generator organization utilizing liquid metal or molten salts. 3,557,760, Cl. 122-32.
Romeo, Philip. Golfing target including a slit along the boundary of a simulated green. 3,558,140, Cl. 273-181.
Ronning, Jacob A. Method of repairing damaged carpeting. 3,558,384, Cl. 156-98.
Ronning, Jacob A. Method for repairing damaged carpeting. 3,558,385, Cl. 156-98.
Ronning, Jacob A. Method for repairing damaged carpeting. 3,558,386, Cl. 156-98.
Ropp, Chester A., Jr., to Eagle-Picher Industries, Inc. Nickel-zinc secondary battery. 3,558,358, Cl. 136-6.
Rosa, John: *See—*
Wood, Peter; and Rosa, John,3,558,915.
Rose, Thomas A., to Keene Corporation. Control system for waste water treatment plants. 3,558,255, Cl. 210-96.
Roseland, Luther M.: *See—*
Hamilton, Vern E.; and Roseland, Luther M.,3,558,408.
Hamilton, Vern E.; and Roseland, Luther M.,3,558,422.
Rosen, Goran. Locking means for the side-boards of a truck platform. 3,558,182, Cl. 296-36.
Rosen, Karl Isac Joel. Yarn feeder. 3,558,026, Cl. 226-39.

Rosi, David: *See—*
Archer, Sydney; and Rosi, David,3,558,629.
Ross, Austin: *See—*
Barkman, Byron L.; Moe, William West; and Ross, Austin,3,558,813.
Ross, John A.: *See—*
Alsup, Richard G.; and Ross, John A.,3,558,583.
Rossetti, Louis F., Jr., to Electronized Chemicals Corporation. Low loss electrical printed circuit board comprising polyolefin, fiberglass and metallic foil. 3,558,423, Cl. 161-203.
Roth, David W. H., Jr.: *See—*
Twilley, Ian C.; Roth, David W. H., Jr.; and Lofquist, Robert A.,3,558,567.
Roth, Stephen A., to Tektronix, Inc. Frequency dividing system. 3,559,092, Cl. 331-16.
Rottmann, Hans R.: *See—*
Morgan, Mark; and Rottmann, Hans R.,3,558,899.
Rousset, Jean-Claude Lucien Maurice, to Societe les Piles Wonder. Reserve battery and testing device therefor. 3,559,047, Cl. 324-29.5
Rowland, George P.: *See—*
Cole, Albert J.; and Rowland, George P.,3,558,544.
Royse, Edwin H. Control for mixing fluids of different specific gravity. 3,557,817, Cl. 137-91.
Rubin, Frank F. Septal morselizer. 3,557,792, Cl. 128-319.
Rubis, Casimir J., to United States of America, Navy. Ship's propulsion control system. 3,557,743, Cl. 115-34.
Ruckert, Hans, to Kalle Aktiengesellschaft. Azido azomethines for reprographic copying compositions. 3,558,609, Cl. 260-240.
Rudinger, Josef: *See—*
Cort, Joseph H.; Jost, Karel; Kasafirek, Evzen; Rudinger, Josef; Sorm, Frantisek; and Zaoral, Milan,3,558,590.
Ruegg, Rudolf: *See—*
Bruderer, Hans; and Ruegg, Rudolf,3,558,662.
Rueping, Calvin F., to Texaco Inc. Lubricating oil composition. 3,558,511, Cl. 252-37.2
Rufener, Walter; Berger, Raoul; and Riethmann, Jean, to Geigy Chemical Corporation, and Geigy, J. R., A.G. Process for the production of 2,4-diamino-6- alkythio-s-triazine. 3,558,622, Cl. 260-249.8
Ruggles, Kay L.; and Van Skyhawk, Norman, to American Standard, Inc. Tub and shower surround and apparatus and method for making same. 3,557,390, Cl. 4-148.
Ruka, Roswell J.: *See—*
Panson, Armand J.; and Ruka, Roswell J.,3,558,280.
Rummer, Heribert; Blumann, Werner; and Weist, Richard, to Telefunken Patentverwertungsgesellschaft m.b.H. Switching and tuning device having rotatable pushbutton associated with each potentiometer. 3,559,118, Cl. 334-7.
Rumpold, Karl: *See—*
Hick, Harald; and Rumpold, Karl,3,558,887.
Ruoff, Carl E., to International Business Machines Corporation. Monolithic bipolar transistor logic circuit and method of forming same. 3,557,444, Cl. 29-577.
Rupp, Lewis A., to Mobil Oil Corporation. Floating storage system with buoy-mounted separator. 3,557,396, Cl. 9-8.
Rusco Industries, Inc.: *See—*
Ballard, Louis M.; and Mc Innis, Andrew M., 3,558,407.
Ruse, Alois: *See—*
Weimann, Hans; and Ruse, Alois,3,557,869.
Rushing, Frank C.: *See—*
Buckingham, Arthur G.; and Rushing, Frank C.,3,558,219.
Rushton, Brian M.; and Ossanna, Oliver A., to Ashland Oil Inc. Coating compositions comprising an epoxidized fatty ester of a cyclic polyol and an acidic polyester. 3,558,535, Cl. 260-22.
Russell, Daniel D. Syphon liquor flask. 3,558,020, Cl. 222-416.
Russell, David B.: *See—*
Ohlenbusch, Cord W.; and Russell, David B.,3,557,387.
Russell, Joseph L., to Halcon International, Inc. Hydrocarbon oxidation with boron additives. 3,558,687, Cl. 260-462.
Russler, Leveret C., to Harnischfeger Corporation. Combination service and park fluid operated brake. 3,557,913, Cl. 188-106.
Rutkowski, Alfred J., to Esso Research and Engineering Company. Nematocidal compositions. 3,558,782, Cl. 424-291.
Rutt, Paul A., to Tenneco Inc., mesne. Tuning tube. 3,557,905, Cl. 181-59.
Ruyle, William V.: *See—*
Sarett, Lewis H.; and Ruyle, William V.,3,558,641.
Ryabov, Nikoali Vasilievich: *See—*
Babich, Valentin Grigorievich; Kursky, Alexander Kuzmich; Markov, Konstantin Petrovich; Ryabov, Nikoali Vasilievich; and Stas, Konstantin Nikolaevich,3,558,884.
Ryan Equipment Company: *See—*
Schuman, Carl F., 3,557,878.
Ryden, James W.: *See—*
Abromavage, John C.; and Ryden, James W.,3,558,158.
Ryer, Jack: *See—*
Gillespie, Bruce G.; and Ryer, Jack,3,558,470.
Saeman, Walter C., to Olin Corporation. Phosphorus recovery feed control method. 3,558,114, Cl. 263-52.
Safe, Laurence G.: *See—*
Conner, James M.; Borsheim, Harold G.; and Safe, Laurence G.,3,557,897.
S.A.F.F.A.-Societa per Azioni Fabbriche Fiammiferi ed Affini: *See—*
Molla, Pietro, 3,557,667.
Sagnis, James C., Jr.; Teig, Michael; and Ward, Robert L., to International Business Machines Corporation. Magnetic memory with apertured strip elements. 3,559,186, Cl. 340-174.
Saines, George S., to Texas Development Corporation. Olefin polymerization. 3,558,737, Cl. 260-683.15
Saito, Hachiro: *See—*
Saito, Tadashi; Saito, Masaya; Saito, Masaru; and Saito, Hachiro,3,557,600.
Saito, Masaru: *See—*
Saito, Tadashi; Saito, Masaya; Saito, Masaru; and Saito, Hachiro,3,557,600.
Saito, Masaya: *See—*
Saito, Tadashi; Saito, Masaya; Saito, Masaru; and Saito, Hachiro,3,557,600.
Saito, Tadashi; Saito, Masaya; Saito, Masaru; and Saito, Hachiro. Transfer press. 3,557,600, Cl. 72-404.
Sakatos, Michael J., to Sigma Instruments, Inc., mesne. Non-polarized magnetic reed switch. 3,559,123, Cl. 335-154.
Sakharov, Petr Vasilievich: *See—*
Shmakov, Vasily Pavlovich; Eremin, Vitaly Alexeevich; Kvasha, Semen Borisovich; Kaganovich, Natalia Grigorievna; Dobrenyakins, Tatiana Nikolaevna; Vanjushin, Viktor Nikolaevich; Sakharov, Petr Vasilievich; Voronov, Boris Pavlovich; Polezhaev, Vasily Dementievich; Smetankin, Pavel Semenovich; Sobolev, Evgeny Pavlovich; Yanchevsky, Kazimir Stanislavovich; Grishin, Mikhail Semenovich; Burtsev, Pavel Semenovich; and Chasovitin, Pavel Alexeevich,3,558,192.
Sakun, Ivan Akimovich: *See—*
Grinpress, Boris Lazarevich; Sakun, Ivan Akimovich; Dimentov, Jury Iosifovich; and Vainshtein, Moisei Fishelevich,3,557,687.
Saleck, Wilhelm: *See—*
Hueckstaedt, Harald; Saleck, Wilhelm; Mueller, Herbert; and Randolph, August,3,558,314.
Saligny, Claude: *See—*
Bolliand, Robert; and Saligny, Claude,3,558,393.
Sallmann, Alfred; and Pfister, Rudolf, to Geigy Chemical Corporation. Substituted derivatives of 2-anilinophenylacetic acids and a process of preparation. 3,558,690, Cl. 260-471.
Salotti, Charles A. Inorganic process for producing hydrocarbon compounds by reaction of hydrogen and crystalline carbonates. 3,558,724, Cl. 260-676.
Salukvadze, Viktor Samsonovich. Rotating cutting tool for surface machining of articles and materials. 3,557,418, Cl. 29-105.
Salvesen, Robert H., to Esso Research and Engineering Company. Stable oil-dithiocarbamate dispersions. 3,558,302, Cl. 71-97.
Salvi, Antoine: *See—*
Robach, Francis; and Salvi, Antoine,3,559,045.
Salyer, Ival O.; and Jefferson, Robert T., to United States of America, Atomic Energy Commission. Process for closed-cell rigid polyurethane foams. 3,558,531, Cl. 260-2.5
Salyer, Ival O.; Schwendeman, James L.; and McClung, Charles E., to Monsanto Research Corporation. Water-repellant resinous foam. 3,558,417, Cl. 161-160.
Sampson, John L., to United States of America, Air Force. Method and apparatus for growing crystals. 3,558,196, Cl. 302-59.
Sanders Associates, Inc.: *See—*
Williams, Roy M., Jr.; and Longland, John R., 3,558,863.
Sandoz Ltd.: *See—*
Fleck, Fritz, 3,558,611.
Helfenberger, Hans, 3,558,623.
Hochreuter, Richard; and Hofer, Kurt, 3,558,668.
Hrach, Josef; Zeschmar, Winfried; Morawetz, Gottfried; and Mach, Dominik, 3,558,557.
Sandoz-Wander, Inc.: *See—*
Griot, Rudolf G., 3,558,626.
Griot, Rudolf G., 3,558,645.
Hardtmann, Geotz E.; and Ott, Hans, 3,558,648.
Sano, Kazuya: *See—*
Hamaoka, Tsutomu; Sano, Kazuya; Yoshida, Makoto; Oishi, Yasushi; and Hirose, Takeshi,3,558,319.
Santangelo, Joseph Hermano: *See—*
Denyes, Russell Owens; and Santangelo, Joseph Hermano,3,558,757.
Santelli, Thomas R., to Owens-Illinois, Inc. Method of making a foamed container having an integral neck portion. 3,558,751, Cl. 264-45.
Santiago, Edgardo: *See—*
Bayer, John W.; and Santiago, Edgardo,3,558,587.
Saotome, Kazuo; Komoto, Hiroshi; and Sato, Kenichiro, to Asahi Kasei Kogyo Kabushiki Kaisha. Polyamides from oxadicarboxylic acids and diamines containing aromatic nucleus. 3,558,565, Cl. 260-78.
Sapolsky, Roger, to Gulf & Western Industrial Products Company, mesne. Press line synchronization. 3,557,686, Cl. 100-43.
Sarem, Amir M., to Union Oil Company of California. Polymerization method. 3,558,759, Cl. 264-142.
Sarett, Lewis H.; and Ruyle, William V., to Merck & Co., Inc. Certain pyridyl salicyclic acid derivatives. 3,558,641, Cl. 260-295.
Sarett, Lewis H.; and Windholz, Thomas B., to Merck & Co., Inc. Steroid carbonates and process. 3,558,675, Cl. 260-397.4
Sarex Corporation: *See—*
Seda, Orlando Louis, 3,558,405.
Sasaguri, Kiichiro: *See—*
Kobayashi, Hidehiko; Sasaguri, Kiichiro; Fujimoto, Yoshihisa; and Ibata, Jyoji,3,558,722.

Sato, Hideshi: *See—*
Uchida, Hiromu; Sato, Hideshi; and Ihara, Takashi,3,558,460.

Sato, Kenichiro: *See—*
Saotome, Kazuo; Komoto, Hiroshi; and Sato, Kenichiro,3,558,565.

Sato, Masaaki, to Olympus Optical Co., Ltd. Mechanism for controlling flexure of endoscope. 3,557,780, Cl. 128-4.

Saul, Sanford: *See—*
Atwater, Wayne G.; and Saul, Sanford,3,557,977.

Saunders, Leonard: *See—*
Heslop, Victor Lorraine; and Saunders, Leonard,3,557,597.

Sauvan, Jacques; Berthelemy, Jacques; and Boue, Pierre Germain Rene, to Societe Anonyme: Societe Nationale d'Etude et de Construction de Moteurs d'Aviation S.N.E.C.M.A. Method and system for finding or plotting an optimum path. 3,558,868, Cl. 235-185.

Savage, Arthur P. Duct stiffener. 3,557,838, Cl. 138-108.

Savaglio, Fredrick J.; Woods, Thomas C.; and Pacela, Allan F., to Beckman Instruments. Common mode signal detection. 3,559,193, Cl. 340-213.

Scalzo, Michael A., to General Electric Company. High-speed printout device for computers and other uses. 3,557,673, Cl. 95-4.5

Schaaf, Frederick W., to International Business Machine Corporation. Programmed line pitch printer. 3,557,929, Cl. 197-133.

Schaberg, Richard R., to Clary Corporation. Apparatus for generating trigonometric functions corresponding to angular movement. 3,559,143, Cl. 338-89.

Schade, Fritz, to Gustav Schade Maschinenfabrik. Frame-type dump scrapers. 3,557,934, Cl. 198-36.

Schaeffer, James R.: *See—*
Goodhue, Charles T.; and Schaeffer, James R.,3,558,431.

Schafer, Kenneth A.; and Sharp, Merle F., to Robertson, H. H., Company. Explosive pressure and/or heat and smoke venting unit. 3,557,497, Cl. 52-1.

Schafer, Rolf, to Farbenfabriken Bayer Aktiengesellschaft. Method of and an apparatus for indicating short circuits in the cells of electrolysis plants. 3,559,199, Cl. 340-253.

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Schaffrath, Heribert: *See—*
Schafer, Rolf; Reerink, Wilm; Schaffrath, Heribert; Schmitt, Karl-Heinrich; and Terlinden, Arthur,3,558,454.

Scharf, Charles William: *See—*
Riddell, Maynard Harry; and Scharf, Charles William,3,557,607.

Scharf, Jerry F., to Crown Cork & Seal Company, Inc. Ring tab assembly operation. 3,557,425, Cl. 29-200.

Scheidweiler, Andreas, to Cerberus AG. Fire alarm with bistable characteristics. 3,559,196, Cl. 340-237.

Schenher, Michel Bernard: *See—*
Bauger, Louis Jules; Beyler, Roland Robert Charles; Lefebvre, Adolphe Robert; Quillevere, Herve Alain; and Schenher, Michel Bernard,3,558,251.

Scherer, Otto; and Kluge, Friedhelm, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. 6-Amino-uracil-5-carbonamido-N-sulfonamides and process for their preparation. 3,558,627, Cl. 260-256.5

Scheyer, Philip: *See—*
Reiner, Lawrence; and Scheyer, Philip,3,558,133.

Schiber, Samuel, to Borg-Warner Corporation. Power steering back-up pressure system. 3,558,239, Cl. 417-3.

Schier, Robert W.: *See—*
Blink, Robert O.; Lutzke, William C.; Holz, Frederick C.; and Schier, Robert W.,3,557,720.

Schilb, William A.: *See—*
Booth, Donald L.; and Schilb, William A.,3,559,088.

Schimmer, Arnim. Means for feeding a consumming device with direct current from an alternating source. 3,559,035, Cl. 321-8.

Schindler, Hans, to Braun Aktiengesellschaft. Magnetic ignition system. 3,559,131, Cl. 335-229.

Schindler, Henry C., to RCA Corporation. Superconductive magnet construction. 3,559,127, Cl. 335-216.

Schipke, Robert N.: *See—*
Howick, Stanley O.; and Schipke, Robert N.,3,557,807.

Schlagel Inc.: *See—*
Schlagel, William A., Jr.; and Huehn, Alfred H., 3,557,924.

Schlagel, William A., Jr.; and Huehn, Alfred H., to Schlagel Inc. Grain distributor. 3,557,924, Cl. 193-23.

Schleif, Ferber R.; and Martin, Glenn E., deceased, to United States of America, Interior. Tieline swing relay. 3,558,986, Cl. 317-27.

Schleifenbaum, Gerhard: *See—*
Koennecke, Wolfgang; and Schleifenbaum, Gerhard,3,559,119.

Schloemann Aktiengesellschaft: *See—*
Bollig, Georg; Dopper, Otto; and Thiemann, Hans, 3,557,593.
Hess, Walter, 3,558,117.
Schussler, Ludwig, 3,557,601.
Simon, Karl-Heinz; Beckmann, Wilhelm; Ashworth, John T.; Bohne, Gunter; Meitz, Adolf; and Kielpinski, Leonard V., 3,557,798.

Schlossbauer, Hubert, to Siemens Aktiengesellschaft. Magnetic record-read control process and apparatus. 3,559,192, Cl. 340-174.1

Schlumberger, N., & Cie: *See—*
Herubel, Jean Frederic, 3,557,409.

Schlumberger Technology Corporation: *See—*
McGinty, Charles F., 3,558,104.
Schwartz, Robert J., 3,559,163.

Schluntz, Gary L., to Xerox Corporation. Fuser system for copying machine. 3,558,853, Cl. 219-216.

Schluter, Heinz, to International Standard Electric Corporation. Guide wire control circuit arrangement for a multi-stage crosspoint network. 3,558,826, Cl. 179-18.

Schmelzer, Hans-Georg; Degener, Eberhart; Unterstenhofer, Gunter; Tarnow, Horst; and Hammann, Ingeborg, to Farbenfabriken Bayer Aktiengesellschaft. 2,2,2-Trichloro-ethylidenanilines. 3,558,705, Cl. 260-566.

Schmerling, Louis, to Universal Oil Products Company. Halovinyl-substituted saturated-carboxylic acids and anhydrides halovinylation of saturated- carboxylic acids. 3,558,660, Cl. 260-346.3

Schmid, Rolf; Lohse, Friedrich; and Batzer, Hans, to Ciba Limited. Carboxy terminated polylactam and a diepoxide. 3,558,742, Cl. 260-830.

Schmidt-Collerus, Josef J.; Gray, Don N.; and Jordan, George W., Jr., to United States of America, Air Force. Fluoro-alkyl-substituted polynitro diphenyl ethers and a process for preparing the same. 3,558,720, Cl. 260-612.

Schmidt, Hans Konrad, to Telefunken Patentverwertungsgesellschaft m.b.H. Signal voltage control for logic circuit. 3,558,914, Cl. 307-214.

Schmidt, Heinz: *See—*
Lindner, Helmut; Sommer, Karl; and Schmidt, Heinz,3,558,593.

Schmidt, Jack E.: *See—*
Barrow, Henry; Schmidt, Jack E.; Fromson, Robert E.; and Staskiewicz, Fred C.,3,557,866.

Schmidt, John, to CTP Industries, Inc. Carrying bag. 3,558,039, Cl. 229-54.

Schmidt, Ludwig: *See—*
Kuchenbecker, Hermann; Fink, Wolfgang; and Schmidt, Ludwig,3,557,693.

Schmidt, Otto; Wartenberg, Klaus; and Reuschel, Konrad, to Siemens Aktiengesellschaft. Method for controlled doping by gas of foreign substance into semiconductor materials. 3,558,376, Cl. 148-189.

Schmidt, Richard J., Corporation: *See—*
Schmidt, Richard J., 3,557,392.

Schmidt, Richard J., to Schmidt, Richard J., Corporation. Hospital bed bath. 3,557,392, Cl. 4-177.

Schmidt, Ronald R.; and Rial, Monty H., to Structex Corporation. Foldable structure. 3,557,500, Cl. 52-69.

Schmidt, William D. Machine tool. 3,557,642, Cl. 77-64.

Schmidt, William G., to Communications Satellite Corporation. Probability error corrector and voltage detector. 3,559,166, Cl. 340-146.1

Schmitt, Karl-Heinrich: *See—*
Schafer, Rolf; Reerink, Wilm; Schaffrath, Heribert; Schmitt, Karl-Heinrich; and Terlinden, Arthur,3,558,454.

Schmitz, Christian, to Daimler-Benz Aktiengesellschaft. Structural part of a gas turbine drive unit which is exposed to thermal load and is to be cooled by means of a gas. 3,557,553, Cl. 60-39.65

Schnabel, Horst: *See—*
Beermann, Claus; Schnabel, Horst; and Ulmschneider, Dieter,3,558,581.

Schneck, Erich: *See—*
Voigt, Hartmut; Malow, Egon, Hofheim; Wetzel, Walter; and Schneck, Erich,3,557,530.

Schneider, Alfred: *See—*
Kiewicz, Frank M.; and Schneider, Alfred,3,557,462.

Schneider, Johannes: *See—*
Behr, Erich; and Schneider, Johannes,3,558,740.

Schneider, Peter R.: *See—*
Carter, William C.; Duke, Keith A.; and Schneider, Peter R.,3,559,167.
Carter, William C.; Duke, Keith A.; and Schneider, Peter R.,3,559,168.

Schoenbeck, Leland C., to Du Pont de Nemours, E. I., and Company. Distillation process and apparatus. 3,558,438, Cl. 203-26.

Schon, Manfred: *See—*
von Brachel, Hanswilli; and Schon, Manfred,3,558,597.

Schrader, Edward R., to RCA Corporation. Superconductive magnet and method of constructing same. 3,559,130, Cl. 335-216.

Schreffler, Robert Z.: *See—*
Lipscomb, Walter P.; and Schreffler, Robert Z.,3,558,202.

Schritt, Wolfgang: *See—*
Engelhardt, Friedrich; and Schritt, Wolfgang,3,558,716.

Schroder, Gunter; and Ganzler, Wolfgang, to Rohm & Haas G.m.b.H. Foamed and foamable copolymers. 3,558,530, Cl. 260-2.5

Schroering, John B., to Industrial Services of America, Inc. Solid waste disposal plant. 3,557,685, Cl. 100-39.

Schubauer, Carl T.: *See—*
Bench, Robert W.; Feibush, Arthur M.; and Schubauer, Carl T.,3,558,883.

Schubert, Joacim, to Ernst & Wilhelm Bertram Fabrik Fotolechn. Exposure control circuit for a photographic shutter. 3,557,677, Cl. 95-53.

Schultz, Fritz, to Farbenfabriken Bayer Aktiengesellschaft. Crystalline kallikrein-inactivator and process for preparing the same. 3,558,773, Cl. 424-177.

Schultz, Vernon A.: *See—*
Colvin, Donald; and Schultz, Vernon A.,3,558,465.

Schuman, Carl F., to Ryan Equipment Company. Roll forming device for sod strips. 3,557,878, Cl. 172-20.

Schussler, Ludwig, to Schloemann Aktiengesellschaft. Control of a forging manipulator co-operating with a forging press. 3,557,601, Cl. 72-420.

Schutt, Hans U., to Shell Oil Company. Reductive gas regeneration of metal impregnated coked catalyst. 3,558,514, Cl. 252-411.

Schwachhofer, Ghislain: *See—*
Bonnel, Bernard; and Schwachhofer, Ghislain,3,558,506.

Schwandt, Howard V. Dowel hole drilling and spacing device. 3,557,641, Cl. 77-63.

Schwartz, Robert J., to Schlumberger Technology Corporation. Well logging pulse transmission system. 3,559,163, Cl. 340-18.

Schwarz, Ludwig, to Gebr. Bohler & Co. Aktiengesellschaft. Method and apparatus for explosively deforming cylinders. 3,557,589, Cl. 72-56.

Schwarzkopf Development Corporation: *See—*
Strohmeier, Gerolf; and Pohler, Alfred, 3,558,113.

Schweigl, Lothar Oscar: *See—*
Rawlings, Robert Louis; and Schweigl, Lothar Oscar,3,559,184.

Schwendeman, James L.: *See—*
Salyer, Ival O.; Schwendeman, James L.; and McClung, Charles E.,3,558,417.

Schwerdhofer, Hans Joachim, to Fichtel & Sachs AG. Centrifugal governor for a multiple-speed hub. 3,557,922, Cl. 192-64.

Scientific-Atlanta, Incorporated: *See—*
Currie, Charles H.; and Graham, William H., 3,559,074.

Scobey, Robert. Steaming unit. 3,557,389, Cl. 4-161.

Scott, Peter H.: *See—*
Churchill, John W.; Kober, Ehrenfried H.; and Scott, Peter H.,3,558,707.

Scott Plastics Corporation: *See—*
Balda, Edward C., 3,557,989.

Searle, G. D., & Co.: *See—*
Coyne, William E.; and Cusic, John W., 3,558,653.
Pappo, Raphael; and Jung, Christopher J., 3,558,682.

Searle, G. E., & Co.: *See—*
Klimstra, Paul D., 3,558,608.

Seda, Orlando Louis, to Sarex Corporation. Film or tape splicer apparatus. 3,558,405, Cl. 156-506.

See, Jacques Leon Alexandre. Elastic soft structure, and its application to the making of sporting tracks and runs. 3,557,668, Cl. 94-3.

See, Robert O., to Air Reduction Company, Incorporated. Gas torch tip. 3,558,062, Cl. 239-419.3

Seeley, Robert L., to United States of America, Navy. Constant light intensity servo control unit. 3,558,892, Cl. 250-205.

Seghezzi, Hans-Dieter; and Rangger, Herbert, to Hilti Aktiengesellschaft. Container for dispensing casingless propellant charge elements. 3,558,007, Cl. 221-232.

Seidel, Harold, to Bell Telephone Laboratories, Incorporated. Coupler switches. 3,559,108, Cl. 333-7.

Sekmakas, Kazys, to De Soto Inc. Aqueous latex paints internally primed with hydroxy functional partial esters of resinous polyhydric alcohols. 3,558,536, Cl. 260-23.

Semicon Associates, Inc.: *See—*
Hill, David L.; and Wu, Lien S., 3,558,966.

Seminole Pollution Equipment Corporation: *See—*
Carney, Russell F., Jr., 3,557,674.

Sen, Durgacharan, to Monsanto Chemicals Limited. Foamed resins production. 3,558,752, Cl. 264-51.

Sendtko, Ulrich: *See—*
Koll, Roman; Penza, Hans; and Sendtko, Ulrich,3,557,675.

Sentralinstitutt for Industriell Forskning: *See—*
Bergem, Normann; Blindheim, Ulf; Onsager, Olav-Torgeir; and Wang, Hagbarth, 3,558,736.

Seregely, Daniel W.: *See—*
Goodenow, Elden Lucerne; O'Sullivan, James; and Seregely, Daniel W.,3,558,392.

Service d'Exploitation Industrielle des Tabacs et des Allumettes: *See—*
Koch, Hans; Wochnowski, Waldemar; Thiele, Willi; Hackmack, Klaus-Georg; Friebel, Heinz; and Pietrucci, Andre, 3,557,799.

Servo Corporation of America: *See—*
Tillman, Leonard; and Glazar, Arthur J., 3,558,876.

Seymour, James O., Jr.; and Agterhuis, Hendrik B. F., to Westinghouse Electric Corporation. Apparatus for detectin g flaws in an elongated moving strand. 3,557,615, Cl. 73-160.

Seymour, Shaun A., to Sperry Rand Corporation. Liquid manure pump transport device. 3,557,981, Cl. 214-146.5

Shader, Benjamin A., to Eversman Mfg. Company, The. Seed bed forming implement. 3,557,883, Cl. 172-701.

Shaff, Larry T.: *See—*
Crabtree, Royale R.; Beeker, Charles W.; Shaff, Larry T.; Mancini, Michael A.; and Pheil, Joseph C.,3,558,005.

Shagena, Jack L., Jr. Electrically wired baseboard. 3,559,149, Cl. 339-23.

Shankel, Richard: *See—*
Hartbauer, Ellsworth A.; and Shankel, Richard,3,557,688.

Sharland, Robert W.: *See—*
Aro, Enn; Chene-, Thomas K.; Dankowski, James J.; Fearn, Clifford M.; Nennerfelt, Carl B.; Patterson, Albert D.; Sharland, Robert W.; and Watts, James A.,3,558,829.

Sharp, Merle F.: *See—*
Schafer, Kenneth A.; and Sharp, Merle F.,3,557,497.

Sharpe, John Thomas Lawrence, to International Standard Electric Corporation. Signal transmitter for limited band width transmission systems. 3,559,070, Cl. 325-136.

Shaver, William R.: *See—*
Aquino, Herman A.; Marulic, Walter J.; and Shaver, William R.,3,557,714.

Shead, Bobby G. Retractile and adjustable safety razor. 3,557,448, Cl. 30-30.

Sheehan, John M., to Tecnifax Corporation. Light-sensitive diazotype material which comprise aryl-substituted acylacetonitriles or ester or amide derivatives of said aryl-substituted acylacetonitriles as coupling components. 3,558,318, Cl. 96-91.

Sheffield, David John: *See—*
Bamford, David George; Biggs, David Frederick; Chaplen, Peter; Davis, Michael; and Sheffield, David John,3,558,654.

Sheldon, Robert Cyril, to Lucas, Joseph, (Industries) Limited. Machine for winding armatures of dynamo electric machines. 3,557,433, Cl. 29-205.

Shell Oil Company: *See—*
Crespin, George T. F.; and Davies, Graham D., 3,557,487.
Haynes, George R.; and Phillips, Donald D., 3,558,615.
Schutt, Hans U., 3,558,514.
van der Plas, Franciscus J. F.; and Wagner, Willem M., 3,558,572.
Young, Eldred E.; Wege, Robert L.; and Kunreuther, Frederick, 3,558,731.

Shelter, Kenneth L., to Sybron Corporation. Devices having flexures of aluminum material. 3,557,623, Cl. 73-410.

Shen, Tsung-Ying; and Dorn, Conrad P., Jr., to Merck & Co., Inc. Certain pyridyl and thiazolyl methylthiopiopionic acids and derivatives. 3,558,640, Cl. 260-294.8

Sherard, James L. Method and apparatus for constructing impervious underground wills. 3,557,561, Cl. 61-35.

Sherley, Roy W.: *See—*
Sherley, Roy W., 3,558,088.

Sherley, Roy W., to Sherley, Roy W., mesne. Trash can holders with improved lid fasteners and spring-loaded break-over handle device. 3,558,088, Cl. 248-147.

Sherwin-Williams Company, The: *See—*
Cunningham, Arthur L., 3,558,563.

Shields, Walter A. Syringe. 3,557,784, Cl. 128-173.

Shimada, Keiji: *See—*
Barada, Minoru; and Shimada, Keiji,3,558,836.

Shinkawa, Toshikazu: *See—*
Uto, Yoshimitsu; Yamazaki, Taizo; and Shinkawa, Toshikazu,3,557,839.

Shmakov, Vasily Pavlovich; Eremin, Vitaly Alexeevich; Kvasha, Semen Borisovich; Kaganovich, Natalia Grigorievna; Dobrenyakins, Tatiana Nikolaevna; Vanjushin, Viktor Nikolaevich; Sakharov, Petr Vasilievich; Voronov, Boris Pavlovich; Polezhaev, Vasily Dementievich; Smetankin, Pavel Semenovich; Sobolev, Evgeny Pavlovich; Yanchevsky, Kazimir Stanislavovich; Grishin, Mikhail Semenovich; Burtsev, Pavel Semenovich; and Chasovitin, Pavel Alexeevich. Shield for tunneling in unstable grounds. 3,558,192, Cl. 299-33.

Shore, William S.; and Godes, Ronald A. Multipurpose stackable high chair. 3,558,186, Cl. 297-136.

Showa Denko Kabushiki Kaisha: *See—*
Ogawa, Masao; and Hayashi, Shigeo, 3,558,745.

Shufflebotham, David: *See—*
Knight, Basil Edward; and Shufflebotham, David,3,557,764.

Shults, Voldemar Garrievich, to Vsesojuzny Nanchno-Issledovatelsky Institut Gornoi Geomekhaniki. Coding theodolite. 3,557,458, Cl. 33-69.

Shurtz, Albert L.; and Leimeister, Fabian J., said Leimeister assor to said Shurtz, Albert L. Paving apparatus. 3,557,672, Cl. 94-44.

Siegal, William Jordan; and Wallgren, Linus Eugene, to Pace, Inc. Miniature electric soldering iron. 3,558,854, Cl. 219-233.

Siegel, William J.; Wallgren, Linus E.; Young, Loring E.; and Ravinsky, John, to Pace, Incorporated. By-pass valve. 3,557,821, Cl. 137-269.5

Siegener Maschinenbau, G.m.b.H.: *See—*
Illert, Karl, 3,557,595.

Sieger, Maurice Paul, to United Engineering and Foundry Company. Rod handling system. 3,557,438, Cl. 29-429.

Siemens Aktiengesellschaft: *See—*
Albrecht, Cord, 3,558,068.
Baum, Wilhelm, 3,557,576.
Dorsch, Gerhard; and Wagnerberger, Wolfgang, 3,558,934.
Gruber, Wolfgang; and Steger, Gunter, 3,557,447.
Kuchenbecker, Hermann; Fink, Wolfgang; and Schmidt, Ludwig, 3,557,693.
Lutz, Roman; and Vogl, Herbert, 3,558,821.
Rambeau, Harry; and Kirschner, Fritz, 3,559,004.
Schlossbauer, Hubert, 3,559,192.
Schmidt, Otto; Wartenberg, Klaus; and Reuschel, Konrad, 3,558,376.
Stut, Hans; and Emeis, Reimer, 3,559,008.

Sievers, Robert E.: *See—*
Harris, Charles W.; Sievers, Robert E.; and Eisentraut, Kent J.,3,558,440.

Sigma Instruments, Inc.: *See—*
Sakatos, Michael J., 3,559,123.

Sigmund, Gerhard, to Daimler-Benz Aktiengesellschaft. Slide shoe structures of synthetic plastic material for sliding roofs of motor vehicles. 3,558,183, Cl. 296-137.

Simcom Corporation: *See—*
Levasseur, Joseph Leo, 3,559,173.
Simon, Friedhelm K.; and Immler, Albert E., to Singer Company, The. Sewing machine bed extensions. 3,557,732, Cl. 112-258.
Simon, Karl-Heinz; Beckmann, Wilhelm; Ashworth, John T.; Bohne, Gunter; Meitz, Adolf; and Kielpinski, Leonard V., to Schloemann Aktiengesellschaft American Tobacco Company, The. Smoking taste of tobacco stems Means for cooling and transversely conveying metal sheets. 3,557,798, Cl. 198-219.
Simonovitch, Chaim: *See—*
Just, George E.; and Simonovitch, Chaim,3,558,688.
Simons, Frank Holmes, to Fiber Industries, Inc. Compositions and yarn made therefrom. 3,557,544, Cl. 57-140.
Simplex Manufacturing Co.: *See—*
Colvin, Donald; and Schultz, Vernon A., 3,558,465.
Sinclair Research, Inc.: *See—*
Matson, Howard J., 3,558,489.
Young, David W., 3,558,686.
Sinclair-Koppers Company: *See—*
Andrews, James M., 3,558,037.
Singer, Benjamin H., Jr., to Kerr Glass Manufacturing Corporation, mesne. Crown closure having removable liner. 3,557,987, Cl. 215-40.
Singer Company, The: *See—*
Simon, Friedhelm K.; and Immler, Albert E., 3,557,732.
Singleton, Albert. Liquid level control device. 3,557,819, Cl. 137-206.
Sitzberger, Frank J., to Adcraft Mfg. Co. Interchangeable badge assembly. 3,557,478, Cl. 40-1.5
Siverson, Garfield C.: *See—*
Hill, Holbert R.; and Siverson, Garfield C.,3,557,569.
Sjoberg, Olof Harald: *See—*
Ekstrom, Bertil Ake; and Sjoberg, Olof Harald,3,558,601.
Skalleberg, Oystein Gunnar: *See—*
Lilljeforss, Gustaf Lennart; and Skalleberg, Oystein Gunnar,3,557,890.
Skubic, Leroy F., to Paltier Corporation, The. Pyramid knock-down rack with adjustable shelf for tire storage. 3,557,966, Cl. 211-24.
Skvarla, John E., to Union Carbide Corporation. Fire fighting composition comprising an asbestos containing slurry. 3,558,485, Cl. 252-7.
Slavin, Michael: *See—*
Emery, Raymen F.; Mirabile, Samuel P.; Slavin, Michael; and Bata, George T.,3,557,898.
Sliwka, Wolfgang; and Immel, Guenther, to Badische Anilin- & Soda-Fabrik Aktiengesellschaft. Hot-melt adhesives of styrene and an acrylic ester grafted unto a polystrene by bulk polymerization. 3,558,746, Cl. 260-885.
Slottow, Hiram Gene: *See—*
Bitzer, Donald L.; Slottow, Hiram Gene; and Willson, Robert H.,3,559,190.
Slowak, Diether: *See—*
Heiser, Joachim; Helfensdorfer, Hans; Slowak, Diether; and Sopha, Klaus,3,557,835.
Small, Donald A., to Corning Glass Works. Temperature sensitive fluidic device. 3,557,816, Cl. 137-81.5
Smetankin, Pavel Semenovich: *See—*
Shmakov, Vasily Pavlovich; Eremin, Vitaly Alexeevich; Kvasha, Semen Borisovich; Kaganovich, Natalia Grigorievna; Dobrenyakins, Tatiana Nikolaevna; Vanjushin, Viktor Nikolaevich; Sakharov, Petr Vasilievich; Voronov, Boris Pavlovich; Polezhaev, Vasily Dementievich; Smetankin, Pavel Semenovich; Sobolev, Evgeny Pavlovich; Yanchevsky, Kazimir Stanislavovich; Grishin, Mikhail Semenovich; Burtsev, Pavel Semenovich; and Chasovitin, Pavel Alexeevich,3,558,192.
Smeulers, Wouter: *See—*
Janssen, Peter Johannes Hubertus; Smeulers, Wouter; and Mathijssen, Wilhelmus Martinus,3,558,804.
Smith, Alvin M.: *See—*
Cooper, David E.; and Smith, Alvin M.,3,559,001.
Smith, Archibald W.: *See—*
Burns, Gerald; Smith, Archibald W.; and Smith, William V.,3,559,185.
Smith, Arthur Dean: *See—*
Langewis, Cornelis; and Smith, Arthur Dean,3,557,598.
Smith, Charles C., Jr.: *See—*
Pultz, Wallace W.; and Smith, Charles C., Jr.,3,558,379.
Smith, David B., to Wild, A. G., & Co. Limited. Valve block with spring-loaded valves. 3,557,828, Cl. 137-596.1
Smith, Dexter E.; and Miller, Elmer C., to Phillips Petroleum Company. Control system for chemical reactions. 3,558,045, Cl. 235-151.12
Smith, Francis Hughes, to Vickers Limited. Double refracting interference microscope. 3,558,210, Cl. 350-12.
Smith, Harry A., to Dow Chemical Company, The. Cloth treating process and composition. 3,558,549, Cl. 260-33.8
Smith, Harry A., to Dow Chemical Company, The. Terpolymers of perhaloacetones, lower alkylene oxides and propylene sulfide. 3,558,561, Cl. 260-63.
Smith, Harry E.; and Smith, Leo A. Ore concentrator. 3,558,043, Cl. 233-21.
Smith Industries, Inc.: *See—*
DeYoung, Charles E., 3,558,482.
Smith, John J.: *See—*
Mueller, Frank H.; Leopold, Wilbur R., Jr.; and Smith, John J.,3,557,832.
Smith, John Walter Freeman; and Gray, Frederick Martin, to English Electric Company Limited, The. A.C. system fault indicator. 3,558,984, Cl. 317-23.
Smith Kline & French Laboratories: *See—*
Kaiser, Carl; and Zirkle, Charles L., 3,558,631.
Kaiser, Carl; and Zirkle, Charles L., 3,558,636.
Kaiser, Carl; and Zirkle, Charles L., 3,558,637.
Pfeiffer, Francis R.; and Weisbach, Jerry A., 3,558,656.
Smith, Leo A.: *See—*
Smith, Harry E.; and Smith, Leo A.,3,558,043.
Smith, Ross David, to Pyle-National Company, The. Tunnel lighting fixture. 3,558,873, Cl. 240-51.11
Smith, Wilfred C.; and Cox, Richard W. J., to Allday, William, and Company Limited. Blow pipes. 3,558,253, Cl. 431-353.
Smith, William V.: *See—*
Burns, Gerald; Smith, Archibald W.; and Smith, William V.,3,559,185.
Smith-Blair Inc.: *See—*
Ferrai, Peter E.; Williams, Robert B.; and Livingston, Charles W., 3,558,162.
Smulders, August Hendrik Maria, to N.V. Industrieele Handelscombinatre Holland. Chain stopper. 3,557,737, Cl. 114-200.
Snead, William C. Plant digging machine. 3,558,177, Cl. 294-70.
Snia Viscosa Societa' Nazionale Industria Applicazioni Viscosa S.p.A.:*See—*
Pasin, Alberto; and Borgo, Silvano, 3,558,702.
Snodgrass, Lincoln Harry, to Orbit Flow, Inc. Gas operated deep well pump. 3,558,240, Cl. 417-174.
Snyder, Marvin K., to Butler Manufacturing Company. Wall panel structure and method of making same. 3,557,503, Cl. 52-173.
Sobering, Simon E.: *See—*
Quynn, Richard G.; Jamison, Saunders E.; and Sobering, Simon E.,3,558,763.
Sobolev, Evgeny Pavlovich: *See—*
Shmakov, Vasily Pavlovich; Eremin, Vitaly Alexeevich; Kvasha, Semen Borisovich; Kaganovich, Natalia Grigorievna; Dobrenyakins, Tatiana Nikolaevna; Vanjushin, Viktor Nikolaevich; Sakharov, Petr Vasilievich; Voronov, Boris Pavlovich; Polezhaev, Vasily Dementievich; Smetankin, Pavel Semenovich; Sobolev, Evgeny Pavlovich; Yanchevsky, Kazimir Stanislavovich; Grishin, Mikhail Semenovich; Burtsev, Pavel Semenovich; and Chasovitin, Pavel Alexeevich,3,558,192.
Socci, Miniato: *See—*
Zuliani, Giuseppe; and Socci, Miniato,3,558,550.
Societe Anonyme des Usines Chausson: *See—*
Plegat, Alain Edouard, 3,558,184.
Plegat, Alain Edouard, 3,558,395.
Societe Anonyme Financiere & Auxiliaire du Textile: *See—*
Gourio, Herve' A., 3,557,945.
Societe Anonyme: Societe Nationale d'Etude et de Construction de Moteurs d'Aviation S.N.E.C.M.A.:*See—*
Sauvan, Jacques; Berthelemy, Jacques; and Boue, Pierre Germain Rene, 3,558,868.
Societe Civile de Prototype Technique Electronique Soprotekel: *See—*
Bernier, Raymond, 3,559,132.
Societe des Fabrications Biraghi-Entrepose: *See—*
Pignal, Edmond, 3,557,427.
Societe Francaise de Construction de Bennes Automatiques: *See—*
Cales, Henri, 3,557,885.
Societe Industrielle et Commerciale des Automobiles Peugeot: *See—*
Dangauthier, Marcel, 3,557,636.
Societe les Piles Wonder: *See—*
Rousset, Jean-Claude Lucien Maurice, 3,559,047.
Societe Lignes Telegraphiques et Telephoniques: *See—*
Dameme, Guy; and Fourichon, Gerard, 3,558,989.
Societe Nationale d'Etude et de Construction de Moteurs d'Aviation:*See—*
Bauger, Louis Jules; Beyler, Roland Robert Charles; Lefebvre, Adolphe Robert; Quillevere, Herve Alain; and Schenher, Michel Bernard, 3,558,251.
Societe Rhodiaceta: *See—*
Aucahne, Jean; Katchka, Jay R.; and Felix, Pierre, 3,557,831.
Bolliand, Robert; and Saligny, Claude, 3,558,393.
Societe Technique de Recherches Industrielles et Mechaniques: *See—*
Precoul, Michel, 3,557,656.
Societe Theramex: *See—*
Gueritte, Nicolas, 3,558,607.
Sofue, Mitsutaka, to Fuji Shashin Film Kabushiki Kaisha. Sheet material processing apparatus. 3,558,109, Cl. 263-3.
Solartron Electronic Group Limited, The: *See—*
Catherall, Reginald; Ley, Anthony John; and Levinge, Rodney Walter, 3,558,849.
Solum, James R.: *See—*
Solum, Kenneth W.; and Solum, James R.,3,557,875.
Solum, Kenneth W.; and Solum, James R., to B & W Incorporated. Method and apparatus for vibrating and cementing a well casing. 3,557,875, Cl. 166-286.
Solvay et Cie Societe Anonyme: *See—*
Wollrab, Friedrich; and Gerkens, Maurice, 3,558,538.
Somerville, Robert P., to Litton Business Systems of Canada Ltd. Adhesive applying process. 3,558,388, Cl. 156-108.
Sommer, Karl: *See—*
Lindner, Helmut; Sommer, Karl; and Schmidt, Heinz,3,558,593.
Soneki, Joseph H.; and Myers, Robert L., to Bethlehem Steel Corporation. Roll heat treating apparatus. 3,558,115, Cl. 266-4.

Sonet, Raymond Ernest, to Ward Manufacturing, Inc. Camping vehicle with retractable console. 3,558,179, Cl. 296-23.
Sonneville, Roger Paul. Rail support device. 3,558,050, Cl. 238-349.
Sony Corporation: *See—*
Aoki, Takao, 3,558,809.
Kurokawa, Hiromichi, 3,558,807.
Kurokawa, Hiromichi, 3,558,808.
Watanabe, Toshiro, 3,558,805.
Soojian, Vahn J.; and Jackson, Richard H., to Howe Richardson Scale Company. Material feed apparatus. 3,558,017, Cl. 222-342.
Sopha, Klaus: *See—*
Heiser, Joachim; Helfensdorfer, Hans; Slowak, Diether; and Sopha, Klaus,3,557,835.
Sopher, Clifford D., to General Methods Corporation. Article spotting device. 3,557,933, Cl. 198-33.
Sorensen, Wayne R.; and Tuddenham, William M., to Kennecott Copper Corporation. Electrolyte-circulating, electrolytic cell. 3,558,455, Cl. 204-105.
Sorm, Frantisek: *See—*
Cort, Joseph H.; Jost, Karel; Kasafirek, Evzen; Rudinger, Josef; Sorm, Frantisek; and Zaoral, Milan,3,558,590.
Sorsche, Joachim: *See—*
Muller, Josef; Sorsche, Joachim; and Daur, Hans-Karl,3,557,896.
Space Corporation: *See—*
Martin, Carl; and Parker, William C., 3,559,059.
Spacht, Ronald B., to Goodyear Tire & Rubber Company, The. Amide of diamines as age resisters for polymers. 3,558,552, Cl. 260-45.9
Spalding, Edwin James, to C.A.V. Limited. Devices for use when setting machine tools. 3,557,465, Cl. 33-185.
Spall, Edward J., to United States of America, Air Force. Circuit for providing nonvolatile memory. 3,558,912, Cl. 307-202.
Spangle, Lloyd B., to Dow Chemical Company, The. Apparatus for measuring hydrostatic pressure of liquid compositions. 3,557,622, Cl. 73-406.
Sparton Corporation: *See—*
Granfors, Ernest A.; Loveless, Don L.; and Boyle, Charles E., 3,559,162.
Specht, Theodore R.; and De Laurentis, Angelo A., to Westinghouse Electric Corporation. Magnetic core structure. 3,559,136, Cl. 336-217.
Spector, Herman. Process for coating modelling clay and product produced thereby. 3,558,340, Cl. 117-26.
Speich, Franz, to Fischer, Georg, Ltd. Clutch and brake for weaving machines. 3,557,919, Cl. 192-14.
Speller, Thomas H., to General-Electro Mechanical Corporation. Slug riveting method and apparatus. 3,557,442, Cl. 29-526.
Spence, John H.; and van der Sluys, William, to Pullman Incorporated. Hopper vehicle construction. 3,557,713, Cl. 105-404.
Spence, Thomas C., to Dow Chemical Company, The. Method for manufacturing nonwoven fibrous products from gel fibers. 3,558,429, Cl. 162-157.
Spencer, Glenn S., to Bendix Corporation, The. Brush and brush holder. 3,559,145, Cl. 339-8.
Speransky, Jaroslav: *See—*
Gallucci, Francis; and Speransky, Jaroslav,3,557,865.
Sperry Rand Corporation: *See—*
Burch, Ray R.; and Casaday, William M., 3,559,013.
Ehresman, Virgil A., 3,559,191.
Gerlach, Le Roy E.; and Woehler, Gary B., 3,557,948.
Mathias, Joseph S.; and McGee, Joseph J., 3,558,306.
Quermann, Thomas R., 3,557,629.
Rakes, Rodney G., 3,559,014.
Seymour, Shaun A., 3,557,981.
Spitz, Adrian N.: *See—*
Hutchinson, Seymour M., 3,557,456.
Splitz, Stephen A.: *See—*
Michaels, Alan S.; Lysaght, Michael J.; and Splitz, Stephen A.,3,558,744.
Spoerl, Alexander; and Heer, Heinrich H. Stand for photographic or cinematographic cameras. 3,557,679, Cl. 95-86.
Spooner, David Frank: *See—*
Clark, Nigel George; Croshaw, Betty; and Spooner, David Frank,3,558,788.
Springer, Earl W. Means for preventing cross-talk effects in a two-channel system. 3,559,010, Cl. 318-110.
Squibb, E. R., & Sons, Inc.: *See—*
Breuer, Hermann; Cohnen, Erich; and Roesch, Egon, 3,558,610.
St. Clair, John C. Method of fabricating large vessels capable of withstanding high internal pressures. 3,557,437, Cl. 29-415.
St. Denis, Andrew Raoul: *See—*
St. Denis, Marcel Louis; and St. Denis, Andrew Raoul,3,557,985.
St. Denis, Marcel Louis; and St. Denis, Andrew Raoul. Tamper-proof plastic closure cap and method of making same. 3,557,985, Cl. 215-9.
St. Regis Paper Company: *See—*
Amerio, Pasquale, 3,557,975.
Staats, James E., to General Electric Company. Low voltage A.C. magnetron. 3,559,094, Cl. 331-86.
Stalioraitis, Joseph S.; and Wilhelmy, Charles S., to Armour Industrial Chemical Company, mesne. Preparation of amine oxides in non-polar solvent. 3,558,710, Cl. 260-584.
Stambera, Adolf, to Fr. Hesser Maschinenfabrik, A.G. Method for automatically weighing pourable goods. 3,557,888, Cl. 177-1.
Standard Pressed Steel Co.: *See—*
Gallagher, James J., 3,557,750.
Stanek, Frank; and Pavelka, Joseph, Jr. Toastswell Company, The Electric food toaster. 3,558,855, Cl. 219-385.
Stange, Karl: *See—*
Koehnlein, Ernst; Bauer, Peter; and Stange, Karl,3,558,762.
Stanley, Thomas R., to Continental Can Company, Inc. Easy opening container. 3,557,997, Cl. 220-54.
Stant, Vernon Corbin; and Caldwell, Jasper Dwight, to American Tobacco Company, The. Cigar accumulator tray. 3,558,042, Cl. 232-1.
Stanworth, Stephen. Ball retrievers. 3,558,170, Cl. 294-19.
Stark, Frank H., to Leander Engineering Company Limited. Combustion engines. 3,557,766, Cl. 123-191.
Stas, Konstantin Nikolaevich: *See—*
Babich, Valentin Grigorievich; Kursky, Alexander Kuzmich; Markov, Konstantin Petrovich; Ryabov, Nikoali Vasilievich; and Stas, Konstantin Nikolaevich,3,558,884.
Staskiewicz, Fred C.: *See—*
Barrow, Henry; Schmidt, Jack E.; Fromson, Robert E.; and Staskiewicz, Fred C.,3,557,866.
Staub, Alfred: *See—*
Pugin, Andre; Burdeska, Kurt E.; and Staub, Alfred,3,558,334.
Stauffer Chemical Company: *See—*
Brokke, Mervin E.; and Lukes, George E., 3,558,301.
Kraft, Paul; Keller, William F.; and Altscher, Siegfried, 3,558,578.
S.T.D. Services Limited: *See—*
Wilson, Donald Malcom, 3,557,610.
Stedfeld, Rowland L., to General Motors Corporation. Valve. 3,557,812, Cl. 137-69.
Steele, Eugene K.: *See—*
Charewicz, Francis J.; Steele, Eugene K.; and Nichols, Frank S.,3,558,145.
Steen, Floyd L., to General Electric Company. Controls for high-current solid-state switches. 3,558,983, Cl. 317-20.
Steger, Gunter: *See—*
Gruber, Wolfgang; and Steger, Gunter,3,557,447.
Stegner, Douglass M., to Baltimore Box Company. Imperforate carton with integral handles. 3,558,035, Cl. 229-33.
Stehr, John J.: *See—*
Wenzel, John S., Sr., 3,557,761.
Stein, William A.; and Cirillo, Robert J., to National Cash Register Company, The. Fixable photochromic display apparatus. 3,558,802, Cl. 178-15.
Steinbach-Van Gaver, Georgette: *See—*
Chatelain, Jean; and Steinbach-Van Gaver, Georgette,3,558,585.
Stemmler, Kurt, to Winkler & Dunebier Maschinenfabrik und Eisengiesserei. Apparatus for folding envelope flaps. 3,557,666, Cl. 93-62.
Stenographic Machines Inc.: *See—*
Wright, Robert T.; Michals, Richard A.; Mozer, Frank H.; and Zumbahlen, Ralph E., 3,557,927.
Sterling Drug In c.: *See—*
Klippel, Kenneth R., 3,558,768.
Sterling Drug Inc.: *See—*
Archer, Sydney; and Rosi, David, 3,558,629.
Johnson, William S.; and Archer, Sydney, 3,558,672.
Kirchner, Frederick K., 3,558,639.
Mooradian, Aram, 3,558,667.
Stern, Ivan J., to Baxter Laboratories, Inc. Process for purification of chymopapain. 3,558,433, Cl. 195-66.
Sternbach, Leo Henryk: *See—*
Metlesics, Werner; and Sternbach, Leo Henryk,3,558,649.
Stevens, Antoni. Grouting nozzle. 3,557,563, Cl. 61-63.
Stevens, Dennis W.: *See—*
Davis, Dwight E.; Stevens, Dennis W.; and Tully, Geoffrey R., Jr.,3,558,750.
Stevenson, Wilbur W. Fluid meters and fluid conduit systems embodying the same. 3,557,618, Cl. 73-231.
Stewart, Richard D., to General Electric Company. Light emitting diode array structure. 3,558,974, Cl. 315-169.
Stockbridge, Bruce W.: *See—*
Parker, Harry W.; Coffin, Arthur G.; and Stockbridge, Bruce W.,3,557,648.
Stoffel, Robert W., to Robbins, Jim, Seat Belt Co. Automatic locking retractor with spiral cam and friction clutch. 3,558,075, Cl. 242-107.4
Stoker, Riley, Corporation: *See—*
Miller, Earle C., 3,557,723.
Stokes, Thomas J., to Elco Corporation. Conductive staple and method of using same. 3,559,147, Cl. 339-18.
Stookey, Kenneth W., to Torrax Systems, Inc., mesne. Furnace emission control system. 3,557,725, Cl. 110-10.
Stooksbury, Clifton E.: *See—*
Peterson, George R.; and Stooksbury, Clifton E.,3,558,344.
Storchheim, Samuel: *See—*
Jamison, Saunders E.; and Storchheim, Samuel,3,558,055.
Stowell, David Y.: *See—*
Javorik, Laszlo; Stowell, David Y.; and Healy, Dennis M.,3,558,965.
Stowell, William V. Combined carrying case and display stand. 3,557,916, Cl. 190-11.
Stratton, Charles A., to Phillips Petroleum Company. Drilling fluid additives. 3,558,487, Cl. 252-8.5
Strauff, Gunter, to Langen & Co. Hydro-pneumatic resilient strut or the like provided with level regulating means located within the cylinder housing. 3,558,153, Cl. 280-124.

Strausfeld, Hermann, to Lindstrom, Carl, Gesellschaft m.b.H. Apparatus for the automatic production of gramophone records. 3,557,406, Cl. 18-5.3

Straw, Eldred G., to Tenneco Inc., mesne. Muffler having mechanical connection of tube to partition. 3,557,903, Cl. 181-48.

Strickler, Jay H.; and Watson, Richard C., to Inland Steel Company. Multi-material spray gun, spray coating system and method of quickly changing the material being sprayed. 3,558,051, Cl. 239-1.

Striegler, Julius P.: *See—*
Jarvis, Samuel M.; and Striegler, Julius P.,3,559,197.

Stringer, Ray E.: *See—*
Powell, Jerald C.; and Stringer, Ray E.,3,557,435.

Strobach, Carl G.; and Fahey, William E., to Rheem International , Inc., mesne. Water heater tank anode construction. 3,558,463, Cl. 204-197.

Strohmeier, Gerolf; and Pohler, Alfred, to Schwarzkopf Development Corporation. Radiation shields for furnaces. 3,558,113, Cl. 263-50.

Stromberg-Carlson Corporation: *See—*
Pharis, William W., 3,558,825.

Stroud, Edward A.: *See—*
Aaron, Charles; and Stroud, Edward A.,3,558,125.

Structex Corporation: *See—*
Schmidt, Ronald R.; and Rial, Monty H., 3,557,500.

Stryker, Frederick J.; and Kornei, Otto, to United States of America, Army, mesne. Image development system. 3,558,338, Cl. 117-1.7

Stuart, Charles Edward. Adjustable and reusable dental clutch former. 3,557,455, Cl. 32-20.

Stuart, Fred E., Sr. Firearm mounted in a shoe heel. 3,557,481, Cl. 42-1.

Stuart, Fred E., Sr. Sand filter. 3,557,961, Cl. 210-272.

Studiengesellschaft Kohle m.b.H.: *See—*
Koster, Roland, 3,558,633.

Studtmann, George H.; and Yarema, Raymond J., to Borg-Warner Corporation. Method of controlling a DC-to-DC converter. 3,559,028, Cl. 321-2.

Stulac, James F.: *See—*
Brown, Neil F.; and Stulac, James F.,3,557,902.

Stut, Hans; and Emeis, Reimer, to Siemens Aktiengesellschaft. Voltage proportional speed control of the output of a differential gear connected to two motors utilizing a pulse width modulator control. 3,559,008, Cl. 318-8.

Subscription Television, Inc.: *See—*
Lewis, Edward E., 3,558,987.

Sudo, Makoto; Yamamoto, Yasumasa; Kobayashi, Masao; Yamasaki, Kenichi; and Ikeda, Minoru, to Mitsubishi Rayon Co., Ltd. Process for preparing methacryl amide-meth- acrylic acid mixtures. 3,558,695, Cl. 260-526.

Suetake, Kunihiro; Naito, Yoshiyuki; and Fujiwara, Eiji, said Naito and said Fujiwara assors. to said Suetake. Electric wave matching element employing a ferrite plate conductively coated on one surface. 3,559,111, Cl. 333-22.

Sugii, Kenji: *See—*
Okazaki, Kaoru; Nakagawa, Asaharu; and Sugii, Kenji,3,558,419.

Sugimoto, Shigetoki, to Nippon Electric Company, Ltd. Microwave switching device employing a semiconductor diode. 3,559,117, Cl. 333-98.

Sugiyama, Kunishige: *See—*
Okazaki, Kanzo; Kohno, Shigeharu; Yamatsu, Isao; Sugiyama, Kunishige; and Ueyama, Seigo,3,558,355.

Sulkowski, Theodore S.; and Mascitti, Albert A., to American Home Products Corporation. 2-(2-Aminophenyl)-phthalimidines. 3,558,647, Cl. 260-325.

Sullivan, James Franklin; Arnold, Loren Glenn; and Esbeck, Howard Christian, to Deere & Company. Opening-up stop latching mechanism for moldboard plows. 3,557,881, Cl. 172-413.

Sumitomo Chemical Company Ltd.: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadishi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi, 3,558,604.
Yamamoto, Hisio; Inaba, Shigeho; Okimoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi, 3,558,603.

Sun Chemical Corporation: *See—*
Bassemir, Robert W.; Carlick, Daniel J.; Dennis, Richard; and Feig, Gerald, 3,558,387.

Sundquist, Donald J.; and Howell, Nicholas W., to Dow Chemical Company, The. Method for making ethylene polymer foams. 3,558,532, Cl. 260-2.5

Sureau, Robert Frederic Michel; and Alicot, Marie Josephe Jeanne, to Kuhlmann, Ugine. Dyestuffs derived from naphthoylene benzimidazoles. 3,558,617, Cl. 260-247.2

Surmatis, Joseph Donald; and Walser, Armin, to Hoffmann-La Roche Inc. Method for the synthesis of zeaxanthins, xanthphylis, and 3-oxo-beta carotene. 3,558,712, Cl. 260-586.

Sussenguth, Edward H., to International Business Machines Corporation. Instruction sequence control. 3,559,183, Cl. 340-172.5

Sutton, Paul Thomas. Patch assembly for rapid repair of bomb-damaged runways and pavements. 3,557,670, Cl. 94-13.

Suzuki, Shigeo, to Beltek Kabushiki Kaisha. Magnetic recording and reproducing apparatus. 3,558,141, Cl. 274-4.

Svadlenak, Rudolf E., to Du Pont de Nemours, E. I., and Company. Electrolysis cell current efficiency. 3,558,451, Cl. 204-68.

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Svaty, Vladimir; and Libansky, Jiri, to Elitex-Zavody Textilniho Strojirenstri Generaline Reditelstvi. Guiding device for picked weft threads. 3,557,845, Cl. 139-127.

Svenska Flygmotor Aktiebolag: *See—*
Raw, John A., 3,557,830.

Sverdrup, Edward F.; Glasser, Albert D.; and Archer, David H., to Westinghouse Electric Corporation. Fuel cell comprising a stabilized zirconium oxide electrolyte and a doped indium or tin oxide cathode. 3,558,360, Cl. 136-86.

Sviokla, Sylvester C., to Alden Research Foundation. Package of recording paper. 3,557,946, Cl. 206-47.

Swanson, Bror W. Thread milling machine. 3,557,657, Cl. 90-11.54

Swanson, Forrest V.: *See—*
Lamer, Gerald P.; Burdick, Elliott S.; and Swanson, Forrest V.,3,558,172.

Swartz, Betty J. Disposable syringe. 3,557,788, Cl. 128-232.

Sweeney, Richard F.; and Price, Alson K., to Allied Chemical Corporation. Fluorinated amide-vinyl sulfone adducts. 3,558,677, Cl. 260-401.

Swenson, Henry F. T-nuts. 3,557,857, Cl. 151-20.

Swierkot, Henri Blaise: *See—*
Nordmann, Joseph; and Swierkot, Henri Blaise,3,558,701.

Swinehart, Merle R., to Cutler-Hammer, Inc. Bidirectional thyristor switching on-off control systems for an inductive load. 3,558,995, Cl. 317-130.

Swiss Aluminium Ltd.: *See—*
Fahrni, Walter, 3,557,514.

Sybron Corporation: *See—*
Morgan, Martin J.; Evans, William C.; Rappaport, Richard A.; and Gutzmer, Alfred N., 3,559,107.
Shelter, Kenneth L., 3,557,623.

Sylvania Electric Products, Inc.: *See—*
Hough, Harold L.; and Dayton, David R., 3,558,872.
Levin, Robert E., 3,558,869.
Tartakoff, Alexander; and Robertson, John Kelley, 3,558,958.

Syntex Corporation: *See—*
Beard, Colin C.; and Cross, Alexander D., 3,558,674.
Jones, Gordon H.; and Moffatt, John G., 3,558,595.

Szentkuti, Charles. Mortarless take-down masonry fireplace. 3,557,770, Cl. 126-9.

Szmuszkovicz, Jacob, to Upjohn Company, The. 1-[2-(α-Alkoxybenzyl and substituted benzyl) cycloalkyl]heterocyclic amines. 3,558,599, Cl. 260-239.

Szucs, Andrew E.: *See—*
Miles, Ray P.; and Szucs, Andrew E.,3,558,152.

T-V.T. (Thomson-C.S.F. Visualisation et Traitement des Informations): *See—*
Floret, Felix; Mayer, Jean-Jacques; and Peronneau, Georges, 3,559,182.

Tabara, Yoshijiro; Teranishi, Nobuhide; Kikuchi, Shigeru; Ono, Kunito; and Imao, Shoji, to Mitsubishi Rayon Co., Ltd., and Mitsubishi Vonnel Co., Ltd. Method for manufacturing acrylonitrile filaments. 3,558,761, Cl. 264-182.

Tabor, Stanley D., Jr.: *See—*
Kramel, Leonard F.; and Tabor, Stanley D., Jr.,3,558,951.

Tagg, George F., to Evershed & Vignoles Limited. Method and apparatus for measuring the electrical resistance of insulating material using very low frequencies. 3,559,053, Cl. 324-62.

Takada, Nobuo, to Koyo Seiko Company, Limited. One-way clutch. 3,557,921, Cl. 192-45.

Takahashi, Michihiko: *See—*
Tsuchida, Shunichiro; Miyata, Tomiaki; and Takahashi, Michihiko,3,558,313.

Takahashi, Takehiko; and Yamamoto, Osamu. Solid-electrolyte cell with tellurium or selenium electrode and Ag_3Si or $RbAg_4I_5$ electrolyte. 3,558,357, Cl. 136-6.

Takaoi, Akira: *See—*
Kuroki, Motoharu; and Takaoi, Akira,3,557,870.

Takayanagi, Kenjiro, to Victor Company of Japan, Limited. Color television picture tube of the single electron gun type. 3,558,968, Cl. 315-13.

Takenaka, Haruo; Ikeda, Teppei; and Furukawa, Katsuharu, to Fuji Shashin Film Kabushiki Kaisha. Edge-fog-prevention method for photographic light-sensitive films. 3,558,315, Cl. 96-78.

Tanaka, Akira, to General Motors Corporation. Elongated belt retractor and stop means. 3,557,914, Cl. 188-134.

Tanba, Shigeru: *See—*
Kuriyama, Tsuneto; Kuroda, Toshihiko; Tanba, Shigeru; and Murakami, Tetsuzo,3,558,554.

Tanis, Cornelius: *See—*
Prescott, Robert E.; and Tanis, Cornelius,3,558,831.

Tann, Alexander Arthur; and Barry, David William, to Muirhead & Co., Limited. Ships' stabilizer control systems. 3,557,734, Cl. 114-122.

Tanno, Takayoshi; and Ikeda, Itsuo, to Kabushiki Kaisha Ricoh. Development process for permanently fixing an image on an electrophotographic copying material. 3,558,342, Cl. 117-37.

Tantillo, Anthony J., to Zenith Radio Corporation. Process of manufacturing a channel-multiplier plate. 3,558,377, Cl. 156-25.

Tarika, Elio E., to Union Carbide Corporation. Easy peel food casings. 3,558,331, Cl. 99-176.

Tarnow, Horst: *See—*
Schmelzer, Hans-Georg; Degener, Eberhart; Unterstenhofer, Gunter; Tarnow, Horst; and Hammann, Ingeborg,3,558,705.

Tartakoff, Alexander; and Robertson, John Kelley, to Sylvania Electric Products, Inc. Blue-red aquarium incandescent lamp. 3,558,958, Cl. 313-112.

Tatyrek, Alfred F.; and Werbel, Burton, to United States of America, Army. Chemiluminescent process. 3,558,502, Cl. 252-186.

Tauke, John D.: *See—*
Egerton, Lawson; Meeker, Thrygve R.; and Tauke, John D.,3,559,116.

Tax, Hans. Auxiliary drive arrangement for vehicles operating under wind pressure. 3,559,022, Cl. 318-436.

Taylor Diving & Salvage Co., Inc.: *See—*
Larenzo, Leroy N.; and Binjavich, Mark P., 3,558,852.

Taylor, Glenn E. Hydraulic rail lifter. 3,558,178, Cl. 294-81.

Taylor, Nancy Ann: *See—*
Louderback, Allan Lee; and Taylor, Nancy Ann,3,558,278.

Tazewll, Joseph H.: *See—*
Hayes, Robert A.; and Tazewll, Joseph H.,3,558,553.

Teasdale, James Arthur, to National Research Development Corporation. Construction of ships. 3,557,741, Cl. 114-235.

Technica-Guss GmbH: *See—*
Krall, Heribert; Koch, Hans Adalbert; and Vollbracht, Karl, 3,557,652.

Tecnifax Corporation: *See—*
Sheehan, John M., 3,558,318.

Teig, Michael: *See—*
Sagnis, James C., Jr.; Teig, Michael; and Ward, Robert L.,3,559,186.

Teijin Limited: *See—*
Goto, Michio; and Nishimura, Takao, 3,558,569.

Tektronix, Inc.: *See—*
Horn, John J., 3,558,916.
Horn, John J., 3,559,082.
Knapton, James H.; and Zimmerman, Henry A., 3,558,930.
Roth, Stephen A., 3,559,092.

Teledictor Limited: *See—*
Lack, Keigh Malcolm, 3,557,758.

Telefonaktiebolaget L.M. Ericsson: *See—*
Fjallbrant, Tore Torstensson, 3,559,114.
Fjallbrant, Tore Torstenssson, 3,559,113.

Telefunken Patentverwertungsgesellschaft m.b.H.: *See—*
Gillmann, Hanno; and Hauff, Paul, 3,559,169.
Rummer, Heribert; Blumann, Werner; and Weist, Richard, 3,559,118.
Schmidt, Hans Konrad, 3,558,914.

Teltronic Measurement Systems, Inc.: *See—*
Mead, Hansel B.; and Campbell, Scott V., 3,559,071.

Tenneco Inc.: *See—*
Inda, Floyd, 3,557,585.
Offer, Robert J., 3,557,963.
Rutt, Paul A., 3,557,905.
Straw, Eldred G., 3,557,903.

Tentschert, Hans: *See—*
Rank, Viktor; Tentschert, Hans; Junker, Harald; and Allgeuer, Kurt,3,558,749.

Teotino, Uberto M.; and Della Bella, Davide, to Whitefin Holding S.A. N-monosubstituted pyrryl- aminoethanols. 3,558,652, Cl. 260-326.5

Teplitz, Alfred, to United States Steel Corporation. Apparatus for marking a coil of strip. 3,557,689, Cl. 101-35.

Teranishi, Nobuhide: *See—*
Tabara, Yoshijiro; Teranishi, Nobuhide; Kikuchi, Shigeru; Ono, Kunito; and Imao, Shoji,3,558,761.

Terlinden, Arthur: *See—*
Schafer, Rolf; Reerink, Wilm; Schaffrath, Heribert; Schmitt, Karl-Heinrich; and Terlinden, Arthur,3,558,454.

Terry, Reese S., Jr.: *See—*
Keller, John W., Jr.; Terry, Reese S., Jr.; and Davies, Gomer L.,3,557,796.

Texaco Inc.: *See—*
Hess, Howard V.; and Cole, Edward L., 3,558,426.
Rueping, Calvin F., 3,558,511.
Woodle, Robert A., 3,557,609.

Texas Development Corporation: *See—*
Saines, George S., 3,558,737.

Texas Inc.: *See—*
Wood, George M., 3,557,872.

Texas Instruments, Incorporated: *See—*
Darnell, James R.; Goundry, Paul C.; and Wakefield, Gene F., 3,558,343.
Dyer, Lawrence D., 3,558,281.
Haberecht, Rolf R., 3,557,440.
Jost, Ernest M., 3,558,356.
Jost, Ernest M., 3,558,359.
Vendelin, George D.; and Webster, Roger R., 3,559,005.

Textron Inc.: *See—*
Hoddinott, William M., 3,557,638.
Howe, Ralph S., Jr., 3,557,421.
Matt, Richard J.; and Mooers, Newman F., 3,557,420.

Thaeter, Hans, to Atlas-Mak Maschinenbau GmbH. Ships hoisting gear for heavy loads. 3,557,968, Cl. 212-58.

Theurer, Josef: *See—*
Plasser, Franz; and Theurer, Josef,3,557,459.

Theurer, Kurt, to Allied Chemical Corporation. Stable formaldehyde product and process for preparing it. 3,558,717, Cl. 260-606.

Thiele, Willi: *See—*
Koch, Hans; Wochnowski, Waldemar; Thiele, Willi; Hackmack, Klaus-Georg: Friebel, Heinz; and Pietrucci, Andre,3,557,799.

Thiemann, Hans: *See—*
Bollig, Georg; Dopper, Otto; and Thiemann, Hans,3,557,593.

Thiokol Chemical Corporation: *See—*
Moffett, Lawrence R., Jr.; and Capps, Julius D., 3,558,680.

Thomas & Betts Corporation: *See—*
Lee, Asa Ren, 3,558,799.

Thomas, Alan F.: *See—*
Buchi, George H.; Demole, Edouard; Eschenmoser, Albert Yakeb; and Thomas, Alan F.,3,558,714.

Thomas, Earl F.: *See—*
Koch, Robert L.; Thomas, Earl F.; Miklos, Joseph; and Curry William H.,3,557,431.

Thomas, Frank W. Battery securing means. 3,557,895, Cl. 180-68.5

Thomas, Jean Claude, to Produits Chimiques Pechiney-Saint-Gobain. Manufacture of polyvinyl chloride. 3,558,584, Cl. 260-92.8

Thompson, Harold K., to American Telephone and Telegraph Company. Automatic conductor pair identification apparatus to permit identification of crossed conductor pairs by inhibiting the recycling of the identification apparatus. 3,559,055, Cl. 324-66.

Thomson, Ian M., to Thomson, Solar, Engineering Company, Ltd. Conveyor belt. 3,557,941, Cl. 198-193.

Thomson, Lois J.: *See—*
Daugherty, Ralph K.; and Baumann, Paul H., 3,557,523.

Thomson, Solar, Engineering Company, Ltd.: *See—*
Thomson, Ian M., 3,557,941.

Thorn Electronics Limited: *See—*
Isaacs, Anthony Leonard, 3,559,144.

Thorne, Gale H.; Wood, Orin Lew; and Davis, William P., to Bio-Logics, Inc., mesne. Automatic proportioner. 3,558,014, Cl. 222-134.

Tiefenthal, Harlan E.: *See—*
Miller, Eugene J., Jr.; Tiefenthal, Harlan E.; Reck, Richard A.; and Malec, Robert E.,3,558,713.

Tiger Vacuum Bottle Industrial Company, Limited: *See—*
Yoshito, Kikuchi, 3,558,023.

Tigner, Ronald G.: *See—*
Davis, Ralph A.; and Tigner, Ronald G.,3,558,723.

Tillman, Leonard; and Glazar, Arthur J., to Servo Corporation of America. Train wheel defect detector. 3,558,876, Cl. 246-169.

Tillotson, John G., to Advance Finishing, Inc. Means for treating yarns. 3,557,582, Cl. 68-19.

Tinnes, Bernhard: *See—*
Bick, Klaus; and Tinnes, Bernhard,3,558,256.

Tinney, Francis J., to Parke, Davis & Company. Tetrahydrobenzothienodiazepinone compounds. 3,558,606, Cl. 260-239.3

Tissier, Pierre: *See—*
Bezombes, Albert; Peyches, Ivan; and Tissier, Pierre,3,558,295.

Tkach, Joseph: *See—*
Ponzo, John C.; and Tkach, Joseph,3,558,013.

Tlalka, Rarodmir, to Ceskoslovenska akademie ved. Device for spectral analysis of a solution. 3,558,227, Cl. 356-86.

Tobe Deutschmann Laboratories, Inc.: *See—*
Blank, Edward, 3,559,007.

Tokyo Shibaura Electric Co., Ltd.: *See—*
Otsuka, Michio; and Muramatsu, Hisayoshi, 3,559,006.

Tokyo Sokuhan Kabushiki Kaisha: *See—*
Isobe, Masahide, 3,557,976.

Tomczak, Eugene, to General Motors Corporation. Control knob. 3,557,637, Cl. 74-553.

Tomita, Fujihiko, to Yamaha Hatsudoki Kabushiki Kaisha. Endless track for motor driven vehicles. 3,558,198, Cl. 305-35.

Tomiyama, Hirofumi. Bar feed mechanism for lathe. 3,557,971, Cl. 214-1.4

Toon, Paul: *See—*
Hartley, David; Lunts, Lawrence H. C.; and Toon, Paul,3,558,642.

Torrax Systems, Inc.: *See—*
Stookey, Kenneth W., 3,557,725.

Torrington Company, The: *See—*
Virtue, Byron T., 3,558,201.

Totty, Gordon, to Borden, Inc.Polyvinyl pyrrolidone pigment 'shock' reducer. 3,558,543, Cl. 260-29.6

Tourpac AG: *See—*
Limmer, Herbert, 3,557,517.

Toussaint, Herbert: *See—*
Hoffmann, Herwig; Fuerst, Ernst; and Toussaint, Herbert,3,558,619.

Touvay, Robert, to Compagnie de Saint-Gobain. Manufacture of armored glass. 3,558,294, Cl. 65-51.

Toyo Rayon Kabushiki Kaisha: *See—*
Okazaki, Kaoru; Nakagawa, Asaharu; and Sugii, Kenji, 3,558,419.

Toyota Jidosha Kogyo Kabushiki Kaisha: *See—*
Arai, Hiroshi, 3,558,972.

Tracked Hovercraft Limited: *See—*
English, Christopher Durrant, 3,557,704.

Tracor, Inc.: *See—*
Lanneau, Keith P.; and Parnell, James R., 3,557,605.

Tracy, James A. Flow control device with restricted terminal delivery. 3,558,011, Cl. 222-20.

Traczyk, Raymond M.: *See—*
Zenger, Richard D.; and Traczyk, Raymond M.,3,558,010.
Tragesser, Art, to Western Company of North America, The. Method and composition for drilling and cementing of wells. 3,557,876, Cl. 166-292.
Trapp, John A. Portable fan. 3,558,243, Cl. 417-411.
Trebnik, Augustine: *See—*
Wolfe, Robert L.; and Trebnik, Augustine,3,557,423.
Trelease, Robert B.: *See—*
Peyton, John F.; Gonzalez, Juan, Jr.; and Trelease, Robert B.,3,558,391.
Trent, Marty C.; and Reed, Frank L. Toy arrangement. 3,557,477, Cl. 40-37.1
Trepainier, Donald L., to Dow Chemical Company, The. Novel 4H-pyrazino(1,2-a)pyrimidine-4-ones. 3,558,618, Cl. 260-247.2
Trevaskis, William T.: *See—*
Cromwell, Robert H., Sr.; Trevaskis, William T.; and Dupler, Garland J.,3,557,928.
Triax Company, The: *See—*
Atwater, Wayne G.; and Saul, Sanford, 3,557,977.
Tribe, Glenn O.; and Riesen, Walter C., Jr., to Aluminum Company of America. Closure assembly. 3,557,988, Cl. 215-46.
Tridair Industries: *See—*
De Pew, Chester C., 3,557,993.
Trigg, Douglas F., to Canadian Patents and Development Limited. Constant amplification summing amplifier voltage control circuit. 3,559,041, Cl. 323-100.
Triglia, Benito. Safety lock for vehicles. 3,557,584, Cl. 70-179.
Trinetics, Inc.: *See—*
Walters, Nole L., 3,559,200.
Triplex Safety Glass Company Limited: *See—*
Cuthbert, Walter; and Hampson, David, 3,557,493.
Tristram, Edward W.: *See—*
Tull, Roger J.; Tristram, Edward W.; and Grabowski, Edward J. J.,3,558,625.
Truck-Lite Company, Inc.: *See—*
Morrison, Charles R., 3,558,870.
Trufanoff, Doric I.; Cooper, Joseph; and Krebs, Fred H., to Kollsman Instrument Corporation. Optical viewing system for aircraft window. 3,558,209, Cl. 350-9.
Truscott, Thomas B.: *See—*
Bruner, Albert H.; and Truscott, Thomas B.,3,558,765.
TRW Inc.: *See—*
Cory, Stanley A., 3,558,946.
Miyahira, Harrison Y.; and Wilkerson, John L., 3,559,104.
Tsuboi, Takasi: *See—*
Imaizumi, Fujimaro; Ozawa, Tsutomu; and Tsuboi, Takasi,3,559,020.
Tsuchida, Shunichiro; Miyata, Tomiaki; and Takahashi, Michihiko, to Fuji Shashin Film Kabushiki Kaisha. Water wash for stabilized silver halide photographic materials. 3,558,313, Cl. 96-50.
Tsuda, Momotoshi: *See—*
Kimura, Shiro; Yoshida, Makoto; Tsuda, Momotoshi; and Okumura, Akio,3,558,700.
Tsukada, Koji, to Kabushiki Kaisha Toyota Chuo Kenkyusho. Accelerometer. 3,557,628, Cl. 73-516.
Tsutsumi, Masato, to Maui Land & Pineapple Company, Inc. Cutter for pineapple segments. 3,557,851, Cl. 146-6.
Tuck, Robert M., to General Motors Corporation. Transmission with phasing clutch for torque converter rotor. 3,557,635, Cl. 74-731.
Tuddenham, William M.: *See—*
Sorensen, Wayne R.; and Tuddenham, William M.,3,558,455.
Tuffaloy Products, Inc.: *See—*
Width, Robert B., 3,558,847.
Width, Robert B., 3,558,848.
Tull, Roger J.; Tristram, Edward W.; and Grabowski, Edward J. J., to Merck & Co., Inc. Pyrazinecarboxaldehydes and method for their preparation. 3,558,625, Cl. 260-250.
Tully, Geoffrey R., Jr.: *See—*
Davis, Dwight E.; Stevens, Dennis W.; and Tully, Geoffrey R., Jr.,3,558,750.
Tump, Dirk: *See—*
Rigney, William R.; Tump, Dirk; and Luciano, Robert A.,3,557,747.
Turner, Arthur F.: *See—*
Refermat, Stanley J.; and Turner, Arthur F.,3,559,090.
Turner, George W., to Arnold Cellophane Corporation. Process for heat sealing saran coated polyolefin film. 3,558,399, Cl. 156-308.
Twilley, Ian C.; Roth, David W. H., Jr.; and Lofquist, Robert A., to Allied Chemical Corporation. Process for the production of nylon 6. 3,558,567, Cl. 260-78.
Tyler, W. S., Inc.: *See—*
Hubach, Louis E.; and Gardner, Edgar E., 3,557,953.
Uchida, Hiromu; Sato, Hideshi; and Ihara, Takashi, to Nippon Steel Corporation. Process for surface treatment of steel strip. 3,558,460, Cl. 204-181.
Uchiyama, Ryoji, to Maruyama Mfg. Co., Ltd. High pressure pump. 3,558,244, Cl. 417-511.
Ucko, Franz, to Control Data Corporation. Process for fabricating multiple image photographic masters. 3,558,312, Cl. 96-41.
Ueki, Atsufumi, to Nippon Electric Company, Limited. Ultra-high-speed laser light pulse generator. 3,559,102, Cl. 332-7.51
Ueno, Yukichi: *See—*
Nishiwaki, Koji; and Ueno, Yukichi,3,559,039.
Uenohara, Michiyuki, to Bell Telephone Laboratories, Incorporated. Circuit arrangement including two-valley semiconductor device. 3,558,923, Cl. 307-260.
Ueyama, Seigo: *See—*
Kohno, Shigeharu; Yamatsu, Isao; and Ueyama, Seigo,3,558,725.
Okazaki, Kanzo; Kohno, Shigeharu; Yamatsu, Isao; Sugiyama, Kunishige; and Ueyama, Seigo,3,558,355.
Ugine Kuhlmann: *See—*
Nordmann, Joseph; and Swierkot, Henri Blaise, 3,558,701.
Ujihara, Shigeo: *See—*
Akima, Akira; Yoshida, Kazuyoshi; and Ujihara, Shigeo,3,557,918.
Ujiie, Akira, to Mitsubishi Jukogyo Kabushiki Kaisha. Method of and apparatus for constructing substantially circular cross section vessel by welding. 3,558,846, Cl. 219-76.
Ullrich, Wolfgang: *See—*
Netsch, Alfred; Weber, Erwin; and Ullrich, Wolfgang,3,558,171.
Ulmschneider, Dieter: *See—*
Beermann, Claus; Schnabel, Horst; and Ulmschneider, Dieter,3,558,581.
Union Carbide Corporation: *See—*
Bäier, Frederick L.; and Wheeler, John B., III, 3,558,290.
Flanigen, Edith M., 3,558,524.
Johnson, Herbert E., 3,558,657.
Palsha, Edward M., 3,558,961.
Reash, Clair W., 3,558,962.
Skvarla, John E., 3,558,485.
Tarika, Elio E., 3,558,331.
Whitman, Robert D.; and Reding, Frederick P., 3,558,529.
Union Oil Company of California: *See—*
Fleck, Raymond N.; and Young, Donald C., 3,558,577.
Owens, William D., 3,557,873.
Sarem, Amir M., 3,558,759.
Union Special Machine Company: *See—*
Richards, William T., 3,557,729.
United Engineering and Foundry Company: *See—*
Sieger, Maurice Paul, 3,557,438.
United States Gypsum Company: *See—*
Byrley, Lewis R., 3,557,651.
United States of America
Agriculture: *See—*
Mc Guire, Thomas A.; and Mehltretter, Charles L., 3,558,501.
Air Force: *See—*
Bench, Robert W.; Feibush, Arthur M.; and Schubauer, Carl T., 3,558,883.
Conley, William F.; Vorachek, Jerome J.; and Menke, James A., 3,558,083.
D'Arcy, Gerald P., 3,557,612.
Harris, Charles W.; Sievers, Robert E.; and Eisentraut, Kent J., 3,558,440.
Lennard, Dean J.; Keck, Donald Frederick; and Lingen, Alfred, 3,558,058.
Metzger, Courtney A.; and Hearld, Albert B., 3,558,437.
Muzzy, Raymond J., 3,557,556.
Robinson, Michael G., 3,558,174.
Sampson, John L., 3,558,196.
Schmidt-Collerus, Josef J.; Gray, Don N.; and Jordan, George W., Jr., 3,558,720.
Spall, Edward J., 3,558,912.
Van Patten, Robert E., 3,557,794.
Vasiloff, Angelos, 3,557,671.
Weingarten, Joseph L.; and Mehaffie, Stephen R., 3,557,855.
Army: *See—*
Barron, Edward R.; Carlucci, Michael P.; James, Peter; Martone, Ralph; and Walsh, Justin E., 3,557,384.
Ciccone, Thomas Q.; White, Wilmer; and Kowalick, James F., 3,558,285.
Crabtree, Royale R.; Beeker, Charles W.; Shaff, Larry T.; Mancini, Michael A.; and Pheil, Joseph C., 3,558,005.
Franklin, Philip J., 3,558,363.
Hart, David; Eppig, Henry J.; and Weingarten, Garry, 3,557,698.
Hoover, Robert L., 3,557,482.
Quinlan, Joseph B.; and Vetter, Elwood, 3,557,700.
Stryker, Frederick J.; and Kornei, Otto, 3,558,338.
Tatyrek, Alfred F.; and Werbel, Burton, 3,558,502.
Atomic Energy Commission: *See—*
Berndt, Carl W.; Rienecker, Frederick, Jr.; and Downing, Willis G., Jr., 3,558,865.
Davis, Dwight E.; Stevens, Dennis W.; and Tully, Geoffrey R., Jr., 3,558,750.
Gritton, Eugene C.; and Pinkel, Benjamin, 3,558,935.
Jaross, Robert A., 3,558,122.
Kniseley, Richard N.; and Van Zuuk, Dean, 3,558,880.
Larson, James D.; and Benjamin, John A., 3,558,879.
McMillan, David E., 3,558,862.
Olk, Lamar B., 3,558,919.
Peterson, George R.; and Stooksbury, Clifton E., 3,558,344.
Salyer, Ival O.; and Jefferson, Robert T., 3,558,531.
Interior: *See—*
Schleif, Ferber R.; and Martin, Glenn E., deceased, 3,558,986.
National Aeronautics and Space Administration: *See—*
Kennedy, Bobby W., 3,557,534.
La Vigna, Thomas A., 3,559,031.
Navy: *See—*

Burnham, Bradshaw, 3,559,160.
Carr, William E., 3,557,603.
Cupp, Frederick B.; and Palley, Carl W., 3,559,157.
Estlick, Raymond J., 3,557,630.
Jessup, Donald A., 3,558,221.
Joyner, Taylor B.; Mallory, Herbert D.; and Okauchi, Kinge, 3,557,697.
McCrory, William W., Jr.; and Hunter, Earl Kent, 3,558,833.
Parker, Donald J.; and Kornstein, Edward, 3,559,101.
Rubis, Casimir J., 3,557,743.
Seeley, Robert L., 3,558,892.
Wang, Frederick E.; and Buehler, William J., 3,558,369.
United States Steel Corporation: *See—*
Agnew, John D., 3,557,646.
Gallucci, Francis; and Speransky, Jaroslav, 3,557,865.
Harris, Leonard F., 3,557,659.
McMichael, David S., 3,558,124.
Teplitz, Alfred, 3,557,689.
Zulauf, Ralph A., 3,557,925.
United States Tobacco Company: *See—*
deVoe, John M., 3,558,036.
United Steel and Wire Company: *See—*
Close, Garth, 3,557,907.
United-Carr Incorporated: *See—*
Van Buren, Harold S. Jr., 3,557,410.
Unitek Corporation: *See—*
Whitehill, Wayne W.; and Preston, Leonard A., 3,557,454.
Universal Oil Products Company: *See—*
Bloch, Herman S., 3,558,458.
Broughton, Donald B., 3,558,480.
De Graff, Richard R., 3,558,729.
Dunkel, Morris, 3,558,689.
Gleim, William K. T.; and Gatsis, John G., 3,558,474.
Neuzil, Richard W., 3,558,730.
Neuzil, Richard W., 3,558,732.
Radke, Arthur O.; Zach, Donald J.; and Hall, Garth O., 3,558,094.
Rausch, Richard E., 3,558,523.
Schmerling, Louis, 3,558,660.
Urban, Peter, 3,558,272.
Universal Umbrella Mfg., Inc.: *See—*
Vazquez, Teddy Colon; and Colon, Alice, 3,557,809.
University of Illinois: *See—*
Bitzer, Donald L.; Slottow, Hiram Gene; and Willson, Robert H., 3,559,190.
Unterstenhofer, Gunter: *See—*
Schmelzer, Hans-Georg; Degener, Eberhart; Unterstenhofer, Gunter; Tarnow, Horst; and Hammann, Ingeborg,3,558,705.
Upjohn Company, The: *See—*
Campbell, J Allan; Babcock, John C.; and Pike, John E., 3,558,776.
Lednicer, Daniel, 3,558,644.
Szmuszkovicz, Jacob, 3,558,599.
Urban, Peter, to Universal Oil Products Company. Treatment of thiosulfate-containing solutions with hydrogen in the presence of a nickel sulfide catalyst. 3,558,272, Cl. 23-137.
URS Systems Corporation: *See—*
Orshansky, Elias, Jr., 3,557,661.
U.S. Baird Corporation, The: *See—*
Foreman, Clarence P.; and Knight, David W., 3,557,647.
U.S. Philip Corporation: *See—*
van den Born, Jacobus Abraham; Haisma, Jan; and Kroon, Ferdinand Jehan Maria, 3,557,566.
U.S. Philips Corporation: *See—*
Almering, Petrus Cornelis Maria; Velo, Henri Jan; and Greefkes, Johannes Anton, 3,559,068.
De Lang, Hendrik; Kramer, Pieter; and Bouwhuis, Gijsbertus, 3,558,285.
de Lange, Hendrik; Bouwhuis, Gijsbertus; and Kramer, Pieter, 3,558,214.
DeBoer, Floris, 3,558,818.
Demeulenaere, Leo H., F., 3,558,774.
Janssen, Peter Johannes Hubertus; Smeulers, Wouter; and Mathijssen, Wilhelmus Martinus, 3,558,804.
Van De Goor, Johannes Antonius, 3,558,970.
van den Avoort, Pieter Marinus; and Janssen, Peter Johannes Hubertus, 3,558,817.
Voss, Otto G., 3,558,969.
Wolf, Gerrit; and Van Gils, Cornelis Johannes Maria, 3,559,089.
USM Corporation: *See—*
Oefinger, Richard W., 3,558,032.
Uto, Yoshimitsu; Yamazaki, Taizo; and Shinkawa, Toshikazu, to Mitsubishi Jukogyo Kabushiki Kaisha. Pressure vessel with laminated wall structure resistant to hydrogen attack. 3,557,839, Cl. 138-143.
Uzu, Keizo: *See—*
Matsui, Masanao; Uzu, Keizo; and Wakaki, Shigetoshi,3,558,651.
Vainshtein, Moisei Fishelevich: *See—*
Grinpress, Boris Lazarevich; Sakun, Ivan Akimovich; Dimentov, Jury Iosifovich; and Vainshtein, Moisei Fishelevich,3,557,687.
Valtonen, Rainer, to Oy Nokia AB. Current supply rail arrangement and a connection plug. 3,559,146, Cl. 339-14.
Van Buren, Harold S. Jr., to United-Carr Incorporated. Snap-acting suspender fastener. 3,557,410, Cl. 24-245.
Van De Goor, Johannes Antonius, to U.S. Philips Corporation. Resonant cavity magnetrons using cathode heater currents to intensify magnetic fields. 3,558,970, Cl. 315-39.51
van den Avoort, Pieter Marinus; and Janssen, Peter Johannes Hubertus, to U.S. Philips Corporation. Television receiver having automatic minimum beam current control. 3,558,817, Cl. 178-7.5
van den Berg, Leendert: *See—*
Beckmann, Leo Heinrich Josef Franz; and van den Berg, Leendert,3,558,812.
van den Born, Jacobus Abraham; Haisma, Jan; and Kroon, Ferdinand Jehan Maria, to U.S. Philip Corporation. Liquefying gaseous material with an ejector. 3,557,566, Cl. 62-9.
Vander Heyden, William H., to Badger Meter Manufacturing Company. Side band detection system for nuclear magnetic resonance flowmeters. 3,559,044, Cl. 324-0.5
van der Lely, Ary: *See—*
van der Lely, Cornelis; and van der Lely, Ary,3,557,879.
van der Lely, Ary. Spreading implements with inlet valve operator. 3,558,021, Cl. 222-483.
van der Lely, Ary; and Bom, Cornelis Johannes Gerardus. Soil cultivating implements. 3,557,880, Cl. 172-91.
van der Lely, Cornelis. Spreading implements. 3,558,065, Cl. 239-661.
van der Lely, Cornelis; and van der Lely, Ary. Cultivating implements. 3,557,879, Cl. 172-32.
van der Plas, Franciscus J. F.; and Wagner, Willem M., to Shell Oil Company. Process for polymerizing beta-lactones in the presence of poly(beta-lactone) prepolymer initiators. 3,558,572, Cl. 260-78.3
van der Sluys, William: *See—*
Spence, John H.; and van der Sluys, William,3,557,713.
Van Deursen, Petrus H.: *See—*
Hendriks, Wilhelm F. M.; and Van Deursen, Petrus H.,3,557,640.
Vandewalle, Roger, to International Harvester Company. Knife section for agricultural mowers and method of fabrication of said knife section. 3,557,538, Cl. 56-299.
Van Doorne's Automobielfabrieken, N. V.: *See—*
Hendriks, Wilhelm F. M.; and Van Deursen, Petrus H., 3,557,640.
Van Dresser Corporation: *See—*
Doerer, Richard P., 3,558,382.
Van Gils, Cornelis Johannes Maria: *See—*
Wolf, Gerrit; and Van Gils, Cornelis Johannes Maria,3,559,089.
van Herpt, Cornelis H. J., to N.V. Koninklijke Nederlandsche Machinefabriek voorheen E.H. Centrifugal pumps. 3,558,238, Cl. 415-169.
Vanjushin, Viktor Nikolaevich: *See—*
Shmakov, Vasily Pavlovich; Eremin, Vitaly Alexeevich; Kvasha, Semen Borisovich; Kaganovich, Natalia Grigorievna; Dobrenyakins, Tatiana Nikolaevna; Vanjushin, Viktor Nikolaevich; Sakharov, Petr Vasilievich; Voronov, Boris Pavlovich; Polezhaev, Vasily Dementievich; Smetankin, Pavel Semenovich; Sobolev, Evgeny Pavlovich; Yanchevsky, Kazimir Stanislavovich; Grishin, Mikhail Semenovich; Burtsev, Pavel Semenovich; and Chasovitin, Pavel Alexeevich,3,558,192.
Van Lennep, William B.: *See—*
Moshier, Stephen L.; Van Lennep, William B.; and Perry, Edmund G.,3,558,822.
Van Nice, Robert I., to Westinghouse Electric Corporation. Shielding arrangements for electrical windings. 3,559,133, Cl. 336-70.
Van Patten, Robert E., to United States of America, Air Force. Arterial dilation device. 3,557,794, Cl. 128-345.
Vanselow, Robert D.: *See—*
Jacobson, Robert L.; and Vanselow, Robert D.,3,558,479.
Van Skyhawk, Norman: *See—*
Ruggles, Kay L.; and Van Skyhawk, Norman,3,557,390.
Van Tuyl, David H., to Clemco-Clementina Ltd. Conveyor. 3,557,936, Cl. 198-82.
Van Zuuk, Dean: *See—*
Kniseley, Richard N.; and Van Zuuk, Dean,3,558,880.
Varian Associates: *See—*
Huggett, George R., 3,559,057.
Hyde, James S., 3,559,043.
Kingston, Floyd E.; and Weaver, Harry E., Jr., 3,559,128.
Miram, George V., 3,558,967.
Varta Gesellschaft mit beschrankter Haftung: *See—*
Krey, Winfried, 3,558,364.
Vasiloff, Angelos, to United States of America, Air Force. Rehabilitation of old asphalt airfields and pavements. 3,557,671, Cl. 94-22.
Vasta, Joseph A., to Du Pont de Nemours, E. I., and Company. Thermosetting coating composition of an organic polyisocyanate and a polymer having pendant hydroxyl containing ester groups. 3,558,564, Cl. 260-77.5
Vazquez, Teddy Colon; and Colon, Alice, to Universal Umbrella Mfg., Inc. Umbrella. 3,557,809, Cl. 135-20.
Velo, Henri Jan: *See—*
Almering, Petrus Cornelis Maria; Velo, Henri Jan; and Greefkes, Johannes Anton,3,559,068.
Vendelin, George D.; and Webster, Roger R., to Texas Instruments, Incorporated. Integrated planar varactor diode. 3,559,005, Cl. 317-234.
Vepa A.G.: *See—*
Fleissner, Heinz, 3,557,394.
Verburg, Werner: *See—*
Keberle, Wolfgang; Verburg, Werner; and Muller, Friedhelm,3,558,316.
Vercauteren, Marcel, to Hirtenberger Patronen-, Zundhutchen-und Metall- Warenfabrik Aktiengesellschaft. Process of producing microcrystalline lipophilic and hydrophilic ammonium nitrate. 3,558,287, Cl. 23-300.
Verdol, Joseph A.; and Carrow, Donald J. Ashless, oil-soluble detergents. 3,558,743, Cl. 260-848.

Verge, Kenneth W., to Bendix Corporation, The. Self-commutated actuator. 3,558,944, Cl. 310-82.
Verguson, Leo E. Index clip. 3,557,475, Cl. 40-16.6
Vetter, Elwood: *See—*
Quinlan, Joseph B.; and Vetter, Elwood,3,557,700.
Vickers Limited: *See—*
Campbell, William Henry; and Pennell, John Antony, 3,557,996.
Gainsley, Reuben Murphy, 3,557,742.
Smith, Francis Hughes, 3,558,210.
Victor Company of Japan, Limited: *See—*
Takayanagi, Kenjiro, 3,558,968.
Victor Comptometer Corporation: *See—*
Benson, Samuel L., 3,557,702.
Villars, Julio, to Etablissements J. Villars S.A. Hoisting installation for vehicles. 3,557,908, Cl. 187-8.54
VIMM Research Development Corporation: *See—*
Easi, Michael D., 3,559,056.
Vind, Holger V., to Danfoss A/S. Thermic starting device. 3,559,015, Cl. 318-221.
Virgili, Tonino; and Capotondo, Giancarlo. Cigarette filter. 3,557,800, Cl. 131-261.
Virginia Chemicals Inc.: *See—*
Giorgi, Anthony Dominic; Duke, Edward Junior; and Conrad, Harold Dean, 3,558,099.
Virtue, Byron T., to Torrington Company, The. Unit preloaded roller bearing. 3,558,201, Cl. 308-212.
Visconti Brebbia, Federico: *See—*
Visconti Brebbia, Giorgio; and Visconti Brebbia, Federico,3,558,941.
Visconti Brebbia, Giorgio; and Visconti Brebbia, Federico. Permanent magnet stepping motor with single winding. 3,558,941, Cl. 310-49.
Voegelin, Heinrich, to Fritz Buser AG, Maschinenfabrik. Rotary screen printing machine equipped with improved squeeges system or the like. 3,557,690, Cl. 101-120.
Vogl, Herbert: *See—*
Lutz, Roman; and Vogl, Herbert,3,558,821.
Voigt, Hartmut; Malow, Egon, Hofheim; Wetzel, Walter; and Schneck, Erich, to Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning. Process for the separation of acetylene from gases obtained by pyrolysis. 3,557,530, Cl. 55-64.
Voith, J. M., GmbH, Firma: *See—*
Baer, Wolfgang, 3,557,736.
Volk, Kurt H., Inc.: *See—*
Lyon, Randolph S., Jr., 3,557,519.
Vollbracht, Karl: *See—*
Krall, Heribert; Koch, Hans Adalbert; and Vollbracht, Karl,3,557,652.
Vollet, George L.: *See—*
Grib, Boris F.; and Vollet, George L.,3,559,100.
Vollman, Heinrich: *See—*
Hohmann, Walter; Vollman, Heinrich; Bien, Hans-Samuel; and Gehrke, Gunter,3,558,670.
Voltz, Jacques: *See—*
Ackermann, Hans; Bossard, Werner; Voltz, Jacques; and Wegmuller, Hans,3,558,261.
von Brachel, Hanswilli; and Herrmann, Erwin, to Cassella Farbwerke Mainkur Aktiengesellschaft. Process for the manufacture of alkenyl isocyanates. 3,558,684, Cl. 260-453.
von Brachel, Hanswilli; and Schon, Manfred, to Cassella Farbwerke Mainkur Aktiengesellschaft. Process for the production of sugar esters. 3,558,597, Cl. 260-234.
von der Heide, Elmer J. Balance indicator and method. 3,557,626, Cl. 73-462.
von Lowis, Alexander, to Bosch, Robert, G.m.b.H. Braking cylinder for vehicles, especially automotive vehicles. 3,557,665, Cl. 92-13.
Voorhis, Harold W., to Continental Can Company, Inc. Closing machine for egg cartons or the like. 3,557,528, Cl. 53-377.
Vorachek, Jerome J.: *See—*
Conley, William F.; Vorachek, Jerome J.; and Menke, James A.,3,558,083.
Voronov, Boris Pavlovich: *See—*
Shmakov, Vasily Pavlovich; Eremin, Vitaly Alexeevich; Kvasha, Semen Borisovich; Kaganovich, Natalia Grigorievna; Dobrenyakins, Tatiana Nikolaevna; Vanjushin, Viktor Nikolaevich; Sakharov, Petr Vasilievich; Voronov, Boris Pavlovich; Polezhaev, Vasily Dementievich; Smetankin, Pavel Semenovich; Sobolev, Evgeny Pavlovich; Yanchevsky, Kazimir Stanislavovich; Grishin, Mikhail Semenovich; Burtsev, Pavel Semenovich; and Chasovitin, Pavel Alexeevich,3,558,192.
Voss, Otto G., to U.S. Philips Corporation. Electron discharge tube having an anode forming part of a Lecher-line with a heat dissipating element. 3,558,969, Cl. 315-39.
Vsesojuzny Nanchno-Issledovatelsky Institut Gornoi Geomekhaniki: *See—*
Shults, Voldemar Garrievich, 3,557,458.
Wacker-Chemie GmbH: *See—*
Balwe, Thomas; Bauer, Johann; and Heckmaier, Joseph, 3,558,566.
Wada, Yuichi: *See—*
Itoh, Toshio; Miyamoto, Toshio; and Wada, Yuichi,3,559,138.
Wafer, James. Brace apparatus. 3,557,782, Cl. 128-80.
Waffner, William D.: *See—*
Wakeman, William R.; and Waffner, William D.,3,558,159.
Wagenknecht, Austin C., to General Mills, Inc. Process of peeling food products. 3,557,852, Cl. 146-233.
Wagner Electric Corporation: *See—*
Wittek, Leslie, 3,557,991.
Wagner, Joachim J., to Allied Chemical Corporation. Foliar fertilization with ammonium polyphosphate. 3,558,300, Cl. 71-34.
Wagner, Willem M.: *See—*
van der Plas, Franciscus J. F.; and Wagner, Willem M.,3,558,572.
Wagnerberger, Wolfgang: *See—*
Dorsch, Gerhard; and Wagnerberger, Wolfgang,3,558,934.
Wakahara, Shigeo, to Nippon Kogaku K.K. Adapter for 8 mm movic projector. 3,558,072, Cl. 242-68.3
Wakaki, Shigetoshi: *See—*
Matsui, Masanao; Uzu, Keizo; and Wakaki, Shigetoshi,3,558,651.
Wakefield, Gene F.: *See—*
Darnell, James R.; Goundry, Paul C.; and Wakefield, Gene F.,3,558,343.
Wakeman, William R.; and Waffner, William D., to Moore Business Forms, Inc. Manifold forms. 3,558,159, Cl. 282-11.5
Waldon, Vernon L., to Ingress Manufacturing Co., Inc. Hinge device for toilet lid. 3,557,393, Cl. 4-236.
Wall, Earle R., Jr. General Motors Corporation Variable turbine nozzles. 3,558,237, Cl. 415-115.
Wall, John J., to Albany International Corporation. Tennis ball cover cloth. 3,558,413, Cl. 161-91.
Wallace, Harry L.; and Parysek, Bruno, to Burroughs Corporation. Print head latching mechanism. 3,557,694, Cl. 101-375.
Wallgren, Linus E.: *See—*
Siegel, William J.; Wallgren, Linus E.; Young, Loring E.; and Ravinsky, John,3,557,821.
Siegal, William Jordan; and Wallgren, Linus Eugene,3,558,854.
Wallis, Benedict L.; and Gold, Michael. Sealing pigtail connector construction. 3,558,800, Cl. 174-87.
Wallis, Elbridge B., to American Science and Engineering, Inc. Crystal growing apparatus. 3,558,284, Cl. 23-273.
Walser, Armin: *See—*
Surmatis, Joseph Donald; and Walser, Armin,3,558,712.
Walsh, Justin E.: *See—*
Barron, Edward R.; Carlucci, Michael P.; James, Peter; Martone, Ralph; and Walsh, Justin E.,3,557,384.
Walsh, Stephen W. Carrying device for skis. 3,558,024, Cl. 224-45.
Walters, Nole L., to Trinetics, Inc., mesne. Monitoring unit for signalling a specific condition in the circuitry supplying power to an electrical device. 3,559,200, Cl. 340-255.
Walton, Charles J.: *See—*
Zelley, Walter G.; and Walton, Charles J.,3,558,368.
Wang, Frederick E.; and Buehler, William J., to United States of America, Navy. Method of treating variable transition temperature alloys. 3,558,369, Cl. 148-11.5
Wang, Hagbarth: *See—*
Bergem, Normann; Blindheim, Ulf; Onsager, Olav-Torgeir; and Wang, Hagbarth,3,558,736.
Wanlass Electric Company: *See—*
Wanlass, Sylvan Dean, 3,559,032.
Wanlass, Sylvan Dean, to Wanlass Electric Company. Voltage regulating and phase shifting circuits employing both a parametric circuit and a transformer to transfer energy. 3,559,032, Cl. 321-5.
Ward, Hubert L. String tensioning device. 3,558,101, Cl. 254-51.
Ward Manufacturing, Inc.: *See—*
Sonet, Raymond Ernest, 3,558,179.
Ward, Robert L.: *See—*
Sagnis, James C., Jr.; Teig, Michael; and Ward, Robert L.,3,559,186.
Wartenberg, Klaus: *See—*
Schmidt, Otto; Wartenberg, Klaus; and Reuschel, Konrad,3,558,376.
Washington, Harold, to Instrumentation and Control Systems, Inc. Automatic mail sorter. 3,557,949, Cl. 209-111.7
Washio, Masayuki: *See—*
Akaike, Seiji; Nomura, Tsutomu; Kimura, Takayoshi; and Washio, Masayuki,3,557,664.
Watanabe, Teruji: *See—*
Oshima, Shintaro; and Watanabe, Teruji,3,558,905.
Watanabe, Toshiro, to Sony Corporation. Color signal generating apparatus. 3,558,805, Cl. 178-5.4
Watkins, Harley E., to Pet Incorporated. Process of quick tempering cereal grains. 3,558,327, Cl. 99-80.
Watson, John V., to Watson Manufacturing Company. Auger type pilot bit. 3,557,887, Cl. 175-421.
Watson, Lloyd M.; and Birchall, William R., to National Distillers and Chemical Corporation. Preparation of dihydronaphthalene compounds. 3,558,728, Cl. 260-667.
Watson Manufacturing Company: *See—*
Watson, John V., 3,557,887.
Watson, Richard C.: *See—*
Strickler, Jay H.; and Watson, Richard C.,3,558,051.
Watts, James A.: *See—*
Aro, Enn; Chene-, Thomas K.; Dankowski, James J.; Fearn, Clifford M.; Nennerfelt, Carl B.; Patterson, Albert D.; Sharland, Robert W.; and Watts, James A.,3,558,829.
Weaver, Harry E., Jr.: *See—*
Kingston, Floyd E.; and Weaver, Harry E., Jr.,3,559,128.
Webb, George Warren: *See—*
Lawrence, Willis Thompson; and Webb, George Warren,3,558,856.
Webb, Jervis B., Company: *See—*
Kohls, James P., 3,557,893.

Weber, Erwin: *See—*
Netsch, Alfred; Weber, Erwin; and Ullrich, Wolfgang,3,558,171.
Webster, Donald F., to Caterpillar Tractor Company. Turbochirger system for internal combustion engine. 3,557,549, Cl. 60-13.
Webster, Roger R.: *See—*
Vendelin, George D.; and Webster, Roger R.,3,559,005.
Weck, Edward, & Company, Inc.: *See—*
Hirsch, Winfred, 3,557,795.
Wege, Robert L.: *See—*
Young, Eldred E.; Wege, Robert L.; and Kunreuther, Frederick,3,558,731.
Weglin, Walter, to Boeing Company, The. Blade assembly and/or stripper frame for wire stripping devices. 3,557,643, Cl. 81-9.5
Wegmuller, Hans: *See—*
Ackermann, Hans; Bossard, Werner; Voltz, Jacques; and Wegmuller, Hans,3,558,261.
Weidenbacker, Russell A. Elastomeric-bonded ice skate. 3,558,149, Cl. 280-11.12
Weidner, Harry C., Jr., to Atlas Bolt and Screw Company, The. Plastic headed fastener. 3,557,654, Cl. 85-9.
Weierter, Edward Peter, to American Cyanamid Company. Thermoplastic polyester resin films bonded together to form a laminate using certain dihydroxy benzene compounds as the bonding agent. 3,558,424, Cl. 161-211.
Weierter, Edward P., to American Cyanamid Company. Shaped object comprising a solid solution of certain quantities of a linear thermoplastic polyester resin dissolved in certain dihydroxy benzene compounds. 3,558,548, Cl. 260-33.4
Weimann, Hans; and Ruse, Alois, to Hartmann and Braun Aktiengesellschaft. Condensate draining device. 3,557,869, Cl. 165-111.
Weingarten, Garry: *See—*
Hart, David; Eppig, Henry J.; and Weingarten, Garry,3,557,698.
Weingarten, Joseph L.; and Mehaffie, Stephen R., to United States of America, Air Force. Pallet having hinged end panels and flexible cover members. 3,557,855, Cl. 150-49.
Weinstein, Berel, to Bio-Medical Sciences, Inc. Blood pressure recording device. 3,557,779, Cl. 128-2.05
Weis, Frank G., to Ecodyne Corporation, mesne. Pump station construction. 3,558,012, Cl. 222-54.
Weisbach, Jerry A.: *See—*
Pfeiffer, Francis R.; and Weisbach, Jerry A.,3,558,656.
Weisberg, Samuel M.: *See—*
Gordon, Arthur L.; and Weisberg, Samuel M.,3,558,770.
Weisbrod, Sherman: *See—*
Chang, Kern K. N.; Prager, Hans J.; and Weisbrod, Sherman,3,559,097.
Weiss, Wolfgang: *See—*
Zumach, Gerhard; Weiss, Wolfgang; and Kuhle, Engelbert,3,558,661.
Weist, Richard: *See—*
Rummer, Heribert; Blumann, Werner; and Weist, Richard,3,559,118.
Welch, Fredrick M., to Allis-Chalmers Manufacturing Company. Scwage treatment apparatus and method. 3,557,954, Cl. 210-17.
Weller, Wolfgang, to Coathylene S.A. Process for the production of finely divided styrene-butadiene copolymers. 3,558,576, Cl. 260-85.1
Wendt, Paul H.; and Latta, David F., to Pacific Clay Products. Process for preparing ceramic clay granules. 3,558,758, Cl. 264-108.
Wenzel, Edward: *See—*
Wenzel, John S., Sr., 3,557,761.
Wenzel, John S., Sr., 50% to Wenzel, Edward, and 50% to Stehr, John J. Self-charging and -scavenging lever engine. 3,557,761, Cl. 123-56.
Werbel, Burton: *See—*
Tatyrek, Alfred F.; and Werbel, Burton,3,558,502.
Werner, Gerhard: *See—*
Rinno, Helmut; and Werner, Gerhard,3,558,570.
Werner, Walter, to Zeiss, Carl-Stiftung, d/b/a Zeiss, Carl. Viewing head for periscopes. 3,558,220, Cl. 350-319.
Wessels, Glenn R.: *See—*
Laman, Johnnie D.; and Wessels, Glenn R.,3,558,277.
West, Harley L. Pressure tank floating diaphragm. 3,557,994, Cl. 220-26.
West, Robert E., to Cascade Industries, Incorporated. Combined deck and horizontal girder structure. 3,557,391, Cl. 4-172.19
Westell, William E., to Baird-Atomic, Inc. Mechanical means for inertially stabilizing optical system against image motion. 3,558,211, Cl. 350-16.
Westermann, Donald H.; Herwig, William C.; and Durant, William J., to Miller Brewing Company. Process for isomerizing and purifying hop extracts. 3,558,326, Cl. 99-50.5
Western Company of North America, The: *See—*
Tragesser, Art, 3,557,876.
Western Electric Company, Incorporated: *See—*
Bayer, James F., Jr., 3,558,837.
Charschan, Sidney Samuel, 3,557,446.
Esseluhn, Werner F.; and Fegley, Charles R., 3,557,596.
Fegley, Charles R.; and Yoder, Theodore L., 3,557,813.
Wyckoff, Charles Clifford, Jr., 3,559,086.
Westin, Sven Birger. Confectionery mould. 3,557,716, Cl. 107-8.
Westinghouse Air Brake Company: *See—*
Grundy, Reed H., 3,559,064.
Grundy, Reed H., 3,559,065.
Westinghouse Electric Corporation: *See—*
Barrow, Henry; Schmidt, Jack E.; Fromson, Robert E.; and Staskiewicz, Fred C., 3,557,866.
Buckingham, Arthur G.; and Rushing, Frank C., 3,558,219.
Chernoske, Anthony J., 3,558,931.
Coley, Kenneth R., 3,559,156.
Daley, Thomas J., 3,559,134.
Edwards, Robert F., 3,559,011.
Mills, John M., 3,559,009.
Panson, Armand J.; and Ruka, Roswell J., 3,558,280.
Seymour, James O., Jr.; and Agterhuis, Hendrik B. F., 3,557,615.
Specht, Theodore R.; and De Laurentis, Angelo A., 3,559,136.
Sverdrup, Edward F.; Glasser, Albert D.; and Archer, David H., 3,558,360.
Van Nice, Robert I., 3,559,133.
Wood, Peter; and Rosa, John, 3,558,915.
Wetzel, Walter: *See—*
Voigt, Hartmut; Malow, Egon, Hofheim; Wetzel, Walter; and Schneck, Erich,3,557,530.
Whalen, John Michael: *See—*
Pan, Pei Tai; and Whalen, John Michael,3,557,724.
Wheeler, John B., III: *See—*
Baier, Frederick L.; and Wheeler, John B., III,3,558,290.
Wheeling-Pittsburgh Steel Corporation: *See—*
Roehl, Edward J.; and Dillon, Robert H., 3,558,442.
Whelan, James E.: *See—*
Jackson, George W.; and Whelan, James E.,3,558,155.
Whelply, Frank V.: *See—*
Jacoby, Charles H.; and Whelply, Frank V.,3,558,512.
Whetton, David A., to British Iron and Steel Research Association, The. Refining of ferrous metals. 3,558,120, Cl. 266-34.
White, Chester N.; and Loveland, Junior West, to Great Canadian Oil Sands Limited. Hot water process. 3,558,469, Cl. 208-11.
White, John E., to General Electric Company. High current thermionic hollow cathode lamp. 3,558,964, Cl. 313-211.
White, Wilmer: *See—*
Ciccone, Thomas Q.; White, Wilmer; and Kowalick, James F.,3,558,285.
Whitefin Holding S.A.: *See—*
Teotino, Uberto M.; and Della Bella, Davide, 3,558,652.
Whitehead, Robert C., Jr.: *See—*
Leger, Alton, Jr.; and Whitehead, Robert C., Jr.,3,557,625.
Whitehill, Wayne W.; and Preston, Leonard A., to Unitek Corporation. Endodontic dowel and sleeve. 3,557,454, Cl. 32-13.
Whitehouse, Joseph Colin, to Rank Organisation Limited, The. Apparatus for controlling the effects of backlash. 3,558,927, Cl. 307-264.
Whiteman, Donald R.: *See—*
Fathauer, Jack E.; and Whiteman, Donald R.,3,558,176.
Whiting, Raymond D.: *See—*
Rehbein, Roy H., Jr.; and Whiting, Raymond D.,3,557,843.
Whitman, Robert D.; and Reding, Frederick P., to Union Carbide Corporation. Urethane polymers having improved stiffness- temperature properties. 3,558,529, Cl. 260-2.5
Whittaker Corporation: *See—*
Kneppel, David S., 3,558,349.
Lanzaro, Andre, 3,558,078.
Legarra, Philip H., 3,557,550.
Wickham, Donald G., to Ampex Corporation. Lithium ferrites. 3,558,493, Cl. 252-62.61
Widegren, Lars Harald: *See—*
Henriksson, Sune Torsten; Malmgren, Ake; Muotka, Ragnar Ludvig; and Widegren, Lars Harald,3,557,982.
Widener, Ted H.: *See—*
Catlin, John P.; and Widener, Ted H.,3,557,588.
Widiger, Almar T.; and Lefevre, Lloyd E., to Dow Chemical Company, The. Packaging film and package. 3,558,330, Cl. 99-174.
Width, Robert B., to Tuffaloy Products, Inc. Electric resistance welding electrode holder for holing two electrodes in balanced force contact. 3,558,847, Cl. 219-87.
Width, Robert B., to Tuffaloy Products, Inc. Electric resistance welding electrode holder three electrodes in balanced force contact. 3,558,848, Cl. 219-87.
Wiegand, Ronald Gay: *See—*
Jones, Peter Hadley; Wiegand, Ronald Gay; and Chun, Alexander Hing Chinn,3,558,594.
Wiegert, Fritz: *See—*
Zippel, Richard; and Wiegert, Fritz,3,557,404.
Wielinger, Hans: *See—*
Rey, Hans-Georg; Wielinger, Hans; and Rieckmann, Peter,3,558,435.
Wiese, Peter: *See—*
Pochert, Rudolf; Haase, Lothar; Roggenbuck, Willy; and Wiese, Peter,3,558,973.
Wiewiorowski, Tadeusz K.; and Miller, David J., to Freeport Sulphur Company. Means for raising the autogenous ignition temperature of carbon disulfide. 3,558,509, Cl. 252-364.
Wiewiorowski, Tadeusz K.: *See—*
Miller, David J.; and Wiewiorowski, Tadeusz K.,3,558,510.
Wild, A. G., & Co. Limited: *See—*
Smith, David B., 3,557,828.
Wilder, Arthur M. Fabricated wall. 3,557,507, Cl. 52-404.

Wilder, LeRoy D.: *See—*
Collins, William O.; Hunt, Dan P.; and Wilder, LeRoy D.,3,558,861.

Wiley, David: *See—*
Nolan, Roger William; Phoenix, Lancelot; Wiley, David; and Williams, Malcolm,3,559,026.

Wiley, Lawrence Grebe; and Couper, William Dean, to AMP Incorporated. Directional coupler. 3,559,110, Cl. 333-10.

Wilhelmy, Charles S.: *See—*
Stalioraitis, Joseph S.; and Wilhelmy, Charles S.,3,558,710.

Wilkerson, John L.: *See—*
Miyahira, Harrison Y.; and Wilkerson, John L.,3,559,104.

Wilkins, Samuel L. Apparatus for sealing cartons. 3,557,527, Cl. 53-374.

Williams, George E.: *See—*
Rees, Robert L.; and Williams, George E.,3,558,135.

Williams Gun Sight Co.: *See—*
Williams, Paul D., 3,557,485.

Williams, Malcolm: *See—*
Nolan, Roger William; Phoenix, Lancelot; Wiley, David; and Williams, Malcolm,3,559,026.

Williams, Paul D., to Williams Gun Sight Co. Swivel assembly. 3,557,485, Cl. 42-85.

Williams, Paul E., to Airmarine Corporation. Airborne vehicles. 3,558,081, Cl. 244-17.19

Williams, Robert B.: *See—*
Ferrai, Peter E.; Williams, Robert B.; and Livingston, Charles W.,3,558,162.

Williams, Roy M., Jr.; and Longland, John R., to Sanders Associates, Inc. Coordinate converter using multiplying digital-to- analog converters. 3,558,863, Cl. 235-150.52

Williams, William Thomas. Foaming agent mixer and method. 3,558,107, Cl. 259-148.

Williamson, David T. N.; and Wood, William, to Molins Machine Company Limited. Mechanism for effecting intermittent rotation. 3,557,930, Cl. 198-19.

Williamson, David Theodore Nelson; and Pym, Michael Aren, to Molins Organization Limited, The. Continuous rod cigarette-making machines and control systems therefor. 3,557,797, Cl. 131-21.

Willimek, Walther: *See—*
Aucktor, Erich; and Willimek, Walther,3,557,572.

Willis, Wesley N.: *See—*
Bonis, David R.; Coumans, Harry M.; and Willis, Wesley N.,3,558,832.

Willis, Weston M.: *See—*
Boots, Edmund R.; and Willis, Weston M.,3,557,776.

Willson, Robert H.: *See—*
Bitzer, Donald L.; Slottow, Hiram Gene; and Willson, Robert H.,3,559,190.

Wilson & Longbottom Limited: *See—*
Porter, Ian S., 3,557,842.

Wilson, Alexander Connor; and Bagley, Peter Edward, to Airflow Developments Limited. Vane anemometers. 3,557,617, Cl. 73-229.

Wilson, Alexander John; and Dawson, Stuart B., to Girling Limited. Hydraulic braking systems for vehicles. 3,557,555, Cl. 60-54.6

Wilson, Donald Malcom, to S.T.D. Services Limited. Ultrasonic testing apparatus. 3,557,610, Cl. 73-67.5

Wilson, Glenn R.: *See—*
Fincke, John K.; DeBrunner, Ralph E.; and Wilson, Glenn R.,3,558,350.

Wilson, Henry Allen. Fishing rod with reel handle section. 3,557,483, Cl. 43-20.

Wilson, Homer M., to Petrolite Corporation. Probe assembly for corrosion tests. 3,558,462, Cl. 204-195.

Wilson, Lee, Engineering Company, Inc.: *See—*
Corns, Edwin A., 3,557,592.

Wilson, Rosser L., to Abex Corporation. Railroad car retarders. 3,557,910, Cl. 188-62.

Windholz, Thomas B.: *See—*
Sarett, Lewis H.; and Windholz, Thomas B.,3,558,675.

Winkler & Dunebier Maschinenfabrik und Eisengiesseri: *See—*
Stemmler, Kurt, 3,557,666.

Winney, Joe R.; and Fiedler, Leon F., to Goodrich, B. F., Company, The. Adhesive cement. 3,558,546, Cl. 260-30.4

Wirth, Wolf-Dieter; and Muller, Erwin, to Farbenfabriken Bayer Aktiengesellschaft. Novel polyesters from hydrazines and lactones a process for their production. 3,558,573, Cl. 260-78.3

Wise, Richard S., to Ball Brothers Research Corporation. Automatic gain control video amplifier. 3,558,816, Cl. 178-7.2

Wise, Richard S., to Ball Brothers Research Corporation. Electrical signal attenuation network. 3,559,084, Cl. 330-13.

Wise, William S. D., to Coal Industry (Patents) Limited. Method of extracting materials. 3,558,468, Cl. 208-8.

Witkin, Donald E., to National Forge Company. Pressure vessel closure. 3,558,166, Cl. 292-256.

Wittek, Leslie, to Wagner Electric Corporation. Electric lamp envelope with pinch-sealed portion. 3,557,991, Cl. 220-2.1

Wochnowski, Waldemar: *See—*
Koch, Hans; Wochnowski, Waldemar; Thiele, Willi; Hackmack, Klaus-Georg; Friebel, Heinz; and Pietrucci, Andre,3,557,799.

Woehler, Gary B.: *See—*
Gerlach, Le Roy E.; and Woehler, Gary B.,3,557,948.

Wolf, Gerrit; and Van Gils, Cornelis Johannes Maria, to U.S. Philips Corporation. Circuit arrangement for receiving electrical signals. 3,559,089, Cl.

Wolf, Lee A., to Haley Corporation. Wand for vacuum cleaner. 3,557,399, Cl. 15-327.

Wolf, Milton: *See—*
Diebold, James L.; and Wolf, Milton,3,558,632.

Wolfe, Robert L.; and Trebnik, Augustine, to Reliance Electric and Engineering Company, The. Method for manufacturing an improved composite gear. 3,557,423, Cl. 29-159.2

Wolff, Gerhard: *See—*
Nuernberg, Hans Wolfgang; and Wolff, Gerhard,3,558,047.

Wolford, John W., to Grossman Music Corporation, The. Recorder. 3,558,797, Cl. 84-384.

Wollrab, Friedrich; and Gerkens, Maurice, to Solvay et Cie Societe Anonyme. Mastic compositions based on ethylene-propylene copolymers or on ethylene-propylene-non- conjugated diene terpolymers. 3,558,538, Cl. 260-23.

Wong Yan Man, Wong Kwong Fa: *See—*
Hoover, Stasel Keith; Knowles, James Thomas Crawford; and Wong Yan Man, Wong Kwong Fa,3,557,696.

Wood, George M., to Texas Inc. Sweep improvement by use of a static block between injection and production wells to delay cusp formation. 3,557,872, Cl. 166-245.

Wood, Orin Lew: *See—*
Thorne, Gale H.; Wood, Orin Lew; and Davis, William P.,3,558,014.

Wood, Peter; and Rosa, John, to Westinghouse Electric Corporation. Selective phase angle pulse generating circuit. 3,558,915, Cl. 307-232.

Wood, William: *See—*
Williamson, David T. N.; and Wood, William,3,557,930.

Woodle, Robert A., to Texaco Inc. Method and apparatus for monitoring the paraffinicity characterization of hydrocarbon mixtures. 3,557,609, Cl. 73-53.

Woodling, Gerald L. Moment carrying and water shedding joint construction. 3,557,510, Cl. 52-534.

Woods, Thomas C.: *See—*
Savaglio, Fredrick J.; Woods, Thomas C.; and Pacela, Allan F.,3,559,193.

Worcester, Joseph A., to General Electric Company. Varactor scan circuit with scan prevention circuitry during brief signal fades. 3,559,076, Cl. 325-470.

World Publishing Company, The: *See—*
Cutrona, Joseph, 3,557,451.

Worm, Hans. Arrangement for guiding and supporting a table top for lengthwise movement. 3,557,721, Cl. 108-43.

Worthington, Harvey R., Jr., to Medidata Sciences, Inc., mesne. Hologram system employing incoherent light. 3,558,207, Cl. 350-3.5

Wright, Herbert Leslie. Sawing machine and system. 3,557,848, Cl. 143-160.

Wright, Robert T.; Michals, Richard A.; Mozer, Frank H.; and Zumbahlen, Ralph E., to Stenographic Machines Inc. Stenographic transcription system. 3,557,927, Cl. 197-9.

Wright, Thomas S. Radial readout gauge having cooperating visual and automatic signification means. 3,559,062, Cl. 324-157.

Wrigth, Robert H. Fishing sinker. 3,557,486, Cl. 43-44.89

Wu, Lien S.: *See—*
Hill, David L.; and Wu, Lien S.,3,558,966.

Wu, Yao Hua, to Mead Johnson & Company. Pharmacologic processes and compositions containing azaspirodecanediones and azaspiroundecanediones. 3,558,777, Cl. 424-250.

Wunderlich, Klaus: *See—*
Bien, Hans-Samuel; Klauke, Erich; and Wunderlich, Klaus,3,558,620.
Bien, Hans-Samuel; Klauke, Erich; and Wunderlich, Klaus,3,558,621.

Wurster, Richard, to Prontor-Werk Alfred Gauthier, G.m.b.H. Photographic camera with relay release. 3,557,676, Cl. 95-53.3

Wybenga, Donald R., to Dow Chemical Company, The. Cholesterol determination reagent of ferric perchlorate, sulfuric acid ethyl acetate. 3,558,516, Cl. 252-408.

Wyckoff, Charles Clifford, Jr., to Western Electric Company, Incorporated. Bipolar voltage amplifier. 3,559,086, Cl. 330-15.

Wykoff, Richard H.: *See—*
Hirs, Gene; and Wykoff, Richard H.,3,557,955.

Wyle Laboratories: *See—*
Payne, Peter R.; and Chris, Stephen J., 3,557,471.

Xerox Corporation: *See—*
Blewitt, Roy E., Jr., 3,558,127.
Hemphill, Kent W., 3,558,223.
Montevecchio, Albert J.; Bartron, William D.; and Galster, Thomas H., 3,558,811.
Randall, John M., 3,558,339.
Schluntz, Gary L., 3,558,853.

Yagi, Yasuhiro; Kawana, Masashi; and Kosukegawa, Takashi, to Kawasaki Steel Corporation, and Kawasaki Dockyard Co., Ltd. Waste gas leakage preventive device in the basic oxygen furnace. 3,558,116, Cl. 266-15.

Yakimenko, Ivan Pavlovich: *See—*
Checheljuk, Yakov Zinovievich; Pshenichny, Gennady Ivanovich; and Yakimenko, Ivan Pavlovich,3,557,846.

Yamaha Hatsudoki Kabushiki Kaisha: *See—*
Tomita, Fujihiko, 3,558,198.

Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadishi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi, to Sumitomo Chemical Company Ltd. Process for producing benzodiazepine derivatives. 3,558,604, Cl. 260-239.3

Yamamoto, Hisio; Inaba, Shigeho; Okimoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi, to Sumitomo Chemical Company, Ltd. Process for producing benzodiizepine derivatives. 3,558,603, Cl. 260-239.3

Yamamoto, Michihiro: *See—*
Yamamoto, Hisao; Inaba, Shigeho; Okamoto, Tadishi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,558,604.
Yamamoto, Hisio; Inaba, Shigeho; Okimoto, Tadashi; Hirohashi, Toshiyuki; Ishizumi, Kikuo; Yamamoto, Michihiro; Maruyama, Isamu; Mori, Kazuo; and Kobayashi, Tsuyoshi,3,558,603.

Yamamoto, Osamu: *See—*
Takahashi, Takehiko; and Yamamoto, Osamu,3,558,357.

Yamamoto, Yasumasa: *See—*
Sudo, Makoto; Yamamoto, Yasumasa; Kobayashi, Masao; Yamasaki, Kenichi; and Ikeda, Minoru,3,558,695.

Yamano, Norihoko, to Rion Kabushiki Kaisha. Mechanically actuated piezoelectric voltage source. 3,558,903, Cl. 310-8.7

Yamasaki, Kenichi: *See—*
Sudo, Makoto; Yamamoto, Yasumasa; Kobayashi, Masao; Yamasaki, Kenichi; and Ikeda, Minoru,3,558,695.

Yamatsu, Isao: *See—*
Kohno, Shigeharu; Yamatsu, Isao; and Ueyama, Seigo,3,558,725.
Okazaki, Kanzo; Kohno, Shigeharu; Yamatsu, Isao; Sugiyama, Kunishige; and Ueyama, Seigo,3,558,355.

Yamazaki, Taizo: *See—*
Uto, Yoshimitsu; Yamazaki, Taizo; and Shinkawa, Toshikazu,3,557,839.

Yanagishita, Kazuo; and Iwakishi, Akira, to Mitsubishi Denki Kabushiki Kaisha. Leakage-proof neutron diffractometer. 3,558,890, Cl. 250-108.

Yanchevsky, Kazimir Stanislavovich: *See—*
Shmakov, Vasily Pavlovich; Eremin, Vitaly Alexeevich; Kvasha, Semen Borisovich; Kaganovich, Natalia Grigorievna; Dobrenyakins, Tatiana Nikolaevna; Vanjushin, Viktor Nikolaevich; Sakharov, Petr Vasilievich; Voronov, Boris Pavlovich; Polezhaev, Vasily Dementievich; Smetankin, Pavel Semenovich; Sobolev, Evgeny Pavlovich; Yanchevsky, Kazimir Stanislavovich; Grishin, Mikhail Semenovich; Burtsev, Pavel Semenovich; and Chasovitin, Pavel Alexeevich,3,558,192.

Yao, Charles Cheng-Yu, to Allied Chemical Corporation. Method for the preparation of fluorinated ethers. 3,558,721, Cl. 260-614.

Yarema, Raymond J., to Borg-Warner Corporation. Control circuit for regulating a DC-to-DC converter. 3,559,029, Cl. 321-2.

Yarema, Raymond J.: *See—*
Studtmann, George H.; and Yarema, Raymond J.,3,559,028.

Yates, Thomas Charles, to Lucas, Joseph, (Industries) Limited. Gas turbine engine installation fuel systems. 3,557,552, Cl. 60-39.16

Yendrek, Michael Robert; and Dzurilla, Robert Richard, to Foseco International Limited. Heat insulators for use in the casting of molten metal. 3,558,591, Cl. 260-17.2

Yew, Ming-Chih, to General Motors Corporation. Composite spring assembly. 3,558,123, Cl. 267-34.

Yissum Research Development Company: *See—*
Belsky, Igal; Gertner, David; and Zilkha, Albert, 3,558,683.

Yoder, Theodore L.: *See—*
Fegley, Charles R.; and Yoder, Theodore L.,3,557,813.

Yokozawa, Norio; Nara, Akinao; and Abe, Ryoichi, to Hitachi, Ltd., and Hitachi Electronics Company, Ltd. Analog signal control switch. 3,558,921, Cl. 307-251.

Yoshida, Kazuyoshi: *See—*
Akima, Akira; Yoshida, Kazuyoshi; and Ujihara, Shigeo,3,557,918.

Yoshida, Makoto: *See—*
Hamaoka, Tsutomu; Sano, Kazuya; Yoshida, Makoto; Oishi, Yasushi; and Hirose, Takeshi,3,558,319.
Kimura, Shiro; Yoshida, Makoto; Tsuda, Momotoshi; and Okumura, Akio,3,558,700.

Yoshito, Kikuchi, to Tiger Vacuum Bottle Industrial Company, Limited. Lid actuating device. 3,558,023, Cl. 222-556.

Yoshitomi Pharmaceutical Industries, Ltd.: *See—*
Kuriyama, Tsuneto; Kuroda, Toshihiko; Tanba, Shigeru; and Murakami, Tetsuzo, 3,558,554.

Youhne, Young: *See—*
Louderback, Allan L.; and Youhne, Young,3,558,522.

Youmans, Arthur H., to Dresser Industries, Inc. Neutron well logging method and apparatus. 3,558,888, Cl. 250-83.1

Young, David W., to Sinclair Research, Inc. Method for preparing boron tri(thioalkyl) compounds by reaction of boron oxyhalides with alkylmercaptans. 3,558,686, Cl. 260-462.

Young, Donald C.: *See—*
Fleck, Raymond N.; and Young, Donald C.,3,558,577.

Young, Eldred E.; Wege, Robert L.; and Kunreuther, Frederick, to Shell Oil Company. Paraxylene crystallization. 3,558,731, Cl. 260-674.

Young, Loring E.: *See—*
Siegel, William J.; Wallgren, Linus E.; Young, Loring E.; and Ravinsky, John,3,557,821.

Young, Richard Owen. Sound diffuser for loudspeaker and loudspeaker incorporating same. 3,557,901, Cl. 181-31.

Youngstown Steel Door Company, The: *See—*
Johansson, Carl E., 3,557,715.

Zach, Donald J.: *See—*
Radke, Arthur O.; Zach, Donald J.; and Hall, Garth O.,3,558,094.

Zachor, Alexander S.: *See—*
Block, Myron J.; and Zachor, Alexander S.,3,558,898.

Zadoya, Alexandr Fedoseevich: *See—*
Oskin, Lev Ivanovich; Anna-Seidov, Chary; Zhukov, Alexandr Sergeevich; and Zadoya, Alexandr Fedoseevich,3,557,542.

Zandstra, Bertus H.: *See—*
Laban, Theodorus F.; and Zandstra, Bertus H.,3,558,755.

Zaoral, Milan: *See—*
Cort, Joseph H.; Jost, Karel; Kasafirek, Evzen; Rudinger, Josef; Sorm, Frantisek; and Zaoral, Milan,3,558,590.

Zeiss, Carl: *See—*
Engle, James L., 3,558,814.
Werner, Walter, 3,558,220.

Zeiss, Carl-Stiftung: *See—*
Werner, Walter, 3,558,220.

Zeiss-Stiftung, Carl: *See—*
Engle, James L., 3,558,814.

Zelley, Walter G.; and Walton, Charles J., to Aluminum Company of America. Textile pirn. 3,558,368, Cl. 148-6.27

Zenger, Richard D.; and Traczyk, Raymond M., to National Can Corporation. Combination fluid pressure supply and regulator unit. 3,558,010, Cl. 222-5.

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deVries, Adrian J., 3,559,115.
Tantillo, Anthony J., 3,558,377.

Zepell, Nathan A. Rotary actuating mechanism for writing instrument. 3,558,233, Cl. 401-106.

Zeschmar, Winfried: *See—*
Hrach, Josef; Zeschmar, Winfried; Morawetz, Gottfried; and Mach, Dominik,3,558,557.

Zhukov, Alexandr Sergeevich: *See—*
Oskin, Lev Ivanovich; Anna-Seidov, Chary; Zhukov, Alexandr Sergeevich; and Zadoya, Alexandr Fedoseevich,3,557,542.

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Zielke, Alfred, to Elmeg Elektro-Mechanik, G.m.b.H. Preselecting switch. 3,558,834, Cl. 200-11.

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Zilkha, Albert: *See—*
Belsky, Igal; Gertner, David; and Zilkha, Albert,3,558,683.

Zimmerman, Henry A.: *See—*
Knapton, James H.; and Zimmerman, Henry A.,3,558,930.

Zimmerman, John R. Strip material folding and packaging machine. 3,557,524, Cl. 53-116.

Zippel, Richard & Co., KG.: *See—*
Zippel, Richard; and Wiegert, Fritz, 3,557,404.

Zippel, Richard; and Wiegert, Fritz, to Zippel, Richard & Co., KG. Arrangements for the continuous manufacture of moulded articles. 3,557,404, Cl. 18-4.

Zirkle, Charles L.: *See—*
Kaiser, Carl; and Zirkle, Charles L.,3,558,631.
Kaiser, Carl; and Zirkle, Charles L.,3,558,636.
Kaiser, Carl; and Zirkle, Charles L.,3,558,637.

Zmoda, Barney Joseph. Thickened liquid bleach and process for preparing same. 3,558,496, Cl. 252-95.

Zmuda, Daniel A., to Oldberg Manufacturing Company. Apparatus for bending tubing. 3,557,586, Cl. 72-22.

Zocholl, Stanley E., to I-T-E Imperial Corporation. Ground relay system for multiple sub-station protection. 3,558,981, Cl. 317-18.

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Zuech, Ernest A., to Phillips Petroleum Company. Complexes of Mo and W, containing NO with organoaluminums as olefin reaction catalysts. 3,558,518, Cl. 252-429.

Zuech, Ernest A.: *See—*
Hughes, William B.; and Zuech, Ernest A.,3,558,517.
Kittleman, Edmund T.; and Zuech, Ernest A.,3,558,515.
Kubicek, Donald H.; and Zuech, Ernest A.,3,558,520.

Zulauf, Ralph A., to United States Steel Corporation. Hydraulic brake for conveyor rollers. 3,557,925, Cl. 193-35.

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Zumach, Gerhard; Weiss, Wolfgang; and Kuhle, Engelbert, to Farbenfabriken Bayer Aktiengesellschaft. Process for the production of 1,2,4-dithiazolidines. 3,558,661, Cl. 260-247.1

Zumbahlen, Ralph E.: *See—*
Wright, Robert T.; Michals, Richard A.; Mozer, Frank H.; and Zumbahlen, Ralph E.,3,557,927.

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Zytko, Walter J., to Abbott Laboratories. Container safety closure. 3,558,022, Cl. 222-490.

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Canter, Frank C., and A. G. Robinson III. Diol monoethers and their manufacture. T882,016, 1–26–71, Cl. 260—615.

Cantwell, Henry C., to E. I. du Pont de Nemours and Co. Bobbin stripper. T882,021, 1–26–71 Cl. 28—19.

Coney, Charles H. Coating substrates with polyolefins. T882,017, 1–26–71, Cl. 117—49.

Continental Oil Co.: *See*—
Davis, J. G., III, and Dillard. T882,013.

Davis, J. G., III, and D. S. Dillard, Jr., to Continental Oil Co. Recovery of volatile liquid from underground storage. T882,013, 1–26–71, Cl. 61—.5.

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Hercules Inc.: *See*—
Gloor, Walter E. T882,015.

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Rees, William W., and Kurz. T882,014.

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NOTE.—Arranged in accordance with the first significant character or word of the name (in accordance with city and telephone directory practice).

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Hausman, Albert F., and Chiplis. Re. 27,043.

Chiplis, Felix A.: *See*—
Hausman, Albert F., and Chiplis. Re. 27,043.

Cutler-Hammer, Inc.: *See*—
Risberg, Robert L. Re. 27,040.

Glassner, Harvey F.: *See*—
Jorgensen, Clinton O., and Glassner. Re. 27,042.

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Newland, Allan B. Re. 27,038.

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Gregori, Agostino, and Wintercorn. Re. 27,039.

Wintercorn, Walter F.: *See*—
Gregori, Agostino, and Wintercorn. Re. 27,039.

LIST OF DESIGN PATENTEES

Airguide Instrument Co.: *See*—
Turnbull, C. Douglas. 219,793.

American Standard Inc.: *See*—
Niemann, James E. 219,780.
Niemann, James E. 219,781.
Tiller, James A. 219,779.
Tiller, James A. 219,782.

Beaunit Corp.: *See*—
Conwill, Albert L. 219,768.

Britt, Thomas M., to Owens-Illinois, Inc. Shipping container for laboratory tubes and the like. 219,770, 1–26–71, Cl. D9—189.

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Sons, Charles C., Jr. 219,799.

Conwill, Albert L., to Beaunit Corp. Stabilizing brace or similar article. 219,768, 1–26–71, Cl. D8—233.

Cox, Broadus F. Vehicle license plate frame. 219,774, 1–26–71, Cl. D14—6.

Dansk Designs, Ltd.: *See*—
Quistgaard, Jens H. 219,789.

Doblin, Jay, to Whitehouse Products, Inc. Film strip viewer. 219,794, 1–26–71, Cl. D61—1.

Ewing, George, and B. M. Meents. Insulated holder for wires or the like. 219,769, 1–26–71, Cl. D8—234.

Field, Leonard E. Boat hull. 219,795, 1–26–71, Cl. D71—1.

Fuji Kinzoku Kosaku Kabushiki Kaisha: *See*—
Mese, Hisayoshi. 219,777.

Gillette Co., The: *See*—
Shimano, Moto, and Zierhut. 219,796.
Shimano, Moto, and Zierhut. 219,797.

Grosso, Raymond A., to Sangamo Electric Co. Watthour meter. 219,792, 1–26–71, Cl. D52—6.

Humlong, Robert F., to Wald Mfg. Co., Inc. Reflective bicycle pedal. 219,798, 1–26–71, Cl. D90—14.

Jacobs, Edward C. Dispenser for toilet tanks. 219,776, 1–26–71, Cl. D23—3.

Johnson, Harold C. Tie down bracket for trucks or similar article. 219,767, 1–26–71, Cl. D8—229.

Leeming, David C. Valve assembly for poultry drinking device. 219,778, 1–26–71, Cl. D23—19.

Lenzi, John D. Food stand. 219,772, 1–26–71, Cl. D13—1.

Leone, Joseph P. Golf putter. 219,788, 1–26–71, Cl. D34—5.

MacFarlane, Douglas I. Furniture panel or similar article. 219,787, 1–26–71, Cl. D33—1.

Main, David R.: *See*—
Novak, Daniel P., and Main. 219,800.

Mayer, Frank, & Associates: *See*—
Novak, Daniel P., and Main. 219,800.

McSwain, Horace C. Heat exchanger or similar articles. 219,783, 1–26–71, Cl. D23—127.

Meents, Bruce M.: *See*—
Ewing, George, and Meents. 219,769.

Mese, Hisayoshi, to Fuji Kinzoku Kosaku Kabushiki Kaisha. Needle valve housing. 219,777, 1–26–71, Cl. D23—19.

Narhi, Ossi E. Coin dispenser. 219,791, 1–26–71, Cl. D52—4.

Niemann, James E., to American Standard Inc. Lavatory fitting. 219,780, 1–26–71, Cl. D23—23.

Niemann, James E., to American Standard Inc. Faucet handle. 219,781, 1–26–71, Cl. D23—29.

Notaro, Pat R., to Trans-Beacon Corp. Theater building. 219,778, 1–26–71, Cl. D13—1.

Novak, Daniel P., and D. R. Main, to Frank Mayer & Associates. Display board. 219,800, 1–26–71, Cl. D96—12.

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Britt, Thomas M. 219,770.

Prybella, Raymond. Poodle dog flower arrangement. 219,786, 1–26–71, Cl. D29—1.

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Sallak, Joseph. Color teaching aid. 219,785, 1–26–71, Cl. D25—1.

Sangamo Electric Co.: *See*—
Grosso, Raymond A. 219,792.

Sawyers Furniture Co.: *See*—
Watson, Hubert H. and M. S. 219,775.

Schwartz, Harold N. Fringe. 219,765, 1–26–71, Cl. D3—32.

Shimano, Moto, and C. D. Zierhut, to The Gillette Co. Casing for a marker pen. 219,796, 1–26–71, Cl. D74—17.

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Tiller, James A., to American Standard Inc. Kitchen fitting. 219,779, 1–26–71, Cl. D23—23.

Tiller, James A., to American Standard Inc. Water control handle for bath and shower. 219,782, 1–26–71, Cl. D23—31.

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Notaro, Pat R. 219,778.

Turnbull, C. Douglas, to Airguide Instrument Co. Weather indicating instrument. 219,793, 1–26–71, Cl. D52—7.

U.S. Philips Corp.: *See*—
Zijlstra, Rudolph B. 219,766.

Wald Mfg. Co., Inc.: *See*—
Humlong, Robert F. 219,798.

Watson, Hubert H. and M. S., to Sawyers Furniture Co. Sectional sofa. 219,775, 1–26–71, Cl. D15—11.

Watson, Mike S.: *See*—
Watson, Hubert H. and M. S. 219,775.

Whitehouse Products, Inc.: *See*—
Doblin, Jay. 219,794.

Zierhut, Clarence D.: *See*—
Shimano, Moto, and Zierhut. 219,796.
Shimano, Moto, and Zierhut. 219,797.

Zijlstra, Rudolph B., to U.S. Philips Corp. Electric brush. 219,766, 1–26–71, Cl. D4—14.

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ISSUED JANUARY 26, 1971

NOTE.—First number, class; second number, subclass; third number, patent number

2— 2.5 : 3,557,384	29—470.1 : 3,557,983	53—183 : 3,557,526
114 : 3,557,385	472.7 : 3,557,440	374 : 3,557,527
191 : 3,557,386	481 : 3,557,984	377 : 3,557,528
3— 1.1 : 3,557,387	509 : 3,557,441	55— 43 : 3,557,529
4— 7 : RE.27,039	526 : 3,557,442	64 : 3,557,530
10 : 3,557,388	558 : 3,557,443	67 : 3,557,531
148 : 3,557,390	577 : 3,557,444	3,557,532
161 : 3,557,389	603 : 3,557,445	3,557,533
172.19: 3,557,391	625 : 3,557,446	75 : 3,557,534
177 : 3,557,392	631 : 3,557,447	237 : 3,557,535
236 : 3,557,393	30— 30 : 3,557,448	269 : 3,557,536
8— 10.2 : 3,558,259	31 : 3,557,449	306 : 3,557,537
21 : 3,558,260	60.5 : 3,557,450	56—299 : 3,557,538
41 : 3,558,261	180 : 3,557,451	330 : 3,557,539
94.11: 3,558,262	325 : 3,557,452	57— 58.34: 3,557,540
116.3 : 3,558,263	32— 2 : 3,557,453	.86: 3,557,541
127.6 : 3,558,264	13 : 3,557,454	.89: 3,557,542
142 : 3,558,265	20 : 3,557,455	.95: 3,557,543
149.1 : 3,557,394	33 : 3,557,456	140 : 3,557,544
.2 : 3,557,395	33— 1 : 3,557,457	156 : 3,557,545
165 : 3,558,266	69 : 3,557,458	58— 42.5 : 3,557,546
172 : 3,558,267	144 : 3,557,459	74 : 3,557,547
9— 8 : 3,557,396	172 : 3,557,460	94 : 3,557,548
305 : 3,557,397	174 : 3,557,461	60— 13 : 3,557,549
310 : 3,557,398	3,557,462	26.1 : 3,557,550
13— 9 : 3,558,791	3,557,463	39.16: 3,557,551
15—327 : 3,557,399	180 : 3,557,464	3,557,552
16— 2 : 3,557,400	185 : 3,557,465	.65: 3,557,553
26 : 3,557,401	34— 4 : 3,557,466	54.6 : 3,557,555
168 : 3,557,402	15 : 3,557,467	94 : 3,557,554
18— 4 : 3,557,404	42 : 3,557,468	207 : 3,557,556
5 : 3,557,405	151 : 3,557,469	257 : 3,557,557
.3 : 3,557,406	35— 12 : 3,557,470	61— .5 : 3,557,558
10 : 3,557,407	17 : 3,557,471	1 : 3,557,559
13 : 3,557,403	28.3 : 3,557,472	28 : 3,557,560
36 : 3,557,408	37— 8 : 3,557,473	35 : 3,557,561
19—153 : 3,557,409	40— 1.5 : 3,557,478	41 : 3,557,562
23— 22 : 3,558,268	10 : 3,557,474	63 : 3,557,563
50 : 3,558,269	16.6 : 3,557,475	72.3 : 3,557,564
52 : 3,558,270	37.1 : 3,557,477	62— 3 : 3,557,565
87 : 3,558,271	95 : 3,557,476	9 : 3,557,566
105 : 3,558,273	125 : 3,557,479	60 : 3,557,567
137 : 3,558,272	152.1 : 3,557,480	79 : 3,557,568
202 : 3,558,274	42— 1 : 3,557,481	237 : 3,557,569
204 : 3,558,275	12 : 3,557,482	278 : 3,557,570
209.1 : 3,558,276	85 : 3,557,485	63— 15.6 : 3,557,571
230 : 3,558,277	43— 20 : 3,557,483	64— 8 : 3,557,572
3,558,278	44.89: 3,557,486	13 : 3,557,573
232 : 3,558,283	66 : 3,557,484	28 : 3,557,574
254 : 3,558,279	44— 2 : 3,557,487	65— 2 : 3,558,293
3,558,280	68 : 3,558,291	33 : 3,557,575
273 : 3,558,281	3,558,292	3,557,576
3,558,284	46— 96 : 3,557,488	51 : 3,558,294
281 : 3,558,285	47— 37 : 3,557,489	66 : 3,558,295
285 : 3,558,282	38.1 : 3,557,490	128 : 3,558,296
288 : 3,558,286	56 : 3,557,491	134 : 3,558,297
300 : 3,558,287	51— 8 : 3,557,498	356 : 3,558,298
312 : 3,558,288	34 : 3,557,492	66— 14 : 3,557,577
24— 73 : 3,557,412	56 : 3,557,493	140 : 3,557,578
201 : 3,557,413	59 : 3,557,494	68— 18 : 3,557,581
245 : 3,557,410	165 : 3,557,495	19 : 3,557,582
25— 41 : 3,557,411	394 : 3,557,496	23.5 : 3,557,579
142 : 3,557,414	52— 1 : 3,557,497	.7 : 3,557,580
26— 2 : 3,557,415	36 : 3,557,499	181 : 3,557,583
29— 95 : 3,557,416	69 : 3,557,500	70—179 : 3,557,584
96 : 3,557,417	81 : 3,557,501	71— 28 : 3,558,299
105 : 3,557,418	169 : 3,557,502	34 : 3,558,300
3,557,419	173 : 3,557,503	86 : 3,558,301
148.4 : 3,557,420	179 : 3,557,504	97 : 3,558,302
3,557,421	204 : 3,557,508	120 : 3,558,303
155 : 3,557,422	275 : 3,557,505	72— 7 : 3,557,585
159.2 : 3,557,423	309 : 3,557,506	22 : 3,557,586
3,557,424	404 : 3,557,507	41 : 3,557,587
193.5 : 3,558,289	489 : 3,557,509	45 : 3,557,588
195 : 3,558,290	534 : 3,557,510	56 : 3,557,589
200 : 3,557,425	588 : 3,557,511	3,557,590
3,557,426	615 : 3,557,512	130 : 3,557,591
202 : 3,557,427	629 : 3,557,513	146 : 3,557,592
203 : 3,557,428	730 : 3,557,514	190 : 3,557,593
3,557,429	741 : 3,557,515	203 : 3,557,594
3,557,430	53— 14 : 3,557,516	237 : 3,557,595
3,557,431	22 : 3,557,517	361 : 3,557,598
205 : 3,557,432	27 : 3,557,518	367 : 3,557,596
3,557,433	31 : 3,557,519	391 : 3,557,597
237 : 3,557,434	37 : 3,557,520	404 : 3,557,599
401 : 3,557,435	48 : 3,557,521	3,557,600
415 : 3,557,437	57 : 3,557,522	420 : 3,557,601
428 : 3,557,436	63 : 3,557,523	73— 4 : 3,557,602
429 : 3,557,438	116 : 3,557,524	12 : 3,557,603
430 : 3,557,439	180 : 3,557,525	19 : 3,557,604
73— 24 : 3,557,605	96— 36.1 : 3,558,310	115— 34 : 3,557,743
37.8 : 3,557,606	.3 : 3,558,311	3,557,744
49.2 : 3,557,607	41 : 3,558,312	116— 70 : 3,557,745
53 : 3,557,608	50 : 3,558,313	115 : 3,557,746
3,557,609	66.3 : 3,558,314	121 : 3,557,747
67.5 : 3,557,610	78 : 3,558,315	129 : 3,557,748
80 : 3,557,611	82 : 3,558,316	117— 1.7 : 3,558,338
94 : 3,557,612	90 : 3,558,317	17.5 : 3,558,339
105 : 3,557,613	91 : 3,558,318	26 : 3,558,340
144 : 3,557,614	100 : 3,558,319	36.2 : 3,558,341
160 : 3,557,615	101 : 3,558,320	37 : 3,558,342
228 : 3,557,616	107 : 3,558,321	46 : 3,558,343
229 : 3,557,617	115 : 3,558,322	3,558,344
231 : 3,557,618	98— 33 : 3,557,681	54 : 3,558,345
336.5 : 3,557,619	99— 11 : 3,558,323	68 : 3,558,346
388 : 3,557,620	17 : 3,558,324	100 : 3,558,347
398 : 3,557,621	30 : 3,558,325	106 : 3,558,348
406 : 3,557,622	50.5 : 3,558,326	130 : 3,558,349
410 : 3,557,623	80 : 3,558,327	132 : 3,558,350
425.4 : 3,557,624	145 : 3,558,328	201 : 3,558,351
432 : 3,557,625	154 : 3,558,329	212 : 3,558,352
462 : 3,557,626	174 : 3,558,330	235 : 3,558,353
514 : 3,557,627	176 : 3,558,331	3,558,354
516 : 3,557,628	327 : 3,557,682	118— 7 : 3,557,749
74— 5.6 : 3,557,629	100— 7 : 3,557,683	308 : 3,557,750
89 : 3,557,630	26 : 3,557,684	637 : 3,557,751
125.5 : 3,557,631	39 : 3,557,685	3,557,752
129 : 3,557,632	43 : 3,557,686	119— 2 : 3,557,753
447 : 3,557,633	146 : 3,557,687	5 : 3,557,754
553 : 3,557,637	218 : 3,557,688	14.49: 3,557,755
625 : 3,557,638	101— 35 : 3,557,689	15 : 3,557,756
719.5 : 3,557,634	93 : 3,557,693	51 : 3,557,757
731 : 3,557,635	120 : 3,557,690	3,557,758
732 : 3,557,636	129 : 3,557,691	.11: 3,557,759
841 : 3,557,639	177 : 3,557,692	122— 32 : 3,557,760
846 : 3,557,640	375 : 3,557,694	123— 56 : 3,557,761
75— 63 : 3,558,304	415.1 : 3,557,695	98 : 3,557,762
150 : 3,558,305	459 : 3,557,696	119 : 3,557,763
170 : 3,558,306	102— 2 : 3,557,697	139 : 3,557,764
77— 63 : 3,557,641	6 : 3,557,698	140 : 3,557,765
64 : 3,557,642	28 : 3,557,699	191 : 3,557,766
81— 9.5 : 3,557,643	38 : 3,557,700	196 : 3,557,767
57.39: 3,557,644	76 : 3,557,701	124— 5 : 3,557,768
91 : 3,557,645	92.7 : 3,557,702	24 : 3,557,769
82— 2 : 3,557,646	104— 2 : 3,557,703	126— 9 : 3,557,770
3 : 3,557,647	148 : 3,557,704	25 : 3,557,771
83— 18 : 3,557,648	172 : 3,557,705	110 : 3,557,772
54 : 3,557,649	191 : 3,557,706	144 : 3,557,773
55 : RE.27,043	105— 1 : 3,557,707	246 : 3,557,774
155 : 3,557,650	4 : 3,557,708	127— 46 : 3,558,355
176 : 3,558,254	199 : 3,557,709	128— 1 : 3,557,775
303 : 3,557,651	366 : 3,557,710	3,557,776
319 : 3,557,652	3,557,711	2 : 3,557,777
522 : 3,557,653	368 : 3,557,712	3,557,778
84— 1.01: 3,558,792	404 : 3,557,713	.05: RE.27,042
3,558,793	406 : 3,557,714	3,557,779
3,558,794	409 : 3,557,715	4 : 3,557,780
.14: 3,558,795	106— 39 : 3,558,332	36 : 3,557,781
.26: 3,558,796	42 : 3,558,333	80 : 3,557,782
384 : 3,558,797	90 : 3,558,335	172.1 : 3,557,783
85— 9 : 3,557,654	165 : 3,558,334	173 : 3,557,784
32 : 3,557,655	3,558,336	188 : 3,557,785
86— 31 : 3,557,656	288 : 3,558,337	214 : 3,557,786
90— 11.54: 3,557,657	107— 8 : 3,557,716	220 : 3,557,787
12 : 3,557,658	54 : 3,557,717	232 : 3,557,788
3,557,659	3,557,718	275 : 3,557,789
91— 3 : 3,557,660	108— 43 : 3,557,721	283 : 3,557,790
184 : 3,557,661	56 : 3,557,719	303 : 3,557,791
375 : 3,557,662	113 : 3,557,720	319 : 3,557,792
394 : 3,557,663	110— 8 : 3,557,722	328 : 3,557,793
499 : 3,557,664	3,557,723	335.5 : 3,557,795
92— 13 : 3,557,665	3,557,724	345 : 3,557,794
93— 62 : 3,557,666	10 : 3,557,725	419 : 3,557,796
93 : 3,557,667	18 : 3,557,726	131— 21 : 3,557,797
94— 3 : 3,557,668	112—121.12: 3,557,727	140 : 3,557,798
11 : 3,557,669	.14: 3,557,728	146 : 3,557,799
13 : 3,557,670	178 : 3,557,729	261 : 3,557,800
22 : 3,557,671	252 : 3,557,730	266 : 3,557,801
44 : 3,557,672	254 : 3,557,731	3,557,802
95— 4.5 : 3,557,673	258 : 3,557,732	132— 5 : 3,557,803
11 : 3,557,674	114—102 : 3,557,733	83 : 3,557,804
14 : 3,557,675	122 : 3,557,734	88.5 : 3,557,805
53 : 3,557,677	124 : 3,557,735	101 : 3,557,806
3,557,678	151 : 3,557,736	134— 1 : 3,557,807
.3 : 3,557,676	200 : 3,557,737	45 : 3,557,808
86 : 3,557,679	202 : 3,557,738	135— 20 : 3,557,809
94 : 3,557,680	208 : 3,557,739	136— 6 : 3,558,356
96— 1 : 3,558,307	211 : 3,557,740	3,558,357
27 : 3,558,308	235 : 3,557,741	3,558,358
35.1 : 3,558,309	3,557,742	24 : 3,558,359

136— 83 : 3,558,363
3,558,364
86 : 3,558,360
3,558,361
120 : 3,558,365
133 : 3,558,362
137— 1 : 3,557,810
7 : 3,557,811
69 : 3,557,812
81.5 : 3,557,813
3,557,814
3,557,815
3,557,816
91 : 3,557,817
118 : 3,557,818
206 : 3,557,819
244 : 3,557,820
269.5 : 3,557,821
315 : 3,557,822
340 : 3,557,823
375 : 3,557,824
489 : 3,557,825
516.29: 3,557,826
590 : 3,557,827
596.1 : 3,557,828
.2 : 3,557,829
604 : 3,557,830
613 : 3,557,831
624.2 : RE.27,041
625.22: 3,557,832
.3 : 3,557,833
.31: 3,557,834
.48: 3,557,835
.66: 3,557,836
630.14: 3,557,837
138—108 : 3,557,838
143 : 3,557,839
149 : 3,557,840
139— 1 : 3,557,841
55 : 3,557,842
89 : 3,557,843
124 : 3,557,844
127 : 3,557,845
140— 71 : 3,557,846
141— 54 : 3,557,847
143—160 : 3,557,848
144— 3 : 3,557,849
34 : 3,557,850
146— 6 : 3,557,851
233 : 3,557,852
148— 1.5 : 3,558,366
3 : 3,558,367
6.27: 3,558,368
11.5 : 3,558,369
36 : 3,558,370
101 : 3,558,371
3,558,372
171 : 3,558,373
174 : 3,558,374
175 : 3,558,375
189 : 3,558,376
150— 7 : 3,557,853
29 : 3,557,854
49 : 3,557,855
52 : 3,557,856
151— 20 : 3,557,857
152—187 : 3,557,858
330 : 3,557,859
362 : 3,557,860
156— 25 : 3,558,377
54 : 3,558,378
62.2 : 3,558,379
3,558,380
73 : 3,558,381
93 : 3,558,382
96 : 3,558,383
98 : 3,558,384
3,558,385
3,558,386
99 : 3,558,387
108 : 3,558,388
126 : 3,558,389
137 : 3,558,390
171 : 3,558,391
180 : 3,558,392
181 : 3,558,393
210 : 3,558,394
246 : 3,558,395
250 : 3,558,396
272 : 3,558,397
304 : 3,558,398
308 : 3,558,399
380 : 3,558,400
397 : 3,558,401
425 : 3,558,402
478 : 3,558,403
484 : 3,558,404
506 : 3,558,405
515 : 3,558,406
580 : 3,558,407
157— 1.24: 3,557,861
3,557,862
159— 4 : 3,557,863
3,557,864
161— 3 : 3,558,408
44 : 3,558,409

161— 44 : 3,558,410
60 : 3,558,411
89 : 3,558,412
91 : 3,558,413
117 : 3,558,414
125 : 3,558,415
143 : 3,558,416
160 : 3,558,417
162 : 3,558,418
173 : 3,558,419
176 : 3,558,420
182 : 3,558,421
185 : 3,558,422
203 : 3,558,423
231 : 3,558,424
232 : 3,558,425
162— 19 : 3,558,428
30 : 3,558,426
155 : 3,558,427
157 : 3,558,429
164—150 : 3,557,865
158 : 3,557,866
255 : 3,557,867
281 : 3,558,256
165— 71 : 3,557,868
111 : 3,557,869
115 : 3,557,870
166— 57 : 3,557,871
245 : 3,557,872
274 : 3,557,873
281 : 3,557,874
286 : 3,557,875
292 : 3,557,876
171— 63 : 3,557,877
172— 20 : 3,557,878
32 : 3,557,879
91 : 3,557,880
223 : 3,557,882
413 : 3,557,881
701 : 3,557,883
173— 93.5 : 3,557,884
159 : 3,557,885
174— 10 : 3,558,798
73 : 3,558,799
87 : 3,558,800
102 : 3,558,801
119 : 3,558,803
175— 50 : 3,557,886
421 : 3,557,887
177— 1 : 3,557,888
3,557,889
3,557,890
30 : 3,557,891
178— 5.4 : 3,558,804
3,558,805
3,558,806
3,558,807
3,558,808
3,558,809
3,558,810
6 : 3,558,811
.7 : 3,558,812
3,558,813
.8 : 3,558,814
7.1 : 3,558,815
.2 : 3,558,816
.5 : 3,558,817
.82: 3,558,818
.92: 3,558,819
15 : 3,558,802
17.5 : 3,558,820
3,558,821
298 : 3,558,822
179— 1 : 3,558,823
15 : 3,558,824
3,558,825
18 : 3,558,826
3,558,827
208— 8 : 3,558,468
11 : 3,558,469
48 : 3,558,470
59 : 3,558,471
60 : 3,558,472
3,558,473
108 : 3,558,474
111 : 3,558,475
120 : 3,558,476
138 : 3,558,477
139 : 3,558,479
179 : 3,558,478
318 : 3,558,480
209— 80.5 : 3,557,948
111.7 : 3,557,949
3,557,950
121 : 3,557,951
125 : 3,557,952
404 : 3,557,953
210— 17 : 3,557,954
22 : 3,558,481
23 : 3,558,482
62 : 3,558,483
67 : 3,557,955
84 : 3,557,956
96 : 3,558,255
130 : 3,557,957
136 : 3,557,958
142 : 3,557,959

188—134 : 3,557,914
203 : 3,557,915
190— 11 : 3,557,916
49 : 3,557,917
192— 3.57: 3,557,918
14 : 3,557,919
41 : 3,557,920
45 : 3,557,921
64 : 3,557,922
70.14: 3,557,923
193— 23 : 3,557,924
35 : 3,557,925
194— 1 : 3,557,926
9 : 3,557,928
195— 6 : 3,558,430
49 : 3,558,431
66 : 3,558,432
3,558,433
81 : 3,558,434
103.5 : 3,558,435
197— 9 : 3,557,927
133 : 3,557,929
198— 19 : 3,557,930
20 : 3,557,931
32 : 3,557,932
33 : 3,557,933
36 : 3,557,934
38 : 3,557,935
82 : 3,557,936
109 : 3,557,937
126 : 3,557,938
139 : 3,557,939
157 : 3,557,940
193 : 3,557,941
219 : 3,557,942
221 : 3,557,943
200— 11 : 3,558,834
38 : 3,558,835
150 : 3,558,836
166 : 3,558,837
3,558,838
202—196 : 3,558,436
200 : 3,558,437
203— 11 : 3,558,439
26 : 3,558,438
38 : 3,558,440
204— 15 : 3,558,441
28 : 3,558,442
30 : 3,558,443
3,558,444
37 : 3,558,445
38 : 3,558,446
50 : 3,558,447
55 : 3,558,448
59 : 3,558,449
3,558,450
68 : 3,558,451
3,558,452
3,558,453
3,558,454
3,558,455
157.1 : 3,558,456
158 : 3,558,457
3,558,458
180 : 3,558,459
181 : 3,558,460
192 : 3,558,461
195 : 3,558,462
197 : 3,558,463
219 : 3,558,464
228 : 3,558,465
275 : 3,558,466
298 : 3,558,467
206— 7 : 3,557,944
45.24: 3,557,945
47 : 3,557,946
65 : 3,557,947
208— 8 : 3,558,468
11 : 3,558,469
48 : 3,558,470
59 : 3,558,471
60 : 3,558,472
3,558,473
108 : 3,558,474
111 : 3,558,475
120 : 3,558,476
138 : 3,558,477
139 : 3,558,479
179 : 3,558,478
318 : 3,558,480
209— 80.5 : 3,557,948
111.7 : 3,557,949
3,557,950
121 : 3,557,951
125 : 3,557,952
404 : 3,557,953
210— 17 : 3,557,954
22 : 3,558,481
23 : 3,558,482
62 : 3,558,483
67 : 3,557,955
84 : 3,557,956
96 : 3,558,255
130 : 3,557,957
136 : 3,557,958
142 : 3,557,959

210—242 : 3,557,960
272 : 3,557,961
321 : 3,557,962
443 : 3,557,963
512 : 3,558,484
531 : 3,557,964
211— 11 : 3,557,965
24 : 3,557,966
212— 55 : 3,557,967
58 : 3,557,968
144 : 3,557,969
214— 1 : 3,557,970
.4 : 3,557,971
6 : 3,557,972
16 : 3,557,973
.4 : 3,557,974
3,557,975
3,557,976
3,557,977
3,557,978
3,557,979
77 : 3,557,980
146.5 : 3,557,981
300 : 3,557,982
215— 9 : 3,557,985
37 : 3,557,986
40 : 3,557,987
46 : 3,557,988
56 : 3,557,989
217— 43 : 3,557,990
219— 8.5 : 3,558,839
10.55: 3,558,840
.61: 3,558,841
69 : 3,558,842
3,558,843
3,558,844
73 : 3,558,845
76 : 3,558,846
87 : 3,558,847
3,558,848
110 : 3,558,849
116 : 3,558,850
146 : 3,558,851
211 : 3,558,852
216 : 3,558,853
233 : 3,558,854
385 : 3,558,855
492 : 3,558,856
499 : 3,558,857
528 : 3,558,858
220— 2.1 : 3,557,991
9 : 3,557,992
25 : 3,557,993
26 : 3,557,994
42 : 3,557,995
46 : 3,557,996
54 : 3,557,997
3,557,998
3,557,999
63 : 3,558,000
67 : 3,558,001
74 : 3,558,002
221— 2 : 3,558,003
7 : 3,558,004
90 : 3,558,005
150 : 3,558,006
232 : 3,558,007
260 : 3,558,008
222— 1 : 3,558,009
5 : 3,558,010
20 : 3,558,011
54 : 3,558,012
61 : 3,558,013
134 : 3,558,014
136 : 3,558,015
218 : 3,558,016
342 : 3,558,017
385 : 3,558,018
402.22: 3,558,019
416 : 3,558,020
483 : 3,558,021
490 : 3,558,022
556 : 3,558,023
224— 45 : 3,558,024
49 : 3,558,025
226— 39 : 3,558,026
90 : 3,558,027
91 : 3,558,028
108 : 3,558,029
135 : 3,558,030
227— 7 : 3,558,031
8 : 3,558,032
229— 7 : 3,558,033
8 : 3,558,034
33 : 3,558,035
43 : 3,558,036
44 : 3,558,037
54 : 3,558,038
3,558,039
73 : 3,558,040
85 : 3,558,041
232— 1 : 3,558,042
233— 21 : 3,558,043
235— 61.11: 3,558,859
3,558,860
3,558,861

235— 61.7 : 3,558,862
88 : 3,558,044
150 : 3,558,864
.52: 3,558,863
151 : 3,558,865
.12: 3,558,045
.3 : 3,558,866
183 : 3,558,867
185 : 3,558,868
236— 34 : 3,558,046
237— 12 : 3,558,047
238— 10 : 3,558,048
29 : 3,558,049
349 : 3,558,050
3,558,060
239— 1 : 3,558,051
3,558,257
3 : 3,558,052
17 : 3,558,053
3,558,054
54 : 3,558,055
102 : 3,558,056
177 : 3,558,258
261 : 3,558,057
265.29: 3,558,058
337 : 3,558,059
394 : 3,558,061
419.3 : 3,558,062
425 : 3,558,063
544 : 3,558,064
661 : 3,558,065
240— 7.1 : 3,558,869
8.2 : 3,558,870
13 : 3,558,871
41.3 : 3,558,872
51.11: 3,558,873
241— 2 : 3,558,066
179 : 3,558,067
242— 7.07: 3,558,068
36 : 3,558,069
56 : 3,558,070
3,558,071
68.3 : 3,558,072
75.53: 3,558,073
3,558,074
107.4 : 3,558,075
118.11: 3,558,076
192 : 3,558,077
244— 1 : 3,558,078
3,558,079
17.11: 3,558,080
.19: 3,558,081
.25: 3,558,082
33 : 3,558,083
63 : 3,558,084
114 : 3,558,085
118 : 3,558,086
142 : 3,558,087
246—126 : 3,558,874
169 : 3,558,875
3,558,876
248—147 : 3,558,088
230 : 3,558,089
309 : 3,558,090
317 : 3,558,091
352 : 3,558,092
362 : 3,558,093
372 : 3,558,094
249— 13 : 3,558,095
197 : 3,558,096
250— 41.9 : 3,558,877
43.5 : 3,558,884
49.5 : 3,558,878
3,558,879
3,558,880
3,558,885
65 : 3,558,881
3,558,886
71 : 3,558,882
83 : 3,558,883
.1 : 3,558,888
.3 : 3,558,887
88 : 3,558,889
108 : 3,558,890
199 : 3,558,891
205 : 3,558,892
208 : 3,558,896
209 : 3,558,897
213 : 3,558,893
216 : 3,558,894
218 : 3,558,898
219 : 3,558,899
3,558,900
220 : 3,558,895
251— 88 : 3,558,097
3,558,098
129 : 3,558,099
207 : 3,558,100
252— 7 : 3,558,485
8.1 : 3,558,486
.5 : 3,558,487
28 : 3,558,488
32.5 : 3,558,489
37.2 : 3,558,511
46.6 : 3,558,490
49.8 : 3,558,491

252— 62.54: 3,558,492
.61: 3,558,493
63 : 3,558,494
90 : 3,558,495
95 : 3,558,496
99 : 3,558,497
135 : 3,558,498
137 : 3,558,499
180 : 3,558,500
182 : 3,558,501
186 : 3,558,502
187 : 3,558,503
301.4 : 3,558,504
312 : 3,558,505
316 : 3,558,506
3,558,507
317 : 3,558,508
364 : 3,558,509
3,558,510
383 : 3,558,512
392 : 3,558,513
408 : 3,558,516
3,558,522
411 : 3,558,514
429 : 3,558,515
3,558,517
3,558,518
3,558,519
3,558,520
431 : 3,558,521
439 : 3,558,523
450 : 3,558,524
453 : 3,558,525
478 : 3,558,526
500 : 3,558,527
520 : 3,558,528
254— 51 : 3,558,101
93 : 3,558,102
122 : 3,558,103
190 : 3,558,104
259— 2 : 3,558,105
109 : 3,558,106
148 : 3,558,107
177 : 3,558,108
260— 2.5 : 3,558,529
3,558,530
3,558,531
3,558,532
3,558,533
3,558,534
17.2 : 3,558,591
22 : 3,558,535
23 : 3,558,536
3,558,537
3,558,538
3,558,539
3,558,540
.7 : 3,558,541
27 : 3,558,542
29.6 : 3,558,543
3,558,545
.7 : 3,558,544
30.4 : 3,558,546
31.2 : 3,558,547
33.4 : 3,558,548
.8 : 3,558,549
41 : 3,558,550
3,558,551
45.75: 3,558,553
.85: 3,558,554
.9 : 3,558,552
.95: 3,558,555
46.5 : 3,558,556
47 : 3,558,557
3,558,558
51.5 : 3,558,559
59 : 3,558,560
63 : 3,558,561
72 : 3,558,562
3,558,563
77.5 : 3,558,564
78 : 3,558,565
3,558,567
3,558,568
3,558,569
3,558,571
.3 : 3,558,572
3,558,573
.5 : 3,558,566
3,558,570
3,558,574
79.5 : 3,558,739
83.7 : 3,558,575
85.1 : 3,558,576
87.1 : 3,558,577
3,558,578
88.2 : 3,558,579
3,558,580
89.7 : 3,558,581
92.1 : 3,558,582
3,558,583
.8 : 3,558,584
3,558,585
93.7 : 3,558,586
3,558,587
94.2 : 3,558,588

260— 94.7 : 3,558,589
112.5 : 3,558,590
199 : 3,558,592
207.1 : 3,558,593
210 : 3,558,594
3,558,595
218 : 3,558,596
234 : 3,558,597
236.6 : 3,558,598
239 : 3,558,599
3,558,600
.1 : 3,558,601
3,558,602
.3 : 3,558,603
3,558,604
3,558,605
3,558,606
.5 : 3,558,607
3,558,608
240 : 3,558,609
3,558,610
3,558,611
3,558,612
3,558,613
.1 : 3,558,614
244 : 3,558,615
247.1 : 3,558,616
3,558,661
.2 : 3,558,617
3,558,618
.7 : 3,558,619
249 : 3,558,620
3,558,621
.8 : 3,558,622
250 : 3,558,623
3,558,624
3,558,625
251 : 3,558,626
256.5 : 3,558,627
3,558,628
268 : 3,558,629
3,558,630
3,558,631
287 : 3,558,632
290 : 3,558,633
292 : 3,558,634
293 : 3,558,635
.4 : 3,558,636
3,558,637
294.3 : 3,558,638
.7 : 3,558,639
.8 : 3,558,640
295 : 3,558,641
3,558,642
297 : 3,558,643
302 : 3,558,644
306.8 : 3,558,662
309 : 3,558,645
314.5 : 3,558,666
319.1 : 3,558,663
325 : 3,558,646
3,558,647
3,558,648
326 : 3,558,650
.1 : 3,558,649
.11: 3,558,653
.3 : 3,558,651
.5 : 3,558,652
.83: 3,558,654
330.5 : 3,558,655
340.9 : 3,558,656
3,558,657
343.2 : 3,558,658
.6 : 3,558,659
346.2 : 3,558,667
.3 : 3,558,660
347.8 : 3,558,664
348 : 3,558,665
.6 : 3,558,668
349 : 3,558,669
380 : 3,558,670
396 : 3,558,671
397 : 3,558,672
.1 : 3,558,673
.4 : 3,558,674
3,558,675
400 : 3,558,676
401 : 3,558,677
413 : 3,558,678
425 : 3,558,679
439 : 3,558,680
448.2 : 3,558,681
3,558,683
453 : 3,558,684
455 : 3,558,685
462 : 3,558,686
3,558,687
465.9 : 3,558,688
468 : 3,558,682
3,558,689
471 : 3,558,690
473 : 3,558,691
497 : 3,558,692
501.15: 3,558,693
514 : 3,558,694
526 : 3,558,695

260— 539 : 3,558,696
543 : 3,558,697
556 : 3,558,698
3,558,699
559 : 3,558,700
3,558,701
561 : 3,558,702
563 : 3,558,703
3,558,704
566 : 3,558,705
577 : 3,558,706
580 : 3,558,707
583 : 3,558,708
3,558,709
584 : 3,558,710
3,558,711
586 : 3,558,712
590 : 3,558,713
594 : 3,558,714
601 : 3,558,716
606 : 3,558,717
3,558,719
.5 : 3,558,718
612 : 3,558,720
614 : 3,558,721
615 : 3,558,722
635 : 3,558,725
646 : 3,558,726
648 : 3,558,715
3,558,727
653 : 3,558,723
667 : 3,558,728
672 : 3,558,729
674 : 3,558,730
3,558,731
3,558,732
676 : 3,558,724
683.15: 3,558,736
3,558,737
3,558,738
.2 : 3,558,733
3,558,734
.3 : 3,558,735
823 : 3,558,740
827 : 3,558,741
830 : 3,558,742
848 : 3,558,743
874 : 3,558,744
876 : 3,558,745
885 : 3,558,746
953 : 3,558,747
955 : 3,558,748
263— 3 : 3,558,109
10 : 3,558,110
21 : 3,558,111
36 : 3,558,112
50 : 3,558,113
52 : 3,558,114
264— .5 : 3,558,750
3 : 3,558,749
45 : 3,558,751
51 : 3,558,752
54 : 3,558,753
94 : 3,558,754
95 : 3,558,755
101 : 3,558,756
103 : 3,558,757
108 : 3,558,758
142 : 3,558,759
168 : 3,558,760
182 : 3,558,761
209 : 3,558,762
210 : 3,558,763
3,558,764
233 : 3,558,765
275 : 3,558,766
290 : 3,558,767
266— 4 : 3,558,115
15 : 3,558,116
23 : 3,558,117
29 : 3,558,118
34 : 3,558,120
3,558,121
37 : 3,558,122
41 : 3,558,119
267— 34 : 3,558,123
269— 48.1 : 3,558,124
270— 58 : 3,558,125
271— 26 : 3,558,126
62 : 3,558,127
86 : 3,558,128
272— 39 : 3,558,129
72 : 3,558,130
83 : 3,558,131
273— 1 : 3,558,132
3,558,133
26 : 3,558,134
55 : 3,558,135
130 : 3,558,136
131 : 3,558,137
157 : 3,558,138
176 : 3,558,139
181 : 3,558,140
3,558,142
11 : 3,558,143

277—208 : 3,558,144
228 : 3,558,145
279— 28 : 3,558,146
103 : 3,558,147
280— 6.11: 3,558,148
11.12: 3,558,149
.35: 3,558,150
3,558,151
36 : 3,558,157
47.16: 3,558,152
124 : 3,558,153
3,558,154
3,558,155
3,558,156
502 : 3,558,158
282— 11.5 : 3,558,159
285— 18 : 3,558,160
27 : 3,558,161
93 : 3,558,162
168 : 3,558,163
236 : 3,558,164
287— 53 : 3,558,165
290— 30 : 3,558,901
292—228 : 3,558,167
256 : 3,558,166
347 : 3,558,168
294— 16 : 3,558,169
19 : 3,558,170
64 : 3,558,171
67 : 3,558,172
3,558,175
70 : 3,558,177
81 : 3,558,173
86.13: 3,558,174
296— 23 : 3,558,179
3,558,180
27 : 3,558,181
36 : 3,558,182
137 : 3,558,183
146 : 3,558,184
297— 84 : 3,558,185
136 : 3,558,186
199 : 3,558,187
346 : 3,558,188
388 : 3,558,189
298— 33 : 3,558,190
299— 22 : 3,558,191
33 : 3,558,192
3,558,193
87 : 3,558,194
302— 24 : 3,558,195
59 : 3,558,196
303— 21 : 3,558,197
305— 35 : 3,558,198
307— 3 : 3,558,902
82 : 3,558,904
88 : 3,558,905
106 : 3,558,906
108 : 3,558,907
109 : 3,558,908
116 : 3,558,909
129 : 3,558,911
134 : 3,558,910
202 : 3,558,912
206 : 3,558,913
214 : 3,558,914
232 : 3,558,915
234 : 3,558,916
235 : 3,558,917
3,558,918
243 : 3,558,919
245 : 3,558,920
251 : 3,558,921
252 : 3,558,922
260 : 3,558,923
3,558,924
261 : 3,558,925
263 : 3,558,926
264 : 3,558,927
265 : 3,558,928
268 : 3,558,929
286 : 3,558,930
291 : 3,558,931
293 : 3,558,932
3,558,933
309 : 3,558,934
3,558,200
207 : 3,558,199
212 : 3,558,201
238 : 3,558,202
310— 4 : 3,558,935
8.1 : 3,558,936
.2 : 3,558,937
.7 : 3,558,903
3,558,938
15 : 3,558,939
41 : 3,558,940
49 : 3,558,941
54 : 3,558,942
58 : 3,558,943
82 : 3,558,944
101 : 3,558,945
112 : 3,558,946
154 : 3,558,947

310—157 : 3,558,948
239 : 3,558,949
270 : 3,558,950
312—140.2 : 3,558,203
208 : 3,558,204
209 : 3,558,205
290 : 3,558,206
313— 25 : 3,558,951
45 : 3,558,952
76 : 3,558,953
82 : 3,558,954
85 : 3,558,955
92 : 3,558,956
157 : 3,559,061
109.5 : 3,558,957
112 : 3,558,958
130 : 3,558,959
161 : 3,558,960
174 : 3,558,961
180 : 3,558,962
184 : 3,558,963
211 : 3,558,964
270 : 3,558,965
346 : 3,558,966
315— 3.5 : 3,558,967
13 : 3,558,968
39 : 3,558,969
.51: 3,558,970
77 : 3,558,971
83 : 3,558,972
111 : 3,558,973
169 : 3,558,974
227 : 3,558,998
316— 19 : 3,558,975
317— 2 : 3,558,976
11 : 3,558,977
13 : 3,558,978
16 : 3,558,979
18 : 3,558,980
3,558,981
20 : 3,558,982
3,558,983
23 : 3,558,984
24 : 3,558,985
27 : 3,558,986
33 : 3,558,987
3,558,988
41 : 3,558,989
43 : 3,558,990
58 : 3,558,991
101 : 3,558,992
3,558,993
3,558,994
123 : 3,558,996
130 : 3,558,995
148.5 : 3,558,997
234 : 3,558,999
3,559,000
3,559,001
3,559,002
3,559,003
3,559,004
3,559,005
235 : 3,559,006
260 : 3,559,007
318— 8 : 3,559,008
95 : 3,559,009
110 : 3,559,010
135 : 3,559,011
138 : 3,559,012
3,559,013
3,559,014
221 : 3,559,015
3,559,016
230 : RE.27,040
314 : 3,559,017
3,559,018
3,559,019
3,559,020
3,559,022
3,559,023
3,559,024
3,559,021
320— 14 : 3,559,025
39 : 3,559,026
61 : 3,559,027
3,559,028
321— 2 : 3,559,029
3,559,030
3,559,031
3,559,032
5 : 3,559,033
3,559,034
8 : 3,559,035
13 : 3,559,036
27 : 3,559,037
45 : 3,559,038
323— 1 : 3,559,039
22 : 3,559,040
100 : 3,559,041
122 : 3,559,042
324— .5 : 3,559,043
3,559,044
3,559,045
8 : 3,559,046
29.5 : 3,559,047
30 : 3,559,048

324— 33 : 3,559,049
34 : 3,559,050
51 : 3,559,051
61 : 3,559,052
62 : 3,559,053
3,559,054
3,559,055
72.5 : 3,559,056
79 : 3,559,057
99 : 3,559,058
3,559,059
151 : 3,559,060
157 : 3,559,061
3,559,062
169 : 3,559,063
173 : 3,559,064
175 : 3,559,065
186 : 3,559,066
325— 38 : 3,559,067
50 : 3,559,068
105 : 3,559,069
136 : 3,559,070
363 : 3,559,071
395 : 3,559,072
405 : 3,559,073
445 : 3,559,074
459 : 3,559,075
470 : 3,559,076
328— 39 : 3,559,077
63 : 3,559,078
119 : 3,559,079
136 : 3,559,080
167 : 3,559,081
181 : 3,559,082
329—104 : 3,559,083
330— 13 : 3,559,084
3,559,085
15 : 3,559,086
3,559,087
29 : 3,559,088
31 : 3,559,089
165 : 3,559,091
331— 16 : 3,559,092
78 : 3,559,093
86 : 3,559,094
94.5 : 3,559,095
107 : 3,559,097
111 : 3,559,098
3,559,099
113 : 3,559,096
116 : 3,559,100
332— 7.51: 3,559,101
3,559,102
9 : 3,559,103
19 : 3,559,104
30 : 3,559,105
41 : 3,559,106
47 : 3,559,107
333— 7 : 3,559,108
3,559,109
10 : 3,559,110
22 : 3,559,111
33 : 3,559,112
70 : 3,559,113
72 : 3,559,115
98 : 3,559,117
334— 7 : 3,559,118
335— 16 : 3,559,119
20 : 3,559,125
42 : 3,559,120
68 : 3,559,121
78 : 3,559,122
154 : 3,559,123
205 : 3,559,124
216 : 3,559,126
3,559,127
3,559,128
3,559,129
3,559,131
275 : 3,559,132
336— 70 : 3,559,133
96 : 3,559,134
192 : 3,559,135
217 : 3,559,136
337— 8 : 3,559,137
21 : 3,559,138
66 : 3,559,139
75 : 3,559,140
224 : 3,559,141
380 : 3,559,142
338— 89 : 3,559,143
173 : 3,559,144
339— 8 : 3,559,145
14 : 3,559,146
18 : 3,559,147
22 : 3,559,148
23 : 3,559,149
45 : 3,559,150
53 : 3,559,151
60 : 3,559,152
126 : 3,559,153
213 : 3,559,154
256 : 3,559,155

339—272 : 3,559,156
340— 3 : 3,559,157
3,559,158
5 : 3,559,159
6 : 3,559,160
3,559,161
10 : 3,559,162
18 : 3,559,163
72 : 3,559,164
75 : 3,559,165
146.1 : 3,559,166
3,559,167
3,559,168
.3 : 3,559,169
3,559,170
147 : 3,559,171
=3,559,172
149 : 3,559,173
3,559,174
152 : 3,559,175
163 : 3,559,176
3,559,177
172 : 3,559,178
.5 : 3,559,179
3,559,180
3,559,181
3,559,182
3,559,183
3,559,184
3,559,187
3,559,188
3,559,189
173 : 3,559,185
3,559,190
174 : 3,559,186
3,559,191
.1 : 3,559,192
213 : 3,559,193
224 : 3,559,194
3,559,195
237 : 3,559,196
239 : 3,559,197
248 : 3,559,198
253 : 3,559,199
255 : 3,559,200
258 : 3,559,201
3,559,202
261 : 3,559,203
272 : 3,559,204
279 : 3,559,205
3,559,206
324 : 3,559,207
3,559,208
350— 3.5 : 3,558,207
8 : 3,558,208
9 : 3,558,209
12 : 3,558,210
16 : 3,558,211
3,558,212
96 : 3,558,213
150 : 3,558,214
3,558,215
162 : 3,558,216
164 : 3,559,090
187 : 3,558,217
226 : 3,558,218
292 : 3,558,219
315 : 3,558,221
319 : 3,558,220
355— 18 : 3,558,222
23 : 3,558,223
51 : 3,558,224
52 : 3,558,225
54 : 3,558,226
356— 17 : 3,558,228
86 : 3,558,227
95 : 3,558,229
138 : 3,558,230
152 : 3,558,231
244 : 3,558,232
401—106 : 3,558,233
112 : 3,558,234
258 : 3,558,235
415— 53 : 3,558,236
115 : 3,558,237
169 : 3,558,238
416—242 : RE.27,038
417— 3 : 3,558,239
174 : 3,558,240
206 : 3,558,241
374 : 3,558,242
411 : 3,558,243
511 : 3,558,244
418— 61 : 3,558,245
88 : 3,558,248
117 : 3,558,246
131 : 3,558,247
424— 21 : 3,558,768
54 : 3,558,769
80 : 3,558,770
95 : 3,558,771
110 : 3,558,772
177 : 3,558,773
180 : 3,558,774
226 : 3,558,780
232 : 3,558,775

424–243	3,558,776	424–283	3,558,779	424–302	3,558,784	424–331	3,558,787	424–356	3,558,790	431–266	3,558,251
245	3,558,778	291	3,558,782	317	3,558,785	343	3,558,788	431– 12	3,558,249	328	3,558,252
250	3,558,777	296	3,558,783	319	3,558,786	354	3,558,789	61	3,558,250	353	3,558,253
251	3,558,781										

CLASSIFICATION OF DESIGNS

D 3– 32	219,765	D13– 1	219,771	D23– 19	219,777	D23–127	219,783	D36– 8	219,789	D71– 1	219,795
D 4– 14	219,766		219,772		219,778	D25– 1	219,784	D49– 13	219,790	D74– 17	219,796
D 8–229	219,767		219,773	23	219,779		219,785	D52– 4	219,791		219,797
233	219,768	D14– 6	219,774		219,780	D29– 1	219,786	6	219,792	D90– 14	219,798
234	219,769	D15– 11	219,775	29	219,781	D33– 1	219,787	7	219,793	20	219,799
D 9–189	219,770	D23– 3	219,776	31	219,782	D34– 5	219,788	D61– 1	219,794	D96– 12	219,800

DEFENSIVE PUBLICATIONS APPLICATIONS

(Notice of Dec. 16, 1969, 869 O.G. 687)

28– 19	T882,021	96– 33	T882,023	96– 76	T882,020	96–108	T882,022	96–120	T882,018	260– 41	T882,015
61– .5	T882,013	45.2	T882,024	82	T882,014	109	T882,019	117– 49	T882,017	615	T882,016

GEOGRAPHICAL INDEX OF RESIDENCE OF INVENTORS

(U.S. States, Territories and Armed Forces, the Commonwealth of Puerto Rico, and the Canal Zone)

Alabama	1	Kentucky	21	Oregon	41
Alaska	2	Louisiana	22	Pennsylvania	42
American Samoa	3	Maine	23	Puerto Rico	43
Arizona	4	Maryland	24	Rhode Island	44
Arkansas	5	Massachusetts	25	South Carolina	45
California	6	Michigan	26	South Dakota	46
Canal Zone	7	Minnesota	27	Tennessee	47
Colorado	8	Mississippi	28	Texas	48
Connecticut	9	Missouri	29	Utah	49
Delaware	10	Montana	30	Vermont	50
District of Columbia	11	Nebraska	31	Virginia	51
Florida	12	Nevada	32	Virgin Islands	52
Georgia	13	New Hampshire	33	Washington	53
Guam	14	New Jersey	34	West Virginia	54
Hawaii	15	New Mexico	35	Wisconsin	55
Idaho	16	New York	36	Wyoming	56
Illinois	17	North Carolina	37	U.S. Air Force	57
Indiana	18	North Dakota	38	U.S. Army	58
Iowa	19	Ohio	39	U.S. Navy	59
Kansas	20	Oklahoma	40		

(First number in listing denotes location according to above key. Refer to patent number in body of the Official Gazette to obtain details as to inventor name, location, etc.)

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1	3,557,534	6	3,557,897	6	3,558,475	6	3,559,062	9	3,558,410	12	3,558,146
	3,558,680		3,557,909		3,558,477		3,559,067		3,558,414		3,558,399
	3,559,048		3,557,914		3,558,479		3,559,095		3,558,447		3,558,765
4	3,557,570		3,557,928		3,558,483		3,559,098		3,558,464		3,558,833
	3,558,158		3,557,932		3,558,488		3,559,104		3,558,707		3,558,976
	3,558,753		3,557,936		3,558,490		3,559,109		3,558,726		3,558,978
	3,558,910		3,557,944		3,558,493		3,559,128		3,558,783		3,559,071
	3,559,001		3,557,962		3,558,495		3,559,142		3,558,813		3,559,140
	3,559,061		3,557,967		3,558,514		3,559,143		3,558,836	13	3,557,448
5	3,557,500		3,557,986		3,558,516		3,559,154		3,558,962		3,557,527
	3,557,702		3,558,001		3,558,522		3,559,170		3,559,084		3,557,582
	3,558,985		3,558,022		3,558,525		3,559,174		3,559,121		3,558,178
6	Re.27,041		3,558,044		3,558,577		3,559,175		3,559,151		3,558,676
	3,557,398		3,558,053		3,558,582		3,559,178		3,559,156		3,558,724
	3,557,430		3,558,056		3,558,595		3,559,183		3,559,167		3,559,074
	3,557,439		3,558,060		3,558,598		3,559,184		3,559,168	15	3,557,851
	3,557,445		3,558,078		3,558,615		3,559,187		3,559,207	17	Re.27,039
	3,557,454		3,558,079		3,558,665		3,559,193		3,559,208		3,557,385
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3,558,883

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3,558,901	3,557,480	3,558,949	3,557,975	3,557,528	3,558,879
3,558,926	3,557,520	3,558,561	3,557,991	3,557,528	3,558,881
3,558,955	3,557,621	3,558,596	3,558,003	3,557,575	3,558,899
3,558,965	3,557,630	3,558,599	3,558,017	3,557,584	3,558,912
3,558,998	3,557,642	3,558,605	3,558,062	3,557,607	3,558,913
3,559,021	3,557,678	3,558,606	3,558,105	3,557,608	3,558,920
3,559,028	3,557,723	3,558,644	3,558,125	3,557,611	3,558,939
3,559,029	3,557,728	3,558,655	3,558,134	3,557,619	3,558,947
3,559,052	3,557,748	3,558,697	3,558,138	3,557,623	3,558,959
3,559,073	3,557,752	3,558,715	3,558,187	3,557,627	3,558,963
3,559,077	3,557,765	3,558,723	3,558,213	3,557,629	3,558,974
3,559,078	3,557,789	3,558,747	3,558,222	3,557,653	3,558,979
3,559,088	3,557,792	3,558,776	3,558,254	3,557,673	3,558,980
3,559,103	3,557,811	3,558,778	3,558,263	3,557,674	3,558,994
3,559,115	3,557,841	3,558,843	3,558,275	3,557,682	3,558,996
3,559,190	3,557,843	3,558,844	3,558,286	3,557,749	3,559,002
18 : RE.27,043	3,557,844	3,558,847	3,558,290	3,557,779	3,559,003
3,557,393	3,557,859	3,558,848	3,558,296	3,557,784	3,559,016
3,557,423	3,557,946	3,558,850	3,558,300	3,557,795	3,559,027
3,557,624	3,557,984	3,558,902	3,558,302	3,557,833	3,559,054
3,557,635	3,558,024	3,558,922	3,558,306	3,557,836	3,559,076
3,557,646	3,558,093	3,558,944	3,558,322	3,557,856	3,559,090
3,557,651	3,558,137	3,559,162	3,558,323	3,557,866	3,559,091
3,557,672	3,558,145	3,559,165	3,558,333	3,557,916	3,559,100
3,557,710	3,558,169	3,559,202	3,558,362	3,557,917	3,559,107
3,557,714	3,558,196	3,559,206	3,558,366	3,557,929	3,559,145
3,557,725	3,558,207	27 : 3,557,386	3,558,396	3,557,974	3,559,153
3,557,767	3,558,211	3,557,559	3,558,425	3,557,990	3,559,160
3,557,812	3,558,218	3,557,579	3,558,461	3,557,993	3,559,181
3,557,966	3,558,235	3,557,645	3,558,470	3,557,999	3,559,185
3,557,988	3,558,279	3,557,717	3,558,478	3,558,006	3,559,186
3,558,124	3,558,284	3,557,718	3,558,485	3,558,020	3,559,189
3,558,128	3,558,305	3,557,769	3,558,496	3,558,025	37 : 3,557,544
3,558,237	3,558,307	3,557,852	3,558,502	3,558,028	3,557,703
3,558,777	3,558,308	3,557,889	3,558,564	3,558,033	3,558,011
3,558,938	3,558,318	3,557,924	3,558,574	3,558,038	3,558,176
3,558,940	3,558,347	3,557,948	3,558,579	3,558,052	3,558,185
3,559,010	3,558,349	3,558,130	3,558,625	3,558,055	3,558,528
3,559,072	3,558,356	3,558,132	3,558,626	3,558,066	3,558,917
3,559,122	3,558,359	3,558,181	3,558,631	3,558,069	3,558,932
3,559,200	3,558,361	3,558,288	3,558,636	3,558,087	3,559,083
19 : 3,557,464	3,558,402	3,558,312	3,558,637	3,558,133	

1 : 219,768	6 : 219,797	17 : 219,794	21 : 219,780	27 : 219,772	41 : 219,767
6 : 219,774	13 : 219,779		219,799	34 : 219,770	42 : 219,771
219,776	219,782		219,800	36 : 219,765	219,786
219,787	17 : 219,790	18 : 219,784	26 : 219,792	219,791	48 : 219,783
219,796	219,793	219,785	27 : 219,769	39 : 219,788	51 : 219,775

DEFENSIVE PUBLICATIONS APPLICATIONS

(Notice of Dec. 16, 1969, 869 O.G. 687)

10 : T882,015	36 : T882,018	36 : T882,020	36 : T882,023	40 : T882,013	48 : T882,016
36 : T882,014	T882,019	T882,022	T882,024	46 : T882,017	51 : T882,021

A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

U.S. DEPARTMENT OF COMMERCE

Official Gazette of the United States Patent Office

January 26, 1971 Volume 882 Number 4

TRADEMARKS

NOTICES

Separation of the Patent and Trademark Sections of the Official Gazette

Effective February 2, 1971, the OFFICIAL GAZETTE will be separated into two parts to be known as the *Patent Official Gazette* and the *Trademark Official Gazette*. The subscription prices for these publications are as follows:

Patent Official Gazette:
$89.00 per year
22.25 additional for foreign mailing
2.00 per single copy
Trademark Official Gazette:
$17.00 per year
4.25 additional for foreign mailing
.40 per single copy

Also effective February 2, 1971, the OFFICIAL GAZETTE will no longer contain "Decisions in Patent and Trademark Cases." Decisions of the type heretofore found in the "Decisions in Patent and Trademark Cases" are published by non-Federal organizations such as, for example, the Bureau of National Affairs, Inc., 1231 25th St. NW., Washington, D.C. 20037, and West Publishing Co., 50 Kellogg Blvd., St. Paul, Minn. 55102.

Finally, the "Decisions Leaflet" of the OFFICIAL GAZETTE will no longer be supplied as a separate subscription item after January 26, 1971. According to present plans, however, both the PATENT OFFICIAL GAZETTE and the TRADEMARK OFFICIAL GAZETTE will have identical "Patent Office Notices" sections containing notices of the various types heretofore published in the Gazette decision leaflet and Trademark Section. Those notices of particular interest to Patent Office employees will be accumulated and published approximately every fourth week, and distributed separately to employees.

Dec. 29, 1970. WILLIAM E. SCHUYLER, JR., *Commissioner of Patents.*

National Technical Information Service (NTIS) Opens Sales Desk in Downtown Washington, D.C.

An NTIS Sales Desk is now located in the main lobby of the Commerce Department building 14th St. NW., between E St. and Constitution Ave. Customers are able to purchase all products and services at this location, including individual documents, renewals of subscriptions to NTIS publications, prepaid coupons and NTIS Deposit Accounts.

NTIS (Springfield, Va.) also maintains a Sales Desk for the convenience of customers. To save time, customers wishing to use either of these facilities should call the NTIS Sales Desk at Springfield, Va, on 321-8543 to place their orders in advance. The customer has a choice between either location to pick up orders.

Depending upon what document or service is ordered and its immediate availability, the NTIS pickup service can generally be provided in one day.

Dec. 15, 1970.

CONDITION OF TRADEMARK APPLICATIONS AS OF NOVEMBER 30, 1970

Total number of applications awaiting action [excluding renewals and Sec. 12(c)] 23,637
Date of oldest new application ..... June 2, 1969
Date of oldest amended application (filing date) ..... January 26, 1968

C. M. WENDT, Director, Trademark Examining Operation

TRADEMARK EXAMINING DIVISION, EXAMINERS AND TRADEMARK CLASSES UNDER EXAMINATION	Oldest Application	
	New	Amended
(I) L. J. BETTENDORF, Classes 2, 3, 4, 5, 7, 8, 9, 10, 11, 17, 27, 28, 30, 32, 33, 37, 38, 39, 40, 41, 42, 43, 50; Certification Marks, Classes A and B	1-27-70	4-22-68
(II) F. H. WETHERBEE, Classes 1, 6, 15, 18, 45, 46, 47, 48, 49, 51, 52; Collective Membership Mark, Class 200	1 30-70	2-19-68
(III) C. R. FOWLER, Classes 12, 16, 19, 21, 23, 26, 31, 34, 35, 36, 44	3-9-70	2-9-68
(IV) M. E. ABRAMSON, Classes 13, 14, 20, 22, 24, 25, 29; Service Marks, Classes 100, 101, 102, 103, 104, 105, 106, and 107	6-2-69	1-26-68
Renewals (All Classes)	10-8-70	----------
Sec. 12(c) Publications (All Classes)	10-28-70	----------

Applications filed during the month of November 1970—2,512

Registrations Issued ..... 535—No. 906,437 to No. 906,971
Renewals Issued 140

THE TRADEMARK SECTION of the OFFICIAL GAZETTE, issued weekly, is mailed under the direction of the Superintendent of Documents, Government Printing Office, Washington, D.C., 20402 to whom all subscriptions should be made payable and all communications addressed; subscription price, $20.50 per annum, foreign mailing $5.75 additional; single copies, 40 cents each.

PRINTED COPIES OF TRADEMARK REGISTRATIONS are furnished by the Patent Office for 20 cents each. Address orders to the Commissioner of Patents, Washington, D.C. 20231.

Legislative Proposal Regarding Postal Emergency

A bill, H.R. 19884, has been introduced in Congress at the request of the Department of Commerce to provide relief in patent and trademark cases affected by the emergency postal situation of March 1970. (H.R. 19884, 91st Cong. 2d Sess., introduced Dec. 1, 1970.)

Several instances have been reported to the Patent Office in which rights may have been lost because of delays caused by the postal emergency, and in which there is no authority under existing law for excusing the delays. The proposed legislation would allow relief in appropriate circumstances by authorizing earlier filing dates to be awarded and delays to be excused.

The introduction of this proposal, of course, does not necessarily indicate that Congress will enact legislation on this subject, or that legislation which is enacted will be in the form of H.R. 19884.

Particular attention is called to the provision which would provide retroactive filing dates for certain patent and trademark applications. Applicants who may be entitled to retroactive filing dates should note that if the Congress enacts the proposed legislation, a change in their United States filing dates might, in turn, alter the date of expiration of the six and twelve month periods for filing applications abroad under the provisions of the Paris Convention for the Protection of Industrial Property.

The text of H.R. 19884 is reproduced below.

WILLIAM E. SCHUYLER, Jr.,
Commissioner of Patents.

A Bill

To provide relief in patent and trademark cases affected by the emergency situation in the United States Postal Service which began on March 18, 1970.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. (a) A patent or trademark application shall be considered as having been filed in the United States Patent Office on the date that it would have been received by the Patent Office except for the delay caused by the emergency situation affecting postal service which began on March 18, 1970, and ended on or about March 30, 1970, if a claim is made for the benefit of an earlier date in accordance with subsections (b) and (c) of this section. Patents issued with earlier filing dates afforded by this section shall not be effective as prior art under subsection 102(e) of title 35 of the United States Code as of such earlier filing dates.

(b) No patent or trademark application, patent, or trademark registration shall be entitled to an earlier filing date under this section unless a verified statement by the applicant or owner of record claiming the filing date to which the application is believed to be entitled is filed in the Patent Office within six months after enactment of this Act. Such statement shall be maintained in the file of the application in the Patent Office and shall be referred to in the patent or trademark registration when practicable.

(c) When a statement filed under subsection (b) of this section appears unreasonable or defective on its face, or when the filing date of the patent or trademark application, patent, or trademark registration is called into question or is material in any inter partes proceeding in the Patent Office or any proceeding in the courts, the applicant or owner of such application, patent, or trademark registration may be required to present evidence establishing the filing date to which the application is entitled. The filing date to which the application is entitled shall be determined on the basis of such evidence and any evidence introduced by an opposing party. The evidence shall be presented as directed by the Commissioner of Patents in proceedings in the Patent Office or as directed by the courts in proceedings in the courts.

SEC. 2. (a) Except for the filing of a patent or trademark application, if any action is taken or any fee is paid in the United States Patent Office later than the end of a time period specified in the statutes set forth in subsection (b) of this section for taking such action or paying such fee, and no provision exists in law for excusing such delay, the delay may be excused if it is determined that it was caused by the emergency situation affecting postal service which began on March 18, 1970, and ended on or about March 30, 1970. Relief under this section must be requested by a verified statement filed in the Patent Office by the patent or trademark applicant or owner within six months after enactment of this Act.

(b) This section is applicable to title 35, United States Code, "Patents"; the Trademark Act of 1946, ch. 540, 60 Stat. 427, as amended; the Atomic Energy Act of 1954, Public Law 83–703, 68 Stat. 919, as amended; and the National Aeronautics and Space Act, Public Law 85–568, 72 Stat. 426 (1958), as amended. In cases involving the Atomic Energy Act of 1954 or the National Aeronautics and Space Act, determinations of relief shall be made by a Board of Patent Interferences. In other cases determinations shall be made by the Commissioner of Patents.

SEC. 3. The Commissioner of Patents may establish regulations for administering this Act.

Trademark Suits

Notices under 15 U.S.C. 1116; Trademark Act of July 5, 1946

Reg. No. 40,411 (CROWN), Crown Central Petroleum Corporation, Lubricants, **filed** June 26, 1970, D.C., S.D. Tex. (Houston), Doc. CA–70–H–673, *Crown Central Petroleum Corporation* v. *Crown Petroleum, Inc.* Final judgment and injunction entered Sept. 30, 1970 for plaintiff.

Reg. No. 105,542 (CELITE), Johns-Manville Corporation, Crude kieselguhr and crushed, broken, cut, or ground kieselguhr; **Reg. No. 231,293,** same, Crushed or ground diatomaceous earth in natural, dried, or calcined condition, pulverulent compositions containing diatomaceous earth and aggregates comprising and containing natural, dried, or calcined diatomaceous earth, for use with hydraulic cement, gypsum, bitumen, and other binders or combined therewith to form wall board, walls, paving, and other structures, **filed** Apr. 3, 1970, D.C., S.D. Fla. (Miami), Doc. 70–456–C–WM, *Johns-Manville Corporation, Johns-Manville Products Corporation, and Johns-Manville Sales Corporation* v. *The Cel-Lite Company.* Stipulation of settlement, case dismissed with prejudice, Oct. 6, 1970.

Reg. No. 231,293. (See Reg. No. 105,542.)

Reg. No. 143,119 (DAILY NEWS), News Syndicate Co., Inc., Newspapers published in the city of New York, **filed** Apr. 7, 1970, D.C., S.D.N.Y., Doc. 70–C–1389, *News Syndicate Co., Inc.* v. *Robert Cenedalla.* Consent judgment, defendant enjoined, Sept. 24, 1970.

Reg. No. 578,168. (DESERT). C. & J. Limited, Boots for men, women, and children, **filed** May 6, 1970, D.C., S.D.N.Y., Doc. 70–C–1842, *Clarks Overseas Shoes Ltd. et ano.* v. *Plymouth Shoe Co.* Consent decree, defendants enjoined and restrained, Aug. 18, 1970.

Reg. No. 617,131 (VOLKSWAGEN), Volkswagenwerk, GmbH, Vehicles—namely, automobiles and trucks, aircraft, boats, and parts of and accessories for automobiles—namely, radiators, direction indicators, windshield defrosters, anti-dazzle appliances; windshield wipers, shock absorbers, brakes, and baggage racks; **Reg. No. 631,649** (VW IN CIRCLE), same; **Reg. No. 653,695** (VW), same; **Reg. No. 790,621** (VOLKSWAGEN) same, Automobiles and trucks, aircraft, and boats; and parts of and accessories for automobiles—namely, radiators, direction indicators, windshield defrosters, anti-dazzle appliances, windshield wipers, shock absorbers, brakes, and baggage racks; **Reg. No. 790,959,** (VW AND DESIGN), same; **Reg. No. 791,311** (VW), same; **Reg. No. 804,869** (VW AND DESIGN), same, Repair and reconditioning of motor vehicles, aircraft and boats; **Reg. No. 808,381** (VOLKSWAGEN), same, Vehicles—namely, automobiles and trucks, aircraft, and boats; and parts and accessories for automobiles and trucks, aircraft and boats—namely, radiators, direction indicators, windshield wipers, shock absorbers, brakes and baggage racks; **Reg. No. 815,632** (VW), same, Repair, reconditioning and replacement of motors and accessories and parts thereof, and repair and reconditioning of motor vehicles, aircraft, and boats; **Reg. No. 819,297** (VOLKSWAGEN). **Same, filed** Feb. 13, 1970, D.C., S.D. Fla. (Miami), Doc. 70–187–TC, *Volkswagenwerk Aktiengesellschaft* v. *Herbert C. Wernsing doing business as Herb's Volkswagen Repairs.* Final Judgment, defendant permanently enjoined and restrained, Oct. 30, 1970.

Reg. No. 631,649. (See Reg. No. 617,131.)

Reg. No. 653,695. (See Reg. No. 617,131.)

Reg. No. 657,184 (EIDERLON), Industrial Rayon Corporation, Knitted fabrics of cotton and rayon for undergarments; **Reg. No. 768,846,** same, Spun-Lo Eiderlon, Inc., Knitted and woven fabrics of synthetic and natural yarns, particularly for underwear, sleepwear, ladies', men's, children's and boys' sweaters, dresses, shirts, jackets, robes, dusters, T-shirts, lounging pajamas, nightgowns, pajamas and shorties, **filed** Aug. 14, 1970, D.C., S.D.N.Y., Doc. 70–C–3527, *Spun Lo Eiderlon Inc.* v. *Young Debs Inc.*

Reg. No. 691,712 ("DEE-CEE"), Washington Manufacturing Company, Shirts, jackets, slacks, shorts, and dungarees for men, women and children; **Reg. No. 791,077,** same; **Reg. No. 794,102** (MR. DEE CEE), same, Sport shirts and pajamas; **Reg. No. 850,643,** same, Men's and boys' sport shirts, dress shirts, slacks, walk shorts, pajamas, and western shirts, **filed** May 21, 1970, D.C., S.D.N.Y., Doc. 70–C–2075, *Washington Manufacturing Company* v. *C.D.C. Merchandising Corp.* Consent judgment, defendants permanently enjoined, Oct. 6, 1970.

Reg. No. 768,846. (See Reg. No. 657,184.)

Reg. No. 790,621. (See Reg. No. 617,131.)

Reg. No. 790,959. (See Reg. No. 617,131.)

Reg. No. 791,077. (See Reg. No. 691,712.)

Reg. No. 791,311. (See Reg. No. 617,131.)

Reg. No. 794,102. (See Reg. No. 691,712.)

Reg. No. 804,869. (See Reg. No. 617,131.)

Reg. No. 808,381. (See Reg. No. 617,131.)

Reg. No. 815,632. (See Reg. No. 617,131.)

Reg. No. 819,297. (See Reg. No. 617,131.)

Reg. No. 845,875 (CORKY), Girsberger & Tschappu, Cork extractors, **filed** Mar. 16, 1970, D.C., S.D.N.Y., Doc. 70–1026, *Novimex Ltd., E. W. Bruno Co., Inc. et ano.* v. *Haverhill's Inc.*

Reg. No. 850,643. (See Reg. No. 691,712.)

Reg. No. 860,766 (NEVCO), Nevco Wood Products Co., Inc., Wood and plastic products—namely, holders, boxes, snack bowls, salad sets, shoeshine and sewing boxes, sold empty in the trade, planters, salt and pepper sets, egg caddies and cup sets, and coasters, Cl. 2; Kitchen, cooking and eating utensils, such as cooking baskets and strainers; and bar accessories, such as ice crushers, spoons, forks, strainers, bottle and can openers, and pourers, Cl. 13; Knives, forks, spoons, files, carving boards, kitchen spades, steak knives, kitchen saws, slicers, carving sets, meat cleavers, salad scissors, choppers and slicers for cheeses, butter, fruits and other foods, pizza and pie cutters, kitchen scissors, poultry shears, peelers and corers; mixing spoons, spatulas, salad fork and spoon sets, meat presses, tongs, foodboards, scoops, meat tenderizers, egg slicers, graters, peelers, can openers, jiggers, cork-screws, ice picks, ice tongs, and lemon squeezers, Cl. 23; Bar stools, chairs, tables, racks, shelves, hatstands, training chairs and training seats for children, drawers, drying racks for clothes, tie racks, valets, step stools, benches, and serving wagons, **filed** June 8, 1970, D.C., S.D.N.Y., Doc. 70–C–2370, *Nevco Wood Products Co., Inc.* v. *John Hull Cutlers Corp.* Consent judgment, defendant enjoined and restrained, Aug. 7, 1970.

Reg. No. 880,277 (DESIGN SUITCASE AND COLORS), Ventura Travelware, Inc., Luggage, attache cases, and trunks, **filed** Mar. 3, 1970, D.C., S.D.N.Y., Doc. 70–C–848, *Universal Luggage Co. Inc. et ano.* v. *Leeds Travelwear.*

Reg. No. 884,128 (KW), Kurt Wayne Inc., Jewelry, including rings, ornamental pins, bracelets, brooches, necklaces, earrings, and diamond settings of precious metals, **filed** Jan. 16, 1970, D.C., S.D.N.Y., Doc. 70–198, *Kurt Wayne Inc.* v. *G & W Castings Inc.* Consent judgment, defendant perpetually restrained and enjoined, Feb. 9, 1970.

MARKS PUBLISHED FOR OPPOSITION

SECTION 1

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Application for the registration of these marks in more than one class has been filed as provided in section 30 of said act as amended by Public Law 772, 87th Congress, approved Oct. 9, 1962, 76 Stat. 769. Opposition under section 13 may be filed within thirty days of this publication. See Rules 2.101 to 2.105.

A separate fee of twenty-five dollars for each class opposed must accompany the opposition.

[NOTE: For publication of marks presented in applications for registration in one class, see section 2.]

SN 255,392. The Wickes Corporation, d.b.a. Wickes Lumber and Building Supply Center, Saginaw, Mich. Filed Sept. 29, 1966.



Owner of Reg. Nos. 704,486 and 707,390.

Class 5—Adhesives

For Adhesives for Use in the Building Industry—Namely, for Securing Paneling to Walls (Int. Cl. 1).

Class 12—Construction Materials

For Building Construction Products—Namely, Polyethylene Sheeting Used in the Construction Field as Moisture Insulating Barriers and Coverings, Composition Sheet Counter Topping and End Caps Therefore, Lumber, Sheathing, Paneling, Plywood, Studs, Mouldings, Siding, Flooring, Finish Boards, Closet Lining, Insulating Building Board, Insulating Sheeting, Utility Board for Use in the Building Industry, Shingles, Ceiling Tile, Acoustical Tile, Building Insulation, Wallboard, Hardboard, Wood Particle Board Underlayment, Doors, Prefabricated Stairs, Sash for Use in the Building Industry, Windows, Prefabricated Thresholds, Prefabricated Louvers, Trim Strips for Use in the Building Industry, Floor Tile, Drywall Construction Material and Package Receivers for Use in the Building Industry (Int. Cls. 17 and 19).

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

For Builders Hardware—Namely, Nails, Closet Rods, Knobs, Rings, Escutcheons, Door Butts, Brackets, Cabinet and Window Hardware (Int. Cl. 6).

Class 16—Protective and Decorative Coatings

For Interior and Exterior Wall and Trim Paints (Int. Cl. 2).

Class 25—Locks and Safes

For Locks and Latches (Int. Cl. 6).

Class 32—Furniture and Upholstery

For Medicine Cabinets (Int. Cl. 20).

Class 34—Heating, Lighting, and Ventilating Apparatus

For Portable Prefabricated Electrical Fireplace Units (Int. Cl. 11).

First use Aug. 9, 1966.

SN 255,700. Ferrania Società per Azioni, Milan, Italy. Filed Oct. 4, 1966.

Ferrania

Priority claimed under Sec. 44(d) on Italian application filed May 12, 1966; Reg. No. 181,828, dated Sept. 22, 1966. Owner of U.S. Reg. No. 434,773.

Class 6—Chemicals and Chemical Compositions

For Chemicals—Namely, Developers, Fixers and Stabilizers for Processing Films, Plates and Papers Used in Cinematography, Photography and Radiography (Int. Cl. 1).

Class 26—Measuring and Scientific Appliances

For Optical, Photographic and Cinematographic Machines and Apparatus for Making (Exposing and Processing) Photographic Papers, Films and Photography—Namely, Cinematographic and Photographic Cameras, Projectors for Cinematographic Films and Transparencies, Enlargers, Motion Picture Displayers, Exposure Meters; and Light Sensitive Photographic Papers and Films, and Sensitized Cardboard (Int. Cls. 1 and 9).

SN 282,114. Montecatini Edison S.p.A., Milan, Italy; Filed Oct. 9, 1967.

Fomblin

Priority claimed under Sec. 44(d) on Italian application filed Apr. 10, 1967; Reg. No. 213,663, dated Aug. 4, 1967.

Class 6—Chemicals and Chemical Compositions

For Fluorinated Fluids for Industrial Use (Int. Cl. 1).

Class 21—Electrical Apparatus, Machines, and Supplies

For Fluorinated Oils for Use as Di-Electric Fluids (Int. Cl. 17).

First use April 1967; in commerce June 1967.

SN 309,449. Gabel's Cosmetics, Inc., Los Angeles, Calif. Filed Oct. 11, 1968.

GABEL'S

Class 51—Cosmetics and Toilet Preparations

For Hair and Face Preparations—Namely, Hair Tonic; Aftershave Lotion, Lanolin Hair Dressing, Pomade, Cream Oil, Hair Oil, Cold Cream, Cleansing Cream, Massage Cream, Hand and Body Lotion, Cream Rinse, and Shaving Creams (Int. Cl. 3).

First use at least as early as Sept. 15, 1932.

Class 52—Detergents and Soaps

For Hair Shampoo (Int. Cl. 3).
First use at least as early as June 2, 1932.

SN 312,658. Computer Processing Unlimited, Chicago, Ill. Filed Nov. 20, 1968.

CPU

Class 100—Miscellaneous

For Computer Leasing Services (Int. Cl. 42).

Class 101—Advertising and Business

For Computer Programming Services (Int. Cl. 35).

First use Oct. 11, 1967.

SN 323,411. United Flight Centers, Incorporated, Detroit, Mich. Filed Apr. 2, 1969.

uniFLIGHT

Class 101—Advertising and Business

For Business Services and Assistance Rendered by Applicant to Fixed Base Operators Engaged in Supplying Goods and Services in the Field of General Aviation (Int. Cl. 35).

Class 200

For Indicating Membership in Applicant.

First use Feb. 7, 1969.

SN 326,524. Garland Maintenance Products, Inc., d.b.a. The Garland Company, Cleveland, Ohio. Filed May 6, 1969.

SILVER SHIELD

Class 12—Construction Materials

For Aluminum Roof Coatings—Namely, Heavy-Bodied Fibrous Coating Material (Int. Cl. 19).
First use Mar. 10, 1969.

Class 16—Protective and Decorative Coatings

For Aluminum Paint (Int. Cl. 2).
First use Oct. 1, 1969.

SN 333,324. Environmental Services, Inc., York, Pa. Filed July 24, 1969.

ESI

Class 100—Miscellaneous

For Research, Design, and Development of Aqueous and Solid Waste Treatment Systems (Int. Cl. 42).

Class 103—Construction and Repair

For Construction of Aqueous and Solid Waste Treatment Systems to the Order and/or Specification of Others, and Installation of Aqueous and Solid Waste Treatment Systems (Int. Cl. 37).

First use Feb. 15, 1968.

SN 348,201. Petline International, Inc., Orlando, Fla. Filed Jan. 12, 1970.

PETLINE

Class 18—Medicines and Pharmaceutical Preparations

For Animal Vitamins and Vitamin Supplements and Animal Kidney and Diarrhea Medicines (Int. Cl. 5).

Class 52—Detergents and Soaps

For Animal Shampoos (Int. Cl. 3).

First use Aug. 26, 1969.

SN 353,352. S. C. Johnson & Son, Inc., Racine, Wis. Filed Mar. 9, 1970.

ENVY

Owner of Reg. No. 796,196.

Class 6—Chemicals and Chemical Compositions

For Disinfectant Preparations for Use in Wash Rooms (Int. Cl. 5).

Class 52—Detergents and Soaps

For Cleaning Preparations for Use in Wash Rooms and Cleaning Preparations for Use on Rugs (Int. Cl. 3).

First use on or about Nov. 12, 1966.

SN 360,849. Avon Products, Inc., New York, N.Y. Filed May 26, 1970.

KEEPSAKE

Class 51—Cosmetics and Toilet Preparations

For Cologne and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use Apr. 17, 1970.

SN 360,850. Avon Products, Inc., New York, N.Y. Filed May 26, 1970.

ABIDE

Class 51—Cosmetics and Toilet Preparations

For Cologne and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use Mar. 31, 1970.

SN 360,851. Avon Products, Inc., New York, N.Y. Filed May 26, 1970.

ADAPTATION

Class 51—Cosmetics and Toilet Preparations

For Cologne and Dusting Powder (Int. Cl. 3).

Class 52—Detergents and Soaps

For Toilet Soap (Int. Cl. 3).

First use Mar. 31, 1970.

SN 363,797. Alberto-Culver Company, Melrose Park, Ill. Filed June 29, 1970.

FDS

Owner of Reg. Nos. 831,204, 848,781, and 863,268.

Class 44—Dental, Medical, and Surgical Appliances

For Sanitary Napkins and Tampons (Int. Cl. 5).
First use Feb. 24, 1969.

Class 52—Detergents and Soaps

For Cleansing Foam for Use in the Vaginal Area of the Skin (Int. Cl. 3).
First use at least as early as May 1970.

SN 365,255. Crown Central Petroleum Corporation, Baltimore, Md. Filed July 15, 1970.

CROWN

Owner of Reg. Nos. 40,411 and 273,320.

Class 15—Oils and Greases

For Gasoline (Int. Cl. 4).

Class 103—Construction and Repair

For Gas Station Services (Int. Cl. 37).

First use at least as early as 1933.

SN 365,256. Crown Central Petroleum Corporation, Baltimore, Md. Filed July 15, 1970.

CROWN

Owner of Reg. Nos. 40,411 and 273,320.

Class 15—Oils and Greases

For Gasoline (Int. Cl. 4).

Class 103—Construction and Repair

For Gas Station Services (Int. Cl. 37).

First use at least as early as Sept. 29, 1969.

SECTION 2

The following marks are published in compliance with section 12(a) of the Trademark Act of 1946. Opposition under section 13 may be filed within thirty days of publication. See Rules 2.101 to 2.105.

A fee of twenty-five dollars must accompany the opposition.

[NOTE: For publication of marks presented in a combined application for registration in more than one class, see section 1.]

Class 1—Raw or Partly Prepared Materials

SN 338,662. Columbian Carbon Company, New York, N.Y. Filed Sept. 23, 1969.

GEM-ROC

For Plastic Molding Compounds for Use in the Industrial Arts (Int. Cl. 1).
First use July 14, 1969.

SN 349,849. Dynamit Nobel Aktiengesellschaft, Troisdorf, Germany. Filed Jan. 28, 1970.

TROVITHERM

Owner of German Reg. No. 109,102, dated May 11, 1957.
For Films, Sheets, and Rods of Plastics, Particularly of Polyvinyl Chloride or Copolymers of Vinyl Chloride (Int. Cl. 17).

SN 356,254. Built-Rite Products, Ashland, Mo. Filed Apr. 8, 1970.

OAK-LITE

For Fire Started in the Form of Wood Chips Coated With a Flammable Material (Int. Cl. 4).
First use Mar. 10, 1970.

SN 356,398. Greenbelt Peat Moss Company, Dallas, Tex. Filed Apr. 9, 1970.

DIXIE LAND

For Peat Moss and Peat (Int. Cls. 4 and 31).
First use Mar. 27, 1970.

SN 357,413. Polycast Technology Corporation, Stamford, Conn. Filed Apr. 20, 1970.

POLYGLASS

For Plastic Sheet (Int. Cl. 17).
First use on or about June 1969.

Class 2—Receptades

SN 338,580. Koehring Company, d.b.a. Brown Machine Division of Koehring Company, Beaverton, Mich. Filed Sept. 22, 1969.

AUTOWELD

For Containers—Namely, Plastic Containers for Milk and Other Products (Int. Cl. 20).
First use Aug. 1, 1969.

SN 349,417. Olin Corporation, Stamford, Conn. Filed Jan. 23, 1970.

VACONODECK

For Floating Covers or Surfaces for Use in Liquid Storage Tanks for the Prevention of Evaporation of Liquids Therein (Int. Cl. 6).
First use on or about Jan. 2, 1970.

Class 6—Chemicals and Chemical Compositions

SN 297,660. Dixi Chem of Greenville, Inc., Greenville, S.C. Filed May 8, 1968.

DI-SECT

For Insecticides, Pesticides, and Insect Repellents—Namely, Insect Spray, Fly Bait, Flea and Tick Killer, Insect Repellent, Pet Spray, Livestock Wound Protectant, Roach and Waterbug Killer, and Livestock Spray, All of Which Are Sold in Individual Packages Through Retail Outlets to, and for Home Use by, Members of the Public as Consumers (Int. Cl. 5).
First use on or about July 1, 1959.

SN 323,538. Louis Dee Associates, Inc., Stoneham, Mass. Filed Apr. 3, 1969.

DEECO

For Chemical Compositions for Use in Treatment of Textile Fibres—Namely, as Softening, Anti-Static, Water Repellent and Lubricating Agents (Int. Cl. 1).
First use July 26, 1968.

SN 328,897. Robinson-Wagner Company, Inc., Mamaroneck, N.Y. Filed June 2, 1969.

ALCOLAN

For Emollient Water-in-Oil Emulsifiers for the Preparation of Cosmetic and Pharmaceutical Emulsions and Ointments (Int. Cl. 1).
First use January 1939.

SN 330,079. Acheson Industries, Inc., Port Huron, Mich. Filed June 16, 1969.

For Organic or Inorganic Chemicals in a Colloidal or Fine Particle State, Alone or in Various Mediums for Various Uses in the Industrial Arts (Int. Cl. 1).
First use April 1969.

SN 330,224. Velsicol Chemical Corporation, Chicago, Ill. Filed June 16, 1969.

BENZODYE

For Auxiliary Product Useful in Dyeing (Int. Cl. 2).
First use Apr. 25, 1969.

SN 330,274. Fuller Laboratories, Inc., Eden Prairie, Minn. Filed June 17, 1969.

PERMA DRI

Owner of Reg. Nos. 872,453 and 876,870.
For Clothing and Tent Waterproofing, and Leather and Boot Waterproofing (Int. Cl. 1).
First use Jan. 2, 1969.

SN 331,374. Harnden-Thornton & Co., Memphis, Tenn. Filed June 30, 1969.

For Crop Oil for Use With Certain Herbicides To Aid in Controlling Weeds in Certain Crops (Int. Cl. 1).
First use June 2, 1969.

SN 331,645. Pine-O-Pine Company, Houston, Tex. Filed July 2, 1969.

SANI-LEMON

For Cleansers, Disinfectants, and Deodorants (Int. Cl. 5).
First use July 28, 1967.

SN 332,442. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed July 14, 1969.

BASOKOL

For Chemical Products for Industrial Purposes, Auxiliaries for the Textile Industry, and Dispersing Agents (Int. Cl. 1).
First use June 14, 1969; in commerce June 14, 1969.

SN 338,127. The Clorox Company, Oakland, Calif. Filed Sept. 17, 1969.

ENTIRE

For Bleach-Disinfectant (Int. Cl. 5).
First use July 28, 1969.

SN 350,020. Wyandotte Chemicals Corporation, Wyandotte, Mich. Filed Jan. 29, 1970.

LOCKPRUF

For Rust Inhibitor (Int. Cl. 2).
First use June 6, 1969.

SN 351,096. Arrowhead Industries, Inc., Denville, N.J. Filed Feb. 11, 1970.

J*F*L*

For Pads Impregnated With Perfumed Deodorants for Use in Ladies' Rooms (Int. Cl. 5).
First use Jan. 26, 1970.

SN 351,098. Arrowhead Industries, Inc., Denville, N.J. Filed Feb. 11, 1970.

JFM

For Pads Impregnated With Perfumed Deodorants for Use in Men's Rooms (Int. Cl. 5).
First use Jan. 26, 1970.

SN 351,773. Alfa Inorganics, Inc., Beverly, Mass. Filed Feb. 19, 1970.

ALFA OPTRONICS

For Ultra-Pure Chemicals Which Have a Principal End Use in Either the Electronics or Optical Industry (Int. Cl. 1).
First use Jan. 26, 1970.

SN 352,069. Baxter Laboratories, Inc., Morton Grove, Ill. Filed Feb. 24, 1970.

HAZYME

For Enzyme Preparation for the Processing of Food Including Fruit Juice Products (Int. Cl. 1).
First use July 11, 1969.

SN 353,286. Continental Oil Company, Ponca City, Okla. Filed Mar. 6, 1970.

CONOSTAN

For Metallo-Organic Spectrographic Standards (Int. Cl. 1).
First use Jan. 20, 1970.

SN 353,719. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen (Rhine), Germany. Filed Mar. 11, 1970.

PALIOTOL

For Dyestuffs (Int. Cl. 2).
First use Mar. 7, 1968; in commerce Nov. 20, 1969.

SN 354,228. Stauffer Chemical Company, New York, N.Y. Filed Mar. 16, 1970.

MATCHMAKERS

For Sulfur (Int. Cl. 1).
First use at least as early as Jan. 1, 1945.

SN 354,229. Stauffer Chemical Company, New York, N.Y. Filed Mar. 16, 1970.

SPECIAL ELECTRIC

Owner of Reg. No. 509,091.
For Sulfur for Use as an Agricultural Insecticide and Fungicide (Int. Cl. 5).
First use at least as early as Jan. 1, 1930.

SN 354,427. Hercules Incorporated, Wilmington, Del. Filed Mar. 18, 1970.

POLYISOX

For Liquid Crosslinkable Premix for Use in Sealants and Adhesives (Int. Cl. 1).
First use Mar. 9, 1970.

SN 361,077. Stauffer Chemical Company, New York, N.Y. Filed May 2, 1970.

ELECTRIC TRITHION

Owner of Reg. Nos. 509,091 and 649,513.
For Sulfur and Phosphate Insecticide-Acaricide-Fungicide (Int. Cls. 1 and 5).
First use in or about 1960.

SN 364,348. The Tapecoat Company, Inc., Evanston, Ill. Filed July 6, 1970.

ENVIROSHIELD

For Corrosion Inhibitors for Indoor and Outdoor Steel Surfaces (Int. Cl. 2).
First use May 8, 1970.

SN 364,618. Smith Kline & French Laboratories, Philadelphia, Pa. Filed July 8, 1970.

CLINICULT

For Laboratory Diagnostic Tests for Bacteriuria, Candida Albicans and Beta Hemolytic Streptococci (Int. Cl. 1).
First use June 26, 1970.

Class 12 — Construction Materials

SN 296,811. Coldweld Gesellschaft für Moderne Reparaturverfahren mbH, Munich, Germany. Filed Apr. 29, 1968.

cwm

Priority claimed under Sec. 44(d) on German Application filed Oct. 30, 1967; Reg. No. 844,309, dated Mar 10, 1969.
For Separately Packaged Compounds, Comprising a Resin and Metal-Particle-Containing Base Together With an Activator Therefor, for Use in Bonding and Repairing Articles of All Types (Int. Cl. 19).

SN 328,745. Symons Corporation, Des Plaines, Ill., by change of name from Symons Mfg. Company, Des Plaines, Ill. Filed May 29, 1969.

SUPERFORM

For Heavy-Duty Concrete Wall Forms and Associated Hardware Including Tapered Ties and She-Bolts (Int. Cl. 19).
First use Mar. 30, 1965.

SN 328,909. Stylon Corporation, Florence, Ala. Filed June 2, 1969.

CERTOSA

For Ceramic Floor and Wall Tile (Int. Cl. 19).
First use March 1965.

SN 328,918. Torginol of America, Inc., Montebello, Calif. Filed June 2, 1969.

HYDROMAT

For Multicomponent Seamless Flooring Coating and Accompanying Chips for Application to Concrete Floor Surfaces (Int. Cl. 19).
First use Jan. 10, 1969.

SN 329,383. The Reardon Company, Brunswick, Ohio. Filed June 6, 1969.

BONDEK

Owner of Reg. Nos. 693,720 and 742,597.
For Black Mastic Roof Coating, Roof Primer, and Trowel Grade Roofing Cement (Int. Cl. 19).
First use Dec. 15, 1967.

SN 331,498. C. A. Dawson and Company, Springfield, Ill. Filed July 1, 1969.

[redacted]

For Lumber and Millwork—Namely, Windows and Doors (Int. Cl. 19).
First use on or about Aug. 15, 1960.

SN 331,499. C. A. Dawson and Company, Springfield, Ill. Filed July 1, 1969.

LUMBER WORLD

No claim is made for the word "Lumber" apart from the mark as shown.
For Lumber and Millwork—Namely, Windows and Doors (Int. Cl. 19).
First use on or about May 19, 1969.

SN 331,501. C. A. Dawson and Company, Springfield, Ill. Filed July 1, 1969.

Dawson's... LUMBER WORLD

No claim is made for the words "Dawson's" and "Lumber" apart from the mark as shown.
For Lumber and Millwork—Namely, Windows and Doors (Int. Cl. 19).
First use on or about May 19, 1969.

SN 333,977. Long's Fence Company, Incorporated, Gambrills, Md. Filed July 30, 1969.

BEST OF BREED

For Animal Enclosures Formed Predominantly of Wire Fencing (Int. Cl. 6).
First use September 1967.

SN 334,993. Cuckler Steel Span Company, Monticello, Iowa. Filed Aug. 11, 1969.

Cuckler BUILDING SYSTEMS

The words "Building Systems" are disclaimed separate and apart from the mark. Owner of Reg. Nos. 657,898 and 892,311.
For Prefabricated and Precut Commercial, Agriculture and Institutional Buildings (Int. Cl. 19).
First use Sept. 1, 1968.

SN 336,334. Johns-Manville Corporation, New York, N.Y. Filed Aug. 26, 1969.

JUMBO

For Insulating Fire Brick (Int. Cl. 17).
First use at least on or about Dec. 1, 1967.

SN 336,799. Hexcel Corporation, Dublin, Calif. Filed Sept. 2, 1969.

TUF-COMB

For Non-Metallic Honeycomb Core and Sandwich Materials for Structural Applications (Int. Cl. 19).
First use on or about Feb. 1, 1969.

SN 338,330. Simpson Timber Company, Seattle, Wash. Filed Sept. 19, 1969.

EXETER

For Wood Doors for Interior and Exterior Use (Int. Cl. 19).
First use Jan. 13, 1969.

SN 340,273. Lonza Ltd., Basel, Switzerland. Filed Oct. 9, 1969.

LONSICAR

Owner of Swiss Reg. No. 236,521, dated Jan. 20, 1969.
For Synthetic Abrasive Grain for Use as Durable, Abrasion Resistant and Anti-Slip Aggregates to Concrete, Resins and Other Bonding Media (Int. Cl. 19).

SN 345,673. Red Devil Inc., Union, N.J. Filed Dec. 8, 1969.
Owner of Reg. No. 549,770.

RED DEVIL

For Caulking Compound (Int. Cl. 17).
First use May 1, 1969.

SN 346,350. PPG Industries, Inc., Pittsburgh, Pa. Filed Dec. 16, 1969.

FIREWALL

For Exterior Glass Thermal Barrier Units (Int. Cl. 19).
First use at least as early as Nov. 14, 1969.

SN 347,836. Mastic Corporation, South Bend, Ind. Filed Jan. 6, 1970.

Contour
T-lok

Owner of Reg. No. 809,118.
For Building Siding Panels Formed of Synthetic Resin (Int. Cl. 19).
First use Mar. 6, 1969.

SN 354,632. Johns-Manville Corporation, New York, N.Y. Filed Mar. 19, 1970.

MICRO-FOIL

For Insulating Tape for Wrapping Pipes and the Like (Int. Cl. 17).
First use at least in or about August 1956.

SN 354,633. Johns-Manville Corporation, New York, N.Y. Filed Mar. 19, 1970.

MICRO-LOK

For Fiber Glass Pipe Insulation (Int. Cl. 17).
First use at least on or about Sept. 4, 1958.

SN 355,271. Taylor Engineering Corporation, Detroit, Mich. Filed Mar. 27, 1970.

TAYLOR THREAD TAPE

Applicant disclaims the use of the words "Thread Tape" apart from the mark.
For Pipe Thread Sealant (Int. Cl. 17).
First use Mar. 13, 1970.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

SN 343,163. Texas Industrial Fastener Company, Houston, Tex. Filed Nov. 10, 1969.

TIFCO

For Screws, Nuts, and Fasteners (Int. Cl. 6).
First use January 1967.

SN 345,630. Tracy Holmes Corporation, Santa Monica, Calif. Filed Dec. 8, 1969.

WHIZ-BANG

For Small Boat Fittings—Namely, Sailboat Travelers (Int. Cl. 6).
First use Sept. 23, 1969.

SN 345,632. Tracy Holmes Corporation, Santa Monica, Calif. Filed Dec. 8, 1969.

RED SNAPPER

For Small Boat Fittings—Namely, Spinnaker Pole Fittings (Int. Cl. 6).
First use Apr. 2, 1962.

SN 350,129. Serck Industries Limited, Birmingham, England. Filed Jan. 30, 1970.

DIGIPOS

Owner of British Reg. No. 929,442, dated Aug. 14, 1968.
For Power Operated Valves and Actuators for Use With Valves, Pumps and Machines (Int. Cl. 7).

SN 350,575. Industrial Bolt and Nut Company, Newark, N.J. Filed Feb. 5, 1970.



For Miscellaneous Small Hardware Items Such as Nuts, Bolts, Screws, Hooks, Brackets, and the Like (Int. Cl. 6).
First use Jan. 10, 1962.

SN 353,311. Mansfield Sanitary, Inc., Perrysville, Ohio. Filed Mar. 6, 1970.

JET-FLUSH

For Toilets (Int. Cl. 11).
First use Jan. 9, 1970.

SN 356,512. Presto Lock Co., Inc., Garfield, N.J. Filed Apr. 10, 1970.



For Hardware Components Primarily for Luggage Including Locks, Catches, and Handle Loops (Int. Cl. 6).
First use December 1947.

SN 361,102. Cajon Company, Solon, Ohio. Filed May 28, 1970.

CAJON

Owner of Reg. No. 690,081.
For Flexible Tubing and Accessories Therefor—Namely, Couplings and Coupling Components (Int. Cl. 6).
First use Mar. 6, 1970.

SN 362,296. Armand Wimel and Jacques Ayrial (joint owners), Ploudalmezeau, Finistere, France. Filed June 10, 1970.

"SHAMPOMATIC"

Owner of French Reg. No. 725,683, dated Jan. 10, 1967.
For Shower Attachment With Shampoo Dispenser (Int. Cl. 21).

SN 363,588. Well Service, Inc., Charleston, W. Va. Filed June 24, 1970.

SAFLO

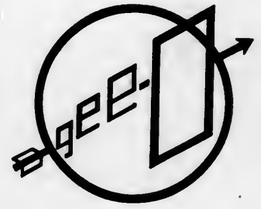
For Equipment Utilized in Cementing Wells—Namely, Float Valves and Turbolizers (Int. Cl. 6).
First use Mar. 13, 1970.

SN 364,001. United Industries, Inc., Wichita, Kans. Filed June 29, 1970.

SWIM TIME

For Strainers, Anchor Sockets, Eyes and Flanges, Drains, Vacuum Fittings, Water Inlet Fittings, Spouts, Skimmers, and Valve Manifolds (Int. Cl. 6).
First use on or about May 21, 1969.

SN 365,252. George R. Welling, Paradise, Kans. Filed July 14, 1970.



For Devices Having Springs for Storing Impact Energy for Use With Tow Chains and the Like (Int. Cl. 6).
First use Apr. 2, 1970.

Class 14—Metals and Metal Castings and Forgings

SN 328,279. Diamond Shamrock Corporation, Cleveland, Ohio. Filed May 26, 1969.

MICROZINC

For Zinc Dust (Int. Cl. 6).
First use Mar. 20, 1969.

SN 354,215. Phelps Dodge Copper Products Corporation, New York, N.Y. Filed Mar. 16, 1970.

PDOF

For High Purity Copper, Particularly for Use in Electrical Applications (Int. Cl. 6).
First use on or about Feb. 9, 1970.

SN 360,744. Flynn & Emrich Company, Baltimore, Md. Filed May 25, 1970.

F&E

For Metal Castings (Int. Cl. 6).
First use as early as 1938.

SN 361,261. Avco Corporation, Boston, Mass. Filed June 1, 1970.

AVCO

Owner of Reg. Nos. 831,412, 875,908, and others.
For Strip Steel and Specialty Wires (Int. Cl. 6).
First use at least as early as Feb. 20, 1969.

Class 15 — Oils and Greases

SN 327,471. Capitol Oil & Grease Company, Inc., Laguna Hills, Calif. Filed May 16, 1969.

Quality Means Savings
CAPITOL

INDUSTRA-LUBE

For Lubricating Oils and Greases and Cutting Oils (Int. Cl. 4).
First use May 9, 1969.

SN 339,236. Secrest Allied Services, Inc., Thomasville, Ga. Filed Sept. 29, 1969.

TOUGH REDHEAD BRAND

No claim is made to the word "Brand" apart from the mark as shown.
For Chain Saw Mixing Oil (Int. Cl. 4).
First use Oct. 1, 1968.

Class 16 — Protective and Decorative Coatings

SN 332,874. Velvet Shield, Inc., Buffalo, N.Y. Filed July 17, 1969.

VELVET SHIELD

The word "Velvet" is disclaimed apart from the mark as shown.
For Flocking Compound Which May Be Applied to Wood, Paper, Concrete, Brick, Iron, Steel, Aluminum, Cloth, Fiberboard, Drywall and the Like and for Covering Interior Dry walls, Cellar Walls, Patios, Exterior Building Trim, Cement Block Walls and the Like (Int. Cl. 2).
First use Feb. 1, 1969.

SN 336,615. The Sherwin-Williams Company, Cleveland, Ohio. Filed Aug. 28, 1969.

KEMFAST

For Baking Enamel and Flatting Base (Int. Cl. 2).
First use Dec. 31, 1950.

Class 18 — Medicines and Pharmaceutical Preparations

SN 307,158. Les Laboratoires Servier, Orleans, France. Filed Sept. 12, 1968.

LES LABORATOIRES SERVIER

Applicant disclaims any rights in the words "Les" and "Laboratoires" apart from their use with the word "Servier" in the mark. Owner of French Reg. No. 2,856, dated July 19, 1965 (Orleans); Natl. Inst. No. 259,040.
For Antibiotics, Coronary Vasodilators, Hypotensive Agents, Cardiovascular Agents, Vitamin Preparations, Dermatological Preparations, Anti-Inflammatory Preparations, Anorexic Preparations, Urinary Bactericides, Analgesic Preparations, Myocardic Preparations, Anti-Diabetic Preparations, Asthmatic Preparations, Hormone and Steroid Preparations, and Female Hygienic Products (Int. Cl. 5).
First use Aug. 5, 1963; in commerce Aug. 5, 1963.

SN 309,219. Amedco, Inc., North Miami, Fla. Filed Oct. 9, 1968.

TUF PAD

For Compositions for External Application to the Feet of Dogs for Toughening and Healing the Pads Thereof (Int. Cl. 5).
First use at least as early as Sept. 1, 1967.

SN 325,544. Carter-Wallace, Inc., New York, N.Y. Filed Apr. 25, 1969.

WILLPOWER

For Lozenges for Use as a Smoking Deterrent (Int. Cl. 5).
First use Apr. 17, 1969.

SN 339,756. Thompson Medical Company, Inc., New York, N.Y. Filed Oct. 3, 1969.

Liqui Sleep

For Pharmaceutical Preparation Designed as Aid to Sleep (Int. Cl. 5).
First use Sept. 17, 1969.

SN 346,586. Vitamins Limited, London, England. Filed Dec. 18, 1969.

PREGNAVITE

Owner of British Reg. No. 572,774, dated Nov. 3, 1936.
For Medicinal Preparation for Use in Supplementing the Diet of Women During Pregnancy and Lactation With Certain Mineral and Vitamin Elements of Which There May Be a Deficiency in the Normal Diet (Int. Cl. 5).

SN 346,929. S. H. Grossman Pharmacist, Inc., Philadelphia, Pa. Filed Dec. 22, 1969.

MOVEEZ

For Relief and Prevention of Constipation (Int. Cl. 5).
First use Jan. 20, 1964.

SN 353,107. The Upjohn Company, Kalamazoo, Mich. Filed Mar. 4, 1970.

BRYTIN

Owner of Reg. No. 810,075.
For Medicated Skin Preparation for the Treatment of Acne (Int. Cl. 5).
First use Nov. 17, 1969.

SN 353,336. E. R. Squibb & Sons, Inc., New York, N.Y. Filed Mar. 6, 1970.

ORTICALM

For Preparation To Prevent Aortic Rupture in Turkeys, Tranquilizer for Chickens and Turkeys (Int. Cl. 5).
First use Nov. 11, 1969.

SN 353,865. Evsco Pharmaceutical Corp., Oceanside, N.Y. Filed Mar. 12, 1970.

STEROPLEX

For Ophthalmic Pharmaceutical Preparation for Veterinary Use (Int. Cl. 5).
First use Feb. 26, 1970.

SN 353,944. Witcher's Crafts, Inc., Monroe, Ga. Filed Mar. 12, 1970.

WITCHER'S BREW

For Animal Stock Powder To Stimulate Appetite (Int. Cl. 5).
First use Dec. 10, 1969.

SN 364,352. The Upjohn Company, Kalamazoo, Mich. Filed July 6, 1970.

FRONT RUNNER

For Equine Nutritional Supplement Containing Vitamins and Minerals (Int. Cl. 5).
First use Feb. 20, 1970.

SN 364,972. American Home Products Corporation, New York, N.Y. Filed July 13, 1970.

CĪDAMON

For Fungicidal Preparation for Vaginal Use (Int. Cl. 5).
First use June 26, 1970.

SN 364,975. American Home Products Corporation, New York, N.Y. Filed July 13, 1970.

CĪDEMON

For Fungicidal Preparation for Vaginal Use (Int. Cl. 5).
First use June 26, 1970.

SN 369,553. The Dow Chemical Company, Midland, Mich. Filed Sept. 1, 1970.

CORUTOL

Owner of Reg. No. 538,059.
For Cardiovascular Pharmaceutical (Int. Cl. 5).
First use Aug. 7, 1970.

SN 369,554. The Dow Chemical Company, Midland, Mich. Filed Sept. 1, 1970.

RUTOL

Owner of Reg. No. 538,059.
For Cardiovascular Pharmaceutical (Int. Cl. 5).
First use Feb. 23, 1948.

SN 369,643. Ralston Purina Company, St. Louis, Mo. Filed Sept. 2, 1970.

LIVESTOCK-PLUS

For Vitamin Supplement for Animals (Int. Cl. 5).
First use January 1970.

SN 370,513. Marion Laboratories, Inc., Kansas City, Mo. Filed Sept. 14, 1970.

FOAMTAB

For Antacid Tablet (Int. Cl. 5).
First use Sept. 2, 1970.

SN 370,677. Ralston Purina Company, St. Louis, Mo. Filed Sept. 15, 1970.

DAIRY PHOS

For Mineral Supplement for Dairy Cattle (Int. Cl. 5).
First use at least as early as September 1969.

Class 20 — Linoleum and Oiled Cloth

SN 362,988. Armstrong Cork Company, Lancaster, Pa. Filed June 18, 1970.

PLACE 'N PRESS

For Resilient Hard Surface Type Covering for Floors, Walls, and Other Surfaces (Int. Cl. 27).
First use May 21, 1969.

Class 21 — Electrical Apparatus, Machines, and Supplies

SN 330,964. Tolerie Dans l'Industrie Moderne, Montreuil Sous Bois, France. Filed June 25, 1969.

TIM

Priority claimed under Sec. 44(d) on French Reg. No. 759,567, dated Mar. 11, 1969.
For Industrial Sheet-Metal Goods, More Specifically Metallic Control Panels and Casing of Electrical Equipment (Int. Cl. 6).

SN 335,086. United Industries, Inc., Wichita, Kans. Filed Aug. 11, 1969.

SWIM TIME

For Under Water Lights, Flood Lights, Under Water Speakers, and Fittings and Fixtures Therefor (Int. Cls. 9 and 11).
First use on or about May 31, 1969.

SN 355,884. Keystone Consolidated Industries, Inc., Peoria, Ill. Filed Apr. 3, 1970.

ECONO TRADING

For Magnetic Catches (Int. Cl. 6).
First use Jan. 26, 1970.

Class 22 — Games, Toys, and Sporting Goods

SN 318,568. Operation Bootstrap, Inc., Los Angeles, Calif. Filed Feb. 6, 1969.

BABY NANCY

For Dolls, Doll Clothing, and Doll Accessories (Int. Cl. 28).
First use Sept. 1, 1968.

SN 341,700. Schildkroet A.G. vorm. Rheinische Gummi- und Celluloid-Fabrik, Mannheim-Neckarau, Germany. Filed Oct. 24, 1969.

TORTULIT

Owner of German Reg. No. 855,401, dated July 19, 1967.
For Cast and Extruded Parts From or in Combination With Synthetic Materials as Semi-Finished Products; Synthetic Materials in the Form of Sheets, Foils, Bars, Tubes, Granulates, Powders, and Profiles (Int. Cls. 1 and 17).

SN 344,023. Spectrum Game Products, Inc., Yonkers, N.Y. Filed Nov. 19, 1969.

SPECTRUM 5

For Equipment (or Apparatus) Sold as a Unit for Playing a Card Game (Int. Cl. 28).
First use Oct. 28, 1969.

SN 344,358. The Firestone Tire & Rubber Company, Akron, Ohio. Filed Nov. 24, 1969.

BANTAM

For Lightweight Single Occupancy Camping Tents (Int. Cl. 22).
First use Oct. 31, 1969.

SN 349,618. The General Tire & Rubber Company, Akron, Ohio. Filed Jan. 26, 1970.

GOALMAKER

For Soccer-Kick Balls, Tether Ball and Sets, and Volley Balls (Int. Cl. 28).
First use Feb. 4, 1965.

SN 349,667. Maxwell Manufacturing Co., Vancouver, Wash. Filed Jan. 26, 1970.

APOLLO

For Fishing Lures (Int. Cl. 28).
First use August 1968.

SN 349,779. R. T. Martin, d.b.a. Marty's Lures, Wichita, Kans. Filed Jan. 27, 1970.

LIGHTNIN'-BUG

For Fishing Lures (Int. Cl. 28).
First use on or about Dec. 10, 1969.

SN 349,994. PGP Golf Products, Costa Mesa, Calif. Filed Jan. 29, 1970.

ALUMI-LITE

For Golf Clubs (Int. Cl. 28).
First use January 1967.

SN 349,995. PGP Golf Products, Costa Mesa, Calif. Filed Jan. 29, 1970.

PRO-CISION

For Golf Clubs (Int. Cl. 28).
First use January 1967.

SN 350,244. Electric Reel Corporation of America, Inc., White Bear Lake, Minn. Filed Feb. 2, 1970.

ERCOA

For Sporting Goods, Particularly Fishing Rods and Reels (Int. Cl. 28).
First use about Jan. 20, 1969.

SN 350,245. Electric Reel Corporation of America, Inc., White Bear Lake, Minn. Filed Feb. 2, 1970.

ERCOA

For Sporting Goods, Particularly Fishing Rods and Reels (Int. Cl. 28).
First use about Jan. 20, 1969.

SN 363,802. Rudy De Lara, d.b.a. Don Galian Co. of California, Los Angeles, Calif. Filed June 29, 1970.

MOON JOGGER

Applicant disclaims the word "Jogger" apart from the mark as shown.
For Rollable Toy for Use While Running or Jogging (Int. Cl. 28).
First use June 19, 1970.

SN 371,674. Mattel, Inc., Hawthorne, Calif. Filed Sept. 25, 1970.

WILD GOOF CHASE

For Toy Automobile Racing Set (Int. Cl. 28).
First use Aug. 19, 1970.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

SN 335,088. United Industries, Inc., Wichita, Kans. Filed Aug. 11, 1969.

SWIM TIME

For Pumps, Filter and Pump Combinations, Pool Maintenance Tools and Machines, Chlorinators, and Jet and Suction Type Vacuum Cleaning Equipment (Int. Cl. 7).
First use May 13, 1969.

Class 24 — Laundry Appliances and Machines

SN 365,209. Bermil Industries Corporation, Hempstead, N.Y. Filed July 14, 1970.

DRAPE-O-MATIC

For Washing Machines (Int. Cl. 7).
First use on or about Sept. 15, 1966.

Class 25 — Locks and Safes

SN 370,193. Zipf Lock Company, Columbus, Ohio. Filed Sept. 8, 1970.

ZIP-PINS

Owner of Reg. No. 806,925.
For Lock Tumbler Pins (Int. Cl. 25).
First use 1961.

Class 29 — Brooms, Brushes, and Dusters

SN 364,831. Thomas Industries Inc., Louisville, Ky. Filed July 9, 1970.

Owner of Reg. Nos. 647,394, 752,104, and others.
For Paint and Varnish Brushes, Paint Rollers, Paint Roller Frames, and Paint Roller Trays (Int. Cl. 16).
First use in or about July 1966.

SN 365,973. Thomas Industries Inc., Louisville, Ky. Filed July 22, 1970.

TRI-LON

For Paint and Varnish Brushes (Int. Cl. 16).
First use June 1970.

Class 30 — Crockery, Earthenware, and Porcelain

SN 346,589. American Can Company, Greenwich, Conn. Filed Dec. 18, 1969.

MIRAWARE

For Ceramic Cups, Dishes, Plates, and Bowls (Int. Cl. 21).
First use Aug. 14, 1969.

Class 32 — Furniture and Upholstery

SN 354,874. National Mattress Company, Huntington, W. Va. Filed Mar. 23, 1970.

Classique

The lining which appears on the mark is a feature thereof and is not intended to represent a color.
For Mattresses and Boxsprings (Int. Cl. 20).
First use Jan. 16, 1966.

SN 354,988. Whitecraft Industries, Inc., Miami, Fla. Filed Mar. 24, 1970.

dura-tan

For Bedroom, Living Room, Dining Room, Porch, Patio, and Outdoor Furniture Made of Plastic (Int. Cl. 20).
First use Jan. 11, 1970.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

SN 339,369. T.G. & Y. Stores Company, Oklahoma City, Okla. Filed Sept. 30, 1969.

GOLDEN T

For Garden Hoses and Bobbin Belts (Int. Cls. 7 and 17).
First use Nov. 27, 1967.

Class 37—Paper and Stationery

SN 331,462. Leon J. Wirth, d.b.a. Wirth Co. Inc., Oakland, Calif. Filed June 30, 1969.

DAB

For Correction Fluid (Int. Cl. 16).
First use May 21, 1969.

SN 336,983. L. & C. Hardtmuth, Inc., Bloomsbury, N.J. Filed Sept. 4, 1969.

"KOLOR-KODED"

Owner of Reg. No. 76,742.
For Pencils (Int. Cl. 16).
First use Jan. 10, 1963.

SN 337,622. Sports-Land Corporation, San Francisco, Calif. Filed Sept. 11, 1969.

SPORTS-LAND

For Nylon Tipped Pens and Markers (Int. Cl. 16).
First use on or about Feb. 1, 1969.

Class 38—Prints and Publications

SN 310,645. 3M Credit Plan, Inc., Phoenix, Ariz. Filed Oct. 28, 1968.

Multiscrip

For Scrip (Int. Cl. 16).
First use Sept. 7, 1968.

SN 337,254. Dana S. Beane, Jr., Gilford, N.H. Filed Sept. 8, 1969.

COMPUDISC

For Printed Digital Computer Cards (Int. Cl. 16).
First use July 9, 1969.

SN 339,142. Corporación Gràfica de Puerto Rico, San Juan, Puerto Rico. Filed Sept. 29, 1969.

Studio Gallery

For Art Works—Namely, Oil Paintings, Water Color Paintings, Art Prints, and Reproductions Thereof (Int. Cl. 16).
First use Feb. 19, 1969.

SN 340,575. Meredith Corporation, Des Moines, Iowa. Filed Oct. 13, 1969.

NEW CENTURY

Owner of Reg. Nos. 252,023, 255,869, and 255,899.
For Educational Printed Materials—Namely, Instruction Books, Workbooks, Teachers' Manuals, and Response Worksheets; and Visual Recordings—Namely, Film Strips and Slides (Int. Cl. 16).
First use Sept. 24, 1927.

SN 344,424. Popular Science Publishing Company, Inc., New York, N.Y. Filed Nov. 24, 1969.

POPULAR SCIENCE BOOK CLUB

Owner of Reg. No. 818,887.
For Books (Int. Cl. 16).
First use Sept. 1, 1964.

SN 348,746. Acme-Cleveland Corporation, Cleveland, Ohio. Filed Jan. 16, 1970.

For Business Publications—Namely, Reports, Catalogs, Schedules of Prices and Goods Issued Separately and in Catalogs, Brochures, Pamphlets, Bulletins, and Leaflets, Released From Time to Time (Int. Cl. 16).
First use on or about Dec. 10, 1969.

SN 351,551. Simulation Associates Incorporated, Los Angeles, Calif. Filed Feb. 16, 1970.

SIMSCRIPT II PLUS

For the purposes of registration, no claim is made to the exclusive right to use the term "Simscript," but the applicant waives none of its common law rights herein.
For Computer Programs (Int. Cl. 16).
First use Jan. 28, 1970.

SN 356,165. Universal Publishing & Distributing Corporation, New York, N.Y. Filed Apr. 6, 1970.

SKI BUSINESS

For Magazine Containing Printed Literary and Artistic Works (Int. Cl. 16).
First use on or about Jan. 1, 1968; at least as early as Mar. 1, 1961, in another form.

SN 362,540. McGraw-Hill, Inc., New York, N.Y. Filed June 12, 1970.

Technology Alert from Chemical Engineering

Owner of Reg. No. 532,465.
For Newsletter (Int. Cl. 16).
First use Apr. 1, 1970.

SN 370,034. Taurus Creations Inc., Natick, Mass. Filed Sept. 8, 1970.

ASTRA-CALS

For Self-Sticking Stickers With Zodiac Signs Thereon (Int. Cl. 16).
First use at least as early as Nov. 6, 1969.

Class 39—Clothing

SN 338,565. Hanes Corporation, Winston-Salem, N.C. Filed Sept. 22, 1969.

CHEVRONECK

For Men's Shirts (Int. Cl. 25).
First use Aug. 27, 1969.

SN 345,142. Dylex Diversified Ltd., Toronto, Ontario, Canada. Filed Dec. 3, 1969.

PAT MCDONAGH

For Ladies' Suits, Overcoats, Topcoats, Raincoats, Jackets, Vests, Trousers, Slacks, Shorts, Shirts, Neckwear, Pajamas, Sweaters, Hosiery, Gloves, Scarves, Bathing Suits, Pants, Brassieres, Dressing Gowns, Belts, Garters, Buckles, Handkerchiefs, Hats, Caps, Shoes, Skirts, and Dresses (Int. Cl. 25).
First use May 1, 1969; in commerce May 7, 1969.

Class 44—Dental, Medical, and Surgical Appliances

SN 315,204. CMP Industries, Inc., Albany, N.Y. Filed Dec. 26, 1968.

MAGICOTE

For Dental Supplies—Namely, a Protective Coating and Separator for Use When Molding Plastic in Dental Stone or Plaster Molds (Int. Cl. 5).
First use October 1937.

SN 322,510. Wolff Industries, San Marino, Calif. Filed Mar. 21, 1969.

TUTOR

For Diagnostic Systems for Dynamically Exhibiting Various Physical Conditions That Are Frequently Manifest by Visual Patterns—Namely, Electronic Units for Presenting Heart Conditions as Recorded on Cartridges for Use Therein (Int. Cl. 10).
First use on or about Aug. 18, 1966.

SN 355,822. Sonny-ke's Prosthesis Arm Socket and Kehope Tools, Honolulu, Hawaii. Filed Apr. 2, 1970.

THE STAR OF BETHLEHEM

3 R P J KE D D

For Tool Mounting Prosthetic Device and Special Tools for Arm Handicaps (Int. Cl. 10).
First use May 9, 1969.

Class 45—Soft Drinks and Carbonated Waters

SN 338,560. Feigenson, Incorporated, d.b.a. Faygo Beverages, Inc., Detroit, Mich. Filed Sept. 22, 1969.

FaygoBräu

Owner of Reg. No. 779,118.
For Soft Drinks (Int. Cl. 32).
First use Sept. 11, 1969.

SN 361,917. The Coca-Cola Company, Atlanta, Ga. Filed June 8, 1970.



Applicant disclaims the representation of the grapes per se apart from the mark as shown.
For Canned Grape Flavored Drink Containing Water (Int. Cl. 32).
First use Apr. 30, 1970.

Class 46—Foods and Ingredients of Foods

SN 246,991. American Home Products Corporation, New York, N.Y. Filed June 1, 1966.

ZOOGHETTI

For Canned Prepared Macaroni (Int. Cl. 30).
First use May 4, 1966.

SN 287,301. Kyowa Hakko Kogyo Co., Ltd., Chiyoda-ku, Tokyo, Japan. Filed Dec. 20, 1967.



Priority claimed under Sec. 44(d) on Japanese application filed Aug. 30, 1967; Reg. No. 819,860, dated June 5, 1969.
For Food Additives Not of a Pharmaceutical Nature, and Seasoning for Foods—Namely, Mono Sodium Glutamate, Nucleic Acids, Oyster Extract, Amino Acids Mixture and Hydrolyzed Plant Protein (Int. Cl. 30).

SN 290,811. Aktiengesellschaft Chocolat Tobler, Berne, Switzerland. Filed Feb. 12, 1968.



For Chocolate Candy (Int. Cl. 30).
First use March 1951; in commerce April 1951; at least 1914, in a different form.

SN 300,330. National Oats Company, Inc., Cedar Rapids, Iowa, assignee of The Col-R-Corn Corporation, Wall Lake, Iowa. Filed June 13, 1968.

COL-R-CORN

The word "Corn" is disclaimed apart from the mark as shown.
For Unpopped Popcorn (Int. Cl. 31).
First use Nov. 1, 1950.

SN 303,935. Takeda Chemical Industries, Ltd., Higashi-ku, Osaka, Japan. Filed July 30, 1968.

いの一番

The English equivalent of the mark is "first and foremost."
Owner of Japanese Reg. No. 645,182, dated June 19, 1964.
For Flavor Enhancers for Foods (Int. Cl. 30).

SN 317,814. Borden, Inc., New York, N.Y. Filed Jan. 29, 1969.

POLAR Royal

For Frozen Confection (Int. Cl. 30).
First use on or before Nov. 25, 1968.

SN 324,383. International Dairy Queen, Inc., Minneapolis, Minn., assignee of American Dairy Queen Corporation, Minneapolis, Minn. Filed Apr. 14, 1969.



The English equivalent of "Spero Meliora" is "look or hope for something good."
For Products Carried Under the Emblem of House of Laird Label—Namely, Bar-B-Q Sauce and Seafood Cocktail Sauce; Pickles; Catsup; Sweet Relish; Mustard; Salad Dressing; Canned Beef Chunks in Gravy; Canned Sliced Beef in Gravy; Toppings—Namely, Fruit and Flavored Syrups; Flavored Syrups for Food Purposes; Canned Pineapple, Cherries and Marshmallow; and Flavors for Making Milk Shakes, Such as Kalva Coating and Banana Shake Flavors (Int. Cls. 29 and 30).
First use since at least 1958.

SN 330,134. Hickory Mountain Farms, Inc., Siler City, N.C. Filed June 16, 1969.

Sugar Creek

For Fresh Cured Ham (Int. Cl. 29).
First use May 1, 1969.

SN 330,499. Althea Ruth L. Goldberg, Dieteria, Forest Hills, N.Y. Filed June 19, 1969.

DIETERIA

For Frozen Prepared Foods Made of Meats, Fish and Vegetables With No Fats or Oils Added (Int. Cl. 5).
First use May 27, 1969.

SN 330,517. Langis Foods Limited, Burnaby, British Columbia, Canada. Filed June 19, 1969.

VEGETABLE-IN-A-MUG

Priority claimed under Sec. 44(d) on Canadian application filed Dec. 23, 1968; Reg. No. 166,723, dated Dec. 5, 1969. Applicant disclaims any exclusive use of the word "Vegetable" apart from the mark as shown. Owner of U.S. Reg. Nos. 750,955, 768,453, and 771,182.
For Dehydrated Base for Soups and Hot Food Drinks (Int. Cl. 29).

SN 330,518. Langis Foods Limited, Burnaby, British Columbia, Canada. Filed June 19, 1969.

FRENCH-ONION-IN-A-MUG

Priority claimed under Sec. 44(d) on Canadian application filed Dec. 23, 1968; Reg. No. 166,724, dated Dec. 5, 1969. Applicant disclaims any exclusive use of the words "French" and "Onion" apart from the mark as shown. Owner of U.S. Reg. Nos. 750,955, 768,453, and 771,182.
For Dehydrated Base for Soups and Hot Food Drinks (Int. Cl. 29).

SN 330,744. Happiness Is Inc., Chicago, Ill. Filed June 23, 1969.

HAPPINESS IS

For Ice Cream and Candies (Int. Cl. 30).
First use Feb. 20, 1969.

SN 331,467. Sea Host, Inc., New York, N.Y. Filed May 15, 1969.

Sea host

Owner of Reg. No. 870,618.
For Frozen Sea Food (Int. Cl. 29).
First use Mar. 21, 1969.

SN 335,966. Flavor Corporation of America, Northbrook, Ill. Filed Aug. 22, 1969.

ENSILA

For Silage Preservative (Int. Cl. 1).
First use Aug. 7, 1969.

SN 336,946. National Can Corporation, Chicago, Ill. Filed Sept. 3, 1969.



Applicant claims the exclusive right to use the outline of the map of the United States as part of its mark, but not otherwise. Owner of Reg. No. 654,598.
For Canned Fruits and Vegetables (Int. Cl. 29).
First use June 1969.

SN 337,842. Varallo Foods, Inc., Nashville, Tenn. Filed Sept. 12, 1969.

VARALLO

For Pork With Barbecue Sauce, Beef With Berbecue Sauce, Hot Dog Sauce and Chili With or Without Beans (Int. Cl. 29).
First use Sept. 15, 1948.

SN 338,258. National Oats Company, Inc., Cedar Rapids, Iowa. Filed Sept. 18, 1969.

STIR N' EAT

For Breakfast Cereals (Int. Cl. 30).
First use June 20, 1969.

SN 339,443. Mead Johnson & Company, Evansville, Ind. Filed Oct. 1, 1969.

LESS THAN

For Snack Chips of a Corn Meal Nature (Int. Cl. 29).
First use Sept. 5, 1969.

SN 339,578. Mead Johnson & Company, Evansville, Ind. Filed Oct. 2, 1969.

SKINNY PUFFS

Applicant disclaims the exclusive right to the word "Puffs" apart from the mark as shown. Owner of Reg. No. 867,662.
For Snack Chips of a Corn Meal Nature (Int. Cl. 29).
First use Sept. 5, 1969.

SN 339,580. Mead Johnson & Company, Evansville, Ind. Filed Oct. 2, 1969.

SKINNY CHIPS

Applicant disclaims the exclusive right to the word "Chips" apart from the mark as shown. Owner of Reg. No. 867,662.
For Snack Chips of a Corn Meal Nature (Int. Cl. 29).
First use Sept. 5, 1969.

SN 339,731. Mead Johnson & Company, Evansville, Ind. Filed Oct. 3, 1969.

SKINNY

Owner of Reg. No. 867,662.
For Food Products—Namely, Snack Chips of a Corn Meal Nature, Onion Dip Mixes, and Candy (Int. Cls. 29 and 30).
First use Sept. 17, 1969.

SN 340,962. Universal Foods Corporation, Milwaukee, Wis. Filed Oct. 16, 1969.

UNIVERSAL FOODS

Applicant disclaims the word "Foods" apart from the mark as shown, but does not waive any common law rights therein. Owner of Reg. Nos. 647,943, 763,227, and 876,647.
For Yeasts for Food Purposes, Brewing, Distilling and Wine Making; Baking Powder; Malt in Syrup and Powdered Form for Food Purposes; a Blend of Starch and Sodium Acid Phosphate for Use as an Ingredient in Bakery Products; Tablets Containing Thiamin Hydrochloride, Riboflavin, Niacin and Iron for Use as an Ingredient (Enrichener) in Bakery Products; Dry Cake and Pastry Mixes; Anti-Oxidants for Use With Food Products; Cheese; Soup and Gravy Bases; an Acidifying Salt Mixture for Use in the Production of Bakery Products; Amylease and Protease Fungal Enzyme Tablets for Use as an Ingredient in Bakery Products; Barbecue Sauce; Paprika; Dough Improver in Powdered Form Consisting of Mineral Salts and Cereal Filler; Emulsifier for Cakes and Sweet Doughs; Gelatin Desserts; Liquid and Dry Meat Tenderizers; Yeast Nutrients Used as an Ingredient in Bakery Products (Int. Cls. 1, 5, 29, and 30).
First use on or about June 1, 1967, on cheese.

SN 341,002. A/S De-No-Fa Og Lilleborg Fabriker, Oslo, Norway. Filed Oct. 17, 1969.

SCANRYE

For Crisp Bread and Crackers (Int. Cl. 30).
First use Oct. 8, 1969; in commerce Oct. 8, 1969.

SN 341,164. Kraftco Corporation, Chicago, Ill. Filed Oct. 20, 1969.

MICRO-DINE

For Frozen Entrees—Namely, Prepared Meat Products, and Prepared Alimentary Pastes, Both Meatless and Meat-Containing; and Frozen Desserts—Namely, Pies (Int. Cls. 29 and 30).
First use July 11, 1969.

SN 341,251. ARB Productions, Inc., d.b.a. A.R.B. Bird Watching Society, Baltimore, Md. Filed Oct. 21, 1969.

BIRD WATCHING SOCIETY

Owner of Reg. No. 816,423.
For Wild Bird Feed (Int. Cl. 31).
First use Nov. 10, 1967.

SN 341,252. ARB Productions, Inc., d.b.a. A.R.B. Bird Watching Society, Baltimore, Md. Filed Oct. 21, 1969.



Owner of Reg. No. 816,423.
For Wild Bird Feed (Int. Cl. 31).
First use Nov. 10, 1967.

SN 341,678. National Hospital Foods, Inc., Northfield, Ill. Filed Oct. 24, 1969.

MEDI-DIET

For Frozen Foods—Namely, Beef Stew, Beef Loaf, Beef Tips, Sliced Pork, Tuna and Noodles, Turkey Tetrazzini, Chicken and Vegetables, Chicken and Rice, Poached Cod, Veal Cutlet, Beef Steak, Beets, Carrots, Spinach, Green Beans, Wax Beans, and Peas (Int. Cl. 29).
First use Apr. 14, 1969, on frozen peas.

SN 342,395. Bemis Enterprises, Inc., Denver, Colo. Filed Nov. 3, 1969.

TOP ROUNDER

For Hamburger Sandwiches (Int. Cl. 29).
First use Sept. 10, 1969.

SN 343,412. Michigan Cottage Cheese Inc., Kalamazoo, Mich. Filed Nov. 13, 1969.

LIPPY LEMON & the WISE GUYS

For Refrigerated Gelatine Salad Having a Flavor of Lemon (Int. Cl. 31).
First use October 1967.

SN 347,114. National Can Corporation, Chicago, Ill. Filed Dec. 24, 1969.



Applicant claims the exclusive right to use the outline of the map of the United States as part of its mark, but not otherwise. Owner of Reg. No. 654,598.
For Canned Fruits and Vegetables (Int. Cl. 29).
First use July 1969.

SN 347,115. National Can Corporation, Chicago, Ill. Filed Dec. 24, 1969.

NCC

Owner of Reg. No. 654,598.
For Canned Fruits and Vegetables (Int. Cl. 29).
First use July 1969.

SN 347,116. National Can Corporation, Chicago, Ill. Filed Dec. 24, 1969.

NC

Owner of Reg. No. 654,598.
For Canned Fruits and Vegetables (Int. Cl. 29).
First use June 1969.

SN 347,384. Aunt Millie's Sauces, Inc., New York, N.Y. Filed Dec. 30, 1969.

LA PREMA

For Spaghetti Sauce (Int. Cl. 30).
First use Oct. 15, 1969.

SN 347,446. Williams & Woods Ltd., Dublin, Ireland. Filed Dec. 30, 1969.



Applicant disclaims the terms "Coffee," "Bar" and "Whiskey Flavoured" separate and apart from the mark as shown. The stippling in the drawing indicates shading only. Owner of U.S. Reg. Nos. 730,193, 758,515, and others.
For Chocolate Bars Flavoured With Coffee and Irish Whiskey (Int. Cl. 30).
First use Jan. 4, 1960; in commerce 1960.

SN 349,177. Ezaki Glico Company, Limited, Nishiyodogawa-ku, Osaka, Japan. Filed Jan. 21, 1970.



Glico

There is no English translation of the Japanese characters, which in combination are a coined word, and read on the figure from top to bottom "GU RI KO," or transliterated into English "Glico."
For Biscuits; Crackers; Cookies; Pastries; Chewing Gum; Corn Cup (Made From Corn Flour and Used as an Edible Container for Ice Cream); Candy; Cake; Doughnuts; Water Ice; Sherbert; Ice Cream; Jelly Bean Cakes (Special Type Japanese Food Somewhat Like a Candy and a Baked Good, But Being Neither); Jellied Starch Used for Food Purposes; and Fresh and Preserved (Such as by Freezing and Canning); Waffles; and Pancakes (Int. Cl. 30).
First use at least by Dec. 31, 1953; in commerce at least by June 30, 1968.

SN 350,113. National Biscuit Company, New York, N.Y. Filed Jan. 30, 1970.

THE CRACKER WITH CRUNCH

Applicant disclaims the word "Cracker" apart from the mark as shown. Owner of Reg. No. 884,741.
For Crackers (Int. Cl. 30).
First use Dec. 26, 1969.

SN 350,913. Houston Foods, Inc., Chicago, Ill. Filed Feb. 9, 1970.

HOLIDAY OF FOODS

Applicant disclaims the word "Foods" apart from the mark as shown.
For Gourmet Gift Package of Assorted Individually Wrapped Food Products—Namely, Cheese, Fish, Salami, Cocktail Onions, Crackers, Bread, Candies, and Jelly (Int. Cls. 29 and 30).
First use September 1967.

SN 352,863. Geneva B. Rose and Roy W. Rose (joint owners), d.b.a. The G & R Rose Brand, El Serrito, Calif. Filed Mar. 2, 1970.



The word "Brand" is disclaimed apart from the mark as shown.
For Edible Seeds—Namely, Alfalfa, Chia, Flax, Peanuts, Pinto Beans, Poppy, Sesame and Soy Beans; Grains—Namely, Buckwheat, Oats and Wheat; Meal—Namely, Corn, Millet, Sesame and Sunflower; Flour—Namely, Barley, Bean, Buckwheat, Carob, Potato, Rice, Rice Polish, Rye, Soy and Wheat; Shelled Nuts—Namely, Almonds, Brazil Nuts, Cashews, Coconuts, Filberts, Pecans, Walnuts and Mixtures of the Foregoing; Oils and Butters—Namely, Cooking Oil, Corn Oil, Olive Oil, Peanut Oil, Safflower Oil, Sesame Oil, Soy Oil, Almond Butter, Cashew Butter, Peanut Butter and Sesame Butter; Fruits (Dried)—Namely, Apricots, Dates, Figs, Peaches, Pears, Pineapple, Prunes and Raisins; Paste—Namely, Macaroni, Noodles and Spaghetti; Candy—Namely, Honey Drops, Licorice Drops and Papaya Drops; Breakfast Food—Namely, a Mixture of Cereals, Nuts, Raisins, etc.; Miscellaneous—Namely, Broth, Cheese, Gelatin, Ginger, Honey, Kelp, Lecithin, Milk Powder, Rosehip Tea, Salt, Sugar and Vinegar (Int. Cls. 29 and 30).
First use September 1962.

SN 354,161. Frazier Soul Foods, Inc., d.b.a. F.S.F. Foods, Inc., Cincinnati, Ohio. Filed Mar. 16, 1970.



For Frozen Soul Foods—Namely, Black-Eyed Peas in Smoky Bacon Sauce, Turnip Greens With Turnips in Smoky Bacon Sauce, Okra and Tomatoes in Bacon Sauce, Candied Sweet Potatoes, Collards in Ham Sauce, White Beans in Ham Sauce (Int. Cl. 29).
First use January 1970.

SN 354,261. Frito-Lay, Inc., Dallas, Tex. Filed Mar. 17, 1970.

FRITOLAY

Owner of Reg. Nos. 306,005 and 876,604.
For Snack Foods—Namely, Corn Chips, Potato Chips and Puffed Corn Snacks (Int. Cl. 29).
First use Oct. 8, 1969.

SN 357,758. Stoll Packing Corp., Bronx, N.Y. Filed Apr. 23, 1970.

PALISADE

For Prepared Meat Products—Namely, Bacon (Int. Cl. 29).
First use March 1966.

SN 357,911. Grandone Inc., Westwood, Mass. Filed Apr. 27, 1970.

GRAND-PHOS

For Food Grade Phosphate Used as, or in, Poultry Feed (Int. Cl. 31).
First use at least as early as June 1, 1968.

SN 358,245. Ocean Garden Products, Inc., San Diego, Calif. Filed Apr. 29, 1970.

WINTER RIPE

For Frozen Strawberries (Int. Cl. 29).
First use Apr. 1, 1970.

SN 358,260. G. L. Webster Company, Inc., Cheriton, Va. Filed Apr. 29, 1970.

Webster's

Owner of Reg. No. 515,065.
For Canned Vegetables—Namely, Sweet Potatoes, Beets, Diced Peppers, White Potatoes, Asparagus, Tomato Puree, and Bottled Tomato Catsup (Int. Cls. 29 and 30).
First use 1920.

SN 358,391. Morton International, Inc., Chicago, Ill. Filed Apr. 30, 1970.

MORTON

Owner of Reg. Nos. 509,883, 890,999, and others.
For Butter Flavored Compound for Use as a Seasoning on Vegetables, Meats, and Other Edibles (Int. Cl. 30).
First use on or about Sept. 17, 1968.

SN 358,616. Shurfine-Central Corporation, Northlake, Ill. Filed May 1, 1970.

SHUR-2

Owner of Reg. Nos. 663,880, 792,332, and others.
For Fresh Milk (Int. Cl. 29).
First use Nov. 24, 1969.

SN 358,777. National Chicle Products Co., Palo Alto, Calif. Filed May 4, 1970.

PETER SZASZ

For Chewing Gum (Int. Cl. 30).
First use June 20, 1969.

SN 359,996. Armour-Dial, Inc., Chicago, Ill. Filed May 18, 1970.

DOGGONE

For Canned Dog Food (Int. Cl. 31).
First use on or prior to Nov. 14, 1969.

SN 360,000. Armour-Dial, Inc., Chicago, Ill. Filed May 18, 1970.

SOUPRIZE

For Canned Dog Food (Int. Cl. 31).
First use on or prior to Apr. 30, 1970.

SN 360,325. Furman Canning Co., Northumberland, Pa. Filed May 20, 1970.

POINT VIEW

For Canned Vegetables (Int. Cl. 29).
First use 1950.

SN 360,326. General Foods Corporation, White Plains, N.Y. Filed May 20, 1970.

GAINES

Owner of Reg. No. 818,354.
For Cat Food (Int. Cl. 31).
First use Aug. 6, 1964.

SN 360,562. Thurman H. Johnson, d.b.a. Hill Country Foods, Goldthwaite, Tex. Filed May 22, 1970.

HILL COUNTRY

For Smoked Turkey (Int. Cl. 29).
First use Nov. 10, 1969.

SN 360,677. Armour-Dial, Inc., Chicago, Ill. Filed May 25, 1970.

MAKINS

For Canned Dog Food (Int. Cl. 31).
First use on or prior to Mar. 26, 1970.

SN 360,679. Armour-Dial, Inc., Chicago, Ill. Filed May 25, 1970.

SANIDOG

For Canned Dog Food (Int. Cl. 31).
First use on or prior to May 12, 1970.

SN 360,680. Armour-Dial, Inc., Chicago, Ill. Filed May 25, 1970.

GLOMLETTE

For Canned Dog Food (Int. Cl. 31).
First use on or prior to May 12, 1970.

SN 360,907. A. E. Staley Manufacturing Company, Decatur, Ill. Filed May 26, 1970.

MIRA-TEX

For Textured Vegetable Protein (Int. Cl. 5).
First use May 8, 1970.

SN 360,908. A. E. Staley Manufacturing Company, Decatur, Ill. Filed May 26, 1970.



For Textured Vegetable Protein (Int. Cl. 5).
First use May 8, 1970.

SN 361,008. Seneca Foods Corporation, Dundee, N.Y. Filed May 27, 1970.

COFFEE BREAK

For Non-Dairy Liquid for Use as Coffee Lightener and With Other Foods (Int. Cl. 29).
First use May 12, 1964.

SN 361,119. General Foods Corporation, White Plains, N.Y. Filed May 28, 1970.

CYCLE

For Dog Food (Int. Cl. 31).
First use Apr. 30, 1970.

SN 361,912. Avoset Food Corporation, Oakland, Calif. Filed June 8, 1970.

QWIP

Owner of Reg. Nos. 538,676, 711,378, and others.
For Vegetable Fat-Based Product To Be Whipped and Used as a Food Topping (Int. Cl. 29).
First use Feb. 4, 1969.

SN 361,940. Missouri Hickory Barbecue Corporation, South El Monte, Calif. Filed June 8, 1970.

Don Miguel's

For Taco Sauce (Int. Cl. 30).
First use Feb. 19, 1970.

SN 362,196. General Mills, Inc., Minneapolis, Minn. Filed June 10, 1970.

JUCI-100

For Orange Juice Food Drink Concentrate (Int. Cl. 32).
First use on or about May 20, 1970.

SN 362,322. Kai Chan Frozen Foods, Inc., Sandusky, Ohio. Filed June 11, 1970.

BAMBOO BASKET

For Prepared Chinese Foods—Namely, Frozen Beef Chop Suey, Chicken Chow Mein, Green Pepper Steak, Egg Rolls, and Ham Fried Rice (Int. Cl. 29).
First use January 1970.

SN 364,203. Ralston Purina Company, St. Louis, Mo. Filed July 2, 1970.

RECEIVING CHOW

Owner of Reg. Nos. 102,843, 781,826, and others.
For Cattle Feed (Int. Cl. 31).
First use May 1, 1970.

SN 370,516. The Quaker Oats Company, Chicago, Ill. Filed Sept. 14, 1970.

KING VITAMAN

Owner of Reg. Nos. 857,596 and 900,414.
For Ready-To-Eat Cereal (Int. Cl. 30).
First use June 16, 1970; Dec. 18, 1969, as to "King Vitaman."

SN 371,160. Live Food Products Co., Burbank, Calif. Filed Sept. 21, 1970.

SANSAL

Owner of Reg. No. 560,680.
For Dietary Substitute for Table Salt (Int. Cl. 5).
First use Mar. 21, 1951.

SN 372,075. General Mills, Inc., Minneapolis, Minn. Filed Sept. 30, 1970.

LUCKY BERRIES

Owner of Reg. Nos. 759,322 and 759,323.
For Ready-To-Eat Breakfast Cereal (Int. Cl. 30).
First use on or about July 17, 1970.

SN 372,077. General Mills, Inc., Minneapolis, Minn. Filed Sept. 30, 1970.

LUCKY'S CLOVERS

Owner of Reg. Nos. 759,322 and 759,323.
For Ready-To-Eat Breakfast Cereal (Int. Cl. 30).
First use on or about July 17, 1970.

SN 372,078. General Mills, Inc., Minneapolis, Minn. Filed Sept. 30, 1970.

LUCKY'S LOOT

Owner of Reg. Nos. 759,322 and 759,323.
For Ready-To-Eat Breakfast Cereal (Int. Cl. 30).
First use on or about July 17, 1970.

Class 47 — Wines

SN 320,664. M. S. Walker, Inc., Boston, Mass. Filed Mar. 3, 1969.

COSTA DEL SOL

"Costa Del Sol" may be translated as "coast of the sun."
For Wines—Namely, Sherries (Int. Cl. 33).
First use about October 1968.

SN 343,103. Etablissements Sardet et Deribaucourt "E.S.E.D.," d.b.a. DOB, Paris-Bercy, France. Filed Nov. 10, 1969.

DOB 1863

Owner of French Reg. No. 513,570, dated Mar. 24, 1963 (Paris); Natl. Inst. No. 209,960.
For Wines (Int. Cl. 33).

Class 49 — Distilled Alcoholic Liquors

SN 347,512. Charles Jacquin et Cie., Inc., d.b.a. Saxony Distillers Co., Philadelphia, Pa. Filed Dec. 31, 1969.

SAXONY

Owner of Reg. No. 773,797.
For Whiskey (Int. Cl. 33).
First use Oct. 31, 1969.

SN 352,968. Manuel Acha, S.R.C., Amurrio (Alava), Spain. Filed Mar. 3, 1970.

KARPY

Owner of Spanish Reg. No. 224,984, dated Jan. 12, 1970.
For Liqueurs (Int. Cl. 33).

SN 360,229. Glenmore Distilleries Company, Louisville, Ky. Filed May 19, 1970.

RON TARA

No claim is made to the word "Ron" (the Spanish word for "rum") apart from the mark as shown.
For Rum (Int. Cl. 33).
First use Mar. 13, 1970.

SN 366,624. MacDonald & Muir Limited, Leith, Scotland. Filed July 30, 1970.

Grand 15

Owner of Reg. No. 694,658.
For Whisky (Int. Cl. 33).
First use May 22, 1970; in commerce May 22, 1970.

Class 51 — Cosmetics and Toilet Preparations

SN 309,683. Laboratoire Lachartre S.A., Paris, France. Filed Oct. 15, 1968.

HÉGOR

Owner of French Reg. No. 483,792, dated Nov. 5, 1959 (Seine); Natl. Inst. No. 133,791; and U.S. Reg. Nos. 736,689 and 736,900.
For Hair Lotions, Hair Conditioners, and Hair Sprays (Int. Cl. 3).

SN 310,197. Avon Products, Inc., New York, N.Y. Filed Oct. 22, 1968.

BRONZE-ON

For Skin Colorant and Foundation Makeup (Int. Cl. 3).
First use Sept. 12, 1968.

SN 313,332. Pharmakon L.U.F. Hobiger-Chemische Fabrik, Vienna, Austria. Filed Nov. 29, 1968.

Lalaqhé

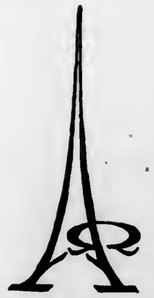
Owner of Austrian Reg. No. 2,026, dated Jan. 7, 1933.
For Permanent Solutions for Hair, Hair Sprays, and Hair Coloring Preparations (Int. Cl. 3).

SN 315,312. Durmin Aktiengesellschaft, Eschen, Liechtenstein. Filed Dec. 27, 1968.

BLU-BAD

The Italian word "Blu" is translated "blue," and in German "Bad" is translated "bath." Owner of Liechtenstein Reg. No. 2,539, dated Feb. 13, 1968.
For Foam Type Bubble Bath (Int. Cl. 3).

SN 317,238. Alega, Incorporated, Houston, Tex., assignee of Jataben, Incorporated, Houston, Tex. Filed Jan. 22, 1969.



The mark consists of the Greek letters "Alpha" and "Omega."
For Cosmetics and Toilet Preparations—Namely, Skin Cleansers, Skin Fresheners, Masques, Skin Lotions, Toning Oils, Eye and Lip Lube, Throat Oil, Moisturizers, Liquid Eyeliners, Eye Shadows, Rouge, Mascara, Lipsticks, Foundation Makeup, Body Powder, Face Powder (Loose), Pressed Powder Compacts, Cologne, and Perfume (Int. Cl. 3).
First use on or about May 17, 1963.

SN 323,005. The Nestle-Lemur Company, New York, N.Y. Filed Mar. 27, 1969.

DESPERADO

For After Shave and Cologne (Int. Cl. 3).
First use Mar. 11, 1969.

SN 328,211. The Wella Corporation, Englewood, N.J. Filed May 23, 1969.

EXTRA CARE

For Hair Conditioners and Hair Setting Lotions (Int. Cl. 3).
First use May 6, 1969.

SN 330,172. Leo E. Mueller, d.b.a. Brimar Company, Audubon, N.J. Filed June 16, 1969.

MAR-TAN

For Suntan Lotions (Int. Cl. 3).
First use July 8, 1968.

SN 330,501. Ray Hayes, Inc., Centerport, N.Y. Filed June 19, 1969.

DECEIVE

For Skin Cream (Int. Cl. 3).
First use on or about May 5, 1969.

SN 334,076. Givaudan Corporation, Clifton, N.J. Filed July 31, 1969.

SILVER BLAZE

For Men's Colognes, Personal Deodorants, After-Shave Lotions, Pre-Shave Lotion, Talcum Powder, Cologne Stick and Body Lotion (Int. Cls. 3 and 5).
First use June 19, 1969.

SN 340,826. Richardson-Merrell Inc., New York, N.Y. Filed Oct. 15, 1969.

IMPACT

For Dentifrice and Oral Rinse (Int. Cl. 3).
First use Aug. 4, 1969.

SN 341,659. Hess Hair Milk Laboratories, Inc., St. Paul, Minn. Filed Oct. 24, 1969.

HAIR MILK

Owner of Reg. Nos. 379,488 and 508,929.
For Hair Tonic (Int. Cl. 3).
First use September 1906.

SN 343,990. Lamour Hair Products, Inc., New York, N.Y. Filed Nov. 19, 1969.

BLACK POWER

For Hair Coloring and Conditioning Preparation (Int. Cl. 3).
First use Oct. 13, 1969.

SN 345,180. Les Parfums de Dana, Inc., New York, N.Y. Filed Dec. 3, 1969.

BRIDAL BOUQUET

For Perfume, Cologne, and Dusting Powder (Int. Cl. 3).
First use Nov. 17, 1969.

SN 345,182. Les Parfums de Dana, Inc., New York, N.Y. Filed Dec. 3, 1969.

BRIDESSENCE

For Perfume, Cologne, and Dusting Powder (Int. Cl. 3).
First use Nov. 17, 1969.

SN 346,192. Warner-Lambert Pharmaceutical Company, Morris Plains, N.J. Filed Dec. 15, 1969.

SECRET FINISH

Applicant disclaims the word "Finish" apart from the mark as shown.
For Makeup Finish (Int. Cl. 3).
First use Dec. 11, 1969.

SN 346,365. Bristol-Myers Company, New York, N.Y. Filed Dec. 16, 1969.

C'EST COMPLEE

The expression "C'Est Complee" is translated from French to English as "it is complete."
For Personal Deodorant (Int. Cl. 5).
First use Nov. 7, 1969.

SN 346,596. Black Sword, Inc., Worthington, Ohio. Filed Dec. 18, 1969.

BLACK SWORD

For Men's Hair Grooming Conditioner (Int. Cl. 3).
First use Dec. 12, 1968.

SN 346,854. Bristol-Myers Company, New York, N.Y. Filed Dec. 22, 1969.

HAVE & HOLD

For Hand Care Lotion (Int. Cl. 3).
First use Nov. 26, 1969.

SN 347,890. Helene Curtis Industries, Inc., Chicago, Ill. Filed Jan. 7, 1970.

INCREDIBLE

For Hair Conditioner (Int. Cl. 3).
First use on or about Nov. 28, 1969.

SN 347,893. Helene Curtis Industries, Inc., Chicago, Ill. Filed Jan. 7, 1970.

FAVORITE

For Hair Spray (Int. Cl. 3).
First use on or about Nov. 28, 1969.

SN 349,214. Ronda Tiffani, Inc., Floral Park, N.Y. Filed Jan. 21, 1970.

RONDA TIFFANI

The name "Ronda Tiffani" does not identify any particular person.
For Face Makeup—Namely, Powder, Blusher, Rouge, Lipstick, and Foundation; Mascara, Liquid and Cake Eyeliner; Eyebrow Pencil; Eyeshadow; and Nail Polish (Int. Cl. 3).
First use Oct. 21, 1969.

SN 349,216. Ronda Tiffani, Inc., Floral Park, N.Y. Filed Jan. 21, 1970.

DON'T BE A PAINTED DOLL, BE A LIVING DOLL

For Face Makeup—Namely, Powder, Blusher, Rouge, Lipstick, and Foundation; Mascara, Liquid and Cake Eyeliner; Eyebrow Pencil; Eyeshadow; and Nail Polish (Int. Cl. 3).
First use Oct. 31, 1969.

SN 349,451. Dunham & Marcus, Inc., New York, N.Y. Filed Jan. 23, 1970.

FACING

For Make-Up Foundation (Int. Cl. 3).
First use Jan. 13, 1970.

SN 351,464. Holiday Magic, San Rafael, Calif. Filed Feb. 16, 1970.

HIGH TIDES

For Men's After Shave and Cologne (Int. Cl. 3).
First use Nov. 25, 1969.

SN 351,657. Lanvin-Charles of the Ritz, Inc., New York, N.Y. Filed Feb. 18, 1970.

LAURENTIAN

Owner of Reg. No. 853,369.
For Toilet Waters (Int. Cl. 3).
First use Oct. 1, 1969.

SN 355,003. I. Stevens and Co., Long Beach, Calif. Filed Mar. 25, 1970.

ESSENCE OF THE STARS

Applicant disclaims the word "Essence" apart from the mark as shown.
For Cologne (Int. Cl. 3).
First use Feb. 26, 1970.

SN 355,935. Thaddeus D. Govan, d.b.a. Govan, Philadelphia, Pa. Filed Apr. 3, 1970.



For Hair Styling Lotions and Conditioners (Int. Cl. 3).
First use Mar. 13, 1970.

SN 359,377. Lien Chemical Company, Franklin Park, Ill. Filed May 11, 1970.



The drawing is lined for the colors red and blue. Owner of Reg. No. 615,466.
For Hand Lotion (Int. Cl. 3).
First use Apr. 11, 1953.

SN 360,437. Sea & Ski Corporation, Reno, Nev. Filed May 21, 1970.

SEA & SKI

Owner of Reg. Nos. 636,263, 884,907, and others.
For Suntan Butter (Int. Cl. 3).
First use Jan. 17, 1969.

SN 363,483. British-American Tobacco Company Limited, London, England. Filed June 24, 1970.

BIO-MIRACLE

Owner of Reg. Nos. 214,539 and 367,937.
For Face Cream and Foundation Make-Up Base (Int. Cl. 3).
First use on or prior to Apr. 16, 1959, on face cream; in commerce on or prior to Apr. 16, 1959.

SN 369,578. Clairol Incorporated, New York, N.Y. Filed Sept. 1, 1970.

CONDITION

Owner of Reg. Nos. 663,281, 768,269, and 799,226.
For Hair Conditioning Preparation (Int. Cl. 3).
First use Oct. 13, 1960.

Class 52 — Detergents and Soaps

SN 329,969. Fenner Industries, Inc., New Orleans, La. Filed June 13, 1969.



No registration rights are claimed for the phrase "Stocking Saver" apart from the mark shown in the drawing, but the applicant does not waive any of its common law rights in the mark shown in the drawing or any feature thereof.
For Laundry Lotion for Household Use (Int. Cl. 3).
First use at least as early as Oct. 28, 1968.

SN 330,213. Sun Oil Company, Philadelphia, Pa. Filed June 16, 1969.

SUNOCO

Owner of Reg. Nos. 423,369, 442,865, and others.
For Degreaser and Cleaning Solvents for Automobiles, Boats, Lawn Mowers, Tools, and for Home Use (Int. Cl. 3).
First use 1969.

SN 339,147. Helene Curtis Industries, Inc., Chicago, Ill. Filed Sept. 29, 1969.

HOT PUFF

Applicant claims exclusive use of the word "Hot" apart from the mark as shown.
For Hair Shampoo (Int. Cl. 3).
First use on or about June 27, 1969.

SN 345,179. Les Parfums de Dana, Inc., New York, N.Y. Filed Dec. 3, 1969.

BRIDESSENCE

For Toilet Soap (Int. Cl. 3).
First use Nov. 17, 1969.

SN 345,181. Les Parfums de Dana, Inc., New York, N.Y. Filed Dec. 3, 1969.

BRIDAL BOUQUET

For Toilet Soap (Int. Cl. 3).
First use Nov. 17, 1969.

SN 351,598. Armour-Dial, Inc., Chicago, Ill. Filed Feb. 17, 1970.

BRIGHT IDEA

Owner of Reg. No. 853,927.
For Liquid Detergent for Household Use (Int. Cl. 3).
First use on or prior to Jan. 15, 1970.

SN 354,675. The Stephan Co., Fort Lauderdale, Fla. Filed Mar. 19, 1970.



Owner of Reg. No. 877,891.
For Hair Shampoo (Int. Cl. 3).
First use Aug. 14, 1969.

SN 357,585. Samuel Bonat & Bro., Inc., Paterson, N.J. Filed Apr. 22, 1970.

DOUBLE BODY

The word "Body" is disclaimed apart from the mark as shown.
For Hair Shampoo (Int. Cl. 3).
First use Mar. 13, 1970.

SN 361,704. The Drackett Company, Cincinnati, Ohio. Filed June 4, 1970.

DELETE

Owner of Reg. No. 613,296.
For Window Cleaner (Int. Cl. 3).
First use May 10, 1963.

SN 361,709. Eplo Chemical Corp., New York, N.Y. Filed June 4, 1970.

MADA-FA

For Instant Spot and Stain Remover (Int. Cl. 3).
First use in or about 1966.

SN 361,815. Armour-Dial, Inc., Chicago, Ill. Filed June 5, 1970.

THE DECORATORS

For Toilet Bar Soap (Int. Cl. 3).
First use on or prior to May 26, 1970.

SN 362,662. Chesebrough-Pond's Inc., New York, N.Y. Filed June 15, 1970.

INTENSIVE CARE

Owner of Reg. No. 864,662.
For Hair Shampoo (Int. Cl. 3).
First use May 26, 1970.

SN 363,610. Colgate-Palmolive Company, New York, N.Y. Filed June 25, 1970.

QUIK SOLV

Owner of Reg. Nos. 206,184, 895,654, and others.
For Laundry Pre-Spotter (Int. Cl. 3).
First use May 13, 1970.

SN 366,004. National Industries for the Blind, New York, N.Y. Filed July 23, 1970.



Owner of Reg. Nos. 891,255 and 891,319.
For Hair Shampoo, Bath Soap, and Hand Soap (Int. Cl. 3).
First use May 26, 1970.

SN 366,255. S. C. Johnson & Son, Inc., Racine, Wis. Filed July 27, 1970.

CAPTURE

Owner of Reg. No. 853,753.
For Hair Shampoo (Int. Cl. 3).
First use on or about Apr. 7, 1970.

SN 371,661. Harold H. Blake, Jr., d.b.a. Dissolve-X Ltd., Carmel, Calif. Filed Sept. 25, 1970.

DISSOLVE-X

For Liquid Solvent Composition Particularly Suitable for Cleaning Smoking Pipes and Especially the Stems Thereof (Int. Cl. 3).
First use Sept. 9, 1970.

SERVICE MARKS

Class 100 — Miscellaneous

SN 262,827. Uptowner Inns, Inc., d.b.a. Uptowner Inns, Huntington, W. Va. Filed Jan. 18, 1967.

UPTOWNER

For Motor Inn and Restaurant Services (Int. Cl. 42).
First use Sept. 16, 1962.

SN 297,220. Satellite Centers, Inc., Milwaukee, Wis. Filed May 2, 1968.

SATELLITE CENTER

For Rendering of Consulting and Advisory Services in Connection With the Construction of Specially Designed Buildings Particularly Adapted for Housing Computer Operations (Int. Cl. 42).
First use Nov. 28, 1967.

SN 309,113. South Carolina Department of Parks, Columbia, S.C. Filed Oct. 7, 1968.



Without relinquishing any of its common law rights and solely for purposes of registration, the words "South Carolina Department of Parks, Recreation & Tourism" are disclaimed apart from the mark as shown. The mark consists of a fanciful representation of a palmetto tree enclosed in a circle.
For Operation and Maintenance of Parks, Rest Areas and Tourist Information Centers, Including Recreational and Educational Facilities Therein; and Making Available to the Traveling Public and Citizens of Other States Maps, Publications and Other Informational Material in Connection With Those Activities (Int. Cl. 42).
First use May 1968.

SN 315,905. The General Board of Evangelism of the United Methodist Church, Nashville, Tenn. Filed Jan. 6, 1969.



For Aiding in the Establishment of Telephone Counseling Centers the Purpose of Which Is To Provide a Listener to Human Beings With a Problem (Int. Cl. 42).
First use March 1967.

SN 323,405. Wing's Teahouse, Inc., Lexington, Ky. Filed Apr. 1, 1969.



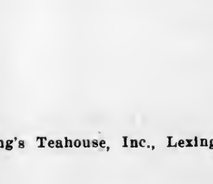
Without relinquishing any common law rights, applicant disclaims exclusive rights in the terminology "Teahouse" apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use Feb. 17, 1969.

SN 325,853. Ferry Boat, Ltd., Washington, D.C. Filed Apr. 29, 1969.



For Leasing Space on Converted Ferryboats to Restaurants, Shops, and Related Business (Int. Cl. 42).
First use July 19, 1968.

SN 327,744. The Crab Claw, Inc., St. Michaels, Md. Filed May 20, 1969.



The drawing is lined for the colors purple and red, however, applicant makes no claim to any specific color apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use June 1965.

SN 329,685. Badische Anilin- & Soda-Fabrik Aktiengesellschaft, Ludwigshafen on Rhine, Germany. Filed June 11, 1969.

LUSAP

For Engineering Service in Connection With the Treatment of Water in the Manufacture of Paper (Int. Cl. 42).
First use December 1965; in commerce December 1965.

SN 331,412. McCormick & Company, Incorporated, Cockeysville, Md. Filed June 30, 1969.



Without waiving any common law rights, applicant disclaims the words "Quality," "Integrity" and "Service," individually and apart from the other features of the mark as shown in the drawing.
For Research and Development for, and Consulting and Advisory Services to, Industrial Customers in the Food Industry, by Food Chemists and Technologists To Assist Customers in the Formulation, Manufacturing and Packaging of Prepared and Prepackaged Food Products (Int. Cl. 42).
First use May 1965.

SN 331,591. Bobby D. Cox, Odessa, Tex. Filed July 2, 1969.



No claim is made to the word "Taco" apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use June 6, 1968.

SN 332,490. International Reservations Corporation, Los Angeles, Calif. Filed July 14, 1969.



For Computerized Reservation Services for Hotels and Motels (Int. Cl. 42).
First use on or about Mar. 14, 1969.

SN 333,844. PittyPat's Porch, Inc., Atlanta, Ga. Filed July 29, 1969.



The mark comprises a fanciful representation of the letters "PP."
For Restaurant and Cocktail Lounge Services (Int. Cl. 42).
First use at least as early as October 1967.

SN 335,630. George Webb Corporation, Brookfield, Wis. Filed Aug. 18, 1969.

GEORGE WEBB

The name "George Webb" is of a deceased individual.
For Restaurant Services (Int. Cl. 42).
First use on or about 1954.

SN 336,938. International Salt Company, Clarks Summit, Pa. Filed Sept. 3, 1969.

CYCLO-BRINE

For Design of Salt Dissolving Process Systems for Others (Int. Cl. 42).
First use on or about Aug. 1, 1965.

SN 337,998. Worley and Ringe, Incorporated, Philadelphia, Pa. Filed Sept. 15, 1969.

WRI

For Service of Providing Chemical Information Accessible Through Computers and Leasing Chemical Computer Programs (Int. Cl. 42).
First use Aug. 20, 1969.

SN 339,140. Colonial Chicken Systems, Inc., South Miami, Fla. Filed Sept. 29, 1969.



For Restaurant Services (Int. Cl. 42).
First use June 26, 1969.

SN 346,207. Beaver Burgers of N.C., Inc., Lexington, N.C. Filed Dec. 15, 1969.

BEAVER'S

For Limited Menu Type Restaurant Services (Int. Cl. 42).
First use at least as early as Dec. 3, 1969.

SN 346,707. Alfie's Fish & Chips, Inc., Houston, Tex. Filed Dec. 19, 1969.



Owner of Reg. No. 889,184.
For Restaurant Services (Int. Cl. 42).
First use at least as early as Mar. 21, 1969.

SN 347,171. National Health Service, Inc., Indianapolis, Ind. Filed Dec. 29, 1969.

MEDI-CALL

For Maintaining Patient Medical Histories and Providing Copies Thereof to Hospitals, Attending Physicians and Others in Emergencies (Int. Cl. 42).
First use Nov. 26, 1969.

SN 347,459. Quinter Industries, Inc., Lexington, N.C. Filed Dec. 31, 1969.

BLACKWELDER'S BARBECUE

No claim is made to the word "Barbecue" apart from the mark.
For Restaurant Services (Int. Cl. 42).
First use 1925.

SN 348,844. Crow's Nest, San Francisco, Calif. Filed Jan. 19, 1970.

Crow's-nest

For Restaurant and Bar Services (Int. Cl. 42).
First use Mar. 17, 1960.

SN 351,737. Teleflora Delivery Service, Inc., Chicago, Ill. Filed Feb. 18, 1970.

TELESPIRIT

For Rendering a Clearing House Service to Subscribing Liquor Dealers in Connection With the Sale and Delivery of Beverages—Namely, Wines, Liquor and Spirits, at a Distant and Near Location (Int. Cl. 42).
First use Jan. 21, 1970.

SN 351,966. Oceanographic Services, Inc., Santa Barbara, Calif. Filed Feb. 20, 1970.



For Performance of Services in Research and Development in Marine Science and Ocean Engineering (Int. Cl. 42).
First use at least as early as 1964.

SN 355,981. Mayflower Restaurant Enterprises, Inc., New York, N.Y. Filed Apr. 6, 1970.



The word "Pub" is disclaimed apart from the mark as shown.
For Restaurant Services (Int. Cl. 42).
First use on or about Nov. 1, 1969.

SN 357,186. Recognize All Potential, Inc., Pittsburgh, Pa. Filed Apr. 17, 1970.

RAP

For Eleemosynary Services—Namely, the Treatment and Rehabilitation of Drug Users (Int. Cl. 42).
First use at least as early as Oct. 15, 1968.

SN 360,734. Earth Satellite Corporation (Earthsat), Washington, D.C. Filed May 26, 1970.

EARTHSAT

For Rendering and Performing Consulting Services With Respect to Remote Sensing Techniques for All Types of Uses—Namely, Mineral Exploration, Agriculture and Economic Development, Oceanography and Fishing, Pollution Control and for Developing Information Systems (Int. Cl. 42).
First use Sept. 23, 1969.

SN 370,348. Jay MacLarty, West Palm Beach, Fla. Filed Sept. 10, 1970.

THE HUNGRY TRAVELER

For Restaurant Services (Int. Cl. 42).
First use June 1, 1968.

SN 371,557. Marriott Corporation, Washington, D.C. Filed Sept. 24, 1970.



The word "Restaurant" is disclaimed apart from the mark as shown, however applicant waives none of its common law rights therein. Owner of Reg. Nos. 520,917, 538,103, and others.
For Restaurant Services (Int. Cl. 42).
First use in or about June 1970.

SN 371,560. Maury's Tiny Cove, Inc., Cheviot, Ohio. Filed Sept. 24, 1970.



For Restaurant and Bar Services (Int. Cl. 42).
First use at least as early as 1960; on or about Mar. 16, 1949 as to the words "Maury's Tiny Cove."

SN 372,085. Longchamps, Inc., New York, N.Y. Filed Sept. 30, 1970.

CATTLE BARON

For Restaurant Services (Int. Cl. 42).
First use March 1967.

Class 101 — Advertising and Business

SN 313,967. Physician's Book Compendium Inc., New York, N.Y. Filed Dec. 9, 1968.

PHYSICIAN'S BOOK COMPENDIUM

For Medical Advertising Services—Namely, Promoting the Sale of the Goods of Others Through Distribution of Printed Media to Physicians (Int. Cl. 35).
First use Oct. 30, 1968.

SN 322,363. Top Dollar Stores, Inc., Jasper, Ala. Filed Mar. 20, 1969.

TOP DOLLAR STORES

The word "Stores" is disclaimed apart from its use in the mark. Owner of Reg. No. 754,690.
For Retail Discount Variety Stores Service (Int. Cl. 35).
First use Apr. 1, 1958.

SN 325,058. Maritz, Inc., Fenton, Mo. Filed Apr. 21, 1969.

NATIONAL BANK OF AWARDS

Owner of Reg. No. 674,318.
For Sales Promotion Program—Namely, the Issuance of Award Credits in the Form of Checks and the Redemption of These in Merchandise (Int. Cl. 35).
First use Jan. 13, 1969.

SN 325,590. E. C. K. Chivers & Associates, Inc., Miami, Fla. Filed Apr. 25, 1969.



For Business Brokerage Services—Namely, Making Business Arrangements Between Franchisors and Franchisees (Int. Cl. 35).
First use May 5, 1968.

SN 326,021. Telecredit, Inc., Los Angeles, Calif. Filed Apr. 30, 1969.



For Reporting the Financial Responsibility of Persons, To Enable Them To Cash Checks (Int. Cl. 35).
First use May 5, 1968.

SN 326,727. Woodlot Corporation, Cohasset, Mass. Filed May 8, 1969.



No registration rights are claimed for the word "Linen" apart from the mark as shown in the drawing, but the applicant waives none of its common law rights in the mark shown in the drawing or any feature thereof.
For Housekeeping and Domestic Goods Store Services—Namely, the Retail Sale of Sheets, Towels, Draperies, Soap, China, Scales, Jewelry Boxes, and the Like (Int. Cl. 35).
First use November 1966.

SN 327,241. Cumberland Farms Dairy, Inc., Canton, Mass. Filed May 14, 1969.

CONVENIENCE COSTS NO MORE AT YOUR CUMBERLAND FARMS STORE

Applicant disclaims the term "Store" apart from the mark as shown. Owner of Reg. No. 813,569.
For Grocery Store Services (Int. Cl. 35).
First use 1965.

SN 330,338. Yum Yum Tree Inc., Youngstown, Ohio. Filed June 18, 1969.



For Retail Candy Store Services (Int. Cl. 35).
First use Mar. 5, 1969.

SN 331,197. Herron-Kienzle, Inc., Westport, Conn. Filed June 27, 1969.

WILDCAT

For Promotion of the Sale of Goods and/or Services of Others Through the Conduct of a Contest (Int. Cl. 35).
First use at least as early as May 20, 1969.

SN 331,441. Sullivan's of Liberty, Inc., Liberty, N.Y. Filed June 30, 1969.

THE gallery SHOP

Applicant disclaims the word "Shop" apart from the mark as a whole, while reserving all common law rights therein.
For Retail Clothing Store Services—Namely, Women's Clothing and Accessories (Int. Cl. 35).
First use October 1966.

SN 331,893. Input, Inc., Highland Park, Ill. Filed July 7, 1969.

COMP-U-GAIN

For Security Analysis and Reporting Services (Int. Cl. 36).
First use May 21, 1969.

SN 332,501. Medi-Mart, Inc., Ambridge, Pa. Filed July 14, 1969.

MAJOR Medi-mart CENTERS

No claim is made to the word "Centers" apart from the mark without waiving any common law rights therein.
For Retail Convalescent Supply Store Services (Int. Cl. 35).
First use June 2, 1969.

SN 333,129. Harvest Markets, Inc., Buffalo, N.Y. Filed July 22, 1969.

HARVEST "The Best"

The words "The Best" and the representations of foodstuffs are disclaimed apart from the mark as shown.
For Supermarket Services (Int. Cl. 35).
First use May 2, 1966.

SN 333,624. Charles D. Yeoman, Covina, Calif. Filed July 25, 1969.

YE OLDE PIE SHOPPE

The term "Pie Shoppe" is disclaimed apart from the mark.
For Rendering Technical Assistance in the Establishment and operation of Pie Shops (Int. Cl. 35).
First use on or about June 7, 1969.

SN 334,345. Ketteridge Industries, Inc., Chapel Hill, N.C. Filed Aug. 4, 1969.

Ketteridge
SUIT MARKET

No claim is made to the words "Suit Market" apart from the mark as shown, but not otherwise.
For Retail Clothing Store Services; Assistance in the Establishment, Operation, and Management of Retail Clothing Stores (Int. Cl. 35).
First use Feb. 13, 1969.

SN 334,346. Ketteridge Industries, Inc., Chapel Hill, N.C. Filed Aug. 4, 1969.

Ketteridge INDUSTRIES
SUITMARKET

No claim is made to the words "Industries Suit Market" apart from the mark shown, but not otherwise.
For Retail Clothing Store Services; Assistance in the Establishment, Operation, and Management of Retail Clothing Stores (Int. Cl. 35).
First use Feb. 13, 1969.

SN 334,566. Fabric Distributors, Inc., Cincinnati, Ohio. Filed Aug. 6, 1969.

FABRIC CIRCLE USA

The word "Fabric" and the term "USA" are disclaimed apart from the mark as shown.
For Retail Fabric Shop Services (Int. Cl. 35).
First use Feb. 27, 1969.

SN 334,567. Fabric Distributors, Inc., Cincinnati, Ohio. Filed Aug. 6, 1969.

FABRIC CIRCLE USA

The word "Fabric" and the term "USA" are disclaimed apart from the mark as shown.
For Retail Fabric Shop Services (Int. Cl. 35).
First use Feb. 27, 1969.

SN 337,315. Instats Corporation, Salt Lake City, Utah. Filed Sept. 8, 1969.

INSTATS

For Reproduction of Photographs, Drawings, and Printed or Written Matter (Int. Cl. 35).
First use June 28, 1969.

SN 338,000. Industrial Research, Incorporated, Beverly Shores, Ind. Filed Sept. 15, 1969.

TEL-SELL

For Telephone Inquiry Services—Namely, Forwarding Inquiries in Response to Advertisements Placed by Others (Int. Cl. 35).
First use Dec. 27, 1968.

SN 338,547. Data Automation Company, Inc., Dallas, Tex. Filed Sept. 22, 1969.

DAC

For Data Processing Equipment Rental Services (Int. Cl. 35).
First use at least as early as February, 1967.

SN 338,759. Communication Dynamics Systems, Inc., Westchester, Ill. Filed Sept. 24, 1969.

COMPUT-A-BILL

For Computerized Accounting Services (Int. Cl. 35).
First use Aug. 26, 1969.

SN 339,590. PDA Systems, Inc., New York, N.Y. Filed Oct. 2, 1969.

COMPU-MAIL

For Computerized Addressing and Direct Mailing Operations (Int. Cl. 35).
First use Aug. 11, 1969.

SN 341,010. Carte Blanche Corporation, Los Angeles, Calif. Filed Oct. 17, 1969.

CARTE BLANCHE BAZAAR

Owner of Reg. Nos. 688,864, 721,049, and 849,109.
For Mail Order Gift Services (Int. Cl. 35).
First use June 25, 1965.

SN 342,511. Raley's, d.b.a. Raley's Food Stores, Raley's Supermarkets and Raley's Drug Centers, Sacramento, Calif. Filed Nov. 3, 1969.

RALEY'S

Owner of Reg. No. 786,201.
For Retail Grocery, Drug, and Supermarket Services (Int. Cl. 35).
First use Jan. 2, 1947.

SN 343,856. R. H. Macy & Co., Inc., New York, N.Y. Filed Nov. 18, 1969.

TIGER SHOP

Applicant disclaims the word "Shop" apart from the mark as shown.
For Retail Department Store Selling Services for Men's and Women's Apparel and Accessories (Int. Cl. 35).
First use Nov. 1, 1968.

SN 346,556. Lynn Carol, Inc., Van Nuys, Calif. Filed Dec. 18, 1969.

LYNN CAROL

"Lynn Carol" is not the name of any known person.
For Employment Agency Services (Int. Cl. 35).
First use at least as early as July 1965.

SN 348,261. Career Concepts Corporation, New York, N.Y. Filed Jan. 12, 1970.

CAREER CONCEPTS

For Executive Placement and Consulting Services (Int. Cl. 35).
First use August 1969.

SN 348,970. Microsystems, Inc., Evanston, Ill. Filed Jan. 19, 1970.

MICROSYSTEMS

For Placing Documentary Material on Microfilm for Applicant's Customers (Int. Cl. 35).
First use in or about August 1957.

SN 356,787. Smart Hat Corp., Allston, Mass. Filed Apr. 13, 1970.

SUZY BOUTIQUE

For Retail Millinery and Wig Store Services (Int. Cl. 35).
First use Sept. 7, 1968.

SN 357,514. Pilot Products, Incorporated, Chicago, Ill. Filed Apr. 21, 1970.

VENTURE GROUP

For Services in the Consumer Products Field—Namely, Rendering Advice and Assistance in Market Planning, Product Conception and Development, Sales, Advertising and Corporate Image, Product Distribution, and the Like (Int. Cl. 35).
First use at least as early as Mar. 23, 1970.

SN 359,549. Inmarco, Inc., Hollywood, Calif. Filed May 13, 1970.



The mark is comprised of the stylized representation of the letter "I."
For Marketing, Advertising and Opinion Research Services—Namely, Television Commercial and Pilot Film Testing; Consumer Survey and Store Audit Services; Development for Others of Management Systems and Computer Programs for Planning and Analysis; Conducting Studies for Others of Consumer Purchase Patterns, Advertising Effectiveness and Point of Purchase Material Through the Use of an Operational Supermarket (Int. Cl. 35).
First use in or about September 1969.

SN 359,550. Inmarco, Inc., Hollywood, Calif. Filed May 13, 1970.

INMARCO

For Marketing, Advertising and Opinion Research Services—Namely, Television Commercial and Pilot Film Testing; Consumer Survey and Store Audit Services; Development for Others of Management Systems and Computer Programs for Planning and Analysis; Conducting Studies for Others of Consumer Purchase Patterns, Advertising Effectiveness and Point of Purchase Material Through the Use of an Operational Supermarket (Int. Cl. 35).
First use Apr. 21, 1969.

SN 361,153. Parkway Distributors, Inc., Holbrook, Mass. Filed May 28, 1970.

PARKWAY

For Retail Health and Beauty Aid Store Services (Int. Cl. 35).
First use Mar. 11, 1959.

SN 361,422. Wicklander Printing Corporation, Chicago, Ill. Filed June 1, 1970.



The drawing is lined for the colors gold and blue but no claim is made to color.
For Printing Services (Int. Cl. 35).
First use on or about May 1, 1970.

SN 361,930. Graphic Advertising, Inc., Miami, Fla. Filed June 8, 1970.

THE READY BANK

Applicant disclaims the word "Bank" apart from the mark.
For Rendering Merchandising and Sales Promotion Advice and Advertising Services to Banks (Int. Cl. 35).
First use May 21, 1970.

SN 364,110. Panda International Corporation, New York, N.Y. Filed July 1, 1970.

COMPUTROL

For Sending Notifications to Delinquent Accounts (Int. Cl. 35).
First use May 8, 1970.

SN 366,452. Finch Pruyn Sales, Incorporated, d.b.a. Warner Pruyn, Glens Falls, N.Y. Filed July 28, 1970.



For Retail Store Services in the Field of Building Materials, Lumber, Appliances, Fuel Oil, and Prefabricated Housing (Int. Cl. 35).
First use Mar. 14, 1970.

Class 102 — Insurance and Financial

SN 333,114. Erie County Savings Bank, Buffalo, N.Y. Filed July 22, 1969.



The mark comprises, in part, a fanciful representation of the letter "E."
For Banking Services (Int. Cl. 36).
First use on or about June 1, 1958.

SN 338,227. Communitronics, Inc., Dallas, Tex. Filed Sept. 18, 1969.

COMMUNITRONICS

For Providing Consultation and Advice in the Design, Implementation and Administration of Employee Benefit Plans Including Group Insurance, Pension Plans and Profit Sharing Arrangements (Int. Cl. 36).
First use Feb. 20, 1969.

SN 342,542. Surety Savings and Loan Association, Burbank, Calif. Filed Nov. 3, 1969.

TEL-A-TRANSFER

For Service of Transferring Funds on Authorization of the Depositor (Int. Cl. 36).
First use May 15, 1969.

SN 344,807. The Aetna Casualty and Surety Company, Hartford, Conn. Filed Nov. 28, 1969.

SAFARI

For Insurance Services, Particularly for the Underwriting of Casualty and Property Insurance (Int. Cl. 36).
First use on or about November 1969.

SN 349,563. Union Service Corporation, New York, N.Y. Filed Jan. 26, 1970.



For Mutual Fund Investment Service (Int. Cl. 36).
First use Jan. 26, 1968.

SN 349,564. Union Service Corporation, New York, N.Y. Filed Jan. 26, 1970.



For Mutual Fund Investment Service (Int. Cl. 36).
First use Dec. 1, 1967.

SN 357,506. Continental Casualty Company, Chicago, Ill. Filed Apr. 21, 1970.

PAY

For Underwriting of Accident Insurance Covering Youth Groups (Int. Cl. 36).
First use Mar. 15, 1970.

SN 367,521. Barnett Banks of Florida, Inc., Jacksonville, Fla. Filed Aug. 10, 1970.

CONTACT BANKING

For the purposes of registration, no claim is made to the exclusive right to use the word "Banking" apart from the mark as shown.
For General Banking, Trust and Credit Financing Services (Int. Cl. 36).
First use Apr. 19, 1970.

SN 370,627. Salomon Brothers, New York, N.Y. Filed Sept. 14, 1970.

Salomon Brothers

For Services as an Underwriter, Dealer and Broker of and in Securities and as a Dealer and Broker in Commodities (Int. Cl. 36).
First use on or before July 20, 1970.

Class 103 — Construction and Repair

SN 321,153. ARA Services, Inc., Philadelphia, Pa., by change of name from Automatic Retailers of America, Inc., Philadelphia, Pa. Filed Mar. 6, 1969.

The drawing is lined for the colors blue, gold and green. The mark "Pro Vita" is translated from Latin as "on behalf of the patient's life."
For Hospital Sanitation and Housekeeping Service (Int. Cl. 37).
First use Sept. 13, 1968.

SN 327,657. Montecito Manufacturing Company, Santa Barbara, Calif. Filed May 19, 1969.



Applicant disclaims any right to register the words "Linen Supply" apart from the mark as shown. Owner of Reg. No. 859,476.
For Linen Supply Services (Int. Cl. 37).
First use Jan. 1, 1959.

SN 332,910. Lawrence S. Bangs, d.b.a. Jet Drain Service, El Cajon, Calif. Filed July 18, 1969.

JET DRAIN SERVICE

The words "Drain Service" are disclaimed apart from the mark.

For Cleaning Water and Sewage Pipe Services (Int. Cl. 37).

First use Nov. 14, 1962.

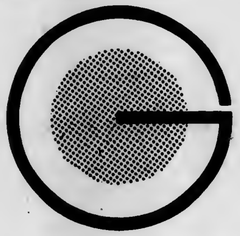
SN 347,877. Applied Engineering Company, Orangeburg, S.C. Filed Jan. 7, 1970.

GYRORIDE

For Vibration Correction Services on Automobiles—Namely, Truing and Balancing of Automobile Tires and Front End Alignment Services (Int. Cl. 37).

First use on or about Nov. 1, 1969.

SN 347,878. Applied Engineering Company, Orangeburg, S.C. Filed Jan. 7, 1970.



For Vibration Correction Services on Automobiles—Namely, Truing and Balancing of Automobile Tires; and Front End Alignment Services (Int. Cl. 37).

First use April 1969.

SN 352,266. Union Oil Company of California, Los Angeles, Calif. Filed Feb. 24, 1970.

UNION

Owner of Reg. Nos. 733,277, 850,791, and others.

For Automobile and Truck Service Station Services (Int. Cl. 37).

First use 1918.

SN 352,281. Aat Zevenhuizen, Lillington, N.C. Filed Feb. 24, 1970.

SPRITE

For Automotive Service Station Services (Int. Cl. 37).

First use as early as Jan. 22, 1970.

SN 372,064. Arrowhead Custom Golf, Inc., Fort Lauderdale, Fla. Filed Sept. 30, 1970.



For Repairing Golf Clubs—Namely, Woods, Irons, and Putters (Int. Cl. 37).

First use July 1, 1970.

Class 105 — Transportation and Storage

SN 318,239. C. H. Sprague & Son Company, Boston, Mass., assignee of C. H. Sprague & Son Company, Boston, Mass. Filed Feb. 3, 1969.

SPRAGUE ENERGY

The word "Energy" is disclaimed apart from the mark as shown.

For Fuel Transportation and Delivery Services—Namely, the Terminal Storage, Discharge, Transportation of Fuel and the Transshipping and Transportation of Solid and Liquid Raw Materials and Bulk Commodities by Ship, Rail, and Truck (Int. Cl. 39).

First use at least as early as Sept. 1, 1966.

SN 327,573. Air Jamaica (1968) Limited, Kingston, Jamaica, West Indies. Filed May 19, 1969.



For Air Transportation of Persons, Property, and Mail (Int. Cl. 39).

First use Apr. 1, 1969; in commerce Apr. 1, 1969.

SN 331,317. Burns-Philp Company of San Francisco, d.b.a. Burns-Philp Travel Organization, San Francisco, Calif. Filed June 30, 1969.

HIBISCUS

For Travel Agency Services (Int. Cl. 39).

First use November 1968.

SN 331,320. W. J. Byrnes & Company, San Francisco, Calif. Filed June 30, 1969.



The mark comprises a fanciful representation of the letter "b."

For Air and Ship Freight Forwarding Services (Int. Cl. 39).

First use July 24, 1968.

SN 347,012. Admiral Travel Service, Inc., Philadelphia, Pa. Filed Dec. 23, 1969.

ESCAPE KIT

For Travel Agency Services (Int. Cl. 39).

First use on or about Nov. 1, 1968.

Class 106 — Material Treatment

SN 317,525. Bremson Research, Inc., Kansas City, Mo. Filed Jan. 27, 1969.

BONUS PHOTO

Applicant disclaims the terminology "Photo" apart from the mark as shown. Owner of Reg. No. 862,926.

For Photographic Processing Services (Int. Cl. 40).

First use Jan. 12, 1967.

SN 328,070. Garry R. Perkins, Rolling Meadows, Ill. Filed May 22, 1969.

TUFALLOY

For Coating Goods of Others by Chrome Plating a Hardened Base Metal Followed by Application of Liquid Synthetic Polymer Having Lubricating Properties (Int. Cl. 40).

First use on or before Dec. 5, 1967.

SN 332,556. DNJ Color Laboratories, Inc., Crown Point, Ind. Filed June 18, 1969.

MAGNACOLOR

For Color Photographic Film Processing and Development Services (Int. Cl. 40).

First use Sept. 1, 1964.

SN 333,733. Meisel Photochrome Corporation, Dallas, Tex. Filed July 28, 1969.

MPC

For Photographic Film Processing and Development Services (Int. Cl. 40).

First use Aug. 1, 1957.

SN 357,897. Allprints Photo, Inc., Mansfield, Ohio. Filed Apr. 27, 1970.



The words "Photo Lab" are disclaimed apart from the mark as shown.

For Development, Printing, Enlargement, and Related Processing of Photographic Film (Int. Cl. 40).

First use Dec. 15, 1968.

SN 360,427. Naturalike Photo Finishing Company, Inc., d.b.a. King Size Photo Service, Everett, Wash. Filed May 21, 1970.



No claim is made to the words "King Size" apart from the mark as shown, without waiving any common law rights therein. Owner of Reg. No. 835,670.

For Photograph Processing and Finishing Services (Int. Cl. 40).

First use June 1969.

Class 107 — Education and Entertainment

SN 314,979. Maniatis Brothers, Evergreen Park, Ill. Filed Dec. 20, 1968.



The word "Bus" is disclaimed apart from the mark as shown. The drawing is lined for the colors purple, yellow, orange, red and brown, but no claim is made to a particular color.

For Entertainment Services, viz, Conducting Birthday Parties for Children on a Bus (Int. Cl. 41).

SN 331,882. Educational Resources, Inc., d.b.a. Educational Resources, Chicago, Ill. Filed July 7, 1969.



The mark comprises a fanciful representation of the letters "ER."

For Conducting Classes and Consultations Designed To Improve the School Grades and Performance of Underachievers (Int. Cl. 41).

First use May 20, 1969.

SN 331,923. Millipore Corporation, Bedford, Mass. Filed July 7, 1969.



Owner of Reg. Nos. 700,967, 887,498, and 896,024.

For Providing Educational Services—Namely, Conducting Seminars, Lectures, Demonstrations and Training Sessions Regarding Filtration and Analytical Control and/or Procedures (Int. Cl. 41).

First use Aug. 12, 1968.

SN 340,231. Amish Acres, Inc., d.b.a. Amish Acres, Nappanee, Ind. Filed Oct. 9, 1969.

AMISH ACRES



For Educational and Entertainment Services Concerning a Restored Amish Farm Through Which Tours Are Conducted and Visitation Privileges Are Extended (Int. Cl. 41).
First use at least as early as Aug. 15, 1969.

SN 340,448. Woodstock Ventures, Inc., d.b.a. Woodstock Music & Art Fair, and The Woodstock Group, New York, N.Y. Filed Oct. 10, 1969.



For Entertainment Services—Namely, the Conducting of Music and Dramatic Productions (Int. Cl. 41).
First use Aug. 15, 1969.

SN 342,964. FAS International, Inc., New York, N.Y. Filed Nov. 7, 1969.

FAS International

For Educational Correspondence Course in the Graphic and Literary Arts (Int. Cl. 41).
First use Sept. 18, 1969.

SN 352,946. Contemporary Educational Systems, Inc., Denver, Colo. Filed Mar. 3, 1970.



For Speed Reading and Comprehension Courses (Int. Cl. 41).
First use Jan. 2, 1970.

COLLECTIVE MEMBERSHIP MARKS

Class 200

SN 351,885. Alpha Lambda Delta, South Miami, Fla. Filed Feb. 20, 1970.



For Indicating Membership in the Applicant.
First use May 31, 1924.

TRADEMARK REGISTRATIONS ISSUED

PRINCIPAL REGISTER

Class 1—Raw or Partly Prepared Materials

906,437. HARDI-BRAND ETC. AND DESIGN. Hardi-Gardens, Inc., by merger from Garden Centers, Inc. MULTIPLE CLASS (Classes 1, 6, 7, 10, 23, and 50). SN 310,726. Pub. 11–10–70. Filed 10–29–68.

906,438. H & K. The Harrington & King Perforating Co., Inc. MULTIPLE CLASS (Classes 1, 12, 14, 37, and 106). SN 320,992. Pub. 11–10–70. Filed 3–7–69.

906,439. BIG FAVORITE GREEN. Florida Seed and Feed Company. SN 328,045. Pub. 11–10–70. Filed 5–22–69.

906,440. ROWLAND. Rowland Products, Incorporated. MULTIPLE CLASS (Classes 1, 6, and 50). SN 335,493. Pub. 11–10–70. Filed 8–18–69.

906,441. NEXUS. United States Steel Corporation. SN 358,524. Pub. 11–10–70. Filed 5–1–70.

Class 2—Receptacles

906,442. CTP DESIGN. CTP Industries Inc. SN 329,335. Pub. 11–10–70. Filed 6–6–69.

906,443. FANCY CAN DESIGN. The Damar Company. SN 342,958. Pub. 11–10–70. Filed 11–7–69.

Class 3—Baggage, Animal Equipments, Portfolios, and Pocketbooks

906,444. APOLLO. Skyway Luggage Company. SN 335,269. Pub. 11–10–70. Filed 8–13–69.

906,445. SPLINT. James C. Alderson, d.b.a. Five A Ranch. SN 341,348. Pub. 11–10–70. Filed 10–22–69.

Class 4—Abrasives and Polishing Materials

906,446. BLUE FOX AND DESIGN. Blue Fox Industries, Inc. SN 314,947. Pub. 11–10–70. Filed 12–20–68.

906,447. ROTO FINISH AND DESIGN. Roto-Finish Company. SN 346,296. Pub. 11–10–70. Filed 12–15–69.

906,448. RENAISSANCE. Picreator Enterprises Limited. SN 352,913. Pub. 11–10–70. Filed 3–3–70.

Class 6—Chemicals and Chemical Compositions

906,437. (See Class 1 for this trademark.)

906,440. (See Class 1 for this trademark.)

906,449. KOTE KLEEN. Kelite Chemicals Corporation. MULTIPLE CLASS (Classes 6 and 52). SN 323,178. Pub. 11–10–70. Filed 4–2–69.

906,450. MAXIM EST 1905 AND DESIGN. Maxim Chemical Company, Inc. SN 327,946. Pub. 11–10–70. Filed 5–21–69.

906,451. ZARAN. ADM-Tronics Unlimited, Inc. SN 332,882. Pub. 8–11–70. Filed 7–18–69.

906,452. MS AND DESIGN. Microbiological Sciences, Inc. SN 337,068. Pub. 11–10–70. Filed 9–4–69.

906,453. FIXAFRAC. The Dow Chemical Company. SN 342,961. Pub. 11–10–70. Filed 11–7–69.

906,454. POLASOL. The Sherwin-Williams Company. SN 346,124. Pub. 6–16–70. Filed 12–12–69.

906,455. AMILON. Amchem Products, Inc. SN 348,239. Pub. 8–18–70. Filed 1–12–70.

906,456. DURATONE. Copy Systems, Inc., d.b.a. Copy Paper Co. SN 348,652. Pub. 9–8–70. Filed 1–15–70.

906,457. FLORA FOG AND DESIGN. Geiger Corporation. MULTIPLE CLASS (Classes 6 and 23). SN 349,095. Pub. 11–10–70. Filed 1–21–70.

906,458. NACCON. Allied Chemical Corporation. SN 351,404. Pub. 11–10–70. Filed 2–16–70.

Class 7—Cordage

906,437. (See Class 1 for this trademark.)

906,459. WRIGHTS AND W DESIGN. Wm. E. Wright Co., by change of name from Wm. E. Wright & Sons Co. MULTIPLE CLASS (Classes 7, 13, and 40). SN 312,252. Pub. 11–10–70. Filed 11–14–68.

Class 9—Explosives, Firearms, Equipments, and Projectiles

906,460. CORSAIR. Firearms International Corporation (New Jersey corporation), assignee of Firearms International Corporation (Delaware corporation). SN 336,237. Pub. 11–10–70. Filed 8–19–69.

Class 10—Fertilizers

906,437. (See Class 1 for this trademark.)

906,461. REDI-PAK. W. R. Grace & Co. SN 349,968. Pub. 11–10–70. Filed 1–29–70.

Class 12—Construction Materials

906,438. (See Class 1 for this trademark.)

906,462. POROTON. Heinrich Oltmanns, assignee, by mesne assignment, of Heinrich Oltmanns. SN 299,998. Pub. 9–1–70. Filed 6–7–68.

906,463. "THE MIRACLE IN MORTAR." Easy-Spred, Inc. SN 312,287. Pub. 11–10–70. Filed 11–15–68.

906,464. MISCELLANEOUS DESIGN. Rixson Inc. MULTIPLE CLASS (Classes 12, 13, 21, and 26). SN 330,199. Pub. 11–10–70. Filed 6–16–69.

906,465. SILITE. Devcon Corporation. SN 332,327. Pub. 9–1–70. Filed 7–11–69.

906,466. NILES AND DESIGN. The Niles Expanded Metals Corporation. SN 345,489. Pub. 11–10–70. Filed 12–5–69.

906,467. POLYBEAMS. Hull Industries, Inc. SN 346,174. Pub. 11–10–70. Filed 12–15–69.

906,468. VELUX. Villum Benedikt Kann Rasmussen, d.b.a. Velux International. SN 347,426. Pub. 11–10–70. Filed 12–30–69.

906,469. OCEANIC AND DESIGN. A.J. Industries, Inc., d.b.a. URB Products. SN 350,819. Pub. 11–10–70. Filed 2–9–70.

Class 13—Hardware and Plumbing and Steam-Fitting Supplies

906,459. (See Class 7 for this trademark.)

906,464. (See Class 12 for this trademark.)

906,470. MODULUS. Modulus Corporation. SN 327,776. Pub. 11–10–70. Filed 5–20–69.

906,471. SOMERSET. Somerset Lumber & Hardware Co. SN 333,194. Pub. 11–10–70. Filed 7–22–69.

906,472. MINI-ROLLS. Continental Copper & Steel Industries, Inc. SN 335,850. Pub. 11–10–70. Filed 8–21–69.

906,473. GEBHARD FASTENER AND GROTESQUE AND PENTAGON DESIGN. United States Banknote Corporation. SN 342,553. Pub. 11–10–70. Filed 11–3–69.

906,474. NORCHEM. Northern Petrochemical Company. SN 351,519. Pub. 7–14–70. Filed 2–16–70.

906,475. CUISINE CLASSIQUE. Elkay Manufacturing Company. SN 354,605. Pub. 11–10–70. Filed 3–19–70.

906,476. DRAINWAY. The Flintkote Company. SN 355,124. Pub. 11–10–70. Filed 3–26–70.

906,477. G DESIGN. Grove Valve and Regulator Company. SN 355,874. Pub. 11–10–70. Filed 4–3–70.

906,478. FLOSAFE. Cabot Corporation. SN 363,385. Pub. 11–10–70. Filed 6–23–70.

Class 14—Metals and Metal Castings and Forgings

906,438. (See Class 1 for this trademark.)

Class 15—Oils and Greases

906,479. WACO AND DESIGN. Waco Oil and Refining Company. SN 320,202. Pub. 10–13–70. Filed 2–26–69.

906,480. VANELLUS. The British Petroleum Company Limited. SN 323,239. Pub. 11–10–70. Filed 4–1–69.

906,481. A AND CIRCLE DESIGN. Aztec Oil & Gas Company. SN 339,117. Pub. 8–25–70. Filed 9–29–69.

Class 16—Protective and Decorative Coatings

906,482. PERMAPOL. Products Research & Chemical Corporation. SN 327,409. Pub. 11–10–70. Filed 5–15–69.

906,483. XL-TREDCOTE. West Chemical Products, Inc. SN 343,608. Pub. 11–10–70. Filed 11–14–69.

906,484. TEDCO. Trailer Equipment Distributors, Inc. SN 350,535. Pub. 10–6–70. Filed 2–4–70.

906,485. PLAIN & FANCY FINISHES (DESIGN). Allentown Paint Manufacturing Company, Inc. SN 352,588. Pub. 11–10–70. Filed 2–27–70.

Class 17—Tobacco Products

906,486. OLE. General Cigar Co., Inc. SN 214,262. Pub. 10–26–65. Filed 3–16–65.

906,487. DON CE SAR AND DESIGN. Havatampa Cigar Corporation. SN 365,089. Pub. 11–10–70. Filed 7–13–70.

Class 18—Medicines and Pharmaceutical Preparations

906,488. VITABLUT. Cl. Lageman GmbH. MULTIPLE CLASS (Classes 18 and 46). SN 280,834. Pub. 9–15–70. Filed 9–21–67.

906,489. MISCELLANEOUS DESIGN. Kyowa Hakko Kogyo Co., Ltd. SN 287,302. Pub. 11–10–70. Filed 12–20–67.

906,490. RUVITE 1000. Savage Laboratories, Inc. SN 308,036. Pub. 11–10–70. Filed 9–23–68.

906,491. BE 15 FORMULAE. Raphael P. Platoff, d.b.a. D & C Supplement Co. SN 317,869. Pub. 11–10–70. Filed 1–29–69.

906,492. REDUFORM. Para-Pharma Salvisberg & Co. SN 324,105. Pub. 7–14–70. Filed 4–9–69.

906,493. AIRET. Baylor Laboratories, Inc. SN 336,308. Pub. 11–10–70. Filed 8–26–69.

906,494. ELMEX. Gaba AG. SN 336,927. Pub. 11–10–70. Filed 9–3–69.

906,495. TEVCOCIN. Tevcon Industries, Inc. SN 334,882. Pub. 11–10–70. Filed 8–8–69.

906,496. MS AND DESIGN. Micobiological Sciences, Inc. SN 337,069. Pub. 11–10–70. Filed 9–4–69.

906,497. N·B·A KIT AND DESIGN. Microbiological Sciences, Inc. SN 337,072. Pub. 11–10–70. Filed 9–4–69.

906,498. ZEROMITE. Dermavet Laboratories, Inc. SN 338,550. Pub. 11–10–70. Filed 9–22–69.

906,499. FIGURE-AID. Thompson Medical Company, Inc. SN 341,338. Pub. 11–10–70. Filed 10–22–69.

906,500. AGRI-TECH. Sparboe Agricultural Corporation. SN 343,581. Pub. 11–10–70. Filed 11–17–69.

906,501. SKARSHAUG AND S DESIGN. Paul E. Skarshaug, d.b.a. Skarshaug Testing Laboratory. MULTIPLE CLASS (Classes 18, 21, 26, and 100). SN 344,440. Pub. 11–10–70. Filed 11–24–69.

906,502. IONAX. Owen Laboratories, Inc. SN 349,680. Pub. 11–10–70. Filed 1–26–70.

906,503. PAMELOR. American Home Products Corporation. SN 350,038. Pub. 11–10–70. Filed 1–30–70.

906,504. UPTIGHT. Clairol Incorporated. SN 350,053. Pub. 11–10–70. Filed 1–30–70.

906,505. MUCOMYST. Mead Johnson & Company. SN 350,107. Pub. 11–10–70. Filed 1–30–70.

906,506. PEDIASOL. Abbott Laboratories. SN 350,197. Pub. 11–10–70. Filed 2–2–70.

906,507. CUPID'S COMPANION. Foremost-McKesson, Inc., d.b.a. McKesson Laboratories. SN 350,253. Pub. 11–10–70. Filed 2–2–70.

906,508. MOTHER'S TOUCH. E. R. Squibb & Sons, Inc. SN 366,008. Pub. 11–10–70. Filed 7–23–70.

906,509. METHOSARB. The Upjohn Company. SN 366,276. Pub. 11–10–70. Filed 7–27–70.

906,510. ALKA-GEL. Miles Laboratories, Inc. SN 366,462. Pub. 11–10–70. Filed 7–28–70.

906,511. PSEUDOGEN. Parke, Davis & Company. SN 366,622. Pub. 11–10–70. Filed 7–30–70.

Class 19—Vehicles

906,512. ENDURO AND DESIGN. Yamaha Hatsudoki Kabushiki Kaisha. SN 300,302. Pub. 11–10–70. Filed 6–12–68.

906,513. DELHI. Delhi Manufacturing Corporation. SN 305,409. Pub. 11–10–70. Filed 8–19–68.

906,514. STRICK. Strick Corporation. SN 308,158. Pub. 11–10–70. Filed 9–24–68.

906,515. PRIDE TRIMBLE. Trimble Products Incorporated. MULTIPLE CLASS (Classes 19, 22, and 32). SN 324,857. Pub. 11–10–70. Filed 4–18–69.

906,516. MEYERS TOW'D AND DESIGN. B. F. Meyers & Company. SN 329,112. Pub. 11–10–70. Filed 6–4–69.

906,517. HI JACKERS. Maremont Corporation. SN 330,524. Pub. 11–10–70. Filed 6–19–69.

906,518. CLAYTON AND DESIGN. The Commodore Corporation. SN 331,493. Pub. 11–10–70. Filed 7–1–69.

906,519. AUBURN. The Commodore Corporation. SN 331,494. Pub. 11–10–70. Filed 7–1–69.

906,520. VALHALLA. The Commodore Corporation. SN 333,534. Pub. 11–10–70. Filed 7–25–69.

906,521. KEY WEST. Key West Homes, Inc. SN 333,718. Pub. 11–10–70. Filed 7–28–69.

906,522. SUPERTHANE. Super Tire Engineering Company. SN 334,751. Pub. 11–10–70. Filed 8–7–69.

906,523. MISCELLANEOUS DESIGN. North American Rockwell Corporation. SN 336,005. Pub. 11–10–70. Filed 8–22–69.

906,524. HYDRO-CLIMATE. Adelphi Mobile Air Conditioners, Inc. SN 336,383. Pub. 11–10–70. Filed 8–27–69.

906,525. MISCELLANEOUS DESIGN. Audi NSU Auto Union Aktiengesellschaft, by merger and change of name from Auto Union G.m.b.H. MULTIPLE CLASS (Classes 19 and 23). SN 336,890. Pub. 11–10–70. Filed 9–3–69.

906,526. WHITE WESTERN STAR AND DESIGN. White Motor Corporation. SN 337,736. Pub. 11–10–70. Filed 9–11–69.

906,527. SC DESIGN. AMF Incorporated, by change of name from American Machine & Foundry Company. SN 340,754. Pub. 11–10–70. Filed 10–15–69.

906,528. MOD CAPS. McNeil Corporation. SN 342,174. Pub. 11–10–70. Filed 10–30–69.

906,529. WINNEBAGO MOTOR INN. Winnebago Industries, Inc. SN 343,611. Pub. 11–10–70. Filed 11–14–69.

906,530. AMF. AMF Incorporated, by change of name from American Machine & Foundry Company. SN 343,647. Pub. 11–10–70. Filed 11–17–69.

906,531. MRAD AND DESIGN. Marshall Research and Development Corp. MULTIPLE CLASS (Classes 19, 23, and 26). SN 344,933. Pub. 11–10–70. Filed 12–1–69.

906,532. SUNSPOT. W. H. Olsen Manufacturing Company Limited. SN 345,664. Pub. 11–10–70. Filed 12–8–69.

906,533. LOON. W. H. Olsen Manufacturing Company Limited. SN 345,665. Pub. 11–10–70. Filed 12–8–69.

906,534. K-CRAFT AND DESIGN. S. S. Kresge Company. SN 348,159. Pub. 11–10–70. Filed 1–9–70.

906,535. M AND CIRCLE DESIGN. Toyo Kogyo Co., Ltd. SN 349,145. Pub. 11–10–70. Filed 1–21–70.

906,536. FESTIVAL. Fleetwood Enterprises, Inc. SN 349,271. Pub. 11–10–70. Filed 1–22–70.

906,537. GROOVY BARS. Wald Manufacturing Company, Inc. SN 362,771. Pub. 11–10–70. Filed 6–15–70.

906,538. TRANSCRAFT. Transcraft Corporation. SN 365,518. Pub. 11–10–70. Filed 7–17–70.

906,539. CROWN. D. P. Harris Hardware & Manufacturing Co., Inc. SN 366,105. Pub. 11–10–70. Filed 7–24–70.

906,540. MULTI-STYLE. Motor Wheel Corporation. SN 366,192. Pub. 11–10–70. Filed 7–24–70.

906,541. SNOWTAMER. J. C. Penney Company, Inc. SN 366,204. Pub. 11–10–70. Filed 7–24–70.

Class 20—Linoleum and Oiled Cloth

906,542. FOUR SQUARE DESIGN. Tarkett Aktiebolag. SN 337,594. Pub. 11–10–70. Filed 9–10–69.

906,543. MISCELLANEOUS DESIGN. Nairn - Williamson Limited. SN 349,671. Pub. 11–10–70. Filed 1–26–70.

Class 21—Electrical Apparatus, Machines, and Supplies

906,464. (See Class 12 for this trademark.)

906,501. (See Class 18 for this trademark.)

906,544. DESIGNER ORIGINALS. Thomas Industries Inc. SN 272,316. Pub. 11–10–70. Filed 5–24–67.

906,545. BALANCED-FORCE. Subscription Television, Inc., assignee of Leach Corporation. SN 315,240. Pub. 11–10–70. Filed 12–26–68.

906,546. RALLY/RAP. Rally Industries. SN 319,074. Pub. 11–10–70. Filed 2–13–69.

906,547. TIP-TOP. Otto Kadmon, Inc. SN 321,366. Pub. 11–10–70. Filed 3–11–69.

906,548. DECCA. MCA Inc. MULTIPLE CLASS (Classes 21 and 36). SN 323,326. Pub. 11–10–70. Filed 4–1–69.

906,549. MISCELLANEOUS DESIGN. Forum, Inc. SN 323,550. Pub. 11–10–70. Filed 4–3–69.

906,550. PAGE ALARM. Reach Electronics, Inc. SN 324,836. Pub. 11–10–70. Filed 4–17–69.

906,551. ESL AND DESIGN. Electro-Science Laboratories, Inc. SN 325,961. Pub. 11–10–70. Filed 4–30–69.

906,552. INDUCTOCAST. Williams Gold Refining Company Incorporated. SN 328,089. Pub. 11–10–70. Filed 5–22–69.

906,553. NIPPERT. The Nippert Company, by change of name from The Nippert Electric Products Company. SN 328,190. Pub. 11–10–70. Filed 5–23–69.

906,554. THERMOTRIMMER. Oxley Developments Company Limited. SN 330,298. Pub. 11–10–70. Filed 6–17–69.

906,555. ELECTRA SPONGE. Proctor-Silex Incorporated. SN 330,773. Pub. 11–10–70. Filed 6–23–69.

906,556. MISCELLANEOUS DESIGN. North American Rockwell Corporation. SN 332,975. Pub. 8–4–70. Filed 7–18–69.

906,557. NIKKO. Nikko Electric Corporation of America. SN 334,486. Pub. 11–10–70. Filed 8–5–69.

906,558. LI/ON. Logicon, Inc. SN 341,533. Pub. 11–10–70. Filed 10–23–69.

906,559. VORNADO. Vornado, Inc. MULTIPLE CLASS (Classes 21, 23, and 36). SN 342,002. Pub. 11–10–70. Filed 10–29–69.

906,560. NOISY TESTER AND DESIGN. Held Electronics, Inc. SN 343,842. Pub. 11–10–70. Filed 11–18–69.

906,561. CERAMIPEC. Murata Manufacturing Company, Limited. SN 346,391. Pub. 11–10–70. Filed 12–16–69.

906,562. INVERTRON. California Instruments Corporation. SN 346,452. Pub. 11–10–70. Filed 12–17–69.

906,563. ASTROPLATE. The Bunker-Ramo Corporation. SN 347,476. Pub. 11–10–70. Filed 12–31–69.

906,564. ELECTRO-TY. Electrovert, Inc. SN 347,497. Pub. 11–10–70. Filed 12–31–69.

906,565. TM SMITH DESIGN. T. M. Smith Tool Company. MULTIPLE CLASS (Classes 21 and 23). SN 348,998. Pub. 11–10–70. Filed 1–19–70.

906,566. RCA. RCA Corporation. SN 351,173. Pub. 11–10–70. Filed 2–12–70.

906,567. RCA DESIGN. RCA Corporation. SN 351,174. Pub. 11–10–70. Filed 2–12–70.

906,568. COMMUNICENTER. Scoville Manufacturing Company. SN 352,236. Pub. 11–10–70. Filed 2–24–70.

906,569. PERC-ALERT. Dominion Electric Corporation. SN 355,364. Pub. 11–10–70. Filed 3–30–70.

906,570. PLUG-O-MATIC. Fedtro, Inc. SN 355,965. Pub. 11–10–70. Filed 4–6–70.

906,571. POLY DYNE. International Battery, Inc. SN 356,092. Pub. 9–15–70. Filed 4–6–70.

906,572. FEM LITE. Baudinet International Corporation of America. SN 357,025. Pub. 11–10–70. Filed 4–16–70.

906,573. NIOMAX. Imperial Metal Industries (Kynoch) Limited. SN 357,834. Pub. 11–10–70. Filed 4–24–70.

906,574. CUFLEX. Phelps Dodge Copper Products Corporation. SN 358,078. Pub. 11–10–70. Filed 4–27–70.

906,575. MEMREED. Tempress Electronic Corp. SN 358,626. Pub. 11–10–70. Filed 5–1–70.

Class 22—Games, Toys, and Sporting Goods

906,515. (See Class 19 for this trademark.)

906,576. FISHMASTER. Fishmaster Products, Inc. SN 306,129. Pub. 11–10–70. Filed 8–28–68.

906,577. THE INSIDE TRACK. Harry C. Ehrmantraut, d.b.a. Gymnas Company. SN 307,444. Pub. 11–10–70. Filed 9–16–68.

906,578. CONTRADA AND DESIGN. Maglieria Ragno Della Manifattura Pastore, S.p.A. MULTIPLE CLASS (Classes 22, 39, 42, and 50). SN 314,286. Pub. 9–1–70. Filed 12–12–68.

906,579. TOY BLOCK DESIGN. A/S Lego System Billund. SN 319,253. Pub. 11–10–70. Filed 2–17–69.

906,580. BARN-YARNS. Uneeda Doll Co., Inc. SN 329,396. Pub. 11–10–70. Filed 6–6–69.

906,581. FUNNEL BALL AND DESIGN. The J. E. Burke Company. SN 329,436. Pub. 11–10–70. Filed 6–9–69.

906,582. SPEAROSCOPE. J. W. Spear & Sons Limited. SN 329,770. Pub. 11–10–70. Filed 6–11–69.

906,583. MM SPORTING GOODS AND DESIGN. Merchandise Mart, Inc. SN 329,877. Pub. 11–10–70. Filed 6–12–69.

906,584. DIDO. La Salle Extension University. SN 330,288. Pub. 11–10–70. Filed 6–17–69.

906,585. PRO BOWL LIVE ACTION FOOTBALL. Louis Marx & Co., Inc. SN 332,499. Pub. 11–10–70. Filed 7–14–69.

906,586. ORBIT BALL. Boraut Industries, Inc. SN 334,808. Pub. 11–10–70. Filed 8–8–69.

906,587. ROTOR CRAFT. National Development Corporation. SN 335,246. Pub. 11–10–70. Filed 8–13–69.

906,588. DOODLY-DOO. Polyfoam Products Company, Inc. SN 336,169. Pub. 11–10–70. Filed 8–25–69.

906,589. MILLCO. M. A. Miller Manufacturing Co. SN 337,074. Pub. 11–10–70. Filed 9–4–69.

906,590. ADVENTURES IN LIGHT. Hasbro Industries, Inc. SN 337,798. Pub. 11–10–70. Filed 9–12–69.

906,591. THERMO-FLUF. White Stag Manufacturing Co., d.b.a. Hirsch-Weis Canvas Products Co. SN 338,634. Pub. 11–10–70. Filed 9–22–69.

906,592. AMERICAN OPEN. Ray Cook. SN 339,857. Pub. 11–10–70. Filed 10–6–69.

906,593. JAVELIN DARTS. Hasbro Industries, Inc. SN 342,446. Pub. 11–10–70. Filed 11–3–69.

906,594. TURFSKI. Turfski, Inc. SN 342,552. Pub. 11–10–70. Filed 11–3–69.

906,595. SUNDANCE. The Firestone Tire & Rubber Company. SN 345,929. Pub. 11–10–70. Filed 12–11–69.

906,596. ROD RUNNER. Mattel, Inc. SN 346,183. Pub. 11–10–70. Filed 12–15–69.

906,597. DING-A-LING. Victor Comptometer Corporation. SN 350,633. Pub. 11–10–70. Filed 2–5–70.

906,598. MULLIGAN. Edgar G. Burkhardt, James C. Mulvaney and Spasen S. Spasoff (partnership). SN 352,321. Pub. 11–10–70. Filed 2–25–70.

906,599. ROTO-CLUB. The Gyro Club Corporation. SN 353,484. Pub. 11–10–70. Filed 3–9–70.

906,600. CAPTAIN DAN DRAKE. Mattel, Inc. SN 355,571. Pub. 11–10–70. Filed 4–1–70.

906,601. SHIP SHAPES. Samsonite Corporation. SN 355,725. Pub. 11–10–70. Filed 4–2–70.

906,602. SCORPIO. Mattel, Inc. SN 355,975. Pub. 11–10–70. Filed 4–6–70.

906,603. GITSMO. Winston E. Brownlee, d.b.a. W. E. Brownlee & Co. SN 356,035. Pub. 11–10–70. Filed 4–6–70.

906,604. PRIMPY PUP. Mattel, Inc. SN 357,177. Pub. 11–10–70. Filed 4–17–70.

906,605. GRAND SPORTS. Mattel, Inc. SN 357,184. Pub. 11–10–70. Filed 4–17–70.

906,606. MINI SPINI. Leisure Dynamics, Inc. SN 357,620. Pub. 11–10–70. Filed 4–22–70.

906,607. DIMINISH. Howard S. Garns. SN 357,681. Pub. 11–10–70. Filed 4–23–70.

906,608. VOYAGE TO GALAXY III. Mattel, Inc. SN 359,563. Pub. 11–10–70. Filed 5–13–70.

906,609. FARMER'S DAUGHTER. Imperial Jade Mining Inc. SN 359,787. Pub. 11–10–70. Filed 5–15–70.

906,610. NIGHT-WINDER. Mattel, Inc. SN 360,646. Pub. 11–10–70. Filed 5–25–70.

906,611. THE PROWLER. Mattel, Inc. SN 360,648. Pub. 11–10–70. Filed 5–25–70.

906,612. CLOUD CLIPPERS. Mattel, Inc. SN 361,444. Pub. 11–10–70. Filed 6–2–70.

906,613. ZOPTERS. Mattel, Inc. SN 365,494. Pub. 11–10–70. Filed 7–13–70.

906,614. WHINER. Mattel, Inc. SN 366,001. Pub. 11–10–70. Filed 7–23–70.

Class 23 — Cutlery, Machinery, and Tools, and Parts Thereof

906,437. (See Class 1 for this trademark.)

906,457. (See Class 6 for this trademark.)

906,525. (See Class 19 for this trademark.)

906,531. (See Class 19 for this trademark.)

906,559. (See Class 21 for this trademark.)

906,565. (See Class 21 for this trademark.)

906,615. JOHN THE JACK MAN. John the Jack Man Co., Inc. SN 300,358. Pub. 11–10–70. Filed 6–13–68.

906,616. TRUXMORE. Truck Equipment Co. Inc. SN 317,982. Pub. 11–10–70. Filed 1–30–69.

906,617. SQUAR BUFF. Squar-Buff, Inc. SN 318,464. Pub. 11–10–70. Filed 2–5–69.

906,618. CODEMASTER. Formulabs Industrial Inks, Incorporated. SN 322,158. Pub. 11–10–70. Filed 3–19–69.

906,619. RAYNE PLANE FARM EQUIPMENT AND DESIGN. Maurice Constantin & Sons, Inc. SN 322,700. Pub. 11–10–70. Filed 3–25–69.

906,620. (See Class 28 for this trademark.)

906,621. AERO-WEST. West Chemical Products, Inc. SN 323,500. Pub. 11–10–70. Filed 4–2–69.

906,622. G GREENLINE AND DESIGN. Greenline Conveyor Company, Inc. SN 324,715. Pub. 11–10–70. Filed 4–16–69.

906,623. GAF AND DESIGN. GAF Corporation. MULTIPLE CLASS (Classes 23 and 26). SN 325,303. Pub. 11–10–70. Filed 4–23–69.

906,624. RAK-A-MATIC AND DESIGN. Artco Corporation. SN 327,467. Pub. 11–10–70. Filed 5–16–69.

906,625. SFE AND DESIGN. Société Francaise d'Etiquetage Virey & Garnier. SN 329,769. Pub. 11–10–70. Filed 6–11–69.

906,626. TUFFTRIDE. Kolene Corporation. SN 331,391. Pub. 11–10–70. Filed 6–30–69.

906,627. FABRIC-FORMER. Proctor & Schwartz, Inc. SN 331,538. Pub. 11–10–70. Filed 7–1–69.

906,628. "POWER-SAVER." TRW, Inc. SN 332,636. Pub. 11–10–70. Filed 7–15–69.

906,629. ANETS. Anetsberger Brothers, Inc. MULTIPLE CLASS (Classes 23 and 34). SN 332,903. Pub. 11–10–70. Filed 7–18–69.

906,630. PLIERENCH. Masterform Tool Company, assignee, by mesne assignment, of Samuel Kaplan and Joseph B. Kaplan, d.b.a. American Plumbing Supply Company. SN 333,140. Pub. 11–10–70. Filed 7–22–69.

906,631. AUTUMN GLOW. Oneida Ltd. SN 336,151. Pub. 11–10–70. Filed 8–25–69.

906,632. ZIPPER LIP. Esco Corporation, SN 336,282. Pub. 11–10–70. Filed 8–12–69.

906,633. MASPORT. Mason & Porter Limited. SN 337,451. Pub. 11–10–70. Filed 9–9–69.

906,634. MICOR. The Micor Corporation. SN 338,157. Pub. 11–10–70. Filed 9–17–69.

906,635. CROWN (DESIGN). Triumph Werke Nuernberg Aktiengesellschaft. SN 338,449. Pub. 11–10–70. Filed 9–19–69.

906,636. RO4. Illinois Tool Works Inc. SN 339,016. Pub. 11–10–70. Filed 9–26–69.

906,637. UNI-BOARD. Universal Refractories Corporation. SN 339,254. Pub. 11–10–70. Filed 9–29–69.

906,638. UNI-LOC. Universal Refractories Corporation. SN 339,255. Pub. 11–10–70. Filed 9–29–69.

906,639. HEAT-SAVER. Universal Refractories Corporation. SN 339,258. Pub. 11–10–70. Filed 9–29–69.

906,640. MAGNEBELT. Kornylak Corporation. SN 340,168. Pub. 11–10–70. Filed 10–8–69.

906,641. MITER TIGHT LOCK. Minder Industries, by change of name from J. W. Minder Chain & Gear Co., d.b.a. Minder, Inc. SN 340,176. Pub. 11–10–70. Filed 10–8–69.

906,642. TEN-BLOCK DESIGN. Arburg Maschinenfabrik Hehl & Sohne. SN 341,900. Pub. 11–10–70. Filed 10–28–69.

906,643. KR DESIGN. Kirk-Rudy, Inc. SN 343,136. Pub. 11–10–70. Filed 11–10–69.

906,644. VETAK. Vermont American Corporation. SN 343,776. Pub. 11–10–70. Filed 11–17–69.

906,645. DURCOMET 100. The Duriron Company, Inc. SN 344,836. Pub. 11–10–70. Filed 11–28–69.

906,646. HI-MASTER AND DESIGN. Great Bend Manufacturing Company, Inc. SN 344,976. Pub. 11–10–70. Filed 12–1–69.

906,647. THERMAL-FLO. Rodney Hunt Company. SN 345,469. Pub. 11–10–70. Filed 12–5–69.

906,648. SOLEFTY. Nippon Accumulator Co., Ltd. SN 346,037. Pub. 11–10–70. Filed 12–12–69.

906,649. ACCU TREAD. Super Mold Corporation. SN 346,979. Pub. 11–10–70. Filed 12–22–69.

906,650. PC DESIGN. Pennsylvania Crusher Corporation. SN 347,042. Pub. 11–10–70. Filed 12–23–69.

906,651. KIT CARSON. Imperial Knife Associated Companies, Inc. SN 347,407. Pub. 11–10–70. Filed 12–30–69.

906,652. NOR II MARKS. Dover Corporation. SN 348,022. Pub. 11–10–70. Filed 1–8–70.

906,653. JOLLY. Plessey Airborne Corporation. SN 348,446. Pub. 11–10–70. Filed 1–13–70.

906,654. MINI-DRUGS. International Automated Marketing Co. SN 352,141. Pub. 11–10–70. Filed 2–24–70.

906,655. RAYGO GATOR AND DESIGN. Raygo, Inc. SN 352,914. Pub. 11–10–70. Filed 3–3–70.

906,656. RAM AND DESIGN. Raygo, Inc. SN 352,915. Pub. 7–21–70. Filed 3–3–70.

906,657. PIONEER. A-T-O Inc. SN 353,121. Pub. 11–10–70. Filed 3–5–70.

906,658. BERTOLAJA AND DESIGN. Cesare Bertolaja. SN 354,284. Pub. 11–10–70. Filed 3–17–70.

906,659. SUPERSPEED. Edgar K. Beauchamp, d.b.a. Ber Mark Company. SN 355,020. Pub. 11–10–70. Filed 3–25–70.

906,660. PIGGY-VAC AND DESIGN. American Coleman Company. SN 356,000. Pub. 11–10–70. Filed 4–6–70.

906,661. HUNTER. Lambert Incorporated, d.b.a. Hunter Industries. SN 356,978. Pub. 11–10–70. Filed 4–15–70.

906,662. RAM-FLO. Fuller Company. SN 357,351. Pub. 11–10–70. Filed 4–20–70.

906,663. VAC-U-FIL. Donald A. Hjermstad, d.b.a. Midway Industries. SN 357,783. Pub. 11–10–70. Filed 4–24–70.

906,664. CA. FMC Corporation. SN 357,980. Pub. 11–10–70. Filed 4–27–70.

906,665. UP. FMC Corporation. SN 357,981. Pub. 11–10–70. Filed 4–27–70.

906,666. HUPENDER. Heppenstall Company. SN 358,015. Pub. 11–10–70. Filed 4–27–70.

906,667. BAR CIRCLE DESIGN. Envirotech Corporation. SN 360,050. Pub. 11–10–70. Filed 5–18–70.

906,668. SCAMPER. Nu-Die Mfg. Co. SN 362,962. Pub. 11–10–70. Filed 6–18–70.

Class 24 — Laundry Appliances and Machines

906,669. 490 PLUS. Excelsior Belting-Equipment Co., Inc. SN 353,467. Pub. 11–10–70. Filed 3–9–70.

Class 25 — Locks and Safes

906,670. H ELECTROLOC AND DESIGN. Archie H. Harris, d.b.a. Harris Enterprises. SN 354,173. Pub. 11–10–70. Filed 3–16–70.

Class 26 — Measuring and Scientific Appliances

906,464. (See Class 12 for this trademark.)

906,501. (See Class 18 for this trademark.)

906,531. (See Class 19 for this trademark.)

906,623. (See Class 23 for this trademark.)

906,671. LABORATORY EXPERIENCES. Harcourt, Brace & World, Inc. SN 312,585. Pub. 11–10–70. Filed 11–19–68.

906,672. PHILIPS AND SHIELD DESIGN. N.V. Philips' Gloeilampenfabrieken. SN 315,260. Pub. 11–10–70. Filed 12–26–68.

906,673. SUPER-VISION. Evan J. Anton. SN 321,743. Pub. 11–10–70. Filed 3–14–69.

906,674. SUPER-VISION AND DESIGN. Evan J. Anton. SN 321,744. Pub. 11–10–70. Filed 3–14–69.

906,675. CHERNE. Cherne Industrial, Inc. SN 326,346. Pub. 11–10–70. Filed 5–5–69.

906,676. IMAGE QUANTIZER. Technical Operations, Incorporated. SN 332,534. Pub. 11–10–70. Filed 7–14–69.

906,677. CONTROL-O-MATIC. Vaponics Inc. SN 333,855. Pub. 11–10–70. Filed 7–29–69.

906,678. N·B·A KIT AND DESIGN. Microbiological Sciences, Inc. SN 337,066. Pub. 11–10–70. Filed 9–4–69.

906,679. N·B·A KIT AND DESIGN. Microbiological Sciences, Inc. SN 337,067. Pub. 11–10–70. Filed 9–4–69.

906,680. MS AND DESIGN. Microbiological Sciences, Inc. SN 337,070. Pub. 11–10–70. Filed 9–4–69.

906,681. MS AND DESIGN. Microbiological Sciences, Inc. SN 337,071. Pub. 11–10–70. Filed 9–4–69.

906,682. CRYO-MISER. Whittaker Corporation. SN 339,476. Pub. 11–10–70. Filed 10–1–69.

906,683. GAMON (LOGO). Gamon-Calmet Industries, Inc. SN 343,105. Pub. 11–10–70. Filed 11–10–69.

906,684. BLOCK-TAK. Pantone, Inc. SN 344,575. Pub. 11–10–70. Filed 11–25–69.

906,685. MC AND DESIGN. Medcanics, Inc. SN 345,900. Pub. 11–10–70. Filed 12–11–69.

906,686. INFOTON, Infoton, Incorporated. SN 346,810. Pub. 11–10–70. Filed 12–22–69.

906,687. RENOTEC. E. R. Squibb & Sons, Inc. SN 347,651. Pub. 11–10–70. Filed 1–2–70.

906,688. OMNIFLO. Flow Technology, Inc. SN 347,860. Pub. 11–10–70. Filed 1–7–70.

906,689. "GRID-SWITCH." Charles B. Lowe, d.b.a. Charles B. Lowe Mfg. Co. SN 352,165. Pub. 11–10–70. Filed 2–24–70.

906,690. GLUCYDUR FBR AND DESIGN. Les Fabriques de Balanciers Reunies. SN 352,351. Pub. 11–10–70. Filed 2–25–70.

906,691. LENKER. Lenker Manufacturing Company, Inc. SN 356,102. Pub. 11–10–70. Filed 4–6–70.

906,692. MASSMASTER. AEI Scientific Apparatus Limited. SN 356,929. Pub. 11–10–70. Filed 4–15–70.

906,693. J AND DESIGN. Japan Binoculars Export Promotion Association. SN 357,371. Pub. 11–10–70. Filed 4–20–70.

906,694. J. H. BENDER OPTOFLEX AND DESIGN. Houston O. Bender, d.b.a. J. H. Bender Equipment Company. SN 357,581. Pub. 11–10–70. Filed 4–22–70.

906,695. ELECTRA 500. Medical Laboratory Automation, Inc. SN 357,842. Pub. 11–10–70. Filed 4–24–70.

906,696. HCD. Pet Incorporated. MULTIPLE CLASS (Classes 26, 31, and 34). SN 366,763. Pub. 11–10–70. Filed 7–31–70.

Class 27 — Horological Instruments

906,697. DELVINA. Delvina S.A. SN 335,436. Pub. 11–10–70. Filed 8–15–69.

906,698. GLUCYDUR FBR AND DESIGN. Les Fabriques de Balanciers Reunies. SN 352,852. Pub. 11–10–70. Filed 2–25–70.

906,699. ANDRE CHAMBORD. Belair Watch Corporation. SN 354,575. Pub. 11–10–70. Filed 3–19–70.

906,700. EDMOND BOIVERT. Belair Watch Corporation. SN 354,576. Pub. 11–10–70. Filed 3–19–70.

906,701. DIVER-TITE. Germanow-Simon Machine Co., Inc. SN 357,997. Pub. 11–10–70. Filed 4–27–70.

Class 28 — Jewelry and Precious-Metal Ware

906,620. PURITAN. The Stieff Company. SN 323,144. Pub. 9–15–70. Filed 3–28–69.

906,702. MAJORCA. Oneida Ltd. SN 305,970. Pub. 7–22–69. Filed 8–26–68.

906,703. FLORALINE. Sunderland's Inc. SN 332,533. Pub. 11–10–70. Filed 7–14–69.

Class 29 — Brooms, Brushes, and Dusters

906,704. TODDLETIME. J. C. Penney Company, Inc. SN 350,292. Pub. 11–10–70. Filed 2–2–70.

906,705. SMOOTH-FLO. Baker Brush Co., Inc. SN 358,689. Pub. 11–10–70. Filed 5–4–70.

Class 30 — Crockery, Earthenware, and Porcelain

906,706. TWO CROSSED SWORDS (DESIGN). VEB Staatliche Porzellan-Manufaktur Meissen. MULTIPLE CLASS (Classes 30 and 50). SN 247,985. Pub. 11–10–70. Filed 6–13–66.

906,707. TWO CROSSED SWORDS WITH DOT (DESIGN). VEB Staatliche Porzellan-Manufaktur Meissen. MULTIPLE CLASS (Classes 30 and 50). SN 247,986. Pub. 11–10–70. Filed 6–13–66.

906,708. DRESDEN ART AND DESIGN. VEB Staatliche Porzellan-Manufaktur Meissen. MULTIPLE CLASS (Classes 30 and 50). SN 254,078. Pub. 11–10–70. Filed 9–8–66.

906,709. ARABIA. Oy Wartsila AB. SN 332,984. Pub. 11–10–70. Filed 7–18–69.

Class 31 — Filters and Refrigerators

906,696. (See Class 26 for this trademark.)

906,710. IMACULATOR. H.T.S. Inc. SN 330,926. Pub. 11–10–70. Filed 6–25–69.

906,711. EW (DESIGN). Elliott-Williams Company, Inc. SN 337,157. Pub. 11–10–70. Filed 9–5–69.

906,712. FRIGI-TOP. Cornish Containers, Inc. SN 337,525. Pub. 11–10–70. Filed 9–10–69.

906,713. VORTOX. Vortox Manufacturing Company. SN 354,102. Pub. 11–10–70. Filed 3–16–70.

906,714. HOLIDAY. Modern-United Water Equipment Company. SN 355,248. Pub. 11–10–70. Filed 3–27–70.

906,715. AJAX RO. Ajax International Corporation. SN 361,253. Pub. 11–10–70. Filed 6–1–70.

Class 32 — Furniture and Upholstery

906,515. (See Class 19 for this trademark.)

906,716. GROTE. The Grote Manufacturing Company. SN 310,891. Pub. 11–10–70. Filed 10–30–68.

906,717. NEEDLEPAINTING AND DESIGN. Needle Painters Guild, Ltd. SN 324,600. Pub. 11–10–70. Filed 4–15–69.

906,718. RSC AND DESIGN. Royal Seating Corporation. SN 325,396. Pub. 11–3–70. Filed 4–23–69.

906,719. DESIGNPAK. Ronald Jackson Gordon-Smith, d.b.a. Designpak. SN 332,295. Pub. 11–10–70. Filed 7–11–69.

906,720. PAKDESIGN. Ronald Jackson Gordon-Smith, d.b.a. Pakdesign. SN 332,296. Pub. 11–10–70. Filed 7–11–69.

906,721. LB AND DESIGN. Lectrabed Corp. SN 352,158. Pub. 11–10–70. Filed 2–24–70.

906,722. BEAUTI-FLEX. Beauti-Flex Manufacturing Company, Inc. SN 363,414. Pub. 11–10–70. Filed 6–23–70.

906,723. CITYSCAPE. Directional Industries, Incorporated. SN 364,402. Pub. 11–10–70. Filed 7–6–70.

906,724. WAVERLY. Joanna Western Mills Company. SN 364,918. Pub. 11–10–70. Filed 7–10–70.

Class 34 — Heating, Lighting, and Ventilating Apparatus

906,629. (See Class 23 for this trademark.)

906,696. (See Class 26 for this trademark.)

906,725. MUREMATIC. Air Reduction Company, Incorporated, d.b.a. Murex Welding Products. SN 297,513. Pub. 11–10–70. Filed 5–7–68.

906,726. CAPPING COMBINE. Melford Olson Honey Company. SN 313,602. Pub. 11–10–70. Filed 12–4–68.

906,727. TROUGHDEAN. Dean Products, Inc. SN 346,874. Pub. 11–10–70. Filed 12–22–69.

906,728. THERMCO. Thermco Products Corporation. SN 347,354. Pub. 11–10–70. Filed 12–29–69.

906,729. AQUA-DRI AND DESIGN. Ebco Manufacturing Company. SN 366,245. Pub. 11–10–70. Filed 7–27–70.

Class 35 — Belting, Hose, Machinery Packing, and Nonmetallic Tires

906,730. INTRUSEAL. Hurricane Pipe Manufacturing, Inc. SN 334,234. Pub. 11–10–70. Filed 8–1–69.

906,731. LAND FILL. The Firestone Tire & Rubber Company. SN 352,802. Pub. 7–28–70. Filed 3–2–70.

906,732. FL. Johns-Manville Corporation. SN 356,691. Pub. 11–10–70. Filed 4–13–70.

Class 36 — Musical Instruments and Supplies

906,548. (See Class 21 for this trademark.)

906,559. (See Class 21 for this trademark.)

906,733. THE GLAD RAGS AND DESIGN. Dorothy Mabee Mackin, d.b.a. The Glad Rags. SN 333,790. Pub. 11–10–70. Filed 7–25–69.

906,734. THE JUNIOR. Kraskin Baton Company. SN 345,646. Pub. 11–10–70. Filed 12–8–69.

906,735. R–360. Columbia Broadcasting System, Inc. SN 347,229. Pub. 11–10–70. Filed 12–29–69.

906,736. RAINBOW A WORLD OF COLORFUL SOUND AND DESIGN. Rainbow Sound, Inc. SN 349,886. Pub. 8–11–70. Filed 1–22–70.

906,737. DE JACQUES. Douglas Jaquith. SN 359,867. Pub. 11–10–70. Filed 5–11–70.

Class 37 — Paper and Stationery

906,438. (See Class 1 for this trademark.)

906,738. ROLL A COASTER. Lightning Novelties Limited. SN 321,950. Pub. 11–10–70. Filed 3–17–69.

906,739. TYBAK. Chicopee Mills, Inc. MULTIPLE CLASS (Classes 37 and 42). SN 326,202. Pub. 9–15–70. Filed 5–2–69.

906,740. & VICE VERSA. Donghia's Infinity, Inc. MULTIPLE CLASS (Classes 37 and 42). SN 335,439. Pub. 11–10–70. Filed 8–15–69.

906,741. TJM (DESIGN) SINCE 1881. Thos. J. Moran's Sons, Incorporated. SN 338,422. Pub. 11–10–70. Filed 9–19–69.

906,742. PERMA-LINE. Diagraph-Bradley Industries, Inc. SN 341,021. Pub. 4–21–70. Filed 10–17–69.

906,743. REZIZTOL. Tekni-Plex Inc. SN 343,441. Pub. 11–10–70. Filed 11–13–69.

906,744. PUMPOMATIC. Carco, Incorporated. SN 348,496. Pub. 11–10–70. Filed 1–14–70.

906,745. EASY-OUT. Mrs. Jane Ann Raviele, d.b.a. Easy-Out Company. SN 349,086. Pub. 11–10–70. Filed 1–20–70.

906,746. SYSTEM SET AND DESIGN. Burroughs Corporation. SN 353,421. Pub. 11–10–70. Filed 3–9–70.

906,747. IMPERIAL GUARANTEED WALLCOVERINGS. Imperial Wallpaper Mill, Inc. SN 365,510. Pub. 11–10–70. Filed 7–17–70.

906,748. KIM. Kimberly-Clark Corporation. SN 365,994. Pub. 11–10–70. Filed 7–23–70.

Class 38 — Prints and Publications

906,749. PR AND DESIGN. Production-Research (PR), Incorporated. SN 309,184. Pub. 11–10–70. Filed 10–8–68.

906,750. RESPONDEX. Steven K. Herlitz, Inc. SN 324,817. Pub. 11–10–70. Filed 4–17–69.

906,751. LA BONNE CUISINE A LA PORTEE DE TOUS. Presses Modernes de France (P.M.F.). SN 330,952. Pub. 11–10–70. Filed 6–25–69.

906,752. COOKING BY THE STARS AND DESIGN. Maria Bragalini, d.b.a. Maria's Cin Cin. SN 339,539. Pub. 11–10–70. Filed 10–2–69.

906,753. CREATIVE SOUL INC. AND BUTTERFLY DESIGN. Creative Soul, Inc. SN 341,634. Pub. 11–10–70. Filed 10–24–69.

906,754. COUNTRY CLUB NEWS. Country Club Enterprises, Inc. SN 344,340. Pub. 11–10–70. Filed 11–24–69.

906,755. PROGRAMMED REFERENCE LIBRARY. Communication & Studies, Inc. SN 344,549. Pub. 11–10–70. Filed 11–25–1969.

906,756. SOREL'S NEWS SERVICE. The Hearst Corporation. SN 344,784. Pub. 11–10–70. Filed 11–28–69.

906,757. KAL-FOIL. Kalamazoo Label Company. SN 344,995. Pub. 4–7–70. Filed 12–1–69.

906,758. BRACK GALLER. Peter Charles Zarilla. SN 347,676. Pub. 11–10–70. Filed 1–2–70.

906,759. PEACH LAND CALENDAR. Gerald J. Ebensteiner, d.b.a. Peach Land Realty. SN 348,276. Pub. 11–10–70. Filed 1–12–70.

906,760. FLEET-MARK. Reidler Decal Corporation. SN 350,955. Pub. 11–10–70. Filed 2–9–70.

906,761. DENTAL STUDENT. Students' Magazine, Inc. SN 351,234. Pub. 11–10–70. Filed 2–12–70.

906,762. ISRAEL CHAI-LITES. Deborah Hahn. SN 353,821. Pub. 11–10–70. Filed 3–12–70.

906,763. GOLDEN FUTURE. Golden Future Publishing Company. SN 354,838. Pub. 11–10–70. Filed 3–23–70.

906,764. THE ALUMNAE. The Register and Tribune Syndicate, Inc. SN 355,261. Pub. 11–10–70. Filed 3–27–70.

906,765. KA HAGON. Ka Hagon Associates, Inc. SN 355,657. Pub. 11–10–70. Filed 4–1–70.

906,766. THE GOOD LIFE. The Good Life. SN 355,968. Pub. 11–10–70. Filed 4–6–70.

906,767. WHERE YOU LIVE. Joy G. Tucker, d.b.a. Joy Holmes. SN 357,875. Pub. 11–10–70. Filed 4–24–70.

906,768. THE ART TRADER. The Art Trader, Inc. SN 358,268. Pub. 11–10–70. Filed 4–29–70.

906,769. TRAY-TALK. Virginia Coy. SN 358,704. Pub. 11–10–70. Filed 5–4–70.

906,770. PERSONAL BUSINESS. McGraw-Hill, Inc. SN 358,979. Pub. 11–10–70. Filed 5–6–70.

906,771. GRINVITATIONS AND DESIGN. Riback Enterprises, Inc. SN 359,041. Pub. 11–10–70. Filed 5–4–70.

906,772. DUGOUT DOPE. Dixie Youth Baseball, Inc. SN 359,830. Pub. 9–8–70. Filed 5–15–70.

906,773. DSM. Psychological Associates, Inc. SN 360,289. Pub. 11–10–70. Filed 5–20–70.

906,774. FORE. Golf Associates, Inc. SN 361,847. Pub. 11–10–70. Filed 6–5–70.

Class 39 — Clothing

906,578. (See Class 22 for this trademark.)

906,775. DUCHESS AND DESIGN. New York Glove Co., Inc. SN 292,408. Pub. 11–10–70. Filed 3–4–68.

906,776. HANG TEN. Doris Moore of California, Inc., assignee of Hang Ten of Nevada, Inc. SN 319,309. Pub. 11–10–70. Filed 2–17–69.

906,777. OMINO DI FERRO AND KNIGHT DESIGN. Fabbriche Riunite Omino di Ferro e Martazz, S.p.A. MULTIPLE CLASS (Classes 39 and 42). SN 322,120. Pub. 11–10–70. Filed 3–19–69.

906,778. THE CLUB ROOM. Montgomery Ward & Co., Incorporated. MULTIPLE CLASS (Classes 39 and 101). SN 327,315. Pub. 9–1–70. Filed 5–15–69.

906,779. COUNTESS ANTONIETTA NINNI. Robert Hall Clothes, Inc., d.b.a. Robert Hall Clothes. SN 335,571. Pub. 11–10–70. Filed 8–18–69.

906,780. TEEN ANGEL. Rudin & Roth, Inc. SN 336,863. Pub. 11–10–70. Filed 9–2–69.

906,781. LITTLE PRUNE. Family Loom, Inc. SN 339,167. Pub. 11–10–70. Filed 9–29–69.

906,782. ANGEL BABY AND DESIGN. The Dorsey Company, d.b.a. The Angel Baby Co. SN 339,664. Pub. 11–10–70. Filed 10–3–69.

906,783. LORD COVENTRY. Sarah Coventry, Inc. MULTIPLE CLASS (Classes 39, 51, and 52). SN 341,302. Pub. 11–10–70. Filed 10–22–69.

906,784. CHC AND DESIGN. Chadbourn Inc. SN 342,022. Pub. 11–10–70. Filed 10–29–69.

906,785. NERO OF ROME AND DESIGN. Raleigh Shirt Co., Inc. SN 342,667. Pub. 11–10–70. Filed 11–4–69.

906,786. LADY DJ. Dickson-Jenkins Manufacturing Company, Incorporated. SN 344,349. Pub. 11–10–70. Filed 11–24–69.

906,787. SHASTA. Jay-Arr Slimwear, Inc. SN 345,346. Pub. 11–10–70. Filed 12–4–69.

906,788. MARJORIE. Jay-Arr Slimwear, Inc. SN 345,347. Pub. 11–10–70. Filed 12–4–69.

906,789. FULLON. Shelby Seamless Hosiery Mills, Inc. SN 345,683. Pub. 11–10–70. Filed 12–8–69.

906,790. UNI-FASHIONS. D'Armigene, Inc. SN 349,595. Pub. 11–10–70. Filed 1–26–70.

906,791. CHIN-CHIN. Career Originals Inc. SN 349,828. Pub. 11–10–70. Filed 1–28–70.

906,792. DOLL RAGS. Gem-Dandy, Inc. SN 350,080. Pub. 11–10–70. Filed 1–30–70.

906,793. LONDON FAIR. London-Aire, Inc. SN 352,355. Pub. 11–10–70. Filed 2–25–70.

906,794. LOVE BANDS. Melville Shoe Corporation. SN 352,732. Pub. 11–10–70. Filed 3–2–70.

906,795. DRI BABE. Union Carbide Corporation. SN 353,631. Pub. 11–10–70. Filed 3–10–70.

906,796. LIBERTY BELLE. Best Wear Hosiery Mills, Inc. SN 356,610. Pub. 11–10–70. Filed 4–13–70.

906,797. GROOPIE. Sandy Shaw, Inc. SN 358,159. Pub. 11–10–70. Filed 4–28–70.

906,798. BEAU JEFF. Lord Jeff Knitting Company, Incorporated. SN 358,873. Pub. 11–10–70. Filed 5–5–70.

906,799. JEFFMATES. Lord Jeff Knitting Company, Incorporated. SN 358,874. Pub. 11–10–70. Filed 5–5–70.

906,800. 'SMOOTH-AS-YOU.' Warnaco Inc. SN 360,942. Pub. 11–10–70. Filed 5–27–70.

906,801. HI-LINE. ESB Incorporated. SN 366,243. Pub. 11–10–70. Filed 7–27–70.

906,802. SAFESOUND. ESB Incorporated. SN 366,244. Pub. 11–10–70. Filed 7–27–70.

906,803. GIFTED. Nicholas Brecher. SN 366,832. Pub. 11–10–70. Filed 8–3–70.

Class 40—Fancy Goods, Furnishings, and Notions

906,459. (See Class 7 for this trademark.)

906,804. SUPERLON. Fashion Tress, Inc. SN 358,722. Pub. 11–10–70. Filed 5–4–70.

Class 41—Canes, Parasols, and Umbrellas

906,805. MINIPLANO. Kortenbach & Rauh Kommanditgesellschaft. SN 347,946. Pub. 11–10–70. Filed 1–7–70.

906,806. MISCELLANEOUS DESIGN. Telesco Brophey Limited. SN 347,974. Pub. 11–10–70. Filed 1–7–70.

Class 42—Knitted, Netted, and Textile Fabrics, and Substitutes Therefor

906,578. (See Class 22 for this trademark.)

906,739. (See Class 37 for this trademark.)

906,740. (See Class 37 for this trademark.)

906,777. (See Class 39 for this trademark.)

906,807. FRESCEAU. Fieldcrest Mills, Inc. SN 336,684. Pub. 11–10–70. Filed 8–29–69.

906,808. CLING-A-WAY. Fab Industries, Inc. SN 337,915. Pub. 9–1–70. Filed 9–15–69.

906,809. FIBERCOAT. Textured Products, Inc. SN 338,004. Pub. 11–10–70. Filed 9–15–69.

906,810. LUSTRELOUR. Cannon Mills Company. SN 340,649. Pub. 11–10–70. Filed 10–14–69.

906,811. POLAROID. Polaroid Corporation. SN 341,594. Pub. 11–10–70. Filed 10–24–69.

906,812. SATINESSA. Klopman Mills, Inc. SN 348,039. Pub. 11–10–70. Filed 1–8–70.

906,813. SCREEN PASS. Klopman Mills, Inc. SN 348,040. Pub. 11–10–70. Filed 1–8–70.

906,814. PINECREST. Angelica Corporation. SN 348,748. Pub. 11–10–70. Filed 1–16–70.

906,815. VERSATIQUE. Dan River Inc., by change of name from Dan River Mills, Incorporated. SN 349,067. Pub. 11–10–70. Filed 1–20–70.

906,816. TEXTOGLASS. J. P. Stevens & Co., Inc. SN 349,222. Pub. 11–10–70. Filed 1–21–70.

906,817. CARNABY. Gitkin Company. SN 349,345. Pub. 11–10–70. Filed 1–22–70.

906,818. HANG TEN AND DESIGN. Doris Moore of California, Inc. SN 349,369. Pub. 11–10–70. Filed 1–22–70.

906,819. KEYNOTE PLUS. Klopman Mills, Inc. SN 349,768. Pub. 11–10–70. Filed 1–27–70.

906,820. COPASETTA. Klopman Mills, Inc. SN 349,769. Pub. 11–10–70. Filed 1–27–70.

906,821. TASTEMAKER. J. P. Stevens & Co., Inc. SN 350,531. Pub. 11–10–70. Filed 2–4–70.

906,822. ESKILOO. Henry Pollak Inc. SN 352,515. Pub. 11–10–70. Filed 2–26–70.

906,823. SYNCEL. Applied Synthetics, Inc. SN 352,598. Pub. 11–10–70. Filed 2–27–70.

906,824. WEB-EE. Graham Manufacturing Company. SN 352,635. Pub. 11–10–70. Filed 2–27–70.

906,825. SILGLO. The Empire Bloomer Company. SN 352,796. Pub. 11–10–70. Filed 3–2–70.

906,826. SAFEGUARD. Ozite Corporation. SN 361,536. Pub. 9–8–70. Filed 6–3–70.

906,827. THE DESIGN WORKS OF BEDFORD-STUYVESANT AND DESIGN. The Design Works of Bedford-Stuyvesant, Inc. SN 366,099. Pub. 11–10–70. Filed 7–24–70.

Class 43—Thread and Yarn

906,828. SSK AND DESIGN. S. S. Kresge Company. SN 352,483. Pub. 11–10–70. Filed 2–26–70.

906,829. K MART AND DESIGN. S. S. Kresge Company. SN 352,484. Pub. 11–10–70. Filed 2–26–70.

906,830. CEDILLA. Fiber Industries, Inc. SN 352,801. Pub. 11–10–70. Filed 3–2–70.

906,831. BARUFFA. A. Zegna Società in Accomandita Semplice. SN 358,161. Pub. 11–10–70. Filed 4–28–70.

Class 44—Dental, Medical, and Surgical Appliances

906,832. "ORTHOCAST." Johnson & Johnson, assignee of Continental Chemical Company, Incorporated. SN 302,393. Pub. 5–26–70. Filed 7–10–68.

906,833. TAK-A-MASSAGE. John Adam Dante. SN 344,830. Pub. 11–10–70. Filed 11–28–69.

906,834. MINDER-SWITCH. Propper Manufacturing Company, Inc. SN 353,381. Pub. 11–10–70. Filed 3–9–70.

906,835. MARK 1. Bird Corporation. SN 360,536. Pub. 11–10–70. Filed 5–22–70.

906,836. SO-LO. American Hospital Supply Corporation. SN 360,665. Pub. 11–10–70. Filed 5–25–70.

906,837. SPECULETTE. Baxter Laboratories, Inc. SN 360,695. Pub. 11–10–70. Filed 5–25–70.

906,838. ADD-A-JET. IMS Limited. SN 361,729. Pub. 11–10–70. Filed 6–4–70.

906,839. SURGINE. Johnson & Johnson. SN 361,731. Pub. 11–10–70. Filed 6–4–70.

906,840. SURE-GUARD. American Optical Corporation. SN 362,440. Pub. 11–10–70. Filed 6–12–70.

906,841. RESICATH. Cutter Laboratories, Inc. SN 362,493. Pub. 11–10–70. Filed 6–12–70.

906,842. ELASTO. Chesebrough-Pond's Inc. SN 362,942. Pub. 11–10–70. Filed 6–17–70.

906,843. ABDO BAG. C. R. Bard, Inc. SN 362,990. Pub. 11–10–70. Filed 6–18–70.

906,844. SOUND MASTER AND DESIGN. Jack B. Taylor and Associates, Inc. SN 363,196. Pub. 11–10–70. Filed 6–19–70.

906,845. BUSTETTE. June B. Greenough, d.b.a. June Greenough Bustette. SN 363,298. Pub. 11–10–70. Filed 6–22–70.

906,846. SOLOSCOPE. DePuy Manufacturing Co., Inc. SN 363,418. Pub. 11–10–70. Filed 6–23–70.

906,847. RESTON. Minnesota Mining and Manufacturing Company. SN 367,118. Pub. 11–10–70. Filed 8–5–70.

Class 45—Soft Drinks and Carbonated Waters

906,848. FRANKLIN BY BEVERAGE AND DESIGN. Franklin Beverage Company. SN 307,017. Pub. 11–10–70. Filed 9–10–68.

906,849. TRILLY. Fonti Levissima S.p.A. SN 327,640. Pub. 11–10–70. Filed 5–19–69.

906,850. TEVIO. Farbenfabriken Bayer Aktiengesellschaft. SN 331,360. Pub. 11–10–70. Filed 6–30–69.

906,851. SLIMWAY. William Seymour & Co. (Sherborne) Limited. SN 340,950. Pub. 11–10–70. Filed 10–16–69.

906,852. SUNSHAKE. Welch Foods Inc. SN 348,621. Pub. 11–10–70. Filed 1–15–70.

906,853. POWER BACK. General Foods Corporation. SN 349,617. Pub. 11–10–70. Filed 1–26–70.

906,854. 1 FOR THE ROAD AND DESIGN. W. Evans Howell. SN 351,756. Pub. 11–10–70. Filed 2–19–70.

906,855. BIG THIRST AMERICA. The Pillsbury Company. SN 358,668. Pub. 11–10–70. Filed 5–4–70.

Class 46—Foods and Ingredients of Foods

906,488. (See Class 18 for this trademark.)

906,856. HOMESTEAD. Fairway Foods, Inc. SN 147,094. Pub. 12–31–63. Filed 6–18–62.

906,857. HOMESTEAD. Beatrice Foods Co. SN 213,648. Pub. 1–4–66. Filed 3–9–65.

906,858. ANDES AND DESIGN. A. Bertolla & Sons. SN 272,908. Pub. 11–10–70. Filed 6–2–67.

906,859. ABBOTTS. Fairmont Foods Company, d.b.a. Abbotts Dairies. SN 295,629. Pub. 11–10–70. Filed 4–15–68.

906,860. DAVY JONES. Brenner Candies, Inc. SN 305,913. Pub. 11–10–70. Filed 8–26–68.

906,861. SALSA RANCHERO. Lake Region, Inc. SN 314,353. Pub. 11–10–70. Filed 12–12–68.

906,862. BACI TIME. La Perugina and Societa per Azioni Perugina, a.k.a. Perugina S.p.A. Cioccolato & Confetture, by merger and change of name from Perugina S.p.A. Cioccolato & Confetture. SN 315,330. Pub. 11–10–70. Filed 12–27–68.

906,863. TETRAL. Ulrich Baensch, d.b.a. Tetra Werke Dr. Rer. Nat. Ulrich Baensch. SN 316,404. Pub. 11–10–70. Filed 1–13–69.

906,864. DIXIE AND DESIGN. Paradise Fruit Company, Inc. SN 318,094. Pub. 9–8–70. Filed 1–31–69.

906,865. PEP. Oberto Sausage Co. SN 327,953. Pub. 11–10–70. Filed 5–21–69.

906,866. HOUSE OF SNOOPY. Interstate Bakeries Corporation. SN 328,303. Pub. 11–10–70. Filed 5–26–69.

906,867. SUNSHINE VALLEY AND DESIGN. Natural Food Supplements, Inc. MULTIPLE CLASS (Classes 46 and 51). SN 328,758. Pub. 11–10–70. Filed 6–2–69.

906,868. UPC DEL MAR. Universal Packers Corporation. SN 328,788. Pub. 11–10–70. Filed 6–2–69.

906,869. CRAVENS. M. A. Craven & Son Limited. SN 330,257. Pub. 11–10–70. Filed 6–17–69.

906,870. DREYER. P. R. Dreyer, Inc. SN 331,355. Pub. 5–26–70. Filed 6–30–69.

906,871. EXCEL. Land O'Lakes Creameries, Inc. SN 332,111. Pub. 11–10–70. Filed 7–9–69.

906,872. MRS. KINSER'S HOME STYLE. Mrs. Kinser's Home Style Foods, Inc. SN 332,421. Pub. 11–10–70. Filed 7–14–69.

906,873. LUCUL. Lucul-Nahrmittelfabrik A.G., d.b.a. Lucul-Food Products Ltd. SN 334,352. Pub. 11–10–70. Filed 8–4–69.

906,874. PEANUT BUTTER CUPS AND DESIGN. H. B. Reese Candy Co., Inc. SN 336,715. Pub. 11–10–70. Filed 8–29–69.

906,875. ROMCO. Black River Dairy Products, Inc. SN 338,882. Pub. 9–8–70. Filed 9–25–69.

906,876. TOMAT-O-MATE. Plochman, Inc. SN 339,926. Pub. 11–10–70. Filed 10–6–69.

906,877. TOP TASTE. National Tea Co. SN 341,681. Pub. 11–10–70. Filed 10–24–69.

906,878. ALANNA. Goodalls of Ireland Limited. SN 341,923. Pub. 11–10–70. Filed 10–28–69.

906,879. DIANE'S. Diane's Foods, Inc. SN 345,806. Pub. 11–10–70. Filed 12–10–69.

906,880. SPAIN IN AMERICA AND DESIGN. Vigo Importing Company. SN 346,414. Pub. 11–10–70. Filed 12–16–69.

906,881. ANZIO. Little Chef Food Products, Inc. SN 347,289. Pub. 11–10–70. Filed 12–29–69.

906,882. CLIMAX. The Procter & Gamble Company. SN 348,087. Pub. 11–10–70. Filed 1–9–70.

906,883. JIB JAB. Jib-Jab Enterprises, Inc. SN 348,217. Pub. 11–10–70. Filed 1–12–70.

906,884. SWEET MAGIC. Cumberland Packing Corp. SN 349,164. Pub. 11–10–70. Filed 1–21–70.

906,885. QUIK FEST. Armour-Dial, Inc. SN 349,314. Pub. 11–10–70. Filed 1–22–70.

906,886. COUNTRY STAR. Armour-Dial, Inc. SN 349,316. Pub. 11–10–70. Filed 1–22–70.

906,887. PEPTEEN. Roy A. Brog, d.b.a. Dairy Monitoring of America. SN 352,080. Pub. 11–10–70. Filed 2–24–70.

906,888. DEEP SEA PRIZES. O'Donnell-Usen Fisheries Corporation. SN 352,192. Pub. 11–10–70. Filed 2–24–70.

906,889. PUFF'NS. Beatrice Foods Co. SN 352,605. Pub. 11–10–70. Filed 2–27–70.

906,890. RESPOND. The Pillsbury Company. SN 362,619. Pub. 11–10–70. Filed 6–15–70.

906,891. FLA-VOR-ICE GIANT BAR AND DESIGN. The Jel Sert Company. SN 366,454. Pub. 11–10–70. Filed 7–28–70.

906,892. OLE. Sunshine Biscuits, Inc. SN 366,625. Pub. 11–10–70. Filed 7–30–70.

906,893. SUNDAY MORNING. Carter-Wallace, Inc. SN 366,768. Pub. 11–10–70. Filed 7–31–70.

Class 47—Wines

906,894. KIKIRIKEE AND ROOSTER (DESIGN). Castellanos & Co. Ltd. SN 323,939. Pub. 11–10–70. Filed 4–8–69.

906,895. FINO SAN PATRICIO. Garvey Sociedad Anonima Bodegas de San Patricio-Jerez de la Frontera. SN 340,662. Pub. 11–10–70. Filed 10–14–69.

906,896. CHATEAU MOUTON BARON PHILIPPE. Baron Philippe de Rothschild. SN 341,780. Pub. 11–10–70. Filed 10–27–69.

906,897. CHAMBRAISE. National Distillers and Chemical Corporation, d.b.a. Munson Shaw Co. SN 357,038. Pub. 11–10–70. Filed 4–16–70.

Class 48—Malt Beverages and Liquors

906,898. OLD STYLE ETC. AND DESIGN. G. Heileman Brewing Company, Inc. SN 332,824. Pub. 11–10–70. Filed 7–17–69.

906,899. ELEPHANT. Carlsberg Bryggerierne, d.b.a. The Carlsberg Breweries. SN 346,221. Pub. 11–10–70. Filed 12–15–69.

906,900. GBX. Grain Belt Breweries, Inc. SN 365,392. Pub. 11–10–70. Filed 7–16–70.

Class 50 — Merchandise Not Otherwise Classified

906,440. (See Class 1 for this trademark.)

906,437. (See Class 1 for this trademark.)

906,578. (See Class 22 for this trademark.)

906,706. (See Class 30 for this trademark.)

906,707. (See Class 30 for this trademark.)

906,708. (See Class 30 for this trademark).

906,901. BIG GAME. The Franklin Mint, Inc. SN 339,006. Pub. 11-10-70. Filed 9-26-69.

906,902. MEMORY. Iva Jane Burns. SN 341,886. Pub. 11-10-70. Filed 10-27-69.

906,903. HICKORY DICKORY DOCKS. Arthur A. Pearson, d.b.a. Pearson Portable Dock Co. SN 344,254. Pub. 11-10-70. Filed 11-21-69.

906,904. WINDIWHEEL. Loren Bear, d.b.a. Bearline Products. SN 348,879. Pub. 11-10-70. Filed 1-19-70.

906,905. PSYCH-A-DILLY AND DESIGN. George P. Andrews, d.b.a. Craft Plastix Company. SN 349,154. Pub. 11-10-70. Filed 1-21-70.

Class 51 — Cosmetics and Toilet Preparations

906,783. (See Class 39 for this trademark.)

906,867. (See Class 46 for this trademark.)

906,906. YOUNG 'N FREE. Youth Care Inc. MULTIPLE CLASS (Classes 51 and 52). SN 340,968. Pub. 11-10-70. Filed 10-16-69.

906,907. ORBITA. Yardley of London, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 347,453. Pub. 11-10-70. Filed 12-31-69.

906,908. YARDLEY ENGLISH LAVENDER. Yardley of London, Inc. MULTIPLE CLASS (Classes 51 and 52). SN 363,126. Pub. 11-10-70. Filed 6-19-70.

Class 52 — Detergents and Soaps

906,449. (See Class 6 for this trademark.)

906,783. (See Class 39 for this trademark.)

906,906. (See Class 51 for this trademark.)

906,907. (See Class 51 for this trademark.)

906,908. (See Class 51 for this trademark.)

906,909. CCR-22. Mantek Corporation. SN 325,527. Pub. 11-10-70. Filed 4-24-69.

906,910. WITH SOILGARD PROTECTION. Texize Chemicals, Inc., assignee of Simoniz Company. SN 335,069. Pub. 9-1-70. Filed 8-11-69.

906,911. SF-400. H & D Industries, Inc. SN 341,655. Pub. 7-14-70. Filed 10-24-69.

906,912. DASCO KLEEN. D. A. Stuart Oil Co., Limited. SN 347,533. Pub. 11-10-70. Filed 12-31-69.

Service Marks

Class 100 — Miscellaneous

906,501. (See Class 18 for this trademark.)

906,913. DIC. Information Systems Architectonics, Inc. MULTIPLE CLASS (Classes 100 and 101). SN 312,360. Pub. 11-10-70. Filed 11-14-68.

906,914. MULTI-AMP. Multi-Amp Corporation. SN 328,570. Pub. 7-14-70. Filed 5-28-69.

906,915. PHCC AND DROP AND FLAME DESIGN. National Association of Plumbing-Heating-Cooling Contractors. SN 340,581. Pub. 11-10-70. Filed 10-14-69.

906,916. HONEY BEAR FARM. Carson International Inc., d.b.a. Honey Bear Farm. SN 341,145. Pub. 11-10-70. Filed 10-20-69.

Class 101 — Advertising and Business

906,778. (See Class 39 for this trademark.)

906,913. (See Class 100 for this trademark.)

906,917. ATU AND DESIGN. Auto-Tronix Universal Corporation, assignee, by mesne assignment, of Auto-Tronix Universal Corporation. SN 311,664. Pub. 11-10-70. Filed 11-8-68.

906,918. FRANCHISE-FAX F AND DESIGN. Franchise Data Service Corporation. SN 316,304. Pub. 11-10-70. Filed 1-10-69.

906,919. DESIGN OF 12 GEOMETRIC FIGURES. Computer Media, Inc. SN 318,701. Pub. 7-21-70. Filed 2-10-69.

906,920. PRS. Photo Reproduction Service, Inc. SN 324,747. Pub. 11-10-70. Filed 4-16-69.

906,921. SALLY. Sally Beauty Company, Inc. SN 324,838. Pub. 11-10-70. Filed 4-17-69.

906,922. THE WAY IN AND DESIGN. The May Department Stores Company. SN 327,948. Pub. 4-14-70. Filed 5-21-69.

906,923. MISS TOURISM. Charlie See, d.b.a. Charlie See Enterprises. SN 328,204. Pub. 11-10-70. Filed 5-23-69.

906,924. COACH AND OVAL AND COACH DESIGN. Coach Agency, Inc. SN 330,356. Pub. 7-14-70. Filed 6-18-69.

906,925. GAF. GAF Corporation. SN 331,978. Pub. 11-10-70. Filed 7-8-69.

906,926. ARROWHEAD AND DESIGN. Arrowhead International, Inc. SN 332,275. Pub. 11-10-70. Filed 7-10-69.

906,927. SE STERLING AND DESIGN. Sterling Electronics Corporation. MULTIPLE CLASS (Classes 101 and 103). SN 338,974. Pub. 11-10-70. Filed 9-26-69.

906,928. RPE DESIGN. Regensteiner Publishing Enterprises, Inc. SN 351,389. Pub. 8-4-70. Filed 2-16-70.

906,929. CHILD AND HOUSE DESIGN. L'Academie Montessori, Inc. SN 357,536. Pub. 11-10-70. Filed 4-21-70.

906,930. COMPUTERVISION AND CV DESIGN. Computervision Corporation. SN 358,233. Pub. 11-10-70. Filed 4-29-70.

906,931. FOTOMAT DRIVE THRU. Fotomat Corporation. SN 360,199. Pub. 11-10-70. Filed 5-19-70.

Class 102 — Insurance and Financial

906,932. K DESIGN. Robert J. Kistler, d.b.a. Kistler Associates. SN 315,771. Pub. 11-10-70. Filed 1-3-69.

906,933. SMART MONEY. Birmingham Bloomfield Bank. SN 323,226. Pub. 11-10-70. Filed 4-1-69.

906,934. NORTHERN VIRGINIA SAVINGS AND LOAN ASSOCIATION AND DESIGN. Northern Virginia Savings and Loan Association. SN 330,296. Pub. 11-10-70. Filed 6-17-69.

906,935. MISCELLANEOUS DESIGN. Pan American Bank of Miami. SN 332,515. Pub. 11-10-70. Filed 7-14-69.

906,936. GRADUATE ESTATE PLAN AND CAP AND CIRCLE DESIGN. California-Western States Life Insurance Company. SN 335,545. Pub. 11-10-70. Filed 8-18-69.

906,937. FPD REVOLVING PLAN. Federated Department Stores, Inc., d.b.a. The F. & R. Lazarus & Company. SN 336,110. Pub. 11-10-70. Filed 8-25-69.

906,938. MISCELLANEOUS DESIGN. AM-Banks Service Corporation. SN 354,344. Pub. 9-8-70. Filed 3-18-70.

906,939. NML AND DESIGN. The Northwestern Mutual Life Insurance Company. SN 360,428. Pub. 11-10-70. Filed 5-21-70.

Class 103 — Construction and Repair

906,927. (See Class 101 for this trademark.)

906,940. ASTRO-LUBE. Astro-Matic Lubricare, Inc. SN 336,222. Pub. 11-10-70. Filed 8-21-69.

906,941. M & W WE SELL PROTECTION AND DESIGN. Elton W. Miller, d.b.a. M & W Security. SN 344,636. Pub. 11-10-70. Filed 11-26-69.

Class 105 — Transportation and Storage

906,942. BI AIRGO. Braniff Airways, Incorporated. SN 326,842. Pub. 6-9-70. Filed 5-9-69.

906,943. BRANIFF AIRGO. Braniff Airways, Incorporated. SN 326,843. Pub. 6-9-70. Filed 5-9-69.

906,944. MEXICAN PARTY AND PEACOCK DESIGN. ABC Travel Service, S.A. SN 329,206. Pub. 11-10-70. Filed 6-5-69.

906,945. ANDREWS VAN LINES AND DESIGN. Andrews Van Lines, Inc. SN 366,449. Pub. 11-10-70. Filed 7-28-70.

Class 106 — Material Treatment

906,438. (See Class 1 for this trademark.)

Class 107 — Education and Entertainment

906,946. ATU AND DESIGN. Auto-Tronix Universal Corporation, assignee, by mesne assignment, of Auto-Tronix Universal Corporation. SN 311,663. Pub. 11-10-70. Filed 11-8-1968.

906,947. UNDERGROUND SUNSHINE. Jon W. Whirry, d.b.a. Jonathan W. Little. SN 332,390. Pub. 11-10-70. Filed 7-11-69.

906,948. MASTER MINDS INTERNATIONAL-MMI AND GLOBE DESIGN. Master Minds International, Inc. SN 335,244. Pub. 11-10-70. Filed 8-13-69.

906,949. FKH (DESIGN). Franklin K. Howard College Boards Institute, Inc. SN 354,182. Pub. 11-10-70. Filed 3-16-70.

906,950. JANTASTICS. Jantzen Inc. SN 361,228. Pub. 11-10-70. Filed 6-1-70.

Collective Membership Marks

Class 200

906,951. WITHDRAWN.

906,952. NCS AND DESIGN. Numerical Control Society. SN 340,585. Pub. 11-10-70. Filed 10-13-69.

906,953. NCAA. The National Collegiate Athletic Association. SN 365,866. Pub. 11-10-70. Filed 7-22-70.

Certification Mark

Class A — Goods

906,954. LAMBERT GREEN. J. O. Lambert, Jr. SN 327,283. Pub. 11-10-70. Filed 5-14-69.

SUPPLEMENTAL REGISTER

These registrations are not subject to opposition.

SECTION 1

(Combined Certificates)

906,956. British Fish & Chips, Ltd., Denver, Colo., assignee of British Fish & Chips, Ltd., Asso., Denver, Colo. SN 324,960. Filed P.R. 4-21-69; Am. S.R. 6-10-70.

BRITISH FISH & CHIPS

Class 46—Foods and Ingredients of Foods

For Batter Powder and Malt Vinegar (Int. Cl. 30).
First use Mar. 29, 1968.

Class 100—Miscellaneous

For Restaurant Services (Int. Cl. 42).
First use on or about Mar. 29, 1968.

Class 101—Advertising and Business

For Promoting the Establishment and Operation of Franchised Restaurants (Int. Cl. 35).
First use on or about Feb. 1, 1968.

SECTION 2

Class 18 — Medicines and Pharmaceutical Preparations

906,955. Masti-Kure Products Company, Norwich, Conn. SN 284,382. Filed P.R. 11-8-67; Am. S.R. 9-28-70.

TEAT-SEAL

For Antiseptic Preparations Which Are Applied to Animals, Particularly Cows, in the Region of the Udder (Int. Cl. 5).
First use Oct. 12, 1967.

Class 46 — Foods and Ingredients of Foods

906,956. Combined Certificate (See Section 1).

906,957. Island Sun Company, Inc., San Francisco, Calif. SN 327,902. Filed P.R. 5-21-69; Am. S.R. 11-9-70.

HOT HOUSE

For Canned Mushrooms (Int. Cl. 29).
First use on or about Nov. 18, 1968.

906,958. J. H. Filbert, Inc., Baltimore, Md. SN 351,922. Filed P.R. 2-20-70; Am. S.R. 10-21-70.

GOLDEN QUARTERS

For Oleomargarine (Int. Cl. 29).
First use May 27, 1948.

Class 47 — Wines

906,959. Frederic P. Winner, Ltd., Baltimore, Md., assignee of Mogen David Wine Corporation, d.b.a. Mama Rosenberg Wine Co., Westfield, N.Y. SN 344,562. Filed P.R. 11-25-69; Am. S.R. 10-23-70.

MAMA ROSENBERG'S

For Wine (Int. Cl. 33).
First use Oct. 29, 1968.

906,960. G. & L. F.lli Cora Societa per Azioni, d.b.a. G & L Fratelli Cora, Turin, Italy. SN 344,848. Filed 11-28-69.



Owner of Italian Reg. No. 215,370, dated July 24, 1967; and U.S. Reg. Nos. 290,132, 884,273, and others.
For Sparkling Wines (Int. Cl. 33).

Class 51 — Cosmetics and Toilet Preparations

906,961. John H. Breck, Inc., Wayne, N.J. SN 340,349. Filed P.R. 10-10-69; Am. S.R. 9-28-70.

BEACH RUSH

For Hair Coloring Preparation (Int. Cl. 3).
First use Sept. 15, 1969.

906,962. John H. Breck, Inc., Wayne, N.J. SN 340,350. Filed P.R. 10-10-69; Am. S.R. 9-28-70.

BISCAYNE

For Hair Coloring Preparation (Int. Cl. 3).
First use Sept. 15, 1969.

906,963. John H. Breck, Inc., Wayne, N.J. SN 340,351. Filed P.R. 10-10-69; Am. S.R. 9-28-70.

BY-THE-SEA

For Hair Coloring Preparation (Int. Cl. 3).
First use Sept. 15, 1969.

906,964. John H. Breck, Inc., Wayne, N.J. SN 340,352. Filed P.R. 10-10-69; Am. S.R. 9-28-70.

CLEAR WATER

For Hair Coloring Preparation (Int. Cl. 3).
First use Sept. 15, 1969.

906,965. John H. Breck, Inc., Wayne, N.J. SN 340,353. Filed P.R. 10-10-69; Am. S.R. 9-28-70.

SAND WARMED

For Hair Coloring Preparation (Int. Cl. 3).
First use Sept. 15, 1969.

906,966. John H. Breck, Inc., Wayne, N.J. SN 340,354. Filed P.R. 10-10-69; Am. S.R. 9-28-70.

SEAWORTHY

For Hair Coloring Preparation (Int. Cl. 3).
First use Sept. 15, 1969.

906,967. John H. Breck, Inc., Wayne, N.J. SN 340,355. Filed P.R. 10-10-69; Am. S.R. 9-28-70.

SILENT WORLD

For Hair Coloring Preparation (Int. Cl. 3).
First use Sept. 15, 1969.

906,968. John H. Breck, Inc., Wayne, N.J. SN 340,356. Filed P.R. 10-10-69; Am. S.R. 9-28-70.

SILVER ANEMONE

For Hair Coloring Preparation (Int. Cl. 3).
First use Sept. 15, 1969.

906,969. John H. Breck, Inc., Wayne, N.J. SN 340,357. Filed P.R. 10-10-69; Am. S.R. 9-28-70.

SUN MIRROR

For Hair Coloring Preparation (Int. Cl. 3).
First use Sept. 15, 1969.

906,970. John H. Breck, Inc., Wayne, N.J. SN 340,360. Filed P.R. 10-10-69; Am. S.R. 9-28-70.

20,000 LEAGUES

For Hair Coloring Preparation (Int. Cl. 3).
First use Sept. 15, 1969.

906,971. John H. Breck, Inc., Wayne, N.J. SN 340,361. Filed P.R. 10-10-69; Am. S.R. 9-28-70.

WARM SAND

For Hair Coloring Preparation (Int. Cl. 3).
First use Sept. 15, 1969.

Class 100 — Miscellaneous

906,956. Combined Certificate (See Section 1).

Class 101 — Advertising and Business

906,956. Combined Certificate (See Section 1).

TRADEMARK REGISTRATIONS RENEWED

80,295. WAYNE. Cl. 26 (Int. Cl. 9). 11-29-10.
274,044. BEL-AIR. Cl. 39 (Int. Cl. 25). 8-19-30.
276,386. PENCO. Cl. 39 (Int. Cl. 25). 10-21-30.
276,415. MEEHANITE. Cl. 14 (Int. Cl. 6). 10-21-30.
276,978. WORTH OF PARIS. Cl. 39 (Int. Cl. 25). 11-4-30.
277,245. STAFFORD'S. Cl. 11 (Int. Cl. 16). 11-11-30.
277,788. STAFFORD'S. Cl. 5 (Int. Cl. 16). 11-25-30.
278,448. "FASHION FOLLOWS THE WINGED FOOT" AND DESIGN. Cl. 39 (Int. Cl. 25). 12-16-30.
279,007. MYCOZOL. Cl. 18 (Int. Cl. 5). 1-6-31.
279,904. SPORTSMAN. Cl. 9 (Int. Cl. 13). 2-3-31.
280,270. LORD CHESTERFIELD. Cl. 46 (Int. Cl. 29). 2-10-31.
280,660. ALEXANDRA DE MARKOFF AND DESIGN. Cl. 51 (Int. Cl. 3). 2-24-31.
280,947. BEFORE AFTER AND DESIGN. Cl. 44 (Int. Cl. 5). 3-3-31.
280,953. DURANESE. Cl. 48 (Int. Cl. 23). 3-3-31.
281,769. CONDOR. Cl. 35 (Int. Cl. 17). 3-31-31.
282,838. MAMMOTH. Cl. 37 (Int. Cl. 16). 5-5-31.
444,303. ALKATROL. Cl. 52 (Int. Cl. 3). 11-7-50.
444,307. NATURAL-LE. Cl. 51 (Int. Cl. 3). 11-7-50.
530,305. ESTEE LAUDER. Cl. 51 (Int. Cl. 3). 9-5-50.
530,678. SHELL X-100. Cl. 15 (Int. Cl. 4). 9-12-50.
530,770. EASY LOCK. Cl. 34 (Int. Cl. 11). 9-19-50.
532,080. GLA-ZOX. Cl. 4 (Int. Cl. 3). 10-17-50.
532,529. PLYMOUTH. Cl. 39 (Int. Cl. 25). 10-24-50.
532,797. OHIO. Cl. 13 (Int. Cl. 6). 10-31-50.
532,798. OHIO QUALITY AND DESIGN. Cl. 13 (Int. Cl. 6). 10-31-50.
532,800. OSTUCO AND DESIGN. Cl. 13 (Int. Cl. 6). 10-31-50.
532,880. A-FIL. Cl. 51 (Int. Cl. 3). 10-31-50.
532,999. WHA-LITE. Cl. 23 (Int. Cl. 8). 11-7-50.
533,191. PASSAP. Cl. 23 (Int. Cl. 8). 11-7-50.
533,334. SODYE. Cl. 6 (Int. Cl. 2). 11-14-50.
536,381. PLAID DESIGN. Cl. 5 (Int. Cl. 16). 1-16-51.
536,646. TERFONYL. Cl. 18 (Int. Cl. 5). 1-16-51.
536,781. GERONA. Cl. 42 (Int. Cl. 24). 1-16-51.
536,784. VELDUVA. Cl. 42 (Int. Cl. 24). 1-16-51.
533,335. SODYEVAT. Cl. 6 (Int. Cl. 2). 11-14-50.
533,390. SNAPPIN TURTLE. Cl. 23 (Int. Cl. 7). 11-14-50.
533,404. THE OHIO SEAM LESS TUBE CO. AND DESIGN. Cl. 13 (Int. Cl. 6). 11-14-50.
533,423. BURMA-SHAVE. Cl. 23 (Int. Cl. 8). 11-14-50.
533,487. DURAVON. Cl. 39 (Int. Cl. 25). 11-14-50.
533,539. VISLUBE. Cl. 15 (Int. Cl. 4). 11-21-50.
533,640. HALLCO. Cl. 37 (Int. Cl. 16). 11-21-50.
533,670. FLOWER MART. Cl. 51 (Int. Cl. 3). 11-21-50.
533,696. CORONADA. Cl. 24 (Int. Cl. 7). 11-21-50.
533,776. THE RIGHT AND DESIGN. Cl. 5 (Int. Cl. 1). 11-21-50.
533,862. ALLIS-CHALMERS. Cl. 23 (Int. Cl. 7). 11-28-50.
533,973. "T." Cls. 12, 13, and 14 (Int. Cl. 6). 11-28-50.
533,939. STAR BRITE AND DESIGN. Cl. 21 (Int. Cl. 9). 11-28-50.
533,982. MAND AND DESIGN. Cl. 21 (Int. Cl. 7). 11-28-50.
534,108. HYDRO FOIL. Cl. 6 (Int. Cl. 1). 11-28-50.
534,178. KOEHRING. Cl. 23 (Int. Cl. 7). 12-5-50.
534,251. BAR HARBOR. Cl. 46 (Int. Cl. 29). 12-5-50.
534,313. HIAWATHA. Cl. 23 (Int. Cl. 7). 12-5-50.
534,375. SOLARCAINE AND DESIGN. Cl. 18 (Int. Cl. 5). 12-5-50.
534,381. ANTIFREEZE. Cl. 39 (Int. Cl. 25). 12-5-50.
534,428. ANGLER. Cl. 39 (Int. Cl. 25). 12-5-50.
534,782. FR. Cl. 21 (Int. Cl. 9). 12-12-50.
534,858. SHONE. Cl. 23 (Int. Cl. 7). 12-19-50.
535,052. CANARY LINER AND DESIGN. Cl. 42 (Int. Cl. 24). 12-19-50.
535,843. EVER SEAL. Cl. 13 (Int. Cl. 6). 1-2-51.
535,968. MEOPTA. Cl. 26 (Int. Cl. 9). 1-9-51.
535,969. MEOPTA AND DESIGN. Cl. 26 (Int. Cl. 9). 1-9-51.
536,196. VIT-RA-TOX AND DESIGN. Cl. 18 (Int. Cl. 5). 1-9-51.
536,236. TACE. Cl. 18 (Int. Cl. 5). 1-9-51.
536,281. RINGMASTER. Cl. 42 (Int. Cl. 24). 1-9-51.
536,785. KODAK. Cl. 9 (Int. Cl. 34). 1-16-51.
536,907. WEBSPUN. Cl. 39 (Int. Cl. 25). 1-23-51.
536,993. LUCO-KWIK. Cl. 16 (Int. Cl. 2). 1-30-51.
537,018. LEAF DESIGN. Cl. 50 (Int. Cl. 16). 1-30-51.
537,027. TRU-COMFORT. Cl. 32 (Int. Cl. 20). 1-30-51.
537,073. HI-VIZ. Cl. 16 (Int. Cl. 2). 1-30-51.
537,156. TRAPEZE. Cl. 42 (Int. Cl. 24). 1-30-51.
537,229. TEEJET. Cl. 13 (Int. Cl. 11). 2-6-51.
537,469. MAFCO AND DESIGN. Cl. 106 (Int. Cl. 40). 2-6-51.
537,472. CO-OP. Cl. 10 (Int. Cl. 1). 2-6-51.
537,524. FJORD. Cl. 46 (Int. Cl. 30). 2-13-51.
537,530. BURKS. Cl. 23 (Int. Cl. 7). 2-13-51.
537,549. GOLDEN ISLE. Cl. 46 (Int. Cl. 29). 2-13-51.
537,552. EATON'S. Cl. 37 (Int. Cl. 16). 2-13-51.
537,702. DYN-O MITE. Cl. 23 (Int. Cl. 8). 2-13-51.
537,707. SILVER SPOON AND DESIGN. Cl. 46 (Int. Cl. 30). 2-13-51.
537,805. BOLSEY. Cl. 26 (Int. Cl. 9). 2-13-51.
537,859. SUNBEAM. Cl. 21 (Int. Cl. 11). 2-13-51.
537,904. CO-OP. Cl. 7 (Int. Cl. 22). 2-13-51.
538,136. 87 SPAR AND DESIGN. Cl. 16 (Int. Cl. 2). 2-20-51.
538,187. STOFTEX. Cl. 46 (Int. Cl. 1). 2-20-51.
538,344. NYL-D ESPRIT. Cl. 42 (Int. Cl. 24). 2-20-51.
538,351. PRINCE EUGENE. Cl. 28 (Int. Cls. 8 and 14). 2-20-51.
538,393. SHARP-LINE. Cl. 37 (Int. Cl. 16). 2-20-51.
538,654. D.H.E. 45. Cl. 18 (Int. Cl. 5). 2-27-51.
538,675. FLEX-LASTIK. Cl. 44 (Int. Cl. 5). 2-27-51.
538,706. NEW EQUIPMENT DIGEST AND DESIGN. Cl. 38 (Int. Cl. 16). 2-27-51.
538,883. RITE-POISE. Cl. 44 (Int. Cl. 10). 3-6-51.
538,932. PROPODY. Cl. 44 (Int. Cl. 5). 3-6-51.
539,457. REDI-BREADER. Cl. 46 (Int. Cl. 30). 3-13-51.
539,536. ROMPIN. Cl. 39 (Int. Cl. 25). 3-20-51.
539,795. CRYSTAL FLASH. Cl. 15 (Int. Cl. 4). 3-27-51.
539,932. BALMORAL AND DESIGN. Cl. 17 (Int. Cl. 34). 3-27-51.
539,939. MARGANAL AND DESIGN. Cl. 14 (Int. Cl. 6). 3-27-51.
540,009. ROTO-MATIC. Cl. 24 (Int. Cl. 7). 3-27-51.
540,041. BRIGHTWOOD. Cl. 23 (Int. Cl. 8). 3-27-51.
540,059. FLEX-O-BED. Cl. 32 (Int. Cl. 20). 3-27-51.
540,165. SUNBEAM. Cl. 21 (Int. Cl. 11). 3-27-51.
540,185. MID-TOWN FORMALS. Cl. 39 (Int. Cl. 25). 3-27-51.
540,618. WAX-PLATE. Cl. 4 (Int. Cl. 3). 4-3-51.
541,403. KOLO. Cl. 6 (Int. Cl. 5). 4-24-51.
541,404. KOLOSPRAY. Cl. 6 (Int. Cl. 5). 4-24-51.
541,451. POWHATAN AND DESIGN. Cl. 46 (Int. Cl. 29). 4-24-51.
541,507. KUHLS. Cl. 12 (Int. Cls. 2, 12, and 17). 4-24-51.
541,549. TELSMITH AND DESIGN. Cl. 23 (Int. Cl. 7). 4-24-51.
541,558. DANACREM. Cl. 51 (Int. Cl. 3). 4-24-51.
541,583. UNION CANNING LABEL AND DESIGN. Cl. 46 (Int. Cl. 29). 4-24-51.
541,584. UNION FISH LABEL AND DESIGN. Cl. 46 (Int. Cl. 29). 4-24-51.
541,714. MERANO. Cl. 36 (Int. Cl. 15). 5-1-51.
541,893. WHITE LILAC AND DESIGN. Cl. 46 (Int. Cl. 29). 5-8-51.
542,032. GRANDMA MOSES. Cl. 38 (Int. Cl. 16). 5-8-51.
542,057. PIG-NOSE AND DESIGN. Cl. 29 (Int. Cl. 21). 5-8-51.
542,112. PEDROS RUM AND DESIGN. Cl. 49 (Int. Cl. 33). 5-8-51.
542,268. KO-BLEND. Cl. 1 (Int. Cl. 17). 5-15-51.
542,445. NOVOPLY. Cl. 12 (Int. Cl. 19). 5-15-51.
542,748. WAFEX. Cl. 18 (Int. Cl. 5). 5-22-51.

TRADEMARK REGISTRATIONS CANCELED

Section 7(d)

857,769. CLEARLITE. Cl. 12. 10–1–68.

Section 8

The following registrations issued Dec. 8, 1964

781,165. ATLANTIC. Cl. 1.
781,170. CLING-PAKS. Cl. 2.
781,175. BEAU JAMES. Cls. 3 and 39.
781,192. SHIELD-PLAST. Cl. 6.
781,194. VIM-OMATIC AND DESIGN. Cl. 6.
781,202. IDEAS IN ACTION. Cls. 8, 21, 26, and 34.
781,204. PLANT PLUG AND DESIGN. Cl. 10.
781,213. CON-CAST. Cl. 12.
781,214. ISPC FUTURA AND DESIGN. Cl. 12.
781,215. NEO-WALL. Cl. 12.
781,216. STYK-A-STUD. Cl. 12.
781,222. U.S. ROYAL TRACK. Cl. 12.
781,223. SUPER BARNMASTER AND DESIGN. Cl. 12.
781,228. 20TH CENTURY POOLS. Cl. 13.
781,229. BUTT-SEAL. Cl. 18.
781,230. SILVER CROWN. Cl. 13.
781,235. GOLD CROWN. Cls. 13 and 23.
781,250. NOMAR. Cl. 16.
781,251. NU-AGAIN. Cl. 16.
781,254. MONTECRISPI AND DESIGN. Cl. 17.
781,255. LA ROSA DE MAYO GARCIA Y VEGA. Cl. 17.
781,256. HEMOCYL. Cl. 18.
781,258. QUADRAMYCIN. Cl. 18.
781,259. NORDEN AND DESIGN. Cl. 18.
781,264. SALAZOIN. Cl. 18.
781,265. TRAVAFOR. Cl. 18.
781,266. ELDOFORM. Cl. 18.
781,270. WONDOROLL AND DESIGN. Cl. 19.
781,271. MISCELLANEOUS DESIGN. Cl. 19.
781,275. SIGMA. Cl. 21.
781,296. REMOTRONIC. Cl. 21.
781,297. SINE FERRO. Cl. 21.
781,298. DISKO. Cl. 22.
781,301. CONVACTOR. Cl. 23.
781,304. PAXMAN VENTURA. Cl. 23.
781,305. VEGA. Cl. 23.
781,308. ROLAUNDRY. Cl. 23.
781,315. HY-DRAFT. Cl. 23.
781,319. CO-PILOT AND DESIGN. Cl. 23.
781,320. MOTOR MASON. Cl. 23.
781,321. STABLEND. Cl. 23.
781,322. BAGITRONIC. Cl. 23.
781,324. FIRE BOY. Cl. 23.
781,327. CRYOTRONICS AND DESIGN. Cl. 26.
781,333. ALLOTTER. Cl. 26.
781,336. THERMO STACK. Cl. 26.
781,341. DEPTH-O-MATIC. Cl. 26.
781,342. ECON-A-COLOR. Cl. 26.
781,350. TELE-CAM. Cl. 26.
781,355. MH. Cl. 26.
781,357. VERTICON. Cl. 26.
781,360. GOURMET. Cl. 26.
781,372. STAR FIGHTER. Cl. 27.
781,374. SOVEREIGN AND DESIGN. Cl. 27.
781,384. HAMOC-AIRE AND DESIGN. Cl. 32.
781,385. THRIFTY MAID. Cl. 32.
781,390. AMERICAN REVIEW. Cl. 32.
781,395. XHB. Cl. 34.
781,398. PEARLESCENT. Cl. 34.
781,419. ANNELIT. Cl. 37.
781,420. CHIEF ZIP. Cl. 37.
781,422. JOUR AND DESIGN. Cl. 37.
781,428. MAZEL TOV. Cl. 37.
781,430. STORYTOON EXPRESS. Cls. 38 and 107.
781,431. SING-A-TOON. Cls. 38 and 107.
781,432. THE SUNCOAST SHOWCASE. Cl. 38.
781,435. BETTER HOMES & GARDENS KITCHEN IDEAS. Cl. 38.
781,436. MICROFACTS NEWSLETTER. Cl. 38.
781,438. THE MARKETING GUIDEPOST ETC. AND DESIGN. Cl. 38.
781,440. JUBILEE. Cl. 38.
781,441. CHAMPAGNE AND ROSES. Cl. 38.
781,442. OPINION-WISE. Cl. 38.
781,451. V.I.G. Cl. 39.
781,454. MURFRESH. Cl. 39.
781,455. DAVID BLACK. Cl. 39.
781,467. SECOND SEMESTER. Cl. 39.
781,469. STORKTOWN. Cl. 42.
781,473. ADRIANA. Cl. 43.
781,475. CORD-HELION. Cl. 43.
781,476. NORTHERN BAN-TRISE. Cl. 43.
781,478. ERIE AND DESIGN. Cl. 44.
781,483. SCALPRO. Cl. 44.
781,484. TISSU-LINE. Cl. 44.
781,487. MME D'ORVILLIERS AND PICTURE DESIGN. Cl. 46.
781,492. FLANCE. Cl. 46.
781,495. LEMANCO. Cl. 46.
781,501. RIVERDALE. Cl. 46.
781,504. TWIN R AND DESIGN. Cl. 46.
781,505. BALD EAGLE. Cl. 46.
781,510. RABUN. Cl. 50.
781,511. TUBBY BUBL AND DESIGN. Cl. 50.
781,512. ROYAL SUN-GLO. Cl. 50.
781,514. WONDERLAND. Cl. 50.
781,515. MAGIC-MAN. Cl. 51.
781,520. VYNL-GLEEM. Cl. 52.
781,521. INDUSTRY PROMOTION ETC. AND DESIGN. Cl. 100.
781,523. LUCKY BITE. Cl. 101.
781,524. DRUG FAIR AND DESIGN. Cl. 101.
781,530. MAGAZINE PACK. Cl. 1.
781,534. N-FE-ZN "PLUS." Cl. 10.
781,535. SEA-HAZE. Cl. 12.
781,536. FAWN. Cl. 12.
781,537. STRIP 'N STIK. Cl. 12.
781,540. SNAP SHOT. Cl. 22.
781,542. KNICK KNACK. Cl. 32.
781,546. WHERE-TO-BUY INFORMATION AND DESIGN. Cl. 38.
781,548. KNIKKER-TITES. Cl. 39.
781,549. EVERYDAY-ANYDAY. Cl. 39.
781,554. DEMI-SOCKS. Cl. 39.
781,556. SWEET HAM. Cl. 46.
781,557. SOY-O-SNAKS. Cl. 46.
781,559. DRI-PAK. Cl. 46.
781,560. TWIN-PACK. Cl. 46.
781,561. STA WAKE AND DESIGN. Cl. 46.
781,564. CUSH-N-FACE. Cl. 50.
781,572. KISSIN' COUSIN CORAL. Cl. 51.
781,574. BANJO RED. Cl. 51.
781,575. GUI-TAH ORANGE. Cl. 51.

Section 18

862,946. JAFFA. Cl. 46. 12–31–68.
887,047. AQUASONIC AND DESIGN. Cl. 21. 3–3–70.

INDEX OF REGISTRANTS

JANUARY 26, 1971

(Registered ; Renewed ; Canceled ; Amended. Disclaimed, Corrected, etc. ; New Certificates ; 12c Publications.)

ABC Travel Service, S.A., Mexico City, Mexico. 906,944, pub. 11–10–70. Cl. 105.
ADM-Tronics Unlimited, Inc., Westwood, N.J. 906,451, pub. 8–11–70. Cl. 6.
AEI Scientific Apparatus Ltd., Urmston, Manchester, England. 906,692, pub. 11–10–70. Cl. 26.
A. J. Industries, Inc., d.b.a. URB Products, Los Angeles, Calif. 906,469, pub. 11–10–70. Cl. 12.
AMF Inc., from American Machine & Foundry Co., New York, N.Y. 906,527, pub. 11–10–70. Cl. 19.
AMF Inc., from American Machine & Foundry Co., New York, N.Y. 906,530, pub. 11–10–70. Cl. 19.
A/S Lego System Billund, Billund, Jutland, Denmark. 906,579. pub. 11–10–70. Cl. 22.
A–T–O Inc., Cleveland, Ohio. 906,637, pub. 11–10–70. Cl. 23.
Abbott Laboratories, North Chicago, Ill. 906,506, pub. 11–10–70. Cl. 18.
Adelphi Mobile Air Conditioners, Inc., Brooklyn, N.Y. 906,524, pub. 11–10–70. Cl. 19.
Air Reduction Co., Inc., d.b.a. Murey Welding Products, New York, N.Y. 906,725, pub. 11–10–70. Cl. 34.
Airguide Instrument Co. ,Chicago, Ill. 781,341, canc. Cl. 26.
Ajax International Corp., Santa Barbara, Calif. 906,715, pub. 11–10–70. Cl. 31.
Aktiebolaget Jonkoping-Vulcan, Jonkoping, Sweden. 781,419, canc. Cl. 37.
Alderson, James C., d.b.a. Five A Ranch, Pomona, Calif. 906,445, pub. 11–10–70. Cl. 3.
Allentown Paint Mfg. Co., Inc., Allentown, Pa. 906,485, pub. 11–10–70. Cl. 16.
Allied Chemical Corp., New York, N.Y. 906,458, pub. 11–10–70. Cl. 6.
Allis-Chalmers Mfg. Co., Milwaukee, Wis. 533,862, ren. 1–26–71. Cl. 23.
Amalgamated Meat Cutters & Butcher Workmen of North America, Chicago, Ill. 541,583–4, ren. 1–26–71. Cl. 46.
Am-Banks Service Corp., Boston, Mass. 906,938, pub. 9–8–70. Cl. 102.
Amchem Products, Inc., Ambler, Pa. 906,455, pub. 8–18–70. Cl. 6.
American Can Co., New York, N.Y. 781,440, canc. Cl. 38.
American Cement Corp., Los Angeles, Calif. 781,213, canc. Cl. 12.
American Coleman Co., Littleton, Colo. 906,660, pub. 11–10–70. Cl. 23.
American Home Products Corp., New York, N.Y. 906,503, pub. 11–10–70. Cl. 18.
American Hospital Supply Corp., Evanston, Ill. 906,836, pub. 11–10–70. Cl. 44.
American Machine & Foundry Co. *See*— AMF Inc.
American Optical Corp., Southbridge, Mass. 906,840, pub. 11–10–70. Cl. 44.
Anaconda Wire & Cable Co., New York, N.Y. 534,782, ren. 1–26–71. Cl. 21.
Andrews, George P., d.b.a. Craft Plastix Co., Mt. Keesport, Pa. 906,905, pub. 11–10–70. Cl. 50.
Andrews Van Lines, Inc., Norfolk, Nebr. 906,945, pub. 11–10–70. Cl. 105.
Anetsberger Brothers, Inc., Northbrook, Ill. 906,629, pub. 11–10–70. Multiple Class (Classes 23 and 34).
Angelica Corp., St. Louis, Mo. 906,814, pub. 11–10–70. Cl. 42.
Angora Corp. Of America, New York, N.Y. 781,473, canc. Cl. 43.
Anton, Evan J., Woodside, N.Y. 906,673–4, pub. 11–10–70. Cl. 26.
Applied Synthetics, Inc., East St. Louis, Ill. 906,823, pub. 11–10–70. Cl. 42.
Arburg Maschinenfabrik Hehl & Sohne, Lossburg/Wurttemberg, Germany. 906,642, pub. 11–10–70. Cl. 23.
Armour-Dial, Inc., Chicago, Ill. 906,885–6, pub. 11–10–70. Cl. 46.
Arrowhead International, Inc., Atlanta, Go. 906,926, pub. 11–10–70. Cl. 101.
Art Trader, Inc., The, Cambridge, Mass. 906,768, pub. 11–10–70. Cl. 38.
Artco Corp., Lansdale, Pa. 906,624. pub. 11–10–70. Cl. 23.
Ashland Oil, Inc., Ashland, Ky. 534.108, ren. 1–26–71. Cl. 6.
Astro-Matic Lubricare, Inc., Nashville, Tenn. 906,940, pub. 11–10–70. Cl. 103.
Atlantic Refining Co., Philadelphia, Pa. 781,165, canc. Cl. 1.
AudiNSU Auto Union Aktiengesellschaft, from Auto Union G.m.b.H., Ingolstadt, Germany. 906,526, pub. 11–10–70. Multiple Class (Classes 19 and 23).
Austin, Nichols & Co., Inc., Maspeth, N.Y. 542,112, ren. 1–26–71. Cl. 49.
Auto Union G.m.b.H. *See*— Audi NSU Auto Union Aktiengesellschaft
Automatic Radio Mfg. Co., Inc., Boston, Mass. 781,296, canc. Cl. 21.
Auto-Tronix Universal Corp. from Auto-Tronix Universal Corp., Denver, Colo. 906,917, pub. 11–10–70. Cl. 101.
Auto-Tronix Universal Corp., from Auto-Tronix Universal Corp., Denver, Colo. 906,946. pub. 11–10–70. Cl. 107.
Avon Sole Co., Avon, Mass. 533,487, ren. 1–26–71. Cl. 39.
Aztex Oil & Co., Dallas, Tex. 906,481, pub. 8–25–70. Cl. 15.
Baensch, Ulrich, d.b.a. Tetra Werke Dr. Repr. Nat. Ulrich Baensch, Melle, Germany. 906,863, pub. 11–10–70. Cl. 46.
Baker Brush Co., Inc., New York, N.Y. 906,705, pub. 11–10–70. Cl. 29.
Baker Clothes, Inc., Philadelphia, Pa. 536,907, ren. 1–26–71. Cl. 39.
Ball, Geo. J. Inc., West Chicago, Ill. 781,170, canc. Cl. 2.
Baniff Airways, Inc., Dallas, Tex. 906,942, pub. 6–9–70. Cl. 105.
Barber-Greene Co., Aurora, Ill. 541,549, ren. 1–26–71. Cl. 23.
Bard, C. R. Inc., Murray Hill, N.J. 906,843, pub. 11–10–70. Cl. 44.
Baron Philippe de Rothschild, Pauillac, Gironde, France. 906,896, pub. 11–10–70. Cl. 47.
Baudinet International Corp. of America, New York, N.Y. 906,572, pub. 11–10–70. Cl. 21.
Baxter Laboratories, Inc., Morten Grove, Ill. 781,265, canc. Cl. 18.
Baxter Laboratories, Inc., Morton Grove, Ill. 906,887, pub. 11–10–70. Cl. 44.
Baylor Laboratories, Inc., Hurst, Tex. 906,493, pub. 11–10–70. Cl. 18.
Bear, Loren, d.b.a. Bearline Products, Cedar Rapids, Iowa. 906,904, pub. 11–10–70. Cl. 50.
Beatrice Foods Co., Chicago, Ill. 906,857, pub. 1–4–66. Cl. 46.
Beatrice Foods Co., Chicago, Ill. 906,889, pub. 11–10–70. Cl. 46.
Beauchamp, Edgar K., d.b.a. Ber Mark Co., Sunnyvale, Calif. 906,659, pub. 11–10–70. Cl. 23.
Beauti-Flex Mfg. Co., Inc., Norfolk, Va. 906,722, pub. 11–10–70. Cl. 32.
Beecher, Nicholas, New York, N.Y. 906,803, pub. 11–10–70. Cl. 39.
Belair Watch Corp., New York, N.Y. 906,699–700, pub. 11–10–70. Cl. 27.
Belenyessy, Laszlo I., Glendale, Ariz. 781,511, canc. Cl. 50.
Belk Stores Services, Inc., Charlotte, N.C. 539,536, ren. 1–26–71. Cl. 39.
Bender, Houston O., d.b.a. J. H. Bender Equipment Co., South Gate, Calif. 906,694, pub. 11–10–70. Cl. 26.
Bertolaja, Cesare, Milan, Italy. 906,658, pub. 11–10–70. Cl. 23.
Bertolla, A., & Sons, Loxley, Ala. 906,858, pub. 11–10–70. Cl. 46.
Besler Corp., Emeryville, Calif. 781,395, canc. Cl. 34.
Best Wear Hosiery Mills, Inc., Philadelphia, Pa. 906,796, pub. 11–10–70. Cl. 39.
Bird Corp., Palm Springs, Calif. 906,835, pub. 11–10–70. Cl. 44.
Birmingham Bloomfield Bank, Birmingham, Mich. 906,933, pub. 11–10–70. Cl. 102.
Black River Dairy Products, Inc., Eau Claire, Wis. 906,875, pub. 9–8–70. Cl. 46.
Blue Fox Industries, Inc., Brooklyn, N.Y. 906,446, pub. 11–10–70. Cl. 4.
Bolsey Corp. of America, Scarsdale, N.Y. 537,805, ren. 1–26–71. Cl. 26.
Boraut Industries, Inc., Cincinnati, Ohio. 906,586, pub. 11–10–70. Cl. 22.
Bragalini, Maria, d.b.a. Maria's Cin Cin, New York, N.Y. 906,752, pub. 11–10–70. Cl. 38.
Braniff Airways, Inc., Dallas, Tex. 906,943, pub. 6–9–70. Cl. 105.
Breck, John H., Inc., Wayne, N.J. 906,961–71. Cl. 51.
Brenner Candies, Inc., Atlantic City, N.J. 906,860, pub. 11–10–70. Cl. 46.
British Fish & Chips, Ltd., from British Fish & Chips, Ltd., Denver, Colo. 906,956. Multiple Class (Classes 46, 100, and 101).
British Petroleum Co. Ltd., The, London, England. 906,480, pub. 11–10–70. Cl. 15.
Broadway-Hale Stores, Inc., Los Angeles, Calif. 274,044. ren. 1–26–71. Cl. 39.
Brog, Roy A., d.b.a. Dairy Monitoring of America, Logan, Utah. 906,887, pub. 11–10–70. Cl. 46.
Brownlee, Winston E., d.b.a. W. E. Brownlee & Co., Suttons Bay, Mich. 906,603, pub. 11–10–70. Cl. 22.
Bunker-Ramo Corp., The, Oak Brook, Ill. 906,563, pub. 11–10–70. Cl. 21.
Burke, Carl J., d.b.a. Trans-Pacific Yacht Imports, Everett, Wash. 781,271, canc. Cl. 19.
Burke, J. E., Co., The, Fond Du Lac, Wis. 906,581, pub. 11–10–70. Cl. 22.
Burkhardt, Edgar G., James C. Mulvaney & Spasen S. Spasoff, Mequon, Wis. 906,598, pub. 11–10–70. Cl. 22.
Burns, Iva Jane, Arkansas City, Kans. 906,902, pub. 11–10–70. Cl. 50.
Burroughs Corp., Detroit, Mich. 906,746, pub. 11–10–70. Cl. 37.
C & F Machine Works, St. Paul, Minn. 781,270, canc. Cl. 19.
CTP Industries Inc., Brooklyn, N.Y. 906,442, pub. 11–10–70. Cl. 2.
Cabot Corp., Boston, Mass. 906,478, pub. 11–10–70. Cl. 13.
California Instruments Corp., San Diego, Calif. 906,562, pub. 11–10–70. Cl. 21.
California-Western States Life Insurance Co., Sacramento, Calif. 906,936, pub. 11–10–70. Cl. 102.

Cannon Mills Co., Kannapolis, N.C. 906,810, pub. 11–10–70. Cl. 42.
Carco, Inc., Detroit, Mich. 906,744, pub. 11–10–70. Cl. 37.
Career Originals Inc., New York, N.Y. 906,791, pub. 11–10–70. Cl. 39.
Carlsberg Bryggerierne, d.b.a. The Carlsberg Breweries, Copenhagen, Denmark. 906,899, pub. 11–10–70. Cl. 48.
Carson International Inc., d.b.a. Honey Bear Farm, Itasca, Ill. 906,916, pub. 11–10–70. Cl. 100.
Carter-Wallace, Inc., New York, N.Y. 906,893, pub. 11–10–70. Cl. 46.
Castellanos & Co. Ltd., Seville, Spain. 906,894, pub. 11–10–70. Cl. 47.
Celanese Coatings Co., New York, N.Y. 538,136, ren. 1–26–71. Cl. 16.
Celanese Corp., New York, N.Y. 280,953, ren. 1–26–71. Cl. 43.
Chadbourn Inc., Charlotte, N.C. 906,784, pub. 11–10–70. Cl. 39.
Channel Master Corp., Ellenville, N.Y. 781,275, canc. Cl. 21.
Chatillon Societa Anonima Italiana per le Fibre Tessili Artificiali S.p.A., Milan, Italy. 781,475, canc. Cl. 43.
Cherne Industrial, Inc., Hopkins, Minn. 906,675, pub. 11–10–70. Cl. 26.
Chesebrough-Pond's Inc., New York, N.Y. 906,842, pub. 11–10–70. Cl. 44.
Chicopee Mills, Inc., New York, N.Y. 906,739, pub. 9–15–70. Multiple Class (Classes 37 and 42).
Chocolats Fjord S.A., Geneva, Switzerland. 537,524, ren. 1–26–71. Cl. 46.
Clairol Inc., New York, N.Y. 906,504, pub. 11–10–70. Cl. 18.
Clarke-Heath Mfg. Co., Modesto, Calif. 781,483, canc. Cl. 44.
Clow Corp., Oak Brook, Ill. 534,858, ren. 1–26–71. Cl. 23.
Coach Agency, Inc., Long Island, N.Y. 906,924, pub. 7–14–70. Cl. 101.
Columbia Broadcasting System, Inc., New York, N.Y. 906,735, pub. 11–10–70. Cl. 36.
Commodore Corp., The, Omaha, Nebr. 906,518–20, pub. 11–10–70. Cl. 19.
Communication & Studies, Inc., Atlanta, Ga. 906,755, pub. 11–10–70. Cl. 38.
Computer Media, Inc., New York, N.Y. 906,919, pub. 7–21–70. Cl. 101.
Computervision Corp., Burlington, Mass. 906,930, pub. 11–10–70. Cl. 101.
Consolidated Foods Corp., d.b.a. Popsicle Industries, Englewood, N.J. 538,187, ren. 1–26–71. Cl. 46.
Constantin, Maurice & Sons, Inc., Rayne, La. 906,619, pub. 11–10–70. Cl. 23.
Continental Chemical Co., Inc. *See*— Johnson & Johnson.
Continental Copper & Steel Industries, Inc., New York, N.Y. 906,472, pub. 11–10–70. Cl. 13.
Cook, Ray, San Antonia, Tex. 906,592, pub. 11–10–70. Cl. 22.
Copperweld Steel Co., Pittsburgh, Pa. 532,797–8, ren. 1–26–71. Cl. 13.
Copperweld Steel Co., Pittsburgh, Pa. 532,800, ren. 1–26–71. Cl. 13.
Copperweld Steel Co., Pittsburgh, Pa. 533,404, ren. 1–26–71. Cl. 13.
Copy Systems, Inc., d.b.a. Copy Paper Co., Los Angeles, Calif. 906,456, pub. 9–8–70. Cl. 6.
Cornish Containers, Inc., Maumee, Ohio. 906,712, pub. 11–10–70. Cl. 31.
Coughlan, G. N. Co., West Orange, N.J. 781,520, canc. Cl. 52.
Country Club Enterprises, Inc., Harrisburg, Pa. 906,754, pub. 11–10–70. Cl. 38.
Coventry, Sarah, Inc., Newark, N.Y. 906,783, pub. 11–10–70. Multiple Class (Classes 39, 51, and 52).
Coy, Virginia, Riverside, Ill. 906,769, pub. 11–10–70. Cl. 38.
Craven, M. A. & Son Ltd., Candyland, York, England. 906,869. pub. 11–10–70. Cl. 46.
Create-A-Check, Inc., Rockville, Md. 781,428, canc. Cl. 37.
Creative Soul, Inc., Cincinnati, Ohio. 906,753, pub. 11–10–70. Cl. 38.
Croll-Reynolds Co., Inc., Westfield, N.J. 781,301, canc. Cl. 23.
Cryogenic Engineering Co., Denver, Colo. 781,327, canc. Cl. 26.
Crystal Flash Petroleum Corp., The, Indianapolis, Ind. 539,795, ren. 1–26–71. Cl. 15.
Cumberland Packing Corp., Brooklyn, N.Y. 906,884, pub. 11–10–70. Cl. 46.
Curtiss-Wright Corp., Cleveland, Ohio. 781,319, canc. Cl. 23.
Cushman, Wilhela d.b.a. Willa Products Unltd., New York, N.Y. 781,549, canc. Cl. 39.
Cutter Laboratories, Inc., Berkeley, Calif. 906,841, pub. 11–10–70. Cl. 44.
Damar Co., The, Rockville, Md. 906,443, pub. 11–10–70. Cl. 2.
Dan River Inc. from Dan River Mills, Inc., Danville, Va. 906,815, pub. 11–10–70. Cl. 42.
Danavox North American, Inc., Wayzata, Minn. 781,438, canc. Cl. 38.
Dante, John Adam, Dallas, Tex. 906,833, pub. 11–10–70. Cl. 44.
D'armigene, Inc., Bay Shore N.Y. 906,790, pub. 11–10–70. Cl. 39.
David, Marvin & Robert David, Brooklyn, N.Y. 781,469, canc. Cl. 42.
Dean Products, Inc., Brooklyn, N.Y. 906,727, pub. 11–10–70. Cl. 34.
Decatur Pump Co., Decatur, Ill. 537,530, ren. 1–26–71. Cl. 23.
Defiance-Azon Corp., Barrowsville, Mass. 538,393, ren. 1–26–71. Cl. 37.
Delhi Mfg. Corp., Delhi, La. 906,513, pub. 11–10–70. Cl. 19.
Delpark, Inc., Manasquan, N.J. 278,448, ren. 1–26–71. Cl. 39.
Delvina, S. A., Geneva, Switzerland. 906,697, pub. 11–10–70. Cl. 27.
Demarest Machines, Inc., Port Washington, N.Y. 781,320, canc. Cl. 23.
de Markoff, Alexandra Sales Corp., New York, N.Y. 280,660, ren. 1–26–71. Cl. 51.
Depuy Mfg. Co., Inc., Warsaw, Ind. 906,846, pub. 11–10–70. Cl. 44.
Dermavet Laboratories, Inc., Syosset, N.Y. 906,498, pub. 11–10–70. Cl. 18.
Design Works Of Bedford-Stuyvesant, Inc., Brooklyn, N.Y. 906,827, pub. 11–10–70. Cl. 42.
Devcon Corp., Danvers, Mass. 906,465, pub. 9–1–70. Cl. 12.
Diagraph-Bradley Industries, Inc., Herrin, Ill. 906,742, pub. 4–21–70. Cl. 37.
Diamond International Corp., New York, N.Y. 540,041, ren. 1–26–71. Cl. 23.
Diane's Foods, Inc., McMinnville, Oreg. 906,879, pub. 11–10–70. Cl. 46.
Dickson-Jenkins Mfg. Co., Inc., Ft. Worth, Tex. 906,786, pub. 11–10–70. Cl. 39.
Directional Industries, Inc., New York, N.Y. 906,723, pub. 11–10–70. Cl. 32.
Dixie Youth Baseball, Inc., Lookout Mountain, Tenn. 906,772, pub. 9–8–70. Cl. 38.
Dixon, Joseph, Crucible Co., The, Jersey City, N.J. 282,838, ren. 1–26–71. Cl. 37.
Dominion Electric Corp., Mansfield, Ohio. 906,569, pub. 11–10–70. Cl. 21.
Donghia's Infinity, Inc., New York, N.Y. 906,740, pub. 11–10–70. Multiple Class (Classes 37 and 42).
Dorsey Co., The, d.b.a. The Angel Baby Co., New York, N.Y. 906,782, pub. 11–10–70. Cl. 39.
Dover Corp., Tulsa, Okla. 906,652, pub. 11–10–70. Cl. 23.
Dow Chemical Co., The, Midland, Mich. 906,453, pub. 11–10–70. Cl. 6.
Dresser Industries, Inc., Dallas, Tex. 80,295, ren. 1–26–71. Cl. 26.
Drexel Enterprises, Inc., Drexel, N.C. 781,390, canc. Cl. 32.
Dreyer, P. R., Inc., New York, N.Y. 906,870, pub. 5–26–70. Cl. 46.
Drug Fair-Community Drug Co., Inc., Alexandria, Va. 781,524, canc. Cl. 101.
Duriron Co., Inc., The, Dayton, Ohio. 906,645, pub. 11–10–70. Cl. 23.
Dutchess Underwear Corp., New York, N.Y. 781,548, canc. Cl. 39.
ESB Inc., Philadelphia, Pa. 906,801–2, pub. 11–10–70. Cl. 39.
East Asiatic Co., Inc., The, d.b.a. Danfoods Co., Los Angeles, Calif. 781,560, canc. Cl. 46.
Eastman Kodak Co., Rochester, N.Y. 536,785, ren. 1–26–71. Cl. 9.
Easy-Speed, Inc., Bradenton, Fla. 906,463, pub. 11–10–70. Cl. 12.
Ebco Mfg. Co., Columbus, Ohio. 906,729, pub. 11–10–70. Cl. 34.
Ebensteiner, Gerald J., d.b.a. Peach Land Realty, Forest Lake, Minn. 906,759, pub. 11–10–70. Cl. 38.
Ehrmantraut, Harry C., d.b.a. Gymnas Co., Los Altos, Calif. 906,577, pub. 11–10–70. Cl. 22.
Electro-Science Laboratories, Inc., Philadelphia, Pa. 906,551, pub. 11–10–70. Cl. 21.
Electrovert, Inc., Mount Vernon, N.Y. 906,564, pub. 11–10–70. Cl. 21.
Elkay Mfg. Co., Broadview, Ill. 906,475, pub. 11–10–70. Cl. 13.
Elliott-Williams Co., Inc., Indianapolis, Ind. 906,711, pub. 11–10–70. Cl. 31.
Empire Bloomer Co., The, New York, N.Y. 906,825, pub. 11–10–70. Cl. 42.
Envirotech Corp., Salt Lake City, Utah. 906,667, pub. 11–10–70. Cl. 23.
Erie City Mfg. Co., Erie, Pa. 781,478, canc. Cl. 44.
Esco Corp., Portland, Oreg. 906,632, pub. 11–10–70. Cl. 23.
Estee Lauder Inc., New York, N.Y. 530,305, ren. 1–26–71. Cl. 51.
Excelsior Belting-Enuipment Co., Inc., New York, N.Y. 906,669, pub. 11–10–70. Cl. 24.
FMC Corp., New York, N.Y. 541,403–4, ren. 1–26–71. Cl. 6.
FMC Corp., Chicago, Ill. 906,664–5, pub. 11–10–70. Cl. 23.
Fab Industries, Inc., New York, N.Y. 906,808, pub. 9–1–70. Cl. 42.
Fabri-Tek Inc., Minneapolis, Minn. 781,336, canc. Cl. 26.
Fabbriche Riunite Omino di Ferro e Mariazz, SpA, Milan, Italy. 906,777, pub. 11–10–70. Multiple Class (Classes 39 and 42).
Fairchild Camera & Instrument Corp., Syosset, N.Y. 781,333, canc. Cl. 26.
Fairchild Camera & Instrument Corp., Syosset, N.Y. 781,342. canc. Cl. 26.
Fairfield Glove Co., Fairfield, Iowa. 534,428, ren. 1–26–71. Cl. 39.
Fairmont Foods Co., d.b.a. Abbotts Dairies, Omaha, Nebr. 906,859, pub. 11–10–70. Cl. 46.
Fairway Foods, Inc., St. Paul, Minn. 906,856, pub. 12–31–63. Cl. 46.
Family Loom Inc., Charlotte, N.C. 906,781, pub. 11–10–70. Cl. 39.
Farbenfabriken Bayer Aktiengesellschaft, Leverkusen-Bayerwerk, Germany. 906,850, pub. 11–10–70. Cl. 45.
Fashion Tress, Inc., Hialeah, Fla. 906,804, pub. 11–10–70. Cl. 40.
Fearn Soya Foods, Melrose Park, Ill. 781,557, canc. Cl. 46.
Federal Auto Products Co., Chicago, Ill. 535,843, ren. 1–26–71. Cl. 13.
Federated Department Stores, Inc., d.b.a. The F. & R. Lazarus & Co., Columbus, Ohio. 906,937, pub. 11–10–70. Cl. 102.
Fedtro, Inc., Rockville Centre, N.Y. 906,570, pub. 11–10–70. Cl. 21.
Fiber Industries, Inc., Charlotte, N.C. 906,830, pub. 11–10–70. Cl. 43.

Fieldcrest Mills, Inc., Eden, N.C. 906,807, pub. 11–10–70. Cl. 42.
Filbert, J. H., Inc., Baltimore, Md. 906,958. Cl. 46.
Firearms International Corp., from Firearms International Corp., Washington, D.C. 906,460, pub. 11–10–70. Cl. 9.
Firestone Tire & Rubber Co., The, Akron, Ohio. 906,595, pub. 11–10–70. Cl. 22.
Firestone Tire & Rubber Co., The, Akron, Ohio. 906,731, pub. 7–28–70. Cl. 35.
Fishmaster Products, Inc., Tulsa, Okla. 906,576, pub. 11–10–70. Cl. 22.
Fleetwood Enterprises, Inc., Riverside, Calif. 906,536, pub. 11–10–70. Cl. 19.
Flexsteel Industries, Inc., Dubuque, Iowa. 540,059, ren. 1–26–71. Cl. 32.
Flintkote Co., The, White Plains, N.Y. 906,476, pub. 11–10–70. Cl. 13.
Florida Seed & Feed Co., Ocala, Fla. 906,439, pub. 11–10–70. Cl. 1.
Flow Technology, Inc., Tempe, Ariz. 906,688, pub. 11–10–70. Cl. 26.
Fonti Levissima S.p.A., Comune di Val di Sotto, Italy. 906,849, pub. 11–10–70. Cl. 45.
Foremost-McKesson, Inc., d.b.a. McKesson Laboratories, New York, N.Y. 906,507, pub. 11–10–70. Cl. 18.
Formulabs Industrial Inks, Inc., Escondido, Calif. 906,618, pub. 11–10–70. Cl. 23.
Forum, Inc., Chicago, Ill. 906,549, pub. 11–10–70. Cl. 21.
Fotomat Corp., La Jolla, Calif. 906,931, pub. 11–10–70. Cl. 101.
Franchise Data Service Corp., Colorado Springs, Colo. 906,918, pub. 11–10–70. Cl. 101.
Franklin Beverage Co., Elizabeth, N.J. 906,848, pub. 11–10–70. Cl. 45.
Franklin Mint, Inc., The, Yeadon, Pa. 906,901, pub. 11–10–70. Cl. 50.
Fuller Co., Catasauqua, Pa. 906,662, pub. 11–10–70. Cl. 23.
GAF Corp., New York, N.Y. 906,623, pub. 11–10–70. Multiple Class (Classes 23 and 26).
GAF Corp., New York, N.Y. 906,925, pub. 11–10–70. Cl. 101.
G. & L. F.lli Cora Societa per Azioni, d.b.a. G. & L. Fratelli Cora, Turin, Italy. 906,960. Cl. 47.
Gaba AG, Basel, Switzerland. 906,494, pub. 11–10–70. Cl. 18.
Gamble-Skogmo, Inc., Minneapolis, Minn. 533,696, ren. 1–26–71. Cl. 24.
Gamble-Skogmo, Inc., Minneapolis, Minn. 534,313, ren. 1–26–71. Cl. 23.
Gamon-Calmet Industries, Inc., Newark, N.J. 906,683, pub. 11–10–70. Cl. 26.
Garden Centers, Inc. *See*— Hardi-Gardens, Inc.
Garforth Mowil, d.b.a. Reservave Suncoast Showcase, Palm Harbor, Fla. 781,432, canc. Cl. 36.
Garns, Howard S., Indianapolis, Ind. 906,607, pub. 11–10–70. Cl. 22.
Garvey Sociedad Anonima Bodegas de San Patricio Jerez de la Frontera, Cadiz, Spain. 906,895, pub. 11–10–70. Cl. 41.
Gehring Textiles, Inc., New York, N.Y. 538,344, ren. 1–26–71. Cl. 42.
Geiger Corp., Harleysville, Pa. 906,457, pub. 11–10–70. Multiple Class (Classes 6 and 23).
Gem-Dandy, Inc., Madison, N.C. 906,792, pub. 11–10–70. Cl. 39.
General Cigar Co., Inc., New York, N.Y. 906,486, pub. 10–26–65. Cl. 17.
General Foods Corp., White Plains, N.Y. 906,853, pub. 11–10–70. Cl. 45.
General Tire & Rubber Co., The, Akron, Ohio. 542,268, ren. 1–26–71. Cl. 1.
Germanow-Simon Machine Co., Inc., Rochester, N.Y. 906,701, pub. 11–10–70. Cl. 27.
Gitkin Co., Totowa, N.J. 906,817, pub. 11–10–70. Cl. 42.
Gleason Corp., Milwaukee, Wis. 781,384, canc. Cl. 32.
Golden Future Publishing Co., St. Louis, Mo. 906,763, pub. 11–10–70. Cl. 38.
Golf Associates, Inc., Hollywood, Calif. 906,774, pub. 11–10–70. Cl. 38.
Good Life, The, North Hollywood, Calif. 906,766, pub. 11–10–70. Cl. 38.
Goodalls of Ireland Ltd., Dublin, Ireland. 906,878, pub. 11–10–70. Cl. 46.
Gordon-Smith, Ronald Jackson, d.b.a. Designpak, New York, N.Y. 906,719–20, pub. 11–10–70. Cl. 32.
Gorham Bronze, Inc., Los Angeles, Calif. 781,510, canc. Cl. 50.
Graham Mfg. Co., Holyoke, Mass., 906,824, pub. 11–10–70. Cl. 42.
Grain Belt Breweries, Inc., Minneapolis, Minn. 906,900, pub. 11–10–70. Cl. 46.
Grandma Moses Properties, Inc., New York, N.Y. 542,032, ren. 1–26–71. Cl. 38.
Grave, W. R. & Co., Cambridge, Mass. 906,461, pub. 11–10–70. Cl. 10.
Great Bend Mfg. Co., Inc., Great Bend, Kans. 906,646, pub. 11–10–70. Cl. 23.
Greenberg, John, d.b.a. Tree Towns Mfg. Co., Gary, Ind. 781,204, canc. Cl. 10.
Greenline Conveyor Co., Inc., Charlotte, N.C. 906,622, pub. 11–10–70. Cl. 23.
Greenough, June B., d.b.a. June Greenough Bustette, Omaha, Nebr. 906,845, pub. 11–10–70. Cl. 44.
Groghan, M. E. Co., Chicago, Ill. 781,215, canc. Cl. 12.
Grote Mfg. Co., The, Madison, Ind. 906,716, pub. 11–10–70. Cl. 32.
Grove Valve & Regulator Co., Oakland, Calif. 906,477, pub. 11–10–70. Cl. 13.
Gulton Industries, Inc., Metuchen, N.J. 781,202, canc. Multiple Class (Classes 8, 21, 26, and 34).
Gyro Club Corp., The, Albuquerque, N. Mex. 906,599, pub. 11–10–70. Cl. 22.
H & D Industries, Inc., Cascade, Md. 906,911, pub. 7–14–70. Cl. 52.
H.T.S. Inc., McCook, Nebr. 906,710, pub. 11–10–70. Cl. 31.
Hahn, Deborah, Old Brookville, N.Y. 906,762, pub. 11–10–70. Cl. 38.
Hall, J. C. Co., Inc., The, Pawtucket, R.I. 533,640, ren. 1–26–71. Cl. 37.
Hall, Robert Clothes, Inc. d.b.a. Robert Hall Clothes, New York, N.Y. 906,779, pub. 11–10–70. Cl. 39.
Hang Ten of Nevada, Inc. *See*— Moore, Doris of Calif., Inc.
Hannes Marker, Garmisch-Partenkirchen, Germany. 781,298, canc. Cl. 22.
Harcourt, Brace & World, Inc., New York, N.Y. 906,671, pub. 11–10–70. Cl. 26.
Hardi-Gardens, Inc. from Garden Centers, Inc., Nashville, Tenn. 906,437, pub. 11–10–70. Multiple Class (Classes 1, 6, 7, 10, 23, and 50).
Harrington & King Perforating Co., Inc., The, Chicago, Ill. 906,438, pub. 11–10–70. Multiple Class (Classes 1, 12, 14, 37, and 106).
Harris, Archie H., San Diego, Calif. 906,670, pub. 11–10–70. Cl. 25.
Harris, D. P. Hardware & Mfg. Co., Inc., New York, N.Y. 906,539, pub. 11–10–70. Cl. 19.
Hasbro Industries, Inc., Pawtucket, R.I. 906,590, pub. 11–10–70. Cl. 22.
Hasbro Industries, Inc., Pawtucket, R.I. 906,593, pub. 11–10–70. Cl. 22
Hassenfeld Bros. Inc., Central Falls, R.I. 781,540, canc. Cl. 22.
Havatampa Cigar Corp., Tampa, Fla. 906,487, pub. 11–10–70. Cl. 17.
Hearst Corp., The, New York, N.Y. 906,756, pub. 11–10–70. Cl. 38.
Helleman, G., Brewing Co., Inc., La Crosse, Wis. 906,898, pub. 11–10–70. Cl. 48.
Held Electronics, Inc., Baltimore, Md. 906,560, pub. 11–10–70. Cl. 21.
Heppenstall Co., Pittsburgh, Pa. 906,666, pub. 11–10–70. Cl. 23.
Herlitz, Steven K., Inc., New York, N.Y. 906,750, pub. 11–10–70. Cl. 38.
Hill International Display Corp., Grand Rapids, Mich. 781,512, canc. Cl. 50.
Hjermstad, Donald A., d.b.a. Midway Industries, Florence, S. Dak. 906,663, pub. 11–10–70. Cl. 23.
House of Westmore, Inc., New York, N.Y. 781,572, canc. Cl. 51.
House of Westmore, Inc., New York, N.Y. 781,574–5, canc. Cl. 51.
Howard, Franklin K., College Boards Institute, Inc., Mineola, N.Y. 906,949, pub. 11–10–70. Cl. 107.
Howell, W. Evans, Baton Rouge, La. 906,854, pub. 11–10–70. Cl. 45.
Hull Industries, Inc., Santa Monica, Calif. 906,467, pub. 11–10–70. Cl. 12.
Hunt, Rodney, Co., Orange, Mass. 906,647, pub. 11–10–70. Cl. 23.
Hurricane Pipe Mfg., Inc., Fort Lauderdale, Fla. 906,730, pub. 11–10–70. Cl. 35.
Hy-Draft, Inc., San Jose, Calif. 781,315, canc. Cl. 23.
IMS Ltd., Los Angeles, Calif. 906,838, pub. 11–10–70. Cl. 44.
Illinois Tool Works, Inc., Chicago, Ill. 906,636, pub. 11–10–70. Cl. 23.
Imoco-Gateway Corp., Chicago, Ill. 444,803, ren. 1–26–71. Cl. 52.
Imperial Jade Mining Inc., Minneapolis, Minn. 906,609, pub. 11–10–70. Cl. 22.
Imperial Knife Associated Companies, Inc., Providence, R.I. 906,651, pub. 11–10–70. Cl. 23.
Imperial Metal Industries (Kynoch) Ltd., Witton, Birmingham, England. 906,573, pub. 11–10–70. Cl. 21.
Imperial Wallpaper Mill, Inc., Cleveland, Ohio. 906,747, pub. 11–10–70. Cl. 37.
Information Systems Architectonics, Inc., Bethesda, Md. 906,913, pub. 11–10–70. Multiple Class (Classes 100 and 101).
Infoton, Inc., Burlington, Mass. 906,686, pub. 11–10–70. Cl. 26.
International Automated Marketing Co., Chicago, Ill. 906,654, pub. 11–10–70. Cl. 23.
International Battery, Inc., Schiller Park, Ill. 906,571, pub. 9–15–70. Cl. 21.
International Staple & Machine Co., Butler, Pa. 781,280, canc. Cl. 13.
International Swimming Pool Corp., Roslyn Heights, N.Y. 781,214, canc. Cl. 12.
Interstate Bakeries Corp., Kansas City, Mo. 906,866, pub. 11–10–70. Cl. 46.
Island Sun Co., Inc., San Francisco, Calif. 906,957. Cl. 46.
Jackes-Evans Mfg. Co., St. Louis, Mo. 530,770, ren. 1–26–71. Cl. 34.
Jantzen Inc., Portland, Oreg. 906,950, pub. 11–10–70. Cl. 107.
Japan Binoculars Export Promotion Association, Tokyo, Japan. 906,693, pub. 11–10–70. Cl. 26.
Jaquith, Douglas, Salem, Oreg. 906,787, pub. 11–10–70. Cl. 36.
Jay-Arr Slimwear, Inc., New York, N.Y. 906,787–8, pub. 11–10–70. Cl. 39.
Jectron Co., The, Toledo, Ohio. 781,484, canc. Cl. 44.
Jel Sert Co., The, Bellwood, Ill. 906,891, pub. 11–10–70. Cl. 46.
Jib-Jab Enterprises, Inc., Youngstown, Ohio. 906,883, pub. 11–10–70. Cl. 46.
Joanna Western Mills Co., Chicago, Ill. 906,724, pub. 11–10–70. Cl. 32.

John The Jack Man Co., Inc., Stafford Springs, Conn. 906,615, pub. 11–10–70. Cl. 23.
Johns-Manville Corp., New York, N.Y. 906,732, pub. 11–10–70. Cl. 35.
Johnson & Johnson, New Brunswick, N.J., from Continental Chemical Co., Inc., Columbia, S.C. 906,882, pub. 5–26–70. Cl. 44.
Johnson & Johnson, New Brunswick, N.J. 906,839, pub. 11–10–70. Cl. 44.
Johnson, S. C., & Son, Inc., Racine, Wis. 540,618, ren. 1–26–71. Cl. 4.
Ka Hagon Associates, Inc., Pittston, Pa. 906,765, pub. 11–10–70. Cl. 38.
Kadmon, Otto, Inc., New York, N.Y. 906,547, pub. 11–10–70. Cl. 21.
Kahn-Lucas-Lancaster, Inc., New York, N.Y. 781,451, canc. Cl. 39.
Kalamazoo Label Co., Kalamazoo, Mich. 906,757, pub. 4–7–70. Cl. 38.
Kaplan, Samuel, and Joseph B. Kaplan: *See*—
Masterform Tool Co.
Kelite Chemicals Corp., Los Angeles, Calif. 906,449, pub. 11–10–70. Multiple Class (Classes 6 and 52).
Kemp, M. Beelman, Sr., d.b.a. Standard Safety Products Co., Saginaw, Mich. 781,324, canc. Cl. 23.
Key West Homes, Inc., Mira Loma, Calif. 906,521, pub. 11–10–70. Cl. 19.
Kimberly-Clark Corp., Neenah, Wis. 906,748, pub. 11–10–70. Cl. 37.
Kirk-Rudy, Inc., Libertyville, Ill. 906,643, pub. 11–10–70. Cl. 23.
Kistler, Robert J., d.b.a. Kistler Associates, Philadelphia, Pa. 906,932, pub. 11–10–70. Cl. 102.
Klopman Mills, Inc., Rockleigh, N.J. 906,812–13, pub. 11–10–70. Cl. 42.
Klopman Mills, Inc., Rockleigh, N.J. 906,819–20, pub. 11–10–70. Cl. 42.
Koehring Co., Milwaukee, Wis. 534,178, ren. 1–26–71. Cl. 23.
Kolene Corp., Detroit, Mich. 906,626, pub. 11–10–70. Cl. 23.
Koninklijke Sigarenfabriek Smit En Ten Hove, Kampen, Netherlands. 539,932, ren. 1–26–71. Cl. 17.
Kornylak Corp., Hamilton, Ohio. 906,640, pub. 11–10–70. Cl. 23.
Kortenbach & Rauh Kommanditgesellschaft, Solingen-Weyer, Germany. 906,805, pub. 11–10–70. Cl. 41.
Kraskin Baton Co., Minneapolis, Minn. 906,734, pub. 11–10–70. Cl. 36.
Kresge, S. S. Co., Detroit, Mich. 906,534, pub. 11–10–70. Cl. 19.
Kresge, S. S. Co., Detroit, Mich. 906,828–29, pub. 11–10–70. Cl. 43.
Kyowa Kakko Kogyo Co., Ltd., Tokyo, Japan. 906,489, pub. 11–10–70. Cl. 18.
L'Academie Montessori, Inc., Fort Lauderdale, Fla. 906,929, pub. 11–10–70. Cl. 101.
Lageman, Cl. GmbH, Aachen, Germany. 906,488, pub. 9–15–70. Multiple Class (Classes 18 and 46).
Lake Region, Inc., McAllen, Tex. 906,861, pub. 11–10–70. Cl. 46.
Lambert Inc., d.b.a. Hunter Industries, Dayton, Ohio. 906,661, pub. 11–10–70. Cl. 23.
Lambert, J. O. Jr., Dallas, Tex. 906,954, pub. 11–10–70. Cl. A.
Land O'Lakes Creameries, Inc., Minneapolis, Minn. 906,871, pub. 11–10–70. Cl. 46.
Landsman Packing Co., Inc., Red Hook, N.Y. 862,946, canc. Cl. 46.
Lanston Industries, Inc., Philadelphia, Pa. 781,357, canc. Cl. 26.
LaPerugina & Societa Per Azioni Perugina SpA Cioccolato from Perugina SpA Cioccolato & Confetture, Perugia, Italy. 906,862, pub. 11–10–70. Cl. 46.
La Salle Extension University, Chicago, Ill. 906,584, pub. 11–10–70. Cl. 22.
Laurens Corp., Middletown, Del. 781,561, canc. Cl. 46.
Lawter Chemicals Inc., Chicago, Ill. 537,073, ren. 1–26–71. Cl. 16.
Leach Corp. *See*—
Subscription Television, Inc.
Lectrabed Corp., Los Angeles, Calif. 906,721, pub. 11–10–70. Cl. 32.
Leisure Dynamics, Inc., Minneapolis, Minn. 906,606, pub. 11–10–70. Cl. 22.
Lenker Mfg. Co., Inc., Sunbury, Pa. 906,691, pub. 11–10–70. Cl. 26.
Les Fabriques de Balanciers Reunies, Bienne, Switzerland. 906,690, pub. 11–10–70. Cl. 26.
Les Fabriques de Balanciers Reunies, Bienne, Switzerland. 906,698, pub. 11–10–70. Cl. 27.
Les Parfums De Dana, Inc., New York, N.Y. 541,358, ren. 1–26–71. Cl. 51.
Liberty Mfg. Co., Fort Worth, Tex. 781,229, canc. Cl. 13.
Lightning Novelties Ltd., Downsview, Ontario, Canada. 906,738, pub. 11–10–70. Cl. 37.
Little Chef Food Products, Inc., Newark, N.J. 906,881, pub. 11–10–70. Cl. 46.
Logicon, Inc., San Pedro, Calif. 906,558, pub. 11–10–70. Cl. 21.
London-Aire, Inc., Miami Springs, Fla. 906,793, pub. 11–10–70. Cl. 39.
Lord Jeff Knitting Co., Inc., Maspeth, N.Y. 906,798–9, pub. 11–10–70. Cl. 39.
Lowe, Charles B., d.b.a. Charles B. Lowe Mfg. Co., Bridge City, Tex. 906,689, pub. 11–10–70. Cl. 26.
Lucky Bite, Inc., Spokane, Wash. 781,523, canc. Cl. 101.
Lucul-Nahrmittelfabrik A.G., d.b.a. Lucul-Food Products Ltd., Zurich, Switzerland. 906,873, pub. 11–10–70. Cl. 46.
Luttrell, Ravon D., d.b.a. Allied Rubber Plate Engravers, Chicago, Ill. 781,564, canc. Cl. 50.
MCA Inc., Universal City, Calif. 906,548, pub. 11–10–70. Multiple Class (Classes 21 and 36).
Mackin, Dorothy Mabee V., d.b.a. The Glad Rago, Cripple Creek, Colo. 906,733, pub. 11–10–70. Cl. 36.
Madag Maschinen-und Apparateban Dietikon, A.G., Dietikon, Switzerland. 533,191, ren. 1–26–71. Cl. 23.
Maglieria Ragno Della Manifattura Pastore, S.p.A., Valduggia, Vercelli, Italy. 906,578, pub. 9–1–70. Multiple Class (Classes 22, 39, 42, and 50).
Mallory Electric Corp., Carson City, Nevada. 533,982, ren. 1–26–71. Cl. 21.
Manaster, Leon Co., The, San Francisco, Calif. 781,495, canc. Cl. 46.
Mangels, Arthur C. Industries, Inc., Philadelphia, Pa. 781,251, canc. Cl. 16.
Mantek Corp., Dallas, Tex. 906,909, pub. 11–10–70. Cl. 52.
Maremont Corp., Chicago, Ill. 906,517, pub. 11–10–70. Cl. 19.
Marine Fabricators Co., Perth Amboy, N.J. 537,469, ren. 1–26–71. Cl. 106.
Marken Plastic Corp., Los Angeles, Calif. 781,537, canc. Cl. 12.
Marshall Research & Development Corp., Burlington, Mass. 906,531, pub. 11–10–70. Multiple Class (Classes 19, 23, and 26).
Martin Marietta Corp., New York, N.Y. 533,334–5, ren. 1–26–71. Cl. 6.
Marx, Louis, & Co., Inc., New York, N.Y. 906,585, pub. 11–10–70. Cl. 22.
Mason & Porter Ltd., Auckland, New Zealand. 906,633, pub. 11–10–70. Cl. 23.
Master Minds International, Inc., Dallas, Tex. 906,948, pub. 11–10–70. Cl. 107.
Masterform Tool Co., Franklin Park, Ill from Samuel Kaplan & Joseph B. Kaplan, d.b.a. American Plumbing Supply Co., Chicago, Ill. 906,630. pub. 11–10–70. Cl. 23.
Masti-Kure Products Co., Norwich, Conn. 906,955. Cl. 18.
Mattel, Inc., Hawthorne, Calif. 906,596, pub. 11–10–70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 906,600, pub. 11–10–70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 906,602, pub. 11–10–70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 906,604–5, pub. 11–10–70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 906,608, pub. 11–10–70. Cl. 22.
Mattel, Inc., Hawthorne, Calif. 906,610–14, pub. 11–10–70. Cl. 22.
Maxim Chemical Co., Inc., New York, N.Y. 906,450, pub. 11–10–70. Cl. 6.
May Department Stores Co., The, St. Louis, Mo. 906,922, pub. 4–14–70. Cl. 101.
McCall Farms, Effington, S.C. 280,270, ren. 1–26–71. Cl. 46.
McCrory Corp., New York, N.Y. 781,175, canc. Multiple Class (Classes 3 and 39).
McDonough Power Equipment, Inc., McDonough, Ga. 533,390, ren. 1–26–71. Cl. 23.
McGraw-Hill, Inc., New York, N.Y. 906,770, pub. 11–10–70. Cl. 38.
McGregor-Doniger Inc., New York, N.Y. 534,381, ren. 1–26–71. Cl. 39.
McNaught Syndicate, Inc., The, New York, N.Y. 781,442, canc. Cl. 38.
McNeil Corp., Akron, Ohio. 906,528, pub. 11–10–70. Cl. 19.
Mead Johnson & Co., Evansville, Ind. 906,505, pub. 11–10–70. Cl. 18.
Meat Industry Suppliers, Inc., Northfield, Ill. 781,556, canc. Cl. 46.
Medcanics, Inc., Hopkins, Minn. 906,685, pub. 11–10–70. Cl. 26.
Medical Laboratory Automation, Inc., Mount Vernon, N.Y. 906,695, pub. 11–10–70. Cl. 26.
Meehanite Metal Corp., White Plains, N.Y. 276,415, ren. 1–26–71. Cl. 14.
Melville Shoe Corp., New York, N.Y. 906,794, pub. 11–10–70. Cl. 39.
Meopta, Narodni Podnik, Prerov, Czechoslovakia. 535,968–9, ren. 1–26–71. Cl. 26.
Merchandise Mart, Inc., Milwaukee, Wis. 906,583, pub. 11–10–70. Cl. 22.
Meredith Publishing Co., Des Moines, Iowa. 781,435, canc. Cl. 38.
Meyers, B. F., & Co., Fountain Valley, Calif. 906,516, pub. 11–10–70. Cl. 19.
Meyers, Harold A., Glendale, Calif. 781,355, canc. Cl. 26.
Micor Corp., The, Bensenville, Ill. 906,634, pub. 11–10–70. Cl. 23.
Microbiological Sciences, Inc., Salt Lake City, Utah. 906,452, pub. 11–10–70. Cl. 6.
Microbiological Sciences, Inc., Salt Lake City, Utah. 906,496–7, pub. 11–10–70. Cl. 18.
Microbiological Sciences, Inc., Salt Lake City, Utah. 906,678–81, pub. 11–10–70. Cl. 26.
Middletown Footwear, Inc., Middletown, N.Y. 540,185, ren. 1–26–71. Cl. 39.
Miles Laboratories, Inc., Elkhart, Ind. 906,510, pub. 11–10–70. Cl. 18.
Miller, Elton W., d.b.a. M & W Security, Harrisonburg, Va. 906,941, pub. 11–10–70. Cl. 103.
Miller, M. A., Mfg. Co., Libertyville, Ill. 906,589, pub. 11–10–70. Cl. 22.
Minda Industries, from J. W. Minder Chain & Gear Co., d.b.a. Minder, Inc., Los Angeles, Calif. 906,641, pub. 11–10–70. Cl. 23.
Minder, J. W., Chain & Gear Co.: *See*—
Minda Industries.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 536,381, ren. 1–26–71. Cl. 5.
Minnesota Mining & Mfg. Co., St. Paul, Minn. 781,436, canc. Cl. 38.

Minnesota Mining & Mfg. Co., St. Paul, Minn. 906,847, pub. 11–10–70. Cl. 44.
Mrs. Kinser's Home Style Foods, Inc., Atlanta, Ga. 906,872, pub. 11–10–70. Cl. 46.
Model-ETTS Corp., New York, N.Y. 542,748, ren. 1–26–71. Cl. 18.
Modern Maid Food Products, Inc., Jamaica, N.Y. 539,457, ren. 1–26–71. Cl. 46.
Modulus Corp., Mount Pleasant, Pa. 906,470, pub. 11–10–70. Cl. 18.
Mogen David Wine Corp.: *See*—
Winner, Frederic P., Ltd.
Montecristi Cigar Co., Inc., Miami Beach, Fla. 781,254, canc. Cl. 17.
Montgomery Ward & Co., Inc., Chicago, Ill. 906,778, pub. 9–1–70. Multiple Class (Classes 39 and 101).
Moore, Benjamin, & Co., New York, N.Y. 541,507, ren. 1–26–71. Cl. 12.
Moore, Doris, of California, Inc., Long Beach, Calif., from Hang Ten of Nevada, Inc., Las Vegas, Nev. 906,776, pub. 11–10–70. Cl. 39.
Moore, Doris, of California, Inc., Long Beach, Calif. 906,818, pub. 11–10–70. Cl. 42.
Moran's, Thos. J., Sons, Inc., Baton Rouge, La. 906,741, pub. 11–10–70. Cl. 37.
Mordern-United Water Equipment Co., Walworth, Wis. 906,714, pub. 11–10–70. Cl. 31.
Morris, Philip, Inc., d.b.a. American Safety Razor Co., New York, N.Y. 533,423, ren. 1–26–71. Cl. 23.
Motor Wheel Corp., Lansing, Mich. 906,540, pub. 11–10–70. Cl. 19.
Mullen Form Corp., Phoenix, Ariz. 781,228, canc. Cl. 13.
Multi-Amp Corp., Cranford, N.J. 906,914, pub. 7–14–70. Cl. 100.
Murata Mfg. Co., Ltd., Nagaokacho, Otokuni-gun, Kyoto-fu, Japan. 906,561, pub. 11–10–71. Cl. 21.
Murfresh Inc., New York, N.Y. 781,454, canc. Cl. 39.
N.V. Philips' Gloeilampenfabrieken, Eindhoven, Netherlands. 906,672, pub. 11–10–70. Cl. 26.
Nairn-Williamson Ltd., Lancaster, England. 906,543, pub. 11–10–70. Cl. 20.
National Association of Plumbing-Heating-Cooling Contractors, Washington, D.C. 906,915, pub. 11–10–70. Cl. 100.
National Collegiate Athletic Association, The, Kansas City, Mo. 906,953, pub. 11–10–70. Cl. 200.
National Cooperatives, Inc., Albert Lea, Minn. 537,472, ren. 1–26–71. Cl. 10.
National Cooperatives, Inc., Albert Lea, Minn. 537,904, ren. 1–26–71. Cl. 7.
National Development Corp., Central Point, Oreg. 906,587, pub. 11–10–70. Cl. 22.
National Distillers & Chemical Corp., d.b.a. Munson Shaw Co., New York, N.Y. 906,897, pub. 11–10–70. Cl. 47.
National Institute of Locker & Freezer Provisioners, Elizabethtown, Pa. 781,521, canc. Cl. 100.
National Tea Co., Chicago, Ill. 906,877, pub. 11–10–70. Cl. 46.
Natural Food Supplements, Inc., Canoga Park, Calif. 906,867, pub. 11–10–70. Multiple Class (Classes 46 and 51).
Needle Painters Guild, Ltd., Weaverville, N.C. 906,717, pub. 11–10–70. Cl. 32.
Nelson-Boyer Co., Glendale, Calif. 781,256, canc. Cl. 18.
Neslo Mfg. Corp., Doylestown, Pa. 781,216, canc. Cl. 12.
New York Glove Co., Inc., New York, N.Y. 906,775, pub. 11–10–70. Cl. 39.
Nikko Electric Corp. Of America, North Hollywood, Calif. 906,557, pub. 11–10–70. Cl. 21.
Niles Expanded Metals Corp., The, Niles, Ohio. 906,466, pub. 11–10–70. Cl. 12.
Nippert Co., The, from The Nippert Electric Products Co., Delaware, Ohio. 906,553. pub. 11–10–70. Col. 21.
Nippert Electric Products Co., The: *See*—
The Nippert Co.
Nippon Accumulator Co., Ltd., Shimizu, Shizuoka/Prefecture, Japan. 906,648, pub. 11–10–70. Cl. 23.
Nomar Coatings, Inc., Great Neck, N.Y. 781,250, canc. Cl. 16.
Norcross, Inc., New York, N.Y. 781,441, canc. Cl. 38.
Norden Laboratories, Inc., Lincoln, Nebr. 781,258–9, canc. Cl. 18.
North American Rockwell Corp., Pittsburgh, Pa. 906,523, pub. 11–10–70. Cl. 19.
North American Rockwell Corp., Pittsburgh, Pa. 906,556, pub. 8–4–70. Cl. 21.
North Atlantic Packing Co., Brookline, Mass. 534,251, ren. 1–26–71. Cl. 46.
North Electric Co., Galion, Ohio. 781,297, canc. Cl. 21.
Northern Petrochemical Co., Des Plaines, Ill. 906,474, pub. 7–14–70. Cl. 18.
Northern Virginia Savings & Loan Association, Arlington, Va. 906,934, pub. 11–10–70. Cl. 102.
Northern Yarn Mills, Newark, N.J. 781,476, canc. Cl. 43.
Northwestern Mutual Life Insurance Co., The, Milwaukee, Wis. 906,939, pub. 11–10–70. Cl. 102.
Nu-Die Mfg. Co., Covina, Calif. 906,668, pub. 11–10–70. Cl. 23.
Numerical Control Society, Princeton, N.J. 906,952, pub. 11–10-70. Cl. 200.
Oberto Sausage Co., Seattle, Wash. 906,865, pub. 11–10–70. Cl. 46.
O'Donnell-Usen Fisheries Corp., Boston, Mass. 906,888, pub. 11–10–70. Cl. 46.
Olsen, W. H. Mfg., Tilbury, Ontario, Canada. 906,532–3, pub. 11–10–70. Cl. 19.
Olson, Melford, Honey Co., Minneapolis, Minn. 906,726, pub. 11–10–70. Cl. 34.
Oltmanns, Heinrich, from Heinrich Oltmanns, Oldenburg, Germany. 906,462, pub. 9–1–70. Cl. 12.
Olympic International, Ltd., Glendale, N.Y. 533,939, ren. 1–26–71. Cl. 21.
Oneida Ltd., Oneida, N.Y. 906,631. pub. 11–10–70. Cl. 23.
Oneida Ltd., Oneida, N.Y. 906,702, pub. 7–22–69. Cl. 28.
Owen Laboratories, Inc., Dallas, Tex. 906,502, pub. 11–10–70. Cl. 18.
Oxley Development Co. Ltd., Ulverston, Lancashire, England. 906,554, pub. 11–10–70. Cl. 21.
Oy Wartsila AB, Helsinki, Finland. 906,709, pub. 11–10–70. Cl. 30.
Ozite Corp., Libertyville, Ill. 906,826, pub. 9–8–70. Cl. 42.
Palheta Cafes Finos S.A., Rio de Janeiro, Guanabara, Brasil. 781,487, canc. Cl. 46.
Pan American Bank Of Miami, Miami, Fla. 906,935, pub. 11–10–70. Cl. 102.
Pantone, Inc., New York, N.Y. 906,684, pub. 11–10–70. Cl. 26.
Paradise Fruit Co., Inc., Plant City, Fla. 906,864, pub. 9–8–70. Cl. 46.
Para-Pharma Salvisberg & Co., Zurich, Switzerland. 906,492, pub. 7–14–70. Cl. 18.
Parfumerie L. T. Piver S. A., Paris, France. 781,515, canc. Cl. 51.
Parke, Davis & Co., Detroit, Mich. 279,007, ren. 1–26–71. Cl. 18.
Parke, Davis & Co., Detroit, Mich. 906,511, pub. 11–10–70. Cl. 18.
Paxman, Davey & Co., Ltd., Colchester, Essex, England. 781,304–5, canc. Cl. 23.
Pearson, Arthur A. d.b.a. Pearson Portable Dock, Fairfield, Mont. 906,903, pub. 11–10–70. Cl. 50.
Pellet Feeds, Inc., Highland Park, Ill. 781,559, canc. Cl. 46.
Penney, J. C. Co., Inc., New York, N.Y. 276,886, ren. 1–26–71. Cl. 39.
Penney, J. C. Co., Inc., New York, N.Y. 906,541, pub. 11–10–70. Cl. 19.
Penney, J. C. Co., Inc., New York, N.Y. 906,704, pub. 11–10–70. Cl. 29.
Pennsylvania Crusher Corp., Broomall, Pa. 906,650, pub. 11–10–70. Cl. 23.
Penton Publishing Co., The, Cleveland, Ohio. 538,706, ren. 1–26–71. Cl. 38.
Perugina SpA Cioccolato & Confetture: *See*—
La Perugina & Societa Per Azioni Perugina SpA Cioccolato
Pet Inc., St. Louis, Mo. 906,696, pub. 11–10–70. Multiple Class (Classes 26, 31, and 34).
Pfizer, Chas. & Co., Inc., New York, N.Y. 781,492, canc. Cl. 46.
Pfizer Inc., New York, N.Y. 532,080, ren. 1–26–71. Cl. 4.
Phelps Dodge Copper Products Corp., New York, N.Y. 906,574, pub. 11–10–70. Cl. 21.
Photo Reproduction Service, Inc., Los Angeles, Calif. 906,920, pub. 11–10–70. Cl. 101.
Picreator Enterprises Ltd., London, England. 906,448, pub. 11–10–70. Cl. 4.
Pillsbury Co., The, Minneapolis, Minn. 906,855, pub. 11–10–70. Cl. 45.
Pillsbury Co., The, Minneapolis, Minn. 906,890, pub. 11–10–70. Cl. 46.
Pioneer Chemical Corp., Fort Collins, Colo. 781,194, canc. Cl. 6.
Platoff, Raphael P., Studio City, Calif. 906,491, pub. 11–10–70. Cl. 18.
Plessey Airborne Corp., Hillside, N.J. 906,653, pub. 11–10–70. Cl. 23.
Plochman, Inc., Chicago, Ill. 906,876, pub. 11–10–70. Cl. 46.
Ploeger Packing Co., Inc., The, Darien, Ga. 537,549, ren. 1–26–71. Cl. 46.
Plough, Inc., Memphis, Tenn. 534,875, ren. 1–26–71. Cl. 18.
Plymouth Shoe Co., Inc., Middleboro, Mass. 532,529, ren. 1–26–71. Cl. 39.
Polaroid Corp., Cambridge, Mass. 906,811, pub. 11–10–70. Cl. 42.
Pollak, Henry, Inc., New York, N.Y. 906,822, pub. 11–10–70. Cl. 42.
Polyform Products Co., Inc., Schiller Park, Ill. 906,588, pub. 11–10–70. Cl. 22.
Polymers, Inc., Middlebury, Vt. 781,530, canc. Cl. 1.
Presses Modernes de France (P.M.F.), Montrouge, Seine, France. 906,751, pub. 11–10–70. Cl. 38.
Procter & Gamble Co., The, Cincinnati, Ohio. 906,882, pub. 11–10–70. Cl. 46.
Proctor & Schwartz, Inc., Philadelphia, Pa. 906,627, pub. 11–10–70. Cl. 23.
Proctor-Silex Inc., Philadelphia, Pa. 906,555, pub. 11–10–70. Cl. 21.
Production-Research (PR), Inc., Coloso, Puerto Rico. 906,749, pub. 11–10–70. Cl. 38.
Products Research & Chemical Corp., Burbank, Calif. 906,482, pub. 11–10–70. Cl. 16.
Propper Mfg. Co., Inc., Long Island City, N.Y. 906,834, pub. 11–10–70. Cl. 44.
Psychological Associates, Inc., St. Louis, Mo. 906,773, pub. 11–10–70. Cl. 38.
RCA Corp., New York, N.Y. 906,566–7, pub. 11–10–70. Cl. 21.
R-H Products Co., Inc., South Acton, Mass. 533,776, ren. 1–26–71. Cl. 5.
Rainbow Sound, Inc., Dallas, Tex. 906,736, pub. 8–11–70. Cl. 36.
Raleigh Shirt Co., Inc., New York, N.Y. 906,785, pub. 11–10–70. Cl. 39.
Rally Industries, Palo Alto, Calif. 906,546, pub. 11–10–70. Cl. 21.
Ralston Purina Co., St. Louis, Mo. 781,501, canc. Cl. 46.
Rasmussen, Villum B. K., d.b.a. Velux International, Soborg, Denmark. 906,468, pub. 11–10–70. Cl. 12.
Raviele, Mrs. Jane Ann, d.b.a. Easy-Out Co., West Long Branch, N.J. 906,745, pub. 11–10–70. Cl. 37.
Raybestos-Manhattan, Inc., Passaic, N.J. 281,769, ren. 1–26–71. Cl. 35.
Raygo, Inc., Minneapolis, Minn. 906,655–6, pub. 11–10–70. Cl. 23.

Reach Electronics, Inc., Lexington, Nebr. 906,550, pub. 11–10–70. Cl. 21.
Red Barn Chemicals, Inc., Shreveport, La. 781,534, canc. Cl. 10.
Reese, H. B., Candy Co., Inc., Hershey, Pa. 906,874, pub. 11–10–70. Cl. 46.
Regensteiner Publishing Enterprises, Inc., Chicago, Ill. 906,928, pub. 8–4–70. Cl. 101.
Register & Tribune Syndicate, Inc., The, Des Moines, Iowa. 906,764, pub. 11–10–70. Cl. 38.
Reidler Decal Corp., St. Clair, Pa. 906,760, pub. 11–10–70. Cl. 38.
Remington Arms Co., Inc., Bridgeport, Conn. 279,904, ren. 1–26–71. Cl. 9.
Rexall Drug & Chemical Co., d.b.a. Kingsway Products Co., Los Angeles, Calif. 781,514, canc. Cl. 50.
Riback Enterprises, Inc., Chicago, Ill. 906,771, pub. 11–10–70. Cl. 38.
Richardson-Merrell Inc., New York, N.Y. 536,236, ren. 1–26–71. Cl. 18.
Rixson Inc., Franklin Park, Ill. 906,464, pub. 11–10–70. Multiple Class (Classes 12, 13, 21, and 26).
Rolaundry, Inc., Cleveland, Ohio. 781,308, canc. Cl. 23.
Roto-Finish Co., Kalamazoo, Mich. 906,447, pub. 11–10–70. Cl. 4.
Rowland Products, Inc., Kensington, Conn. 906,440, pub. 11–10–70. Multiple Class (Classes 1, 6, and 50).
Royal Seating Corp., Cameron, Tex. 906,718, pub. 11–3–70. Cl. 32.
Rudin & Roth, Inc., New York, N.Y. 781,554, canc. Cl. 39.
Rudin & Roth, Inc., New York, N.Y. 906,780, pub. 11–10–70. Cl. 39.
Rummonds Bros. Ranch, Thermal, Calif. 781,504, canc. Cl. 46.
Sahlein, J. M., Music Co., Inc., San Francisco, Calif. 541,714, ren. 1–26–71. Cl. 36.
Sally Beauty Co., Inc., New Orleans, La. 906,921, pub. 11–10–70. Cl. 101.
Samsonite Corp., Denver, Colo. 906,601, pub. 11–10–71. Cl. 22.
Sandoz-Wander, Inc., Hanover, N.J. 538,654, ren. 1–26–71. Cl. 18.
Savage Laboratories, Inc., Houston, Tex. 906,490, pub. 11–10–70. Cl. 18.
Scanpublic, Copenhagen, Denmark. 781,546, canc. Cl. 38.
Scholl Mfg. Co., Inc., The, Chicago, Ill. 280,947, ren. 1–26–71. Cl. 44.
Scholl Mfg. Co., Inc., The, Chicago, Ill. 538,675, ren. 1–26–71. Cl. 44.
Scholl Mfg. Co., Inc., Chicago, Ill. 538,883, ren. 1–26–71. Cl. 44.
Scholl Mfg. Co., Inc., The, Chicago, Ill. 538,932, ren. 1–26–71. Cl. 44.
Schwartz, David, New York, N.Y. 781,455, canc. Cl. 39.
Schy, Lowell J., Co., Fresno, Calif. 781,505, canc. Cl. 46.
Scovill Mfg. Co., Waterbury, Conn. 906,568, pub. 11–10–70. Cl. 21.
Sealomatic Electronics Corp., Brooklyn, N.Y. 887,047, canc. Cl. 21.
Seco, Inc., Goodlettsville, Tenn. 781,322, canc. Cl. 23.
See, Charile, d.b.a. Charile See Enterprises, Hollywood, Calif. 906,923, pub. 11–10–70. Cl. 101.
Seymour, William & Co. (Sherborne), Sherborne, Dorset, England. 906,851, pub. 11–10–70. Cl. 45.
Shaw, Sandy Inc., New York, N.Y. 906,797, pub. 11–10–70. Cl. 39.
Shawnee Milling Co., Shawnee, Okla. 537,707, ren. 1–26–71. Cl. 46.
Shelby Seamless Hosiery Mills, Inc., Shelby, N.C. 906,789, pub. 11–10–70. Cl. 39.
Shell Oil Co., New York, N.Y. 530,678, ren. 1–26–71. Cl. 15.
Sherwin-Williams Co., The, Cleveland, Ohio. 536,993, ren. 1–26–71. Cl. 16.
Sherwin-Williams Co., The, Cleveland, Ohio. 906,545, pub. 6–16–70. Cl. 6.
Silverstein, Ben d.b.a. Silver Foods Co., Wilkes-Barre, Pa. 541,893, ren. 1–26–71. Cl. 46.
Simmons Co., New York, N.Y. 537,027, ren. 1–26–71. Cl. 32.
Simoniz Co.: *See*—
Texize Chemicals, Inc.
Simpson Timber Co., Seattle, Wash. 781,535–6, canc. Cl. 12.
Skarshaug, Paul E., d.b.a. Skarshaug Testing Laboratory, Ames, Iowa. 906,501, pub. 11–10–70. Multiple Class (Classes 18, 21, 26, and 100).
Skyway Luggage Co., Seattle, Wash. 906,444, pub. 11–10–70. Cl. 3.
Smith, T. M. Tool Co., Detroit, Mich. 906,565, pub. 11–10–70. Multiple Class (Classes 21 and 23).
Societe Francaise d'Etiquetage Virey & Garnier, Nogent, Marne, France. 906,625. pub. 11–10–70. Cl. 23.
Somerset Lumber & Hardware Co., Somerset, N.J. 906,471, pub. 11–10–70. Cl. 13.
Sovereign Watch Co., Inc., New York, N.Y. 781,374, canc. Cl. 27.
Sparboe Agricultural Corp., Litchfield, Minn. 906,500, pub. 11–10–70. Cl. 18.
Spear, J. W. & Sons Ltd., Enfield, Middlesex, England. 906,582, pub. 11–10–70. Cl. 22.
Spraying Systems Co., Bellwood, Ill. 537,229, ren. 1–26–71. Cl. 13.
Squar-Buff, Inc., Danvers, Mass. 906,617, pub. 11–10–70. Cl. 23.
Squibb, E. R. & Sons, Inc., New York, N.Y. 536,646, ren. 1–26–71. Cl. 18.
Squibb, E. R. & Sons, Inc., New York, N.Y. 906,508, pub. 11–10–70. Cl. 18.
Squibb, E. R. & Sons, Inc., New York, N.Y. 906,687, pub. 11–10–70. Cl. 26.
Stafford-Reeves, Inc., New York, N.Y. 277,245, ren. 1–26–71. Cl. 11.
Stafford-Reeves, Inc., New York, N.Y. 277,788, ren. 1–26–71. Cl. 5.
Staley, A. E. Mfg. Co., Decatur, Ill. 781,321, canc. Cl: 23.
Star Pharmaceuticals, Inc., Atlanta, Ga. 781,264, canc. Cl. 18.
Stephen-Roger, Inc., Hingham, Mass. 781,192, canc. Cl. 6.
Sterling Drug Inc., New York, N.Y. 444,307, ren. 1–26–71. Cl. 51.
Sterling Drug Inc., New York, N.Y. 781,266, canc. Cl. 18.
Sterling Electronics Corp., Houston, Tex. 906,927, pub. 11–10–70. Multiple Class (Classes 101 and 103).
Stevens, J. P. & Co., Inc., New York, N.Y. 536,781, ren. 1–26–71. Cl. 42.
Stevens, J. P. & Co., Inc., New York, N.Y. 536,784, ren. 1–26–71. Cl. 42.
Stevens, J. P. & Co., Inc., New York, N.Y. 537,156, ren. 1–26–71. Cl. 42.
Stevens, J. P. & Co., Inc., New York, N.Y. 906,816, pub. 11–10–70. Cl. 42.
Stevens, J. P. & Co., Inc., New York, N.Y. 906,821, pub. 11–10–70. Cl. 42.
Stewart-Warner Corp., Chicago, Ill. 537,702, ren. 1–26–71. Cl. 23.
Stieff Co., The, Baltimore, Md. 906,620, pub. 9–15–70. Cl. 28.
Storytoons, Inc., Kenilworth, N.J. 781,430–1, canc. Multiple Class (Classes 38 and 107).
Strick Corp., Fairless Hills, Pa. 906,514, pub. 11–10–70. Cl. 19.
Stuart, D. A. Oil Co., Ltd., Chicago, Ill. 906,912, pub. 11–10–70. Cl. 52.
Students' Magazine, Inc., Northfield, Ill. 906,761, pub. 11–10–70. Cl. 38.
Stulz-Sickles Steel Co., Elizabeth, N.J. 589,939, ren. 1–26–71. Cl. 14.
Subscription Television, Inc., New York, N.Y. from Leach Corp., South Pasadena, Calif. 906,545, pub. 11–10–70. Cl. 21.
Sunbeam Corp., Chicago, Ill. 537,859, ren. 1–26–71. Cl. 21.
Sunbeam Corp., Chicago, Ill. 540,165, ren. 1–26–71. Cl. 21.
Sunderland's Inc., Seattle, Wash. 906,703, pub. 11–10–70. Cl. 28.
Sunshine Biscuits, Inc., New York, N.Y. 906,892, pub. 11–10–70. Cl. 46.
Super Mold Corp., Lodi, Calif. 906,649, pub. 11–10–70. Cl. 23.
Super Tire Engineering Co., Camden, N.J. 906,522, pub. 11–10–70. Cl. 19.
Swindle, D. W., d.b.a. D. W. Swindle & Sons Co., Nashville, Tenn. 542,057, ren. 1–26–71. Cl. 29.
TRW, Inc., Cleveland, Ohio. 906,628, pub. 11–10–70. Cl. 23.
Tablet & Ticket Co., Chicago, Ill. 537,018, ren. 1–26–71. Cl. 50.
Tappan Co., The, Mansfield, Ohio. 781,398, canc. Cl. 34.
Tarkett Aktiebolag, Malmo, Sweden. 906,542, pub. 11–10–70. Cl. 20.
Taylor, Jack B., & Associates, Inc., Oakland, Calif. 906,844, pub. 11–10–70. Cl. 44.
Taylor & Sledd, Inc., Richmond, Va. 541,451, ren. 1–26–71. Cl. 46.
Technical Operations, Inc., Burlington, Mass. 906,676, pub. 11–10–70. Cl. 26.
Tekni-Plex Inc., Brooklyn, N.Y. 906,743, pub. 11–10–70. Cl. 37.
Tele-Cam, Inc., Pittsburgh, Pa. 781,350, canc. Cl. 26.
Telesco Brophey Ltd., Montreal, Quebec, Canada. 906,806, pub. 11–10–70. Cl. 41.
Tempress Electronic Corp., East Orange, N.J. 906,575, pub. 11–10–70. Cl. 21.
Tevcon Industries, Inc., Ralston, Nebr. 906,495, pub. 11–10–70. Cl. 18.
Texas Pharmacal Co., San Antonio, Tex. 532,880, ren. 1–26–71. Cl. 51.
Texize Chemicals, Inc., Greenville, S.C., from Simoniz Co., Chicago, Ill. 906,910, pub. 9–1–70. Cl. 52.
Textron Inc., Pittsfield, Mass. 537,552, ren. 1–26–71. Cl. 37.
Textron Inc., Providence, R.I. 538,351, ren. 1–26–71. Cl. 28.
Textron, Inc., Sidney, Ohio. 781,385, canc. Cl. 32.
Textured Products, Inc., Mount Vernon, N.Y. 906,809, pub. 11–10–70. Cl. 42.
Thermco Products Corp., Orange, Calif. 906,728, pub. 11–10–70. Cl. 34.
Thexton Mfg. Co., Minneapolis, Minn. 781,360, canc. Cl. 26.
Thomas Industries, Inc., Louisville, Ky. 906,544, pub. 11–10–70. Cl. 21.
Thompson Medical Co., Inc., New York, N.Y. 906,499, pub. 11–10–70. Cl. 18.
Tomahawk Paper Co., Inc., Tomahawk, Wis. 781,422, canc. Cl. 37.
Toyo Kogyo Co., Ltd., Hirochima-ken, Japan. 906,535, pub. 11–10–70. Cl. 19.
Trailer Equipment Distributors, Inc., Seattle, Wash. 906,484, pub. 10–6–70. Cl. 16.
Transcraft Corp., Anna, Ill. 906,538, pub. 11–10–70. Cl. 19.
Trimble Products Inc., Southern Pines, N.C. 906,515, pub. 11–10–70. Multiple Class (Classes 19, 22, and 32).
Triumph Werke Nuremberg Aktiengesellschaft, Nuremberg, Germany. 906,635, pub. 11–10–70. Cl. 23.
Truck Equipment Co. Inc., Buffalo, N.Y. 906,616, pub. 11–10–70. Cl. 23.
Tucker, Joy G., d.b.a. Joy Holmes, St. Louis, Mo. 906,767, pub. 11–10–70. Cl. 38.
Turfski, Inc., West Dover, Vt. 906,594, pub. 11–10–70. Cl. 22.
Tussy Cosmetics, Inc., New York, N.Y. 533,670, ren. 1–26–71. Cl. 51.
Uneeda Doll Co., Inc., Brooklyn, N.Y. 906,580, pub. 11–10–70. Cl. 22.
Union Carbide Corp., New York, N.Y. 906,795, pub. 11–10–70. Cl. 39.
Union Oil Co. of California, Los Angeles, Calif. 533,539, ren. 1–26–71. Cl. 15.
Unipress Co., Inc., The, Minneapolis, Minn. 540,009, ren. 1–26–71. Cl. 24.

United States Banknote Corp., New York, N.Y. 906,473, pub. 11–10–70. Cl. 13.
U.S. Plywood-Champion Papers Inc., New York, N.Y. 542,445, ren. 1–26–71. Cl. 12.
United States Rubber Co., New York, N.Y. 781,222, canc. Cl. 12.
United States Steel Corp., Pittsburgh, Pa. 533,973, ren. 1–26–71. Multiple Class (Classes 12, 18, and 14)
United States Steel Corp., Pittsburgh, Pa. 906,441, pub. 11–10–70. Cl. 1.
Universal Packers Corp., Oxnard, Calif. 906,868, pub. 11–10–70. Cl. 46.
Universal Refractories Corp., Milwaukee, Wis. 906,637–9, pub. 11–10–70. Cl. 23.
Upjohn Co., The, Kalamazoo, Mich. 906,509, pub. 11–10–70. Cl. 18.
V.E. Irons, Inc., Natick, Mass. 536,196, ren. 1–26–71. Cl. 18.
V.S.I. Corp., Azusa, Calif. 781,542, canc. Cl. 32.
Vaisey-Bristol Shoe Co. Inc., Monett, Mo. 781,467, canc. Cl. 39.
Vaponics Inc., Waltham, Mass. 906,677, pub. 11–10–70. Cl. 26.
Veb Staatliche Porzellan Manufaktur Meissen, Meissen, Germany. 906,706–8, pub. 11–10–70. Multiple Class (Classes 30 and 50).
Vega, Garcia Y, Inc., New York, N.Y. 781,255, canc. Cl. 17.
Vermont American Corp., Louisville, Ky. 906,644, pub. 11–10–70. Cl. 23.
Victor Comptometer Corp., Chicago, Ill. 906,597, pub. 11–10–70. Cl. 22.
Vigo Importing Co., Tampa, Fla. 906,880, pub. 11–10–70. Cl. 46.
Vistron Corp., Cleveland, Ohio. 857,769, canc. Cl. 12.
Vornado, Inc., Garfield, N.J. 906,559, pub. 11–10–70. Multiple Class (Classes 21, 23, and 36).
Vortox Mfg. Co., Claremont, Calif. 906,713, pub. 11–10–70. Cl. 31.
Waco Oil & Refining Co., Covington, Ky. 906,479, pub. 10–13–70. Cl. 15.
Wald Mfg. Co., Inc., Maysville, Ky. 906,537, pub. 11–10–70. Cl. 19.
Warnaco Inc., Bridgeport, Conn. 906,800, pub. 11–10–70. Cl. 39.
Welch Foods Inc., Westfield, N.Y. 906,852, pub. 11–10–70. Cl. 45.
West Chemical Products, Inc., Long Island City, N.Y. 906,483, pub. 11–10–70. Cl. 16.
West Chemical Products, Inc., Long Island City, N.Y. 906,621, pub. 11–10–70. Cl. 23.
Western Pump Distributors, Inc., Lubbock, Tex. 781,235, canc. Multiple Class (Classes 13 and 23).
Wha-Lite Products, Chicago, Ill. 532,999, ren. 1–26–71. Cl. 23.
Wheeling Corrugating Co., Wheeling, W. Va. 781,223, canc. Cl. 12.
Whirry, Jon W., d.b.a. Jonathan W. Little, Madison, Wis. 906,947, pub. 11–10–70. Cl. 107.
White, J. J., Products, Inc., Cleveland, Ohio. 535,052, ren. 1–26–71. Cl. 42.
White Motor Corp., Cleveland, Ohio. 906,526, pub. 11–10–70. Cl. 19.
White Stag Mfg. Co., d.b.a. Hirsch-Wels Canvas Products Co., Portland, Oreg. 906,591, pub. 11–10–70. Cl. 22.
Whittaker Corp., Los Angeles, Calif. 906,682, pub. 11–10–70. Cl. 26.
Williams Gold Refining Co., Inc., Buffalo, N.Y. 906,552, pub. 11–10–70. Cl. 21.
Winnebago Industries, Inc., Forest City, Iowa. 906,529, pub. 11–10–70. Cl. 19.
Winner, Frederic P., Ltd., Baltimore, Md., from Mogen David Wine Corp., d.b.a. Mama Rosenberg Wine Co., Westfield, N.Y. 906,959. Cl. 47.
Worth, Societe Anonyme, Paris, France. 276,978, ren. 1–26–71. Cl. 39.
Wright, Wm. E., Co., from Wm. E. Wright Co., West Warren, Mass. 906,459, pub. 11–10–70. Multiple Class (Classes 7, 13, and 40).
Wyler Watch Corp., New York, N.Y. 781,372, canc. Cl. 27.
Yamaha Hatsudoki Kabushiki Kaisha, Shizuoka-ken, Japan. 906,512, pub. 11–10–70. Cl. 19.
Yardley of London, Inc., New York, N.Y. 906,907–8, pub. 11–10–70. Cl. 51.
Youth Care Inc., Elizabeth, N.J. 906,906, pub. 11–10–70. Multiple Class (Classes 51 and 52).
Zarilla, Peter C., Rochester, Pa. 906,758, pub. 11–10–70. Cl. 38.
Zegna, A., Societa in Accomandita Semplice, Vallemosso, Italy. 906,831, pub. 11–10–70. Cl. 43.
Zip-Mark Corp., Jersey City, N.J. 781,420, canc. Cl. 37.

U.S. GOVERNMENT PRINTING OFFICE: 0—1971

U. S.
OFFICIAL GAZETTE
UNITED STATES
PATENT OFFICE

VOL 882
JANUARY
1971

MICRO PHOTO DIVISION

